Agenda

Canterbury Water Management Strategy Waimakariri Zone Committee

Monday 3 February 2025
4pm

Council Chamber
215 High Street, Rangiora

Members:

Claire Aldhamland
John Cooke (Te Ngai Tūāhuriri Rūnanga)
Tim Fulton (WDC Councillor)
Erin Harvie
Martha Jolly
Carolyne Latham
Claire McKay (ECan Councillor)
Arapata Reuben (Te Ngai Tūāhuriri Rūnanga)

WAIMAKARIRI DISTRICT COUNCIL

Environment Canterbury Regional Council
Kaunihera Taiao ki Waitaha

Chairperson and Members
CWMS WAIMAKARIRI ZONE COMMITTEE

AGENDA FOR THE MEETING OF THE CANTERBURY WATER MANAGEMENT STRATEGY WAIMAKARIRI ZONE COMMITTEE TO BE HELD IN THE COUNCIL CHAMBER, 215 HIGH STREET, RANGIORA ON MONDAY 3 FEBRUARY2025 COMMENCING AT 4PM.

Recommendations in reports are not to be construed as Council policy until adopted by the Council

BUSINESS

PAGES

KARAKIA

1. BUSINESS

1.1 **Apologies**

1.2 **Welcome and Introductions**

1.3 **Register of Interests**
Advice of any changes or updates. *5-7*

2. OPPORTUNITY FOR THE PUBLIC TO SPEAK

3. COMMITTEE APPOINTMENTS FOR 2025 – M GRIFFIN (CWMS FACILITATOR, ECAN)

RECOMMENDATION *8-9*

THAT the CWMS Waimakariri Zone Committee:

(a) **Appoints** _____ as Chairperson for 2025.

(b) **Appoints** _____ as Deputy Chairperson for 2025.

4. REPORTS

4.1 **CWMS Action Plan Budget 2024/25 – M Griffin (CWMS Facilitator, ECan)**

RECOMMENDATION *10-137*

THAT the CWMS Waimakariri Zone Committee:

(a) **Receives** the information provided on the proposed CWMS Action Plan Budget project initiatives to support for the 2024-25 financial year.

(b) **Approves** its support for the project initiatives based on the $50,000 available of the CWMS Action Plan Budget allocated for each CWMS Water Zone for the 2024/25 financial year.

2.2 – 1.	A Olorenshaw – Rakahuri Wetlands	$10,109
2.2 – 2.	A Thompson – Coppers Creek Wetland	$3,048
2.2 – 3.	C Cook – Mill Road Ohoka Stream Restoration	$3,843
2.2 – 4.	Jersey Land Diaries Ltd – Waikuku Stream Riparian Enhancement	$10,000
2.2 – 5.	Ken Robinson – Springvale Wetland	$20,000
2.2 – 6.	Waimakariri Biodiversity Working Group – Environment Awards	$3,000
	TOTAL	$50,000

4.2 **Draft WDC Rangiora Stormwater Management Plan 2025-2040 – M Griffin (CWMS Facilitator, ECan) and S Allen (Water Environment Advisor, WDC)**

RECOMMENDATION *138-219*

THAT the CWMS Waimakariri Zone Committee:

(a) **Receives** this report for its information.

(b) **Provides** any feedback on this draft Stormwater Management Plan for Rangiora by 13 February 2025.

5. COMMITTEE UPDATES – M GRIFFIN (CWMS FACILITATOR, ECAN)

5.1 **Zone Committee Working Groups.**

5.2 **Environment Canterbury Updates.**

5.3 **Waimakariri District Council Updates.**

5.4 **CWMS Zone Committee – Review.**

5.5 **Future Committee Meetings.**

5.6 **Action Points from the Previous Zone Committee Meetings.**

RECOMMENDATION *220-221*

THAT the CWMS Waimakariri Zone Committee:

(a) **Receives** these updates for information.

6. REPORTS FOR INFORMATION

6.1 **CWMS Zone Committee Review 2024 – Reporting and Next Steps**

RECOMMENDATION *222-229*

THAT the CWMS Waimakariri Zone Committee:

(a) **Receives** this report for information.

7. CONFIRMATION OF MINUTES

7.1 Minutes of the Canterbury Water Management Strategy Waimakariri Zone Committee Meeting – 11 November 2024

RECOMMENDATION *230-235*

THAT the CWMS Waimakariri Zone Committee:

(c) **Confirms** the Minutes of the Canterbury Water Management Strategy Waimakariri Zone Committee meeting, held on 11 November 2024, as a true and accurate record.

8. GENERAL BUSINESS

KARAKIA

NEXT MEETING

The next meeting of the CWMS Waimakariri Water Zone Committee is scheduled for Monday 5 May 2025 at 4pm.

AGENDA ITEM NO: 1.3	Register of Interests
Waimakariri Water Zone Committee	**MEETING DATE:** 3 February 2025

WAIMAKARIRI WATER ZONE COMMITTEE

Register of Interests – at 11 November 2024

Keeping a Zone Committee Members' declarations of interest register allows Zone Committees to identify and manage a conflict of interest when it arises.

The Office of the Auditor General notes a conflict of interest can arise when: "A member's or official's duties or responsibilities to a public entity could be affected by some other interest or duty that the member or official may have."[1]

If a member is in any doubt as to whether or not they have a conflict of interest, then the Member should seek guidance from General Counsel, Environment Canterbury, the Zone Facilitator, and/or refer to the following guidance: https://oag.parliament.nz/2020/lamia

Types of Interest to be documented in the register:

- Employment, trade or profession carried on by the Member or the Member's spouse for profit or gain.
- Company, trust, partnership etc for which the Member or their spouse is a director, partner or trustee, or a shareholder of more than 10% shares.
- Address of any land in which the Member has a beneficial interest, and which is in the area of the Zone Committee.
- The address of any land where the landlord is Environment Canterbury or Waimakariri District Council and:
    - The Member or their spouse is a tenant; or
    - The land is tenanted by a firm in which the Member or spouse is a partner, a company of which the Member or spouse is a director, or a Trust of which the Member or spouse is a Trustee.
- Any other matters which the public might reasonably regard as likely to influence the Member's actions during the course of their duties as a Member.
- Any contracts held between the Member or the Member's spouse and Environment Canterbury or Waimakariri District Council. Including contracts in which the Member or their spouse is a partner, a company of which the spouse is a director and/or holds more than 10% in shares, or a Trust of which the Member or their spouse is a trustee (noting that no committee member should be a party to a contract with Environment Canterbury or the relevant TLA if that value is more than $25,000 per annum).

Zone Committee members are to ensure that the information contained in this register is accurate and complete.

[1] Office of the Auditor General Good Practice Guide – Managing Conflicts of Interest: Guidance for public entities

Name	Committee Member Interests
Claire Aldhamland	- Teacher – Rangiora High School
John Cooke	- Director/Shareholder – Executive Limousines 2015 Limited - Director/Shareholder – Express Hire Limited - Director/Shareholder – Testpro Limited - Director/Shareholder – Acropolis Wedding and Event Hire Limited - Director/Shareholder – Pines Beach Store Limited - Director/Shareholder – Coastal Dream 2005 Limited – 4Ha property, Kaiapoi - Interim Trustee – Section 6 Survey Office Plan 465273 Ahu Whenua Trust - Member – Kaiapoi Club executive - Trustee on several Māori land blocks, all located in Otago
Cr Tim Fulton	- Waimakariri District Councillor - Freelance Writer in the agricultural business sector - Contracted to write a book on Central Plains Water Scheme
Erin Harvie	- Director – Bowden Consultancy Limited, trading as Bowden Environmental - Co-ordinator – Waimakariri Landcare Trust - Member – NZ Hydrological Society - Member – NZ Institute of Primary Industry Management - Involvement with Cust River Water User Group
Martha Jolly	- Veterinary surgeon (Companion animal) - PhD Student in Water Resource Management (2nd year) - Volunteer assistant the Styx Living Laboratory Trust - Volunteer educator Vets for Compassion - Volunteer clinician SPCA NZ - Member – Forest and Bird NZ
Carolyne Latham	- Farmer – Sheep and Beef - Director – Latham Ag Ltd Consulting - Shareholder – Silver Fern Farms, Farmlands - Registered Member – New Zealand Institute of Primary Industry Management
Cr Claire McKay	- Canterbury Regional Councillor - Dairy grazing - Ihenga Holdings – Partner (with spouse) - McKay Family Trust – Trustee (spouse also a Trustee) - Shareholder – Waimakariri Irrigation Limited, Ravensdown Ltd, Fonterra, and Farmlands - Member – Federated Farmers, Irrigation NZ

	- Water take and use consents CRC: 050222.1
Arapata Reuben	- Trustee – Tūhono Trust - Member – National Kiwi Recovery Group - Rūnanga Rep – Christchurch/West Melton Water Zone Committee - Rūnanga Rep – Ashburton Water Zone Committee

AGENDA ITEM NO: 3	**SUBJECT MATTER:** Committee Appointments for 2025
REPORT TO: Waimakariri Water Zone Committee	**MEETING DATE:** 3 February 2025
REPORT BY: Murray Griffin, CWMS Facilitator, ECan	

1 PURPOSE

The purpose of this report is to facilitate the appointment of the Chairperson and Deputy Chairperson of the Waimakariri Water Zone Committee (the Committee).

2. BACKGROUND

2.1 The Committee is required to annually appoint a Chairperson in accordance with its Terms of Reference, which state that – "*each year, the Committee shall appoint the Chair and Deputy Chair from the membership by a simple majority."* There is no limit on how long a person can be in either of these positions.

2.2 The Chairperson plays a central role in the effective functioning of a Committee. They need to be able to guide Committee meetings to ensure clear and fruitful outcomes.

2.2 The Chairperson should also provide leadership by developing a culture of good governance and should ensure that there is constant communication between the Committee, officials and the community.

3. ISSUES AND OPTIONS

3.1 2025 Appointments

C Latham and E Harvie have confirmed they are willing to continue as Chair and Deputy Chair respectively in 2025, through to the conclusion of the Waimakariri Water Zone Committee term in its current form, if no other members are nominated for these positions.

A move to a Local Leadership Group model is proposed to advance the implementation of the CWMS in the Canterbury Mayoral Forum 2024 review report (*please refer to this report provided as agenda item 4.3 – 1*). Decisions on the future of CWMS Zone Committees and the potential transition to Local Leadership Groups will made by the Canterbury Mayoral Forum and Local Councils by mid-2025.

With the departure overseas of Ruby Gill-Clifford, the committee currently has a vacancy for a Youth Representative. There are no Youth Representatives currently proposed for the committee, in part because of the shorter tenure proposed for the zone committee in 2025.

3.2 Proposed Approach to appointments

In accordance with WDC Standing Orders the following steps can be followed:

- The Committee shall accept nominations for the position of Chairperson for 2025.
- The Committee shall then accept nominations for the position of Deputy Chairperson for 2025.

Should there be more than one nomination for the position of Chairperson or Deputy Chairperson, the procedure to be followed is outlined in section 25 (Schedule 7, Part 1) the Local Government Act 2002 of the as follows:

"25. Voting systems for certain appointments—

(1) This clause applies to—

(a) the election or appointment of the chairperson and deputy chairperson of a regional council; and

(b) the election or appointment of the deputy mayor; and

(c) the election or appointment of the chairperson and deputy chairperson of a committee; and

(d) the election or appointment of a representative of a local authority.

(2) If this clause applies, a local authority or a committee (if the local authority has so directed) must determine by resolution that a person be elected or appointed by using one of the following systems of voting:

*(a) the voting system in sub clause (3) (**system A**):*

*(b) the voting system in sub clause (4) (**system B**).*

(3) System A—

(a) requires that a person is elected or appointed if he or she receives the votes of a majority of the members of the local authority or committee present and voting; and

(b) has the following characteristics:—

(i) there is a first round of voting for all candidates; and

(ii) if no candidate is successful in that round there is a second round of voting from which the candidate with the fewest votes in the first round is excluded; and

(iii) if no candidate is successful in the second round there is a third, and if necessary subsequent, round of voting from which, each time, the candidate with the fewest votes in the previous round is excluded; and

(iv) in any round of voting, if 2 or more candidates tie for the lowest number of votes, the person excluded from the next round is resolved by lot.

(4) System B—

(a) requires that a person is elected or appointed if he or she receives more votes than any other candidate; and

(b) has the following characteristics:

(i) there is only 1 round of voting; and

(ii) if 2 or more candidates tie for the most votes, the tie is resolved by lot."

RECOMMENDATION

That the Waimakariri Water Zone Committee either:

(a) **Appoints** _____ as Chairperson for 2025.

(b) **Appoints** _____ as Deputy Chairperson for 2025.

AGENDA ITEM NO: 4.1	**SUBJECT:** CWMS Action Plan Budget 2024/25 – recommendations for decision
REPORT TO: Waimakariri Water Zone Committee	**DATE OF MEETING:** 3 February 2025
REPORT BY: Murray Griffin, CWMS Facilitator	

1. PURPOSE

The purpose of the agenda item is to enable the Waimakariri Water Zone Committee to confirm its support of projects utilising the Canterbury Water Management Strategy (CWMS) Action Plan Budget for the 2024/25 financial year approved for the Waimakariri Water Zone through the Environment Canterbury 2024-34 Long Term Plan.

A total of fourteen project applications were received for this year's Action Plan Budget available in the Waimakariri Water Zone, from September to November 2024. To assist the committee in confirming its support of the staff recommendations, the fourteen applications received are included in this meeting agenda, as listed below:

2. RECOMMENDATIONS

That the Waimakariri Water Zone Committee:

(a) **Receives** the information provided on the proposed CWMS Action Plan Budget project initiatives to support for the 2024-25 financial year.

(b) **Approves** its support for the project initiatives based on the $50,000 available of the CWMS Action Plan Budget allocated for each CWMS Water Zone for the 2024/25 financial year.

2.2 – 1. A Olorenshaw – Rakahuri Wetlands	$10,109
2.2 – 2. A Thompson – Coopers Creek Wetland	$ 3,048
2.2 – 3. C Cook – Mill Rd Ohoka Stream Restoration	$ 3,843
2.2 – 4. Jersey Land Dairies Ltd – Waikuku Stream riparian enhancement	$10,000
2.2 – 5. Ken Robinson – Springvale Wetland	$20,000
2.2 – 6. Waimakariri Biodiversity Working Group – Environmental Awards	$ 3,000
TOTAL:	$50,000

3. BACKGROUND

As part of its Long-Term Plan 2021-2031, Environment Canterbury established the Zone Committee Action Plan Budget and committed $50,000 per Water Zone for the 2021-22 financial year. Another $50,000 for each CWMS Water Zone was confirmed by Environment Canterbury through its 2022/23 Annual Plan. In the third and final year of this Action Plan Budget, $75,000 was confirmed by Environment Canterbury in its 2023/24 Annual Plan.

As part of its Long-Term Plan 2024-2034, Environment Canterbury approved a further CWMS Zone Committee Action Plan Budget allocation of $50,000 per Water Zone for the 2024-25 financial year.

The purpose of the budget is to support Zone Committees to focus on implementing their Action Plan and where possible, leverage other funding opportunities to achieve their Canterbury Water Management Strategy (CWMS) priorities.

CWMS Action Plan Budget Initiatives – Assessment

The Waimakariri Water Zone Committee has considered the above initiatives as options to support in this final year of its CWMS 2021-24 Action Plan. In doing so, the committee has followed a consistent approach to assessing the 2024/25 Action Plan Budget initiatives, seeking alignment with its recommendations from the previous three years.

The Zone Committee has had opportunities to convene and consider the merits of the applications received this year prior to this meeting. Of the fourteen project applications received, the six projects recommended for support in this financial year were deemed to have the strongest alignment with the committee's CWMS 2021-24 Action Plan priorities and criteria.

The Waimakariri Water Zone Committee would like to thank all the applicants for their time and effort in applying, and for advancing all these worthwhile projects within the Waimakariri Water Zone.

Application for funding – CWMS Action Plan Budget 2024/25 *(for the Waimakariri Water Zone)*

The purpose of the CWMS Action Plan Budget is:

- To allow Zone Committees to **focus on implementing their action plan and leverage other funding opportunities to achieve the CWMS priorities.**

The funding is administered, distributed, and monitored by Environment Canterbury.

Applicant details

Organisation (if applicable):	
Contact name:	**Andrew Olorenshaw**
Contact email:	
Contact phone number:	
Postal address:	
Other address:	
Are you GST registered? (if yes, please provide number)	**TBA (if needed)**
NZBN (NZ Business Number, if applicable)	**TBA (if needed)**

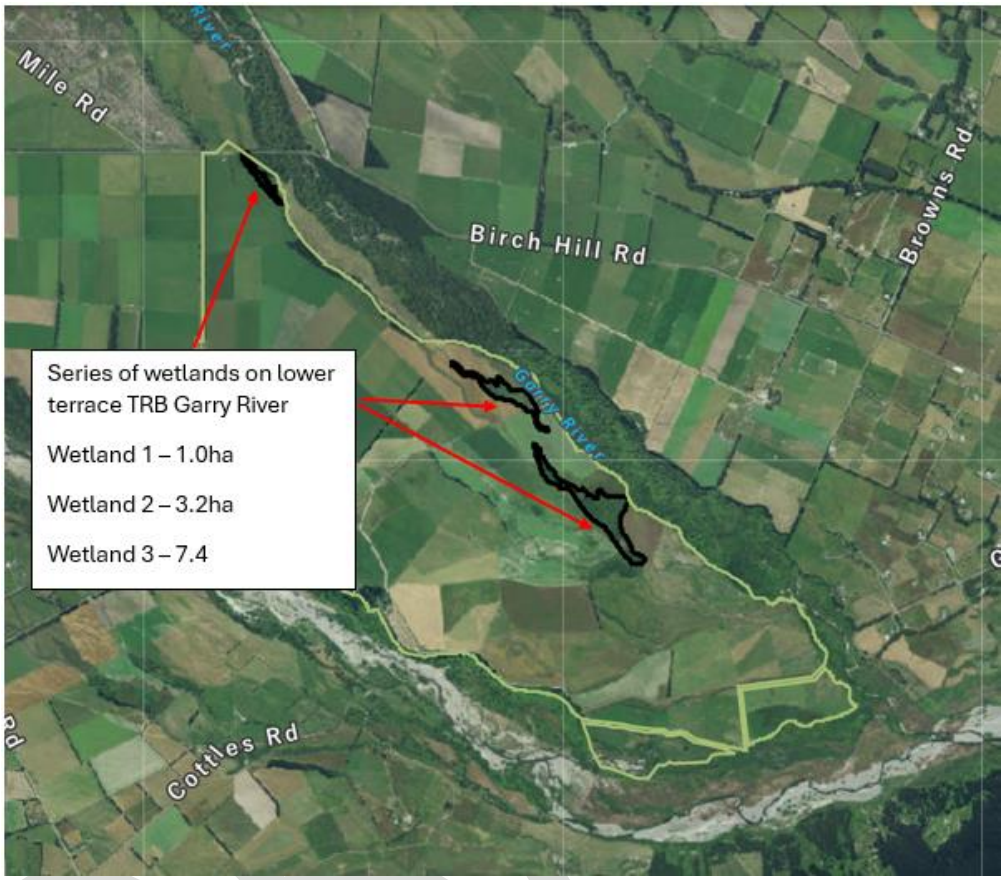
About your project

The amount of information and detail we would like you to provide is in proportion to the amount of funding you are requesting. If it is smaller amount, then a simple description of your project, who's involved and what you will be doing, along with a simple budget is sufficient.

Project name:	*Rakahuri Wetlands Project*
CWMS zone where the activity will occur:	*Waimakariri*
Provide a brief project description (in two sentences):	
Commence a staged multi-year woody weed control project in the series of connected ground and surface water-fed harakeke-dominant wetland remnant series, that are on an	

old alluvial terrace of the Garry River. The funding is sought to start control in Wetlands 1 & 2 in map below.

Currently exotic vegetation within the wetland consists of a number of woody species including grey and crack willow, flowering cherry, gorse and Himalayan honeysuckle.



Explain what the grant will be used for - what the money is mainly being spent on/what activities are involved in the project (in two sentences):

The funding will go towards paying an experienced pest management contractor to complete woody weed control in the first two wetland areas. The contractors will systematically work through the area using 'drill and fill' and 'cut and paste' methods to target non-native woody vegetation including crack and grey willow, gorse, wild cherry and Himalayan honeysuckle.

Describe the problem or opportunity the project will address:

We intend to start in the two smaller wetland areas in this first year to ensure these are secured as potential seed sources for the larger more densely weedy downstream wetland.

Describe the outcomes or impacts of this project:
Outcomes or impacts are what will change or who will benefit from this work, including enduring benefits. For example, fencing off springheads will improve biodiversity and improve stream health.

If the woody weed control is undertaken, it will reduce the extent and density of woody weeds within the wetlands; and enable an increase in the condition, extent and density of native vegetation in these wetlands.

Indigenous vegetation present includes flax/harakeke, with Cordyline australis, Juncus and Carex species, as well as Coprosma species.

This is one of the larger remnant examples in the upper Canterbury Plains in the Waimakariri District,

List the key outputs of the project:
An output describes what your group is proposing to do and is measurable. For example, install 250 m of fencing, or train 25 volunteers. Outputs are important and may be used as deliverables in a funding agreement.

The pest management contractor will:

- *systematically work through the x2 areas identified on the map above using the 'Drill n Fill' method to target non-native woody vegetation including but not limited to wild cherry, grey and crack willow, gorse, wild cherry and Himalayan honeysuckle*

- *small vegetation that is not big enough for drill control will be cut and pasted and left on dry ground or suspended from the ground to eliminate regrowth; or knapsack foliar sprayed if away from water, native vegetation, and grazing vegetation*

Please state how the project aligns with the relevant Zone Committee's 2021-24 Action Plan:
Waimakariri – Waimakariri Water Zone Committee Action Plan 2021-2024 | Environment Canterbury (ecan.govt.nz)

Alternatively, contact the Zone Facilitator (Murray Griffin) who can email you a copy.

By undertaking woody weed control activities in the first two of this wetland series along an historic terrace of the Garry River, the project will help start a staged programme of pest plant control throughout the whole of the 11.6ha wetlands. This will result in an increase in the condition, extent, and density of native vegetation within site over time.

This project aligns with the Waimakariri Zone Committee Action Plan for:

- *Increased indigenous biodiversity in the zone by protecting and improving the indigenous biodiversity, habitat or ecosystems in the zone through:*
  - ***Managing and eliminating plant and animal pest species****;*

Assisting all landowners and managers to integrate indigenous biodiversity management into the wider aspects of land and water (catchment) management.

Tell us when you can start the project and when you intend to have the project completed (timeline):

We have already been in contact with a contractor (via Anna Veltman) and would be able contract the work to be completed over the upcoming summer period November – April 2024/25.
Tell us why you think your project is feasible/realistic:
The first two wetland areas are narrow and smaller in size and are relatively easy to gain access; and it is anticipated that undertaking the control work will be relatively straight forward.
Tell us about the project management, including leadership and financial oversight:
We are working closely with Environment Canterbury staff – in particular Jason Butt and Anna Veltman to date, who are all supporting us to implement this project – with both technical advice and project management (at least in this early stage where they are helping liaising to get a quote from a contractor). If we are successful in this application for Waimakariri Zone Action Fund support – we will continue to liaise closely with these staff to ensure we execute this successfully.
List any other groups or organisations you are partnering with on this project, such as community groups, schools etc:
None
How will you engage the community on the project:
No specific engagement planned.

Do you know of any cultural values associated with this site? **If yes, what engagement has occurred or is planned (if any) with local Papatipu Rūnanga about this project?**	**NO**

Please provide an accurate location with grid references and a map (if relevant to your project – please *contact the Zone Facilitator who can assist with this if required***):**
NZTM Grid Ref X (Easting): 1548223 **NZTM Grid Ref Y (Northing):** 5212516
Who owns the land? *Attach evidence of permission from the landowner, or their representative (if you are undertaking a project on land that you do not own)*
John & Margaret Olorenshaw

Funding details

Your budget should include estimates of income and expenditure, including other funding and in-kind contributions. You should show clearly what you are planning to spend the Action Plan funds on if successful. For applications for less than $15,000 a simple budget is fine. We would like more detail if your application is for a larger amount e.g. more than $15,000 or more than $50,000. We have a budget template in the guidance document.

How much funding are you requesting?	$20,000
If you are successful with this application, what components of your project will you spend the money on? **Please include below or attach your budget to your application.*	
The funding will be spent on paying for a specialised pest management contracting company to undertake woody weed control in the 1.0 and 3.2 ha wetlands (as per the map earlier in the application). The funding will be spent on labour, chemical, travel and milage. The cost is based on a price estimate for such services that Anna Veltman and James Schaap sought from a contractor in May this year (2024) Stage 1 Wetland 1: $ 6,350.00 Wetland 2: $ 12,710.00	
Have you applied to, or received funding from other organisations for this project? **If YES, please provide details below or note if it is included in your attached budget.** *The CWMS Action Plan Budget is seed funding or leverage for partnering and collaboration, so it is positive if you have received or are applying for other funding.*	**NO**
Is the project receiving any other monetary or "in-kind" contributions (volunteer hours, resources, equipment, facilities) from your organisation or others? **If YES, please provide details below or note if it is included in your attached budget:**	**NO**

Working with Environment Canterbury

In the last three years have you received funding or other support from Environment Canterbury for this, or any other project? **If yes, what was the funding/support for, and when did you receive it?**	**NO**
Are you intending on applying to another Environment Canterbury fund/budget this financial year for this, or any other project? **If yes, what fund are you applying to?**	**NO**
Note that this project was put forward for consideration for support from the Environment Canterbury Regional Biodiversity fund, however no new projects were able to be supported by that fund this year - anywhere in the Canterbury region	
Do you give permission for your application for the CWMS Action Plan Budget to be shared with the ECan staff who coordinate the Waitaha Wai Action to Impact Fund (we prefer to share information between the two to get best use of both)	**YES**

Additional information you would like to provide?

Do you have supporting information you would like to provide (optional)?

**Please attach any supporting information with your application*.

Once completed, please send this application form to Zone Facilitator, Murray Griffin, murray.griffin@ecan.govt.nz

The Zone Facilitator will keep in touch with you about timeframes, whether the Committee would like you to give them a presentation, and whether there are any questions.

Appendix

Diagrams and maps

Stage 1- Wetland 1- 1ha

(Stage 1 Crack Willow)

(Density and existing Native vegetation)

Stage 2- Wetland 2 – 3.2ha

(Stage 2)

Other photos from throughout the wetland series

Application for funding – CWMS Action Plan Budget 2024/25 *(for the Waimakariri Water Zone)*

The purpose of the CWMS Action Plan Budget is:

- To allow Zone Committees to **focus on implementing their action plan and leverage other funding opportunities to achieve the CWMS priorities.**

The funding is administered, distributed, and monitored by Environment Canterbury.

Applicant details

Organisation (if applicable):	
Contact name:	Annabelle Thompson
Contact email:	
Contact phone number:	
Postal address:	
Other address:	
Are you GST registered? (if yes, please provide number)	
NZBN (NZ Business Number, if applicable)	-

About your project

The amount of information and detail we would like you to provide is in proportion to the amount of funding you are requesting. If it is smaller amount, then a simple description of your project, who's involved and what you will be doing, along with a simple budget is sufficient.

Project name:	Coopers Creek Wetland Restoration
CWMS zone where the activity will occur:	Waimakariri
Provide a brief project description (in two sentences):	
This project aims to enhance and protect the native biodiversity of the Coppers Creek Wetland which is a sanctuary for the Canterbury mudfish / kowaro	

The goal is to provide an environment where native plants can thrive, seeds can germinate and invasive exotic plants are managed - this in turn will provide habitat, shelter and food for birds, insects, lizards and the kowaro.

Explain what the grant will be used for - what the money is mainly being spent on/what activities are involved in the project (in two sentences):

To support this wetland, weed control work is required on the steep hill side which is currently covered in broom, gorse, blackberry and wire vine.

Cutting tracks and planting zones by hand has become a losing battle, therefore an excavator is required to remove the wire vine and cut in accessible tracks, along with a heavy duty scrub cutter to cut through gorse and broom. Machinery is required to do the majority of the work to clear the invasive weeds and allow for native planting.

Describe the problem or opportunity the project will address:

Once the invasive scrub is maintained there is an opportunity to allow further planting of eco-sourced native plants to support native wildlife and increase biodiversity of the wetland.

There is an opportunity to improve the quality of the water and habitat.

Describe the outcomes or impacts of this project:
Outcomes or impacts are what will change or who will benefit from this work, including enduring benefits. For example, fencing off springheads will improve biodiversity and improve stream health.

Removing invasive weeds and planting the wetland area in native plants will help to protect and enhance the native biodiversity of the area and improve the habitat for the Canterbury mudfish / kowaro and other freshwater invertebrates.

List the key outputs of the project:
An output describes what your group is proposing to do and is measurable. For example, install 250 m of fencing, or train 25 volunteers. Outputs are important and may be used as deliverables in a funding agreement.

Control up to 1782.4m2 of invasive weeds using excavator, scrub bar and chemical gel paste.

Continued cut and paste weed control regime by us, the landowners, to keep on top of weed growth

Lay jute / weed mat to suppress weeds in areas for planting up to 200 native seedlings in 2025

Obtain monitoring data of the wetland freshwater invertebrates, mudfish population and water quality

Please state how the project aligns with the relevant Zone Committee's 2021-24 Action Plan:
Waimakariri – Waimakariri Water Zone Committee Action Plan 2021-2024 | Environment Canterbury (ecan.govt.nz)

Alternatively, contact the Zone Facilitator (Murray Griffin) who can email you a copy.

This project aligns with the action **of improving biodiversity in the Waimakariri District** by clearing the wetland site of invasive weeds and replacing with native plants to provide food and shelter for native wildlife, and to help protect the Canterbury Mudfish and other invertebrates that inhabit the wetland.

Conducting an aquatic baseline survey, and specifically an assessment of the Canterbury Mudfish numbers present in the wetland aligns with action of **improved monitoring of groundwater and surface water in the zone**

Tell us when you can start the project and when you intend to have the project completed (timeline):

Weed control / excavator work: Jan/Feb 2025

Laying of weed mat: Jan/Feb 2025

Native planting: Autumn 2025

Aquatic baseline survey / mudfish monitoring: 2025

Tell us why you think your project is feasible/realistic:

To date we have fenced the area from livestock and planted over 1000 native plants. We have improved the water quality of the wetland - allowing Mudfish to be introduced via the WDC program.

Through our restoration activities to date, we have noticed an increase in native bird and insect life on the site which indicates this will continue to increase over time through further restoration activities.

Tell us about the project management, including leadership and financial oversight:

We will be supported by the Waimakariri Biodiversity Trust in all stages of the project and as the landowners we will manage the financial oversight of the project and undertake the majority of the labour - as we have done in the past with all other stages for this restoration project.

List any other groups or organisations you are partnering with on this project, such as community groups, schools etc:
We will invite members of the Keep Oxford Beautiful group to take part in our Autumn 2025 planting and we will also invite Oxford View Hill School to visit the site as part of their mudfish monitoring project and to take part in future plantings Other groups involved: Waimakariri District Council - Sophie Allen Freshwater Ecologist, Waimakariri Biodiversity Trust, Department of Conservation - For mudfish monitoring
How will you engage the community on the project:
We will engage with the community through the Oxford Community Facebook page and local community groups by sharing the vision of the project and restoration achievements, and to provide a case study for others wanting to undertake something similar on their property.

Do you know of any cultural values associated with this site? **If yes, what engagement has occurred or is planned (if any) with local Papatipu Rūnanga about this project?**	**YES**
The Canterbury Mudfish / Kōwaro has a 'Nationally Critical' conservation status and Ngāi Tahu considers it a Taonga species, with protected mahinga kai significance.	

Please provide an accurate location with grid references and a map (if relevant to your project – please *contact the Zone Facilitator who can assist with this if required*)**:**
NZTM Grid Ref X (Easting): 1526549.17 **NZTM Grid Ref Y (Northing):** 5208434.5
Who owns the land? *Attach evidence of permission from the landowner, or their representative (if you are undertaking a project on land that you do not own)*
Annabelle and Karl Thompson

Funding details

Your budget should include estimates of income and expenditure, including other funding and in-kind contributions. You should show clearly what you are planning to spend the Action Plan funds on if successful. For applications for less than $15,000 a simple budget is fine. We would like more detail if your application is for a larger amount e.g. more than $15,000 or more than $50,000. We have a budget template in the guidance document.

How much funding are you requesting?	$3,048
If you are successful with this application, what components of your project will you spend the money on? **Please include below or attach your budget to your application.*	
3.5t Excavator hire - 7 days - $1,654.40 Scrub cutter hire - 7 days - $319.00 Vigilant cut and paste gel - $240 30m Roll of Jute Mat - $490 Water quality testing - $345	
Have you applied to, or received funding from other organisations for this project? **If YES, please provide details below or note if it is included in your attached budget.** *The CWMS Action Plan Budget is seed funding or leverage for partnering and collaboration, so it is positive if you have received or are applying for other funding.*	**YES**
We have received funding from the Waimakariri Biodiversity Fund for the following: $490 for 30m roll of Jute Mat (More is required for site) $1068 for eco soured native seedlings and plant guards for the Autumn 2025 planting	
Is the project receiving any other monetary or "in-kind" contributions (volunteer hours, resources, equipment, facilities) from your organisation or others? **If YES, please provide details below or note if it is included in your attached budget:**	**YES**

Freshwater investigations / Mudish Survey - To be carried out by Sophie Allen - WDC Freshwater ecologist, for Department of Conservation The weed control and planting will be carried out by us, the landowners and an approximation of: $1500 - Digger driving and scrub bar hours $1000 - laying weed mat and planting

Working with Environment Canterbury

In the last three years have you received funding or other support from Environment Canterbury for this, or any other project? **If yes, what was the funding/support for, and when did you receive it?**	**NO**
Are you intending on applying to another Environment Canterbury fund/budget this financial year for this, or any other project? **If yes, what fund are you applying to?**	**NO**
Do you give permission for your application for the CWMS Action Plan Budget to be shared with the ECan staff who coordinate the Waitaha Wai Action to Impact Fund (we prefer to share information between the two to get best use of both)	**YES**

Additional information you would like to provide?

Do you have supporting information you would like to provide (optional)?

**Please attach any supporting information with your application*.

Once completed, please send this application form to Zone Facilitator, Murray Griffin, murray.griffin@ecan.govt.nz

The Zone Facilitator will keep in touch with you about timeframes, whether the Committee would like you to give them a presentation, and whether there are any questions.

Application for funding – CWMS Action Plan Budget 2024/25 *(for the Waimakariri Water Zone)*

The purpose of the CWMS Action Plan Budget is:

- To allow Zone Committees to **focus on implementing their action plan and leverage other funding opportunities to achieve the CWMS priorities.**

The funding is administered, distributed, and monitored by Environment Canterbury.

Applicant details

Organisation (if applicable):	
Contact name:	Clayton Cook
Contact email:	
Contact phone number:	
Postal address:	
Other address:	
Are you GST registered? (if yes, please provide number)	
NZBN (NZ Business Number, if applicable)	-

About your project

The amount of information and detail we would like you to provide is in proportion to the amount of funding you are requesting. If it is smaller amount, then a simple description of your project, who's involved and what you will be doing, along with a simple budget is sufficient.

Project name:	Mill Rd - Ohoka Stream Restoration
CWMS zone where the activity will occur:	Waimakariri
Provide a brief project description (in two sentences):	
To restore the 343m reach of Ohoka stream and embankment to a more	

natural ecosystem to increase biodiversity and in-stream habitat diversity and reduce excessive aquatic weeds through freshwater investigations and native riparian planting.

Explain what the grant will be used for - what the money is mainly being spent on/what activities are involved in the project (in two sentences):

- For freshwater investigations, managed by the Waimakariri Biodiversity Trust to obtain insights on the aquatic habitats found in-stream, water quality and to inform the best approach for enhancing the stream habitat and increasing biodiversity.
- Stage 1 riparian planting of 200 native seedlings, plant guards and weed mats

Describe the problem or opportunity the project will address:

This project will address the problem of a lack of native flora and fauna in this reach of the Ohoka Stream.

There is an opportunity to restore native biodiversity, provide in-stream habitat, and to encourage other landowners up and down stream to carry out similar restoration projects on their reach of the Ohoka Stream.

Describe the outcomes or impacts of this project:
Outcomes or impacts are what will change or who will benefit from this work, including enduring benefits. For example, fencing off springheads will improve biodiversity and improve stream health.

The restoration of this reach of the Ohoka stream through native riparian planting will improve in-stream habitat diversity, reduce excessive emergent aquatic weeds, improve bank stability and enhance habitat for native biodiversity.

List the key outputs of the project:
An output describes what your group is proposing to do and is measurable. For example, install 250 m of fencing, or train 25 volunteers. Outputs are important and may be used as deliverables in a funding agreement.

- Obtain base-line monitoring data of the in-stream freshwater habitats and water quality through freshwater investigations
- Begin Stage 1 of planting in 2025 by planting 200 native riparian plants to start improving habitat and biodiversity.

Please state how the project aligns with the relevant Zone Committee's 2021-24 Action Plan:
Waimakariri – Waimakariri Water Zone Committee Action Plan 2021-2024 | Environment Canterbury (ecan.govt.nz)

Alternatively, contact the Zone Facilitator (Murray Griffin) who can email you a copy.

This project aligns with the action **of improving biodiversity in the Waimakariri District** through the planting of native riparian plants to improve in-stream and terrestrial habitat for native wildlife.

Conducting an aquatic baseline survey aligns with action of **improved monitoring of groundwater and surface water in the zone**

Tell us when you can start the project and when you intend to have the project completed (timeline):
Freshwater Investigations: Nov/Dec 2024 Stage 1 Native Riparian planting: Autumn 2025
Tell us why you think your project is feasible/realistic:
Since obtaining the property almost 2 years ago the landowners have maintained the stream bank edges through a regular weed control regime and the stream banks are ready for planting. They plan to carry out the riparian planting in manageable stages each season so as to ensure feasible maintenance of establishing seedlings, and will be guided by the Waimakariri Biodiversity Trust involving freshwater ecologist and experts at each stage.
Tell us about the project management, including leadership and financial oversight:
The project will be managed by the landowners - Clayton and Angela Cook, Robin Smith (retired freshwater habitat specialist) with support from the Waimakariri Biodiversity Trust through all stages. The landowners will manage the financial oversight of the project and carry out planting and plant maintenance under the guidance of Robin Smith and the Waimakariri Biodiversity Trust.
List any other groups or organisations you are partnering with on this project, such as community groups, schools etc:
Waimakariri District Council - Sophie Allen Freshwater Ecologist
How will you engage the community on the project:
Contact with local school and local landholders up and down stream who would be interested in the project

Do you know of any cultural values associated with this site? **If yes, what engagement has occurred or is planned (if any) with local Papatipu Rūnanga about this project?**	**YES**
Rūnanga will be contacted to and invited to advise on how the cultural values and can be protected or enhanced as part of this project	

Please provide an accurate location with grid references and a map (if relevant to your project – please *contact the Zone Facilitator who can assist with this if required*)**:**
NZTM Grid Ref X (Easting): 1564716 **NZTM Grid Ref Y (Northing):** 5199240
Who owns the land? *Attach evidence of permission from the landowner, or their representative (if you are undertaking a project on land that you do not own)*
Clayton and Angela Cook

Funding details

Your budget should include estimates of income and expenditure, including other funding and in-kind contributions. You should show clearly what you are planning to spend the Action Plan funds on if successful. For applications for less than $15,000 a simple budget is fine. We would like more detail if your application is for a larger amount e.g. more than $15,000 or more than $50,000. We have a budget template in the guidance document.

How much funding are you requesting?	$ 3,843
If you are successful with this application, what components of your project will you spend the money on? **Please include below or attach your budget to your application.*	
Water quality testing - $345 Waimakariri Biodiversity Trust - Freshwater investigations - approx $2000 - figure to be confirmed following site visit 24 October 2024. Stage 1 Native Planting - 200 plants and FibreGuard Combi 50Pk (x4) - $1498	
Have you applied to, or received funding from other organisations for this project? **If YES, please provide details below or note if it is included in your attached budget.** *The CWMS Action Plan Budget is seed funding or leverage for partnering and collaboration, so it is positive if you have received or are applying for other funding.*	**NO**

Is the project receiving any other monetary or "in-kind" contributions (volunteer hours, resources, equipment, facilities) from your organisation or others? **If YES, please provide details below or note if it is included in your attached budget:**	**YES**
General advice from WDC and ECan ecologists	

Working with Environment Canterbury

In the last three years have you received funding or other support from Environment Canterbury for this, or any other project? **If yes, what was the funding/support for, and when did you receive it?**	**NO**
Are you intending on applying to another Environment Canterbury fund/budget this financial year for this, or any other project? **If yes, what fund are you applying to?**	**NO**
Do you give permission for your application for the CWMS Action Plan Budget to be shared with the ECan staff who coordinate the Waitaha Wai Action to Impact Fund (we prefer to share information between the two to get best use of both)	**YES**

Additional information you would like to provide?

Do you have supporting information you would like to provide (optional)?

**Please attach any supporting information with your application*.

Once completed, please send this application form to Zone Facilitator, Murray Griffin, murray.griffin@ecan.govt.nz

The Zone Facilitator will keep in touch with you about timeframes, whether the Committee would like you to give them a presentation, and whether there are any questions.

Ohoka Stream, 600 Mill Road, Ohoka

Observations, shared ideas and recommendations for stream enhancement

1. On 29 August 2024, Robin Smith and Kate O'Brien (Coordinator, Waimakariri Biodiversity Trust) visited the property of Clayton and Angela Cook at 600 Mill Road, Ohoka. The purpose of the visit was to discuss with them their aspirations for the enhancement of their 343m reach of Ohoka Stream. If an enhancement project was possible, it was likely that public funding could be sought with help from the Waimakariri Biodiversity Trust and support from the Waimakariri District Council.

2. During a stream walk various ideas were discussed. Robin also walked up the stream (in waders) to take photos and make further observations. No fish were observed.

3. Site description – Ohoka Stream is a small, perennial spring-fed tributary of the Kaiapoi River. The Mill Road property includes a 343m gravel bottom reach in the upper Ohoka Stream catchment near its spring source(s). The stream bed is relatively uniform with few instream habitat features such as woody debris or large cobbles. Stream banks are mostly gently sloping and stable. The stream has excellent water clarity and an estimated discharge of approximately 0.05 cumecs (50 litres/second). There were virtually no emergent macrophytes observed during the visit, but typically by late summer, the stream has a significant cover of exotic yellow-flowered monkey musk (*Erythranthe guttata*) and other aquatic weeds. Several submerged macrophyte species were present during the August site visit.

4. The 'Canterbury Water Management Strategy, Targets and Goals' lists as a regional priority the protection and enhancement of lowland streams to improve ecological health and ecosystem condition along with an increase in the extent of riparian management. This stream meets the Strategy's criteria and based on the initial site visit assessment, would be a good candidate for enhancement.

5. Possible objectives for a stream enhancement project at 600 Mill Road include:

- Improving in-stream habitat diversity
- Reducing excessive emergent aquatic weeds
- Enhancing riparian habitat for terrestrial and aquatic biodiversity
- Improving shelter for the property (especially the house and grazing horses)
- Enhancing the aesthetic values of the stream

Figure 1 – The map shows (blue dots) freshwater springs in the headwaters of Ohoka Stream (Source - Canterbury Maps, Environment Canterbury).

Figure 2 – Looking downstream from the western property boundary. The stream banks have been sprayed to control mainly grass weeds making planting of the riparian zone a relatively easy task. Fence set backs are generally adequate for paddocks which are primarily grazed with horses. Fences are constructed of Y posts and hot wires. If the banks are planted, the adequacy of the fences to prevent damage to establishing plants from horses and other animals would need to be considered.

Figure 3 – Looking upstream from near the house. A small drain enters on the true left (right of photo). The majority of the stream is comprised of shallow riffle or run habitat with almost no deep pools, large cobbles or woody debris. The streambed substrate is comprised of small stones with patches of fine sediment in places. In places, banks are slightly undercut providing refuge for fish.

Figure 4 – Looking downstream. Some portions of the fence on the true left are possibly too close to the stream edge to allow for an adequate margin of stream bank to successfully plant. Large sedges (*Carex secta*) are present in several locations. Generally, they are planted slightly too far up the bank to shade the stream edges and reduce macrophyte establishment. Sedges planted slightly closer to the stream would also provide better shade for fish and other aquatic species. Care needs to be taken with the planting of stream-side sedges and a strict planting protocol needs to be followed (see *Figure 7* for more information on planting).

Figure 5 – looking downstream near the house. Stream banks typically have a gentle, plantable slope. In a few locations (e.g. left of photo), slight re-battering of the bank could be considered to make the bank more stable and plantable. There is existing native vegetation in some locations - *Carex secta*, flax and *Pittosporum tenuifolium*/kōhūhū are growing on the true right bank. The large species of flax (*Phormium tenax*) should not be planted close to the streambank as it's prone to growing into the stream and causing restrictions and damage to banks in flood flows. If planted, it should be located further up the bank or smaller flax species planted such as *Phormium cookianum*.

Figure 6 – Vehicle and stock crossing. A culvert has been constructed downstream which will largely eliminate the need for this stream crossing.

Figure 7 – For the most part, the stream banks are ready for planting. This would increase their stability, considerably enhance the riparian and in-stream habitat and substantially reduce excessive aquatic weeds. To provide quick and effective stream edge shade, it's suggested that at least one row of *Carex secta*/pukio (a long-lived native sedge) is planted on both banks. Careful spacing and plant placement is crucial for the sedges. If they're planted too far up the bank, they won't provide stream edge shade and fish cover. If they're planted too close to the water's edge, at maturity plants will touch those on the opposite bank. While such cover may keep the water cool and provide refuge for fish, flood flows may be impeded and aesthetically it would be far nicer to be able to see the water. If plants are spaced at 1.5m apart, a total of 450 sedges would be required to plant both banks (less plants would be needed as that number doesn't take into account bridges, stream crossings, existing planting and other factors). On the true right bank (the right bank looking downstream), a row (or more) of indigenous shrubs could be planted above the sedges together with the occasional pocket of trees. Shrubs and particularly trees should be planted on the true left bank above the sedges where the greatest shade effect can be obtained. Plant species should be selected from the Low Plains Ecological District where possible and if appropriate. A planting plan based on the project's objectives needs to be prepared which lists the species, their placement, plant numbers and staging of the planting.

Figure 8 – *Pittosporum tenuifolium*/kōhūhū planted on the true left bank provides good shade for the stream, habitat for aquatic and terrestrial invertebrates, litter for the stream, stabilises the bank and offers shelter.

Figure 9 – Angela, Kate and Clayton discussing ideas for enhancing the stream. Grass and other weeds have been sprayed to make management of the ungrazed stream banks easier.

Figure 10 – A footbridge provides access across the stream near the house. The fence on the true left (to right of photo) could be set back slightly to allow more room for planting. The stream bank could also be re-battered to make planting easier (this may require a resource consent but Council staff can advise).

Figure 11 – A large willow on the true right bank near the downstream property boundary.

Figure 12 – A bridge made of 2 large culverts under construction. A large pool has formed just downstream of the outlet. To avoid water undermining the culverts, large cobbles could be placed in the bed immediately downstream of the pipes. This would also create instream habitat variation.

Figure 13 – Upstream view of the bridge.

Figure 14 – Macrophytes (probably the non-native and aggressive monkey musk) are establishing along the stream edge from where they grow rapidly out into the water. If left unmanaged, by late summer they'll cover the entire water surface. This will raise the water level and if left uncontrolled possibly cause flooding during storm events. Excessive macrophytes also cause significant fluctuations in dissolved oxygen in the water which could be harmful for fish. Control of monkey musk is relatively easy at this early stage by regular hand pulling and leaving on the bank to die. Monkey musk growing further up the bank away from the water could be carefully sprayed with glyphosate (by standing in the water and spraying towards the bank). Care should be taken to avoid contamination of the water with herbicide, especially if water downstream is used for irrigation, livestock water or human consumption.

Figure 15 – The stream bed is mostly comprised of relatively small round gravels with patches of consolidated sand and sediment. The addition of widely spaced, small groups of large round rocks (called cobble clusters) could significantly improve habitat and flow diversity for fish and invertebrates (see the Living Water Ararira Catchment Management Plan pages 90-91).

Figure 16 – There was virtually no instream woody debris with the exception of this small log towards the downstream property boundary. Logs such as this provide significant habitat for fish and invertebrates and could easily be added to the stream. Log vanes (submerged logs) could also be added in deeper run habitat to improve habitat and flow diversity for fish and invertebrates. These longer logs are inserted into the bank pointing upstream at an angle. Like cobble clusters, these are low-cost solutions to improve habitat diversity in modified waterways. Fish and invertebrate sampling could be considered to identify species present and measure changes over time.

Figure 17 – Submerged aquatic plants (macrophytes) are present, especially in the deeper downstream reaches of the stream.

Figure 18 – Submerged aquatic plants.

Figure 19 – This fence across the stream, not far from the downstream property boundary, has collected flood debris. It's a reminder that although these spring fed streams have very stable base flows, they can sometimes carry significant discharges. Managing emergent aquatic weeds, such as monkey musk, through stream edge planting will significantly reduce the adverse impact of floods.

Riparian Planting Species List for 600 Mill Road - Ohoka Stream

Suggested Species List based on an area of 681m2 of marginal planting (340m2 on either side of bank), 1021m2 of lower bank planting (510m2 on either side of bank) and 500m2 (250m2 on either side of bank) of pocket / grouped upper bank planting.

Margin – first 1 m strip of bank closest to the stream - 681m2			
Common name	**Latin name**	**Qty**	**Dispersal**
Pukio/Swamp sedge	*Carex virgata/ Carex secta*	400	80% of the site
Sharp sedge	*Eleocharis acuta*	52	20% of the site
Lower Bank – Strip of 1.5 m above the marginal planting -1021m2			
Common name	**Latin name**	**Qty**	**Dispersal**
Harakeke	*Phormium tenax*	135	Scattered throughout 20% of the site
Mikimiki	*Coprosma propinqua*	135	Scattered throughout 20% of the site
Ribbonwood	*Plagianthus regius*	135	Scattered throughout 20% of the site
Tī kōuka, cabbage tree	*Cordyline australis*	135	Scattered throughout 20% of the site
Upper Bank – Areas above the lower bank - 500m2			
Common name	**Latin name**	**Qty**	**Dispersal**
Karamū	*Coprosma robusta*	55	Scattered throughout 15% of the site
Kōhūhū	*Pittosporum tenuifolium*	55	Scattered throughout 15% of the site
Wrinkle leaved olearia	*Olearia bullata*	55	Scattered throughout 15% of the site
Tī kōuka, cabbage tree	*Cordyline australis*	55	Scattered throughout 15% of the site
Mikimiki	*Coprosma propinqua*	55	Scattered throughout 15% of the site

Kōwhai	*Sophora microphylla*	55	Scattered throughout 15% of the site
	Total:	**1322**	

Application for funding – CWMS Action Plan Budget 2024/25 *(for the Waimakariri Water Zone)*

The purpose of the CWMS Action Plan Budget is:

- To allow Zone Committees to **focus on implementing their action plan and leverage other funding opportunities to achieve the CWMS priorities.**

The funding is administered, distributed, and monitored by Environment Canterbury.

Applicant details

Organisation (if applicable):	Department of Conservation
Contact name:	
Contact email:	
Contact phone number:	
Postal address:	
Other address:	
Are you GST registered? (if yes, please provide number)	Yes
NZBN (NZ Business Number, if applicable)	9429000028295

About your project

The amount of information and detail we would like you to provide is in proportion to the amount of funding you are requesting. If it is smaller amount, then a simple description of your project, who's involved and what you will be doing, along with a simple budget is sufficient.

Project name:	Motu Kānuka Scientific Reserve Weed Control
CWMS zone where the activity will occur:	Waimakariri
Provide a brief project description (in two sentences):	

Problematic weeds at the Department of Conservation dryland scientific reserves will be controlled to allow dryland ecosystem to regenerate back to a native herbfield/mossfield under kānuka dominated canopy.

Explain what the grant will be used for - what the money is mainly being spent on/what activities are involved in the project (in two sentences):

Hiring of contractors for the control of weed species Cock's-foot (*Dactylis glomerata*) and Karo (*Pittosporum crassifolium*) at Motu Kānuka Scientific Reserve to allow indigenous dryland ecosystem to regenerate.

Describe the problem or opportunity the project will address:

The dryland ecosystems of the Canterbury plains have almost been entirely developed for agriculture with only small remnants remaining. These remnants provide habitat for a number of threatened plant species. One of these remnants is Motu Kānuka in Eyrewell Forest in the Waimakariri District. Motu Kānuka is a 13ha scientific reserve. It is one of the largest remaining areas of kānuka forest remaining on the plains. Under the kānuka canopy is a diverse herb and mossfield of native herbs, mosses, and lichens, including dryland button daisy, common mountain daisy, onion orchid, and sun orchid. Exotic weed species threaten native indigenous vegetation, especially cock's-foot, which forms dense swards preventing the recruitment of native shrubs and trees and displacing native moss and herbfields. The native *Pittosporum crassifolium* had a limited North Island range and has been spread south. It is now considered an environmental weed disrupting local plant communities and is a problem at Motu Kānuka.

Describe the outcomes or impacts of this project:
Outcomes or impacts are what will change or who will benefit from this work, including enduring benefits. For example, fencing off springheads will improve biodiversity and improve stream health.

Increased native plant abundance and diversity at the site.
List the key outputs of the project: *An output describes what your group is proposing to do and is measurable. For example, install 250 m of fencing, or train 25 volunteers. Outputs are important and may be used as deliverables in a funding agreement.*
Approximately 6ha weed control.
Please state how the project aligns with the relevant Zone Committee's 2021-24 Action Plan: *Waimakariri* – Waimakariri Water Zone Committee Action Plan 2021-2024 | Environment Canterbury (ecan.govt.nz) *Alternatively, contact the Zone Facilitator (Murray Griffin) who can email you a copy.*
Aligns with the following in the Waimakariri Water Zone committee action plan: "To protect and improve the indigenous biodiversity, habitat or ecosystems in the zone through: Managing and eliminating plant and animal pest species".
Tell us when you can start the project and when you intend to have the project completed (timeline):
Work would begin in summer 2024 and be completed by the end of the financial year.
Tell us why you think your project is feasible/realistic:
This funding has been hugely beneficial to improving the dryland reserves over two financial years. Future biodiversity funding towards controlling this weed threat would be very beneficial to Motu Kānuka. DOC rangers experienced in weed control at sensitive sites will manage the project.
Tell us about the project management, including leadership and financial oversight:
All funds will be spent on contracting of the work. Project and contract management will be carried out by Department of Conservation staff and is not included in the budget estimate.
List any other groups or organisations you are partnering with on this project, such as community groups, schools etc:
Te Ara Atawhai ('the conservation pathway') is a programme run by The Department of Conservation and the Ministry of Social Development to provide conservation work experience to jobseekers. Te Ara Atawhai students have provided weed control in recent years at Motu Kānuka. Further contribution to Motu Kānuka is subject to as yet unconfirmed funding.
How will you engage the community on the project:
The Waimakariri zone committee will be updated on the results of the project and there is the potential for Environment Canterbury comms output.

Do you know of any cultural values associated with this site?	**NO**

If yes, what engagement has occurred or is planned (if any) with local Papatipu Rūnanga about this project?	
Please provide an accurate location with grid references and a map (if relevant to your project – please *contact the Zone Facilitator who can assist with this if required*)**:**	
NZTM Grid Ref X (Easting): 1532219 **NZTM Grid Ref Y (Northing):** 5194597	

Who owns the land?

Attach evidence of permission from the landowner, or their representative (if you are undertaking a project on land that you do not own)
Department of Conservation

Funding details

Your budget should include estimates of income and expenditure, including other funding and in-kind contributions. You should show clearly what you are planning to spend the Action Plan funds on if successful. For applications for less than $15,000 a simple budget is fine. We would like more detail if your application is for a larger amount e.g. more than $15,000 or more than $50,000. We have a budget template in the guidance document.

How much funding are you requesting?	**$15,000**
If you are successful with this application, what components of your project will you spend the money on? **Please include below or attach your budget to your application.*	
Hiring of contractors for the following: • **$6,000 to grid search and control cocksfoot grass (Dactylis glomerata). Controlling about 6ha.** Contract labour rough estimate: 90 hours @ $60/hr, milage 300km @ 0.95/km, $160 herbicides, GPS hire $100. • **$3,000 to gun and hose spray cocksfoot grass (Dactylis glomerata). Controlling about 3ha.** Contract labour rough estimate: 22 hours @ $60/hr, 22 hours spray truck @ $60/hr, milage 300km @ 0.95/km, $80 herbicides, GPS hire $80. • **$6,000 karo (Pittosporum crassifolium) manual cut and paste control. Controlling about 6ha.** Contract labour rough estimate: 90 hours @ $60/hr, milage 300km @ 0.95/km, $160 herbicides, GPS hire $100.	
Have you applied to, or received funding from other organisations for this project? **If YES, please provide details below or note if it is included in your attached budget.** *The CWMS Action Plan Budget is seed funding or leverage for partnering and collaboration, so it is positive if you have received or are applying for other funding.*	**NO**
Is the project receiving any other monetary or "in-kind" contributions (volunteer hours, resources, equipment, facilities) from your organisation or others? **If YES, please provide details below or note if it is included in your attached budget:**	**YES**

• 24 ranger days for weed control visits per year. • 1 ranger day fencing maintenance and neighbouring landowner liaison per year. • 8 days per year for woody weed control from the Te Ara Atawhai program at about 8 people each day (subject to funding not yet confirmed)

Working with Environment Canterbury

In the last three years have you received funding or other support from Environment Canterbury for this, or any other project? **If yes, what was the funding/support for, and when did you receive it?**	**YES**
This project received $14,400 in FY22/23 and $20,000 in FY23/24 from Environment Canterbury's Canterbury Biodiversity Strategy fund.	
Are you intending on applying to another Environment Canterbury fund/budget this financial year for this, or any other project? **If yes, what fund are you applying to?**	**YES**
Environment Canterbury and the Department of Conservation work closely together in a number of areas.	
Do you give permission for your application for the CWMS Action Plan Budget to be shared with the ECan staff who coordinate the Waitaha Wai Action to Impact Fund (we prefer to share information between the two to get best use of both)	**N/A**

Additional information you would like to provide?

Do you have supporting information you would like to provide (optional)?

Please attach any supporting information with your application*.**

Once completed, please send this application form to Zone Facilitator, Murray Griffin, murray.griffin@ecan.govt.nz

The Zone Facilitator will keep in touch with you about timeframes, whether the Committee would like you to give them a presentation, and whether there are any questions.

Te Ara Atawhai students controlling gorse

Native Orchids and Daisies at Motu Kanuka

Application for funding – CWMS Action Plan Budget 2024/25 *(for the Waimakariri Water Zone)*

The purpose of the CWMS Action Plan Budget is:

- To allow Zone Committees to **focus on implementing their action plan and leverage other funding opportunities to achieve the CWMS priorities.**

The funding is administered, distributed, and monitored by Environment Canterbury.

Applicant details

Organisation (if applicable):	Environment Canterbury
Contact name:	
Contact email:	
Contact phone number:	
Postal address:	
Other address:	
Are you GST registered? (if yes, please provide number)	Yes
NZBN (NZ Business Number, if applicable)	9429041900130

About your project

The amount of information and detail we would like you to provide is in proportion to the amount of funding you are requesting. If it is smaller amount, then a simple description of your project, who's involved and what you will be doing, along with a simple budget is sufficient

Project name:	Lees Valley Road Sycamore Control
CWMS zone where the activity will occur:	Waimakariri
Provide a brief project description (in two sentences):	

An infestation of Sycamore (*Acer pseudoplatanus*) has been found on Lees Valley Road. Early intervention to eliminate Sycamore now will save considerable cost control costs in the future and have long term benefits to the surrounding ecosystems.

Explain what the grant will be used for - what the money is mainly being spent on/what activities are involved in the project (in two sentences):

Control of an infestation of Sycamore on the roadside of Lees Valley Road near Middle Bridge.

Describe the problem or opportunity the project will address:

Sycamore has been found in an approximately 2 ha area along Lees Valley Road near Middle Bridge. This site is situated within continuous indigenous forest directly linked to the Ashley Rakahuri River and Mt Thomas Forest conservation area with Oxford Forest Conservation Area and QEII covenants nearby. Species with threat classifications in adjacent conservation area and gorge include white rātā, mānuka, rōhutu, and kānuka.

Sycamore is named in a list of 386 environmental weeds in New Zealand 2024 prepared by the Department of Conservation. Sycamore seeds are wind dispersed. At its upper bounds seeds can spread more than 300 m with a seedling density over 3000 per hectare. Given this site's proximity to the Ashley River seed spread could be much greater. There is potential for sycamore to invade closed beech forest as it is shade tolerant threatening the surrounding beech forest. Giving a large potential benefit area for control works in this project. Inaction will greatly raise costs of future control as Sycamore grows and spreads rapidly producing a high number of seeds. Sycamore does not form persistent seed banks and given the small number of mature trees means there is high value for money in undertaking control now. Sycamore is a relatively long-lived tree, and stands will likely persist for centuries without succession. Due to its rapid growth and ability to produce vast numbers of seeds, Sycamore is a high threat to the values of the area. elimination of Sycamore is achievable at this site.

Describe the outcomes or impacts of this project:
Outcomes or impacts are what will change or who will benefit from this work, including enduring benefits. For example, fencing off springheads will improve biodiversity and improve stream health.

Eliminated presence of Sycamore within site.

List the key outputs of the project:
An output describes what your group is proposing to do and is measurable. For example, install 250 m of fencing, or train 25 volunteers. Outputs are important and may be used as deliverables in a funding agreement.

Sycamore control over approximately 2 ha.

Please state how the project aligns with the relevant Zone Committee's 2021-24 Action Plan:
Waimakariri – Waimakariri Water Zone Committee Action Plan 2021-2024 | Environment Canterbury (ecan.govt.nz)

Alternatively, contact the Zone Facilitator (Murray Griffin) who can email you a copy.

Aligns with the following in the Waimakariri Water Zone committee action plan: "To protect and improve the indigenous biodiversity, habitat or ecosystems in the zone through: Managing and eliminating plant and animal pest species".

Tell us when you can start the project and when you intend to have the project completed (timeline):

The ideal time to control would be in summer or autumn before the seed fall. If funding were made available a contractor would be hired, and work would expected to be completed by early autumn.

Tell us why you think your project is feasible/realistic:

The area has been scoped by Environment Canterbury staff and weed control contractors. Experienced contractors with knowledge of the are will be used.

Tell us about the project management, including leadership and financial oversight:

All funds will be spent on contracting of the work. Project and contract management will be carried out by Environment Canterbury staff and is not included in the budget estimate.
List any other groups or organisations you are partnering with on this project, such as community groups, schools etc:
N/A
How will you engage the community on the project:
The Waimakariri zone committee will be updated on the results of the project and there is the potential for Environment Canterbury comms output.

Do you know of any cultural values associated with this site? **If yes, what engagement has occurred or is planned (if any) with local Papatipu Rūnanga about this project?**	**YES**

The Rakahuri is of particular significance to Ngāi Tahu.
Please provide an accurate location with grid references and a map (if relevant to your project – please *contact the Zone Facilitator who can assist with this if required***):**
NZTM Grid Ref X (Easting): 1532717 **NZTM Grid Ref Y (Northing):** 5214253

Who owns the land?

Attach evidence of permission from the landowner, or their representative (if you are undertaking a project on land that you do not own)
Waimakariri District Council Primary Road Parcel 3573725

Funding details

Your budget should include estimates of income and expenditure, including other funding and in-kind contributions. You should show clearly what you are planning to spend the Action Plan funds on if successful. For applications for less than $15,000 a simple budget is fine. We would like more detail if your application is for a larger amount e.g. more than $15,000 or more than $50,000. We have a budget template in the guidance document.

How much funding are you requesting?	$16,192
If you are successful with this application, what components of your project will you spend the money on? **Please include below or attach your budget to your application.*	
Hiring contractor at following rates: 4 Days x 4 crew labour including chemical, mileage and hire plant. $ 13,062. Traffic management x 1 day (including plan and stop/go). $ 3,130. With the close proximity to the road some larger trees will require felling and traffic management will be required.	
Have you applied to, or received funding from other organisations for this project? **If YES, please provide details below or note if it is included in your attached budget.** *The CWMS Action Plan Budget is seed funding or leverage for partnering and collaboration, so it is positive if you have received or are applying for other funding.*	**NO**
Is the project receiving any other monetary or "in-kind" contributions (volunteer hours, resources, equipment, facilities) from your organisation or others? **If YES, please provide details below or note if it is included in your attached budget:**	**NO**

Working with Environment Canterbury

In the last three years have you received funding or other support from Environment Canterbury for this, or any other project? **If yes, what was the funding/support for, and when did you receive it?**	**N/A**
Are you intending on applying to another Environment Canterbury fund/budget this financial year for this, or any other project? **If yes, what fund are you applying to?**	**N/A**
Do you give permission for your application for the CWMS Action Plan Budget to be shared with the ECan staff who coordinate the Waitaha Wai Action to Impact Fund (we prefer to share information between the two to get best use of both)	**N/A**

Additional information you would like to provide?

Do you have supporting information you would like to provide (optional)?

**Please attach any supporting information with your application*.

Once completed, please send this application form to Zone Facilitator, Murray Griffin, murray.griffin@ecan.govt.nz

The Zone Facilitator will keep in touch with you about timeframes, whether the Committee would like you to give them a presentation, and whether there are any questions.

Middle Bridge on Lees Valley Road

Application for funding – CWMS Action Plan Budget 2024/25 *(for the Waimakariri Water Zone)*

The purpose of the CWMS Action Plan Budget is:

- To allow Zone Committees to **focus on implementing their action plan and leverage other funding opportunities to achieve the CWMS priorities.**

The funding is administered, distributed, and monitored by Environment Canterbury.

Applicant details

Organisation (if applicable):	Environment Canterbury and Department of Conservation
Contact name:	
Contact email:	
Contact phone number:	
Postal address:	
Other address:	
Are you GST registered? (if yes, please provide number)	Yes
NZBN (NZ Business Number, if applicable)	9429041900130

About your project

The amount of information and detail we would like you to provide is in proportion to the amount of funding you are requesting. If it is smaller amount, then a simple description of your project, who's involved and what you will be doing, along with a simple budget is sufficient.

Project name:	White Rock Gentian Census
CWMS zone where the activity will occur:	Waimakariri
Provide a brief project description (in two sentences):	

This proposal is to conduct a full census of the critically endangered Waipara gentian (*Gentianella calcis* subsp. *Waipara*) at White Rock.

Gentianella calcis subsp. Waipara Source: Melissa Hutchinson

Explain what the grant will be used for - what the money is mainly being spent on/what activities are involved in the project (in two sentences):

Contract botanist and abseilers to conduct a full census of the Waipara gentian at White Rock. As White Rock is a steep limestone escarpment abseilers are required to fully surveil the site.

Describe the problem or opportunity the project will address:

White Rock is a limestone escarpment in Loburn in the Waimakariri District. It represents a naturally uncommon ecosystem and provides a habitat for many threatened and uncommon indigenous plant species especially indigenous calcicoles including the nationally endangered Weka Pass sun hebe (*Veronica maccaskillii*), *Pimelea declivis,* and Limestone aniseed (Gingidia enysii) and the critically endangered Waipara gentian (*Gentianella calcis subsp. waipara*).

The Waipara gentian is a subspecies of *Gentianella calicis* and is endemic to Canterbury and known from only a few limestone sites including White Rock. It is classified as Threatened-Nationally Critical the highest threat level in New Zealand's threat classification system. (which is defined as "most severely threatened, facing an immediate high risk of extinction") and has gone extinct from sites it was previously recorded at elsewhere in Canterbury leaving only a few remaining sites where it is present. The last census of gentian at White Rock was conducted in 2010 and 239 individuals where counted.

Describe the outcomes or impacts of this project:

Outcomes or impacts are what will change or who will benefit from this work, including enduring benefits. For example, fencing off springheads will improve biodiversity and improve stream health.
Conducting a full census is an essential prerequisite to understand population trends and therefore determine whether the population of Waipara gentian is stable or declining at White Rock. This will inform us as to what further management is required at this site.
List the key outputs of the project: *An output describes what your group is proposing to do and is measurable. For example, install 250 m of fencing, or train 25 volunteers. Outputs are important and may be used as deliverables in a funding agreement.*
Full census of *Gentian calcis* subsp. *waipara* at White Rock.
Please state how the project aligns with the relevant Zone Committee's 2021-24 Action Plan: *Waimakariri* – Waimakariri Water Zone Committee Action Plan 2021-2024 | Environment Canterbury (ecan.govt.nz) *Alternatively, contact the Zone Facilitator (Murray Griffin) who can email you a copy.*
Increased indigenous biodiversity in the zone.
Tell us when you can start the project and when you intend to have the project completed (timeline):
The best time to identify the Waipara gentian is when it is in flower which is in autumn. The census would take two to three days to complete. The expected completion date is by the end of May 2025.
Tell us why you think your project is feasible/realistic:
We have contractors (botanist and abseilers) who are experienced in navigating this site and in identifying the Waipara gentian.
Tell us about the project management, including leadership and financial oversight:
All funds will be spent on contracting of the work. Project and contract management will be carried out by Environment Canterbury and Department of Conservation staff and is not included in the budget estimate.
List any other groups or organisations you are partnering with on this project, such as community groups, schools etc:
Department of Conservation
How will you engage the community on the project:
The Waimakariri zone committee, relevant agencies and groups will be updated on the results of the project and there is the potential for Environment Canterbury comms output.

Do you know of any cultural values associated with this site?	**NO**

If yes, what engagement has occurred or is planned (if any) with local Papatipu Rūnanga about this project?	

Please provide an accurate location with grid references and a map (if relevant to your project – please *contact the Zone Facilitator who can assist with this if required*):

NZTM Grid Ref X (Easting): 1555718

NZTM Grid Ref Y (Northing): 5221969

Who owns the land? *Attach evidence of permission from the landowner, or their representative (if you are undertaking a project on land that you do not own)*
Whiterock Lime Limited.

Funding details

Your budget should include estimates of income and expenditure, including other funding and in-kind contributions. You should show clearly what you are planning to spend the Action Plan funds on if successful. For applications for less than $15,000 a simple budget is fine. We would like more detail if your application is for a larger amount e.g. more than $15,000 or more than $50,000. We have a budget template in the guidance document.

How much funding are you requesting?	$4,500
If you are successful with this application, what components of your project will you spend the money on? **Please include below or attach your budget to your application.*	
$2,000 contract botanist $4,500 two abseilers. **Total project cost: $6,500.**	
Have you applied to, or received funding from other organisations for this project? **If YES, please provide details below or note if it is included in your attached budget.** *The CWMS Action Plan Budget is seed funding or leverage for partnering and collaboration, so it is positive if you have received or are applying for other funding.*	**NO**
Is the project receiving any other monetary or "in-kind" contributions (volunteer hours, resources, equipment, facilities) from your organisation or others? **If YES, please provide details below or note if it is included in your attached budget:**	**YES**
The Department of Conservation will provide $2,000.	

Working with Environment Canterbury

In the last three years have you received funding or other support from Environment Canterbury for this, or any other project? **If yes, what was the funding/support for, and when did you receive it?**	**NO**
Environment Canterbury biodiversity and biosecurity section funds wild thyme control annually at this site and funded a botanical survey in the last financial year.	
Are you intending on applying to another Environment Canterbury fund/budget this financial year for this, or any other project? **If yes, what fund are you applying to?**	**NO**
Do you give permission for your application for the CWMS Action Plan Budget to be shared with the ECan staff who coordinate the Waitaha Wai Action to Impact Fund (we prefer to share information between the two to get best use of both)	**YES**

Additional information you would like to provide?

Do you have supporting information you would like to provide (optional)?

**Please attach any supporting information with your application*.

Once completed, please send this application form to Zone Facilitator, Murray Griffin, murray.griffin@ecan.govt.nz

The Zone Facilitator will keep in touch with you about timeframes, whether the Committee would like you to give them a presentation, and whether there are any questions.

Abseiler on White Rock. Source: Martin Freeman.

Application for funding - CWMS Action Plan Budget 2024/25

The purpose of the CWMS Action Plan Budget is:

- To allow Zone Committees to **focus on implementing their action plan and leverage other funding opportunities to achieve the CWMS priorities.**

The funding is administered, distributed, and monitored by Environment Canterbury.

Applicant details

Organisation (if applicable):	**EOS Ecology Limited**
Contact name:	
Contact email:	
Contact phone number:	
Postal address:	
Other address:	
Are you GST registered? (if yes, please provide number)	**YES**
NZBN (NZ Business Number, if applicable)	**NZBN: 9429036918058**

About your project

The amount of information and detail we would like you to provide is in proportion to the amount of funding you are requesting. If it is smaller amount, then a simple description of your project, who's involved and what you will be doing, along with a simple budget is sufficient.

Project name:	'Nature Agents – Ngā kaitaunaki taiao'
CWMS zone where the activity will occur:	*Waimakariri, Christchurch West Melton, Banks Peninsula & Selwyn Waihora.*
Provide a brief project description (in two sentences):	

EOS Ecology has been delivering 'Nature Agents – Ngā Kaitaunaki Taiao' to schools across Ōtautahi Christchurch and the Banks Peninsula since 2018 and as of June 2024 we have 45 'Nature Agents' schools.

The purpose of the programme is to encourage ākonga to become environmental investigators in their local awa, to get them excited about STEM. We do this by teaching ākonga basic scientific monitoring techniques through a 3-hour field session with our team of scientist and setting the school up with a monitoring kit/resources, access to the online portal to collect their data (www.natureagents.co.nz), and running teacher training. The purpose of linking them to the online GIS data 'Hubsite' is so they can become confident users of digital technology, which is so important in today's world.

Explain what the grant will be used for - what the money is mainly being spent on/what activities are involved in the project (in two sentences):

We're looking for a contribution towards the funding shortfall for the delivery of 'Nature Agents Ngā kaitaunaki taiao' in schools within Waimakariri, Selwyn Waihora, Christchurch West Melton and Banks Peninsula CWMS zones.

Funding from the zone committees will go directly to the on-the-ground delivery of this programme, the 3-hour field session with our scientists, coordination with schools, preparing and creating resources and setting up each new school up on the online portal.

Describe the problem or opportunity the project will address:

Our programme offers the opportunity to engage ākonga, and thus their parents/guardians, in their awa and the environmental issues which both the zone committee and the local community care strongly about. Creating a lasting connection through knowledge. Greater knowledge leads to greater chance for change.

There is also an issue with schools accessing STEM and ELC (Enriching Local Curriculum) due to cost – our 'Nature Agents – Ngā kaitaunaki taiao' programme will always be completely free to schools and teachers including the access to our team of scientist (through the 3-hour field session) and the resources to continue monitoring after the session. If a school wants to regularly connect to an awa that is not within walking distance then we look for continued funding for transport to enable schools to participate, such as Te Komanawa (Rowley Ave School) whose bus is funded by the Cashmere Stream Enhancement Project.

We are also creating an opportunity for each school to connect with other areas through the comparison feature developed on the 'Hubsite' (www.natureagents.co.nz) and as we continue to expand into Waimakariri and Selwyn, they will be able to compare they health of their awa with many different environments.

Describe the outcomes or impacts of this project:

Outcomes or impacts are what will change or who will benefit from this work, including enduring benefits. For example, fencing off springheads will improve biodiversity and improve stream health.

More schools engaged in the programme

- Providing a cost-free programme for schools and parents means there is no financial barrier to schools becoming a 'Nature Agents' school. They also do not need to worry about buying resources as the monitoring kit, access the online data hub and continued support is included, free of cost, for the school.

Connecting schools across Waitaha

- Schools can compare the awa they are learning about to others, learn about what is impacting the waterways and, hopefully, work collaboratively to seek out better water quality and education in their area.

On-site field sessions held

- We run our session beside and in the awa to engage schools outside the classroom and ākonga are in the water collecting data themselves alongside our team of scientists.

Schools empowered to lead actions caring for their awa

- As they learn more, schools are taking their own actions to improve or maintain the awa in their area, and are becoming champions for the awa following their 'Nature Agents' experience and our partnerships with 'Enviroschools'. We have even had a few schools present to local council on the importance of the waterway.

Community connections built and fostered

- We aim to foster relationships between the schools and local community as we have done in the past. We work alongside a number of organisations including district and city council, Environment Canterbury, a range of community groups and we have a long-standing relationship with 'Enviroschools'. In our sessions we welcome family members along to support the session and understand what their tamariki are learning, we have also had representations from different councils join us as well as DOC.

List the key outputs of the project:
An output describes what your group is proposing to do and is measurable. For example, install 250 m of fencing, or train 25 volunteers. Outputs are important and may be used as deliverables in a funding agreement.

- In term 4 2024 and term 1 2025 engage with at least 600 ākonga across Waimakariri, Selwyn, CCC and Banks Peninsula.
- Delivery of one teacher training session in each region listed above between October 2024 – October 2025.
- Set up 5 new Nature Agents schools and re-engage with existing schools, to continue and refresh the monitoring programme.

- Invite zone committee members to join Nature Agents sessions, where appropriate, and invite them to the teacher Training session where suitable.
- Encourage and support schools in feeding back their findings to the Zone Committee and connect them to other groups funded in the region.

Please state how the project aligns with the relevant Zone Committee's 2021-24 Action Plan:
Weblinks to each zone's Action Plan are found at the bottom of this document.

Waimakariri Water Zone Committee

The schools we are engaging with currently, and those we hope to engage with in the future, are in same way linked either the Waimakariri Biodiversity Trust, the Rakahuri river, Silverstream, the Waimakariri river itself, or all the previous, plus all the land connected in between. Schools will be doing regular monitoring in tributaries of large awa, learning about the biodiversity of these important places, planning actions of their own such as planting or litter pick days and building or creating relationships with an awa close to their school.

We will also look for every opportunity to connect our work and the schools, to the amazing work being done by landowners and catchment groups across the region.

Tell us when you can start the project and when you intend to have the project completed (timeline):

'Nature Agents – Ngā Kaitaunaki Taiao' was developed in 2018 with Ministry of Education LEOTC (Learning Experiences Outside the Classroom) funding support through to June 2022. In 2022 we were awarded ELC funding to continue delivering our and to improve the programme, to deliver to schools in new regions, update our resources and grow our online 'Hubsite'. We have since created a new Year 0-3 programme and an adaptive Year 9+ programme, as well us updating our existing Year 4-8 programme the purpose is to create a multi-touchpoint programme that engages ākonga throughout their school journey.

Funding from the Water Zone Committees will help us continue delivery until December 2025. We envisage new ELC funding will be announced by the Ministry of Education allowing us to continue delivering our programme across Waitaha Canterbury beyond 2025.

We see our programme continuing to run and grow over the years to meet the needs of ākonga, the school curriculum and our environment.

Tell us why you think your project is feasible/realistic:

EOS Ecology has successfully implemented 'Nature Agents – Ngā Kaitaunai Taiao' programme since 2018, exceeding our KPI requirements for the LEOTC fund and receiving overwhelming positive participant feedback.

Combining our experienced team that are well versed in effectively and efficiently implementing this programme (to 2,716 ākonga/95 session/45 schools), we are exceptionally well positioned to successfully deliver this programme.

Tell us about the project management, including leadership and financial oversight:

EOS Ecology is a small science and engagement organisation that believes if we look after the environment, we're looking after ourselves.

Shelley McMurtrie (Principle Scientist) and Bronwyn Gay (Graphic Design) were part of the inception of the programme in 2018, and still continue to provide valuable feedback and resource creation as the programme has grown. Since June 2022 Jessica Halsey has taken over all management and organisation of delivery of 'Nature Agents' and currently leads reporting and programme growth within the current ELC funding round.

Our primary method of project management and financial oversight is the utilization of Streamtime, a fully integrated software solution developed for businesses operating a time-based service delivery model. It sits atop a FileMaker Pro database and manages all our contacts, allows us to build quotes off a back-end cost matrix and purchase orders, enables us to assign project tasks to staff thereby populating their work schedules (including start and finish dates), allows for time sheeting against project tasks with real-time feedback on budgeted time against used and remaining time, generates Gantt charts for effective project management (on staff, project, department and company levels), generates all our invoices, and produces reports on numerous KPIs. Not only does it allow us to track and effectively manage current projects, it also allows us to assign 'likelihood of success' confidence levels to quotes yet approved. This enables robust tracking of current and future consultancy demand, and provides the capability for a highly managed human resource planning process.

List any other groups or organisations you are partnering with on this project, such as community groups, schools etc:

- 'Enviroschools'
- Waimakariri Biodiversity trust
- Christchurch City Council
- Selwyn District Council
- Environment Canterbury
- Community Waterways
- Department Of Conversation

Schools –

- Hillmorton High
- Cashmere High
- Hororata School
- Ararira School
- Broadfield School
- Cheviot Area School
- Clarkville School

- Villa Maria School
- Cust School
- Glentunnel School
- Paraewa Banks Avenue
- Pegasus Bay School
- Te Kura o te Tauawa Halswell School
- Te Komanawa Rowley Ave
- Ōmarama School
- Akaroa Area School
- Diamond Harbour School
- Burnside School
- Governors Bay School
- Little River School

Catchment groups

- Cashmere stream enhancement group
- Avon Ōtākaro River network
- Ōpawaho Heathcote River network
- Wairewa Mahinga Kai Catchment Group
- Upper Waikirikiri Catchment Collective Inc
- Waimakariri Landcare Trust
- Waimakariri Biodiveristy Trust

How will you engage the community on the project:

As previously stated, we aim to connect each school with work the community is doing around the awa and look for opportunities for the school to support and add to those actions.

Do you know of any cultural values associated with this site? **If yes, what engagement has occurred or is planned (if any) with local Papatipu Rūnanga about this project?:**	**YES / NO**

This is part of the conversation with each school when their Nature Agents site is set up and we encourage schools to learn about the cultural values in partnership with the local rūnanga before the field session and as part of the learning journey about the awa.

Please provide an accurate location with grid references and a map (if relevant to your project):

N/A

Who owns the land?

Attach evidence of permission from the landowner, or their representative (if you are undertaking a project on land that you do not own)

N/A

Funding details

Your budget should include estimates of income and expenditure, including other funding and in-kind contributions. You should show clearly what you are planning to spend the Action Plan funds on if successful. For applications for less than $15,000 a simple budget is fine. We would like more detail if your application is for a larger amount e.g. more than $15,000 or more than $50,000. We have a budget template in the guidance document.

How much funding are you requesting?	**$14,750**
If you are successful with this application, what components of your project will you spend the money on? * *Please attach your budget to your application.*	
Have you applied to, or received funding from other organisations for this project? **If YES, please provide details below or note if it is included in your attached budget.** *The CWMS Action Plan Budget is seed funding or leverage for partnering and collaboration, so it is positive if you have received or are applying for other funding.*	**YES**
Included in the budget.	
Is the project receiving any other monetary or "in-kind" contributions (volunteer hours, resources, equipment, facilities) from your organisation or others? **If YES, please provide details below or note if it is included in your attached budget:**	**YES**
Included in the budget.	

Working with us, Environment Canterbury

In the last three years have you received funding or other support from Environment Canterbury for this, or any other project? *	**YES**

If yes, what was the funding/support for, and when did you receive it?	
Details of ECan support for kits pre-ELC funded project. *ECan providing funding for the Wai Connection project – details included.*	
Are you intending on applying to another Environment Canterbury fund/budget this financial year for this, or any other project? **If yes, what fund are you applying to?**	YES
Not for Nature Agents. However, we will likely approach ECan to discuss the potential for them to support the Wai Connection programme.	
How did you hear about this funding? *Tick which applies*	
☐ Social media e.g. Facebook ☐ Word of mouth ☐ Print advertising e.g. Newspaper ☐ Environment Canterbury webpage ☐ Other: _____	

Additional information you would like to provide?

Do you have supporting information you would like to provide (optional)?:

**Please attach any supporting information with your application*.

NATURE AGENTS
NGĀ KAITAUNAKI TAIAO
an EOS Ecology Participatory Science Programme

WHAT BUGS LIVE THERE?
HOW CLEAR?
HOW FAST?
pH LEVELS?
WHAT TYPE OF STREAM?
HOW SHADY?

BECOME A 'NATURE AGENT' SCHOOL

WHAT IS THE PROGRAMME?

'Nature Agents – Ngā Kaitaunaki Taiao' is an EOS Ecology 'Enriching Local Curriculum' (ELC) programme for schools. We engage ākonga/students with real science – aiming to inspire them to continue making the sciences part of their education and life.

'Nature Agents – Ngā Kaitaunaki Taiao' has fully-funded modules targeted at schools for years 0–3, 4–8 and 9+. It sets your school up for long-term monitoring and data collection on different aspects of your local waterway, and adding to a body of nationally important data. It can also strengthen your school's ties with your local community/iwi while improving the health of your waterway.

The programme includes the following (module dependent):

Teacher Planning & Training Sessions: We provide training and support specifically for teachers – including planning, field training and GIS training – so you can be confident with the programme.

Equipment Kit & Programme Resources: All the equipment you'll need to undertake monitoring – including instructions and data sheets. Younger ages are provided with fun resources and activities that help teach basic environmental concepts.

Field Visit: A 1–3 hour training session (depending on age) with our team of Freshwater Scientists using the equipment kit and monitoring the stream.

ArcGIS Online Data Capabilities: Modules for older ākonga include an ArcGIS login for submitting data via our online hub, and to access your data dashboard and catchment map for data analysis. Includes activities for wider subject use of data within the NZ Curriculum.

Post-visit Support: To help you continue monitoring your site, utilise your equipment kit and interpret your data.

Your ākonga learning will include:

- having fun developing an understanding of environmental science concepts and their local freshwater habitat (elements of 'Natural of science' and 'Living world' Achievements in the current NZ Curriculum)
- being able to demonstrate skills on how to monitor and collect data on different aspects of their local waterway
- being able to apply these skills to compare and contrast over time
- using the data collected to theorise possible ways and outcomes to protect, enhance and/or restore their local waterway while considering the impact on groups and individuals affected by them
- demonstrate a growing knowledge and awareness of their local waterway through applying effective action for conservation, and
- the ability to communicate information about stream health and contribute to valuable data for the stream.

Programme costs:

'Nature Agents – Ngā Kaitaunalo Taiao' is fully funded by the Ministry of Education, so there is no cost to the school. All we ask is that you are committed to using the knowledge and equipment kits, and continue to be 'Nature Agents' into the future.

To book your class in or for more information email:
engagement@eosecology.co.nz
WWW.NATUREAGENTS.CO.NZ






Nature Agents Budget

Resource development

	Cost	
ELC resource updates and new resource creation for Year 0-3 and Year 9+ programmes	$220,665.47	Total already invested in resource developement and creation of our the new elements of the programme.

Delivery

	Cost	Location on server and more information
Programme delivery for 3.5 years	$235,214.11	Total cost of programme delivery from June 2022 - December 2025
Nature Agents kits	$28,584.90	Per kit cost = $1905.66. Expecting to need 15 kits.
Esri Hub site	$70,000.00	$20,000 per year for up to 100 schools

Budget - June 2022 - December 2025

	Cost		Percentage of cost covered by
Full NA programme incl resource+delivery	**$554,464.48**	**Total cost**	
Esri in kind	$70,000.00	Full cost of Esri Hub site covered	12.62%
EOS Ecology in kind	$55,446.45	EOS Ecology covering 10% in kind of cost after Esri accounts deducted	10.00%
Ministry of Education ELC fund	$217,700.00	Delivery contract through to December 2025	39.26%

Total funding still needed	$211,318.03	This is the **total** funding still needed for the Nature Agents programme. This includes the cost of the kits which are yet to be covered

This is the suggested contribution amount from council

Waimakariri Zone Committee	$14,750.00	Delivery from July 2024 - June 2025	2.66%	Ideal funding from each water zone committee
Selwyn Zone Committee	$14,750.00	Delivery from July 2024 - June 2025	2.66%	
Christchurch and West Melton Zone Committee	$14,750.00	Delivery from July 2024 - June 2025	2.66%	
Banks Peninsula	$14,750.00	Delivery from July 2024 - June 2025	2.66%	

			Percentage covered	Current percentage remaining to be covered	If approved, total percentage covered by Zone Committee for July 2024 - June 2025
Current funding still needed	$211,318.03	Currently this is the total remaining uncovered	**61.89%**	**38.11%**	**10.64%**

Application for funding – CWMS Action Plan Budget 2024/25 *(for the Waimakariri Water Zone)*

The purpose of the CWMS Action Plan Budget is:

- To allow Zone Committees to **focus on implementing their action plan and leverage other funding opportunities to achieve the CWMS priorities.**

The funding is administered, distributed, and monitored by Environment Canterbury.

Applicant details

Organisation (if applicable):	Kapukariki / Hunters Stream Project
Contact name:	
Contact email:	
Contact phone number:	
Postal address:	
Other address:	
Are you GST registered? (if yes, please provide number)	**NO**
NZBN (NZ Business Number, if applicable)	**N/A**

About your project

The amount of information and detail we would like you to provide is in proportion to the amount of funding you are requesting. If it is smaller amount, then a simple description of your project, who's involved and what you will be doing, along with a simple budget is sufficient.

Project name:	Hunters Stream Project
CWMS zone where the activity will occur:	*Waimakariri*
Provide a brief project description (in two sentences):	
To restore the stream and embankment to a natural ecosystem, while incorporating the community, schools and land owners. To inspire other landholders who border the stream	

to continue this project on their own properties, so in the future Hunters Stream is fully planted, from its source until it flows into the Cust River.

Explain what the grant will be used for - what the money is mainly being spent on/what activities are involved in the project (in two sentences):

Freshwater investigations - invertebrate sampling and eDNA sampling to obtain current knowledge on ecological values of the Freemans reach of Hunters Stream.

Describe the problem or opportunity the project will address:

No comprehensive eDNA testing has been done on the Hunters Stream to date and this information will be valuable to landowners in the area as they work towards forming a catchment group.

Describe the outcomes or impacts of this project:
Outcomes or impacts are what will change or who will benefit from this work, including enduring benefits. For example, fencing off springheads will improve biodiversity and improve stream health.

Obtaining current knowledge on the ecological values of the Hunters Stream will help guide and encourage landowners who want to restore their portion of the Hunters Stream through riparian planting and other restoration activities, in turn improving the biodiversity of the waterways and terrestrial habitats.

List the key outputs of the project:
An output describes what your group is proposing to do and is measurable. For example, install 250 m of fencing, or train 25 volunteers. Outputs are important and may be used as deliverables in a funding agreement.

Survey and processing of 1 x invertebrate sample and 1 x eDNA sample

Please state how the project aligns with the relevant Zone Committee's 2021-24 Action Plan:
Waimakariri – Waimakariri Water Zone Committee Action Plan 2021-2024 | Environment Canterbury (ecan.govt.nz)

Alternatively, contact the Zone Facilitator (Murray Griffin) who can email you a copy.

Conducting an aquatic baseline survey aligns with action of **improved monitoring of groundwater and surface water in the zone**

This project increases biodiversity in the Waimakariri Water Zone. The native restoration activities at the Freemans reach of the Hunter Stream will see an increase in aquatic biodiversity as well as terrestrial biodiversity.

This project improves Mahinga Kai within the Waimakariri Water Zone There have been Tuna observed in this section of Hunters Stream and their habitat will be improved through riparian planting.
Tell us when you can start the project and when you intend to have the project completed (timeline):
Aquatic sampling will be completed between by Feb 2025
Tell us why you think your project is feasible/realistic:
The Waimakariri Biodiversity Trust has sourced a trusted and experienced freshwater ecologist to carry out these freshwater investigations and process the samples for landowners in the Waimakariri district.
Tell us about the project management, including leadership and financial oversight:
The Waimakariri Biodiversity Trust will work with the landowners (Jackie and Grant Freeman) and the freshwater ecologist to carry out the sampling, share the findings to the wider Hunters Stream catchment area, and manage the financial oversight of these freshwater investigations.
List any other groups or organisations you are partnering with on this project, such as community groups, schools etc:
The findings will be shared with Cust School, WIL, Rūnanga, and other groups interested in obtaining information about the ecological values of the Hunters Stream.
How will you engage the community on the project:
Contact with local schools and local landholders who border Hunters Stream through planting days, workshops.

Do you know of any cultural values associated with this site? **If yes, what engagement has occurred or is planned (if any) with local Papatipu Rūnanga about this project?**	**YES**
There have been tūna observed in this stretch of Hunters Stream. Rūnanga will be contacted once the ecological values are obtained and invited to inform how the values can be protected or enhanced as part of the project.	

Please provide an accurate location with grid references and a map (if relevant to your project – please *contact the Zone Facilitator who can assist with this if required*)**:**
NZTM Grid Ref X (Easting): 1553613 **NZTM Grid Ref Y (Northing): 5201712**
Who owns the land? *Attach evidence of permission from the landowner, or their representative (if you are undertaking a project on land that you do not own)*
Land is owned by the Jackie and Grant Freeman

Funding details

Your budget should include estimates of income and expenditure, including other funding and in-kind contributions. You should show clearly what you are planning to spend the Action Plan funds on if successful. For applications for less than $15,000 a simple budget is fine. We would like more detail if your application is for a larger amount e.g. more than $15,000 or more than $50,000. We have a budget template in the guidance document.

How much funding are you requesting?	**$525**
If you are successful with this application, what components of your project will you spend the money on? **Please include below or attach your budget to your application.*	
Invertebrate sample processing- $225 eDNA syringe and analysis kit - $300	
Have you applied to, or received funding from other organisations for this project? **If YES, please provide details below or note if it is included in your attached budget.** *The CWMS Action Plan Budget is seed funding or leverage for partnering and collaboration, so it is positive if you have received or are applying for other funding.*	**YES**
The Freemans received funding from the CWMS Action Plan for 2023/2024 for native plants, guards, mats, stakes and fencing	

Is the project receiving any other monetary or "in-kind" contributions (volunteer hours, resources, equipment, facilities) from your organisation or others? **If YES, please provide details below or note if it is included in your attached budget:**	**YES**
The hours spent collecting and processing the freshwater samples by the ecologist is 'in-kind'.	

Working with Environment Canterbury

In the last three years have you received funding or other support from Environment Canterbury for this, or any other project? **If yes, what was the funding/support for, and when did you receive it?**	**NO**
Are you intending on applying to another Environment Canterbury fund/budget this financial year for this, or any other project? **If yes, what fund are you applying to?**	**NO**
Do you give permission for your application for the CWMS Action Plan Budget to be shared with the ECan staff who coordinate the Waitaha Wai Action to Impact Fund (we prefer to share information between the two to get best use of both)	**YES**

Additional information you would like to provide?

Do you have supporting information you would like to provide (optional)?

**Please attach any supporting information with your application*.

Once completed, please send this application form to Zone Facilitator, Murray Griffin, murray.griffin@ecan.govt.nz

The Zone Facilitator will keep in touch with you about timeframes, whether the Committee would like you to give them a presentation, and whether there are any questions.

Application for funding – CWMS Action Plan Budget 2024/25 *(for the Waimakariri Water Zone)*

The purpose of the CWMS Action Plan Budget is:

- To allow Zone Committees to **focus on implementing their action plan and leverage other funding opportunities to achieve the CWMS priorities.**

The funding is administered, distributed, and monitored by Environment Canterbury.

Applicant details

Organisation (if applicable):	**Jersey Land Dairies Ltd**
Contact name:	
Contact email:	
Contact phone number:	
Postal address:	
Other address:	
Are you GST registered? (if yes, please provide number)	
NZBN (NZ Business Number, if applicable)	**9429035025795**

About your project

The amount of information and detail we would like you to provide is in proportion to the amount of funding you are requesting. If it is smaller amount, then a simple description of your project, who's involved and what you will be doing, along with a simple budget is sufficient.

Project name:	*Waikuku Stream Riparian Enhancement project*
CWMS zone where the activity will occur:	*Waimakariri – lower Waikuku Stream riparian area*
Provide a brief project description (in two sentences):	
Complete a riparian enhancement project of a 1km reach on the true right bank of the lower Waikuku Stream by:	

1. *Planting indigenous riparian vegetation within a wide fenced-off riparian buffer zone on the true right bank of the lower Waikuku Stream as it passes through part of our property*
2. *Undertake plant maintenance for a period of x2 years post-establishment to ensure plant survival is optimised*

Explain what the grant will be used for – what the money is mainly being spent on/what activities are involved in the project (in two sentences):

1. **Purchase of 2000 native plants –** for planting out the riparian area (see appendix for plant list)
2. **Planting and maintenance cost –** to pay for planting, and then maintenance costs for up to 2 years (as plants will be plug size and so will require a bit more maintenance to ensure they become well established)

Describe the problem or opportunity the project will address:

As part of a programme of riparian enhancement activities we have been implementing on-farm for the last 4 -5 years, we are now undertaking riparian enhancement work along a 1km reach of the Waikuku Stream that runs through the property.

Willows intermittently growing along this 1km stream reach have recently been removed by WDC (by cutting down to stump level), enabling us to now advance enhancement activities for this riparian area.

On-farm we are now:

- poisoning of the willow stumps and burning off the willow debris piles;
- establishing a wide riparian buffer setback of between 5 – 15m from the stream by fencing this area out (already completed). The buffer area is wider where it follows the contour along an old upper river terrace; and
- planting this riparian area out in native species suitable to the site (list in appendix)

See Diagram and photos on planned project in Appendix for location of site and some visuals

Describe the outcomes or impacts of this project:
Outcomes or impacts are what will change or who will benefit from this work, including enduring benefits. For example, fencing off springheads will improve biodiversity and improve stream health.

The Waikuku Stream is approximately 7kms in length arising from springhead areas in the vicinity of Smarts Road. The reach we are enhancing in this project includes the stream from our northern boundary where the Waikuku Stream leaves the property, to a southern point by the farm bridge adjacent to the dairy shed (see diagram in appendix)). This reach includes significant areas of low riverbank and associated back swamp habitat and will be enhanced by appropriate riparian planting. There are already a number of carex and juncus species present and colonising these areas already.

The many willows in this reach, whilst providing some shading, were old and brittle, were overhanging the stream and causing blockage when large branches broke away, causing stream flow to be diverted and causing stream bank erosion in places.

Removing these, while minimising bank disturbance, and replacing with a wide native riparian buffer will start the process of ensuring that the banks remain become more stable over time and other benefits of a well-managed riparian buffer zone will be gained – increased shading for stream temperature and nuisance plant control, cover for fish species; wider buffer will also provide filtering of overland flow.

Note we have already fenced out and planted along the same reach on the true left bank of this reach of the Waikuku Stream (average of 5 – 6m buffer)

List the key outputs of the project:
An output describes what your group is proposing to do and is measurable. For example, install 250 m of fencing, or train 25 volunteers. Outputs are important and may be used as deliverables in a funding agreement.

1. *Plant 2000 riparian plants along and within the newly established riparian buffer zone on true right bank of the lower Waikuku Stream*
2. *Undertake plant maintenance activities by carrying out plant release (either by hand or by spraying) for up to 2 years post-planting to ensure good plant survival*

Please state how the project aligns with the relevant Zone Committee's 2021-24 Action Plan:
Waimakariri – Waimakariri Water Zone Committee Action Plan 2021-2024 | Environment Canterbury (ecan.govt.nz)

Alternatively, contact the Zone Facilitator (Murray Griffin) who can email you a copy.

Funding this project will help the Zone Committee to implement their Action Plan specifically in the following areas.

***"Promoting the natural braided character and increased flow of the Ashley River/Rakahuri – measured by** Encouraging landowner and agency efforts to improve the habitat health of lowland spring-fed tributaries"*

***"Improved mahinga kai within the Waimakariri water zone - measured by** Encouraging catchment and landcare groups to protect and improve riparian habitat to support mahinga kai practices on the plains and lowland waterways"*

The Waikuku stream is one of the larger lowland springfed tributaries, and this project is helping protect a 1km reach (approximately 1/7th of the full length of this stream). We have already fenced off and planted the TLB some years back. Completion of this project will mean we have fully fenced out all of the Waikuku Stream as it passes through our property.

Tell us when you can start the project and when you intend to have the project completed (timeline):

We are currently treating the willow stumps and have commenced burning the willow debris. We have also completed the fencing out of the riparian buffer zone.

We are in the position to commence riparian planting in the up-coming planting season – autumn - spring 2025.

Tell us why you think your project is feasible/realistic:

Over the last 5 years or so, we have been undertaking a staged programme of riparian enhancement work on the property. This has included:

- fencing out and planting on the TLB of the Little Ashley
- increasing the buffer setback on the TLB of the same reach of the Waikuku Stream and planting, including blanking and releasing
- fenced out a wetland area on the property on the other side of Waikuku Beach Rd and included some in-fill planting

We are committed to completing all of the riparian protection and enhancement work on the property and this project is the final and largest area needing protection.

Tell us about the project management, including leadership and financial oversight:

I am managing the project (same as I have done for the above list of riparian enhancement work). I have placed an order for plants already and have sought an estimate of costs from Hurunui Natives to undertake the planting and maintenance activities for this proposal. They have previously done similar work for us when undertaking the riparian planting on the opposite bank of the Waikuku Stream.

Now that WDC have completed willow removal, we are stump treating and burning the willow debris. We have recently completed fencing out the area. This means that the riparian area is now ready for preparation and riparian planting.

List any other groups or organisations you are partnering with on this project, such as community groups, schools etc:

I am working together with WDC (willow removal); Synlait – access to eco-sourced plants; and ECan (Anna Veltman) – to seek funding support for purchasing plants and undertaking post-planting maintenance activities (in terms of this application).

How will you engage the community on the project:

No specific engagement planned. However, we have previously hosted a Mahinga kai and Biodiversity field day on the property some years back.

Do you know of any cultural values associated with this site? **If yes, what engagement has occurred or is planned (if any) with local Papatipu Rūnanga about this project?**	**YES**

Have had Makarini Rupene out on-farm a few years back and he indicated the area has importance to Ngai Tūāhuriri and Ngai Tahu as we are close to the Ashley River/Rakahuri, Te Aka Aka and coastal lagoons that were important food sources for the local pa at Kaiapohia and there is hope that they will be again if enhancement activities are widely implemented.

Please provide an accurate location with grid references and a map (if relevant to your project – please *contact the Zone Facilitator who can assist with this if required***):**

NZTM Grid Ref X (Easting): 1575260 **NZTM Grid Ref Y (Northing): 5207646**
Who owns the land? *Attach evidence of permission from the landowner, or their representative (if you are undertaking a project on land that you do not own)*
Jersey Land Dairies Limited

Funding details

Your budget should include estimates of income and expenditure, including other funding and in-kind contributions. You should show clearly what you are planning to spend the Action Plan funds on if successful. For applications for less than $15,000 a simple budget is fine. We would like more detail if your application is for a larger amount e.g. more than $15,000 or more than $50,000. We have a budget template in the guidance document.

How much funding are you requesting?	
If you are successful with this application, what components of your project will you spend the money on? **Please include below or attach your budget to your application.*	
We are seeking funding support from the Waimakariri Zone Committee Action Fund for $10,000 to assist with the following costs: 1. Buying 2000 eco-sourced plants from the Synlait Whapapuawai program @ $1/plant - **total $2,000** 2. Paying a contractor to undertake pre-planting site prep; planting; and on-going plant maintenance for up to 2 years (as quite small plants size being used – plug size) a. Pre-planting spray, planting @ $7.00/plant – **total $14,000** b. Plant maintenance @ $6.00/plant (including sock removal) – **total $12,000** **Total cost $28,000** (Costs based on estimates sourced from preferred contractor)	
Have you applied to, or received funding from other organisations for this project? **If YES, please provide details below or note if it is included in your attached budget.** *The CWMS Action Plan Budget is seed funding or leverage for partnering and collaboration, so it is positive if you have received or are applying for other funding.*	**NO**

Is the project receiving any other monetary or "in-kind" contributions (volunteer hours, resources, equipment, facilities) from your organisation or others? **If YES, please provide details below or note if it is included in your attached budget:**	**YES**
WDC has provided support in undertaking willow removal along this reach of the Waikuku Stream	

Working with Environment Canterbury

In the last three years have you received funding or other support from Environment Canterbury for this, or any other project? **If yes, what was the funding/support for, and when did you receive it?**	**NO**
Are you intending on applying to another Environment Canterbury fund/budget this financial year for this, or any other project? **If yes, what fund are you applying to?**	**NO**
Do you give permission for your application for the CWMS Action Plan Budget to be shared with the ECan staff who coordinate the Waitaha Wai Action to Impact Fund (we prefer to share information between the two to get best use of both)	**YES**

Additional information you would like to provide?

Do you have supporting information you would like to provide (optional)?

Please attach any supporting information with your application*.**

Once completed, please send this application form to Zone Facilitator, Murray Griffin, murray.griffin@ecan.govt.nz

The Zone Facilitator will keep in touch with you about timeframes, whether the Committee would like you to give them a presentation, and whether there are any questions.

Appendix

Plant List

Please find below plant order for Waikuku Stream planting for Autumn 2025.

Name:	Tim Delaney(Jersey Land Dairies Ltd)	**Plant Species List**	**Number of Plants**
Farm Name:	Harakeke- Waikuku	Austroderia richardii	250
Dairy #	2087	Carex secta	800
Phone#	277369706	Coprosma propinqua	250
Email address:	jerseyoaks@amuri.net	Cordyline australis	170
Delivery Address:	Waikuku	Hebe salicifolia	50
Area Description:	Waikuku Stream Riparian Enhancement Project	Phormium tenax	450
		Sophora microphylla	30
Site prep notes;	Ecan involvement		
Spraying			
Mowing			
Ripping			
Contouring			
Planting Time	Autumn 2025		
DIY or Contractor	Hurunui Natives		
Future Plantings			
		Total	2000

Diagram and photos on planned project

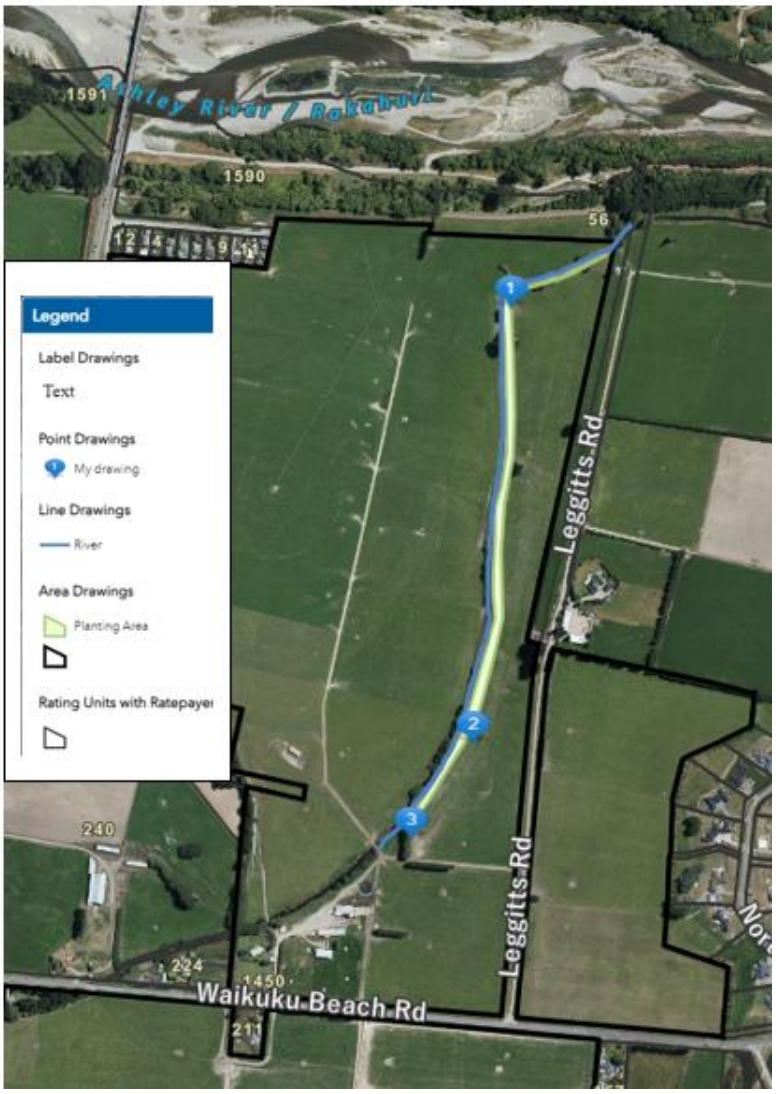


Diagram: Planned project area

Photo 1 (1 looking east - 4 – 6m wide fenced riparian buffer)

Photo 2 (looking north from 2 approximately – riparian buffer width ±10m average)

Photo 3 (looking north from 3 approximately – riparian buffer width ±10m average)

Application for funding – CWMS Action Plan Budget 2024/25 *(for the Waimakariri Water Zone)*

The purpose of the CWMS Action Plan Budget is:

- To allow Zone Committees to **focus on implementing their action plan and leverage other funding opportunities to achieve the CWMS priorities.**

The funding is administered, distributed, and monitored by Environment Canterbury.

Applicant details

Organisation (if applicable):	
Contact name:	**Ken and Shelly Robinson**
Contact email:	
Contact phone number:	
Postal address:	
Other address:	
Are you GST registered? (if yes, please provide number)	
NZBN (NZ Business Number, if applicable)	

About your project

The amount of information and detail we would like you to provide is in proportion to the amount of funding you are requesting. If it is smaller amount, then a simple description of your project, who's involved and what you will be doing, along with a simple budget is sufficient.

Project name:	*Springvale Wetland (Summerhill area)*
CWMS zone where the activity will occur:	*Waimakariri*
Provide a brief project description (in two sentences):	

To complete the last stage of a multi-year staged programme of pest plant control for two areas of approximately 4.3ha in size in Springvale wetland (see map below and Appendix for location map)).

To complete pest plant control in an area started previously by another contractor – area labelled 'Stage 3 started' in map below; and to control an untreated dense infestation of multiple species of woody weed pest plants in the area labelled 'Stage 3 dense' in map below.

Job ID: Springvale Wetland Stage 3 'Started' and stage 4 'Dense"

Explain what the grant will be used for - what the money is mainly being spent on/what activities are involved in the project (in two sentences):

We will spend the money on paying an experienced pest management contractor to complete pest plant control in the remaining north-eastern section of the wetland. They will systematically work through the area using 'drill and fill' and 'cut and paste' methods to target non-native woody vegetation including but not limited to wild cherry, crack willow, hawthorn, and elderberry.

Describe the problem or opportunity the project will address:

The exotic vegetation within the wetland has been incrementally reducing the indigenous ecological integrity of the wetland. In particular, crack and grey willows have invaded the site and have formed a continuous canopy over parts of the wetland.

We have been systematically undertaking pest plant control over the last 5 years and consider not continuing with these efforts risks seeing the significant gains made regress.

The work will reduce the extent and/or eliminate presence of targeted weed species (crack willow, ash, hawthorn, elderberry) within the site. Over time this will see the increase in condition, extent and density of native vegetation within the site.

Background

Springvale wetland covers an area of approximately 12.9ha. The wetland, which drains into the Ashley River/Rakahuri, borders between the High and Low Plains ecological districts. Situated on a historic river terrace, the wetland consists primarily of flaxland and has been identified as an indigenous vegetation and habitat site within the Waimakariri District Plan. Environment Canterbury has assessed it to be of moderate ecological significance. The core of the wetland is permanently wet swamp, while its margins consist of seasonally wet marsh. The wetland also receives water from the WIL Scheme, which in more recent times has the inflows increasing, potentially resulting in some expansion of intermittently or permanently wet areas of the wetland.

Indigenous vegetation consists primarily of flax (Phormium tenax) and Carex spp., but also includes short leaved coprosma (Coprosma propinqua), cabbage tree (Cordyline australis) and sedges and rushes at the wetland's border, including spike sedge (Eleocharis acuta) and Juncus edgariae. Raupō/bull rush is occasional. A wide variety of other indigenous shrub, herb and fern species are also present.

The site contains two At Risk (Discaria toumatou & Juncus distegus) and one 'Data deficient' (Ranunculus macropus) plant species. The site also contains at least 8 indigenous plant species that are considered to be uncommon in the High Plains Ecological District: Carex sinclairii, Epilobium chionanthum and E. pallidiflorum, Juncus distegus and J. sarophorus, Montia fontana subsp. fontana, Myriophyllum propinquum, Typha orientalis

Describe the outcomes or impacts of this project:
Outcomes or impacts are what will change or who will benefit from this work, including enduring benefits. For example, fencing off springheads will improve biodiversity and improve stream health.

The project will:

- reduce the extent and/or eliminate presence of targeted weed species (cherry, crack willow, hawthorn, elderberry) within the section of the wetland being targeted for treatment; and
- increase the condition, extent, and density of native vegetation within site over time

Springvale wetland is a larger remnant example in the upper Canterbury Plains in the Waimakariri Zone – of which there are only 4 – 5 identified at this stage. It is a wetland remnant in highly modified plains environment. While the wetland hydrology has been modified, the wetland is still largely intact, and supports a mix of native vegetation types, with native harakeke the dominant cover.

Completing this project will help complete the multi-year staged approach taken to treat the pest plant species that have invaded the wetland. We want to build on the great progress made over the last 4 years and get the wetland back to where native vegetation can revert to being dominant over time.

If this project is funded this year, that will complete the larger pest plant control work needed. There will be a need to continue with annual pest plant surveillance to identify and eliminate emerging pest plants to ensure native revegetation continues.

Historically the vegetation of the district consisted of a mosaic of lowland tussockland, floodplain podocarp forest, dry woodland and wetlands, reflecting the underlying hydrology

and soils. The site identified here represents a fragment of the indigenous wetlands which now cover less than 5% of their former extent across the Waimakariri district.

See photos in the Appendix at the end of this application form showing the success of earlier multi-staged pest plant control work undertaken since 2020 in other areas of the wetland.

List the key outputs of the project:
An output describes what your group is proposing to do and is measurable. For example, install 250 m of fencing, or train 25 volunteers. Outputs are important and may be used as deliverables in a funding agreement.

The pest management contractor will:

- systematically work through the x2 areas identified on the map above area using the 'Drill n Fill' method to target non-native woody vegetation including but not limited to wild cherry, crack willow, hawthorn, and elderberry

- small vegetation that is not big enough for drill control will be cut and pasted and left on dry ground or suspended from the ground to eliminate regrowth; or knapsack foliar sprayed if away from water, native vegetation, and grazing vegetation

Please state how the project aligns with the relevant Zone Committee's 2021-24 Action Plan:
Waimakariri – Waimakariri Water Zone Committee Action Plan 2021-2024 | Environment Canterbury (ecan.govt.nz)

Alternatively, contact the Zone Facilitator (Murray Griffin) who can email you a copy.

By undertaking pest plant control activities in the last section of the wetland to undergo primary treatment, the project will help complete a staged programme of pest plant control throughout the whole of the 12.9ha wetland. This will result in an increase in the condition, extent, and density of native vegetation within site over time.

This project aligns with the Waimakariri Zone Committee Action Plan for:

- *Increased indigenous biodiversity in the zone by protecting and improving the indigenous biodiversity, habitat or ecosystems in the zone through:*
  - ***Managing and eliminating plant and animal pest species****;*
  - ***Assisting all landowners and managers to integrate indigenous biodiversity management into the wider aspects of land and water (catchment) management.***

Tell us when you can start the project and when you intend to have the project completed (timeline):

We have already been in contact with a preferred contractor and would be able contract the work to be completed over the upcoming summer period November – April 2024/25.

Tell us why you think your project is feasible/realistic:

We have been working in conjunction with Environment Canterbury since 2020 to undertake this multi-staged pest plant control programme. The previous work stages have

all been completed on time and to the contracted specifications, so we have a track record and history in successfully progressing this wetland protection project.
Tell us about the project management, including leadership and financial oversight:
We are working closely with Environment Canterbury staff – in particular Jason Butt, James Schapp and Anna Veltman, who are all supporting us to implement this project – with both technical advice and project management (at least in the earlier stages where they oversaw the setting up and management of contracts for the pest plant control work). If we are successful in this application for Waimakariri Zone Action Fund support – we will continue to liaise closely with these staff to ensure we execute this last stage successfully.
List any other groups or organisations you are partnering with on this project, such as community groups, schools etc:
None specifically
How will you engage the community on the project:
No specific engagement planned. However, we have previously hosted a Mahinga kai and Biodiversity field day on the property some years back.

Do you know of any cultural values associated with this site? **If yes, what engagement has occurred or is planned (if any) with local Papatipu Rūnanga about this project?**	**No**

We have not engaged more directly with Ngāi Tūāhuriri Runanga.
Please provide an accurate location with grid references and a map (if relevant to your project – please *contact the Zone Facilitator who can assist with this if required***):**
NZTM Grid Ref X (Easting): 1546300 **NZTM Grid Ref Y (Northing): 5210855**
Who owns the land? *Attach evidence of permission from the landowner, or their representative (if you are undertaking a project on land that you do not own)*
Ken Robinson & PJC Trustee Services Limited

Funding details

Your budget should include estimates of income and expenditure, including other funding and in-kind contributions. You should show clearly what you are planning to spend the Action Plan funds on if successful. For applications for less than $15,000 a simple budget is fine. We would like more detail if your application is for a larger amount e.g. more than $15,000 or more than $50,000. We have a budget template in the guidance document.

How much funding are you requesting?	**$20,000**

If you are successful with this application, what components of your project will you spend the money on? **Please include below or attach your budget to your application.*
The funding will be spent on paying for a specialised pest management contracting company to undertake woody weed control in the 4.3 ha northern part of the wetland (as per the maps earlier in the application – Stage 3 'started' and Stage 3 'dense'). The cost is based on a price estimate for such services that Anna Veltman and James Schaap sought in December last year (2023)

Have you applied to, or received funding from other organisations for this project? **If YES, please provide details below or note if it is included in your attached budget.** *The CWMS Action Plan Budget is seed funding or leverage for partnering and collaboration, so it is positive if you have received or are applying for other funding.*	No
Is the project receiving any other monetary or "in-kind" contributions (volunteer hours, resources, equipment, facilities) from your organisation or others? **If YES, please provide details below or note if it is included in your attached budget:**	**NO**

Working with Environment Canterbury

In the last three years have you received funding or other support from Environment Canterbury for this, or any other project? **If yes, what was the funding/support for, and when did you receive it?**	**YES**
Since commencing this multi-year multi-staged pest plant control programme in 2020, we have received a total of $53,692 in funding. The majority of this funding has been from a number of the funds operated by Environment Canterbury, and a contribution of $7,000 from WDC to help support work to date.	

Are you intending on applying to another Environment Canterbury fund/budget this financial year for this, or any other project? **If yes, what fund are you applying to?**	**NO**
Note that this project was put forward to the Environment Canterbury Regional Biodiversity fund, however no new projects (anywhere in the Canterbury region) were able to be supported by that fund this year.	
Do you give permission for your application for the CWMS Action Plan Budget to be shared with the ECan staff who coordinate the Waitaha Wai Action to Impact Fund (we prefer to share information between the two to get best use of both)	**YES**

Additional information you would like to provide?

Do you have supporting information you would like to provide (optional)?

Please attach any supporting information with your application*.**

Once completed, please send this application form to Zone Facilitator, Murray Griffin, murray.griffin@ecan.govt.nz

The Zone Facilitator will keep in touch with you about timeframes, whether the Committee would like you to give them a presentation, and whether there are any questions.

Appendix

Location map – Springvale Wetland (12ha)

Photos

Northern end of wetland – already had pest plant control work undertaken

South-western end of wetland – already had pest plant control work undertaken

Application for funding - CWMS Action Plan Budget 2024/25

The purpose of the CWMS Action Plan Budget is:

- To allow Zone Committees to **focus on implementing their action plan and leverage other funding opportunities to achieve the CWMS priorities.**

The funding is administered, distributed, and monitored by Environment Canterbury.

Applicant details

Organisation (if applicable):	**re:generations**
Contact name:	**Roger Robson-Williams**
Contact email:	
Contact phone number:	
Postal address:	
Other address:	
Are you GST registered? (if yes, please provide number)	**YES**
NZBN (NZ Business Number, if applicable)	**9429052282058**

About your project

The amount of information and detail we would like you to provide is in proportion to the amount of funding you are requesting. If it is smaller amount, then a simple description of your project, who's involved and what you will be doing, along with a simple budget is sufficient.

Project name:	re:generating native bush in Oxford
CWMS zone where the activity will occur:	Waimakariri
Provide a brief project description (in two sentences):	
We are seeking support to buy plant guards, canes, and weed mats for 1,750 native plants we intend to plant each year for the next three years (5,250 native plants in total).	

This is part of a larger project we have underway to regenerate native bush on a 5ha ex-dairy paddock on the outskirts of Oxford (41 Somerset Drive).

Explain what the grant will be used for - what the money is mainly being spent on/what activities are involved in the project (in two sentences):

A contribution is sought for each of the next three years towards the costs of plant guards, canes, and weed mats for the next phase of planting in 2025, 2026 and 2027. An appropriate mix of eco-sourced native plants will be propagated by our Partnership (re:generations) and the planting will be done by us and volunteers.

Describe the problem or opportunity the project will address:

Waitaha/Canterbury Plains has lost much of its native habitat and indigenous biodiversity due to farming, urban development and transport infrastructure. Some estimates indicate that less than 1% of the Plains now supports native vegetation. It is anticipated that climate change will further degrade indigenous ecosystems in the area. Our project aims to address this by restoring native bush on a 5ha ex-dairy paddock that we own. The paddock includes numerous springs, and area of wetland, and an intermittent stream.

Describe the outcomes or impacts of this project:
Outcomes or impacts are what will change or who will benefit from this work, including enduring benefits. For example, fencing off springheads will improve biodiversity and improve stream health.

More biodiversity. Planting the springheads, wetland and riparian margins will provide more native habitat and increase biodiversity in the zone.

Better water quality. Planting the springheads, wetland and riparian margins will improve water quality.

Healthier soil. Planting perennial natives will improve soil health.

Climate change mitigation and adaption. Planting perennial natives will also sequester carbon.

Education. The project will provide learning opportunities for students from the Climate Action Campus – Ōtautahi. In 2024 we hosted two visits with 18 students in total.

Engagement. The project will also provide opportunities to build community connections. In 2024 we hosted one planting day.

Please note that we have already excluded stock from springheads, wetland and riparian margins.

List the key outputs of the project:
An output describes what your group is proposing to do and is measurable. For example, install 250 m of fencing, or train 25 volunteers. Outputs are important and may be used as deliverables in a funding agreement.

1. **Plants.** In each of the next three years, plant a further 1,750 eco-sourced native trees and shrubs to extend the current area of approximately 3,100 plants already established. Note that to complete the restoration of native bush across the entire paddock will require an estimated 15,000-20,000 plants.

2. **Students.** In each of the next three years provide at least one learning opportunity for further cohorts of students from the Climate Action Campus Ōtautahi by inviting them to participate in a planting day and/or a visit to review progress with the plants that they have previously planted. The first of these visits in May 2024 attracted six students plus their learning advisors. The second in September 2024 involved twelve students. As our relationship with the Campus matures, we expected student numbers to continue to grow.
3. **Neighours.** Host further planting days for the community on Somerset Drive.

Please state how the project aligns with the relevant Zone Committee's 2021-24 Action Plan:
Weblinks to each zone's Action Plan are found at the bottom of this document.

Our project supports the following components of the Zone Committee's Action Plan.

1. *'To protect and improve the indigenous biodiversity, habitat or ecosystems in the zone through assisting all landowners and managers to integrate indigenous biodiversity management into the wider aspects of land and water (catchment) management.'*

Our project will increase the area of indigenous biodiversity habitat in the zone and promote greater community understanding about the importance of protecting and enhancing biodiversity.

2. *'To protect and enhance mahinga kai practices in waterways within the Waimakariri water zone by encouraging catchment and landcare groups to protect and improve riparian habitat to support mahinga kai practices on the plains and lowland waterways.'*

Our project supports downstream mahinga kai through improving water quality and habitat in the intermittent stream, wetland, and springhead complex.

3. *'The Canterbury Water Management Strategy and its effective implementation is one of the adaptation strategies Canterbury has in place to respond to climate change and support community resilience.'*

Our project supports ECan's mitigation response to climate change principally through carbon sequestration. It also supports adaptation by increasing the area of native habitat.

Tell us when you can start the project and when you intend to have the project completed (timeline):

This funding request is sought for each of the next three years to assist with the purchase of plant guards, canes, and weed mats for planting 1,750 eco-sourced native trees and shrubs each year. Planting would be done between April and October each year as planting conditions permit, starting April 2025 and finishing October 2027.

Please note that sourcing, propagating and planting an ecologically appropriate mix of eco-sourced native plants commenced 2 years ago and more than 3,000 trees and shrubs have been established so far (please see photograph below, taken on 24 October 2024).

Tell us why you think your project is feasible/realistic:

We have already successfully established over 3,000 native trees and shrubs over the past 2 years. In doing so we have refined our methodology, experimented with different approaches to weed control, and found the most cost-effective plant guards, canes, and weed mats for our specific conditions. We are confident that a high percentage of the plants we plant out will establish and flourish.

We have taken advice from Dr Colin Meurk and other experts regarding appropriate species and spacing of plants. With the permission of other landowners in the area, we have sourced seedlings and seeds from existing native bush. We are therefore confident that the anticipated biodiversity benefits will accrue from the native bush that we are regenerating.

Tell us about the project management, including leadership and financial oversight:

re:generations is a husband and wife Partnership created to deliver environmental and social benefit for current and future generations of humans and other species living around Oxford.

Roger is a Chief Sustainability Officer at Plant & Food Research and Melissa is an environmental scientist at Manaaki Whenua Landcare Research. Both have considerable experience of project management. As the two Partners owning re:generations, Roger and Melissa will deliver the project.

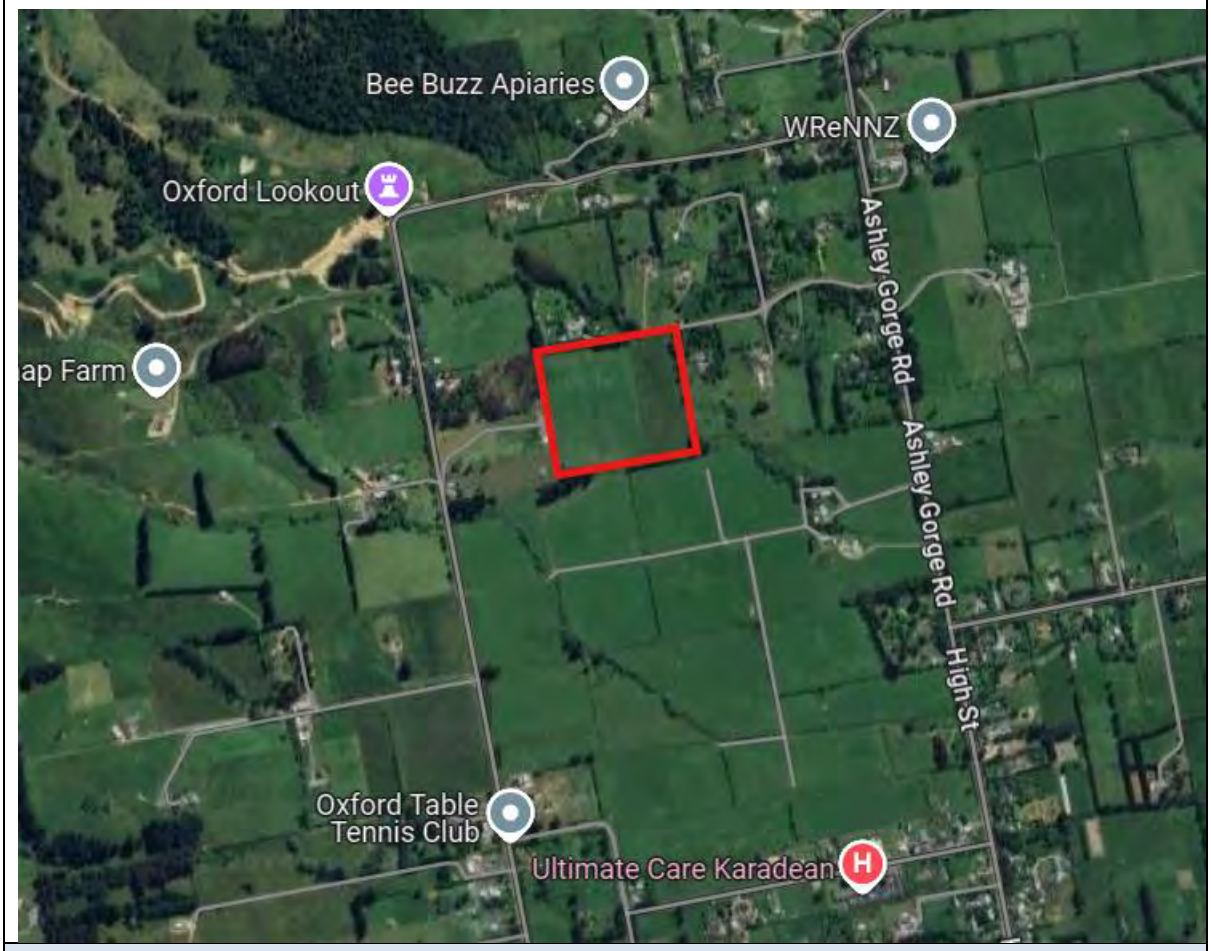
To date, we have successfully sourced, propagated, planted and establish more than 3,000 native plants with no external funding. The re:generations Partnership has done the bulk of the work and has provided all the funding to date. However, the work has been supported by friends and neighbours who have donated seeds, seedlings, plant pots and their time. We anticipate this continuing, hence seeking funding only to cover the unavoidable direct costs of plant guards, stakes, and weed mats.

We are committed to avoiding herbicide use in the establishment and maintenance of the planting. We have mostly planted in rows to enable maintenance mowing between rows using a converted battery EV tractor. Furthermore, we have used old hay to mulch around

plants. We anticipate being able to reduce waste by starting to reuse tree guards after approximately four years, when established trees no longer need this protection.
List any other groups or organisations you are partnering with on this project, such as community groups, schools etc:
We have hosted two visits by the Climate Action Campus – Ōtautahi during 2024 and these were well received. We anticipate that this relationship will grow.
How will you engage the community on the project:
We have hosted a neighbourhood planting afternoon during 2024 and this went well. We anticipate hosting further such events.

Do you know of any cultural values associated with this site? **If yes, what engagement has occurred or is planned (if any) with local Papatipu Rūnanga about this project?:**	**~~YES~~ / NO**

We have not engaged so far but would be very open to doing so.
Please provide an accurate location with grid references and a map (if relevant to your project):
NZTM Grid Ref X (Easting): 172.187878 **NZTM Grid Ref Y (Northing): -43.280727**



Who owns the land? *Attach evidence of permission from the landowner, or their representative (if you are undertaking a project on land that you do not own)*
The land is owned by Melissa and Roger Robson-Williams.

Funding details

Your budget should include estimates of income and expenditure, including other funding and in-kind contributions. You should show clearly what you are planning to spend the Action Plan funds on if successful. For applications for less than $15,000 a simple budget is fine. We would like more detail if your application is for a larger amount e.g. more than $15,000 or more than $50,000. We have a budget template in the guidance document.

How much funding are you requesting?	**$4,922.22** per year in each of 2025, 2026 & 2027
If you are successful with this application, what components of your project will you spend the money on? *	

Please attach your budget to your application.
We are seeking funding for plant guards, canes, and weed mats.

Have you applied to, or received funding from other organisations for this project? **If YES, please provide details below or note if it is included in your attached budget.** *The CWMS Action Plan Budget is seed funding or leverage for partnering and collaboration, so it is positive if you have received or are applying for other funding.*	**~~YES~~ / NO**
Is the project receiving any other monetary or "in-kind" contributions (volunteer hours, resources, equipment, facilities) from your organisation or others? **If YES, please provide details below or note if it is included in your attached budget:**	**YES / ~~NO~~**

In-kind contributions (plants and labour) of:

- $14,210 in 2025
- $14,770 in 2026
- $15,330 in 2027

Working with us, Environment Canterbury

In the last three years have you received funding or other support from Environment Canterbury for this, or any other project? * **If yes, what was the funding/support for, and when did you receive it?**	**~~YES~~ / NO**
Are you intending on applying to another Environment Canterbury fund/budget this financial year for this, or any other project? **If yes, what fund are you applying to?**	**~~YES~~ / NO**

How did you hear about this funding? *Tick which applies*

- ☐ Social media e.g. Facebook
- ☐ Word of mouth
- ☒ Print advertising e.g. Newspaper

☐ Environment Canterbury webpage

☐ Other: _____

Additional information you would like to provide?

Do you have supporting information you would like to provide (optional)? Yes

Please see attached budget.

Once completed, please send this application form to the relevant Zone Facilitator:

Zone	Zone Facilitator
• Kaikōura	Jodie Hoggard (Jodie.hoggard@ecan.govt.nz)
• Hurunui Waiau Uwha • Waimakariri • Christchurch West Melton • Upper Waitaki	Murray Griffin (Murray.griffin@ecan.govt.nz)
• Selwyn Waihora	Jaimee Grant (Jaimee.grant@ecan.govt.nz)
• Ashburton • Ōrari Temuka Ōpihi Pareora (OTOP) • Lower Waitaki	Dave More (dave.moore@ecan.govt.nz)

The Zone Facilitator will keep in touch with you about timeframes, whether the Committee would like you to give them a presentation, and whether there are any questions.

CWMS Zone Committee Action Plans

These can be accessed online via the Environment Canterbury website (ecan.govt.nz). Links to each Action Plan are provided below.

Press Ctrl + Click on the relevant zone to access the online Action Plan:

- Kaikōura
- Hurunui Waiau Uwha – *please email Murray Griffin for more info: (murray.griffin@ecan.govt.nz)*
- Waimakariri
- Christchurch West Melton
- Selwyn Waihora
- Ashburton

- Ōrari Temuka Ōpihi Pareora (OTOP)
- Lower Waitaki
- Upper Waitaki

If you wish to discuss one of the action plans, please contact the relevant Zone Facilitator.

2025 budget (excluding GS			
Item	**Description**	**Quantity required**	**Units**
Native plants	Locally sourced and propagated by re:generations	1750	Plants
Plant guards	Polylogic 360mmx460mm tree guards	1750	Packs
Plant stakes	Primehort 90cm 8-10mm bamboo canes (4 per plant)	7000	Packs
Weed mats	Primehort 450x450mm jute wool matting squares	1750	Packs
Labour	Planted by re:generations with help from volunteers	140	Hours
Ongoing maintenance	Undertaken by re:generations	16	Hours

2026 budget (excluding GS			
Item	**Description**	**Quantity required**	**Units**
Native plants	Locally sourced and propagated by re:generations	1750	Plants
Plant guards	Polylogic 360mmx460mm tree guards	1750	Packs
Plant stakes	Primehort 90cm 8-10mm bamboo canes (4 per plant)	7000	Packs
Weed mats	Primehort 450x450mm jute wool matting squares	1750	Packs
Labour	Planted by re:generations with help from volunteers	140	Hours
Ongoing maintenance	Undertaken by re:generations	32	Hours

2027 budget (excluding GS			
Item	**Description**	**Quantity required**	**Units**
Native plants	Locally sourced and propagated by re:generations	1750	Plants
Plant guards	Polylogic 360mmx460mm tree guards	1750	Packs
Plant stakes	Primehort 90cm 8-10mm bamboo canes (4 per plant)	7000	Packs
Weed mats	Primehort 450x450mm jute wool matting squares	1750	Packs
Labour	Planted by re:generations with help from volunteers	140	Hours
Ongoing maintenance	Undertaken by re:generations	48	Hours

ST)				
Number per unit	Number of units	Price per unit	Total cost	Requested from CWMS Action Plan Budget
1	1750	$ 5.00	$ 8,750.00	$ -
600	3	$ 136.44	$ 409.32	$ 409.32
500	14	$ 72.35	$ 1,012.90	$ 1,012.90
50	35	$ 100.00	$ 3,500.00	$ 3,500.00
1	140	$ 35.00	$ 4,900.00	$ -
1	16	$ 35.00	$ 560.00	$ -
		Total	**$ 19,132.22**	**$ 4,922.22**

ST)				
Number per unit	Number of units	Price per unit	Total cost	Requested from CWMS Action Plan Budget
1	1750	$ 5.00	$ 8,750.00	$ -
600	3	$ 136.44	$ 409.32	$ 409.32
500	14	$ 72.35	$ 1,012.90	$ 1,012.90
50	35	$ 100.00	$ 3,500.00	$ 3,500.00
1	140	$ 35.00	$ 4,900.00	$ -
1	32	$ 35.00	$ 1,120.00	$ -
		Total	**$ 19,692.22**	**$ 4,922.22**

ST)				
Number per unit	Number of units	Price per unit	Total cost	Requested from CWMS Action Plan Budget
1	1750	$ 5.00	$ 8,750.00	$ -
600	3	$ 136.44	$ 409.32	$ 409.32
500	14	$ 72.35	$ 1,012.90	$ 1,012.90
50	35	$ 100.00	$ 3,500.00	$ 3,500.00
1	140	$ 35.00	$ 4,900.00	$ -
1	48	$ 35.00	$ 1,680.00	$ -
		Total	**$ 20,252.22**	**$ 4,922.22**

Application for funding – CWMS Action Plan Budget 2024/25 *(for the Waimakariri Water Zone)*

The purpose of the CWMS Action Plan Budget is:

- To allow Zone Committees to **focus on implementing their action plan and leverage other funding opportunities to achieve the CWMS priorities.**

The funding is administered, distributed, and monitored by Environment Canterbury.

Applicant details

Organisation (if applicable):	**Sefton Saltwater Creek Catchment Group**
Contact name:	
Contact email:	
Contact phone number:	
Postal address:	
Other address:	
Are you GST registered? (if yes, please provide number)	**Funding would be held by Waimakariri Landcare Trust**
NZBN (NZ Business Number, if applicable)	

About your project

The amount of information and detail we would like you to provide is in proportion to the amount of funding you are requesting. If it is smaller amount, then a simple description of your project, who's involved and what you will be doing, along with a simple budget is sufficient.

Project name:	SSCCG Monitoring Programme
CWMS zone where the activity will occur:	Waimakariri
Provide a brief project description (in two sentences):	
Continuation of a quarterly monitoring programme at six sites for another two years to form a 5 year baseline of data.	

Explain what the grant will be used for - what the money is mainly being spent on/what activities are involved in the project (in two sentences):

The funding will pay for Hill Laboratories sampling kits, and administrative costs associated with the logistics of organising kits and delivery of samples, and recording of data. It will also pay for more targeted sampling and diagnostic sampling eg if high Ecoli is recorded, to test for the probably source, avian, bovine, human etc. Also to do some sampling at flood flows to compare with normal flows.

Describe the problem or opportunity the project will address:

ECan only have one monitoring site in the catchment which meant that very little was known about our catchment. The monitoring expands this considerably, however our current funding (WZC Action Plan Fund and Westpac Bank) runs out at the end of year 3, and advice is that five years of monitoring across a variety of seasonal conditions would provide a better baseline. It will also enable more information to be obtained for any specific issues that arise eg higher Ecoli, higher nitrates, to try and work out sources and possible solutions.

Describe the outcomes or impacts of this project:
Outcomes or impacts are what will change or who will benefit from this work, including enduring benefits. For example, fencing off springheads will improve biodiversity and improve stream health.

The key outcome is a five year baseline of data across the catchment, which can be used to measure against any future changes. It will help to identify what and where there may be issues, so that solutions can be worked on. This could lead to a catchment management plan. The monitoring programme has also been a project that has served as a focus for the group, enabled the involvement and upskilling of members to be able to do the sampling, and facilitated much wider knowledge about the catchment across the group. It has also brought together a variety of landowners in the catchment such as forestry, industrial, farming, lifestyle, along with various organisations such as WDC and ECan, and enabled information exchange.

List the key outputs of the project:
An output describes what your group is proposing to do and is measurable. For example, install 250 m of fencing, or train 25 volunteers. Outputs are important and may be used as deliverables in a funding agreement.

- Complete five years of monitoring data to form a baseline of information on water quality in the catchment.
- Undertake diagnostic monitoring to identify potential issues.
- Continue work towards a catchment management plan.
- Identifies opportunities for running events that will contribute towards improvements, and helps to keep the group engaged and involved.

Please state how the project aligns with the relevant Zone Committee's 2021-24 Action Plan:
Waimakariri – Waimakariri Water Zone Committee Action Plan 2021-2024 | Environment Canterbury (ecan.govt.nz)

Alternatively, contact the Zone Facilitator (Murray Griffin) who can email you a copy.

Improved monitoring of groundwater and surface water in the zone – The project is and

will continue to improve monitoring of surface water in this part of the zone, has community involvement, and facilitates collaboration eg Daiken share their monitoring results with the group.

Improved indigenous biodiversity in the zone – Keeping the group engaged and involved is leading to improved indigenous diversity as members are motivated to undertake projects and are able to access help.

Improved mahinga kai with the Waimakariri water zone – Improved biodiversity and a greater awareness of the state of the catchment and ability to identify issues will in the longer term improve mahinga kai outcomes.

Tell us when you can start the project and when you intend to have the project completed (timeline):

Our monitoring programme started in July 2022 and we have sufficient funding remaining to get to November 2025. Any new funding will enable the quarterly sampling at 6 sites to continue ideally until November 2027, with options for diagnostic sampling as required.

Tell us why you think your project is feasible/realistic:

We have good momentum with the monitoring programme. Everything runs very smoothly and we have an effective data recording system. We would like to keep it going another two years to get a more substantial 5 year baseline in place.

Tell us about the project management, including leadership and financial oversight:

The project is managed by SSCCG's coordinator Carolyne Latham with the support of up to 10 volunteers, and the SSCCG's steering group. Any funding granted is held by Waimakariri Landcare Trust, and financial reporting is undertaken quarterly giving financial oversight.

List any other groups or organisations you are partnering with on this project, such as community groups, schools etc:

We would like to engage with our two local schools at some point, and students occasionally attend our events with their parents. New Zealand Landcare Trust is a key partner of SSCCG in terms of organisation and access to resources. Rayonier Matariki have two sites within Ashley Forest and undertake sampling as part of the group monitoring programme. Daiken are required to monitor for their discharge consent and share their data regularly with the group.

How will you engage the community on the project:

We advertise our events on the local facebook page and in the local paper. The local papers occasionally report on some of the activities the group is involved with.

Do you know of any cultural values associated with this site? **If yes, what engagement has occurred or is planned (if any) with local Papatipu Rūnanga about this project?**	**YES**

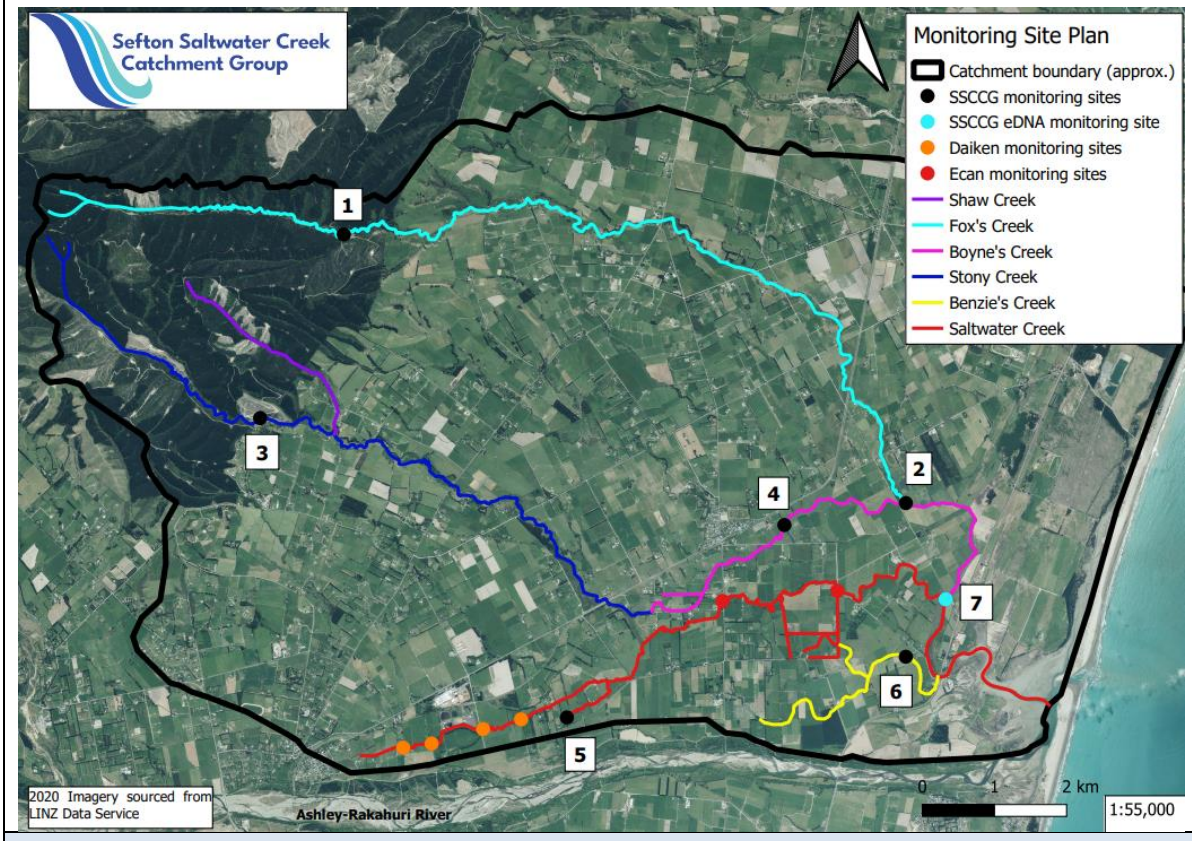
The Ashley Rakahuri Estuary where Saltwater Creek meets the ocean is a taonga for iwi. It is a source of mahinga kai, and home to numerous threatened species including braided

river birds. It is also a popular recreational area. A representative of Ngai Tuahuriri is on the email list and therefore kept up to date with the group's activities.

Please provide an accurate location with grid references and a map (if relevant to your project – please *contact the Zone Facilitator who can assist with this if required*)**:**

NZTM Grid Ref X (Easting): The catchment is located to the north of Ashley River between the coast and the Ashley River bridge at Rangiora. See map below.

NZTM Grid Ref Y (Northing):



Who owns the land?

Attach evidence of permission from the landowner, or their representative (if you are undertaking a project on land that you do not own)

Only one of our sites is on private land, which is the Saltwater Creek spring at site 5. The landowner Des Crampton has provided permission to do the sampling as per the email below.

Funding details

Your budget should include estimates of income and expenditure, including other funding and in-kind contributions. You should show clearly what you are planning to spend the Action Plan funds on if successful. For applications for less than $15,000 a simple budget is fine. We would like more detail if your application is for a larger amount e.g. more than $15,000 or more than $50,000. We have a budget template in the guidance document.

How much funding are you requesting?	**$15,000**
If you are successful with this application, what components of your project will you spend the money on? **Please include below or attach your budget to your application.*	

Sefton Saltwater Creek Catchment Group Monitoring Programme

14th October 2024

All figures exclude GST

Monitoring period: November 2025 to November 2027

Sites 1-6 sampled and monitored eight times over two years Nov 2025 to Nov 2027

Site 7 monitored not sampled (tidal)

Description	No.	Rate	Total per annum
Waimakariri Landcare Trust - funding administration	1	$500.00	$500.00
Hill Laboratory sample testing 6 samples x 8 samplings	48	$152.24	$7,307.52
Coordinator time - admin, recording, results, collecting			$0.00
samples & delivery to Hills est. 8hrs @ $60/hr $480	8	$480.00	$3,840.00
Follow up sampling	6	$152.24	$913.44
Faecal tracking sampling @ $1000 per sample	2	$1,000.00	$2,000.00
Coordinator time for additional sampling including delivery 6hrs @ $60	6	$60.00	$360.00
Monitoring supplies (tin foil, forms, pH strips etc)	1	$100.00	$100.00
Total cost			**$15,020.96**
Volunteer hours:			
10 volunteer samplers at 1.5 each, 8 samplings	120	$40.00	$4,800.00
Follow up sampling - 8 samples at 1.5 hours each	12	$40.00	$480.00
Total volunteer hours			**$5,280.00**

Have you applied to, or received funding from other organisations for this project? **If YES, please provide details below or note if it is included in your attached budget.** *The CWMS Action Plan Budget is seed funding or leverage for partnering and collaboration, so it is positive if you have received or are applying for other funding.*	**YES**

Since the project began in 2022 we have received $10,000 from Westpac Bank and $9,445 from the Waimakariri Zone Committee Action Plan Fund. No other funding applied for yet.

Is the project receiving any other monetary or "in-kind" contributions (volunteer hours, resources, equipment, facilities) from your organisation or others? **If YES, please provide details below or note if it is included in your attached budget:**	**YES**

As noted in the budget above.

Working with Environment Canterbury

In the last three years have you received funding or other support from Environment Canterbury for this, or any other project? **If yes, what was the funding/support for, and when did you receive it?**	**YES**
Yes from the Zone Committee Action Plan Fund for the same project, as noted above.	
Are you intending on applying to another Environment Canterbury fund/budget this financial year for this, or any other project? **If yes, what fund are you applying to?**	**YES / NO**
Possibly, haven't yet investigated other funds.	
Do you give permission for your application for the CWMS Action Plan Budget to be shared with the ECan staff who coordinate the Waitaha Wai Action to Impact Fund (we prefer to share information between the two to get best use of both)	**YES**

Additional information you would like to provide?

Do you have supporting information you would like to provide (optional)?

Please attach any supporting information with your application*.**

Once completed, please send this application form to Zone Facilitator, Murray Griffin, murray.griffin@ecan.govt.nz

The Zone Facilitator will keep in touch with you about timeframes, whether the Committee would like you to give them a presentation, and whether there are any questions.

Application for funding – CWMS Action Plan Budget 2024/25 *(for the Waimakariri Water Zone)*

The purpose of the CWMS Action Plan Budget is:

- To allow Zone Committees to **focus on implementing their action plan and leverage other funding opportunities to achieve the CWMS priorities.**

The funding is administered, distributed, and monitored by Environment Canterbury.

Applicant details

Organisation (if applicable):	
Contact name:	**Tim Wells**
Contact email:	
Contact phone number:	
Postal address:	
Other address:	
Are you GST registered? (if yes, please provide number)	**No**
NZBN (NZ Business Number, if applicable)	

About your project

The amount of information and detail we would like you to provide is in proportion to the amount of funding you are requesting. If it is smaller amount, then a simple description of your project, who's involved and what you will be doing, along with a simple budget is sufficient.

Project name:	**Bennetts Diversion access improvement for conservation**
CWMS zone where the activity will occur:	**Waimakariri**
Provide a brief project description (in two sentences):	

We will focus on improving access to the Bennetts Stream site to enable and facilitate ongoing community involvement. This is an important step towards the long-term self-sustainability goal for the Bennetts Stream Biodiversity Restoration and Protection Project

Explain what the grant will be used for - what the money is mainly being spent on/what activities are involved in the project (in two sentences):

To improve vehicle access, to establish a footpath and to install a footbridge. We also aim to clear excess vegetation and remove major hazards from the project site.

Describe the problem or opportunity the project will address:

Since early 2024, two native freshwater species of national significance (Canterbury mudfish and tadpole shrimp) have been discovered in the area known as “Bennetts Diversion” where Bennetts Stream is diverted into the Eyre River. The area already has outstanding natural character, including wetland areas and some well-established native vegetation, and since 2022 there have been several community efforts led by local schools and a local farming family to remove weeds and plant native riparian species where appropriate. However, access to the site remains difficult with no established foot paths. Vehicle access is within a 5 minute walk but the track to the site is rough and only suited to 4x4’s. There is also no way to cross the stream without wading through water that can be up to 1 meter deep, posing a health and safety risk (particularly to school children) as well as disturbing the stream bed which could impact on the rare species found there. Improved access is a priority for this site as it will foster community ownership of the project which in turn will help to ensure the project’s long term viability

Describe the outcomes or impacts of this project:
Outcomes or impacts are what will change or who will benefit from this work, including enduring benefits. For example, fencing off springheads will improve biodiversity and improve stream health.

Case studies on other successful projects of a similar nature (Silverstream Reserve and Tūhaitara Coastal Park) show that enabling the community to easily access and participate in conservation/enhancement/protection efforts often leads to long term project support, increased awareness of environmental issues, and in some cases people feeling adequately inspired to step forward and take lead roles to ensure the continuing success of such projects.

Easier and safer site access will not only enable West Eyreton School to realise their vision of improving access for ongoing recreation and education but will also allow them to continue their commitment to grow native seedlings on school grounds and plant them where appropriate on the site each year.

Importantly, better site access will also make it safer and more practical for specialists to visit and assist in ongoing scientific monitoring of the most significant species, and consequently provide specialist advice on which actions or interventions may or may not be necessary for populations of key native species to thrive.

Finally, it will make tasks such as ongoing weed maintenance and pest trapping safer and more practical. This will allow the community to witness progress being made, which will in turn inspire others to become involved. As this project is located on public land,

students who participate in planting will also be able to visit the site freely in their own time to see the impact their efforts have made on improving key biodiversity values.

List the key outputs of the project:
An output describes what your group is proposing to do and is measurable. For example, install 250 m of fencing, or train 25 volunteers. Outputs are important and may be used as deliverables in a funding agreement.

- **Surfacing improvements to access road and car parking area**
  Re-levelling/smoothing of a 500m2 carparking area and a vehicle track of approximately 600m which links to Carleton Road.

- **Footpath**
  Form 250m of footpath linking the carparking area to the project site.

- **"Zone 1" staging and gathering area**
  Clearing and maintenance of a 1000m2 area to remove weedy vegetation, clear overgrown grass and remove any hazards - e.g. - dead trees, prickly or poisonous vegetation, and any sharp or hazardous objects.

- **Construct a footbridge**
  The bridge would be a single-span structure of no more than 7.5 metres in length and approximately 1.2 metres in width, constructed of wood and located just below a disused weir in the stream to provide access to the stream's south bank. There would be no support structures in the bed of the stream.

Please state how the project aligns with the relevant Zone Committee's 2021-24 Action Plan:
Waimakariri – Waimakariri Water Zone Committee Action Plan 2021-2024 | Environment Canterbury (ecan.govt.nz)

Alternatively, contact the Zone Facilitator (Murray Griffin) who can email you a copy.

"Protection and enhancement of environmentally sustainable recreation in the zone"

- The project enables the extension of recreation corridors and amenity space in the Waimakariri Water Zone.

"Improved Mahinga Kai within the Waimakariri Water Zone"

- The project increases access for Mahinga Kai practices.
- The project would provide measurable improvements in habitat to support Mahinga Kai principles, i.e. - protecting and enhancing the abundance of Tāonga freshwater species, as well as improving access for practices such as gathering watercress.

“ Increased Indigenous Biodiversity in the Zone”

- The outcomes listed above will all contribute to improving indigenous biodiversity, habitat or ecosystems in the zone through managing and eliminating plant and animal pest species whilst enabling safe access for activities that advance indigenous biodiversity values.
- Safer and easier access will also help to promote greater community understanding about biodiversity and wetlands, and the benefits of their protection and enhancement.

Tell us when you can start the project and when you intend to have the project completed (timeline):

- Initial formation of the footpath and clearing of the gathering and staging area would be completed by autumn 2025 to facilitate autumn planting and maintenance of the previous years’ plantings.
- The estimated timeframe for the completion of all site works would be March 2026 to allow time for tendering, design and installation of the footbridge.

Tell us why you think your project is feasible/realistic:

Ultimately, the purpose of this application is not to fund one entity to do everything, but to enable the involvement of the wider community so that the project can become self-sustaining in the longer term.

The wider project has a proven record of community involvement that has grown over the past four years. More importantly, it has a meaningful purpose which is to better understand and protect the threatened freshwater species that have been discovered there, some of which are nationally significant.

There are local examples of similar projects that took a similar approach and have demonstrated considerable success in terms of long-term sustainability and proven outcomes for indigenous biodiversity/freshwater protection, which also provide a model to follow. The scope of the proposed works is reasonable and measurable with clear, realistic milestones, and the services needed to deliver the outcomes can easily be sourced from the greater Christchurch area.

Tell us about the project management, including leadership and financial oversight:

The project will be supported by Waimakariri Irrigation Limited (WIL) through the in-kind provision of a project manager with experience in this field and a four year history with the project. It will be led by the Wells family who will also ensure professional financial administration through their farming business that will enable regular reporting.

The project manager will have the responsibility of tendering for each project deliverable as per best practice to ensure value for money. They will also be responsible for record keeping and reconciliation and will be accountable to the Wells family as well as the committee for reporting.

List any other groups or organisations you are partnering with on this project, such as community groups, schools etc:

- **West Eyreton School**
- **Waimakariri District Council**
- **Carleton Dairies Ltd**
- **Waimakariri Irrigation Ltd (WIL)**

How will you engage the community on the project:

The students of Rōpu Kārearea (Year 3 & 4) at West Eyreton School have developed the vision for this project of increasing access to allow for more educational activity onsite and the involvement of people from the wider community. We anticipate that teachers, parents and wider family members will become more involved through the schools' native seedling programme (harvesting native seed from the site, growing seedlings at the school and planting them back at the site), as well as their commitment to ongoing school learning about Canterbury mudfish and tadpole shrimp.

Regular engagement with the surrounding farm owners through shed meetings is planned with the first in a series of such meetings to be held in December 2024. This will provide the opportunity for those landowners who wish to be involved to do so as and when is practical for them.

Other members of the community have expressed their interest in this project including Waimakariri District Councillors, and they will be added to a mailing list to receive regular progress and communications updates as the project develops.

Do you know of any cultural values associated with this site? **If yes, what engagement has occurred or is planned (if any) with local Papatipu Rūnanga about this project?**	**YES / NO**

If the application is successful, efforts will be made to engage with Ngāi Tūāhuriri runanga at the earliest possible opportunity.

Please provide an accurate location with grid references and a map (if relevant to your project – please *contact the Zone Facilitator who can assist with this if required***):**

NZTM Grid Ref X (Easting): 172°14'35.9"E

NZTM Grid Ref Y (Northing): 43°19'19.9"S

Who owns the land?

Attach evidence of permission from the landowner, or their representative (if you are undertaking a project on land that you do not own)

Land Information New Zealand (LINZ)

Funding details

Your budget should include estimates of income and expenditure, including other funding and in-kind contributions. You should show clearly what you are planning to spend the Action Plan funds on if successful. For applications for less than $15,000 a simple budget is fine. We would like more detail if your application is for a larger amount e.g. more than $15,000 or more than $50,000. We have a budget template in the guidance document.

How much funding are you requesting?	**$21,500**
If you are successful with this application, what components of your project will you spend the money on? **Please include below or attach your budget to your application.*	
See budget	
Have you applied to, or received funding from other organisations for this project? **If YES, please provide details below or note if it is included in your attached budget.** *The CWMS Action Plan Budget is seed funding or leverage for partnering and collaboration, so it is positive if you have received or are applying for other funding.*	**YES / NO**
Is the project receiving any other monetary or "in-kind" contributions (volunteer hours, resources, equipment, facilities) from your organisation or others? **If YES, please provide details below or note if it is included in your attached budget:**	**YES / NO**
See budget	

Working with Environment Canterbury

In the last three years have you received funding or other support from Environment Canterbury for this, or any other project? **If yes, what was the funding/support for, and when did you receive it?**	**YES / NO**
Are you intending on applying to another Environment Canterbury fund/budget this financial year for this, or any other project? **If yes, what fund are you applying to?**	**YES / NO**

Do you give permission for your application for the CWMS Action Plan Budget to be shared with the ECan staff who coordinate the Waitaha Wai Action to Impact Fund (we prefer to share information between the two to get best use of both)	**YES/NO**

Additional information you would like to provide?

Do you have supporting information you would like to provide (optional)?

**Please attach any supporting information with your application*.

Once completed, please send this application form to Zone Facilitator, Murray Griffin, murray.griffin@ecan.govt.nz

The Zone Facilitator will keep in touch with you about timeframes, whether the Committee would like you to give them a presentation, and whether there are any questions.

PROJECT BUDGET

INCOME			
Confirmed and 'in-kind' funding			
Source	***Project allocation***	***Amount $***	***Amount In-Kind $***
Waimakariri Irrigation Ltd	Project management & As-builts		$7,215.00
Tim Wells	Operations		$2,000.00
	Sub-Total		**$9,215.00**
Unconfirmed Funding*			
Source	***Project allocation***	***Amount $***	
CWMS Waimakariri Zone Action Plan	Capital expenditure	$23,000.00	
	Sub-Total	**$23,000.00**	
	TOTAL INCOME	**$32,215.00**	

*Unconfirmed funding is the shortfall amount your organisation is committing to seek from other sources

EXPENSES			
Provide detailed complete project delivery costs under the following or similar headings			
Expense item	***Unit price / quantity required***	***Amount $***	
Footbridge Construction &			
Site Safety	H&S planning, site inductions, signage etc	$16,300	
Site survey	Mapping & measurement of site		
Compliance	Building code compliance, Inspections, reporting		
Design	As per existing design provided by District		
Materials Transport			
Construction	Labour		
Project Management	Develop tender documents/specifications,		$2,925.00
As-built	Verify completed design as per specifications		$585.00
Incidentals		$200.00	

		TOTAL EXPENSES	**$16,500.00**	**$3,510.00**

EXPENSES			
Provide detailed complete project delivery costs under the following or similar headings			
Expense item	***Unit price / quantity required***	***Amount $***	
Footpath formation			
Site Safety	H&S planning, site inductions, signage etc	$1,400	
Site survey	Mapping & measurement of site		
Construction	Machinery hire & transport, operator labour		
Additional weed clearing/removal of			$1,500.00
Project Management	Develop tender documents/specifications,		$975.00
As-built	Verify completed design as per specifications		$390.00
Incidentals		$100.00	
		TOTAL EXPENSES	**$1,500.00**	**$2,865.00**

EXPENSES			
Provide detailed complete project delivery costs under the following or similar headings			
Expense item	***Unit price / quantity required***	***Amount $***	
Vehicle Access & Car Parking Area			
Site Safety	H&S planning, site inductions, signage etc	$3,400	
Site survey	Mapping & measurement of site		
Construction	Machinery hire & transport, operator labour		
Project Management	Develop tender documents/specifications,		$975.00

As-built	Verify completed design as per specifications		$390.00
Incidentals		$100.00	
	TOTAL EXPENSES	**$3,500.00**	**$1,365.00**

EXPENSES			
Provide detailed complete project delivery costs under the following or similar headings			
Expense item	***Unit price / quantity required***	***Amount $***	
Zone 1 Staging & Gathering Area			
Site Safety	H&S planning, site inductions, signage etc	$1,400	
Clearing & removal of vegetation,	Machinery hire & transport, operator labour		
Project Management	Develop tender documents/specifications,		$975.00
Additional removal of organic waste,			$500.00
Incidentals		$100.00	
	TOTAL EXPENSES	**$1,500.00**	**$1,475.00**

Application for funding - CWMS Action Plan Budget 2024/25

The purpose of the CWMS Action Plan Budget is:

- To allow Zone Committees to **focus on implementing their action plan and leverage other funding opportunities to achieve the CWMS priorities.**

The funding is administered, distributed, and monitored by Environment Canterbury.

Applicant details

Organisation (if applicable):	**Waimakariri Water Zone Committee – Biodiversity Working Group**
Contact name:	**Kate Steel**
Contact email:	
Contact phone number:	
Postal address:	
Other address:	
Are you GST registered? (if yes, please provide number)	**YES (WDC to hold funds)**
NZBN (NZ Business Number, if applicable)	

About your project

The amount of information and detail we would like you to provide is in proportion to the amount of funding you are requesting. If it is smaller amount, then a simple description of your project, who's involved and what you will be doing, along with a simple budget is sufficient.

Project name:	Waimakariri Water Zone Committee Environmental Awards
CWMS zone where the activity will occur:	*Waimakariri*
Provide a brief project description (in two sentences):	

Following discussion at both Biodiversity Working Group and Zone Committee level we would like to set up environmental awards to highlight and celebrate individuals and organisations/businesses contributing to better environmental outcomes within our Zone. The inaugural awards will consist of three categories.

1) **Organisation or business**: can be a not-for-profit such as a catchment group or a business that has contributed significantly to environmental gains as aligned with the WZC Action Plan 2012-2024.
2) **Individual**: someone who has driven educated or inspired environmental outcomes in the Zone. May be a member of an organisation or a landowner/private enterprise.
3) **Youth Award:** criteria are the same award for an organisation or individual, under 18.

An exceptional youth group or individual may also be eligible for awards 1) and 2).

The awards will be run in conjunction with WDC's annual Community Awards. A panel made up of ecologists, Working Group community members and iwi representatives will assess applications. All projects must align with at least one of the Zone Committee's Action Plan values (water monitoring, indigenous biodiversity, promotion of braided river character of the Ashley/Rakahuri, enhancement of recreation and improving mahinga kai values). Environmental projects with community benefit and/or cultural value are encouraged.

Explain what the grant will be used for - what the money is mainly being spent on/what activities are involved in the project (in two sentences):

The grant is spent on prizes for recipients to go towards their projects, plus a little for certificates for all applicants. We try to bring value to all entries by helping with networking, raising project profiles and assisting with funding suggestions. Native plants are given to all applicants.

Describe the problem or opportunity the project will address:

This is an opportunity to celebrate individuals and groups championing the environment within the Zone.

Describe the outcomes or impacts of this project:
Outcomes or impacts are what will change or who will benefit from this work, including enduring benefits. For example, fencing off springheads will improve biodiversity and improve stream health.

The awards give us a chance as a Zone Committee to commend positive environmental action occurring within the Zone. It will allow the community to connect with their Zone Committee and share the hard mahi they have been part of and be recognised for this. We hope that the awards will also encourage communication and discussion with the Committee, particularly important in the upcoming planning framework changes

List the key outputs of the project:
An output describes what your group is proposing to do and is measurable. For example, install 250 m of fencing, or train 25 volunteers. Outputs are important and may be used as deliverables in a funding agreement.

Please state how the project aligns with the relevant Zone Committee's 2021-24 Action Plan: *Weblinks to each zone's Action Plan are found at the bottom of this document.*
The awards will be judged primarily on alignment with Action Plan values. • Monitoring • Biodiversity • Braided river character • Recreation • Mahinga kai Projects assessed for awards must align with at least one of these values but those that include more than one are encouraged.
Tell us when you can start the project and when you intend to have the project completed (timeline):
February /March 2025 : Funding confirmed at Zone Committee meeting April/ May 2025: Comms campaign for awards across ECAN and WDC websites, community social media pages, newsletters, community groups etc. May/June 2025 : Applications open (8 weeks). July/ August 2025: Panel judges applications and winners notified. October 2025: Awards ceremony with community awards night at WDC
Tell us why you think your project is feasible/realistic:
We have run these awards successfully for the last two years. We know that Mayor Gordon and WDC are keen to collaborate again in 2025.
Tell us about the project management, including leadership and financial oversight:
This project will be managed by the Biodiversity Working Group and WDC. The Waimakariri Biodiversity Trust has indicated that they might be keen to oversee this project if the Working Group /Zone Committee structure changes. We ask that funding is paid directly to WDC for financial oversight (Contact Kate Steel, WDC ecologist).
List any other groups or organisations you are partnering with on this project, such as community groups, schools etc:
WDC, Waimakariri Biodiversity Trust and Environment Canterbury.
How will you engage the community on the project:

We run an extensive comms campaign and also encourage nominations by friends and community members.

Do you know of any cultural values associated with this site? **If yes, what engagement has occurred or is planned (if any) with local Papatipu Rūnanga about this project?:**	**YES / NO**
Please provide an accurate location with grid references and a map (if relevant to your project):	
NZTM Grid Ref X (Easting): Later **NZTM Grid Ref Y (Northing): Later**	
Who owns the land? *Attach evidence of permission from the landowner, or their representative (if you are undertaking a project on land that you do not own)*	

Funding details

Your budget should include estimates of income and expenditure, including other funding and in-kind contributions. You should show clearly what you are planning to spend the Action Plan funds on if successful. For applications for less than $15,000 a simple budget is fine. We would like more detail if your application is for a larger amount e.g. more than $15,000 or more than $50,000. We have a budget template in the guidance document.

How much funding are you requesting?	**$3000**
If you are successful with this application, what components of your project will you spend the money on? * *Please attach your budget to your application.*	
Have you applied to, or received funding from other organisations for this project? **If YES, please provide details below or note if it is included in your attached budget.** *The CWMS Action Plan Budget is seed funding or leverage for partnering and collaboration, so it is positive if you have received or are applying for other funding.*	**NO**

Is the project receiving any other monetary or "in-kind" contributions (volunteer hours, resources, equipment, facilities) from your organisation or others? **If YES, please provide details below or note if it is included in your attached budget:**	**NO**

Working with us, Environment Canterbury

In the last three years have you received funding or other support from Environment Canterbury for this, or any other project? * **If yes, what was the funding/support for, and when did you receive it?**	**YES**
Yes. ECan kindly supported the Awards in 2023 and 2024	
Are you intending on applying to another Environment Canterbury fund/budget this financial year for this, or any other project? **If yes, what fund are you applying to?**	**NO**

How did you hear about this funding? *Tick which applies*

- ☐ Social media e.g. Facebook
- ☐ Word of mouth
- ☐ Print advertising e.g. Newspaper
- ☐ Environment Canterbury webpage

☐ Other: _____

Additional information you would like to provide?

Do you have supporting information you would like to provide (optional)?:

**Please attach any supporting information with your application*.

Once completed, please send this application form to the relevant Zone Facilitator:

Zone	**Zone Facilitator**

• Kaikōura	Jodie Hoggard (Jodie.hoggard@ecan.govt.nz)
• Hurunui Waiau Uwha • Waimakariri • Christchurch West Melton • Upper Waitaki	Murray Griffin (Murray.griffin@ecan.govt.nz)
• Selwyn Waihora	Jaimee Grant (Jaimee.grant@ecan.govt.nz)
• Ashburton • Ōrari Temuka Ōpihi Pareora (OTOP) • Lower Waitaki	Dave More (dave.moore@ecan.govt.nz)

The Zone Facilitator will keep in touch with you about timeframes, whether the Committee would like you to give them a presentation, and whether there are any questions.

CWMS Zone Committee Action Plans

These can be accessed online via the Environment Canterbury website (ecan.govt.nz). Links to each Action Plan are provided below.

Press Ctrl + Click on the relevant zone to access the online Action Plan:

- Kaikōura
- Hurunui Waiau Uwha – *please email Murray Griffin for more info: (murray.griffin@ecan.govt.nz)*
- Waimakariri
- Christchurch West Melton
- Selwyn Waihora
- Ashburton
- Ōrari Temuka Ōpihi Pareora (OTOP)
- Lower Waitaki
- Upper Waitaki

If you wish to discuss one of the action plans, please contact the relevant Zone Facilitator.

AGENDA ITEM NO: 4.2	**SUBJECT MATTER:** Draft WDC Rangiora Stormwater Management Plan 2025-2040 – for information
REPORT TO: Waimakariri Water Zone Committee	**MEETING DATE:** 3 February 2025
REPORT BY: Murray Griffin, CWMS Facilitator (ECan) & Sophie Allen, Water Environment Advisor (WDC)	

PURPOSE

This agenda item provides the Water Zone Committee with an update on the Draft Rangiora Stormwater Management Plan 2025-2040 prepared by the Waimakariri District Council.

The draft Rangiora Stormwater Management Plan is provided for the committee as **agenda item 4.2 – 1**. **Page 140**

RECOMMENDATION

THAT the CWMS Waimakariri Zone Committee:

(a) **Receives** this report for its information.

(b) **Provides** any feedback on this draft Stormwater Management Plan for Rangiora by 13 February 2025.

BY WHO

This report and overview is provided by:

- **Sophie Allen, Water Environment Advisor, Waimakariri District Council**

BACKGROUND

Rangiora Stormwater Management Plan 2025-40

Executive Summary

A Stormwater Management Plan (SMP) for Rangiora township is required by the Stormwater Network Discharge Consent CRC184601. Its purpose is to reduce the adverse effects of stormwater discharges on surface water quality and quantity, wāhi tapu, wāhi taonga, as well as protect and enhance mahinga kai.

This SMP sets out methods the Council will implement to meet the consent objectives set out in condition (8), which requires the Council to use 'best practicable options' to achieve specified water quantity and water quality outcomes.

Rangiora stormwater discharges primarily to the Cam River Ruataniwha catchment, with some discharges also to the Ashley Rakahuri River and Cust River.
Most developed areas are adequately protected from flooding by the drainage network. There has been previous work on prevention of downstream flooding, scour and erosion. This has included projects from the Rangiora SMP in 2001 and flood recovery work after the 2014 flood event. Therefore, this SMP focuses primarily on stormwater quality improvement projects. Water quality monitoring from 2021-2023 shows that there are exceedances of compliance targets, particularly during wet weather. Waterway values have been affected in Rangiora from urbanisation and industrial activities, which has in turn had an impact on mahinga kai practices. Ecological health of waterways has also been shown to be affected by urbanisation using fine sediment and macro-invertebrate indices.

The position of Ngāi Tūāhuriri Rūnanga, as mana whenua of the takiwā, is that they do not support or oppose this Rangiora Stormwater Management Plan. Stormwater management in

Rangiora is expressed in the Mahaanui Iwi Management Plan (IMP) (2013) objective that states ‘the discharge of contaminants is discontinued, and all existing direct discharges of contaminants to water are eliminated.’

Current stormwater treatment in Rangiora consists primarily of wet and dry ponds, infiltration basins, and constructed wetlands, with some proprietary devices also installed. The majority of Rangiora township has existing infrastructure, such as basins, that provide attenuation and/or some form of treatment. However, there are developed areas where there is no significant attenuation or treatment, for example, the Middle Brook sub-catchment, parts of the South Brook, the Newnham Street industrial area of the North Brook and the majority of the North Drain sub-catchment.

Some catchment areas that were developed in the past without stormwater infrastructure are suitable for retrofitting treatment solutions before reaching the receiving environment. However other catchments have fewer practicable opportunities to treat with wet or dry basins or constructed wetlands, primarily due to constraints with space and high groundwater levels. For these areas source controls will be more important. Risk assessment in this SMP found the North Brook and Middle Brook to be high risk sub-catchment, and the North Drain and No. 7 Drain as medium risk sub-catchments.

This SMP proposes to carry out investigations for options for retrofitting stormwater treatment in all of the North Drain, and parts of the Middle Brook, North Brook catchments, as the best solution to achieve improved water quality outcomes.

Stormwater from new developments is required to be attenuated and treated to meet the Waimakariri District Council (WDC) Engineering Code of Practice (ECoP), with the Waterways Wetland and Drainage Guide (Christchurch City Council) and TP10 (by Auckland Regional Council, replaced by GD01 - Auckland Council) recognised as best practice guidance documents for treatment.

WDC proposes an adaptive management approach to stormwater management, where this SMP will be revised annually and reviewed every 5 years. This allows for progress checks of monitoring against the consent objectives, adaptation and learning as well as the adoption of emerging technologies.

CRC184601

Rangiora Stormwater Management Plan 2025-40

Prepared by Waimakariri District Council
18 December 2024

Prepared for: Kalley Simpson 3 Waters Manager

Prepared by:
Sophie Allen — Water Environment Advisor
Kirtina Ismail — Waterways Engineer
Janet Fraser — Infrastructure Planner

Reviewed by:
Janet Fraser — Utilities Planner
Chris Bacon — Network Planning Team Leader
Jason Recker — Stormwater and Waterways Manager

Approved by: Gerard Cleary — Manager Utilities and Roading

on behalf of Waimakariri District Council

Published: 18 December 2024

File / Record Number: EXT-04-385 / 230803118230

Version Number	Prepared By	Comments	Date
1	Sophie Allen, Kirtina Ismail, Janet Fraser	Submitted to MKL for review	September 2024
1.1	Sophie Allen, Kirtina Ismail	Incorporated recommendations from Te Ngāi Tūāhuriri Rūnanga	December 2024

1. Executive Summary

A Stormwater Management Plan (SMP) for Rangiora township is required by the Stormwater Network Discharge Consent CRC184601. Its purpose is to reduce the adverse effects of stormwater discharges on surface water quality and quantity, wāhi tapu, wāhi taonga, as well as protect and enhance mahinga kai.

This SMP sets out methods the Council will implement to meet the consent objectives set out in condition (8), which requires the Council to use 'best practicable options' to achieve specified water quantity and water quality outcomes.

Rangiora stormwater discharges primarily to the Cam River Ruataniwha catchment, with some discharges also to the Ashley Rakahuri River and Cust River.

Most developed areas are adequately protected from flooding by the drainage network. There has been previous work on prevention of downstream flooding, scour and erosion. This has included projects from the Rangiora SMP in 2001 and flood recovery work after the 2014 flood event. Therefore, this SMP focuses primarily on stormwater quality improvement projects. Water quality monitoring from 2021-2023 shows that there are exceedances of compliance targets, particularly during wet weather. Waterway values have been affected in Rangiora from urbanisation and industrial activities, which has in turn had an impact on mahinga kai practices. Ecological health of waterways has also been shown to be affected by urbanisation using fine sediment and macro-invertebrate indices.

The position of Ngāi Tūāhuriri Rūnanga, as mana whenua of the takiwā, is that they do not support or oppose this Rangiora Stormwater Management Plan. Stormwater management in Rangiora is expressed in the Mahaanui Iwi Management Plan (IMP) (2013) objective that states *'the discharge of contaminants is discontinued, and all existing direct discharges of contaminants to water are eliminated.'*

Current stormwater treatment in Rangiora consists primarily of wet and dry ponds, infiltration basins, and constructed wetlands, with some proprietary devices also installed. The majority of Rangiora township has existing infrastructure, such as basins, that provide attenuation and/or some form of treatment. However, there are developed areas where there is no significant attenuation or treatment, for example, the Middle Brook sub-catchment, parts of the South Brook, the Newnham Street industrial area of the North Brook and the majority of the North Drain sub-catchment.

Some catchment areas that were developed in the past without stormwater infrastructure are suitable for retrofitting treatment solutions before reaching the receiving environment. However other catchments have fewer practicable opportunities to treat with wet or dry basins or constructed wetlands, primarily due to constraints with space and high groundwater levels. For these areas source controls will be more important. Risk assessment in this SMP found the North Brook and Middle Brook to be high risk sub-catchment, and the North Drain and No. 7 Drain as medium risk sub-catchments.

This SMP proposes to carry out investigations for options for retrofitting stormwater treatment in all of the North Drain, and parts of the Middle Brook, North Brook catchments, as the best solution to achieve improved water quality outcomes.

Stormwater from new developments is required to be attenuated and treated to meet the Waimakariri District Council (WDC) Engineering Code of Practice (ECoP), with the Waterways Wetland and Drainage Guide (Christchurch City Council) and TP10 (by Auckland Regional Council, replaced by GD01 - Auckland Council) recognised as best practice guidance documents for treatment.

WDC proposes an adaptive management approach to stormwater management, where this SMP will be revised annually and reviewed every 5 years. This allows for progress checks of monitoring against the consent objectives, adaptation and learning as well as the adoption of emerging technologies.

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1.1. List of Figures

1.2. List of Tables

1.3. List of Abbreviations

AEP	Annual Exceedance Probability
ARI	Annual Return Interval
ASPM	Average Score Per Metric
BMP	Best Management Practice
CLM	Contaminant Load Model
CLWRP	Canterbury Land and Water Regional Plan
CWMS	Canterbury Water Management Strategy
DIN	Dissolved Inorganic Nitrogen
DRP	Dissolved Reactive Phosphorus
ECoP	Engineering Code of Practice
GIS	Geographic Information System
GPT	Gross Pollutant Trap
HAIL	Hazardous Activities and Industries List
IMP	Iwi Management Plan
LGA	Local Government Act
LLUR	Listed Land Use Register
MfE	Ministry for the Environment
MKL	Mahaanui Kurataiao Ltd
MOU	Memorandum of Understanding
NPS-FM	National Policy Statement for Freshwater Management
NTCSA	Ngāi Tahu Claims Settlement Act
ODP	Outline Development Plan
PAH	Polycyclic Aromatic Hydrocarbon
PCG	Project Control Group
PIM	Project Information Memorandum
QMCI	Quantitative Macroinvertebrate Community Index
RCP	Representative Concentration Pathway
RMA	Resource Management Act
RUSM	Rangiora Urban Stormwater Model
SMA	Stormwater Management Area
SMP	Stormwater Management Plan
SQEP	Suitably Qualified Environmental Practitioner
SSMP	Site-specific Stormwater Management Plan
TAN	Total Ammoniacal Nitrogen
TSS	Total Suspended Solids
TRoNT	Te Rūnanga o Ngāi Tahu
WDC	Waimakariri District Council
WSD	Water Sensitive Design
WWDG	Waterways, Wetland and Drainage Guide (Christchurch City Council, updated 2012)
ZIPA	Zone Implementation Programme Addendum

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2. Introduction

On 7 May 2021 the Waimakariri District Council was granted consent CRC184601 to discharge stormwater and water treatment chemicals into land and to surface water by Environment Canterbury, for a period of 24 years, effective from 7 May 2021 to 30 June 2045.

Condition 9 of the consent requires that before 1 January 2025, a Stormwater Management Plan (SMP) shall be prepared, and from 1 January 2025, be maintained and implemented for the duration of the consent. The purpose of the SMP is to detail the options to manage the stormwater discharges authorised by CRC184601 so that the receiving environment objectives and targets set out in condition (8) of the consent will be met.

2.1. Receiving Environment Objectives of CRC184601

Waimakariri District Council (WDC) shall use best practicable options to achieve the following receiving environment objectives as stated in Condition 8 of the Rangiora Stormwater Network Discharge Consent:

> ***8(a) Avoid stormwater that is discharging from the reticulated stormwater system from entering any dwelling house located downstream of any network discharge point during any duration two percent Annual Exceedance Probability rainfall event; and***
> ***8(b) Avoid stormwater that is discharging from the reticulated stormwater system from causing erosion or scour of any receiving or downstream waterway, or causing damage to any downstream infrastructure; and***
> ***8(c) The receiving environment objectives for management of stormwater discharge quality and which measure the associated effects on receiving waterways set out in Schedule 1 of CRC184601; and***
> ***8(d) The protection and culturally appropriate treatment of wāhi tapu and wāhi taonga habitats and sites (if or where identified by Te Ngāi Tūāhuriri Rūnanga) and cultural items or artefacts; and***
> ***8(e) The management of stormwater discharges in a manner that protects and enhances mahinga kai species of value to Te Ngāi Tūāhuriri Rūnanga, and enhances mahinga kai areas.***

2.2. Requirements of this SMP

This SMP is required under Condition 9 of the Rangiora Stormwater Network Discharge Consent CRC184061 to include:

2.2.1. Details of the current status of stormwater quality improvement measures implemented within the catchment (see Section 3.6);

2.2.2. A description of the understanding of the overall effects the existing discharge is having on the receiving environment (see Section 4.2);

2.2.3. A description of the catchment areas covered by the SMP that are developed at the time of writing the SMP (see Section 3.3), and an assessment of what additional development is anticipated in the Rangiora township prior to the next review of the SMP (see Section 3.4.4);

2.2.4. Details of the outcome of investigations undertaken into water quality or water quantity (see Sections 4.1, 4.2), and any investigations that are proposed to occur to inform future SMP decisions and implementation and (see Section 8);

2.2.5. Details of the contaminant load model (CLM) developed for the township, including outcomes of the modelling (see Section 3.5.3 and Appendix C);

2.2.6. Details of measures that will be used to manage discharges of stormwater authorised by CRC184601 (see Section 6);

2.2.7. Details of the management of stormwater from sites requiring or that will require a pollution prevention plan and / or from sites involving the use, storage or disposal of hazardous substances (see Section 6.1);

2.2.8. A description of funding available for stormwater improvement projects proposed over the next ten years and how these funds will be allocated among the prioritised highest risk areas within the Rangiora township (see Section 9);

2.2.9. Methods that will be used to:

- Maintain compliance with the water quantity limits and requirements in condition (8)(a) and (b) (see Section 6.1.1);
- Work toward achieving the limits and targets in the monitoring programme "urban impact" sections, as required by condition 8(c), including:
    - A detailed description of the adaptive management approach that will be implemented, and how decisions will be made (see Sections 7 and 11);
    - Reflecting the outcomes of the CLM developed (see Section 8);
    - Consideration of innovative technologies, including trials which have been undertaken (Sections 7.3.2 and 8);
    - Implementation of source controls (Sections 6.2 and 8);
    - The use of sustainable urban design in sub-catchments (see Section 6.3); and
    - Considering the feasibility/practicability of retrofitting existing catchments (Sections 7 and 8).
- Progress toward meeting the objectives and values of Ngāi Tūāhuriri as set out in condition 8(d) and (e) (Sections 7, 8 and 9); and
- Implement the measures set out in condition (14) of CRC184601 (Sections 2.4.5. and 3.4.4);

2.2.10. Requirements for appropriate disposal of contaminated material removed from stormwater basins in accordance with the requirements of CRC184601 to a disposal location authorised to receive that material (Appendix B).

2.3. Scope Exclusions

Effects of the discharge of stormwater to groundwater is not considered in this SMP, except for consideration of the maintenance of infiltration basins, such as replacement of filter media.

Flood risk from an Ashley Rakahuri River breakout scenario is out of scope of the Rangiora stormwater network discharge consent. The Ashley Rakahuri River is managed by Environment Canterbury for flood protection.

Contaminants from rural sources or from groundwater inflows into the Rangiora urban area are not considered for actions and projects under this SMP, as these contaminants are out of scope of the consent CRC184601.

2.4. Planning Requirements and Key Non-Statutory Documents

The following planning requirements, or other non-statutory documents are relevant to consider, to understand the context that the SMP operates within.

2.4.1. National Policy Statement for Freshwater Management (2020)

The National Policy Statement for Freshwater Management (NPS-FM) uses the concept of Te Mana o te Wai, that recognises that protecting the health of freshwater protects the health and well-being of the wider environment. As part of Te Mana o te Wai, the hierarchy of obligations prioritises the health and well-being of water bodies and freshwater ecosystems, over the health needs of people (such as drinking water), which is over the ability of people and communities to provide for their social, economic, and cultural well-being, for now and in the future.

2.4.2. Resource Management Act (RMA, 1991) and the Canterbury Land and Water Regional Plan (CLWRP)

Section 5 (Purpose), 6 (Matters of National Importance), 7 (Other Matters), and 8 (Te Tiriti o Waitangi) of the Resource Management Act 1991 prescribe what all persons exercising functions and powers under the Resource Management Act need to consider in relation to managing the use, development and protection of natural and physical resources. The CLWRP is the regional plan developed by Environment Canterbury under the RMA.

2.4.3. Waimakariri District Plan and Proposed District Plan

Stormwater is considered in Chapter 32 of the operative Waimakariri District Plan which states 'Stormwater conveyance and attenuation shall follow the natural drainage patterns of the site, utilising and enhancing naturally occurring indentations and low points for conveyance and attenuation. Stormwater detention basins should be located and sized to support logical staging of the development and assist with sediment control during construction.'

It is noted that WDC is currently reviewing its District Plan, via the Proposed District Plan process. The Proposed District Plan also considers stormwater, primarily in the Subdivision Chapter. In particular, this chapter sets out certain requirements and standards in relation to sustainable design and stormwater management (Policies SUB-P3 and SUB-P10) which is a change to the operative District Plan.

2.4.4. Mahaanui Iwi Management Plan (2013)

The Mahaanui Iwi Management Plan (IMP) is a written expression of kaitiakitanga, setting out how to achieve the protection of natural and physical resources according to Ngāi Tahu values, knowledge, and practices. The plan has the mandate of the six Papatipu Rūnanga, and is endorsed by Te Rūnanga o Ngāi Tahu, as the iwi authority.

2.4.5. WDC Engineering Code of Practice (ECoP) – (last updated July 2020)

The WDC ECoP provides controls to ensure that all developed infrastructure is, and will remain, fit for the intended life of the asset. The document sets out guidelines to assist developers and contractors to comply with the WDC District Plan, bylaws, policies and consents. For water quality, the ECoP refers to the guidelines in the Christchurch City Council Waterways Wetlands and Drainage Guide (2003, partly amended 2012) and the Auckland Regional Council guidelines TP10 (2003), which was updated by Auckland Council in the document GD01 (Cunningham *et al.* 2017).

2.4.6. Canterbury Water Management Strategy (CWMS)

The Canterbury Water Management Strategy provides a collaborative framework to help manage the multiple demands on freshwater resources in the Canterbury region. This includes the control of discharges.

3. Catchment and Network Overview

3.1. Catchment Background

Rangiora is an urban town with a population of approximately 20,000 people. It is located some 8km north of the Waimakariri River, 1km south of the Ashley River and about 6km from the coast. It is bisected by three major spring-fed streams (the 'Three Brooks' - North Brook, Middle Brook, and South Brook) and their tributaries, traversing the lower half of the Rangiora urban area (Figure 1).

Figure 1 indicates the layout of the Rangiora urban drainage network and shows the natural fall of the land. It shows the location of the network in relation to the location of nearby towns, and the Ashley Rakahuri, Kaiapoi and Waimakariri Rivers.

In summary, this SMP has considered stormwater effects on five natural streams (receiving environments) within the Rangiora urban limits; North Brook, Middle Brook, South Brook, South South Brook, and the No. 7 Drain. Most of these streams are spring-fed with yearly baseflow and are generally considered to have high ecological and cultural values. The North Drain is also considered within this SMP, with discharge to the Ashley Rakahuri River (the receiving environment) beyond the urban limits.

3.1.1. Cam Ruataniwha catchment

The Rangiora urban stormwater network predominantly discharges to the three brooks, which form part of the extended tributaries of the Cam River (Ruataniwha) catchment. The Cam River flows into the Kaiapoi and Waimakariri Rivers.

In the eastern part, the town centre is drained by the Railway Stream, with spring-fed base flow emerging at its lower end where it drains into the Kowhai Ave Stream and then into the North Brook mainstem. Both the Railway Stream and the North Brook primarily flow into Io Io Whenua (North Brook ponds) before re-joining a North Brook mainstem baseflow downstream. The principal purpose of these ponds is to attenuate flows and reduce the amount of sediment entering the river systems from stormwater runoff from the town. The Newnham Street industrial area stormwater flows along Boys Road into the North Brook, without passing through Io Io Whenua (North Brook Ponds), with some flows in large rain events also potentially flowing into the Middle Brook catchment.

At Southbrook Park there are smaller ponds that cater for the Green Street catchment. There is also a small pump station (on Rowse St) in the Green Street catchment that provides a groundwater base flow to the upper reaches of the Middle Brook for ecological purposes.

3.1.2. North Drain

The northern part of the town is served by the ephemeral "North Drain" which discharges directly to the Ashley Rakahuri River. A long, grassed swale area provides some infiltration and an unquantified amount of treatment of the flow prior to discharge to the Ashley Rakahuri River.

3.1.3. No. 7 Drain

When the Southbrook industrial area was further developed in 2011 the upper section of the South-South Brook was diverted to the south. This diversion resulted in the upper part of the South-South Brook becoming part of the No.7 Drain (flowing to the Cust Main Drain) catchment, with the lower section of the South-South Brook continuing as part of the Cam River catchment.

3.1.4. Discharge to Ground

There are significant areas to the north of Rangiora that discharge to ground, particularly the north-west subdivisions of Westpark and Arlington. The recent development of the Bellgrove area in the Northeast of Rangiora discharges to ground, except in a 1 in 50-year storm event or above, during which, this area will discharge stormwater into the headwaters of the Cam River itself. Similarly, future development of Bellgrove further stages to the north-east of Rangiora are also proposed to discharge stormwater to ground, with discharge to the headwaters of the Taranaki Stream, in a 1 in 50-year storm event.

3.1.5. Stormwater exclusion

In addition to the main natural streams there are also several smaller tributary waterways. For example, Kōura (Crayfish) Creek is a spring-fed creek draining to the North Brook, originating above North Brook Road, with high ecological values. The area surrounding this creek is within the Rangiora urban area. To preserve the ecological values of this creek none of the stormwater from the development is discharged into the creek.

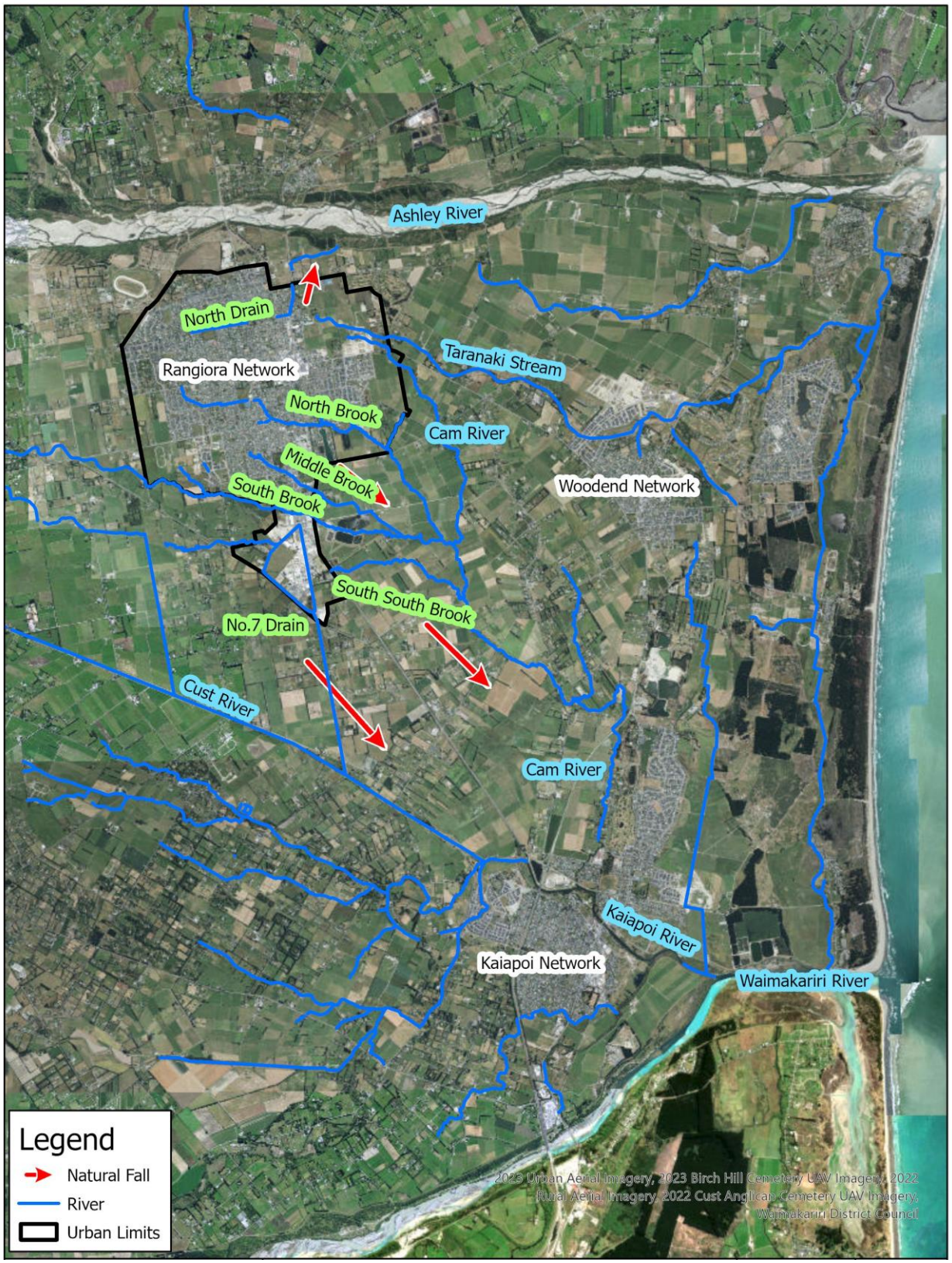

Figure 1: Rangiora network location plan.

3.2. The Receiving Environment

Stormwater discharge from Rangiora is primarily to the Cam River Ruataniwha catchment, with some discharge to the Cust and Ashley Rakahuri Rivers.

3.2.1. Cam River Ruataniwha

The Cam River Ruataniwha originates as spring-fed tributaries on the plains to the west of Rangiora (South Brook) or within Rangiora township itself (Middle Brook, North Brook, and Cam River headwaters). The Cam River Ruataniwha flows to the Kaiapoi River then the Waimakariri River before entering the sea.

The macrofauna species in the Cam River Ruataniwha catchment include[1]:

- Tuna / Longfin eel (*Anguilla dieffenbachii*) and shortfin eel (*Anguilla australis*)
- Pātiki / Black Flounder (*Rhombosolea retiarii*)
- Inanga (*Galaxias maculatus*) – a whitebait species
- Toitoi / Common Bully (*Gobiomorphus cotidianus*), Upland Bully (*Gobiomorphus breviceps*), Giant Bully (*Gobiomorphus gobioides*)
- Common smelt (*retropinna retropinna*)
- Yellow-eyed mullet (*Aldrichetta forsteri*)
- Kanakana / pouched lamprey (*Geotria australis*)
- Brown trout (*Salmo trutta*) – An introduced sport fish
- Kākahi / freshwater mussels (*Echyridella menziesi*)
- Freshwater shrimp (*Paratya curvirostris*)
- Wai kōura / freshwater crayfish (*Paranephrops zealandicus*)

There is a historical (1946) record for the Canterbury mudfish (*Neochanna burrowsius*), however this species is no longer known to be present in this catchment.

Parts of the South Brook, North Brook, Cam River mainstem and Kōura (Crayfish) Creek are mapped as areas of Critical Habitat for Indigenous Species under Plan Change 7 of the CLWRP (Figure 2). This is likely to be due to the presence of species such as wai kōura / freshwater crayfish (*Paranephrops zealandicus*) which is ranked as “At Risk- Declining” and kanakana / pouched lamprey (*Geotria australis*) which is “Nationally Vulnerable”.

The presence of larval and juvenile kanakana at multiple sites in 2023 ecological surveys indicates kanakana are likely to be spawning in the South Brook, and potentially wider Cam River catchment (Boffa Miskell, 2024). Wai kōura are also known to be present in the South Brook, North Brook and its tributaries through WDC staff observations.

[1] source: New Zealand Freshwater Fish Database and WDC staff observations

Figure 2: Critical habitat for indigenous species shown in orange (source: CLWRP)

3.2.2. Cust River (No.7 Drain)

The Cust River originates on the plains near Oxford. In the lower reaches the river has been diverted into a channel, often called the Cust Main Drain. The No.7 Drain, which receives stormwater from Rangiora, is one of the drainage channels flowing into the Cust River that was constructed to drain wetland areas in the 19th century.

Macrofauna species in the Cust River catchment include[2]:

- Tuna / Longfin eel (*Anguilla dieffenbachii*) and shortfin eel (*Anguilla australis*)
- Pātiki / Black Flounder (*Rhombosolea retiarii*)
- Inanga (*Galaxias maculatus*) – a whitebait species
- Toitoi / Common Bully (*Gobiomorphus cotidianus*), Upland Bully (*Gobiomorphus breviceps*), Giant Bully (*Gobiomorphus gobioides*), Bluegill Bully (*Gobiomorphus hubbsi*), Redfin Bully (*Gobiomorphus huttoni*)
- Yellow-eyed mullet (*Aldrichetta forsteri*)
- Kanakana / pouched lamprey (*Geotria australis*) – one record from 1998 only
- Brown trout (*Salmo trutta*), Chinook Salmon (*Oncorhynchus tshawytscha*), Rainbow Trout (*Oncorhynchus mykiss*)– Introduced sport fish
- Kākahi / freshwater mussels (*Echyridella menziesi*)
- Freshwater shrimp (*Paratya curvirostris*)
- Panoko / Torrentfish (*Cheimarrichthys fosteri*)

[2] Source: New Zealand Freshwater Fish Database

There is one undated record for the Canterbury mudfish (*Neochanna burrowsius*), however this species is no longer known to be present in this catchment.

3.2.3. Ashley Rakahuri River

The Ashley Rakahuri River originates in the Puketeraki Range, which are the foothills to the west of Lees Valley, that then passes through a gorge before coming a braided river on the plains. The Ashley Rakahuri estuary (Te Aka Aka) is a large estuarine area that is a wāhi taonga for tāngata whenua (Mahaanui IMP, Jolly *et al*. 2013).

Macrofauna species in the Ashley Rakahuri catchment include[3]:

- Tuna / Longfin eel (*Anguilla dieffenbachii*) and shortfin eel (*Anguilla australis*)
- Pātiki / Black Flounder (*Rhombosolea retiarii*)
- Inanga (*Galaxias maculatus*) – a whitebait species
- Toitoi / Common Bully (*Gobiomorphus cotidianus*), Upland Bully (*Gobiomorphus breviceps*), Giant Bully (*Gobiomorphus gobioides*)
- Common smelt (*Retropinna retropinna*)
- Yellow-eyed mullet (*Aldrichetta forsteri*)
- Kanakana / pouched lamprey (*Geotria australis*)
- Brown trout – An introduced sport fish (*Salmo trutta*)
- Kākahi / freshwater mussels (*Echyridella menziesi*)
- Freshwater shrimp (*Paratya curvirostris*)
- Bluegill Bully (*Gobiomorphus hubbsi*)
- Estuarine triplefin (*Grahamina sp.*)
- Panoko / Torrentfish (*Cheimarrichthys fosteri*)
- Canterbury galaxias (*Galaxias vulgaris*)
- Koaro (*Galaxias brevipinnis*)

3.3. Rangiora Sub-catchments

A combined area of 3,050 Ha contributes to the Rangiora stormwater catchment area and includes both urban and rural areas. A crucial objective of the SMP is to meet established consent limits for water quality within the receiving waterways. In line with this objective, sub-catchments for the purpose of the SMP were defined based on where the waterway intersects the urban limit (see sub-catchment delineation points shown on Figure 3). These locations were selected to, as best possible, align with the existing sampling locations outlined in the Rangiora Stormwater Monitoring Programme. This intentional overlap facilitates efficient and coordinated ongoing monitoring efforts, enabling:

Clear identification of areas exceeding consent limits.
By correlating water quality data with specific discharge points from each sub-catchment, the SMP identifies areas within the urban landscape where targeted interventions can be implemented to work towards improvements needed to meet established consent limits for discharge.

Assisted in identifying gaps in sampling locations.
Alignment with sampling locations also provided a clear indication of additional sample points to be considered for ongoing monitoring.

Effective tracking of progress towards compliance.

[3] Source: New Zealand Freshwater Fish Database and WDC staff personal observations

Using aligned sampling locations allows for consistent data collection and analysis, providing a clear picture of progress made towards achieving compliance with water quality consent limits and other water quality objectives.

Streamlined data interpretation and resource allocation.
Aligning boundary definition of sub-catchments and sampling points simplifies data analysis and interpretation, helping to guide resource allocation and improvement efforts within the SMP, ensuring resources are directed towards areas with the greatest impact on achieving consent limits.

This strategic coordination between the SMP and the CRC184601 Stormwater Monitoring Programme fosters a data-driven approach to stormwater management, ultimately leading to improved water quality within the receiving waterway ensuring steps towards achieving established consent limits.

The following seven sub-catchments, one of which is categorised as areas with discharges to ground, were identified within the Rangiora township, listed below and presented in Figure 3. Total catchment areas for each of these catchments are shown in Table 1.

1. North Brook
2. South Brook
3. Middle Brook
4. North Drain
5. No. 7 Drain
6. South South Brook;
7. Areas that discharge to ground.

Table 1: Total area of each sub-catchment

Sub-catchment	Area (ha)
Discharge to Ground	300
Middle Brook	75
No. 7 Drain	295
North Drain	97
North Brook	594
South South Brook	30
South Brook	1463

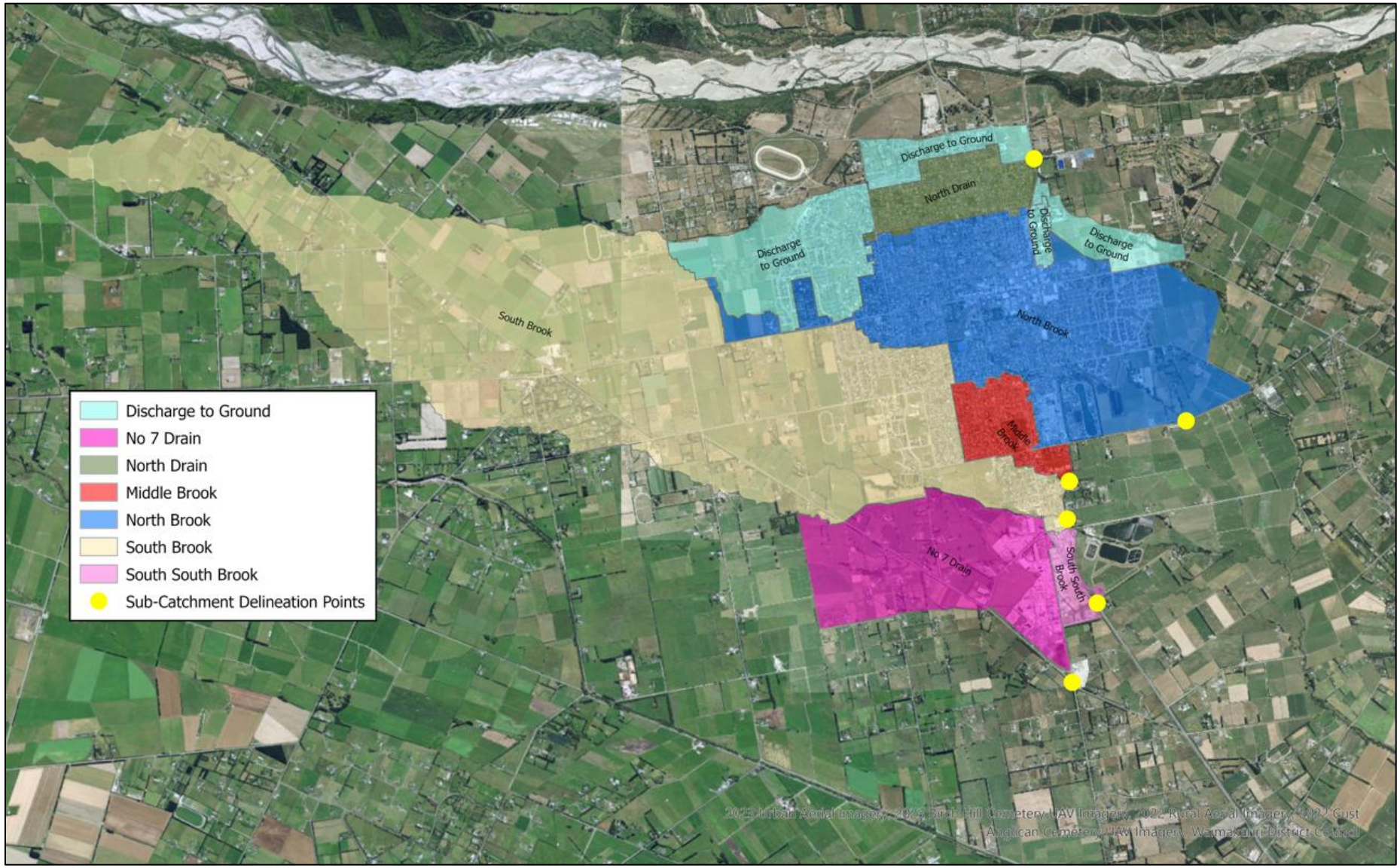

Figure 3: Rangiora SMP sub-catchments.

3.4. Sub-catchment Characteristics

Characterisation of each sub-catchment within the township was undertaken, encompassing the following:

- land-use classifications (residential, industrial, rural, and commercial);
- soil properties and infiltration rates;
- groundwater levels;
- existing stormwater infrastructure, and;
- projected growth areas within Rangiora.

This spatial analysis, documented through comprehensive mapping, provided a valuable foundation for understanding the unique hydrological behaviour of each sub-catchment.

These factors included land use, stormwater drainage and infrastructure, groundwater levels, soil conditions, and future growth areas. The spatial analysis also identified locations with existing treatment facilities, highlighting areas lacking necessary stormwater management controls. This comprehensive mapping exercise provided a detailed overview of each sub-catchment's unique characteristics which leads to informed decision making for this SMP. This information was critical in:

- Identifying high-risk areas within the township. Locations with specific land uses or inadequate treatment that led to increased runoff and contributed to high contaminant generation (further discussed in Section 3.5).
- Analysing the capacity of existing infrastructure and identifying potential flood prone areas or upgrade needs.
- Best Management Practices (BMP) selection. Choosing appropriate BMPs considering specific sub-catchment constraints and opportunities.
- Prioritisation of projects. Improved project implementation plans – resources are directed towards highest risk areas and or projects that would that provide the most significant impact (i.e. poor water quality, directed efforts for areas particularly vulnerable to flooding, highlighted areas where existing treatment systems are lacking in performance and efficiency).

By employing this approach, the plan ensures effective and adaptable stormwater management practices are implemented across the diverse sub-catchments within the township. This ultimately translates to a more efficient and cost-effective method for managing stormwater within Rangiora. Additionally, this characterization allows for future flexibility and adaptability in the face of changing land-use patterns or evolving environmental regulations. By understanding the baseline conditions and potential challenges of each sub-catchment, the plan can readily be updated and refined to maintain optimal stormwater management practices for the township.

3.4.1. Rangiora Drainage Network and Infrastructure

The discharge of stormwater from the Rangiora urban stormwater network is via the following combination of key infrastructure:

- Kerb and channel, sumps, manholes and pipes
- Passive treatment devices such as swales
- Open drains (naturalised and boxed)
- Dry ponds
- Wet ponds
- Wetlands
- Discharges to ground such as infiltration trenches/soakage basins

The town centre is drained by the Railway Stream, with a spring-fed base flow. First flush from the Railway Stream and the North Brook discharge into the Io Io Whenua (North Brook Ponds) before re-joining the North Brook downstream. The principal purpose of these ponds is to attenuate flows and reduce the amount of sediment entering the downstream river systems from stormwater runoff from the town.

At Southbrook Park there are smaller ponds that cater for the Green Street catchment. There is also a small pump station in the Green Street catchment that provides a base flow of spring water to the upper reaches of the Middle Brook, for ecological purposes.

In the northwest of the township, stormwater runoff is discharged directly to ground. Runoff from urban areas is conveyed via various combinations of infrastructure such as kerb and channel, sumps, manholes and pipes into swales or soakage systems such as soak pits or infiltration basins to be discharged into ground.

All the basins within the network provide a water quantity function of managing flows, reducing / maintaining flow peaks, managing flood water levels and reducing erosion. In addition, some of these basins are also designed as infiltration/first flush basins which, in addition to attenuating flows, are designed to treat stormwater discharges by discharging contaminants to land and filtering contaminants across grass or vegetation.

The Rangiora stormwater network infrastructure and points where stormwater runoff exits the urban boundary of Rangiora are shown in Figure 4.

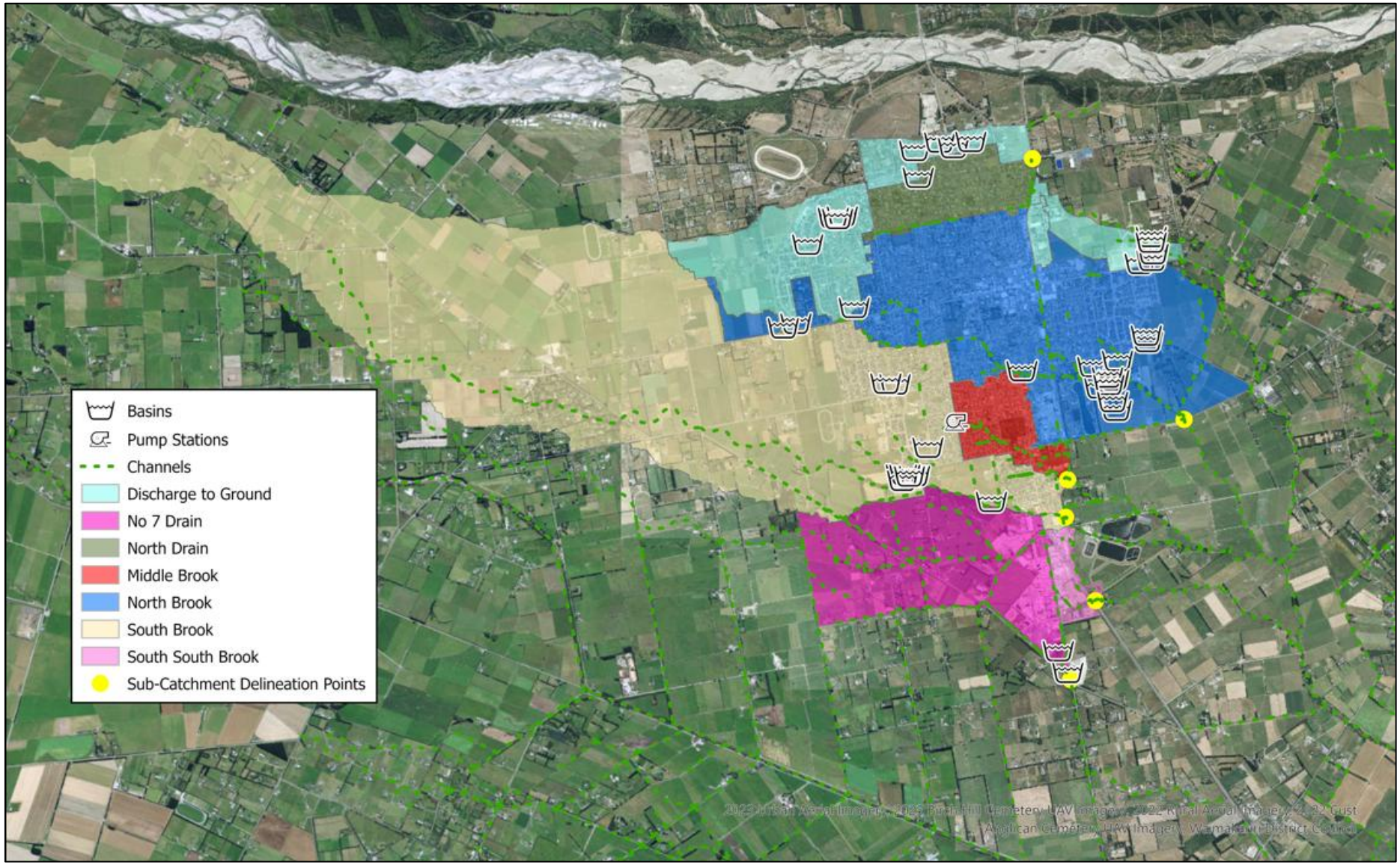

Figure 4: Rangiora stormwater drainage network and infrastructure

3.4.1. Land Use

The spatial distribution of various land use types was identified within each sub-catchment and quantified (Figure 5 and Table 2). This data provides insights into potential types and loads of contaminant generation from runoff based on land use activities. Three main land use types were mapped: rural, business (which include both commercial and industrial sites) and residential zones.

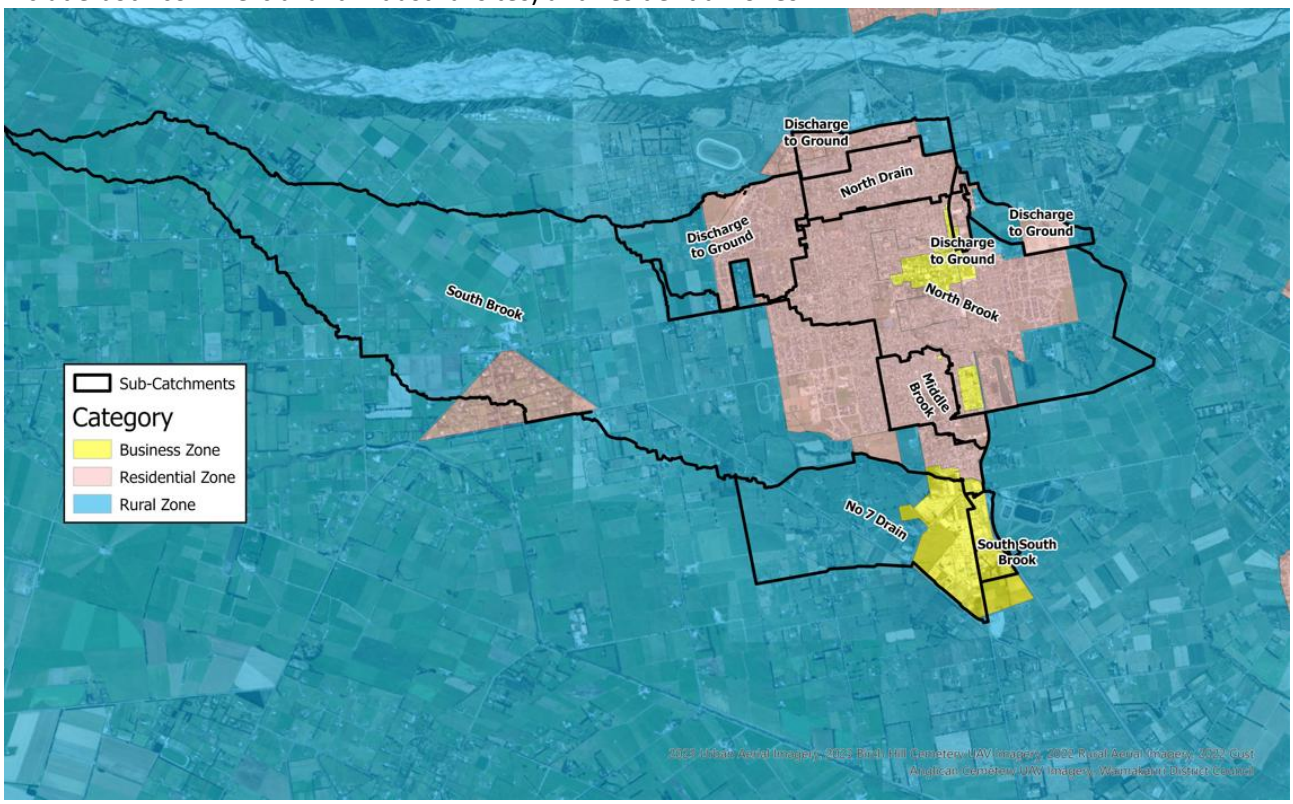

Figure 5: Land Use Zones for Rangiora

Table 2: Land use distribution (%) by sub-catchment.
Note that due to rounding, percentages do not always equal 100%.

Catchment	Business		Residential		Rural	
	Percentage	Ha	Percentage	Ha	Percentage	Ha
Discharge to Ground	1%	2	58%	173	42%	125
No 7 Drain	27%	79	0%	0	73%	217
North Drain	0%	0	99%	96	1%	1
Middle Brook	0%	0	99%	75	0%	0
North Brook	8%	45	63%	374	29%	175
South Brook	1%	8	17%	244	83%	1210
South South Brook	83%	25	0%	0	17%	5

Conclusions drawn from the mapping of land use areas are:

<u>Business zones (industrial and commercial) areas are concentrated.</u>
Business zones within the township are largely located in only three of the seven sub-catchments: North Brook; which includes the entire Rangiora Central Business District (CBD) and some industrial areas, the No. 7 Drain, and South South Brook; with a small portion within the areas that Discharge to Ground (2 Ha) and South Brook (8 Ha).

Industrial and commercial land use activities are recognized as significant sources of pollutants which contain high contaminant load generating activities. Overall, in terms of total area (ha), business zones make up only 6% of land use over the seven sub-catchments. The concentration of industrial and commercial land use being mainly within three sub-catchments leverages economies of scale, allowing for the implementation of treatment measures at a more efficient and cost-effective level. Focusing on treating similar contaminants in concentrated areas avoids logistical and financial challenges associated with scattered treatment across diverse industrial and commercial areas, thus allowing for more effective implementation of necessary treatment measures at a sub-catchment level.

A large portion of overall land use within Rangiora sub-catchments is rural.
Almost all sub-catchments contain areas with rural land use (overall 61% of land use area (Ha) across the seven sub-catchments are zoned as rural), with the exception of Middle Brook and North Drain (1 Ha). South Brook contains the largest amount of rural land use (83%), followed by No.7 Drain (73%), with North Brook and area that discharge to ground consisting of less than 50% of rural area.

While removing total suspended solids (TSS) effectively addresses common urban pollutants, rural run-off poses a distinct challenge due to its prevalence of dissolved contaminants like ammonia, dissolved inorganic nitrogen, and dissolved reactive phosphorus. Rural areas that are not within the reticulated service area of WDC are excluded from the scope of the SMP. Having said that, it is recognised that these dissolved contaminants stemming from rural activities have an impact on overall receiving environment water quality. Source control methods (in line with BMP) and community education are valuable mechanisms that can be utilised to approach mitigation of stormwater pollution from rural areas.

Residential areas are predominant.
Overall, 34% of land use area (Ha) across the seven sub-catchments are zoned as residential. All catchments contain residential areas, except for No.7 Drain and South South Brook. North Drain and Middle Brook has 99% of total area zoned as residential but are the smallest in terms of total area for residential zones within a sub-catchment (96 and 75 Ha respectively). North Brook on the other hand has the largest residential zone in terms of area, 374 Ha which is approximately 63% of land use within the sub-catchment. This indicates the need for a diverse range and sub-catchment specific stormwater management solutions across the catchments, considering the varying densities, size of catchment areas and contaminant concentrations.

Discharge is mostly to ground in the north-west.
In the north, northeast and northwest of Rangiora, land use is predominantly either rural or residential and the soil composition is ideal for stormwater to be disposed of into ground. In more recent builds of subdivisions in this area, a dwelling may have an individual soakpit to dispose of roof water. Runoff from roadways and other impervious areas are normally discharged to a treatment basin before discharging to ground. Secondary flow is sometimes discharged to ground, however overland flow paths are always required to carry the full secondary flow overland to the receiving waterways.

Currently, in Rangiora, most of the northwestern subdivisions dispose of stormwater to ground; these include The Oaks, Arlington, Chesterfield Place, Covan Mews, Enverton Drive and River Road subdivisions.

3.4.2. Soil Drainage Conditions

The distribution of soil drainage capacity across the sub-catchments (Figure 6) was mapped, highlighting their influence on infiltration capacity and potential runoff generation. Understanding this characteristic is crucial for selecting and designing effective stormwater treatment (infiltration-based solutions) and flood mitigation and water quantity storage strategies.

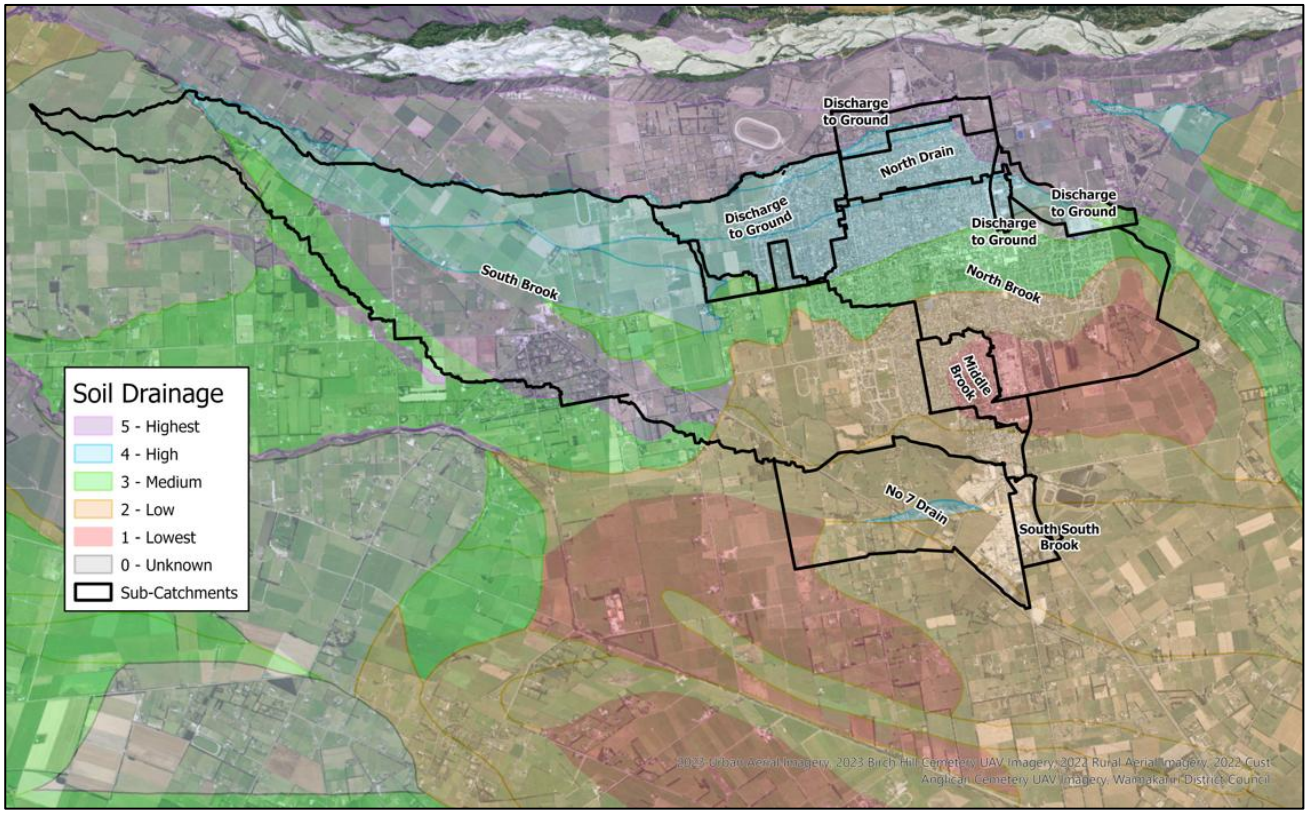

Figure 6: Soil Drainage capacity across sub-catchments within Rangiora

Table 3: Soil drainage capacity distribution (%) by sub-catchment.
Note that due to rounding, percentages do not always equal 100%.

Sub-Catchment	Very Low	Low	Medium	High	Very High	Unknown
Discharge to Ground	0%	0%	4%	74%	20%	2%
No 7 Drain	6%	90%	0%	5%	0%	0%
North Drain	0%	0%	0%	89%	11%	0%
Middle Brook	61%	39%	0%	0%	0%	0%
North Brook	22%	20%	33%	22%	0%	2%
South Brook	0%	24%	19%	30%	21%	6%
South South Brook	0%	100%	0%	0%	0%	0%

The modelling infiltration information is extracted from Manaaki Whenua (Landcare Research), who use a scale of 1-5 to classify the drainage capacity of the soil (or infiltration capacity). A classification number of 1 indicates a soil with low infiltration rates, a 5 indicates a soil with high infiltration rates.

Areas to the north, northwest and northeast of the township have excellent to good soil drainage (ranked high and highest). The North Drain sub-catchment is almost entirely within the “high” soil drainage classification. Towards the middle of the township, soil drainage is average and continues to decline towards the south of Rangiora, with the No.7 Drain catchment in the south being classified mostly with low soil drainage. South Brook, North Brook and Middle Brook catchment areas have varying levels of soil drainage.

For new developments, geotechnical investigations are undertaken during which infiltration tests are undertaken to determine if there is sufficient infiltration capacity at the site for the required runoff volumes. It is a requirement for WDC Engineers to review any information provided via the Land Development team, who will make recommendations regarding any such proposals via the consenting process for any new subdivisions.

As the infiltration capacity of the soil deteriorates over time, the WDC normally requires that a subdivision has soakage solutions are able to convey a 5-year Annual Return Interval (ARI) but constructed to convey a 50-year ARI. This allows the infiltration system to deteriorate to a level still meeting a 5-year ARI storm before being renewed.

Some sub-catchments exhibit a single, consistent soil drainage classification, while others display variations in infiltration capacity across the area. Due to the varying soil drainage characteristics across different sub-catchments within the township, a multipronged approach incorporating diverse strategies and tailored solutions will likely be more effective than relying on a single, uniform approach for managing water quantity runoff and stormwater treatment throughout Rangiora.

3.4.3. Groundwater

Groundwater levels in Rangiora range from high (less than 1m depth, to greater than 3.0m (Figure 7). Depth shown are an average and vary seasonally.

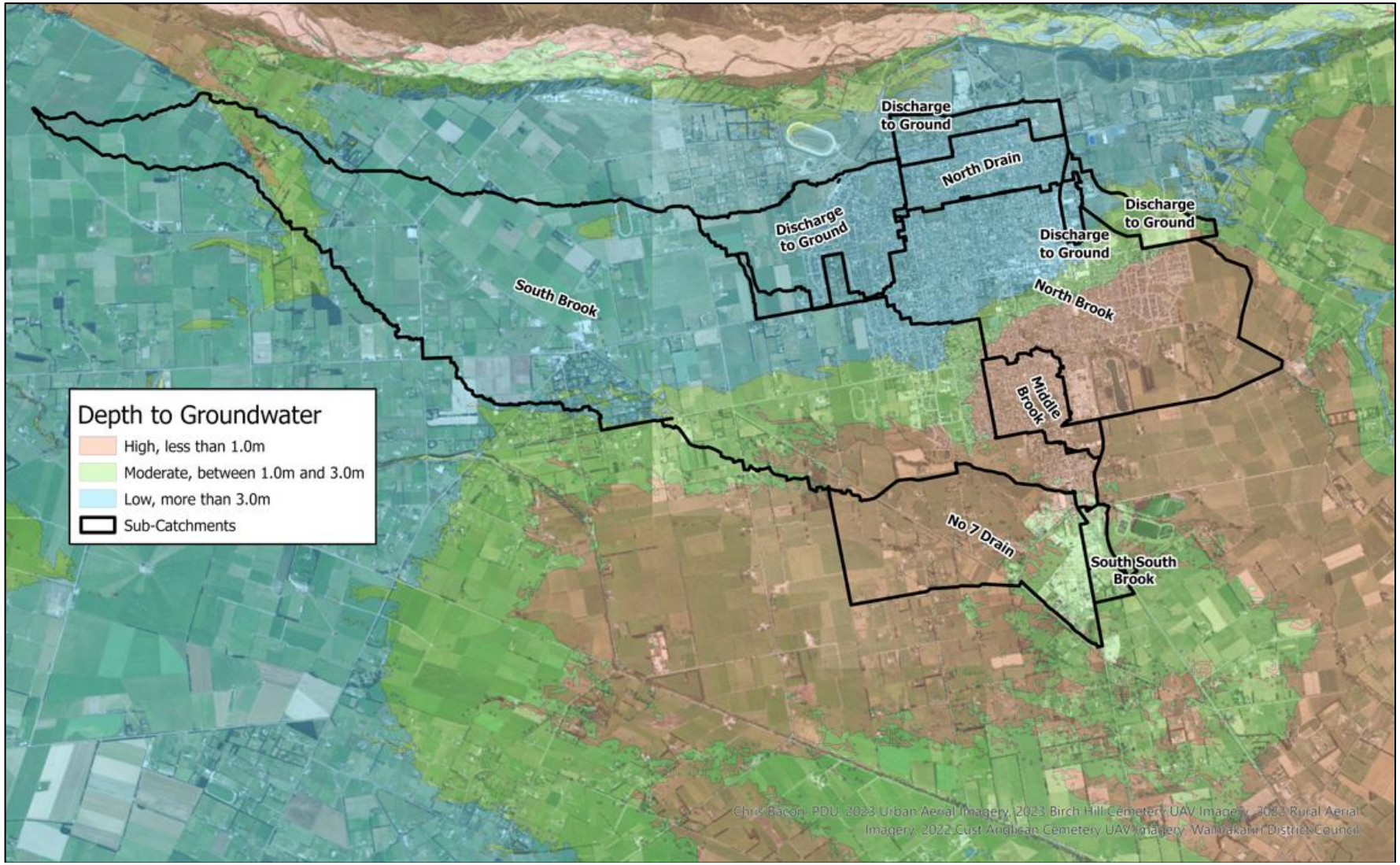

Figure 7: Depth to groundwater for sub-catchments within Rangiora

Table 4: Depth to groundwater (%) for sub-catchments within Rangiora.
Note that due to rounding, percentages do not always equal 100%.

Sub Catchments	High <1m	Moderate 1-3m	Low >3m
Discharge to Ground	1%	11%	88%
No 7 Drain	78%	22%	0%
North Drain	0%	0%	100%
Middle Brook	100%	0%	0%
North Brook	52%	11%	37%
South Brook	12%	21%	67%
South South Brook	4%	96%	1%

Discharge to Ground areas and the North Drain catchment in majority are classified as having "Low" groundwater levels (i.e. depth to groundwater more than 3m); which makes infiltration or soakage systems an ideal stormwater management solution for these areas. On the other hand, Middle Brook and No.7 Drain land area is largely as having high groundwater levels (i.e depth to groundwater at less than 1m). Areas of the South Brook catchment within the urban limits are a mixture of 'High'," Moderate and "Low" groundwater. South South Brook land area is in majority classified as "Moderate" (between 1 and 3m). Other sub-catchments have varying levels of depth to groundwater across the catchment area.

The impacts of stormwater runoff on groundwater and its connections to urban infrastructure are complex and multifaceted. This is a relatively new and evolving area of discussion within the industry. Understanding groundwater levels plays a pivotal role in effective stormwater management providing key information that informs the following key factors:

Flood Risk Vulnerability
During heavy rainfall, high groundwater levels can prevent infiltration, leading to increased surface runoff and potentially contributing to flooding. Understanding groundwater dynamics helps assess areas susceptible to flooding due to interactions with surface water, informing decisions and selection of preventive measures.

Suitability of Stormwater Treatment Systems
Different treatment systems rely on various mechanisms to manage stormwater. Infiltration-based systems like infiltration basins or dry ponds require permeable soils and sufficient space below the water table for infiltration. Conversely, solutions like wetlands or wet ponds, that require a permanent water level to function are most suitable for soil conditions with low permeability and are more appropriate for areas with high groundwater levels. Mapping groundwater levels helps identify suitable locations for these systems and inform design, preventing potential issues like ponding, oversaturation, and potential groundwater contamination.

Groundwater Interaction and Quality
Stormwater can interact with groundwater, potentially impacting its quality. If contaminated runoff infiltrates into shallow aquifers, it can endanger drinking water sources. Mapping groundwater levels and flow direction helps assess this risk and inform the selection of treatment systems.

The groundwater levels beneath Rangiora are also illustrated on the Environment Canterbury online GIS viewer (Canterbury Maps) which shows groundwater depth contour lines and shows that the area of the network consent application overlies an unconfined or semi-confined aquifer.

In 2004 MWH Ltd conducted an investigation into the Rangiora groundwater water supply and the capacity of the Ashley River aquifer; (see *Rangiora Water Supply Issues and Options* report, TRIM 040614097).
These backup drinking water sources for Rangiora from the Ashley River are not considered to be

significantly impacted by the interaction with surface water due their depth, which is 8.8m and 13.7m for the Ayers Street wells and 22.9m and 19.5m for the Dudley Park wells.

3.4.4. Growth Areas

Possible growth areas of Rangiora have been derived from census data shown in Figure 8. Note that these growth areas are indicative only. They are subject to change, depending on the outcome of the Proposed District Plan zoning process and other factors.

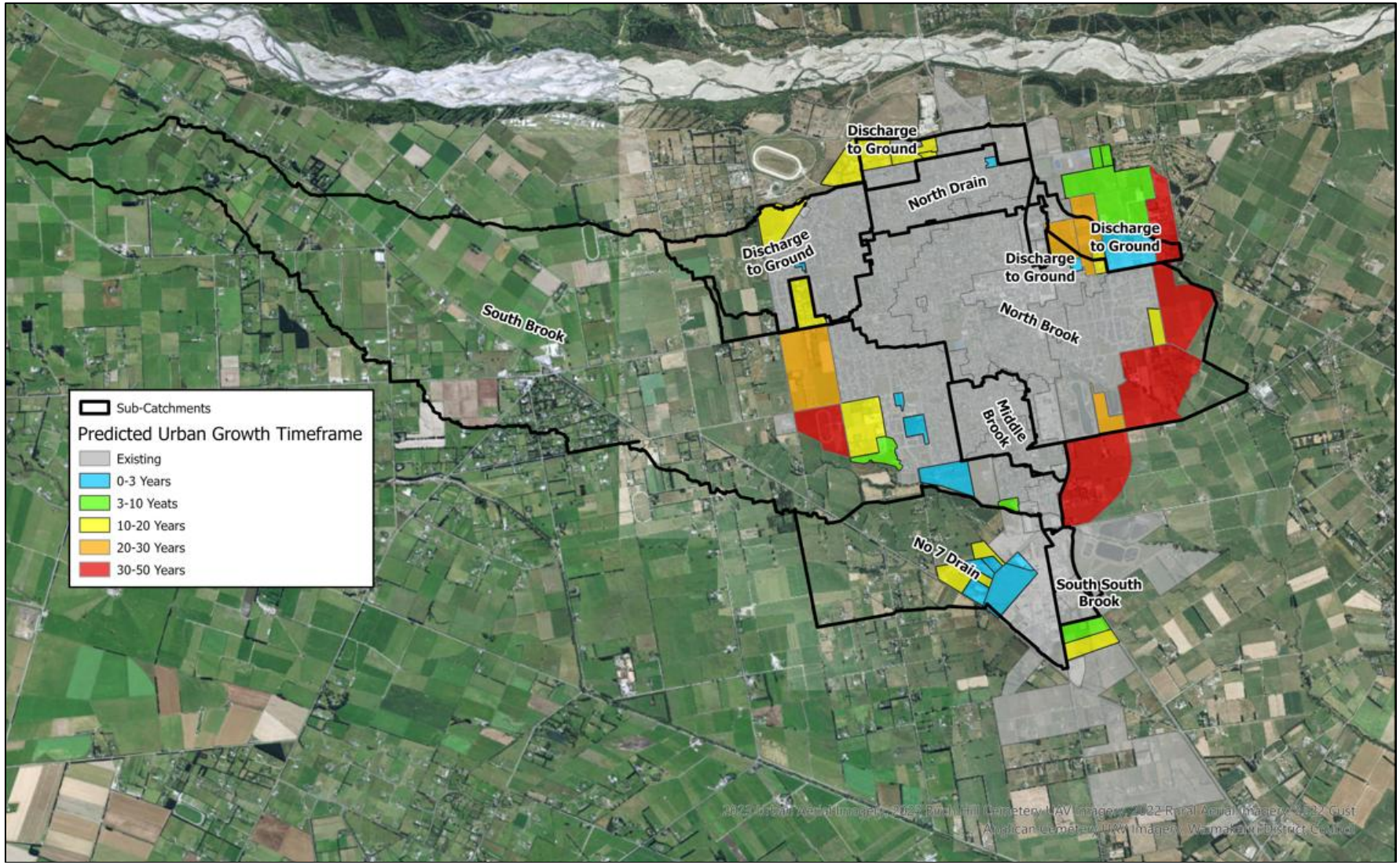

Figure 8: Projected growth areas within Rangiora

Table 5: Projected growth area distribution (%) by sub-catchment.
Note that due to rounding, percentages do not always equal 100%.

Sub-Catchment	Existing	0-3 Years	3-10 Years	10-20 Years	20-30 Years	30-50 Years	>50 years	Rural
Discharge to Ground	57%	7%	0%	11%	5%	2%	20%	0%
No 7 Drain	22%	9%	0%	5%	0%	0%	0%	65%
North Drain	99%	1%	0%	0%	0%	0%	0%	0%
Middle Brook	99%	0%	0%	0%	0%	1%	0%	0%
North Brook	73%	0%	0%	3%	3%	14%	4%	3%
South Brook	11%	1%	1%	1%	3%	1%	4%	77%
South South Brook	100%	0%	0%	0%	0%	0%	0%	0%

Table 6: Projected growth area distribution (Ha) by sub-catchment

Discharge to Ground	Existing	0-3 Years	3-10 Years	10-20 Years	20-30 Years	30-50 Years	Rural
Discharge to Ground	169	20	0	32	14	5	1
No 7 Drain	64	26	0	13	0	0	192
North Drain	96	1	0	0	0	0	0
Middle Brook	75	0	0	0	0	0	0
North Brook	431	2	0	17	16	84	21
South Brook	167	19	10	21	41	20	1126
South South Brook	0	0	0	0	0	0	0

Figure 8 predicts urban growth within the Rangiora catchment area to be concentrated in the south, southeast, north-east and west of the township over the next 10 years. Over this period, the No.7 Drain, South Brook and the Discharge to Ground areas are anticipated to have the most growth and new development in terms of area (Ha).

It is important to take into consideration that the Council requires all new (or greenfield) developments to have their own SMA in the ECoP. This requires developers to consider flood capacity and projected flows in the downstream network and receiving environments when designing their stormwater systems. This requires attenuation of peak flows and peak velocities to match pre-development levels (i.e. to achieve stormwater neutrality). The management of flow regimes to pre-development levels is intended to prevent any damage to structures downstream of the developments, including dwellings located near the lower Three Brooks or alongside the Cam River. Discharge to ground is also required where practicable.

Similarly, any new developments are required to implement stormwater treatment solutions, addressing urban pollutants and will be assessed for approval by the WDC to meet the provisions of Consent CRC184601, such as Condition 14. Land use consents issued by WDC require stormwater from new developments to be treated to meet the ECoP, with the Waterways, Wetlands and Drainage Guide (WWDG) (Christchurch City Council) and TP10 (replaced by GD01, Auckland Council) stated as best practice to follow. This is to ensure potential adverse impacts of the development on water quality in the downstream receiving environment are managed and mitigated close to source.

The following Outline Development Plan (ODP) maps have further detail on these future growth areas within Rangiora and can be found on the WDC website. These maps also include additional information on stormwater, land use, water, wastewater and greenspaces for the projected growth area.

Existing Outline Development Plans:

- Northwest Rangiora Development Area
  https://waimakariri.isoplan.co.nz/draft/rules/0/297/0/0/0/226
- South Belt Development Area
  https://waimakariri.isoplan.co.nz/draft/rules/0/296/0/0/0/226
- Southbrook Development Area
  https://waimakariri.isoplan.co.nz/draft/rules/0/278/0/0/0/226
- North Rangiora Development Area
  https://waimakariri.isoplan.co.nz/draft/rules/0/275/0/0/0/226

Proposed District Plan Outline Development Plans:

- West Rangiora Development Area
  https://waimakariri.isoplan.co.nz/draft/rules/0/224/0/0/0/226
- North East Rangiora Development Area
  https://waimakariri.isoplan.co.nz/draft/rules/0/225/0/0/0/226
- South East Rangiora Development Area
  https://waimakariri.isoplan.co.nz/draft/rules/0/290/0/0/0/226

Some of these ODP areas are partially developed. If the associated stormwater discharges are already consented by Environment Canterbury the consent conditions will be transferred to the stormwater network consent CRC184601 at the same time at which the corresponding infrastructure is vested in the Council.

3.5. High Risk Areas within Rangiora Township

3.5.1. Approach

Maintaining healthy receiving environments requires effective stormwater management. This section outlines the methodology used to identify high risk areas within the township, allowing WDC to allocate resources towards priority areas that need improvement. Sub-catchments are prioritised based on determining the risk levels for each sub- catchment. High risk areas are determined by evaluating which sub-catchments pose the greatest potential for negative impact on the receiving environment.

3.5.2. Key factors

This assessment methodology assigns risk levels to six sub-catchments based on assessment against three key factors which have a high impact on stormwater quality:

a) Areas with existing treatment infrastructure versus untreated areas
Lack of existing treatment infrastructure is a significant risk as it allows contaminants to enter receiving environments without mitigation. Existing stormwater treatment infrastructure reduces the immediate need for significant investment as preexisting systems in place lowers the likelihood of contaminants exceeding trigger levels.

b) Land use composition
The type of land use is a key factor when determining the risk of that area having a negative impact on the downstream system. For example, areas dominated by business zones (industrial and commercial activities) are typically known sources of higher pollutant loads and more harmful contaminant types. Therefore, the type and extent of land use is a factor when determining the risk of a given area.

c) Water quality sampling results for dissolved copper and zinc
Water quality sampling is crucial for confirming potential issues highlighted by the methodology used to identify and rank elevated risk areas. The collected data from the Rangiora Stormwater Monitoring

Programme offers clear proof of stormwater quality issues; be it non-compliance with regulations, possibility of a spill event, or an indication of subpar performance of existing treatment systems. This data is instrumental in designing targeted improvement measures. By analysing this information, we can gain a deeper understanding of the problem areas and ensure that implemented solutions directly address the root causes (i.e upgrading existing treatment systems, implementing additional treatment measures and or review of maintenance practices and frequencies).

At present, water quality sampling results for dissolved copper and zinc from the identified discharge points are available for all sub-catchments (sampling years 2021 -2023). Sampling for 2024 had not been reported at the time of this SMP development, and therefore has been excluded. Ongoing monitoring over the next few years will highlight any emerging trends. This will not only enhance verification of current water quality but also potentially inform future adjustments to the monitoring program and risk assessment, ensuring an adaptive management approach to stormwater management.

Note: *Factor B excluded rural areas of a sub-catchment. Factors B and C both excluded areas that discharge to ground.*

3.5.3. Contaminant Load Modelling (CLM)

To complement the three factors for risk assessment, CLM was conducted for each catchment by the WDC Network Planning Team in 2022, using a CLM developed by Auckland Regional Council (see Appendix C for development of the CLM).

The model provided projections of contaminant loads in each sub-catchment area based on land use type and considers any existing treatment systems that are in place. Results of the CLM modelling for TSS, total zinc and total copper for each sub-catchment are shown in Table 7. The results (kg/year) from the CLM model, although not directly comparable to the water quality sampling results, are in line with the risk assessment that identifies South Brook as high risk based on the total loads (kg/yr).

The modelling results indicate that from all the sub-catchments contaminant loads from South Brook is within the three highest levels (shown in cells shaded red in Table 7) of contaminant loads contributing towards total zinc, total copper and TSS.

Table 7: CLM results for projected contaminant loads at discharge point for Rangiora sub-catchments

Catchment	Zn (kg/yr)	Cu (kg/yr)	TSS (kg/yr)	Zn kg/ha/yr	Cu kg/ha/yr	TSS kg/ha/yr
North Drain	14.216	0.567	2230.598	0.426	0.017	66.816
North Brook	30.723	4.215	**45356.895**	0.121	0.017	178.870
South Brook	**69.696**	**6.683**	**62921.095**	0.048	0.005	43.053
Middle Brook	**90.883**	**6.353**	**21014.035**	1.213	0.085	280.453
South South Brook	8.685	1.676	1019.293	0.285	0.055	33.465
No. 7 Drain	**53.995**	**8.740**	16260.976	0.283	0.046	85.207

Note: Shading indicates areas of higher loads.

The outputs from the model are the total load in kilograms per year in each catchment. Alternatively, results are also presented in kilograms per hectare per year, where the large rural area of the South Brook catchment masks the higher loads from the developed area of the sub-catchment.

This CLM can be a useful tool to give indicative contaminant concentrations for scenarios and should not be interpreted as a precise measurement tool. Alongside sampling results, this model can be used to target

sources of contamination and the effectiveness of treatment devices. The output of the model is total copper and zinc per year, therefore direct comparison to CRC184601 water quality limits for dissolved copper and zinc in mg/L is not possible.

Overall, CLM provides a valuable tool for understanding the potential for pollution across Rangiora, even if it does not directly influence the risk assessment. Instead, it can help prioritise areas for further investigation, plan for future risks, and project effectiveness of contaminant concentration reductions for a proposed treatment system or treatment train.

By combining these factors with data-driven assessments, this methodology of assigning risk levels, allows a Project Control Group (PCG) to effectively prioritise funding and targeted improvement initiatives within Rangiora that will provide the most impact on water quality outcomes. This ensures that funds and resources are directed towards areas with the greatest need and enabling flexibility and adaptability to raise or reduce risk levels as needed, maximizing the overall environmental benefit of our stormwater management efforts.

3.5.4. Scoring criteria for each factor

Sub-catchments were assessed against each of the following factors, with scores between 1 to 5 applied to each factor based on the following criteria score bands:

Factor A – Water Quality

This factor was calculated as the percentage of water quality sampling results (dissolved zinc and dissolved copper only) during first flush rain events that were above CLWRP guideline value across the 2021 -2023 monitoring period for all sites in each sub-catchment. During this period a total of 3 sampling rounds were undertaken for each of the six sub-catchments. It is important to note that due to resourcing issues, for North Brook and South South Brook there was only two rounds of sampling undertaken (Q3 2021/2022) and (Q4 2022/2023).

Table 8: Scoring criteria for water quality

Score	Zn and Cu % exceedances of total samples taken
1	= 0-20%
2	≥ 20-40%
3	≥ 40-60%
4	≥ 60-80%
5	≥ 80-100%

Factor B - Untreated areas

Total area (in hectares) within a sub-catchment where stormwater runoff does not pass through a stormwater treatment system prior to discharging into a receiving environment.

Table 9: Scoring criteria for untreated areas

Score	Untreated Areas (Ha)
1	= 0-20 Ha
2	≥ 20-40 Ha
3	≥ 40-60 Ha
4	≥ 60-80 Ha
5	≥ 80-100 Ha

Factor C - Land use composition

The total amount of land use area (in hectares) within a catchment that consists of business zones (commercial or industrial activities).

Table 10: Scoring criteria for land use composition

Score	Business Zone Areas (Ha)
1	= 0-20 Ha
2	≥ 20-40 Ha
3	≥ 40-60 Ha
4	≥ 60-80 Ha
5	≥ 80-100 Ha

3.5.5. Risk Classification

After assigning scores to each factor, the final score for every sub-catchment was determined by calculating the mean of the three factors, using equal weighting for each factor. Based on this average score, risk levels were categorized using the following classification:

Risk Classification

- **Low Risk**: Average score of 1-2
- **Medium Risk**: Average score of >2-3
- **High Risk**: Average score greater than >3-4
- **Very High Risk**: Average score >4-5

This classification system allows for a clear and systematic assessment of risk levels across the sub-catchments based on the averaged factor scores.

3.5.6. Results

The following table displays the results of applying sections 3.5.4 and 3.5.5 above.

Table 11: Risk levels for Rangiora sub-catchments

Sub-catchment	(A) Water quality sampling results	(B) Limited or No Treatment	(C) Land Use - Contains business zone	Average of all 3 factors (A, B & C)	Risk Level
North Drain	3	5	1	3.0	Medium
North Brook	5	2	3	3.3	High
South Brook	1	3	1	1.7	Low
Middle Brook	5	4	1	3.3	High
South South Brook	3	1	2	2.0	Low
No.7 Drain	2	1	4	2.3	Medium

The result of the risk assessment identified the North Brook and Middle Brook as high risk sub-catchments, and the North Drain and No 7. Drain as medium risk. Therefore, these four catchments are the primary focus for implementing future stormwater improvement projects.

This approach leverages existing knowledge to verify the effectiveness of the scoring mechanism, ensuring that the prioritization matrix is not just theoretically sound, but also practically applicable.

Feedback was sought from the 3 Waters Manager on scores and was used in fine-tuning the prioritization matrix by adjusting the scoring mechanisms for greater accuracy and recalibration of criteria thresholds to better reflect real-world conditions. The process underscores the importance of incorporating diverse viewpoints in developing effective decision-making frameworks.

The Newnham Street Industrial area in the North Brook sub-catchment is a business zone with currently no treatment. It is a significant untreated area within Rangiora, and therefore is a specific area worthy of focus for stormwater improvement.

Although ecological values of the receiving environment are not evaluated within the risk assessment criteria, they are in line with the identification of the North Brook as a priority sub-catchment. The North Brook (including Kōura Creek tributary) along together with the South Brook have been mapped by Environment Canterbury as Critical Habitat for Indigenous Species (Figure 2). This was re-confirmed by recent ecological survey results (Boffa Miskell, 2024) which found threatened species kanakana (pouched lamprey, *Geotria australis*) in the South Brook, and wai kōura (freshwater crayfish, *Paranephrops zealandicus*) are present in both waterways.

The results from this assessment can be used to serve a dual purpose. While it effectively identifies priority areas that require focus, it also offers valuable insights into lower risk areas. By strategically allocating resources to these high and medium-risk areas, there is possibility to implement some smaller-scale projects aimed at further improving low risk areas to ultimately posing no risk where environmental outcomes are fully met. Conversely, these medium risk areas can be prevented from being escalated into high-risk ranked areas; by targeting areas with the potential for substantial improvement (even with existing treatment). This approach can potentially yield significant benefits for water quality. This risk assessment process is intended to be re-run for each review of this stormwater management plan to assess progress to downgrade catchments from high through to medium, low or no risk over time.

Sub-catchments that have existing treatment systems, but demonstrate poor water quality results could indicate potential issues such as:

- Overwhelmed Systems
  Treatment systems might be overwhelmed by the high volume or specific types of pollutants, leading to inefficient pollutant removal and non-compliance with environmental regulations.
- Improper Functioning or inadequate systems
  Existing systems may be malfunctioning due to wear and tear, improper design size, or lack of maintenance.
- Mismatch of treatment system versus type of contaminant
  The current treatment system in place does not target removal of dissolved metals, and therefore may require additional treatment measures.
- Upstream Issues
  In rare cases, temporary upstream events like spills or accidents could temporarily compromise water quality before reaching the treatment system.

One-off investigations could include additional water quality sampling into medium risk areas to understand root causes of poor performance of existing systems and or to determine the best solution for improvement measures, in addition to sampling for the Rangiora Stormwater Monitoring Programme.

This methodology for assessing risk provides a high-level overview of sub-catchment risk by employing a quantitative approach. Inclusion of CLM modelling data helps proactively identify potential issues even before they appear, allowing for pre-emptive planning. This method also highlights the need for further investigation into existing treatment systems that show poor performance. This could indicate a need for enhanced treatment, improved maintenance, need for improved source control, or even system remediation.

The limitation to this methodology is that it relies on readily available data and may oversimplify complex decisions that does not capture all intricacies of each sub-catchment. Despite attempts at objectivity, scoring systems can still be influenced by inconsistent interpretation of criteria across different evaluators. Therefore, this risk assessment is meant to highlight problem areas within the township at a high level, further site-specific assessments are necessary to refine the risk ranking and identify additional factors. More detailed assessments should be undertaken during the project prioritisation and implementation phase.

3.6. Current Status of Stormwater Quality Improvement Measures

This section provides an overview of the current stormwater quality improvement measures that are currently in place within Rangiora.

3.6.1. Existing Stormwater Treatment

The Rangiora stormwater network services all streets and properties within the developed urban limits (Figure 9). All new (greenfield) developments are required to consider the downstream network and receiving environments when designing their stormwater system. This is done so that the existing receiving waterways are protected. From a stormwater quantity perspective, this is commonly achieved through attenuating peak flows and peak velocities to match pre-development levels.

The majority of the Rangiora stormwater system enters either a retention or detention system consisting of either a wetland, dry pond, wet pond or infiltration swale/basin before being discharged to the receiving environment.

As well as providing attenuation, these systems also provide treatment. Refer to Section 6.3 for types of treatment.

Figure 9 provides an overview of areas that have existing treatment and areas that currently are “untreated” i.e. defined as not passing through a pond or a stormwater management area (SMA) (dry or wet pond, infiltration basin, or wetland) before discharge.

The majority of the Rangiora urban area has an existing pond or basin that provides attenuation and or treatment. There are several urban areas where there is no treatment: for example, all of the Middle Brook catchment and the majority of the North Drain Catchment.

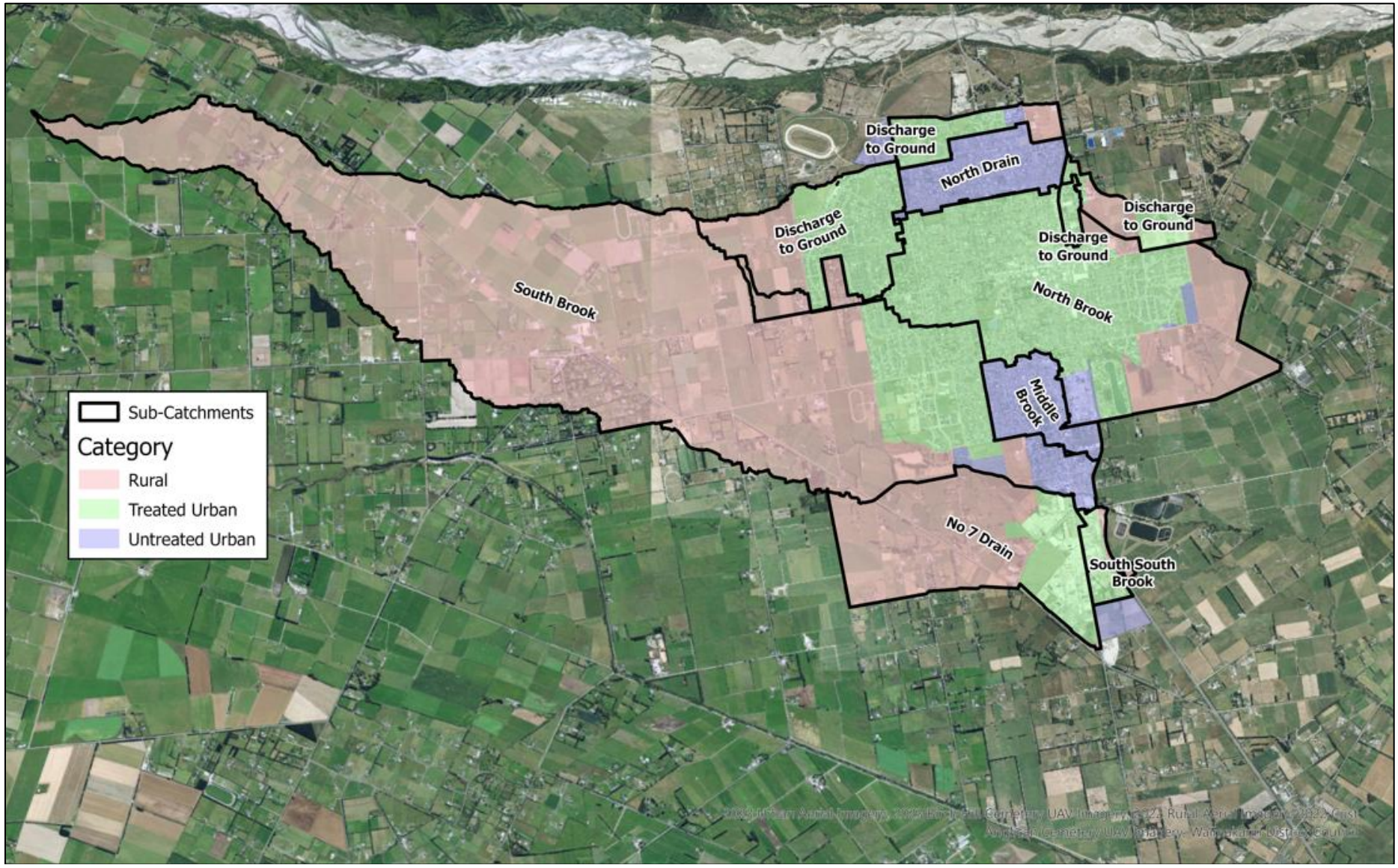

Figure 9: Treated and untreated areas within Rangiora sub-catchments.

Table 12 Distribution of treated and untreated areas by sub-Catchment

Sub-Catchment	Untreated Urban		Treated Urban		Rural %	
	%	Ha	%	Ha	%	Ha
Discharge to Ground	1%	4	65%	194	34%	102
No 7 Drain	0%	0	27%	79	73%	217
North Drain	99%	96	0%	0	1%	1
Middle Brook	100%	75	0%	0	0%	0
North Brook	4%	23	67%	396	29%	175
South Brook	3%	43	10%	153	87%	1266
South South Brook	0%	0	83%	25	17%	5

There are over 23 stormwater basins (the number varies with definition), which are a combination of both wet and dry ponds within the Rangiora urban boundary. The catchment areas served by each of these systems are shown in Figure 10. These ponds aid in reducing/maintaining flow peaks, flood water levels and erosion within the receiving waters. Many of these ponds also function as first flush treatment basins which are primarily designed to treat stormwater discharge but also provide attenuation.

A schematic showing configuration of these systems is included in Appendix D of this report.

It should be noted that data used in mapping Figures 9 and 10 focuses on larger stormwater treatment and storage systems like basins, ponds, and wetlands. It excludes smaller features within the township, such as swales and specialised proprietary treatment devices. Previous studies that utilised this data were focused on water quantity analysis, therefore these smaller systems were omitted at the time, as their primary function is treatment of stormwater, not water quantity management.

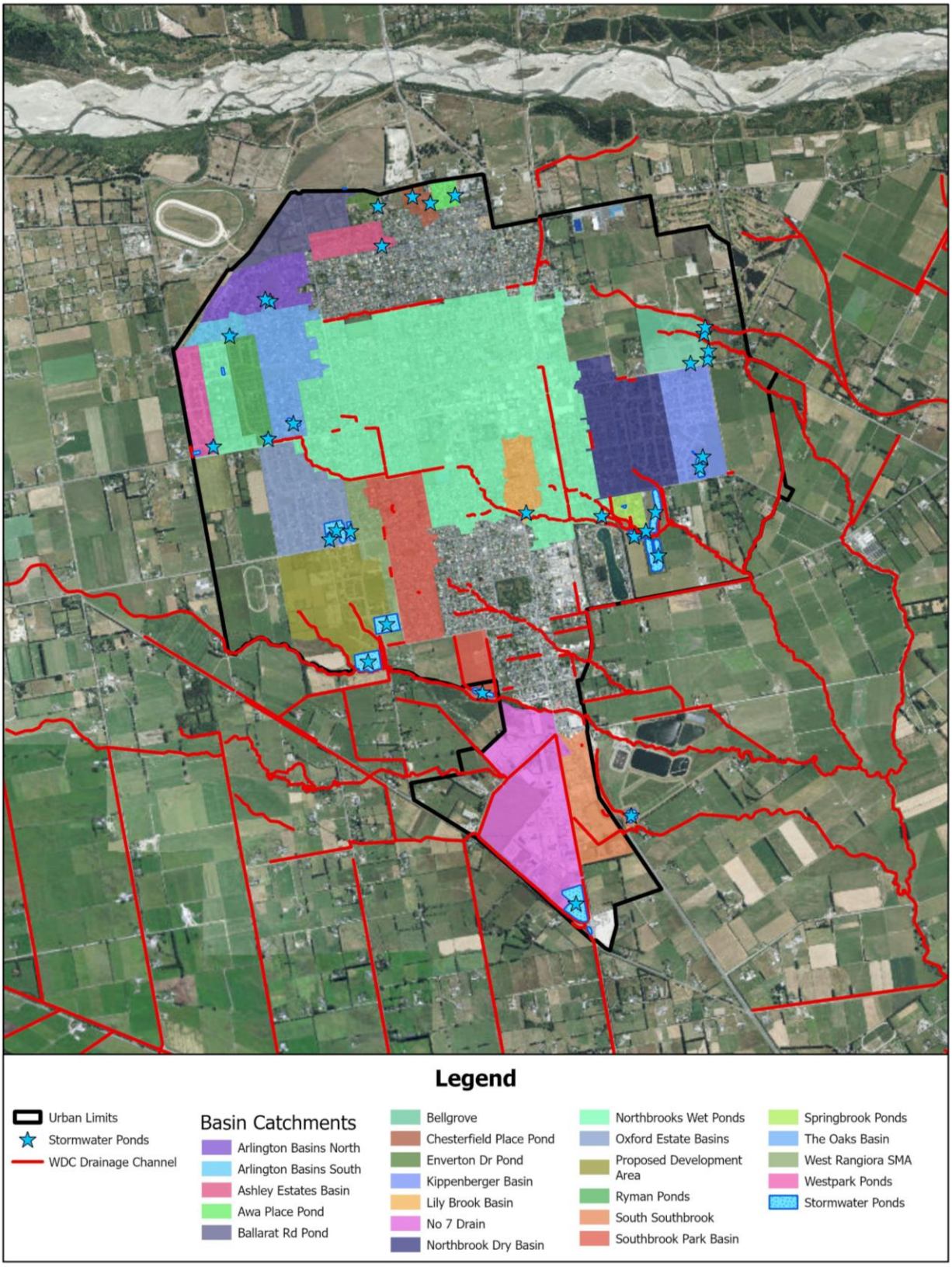

Figure 10: Stormwater Ponds within Rangiora

A record and map of Enviropods or other similar catchpit filters such as the Littatrap across Rangiora is shown in Figure 11 below. Additionally, a record of other proprietary devices such as Stormfilters and soak pits are shown in Table 13 below. A preliminary gap analysis of existing treatment systems such as these proprietary

systems revealed that there is some missing asset information. It is important to note that the figures showing records of these assets are not exhaustive. Further improvement on how asset data is recorded, mapped and maintained is needed; to ensure accurate and complete data registry of treatment systems installed within the township.

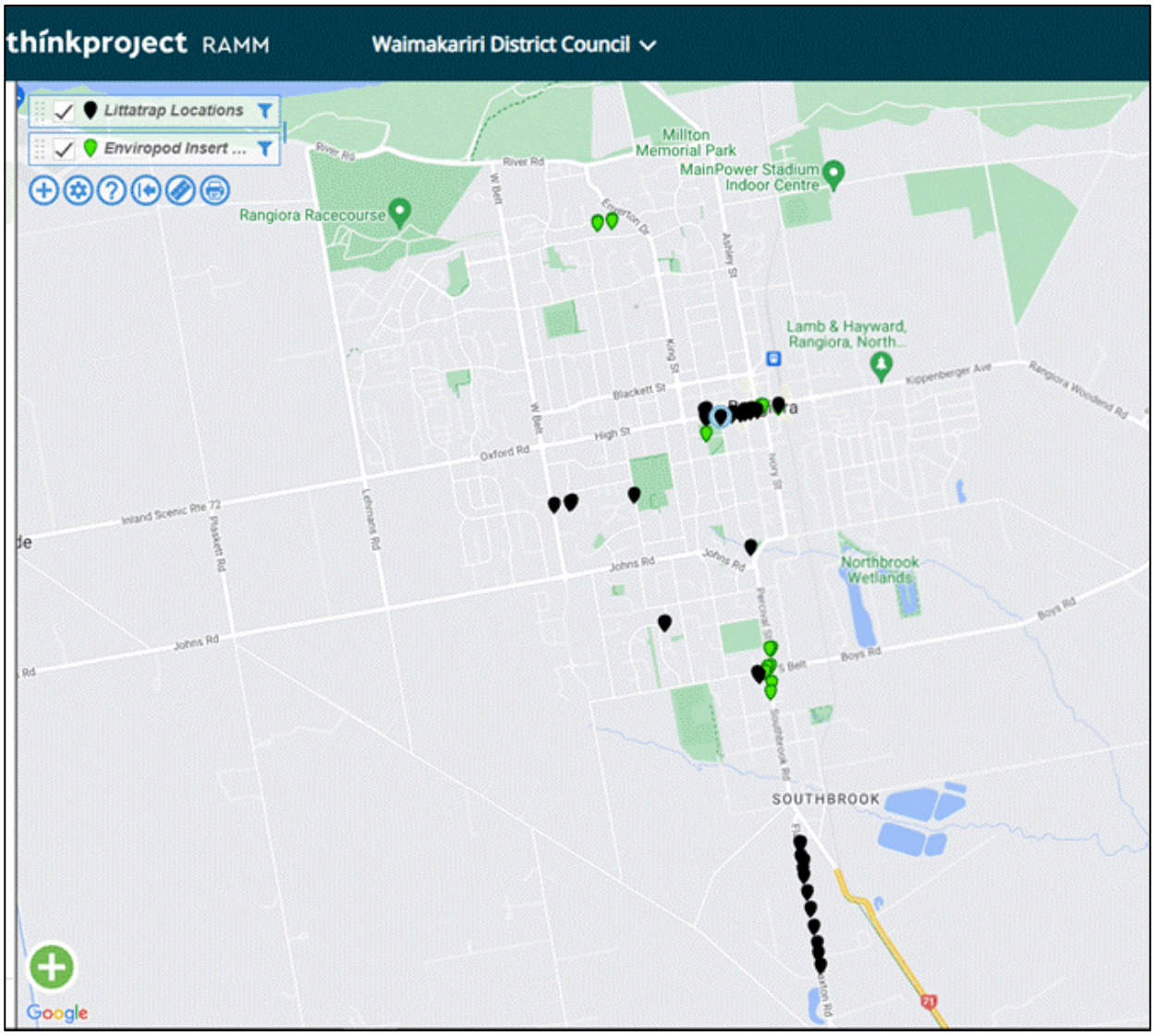

Figure 11: Location of catchpit filters within Rangiora (Littatraps and Enviropods)

Table 13: Record of proprietary devices in Rangiora urban area.

Asset Number	Asset	Asset Description
SW026426	Cartridge Stormwater Filter System	95 Townsend Rd Rangiora
SW011403	Gross Pollutant Trap (GPT)	Stormwater Chamber acting as GPT -366 Flaxton Rd
SW014797	Arlington Park Soakpit System	Chamber 1 for Arlington Park Soakpit System- Epsom, Drive Rangiora
SW006611	Arlington Park Soakpit System	Chamber 2 for Arlington Park Soakpit System- Epsom, Drive Rangiora

4. Issues

Issues analysis has been carried out to review the effect the existing stormwater discharge is having on the receiving environment. Some issues analysed for the Rangiora Interim SMP (2017, TRIM 171206132761) were found to not affect the receiving environment; namely negligible erosion and scour caused by discharges and effects on downstream private drinking water supplies.

4.1. Flooding and Network Capacity

The Rangiora urban stormwater network has a 20% Annual Exceedance Probability (AEP) level of service design standard (i.e. 1 in 5-year flood) that has generally been applied since 2000, however older parts of the network were often not designed to this level. In some cases, even if systems were designed to that level, as rainfall intensity projections have increased over time, they will not meet that level based on current rainfall forecasts. A specific capacity of 2% AEP (i.e. a 1 in 50-year flood) is provided for with secondary overland flow paths. The commercial town centre has a 10% AEP level of service design standard (i.e. a 1 in 10-year flood).

Rangiora flooding issues or challenges identified include:

- Excess rural flows entering the town, particularly during a period of high groundwater causing rural flows to overwhelm the urban network (such as during the June 2014 flood event)
- Poorly drained areas, particularly in the south-east of Rangiora, where this can lead to increased run-off for the network and poor soakage as there is little depth to groundwater.
- The southern part of Rangiora (including the Southbrook Industrial area), a strip to the west of the railway line, and small localised low points have been identified as having a significant flood risk in WDC natural hazard modelling for a 1 in 200-year flood event (localised and Ashley River Breakout models).
- Limited and undersized pipe network in older parts of the town where infrastructure was designed and constructed prior to adoption of the current design standards. This causes stormwater to flow over ground when the pipe system is full or not available.
- In general, increasing impervious areas, combined with more frequent heavy rainfall events.

The most recent run of the Rangiora Urban Stormwater Model (RUSM) in May 2024 (TRIM 240508073139) confirmed that water quantity issues where flooding of private property (i.e. outside of secondary flow paths) in a 1 in 50-year event are likely to occur are:

- Blackett Street / Central Business District North
- White Street / Kingsbury Avenue
- Blackett St West and White St North
- Watson Place
- Douglas Street
- West Belt Between Blackett Street and High Street

It is noted that this work was not to the level of detail to determine whether dwellings are at risk; only that private property is subject to flooding in these areas. Further detail would be required, including consideration of dwelling locations, and floor level, to understand this risk in more detail.

Climate Change has been factored into the RUSM using the 100-year Recommended Concentration Pathway scenario (RCP) 8.5 as adopted by WDC for flood modelling. This means that the model results discussed are conservative for current weather patterns, as they are based on rainfall intensities that are expected to occur approximately 100 years from now, with the impacts from climate change factored in.

Environment Canterbury is responsible for providing Ashley Rakahuri River flood protection works that protect the town from flooding events. The Ashley Rakahuri River is the only significant watercourse posing a direct threat to Rangiora township; however, this flood risk is out of scope of the Rangiora stormwater network discharge consent.

4.2. Water Quality

Stormwater runoff picks up contaminants from hard surfaces such as roads, carparks, industrial yards and certain building materials. Polluted stormwater that is discharged to the environment can put a strain on the health of our waterways. This can affect the aquatic ecosystem and how the community views and interacts with the waterways. Water quality guideline values (Appendix A) have been primarily set where an estimated 90% of aquatic species are protected, with increasing negative impacts on native species when these guidelines are exceeded.

The Rangiora Stormwater Monitoring Programme has 22 visual discharge inspection outlets in the stormwater network (6 of which are also sampled for Total Suspended Sediment). Thirteen sites are located in the receiving environment and are sampled for urban contaminants during first flush conditions, and there are 6 sites within waterways for stream health sampling during dry weather.

The following stormwater contaminant-related issues have been identified in Rangiora through the stormwater monitoring programme annual reports for CRC184601 (TRIM 230919146639 and 220512075696) and baseline sampling from 2014-2017:

- Guideline values in 2021-2023 were routinely exceeded for Dissolved Copper, Dissolved Zinc, Dissolved Reactive Phosphorus (DRP) and *E. coli*. during wet weather events in waterways that were sampled. Guideline values were not exceeded for Total Ammoniacal Nitrogen (TAN).

- Visual monitoring of stormwater outlets from 2021-23 generally does not raise any issues for hydrocarbons or smell. Sediment was occasionally noted to be visible during discharge outlets inspections. The discharge from Pond C (SMA on the corner of Flaxton and Fernside Road) into the No. 7 Drain however has once measured above the guideline value for TSS and is frequently above the *E. coli* guideline value.

- From 2021-2023 during dry weather “Stream Health” sampling in selected waterways, guideline values were not exceeded for TSS, pH, temperature, TAN, DRP, and dissolved oxygen. The exception was a low value at the North Brook at Lilybrook Park, that is thought to be due to low oxygen in groundwater inflows. Guideline values for Dissolved Inorganic Nitrogen (DIN) and *E. coli* were occasionally not met in the North Brook, Middle Brook, South Brook, or the No. 7 Drain.

Recommendations to address contaminants and actions for waterways have been included in the annual Rangiora Stormwater Monitoring Reports of 2021-22 and 2022-23 and incorporated where appropriate into this SMP. It is believed that some exceedances of *E. coli*, DRP and DIN, particularly for the South Brook and No. 7 Drain could be due to rural inputs, beyond the scope of the Consent CRC184601.

Macroinvertebrates are an important and commonly used measure of stream health. Invertebrate communities are in a degraded state throughout the spring-fed rivers in the Ashley Rakahuri and Cam River Ruataniwha catchments. Deposited fine sediment cover is high in all spring-fed streams in both catchments and is likely a key driver of poor ecosystem health and high macrophyte cover in these systems. In terms of recreational value, spring-fed rivers in the Ashley and Cam River / Ruataniwha catchments are unsuitable for primary contact recreation due to significant faecal contamination (Greer and Meredith 2017). Fine sediment and nutrients, such as nitrate and phosphorus in particular, are contaminants sourced from rural inputs as

well as Rangiora township urban sources, which could be from wastewater overflows or residential use of garden fertiliser for example.

In a stream health ecological and sediment contaminant investigation in December 2023, as part of the Rangiora Stormwater Monitoring Programme, Boffa Miskell Ltd (2024) found;

- Two sites of six monitored sites, (in the South Brook at Marsh Road, and the Middle Brook at Hegan Reserve) met the Quantitative Macroinvertebrate Community Index (QMCI) NPS-FM National Bottom-Line value, all other sites did not meet the National Bottom-Line. Average Score Per Metric (ASPM) scores were variable between the six sites, but only one (South Brook at Marsh Road), met the NPS-FM National Bottom-Line of ASPM > 0.3. All other sites did not meet the National Bottom-Line value.
- Fine sediment cover was high (exceeding the CLWRP guidelines) at all six sites surveys across key sub-catchments. Fine sediment cover means coarser substrates, like cobbles, are less available to aquatic biota (for grazing, egg laying, using as refugia), highlighting the need to stabilise eroding banks, using best practice stormwater treatment, and minimising intensive land-use change in the catchment to reduce inputs of fine sediments. Fine sediment depth and cover is particularly extensive in the South South Brook catchment.
- Guidelines for in-stream sediment concentrations of copper, total polycyclic aromatic hydrocarbons (PAH), cadmium, chromium, BTEX, and nickel were met at all eight sites that were tested. Stream sediment contaminants exceed guideline values in the South South Brook at Lineside Road (for zinc, arsenic and mercury), Middle Brook at Gefkins Road (for zinc), and North Brook at Ward Park (for zinc and lead).
- Total macrophyte cover was above (i.e. did not meet) guidelines at two of the six monitoring sites- both were sites in the North Brook.

Interim results from a WDC SMA sediment sampling investigation carried out from December 2023- May 2024 (unpublished data) found levels of:

- Total recoverable zinc were above guideline values in eight SMAs (of 25 SMAs sampled);
- Total petroleum hydrocarbons were above guideline values in nine SMAs (of 25 SMAs sampled); and
- Total recoverable copper, arsenic, mercury, lead, and chromium were above guideline values in one or two SMAs each of the 25 SMAs sampled. These were primarily SMAs with industrial/commercial land use, namely Pond C on the corner of Flaxton and Fernside Road (No. 7 Drain catchment), Pond A on Lineside Road (South South Brook sub-catchment) and Io Io Whenua Northbrook Ponds (North Brook sub-catchment).

A programme of further sampling investigations and recommendations for remedial action, such as soil disposal where required will be carried out, commencing in 2024-25.

4.2.1. Industrial Sites, Contaminated Sites and Hazardous Substances

Some industrial activities are a higher risk source of contaminants to stormwater such a heavy metals and hydrocarbons. Environment Canterbury maintains a Hazardous Activities and Industries List (HAIL), which identifies these types of land uses.

Many of the potentially contaminated sites located within the Rangiora Urban Limits have been identified in the Environment Canterbury Listed Land Use Register (LLUR) for areas where potentially hazardous activities are or have occurred previously. Types of LLUR sites in Rangiora are mainly industrial contaminant discharges

due to current land use or contaminated stormwater discharges due to past land use, and human effluent discharges (i.e. from private septic tanks).

4.3. Impacts on Wāhi Tapu, Wāhi Taonga, and Mahinga Kai

Stormwater infrastructure can create scour of downstream wāhi tapu or wāhi taonga sites such as urupā, modify habitat (i.e. to increase conveyance) with negative impacts on aquatic life, and also present fish passage barriers to migration upstream and/or downstream for migratory species. Stormwater infrastructure can also create restricted areas for access, so that mahinga kai practices are no longer able to be carried out.

Stormwater contaminant discharges can impact the survival of species so that they are less abundant and reduce the safety and quality of mahinga kai for consumption so that traditional collection areas are no longer available. Bioaccumulation of a contaminant could lead to restrictions in recommended consumption amounts.

4.4. Exacerbators of Issues

4.4.1. Urban Development and Construction

Urban development of new greenfield subdivisions or brownfield redevelopment, as well as during the construction phase (i.e. house-building) can lead to exacerbated contaminant release, such as sediment from poor erosion and sediment control. When constructed, these developments often result in a net increase in impervious surface area of a catchment, with higher peak flows during rain events to be managed by the stormwater infrastructure.

4.4.2. Poor Maintenance

Delayed or incorrect stormwater infrastructure maintenance can lead to blockages and flooding, erosion from higher peak flows and additional contaminant discharges, for example if filters of proprietary devices are not regularly serviced. Maintenance and minor works in the stormwater network can exacerbate issues if best practice is not followed, such as causing sediment disturbance and resuspension.

4.4.3. Climate Change

Climate change is an exacerbator of stormwater issues. Possible climate change effects predicted in the Waimakariri District that would likely affect Rangiora township include the following, as defined in the Zone Implementation Programme Addendum (ZIPA, Environment Canterbury 2018):

- Increase in the frequency, duration and severity of droughts causing increased stress on water resources and impacts on stream health.
- An increase in evapotranspiration with associated increase in groundwater abstraction, depending on rainfall.
- Further flow decreases in the Ashley Rakahuri River, increasing length and duration of dry reaches in the river and causing reduced flows in the spring-fed streams, such as has been noted in the North Brook and Cam River headwaters, (spring-fed waterways sustained by groundwater flow from the river).
- The potential for less winter rainfall with more rainfall in summer and autumn.

Higher intensity rainfall is also predicted, resulting in surpassing the capacity of the stormwater network and an increased risk of pluvial flooding. This type of high rainfall is associated with an increasing number and duration of atmospheric rivers.

As Rangiora is generally located at an elevation of approximately 20 to 40 metres above sea level it will not be affected by sea level rise and its streams will continue to be unaffected by tidal influence.

In terms of planning for the impacts of climate change, the Council requires that new infrastructure be built taking into account projections for increased rainfall intensities, in accordance with the RCP 8.5 scenario – a conservative (worst case) climate change scenarios involving increasing rainfall intensity and duration. This ensures that new infrastructure that is built is sized to take into account the impacts of climate change.

5. Mana Whenua Values

Ngāi Tahu are tangata whenua of the Canterbury region and hold ancestral and contemporary relationships with Canterbury. The contemporary structure of Ngāi Tahu is set down through the Te Rūnanga o Ngāi Tahu Act 1996 (TRoNT Act). The TRoNT Act and Ngāi Tahu Claims Settlement Act (NTCSA) 1998 sets the requirements for recognition of tāngata whenua in Canterbury. The TRoNT Act (1996) and the NTCSA (1998) give recognition to the status of Papatipu Rūnanga as kaitiaki and mana whenua of the natural resources within their takiwā (boundaries). Each Papatipu Rūnanga has their own respective takiwā, and each is responsible for protecting the tribal interests in their respective takiwā, not only on their own behalf of their own hapū, but again on behalf of the entire tribe (Mahaanui Kurataiao Ltd, 2024). Ngāi Tūāhuriri Rūnanga hold mana whenua over Rangiora, as it is within their takiwā.

Natural resources – water (waterways, waipuna (springs), groundwater, wetlands); mahinga kai; indigenous flora and fauna; cultural landscapes and land - are taonga to mana whenua and they have concerns for activities potentially adversely affecting these taonga. These taonga are integral to the cultural identity of ngā rūnanga mana whenua and they have a kaitiaki responsibility to protect them. The policies for protection of taonga that are of high cultural significance to ngā rūnanga mana whenua are articulated in the Mahaanui IMP 2013 (Mahaanui Kurataiao Ltd, 2024).

The Mahaanui IMP details the cultural importance of the Ruataniwha and Cust River, which are part of the Waimakariri River catchment, and the Rakahuri (Ashley River) to tāngata whenua. The Waimakariri catchment was recognised for its cultural significance in the Ngāi Tahu Claims Settlement Act (1998). Objectives of the Mahaanui IMP (Jolly *et al.* 2013) include;

- Water quality and flows in the Waimakariri and its tributaries are improved to enable whānau and the wider community to have places they can go to swim and fish.
- The mauri and mahinga kai values of the Waimakariri and its tributaries and associated springs, wetlands and lagoons are protected and restored; mō tātou, ā, mō kā uri ā muri ake nei (for us and our children after us).

The Rakahuri (Ashley River), Waimakariri and Ruataniwha (Cam River) have continued to sustain Ngāi Tahu even after the land purchases in Canterbury (i.e. Kemps's Deed in 1948 and subsequent purchases), therefore there are strong mahinga kai associations with these waterways for Ngāi Tahu (IMP, 2013).

The position of Ngāi Tūāhuriri Rūnanga regarding stormwater management in Rangiora (Mahaanui Kurataiao Ltd, 2024) is that it *'neither supports, nor opposes, the Rangiora Stormwater Management Plan. Ngāi Tahu have traditionally strongly opposed the use of global consents for stormwater discharge. Stormwater run off from urban, industrial and rural environments can have significant effects on water quality and waterway health. Improving stormwater management requires on site, land-based solutions to stormwater disposal, alongside initiatives to reduce the presence of sediments and contaminants in stormwater, and reducing the volume of stormwater requiring treatment. Tāngata whenua have always supported discharge to land as an*

alternative to discharge to water, given the natural ability of Papatūānuku to cleanse and filter contaminants from waste. However, support for discharge to land is provisional on appropriate management of the activity. Over-saturation and over-burdening of soils with stormwater discharges compromises the mauri of the land and can result in run off or seepage into groundwater and waterways in the area. Low impact development and low impact urban design are fundamental features of sustainable stormwater management.

The discharge of contaminants such as wastewater, stormwater or sediment to water, or to land where they may enter water, is culturally unacceptable. The effects of these discharge activities on tāngata whenua values may be significant despite the activity having only been assessed as having only minor ecological effects. It is critical that local authorities recognise that Ngāi Tahu concerns with discharges of contaminants to water extend beyond the existence of silent files or areas of cultural significance. Rather, these concerns are based on protecting the mauri of waterways, and the relationship of Ngāi Tahu to them. Clear limits are required for reducing and managing contaminants at the source, both in rural and urban environments, and for controlling those land use activities which pose the highest risk to water quality. For Ngāi Tahu, water quality is a measure of how well we are doing regarding land and water management and hāpua, coastal lakes and river mouth environments are the indicators. At the bottom of the catchment, the health of these environments reflects our progress in the wider catchment.'

The relevant policy sections of the Mahaanui IMP (2013) for Rangiora stormwater management were identified in the Cultural Impact Assessment for consent CRC184601 (Hullen 2017, TRIM 230824131017) as:

- Section 5.3 WAI MĀORI CHANGING THE WAY WATER IS VALUED
- Section 5.4 PAPATŪĀNUKU EARTHWORKS
- Section 5.5 TĀNE MAHUTA MAHINGA KAI
- Section 5.8 NGĀ TŪTOHU WHENUA RECOGNISING CULTURAL LANDSCAPES

The Cultural Impact Assessment for consent CRC184601 (2017, TRIM 230824131017) by Joseph Hullen for Mahaanui Kurataiao Ltd detailed mana whenua values that apply to stormwater management.

Mana Whenua Values for Rangiora Stormwater Management (Hullen, 2017 for MKL Ltd)

Kaitiakitanga

Kaitiakitanga is an integral aspect of Rangatiratanga and entails an active exercise of authority in a manner beneficial to the resource in question. The rights and responsibilities of kaitiaki derive from mana whenua, and this has been reflected in the definition of kaitiakitanga in the Resource Management Act 1991 where it is made clear that only tāngata whenua of an area are able to exercise kaitiakitanga. Traditionally speaking kaitiaki were spiritual guardians associated with particular resources and locations. Their essential function was to indicate the well being of their environment thereby warn local human guardians accordingly. Those that claim mana whenua have a responsibility to maintain natural and physical resources within their rohe and as such are considered kaitiaki. How to recognise and provide for Kaitiakitanga? Appropriate participation by tāngata whenua whether that be on any Board, Trust or Committee set up for the purpose of managing the natural or physical resources, and/or through "on the ground" maintenance and monitoring of those sites and resources within the project area affected by the activities presently under application.

Outcomes sought:

a.) Adoption of a Planting Plan that utilises plant species that would historically occur within the project area and that addresses:

i) Enhancement of Biodiversity;

ii) Protection of Cultural and Historic Values; and

iii) Protection of in stream values.

b.) Where necessary the engagement of members of Ngāi Tūāhuriri who are trained in the recognition of archaeological sites to monitor earthworks and assist the lead archaeologist.

c.) Consultation with Te Ngāi Tūāhuriri Rūnanga regarding the display and or storage of prehistoric artefacts located within the proposed Rangiora Stormwater Consent.

Mauri

In Māori thought all things are believed to have a mauri, or vital essence. It is this mauri which provides all living things and every place with a unique personality. The key to the traditional Māori view towards environmental issues is the importance of not altering a mauri to the extent that it is no longer recognisable.

How to recognise and provide for Mauri?

Appropriate input or involvement - whether in person or via plans and policies- in the management, maintenance and monitoring of culturally significant sites or resources affected by the activities presently under application. Outcomes sought:

a.) Adoption of a multi faceted approach to Water Sensitive Urban Design treatment methods.

Manaakitanga

A term to express love and the concepts of hospitality and mutual obligation. Manaakitanga defines the obligation of Tāngata Whenua towards their Manuhiri (guests) and, when exercised appropriately, enhances the mana of the hosts. Traditional expressions of manaakitanga require an ability to provide a selection of the local delicacies. There is an intimate and inextricably linked relationship between the values of manaakitanga, kaitiakitanga and Rangatiratanga, and without one it is very difficult to exercise another. The relative health and availability of mahinga kai is one of the principal means by which manaakitanga can be expressed. How to recognise and provide for Manaakitanga? Recognition of the value of mahinga kai within any relevant management plans or regimes established to manage the natural resources within or directly affected by the proposed project area. Provide for the ongoing sustainability of mahinga kai through the recognition of mauri.

Mahinga Kai

Mahinga kai are central to the traditional way of life for Ngāi Tahu. Highly organised seasonal timetables were followed to best utilise the resources available. The term mahinga kai, therefore, refers to the whole resource chain, from the mountain tops to the ocean floor. It encompasses social and education elements as well as the process of food gathering, including the way it is gathered, the place it is gathered from, and the actual resource itself. How to recognise and provide for Mahinga Kai? Appropriate input or involvement - whether in person or via plans and policies- in the management, maintenance and monitoring of culturally significant sites or resources affected by the activities presently under application.

Outcomes sought:

a.) Adoption of a Restoration Re-vegetation Planting Plan that utilises plant species that would historically occur within the project area and that addresses:

i) Enhancement of Biodiversity.

ii) Protection of Cultural and Historic Values.

iii) Protection of in stream values.

b.) Adoption of a multi faceted approach to Water Sensitive Urban Design treatment methods.

Wāhi Tapu/Wāhi Taonga and Urupā

In modern terms - in the Ngāi Tahu rohe - the term wāhi tapu refers to places held in reverence according to local tribal custom and history. Some wāhi tapu are important to the Iwi while others are important to individual hapu or whānau. Of all wāhi tapu, urupa (burial sites) are considered to be the most significant.

How to recognise and provide for Wāhi Tapu/Wāhi Taonga and Urupā?

"It is important for Ngāi Tahu that wāhi tapu sites are protected from inappropriate activity; and there is continued access to such sites for Ngāi Tahu. Outcomes sought:

i.) Adoption of a Wāhi Taonga/Wāhi Tapu and Urupā Protocol.

6. Toolbox of Options

This section describes the current toolbox of options available to manage and mitigate the issues identified in Section 4. Tools available include regulatory and planning tools, site design and source control tools and stormwater treatment systems.

6.1. Regulatory and Planning Tools

Regulations are able to require best practice to be employed and restrict activities that have negative outcomes. Planning tools are useful for assessing and managing risk, such Pollution Prevention Plans or flood modelling. A number of such tools are currently used for Rangiora.

6.1.1. Network Stormwater Modelling

The Rangiora Urban Stormwater Model (RUSM) is the planning tool which determines if the Council is meeting water quantity outcomes of the network consent CRC184601, condition 8 a. The most recent run of the RUSM with a system performance analysis was in May 2024 (TRIM 240508073139). Prior to that, this model was last run in 2013 with a system performance analysis (TRIM 131112104705). The model is planned to be re-run at least every 5 years from 2024 to examine if stormwater network discharges have increased in volume, which could cause flooding of downstream dwellings or damage downstream infrastructure in a two percent AEP rainfall event. The model is also used to make recommendations to plan upgrades, where deficiencies are identified.

Climate Change has been factored into the RUSM using the Recommended Concentration Pathway scenario (RCP) 8.5 as adopted by WDC for flood modelling. This means conservative (worst case) climate change scenarios involving increasing rainfall intensity and duration are factored into model outputs.

6.1.2. Stormwater, Drainage and Watercourse Protection Bylaw (2024)

The Stormwater, Drainage and Watercourse Protection Bylaw (2024) is the legal mechanism enabling the Council to require and enforce actions of third parties discharging stormwater into the reticulated networks. The Bylaw provides the basis for the Council to control the quality and quantity of all discharges from private properties into its reticulated stormwater networks. It enables the Council to manage discharges from high and medium risk sites and construction activities and provides for Council approvals of pollution prevention and erosion and sediment control plans. High risk sites are defined in schedule 1A of the Bylaw; as sites where an activity is occurring that is described in the current version of the Canterbury Land and Water Regional Plan Schedule 3 "*Hazardous Industries and Activities List"* i.e. sites involving the use, storage or disposal of hazardous substances. A list of activities and sites that are considered medium risk are included in schedule 1B of the Bylaw. In general, heavy industrial sites, workshops and manufacturing and or processing plants are considered medium risk activities.

The Bylaw includes provision for Council to assume full control of all discharges from high risk sites into the reticulated networks from 1 January 2025. The review will align the Bylaw with Policy 4.16A of the CLWRP, which requires the Council to manage the quality of all discharges into and from the reticulated networks from 1 January 2025.

6.1.3. Pollution Prevention Plans

Pollution Prevention Plans are required by WDC for medium risk sites discharging into the reticulated stormwater networks. These plans are required to identify any potential contamination generating areas and or activities, provide the detail of how contaminants generated from activities on these sites are managed so that they do not discharge into the stormwater systems.

High risk activities are subject to additional requirements such as an approval of a Site-Specific Stormwater Management Plan (SSMP) as well as a Pollution Prevention Plan. The SSMP will cover details such as how hazardous substances on site are stored and managed and emergency storage and bunding for spill containment on site. In addition to this, high risk sites will require to obtain written discharge approval from the Council. The approval and installation of an on-site stormwater treatment system may also be required. These updated requirements tailor the approval process and documentation for high-risk site discharges to the degree of risk these pose to stormwater quality. The Pollution Prevention Plan requirements for medium-risk sites are relatively less stringent. A link within the Bylaw is provided to the Council website where best practice information is available to support customers with navigating these new requirements and approval processes (which is required under the updated Bylaw from 1 January 2025).

There is a template available for developing a Pollution Prevention Plan (TRIM 220401049637).

6.1.4. Construction Phase Discharge Approvals

The Council can directly authorise construction phase discharges into its reticulated networks through its function as the reticulated network operator, under Rule 5.93A of the CLWRP. This means, with a network discharge consent in place, construction phase discharges into the reticulated networks do not require a separate Environment Canterbury consent if WDC approval is granted and its conditions complied with. The approval document includes an Erosion and Sediment Control Plan requirement together with other conditions to manage risks assessed specifically for each site.

A template titled "*Template Approvals Document Construction Phase Stormwater"* can be viewed at TRIM 221004171610.

6.1.5. ECoP and Development Consents

The Council authorises new subdivisions and site redevelopments as defined in its District Plan through requiring private property owners to obtain subdivision and / or land use consents from the Council to manage the effects of the activity. These consents include managing stormwater discharges into the reticulated networks.

The ECoP sets out stormwater system design standards that private property owners need to meet, when seeking to connect into or change a connection into the Council reticulated network. The ECoP standards will be applied and approved by the Council through the conditions of a resource consent, which also must give effect to conditions of the Rangiora network discharge consent CRC184601.

6.1.6. Building Sites Erosion and Sediment Control Inspections

The Council is working on a new process with staff who regularly visit development areas to include reporting of erosion and sediment control issues to 3 Waters staff on sites via the Snap Send Solve app. The legal basis for the Council staff to investigate and remedy any breach of TSS levels in stormwater discharges is established through the Stormwater Drainage and Watercourse Protection Bylaw (2024) which allows the Council to require all necessary action to manage discharges from private sites into the stormwater networks.

Following initial investigations a process is being set up to advise and educate the property owner / site manager on necessary improvements to erosion and sediment control methods on building sites to protect the downstream stormwater system and receiving environment. Education resources will be developed and disseminated by 3 Waters staff.

This approach may need to be followed up through Council issue of warnings and statutory notices to private property owners under the Bylaw.

6.1.7. MOU for High Risk Sites with Environment Canterbury / Exclusion of Sites

The Council may encounter ongoing non-cooperation of private property owners / site managers discharging unauthorised contaminants into the stormwater networks including non-compliance with Pollution Prevention Plans, Site-specific Stormwater Management Plans, Erosion and Sediment Control Plans or from discharges into the networks from contaminated sites. To address this situation a Memorandum of Understanding (MOU) has been developed with Environment Canterbury which sets out the process to exclude non-complying discharges from authorisation under CRC184601.

If excluded a private property site discharge would require a separate consent from Environment Canterbury. The MOU clarifies responsibilities of the Council and Environment Canterbury and determines circumstances when an exclusion can be sought.

The document is titled *"Memorandum of Understanding for Process for Exclusion from Stormwater Discharge Consent CRC184601 in Waimakariri District*" (see TRIM 230925149963).

A companion document, titled "*Assessment Criteria for HAIL Sites from 1 January 2025"* (see TRIM 230412051135) sets out the specific criteria for the Council to follow when determining the level of risk of the construction phase discharge of the medium or high risk site (HAIL site) discharge. This provides guidance about how the Council will manage the effects of the discharge into its network or alternatively when it should refer the discharge to Environment Canterbury for authorisation if there is deemed to be an unacceptable risk.

6.2. Site Design and Source Control Tools

A key approach to managing the impact of stormwater and effect of contaminants downstream is through prevention, before considering mitigation through treatment or regulation. Designers and asset managers should consider non-structural approaches to minimise the impacts of development and re-development on stormwater. Water sensitive design (WSD) concepts for site design of new developments in Rangiora should be encouraged. Some sub-catchments, particularly where treatment options are limited due to limited space and high groundwater levels (such as the Middle Brook, South Brook, No.7 Drain sub-catchments and parts of the North Brook sub-catchment) source control options are likely a preferable option for water quality improvements. Table 7 of the GD01 document by Auckland Council (Cunningham *et al*. 2017) provides a full list of site design and source control measures that are summarised below.

6.2.1. Site Design

Site design measures can include:

- Preserve and use existing site features during development (re-development) such as watercourses, springheads, depressions, floodplains, wetlands, vegetation and permeable areas that contribute to the current balance in the hydrological cycle.

- Reduce impervious surfaces with site design (such as to minimise driveways), and to provide pervious channels and surfaces and infiltration (e.g. grass swales).

- Configure lots to cluster housing so that developments are more pervious overall, and also with opportunities for common recreational areas, and existing hydrological channels can be retained.

- Minimise site disturbance to reduce compaction of soils from earthworks machinery through deliberate site design. Retain existing vegetation for its role in maximising infiltration and promoting evapotranspiration by planning incorporating natural site features. Keep topsoil and leaf litter to capture rainfall and slowly infiltrate it into the ground.

6.2.2. Source Control

Avoiding the use of a contaminant is a preferred option. If a contaminant is required for an activity, procedures should seek to control the release of contaminants or remove them before they come into contact with stormwater. Businesses should carry out self-audits to avoid and minimise any pollutants through an action plan, such as a PPP, Environmental Management Plan or Emergency Spill Response Plan.

Contaminant sources can be identified and physical works carried out to prevent contact with stormwater, such as bunding of storage areas for hazardous substances.

Management practices such as reviewing street sweeping procedures, refuelling, chemical handling, staff training, community education initiatives can minimise transfer of contaminants to stormwater.

National regulation is appropriate to reduce contaminants at source where local Bylaws would be ineffective, such as regulation of copper content in car brakes, and potentially restriction of building materials such as zinc and copper from roofing and cladding materials through the Building Code.

6.3. Stormwater Treatment Systems

This section outlines the various stormwater treatment methods and devices that are primarily used within Rangiora, types of contaminants that they target, and the selection process and considerations the Council will use when selecting a treatment system for a project.

6.3.1. Treatment Selection

This plan prioritises WSDs for treatment, also known as Low Impact Designs or Water Sensitive Urban Designs for stormwater treatment. WSDs are the preferred approach because they can offer multiple benefits beyond just treating and managing stormwater. They can enhance the landscape, provide ecological benefits, and align with community goals. Additionally, WSDs often offer broader advantages compared to proprietary treatment systems.

However, WSDs may not always be feasible due to limitations like space constraints, project budget, or specific site characteristics. In such cases, this plan will consider alternative treatment methods such as GPTs and filter media systems (such as the Stormfilter or Upflo Filter). These proprietary devices (and equivalents) will be evaluated when a WSD is not the most viable option due to project constraints.

The Christchurch City WWDG (2012) notes that in determining what is an appropriate stormwater treatment system for any catchment, it should be understood that whilst sediment is the primary contaminant during the early stages of any urban development, it becomes a lesser concern as urban developments mature. Chemical contaminants, however, do become more important as the intensity of urban contaminant sources (buildings, roads, vehicles, etc) increase. These chemical contaminants are either in dissolved form or bound to particulate matter, with bound contaminant concentrations being higher for fine particles than coarse particles (Christchurch City Council, 2012). Adsorption of contaminants onto the surface of suspended particles, sediment, organic matter, and vegetation, is a principal mechanism for removal of dissolved contaminants and contaminants bound to fine particulate matter (Leersnyder, H. 1993, as cited in Christchurch City Council, 2012).

Stormwater treatment system selection requires a site-specific approach. Each system should be sized and chosen based on the specific contaminants it needs to target for effective removal. Site constraints, characteristics, and potential downstream effects either during construction or post construction of the system should also be taken into account when selecting treatment systems. Additionally, the selection process should also consider any additional benefits that can be achieved such as flood control, erosion prevention, and habitat creation. The chosen system should ideally contribute to achieving these additional objectives where possible.

Even with BMPs in place, proposals should always place significant emphasis on controlling contaminants at their source and by protecting unmodified tracts of land (Christchurch City Council, 2012). Source control options are previously discussed in section 6.2.2 of the SMP.

WDC reference the following nationally accepted design guidelines and methodology when selecting a treatment system for a specific project:

- Waterways and Wetland Drainage Guide (WWDG) by Christchurch City Council (specifically this is selection steps are outlined in *Section 6.2 The Treatment System Selection Process* of the guide)
- Technical Publication No 10, Design Guideline Manual: Stormwater treatment devices by Auckland Regional Council, updated by Auckland Council to publication GD01 (Cunningham *et al.* 2017).

Design and implementation of stormwater treatment systems is a complex issue that can only be adequately addressed by considering whole catchments and seeking input from an experienced multi-disciplinary team (Christchurch City Council, 2012). The Christchurch City Council WWDG also states that key to effective treatment systems will be dependent upon catchment characteristics, good environmental design, and long-term operation and maintenance of the system. The SMP will need to balance effectiveness with long-term operational efficiency. While achieving desired water quality outcomes is paramount, consideration must also be given to:

- Lifecycle costs should be evaluated, encompassing initial investment, regular maintenance requirements, and potential for replacement parts;
- Access - accessibility for ease of inspection and maintenance should also be weighed and are equally crucial to keep systems effective and efficient; and,
- Frequency of maintenance and inspection, and type and complexity of equipment needed for maintenance should also be considered.

6.3.2. Treatment Systems within Rangiora

The current Rangiora stormwater management system primarily relies on basins or ponds that are located downstream of a large catchment area (wetlands, dry ponds, wet ponds, or infiltration basins). These larger systems treat the bulk of the stormwater runoff before it is released into the receiving environment. Treatment is primarily targets coarser particles settling out in the basins, and contaminants that dissolved or attached to fine particular material become attached via adsorption to vegetation, sediment or organic matter.

In addition to these major systems, Rangiora also utilises smaller-scale treatment solutions in specific locations throughout the township. These smaller systems include small swales; shallow, vegetated channels that help filter pollutants and slow down runoff, and proprietary devices; manufactured treatment systems designed for specific purposes. Examples include GPTs which capture larger debris and sediment, vortex

separators which target total suspended solids, hydrocarbons and sediment, and filter media systems which remove finer particles in addition to dissolved metals and nutrients.

A brief overview of each of the commonly used devices are provided in the following sections below.

6.3.2.1. Infiltration Basins and Soakpits

An infiltration system captures stormwater runoff and allows runoff to soak or infiltrate back into ground over a period of time. These systems are suited for locations that have sufficient subsoil permeability. The primary function of an infiltration device is to meet retention requirements through the recharge of groundwater. Infiltration devices may form part of a suite, where full mitigation is not achievable due to soil infiltration rate limits (e.g. where retention volumes can be achieved but not detention volumes) (Auckland Council, 2017).

A wide variety of design options are available for infiltration devices which allow for multiple functions, in addition to groundwater recharge, to be added to the infiltration device (Cunningham *et al*, 2017). Within Rangiora the most common form of infiltration system used are infiltration basins and in some limited areas for smaller catchments, soakage pits (Rapid Infiltration Chambers). Infiltration basins are also often referred to as soil adsorption basins. They provide a storage area for stormwater from where it can pass at a pre-determined rate through a filter bed designed to remove contaminants (such as hydrocarbons, suspended sediment and attached metals) (Christchurch City Council, 2012). The filtered runoff then percolates down to the water table or via an under drainage system to surface water or a soakage chamber (Christchurch City Council, 2012).

6.3.2.2. Stormwater Ponds

Ponds can effectively remove coarse to fine particles. The definition and descriptions of stormwater ponds under section 6.3.2.2 of this SMP are excerpts from the Auckland Regional Council Stormwater Treatment Devices Operation and Maintenance document TR053 (Healy *et al.* 2010).

Stormwater ponds remove sediments and other contaminants from stormwater before discharging to a receiving open water body or piped stormwater system. They provide a flood control and water treatment function as well as creating an aesthetically pleasing habitat that can be used by birds and aquatic life. Ponds have a long-life span if maintained correctly and are one of the most common stormwater treatment tools worldwide. Two types of ponds are generally recognised; wet ponds and dry ponds and both are described below.

- **Wet Ponds**

  Wet ponds have a standing (permanent) pool of water and are permanent structures providing water quality treatment and flood protection. Wet ponds are usually “offline” i.e. not located within an existing watercourse.

- **Dry Ponds**

  Dry ponds do not have a permanent pool of water but operate similarly to a wet pond by providing some water quality treatment but mostly flood protection. Dry ponds typically do not provide as much water quality improvement as wet ponds.

Within Rangiora dry and wet ponds are commonly used methods of stormwater treatment; however, they require a considerable land area. In Rangiora, wet ponds are generally used for catchments in areas of high

groundwater levels. Dry ponds are primarily used in Rangiora for residential areas with sufficient depth to groundwater.

The components of a wet stormwater pond are identified in the figure below.

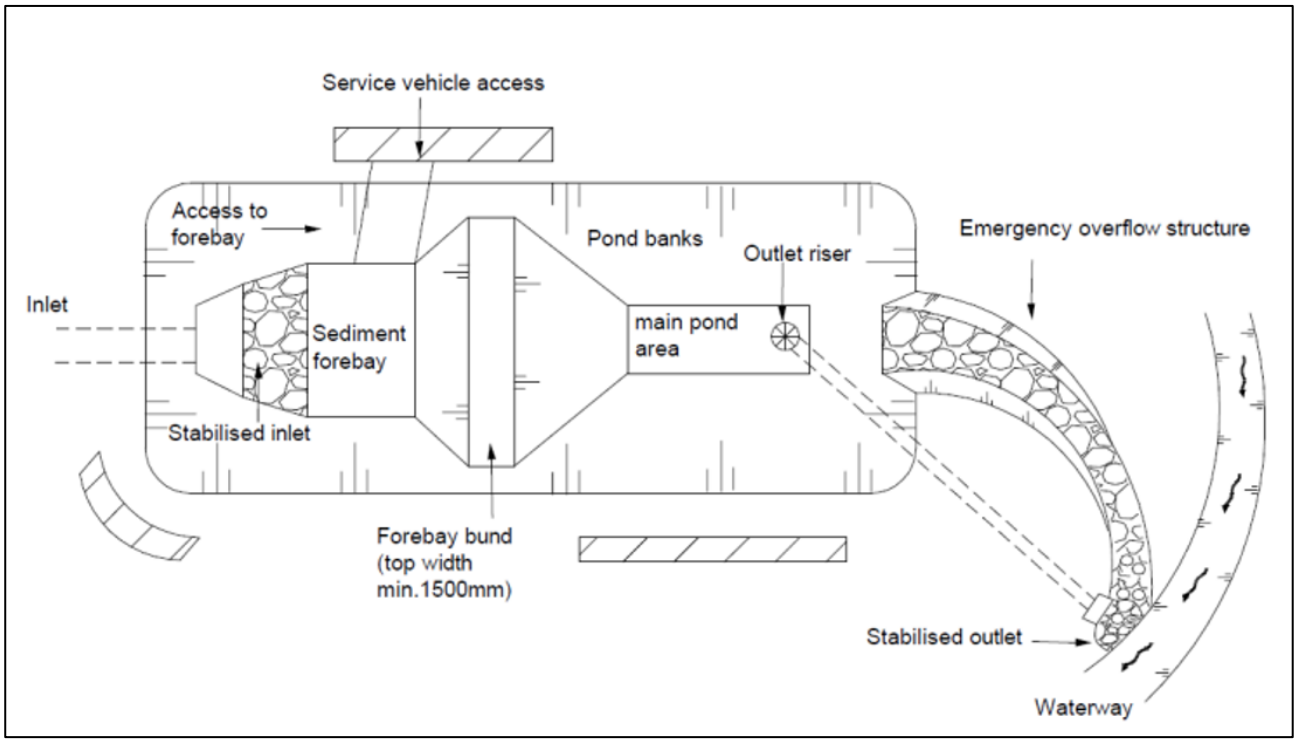

Figure 12: Typical components for a stormwater pond (Auckland Regional Council TR053, (Healy *et al*. 2010).

6.3.2.3. Wetlands

Wetlands have been used in some industrial areas of Rangiora. Pond C (corner of Flaxton and Fernside Road, No. 7 sub-catchment) and Pond A (Lineside Road, South South Brook sub-catchment) are examples of constructed wetlands in Rangiora. Constructed wetlands are a means of water treatment with robust effectiveness over a wide range of hydrological conditions, and potentially high landscape and ecological values (Christchurch City Council, 2012).

Auckland Regional Council TR053, (Healy *et al.* 2010) states that level of treatment and types of contaminants capable of being treated via wetlands; that constructed wetlands remove nitrogen, phosphates, sediments and heavy metals such as zinc and copper from stormwater run-off, as well as control the flow rates of stormwater. Pollutant removal is achieved by the settling out of sediment from the run-off and sticking to biofilms (layers of microorganisms that coat plants and other surfaces) in the water column. Additionally, dissolved nutrients are removed from stormwater by natural biological processes such as uptake by plant and microbial communities (see Figure 13).

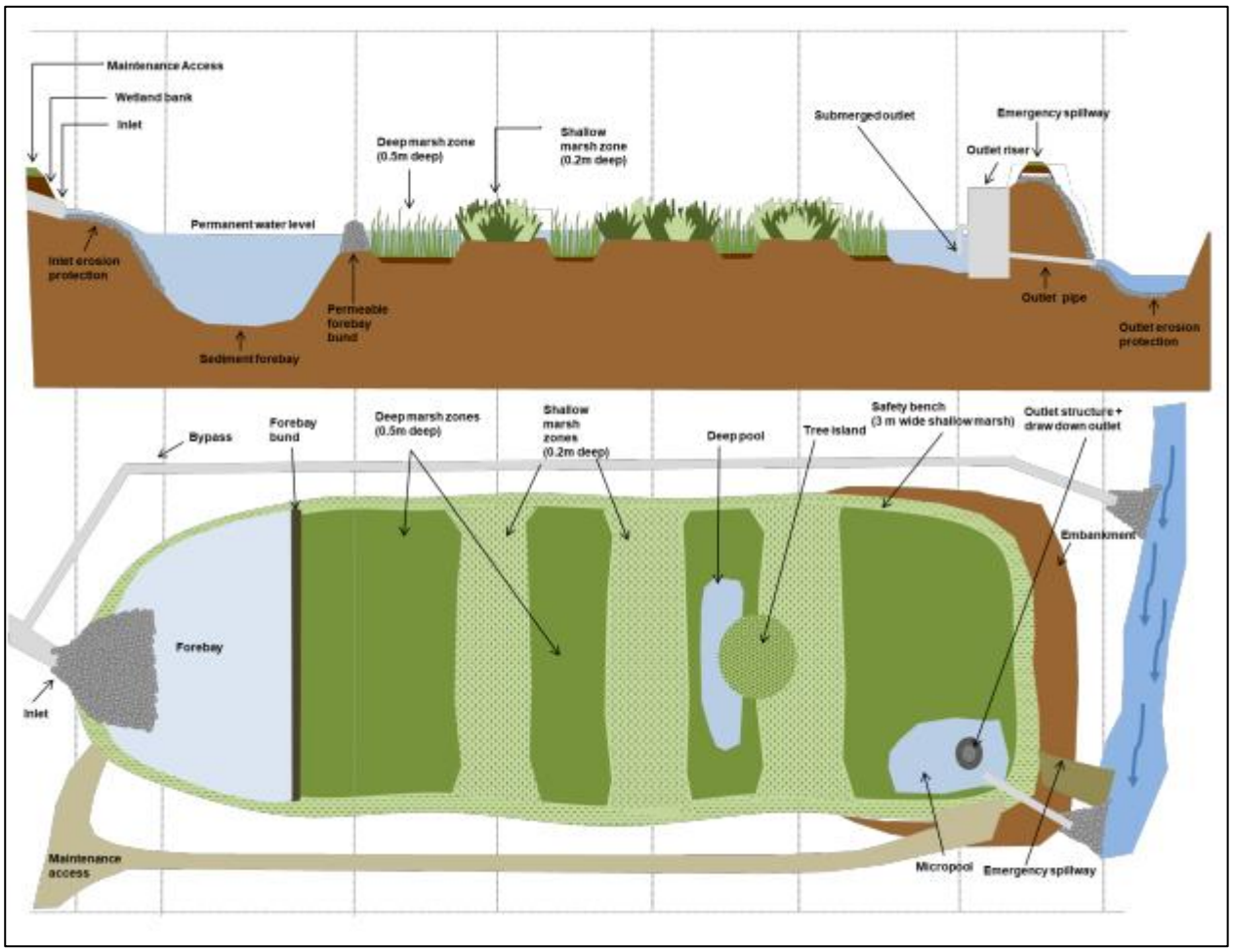

Figure 13: General components of a banded bathymetry wetland (Auckland Council, GD01, 2017)

The following Figure 14 is taken from the Christchurch Waterways, Wetlands and Drainage Guide, (2012) and shows an example treatment train that utilises both a pond and wetland.

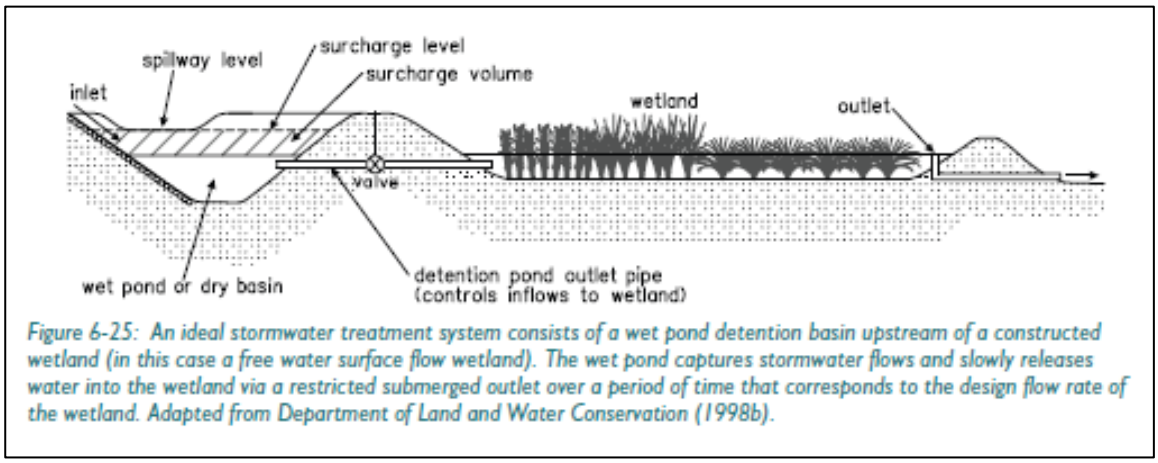

Figure 6-25: An ideal stormwater treatment system consists of a wet pond detention basin upstream of a constructed wetland (in this case a free water surface flow wetland). The wet pond captures stormwater flows and slowly releases water into the wetland via a restricted submerged outlet over a period of time that corresponds to the design flow rate of the wetland. Adapted from Department of Land and Water Conservation (1998b).

Figure 14: Example treatment train utilising a pond and wetland.

6.3.2.4. Grassed Swales and Filter Strips

Swales:
Swales are present in The Oaks subdivision in Rangiora, among other locations, to provide pre-treatment. Vegetated swales having gently sloping sides (typically flatter than 6H:1V) and flat longitudinal grades, are primary channels designed to intercept, convey, and provide inline primary treatment of stormwater (Christchurch City Council, 2012). Vegetation, either grass or other dense ground cover plants, slow the water flow to allow the water to filter through the vegetation and soil to remove pollutants including clay and silt (sediment), dissolved nutrients and metals (e.g. nitrogen, phosphorous and zinc) (Auckland Regional Council, 2010). Swales are commonly placed closed to point source and can act as conveyance to a secondary stormwater treatment system such as a larger infiltration basin or wetland. They can also function as a treatment system independently for a specific site and then conveyed to join the council network via pipes or directly to a receiving environment.

Filter Strips:
A key point of difference between swales and filter strips is that; where swales collect concentrated flow which is directed into the channel, a filter strip intercepts stormwater as distributed or sheet flow before they become concentrated and then distribute the flow evenly across the filter strip (Auckland Council, 2010). The filter strip reduces flow velocities, and a percentage of runoff may infiltrate back into ground.

Typical components of a grassed swale are shown the Figure 15 below, and is an excerpt from the Auckland Regional Council Technical Report 053 document (Healy *et al*. 2010):

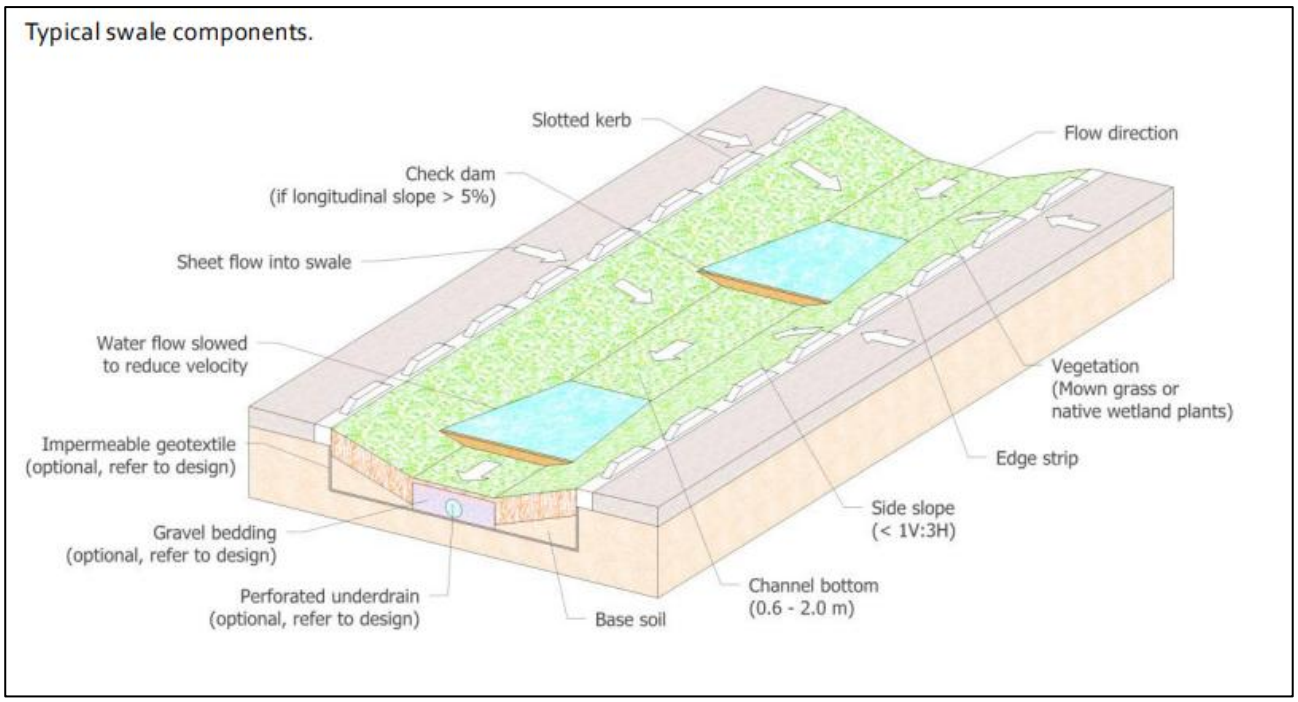

Figure 15: General components of a swale (Auckland Council, 2010)

6.3.2.5. Rain gardens

Rain gardens were installed on East Belt in 2024, however are not commonly used in Rangiora. The following points are summarised from Christchurch City Council Rain Garden Design, Construction and Maintenance Manual, (2016); and provides an overview of design and function of a rain garden.

- Rain gardens (also known as bio-retention devices); are engineered gardens designed to harness the natural ability of vegetation and soils to treat stormwater.

- Treatment occurs through sedimentation, filtration, adsorption and uptake by vegetation and operate to reduce effects of stormwater volumes, peak flows and provide treatment.
- Stormwater tree pits can be considered a special type of rain garden that accommodates a large tree. The treatment mechanism and form is largely the same and most design, construction and maintenance aspects of rain gardens also apply to tree pits.
- The advantage of a rain garden, besides its primary function noted above, is that aesthetically they are pleasing and are a good option in city centres as it provides a natural feel to otherwise hard concrete structures.
- Rain gardens work by ponding stormwater in the planted area, which is then filtered through the soil mix and by plant roots. These absorb and filter contaminants before stormwater flows into surrounding ground, pipes, drains and onto final receiving environments.

The key components of a rain garden are shown in Figure 16 below.

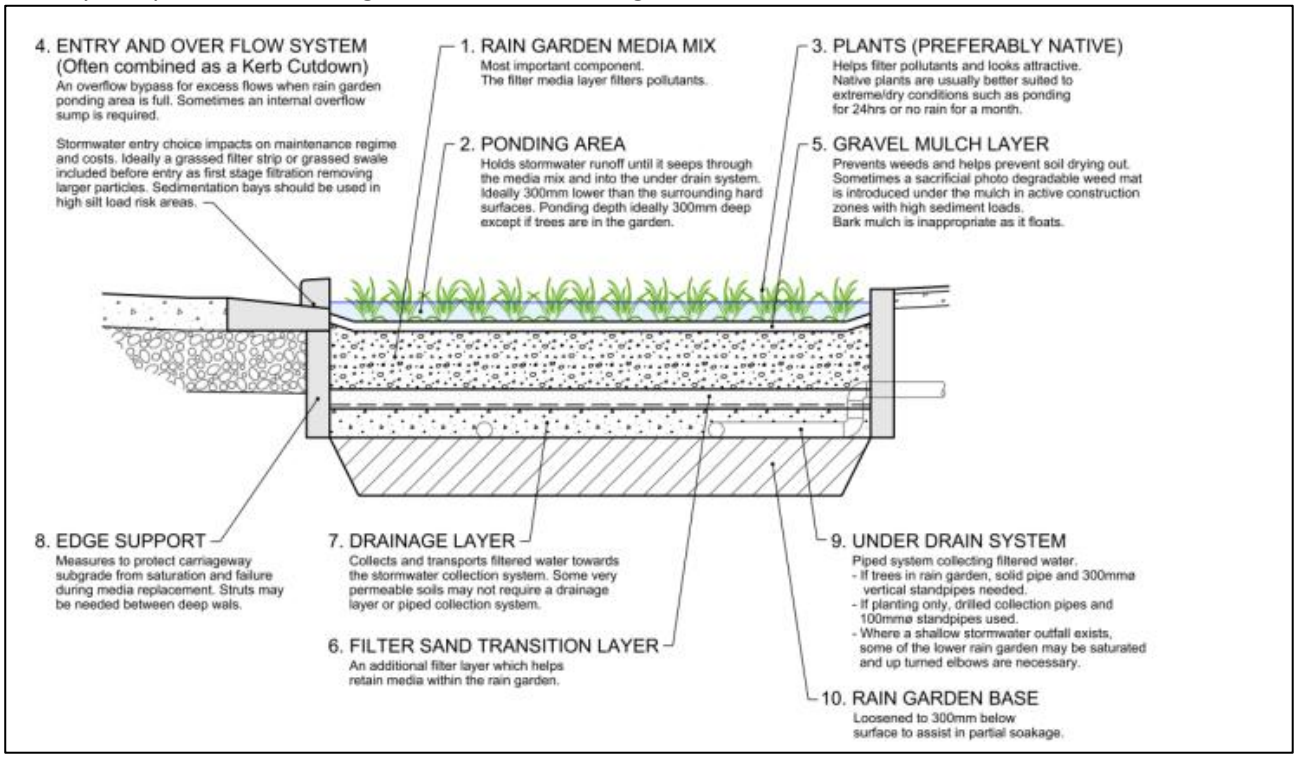

Figure 16: Key components of a rain garden (Christchurch City Council, 2016)

Figure 17: Example of a rain garden (Christchurch City Council, 2016)

6.3.2.6. Proprietary Devices

Stormwater treatment can be achieved through a variety of devices designed and manufactured by specific companies. These proprietary treatment devices offer a pre-engineered solution for managing and treating stormwater runoff. Key characteristics of these devices is that they vary in terms of removal efficiencies, types of contaminants removed, costs, maintenance requirements and total catchment area served. Commonly used systems within Rangiora are:

Gross pollutant traps (such as LittaTraps, and Enviropods)
Designed as an easy low-cost solution for sites and environments that require the removal of sediments and gross pollutants and a reduction of particulate-bound heavy metals, and oils and grease from entering into the downstream stormwater or waterways.

Hydrodynamic separators (Vortex Separator)
Utilises hydrodynamic flow paths to separate out contaminants such as hydrocarbons, sediment and floatables. These systems can cater for larger catchment areas and flows.

Filter media systems (such as the StormFilter)
One of the widely used solutions in this space are the cartridge filter systems. These systems contain cartridges that are filled with a specific media mix (defers between manufacturers). Besides TSS, gross pollutants and hydrocarbon, these filter media systems can also target removal of nutrients, organics, and organic trapped bacteria. They are generally designed to treat only the first flush of a stormwater event and can remove contaminants both in particulate and dissolved form.

Another new type of engineered media system from Stormwater 360 includes the Filterra and Bioscape filters. The Bioscape filter is a new technology which resembles a rain garden, however contains high-flow engineered media so can achieve equivalent treatment in a much reduced space. These systems that can be designed and manufactured to various sizes to suit a range of catchment area. This system is a new technology that has been indicated recently will be installed by Christchurch City Council to treat selective urban areas in the proposed Avon Ōtakaro Stormwater Management Plan and is also a system that WDC is

considering trialling as a solution for stormwater quality improvement projects in areas with limited space for WSD solutions.

7. Project Implementation Framework

7.1. Introduction

One of the objectives for this SMP is to outline the framework used to prioritize and select projects that are to be implemented for stormwater improvement within Rangiora. This section outlines the simple and structured framework that was developed for the SMP. The aim of the framework was to ensure effective allocation of budget to maximize the impact of stormwater management improvement projects, and in alignment of the Rangiora Network Discharge Consent objectives, encourage WSD and NPS-FM Te Mana o Te Wai principles.

7.2. Goals and Objectives

The proposed duration of the SMP is from 2025-2040. This SMP seeks to achieve the receiving environment objectives set in Condition 8 of consent CRC184601 (Section 2.1) within this timeframe.

Water quality monitoring results from Rangiora baseline monitoring in 2014-17 and 2021-2023 under consent CRC184601 show non-compliance for several contaminants. In the consent application, WDC proposed to Environment Canterbury to implement stormwater improvement projects to meet compliance levels by 2040. A budget for these stormwater quality improvements is earmarked to cost $9.8 million in the Long Term Plan 2024-34 (in addition to existing stormwater project allocations). The section provides an overview of the potential stormwater improvement capital projects that this funding will be allocated for, and the framework used to prioritise and assess the projects that will be delivered.

There has been previous work on prevention of downstream flooding, scour and erosion, such as projects from the Rangiora SMP in 2001 and flood recovery work after the 2014 flood event. It is projected that the Rangiora SMP will focus primarily on stormwater quality improvement projects, the area where the need is greatest, to be in compliance with contaminant guideline values (as set in CRC184601 Schedule 1 and the Rangiora Stormwater Monitoring Programme) which forms part of the consent. Consultation with Te Ngāi Tūāhuriri Rūnanga (via Mahaanui Kurataiao Ltd) has been undertaken for inclusion of actions in the work programme for objectives in consent condition 8 (d) and (e) regarding wāhi tapu, wāhi taonga and mahinga kai.

7.3. Framework Methodology and Application

The following steps of identification, categorisation, and evaluation were taken into account for the development of this methodology.

7.3.1. Project Identification

A list of potential stormwater management projects within the Rangiora township boundaries were identified and compiled. Identifying projects involved soliciting proposals from internal departments and via consultation with Te Ngāi Tūāhuriri Rūnanga,and gathering any relevant information for each project i.e description, objectives, alignment of projects to project categories and estimated timeline for implementation. Project approvals are through WDC standard planning processes, i.e. inclusion of budget in Annual and Long Term Plans.

A list of the capital expenditure projects identified to-date for inclusion in the SMP are shown in Section 9. Future projects will use the same framework methodology for evaluation.

7.3.2. Project Categorisation and Subcategorization (Tier 1 and 2 Factors)

Project groups were developed based on their key objectives of the project and alignment with CRC184601 objectives. Each project was then classified into the most relevant project group based on its primary focus. The following project categories were identified:

Table 14: Project groups

	Project Group	Description
1	**Water Quality Improvement**	*Focusing on projects with the most significant impact on improving water quality in priority waterways and high-risk areas within the township.*
2	**Waterway Restoration**	*Focusing on projects that actively restore the ecological health and function of waterways impacted by stormwater runoff while ensuring the protection of wāhi tapu and wāhi taonga. (i.e: streambed and bank stabilization work, riparian zone planting and restoration, access for and enhancement of mahinga kai activities, habitat enrichment of native and or endangered species.)*
3	**Flood Mitigation**	*Prioritising projects based on severity of flood risk, vulnerable communities and areas of networks that require water quantity management improvements.*
4	**Community Engagement & Education**	*Promoting public awareness and understanding of stormwater management issues and solutions. (Educational workshops and community events, public signage and informational campaigns, public data collection initiatives, school programs.)*
5	**Compliance and Infrastructure**	*Addressing urgent needs like critical asset upgrades, meeting regulatory requirements, and remediating existing non-compliance issues.*
6	**Innovation and Collaboration**	*Encouraging innovative approaches and partnerships with tangata whenua, community groups, and other stakeholders to address emerging challenges and opportunities. Including trialling of new technology and green infrastructure solutions*

7.3.2.1. Project Evaluation Within Categories

Each project category has a set of established subcategories or prioritization factors categorized into Tier 1 and Tier 2. The two-tiered evaluation system is used to assess potential projects in more detail and ensure a consistent evaluation process.

Tier 1 Factors: These are essential criteria applied to all projects within any category. Projects are initially evaluated against these core factors and assesses their alignment with overall goals and objectives of the category.

Tier 2 Factors: These are more specific criteria that depend on the outcome of the Tier 1 evaluation. If a project meets a specific Tier 1 factor, it is then further assessed against the corresponding Tier 2 factor(s); which provides a more in-depth understanding into project impact and effectiveness. Conversely, if a project does not meet a specific Tier 1 factor, the corresponding Tier 2 factor becomes irrelevant for that project.

The Tier 1 and Tier 2 factors are shown in the Project Assessment Table (Table 12).

This approach ensures all projects are evaluated against the same essential criteria while allowing for additional, project-specific considerations for those that demonstrate strong potential.

7.3.3. Continuous Improvement

This framework is designed to be adaptable and accommodate ongoing revisions and 5-yearly reviews, aligning with the concept of a SMP as a living document that evolves to address changing needs and opportunities. While formal consent conditions mandate a comprehensive SMP review every five years, more frequent internal revisions can ensure this plan stays current and that the review captures all emerging requirements. Recognising the importance of continuous improvement and accountability, WDC will monitor the progress and effectiveness of implemented projects based on the framework's outcomes. This exercise will inform future updates of the framework; potentially including adjustments to specific criteria (like Tier 1 and Tier 2 factors) to better align with the evolving priorities of the Council, the Rangiora community and national requirements, as set out by Taumata Arowai.

Project assessments or re-assessments could be updated and evaluated using the framework outlined whenever there is a budgetary opportunity to do so, such as for Annual Plans, Long Term Plans, as well as for reviews of this SMP every 5 years. Additionally, the weighting of each factor and the potential adoption of a scoring system in the future will be reviewed.

7.4. Project Evaluation Outcomes

7.4.1. List of Projects Identified for Stormwater Improvement within Rangiora.

Section 9 details a budget with a list of CAPEX projects recommended by this SMP. Note that this budget requires consideration and approval through a Council Annual Plan and/or Long Term Plan to be finalised.

Appendix E contains a template for further scoping of CAPEX projects for inclusion into the Council capital works programme and facilitate project initiation.

Additionally, an action programme is detailed in Section 8 for stormwater management initiatives that improve operations and maintenance, or that are one-off investigations.

7.4.2. Project Prioritisation Framework

Table 12 outlines the developed prioritization framework for stormwater improvement projects. All remaining identified projects, not currently included in the budget, will be evaluated using this framework and the methodology detailed in section 7.3.

Table 15: Project Prioritization Assessment Table

Project Prioritsation Assessment Table				
Project Group: **Project Title:** **Description** **Key NDC Objective**				
Tier 1 Factors	**Yes**	**Tier 2 Factors**	**Yes2**	**Internal Use: Context/Measure**
Project within a high risk area		Serves an Industrial area with no exsiting treatment		Check SMP
		Exceedance in compliance limits in receiving waterway		Check monitoring programme results (e.g. TRIM 230919146639)
		Serves an urban residential area with no exsiting treatment		Check SMP
		Has exsiting treatment but poor water quality results		Check SMP and monitoring programme results (e.g. TRIM 230919146639)
Urgency: Immediate Threat to Public Safety		Risk of flooding in critical areas		Check Rangiora Urban Stormwater Model report (TRIM 240508073139)
		Failing or inadequate infrastructure		Service requests, CCTV footage and inspections
		Critical infrastructure and high population at risk		Service requests, CCTV footage and inspections
		Public health concerns		Service requests, other - Health NZ Community and Public Health or ECan concerns
Urgency: Risk to environment		Erosion control		Check Rangiora Urban Stormwater Model reports (TRIM 240508073139, 131112104705)
		Pollution control		Pollution Prevention Plans, site-specific SMPs, ECan consents to discharge
		Habitat restoration		Ecological Surveys - 5 Yearly surveys for CRC184601 (TRIM 24061809882)
Urgency: Regulatory Compliance		Non compliant to meeting NDC dicharge limits /others		ECan non-compliance reports
		Reporting deadlines		
		New regulatory requirements		New regulations
Urgency: Resource Availability/Disruptions		Seasonal constraints		
		Emergency funding		
		Minimizing service disruptions		
Urgency: Long-Term Cost Implications		Preventative maintenance need		Operations and Maintenance manuals
		Cascading infrastructure failures		Service request information
Identified as Culturally significant by Mana Whenua		Cultural and histroical significance		MKL report (2018) for the Proposed District Plan with wahi tapu and wahi taonga (TRIM 180910103490), Cultural Impact Assessment for Rangiora CRC184601 (TRIM 230830134536)
		Mahinga Kai Sites		MKL report (2018) for the Proposed District Plan with wahi tapu and wahi taonga (TRIM 180910103490), Cultural Impact Assessment for Rangiora CRC184601 (TRIM 230830134536), listed as taonga species in schedule 97 of the Ngai Tahu Claims Settlement Act (1998)
Socially significant		High Public Interest/ Publich health and Safety		Feedback from Environment Services Unit (for health and safety)
		Improving access to green spaces and recreation		Feedback from WDC Greenspace Team
		Promoting community participation and decision-making		Feedback from WDC Community Team
		Educational and Awareness-Raising Opportunities		Feedback from WDC Community Team
		Enhancing aesthetics and neighborhood livability		Feedback from WDC Development Planning Unit
Receving environment of high ecological value		Threat to endangered species/habitat		Check 'Critical Habitat of Indigenous Species' map - Plan Change 7 of the Land and Water Regional Plan and New Zealand Freshwater Fish Database records
		Habitat diversity and complexity		Feedback from WDC Ecologist / Water Environment Advisor - assess both aquatic and terrestrial habitats
		Benfits to ecological corridors		Feedback from WDC Ecologists / Water Environment Advisor
		Restoration potential		Feedback from WDC Ecologists / Water Environment Advisor
Multifunctional benefit		Ecosystem Services Water quality improvement		Feedback from WDC Ecologists / Water Environment Advisor
		Flood control and erosion mitigation		Feedback from the Network Planning Team
		Carbon sequestration and climate change adaptation		Feedback from / WDC Ecologists / Water Environment Advisor
		Community involvement and stewardship		Feedback from WDC Community Team
		Community Engagement, Education and Outreach		Feedback from WDC Community Team
		Utilizing common timelines or funding sources		Capex budget spreadsheets for Drainage, Wastewater, Water, Roading projects
Potential allignment with other projects		Shared Resources and Infrastructure		Capex budget spreadsheets for Drainage, Wastewater, Water, Roading projects
		Phased implementation		Timeframes of other projects
Meets WDC Community Outcomes		Efficient and resilient core services		WDC LTP 2024-2034
		Caring for the environment		WDC LTP 2024-2034
		Positive about the future		WDC LTP 2024-2034
		Proud to be local		WDC LTP 2024-2034
Allignment with LGA 4 well beings		Social well-being		Local Government Act (2002) and Local Government (Community Well-being Amendment Act (2019)
		Environmental well-being		Local Government Act (2002) and Local Government (Community Well-being Amendment Act (2019)
		Economic well-being		Local Government Act (2002) and Local Government (Community Well-being Amendment Act (2019)
		Cultural well-being		Local Government Act (2002) and Local Government (Community Well-being Amendment Act (2019)
Flood Risk Mitigation/Water Quantity Control		Critical infrastructure and high population at risk		Criticality of assets and risk assessments - Feedback from Stormwater and Waterways Manager
		Frequent and severe flooding		Check Rangiora Urban Stormwater Model report (TRIM 240508073139)
		Potential flood depth and damage		Feedback from the Network Planning Team
		Volume reduction and storage		Feedback from the Network Planning Team
		Peak flow reduction		Feedback from the Network Planning Team
		Improved drainage capacity		Feedback from the Network Planning Team

8. Action Work Programme

The action work programme proposed for this SMP (Table 16) are operational initiatives, to be carried out alongside capital expenditure projects (see Section 9). Actions for the period 2025-2030 are the primary focus, with an update of actions to be carried out for each 5-yearly review of the SMP. Changes to current "business as usual" practices have been listed, however current "business as usual" practices with no change proposed have been excluded for clarity and brevity purposes.

Progress on the action work programme will be overseen by the WDC Stormwater and Waterways Manager.

Table 16: Action work programme for the Rangiora SMP

Flood Mitigation Aligns with consent objective 8 (a)				
Work Programme	**Actions**	**Role (Implemented by who)**	**Timeframe**	**Expected outcomes**
Stormwater reticulation master planning for Rangiora	Develop a stormwater reticulation master plan for Rangiora township based on expected level of development	Network Planning Team	Every 5 years (for SMP review)	Highlight any deficiencies within the stormwater network and allow for forward planning
Prevent flooding of habitable floors to a 1:50 Annual Recurrence Interval (ARI) event	Regular Rangiora Urban Stormwater Model flood model re-runs that monitor changes to impervious areas and stormwater network capacity. Appropriate use of District flood hazard modelling to set Finished Floor Level requirements. Compensate with planning changes (i.e. District Plan restrictions on land use) or capacity upgrades where required.	Network Planning Team Development Planning Unit / Infrastructure Resilience Team	Every 5 years re-run of model Compare model with flood events (e.g. service requests) – as required	Habitable floor levels will not be flooded through controls on development and/or capacity upgrades
Water Quality Improvement Aligns with consent objective 8 (c)				
Work Programme	**Actions**	**Role (Implemented by who)**	**Timeframe**	**Expected outcomes**
Erosion and sediment control guidance for small construction sites	Create a guideline document for erosion and sediment control plans for small sites. Attach this guide to building consents issued by Council.	Guidance prepared by 3 Waters. PIM Team and Building Team to implement	1 July 2026	Decrease in sediment discharges from construction sites

Investigate the treatment efficiency of strategic SMAs	Investigate current state functioning of strategic SMAs (North Brook Ponds *Io Io Whenua*, North Brook sub-catchment, Pond A – South South Brook sub-catchment, and Pond C, No. 7 Drain sub-catchment) and recommend treatment improvements	3 Waters Team (via external contracts)	30 June 2027	Ability to improve treatment efficiency of strategic SMAs
Construction phase discharges - Best practice used at construction sites for sediment control	WDC requirement Erosion and Sediment Control Plans for all construction sites (as required by the Stormwater Drainage and Watercourse Protection Bylaw 2024, Section 11) Investigation of potential non-compliances	Building Unit 3 Waters Team, with possible referral to ECan for enforcement	30 June 2030	Sediment from 95% of construction activities is treated to best practice by 2030
Target contaminants (sediment, zinc and copper) from high traffic and industrial areas	Analyse options for improving street sweeping sump cleaning frequency and methodology, and adopting innovative technologies	3 Waters Team	Every time the Road and Drainage Maintenance Contract is renewed (approx. 5-yearly)	Understanding of how to carry out innovation for water quality improvements from high traffic and industrial areas
Retrofitting treatment or source control of high and medium risk sub-catchments	Investigate feasibility and practicability of options for source control or retrofitting treatment of existing high and medium risk catchments (North Brook , particularly Newnham St industrial area, Middle Brook, selective areas of the South Brook) where there is no dissolved metal treatment, or where contaminant levels exceed the guideline value after treatment (No. 7 Drain)	3 Waters Team	30 June 2032	Reduction in contaminants sources (such as dissolved zinc and copper) and/or increased contaminant treatment in retrofitted catchments
Review modelled and monitoring sources of zinc and copper	Use CLM outcomes and stormwater monitoring programme results to find hot spots, then propose treatment or source control options	Network Planning Team, 3 Waters Team	Prior to each review of SMP Update a CLM every 5 years	Up-to-date information for prioritising projects

SMA sediment remediation programme	Remediate SMAs that have been assessed by a SQEP to require actions, based on 2024 sediment sampling investigation results and any further investigations	3 Waters (externally contracted to a SQEP)	Consent timeframes	Minimise risk of groundwater contamination from SMAs
Water Quality Improvement - Control industrial and contaminated sites Aligns with consent objectives 8 (c) and (e)				
Work Programme	**Actions**	**Role (Implemented by who)**	**Timeframe**	**Expected outcomes**
Implement high risk site management from Bylaw changes	Implement changes from the Stormwater, Drainage and Watercourse Bylaw (2024) Set-up and refine processes for site-specific stormwater management plan review, approval, and monitoring for high risk sites. Promote Pollution Prevention Plan requirements and process for high and medium risk site approvals Apply process to assess applications from LLUR sites prior for acceptance or exclusion of discharge into Council stormwater network under CRC184601 Consent	3 Waters Team, Land Development Team	1 January 2025	Annual compliance monitoring programme of high risk sites commences by 1 January 2025 Site-specific Stormwater Management Plans and Pollution Prevention Plans in place for 95% of high risk sites by 2030
Spill response	Require appropriate spill kits at medium and high risk sites	3 Waters Team	Ongoing	Contaminants prevented from reaching the stormwater network
High and medium risk businesses database	High and medium risk businesses database compiled based on existing Environment Canterbury consent information	3 Waters Team	1 January 2025	Engagement with high and medium risk sites enabled by a contacts database
Heavy metals in the South South Brook	Investigate sources of heavy metals in the South South Brook to establish whether there are legacy or recent sources of contaminants	3 Waters Team	30 June 2025	Improved receiving environment (the South South Brook) for aquatic organisms
Waterway Restoration - Provide protection and culturally appropriate treatment of wāhi tapu and wāhi taonga habitats. Protect and enhance mahinga kai Aligns with consent objectives 8 (d) and (e)				
Work Programme	**Actions**	**Role (Implemented by who)**	**Timeframe**	**Expected outcomes**

Faecal bacterial contamination	Carry out *E. coli* investigations (potentially with source tracking) and follow up with remediation measures for wastewater sources such as point sources or cross-connections with stormwater pipes Update wet weather overflow modelling	3 Waters Team, Network Planning Team	On-going	Decrease in dry weather and wet weather *E.coli* counts
Enhancement of habitat for taonga species, targeted planting, and exotic species removal	Carry out drainage maintenance works under the Drainage Maintenance Management Plan, and enhancement projects under the Zone Implementation Programme Addendum (ZIPA), Arohatia te Awa (Cherish the River) and potentially other WDC work programmes.	3 Waters Team, Greenspace Team	On-going	Improved abundance and health of taonga species
Regular 'State of the Takiwā' monitoring and reporting	Support the programme design and implementation of 'State of the Takiwā' monitoring	Environment Canterbury, Te Ngāi Tūāhuriri Rūnanga – supported by WDC	To be confirmed	Waterways will be monitored for cultural health and mahinga kai trends
Enhancement of waipuna/springs, wetlands and riparian areas in the Ruataniwha Cam River catchment	Carry out drainage maintenance works under the Drainage Maintenance Management Plan, and enhancement projects under the Zone Implementation Programme Addendum (ZIPA), Arohatia te Awa (Cherish the River) and potentially other WDC work programmes.	3 Waters Team, Greenspace Team	On-going	Improved abundance and health of taonga species
Habitat enhancement projects within waterways, particularly Critical Habitats for Indigenous Species (CLWRP)	Boulder placement for kanakana (lamprey) spawning habitat enhancement in the South Brook, Middle Brook and North Brook	Water Environment Advisor	1 July 2026	Improved habitat for kanakana (lamprey) spawning
Maintain habitat complexity, such as woody debris for kekewai / wai kōura (freshwater crayfish)	Review Drainage Maintenance Management Plan 2020 for management of kekewai / wai kōura (freshwater crayfish) vegetation and woody debris	Water Environment Advisor, Land Drainage Engineer	Next review of the Drainage Maintenance Management Plan (2020)	Key habitat for kekewai / wai kōura (freshwater crayfish) is maintained or will improve over time from management

Encourage WSD (also known as low impact design)	Incorporate further WSD in the ECoP, such as to encourage minimising impervious surface area	Land Development Team	Next ECoP review	Attenuation of peak run-off
Watercress enhancement projects in the Ruataniwha Cam River catchment	Experiment with weeding of competitor species to watercress, bank enhancements, and enabling access to watercress areas	Potentially Te Ngāi Tūāhuriri Rūnanga or their nominated entity (from WDC ZIPA budget)	TBC	Increased abundance of watercress available for mahinga kai
Review watercress drainage management practices	Review existing exclusion areas where watercress is to not be removed for drainage maintenance		Next review of the Drainage Maintenance Management Plan (2020)	Increased abundance of watercress available for mahinga kai
Community engagement and education programmes Aligns with consent objectives 8 (a)-(e)				
Work Programme	**Actions**	**Role (Implemented by who)**	**Timeframe**	**Expected outcomes**
Source control through behaviour change	Community engagement programmes regarding source control for dog owners (faecal bacteria) residential and industry land use (zinc and other contaminants) Support catchment groups and environmental organisations promoting healthy waterways	3 Waters Team	On-going	Decrease in stormwater contaminants
Innovation and Collaboration Aligns with consent objectives 8 (a)-(e)				
Work Programme	**Actions**	**Role (Implemented by who)**	**Timeframe**	**Expected outcomes**
Evaluation of innovative technologies	Monitoring of any novel technology installed e.g. Mussel shell filter bunds or biofilters for contaminant removal rates	3 Waters Team	As required	Informed decision-making for future treatment decisions

9. Budget

In the WDC Long Term Plan 2024-2034 there is a total budget of $9.8 million of capital expenditure for projects identified by this SMP. Table 14 indicates how this $9.8 million could be spent. This SMP is not seeking any additional budget above what is currently allocated in the Long Term Plan 2024-2034. Note that

these indicative costs require further option scoping and costing and will be confirmed through the Council Annual Plan or Long Term Plan budgeting process. This is in addition to existing budgets for stormwater treatment and capacity improvement projects which have been included in Table 17 for completeness.

Table 17: Stormwater Capital Projects Budget

Project Title	Indicative spend for SMP water quality improvement projects[1]	Existing allocation in Long Term Plan 2024-34	Total $ (indicative spend and existing allocation)
Project Works			
Newnham Street Industrial Area Treatment (North Brook)	4,500,000		4,500,000
North Brook Treatment	1,800,000		
North Drain Treatment - potential infiltration basin	1,200,000	1,183,110	2,383,110
Middle Brook Treatment	1,800,000	397,860	2,197,860
SMA treatment efficiency improvements or alternate options	500,000		500,000
North Brook - Railway Drain Treatment		282,690	565,380
Under Channel Piping		565,380	1,005,120
North Brook Retaining Wall - Janelle to White		921,360	1,842,720
North Drain Piping - Ashley to Edward		575,850	1,151,700
Belmont Avenue Drainage Upgrades		481,620	963,240
Stormwater Minor Improvements		471,150	848,070
Blackett Street Piping		1,256,400	2,512,800
East Belt to Cam River Connection		523,500	1,047,000
Three Brooks Enhancement Work - North Brook / Geddis Street		287,925	575,850
Three Brooks Enhancement Work - Middle Brook Tributary		209,400	418,800
Three Brooks Enhacement Project - North Brook Victoria to Newnham		471,150	942,300
Three Brooks Enhancement Work - Middle Brook Martyn to Bush		235,575	471,150
Three Brooks Enhancement - Middle Brook Bush to King		628,200	1,256,400
Wiltshire / Green Pipework Upgrade Stage 2		499,419	998,838
Stormwater Reticulation Renewals			
Rangiora Urban Drainage Long Term Headworks Renewals		68,055	136,110
Blackett Street Piping		130,875	261,750
Rangiora Urban Drainage Long Term Renewals		261,750	523,500

Note:
1. The figures allocated in this column are an indicative spend of a total allocation of a pool of $9.8m in the 2024-2034 Long Term Plan. This indicative spend is in addition to stormwater budgets for specific projects that are also allocated in the LTP and included in Table 17 for completeness.

10. Review

This SMP shall be reviewed at least once every 5 years, and revised annually, if required, to respond to:

- The results of monitoring undertaken in accordance with this consent;
- The results of updated hydraulic modelling for the catchments which receive stormwater under this consent;
- Any changes to relevant national and/or regional planning documents, including those that result from the Land and Water Regional Plan sub-regional chapter development process;
- New technologies or changes in good practise stormwater treatment.

In addition to the revisions required under Condition (10) of CRC184601, as per Condition (11), the SMP shall be revised at other times if requested by the Canterbury Regional Council under the following conditions:

- Any changes to relevant national, and/or regional planning documents including those that result from the CLWRP sub-regional chapter development process; or
- The results of monitoring or modelling, including any investigations or outcomes in relation to the responses to modelling and monitoring; or
- The use of new technologies which may provide new opportunities for mitigation treatment and source control; and
- Upon the release of any amendment to the Resource Management Act 1991, or any document accepted as a New Zealand Guideline or Standard, which addresses the stormwater management requirements set out in Consent CRC184601.

11. Adaptive Management

WDC intends to apply an adaptive management approach to the management of the stormwater in Rangiora. Adaptive management is an investigational approach to management, often defined as 'structured learning by doing'. It has three elements, (1) monitoring, (2) adapting and (3) learning.

The monitoring programme assesses the performance of the management of Rangiora's stormwater management systems relative to the specified CRC184601 Objectives, as well as identify projects or management actions that would progressively improve the management of stormwater or address a specific issue(s).

The SMP will be revised annually, and reviewed every 5 years, which in turn will feed into WDC Annual Plan and Long-term planning processes. A continual review of emerging technology and consideration of the performance of the implemented projects or management actions will ensure that WDC expenditure will be directed to projects and actions that will progressively address the objectives of the SMP. The Rangiora Stormwater Monitoring Programme and CLM for CRC184601 allows WDC to evaluate the performance and progress of the stormwater management infrastructure to achieve these objectives, and more importantly, trigger the identification of additional projects that would improve the outcomes of the stormwater network.

12. References

Auckland Regional Council (1992 and 2003). *Technical Publication no. 10, Design Guideline Manual: Storm-water treatment devices*. Auckland Regional Council, Auckland

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Greer, M., Meredith, A., (2016). *Waimakariri Zone water quality and ecology: State and trend*. Environment Canterbury Technical Report No. R16. Draft report

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Hullen, J. (2017). *Rangiora Stormwater Network Consent Cultural Impact Assessment Report. An assessment of effects on Ngāi Tūāhuriri and Ngāi Tahu Values.* Mahaanui Kurataiao Ltd

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APPENDIX A. Schedule 1 of CRC184601 – Water Quality

Contaminant	Guideline	Guideline Source
Total Suspended Solids	<50 gm3	CLWRP
Dissolved Copper	< 0.0018 mg/L	CLWRP *spring fed – plains – Urban* Water 90% of the Australian New Zealand Guidelines
Dissolved Zinc	< 0.015 mg/L	CLWRP *spring fed – plains – Urban* Water
pH	Shall be between 6.5 - 8.5	CLWRP, *section 16, schedule 5*
Dissolved Reactive Phosphorus	< 0.016mg /L	CLWRP, *section 16, schedule 5*
E. coli	95% of the samples should have less than 550 E. coli per 100 mL	CLWRP, *section 16, schedule 5*
Total Ammoniacal Nitrogen	Depends on pH level	CLWRP, *Table S5C, Schedule 5*
Hardness	5 yearly adjustment of Guideline Value	
Dissolved Organic Carbon	To characterise the waterway – adjust Guideline Value	

Note: The limits and targets which measure stormwater discharge quality and receiving waterway effects, and which prompt required responses, apply when managing contaminants demonstrated to be discharging from the reticulated stormwater system including from private connections to the system that are authorised under consent CRC184601.

The Rangiora stormwater network monitoring programme also includes a "stream health" section including requirements to gather baseline and trend information on environmental targets for environmental reporting purposes. These are not compliance requirements of CRC184601. The stream health reporting may demonstrate progress toward receiving environment objectives that are the result of interventions undertaken or natural processes occurring outside of the scope of consent CRC184601.

APPENDIX B. SMA Remedial Strategy and Soil Disposal Procedure

An exceedance of trigger values specified for any infiltration basin, soakpit or dry detention basin may prompt a site-specific risk assessment/s of effects of the recorded contaminant levels on groundwater quality prior to confirming whether excavation of the affected soil layers or other suitable modifications to the basin are required (based on expert advice from a contaminated land practitioner (SQEP)). This will include any mitigation provided from either:

(a) for infiltration basins and soakpits, the extent of soil depth and associated separation between the affected soil layer and the seasonal high groundwater level (e.g. what attenuation is provided if the contaminated layer is not in direct contact with groundwater and the extent to which this reduces the risk); or

(b) for dry detention basins, the attenuation provided by soil type and ground infiltration and attenuation potential, including whether infiltration and effects on groundwater from the basin are likely to be occurring or are mitigated by the soil type and infiltration rate.

For wet ponds and constructed wetlands, once the lateral and vertical extent of the contamination has been determined, then any combination of the following mitigation options may apply:

- excavation to remove all contaminated soils until contaminant concentrations in the remaining soils, as determined by a repeat of the sampling and analysis methods (above) are less than or equal to the trigger concentrations;
- the redesign of hydraulic conveyance within the wetland to reduce the disturbance and disbursal of silts being conveyed into the downstream environment; and/ or
- other suitable action/s, such as improvements to sediment trapping, addition of new or alternative plants or addition of new filtration media that will better perform the desired treatment functions to protect the site and downstream waterway.

The immediate reinstatement of a wetland or wet pond may not always be the best option for the management of water quality in both the facility and its downstream environment. This is due to various factors including effects of disturbance of the wetland habitat and extent of effects on species present during reinstatement on the ecology of the wetland. A further factor is the length of time required to reestablish wetland vegetation and habitat within a reinstated site. The draining of a wet pond with contaminated water or sludge into a downstream waterway is undesirable. The relative extent of effects of any ongoing discharge into surface water should also be considered in comparison with the extent of the effects of site reestablishment. Some constructed wetlands are lined with clay or low permeability liners, which reduces the risks of leaching materials into nearby springs or waterways. All of these factors will be considered in determining the most suitable mitigation option for each constructed wetland, or wet pond, when Guideline Values are exceeded.

WDC may commission a site-specific assessment of risks to groundwater quality to determine whether excavation to remove affected soil layers or other actions are required. Results of the risk assessment will be reported to Environment Canterbury.

Sediment for disposal will be transported to only a landfill or managed fill which are approved to accept the contaminated material.

This SMA Remedial Strategy and Soil Disposal Procedure detailed in this SMP also is incorporated into the Rangiora Stormwater Monitoring Programme and brief for basin sediment sampling that forms part of the CRC184601 consent.

APPENDIX C. Contaminant Load Model

An annual contaminant load model (CLM) has been used in this SMP to estimate contaminant loads. The model is a version of the former Auckland Regional Council (ARC) CLM adjusted for Rangiora precipitation conditions. It uses GIS land use information and converts it to likely annual loads of the following contaminants;

- TSS
- Total Zinc
- Total Copper

The land areas analysed are;

- Grasslands (subcategorised by land use)
- Roofs (subcategorised by material)
- Roads (subcategorised by daily traffic volume)
- Non-road Paved Surfaces (subcategorised by land use)

The CLM estimates the contaminant load reduction from treatment.

Comparison from land use to contaminant load is based on calibrated factors generated by ARC. These have been adjusted for total rainfall but have otherwise not been calibrated for local conditions. It is noted that there is uncertainty around roofing materials as detailed roof material information is not held by WDC.

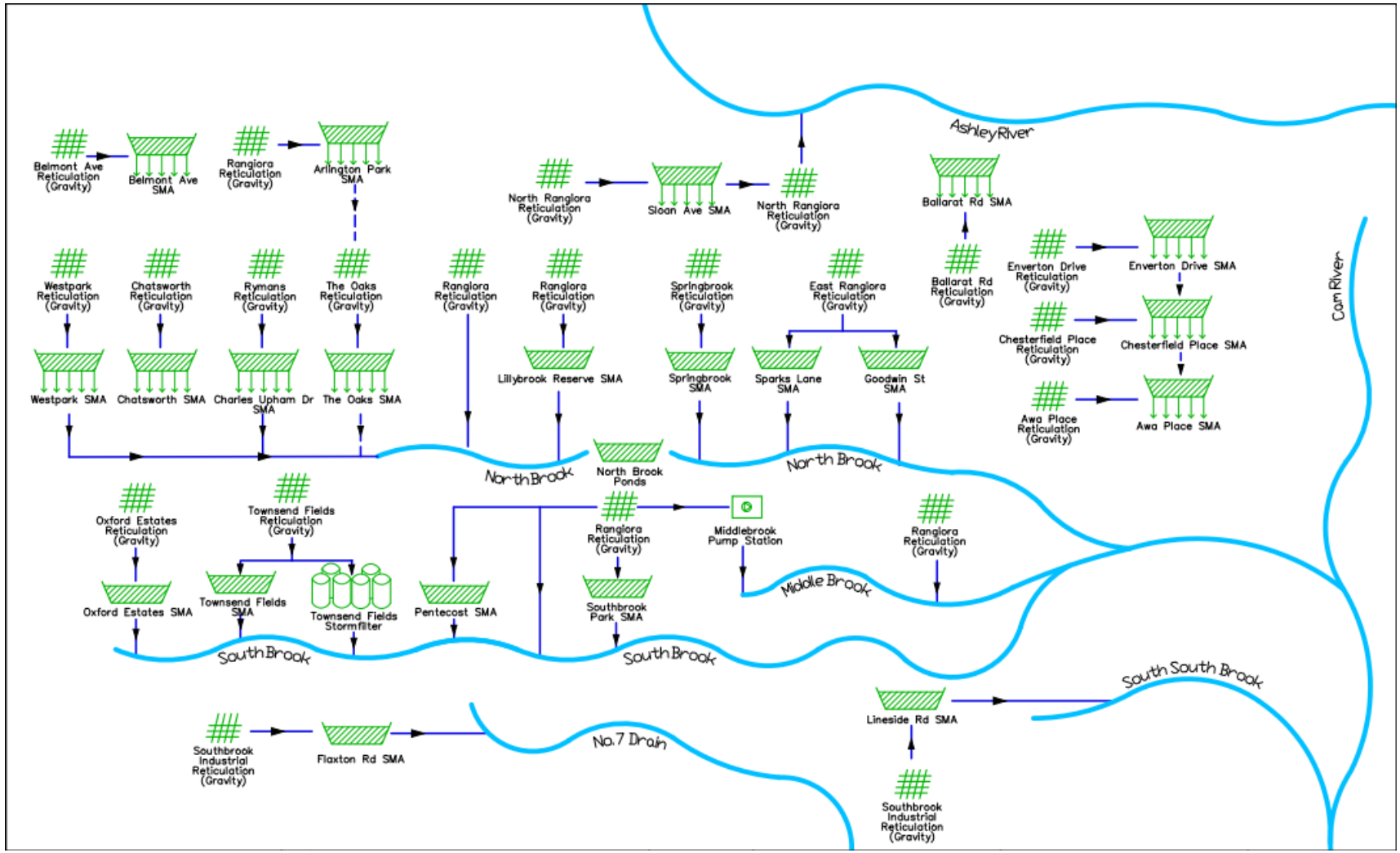
Existing treatment devices in Rangiora use load reduction factors generated by ARC. These assume the devices are operating effectively.

TRIM document 220916161020 provides a summary report of CLM findings.

While CLM results were not directly used to identify high-risk areas in this SMP, they can offer valuable insights, such as:

- CLM results can highlight areas where existing data might be insufficient. If the model predicts high potential pollution in a specific area, but may have limited sampling data to verify projections, it flags the need for further investigation. This helps target sampling efforts to areas where the risk is most likely and assist to fill knowledge gaps.
- The model can simulate how contaminants move through the stormwater system, and the effectiveness of a treatment system. This can help identify potential sources of pollution beyond land use. For example, the model might indicate that a specific industrial site or a historical spill zone could be contributing disproportionately to the overall contaminant load. This information can be crucial for developing targeted mitigation strategies.
- CLM can predict future contaminant loads based on potential changes in land use. This allows for proactive planning. For example, if a new development project is planned, CLM can help assess the potential impact on contaminant loads in the surrounding area and or final discharge points. This foresight allows WDC to implement preventive measures like stormwater treatment systems or updated regulations to mitigate future risks.
- CLM can also be utilised as a tool for project-specific assessments. By simulating different scenarios, the CLM model can be used to project which combination of areas and treatment solutions will yield the greatest water quality improvements. Additional project specific water quality monitoring should be undertaken to verify predictions of the CLM when evaluating projects, providing further confidence for decision-making.

APPENDIX D. Rangiora Stormwater Schematic Diagram (as of July 2023)



APPENDIX E. Project Brief Template

TRIM No. 240625103476 *Note: Text in italics included as an example only*

WAIMAKARIRI DISTRICT COUNCIL

PROJECT BRIEF
STORMWATER MANAGEMENT PLAN

Refer SMP

PROJECT NAME :		
PROJECT GROUP :		Section 7.3.2
OBJECTIVE(S) :		
	a	
	b	
	c	
DESCRIPTION :		
PROJECT AREA :		
SUB CATCHMENT :		Section 3.3
RISK LEVEL :		Section 3.5.6
IDENTIFIED SOLUTION BMP(s)		
WSD	*Wetland*	
Conventional/Proprietary	*GPT vortex separator as Pre treatment*	
Non Structural Measures	*(e.g Public education, street sweeping, signage)*	
COSTS :	**CAPITAL COSTS**	
	a *Peliminary Investigations*	
	b *Design*	
	c *Land purchase? /Modification of existing infrastructure*	
	d *Consent?*	
	e *Supply*	
	f *Install*	
	Total :	
	ANNUAL MAINTENANCE COSTS	
	a *Inspections*	
	b *Replacement filters*	
	c *Media*	
	d *Chamber suck out and disposal*	
	e	
	f	
	Total :	
NOTES/COMMENTS :		
SUGGESTED PRIORITY :	*LOW/MEDIUM/HIGH*	
ASSUMPTIONS :		TBC for erach project

AGENDA ITEM NO: 5	SUBJECT MATTER: Committee Updates
REPORT TO: Waimakariri Water Zone Committee	MEETING DATE: 3 February 2025
REPORT BY: Murray Griffin, CWMS Facilitator, ECan	

PURPOSE
The purpose of the agenda item is to provide the committee with an overview of updates to be tabled.

RECOMMENDATION
That the Zone Committee:

Receives these updates for its information.

COMMITTEE UPDATES
The following updates will be addressed with the committee:

1. Zone Committee Working Groups

1.1 Biodiversity Working Group
Martha Jolly will provide a short update at the meeting.

1.2 Lifestyle Block Working Group
Carolyne Latham will provide a short update at the meeting.

1.3 Monitoring Working Group
Erin Harvie will provide a short update at the meeting.

2. Environment Canterbury Updates

Councillor Claire McKay will lead this update.

2.1 Canterbury Mayoral Forum – CWMS Zone Committee Review 2024 – Reporting and Next Steps
Please find this report presented to the Canterbury Mayoral Forum at its 29 November 2024 meeting attached for the committee's information as **agenda item 4.3 – 1. Page 222**

2.2 Council Meetings
Council Meeting agendas can be viewed and downloaded from this link:

Link – Council and committee meetings: Current month | Environment Canterbury (ecan.govt.nz)

3. Waimakariri District Council updates

Councillor Tim Fulton will lead this update.

3.1 Council Report – Draft Rangiora Stormwater Management Plan 2025-40
This report is provided for the committee as **agenda item 4.2 – 1** with Sophie Allen (WDC Water Environment Advisor) providing an overview of this for the committee.

4 Action points from the previous zone committee meetings

- An update on the water quality sampling at Tutaepatu Lagoon.
- A clarification of the use of contact recreation and suitability for swimming in the Water Quality for Contact Recreation Report presented at the 11 November meeting.
- The following excerpt from the Auckland Council report on Freshwater Management Tools (August 2021), as noted by S Allen, is provided following the committee's discussion on copper brake pads at its 11 November 2024 meeting:

"A literature review was undertaken to obtain cost information for copper free brake pads, low zinc tyres and behaviour change initiatives.

The review found that it is likely that current legislation in the USA and Europe, which restricts copper brakes, has had a flow-on effect in the market and it appears that ceramic and semi-metallic brake pads (which are considered copper free or low copper) are now the norm, both here in New Zealand as well as internationally. However, it is unclear what percentage of copper is contained within the semi-metallic brakes installed in New Zealand. If most cars are currently using copper free or low copper brake pads, then the validity of including copper-free brakes as a source control intervention in the FWMT (over and above the business as usual) should be considered carefully in future scenarios. To inform that decision, it is recommended that:

• further research be undertaken to determine the extent of cars within the Auckland region which would still have copper brake pads. This could be based on the age and make of the car, obtained from NZTA records.
• further interviews should be held with brake pad manufacturers to confirm sales data of copper vs copper free brake pads;
• the metal composition of the semi-metallic brake pads used in New Zealand needs to be further investigated;
• if needed, collection of further cost data, directly from suppliers, on the cost differential between copper and copper-free brake pads for different types of vehicle categories (i.e. sedans/ hatchbacks; SUVs, Utes, 4x4 vehicles, trucks) be undertaken."

Fin.

Canterbury Mayoral Forum

Date: 29 November 2024

Presented by: Craig Pauling, Environment Canterbury

CWMS Zone Committee Review 2024 – Reporting and Next Steps

Purpose

1. To report on the outcome of the Canterbury Water Management Strategy Zone Committee Review 2024 (the 'Review') and seek endorsement from the Canterbury Mayoral Forum on proposed next steps.

Recommendations

That the Canterbury Mayoral Forum:

1. **acknowledges that the Review has been completed, with the full technical report provided to territorial authorities, Papatipu Rūnanga, and zone committees**
2. **agrees that zone committees as a consistent structure across Canterbury are no longer fit for purpose**
3. **agrees that a proposed model of local freshwater leadership groups with core membership of territorial authorities, mana whenua, and regional council be investigated in early 2025**
4. **endorses work to be undertaken to refine the operation of this core model and to report back to the Mayoral Forum in May 2025, seeking agreement to the proposed model**
5. **agrees that this work should be undertaken collaboratively by staff from territorial authorities, Environment Canterbury, and Rūnanga**
6. **agrees that this work continues to be supported by a working group of Mayors, Rūnanga representatives, and the Environment Canterbury Chair.**

Key points

2. A working group of nominated Canterbury Mayors and mana whenua representatives workshopped (i) principles, functions, and bottom lines for local freshwater leadership and engagement, and (ii) models to achieve these principles and functions.

3. It was agreed that while the underlying vision and principles of the Canterbury Water Management Strategy (CWMS) remain sound, zone committees as a consistent regional structure are no longer fit for purpose and should be replaced.

4. A replacement model was identified that centres on connecting territorial authorities, mana whenua and regional council at a leadership level, with connections to local communities critical but best tailored at the local level.

5. Further work is required to refine the operation of this replacement model. This work should be undertaken collaboratively by staff from territorial authorities, Environment Canterbury, and Rūnanga.

Background

6. On 30 August 2024, the Canterbury Mayoral Forum (CMF) nominated four mayors to work with Environment Canterbury's Chair to workshop what local freshwater leadership the CMF will support into the future. The four nominees were Mayors Mackle, Bowen, Black, and Mauger. Mayor Munro later joined the working group.

7. Also on 30 August, Te Rōpū Tuia agreed to nominate mana whenua representatives to participate. The two representatives were Rik Tainui (Chairperson, Ōnuku) and Dardanelle McLean-Smith (Chairperson, Te Rūnanga o Waihao). Environment Canterbury's Ngāi Tahu Councillors, Crs Cranwell and Korako, joined the working group.

8. This working group met for two-hour workshops on 21 October and 4 November 2024 in hybrid in-person and online settings.

9. This report concludes the Review, with recommendations for next steps presented below for endorsement by the CMF. A full technical report will be shared with territorial authorities, Papatipu Rūnanga, and zone committees once finalised.

Workshop outcomes

10. Workshop content was based on the Review's empirical findings (see Attachment 1) and aimed at testing (i) principles, functions, and bottom lines for local freshwater leadership and engagement, and (ii) models to achieve these principles and functions.

11. There was a shared view that while the CWMS vision and principles remain sound, and provide a good basis for future work, the zone committees as a consistent structure across Canterbury are no longer fit for purpose.

12. While some committees work well and opportunities should be created to keep the momentum and membership of these committees, the majority of committees have not been well placed or supported to move from planning-centric work to an implementation work programme.

13. Through the workshops a preferred base model was identified as well as questions that require further investigation before this new model can be operationalised.

Key features of proposed local leadership model

14. A base model was identified that centres on connecting territorial authorities, mana whenua and regional council at a leadership level and at place, with connections to local communities critical along with the need to reflect a maturing partnership with

mana whenua. Connections to Central Government and industry alongside, and as part of, local communities may also be important for future success.

15. The working group recognised that the relationship of these three partners should be meaningful and have clear purpose – it ought to extend beyond loose connections and involve direction setting, and possibly support funding decisions to achieve outcomes. Members of the working group framed this well – it is about these local leadership groups confirming a master plan of local priorities and then utilise their resources, mana, and networks to support delivery towards these priorities.

16. The scope of the leadership groups was also discussed by the working group, and it was agreed that the fundamentals of the CWMS and guiding plans (e.g. Zone Implementation Programmes) remain crucial for identifying freshwater management priorities and focus efforts. Leadership groups may, however, wish to extend the scope of local priorities to other overlapping cross-boundary issues, such as land use, biosecurity, biodiversity and natural hazards.

17. The working group acknowledged that an approach is needed that achieves a degree of regional consistency from a membership and function perspective, with enough flexibility to enable locally suitable solutions, which will include determining at place the mechanisms for local community engagement, setting of priorities, and degree of investment support.

18. The group also noted that future options should be effective and efficient without duplicating existing structures or recreating known challenges to achieving outcomes. Successful examples of partnership approaches across Canterbury may serve as points of reference (e.g. Waitarakao Washdyke Lagoon Catchment Strategy and Whakaraupō Whaka-Ora Healthy Harbour).

19. The success of future options will depend on clear responsibilities and accountability, with the support of councils and Rūnanga being critical.

Key questions to be considered

20. Some key design questions need to be worked through in early 2025 before final advice can be provided to the CMF. For example, should these groups operate according to existing CWMS zone boundaries, district boundaries, or be based on proposed freshwater management units?

21. Options for how these groups are mandated also need to be determined. Zone committees are joint committees of territorial authorities and Environment Canterbury, whereas other mechanisms, such as Whaka-Ora, are underpinned by a voluntary partnership reflected with a Collaborative Agreement.

22. These questions, along with operational details (e.g., options for wider membership, meeting formats and frequency, and administrative support), need to be investigated further.

Proposed next steps

23. Further work is required to resolve the questions outlined above and refine the proposed model. Under the auspices of the CMF, this work should be undertaken collaboratively by staff from territorial authorities, Environment Canterbury, and Rūnanga.

24. It is proposed that this work continues to be supported by a working group of Mayors, Rūnanga representatives, and Environment Canterbury Chair. The working group that met on 21 October and 4 November has been highly effective, and there will be ongoing value to support refinement of the proposed model.

25. Final endorsement from the CMF will be sought at its May 2025 meeting, in order to have new groups operational in the 2025/26 financial year.

26. This timing would enable further discussions in individual councils (noting changes to the zone committee approach will require decisions by each council given these are joint committees) and for the new structures to commence in the 2025/26 financial year. It is intended that new groups would operate within existing CWMS Zone Committee funding envelops.

27. It is intended that the CWMS zone committees continue their work in their current form until new groups are established.

28. A progress update will be provided at the CMF's February 2025 meeting, with a finalised model presented at the May 2025 meeting.

Cost, compliance and communication

Financial implications

29. In refining the proposed model, staff are working towards new groups being funded within existing CWMS Zone Committee budgets.

Risk assessment and legal compliance

30. Given the collaborative approach taken for this Review, key parties have received regular updates and participated in determining the outcomes of the Review. Therefore, no major risks or legal implications are foreseen.

Significance and engagement

31. This work affects the relationship and future collaboration between key CWMS parties, including territorial authorities, Environment Canterbury, Ngāi Tahu, the Canterbury community, and organisations with interests in water.

32. Further collaborative engagements between territorial authorities, mana whenua, and regional council are required at a leadership and staff level to refine the operation of the proposed leadership group model. Zone committee members will be engaged throughout early to mid-2025 as part of the transition to a new model by July 2025.

Communication

33. Progress updates on proposed next steps will be communicated through upcoming quarterly meetings of the CMF and Chief Executive Forum, as well as other avenues on an as-needed basis (e.g. Canterbury Policy Forum). Zone committee members will continue to receive regular updates.

Next steps

34. A progress update will be provided to the CMF in February 2025, with a final model to be presented in May.

Attachments

- Summary of the CWMS Zone Committee Review 2024

Attachment 1: Summary CWMS Zone Committee Review 2024

Background

The CWMS Zone Committee Review 2024 (the 'Review') aimed to address key questions about the future of local freshwater leadership to determine necessary functions, structures, and resources needed to support local leadership into the future. Led by Environment Canterbury under the Canterbury Mayoral Forum, the Review engaged a range of stakeholders between March – June 2024, including zone committee members, Canterbury Mayors, Rūnanga representatives, and Environment Canterbury Councillors. Several qualitative methods were employed to gather feedback, such as workshops, interviews, and surveys. Key insights from these engagements are summarised below.

Views on the current function of Zone Committees

Participants stressed that **Zone Committees have been an integral part of collaborative freshwater management** in Canterbury over the last decade, including substantial involvement in several plan changes, the development of zone implementation programmes and addendums, as well as by enabling a range of local community-led initiatives (e.g. catchment groups).

Additionally, many participants reflected on the less tangible, or associated, **benefits of zone committees**, including:

- being a **unique shared forum** for diverse community voices, local and regional councils, and mana whenua
- providing a **formalised structure for constructive discussion, functional disagreement, and effective collaboration** to establish shared targets, with the **support from facilitators and local and regional council staff**
- offering opportunities for **shared learning** about local freshwater issues, **capability building** (including for emerging community leaders), and in some cases **inter-cultural learning**
- **influencing local environmental efforts** through setting priorities, allocating and coordinating funding, connecting community members, and liaising with local and regional councils.

However, it was widely acknowledged that the **context for zone committees has changed in recent years,** partly due to:

- a **shift from the 'strategic phase' of the Canterbury Water Management Strategy** (e.g., planning) towards a stronger implementation focus
- more **directive national legislation** limiting (sub)regional flexibility (e.g., National Policy Statement for Freshwater Management 2020)
- the **increased activity of catchment groups and collectives**, supported by national funding (e.g. Jobs For Nature), which leads to overlaps in function.

Many participants consequently expressed **a range of concerns about zone committees in their current form and function**, including:

- feeling a **loss of purpose and (political) mana** with councils, **frustration over limited progress with implementation** and their **inability to influence** this (e.g. insufficient

funding), their **role reduced to allocate funding**, and **significant uncertainty over their future**

- several participants acknowledging that, for various reasons, **some zone committees are disconnected** from councils, local community activities, and/or mana whenua (e.g., limited links to operational activities or lacking involvement in emerging issues)
- an acknowledgement that **support from territorial authorities and regional council has declined** in recent years
- some participants questioning zone committees' **efficacy and 'value for money'** in achieve desired environmental outcomes.

Considerations for the future of Zone Committees and local leadership

Participants outlined **broad considerations over the future of local freshwater leadership and the role of zone committees**. These considerations include:

- widely shared views that **collaborative approaches remain crucial**, including between councils, mana whenua and local communities
- a need to **maintain the holistic and systematic focus** of the CWMS and Zone Committees, with core principles (e.g. balance of views) and guiding plans (e.g. ZIPs) still relevant
- the importance of **maintaining strategic oversight** of on-the-ground activities, including but not limited to catchment groups, and of **addressing gaps** where applicable
- a need to **sustain lasting connection and coordination** among groups and individuals involved in local freshwater management, with a concern that **losing zone committees could disrupt relationships** formed over many years
- a need for mechanisms to **maintain diverse community influence on strategic direction and plans,** with a lot of current activities being led by rural communities (e.g. catchment groups) with **limited participation from urban, non-farming communities and mana whenua**
- having mechanisms to **achieve local community engagement**, including encouraging local participation and ownership to **achieve outcomes** and **create accountability** where required
- a need for **safe forums that bring together diverse local community voices, council staff and mana whenua** in a collaborative and inclusive manner
- a potential gap resulting from the **loss of Zone Committees' independent voice and their role as trusted mediators** between councils and local communities
- a need for **shared learning spaces** that help to **build capability and capacity**.

Following these requirements for, and benefits of, local freshwater leadership, views **diverged on whether Zone Committees (or similar groups) are required** in the future, ranging from participants advocating for their disestablishment while others prefer them to be refreshed and strengthened. There is, however, shared agreement that **certainty over their future role is required**, including adequate commitment from Environment Canterbury, territorial authorities, Rūnanga and other key parties.

Participants outlined **diverse recommendations for achieving effective future local freshwater leadership and engagement**, with or without Zone Committees. Relevant recommendations included:

- Several **principles that apply regardless of future options**:
  - diversity and balance of views should be supported, potentially beyond freshwater
  - clear purpose, adequate support, and targeted outcomes are required
  - acknowledgement that ‘strategic’ and ‘implementation’ functions may differ
- A **range of potential structures suggested,** noting those **should be effective and efficient**:
  - mechanisms for community connection and engagement, possibly formalised as sub-regional Water & Land Forums or Groups
  - umbrella groups that enable community and catchment groups, such Catchment Leaders Forums, noting that those groups may perform different roles to zone committees
  - advisory groups or community boards to support Councils
  - a Governance and Planning Forum or Committees with strategic oversight and potentially a broader focus than freshwater, e.g. including climate change and biodiversity
- Strong sense that **flexible solutions are need across the region** without one-size-fits-all solutions, while noting that support from **facilitation and liaison staff remains important**
- Acknowledgement of **membership as an important success factor**, with a need to maintain connections to local community and diverse views on suitable composition and size
- Range of suggestion for **more effective working and funding procedures** (e.g. fewer formal meetings and simplified funding allocation), but a desire to **keep existing CWMS funding**
- Widely shared view that for any successful future option **adequate support from territorial authorities and Environment Canterbury will be crucial**, including collaboration and coordination between them as well as effective support to enable local leadership.

Summary

The Review confirmed that Zone Committees in Canterbury have played a crucial role in collaborative freshwater management over the past decade, contributing to plan changes, zone implementation programmes, and community-led initiatives. They have fostered dialogue between diverse stakeholders, including local councils, mana whenua, and community members, while influencing local environmental efforts.

The Review confirmed that the evolving context of freshwater management, including national legislation and the rise of catchment groups, has led to concerns about the Committees' current effectiveness and relevance. The Review also highlighted that meaningful connection with community remains vital in shaping strong positive outcomes for water management.

In considering future leadership options, the Review has incorporated a wide range of views on the challenges faced by Zone Committees and outlines considerations for how to maintain effective local freshwater management and community engagement moving forward.

MINUTES OF THE MEETING OF THE CANTERBURY WATER MANAGEMENT STRATEGY WAIMAKARIRI ZONE COMMITTEE HELD IN THE COUNCIL CHAMBER, 215 HIGH STREET, RANGIORA, ON MONDAY, 11 NOVEMBER 2024, COMMENCING AT 4PM.

PRESENT

C Latham (Chairperson), C Aldhamland, R Gill-Clifford (Youth Representative), M Jolly, C McKay (ECan Councillor) and A Reuben (Te Ngāi Tūāhuriri Rūnanga representative).

IN ATTENDANCE

S Allen (WDC Water Environment Advisor), K Steel (WDC Ecologist), M Griffin (ECan CWMS Facilitator), and T Kunkel (WDC Governance Team Leader).

S Stewart (Deputy Chairperson - Kaiapoi-Tuahiwi Community Board), M Bate (Kaiapoi Resident), D Hill (North Canterbury News) and J Ensor (Chairperson Mandeville Residents Association).

KARAKIA

A Reuben opened the meeting with a Karakia.

1. BUSINESS

1.1 Apologies

Moved: C Latham Seconded: M Jolly

THAT the CWMS Waimakariri Zone Committee:

(a) **Receives** and sustains apologies for leave of absence from J Cook, E Harvie and T Fulton.

CARRIED

1.2 Welcome and Introductions

C Latham welcomed everyone present to the meeting and requested members and those in the public gallery to introduce themselves.

1.3 Register of Interests

There were no updates to the Register of Interest.

2. OPPORTUNITY FOR THE PUBLIC TO SPEAK

2.1 M Bate – Kaiapoi Resident

M Bate noted that in 1971, the Waimakariri River had a low flow of 45m^2 or below for approximately 165 days due to a natural drought. However, the river's biodiversity at that time was very healthy. Also, saltwater did not kill any willows in the Kaiapoi River, but the willows did drop their leaves in March instead of April. In 2024, the saltwater intrusion reached the same areas as in 1971; however, abundant fish still existed. By M Bate's calculation, the tide prevented saltwater from intruding upriver, adding that the Waimakariri River freshwater had never reached the motorway bridge over the Kaiapoi River.

M Bate showed photos and advised that on 6 July 2024, he could not find any aquatic life in Flaxton Road Creek. He believed that chemicals destroyed the biodiversity in the creek, which ran down the Cust Main Drain and led to a dramatic decline the aquatic life in the upper

Kaiapoi River and lower Cust Main Drain. In June 2024, aquatic plant life was still visible in the Kaiapoi River behind the Borough School, but this had declined dramatically by 6 July 2024. M Bate expressed his disappointment that floodgates were not being used to control saltwater intrusion.

As regards the Cam River, M Bate noted that there was still some aquatic life behind the Kaiapoi Woollen Mills. However, no aquatic life was present at the Revells Road Bridge. The bottom of the river was muddy with no aquatic plant life, and ECan and the Council had done no testing, had shown no interest, and blamed the condition of the river on saltwater intrusion. However, saltwater could not reach upstream to this part of the river. He emphasised the need for more testing and investigation to determine the cause. M Bate tabled documentation that he sent to elected members (Trim), sharing his concerns and belief that household toxic chemicals were destroying the aquatic life in waterways.

A Reuben felt it was disappointing that M Bate continued to raise concerns regarding the health of waterways in the Waimakariri District at CWMS Waimakariri Zone Committee meetings with no result. He shared M Bate's concerns and agreed that the matter needed further investigation.

C Latham concurred, stating the Committee had requested investigations and monitoring of saltwater intrusion to understand the levels of saltwater intrusion. Other requests made regarding chemical use near rivers confirmed that chemicals were only used when necessary and then strategically. She stated that more mapping of what was growing in the lower catchments could provide a clearer picture of the cause.

Councillor C McKay noted that ECan was working with the Council on these matters. She concurred that further information needed to be found as this was not only occurring in the Waimakariri District but all over the region.

2.2 **James Ensor**

J Ensor mentioned that Christchurch City Council used a very toxic chemical (Tordon) for weed control in culverts and drains, which soaked into the ground and was long-lasting. This could have also contributed to the destruction of aquatic life in waterways. He believed that the various irrigation consents grated over the years and the change in weather had contributed to the low flow of the Waimakariri River, which, in turn, contributed to the saltwater intrusion.

The Chairperson thanked the members of the public for their contribution.

3. SUSPENSION ON SECTIONS 9.4 OF THE STANDING ORDERS

- The Chairperson advised that the CWMS Waimakariri Zone Committee was subject to the Council's Standing Orders, which did not allow for the public to provide input on reports, Therefore, she moved that Sections 9.4 of the Standing Orders be suspended for Items 3 and 4 to allow members of the public ask questions prior to the item being moved.

Moved: C Latham Seconded: M Jolly

THAT the CWMS Waimakariri Zone Committee:

(a) **Agrees** that Sections 9.4 of the Standing Orders be suspended for Items 3 to 6 to allow members of the public ask questions prior to the item being moved.

CARRIED

4. COMMITTEE UPDATES – M GRIFFIN (CWMS FACILITATOR, ECAN)

4.1 Zone Committee Working Groups.

4.1.1 Biodiversity Working Group

M Jolly thanked everyone who attended the Waimakariri Zone Committee Environmental Awards Ceremony, which was held on 10 October 2024 as part of the Waimakariri Community Services Awards. The Biodiversity Working Group looked forward to facilitating the Environmental Awards in the following year.

The Chairperson thanked M Jolly and the members of the Biodiversity Working Group for enabling the Environmental Awards process.

4.1.2 Lifestyle Block Working Group

C Latham was investigating alternative ways of providing relevant information to community groups, such as weekly e-mails with key information to interested groups rather than hosting a workshop. This could include tips on weed control through spaying. She was currently utilising Beef and Lamb fact sheets on sediment, phosphorus, nitrates, and E. coli over four weeks. However, they were more technical and targeted at farmers.

4.1.3 Monitoring Working Group

No update was provided.

4.2 Environment Canterbury Updates.

Councillor C McKay highlighted the following:

- The annual Water Quality for Contact Recreation Report for the 2023/24 season dealt with quality testing conducted at swimming sites, such as rivers, lakes and coasts. A total of 104 sites were tested for faecal indicator bacteria or COVID.
- At the conclusion of the 2023-24 summer, 85% of coastal sites (estuaries, harbours, and beaches) were graded as generally suitable for swimming. The number of sites suitable for contact recreation had improved compared to the previous two years. However, it was a concern that 63% of the sites within Lyttleton Harbour / Whakaraupō were still considered 'unsuitable for swimming'. Christchurch City Council was investigating possible solutions.
- During the 2023-24 summer, no temporary public health warnings were issued due to high faecal contamination. However, twenty-two river sites and six lake sites had health warnings issued due to toxic algae blooms.
- The Central Government had recently passed legislation stating that Regional Councils were not to notify any Freshwater Planning Legislation work such as Regional Policies and proposed Plan Changes. Thus, ECan could not proceed with the notification of its Regional Policy Statement or proposed Plan Change Eight. ECan Council would, therefore, be meeting on 27 November 2025 to discuss various options.

S Stewart expressed concern about the interchangeability of the use for contact recreation and suitability for swimming in the Water Quality for Contact Recreation Report. The report referred to marine sites' suitability or unsuitability for swimming, which was a high standard. However, freshwater sites were graded as usually suitable for contact recreation. She questioned if the 72% of the freshwater sites, graded as suitable for contact recreation, were also suitable for swimming. If not, had there been a degradation in the suitability for swimming in the freshwater sites. Councillor C McKay undertook to take the matter up with ECan staff and report back to the CWMS Waimakariri Zone Committee.

4.3 **Waimakariri District Council Updates.**

In the absence of Councillor T Fulton, S Allen provided the following update:

- The Council's Report regarding Saline incursions in the Kaiapoi and Ruataniwha Cam Rivers was taken as read.
- Regarding previous questions, she reported that ECan was carrying out the work on the stopbanks in the Cam River.
- The modelling by Jacobs Ltd published in 2020, on behalf of the Council, indicated that the bed of the Ruataniwha Cam River along lower Camside Road and Kaiapoi River upstream of the railway line was currently below Mean Sea Level. However, the ability for saltwater to pass upstream during tidal cycles in these waterways was generally prevented by freshwater river flows, particularly from the Waimakariri River.
- S Allen confirmed that all Council's discharge consents were current. Rangiora Township was issued in 2021, and Kaiapoi, Oxford in Woodend Townships were issued in July 2024.
- The Biodiversity Contestable Fund was currently open for applications. The fund's purpose was to support people in protecting, maintaining, and restoring indigenous biodiversity. Priority would be given to work protecting and restoring significant natural areas and establishment costs for conservation covenants or establishing covenants. The remaining funds would be allocated to projects restoring nature outside significant natural areas.

A Reuben questioned why the Council had not also requested ECan to determine and employ methods to monitor water quality and aquatic ecology trends of the tidal section of the Cam River. S Allen advised that the Kaiapoi River monitoring was requested by the Kaiapoi-Tuahiwi Community Board.

C Latham suggested that a copy of the Council's Report regarding saline incursions in the Kaiapoi and Ruataniwha Cam Rivers be forwarded to the Kaiapoi River Preservation Group for information. S Allen undertook to ensure that the group was provided with a copy of the report.

4.4 **CWMS Zone Committee – Review.**

M Griffin reported that the Mayoral Forum was expected to discuss the CWMS Zone Committee review recommendations at its meeting on 29 November 2024. However, there was an expectation that the first half of 2025 would be a transitional phase to allow all parties to agree on the proposed way forward. So, the status quo was expected to be maintained until 30 June 2025. A working group of Mayors and Rūnanga representatives had been set up to assist the Mayoral Forum with advancing the CWMS Zone Committee's review recommendations.

C Latham noted that the CWMS Zone Committees had an opportunity to contribute to the consultation on the review. There seemed to be a mix of opinions amongst members of the Mayoral Forum regarding the future of the CWMS Zone Committees, so it would be interesting to see the final recommendation to councils.

4.5 **Future Committee Meetings.**

C Latham confirmed that the CWMS Waimakariri Zone Committee would undertake a field trip on Monday, 2 December 2024, and the next Committee meeting would be held on Monday, 3 February 2025.

C Latham noted that the Youth Representative, R Gill-Clifford's last meeting would be in December 2024, as she would be traveling in 2025. R Gill-Clifford expressed her gratitude for being able to serve as a member of the CWMS Waimakariri Zone

Committee. She found it to be a valuable and informative experience. C Latham thanked R Gill-Clifford for her contribution to the committee's work.

4.6 **Action Points from the Previous Zone Committee Meetings.**

M Griffin undertook to provide the CWMS Waimakariri Zone Committee with an update on the water quality sampling at Tutaepatu Lagoon at a subsequent meeting.

Moved: M Jolly Seconded: C McKay

THAT the CWMS Waimakariri Zone Committee:

(a) **Receives** these updates for information.

CARRIED

5. CONFIRMATION OF MINUTES

5.1 **Minutes of the Canterbury Water Management Strategy Waimakariri Zone Committee Meeting – 2 September 2024**

Moved: R Gill-Clifford's Seconded: C Aldhamland

THAT the CWMS Waimakariri Zone Committee:

(a) **Confirms** the Minutes of the Canterbury Water Management Strategy Waimakariri Zone Committee meeting, held on 2 September 2024, as a true and accurate record.

CARRIED

6. GENERAL BUSINESS

C Latham questioned the progress the CWMS Christchurch West Melton Zone Committee had made with the possible amendment of national legislation regarding the use of brake pads with no heavy metals. A Reuben noted that the issue was raised with Local Government New Zealand. S Allen noted that the vehicle industry had resolved the issue, as brake pads no longer contained copper. Brake pads were now 80% copper-free or low copper, which was 0.5%. She noted Auckland Council had a recent report on Freshwater Management Tools which noted this shift to copper free, or low copper, brake pads use in New Zealand.

KARAKIA

A Reuben provided the Karakia.

NEXT MEETING

The next meeting of the CWMS Waimakariri Water Zone Committee was scheduled for Monday 3 February 2025 at 4pm.

THERE BEING NO FURTHER BUSINESS, THE MEETING CONCLUDED AT 5.15PM.

CONFIRMED

_____

Chairperson
Carolyne Latham

_____
Date