AGENDA OF THE INAUGURAL MEETING OF THE LAND AND WATER WORKING GROUP TO BE HELD IN THE COUNCIL CHAMBER, 215 HIGH STREET, RANGIORA COMMENCING AT 3.30PM ON THURSDAY 25 JULY 2019

G Cleary (Manager Utilities and Roading) will open the meeting.

1. APPOINTMENT OF CHAIR

RECOMMENDATION

THAT the Land and Water Working Group:

(a) **Receives** nominations.

(b) **Uses** "System B" as per Standing Orders for the election of Chair, should more than one nomination be received.

2. APOLOGIES

3. CONFLICTS OF INTEREST

4. TERMS OF REFERENCE

RECOMMENDATION

THAT the Land and Water Working Group:

(a) **Reviews** the Terms of Reference (Trim 190305026331).

5. PRESENTATIONS / DEPUTATIONS

5.1 Plan Change 7 – Land and Water Regional Plan and Plan Change 2 Waimakariri River Regional Plan, discussion on the WDC submission. Geoff Meadows – Policy Manager

6. REPORTS

6.1 Arohatia te Awa – Biodiversity and amenity linkages along waterways (Sophie Allen – Water Environment Advisor) and Grant MacLeod (Greenspace Manager)

THAT the Land and Water Working Group recommends:

THAT the Council:

(a) **Receives** report No. 190314033747.

(b) **Approves** the 'Arohatia te Awa' project objectives, scope and timelines in principal.

(c) **Notes** that a scoping phase, conducted by the Land and Water Project Action Group, is recommended in 2019-2020 to assess staff resources, project areas, similar initiatives and funding availability.

(d) **Circulates** this report to Community Boards, the Utilities and Roading Committee and Community and Recreation Committee for their information.

6.2 Nitrate pilot study for private wells (Sophie Allen – Water Environment Advisor)

THAT the Land and Water Working Group recommends:

THAT the Council:

(a) **Receives** report No. 190627090939.

(b) **Notes** the scope of the pilot study, which aims to provide information to private well owners in Cust and Eyreton on nitrate levels in these areas. The aim is to also to test two different sampling techniques, self-supplied sampling or Water Unit staff sampling.

(c) **Notes** that the allocated budget is $10,000 per annum for 2019-20 and 2020-21.

(d) **Notes** that the pilot study in this report is in anticipation of a more extensive programme in 2020-21 onwards of 170 private wells. The extended programme would require additional funding, such as from Environment Canterbury.

(e) **Notes** that specific communication will be undertaken by WDC staff with individual landowners about test results obtained. Any general communication with the wider communities of Cust and Eyreton will depend on test results obtained.

TERMS OF REFERENCE

LAND AND WATER WORKING GROUP

1. PURPOSE

The purpose of the Land and Water Working Group (LWWG) is to provide project oversight and recommendations to the Waimakariri District Council (WDC) on workstreams with an environmental theme, such as for the Waimakariri Water Zone - Zone Implementation Programme Addendum (ZIPA) and District Plan biodiversity functions.

2. MEMBERSHIP

- Councillor with the Canterbury Water Management Strategy portfolio
- A Councillor from the Utilities and Roading Committee
- A Councillor from the Community and Recreation Committee
- A Councillor from the District Planning and Regulation Committee
- A Councillor
- Manager of Utilities and Roading
- Manager of Community and Recreation
- Chair of the Land and Water Project Action Group (LWPAG)

3. ROLE

The members of the LWWG will engage in a positive and collaborative manner to enable the efficient and effective implementation of WDC work programmes with an environmental theme. This includes (but is not limited to) the following roles:

- Govern delegated environmental work programmes;
- Make recommendations to Council or Council Committees, and oversee the implementation of Board, Council or Council Committee decisions;
- Lead and support community engagement;
- Give strategic level recommendations and guidance, for Council decision-making;
- Make recommendations to Council regarding the division of the overall budget for specific projects;

TERMS OF REFERENCE

LAND AND WATER WORKING GROUP

- Recommend approval of any changes to the environmental work programme;
- Review and monitor overall progress, including budget tracking;
- Provide a regular project overview to the Council, or relevant Council Committee, and reporting on milestones, programme, budget, issues, risk, and health and safety;
- Provide recommendations on key documents where necessary, including but not limited reports or briefings to Council, Council Committees or Community Boards;
- Participate in planning workshops.

Members have a key role to ensure the effective flow of information between external organisations and the LWWG.

4. MEETING FREQUENCY

The LWWG shall meet bi-monthly or when requested to do so for urgent matters, or matters relating to the purpose of the LWWG. Meetings will be public, as prescribed by the Local Government Official Information and Meeting Act (1987).

A quorum is considered to be 50 percent of members.

5. ADMINISTRATION

The agenda and minutes for LWWG meetings will be prepared by Utilities and Roading Business Support. The agenda and minutes will be filed in TRIM and distributed to all members. The agenda for the meeting shall generally be as follows:

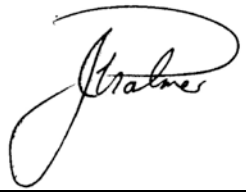
1. Introductions / Apologies
2. Previous Minutes
3. Deputations
4. Staff Reports (milestones, programme, issues, budget, risk, health and safety)
5. Community engagement and media
6. Reports to Council, Committee or Community Board
7. General Business

6. DURATION

The LWWG is intended to function until 30 June 2021, where upon it will be reviewed and a decision made on whether to extend its duration. These Terms of Reference and membership of the group will be reviewed bi-annually thereafter. It is noted that duration and membership will also be reviewed following Council elections in October 2019 and subsequent elections.

WAIMAKARIRI DISTRICT COUNCIL

REPORT FOR DECISION

FILE NO and TRIM NO:	WAT-11 / 190314033747
REPORT TO:	Land and Water Working Group, Council
DATE OF MEETING:	25 July 2019
FROM:	Sophie Allen – Water Environment Advisor Gerard Cleary – Manager Utilities and Roading Grant McLeod– Manager Greenspace
SUBJECT:	'Arohatia te Awa – Cherish the River' project approval
SIGNED BY: **(for Reports to Council, Committees or Boards)**	
	Department Manager — Chief Executive

1. SUMMARY

1.1 This report seeks the approval, in principle, from Council for the concept 'Arohatia te Awa' (Cherish the River), creating a network of recreational walkways and cycleways along waterways, to be adopted as a Council project.

1.2 This report also seeks to define the objectives, scope, and timelines of the project 'Arohatia te Awa.'

1.3 Councillor Stewart proposed the concept Arohatia te Awa to the Waimakariri District Council (WDC) Management Team in December 2018 (refer to attachment 190306027090). Management Team are supportive of the concept in principle (MTO minutes, 17 December 2018), awaiting scoping of project details around governance, staff resourcing, funding and project(s) ownership. Gerard Cleary, Manager Utilities and Roading and Chris Brown, Manager Community and Recreation were nominated as staff leads to progress the concept within Waimakariri District Council.

1.4 It is recommended by WDC staff to establish a Project Control Group (PCG) to discuss governance, staff resourcing, funding and project(s) ownership, to provide a co-ordinated and strategic approach to Arohatia te Awa across Council departments.

1.5 The proposed objectives of Arohatia te Awa are to:

a. improve recreational amenity;

b. enhance cultural values;

c. encourage biodiversity improvements through ecological corridor creation;

d. catalyse economic diversification, for example though agri-tourism along the network; and

e. create a ‘drawcard’ or promotional vehicle for Waimakariri District.

2. RECOMMENDATION

THAT the Land and Water Working Group recommends that:

THAT the Council:

(a) **Receives** report No. 190314033747.

(b) **Approves** the ‘Arohatia te Awa’ project objectives, scope and timelines in principal.

(c) **Notes** that a scoping phase, conducted by the Land and Water Project Action Group, is recommended in 2019-2020 to assess staff resources, project areas, similar initiatives and funding availability.

(d) **Circulates** this report to Community Boards, the Utilities and Roading Committee and Community and Recreation Committee for their information.

3. BACKGROUND

3.1. In 2015, WDC Green Space staff proposed a Recreation and Ecological Linkage Reserve Management Plan. Initial consultation was carried out with the community, however was placed on indefinite hold due to reallocation of staff resourcing. This Plan, created under the Reserves Act (1977) proposed to help Council make decisions on the management of recreation and ecological linkages. Recreation and ecological linkages, as noted by the initial consultation document, provide corridors for fauna to move along waterways and links for walking and cycling, among other benefits.

3.2. Councillor Stewart, in her role as the Drainage and Canterbury Water Management Strategy Portfolio holder and WDC representative on the Waimakariri Water Zone Committee, has articulated a concept of ‘Arohatia te Awa – Cherish the River’. Arohatia te Awa is proposed to link up and provide access to publicly-owned land along waterways in the District, while also carrying out restoration work, with community input and ownership to enhance biodiversity. This would also have the potential to increase the recreation and amenity offering throughout the district. Economic enterprises would be encouraged by the Council to utilise the river access network, such as for cycling tours and agri-tourism ventures.

Related local initiatives

3.3. Environment Canterbury manages an existing recreational trail network along the ecological corridors of the Waimakariri River Regional Park and Ashley Rakahuri Regional Park. These trails are popular for recreation. The regional parks also have associated biodiversity projects such as native plantings and īnanga habitat creation.

3.4. Environment Canterbury has allocated $300,000 in the 2018-19 to the project ‘Clean Green Silverstream’, creation of a cycleway/walkway loop from Kaiapoi, following the Silverstream catchment, to the existing Waimakariri River corridor walkway/cycleway, with a return to Kaiapoi. This loop track has associated biodiversity and water quality improvements, which will be showcased along the loop to the public.

3.5. Te Kōhaka o Tūhaitara Trust maintains the Pegasus and Tutaepatu Trails (see Figure 1), providing recreational cycleways and walkways through wetland and backdune coastal ecosystems of the District.

3.6. Waimakariri District Council is progressing an Urban Cycleways Programme (see Figure 1), for cycling traffic. There is potential for parts of this network to connect to an Arohatia te Awa network.

Figure 1: Urban Cycleways Programme network and selected recreational trails in the Waimakariri District

3.7. Enterprise North Canterbury is facilitating a proposal for a 'Wheels to Waipara' coastal cycleway and walkway along Pegasus Bay from the Waimakariri River to Waipara. Funding has been sought from the Provincial Growth Fund, with a decision still pending. This will connect to an existing 'Vineyard tour of Waipara cycleway' in the Hurunui District.

3.8. A cycle lane on the State Highway One bridge over the Waimakariri River is due for completion in 2019. This cycle lane will increase the potential for cycling and walking options to, and from, Christchurch into North Canterbury.

4. ISSUES AND OPTIONS

Scope

4.1. The recommended project scope of Arohatia te Awa is:

a. To create a network of walkways and cycleways primarily suitable for recreational users. It is not anticipated to receive any significant commuter usage.

b. A network to be placed alongside waterways off-road, with some connector sections along other networks, such as road, only if required.

c. To focus on biodiversity restoration of threatened ecosystem types of the Canterbury plains, such as wetland and drylands ecosystems.

d. For the whole of the Waimakariri District, however with initial pilot areas potentially along the Cam River and coastal area of the District.

e. To focus on the use of Waimakariri District Council and other public land, however with the possibility for access negotiations with private landowners, such as easements.

Timelines

4.2. A scoping phase, conducted by the Land and Water Project Action Group, is recommended in 2019-2020 to assess staff resources, project areas, similar initiatives and funding availability.

4.3. A report on existing budgets, future funding needs and proposed governance structure will be presented to the Land and Water Working Group late in 2019-20, provided there is Council approval to adopt the project.

4.4. Future work post 2019-20 could include the preparation of business cases, network plans, and implementation and maintenance of works.

4.5. Arohatia te Awa is proposed to be on-going until such a time as the project is deemed to no longer be required.

Strategic Alignment

4.6. Arohatia te Awa aligns with objectives of other Council work, such as the Canterbury Biodiversity Strategy to create ecological corridors from the mountains to the sea, and projects under the Zone Implementation Programme Addendum (ZIPA). Recommendation 1.26 of the ZIPA seeks that: 'Environment Canterbury and the Waimakariri District Council support projects that have enduring benefits for improved stream health, Ngāi Tūāhuriri values, improved recreational amenity in the North Waimakariri River Tributaries.'

4.7. The WDC Greenspace Manager has indicated it is a priority for the Greenspace team to re-commence work on a recreation and ecological linkages management plan. This plan would include direction for creation of esplanade reserves along specified waterways under the Resource Management Act (1991). This plan could underpin work carried out by the Land and Water Project Action Group.

Funding

4.8. The Zone Implementation Programme Addendum (ZIPA) was adopted by Council in December 2018. $70,000 per annum for two years has been allocated to implementing Recommendation 1.26 for 'improved stream health, Ngāi Tūāhuriri values, and improved recreational amenity': This allocated budget fits well with Arohatia te Awa objectives.

4.9. Central government funding is potentially available for implementation of Arohatia te Awa, for example through the Provincial Growth Fund.

Relationships and Community Engagement

4.10. It is recommended for the Land and Water Project Action Group to coordinate and cooperate with similar local initiatives, for example the Environment Canterbury 'Clean, Green, Silverstream' loop and the work of Enterprise North Canterbury to promote recreational trails.

4.11. Agreements for easement access over private land could be sought by Waimakariri District Council, however is only recommended for circumstances only where an access easement would permit completion of a network section along primarily public land.

4.12. It is anticipated that there will be a high level of community interest and engagement. Opportunities are recommended to be created for community to participate in planning and on-going use of the Arohatia te Awa network, such as trail maintenance, tree planting and weeding bee events.

4.13. It is recommended for the Land and Water Project Action Group, when considering governance structures for Arohatia te Awa, to consider establishment of a charitable trust, as a separate entity from the Council. A successful example of the use of this governance structure is the Hurunui Trails Trust, which has facilitated the creation of trails in the Hurunui District. Advantages of a separate trust could include access to a wider range of philanthropic / charitable funding sources.

Mapping

4.14. GIS mapping of public land along waterways will be key for scoping potential network sections. The WDC Geospatial Team have trialled a pilot mapping exercise with the Cam River and tributaries. The pilot mapping exercise found that further mapping of the exact location of waterways, particularly smaller tributaries could be required by WDC. Features such as unformed legal roads and esplanade strips could require mapping manually, as no GIS layer currently exists.

4.15. The Management Team has reviewed this report and supports the recommendations.

5. COMMUNITY VIEWS

5.1. Groups and Organisations

5.1.1. Environment Canterbury

The Arohatia te Awa project would complement the 'Clean, Green Silverstream' project with similar objectives led by Environment Canterbury.

5.1.2. Waimakariri Water Zone Committee (WWZC)

Arohatia te Awa would support the implementation of WWZC Recommendation 1.26 in the ZIPA seeks that: 'Environment Canterbury and the Waimakariri District Council support projects that have enduring benefits for improved stream health, Ngāi Tūāhuriri values, improved recreational amenity in the North Waimakariri River Tributaries.'

5.1.3. Te Ngāi Tūāhuriri Rūnanga

Consultation on the project is proposed to be undertaken at a WDC-Rūnanga meeting. Consultation could focus specifically on how to improve cultural values, such as providing

access for mahinga kai (customary food gathering) and the desired role of the rūnanga with the project.

5.1.4. Enterprise North Canterbury

Arohatia te Awa fits well with a current Enterprise North Canterbury project to promote recreational trails to tourists and local community. Enterprise North Canterbury has indicated an interest to work with the Land and Water Project Action Group.

6. IMPLICATIONS AND RISKS

6.1. Financial Implications

6.1.1. Staff resourcing is available to progress this project within existing budgets at the initial phase of the project in 2019-20, particularly by the Water Environment Advisor role and proposed Biodiversity Officer role. Any funding requests would be presented in a future report to Council.

6.2. Community Implications

6.2.1. The community would receive;

6.2.1.1. increased recreational amenity;

6.2.1.2. improved biodiversity with more extensive ecological corridors;

6.2.1.3. opportunities for economic diversification; and

6.2.1.4. support for cultural values, such as providing access for mahinga kai, and providing habitat to sustain taonga species.

There is potentially a cost to ratepayers, if additional funding was sought to implement the project Arohatia te Awa from rates.

6.3. Risk Management

6.3.1. It is recommended to continually monitor and review the scope of the Arohatia te Awa project, to minimise the risk of losing focus and not meeting objectives. There is a risk of the scope changing over time, due to the multi-disciplinary nature of the project. It could be advantageous to focus on completing a few pilot sections, followed by an evaluation before up-scaling.

6.4. Health and Safety

6.4.1. There are no health and safety considerations regarding the adoption of the Arohatia te Awa project in itself. Health and safety considerations for sections of the recreational cycleway and walkway network, such as road traffic, heights and uneven ground, would be considered as part of the design process.

7. CONTEXT

7.1. Policy

7.1.1. This matter is not of significance in terms of the Council's Significance and Engagement Policy.

7.2. Legislation

7.2.1. Canterbury Biodiversity Strategy (2008) – The vision statement of the strategy support ecological corridors with a vision for 'a full range of healthy ecosystems stretching from the mountains to the sea.'

7.2.2. Resource Management Act (1991) – Sections 229-231 for vesting of esplanade reserves to a Council. Section 232 for creation of esplanade strips.

7.2.3. Reserves Act (1977) – Esplanade reserves are set aside as reserves under the Reserves Act (1977). The Act also permits the creation of a Reserve Management Plan, such as the 'Recreation and Ecological Linkage Reserve Management Plan', which was proposed by WDC in 2015.

7.3. **Community Outcomes**

There is a healthy and sustainable environment for all

7.3.1. Harm to the environment from the impacts of land use, use of water resources and air emissions is minimised.

7.3.2. Cultural values relating to water are acknowledged and respected.

7.3.3. The demand for water is kept to a sustainable level.

7.3.4. Harm to the environment from the spread of contaminants into ground water and surface water is minimised.

There are areas of significant indigenous vegetation and habitats for indigenous fauna

7.3.5. Conservation and restoration of significant areas of vegetation and/or habitats is encouraged.

Public spaces and facilities are plentiful, accessible and high quality

7.3.6. People enjoy clean water at our beaches, rivers and lakes.

7.3.7. There is a wide variety of public places and spaces to meet people's needs.

7.3.8. There are wide-ranging opportunities for people to enjoy the outdoors.

Transport is accessible, convenient, reliable and sustainable

7.3.9. Communities in our District are well linked with each other and Christchurch is readily accessible by a range of transport modes.

Businesses in the District are diverse, adaptable and growing

7.3.10. There are growing numbers of businesses and employment opportunities in our District.

7.3.11. There are sufficient and appropriate places where businesses are able to set up in our District.

7.4. **Delegations**

No delegations apply.

WAIMAKARIRI DISTRICT COUNCIL

REPORT FOR INFORMATION

FILE NO and TRIM NO:	WAT-10-14 / 190627090939
REPORT TO:	Land and Water Working Group
DATE OF MEETING:	25 July 2019
FROM:	Sophie Allen – Water Environment Advisor
SUBJECT:	Pilot study of nitrate levels in private wells
SIGNED BY: **(for Reports to Council, Committees or Boards)**	

Department Manager | Chief Executive

1. SUMMARY

1.1 This report recommends the scope for Council to undertake a pilot study of nitrate levels in groundwater, for private wells in the Cust and Eyreton areas, as per recommendation 3.16 of the Zone Implementation Programme Addendum (ZIPA).

1.2 Nitrate levels have been reported to Council in 2018, by private well owners in the Eyreton area, that were close to the Maximum Accepted Value (MAV) of 11.3 mg/L of nitrate-nitrogen as defined in the Drinking-water Standards for New Zealand (DWSNZ 2005, amended 2018).

1.3 Cust and Eyreton are recommended as the two areas for the pilot study due to previous high nitrate levels reported in Environment Canterbury monitoring wells and reports from private well owners.

1.4 It is recommended by WDC staff that the pilot study is used as a test of sampling processes for a potential wider and more extensive private well sampling programme from 170 wells in 2020-21 onwards.

1.5 Ten private wells in the Cust area and ten private wells in the Eyreton area are proposed to be sampled in the spring of 2019. Spring is when nitrate levels are usually seasonally high. Both well sampling by the WDC Water Unit and self-sampled by the landowner will be trialled for Cust; for comparison of the quality of self-sampling results. The self-supplied sample system alone will be trialled for Eyreton. The sampling system trial is to determine a preferred method (Water Unit sample or self-supplied) for a more extensive sampling programme to be carried out in 2020-21.

1.6 Environment Canterbury groundwater staff have confirmed that they are able to provide technical advice, as well as data management and storage, for the pilot study.

1.7 A budget of $10,000 per annum for 2019-20 and 2020-21 has been allocated from the general rate for ZIPA works under the Drainage Account for the pilot study to be undertaken.

Attachments:

i. Oxford Ohoka Community Board Meeting 3 October 2018 Tabled Information Rosina Rouse Tom McBreaty (Nitrate levels in Eyreton, TRIM 181011118533)

2. RECOMMENDATION

THAT the Land and Water Working Group recommends:

THAT the Council:

(a) **Receives** report No. 190627090939.

(b) **Notes** the scope of the pilot study, which aims to provide information to private well owners in Cust and Eyreton on nitrate levels in these areas. The aim is to also to test two different sampling techniques, self-supplied sampling or Water Unit staff sampling.

(c) **Notes** that the allocated budget is $10,000 per annum for 2019-20 and 2020-21.

(d) **Notes** that the pilot study in this report is in anticipation of a more extensive programme in 2020-21 onwards of 170 private wells. The extended programme would require additional funding, such as from Environment Canterbury.

(e) **Notes** that specific communication will be undertaken by WDC staff with individual landowners about test results obtained. Any general communication with the wider communities of Cust and Eyreton will depend on test results obtained.

3. BACKGROUND

3.1 A level of nitrate-nitrogen in a private well in Eyreton that was 11.2 mg/L (just below the MAV of 11.3 mg/L, as per the Drinking-water Standards for New Zealand 2005, amended 2018) was reported to WDC in 2018. A neighbouring property in Eyreton was also measured as 10.4 mg/L of nitrate-nitrogen in 2018.

3.2 The property owners with the well over the MAV for nitrate have installed a reverse osmosis system to treat the water. Depending on results and location of properties, a treatment option can be offered to connect to a community supply well where practicable.

3.1. Canterbury groundwater monitoring bores mostly show no trend in the Waimakariri Water Zone, (one well shows an increasing trend and two wells a decreasing trend). In the Environment Canterbury 2018 groundwater annual report, none of the monitoring bores were shown to be over the MAV for nitrate in the Waimakariri Water Zone.

3.3 Nitrate levels are known to vary seasonally, often with highest levels noted in spring.

4. ISSUES AND OPTIONS

4.1. The pilot study will be carried out as per the stated proposal below by WDC staff. This proposal outlines study objectives, scope, exclusions, deliverables, and timeframes.

Proposal - Study Objectives

4.2. The objectives of the pilot study are:

4.2.1. To establish nitrate levels in ten private wells in Cust and ten private wells in Eyreton.

4.2.2. To assess the cost, sample quality and effectiveness of ‘self-sampling’ compared to water sampling by Water Unit staff.

4.2.3. To recommend any improvements to the sampling protocol, data management, project management for the more extensive nitrate sampling programme in 2020-2021.

4.3. It is proposed that the Water Unit sampling will sample the routine water chemical suite of parameters, wider than what is required for this pilot study, as there is a potential opportunity for water quality results to be further analysed at a later date- outside of the scope of this study. An example would be valuable information on the prevalence of *E. coli* in private wells, indicating whether there is potential faecal contamination.

4.4. 'Self-sampling' will be for a restricted set of parameters only, i.e. the routine water suite from Hill Laboratories excluding *E. coli* and Total coliforms, due to the expertise and careful sample handling required to correctly sample these microbiological parameters.

1.8 A private wells sampling programme of 170 wells from 2020-21 onwards would cover all seventeen key groundwater areas in the District to advise private well owners of nitrate levels, and also monitor nitrate trends over time. Discussions have commenced with Environment Canterbury staff on whether the more extensive programme will be in conjunction with support and/or budget from Environment Canterbury.

Scope

4.5. The selection of the 20 wells will follow advice from Environment Canterbury groundwater scientist. Targeted wells to be sampled will be:

4.5.1. Private wells (i.e. excluding WDC and private community water supplies that are already required to test for nitrate and other determinands under the Drinking-water Standards for New Zealand).

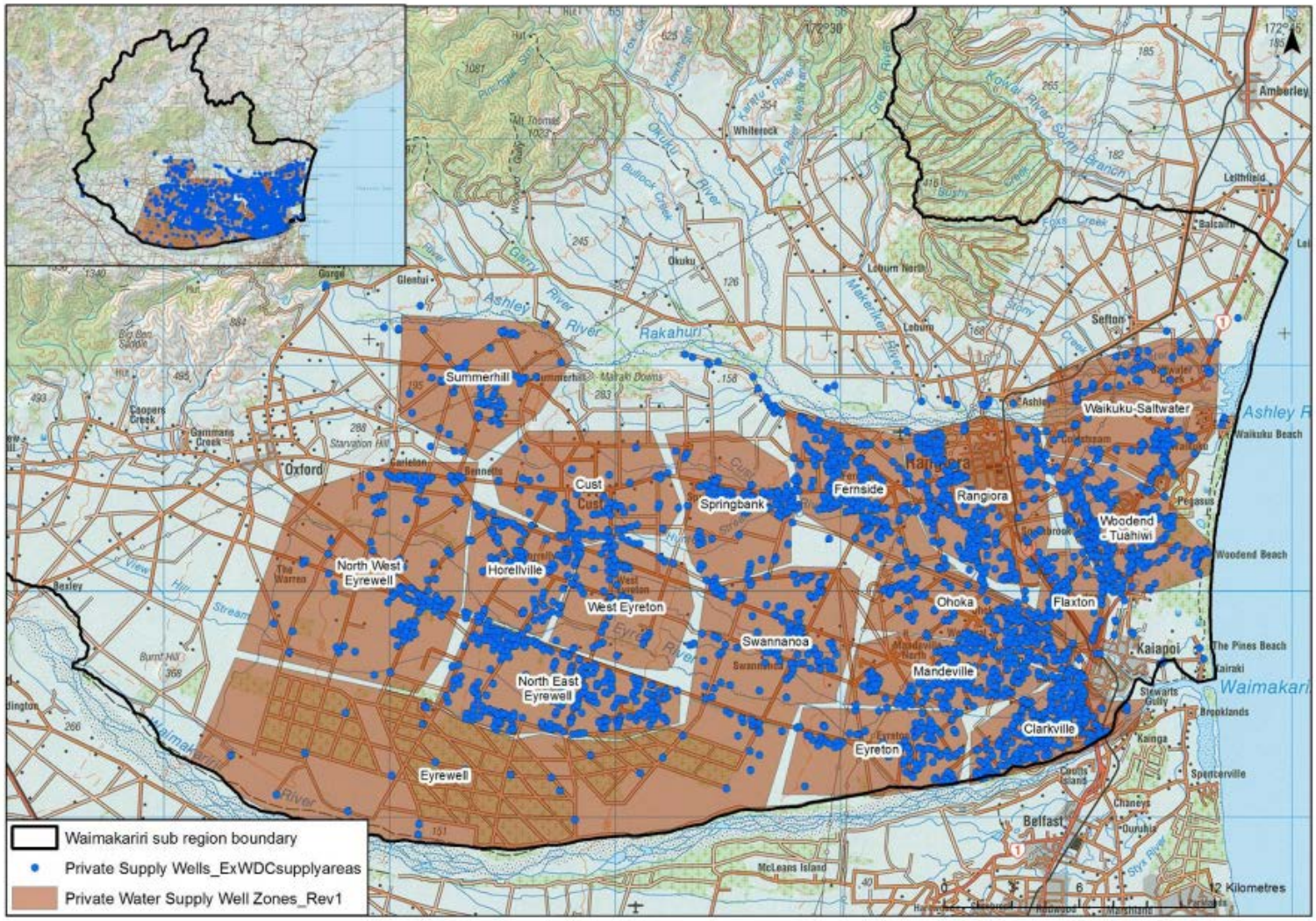
4.5.2. Are located within the groundwater sub-zone areas of 'Cust' and 'Eyreton' as defined by Environment Canterbury (see Map 1).

4.5.3. Sampled from the well head, or a well-purged kitchen tap if there is no filtration installed.

4.5.4. For Cust - Sampling for the routine water suite as defined by Hill Laboratories.

For Eyreton – Sampling for the routine water suite as defined by Hill Laboratories, except microbiological (*E.coli* and Total coliforms.),

4.5.5. WDC staff will contact and provide advice to any private well owners with any nitrate-nitrogen level that is over the nitrate-nitrogen MAV (11.3 mg/L).



Map 1: Seventeen private well sampling areas groundwater within the Waimakariri Water Zone, as defined by the Zone Implementation Programme Addendum (ZIPA) – Map X5.

Exclusions

4.6. Exclusions from the pilot study are:

4.6.1. Well water used only for stock and other agricultural uses such as irrigation.

4.6.2. Sampling of community water supplies, as these require regular testing for nitrate under the DWSNZ (2005, amended 2018).

Deliverables

4.6.3. A presentation of final report findings and recommendations to Council of nitrate levels found in selected private wells of Cust and Eyreton (see Map 1). WDC staff will interpret results together with the Waimakariri Water Zone groundwater model predictions for the Cust and Eyreton areas.

4.6.4. Advice that can be used to inform and advise all private well owners in the Cust and Eyreton areas. Recommendations on treatment options for private well owners, if applicable.

4.6.5. Well locations to be double-checked with GPS, and a photo to be taken by Water Unit staff. Well location to be mapped, or a GPS reference taken if possible, and a well head photo taken by the 'self-sampling' well owners.

4.6.6. Results data supplied to Environment Canterbury for entry into the Canterbury groundwater database.

Timeframe

4.7. The proposed timeframe for the pilot study is:

Date	Task
By July 2019	Scope project with this report to the Land and Water Working Group
By September 2019	WDC media release to promote information to the community about the pilot study and to request to volunteer private wells to be sampled.
By September 2019	Ground-truthing of Environment Canterbury well data by WDC and Environment Canterbury. Selection of wells based on criteria.
September-November 2019	Private well owners contacted by WDC. Sampling carried out by the Water Unit and/or sample kit sent out for self-sampling.
September 2019 onwards	Test results shared with private well owners. Potential work by WDC staff commences to advise private well users of any recommended treatment options, based on private well testing results.
By December 2019	Draft report with results and recommendations by WDC staff
By December 2019 - January 2020	Final report to Land and Water Working Group meeting
4 February 2020	Final report with recommendations presented to Council by WDC staff at Council meeting

Data quality and data management

4.8. Environment Canterbury groundwater scientists will provide advice and technical support to refine which wells are suitable for sampling within the area.

4.9. Some ground-truthing of Environment Canterbury well data will be required by WDC staff, for example by looking at the location of habitable dwellings that are not connected to a reticulated water supply. Environment Canterbury well data may not identify all wells that would be suitable for sampling in cases such as:

4.9.1. Wells dating from pre-1990's, with no consent expiry or review carried out since this date

4.9.2. Wells are used for domestic use, though not consented for this use.

4.9.3. A reticulated water supply connection exists, therefore an available well is assumed to not be used for domestic consumption.

4.9.4. Wells not recorded in Environment Canterbury well data, for example if no consent to drill a well has been issued.

4.10. It is unknown how representative the 10 wells selected will be for each of the Cust and Eyreton areas. Due to the low sample size and volunteer recruitment, it is likely that there will be some sampling bias. There are approximately 2300 private supply wells in the Waimakariri Water Zone according to a draft Environment Canterbury memo in 2018.

4.11. The 20 wells are recommended to be selected, in discussion with Environment Canterbury groundwater scientists on criteria such as;

4.11.1. close proximity to a well with an identified elevated nitrate level;

4.11.2. providing a range of depths (screened depth, or total depth if information on screened depth is not available);

4.11.3. willingness of the landowner to provide a sample;

4.11.4. modelled to have oxidised groundwater conditions and/or

4.11.5. request from a landowner to be sampled.

4.12. The Management Team have reviewed this report and support the recommendations.

5. COMMUNITY VIEWS

5.1. Groups and Organisations

5.1.1. Eyreton residents with elevated nitrate levels have expressed a desire for wider testing to be carried out, and for private well owners in the area to be alerted of the possibility of elevated nitrate levels.

5.2. Wider Community

5.2.1. The wider community has not been consulted on the scope of a pilot study for nitrates in the Cust and Eyreton areas. A media release before the pilot study will inform community members about the aims of the study, and hopefully identify private well owners who are willing to volunteer wells for sampling.

6. IMPLICATIONS AND RISKS

6.1. Financial Implications

6.1.1. A total cost of $7.5k is anticipated for the pilot study, in addition to WDC staff time (see Table 1).

Table 1: Indicative cost of risk assessment.

Task	Cost (approximate)

Sampling by the Water Unit (10 samples at $385 / sample, including water sample analysis. Self-supplied sampling - 20 wells at $130 per sample including courier bags, postage, and water sample analysis.	$6,500
Project contingency	$1,000
Total	**$7,500**

6.1.2. Any proposal for a significant extension of a Council community water supply scheme, due to results of the pilot study, would be brought to Council for consideration as part of the Long Term Plan process.

6.2. **Community Implications**

6.2.1. A study of nitrate levels in private wells for all of the Waimakariri District will give the best outcomes for the community. This is because currently water quality testing by private well owners is discretionary, and results are not required to be shared with Council unless as a condition for a subdivision or building consent. Due to this situation, there is limited information of the level of nitrates in private wells.

6.3. **Risk Management**

6.3.1. The risk that private well owners in the Cust and Eyreton areas could be consuming water that has elevated nitrate levels over the MAV will be reduced as a result of this pilot study and subsequent communication of any treatment recommendations.

6.3.2. The work to warn private well users of any elevated nitrate-nitrogen level over the MAV of 11.3mg/L will commence as soon as water test results are confirmed. This is because a water test result is sufficient to alert private well owners, and there is a potential risk to human health in delaying communication of results.

6.4. **Health and Safety**

6.4.1. There are some health and safety considerations of water sampling staff while out in the field, which will be minimised by complying with the 'Safe Working in the Field' manual if staff from the Water Unit.

7. CONTEXT

7.1. **Policy**

7.1.1. This matter is not a matter of significance in terms of the Council's Significance and Engagement Policy.

7.2. **Legislation**

7.3. **Community Outcomes**

7.3.1. There is a healthy and sustainable environment for all

7.3.1.1. Cultural values relating to water are acknowledged and respected.

7.3.1.2. Harm to the environment from the spread of contaminants into ground water and surface water is minimised.

7.4. **Delegations**

7.4.1. No delegations apply to this report, as this report is for information only.