WAIMAKARIRI
DISTRICT COUNCIL

Land and Water Committee

Agenda

Thursday 10 December 2020

9.30am

Function Room
Rangiora Town Hall
303 High Street
Rangiora

Members:

Councillor Sandra Stewart (Chairperson)
Deputy Mayor Neville Atkinson
Councillor Kirstyn Barnett
Councillor Al Blackie
Councillor Niki Mealings
Councillor Paul Williams
Mayor Dan Gordon (ex officio)

The Chairperson and Members
LAND AND WATER COMMITTEE

AGENDA OF THE LAND AND WATER COMMITTEE TO BE HELD IN THE FUNCTION ROOM, RANGIORA TOWN HALL, 303 HIGH STREET, RANGIORA ON THURSDAY 10 DECEMBER 2020 AT 9.30AM.

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

BUSINESS

Page No

1 APOLOGIES

2 CONFLICTS OF INTEREST

Conflicts of interest (if any) to be reported for minuting.

3 CONFIRMATION OF MINUTES

3.1 Minutes of a meeting of the Land and Water Committee held on Thursday 8 October 2020

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RECOMMENDATION

THAT the Land and Water Committee:

(a) **Confirms** the circulated Minutes of the meeting of the Land and Water Committee held on 8 October 2020 as a true and correct record.

4 MATTERS ARISING

5 DEPUTATION/PRESENTATIONS

Nil.

6 REPORTS

6.1 Environmental programmes for the draft Long Term Plan 2021-31 – Sophie Allen (Water Environment Advisor) and Kate Steel (Ecologist Biodiversity)

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RECOMMENDATION

THAT the Land and Water Committee:

(a) **Receives** report 200915122094[v2].

(b) **Recommends** the following proposed budget options to the Council for consideration among other priorities for inclusion in the draft Long Term Plan 2021-2031 for biodiversity, freshwater, natural reserves, district planning, and environmental education.

i. Zone Implementation Programme Addendum ($310k per year)

ii. Arohatia Te Awa (initially $210k, then $120k per year)

iii. Biodiversity Contestable Fund ($7.25k in 2022/23, $25k 2023/24, then increasing by $10k per year)

iv. Greenspace Natural Reserves

v. Environmental Education (budget to be confirmed)

(c) **Notes** the proposal that budgets for environmental programmes that are new or expanded, namely the Biodiversity Contestable Fund and Arohatia te Awa programmes, are detailed in the draft Long Term Plan as a consultation topic for the community.

(d) **Notes** that the recommended budget options will be included in the draft LTP.

(e) **Notes** the recommended option for the Zone Implementation Programme Addendum (Option B) is a continuation of a medium-range budget of $310k per year, similar to the approved budget from 2019-21.

(f) **Notes** the recommended option for Arohatia te Awa (Option B) is a budget of $210k for the first year, decreasing to $120k per year over 4 years, with baseline support for a community trust.

(g) **Notes** the recommended option for the Biodiversity Contestable Fund (Option B) is an initial budget of $0 increasing to $95k over the span of the LTP.

(h) **Notes** the proposed budgets for Silverstream Reserve and Forestdale Wetlands Reserve.

(i) **Notes** that WDC staff recommend for the continuation of the stormwater education budget and for a biodiversity education budget to be created.

(j) **Circulates** this report to Council, Waimakariri Water Zone Committee, Rūnanga liaison meeting and Community Boards.

6.2 Drainage activities in wetland areas – Sophie Allen (Water Environment Advisor)

37 - 55

RECOMMENDATION

THAT the Land and Water Committee:

(a) **Receives** report No. 201015138673.

(b) **Notes** that changes to regulations to introduce requirements for certain activities within natural wetlands, and buffer areas of up to 100m, under the National Environmental Standards for Freshwater (2020).

(c) **Notes** that the WDC drainage network meets the definition of specified infrastructure in the National Environmental Standards - Freshwater (2020), with activities that are permitted (vegetation clearance) and discretionary (such as earthworks, and land disturbance) if conditions can be met.

(d) **Notes** the position of WDC staff for the summer of 2020-21 is to undertake only permitted activities within 100m of a wetland, until further interpretation on the NES-F rules can be obtained regarding conditions for discretionary and non-complying activities.

(e) **Notes** that WDC staff anticipate that confining activities within 100m of a wetland to those permitted under the NPS-F will not impact the WDC 3 waters work programme planned for summer 2020-21.

(f) **Notes** that WDC staff recommend seeking a consent(s) for selective activities in natural wetland areas that are discretionary, but potentially to cease maintenance for non-complying activities; in order to protect wetland values and also the unlikelihood of a non-complying activity consent application being granted.

(g) **Notes** that WDC staff will request that Environment Canterbury and the Ministry for the Environment promote the rules of the NES-F (2020) regarding wetlands management for private landowners, particularly in relation to earthworks for drainage.

(h) **Notes** concerns from landowners of the Lineside Road - Bramley Road area that a wetland mapped by Environment Canterbury is due to deferred drain maintenance by WDC Drainage, with requests for rate rebates and/or land purchase received by WDC.

(i) **Notes** that the Lineside Road - Bramley Road wetland mapped is for intended to undergo an ecological ground survey review by Environment Canterbury ecologist this summer, dependent on obtaining landowner access permissions, which will delineate where the definition for a natural wetland is meet.

(j) **Notes** the need for community education and engagement to support our communities understanding of this issue particularly through community boards and drainage boards.

(k) **Notes** that community education will be discussed as part of Long Term Plan deliberations.

(l) **Circulates** this report to the Drainage Advisory Groups, Community Boards and Waimakariri Water Zone Committee.

6.3 Weed Control and Fencing at Forestdale Wetland – Kate Steel (Ecologist Biodiversity)

56 - 88

RECOMMENDATION

THAT the Land and Water Committee:

(a) **Receives** report No. 201106150208

(b) **Notes** in the current financial year staff would like to fence Forestdale Wetland at a cost of $66k and undertake weed control at a cost of $20k.

(c) **Notes** this report recommends funding from three sources including a ZIPA reallocation, Environment Canterbury operational budget and Immediate Steps Funding.

(d) **Notes** the Environment Canterbury operations budget contribution is proposed to be $20k towards fencing and $10k for weed control.

(e) **Approves** the reallocation of $20,000 from the 2020/2021 ZIPA budget as a WDC contribution to the Forestdale Wetlands project.

(f) **Notes** staff will apply to Environment Canterbury's Immediate Steps Biodiversity Fund for $26k towards the capital cost of boundary fencing and $10k towards weed control needed to complete the project.

7 PORTFOLIO UPDATES

7.1 Biodiversity – Councillor Sandra Stewart

7.2 Land based Indigenous Reserves (Including River Margins) – Councillor Al Blackie

8 QUESTIONS

9 URGENT GENERAL BUSINESS

NEXT MEETING

The next meeting of the Land and Water Committee is scheduled for 1:00pm, Tuesday 16 February 2021 in the Function Room, Rangiora Town Hall.

BRIEFING

Canterbury Water Management Strategy work programme for WDC to support the Long Term Plan decision-making process – Sophie Allen (Water Environment Advisor)

(briefing material (Trim 201117154500) will be circulated to members)

WAIMAKARIRI DISTRICT COUNCIL

MINUTES OF A MEETING OF THE LAND AND WATER COMMITTEE HELD IN THE FUNCTION ROOM AT THE RANGIORA TOWN HALL, 303 HIGH STREET, RANGIORA ON THURSDAY 8 OCTOBER 2020 COMMENCING AT 9:30AM

PRESENT

Councillors S Stewart (Chairperson), N Atkinson, K Barnett, A Blackie, N Mealings and P Williams.

IN ATTENDANCE

G Cleary (Manager Utilities and Roading), S Allen (Water Environment Officer), K Steel (Ecologist – Biodiversity), G McLeod (Community Greenspace Manager) and K Rabe (Governance Adviser).

1 APOLOGIES

Nil.

2 CONFLICTS OF INTEREST

There were no conflicts of interest declared.

3 CONFIRMATION OF MINUTES

3.1 Minutes of a meeting of the Land and Water Committee held on Thursday 13 August 2020

Moved: Councillor Stewart Seconded: Councillor Atkinson

THAT the Land and Water Committee:

(a) **Confirms** the circulated Minutes of a meeting of the Land and Water Committee held on 13 August 2020, subject to the amendment in item 6.1 (paragraph 4), as a true and accurate record.

CARRIED

4 MATTERS ARISING

Councillor Barnett requested an update on the Nitrate limits for private wells. S Allen undertook to forward the report that was presented to the CWMS Waimakariri Zone Committee to the members of the Land and Water Committee.

5 DEPUTATION/PRESENTATIONS

5.1 Jo Buckner –NZ Landcare Trust

J Buckner, Regional Co-ordinator of the NZ Landcare Trust was in attendance to introduce herself and to update the Committee on the work done by the NZ Landcare Trust.

The Canterbury region extends from Kaikoura and North Canterbury to South Canterbury, the Waitaki Valley and inland to the MacKenzie Basin.

The Trust partners with farmers, stakeholders, agencies and Community Catchment and Landcare Groups to make a tangible difference in the future of New Zealand's waterways and landscapes. At a practical level, the Trust supports landowners, farmers and community groups to carry out sustainable land and catchment management projects.

The Chairperson thanked J Buckner for her presentation and the information provided.

5.2 Environmental programmes for the Long Term Plan 2021-31 – Sophie Allen (Water Environment Advisor) and Kate Steel (Ecologist Biodiversity)

S Allen and K Steel updated the Committee on the possible Environmental Programmes to be submitted for inclusion in the Long Term Plan 2021-31 and to get the Committee's feedback and endorsement of the projects going forward.

Current Environment projects included Zone Implementation Programme Addendum (ZIPA) outcomes, Arohatia te Awa, Significant Natural Areas, Greenspace Natural Reserves and Environmental education. Constraints on these projects would be the financial impacts due to Covid-19 and consideration should be given to the co-funding of the Covid Green Recovery Programmes such as Jobs for Nature and partnering options.

Councillor Mealings enquired how 'Significant Natural Areas' were being identified and was informed that the District Plan listed known sites, and possible new sites were identified by landowners who requested ground surveys by Wildlands/Boffa Miskell.

The Committee discussed the opportunities to partner with existing environmental trusts such as Te Arra Kakariki to assist with the support for landowners and to create habitat connectivity across the Canterbury Plains. Also discussed were options to access possible external funding through local businesses to achieve desired results. Staff were requested to bring back a detailed report on options available and access to possible external funding streams.

There was agreement that additional funding from Council was not possible due to the desire to keep rates low to combat the impact of Covid-19. However it would be beneficial for this matter to be highlighted in the Long Term Plan so that residents/rate payers are aware of the importance and need for the continuation of the environmental work being done.

6 REPORTS

6.1 Kaiapoi River water quality and management – S Allen (Water Environment Advisor)

S Allen gave a brief overview of the proposed work programmed for water management and improved water quality for the Kaiapoi River as recommended by the Kaiapoi River Rehabilitation Committee.

This included plantings both in the Kaiapoi River and along its banks to improve increased flushing flows and absorb wave erosion, as well as the establishment of native saltmarsh vegetation, to monitor inanga spawning and to improve suitable spawning habituates further upstream.

In regards to the proposal to create a wetland at Adderley Terrace and the realignment of the 'elbow bend' in the Kaiapoi River at the corner of Smith and Charles Streets, staff recommend that these projects not proceed at this time as other workstreams in the area made the timing of this work inappropriate.

With regard to the informal request by members to control the pigeon colony under the Williams Street Bridge in an effort to mitigate the faecal bacterial contamination of the Kaiapoi river, staff believe that the pigeons were not the biggest contributor of the contamination and there was insufficient budget to effectively deal the issue at present.

S Allen noted that the Council would be requesting Environment Canterbury (ECan) to carry out continuous monitoring of the Kaiapoi River for nutrient, chlorophyll-a and salinity levels in particular. As the Kaiapoi River was a tidal waterway, continuous 15 minute readings would be beneficial as the fluctuations in the parameters made less frequent monitoring ineffective for the gathering of data.

Councillor Atkinson questioned the viability of creating a gravel 'beach' at the elbow of the Kaiapoi River, noting that the thick silt at this location would likely cause the gravel to be absorbed into the silt. He also noted that the actual elbow in the river was carefully engineered at the time the course of the river was altered when the highway was developed. The resulting popular 'fishing hole' located at the bend should, in his opinion, be left as is. In regards to Adderley Terrace, he felt that the area should be dredged and suggested that further investigation of this project this should be carried out.

Councillor Barnett agreed with staff that better monitoring of the Kaiapoi River should be carried out by ECan so as to obtain more meaningful data that could assist the Council to plan for the future.

Councillor Atkinson enquired if a bird count had been carried out to establish if the bird population had decreased in the Kaiapoi River area. S Allen noted that there was a perception that there were fewer bird on the river, however it was believed that the bird population was stable and that the development around the river had moved the bird populations to neighbouring areas such as Kaiapoi Lakes and Silverstream.

Councillor Atkinson felt that the majority of the contamination of the Kaiapoi River stemmed from the tributaries flowing into the Kaiapoi River which become the dumping ground for all the issues and pollution from further up river.

Councillor Stewart noted that during the summer months the William Street Bridge was used as a 'launch pad' for swimmers jumping into the river. She asked if warning signs prohibiting swimming had been erected near the bridge and felt that the Council had an obligation towards resident's safety. The data received from ECan reflected that the water was unsafe for any sort of recreational activity.

Councillor Blackie noted that swimming was prohibited in the marina area and there were signs to that effect. However the signage was focused on safety around boats rather than on the contamination of the water.

Councillor Stewart enquired what was being done towards the improvement of water quality so as to achieve the five year target proposed by ECan. She acknowledged that the drainage work being carried out would mitigate some of the stormwater discharge and that the work being done in the Cam River would also alleviate some of the problems, however she felt that was not sufficient to make the target.

Moved: Councillor Atkinson Seconded: Councillor Stewart

THAT the Land and Water Committee:

(a) **Receives** report No. 200918124023.

(b) **Notes** the water quality information available for in the Kaiapoi River from Environment Canterbury monitoring, as well as proposed future management options.

(c) **Approves** the removal of the Adderley Terrace Wetland and the Smith Street Charles Street elbow bend Realignment Projects from the 2021-22 Kaiapoi River Rehabilitation work programme.

(d) **Endorses** the work programme detailed in 1.3 of the report in the agenda. (Trim Ref: 20091824023)

(e) **Endorses** that the Council requests Environment Canterbury to carry out continuous monitoring in the Kaiapoi River for nutrient, chlorophyll-a and salinity levels in particular.

(f) **Notes** no pigeon control would be undertaken for the Williams Street Bridge colony until it was confirmed whether the pigeons were a significant source of faecal bacteria to the waterway.

(g) **Notes** the suggestion from staff for the Kaiapoi River Rehabilitation Work Programme to be combined into the Zone Implementation Programme Addendum (ZIPA) work programme in the 2021-31 Long Term Plan, primarily under recommendation 1.27.

(h) **Circulates** this report to the Waimakariri Water Zone Committee, the Rūnanga Liaison Group and the Kaiapoi-Tuahiwi Community Board.

CARRIED

Councillor Atkinson stated that, in his opinion, the tributaries contributed to the lack of water quality and that the Kaiapoi River became the end product of what was occurring further up river. He also stated that he did not feel that the salinaty of the water was a problem as the river was tidal, there had always been saline in the river as far as Adderley Terrace.

Councillor Barnett agreed with Councillor Atkinson and noted that no work had been done on the Cust Main Drain which drained directly into the Kaiapoi River. She therefore felt that there should be more focus on the Drain before trying to improve the water quality in the lower reaches of the river.

Councillor Stewart stated that she was pleased to see that the Committee endorsed the above recommendations and especially recommendation (e).

She stated that continuous monitoring was the only effective manner for data to be captured. She expressed her hope that water quality was highlighted in the draft Long Term Plan to stimulate public discussion regarding the desire for clean waterways verses the cost of achieving the goal within the five year time limit.

Councillor Atkinson stated that he believed that this was not just the Waimakariri District Council's problem but a regional one. He felt that all ratepayers should assist with the costs involved in improving water quality of the Kaiapoi River and its tributaries. He believed the way forward would be for ECan to step up and take more ownership of the costs involved.

7 QUESTIONS

Nil.

8 URGENT GENERAL BUSINESS

Nil.

NEXT MEETING

The next meeting of the Land and Water Committee is scheduled for 9:30am, Thursday 10 December 2020 in the Function Room, Rangiora Town Hall.

There being no further business the meeting closed at 11.46am.

Briefing
(11.46am – 12.25pm)

- Pineview Farm
- Lehmans Road realignment

Chairperson

Date

DRAFT

WAIMAKARIRI DISTRICT COUNCIL

REPORT FOR INFORMATION

FILE NO and TRIM NO:	WAT-10-14 / 200915122094[v2]
REPORT TO:	Land and Water Committee
DATE OF MEETING:	10 December 2020
FROM:	Sophie Allen – Water Environment Advisor Kate Steel – Ecologist Biodiversity
SUBJECT:	Environmental programmes for the draft Long Term Plan 2021-31
SIGNED BY: **(for Reports to Council, Committees or Boards)**	Department Manager / Chief Executive

1. SUMMARY

1.1. This report outlines an overview of existing and proposed freshwater, environmental and biodiversity programmes led by Waimakariri District Council. This report recommends projects for feedback from the Land and Water Committee, for consideration for the draft Long Term Plan 2021-31 by the Council.

1.2. This report excludes consideration of sustainability projects such as climate change mitigation and adaptation, as these are considered separately.

1.3. The freshwater, environmental and biodiversity programmes are proposed to be managed in five packages:

1.3.1. **Zone Implementation Programme Addendum** (ZIPA) – projects related to freshwater outcomes and implementation of the Canterbury Water Management Strategy. The Kaiapoi River Rehabilitation work programme and Cam River enhancement works, following the full spend of the Cam River Enhancement Fund, are both proposed to be amalgamated into the ZIPA programme.

1.3.2. **Arohatia te Awa** (ATA) – 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.

1.3.3. **Biodiversity Contestable Fund –** For protection and enhancement projects by landowners with Significant Natural Areas. WDC staff propose separation of the current Heritage, Ecological, and Biodiversity Contestable Fund into separate biodiversity and heritage funds. An associated report has been presented to Council (TRIM No. 200924127240).

1.3.4. **Greenspace Reserves Programme** - For continuation of biodiversity and water quality work at the Silverstream Reserve and Forestdale Reserve. A report on

Forestdale Wetland will be presented to the Land & Water Committee separately (TRIM NO. 201106150208)

1.3.5. **Environmental Education** – The combination of education budgets with Council to provide a comprehensive education service for environmental themes.

1.4. Low, medium, and high budget options have been prepared for the ZIPA programme and the Biodiversity Contestable Fund. For both, the medium budget option (Option B) is recommended by WDC staff. Option B for the ZIPA programme is similar to the approved budget for the period 2019-21 of $305k per year, prior to a COVID-19 reduction in 2020-21to $255k.

1.5. For the ZIPA, Option A is at a cost of $200k per year. Option B is at a cost of $310k per year, and Option C is at a cost of $560k per year.

1.6. For Arohatia Te Awa, Option A is an initial cost of $210k per year increasing to $240k. Option B is at a cost of $210k per year decreasing to $120k per year. Note that Option B assumes ZIPA budget Option B or C.

1.7. For Forestdale Wetland Reserve requested budget is $10k for 2021/22, $25k for 2022/23, $5k for 2023/24 and $5k for 2024/25.

1.8. For Silverstream Reserve requested budget is $15k for 2021/22, $25k for 2023/24, and $9k for remaining years of the Long Term Plan.

Attachments:

i. ZIPA roles and funding review Long Term Plan September 2020 (200918124072)

2. RECOMMENDATION

THAT the Land and Water Committee:

(a) **Receives** report 200915122094[v2].

(b) **Recommends** the following proposed budget options to council for consideration among other priorities for inclusion in the draft Long Term Plan 2021-2031 for biodiversity, freshwater, natural reserves, district planning, and environmental education.

i. Zone Implementation Programme Addendum ($310k per year)

ii. Arohatia Te Awa (initially $210k, then $120k per year)

iii. Biodiversity Contestable Fund ($7.25k in 2022/23, $25k 2023/24, then increasing by $10k per year)

iv. Greenspace Natural Reserves

v. Environmental Education (budget to be confirmed)

(c) **Notes** the proposal that budgets for environmental programmes that are new or expanded, namely the Biodiversity Contestable Fund and Arohatia te Awa programmes, are detailed in the draft Long Term Plan as a consultation topic for the community.

(d) **Notes** the recommended budget options will be included in the draft LTP.

(e) **Notes** the recommended option for the Zone Implementation Programme Addendum (Option B) is a continuation of a medium-range budget of $310k per year, similar to the approved budget from 2019-21.

(f) **Notes** the recommended option for Arohatia te Awa (Option B) is a budget of $210k for the first year, decreasing to $120k per year over 4 years, with baseline support for a community trust.

(g) **Notes** the recommended option for the Biodiversity Contestable Fund (Option B) is an initial budget of $0 increasing to $95k over the span of the LTP.

(h) **Notes** the proposed budgets for Silverstream Reserve and Forestdale Wetlands Reserve.

(i) **Notes** that WDC staff recommend for the continuation of the stormwater education budget and for a biodiversity education budget to be created.

(j) **Circulates** this report to Council, Waimakariri Water Zone Committee, Rūnanga liaison meeting and Community Boards.

3. BACKGROUND

Zone Implementation Programme Addendum

3.1. The Canterbury Water Management Strategy (CWMS) Waimakariri Water Zone Committee developed a Zone Implementation Programme in 2011, and after both extensive consideration of the best available science and extensive consultation with the public, developed an addendum (ZIPA). This ZIPA, or alternatively named the Waimakariri Land and Water Solutions Package, with both statutory and non-statutory recommendations for action, aims at setting water quantity and water quality limits to improve the condition of fresh water resources in the Zone.

3.2. The Waimakariri Water Zone Committee approved the final ZIPA on the 19 November 2018. WDC Council approved the ZIPA on the 4 December 2018, and Environment Canterbury (Canterbury Regional Council) approved the ZIPA on the 13 December 2018.

3.3. The budget allocation for the ZIPA programme for 2019-21 was approved by Council at a level of $305k per annum (190501061992[v2]), which was reduced in 2020-21 to $255k due to COVID-19 pandemic-related budget reductions. A review of budget allocation was indicated for the 2021-31 Long Term Plan period.

Arohatia te Awa

3.4. 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 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.

3.5. Councillor Sandra Stewart, in her role as the Drainage and Canterbury Water Management Strategy Portfolio holder and WDC representative on the Waimakariri Water Zone Committee, articulated a concept of ‘Arohatia te Awa – Cherish the River’ in December 2018. Arohatia te Awa proposes 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 concept also has the potential to increase the agri-tourism, recreation and amenity offering throughout the district.

3.6. The Arohatia te Awa concept was approved by Council on the 3 September 2019 (190913128624). A $100k capital works budget was allocated for 2020-21 for initial scoping and works, with a more in-depth budget evaluation of the concept proposed for the 2021-2031 Long Term Plan.

Heritage, Ecological and Biodiversity Contestable Fund

3.7. The Waimakariri District Council provides grants to enhance biodiversity on private land through the Heritage, Biodiversity, and Ecological Fund (HBEF). This is a contestable fund that currently accumulates at a rate of $15,500 per year. The fund provides for heritage sites and notable trees as well as significant vegetation and habitat sites. As at 1 September 2020 the amount available in the fund totals $85,228.

3.8. Staff put a report to the 1 December 2020 Council meeting proposing that the Heritage, Biodiversity, and Ecological Fund be split. Responsibility for the new Ecological and Biodiversity fund is proposed to transfer to the Greenspace Team, specifically the Ecologist – Biodiversity, with financial delegation held by the Land & Water Committee. Criteria for the biodiversity fund will be workshopped with Council in 2021.

3.9. As part of the upcoming District Plan Review staff will be contacting all landowners in the district with significant vegetation and habitat sites. Staff are proposing that this work be led by the Ecologist – Biodiversity and combined with a non-statutory programme to provide landowners with advice on:

3.9.1. The current biodiversity values of the site

3.9.2. Practical advice on how to maintain and enhance these values

3.9.3. Funding and other incentives (rates relief, development rights) available to support landowners with restoration work

Greenspace Natural Reserves - Forestdale Reserve and Silverstream Reserve

3.10. Forestdale Wetland Reserve is a 10.3 ha reserve 19 km north-west of Rangiora owned by WDC, and managed by the Greenspace Unit. A number of ecological reports highlight Forestdale Wetland's importance for conservation due to its high natural values, and rarity in the Waimakariri District.

3.11. The wetland biodiversity values are being diminished due to deer browse which is supressing natural regeneration, and enabling woody weed invasion. Ecologist recommendations are that if deer and sheep were excluded and the tall weeds controlled the site would return to a forested margin around the wetland core over a period of 20-30 years with minimal management.

3.12. Silverstream Reserve is a key natural reserve managed by the Greenspace Unit. It has gained significant community support over the past 8 years with high numbers of volunteer hours committed on a weekly basis. In the past three months 4,500 seedlings have been planted by volunteers which equates to approximately 400 volunteer hours. Maintenance tasks also undertaken which would see this figure double. The planting programme is also supported by Taggarts who provide heavy machinery at no cost. Applications for free

seedlings from Trees That Count (TTC) have also been successful with 1500 seedlings being supplied in 2019/20 and again in 2020/21.

Environmental education

3.13. At the request of Councillors, a Section 17A Local Government Act review has been carried out by WDC staff of environmental education delivered by the Council, and was extended to include a wider "whole of Council" review of all Council-provided school and community education programmes. This report is in final draft stage, however has not yet been represented to the Council, therefore a recommendation by WDC staff of budget allocation in the Long Term Plan for environmental education is not possible at this stage. The inclusion of the environmental education package is in the report has been included for completeness, without details or budget indications able to be presented at this stage.

4. ISSUES AND OPTIONS

4.1. WDC staff present low, medium and high budget options for the Zone Implementation Programme Addendum (ZIPA), and Biodiversity Contestable Fund programmes, and high and low budget options for Arohatia te Awa (ATA).

ZIPA Options

4.2. WDC staff recommend the presentation of three ZIPA options for Long Term Plan deliberations. Option A requests minimal budgets, in particular for ZIPA recommendations where WDC has a lead role for implementation. Option B requests moderate budgets for for ZIPA recommendations where WDC has a lead role or an important contributing role for implementation. Option C requests extended budgets for ZIPA recommendations where WDC has a lead role or a contributing role for implementation, which would allow for more projects to be undertaken.

4.3. For the ZIPA, Option A is at a cost of $200k per year. Option B is at a cost of $310k per year, and Option C is at a cost of $560k per year.

4.4. Options A and B can be achieved with current staff levels and resources. WDC staff advise that there would be a need to reallocate staff resourcing of the Water Environment Advisor away from other work to the ZIPA programme if Option C was the option approved by Council.

4.5. In the 2019-20 Annual Plan, a budget of $305k per year was allocated for 2019-20, 2020-21, which was a medium budget option of three options presented. There was an underspend of $140k in the 2019-2020 budget, primarily due to a delay in the start of the

Ecologist - Biodiversity role, and the COVID-19 pandemic which prevented autumn plantings from taking place.

4.6. The Long Term Plan spreadsheet provides three options; low, medium and high budget options, with Option B (medium budget) as the preferred option recommended by WDC staff.

4.7. For all three options budget will be considered ongoing operational expenditure, funded through rates.

4.8. Option A (a reduced budget) provides:

4.8.1. Fish passage project(s) and fish surveys ($10k, Rec 1.7)

4.8.2. Drainage management improvements following the Drainage Maintenance Management Plan ($20k, Rec 1.14)

4.8.3. Urban stormwater education ($10k, Rec 1.25)

4.8.4. Improvements to WDC esplanade reserves for amenity and water quality ($15k, Rec 1.26)

4.8.5. On-the-ground projects in the Cam and Kaiapoi Rivers for water quality and fish passage ($20k, Rec 1.27)

4.8.6. Continue biodiversity capacity and capability resourcing within WDC with the Ecologist- Biodiversity salary and overheads ($110k, Rec 2.2)

4.8.7. Ecological survey support from external experts for planning and operational activities ($10k, Rec. 2.5)

4.8.8. Private well annual nitrate study for state and trends – 20 wells ($5k, Rec 3.16)

4.9. Option B, equivalent to current budget levels, provides (in addition to areas funded in Option A)

4.9.1. Fish passage projects and fish surveys (an additional $10k, Rec 1.7)

4.9.2. Drainage management improvements following the Drainage Maintenance Management Plan (an additional $20k, Rec 1.14)

4.9.3. Improvements to WDC esplanade reserves for amenity and water quality (an additional $15k, Rec 1.26)

4.9.4. On-the-ground projects in the Cam and Kaiapoi Rivers for water quality and fish passage (an additional $20k, Rec 1.27)

4.9.5. Support for community groups to address biodiversity protection and enhancement ($30k, Rec. 2.8)

4.9.6. Inanga spawning habitat improvements ($10k, Rec 2.11)

4.9.7. Private well annual nitrate study for state and trends – 40 wells (an additional $5k, Rec 3.16)

4.10. Option C, an extended budget, provides (In addition to areas funded in Options A and B):

4.10.1. Support for catchment management planning, which could be provided to community catchment management groups to lead the planning process. ($20k, Rec 1.1)

4.10.2. Review of private landowners drain management practices, with education provided to improve practices. ($10k, Rec 1.7)

4.10.3. Fish passage projects and fish surveys (an additional $120k, Rec 1.7)

4.10.4. Drainage management improvements following the Drainage Maintenance Management Plan (an additional $40k, Rec 1.14)

4.10.5. Urban stormwater education (an additional $10k, Rec 1.25)

4.10.6. Improvements to WDC esplanade reserves for amenity and water quality (and additional $30k, Rec 1.26)

4.10.7. On-the-ground projects in the Cam and Kaiapoi Rivers for water quality and fish passage (an additional $20k, Rec 1.27)

4.10.8. Support for riparian and wetland plantings under Farm Environment Plans / under a management plan – potentially through a community organisation / catchment group ($20k, Rec 1.28)

4.10.9. Ecological survey support from external experts for planning and operational activities (an additional $10k, Rec. 2.5)

4.10.10. Protection of braided river bird habitat ($10k, Rec 2.6)

4.10.11. Support for community groups to address biodiversity protection and enhancement (an additional $20k, Rec. 2.8)

4.10.12. Private well annual nitrate study for state and trends – 180 wells (an additional $40k, Rec 3.16)

4.11. The Kaiapoi River Rehabilitation programme, is recommended by WDC staff to be combined (and extended beyond 2021- 2022) within the ZIPA programme and budget (refer to report 200918124023). This is because there are specific ZIPA recommendations for the Kaiapoi River (1.27 and 2.11 for example) under which the programme can continue, and allow the Kaiapoi River Rehabilitation programme to transition from a Canterbury earthquake recovery programme of works, to a long-term ecological, cultural, recreation and amenity programme.

4.12. The Cam River Enhancement Fund is expected to be fully spent by the end of 2022-23 (consent dependent). It is recommended that Cam River Capex project and maintenance budgets are included in the ZIPA budget (under recommendation 1.27) for the Long Term Plan 2021-31, commencing in 2023-24 onwards.

Arohatia te Awa Options

4.13. For Arohatia Te Awa, Option A is a high spend option assuming funding and delivery by council. Option B is lower cost option that could be supplemented by applications for co-funding and through partnership with other organisations. Option B seeks to deliver the same outcomes as Option A with increased community engagement, and at a reduced cost to ratepayers but potentially an increased timeframe.

4.14. Option A comes at a cost of $210k increasing to $240k per year. Option B comes at a cost of $210k reducing to $120k per year.

4.15. WDC staff advise that it could be challenging to deliver Option A without extra resourcing or outsourcing work. Meeting the requirements of the National Policy Statement for

Indigenous Biodiversity (NPS-IB) scheduled for release in April next year is likely to require significant time from the Ecologist – Biodiversity.

4.16. Option A – Council-led

4.16.1. Provides $200k capital budget per annum delivered by the Greenspace Team and associated operational budget (see Table 1).

Table 1: LTP yearly budget Arohatia Te Awa Option A

	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Capex Budget (000's)	200	200	200	200	200	200	200	200	200	200
Opex Budget (000's)	10	20	40	40	40	40	40	40	40	40

4.17. Option B – Delivery through partnership (recommended)

4.17.1. Provides $200k capital budget per annum for 2021/22 decreasing to $100k over 4 years, operational budget associated with capital works (see Table 2).

4.17.2. This is the recommended option as it could theoretically leverage other funding sources in order to deliver Arohatia Te Awa with reduced impact on rates.

4.17.3. There is potential for community organisations with aligned goals to support delivery of the project in the future. This could either use the ZIPA budget allocated to recommendation 2.8 (assumed in Table 2) or an additional $15k - $30k operational budget per year.

4.17.4. With baseline funding a community organisation can apply for funding from other sources inaccessible to Council (e.g. DOC Community Fund, Rata Foundation, Isaac Conservation and Wildlife Trust) and use volunteer time to deliver a highly effective programme with good support in the community.

4.17.5. This community organisation delivery model works well for other similar initiatives led by Te Kōhaka O Tūhaitara Trust and the Silverstream Volunteers in Waimakariri, Te Ara Kākāriki in Selwyn District, and the StyxLiving Laboratory Trust in Christchurch.

Table 2: LTP yearly budget Arohatia Te Awa Option B

	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Capex Budget (000's)	200	150	125	100	100	100	100	100	100	100
Opex Budget (000's)	10	15	20	20	20	20	20	20	20	20

Biodiversity Contestable Fund Options

4.18. For the Biodiversity Contestable Fund, Option A is no increase. Option B is an increase of $15k in 2022/23 and a further $10k each subsequent year of the LTP. Option C is an increase of $50k from 2022/23.

4.19. Option A (minimal spend) provides:

4.19.1. No change to current funding. Approximately $50k available in 2021/2022 with existing budget from Heritage, Biodiversity, and Ecological Fund (about 5 projects supported). This option provides support for 1 project per year from 2022/23.

Table 3: LTP yearly budget Biodiversity Contestable Fund Option A

	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Total amount (000's)	7.75	7.75	7.75	7.75	7.75	7.75	7.75	7.75	7.75	7.75
New Opex Budget requested (000's)	0	0	0	0	0	0	0	0	0	0

4.20. Option B (recommended) provides:

4.20.1. Gradual increase in budget for a Biodiversity Contestable Fund:

4.20.1.1. $0k increase in Biodiversity Contestable Fund budget for 2021/22. Approximately $50k total available in the fund with $42k from the amount accrued in the HBEF since 2008 and $7.75k transferred from the 2021/22 HBEF budget (see Table 4).

4.20.1.2. $7.25 increase in 2022/23. $15k available with $7.75k transferred from the 2022/23 HBEF budget.

4.20.2. The Ecologist - Biodiversity will support an active non-statutory programme to help land owners protect and enhance Significant Natural Areas.

4.20.3. Funding levels in later years of the Long Term Plan may allow us to provide support for second-tier projects if significant sites do not fully subscribe the fund value (as per the Selwyn Natural Environment Fund).

4.20.4. Second-tier projects are those that help restore, enhance and protect sites that are not yet significant, but would benefit from enhancement and protection.

Table 4: LTP yearly budget Biodiversity Contestable Fund Option B

	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Total amount (000's)	7.75	15	25	35	45	55	65	75	85	95
New Opex Budget (000's)	0	7.25	25	35	45	55	65	75	85	95

4.21. Option C brings substantial funding forward to align with the introduction and implementation of the National Policy Statement on Indigenous Biodiversity. This would allow WDC to support substantially more landowners with biodiversity projects over the next 6 years (see Table 5).

Table 5: LTP yearly budget Biodiversity Contestable Fund Option C

	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Total amount (000's)	100	100	100	100	100	100	100	100	100	100
New Opex Budget (000's)	92.25	92.25	92.25	92.25	92.25	92.25	92.25	92.25	92.25	92.25

Greenspace Natural Reserves

Forestdale Wetland Reserve

4.22. Forestdale Wetland requires $65k for the construction of a deer fence around the perimeter of the reserve and $50k for intensive woody weed control over 3 – 5 years to protect and enhance the biodiversity values of the reserve.

4.23. Restoration of the site would also allow for future use of the reserve for amenity and education.

4.24. Environment Canterbury will commit $30k from their 2020/2021 operational budget if WDC are able to get works done this financial year. $20k can be re-allocated from the 2020/21 ZIPA budget to enable this if approved by the Land & Water Committee.

4.25. WDC staff propose applying to the Environment Canterbury Immediate Steps (IMS) fund for $35k.

4.26. Option A (recommended) supports an Immediate Steps Application for approximately 30% of the costs of the project. Option B provides 100% of the cost of the fencing and can be considered a back-up option if the funding bid is unsuccessful. Option C assumes no funding is approved in 2020/23 and provides funding for weed control only from 2022/23.

4.27. Forestdale wetland is listed as a significant vegetation and habitat site in the Waimakariri district plan. WDC should be leading by example with regard to protection and enhancement of sites we manage.

4.28. Following the intensive restoration there will be an increase in operational budget for follow up weed and pest control. This maintenance work will ensure long term ecological benefits are sustained. Improvement in the condition of the site would also allow us to make the most of the education and amenity value of such a large publicly owned wetland.

4.29. Option A (IMS application approved):

4.29.1. WDC budget transfer approved, ECAN co-funding and IMS funding help pay for deer fence and intensive weed control in 2020/21

4.29.2. Operational budget increase of $5.81k ($10k total) is requested from 2022/23.

Table 6: LTP yearly budget Forestdale Reserve Option A

	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Total Opex Budget (000's)	10	10	10	10	10	10	10	10	10	10
New Opex Budget (000's)	5.81	5.81	5.81	5.81	5.81	5.81	5.81	5.81	5.81	5.81

4.30. Option B - 100% funding of fence by WDC (if project fails to qualify for IMS funding):

4.30.1. ECAN co-funding is spent on intensive weed control in 2020/21. WDC staff request a $5.81k increase ($10k total) operational budget. Capital budget of $70k is requested in 2022/23 for deer fencing.

Table 7: LTP yearly budget Forestdale Reserve Option B

	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
New Capex Budget (000's)		70								
New Opex Budget (000's)	5.81	5.81	5.81	5.81	5.81	5.81	5.81	5.81	5.81	5.81
Total Opex Budget (000's)	10	10	10	10	10	10	10	10	10	10

4.31. Option C – Weed control only from 2022/23 (no 2020/21 funding approved):

4.31.1. Budget of $25k for weed control requested in 2022/23, $10k in 2023/24 and 2024/25, and $5k in 2025/26 and 2026/27

Table 8: LTP yearly budget Forestdale Reserve Option C

	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
Total Opex Budget (000's)	4.19	25	10	10	10	10	10	10	10	10
New Opex Budget (000's)		20.81	5.81	5.81	5.81	5.81	5.81	5.81	5.81	5.81

4.32. A $50k contribution to fencing and weed control for Forestdale Wetland would be half the IMS budget allocated to projects in the Waimakariri Water Zone. In addition there may be some reluctance from the Waimakariri Zone Committee to recommend projects undertaken by local and central government agencies.

4.33. ECAN staff have advised WDC that a 50% co-funding contribution would substantially increase the chance of the project being approved for IMS funding.

Silverstream Reserve

4.34. It is proposed to increase the operational budget from the existing $11k to $20k in 2023/24 (rates impact of 40c per property). Additional budget is required to ensure successful establishment of 2019/2020 and 2020/2021 plantings. Although the target of planting 5000 seedling this financial year has almost been achieved additional funding is required to sustain this level of activity.

4.35. $15k is proposed in 2021/22 to upgrade the standard of track surface. With the steadily increasing popularity of the walking tracks the standard of track surface provided needs to be upgraded. Existing walking routes are of a low standard requiring shingling and/or board walking in the wet stream margins.

4.36. A budget of $15k is proposed in 2022/23 to enable the installation of a footbridge to link the tracks on both banks of the stream.

4.37. Recreational use of this reserve can be significantly enhanced for current users by the installation of a foot bridge at the western end of the reserve. This would provide a loop walk where currently walkers are limited to walking on side of the stream or the other.

Table 9: LTP yearly budget Silverstream Reserve

	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
New Capex Budget (000's)	15	15								
New Opex Budget (000's)			9	9	9	9	9	9	9	9

Environmental education

4.38. The Section 17A Local Government Act review analysed delivery models, such as a potential in-house coordinator, environmental charities, and/or external contractors. Irrespective of the outcome of the 17A review and delivery model, WDC staff recommend for stormwater education budget to continue, either as part of a wider environmental education programme or individual programme, and for a biodiversity education programme to commence, also as part of a wide education package or individually.

Alignment with planning documents

4.39. The ZIPA work programme is aligned with the Canterbury Water Management Strategy (CWMS), and enables the implementation of the newly gazetted National Policy Statement for Freshwater Management (NPS-FM, 2020). A Memorandum of Understanding for ZIPA implementation is due to be signed between the Chief Executives of WDC and Environment Canterbury, which has been used as the framework for clarifying agency roles and budget allocation to recommendations.

4.40. There is a National Policy Statement for Indigenous Biodiversity (NPS-IB) due for release in April 2021. Environment Canterbury has drafted a non-binding CWMS work programme for WDC, which summarises actions of the NPS-FM, NPS-IB, CWMS, and other planning documents for WDC going forward into the 2021-2031 Long Term Plan cycle. WDC staff are currently in the progress of analysing this work programme for Long Term Plan implications.

Timeframes

4.41. WDC staff suggest a two-stage process for the consideration of environmental project budgets, with a report for information seeking feedback (this report); and a subsequent report(s) for decision prepared for LTP deliberations presented in January 2021. This allows for feedback from the Land and Water Committee and Council to be incorporated into the budget requests presented for LTP deliberations.

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

5. COMMUNITY VIEWS

5.1. Groups and Organisations

5.1.1. The Waimakariri Water Zone Committee held a workshop with Environment Canterbury staff to provide feedback on ZIPA Long Term Funding priorities on the 7 September 2020. Feedback was not able to be provided in full at this workshop due to time constraints. Expansion of the private well sampling programme for nitrate, wetland construction and protection, and support for catchment management groups were raised as key issues for Long Term Plan budget support by members of the Committee.

5.2. Wider Community

5.2.1. More than 50% of respondents to the 2019 community survey felt a range of environmental issues were potentially challenging for the district including climate change, water quality, and loss of biodiversity. More than 91% of respondent households considered living in an environmentally sustainable manner important.

5.2.2. WDC recommend that budgets for environmental programmes that are new or expanded, particularly the Biodiversity Contestable Fund and Arohatia te Awa programmes are detailed in the draft Long Term Plan as a consultation topic for the community.

5.2.3. The wider community was consulted on the Zone Implementation Programme Addendum budget and high-level actions in the 2019-20 Draft Annual Plan consultation.

5.2.4. The community was consulted on Kaiapoi River Rehabilitation projects, such as the tidal plantings, wetland creation and Smith / Charles Street elbow bend realignment in 2017 (refer to 200526061827).

5.2.5. The wider community has not been consulted on the Arohatia te Awa proposal or creation or a specific Biodiversity Contestable Fund to-date.

6. IMPLICATIONS AND RISKS

6.1. Financial Implications

6.1.1. The COVID-19 pandemic has created a loss of revenue for the Council. It is acknowledged that there are more economic constraints with setting of the Long Term Plan budgets than would have been predicted before the pandemic. WDC is also continuing to finance an earthquake recovery loan. The budgets in this report have been prepared by WDC with consideration of the economic situation and constraints.

6.1.2. Biodiversity is a particular area for WDC where an increase in budgets, even with economic constraints, is believed to be warranted by WDC staff. This is because WDC has increased staff resourcing in 2019-20 with an Ecologist-Biodiversity role, who is able to oversee the allocation of a Biodiversity Contestable Fund. Central Government has clearly signalled an increased expectation for biodiversity outcomes for Territorial Authorities with the New Zealand Biodiversity Strategy (released August 2020), and awaited National Policy Statement for Indigenous Biodiversity (in draft).

6.1.3. As part of the COVID-19 response there are opportunities to apply for central government funding, such as the $1.13 billion 'Jobs for Nature' stimulus funding. Often application assessment rates more highly if there is co-funding available from the applicant, with a higher probability of success.

6.2. Community Implications

6.2.1. There would be more visible WDC-led or WDC-supported biodiversity and freshwater restoration projects in the District, such as council funding of Significant Natural Area fencing and predator control, īnanga spawning area and fish passage improvements. These projects will improve ecosystem values, and increase awareness and engagement with biodiversity and freshwater issues in the District.

6.2.2. There would be a sustained increase from 2021-22 onwards in rates for the ratepayer, through a WDC general rate increase.

6.2.3. The split and increase in biodiversity contestable funding would support landowners with significant indigenous vegetation and habitat sites to value the area for its biodiversity, and incentivise biodiversity protection.

6.3. Risk Management

6.3.1. The commitment of WDC to environmental projects enhances the ability of the Council to seek external funding from central government, i.e. as leverage for a co-funded project. Central government has committed $1.3 billion to 'Jobs for Nature' funding, in a COVID-19 green recovery response model. This funding has been made available through the Provincial Growth Fund, 'shovel-ready' projects, and Freshwater Improvement Fund already, with further funds and funding rounds anticipated.

6.3.2. The National Policy Statement for Indigenous Biodiversity (NPS-IB), due for release in April 2021 will include greater requirements for Territorial Authorities. The Biodiversity Contestable Fund and other biodiversity work programmes will help WDC be well set-up for the implementation of NPS – IB requirements. There

may be additional budget needed through district development to meet requirements to map significant natural areas (more extensive than existing vegetation and habitat sites.

6.3.3. Offering help to landowners to look after significant vegetation and habitat sites, through a Biodiversity Contestable Fund will reduce the risk that landowners will feel burdened by a significant site on their property and contest the listing in the District Plan or allow degradation of the site.

6.4. Health and Safety

6.4.1. There are no specific Health and Safety considerations for this report.

7. CONTEXT

7.1. Policy

7.1.1. This matter is a matter of significance in terms of the Council's Significance and Engagement Policy.

7.2. Legislation

Local Government Act (2002)

7.2.1. Special Consultative Procedure (draft Long Term Plan consultation)

7.3. Community Outcomes

7.3.1. There is a healthy and sustainable environment for all

- Harm to the environment from the impacts of land use, use of water resources and air emissions is minimised.
- Cultural values relating to water are acknowledged and respected.
- The demand for water is kept to a sustainable level.
- Harm to the environment from the spread of contaminants into ground water and surface water is minimised.

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

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

7.3.3. Public spaces and facilities are plentiful, accessible and high quality

- People enjoy clean water at our beaches, rivers and lakes.
- There is a wide variety of public places and spaces to meet people's needs.
- There are wide-ranging opportunities for people to enjoy the outdoors.

7.4. Delegations

7.4.1. The Land and Water Committee hold the delegation for the oversight of ZIPA, Arohatia te Awa, Cam River Enhancement Fund, and Kaiapoi River Rehabilitation implementation. The District Planning and Regulation Committee holds the delegation for the Biodiversity, Ecological and Heritage Contestable Fund, which WDC staff will propose in an associated report to be separated into a Biodiversity Contestable Fund and Heritage Contestable Fund.

Waimakariri ZIPA - Final version (26 November 2018)

		WDC and ECan roles (MOU)		WDC Funding							
Recommendation	**Text**	**Project Lead**	**Project Contributor**	**Current funding per annum (K) 19/20, 20/21**	**Option A Low WDC funding (K) CAPEX**	**Option A Low WDC funding (K) OPEX**	**Option B Medium WDC funding (K) CAPEX**	**Option B Medium WDC funding (K) OPEX**	**Option C High WDC funding (K) CAPEX**	**Option C High WDC funding (K) OPEX**	**Notes**
1.1	That Environment Canterbury and the Waimakariri District Council support the Waimakariri Water Zone Committee to prioritise catchments and develop at least two Catchment Management Plans per year. These plans will provide specific catchment management goals and actions, priorities and monitoring programmes to support the implementation of ZIP Addendum recommendations.	Waimakariri Water Zone Committee	ECan Zone Delivery	0	0	0	0	0	0	20	Would be for Taranaki Coastal Streams, maybe Saltwater Creek Catchment (Still need to scope cost and scope of Catchment Management Plans first before funding. High level funding could be for funding for Catchment Groups to lead catchment planning work.
1.2	That Environment Canterbury and the Waimakariri Water Zone Committee support industry groups to provide sector, and catchment-specific support to landowners implementing Good Management Practice (GMP), including: a. sub-catchment groups working to reduce contaminant losses. b. increasing education and awareness of the Farm Environment Plan audit and accreditation process amongst wider community. c. educating and supporting landowners to protect catchment-specific ecological, biodiversity and Ngāi Tūāhuriri values by: – Preparing catchment management plans to implement on-the-ground waterway remediation projects at sites identified as priorities. – Providing workshops in vulnerable hotspots (i.e. high value or high contaminant loss) areas.	ECan Zone Delivery	ECan Regional Support, Waimakariri Water Zone CommitteeWDC 3 Waters, Ngāi Tūāhuriri Rūnanga,	0	0	0	0	0	0	0	
1.4	That Environment Canterbury implement a comprehensive waterway monitoring plan for the Waimakariri Water Zone, including: a. Monitoring water quality and ecological health of waterways. b. State of the Takiwā monitoring, including the health and wellbeing of mahinga kai species. c. Measuring diversity and distributions of freshwater fish, invertebrates and aquatic vegetation throughout the zone. d. Identifying critical sources areas and measuring deposited sediment extent and character, particularly in spring-fed plains streams. e. Including important bathing sites in Schedule 6 of the Land and Water Regional Plan and assessing primary recreational water quality at: – Ashley River/Rakahuri at Gorge – Ashley River/Rakahuri at Rangiora-Loburn Bridge – Ashley River/Rakahuri at State Highway 1 – Kaiapoi River at Kaiapoi township – Pegasus Lake at Motu Quay – Cam River at Bramleys Rd f. Continuing to share information and integrating monitoring programmes between organisations, and promoting community-based monitoring of waterways (citizen science) and education initiatives g. Investigating the ecosystem health of hill country waterways to identify issues and catchment-specific management options as required. h. Supporting ongoing research into emerging contaminants, including endocrine disruptors, in the Waimakariri Water Zone. i. Investigating tidal waterbodies related to: I. Sediment deposition and salt water intrusion in: – Ashley River/Rakahuri – Saltwater Creek Estuary – Tidal reaches of Kaiapoi River, Saltwater Creek and Taranaki Creek II. Aquatic habitat shifts associated with climate change and sea level rise, including changes in īnanga spawning areas. j. Monitoring water quality and ecological health in urban streams and rivers in conjunction with Waimakariri District Council	WDC 3 Waters (j. only)	ECan Science (j.only)	0	0	0	0	0	0	0	(J) only - Urban stream monitoring together with ECan. Covered under existing budgets for stormwater improvements.
1.5	That Environment Canterbury and Waimakariri District Council investigate the impact of commercial forestry practices and wilding pines on downstream freshwater ecosystems.	ECan Science	WDC 3 Waters	0	0	0	0	0	0	0	National Environmental Standard for Plantation Forestry. Could start with the Saltwater Creek Catchment, due to catchment management group and Ashley Forest
1.6	That Environment Canterbury and the Waimakariri District Council support further research into factors that influence and/or control toxic cyanobacteria growth in the Ashley River/Rakahuri.	ECan Science	WDC 3 Waters	0	0	0	0	0	0	0	Research would require substantial funding of a third party e.g. Cawthron Institute. It would be better to advocate for central government research funding support. Proposed

Recommendation	Text	Project Lead	Project Contributor	Current funding per annum (K) 19/20, 20/21	Option A Low WDC funding (K) CAPEX	Option A Low WDC funding (K) OPEX	Option B Medium WDC funding (K) CAPEX	Option B Medium WDC funding (K) OPEX	Option C High WDC funding (K) CAPEX	Option C High WDC funding (K) OPEX	Notes
1.7	That Environment Canterbury, Waimakariri District Council, and Ngāi Tūāhuriri review the waterway management and maintenance methods used in the Zone. The review which should be publicly reported, would include: a. Preparation of an inventory of the main methods, including chemicals and mechanical methods, used by public and private land and water managers in the Zone; b. The findings of recent work by EPA, MfE or other relevant New Zealand organisations reviewing the potential effects of the listed chemicals on waterway ecosystem health and of other methods; c. An assessment of the risk to soil biodiversity and waterway ecosystem health in the Zone from use of chemicals or other methods.	WDC 3 Waters	Ngāi Tūāhuriri Rūnanga, ECan Science	10	0	0	0	0	0	10	Review completed in 2020 for WDC Drainage Maintenance Management Plan (200728095074). Could fund hours by WDC Water Environment Advisor, or WDC contractor for private drainage management practices and education. ECan will promote existing resources as BAU.
1.8	That Environment Canterbury, Waimakariri District Council, Department of Conservation, Fish and Game, and Ngāi Tūāhuriri review the presence and effects of barriers to indigenous and introduced fish migration on waterways in the Zone in consultation with stakeholders and land owners. The review should: a. Identify locations where there are barriers to migrating indigenous fish and salmonids b. Consider the purpose of specific barriers (e.g. tidal control, flood management, drainage) c. Determine and prioritise options for removing or retrofitting barriers appropriate to different species at specific sites.	ECan Zone Delivery	WDC 3 Waters, Ngāi Tūāhuriri Rūnanga, DOC, Fish & Game	20	5	5	15	5	30	10	Fish passage projects or survey work. Fish passage guidelines now required by the National Policy Statement for Freshwater Management (2020)
1.14	That Environment Canterbury and Waimakariri District Council ensure waterway management and maintenance activities minimise contaminant losses to downstream waterbodies and loss of aquatic life, while maintaining flood carrying capacity.	WDC 3 Waters, ECan Zone Delivery		20	15	5	25	15	60	20	Funding to start implementation of initiatives under the Drainage Maintenance Management Plan (200728095074). Funding for drain shading, channel
1.18	That Environment Canterbury and the Waimakariri District Council support landowners with education and guidance on appropriate riparian set back distances and plantings for different situations.	ECan Zone Delivery	WDC 3 Waters, WDC	0	0	0	0	0	0	0	Resource provided by ECan/National guidance? BAU with 70 hours Water Environment Advisor. Setback details from Section 360 Stock Regulations
1.19	That Environment Canterbury and Waimakariri District Council work with the forestry sector and MPI to: a. Identify high risk periods over the next 5 years when earthworks and harvesting will take place within the Waimakariri Water Zone, so resources can be targeted to ensure potential environmental effects are mitigated or avoided. b. ensure that implementation of the NES is effective within the zone.	ECan Strategy & Planning	WDC Policy & Strategy	0	0	0	0	0	0	0	BAU with ECan, and working with forestry industry
1.20	That Ngāi Tūāhuriri, Te Rūnanga o Ngāi Tahu, Environment Canterbury, and Waimakariri District Council work together to identify areas and waterways of high cultural value and options for protecting those values including providing for mahinga kai and the protection of wāhi tapu and wāhi taonga within the Waimakariri Water Zone.	ECan Planning	Ngāi Tūāhuriri Rūnanga,	0	0	0	0	0	0	0	0
1.21	That Environment Canterbury prioritise on the ground projects for Taranaki Creek, given its significant value to Ngāi Tūāhuriri and proximity to Kaiapoi Pā, particularly those related to: • reducing and removing sources and legacies of deposited fine sediment • improving the quality of habitat for mahinga kai species • removing barriers to native fish passage • removal of invasive fish species	ECan Science	Ngāi Tūāhuriri Rūnanga, WDC 3 Waters, WDC Greenspace, ECan Zone Delivery	0	0	0	0	0	0	0	
1.22	That Environment Canterbury and the Waimakariri District Council recognise the Ashley River/Rakahuri for its important natural landscape values, braided river characteristics, and braided river bird (nesting and feeding) habitat.	WDC Planning, ECan Planning		0	0	0	0	0	0	0	Recognised as Outstanding Natural Landscape and Special Amenity Area in draft District Plan. Ecologist-Biodiversity role with 30 hours/year to implement? Braided river work
1.24	That Environment Canterbury and the Waimakariri District Council recognise the Upper Ashley River/Rakahuri catchment, including Lees Valley, for its high natural landscape and ecosystem values, and protect its waterways from degradation by: • avoiding increased contaminant losses to waterways. • preventing the removal or degradation of any existing wetlands. • preventing the expansion of wilding pines.	ECan Planning	WDC Planning	0	0	0	0	0	0	0	On track to protect Lees Valley wetlands as SNAs in District Plan, and designate area as Outstanding Natural Landscape . BAU with 70 hours Water Environment Advisor / Ecologist - Biodiversity for compliance
1.25	That Environment Canterbury and the Waimakariri District Council initiate public education and awareness campaigns aimed at improving the water quality and health of urban waterways.	WDC 3 Waters	ECan Zone Delivery	20	0	10	0	10	0	20	Urban waterway education (stormwater incentives e.g. water tanks for industries maybe). Delivered together with Education for Sustainability from S17A review internal

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1.26	That Environment Canterbury and the Waimakariri District Council support projects that have enduring benefits for improved stream health, Ngāi Tūāhuriri values, and improved recreational amenity in the North Waimakariri River tributaries.	ECan Zone Delivery	WDC 3 Waters, WDC Greenspace, Ngāi Tūāhuriri Rūnanga	70	10	5	15	15	40	20	Fencing, walkways on WDC land, as well as biodiversity and stream health projects. Continue with South Brook Townsend Fields Reserve and possibly start work on a new esplanade reserve.
1.27	That Environment Canterbury and the Waimakariri District Council prioritise on-the-ground projects in the Cam River/Ruataniwha and Kaiapoi/Silverstream, including but not limited to: • Reducing and removing sources and legacies of deposited fine sediment. • Improving the quality of habitat for mahinga kai. • Removing barriers to native fish passage.	ECan Zone Delivery	WDC 3 Waters, Ngāi Tūāhuriri Rūnanga	10	15	5	30	10	45	15	Kaiapoi river projects e.g. plantings ($10k for 3 years), transitions to funding for Cam River, post the Cam River Enhancement Fund (projects and emptying of sediment traps). Watercress mahinga kai enhancement (access,signage,shade management)
1.28	That Environment Canterbury and Waimakariri District Council investigate options to fund plants for riparian or wetland planting on land managed in accordance with an FEP or a Management Plan. (see also Rec 2.9)	ECan Regional Support	WDC 3 Waters	0	0	0	0	0	10	10	Contribute to Environment Canterbury to find funding and providing guidance to landowners- could fund a community organisation, with WDC Biodiversity Contestable Fund focussing on SNAs
2.1	The zone committee recommends that Environment Canterbury and the Waimakariri District Council work with Ngāi Tūāhuriri, landowners, agencies and stakeholders to integrate indigenous biodiversity in a whole of waterway, Ki Uta Ki Tai, approach to managing catchments in the Waimakariri Water Zone.	ECan Zone Delivery	WDC 3 Waters, WDC Planning,	0	0	0	0	0	0	0	Capture in District Plan (Natural Character of waterbodies chapter etc.) and Catchment Management Plans
2.2	The Waimakariri Water Zone Committee endorses and supports the implementation of the Canterbury Regional Biodiversity Strategy as it applies in the Waimakariri Water Zone. In particular: a. The zone committee endorses the vision, goals, targets, and actions of Canterbury Regional Biodiversity Strategy: b. The zone committee recommends that Environment Canterbury support the appointment of a regional co-ordinator for the Canterbury Regional Biodiversity Strategy c. The zone committee recommends that Waimakariri District Council increase its biodiversity capability and capacity	Waimakariri Water Zone Committee	ECan Strategy & Planning	110	0	110	0	110	0	110	1 X Ecologist-Biodiversity at 90k/yr plus 20K overheads
2.3	The zone committee recommends implementing the Canterbury Biodiversity Strategy, at the water zone level, with a Waimakariri Biodiversity Action Plan to enable the following actions: • Developing and illustrating a vision for indigenous biodiversity (and related values) across the zone • Mapping indigenous habitats, vegetation and, as appropriate, threatened plant and animal species in the zone • Identifying actions for protection and enhancement of indigenous habitats, vegetation types and plant and animal species • Identifying priority sites, waterways, springheads, wetlands, reaches or locations for protection • Identifying priority habitats and vegetation for management actions • Setting targets for biodiversity protection and enhancement in the zone • Working with willing landowners to action indigenous biodiversity protection and enhancement projects • Developing strategies and actions that incentivise indigenous biodiversity protection and enhancement on private land.	ECan Regional Support	Waimakariri Water Zone Committee, WDC Policy & Strategy, WDC Greenspace, WDC 3 Waters, ECan Zone Delivery, Ngāi Tūāhuriri Rūnanga, DOC	0	0	0	0	0	0	0	No support for Waimakariri Biodiversity Action Plan until scoped further? Environmental and Biodiversity Strategy will be supported by BAU for Policy and Strategy Team in-house
2.4	That Environment Canterbury and the Waimakariri District Council consider climate change and sea level rise impacts on indigenous biodiversity in the Waimakariri Water Zone.	ECan Science	WDC Policy & Strategy, WDC 3	10	0	0	0	0	0	0	Was allocated to PhD 2019-21. BAU with Water Environment Advisor Ecologist-Bioidversity

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2.5	That Environment Canterbury and the Waimakariri District Council integrate indigenous biodiversity and instream ecological values into councils' planning and operational activities, including in work carried out by consultants or contractors.	Ecan Planning	WDC Policy & Strategy, WDC 3 Waters, ECan Zone Delivery, ECan Science	10	0	10	0	10	0	20	Ecology surveys to assist planning and operational. Relates to rec. 1.7
2.6	That Environment Canterbury and Waimakariri District Council investigate further ways to protect braided river-bed breeding bird habitat and bird populations from the impacts of vehicles.	ECan Regional Support	WDC 3 Waters, Ashley Rakahuri	0	0	0	0	0	0	10	BAU Planning tools e.g. a Bylaw, signage education monitoring? Funding would be to support Ashley Rakahuri Rivercare Group
2.7	That Environment Canterbury, Waimakariri District Council and the Department of Conservation work with, and support, Ngāi Tūāhuriri Fenton Reserve Trustees in the Land and Water Solutions Programme project to reconnect coastal ecosystems between the Lower Ashley River/Rakahuri, the estuary and Te Aka Aka Fenton Reserve to provide for mahinga kai benefits for Ngāi Tūāhuriri Rūnanga.	ECan Strategy & Planning	ECan Science, ECan Zone Delivery, WDC Policy & Strategy	0	0	0	0	0	0	0	Support with scoping as BAU, for potential funding later
2.8	That Environment Canterbury and the Waimakariri District Council work with community groups to address indigenous biodiversity protection and enhancement by means such as: • Provision of administrative support; • Provision of financial assistance; • Identification of funding sources; • Provision of technical advice; and • Endorsement of projects.	ECan Zone Delivery	WDC 3 Waters, ECan Regional Support, ECan Science	0	0	0	10	20	20	30	Baseline support for community organisations for the Arohatia te Awa riparian planting, and could stretch to District-wide support for catchment groups and community groups
2.9	That Environment Canterbury and the Waimakariri District Council work with Ngāi Tūāhuriri, Department of Conservation and other agencies to assist landowners/land managers by: • Establishing a biodiversity advisory service (e.g. advice on appropriate plant sources or riparian planting) • Advising on indigenous biodiversity management as part of farm management planning within catchment plans • Publicising positive biodiversity actions, events and news • Promoting and raising awareness of biodiversity values and protection or enhancement opportunities • Investigating the development of a system to ensure appropriate sources of plant material for revegetation and enhancement projects • Promoting and advising on appropriate wetland habitat and waterway protection	ECan Zone Delivery	ECan Regional Support, WDC Greenspace, Ngāi Tūāhuriri Rūnanga, DOC, ECan Science	0	0	0	0	0	0	0	Provided through Rec 2.8, or BAU for Water Environment Advisor and Ecologist - Biodiversity. Service delivery model though baseline funding for a community organisation (e.g. Te Ara Kakariri) for ATA sites in ATA budget, but that is Cam River specific (need for whole of District.)
2.10	That Environment Canterbury and the Waimakariri District Council explore consenting options to enable landowners to undertake indigenous biodiversity initiatives including, but not restricted, to: • habitat protection and enhancement • wetland creation or restoration • predator control of high values sites • revegetation projects	ECan Planning	ECan Consents Planning, WDC Planning	0	0	0	0	0	0	0	BAU Planning tools (green consenting, bonus development lots) e.g. permitted actitivities, and/or WDC provides access to global consent in partnership
2.11	The zone committee recognises the importance of the tidal reaches of waterways as īnanga habitat and recommends that Environment Canterbury and the Waimakariri District Council support the development of habitat at īnanga spawning sites and riparian planting.	WDC 3 Waters, ECan Science	ECan Regional Support	10	0	0	5	5	5	5	Started with the McIntosh, Courtenay - potential further CAPEX work at Taranaki, Benzies Creek, Saltwater Creek - as well as follow-up survey work and sea level rise preparation (OPEX)
2.12	The Waimakariri Water Zone Committee acknowledges the Ashley Estuary (Te Aka Aka) as a taonga within the Waimakariri Water Zone; and acknowledges the current project in relation to the Fenton Reserves (see Rec 2.7); and recommends the establishment of a working group comprising representatives of Ngāi Tūāhuriri, Environment Canterbury, Waimakariri District Council, Department of Conservation, Fish and Game and other agencies to develop a strategy and programme to protect and enhance Ngāi Tūāhuriri, biodiversity and recreational values in the face of current pressures, climate change and rising sea levels.	ECan Strategy & Planning	ECan Science, ECan Zone Delivery, WDC 3 Waters, WDC Policy & Strategy	0	0	0	0	0	0	0	BAU Water Environment Advisor support of 30 hours/year. Could overlap with the existing Northern Pegasus Bay Bylaw Advisory Group - but this group does not have a strong biodiversity focus currently.

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3.16	That Environment Canterbury, Waimakariri District Council and Canterbury District Health Board work together to: a. develop a programme for testing and reporting of water quality in private drinking water supply wells, and b. raise awareness of health impacts from high nitrates in drinking water	ECan Science, WDC 3 Waters	ECan Comms, CDHB	10	0	5	0	10	0	50	Cost of water sampling if full chemical suite analysis. Programme delivered by WDC, with technical support from ECan Groundwater Team, Option A is to continue with only 20 wells, Option B is 40 wells, Option C is 180 wells. Would also need considerable support from Water Environment Advisor as BAU. Alternative to just sample nitrate-nitrogen
3.17	Environment Canterbury and Waimakariri District Council should consider provision of guidance and information regarding a minimum depth for new drinking water supply wells and well head security, to provide better water quality protection.	ECan Science	WDC 3 Waters	5	0	0	0	0	0	0	To be completed 2020-21. BAU distribution of leaflet
3.20	That Environment Canterbury commences a review of the Waimakariri section of the Land and Water Regional Plan in 2030 to incorporate new information and understanding of: how social, cultural, economic and environmental systems have responded; and whether we are on track to meet the plan nitrate limits.	ECan Planning	ECan Science, ECan Strategy & Planning, WDC Policy & Strategy	0	0	0	0	0	0	0	
3.22	That Environment Canterbury works with the Waimakariri community and Ngāi Tūāhuriri Rūnanga, to respond accordingly to new information, emerging opportunities and technology, and review the Waimakariri section of the Land and Water Regional Plan at least once every 10 years.	ECan Strategy & Planning	ECan Regional Support, WDC 3	0	0	0	0	0	0	0	
3.25	The Environment Canterbury and Waimakariri District Council explore a funding stream and management structure to deliver the significant improvements in stream health and biodiversity, and mahinga kai diversity and abundance for the Waimakariri Water Zone over the next 5-10 years. The option of Targeted Rating Districts should be explored by Environment Canterbury. Industry and government funding partners should also be sought.	ECan Zone Delivery	ECan Strategy & Planning, WDC Policy & Strategy	0	0	0	0	0	0	0	Continue discussion with ECan over targeted rating districts
4.12	That any changes to the water race network (e.g. race closure or piping) in the Waimakariri Water Zone be subject to wider consideration by Environment Canterbury and Waimakariri District Council, given the existing benefits of race losses in diluting nitrate concentrations, and supporting groundwater levels and stream flows.	ECan Planning, WDC 3 Waters		0	0	0	0	0	0	0	Assessment of Environmental Effects (AEE) for closures. Annual report to U&R / WWZC about overview of changes to the Stockwater Race system potentially
4.19	In all zone committee proceedings and documentation, the local naming convention is to be adopted: a. The term 'Silverstream' will be used to define the section of watercourse from the springheads to the three streams confluence. b. The term 'Kaiapoi River' will be used to define the section of watercourse from the three streams confluence to the Waimakariri River confluence.	ECan Planning	ECan Comms, WDC 3 Waters, ECan Science, ECan Zone Delivery	0	0	0	0	0	0	0	
4.20	Environment Canterbury investigate further actions necessary to reverse the degraded features of the water quality and habitat of the 'Kaiapoi River' that detract from its vision of being 'New Zealand's best Rivertown'.	ECan Science	ECan Strategy & Planning, WDC 3 Waters	0	0	0	0	0	0	0	
1.3	That Environment Canterbury engages with small block owners to increase awareness and uptake of good management practices.	ECan Zone Delivery	ECan Regional Support	0	0	0	0	0	0	0	
1.9	That Environment Canterbury work with Ngāi Tūāhuriri and Department of Conservation to identify the types of activities and controls needed to protect the aquatic habitat of the threatened Canterbury mudfish and amend plan provisions to ensure protection at key sites in waterbodies including the following: • Tutaepatu Lagoon • Taranaki Creek • Eyre River tributaries • Coopers Creek tributaries • Mounseys Stream tributaries	ECan Planning	ECan Science Ngāi Tūāhuriri Rūnanga DOC	0	0	0	0	0	0	0	

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1.10	That Environment Canterbury work with Ngāi Tūāhuriri and Department of Conservation to identify the locations and types of activities and controls needed to protect the habitat of important indigenous species including but not limited to: • Freshwater crayfish/kōura • Freshwater mussels/kākahi • Lamprey/kanakana	ECan Planning	ECan Science Ngāi Tūāhuriri Rūnanga DOC	0	0	0	0	0	0	0	
1.11	That Environment Canterbury support catchment management plans that implement on the ground projects targeted at rehabilitating the wetland, freshwater or estuarine habitats of threatened species or species of high value to Ngāi Tūāhuriri.	ECan Science	ECan Zone Delivery	0	0	0	0	0	0	0	
1.12	That Environment Canterbury support further assessment of the issue of lost ecological and cultural values resulting from waterway realignments for consented and permitted activities.	ECan Science	Ngāi Tūāhuriri Rūnanga	0	0	0	0	0	0	0	
1.13	That Environment Canterbury promotes actions that improve bank stabilisation and reduce sediment inputs to spring-fed plains waterways.	ECan Zone Delivery	ECan Science	0	0	0	0	0	0	0	
1.15	That Environment Canterbury strengthen the LWRP rules on stock exclusion to exclude intensively farmed stock from: • All springheads that permanently or intermittently contain water; and • All open drains and other artificial watercourses, (including but not restricted to irrigation canals and water races) with surface water in them that discharge into a stream, river or lake.	ECan Planning	ECan Science	0	0	0	0	0	0	0	
1.16	That Environment Canterbury strengthen the LWRP rules on stock exclusion to exclude non-intensively farmed cattle and deer on the plains from: • All waterways and their tributaries, • All springheads that permanently or intermittently contain water; and • All open drains and other artificial watercourses, (including but not restricted to irrigation canals and water races) with surface water in them that discharge into a stream, river or lake.	ECan Planning	ECan Science	0	0	0	0	0	0	0	
1.17	That Environment Canterbury educate horse owners to exclude grazing horses from access to waterways.	ECan Zone Delivery	ECan Comms	0	0	0	0	0	0	0	
1.23	That Environment Canterbury investigate funding for projects to address key environmental issues in consultation with LINZ and Department of Conservation for the Ashley River/Rakahuri, particularly the removal of woody weeds above the confluence with the Okuku River.	ECan Zone Delivery	ECan Strategy & Planning	0	0	0	0	0	0	0	
2.13	That Environment Canterbury undertake a programme of investigations and monitoring in the Ashley Estuary (Te Aka Aka) to provide information for the deliberations of the working group identified in Rec 2.12 and the group implementing Rec 2.7. The programme should include: • Determination of eutrophication susceptibility. This requires determining the flushing potential, the dilution potential, nutrient inputs and nutrient load susceptibility • Development and implementation of a programme to assess current trophic state and to monitor trophic state over time (important considerations are location of sites, parameters to be measured, frequency of sampling, seasonality of sampling) • Annual mid-summer broad-scale monitoring to assess the occurrence of macro-algae. • Monthly water quality monitoring for ecosystem health at the site near the estuary mouth. • Five-yearly monitoring of sediment quality at two sites – present site adjacent to Saltwater Creek and downstream from SH1 and a site in proximity to where Taranaki Creek flows into the Ashley Estuary (Te Aka Aka). • Monitoring of cockles and pipis from sites in the estuary to assess contaminant levels in shellfish flesh. • Establish stations at various locations in the estuary and begin to monitor sedimentation. • Annual monitoring of the sediments and macrobiota at one site within the estuary. • Baseline surveys of the fish and bird populations of this estuary.	ECan Science	ECan Science	0	0	0	0	0	0	0	
3.1	That Environment Canterbury reflect in the Waimakariri section of the Land and Water Regional Plan a staged approach to reduce nitrate losses over time in the Waimakariri Water Zone.	ECan Planning	ECan Science	0	0	0	0	0	0	0	
3.2	Two water quality management areas are proposed; a Nitrate Priority Management Area and a Runoff Priority Management Area.	ECan Planning	ECan Science	0	0	0	0	0	0	0	

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3.3	The zone committee recommend that farmers in the Runoff Priority Management Area are not required to achieve beyond Baseline GMP reductions. The expectation is that landowners in this area will focus on minimizing overland flow of contaminants such as sediment, phosphate, nitrate and pathogens.	ECan Planning	ECan Science, ECan Zone Delivery, ECan Regional Support	0	0	0	0	0	0	0	
3.4	The Waimakariri Water Zone Committee proposes Baseline GMP as the starting point for nitrate reductions from 1 July 2020 (at the onset of expiry of land use consents). Baseline GMP is the average nitrogen loss rate, estimated by the Farm Portal, for the farming activity carried out during the baseline period of 2009-2013, if operated at good management practice.	ECan Planning	ECan Science, ECan Zone Delivery, ECan	0	0	0	0	0	0	0	
3.5	Dairy in the Nitrate Priority Management Area should achieve a 15% beyond Baseline GMP reduction by 2030.	ECan Planning	ECan Science, ECan Zone	0	0	0	0	0	0	0	
3.6	All other consented farming activities in the Nutrient Priority Management Area should achieve a 5% beyond Baseline GMP reduction by 2030.	ECan Planning	ECan Science, ECan Zone	0	0	0	0	0	0	0	
3.7	The zone committee encourage industry and local authorities to provide incentives to achieve nutrient reductions greater than the recommended reductions in this ZIP Addendum.	ECan Regional Support	ECan Science, ECan Zone Delivery	0	0	0	0	0	0	0	
3.8	Unless amended in a Waimakariri plan review process, the nitrate loss reductions in recs 3.5 and 3.6 above should be repeated until: a. the nitrate reductions necessary to achieve the plan limits have been met, or b. the science information available shows the plan limit is likely to be met in the future without the need for further reductions.	ECan Planning	ECan Science	0	0	0	0	0	0	0	
3.9	The zone committee recommends the plan change includes policy criteria that allow for and guides consideration of extensions to the 2030 target date for beyond baseline GMP reductions in exceptional circumstances.	ECan Planning	ECan Science	0	0	0	0	0	0	0	
3.10	Investigate and implement a nitrate “floor” to exclude low nitrogen emitters from having to make further reductions in nitrogen loss beyond Baseline GMP within the Nitrate Priority Management Area.	ECan Planning	ECan Science	0	0	0	0	0	0	0	
3.11	The Waimakariri Water Zone Permitted Activity winter grazing allowances should be reduced across the whole Waimakariri Water Zone to minimise the potential for further nitrate increases in streams and groundwater. The following winter grazing PA property size thresholds should be implemented: Property sizes: • less than 5 ha do not require consent for winter grazing; • Between 5 ha and 100ha can use up to 5ha of property for winter grazing without triggering a consent requirement; and • Between 101ha and 1,000 ha can use up to 5% of property size for winter grazing without triggering a consent requirement; and • greater than 1,000 ha can use up to 50 ha for winter grazing without triggering a consent requirement.	ECan Planning	ECan Science	0	0	0	0	0	0	0	
3.12	That Environment Canterbury runs an education campaign (including workshops) promoting good management practice, and proactively checks progress.	ECan Regional Support	ECan Zone Delivery	0	0	0	0	0	0	0	
3.13	The zone committee recommends that the Waimakariri sub-region plan boundary in Section 8 of Land and Water Regional Plan is amended to incorporate land bordering the Waimakariri River.	ECan Planning		0	0	0	0	0	0	0	
3.14	That Plan Change 5 nutrient allocation zone rules for “red zones” are used as a foundation for managing nutrients across the whole Waimakariri Water Zone, combined with amendments to the permitted activity winter grazing consent thresholds, and additional nitrate loss reductions in the Nitrate Priority Management Area described in other recommendations.	ECan Planning		0	0	0	0	0	0	0	
3.15	That Environment Canterbury reflect in the Waimakariri section of the Land and Water Regional Plan the nitrate limits in the drinking water supply wells of Waimakariri Water Zone as set out in the table below 1. Private water supply well areas are shown in Map X5, appended.	ECan Planning		0	0	0	0	0	0	0	
3.18	That Environment Canterbury reflect in the Waimakariri section of the Land and Water Regional Plan the nitrate limits in the streams and rivers of the Waimakariri Water Zone as set out in the tables below.	ECan Planning		0	0	0	0	0	0	0	

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3.19	That Environment Canterbury makes sufficient resources available to enable significant improvements to continue to be made in the understanding of the Waimakariri Water Zone groundwater system and its connection with the Christchurch aquifer and spring-fed streams. The outcome of this work should be an updated assessment of the direction of travel and likely future nitrate concentrations provided to the committee, partners and stakeholders in 2025. The key areas for improvement of understanding include: a. Lag times between land use change and nitrate concentration changes in wells and spring-fed streams b. Past and present rates of nitrate discharge to ground within the zone and trends in nitrate concentrations c. Transport pathways between land and key receptors such as spring-fed streams, community water supply wells and the Christchurch aquifer system, so that recharge zones can be defined with more certainty d. Nitrate attenuation e. The effectiveness of actions (regulatory and non-regulatory) being taken. f. Nitrate discharges to Ashley Estuary (Te Aka Aka) g. Nitrate concentrations in private water supply wells	ECan Science		0	0	0	0	0	0	0	
3.21	That farming land use consents are granted to have common expiry dates to align with plan review stages.	ECan Consents Planning	ECan Planning	0	0	0	0	0	0	0	
3.23	That Environment Canterbury continues to work with sector and research groups to encourage the further development and implementation of tools and techniques to reduce nitrate leaching.	ECan Science	ECan Regional Support, ECan Zone Delivery	0	0	0	0	0	0	0	
3.24	That the Zone Committee support the investigation and assessment of on-the-ground actions to address nitrate issues (for example, Managed Aquifer Recharge, targeted stream augmentation, woodchip bioreactors, wetland creation, and water storage), including: a. That Environment Canterbury undertake a zone-wide study to assess the feasibility, costs and measures required to implement appropriate actions (to be completed by the end of 2019) to inform the development of sub-catchment management plans. b. That the Waimakariri section of the Land and Water Regional Plan should be assessed to ensure that these activities are enabled where appropriate in the Waimakariri Zone.	ECan Science, ECan Strategy and Planning	ECan Regional Support, ECan Zone Delivery	0	0	0	0	0	0	0	
4.1	In over-allocated Surface Water Allocation Zones, that Environment Canterbury uses the methods set out in Rec 4.2 to reduce and where possible eliminate the over-allocation by 2032.	ECan Planning	ECan Planning	0	0	0	0	0	0	0	

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4.2	That Environment Canterbury use the following suite of options to recover over-allocation, prioritising those options which reduce paper allocation. a. Prohibit any abstraction, other than for community drinking water supplies, where a limit has, or would be, exceeded. b. Enable the substitution of existing surface water or stream depleting groundwater takes with deep groundwater in over-allocated catchments provided there is no increase in the rate of take or annual volume. c. In the case of site to site water transfers i. Prohibit the transfer of any unexercised water permit, and/or of any unused water from the previous 5 years, based on actual usage records. ii. For transfers of water within over-allocated catchments 50% of the transferred water (rate of take and/or annual volume) is to be surrendered unless the water is to be used for a community water supply. iii. Retain Land and Water Regional Plan Section 8 policy that there are no transfers of river water takes within the Ashley River/Rakahuri catchment above State Highway 1 d. That Environment Canterbury identifies water permits that have not been exercised in the past five years and works with consent holders to seek their surrender. e. Lapsed consents i. For any water permit that lapses, is surrendered, or expires and is not renewed, the rate of take and/or annual volume is not reallocated ii. Lapse dates on unexercised consents are prevented from being extended except where exceptional extenuating circumstances are demonstrated. f. Past water use i. The Plan Change includes policy direction that records of past water use are assessed and considered when determining an efficient allocation for replacement consents in accordance with Schedule 10 ii. That Environment Canterbury reports annually on how metered usage compares to consented allocation within the Waimakariri Water Zone. g. Region-wide policy in the Land and Water Regional Plan for reducing over allocation by adjusting the allocation on replacement consents applies throughout the whole of the Waimakariri Water Zone, not only within the Ashley River/Rakahuri catchment.	ECan Planning, ECan Consents Planning	ECan Planning, ECan Consents Planning	0	0	0	0	0	0	0	
4.3	That Environment Canterbury applies LWRP requirements for partial restrictions and requires that pro-rata restrictions be applied to all surface water takes, and stream-depleting groundwater takes which require a minimum flow in the zone.	ECan Planning	ECan Consents Planning	0	0	0	0	0	0	0	
4.4	That Environment Canterbury adopt the methodology for classifying stream-depleting groundwater takes laid out in Schedule 9 of the Land and Water Regional Plan.	ECan Planning	ECan Science	0	0	0	0	0	0	0	
4.5	That Environment Canterbury remove B allocation blocks from all spring-fed rivers unless further investigations indicate that sustainable B blocks can be supported.	ECan Planning	ECan Consents Planning	0	0	0	0	0	0	0	
4.6	That Environment Canterbury extend existing SWAZ and/ or introduce new SWAZ to ensure that there are no gaps in the environmental flow regime framework which manages the Waimakariri Water Zone.	ECan Planning	ECan Consents Planning	0	0	0	0	0	0	0	
4.7	In currently under-allocated catchments, that Environment Canterbury cap the allocation at the currently allocated amount, so no further surface water can be allocated.	ECan Planning	ECan Consents	0	0	0	0	0	0	0	
4.8	That Environment Canterbury support water users to set up water user groups such that the available water resource can be best managed, particularly in times of restriction	ECan Zone Delivery	ECan Strategy & Planning,	0	0	0	0	0	0	0	
4.9	Environment Canterbury investigate how takes for community supplies (and, back-up supplies) are incorporated into the allocation block system, such that they do not unnecessarily impact on the reliability of takes by other users.	ECan Strategy & Planning	ECan Science	0	0	0	0	0	0	0	
4.10	The zone committee will prioritise over-allocated catchments in its catchment management plan programme and actively promote the use of non-statutory mitigations to offset the effects of over-allocation.	Waimakariri Water Zone Committee	ECan Strategy & Planning, ECan Zone	0	0	0	0	0	0	0	
4.11	That Environment Canterbury ensure: a. The Plan Change to section 8 of the Land and Water Regional Plan (Waimakariri) includes policies and rules that adequately provide for augmentation of water bodies, including the Cust River, for environmental benefit. b. Ngāi Tūāhuriri Rūnanga are actively involved in any decision-making with other relevant stakeholders regarding water used in the zone for augmentation purposes.	ECan Planning	ECan Science	0	0	0	0	0	0	0	
4.13	The zone committee recommends that Environment Canterbury allocates resources to improve monitoring of permitted surface water irrigation takes for compliance with limits in the Land and Water Regional Plan.	ECan Compliance	ECan Consents Planning	0	0	0	0	0	0	0	

Recommendation	Text	Project Lead	Project Contributor	Current funding per annum (K) 19/20, 20/21	Option A Low WDC funding (K) CAPEX	Option A Low WDC funding (K) OPEX	Option B Medium WDC funding (K) CAPEX	Option B Medium WDC funding (K) OPEX	Option C High WDC funding (K) CAPEX	Option C High WDC funding (K) OPEX	Notes
4.14	That in any year it chooses within the date range below, Environment Canterbury considers, prioritises and may undertake a review of water permits to align with any revised environmental flow and allocation regime following the Waimakariri plan change becoming operative: a. Ashley River/Rakahuri Catchment – between 2026 and 2027 b. Northern Waimakariri Tributaries – between 2028 and 2029	ECan Consents Planning	ECan Planning, ECan Science	0	0	0	0	0	0	0	
4.15	For the Ashley River/Rakahuri B and C blocks, that Environment Canterbury designate an allocation for mahinga kai enhancement purposes equal to 50% of the water available within the existing block system at plan notification. This allocation would be included in, and subject to, the prevailing management rules for that block (minimum flow and restriction regime).	ECan Planning	ECan Consents Planning, ECan Science	0	0	0	0	0	0	0	
4.16	That Environment Canterbury adopt the minimum flow and allocation recommendations in Table 4.5	ECan Planning	ECan Consents Planning, ECan Science	0	0	0	0	0	0	0	
4.17	For the Cam River/Ruataniwha A block, that Environment Canterbury designate an allocation for mahinga kai enhancement purposes equal to 50% of the water available within the existing block system at plan notification. This allocation would be included in, and subject to, the prevailing management rules for that block (minimum flow and restriction regime).	ECan Planning	ECan Consents Planning, ECan Science	0	0	0	0	0	0	0	
4.18	That Environment Canterbury adopt the minimum flow and allocation recommendations in Table 4.6.	ECan Planning	ECan Consents Planning, ECan Science	0	0	0	0	0	0	0	
4.21	That Environment Canterbury, along with Ngāi Tūāhuriri, Waimakariri Irrigation Limited and other stakeholders, investigate the potential to create an enduring flow regime for the Cust River. This is to be given effect in the upcoming Waimakariri sub-regional plan change, as part of the minimum flow and allocation recommendations, detailed in Table 4.6, under Rec 4.18. The regime would provide for improved stream health and habitat availability, noting that: a. 230 L/s of allocation from the Waimakariri River is already reserved for such purposes in the Waimakariri River Regional Plan and b. Such a flow regime may result in an increased minimum flow.	ECan Planning	ECan Science, ECan Strategy & Planning, Ngāi Tūāhuriri Rūnanga, Waimakariri Irrigation Limited	0	0	0	0	0	0	0	
4.22	That Environment Canterbury investigate a sustainable B allocation limit for the Cust River prior to plan notification.	ECan Planning	ECan Science	0	0	0	0	0	0	0	
5.1	That the Waimakariri Water Zone Committee proposes within the Kowai Groundwater Allocation Zone to: a. cap the current allocation volume, b. allow an extra 10% (based on current allocation volume) for additional groundwater takes that are not stream-depleting and c. provide an allocation for the substitution of existing surface water and stream depleting groundwater takes for non-stream depleting groundwater, provided i. the existing take is surrendered and ii. the new groundwater take is abstracted from the same property as the surrendered surface water or stream depleting groundwater take, and there is no increase in the proposed rate of take or annual volume.	ECan Planning	ECan Science	0	0	0	0	0	0	0	
5.2	That the Waimakariri Water Zone Committee proposes within the Ashley Groundwater Allocation Zone to: a. cap the current allocation volume, b. allow an extra 10% (based on current allocation volume) for additional groundwater takes that are not stream-depleting and c. provide an allocation for the substitution of existing surface water or stream depleting groundwater takes for non-stream depleting groundwater, provided i. the existing take is surrendered and ii. the new groundwater take is abstracted from the same property as the surrendered surface water or stream depleting groundwater take, and there is no increase in the proposed rate of take or annual volume.	ECan Planning	ECan Science	0	0	0	0	0	0	0	

Recommendation	Text	Project Lead	Project Contributor	Current funding per annum (K) 19/20, 20/21	Option A Low WDC funding (K) CAPEX	Option A Low WDC funding (K) OPEX	Option B Medium WDC funding (K) CAPEX	Option B Medium WDC funding (K) OPEX	Option C High WDC funding (K) CAPEX	Option C High WDC funding (K) OPEX	Notes
5.3	That the Waimakariri Water Zone Committee proposes within the Loburn Groundwater Allocation Zone to: a. cap the current allocation volume, b. allow an extra 10% (based on current allocation volume) for additional groundwater takes that are not stream-depleting and c. provide an allocation for the substitution of existing surface water or stream depleting groundwater takes for non-stream depleting groundwater takes, provided i. the existing take is surrendered and ii. the new groundwater take is abstracted from the same property as the surrendered surface water or stream depleting groundwater take, and there is no increase in the proposed rate of take or annual volume.	ECan Planning	ECan Consents Planning	0	0	0	0	0	0	0	
5.4	That the Waimakariri Water Zone Committee proposes within the Cust Groundwater Allocation Zone to: a. cap the current allocation volume, b. allow an extra 10% (based on current allocation volume) for additional groundwater takes that are not stream-depleting and c. provide an allocation for the substitution of existing surface water or stream depleting groundwater takes for non-stream depleting groundwater, provided i. the existing take is surrendered and ii. the new groundwater take is abstracted from the same property as the surrendered surface water or stream depleting groundwater take, and there is no increase in the proposed rate of take or annual volume.	ECan Planning	ECan Science	0	0	0	0	0	0	0	
5.5	That the Waimakariri Water Zone Committee proposes within the Eyre Groundwater Allocation Zone to: a. cap the current allocation volume, and b. provide an allocation for the substitution of existing surface water or stream depleting groundwater takes for non-stream depleting groundwater, provided i. the existing take is surrendered and ii. the new groundwater take is abstracted from the same property as the surrendered surface water or stream depleting groundwater take, and there is no increase in the proposed rate of take or annual volume.	ECan Planning	ECan Science	0	0	0	0	0	0	0	
5.6	That the Waimakariri Water Zone Committee propose to create a Lees Valley Groundwater Allocation Zone. Within the proposed Lees Valley Groundwater Allocation Zone: cap the current allocation volume, allow an extra 10% (based on current allocation volume) for additional groundwater takes that are not stream-depleting.	ECan Planning	ECan Science	0	0	0	0	0	0	0	
5.7	That Environment Canterbury extend the Groundwater Allocation Zone boundaries further inland, to the edge of surface water catchment boundary.	ECan Planning	ECan Science	0	0	0	0	0	0	0	
5.8	That Environment Canterbury allocates resources to improve monitoring of permitted groundwater irrigation takes for compliance with limits in the LWRP. The proposed GAZ boundaries are shown on Map X4.	ECan Science	ECan Science	0	0	0	0		0		
				305	**45**	**155**	**100**	**210**	**210**	**350**	**TOTAL ($K per year)**
					450	1,550	1,000	2,100	2,100	3,500	**Accumulative TOTAL (10 years)**
					Option A	**$ 8.84**	**Option B**	**$ 13.70**	**Option C**	**$ 24.75**	**Rating impact per average rateable property- assuming CAPEX funded from rates, not loan**
						0.32%		**0.44%**		**0.73%**	**% of rates increase (based on 2021 Financial Year)**

WAIMAKARIRI DISTRICT COUNCIL

REPORT FOR INFORMATION

FILE NO and TRIM NO:	DRA-21 / 201015138673
REPORT TO:	Land and Water Committee
DATE OF MEETING:	10 December 2020
FROM:	Sophie Allen – Water Environment Advisor
SUBJECT:	Drainage activities in wetland areas
SIGNED BY: **(for Reports to Council, Committees or Boards)**	Department Manager / Chief Executive

1. SUMMARY

1.1 This report examines management of drainage activities within wetlands with regards to the newly-gazetted National Environmental Standards – Freshwater (NES-F 2020). The NES-F in particular contains a new framework for Territorial Authorities, landowners and others to undertake drainage works within natural wetlands. This report also summarises issues and implications with the implementation of the new standards.

1.2 Under the NES-F, there are permitted activities that are able to be carried out for 'specified infrastructure' within natural wetlands. The Waimakariri District Council (WDC) drainage network meets the definition of specific infrastructure, as it includes 'any public flood control, flood protection, or drainage works carried out by or on behalf of a local authority'.

1.3 There are conditions to be met for activities to be permitted. WDC staff need further advice from Environment Canterbury (ECan) to confirm interpretation that these conditions can be generally met for drainage activities, particularly earthworks and land disturbance. If these conditions cannot be met, activities for specified infrastructure within a natural wetland require a discretionary consent.

1.4 An activity is non-complying if there will be a change in the bed profile or hydrological regime of the wetland 30 days or more after work is completed. Depending on the interpretation of the NES-F, some drainage activities carried out by WDC, such as to enlarge or modify a drain, might not be able to meet the discretionary conditions, therefore consent for a non-complying activity would need to be obtained in some instances, or potentially drainage works not carried out as a change of level of service.

1.5 The NES-F introduces rules for buffer areas within 10m and 10m - 100m from a wetland, such as earthworks restrictions. In general, the NES-F rules are more restrictive and apply to a large area (e.g. up to 100m buffer) than rules in the Canterbury Land and Water Regional Plan and Waimakariri District Plan.

1.6 Areas of WDC drainage network have been identified which have an overlap with wetlands mapped by Environment Canterbury, or which are located within the 10m and 100m buffer areas. Particular areas of overlap to note are the Kairaki (Saltwater) Creek and lower Taranaki Stream areas. The current wetland mapping by ECan does not have the status of a planning map, i.e. applying the NES-F definition of a 'natural wetland', however is proposed to be used by WDC staff in the interim, until a planning map is produced by ECan.

1.7 There are areas within the Waimakariri District where further interpretation of the NES-F is currently required, to inform management. An area between Lineside Road and Bramleys Road has been identified as a wetland area by Environment Canterbury via aerial survey. Part of the WDC drainage network lies within the wetland area and the surrounding 100m buffer. Landowners claim there has been deferred maintenance by WDC, and are requesting drainage works to be carried out within the wetland area. Landowners have been encouraged to allow ECan to survey the wetland area, to confirm whether there is a natural wetland that meets Ministry for the Environment wetland delineation protocols.

Attachments:

i. Ministry for the Environment Essential Freshwater wetlands factsheet (TRIM 201123158105)

2. RECOMMENDATION

THAT the Land and Water Committee:

(a) **Receives** report No. 201015138673.

(b) **Notes** that changes to regulations to introduce requirements for certain activities within natural wetlands, and buffer areas of up to 100m, under the National Environmental Standards for Freshwater (2020).

(c) **Notes** that the WDC drainage network meets the definition of specified infrastructure in the National Environmental Standards - Freshwater (2020), with activities that are permitted (vegetation clearance) and discretionary (such as earthworks, and land disturbance) if conditions can be met.

(d) **Notes** the position of WDC staff for the summer of 2020-21 is to undertake only permitted activities within 100m of a wetland, until further interpretation on the NES-F rules can be obtained regarding conditions for discretionary and non-complying activities.

(e) **Notes** that WDC staff anticipate that confining activities within 100m of a wetland to those permitted under the NPS-F will not impact the WDC 3 waters work programme planned for summer 2020-21.

(f) **Notes** that WDC staff recommend seeking a consent(s) for selective activities in natural wetland areas that are discretionary, but potentially to cease maintenance for non-complying activities; in order to protect wetland values and also the unlikelihood of a non-complying activity consent application being granted.

(g) **Notes** that WDC staff will request that Environment Canterbury and the Ministry for the Environment promote the rules of the NES-F (2020) regarding wetlands management for private landowners, particularly in relation to earthworks for drainage.

(h) **Notes** concerns from landowners of the Lineside Road - Bramley Road area that a wetland mapped by Environment Canterbury is due to deferred drain maintenance by WDC Drainage, with requests for rate rebates and/or land purchase received by WDC.

(i) **Notes** that the Lineside Road - Bramley Road wetland mapped is for intended to undergo an ecological ground survey review by Environment Canterbury ecologist this summer, dependent on obtaining landowner access permissions, which will delineate where the definition for a natural wetland is meet.

(j) **Notes** the need for community education and engagement to support our communities understanding of this issue particularly through community boards and drainage boards.

(k) **Notes** that community education will be discussed as part of Long Term Plan deliberations.

(l) **Circulates** this report to the Drainage Advisory Groups, Community Boards and Waimakariri Water Zone Committee.

3. BACKGROUND

3.1 Central government gazetted four new pieces of freshwater regulation in August 2020, including the NES-F (2020). The National Policy Statement for Freshwater Management (2020) and Resource Management (Stock Exclusion) Regulations (2020) also have implications for the management of wetlands that are not detailed in this report.

Definitions within the NES-F

3.2 The NES-F rules apply to 'natural wetlands'. An 'natural wetland' means a wetland (as defined in the Act) that is not:

> (a) a wetland constructed by artificial means (unless it was constructed to offset impacts on, or restore, an existing or former natural wetland); or
>
> (b) a geothermal wetland; or
>
> (c) any area of improved pasture that, at the commencement date, is dominated by (that is more than 50% of) exotic pasture species and is subject to temporary rain derived water pooling

3.3 NES-F (2020) has specific rules regarding 'specified infrastructure', as defined in the National Policy Statement for Freshwater Management (2020), which are met by WDC as a local authority:

> 'Specified infrastructure means any of the following: (a) infrastructure that delivers a service operated by a lifeline utility (as defined in the Civil Defence Emergency Management Act 2002) (b) regionally significant infrastructure identified as such in a regional policy statement or regional plan (c) any public flood control, flood protection, or drainage works carried out: (i) by or on behalf of a local authority, including works carried out for the purposes set out in section 133 of the Soil Conservation and Rivers Control Act 1941; or (ii) for the purpose of drainage by drainage districts under the section 133 of the Soil Conservation and Rivers Control Act 1941'

3.4 The Canterbury Land and Water Regional Plan (CLWRP) contains restrictions on works within wetlands, which were the rules that applied prior to September 2020. The NES-F (2020) rules superseded the rules of the Canterbury LWRP and Waimakariri District Plan for works in natural wetlands. In general, the NES-F rules are more restrictive and apply to a large area (e.g. up to 100m buffer) than rules in the Canterbury Land and Water Regional Plan and Waimakariri District Plan.

Wetland planning map

3.5 Environment Canterbury (ECan) is required to produce a planning map of wetlands within Canterbury. WDC staff have discussed with ECan staff the process for wetland mapping and how definitions will be applied, however they have indicated that it is very early in the process. For example a decision has not been made on whether to use the currently Canterbury Maps (canterburymaps.govt.nz) wetland layer developed by ECan ecologists as a starting point for a planning map of natural wetlands. ECan planning staff have indicated that they are working to a timeframe of producing a planning map by 2025, although a national time limit of 2030 has been set.

4. ISSUES AND OPTIONS

Overlap of the WDC Drainage Network with wetlands

4.1. Areas of WDC drainage network have been identified which have an overlap with wetlands mapped by Environment Canterbury, or which are located within the 10m and 100m buffer areas. Particular areas of overlap to note are the Kairaki (Saltwater) Creek and lower Taranaki Stream areas (see Figures 1 and 2).

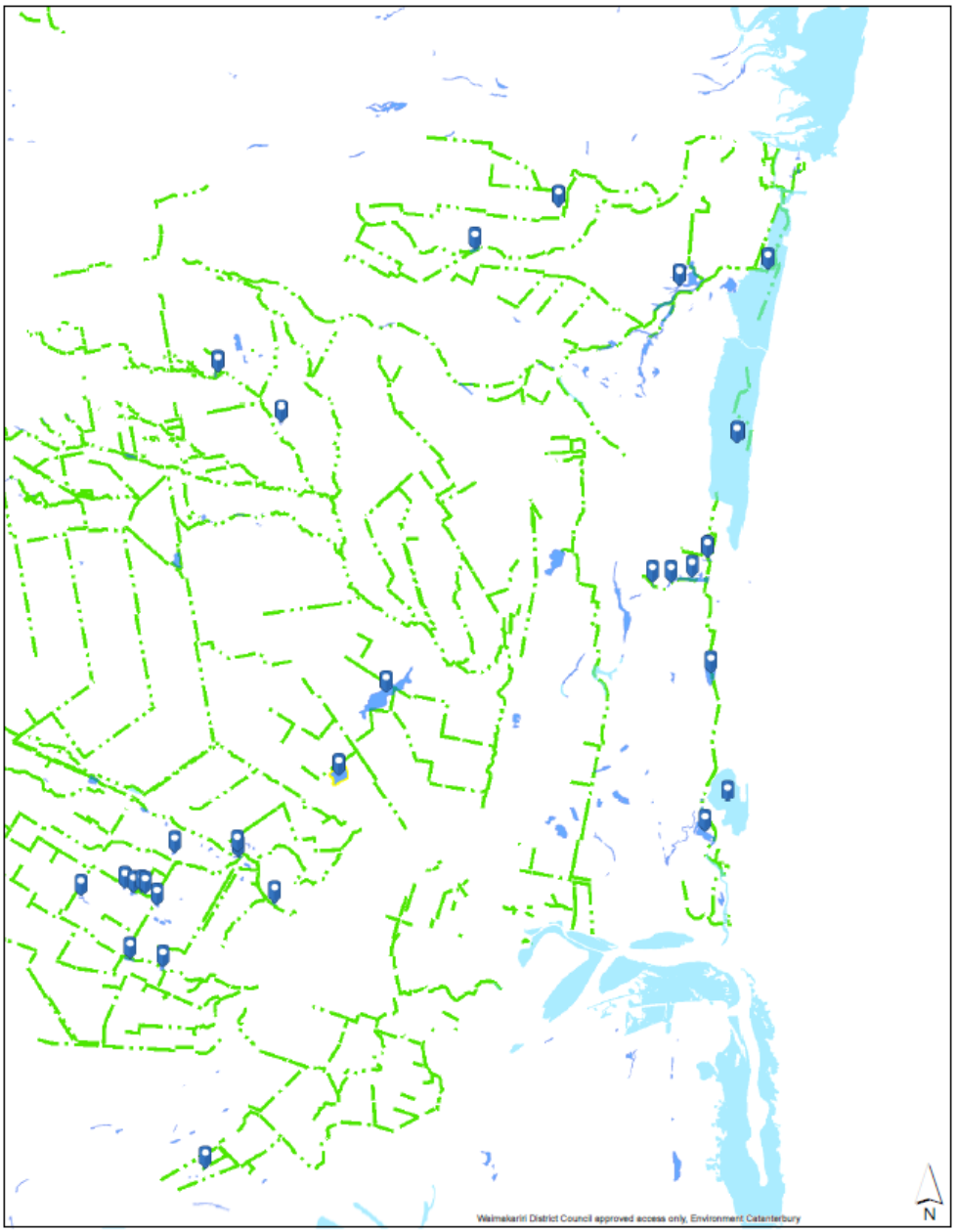

Figure 1: An indicative map of areas in the east of the Waimakariri District where the WDC drainage network (green lines) overlaps within 100m of a wetland mapped by Environment Canterbury on Canterbury Maps (blue markers).

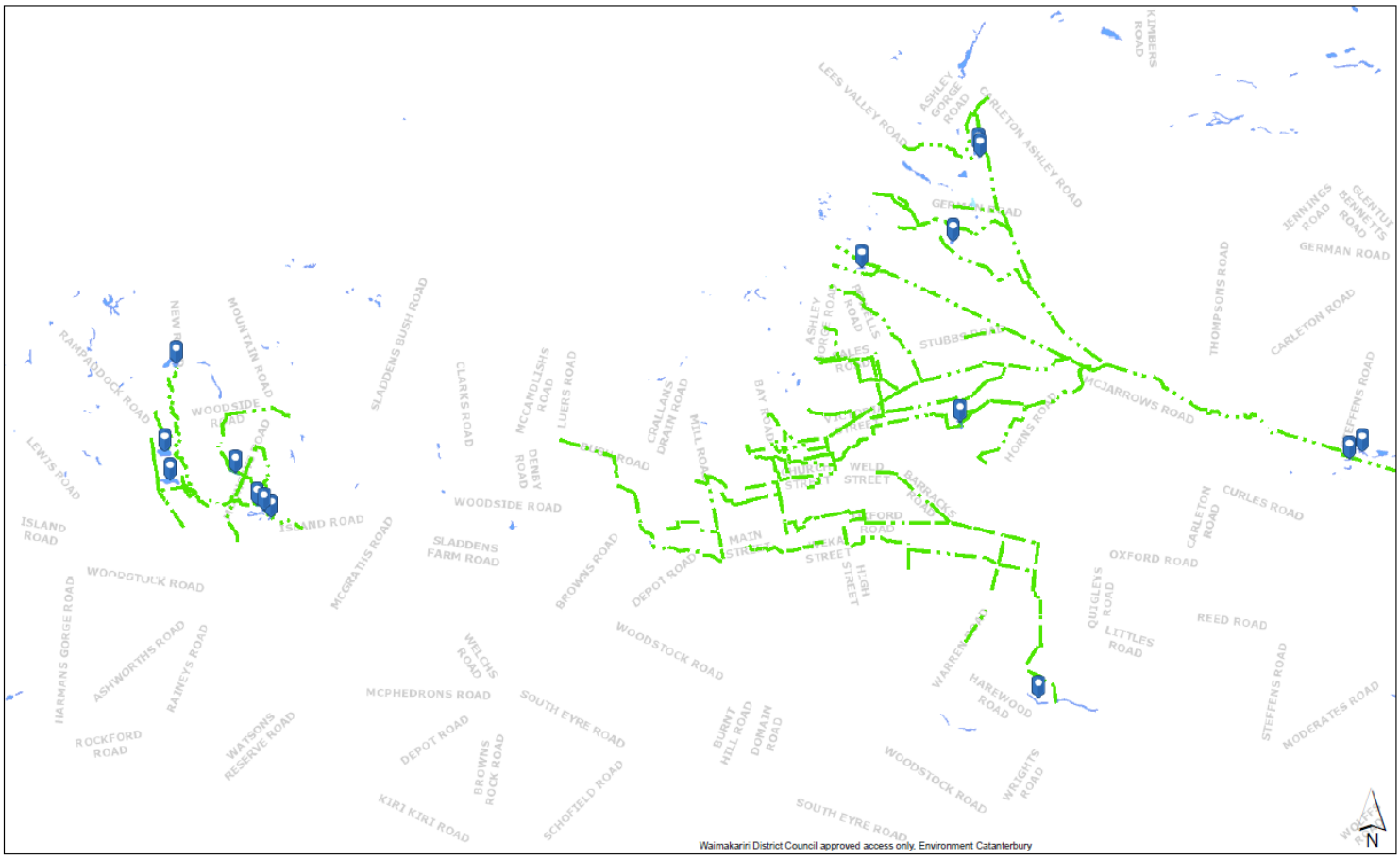

Figure 2: An indicative map of areas in the west of the Waimakariri District where the WDC drainage network (green lines) overlaps within 100m of a wetland mapped by Environment Canterbury on Canterbury Maps.

4.2. It should be noted that the maps only indicate potential areas to investigate whether the NES-F definition of a natural wetland applies. Subsequent steps will assess whether there is confirmation of a natural wetland, followed by discussion for any in change in level of service or consent application for drainage works to be undertaken.

Consenting for WDC drainage works

4.3. Any consents by WDC for works in natural wetlands under the NES-F will be separate from the 'Maintenance and Minor Works in Waterways' consent that is due to be granted shortly by Environment Canterbury. Consent for any non-complying activity may not be granted or require effects management such as off-setting and compensation.

4.4. The reasons for the separation into separate consents is to not delay the processing of the 'Maintenance and Minor Works in Waterways' consent, and to allow time for interpretation of the NES-F as applied to wetlands. WDC staff recommend that a consent is not sought in some instances, i.e. where an activity is non-complying, with 'naturalisation' of some areas of the WDC drainage network. This is due to both the protection of wetland values, and the unlikelihood of a non-complying consent being granted. Any areas for proposed 'naturalisation' have not yet been identified for recommendation by WDC staff.

Wetland buffer areas

4.5. The NES-F introduces rules for buffer areas within 10m and 10m - 100m from a wetland, such as earthworks restrictions. In general, the NES-F rules are more restrictive and apply

to a larger area (e.g. up to 100m buffer) than rules in the Canterbury Land and Water Regional Plan and Waimakariri District Plan.

WDC position for drainage works 2020-21

4.6. The position of WDC staff for the summer of 2020-21 is to undertake permitted activities, but to not undertake any discretionary or non-complying activities within 100m of a wetland (as currently identified on the Ecan Canterbury Maps layer, in the absence of a planning map). Vegetation clearance, for example, where it meet the conditions of 'must not result in drains being deeper, relative to the natural wetland's water level, than they were before the activity', has been interpreted by WDC staff as a permitted activity. WDC staff will continue to seek further clarification on the NES-F rules from ECan and the Ministry for the Environment.

4.7. Section 55 of the NES-F states a general condition for permitted activities within natural wetlands, that prior notice about any permitted activity, such as a description of extent and map, must be notified to ECan at least 10 working days before commencing the activity. WDC staff have commenced notification of vegetation removal as a permitted activity to ECan.

Private drain management

4.8. If drainage works are not for specified infrastructure, or another exceptions stated in rules 38-51 (e.g. for wetland restoration, scientific research or maintenance of a wetland utility structures such as a boardwalk), the new NES-F (2020) prohibits works within a wetland. Therefore it is anticipated that private drains maintained by landowners, if defined to be within a natural wetland area, will not be able to apply for consent to carry out earthworks and land disturbance activities.

4.9. This is a change from rules in the Canterbury Land and Water Regional Plan, where activities for private drainage were able to be carried out if consent was granted. These restrictions on wetland activities will help to maintain or improve wetland ecosystems, but could be a source of frustration for landowners.

4.10. There could be calls from the community for WDC to take on maintenance of private drains in wetland areas, as a Territorial Authority has the ability to apply for consent activities for specified infrastructure, whereas the activity is prohibited for private land owners. There could be potentially calls to include parts of the private drain network within the WDC drainage network.

Lineside Road – Bramleys Road basin area

4.11. WDC and ECan staff have held meetings in September 2019 and September 2020 with landowners in the Lineside Road – Bramleys Road basin area to discuss concerns regarding drain maintenance, the identification of a wetland area by ECan on Canterbury Maps, and actions going forward.

4.12. WDC staff have carried out drain level surveys and drain maintenance outside of the wetland area as per agreed actions in the meetings. Until there is a confirmation of the presence of a natural wetland or not, the WDC Drainage team has taken a precautionary position to not carry out earthworks to remove sediment from a drain located within the wetland area.

4.13. Drain maintenance could change the hydrological regime and/or deepen the drain of the wetland, thereby potentially requiring a consent application for a non-complying activity. WDC communicated to a landowner in September 2020 that the Council at present will not

carry out earthworks within the wetland area. This is due to the rules of the NES-F (2020) requiring further interpretation by WDC. This position will be re-evaluated when further interpretation is received from ECan. WDC staff have recommended a ground survey of the area to the landowners, to delineate the presence of any natural wetland.

4.14. The feedback from landowners to the Central Rural Drainage Advisory Group is that the lack of drain maintenance in the past has led to the area becoming a wetland.

4.15. This area is one of the lowest-lying areas in the district, with increasing challenges for maintenance of drainage due to climate change. WDC height surveys indicated that there is little fall within the drains of the area. This is confirmed by LIDAR data that also indicates a basin-shaped formation (see Figure 3). The historical 'Black' survey maps show this area as part of a large wetland. Coastal inundation modelling by Jacobs Ltd on behalf of WDC has also indicated that the basin would be below sea-level and permanently wet with a modelled 1.8 m sea level rise.

Figure 3: LIDAR showing elevations of the basin area between Lineside Road and Bramleys Road

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

5. COMMUNITY VIEWS

5.1. Groups and Organisations

5.1.1. Drainage Advisory Groups have raised concerns regarding the process for the definition wetlands, with calls for Drainage Advisory Groups to be involved. However, as the NES-F definition of a natural wetland is scientific, (based on soils, hydrology and species present), there is no role for the Drainage Advisory Groups in the delineation of what is a wetland.

5.2. Wider Community

5.2.1. Landowners in the Lineside Road - Bramleys Road area with a wetland identified via aerial survey by Environment Canterbury have held meetings with WDC and ECan staff, as well as attended a Central Rural Drainage Advisory Group meeting to raise concerns that WDC has deferred maintenance of drains in their basin area.

6. IMPLICATIONS AND RISKS

6.1. Financial Implications

6.1.1. Until there is a planning map of natural wetlands prepared by Environment Canterbury, it is difficult to assess changes to drainage maintenance and associated financial costs.

6.1.2. There is a financial cost for consent application preparation and processing that will likely increase due to NES-F requirements. It is undecided whether this will be one over-arching consent or multiple consent applications prepared on an as-required basis. There is also an increase in time for WDC staff and drainage contractors with the requirement to notify permitted works within natural wetlands to ECan.

6.2. Community Implications

6.2.1. The ecology and hydrology of natural wetlands will be maintained or improved.

6.2.2. There will be a period of uncertainty in the community around wetland areas, particularly until production of a natural wetland planning map by Environment Canterbury.

6.2.3. The restrictive and prohibitive rules for private drain management within natural wetlands will likely result in frustration for landowners who would prefer a different land use. WDC staff will encourage that ECan and the Ministry for the Environment provide good guidance for wetland landowners regarding the new NES-F rules for drainage works and wetland restoration.

6.3. Risk Management

6.3.1. Drainage management within a natural wetland and 100m buffer is likely to be an on-going area of risk discussion and development. Therefore WDC staff will provide on-going updates to the Land and Water Committee.

6.3.2. In order to manage a risk of non-compliance with NES-F rules, WDC staff recommend changes to the Level of Service and/or the reconfiguration of the WDC drainage network, to accommodate naturalisation of drainage in some of the areas defined as natural wetland.

6.4. Health and Safety

6.4.1. This report is for information only, with no Health and Safety considerations.

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 (Resource Management Act 1991)

7.2.1. National Environmental Standards for Freshwater – new legislation created under the RMA. The NES-F was gazetted in August 2020, and became operative in September 2020.

7.3. **Community Outcomes**

7.3.1. There is a healthy and sustainable environment for all

- Harm to the environment from the impacts of land use, use of water resources and air emissions is minimised.
- Cultural values relating to water are acknowledged and respected.
- Harm to the environment from the spread of contaminants into ground water and surface water is minimised.

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

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

7.4. **Delegations**

7.4.1. No delegations apply. This report is for information only.

Ministry for the Environment
Manatū Mō Te Taiao

ESSENTIAL FRESHWATER
WAI MĀORI MĀTUATUA

TE MANA O TE WAI

Wetlands factsheet

Essential Freshwater is part of a new national direction to protect and improve our rivers, streams, lakes and wetlands. The Essential Freshwater package aims to:

- stop further degradation of our freshwater
- start making immediate improvements so water quality improves within five years
- reverse past damage to bring our waterways and ecosystems to a healthy state within a generation.

Te Mana o te Wai is fundamental to all freshwater management

Te Mana o te Wai recognises the vital importance of water. It expresses the special connection that New Zealanders have with freshwater. By protecting the health of freshwater we protect the health and well-being of people and our ecosystems. When managing freshwater, Te Mana o te Wai ensures the health and well-being of the water is protected and human needs are provided for before enabling other uses of water. Through discussions with regional councils, tangata whenua and communities people will have a say on how Te Mana o te Wai is applied locally in freshwater management. More information can be found in the **Te Mana o te Wai factsheet**.

Who should read this factsheet

This factsheet is part of a **series** and provides information on new provisions for wetlands. It is primarily intended for council staff and land users, but may also be of interest to iwi, the wider agricultural industry, farm advisors and consultants, and anyone else with an interest in freshwater policy.

New provisions for wetlands

The **National Policy Statement for Freshwater Management 2020** (NPS-FM 2020) includes new policies to avoid the loss of extent of natural inland wetlands, protect their values and promote their restoration. The new regulations in the **National Environmental Standards for Freshwater** (NES) place restrictions on damaging activities in and near natural wetlands. **The Resource Management (Stock Exclusion) Regulations 2020 mandate that certain stock must**

be excluded from natural wetlands in some circumstances. The NES, NPS-FM 2020 and stock exclusion regulations come into force on 3 September 2020. Regional councils will need to amend their regional plans as soon as practicable to include a policy to avoid the loss of extent of natural inland wetlands, protect their values and promote their restoration, without using the Schedule 1 process. Any other changes to give effect to the NPS-FM 2020 through their regional policy statement and changes to regional plans will need to be notified by 31 December 2024.

NPS-FM 2020 applies to:	NES applies to:
✓ Natural inland wetlands[1] ✓ This includes constructed wetlands outside the coastal marine area that were constructed to offset impacts on, or restore an existing or former natural wetland.	✓ Natural inland wetlands AND ✓ Natural coastal wetlands (Together referred to as natural wetlands[1]) ✓ This includes constructed wetlands that were constructed to offset impacts on, or restore an existing or former natural wetland
NPS-FM 2020 does not apply to:	**NES do not apply to:**
X Natural coastal wetlands (as these are covered by the New Zealand Coastal Policy Statement 2010 (NZCPS)). X Geothermal wetlands X Constructed wetlands inside the coastal marine area X Constructed wetlands created for other purposes	X Geothermal wetlands X Constructed wetlands created for other purposes

What are the new NPS-FM 2020 policies and when do they apply?

Overarching policy

From 3 September 2020, regional plans need to be amended to include an overarching policy to avoid the loss of extent of natural inland wetlands, protect their values and promote their restoration.

This amendment must be made as soon as practicable, without the use of the Schedule 1 process in the Resource Management Act 1991 (RMA). Under s104 of the RMA consent authorities need to have regard to a national policy statement. Councils are encouraged to seek legal advice as to how the NPS-FM 2020 applies to specific applications for resource consent that are being processed at the time of amendment.

Exceptions to the overarching policy

The overarching policy allows councils to permit or grant resource consents for some specified activities in or near wetlands. For detail on which activities may be permitted or granted resource consents, see figure 1 below.

One notable exception is that councils may grant resource consents for the construction or upgrade of specified infrastructure[1] that will provide significant national or regional benefits, if the regional council is satisfied that there is a functional need[1] for that infrastructure in that location.

Since "specified infrastructure" includes regionally significant infrastructure identified as such in a regional policy statement or plan, regional councils are encouraged to begin the process of identifying appropriate infrastructure in their policy statements and plans as soon as possible.

Managing adverse effects on wetlands

Resource consents must be assessed by applying the effects management hierarchy[1] to manage any adverse effects on the wetland extent or values, including cumulative effects and loss of potential value, as a result of the proposed activity. Councils must impose conditions on resource consents to apply the effects management hierarchy and require monitoring of the wetland for the consent duration, at a scale appropriate to the potential adverse effects of the activity.

> Under the effects management hierarchy, adverse effects on the wetland extent or values caused by the activity are avoided, minimised then remedied (in that order) wherever practicable, then offset or compensated (in that order) where possible. If these cannot be achieved, the activity must be avoided, and consent declined.

The Ministry is planning to work with partners and stakeholders to develop technical guidance on the effects management hierarchy. In the meantime, aquatic offsetting[1] and compensation[1] under the effects management hierarchy should be measured and monitored in accordance with the principles that underpin biodiversity offsetting in currently available guidance[2], noting that the NPS-FM 2020 and NES also require consideration of values other than indigenous biodiversity, such as ecosystem health, hydrological functioning, mahinga kai and other Māori freshwater values, and amenity values.

Aquatic offsets should achieve at least no net loss,[1] and preferably result in a net gain[1] in wetland extent or values. However, many values (especially biodiversity) cannot be offset or compensated due to irreplaceability or vulnerability, and if they are adversely affected, they may be permanently lost. This means for some projects, offsetting and compensation is not achievable and the activity should be avoided. This will be decided by regional councils.

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1 See the NPS-FM 2020 text for legal definitions of terms.

2 Currently available biodiversity offsetting guidance:

https://www.eianz.org/document/item/4447

https://www.doc.govt.nz/Documents/our-work/biodiversity-offsets/the-guidance.pdf

https://www.lgnz.co.nz/assets/Uploads/7215efb76d/Biodiversity-offsetting-under-the-resource-management-act-full-document-....pdf

Please note that the LGNZ guidance references the hierarchy of obligations in the RMA, and therefore will not be directly applicable to the NPS-FM 2020 as the order and steps of the effects management hierarchy differs.

Mapping and monitoring

Regional councils also need to identify, map, and monitor those natural inland wetlands that are larger than 500 square metres or that contain threatened species (if less than 500 square metres), excluding those located on public conservation lands or waters. Councils may also include coastal wetlands and conservation lands and waters in their mapping at their own discretion. Mapping must be completed by 3 September 2030. If there is uncertainty about the existence or extent of a wetland, this should be decided using the wetland delineation protocols, available online.[3]

Monitoring should provide enough information for the council to assess whether its plan provisions are successfully ensuring no net loss of wetland extent and values. The mapping and monitoring information collected should be used to create and maintain an inventory of wetlands in the region. This data collection will support councils to track the health of wetlands in their region and provide a baseline for restoration efforts.

Additionally, regional councils must include provisions for the restoration of natural inland wetlands in their regional plans, including restoring the values of ecosystem health, indigenous biodiversity, hydrological functioning, Māori freshwater values, and amenity value.

What are the NES regulations and when do they apply?

The NES regulations come into force on 3 September 2020.

The regulations require strict measures, including but not limited to resource consents, for activities that can result in the loss of extent and values of natural wetlands. The NES prescribes activity statuses and detailed conditions for various potentially damaging activities in and around wetlands. Some activities that cause complete or partial drainage of all or part of a natural wetland are now prohibited - see figure 1 for details. A regional rule or resource consent may be more stringent than the regulations, but more lenient rules in regional plans will be superseded by the NES.

The new standards do not apply to the customary harvest of food or resources undertaken in accordance with tikanga Māori.

Figure 1 explains what activity status may apply to a proposed activity in or near a natural inland wetland. This is determined by the purpose of the activity, the type of activity, and its expected adverse effects on the natural wetland. See the NES text for detailed conditions that apply to each activity. The NES also details matters to which the discretion of a consent authority is restricted.

The relationship between these new regulations and existing consents or existing lawful activities is set out in section 43B of the RMA. In general:

- consents granted prior to gazettal[4] of the regulations prevail until reviewed

[3] **https://www.mfe.govt.nz/publications/fresh-water/wetland-delineation-protocols**

[4] 5 August 2020

- consents also prevail if there was a decision made about whether or not to notify the relevant consent application prior to gazettal of the regulations

- activities that require a consent under the regulations may be able continue temporarily under **section 20A(2)** of the RMA if:

  - they were permitted, or allowed without a consent, and lawfully established, prior to the relevant regulations commencing; and
  - the effects of the activities are of the same or similar character, scale, and intensity as they were before commencement; and
  - the person carrying out the activities applies for consent no later than 6 months after commencement. The activities may continue until the consent application, and any appeals, are finally determined.

For activities to which section 20A applies, this means that people must apply for their consent no later than **2 March 2021**.

Figure 1: The status of wetlands activities under the National Environmental Standards for Freshwater

Proposed activity (see the NES text for full legal definitions for each activity)

Vegetation clearance within, or within a 10-metre setback of a natural wetland, unless otherwise specified

Permitted	Restricted discretionary	Discretionary	Non-complying	Prohibited	Exempt
If the activity is for the purposes of: wetland restoration that complies with conditions in regulation 38(4) scientific research that complies with conditions in regulation 40(4) maintenance of wetland utility structures that complies with the conditions in regulation 43(4) maintenance and operation of specified infrastructure and other infrastructure that complies with the conditions in regulation 46(4) arable and horticultural land use outside a natural wetland but within a 10 m setback in an area that was used for these purposes at any time between the start of 1 January 2010 and the close of 2 September 2020, and that complies with the general conditions on natural wetland activities in regulation 55 (except regulation 55(2)) natural hazard works (for the purpose of removing material, such as trees, debris and sediment, that is deposited as the result of a natural hazard and is causing, or is likely to cause, an immediate hazard to people or property) that complies with the conditions in regulation 51(5).	**If the activity is for the purposes of:** wetland restoration that does not comply with any of the conditions in regulation 38(4) scientific research that does not comply with conditions in regulation 40(4) construction of wetland utility structures maintenance of wetland utility structures that does not comply with any of the conditions in regulation 43(4) maintenance and operation of specified infrastructure and other infrastructure if it does not comply with any of the conditions in regulation 46(4).	**If the activity is for the purposes of:** construction of specified infrastructure.	Vegetation clearance activities within, or within a 10-metre setback from, a natural wetland if they do not have another status under Subpart 1 of Part 3 of the NES.	N/A	**If the activity is for the purposes of:** the customary harvest of food or resources undertaken in accordance with tikanga Māori.

Proposed activity (see the NES text for full legal definitions for each activity)

Earthworks or land disturbance within, or within a 10-metre setback from, a natural wetland, unless otherwise specified

Permitted	Restricted discretionary	Discretionary	Non-complying	Prohibited	Exempt
If the activity is for the purposes of: wetland restoration that complies with conditions in regulation 38(4)* scientific research that complies with conditions in regulation 40(4)* maintenance of wetland utility structures that complies with the conditions in regulation 43(4)* maintenance and operation of specified infrastructure and other infrastructure that complies with the conditions in regulation 46(4)* arable and horticultural land use outside a natural wetland but within a 10-metre setback in an area that was used for these purposes at any time between the start of 1 January 2010 and the close of 2 September 2020, that complies with the general conditions on natural wetland activities in regulation 55 (except regulation 55(2)) natural hazard works (for the purpose of removing material, such as trees, debris and sediment, that is deposited as the result of a natural hazard, and is causing, or is likely to cause, an immediate hazard to people or property) that complies with the conditions in regulation 51(5).	**If the activity is for the purposes of:** wetland restoration that does not comply with any of the conditions in regulation 38(4) scientific research that does not comply with conditions in regulation 40(4) construction of wetland utility structures maintenance of wetland utility structures that does not comply with any of the conditions in regulation 43(4) maintenance and operation of specified infrastructure and other infrastructure if it does not comply with any of the conditions in regulation 46(4).	**If the activity is for the purposes of:** construction of specified infrastructure (earthworks or land disturbance within, or within a 10-metre setback from a natural wetland) construction of specified infrastructure (earthworks or land disturbance outside a 10-metre setback but within a 100-metre, setback, from a natural wetland if it results, or is likely to result, in the complete or partial drainage of all or part of the natural wetland).	Earthworks outside, but within a 100-metre setback from, a natural wetland if it results, or is likely to result, in the complete or partial drainage of all or part of a natural wetland, and does not have another status under any of regulations 38 to 51. Earthworks within, or within a 10-metre setback from, a natural wetland are non-complying activities if they do not have another status under Subpart 1 of Part 3 of the NES.	Earthworks within a natural wetland is a prohibited activity if it results, or is likely to result, in the complete or partial drainage of all or part of a natural wetland, and does not have another status under any of regulations 38 to 51.	**If the activity is for the purposes of:** the customary harvest of food or resources undertaken in accordance with tikanga Māori.

* The size threshold conditions do not apply to earthworks and land disturbance for planting.

Proposed activity (see the NES text for full legal definitions for each activity)	Permitted	Restricted discretionary	Discretionary	Non-complying	Prohibited	Exempt
The taking, use, damming, diversion, or discharge of water within, or within a 100-metre setback from, a natural wetland; unless otherwise specified.	**If the activity is for the purposes of:** wetland restoration that complies with conditions in regulation 38(4) scientific research that complies with conditions in regulation 40(4) maintenance of wetland utility structures that complies with the conditions in regulation 43(4) maintenance and operation of specified infrastructure and other infrastructure that complies with the conditions in regulation 46(4) natural hazard works (for the purpose of removing material, such as trees, debris and sediment, that is deposited as the result of a natural hazard; and is causing, or is likely to cause, an immediate hazard to people or property) that complies with the regulations in regulation 51(5).	**If the activity is for the purposes of:** wetland restoration that does not comply with the conditions in regulation 38(4)(a) scientific research that does not comply with the conditions in regulation 40(4) but does comply with the conditions in regulation 41(4)** construction of wetland utility structures that complies with the conditions in regulation 42(4)** maintenance of wetland utility structures if it does not comply with any of the conditions in regulation 43(4), but does comply with the conditions in regulation 44(4)** maintenance and operation of specified infrastructure and other infrastructure if it does not comply with any of the conditions in regulation 46(4) but does comply with the conditions in regulation 47(5). However, the conditions do not apply if the activity is for the purpose of maintaining or operating hydro-electricity infrastructure.**	**If the activity is for the purposes of:** construction of specified infrastructure.	The taking, use, damming, diversion or discharge of water outside, but within a 100-metre setback from, a natural wetland is a non-complying activity if it results, or is likely to result, in the complete or partial drainage of all or part of a natural wetland and does not have another status under any of regulations 38 to 51. The taking, use, damming, diversion or discharge of water within, or within a 100-metre setback from, a natural wetland are non-complying activities if they do not have another status under Subpart 1 of Part 3 of the NES.	The taking, use, damming, diversion, or discharge of water within a natural wetland is a prohibited activity if it results, or is likely to result, in the complete or partial drainage of all or part of a natural wetland; and does not have another status under any of regulations 38 to 51.	**If the activity is for the purposes of:** the customary harvest of food or resources undertaken in accordance with tikanga Māori.
Sphagnum moss harvesting within a natural wetland	**If the activity is for the purposes of:** sphagnum moss harvesting in areas where sphagnum moss was harvested, or actively managed for harvest, at any time between the start of 1 January 2010 and the close of 2 September 2020. The harvest must comply with the conditions in regulation 48(2).	N/A	**If the activity is for the purposes of:** new sphagnum moss harvests if sphagnum moss was not harvested, or actively managed for harvest, in the area being harvested at any time between the start of 1 January 2010 and the close of 2 September 2020.	N/A	N/A	

** The conditions in regulations 41(4)(c), 42(4)(c), 44(4)(c), and 47(5)(c) do not apply to any part of the wetlands bed that is in direct contact with the relevant equipment or structures.

What are the stock exclusion regulations and when do they apply?

New farms

Under the stock exclusion regulations, for any new pastoral system[5], stock, being beef cattle, dairy cattle, dairy support cattle, deer or pigs, must be excluded from natural wetlands that are identified in any regional or district plan or regional policy statement that is operative on or after 3 September 2020.

Farmers managing a new pastoral system must also ensure stock are excluded from wetlands supporting a population of threatened species (identified in the NPS-FM 2020), and from any wetland 0.05 ha (500 square metres) or greater on **low slope land as mapped**. The maps form part of the stock exclusion regulations and are published on the Ministry for the Environment website.

Existing farms

For all other farms, stock (excluding sheep) must be excluded by 1 July 2023 from natural wetlands identified in an operative regional or district plan or regional policy statement as at 3 September 2020.

These farms also must exclude stock from wetlands supporting a population of threatened species (identified in the NPS-FM 2020) by 1 July 2025.

Finally, stock must be excluded from wetlands 0.05 ha or greater on low slope land by 1 July 2025.

All farms

The responsibility for complying with the stock exclusion regulations sits with the person who owns or controls the stock.

More stringent stock exclusion provisions in a regional plan prevail over provisions in these stock exclusion regulations.

Why these provisions?

The NES, NPS-FM 2020 and stock exclusion regulations are designed to prevent further loss of New Zealand's valuable natural wetlands and associated ecosystems.

New Zealand wetlands provide essential habitat for a diverse range of endemic flora and fauna, including critically endangered birds like matuku and kōtuku, as well as 67 per cent of freshwater and estuarine fish species, and 13 per cent of nationally threatened plant species. Wetlands provide essential ecosystem services, acting as buffers for flooding, nutrient cyclers, water purifiers and carbon sinks. Replacing these ecosystem services with infrastructure

[5] Any land converted to pastoral land use on or after 3 September 2020

like constructed wetlands, flood barriers and dams generally costs more than avoiding their loss in the first place.

The value of wetlands has not been historically recognised, and many were drained to create additional 'usable' land. This has resulted in the loss of over 90 per cent of New Zealand's historical inland wetland extent.

More about the Essential Freshwater package

The package includes a number of new provisions including:

- new **National Environmental Standards for Freshwater**
- new **stock exclusion regulations** under section 360 of the RMA
- amendments to the **Resource Management (Measurement and Reporting of Water Takes) Regulations 2010**
- the **National Policy Statement for Freshwater Management 2020** which replaces the NPS-FM 2017
- **amendments to the RMA** to provide for a faster freshwater planning process
- **amendments to the RMA** to enable mandatory and enforceable freshwater farm plans, and the creation of regulations for reporting nitrogen fertiliser sales.

Factsheets in this series

The full set of Essential Freshwater factsheets are available **on our website**.

Find out more and give us feedback

Contact us by emailing freshwater@mfe.govt.nz, or visit **the Essential Freshwater page** on our website.

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WAIMAKARIRI DISTRICT COUNCIL

REPORT FOR DECISION

FILE NO and TRIM NO:	CPR-04-3-11/201106150208
REPORT TO:	Land and Water Committee
DATE OF MEETING:	10 December 2020
FROM:	Kate Steel – Ecologist Biodiversity
SUBJECT:	Weed Control and Fencing at Forestdale Wetland
SIGNED BY: **(for Reports to Council, Committees or Boards)**	Department Manager / Chief Executive

1. SUMMARY

1.1. Environment Canterbury is interested in collaborating with WDC on ecological restoration work in Forestdale Wetland Reserve. A high value biodiversity site owned by WDC.

1.2. Environment Canterbury staff have offered WDC $30k from their 2020/21 operations budget and support for an application to their Immediate Steps Biodiversity Fund to progress intensive woody weed control and deer fencing for the wetland.

1.3. WDC staff propose re-allocating $20k from the ZIPA budget as part of Council's contribution to this project.

Attachments:

i. 190514067902 Forestdale Wetland Botanical Assessment 2019

THAT the Land and Water Committee:

(a) **Receives** report No. 201106150208

(b) **Notes** in the current financial year staff would like to fence Forestdale Wetland at a cost of $66k and undertake weed control at a cost of $20k.

(c) **Notes t**his report recommends funding from three sources including a ZIPA reallocation, Environment Canterbury operational budget and Immediate Steps Funding.

(d) **Notes** the Environment Canterbury operations budget contribution is proposed to be $20k towards fencing and $10k for weed control.

(e) **Approves** the reallocation of $20,000 from the 2020/2021 ZIPA budget as a WDC contribution to the Forestdale Wetlands project.

(f) **Directs** staff to apply to Environment Canterbury's Immediate Steps Biodiversity Fund for $26k towards the capital cost of boundary fencing and $10k towards weed control needed to complete the project.

2. BACKGROUND

2.1. Forestdale Wetland Reserve is a 10.3 ha reserve 19km north-west of Rangiora owned by WDC, and managed by the Greenspace Unit (Figure 1, Figure 2). A number of ecological reports highlight Forestdale Wetland's importance for conservation due to its high natural values, and rarity in the Waimakariri District. The wetland is listed as a significant vegetation and habitat site in the Waimakariri district plan.

Figure 1: Location of Forestdale Wetland Reserve

Figure 2: Forestdale Wetland Reserve

2.2. The reserve borders a forestry block. In 2019 approximately 0.6 – 0.7 hectares of mature secondary forest in the reserve was damaged by forestry overspray. A photo point assessment following the overspray incident recommends constructing a fence to define the boundary of the site as the best way to prevent a repeat occurrence (attachment i).

2.3. Previous ecologist reports in the WDC archive dating back to 1999 also highlight the importance of securely fencing the site (especially along the forestry block boundary) as well as progressively eradicating invasive weeds especially woody weeds.

2.4. The woody weed invasion is exacerbated by deer browse which is supressing the natural regeneration normally present in areas with a good seed source.

2.5. Environment Canterbury Principal Wetland Advisor Jason Butt has provided WDC staff with advice that if deer and sheep were excluded and the tall weeds controlled the site would return to a forested margin around the wetland core over a period of 20-30 years with minimal management.

3. ISSUES AND OPTIONS

3.1. Environment Canterbury would like to collaborate with WDC to fence and restore this significant wetland.

3.2. Environment Canterbury Staff have agreed to support WDC with an application to the Environment Canterbury Immediate Steps (IMS) fund for the remainder of the project costs.

3.3. Forestdale Wetland requires $66k for the construction of a deer fence around the perimeter of the reserve and $50k for intensive weed control over 3 – 5 years to protect and enhance the biodiversity values of the reserve. None of this work has been started.

3.4. Environment Canterbury will commit $30k from their 2020/2021 operational budget if WDC also commit funding are able to get works done this financial year.

3.5. $20k capex can be re-allocated from the 2020/21 ZIPA budget to enable this if approved by the Land & Water Committee.

Table 1: Funding sources for 2020/2021 Budget for Fencing and Weed Control at Forestdale Wetland

	WDC	ECAN	Immediate Steps	Total
Fencing	$20k	$20	$26	$66k
Weed Control	$4.19k	$10	$10	$24k
Total	$24.19k	$30k	$35k	

3.6. Budget would be reallocated from:

3.6.1. $10k for inanga spawning work at McIntosh Drain and Taranaki Stream. This work cannot proceed as the WDC shovel ready project is underway at McIntosh Drain and the installation of the Taranaki Stream flood gate has lowered the water level too far below the bank edge for riparian grasses to provide suitable inanga spawning habitat.

3.6.2. $10k from the $20k budget for amenity and biodiversity work at Townsend Road Esplanade Reserve. WDC staff had planned to use $10k from this budget for spring contractor planting of grasses in this reserve (with $10k reserved for a community planting programme in autumn 2021). Through spring 2020 considerable work has been undertaken in this reserve by the WDC 3 Waters. Following the works riparian planting of *Carex Secta* was done under the Rangiora Drainage Budget.

3.7. A small amount of operational budget will be requested through the LTP to ensure the long term ecological benefits of the 2020/21 intensive weed control is sustained. Improvement in the condition of the site would also allow us to make the most of the education and amenity value of such a large publicly owned wetland.

3.8. WDC should be leading by example with regard to protection and enhancement of significant ecological sites we manage.

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

4. COMMUNITY VIEWS

4.1. Groups and Organisations

4.1.1. The Immediate Steps application for Forestdale Wetland will be put to the Waimakariri Zone Committee for endorsement.

4.2. Wider Community

4.2.1. More than 50% of respondents to the 2019 community survey felt a range of environmental issues were potentially challenging for the district including climate change, water quality, and loss of biodiversity. More than 91% of respondent households considered living in an environmentally sustainable manner important.

5. IMPLICATIONS AND RISKS

5.1. Financial Implications

5.1.1. The reallocation of budget to this project represents a good return on investment for WDC in terms of biodiversity spending due to:

5.1.1.1. The offer from Environment Canterbury of both a financial contribution from their operational budget and support for an Immediate Steps Funding application

5.1.1.2. Restoration of existing high value habitat is 10 times more cost effective than planting the same area.

5.2. Community Implications

5.2.1. Environment Canterbury are interested in publicising collaboration on this restoration project as a ‘good news’ story. This would help make WDC’s investment in biodiversity visible to the Waimakariri community.

5.2.2. Visible evidence of investment in Council owned high value biodiversity sites will bolster our ability to credibly support landowners to invest in biodiversity improvement on private land.

5.2.3. Dealing with the weed issues is the first step toward making this reserve accessible to our community.

5.3. Risk Management

5.3.1. Should the recommendations in this report not be approved there is a risk of a repeat of the forestry overspray incident due to a poorly defined boundary, and ongoing biodiversity loss in the reserve due to lack of maintenance.

5.3.2. There is some uncertainty from both the Ministry for the Environment and Environment Canterbury about the impact of the new regulations for freshwater management (gazetted September 3) on restoration activities in wetlands.

Working closely with Environment Canterbury staff on this project will help ensure timeframes are met while complying with and new regulation.

5.4. Health and Safety

There are no specific Health and Safety considerations for this report.

6. CONTEXT

6.1. Policy

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

6.2. Legislation (Reserves Act 1977 Section 17)

6.2.1. (b) where scenic, historic, archaeological, biological, geological, or other scientific features or indigenous flora or fauna or wildlife are present on the reserve, those features or that flora or fauna or wildlife shall be managed and protected to the extent compatible with the principal or primary purpose of the reserve:

6.3. Community Outcomes

6.3.1. There is a healthy and sustainable environment for all

- Harm to the environment from the impacts of land use, use of water resources and air emissions is minimised.
- Cultural values relating to water are acknowledged and respected.
- The demand for water is kept to a sustainable level.
- Harm to the environment from the spread of contaminants into ground water and surface water is minimised.

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

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

6.3.3. Public spaces and facilities are plentiful, accessible and high quality

- People enjoy clean water at our beaches, rivers and lakes.
- There is a wide variety of public places and spaces to meet people's needs.
- There are wide-ranging opportunities for people to enjoy the outdoors.

6.4. Delegations

6.4.1. The Land and Water Committee hold the delegation for the oversight of ZIPA budget.

Forestdale Wetland

Condition Assessment and repeat of Photopoints April 2019

Report Prepared for
Waimakariri District Council
Rangiora

by

Graeme Ure
Independent Ecologist
Loburn, Rangiora
14 May 2019

Introduction

Forestdale Wetland is a 10 ha reserve owned by Waimakariri District Council who purchased it in the mid-1990's following a report by R.P. Buxton and J. Roper-Lindsay(1993), highlighting it's high natural values, rarity in Waimakariri District and importance for conservation within the district (Norton and Stilwell, 1999). The reserve is approximately 1.1km long and 90m wide with the wetland occupying the central strip (one third to one half of the total width) and as a consequence the wetland is reasonably well buffered from adjoining farmland. Full details on the background and condition in 1999 can be found in Norton and Stilwell (1999).

Both reports highlight the presence of a nationally threatened sedge, *Carex tenuiculmis.* Norton and Stilwell (1999) point out that the dominant native species in the wetland, purei, swamp flax, raupo and holy grass, are significant populations for these species in Waimakariri District due to habitat loss. A single red tussock is also mentioned in both reports but this could not be found in 2017(Ure, 2017).

Particular attention was drawn to the potential impact of woody weeds on the wetland if left unmanaged, in particular grey and crack willow, Spanish heath, gorse and elderberry. On the margins, wild cherries are identified as of particular concern.

This report follows an inspection on 3rd April 2019, conducted in order to repeat the photopoint monitoring established by Norton and Stilwell (1999) and last completed in August 2017, to assess the condition of the reserve, and to determine if management is meeting the purposes of the reserve.

As part of this repeat of photopoints, missing pegs were replaced with fibreglass rods as best as possible and the positions of the rods recorded with a handheld GPS. Additional photos were also taken at photopoints 3 and 6. In this report recommendations from the previous report (Ure, 2017) are repeated with a few minor alterations, as condition and threats in the wetland proper remain unchanged.

Figure 1 Fibreglass rod installed at photopoint 5

Reserve Condition

Norton and Stilwell (1999) mapped rough vegetation types identifying five terrestrial types and two wetland types. With the latter only distinguishing between native dominated wetland and willow dominated wetland. Their map is reproduced in Figure 2 with minor amendments showing broad changes.

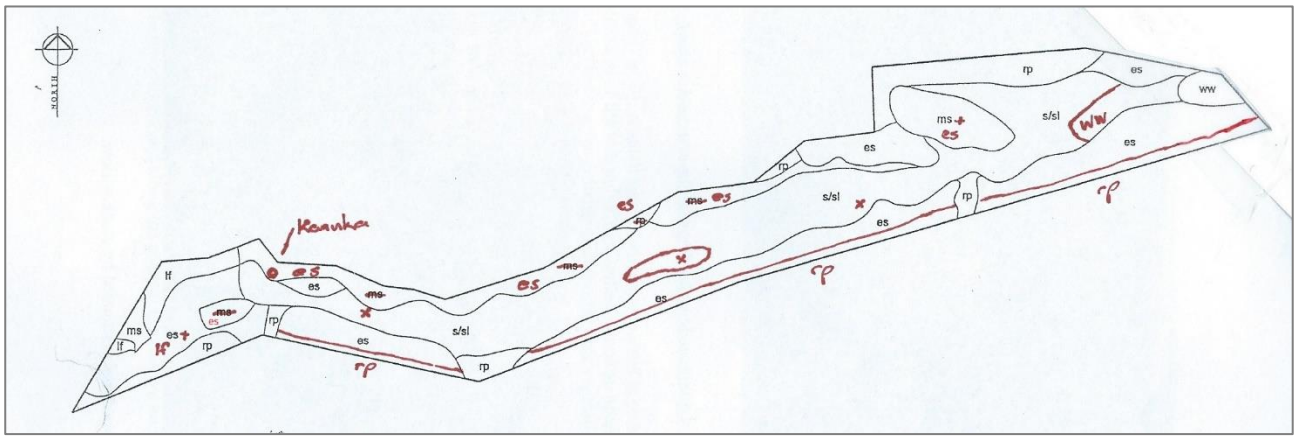

Figure 2 Generalised vegetation patterns, modified from Stillwell and Norton (1999). Es = exotic shrubland; ms = manuka shrubland; lf=low forest; rp=rough pasture; s/sl=swamp and sedgeland; ww=willow wetland; x=*Carex secta.*

Overall

The main body of the reserve appears little changed since the previous inspection (September, 2017), however there has been considerable spray damage to scrub/forest adjacent to Lot 16. Also evident at this time of year is the expansion of raupo into areas which in 1999 were dominated by shorter species such as *Carex geminata.*

Radiata and forestry

Radiata seedlings(wildings) were observed in the over spray zone and radiata has been replanted along the north boundary to match the previous extent of radiata which is hard on and, in many places, across the legal boundary into the reserve. It is understood that the consent for forestry on Lots 16 and 15 required a 10m setback from the boundary with Lot 17. Overplanting was mentioned, and illustrated, in Norton and Stilwell (1999) with recommendations for fencing '…especially the northern side.' as was the need to ensure no radiata were planted in the reserve.

Defining the boundary on the ground is essential if overplanted radiata are to be removed and this would be best achieved with a fence, which would also provide some permanence to the boundary going forward.

Spray damage

It appears that the adjacent, clear cut woodlot (Lot 16) was sprayed with a general herbicide prior to planting resulting in various degrees of overspray along the northern boundary of the reserve. While there is some degree of spray damage along most of the boundary there are three main areas where damage is extensive, these are shown in Figure 3.

The spray zone is up to 21m wide, horizontally from the legal boundary, and the area affected is approximately 0.6 – 0.7 hectares. This estimate is derived from satellite imagery with a cadastral overlay, and using an area calculation tool derive the following estimates (cf Figure 3). Spray area 1 – 0.32ha; area 2 – 0.13ha; area 3 – 0.13ha. Note that, while the imagery used for this exercise (Google Earth) is not fully ortho-rectified in this instance the correlation of position for the four found survey pegs with cadastral data is highly accurate (within a metre, going by identifiable features) and well in excess of GPS waypoints for each survey peg, Figure 4.

The westernmost area (Spray area 1 in Figure 3) held groups of mature secondary forest trees much of which has been killed outright with the main woody species affected appearing to be kohuhu, lemonwood, five-finger and wineberry. Extensive patches of the scrambling vines pohuehue and bush lawyer, are also affected. Photographs of the spray damage are presented in Appendix II

Figure 3 Main areas of spray damage: area 1 (red) has the highest impacts to indigenous vegetation; green survey points correspond to known survey pegs.

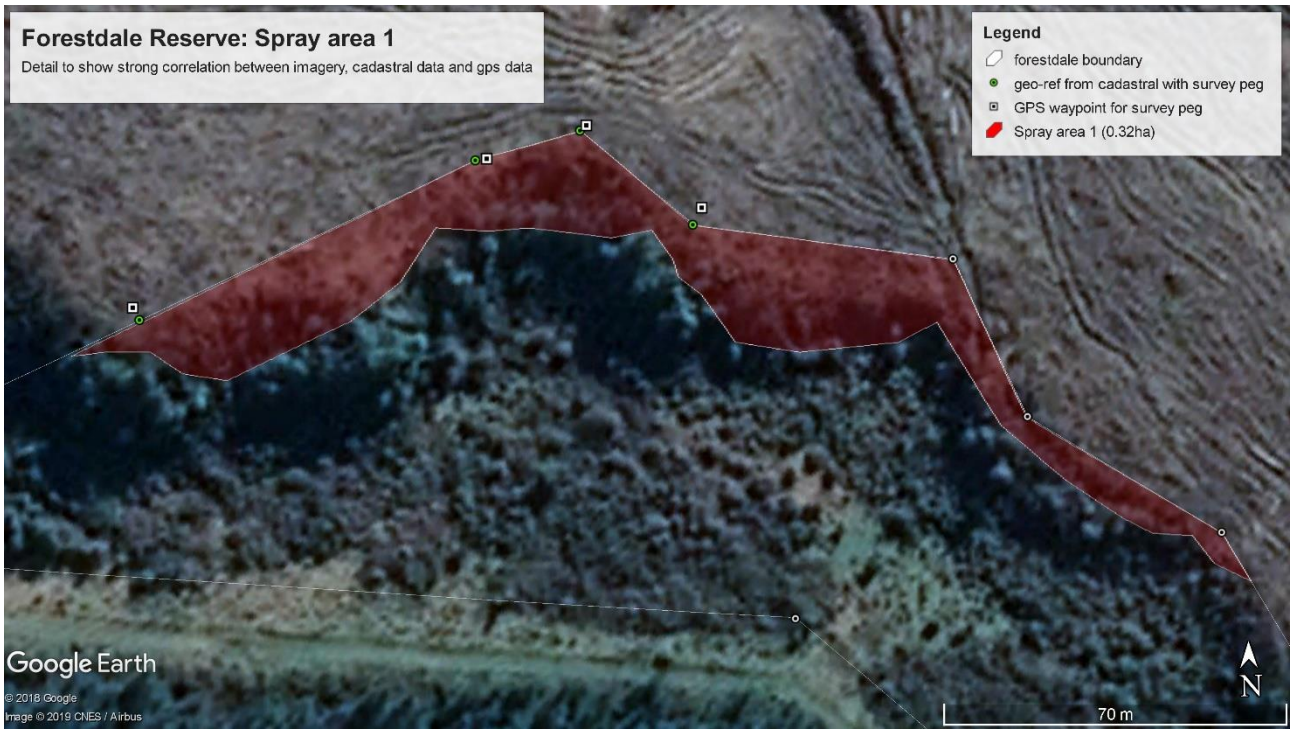

Figure 4 Close up of spray area 1 to demonstrate reliability of the cadastral overlay

In areas two and three: gorse, blackberry and cherry are the dominant species and consequently direct impacts to indigenous vegetation are negligible. In these areas the main native shrubs affected are small leaved coprosmas .e.g. *Coprosma dumosa*, and most of these appear to be recovering from the spray damage. The main long-term impact in these areas is going to be a

reversion to exotic grassland, effectively setting back the process of regeneration to woody species by at least 20 years. This set-back in combination with the increasing prevalence of cherry makes regeneration to native forest, without direct intervention, considerably less likely.

Woody weeds

Little change was noted in wetland weeds, the extent of the willow carr in the eastern end appears unchanged and while some of the scattered grey willow in the central section appear to have been poisoned, patches of grey willow in the western end remain.

On the margins mature cherry and elder appear largely unchanged except where the overspray has killed or damaged saplings and small trees while simultaneously releasing small saplings from the gorse and blackberry cover. The pines, mentioned in (Ure, 2017) still need to be killed.

Fences

The north boundary remains undefined adjacent to Lot 16. Now that the plantation has been replanted, only a narrow window of opportunity remains to access the area for the purpose of installing a fence or in some other way delineating the boundary.

The electric fence on the boundary with Lot 15 remains in a derelict state and on the south boundary sheep continue to push through the wires.

Recommendations

As the overall condition of the reserve remains unchanged, and the issues identified in 2017 also remain, the core recommendations from Ure, (2017) are repeated with a few additions/alterations.

1. Define the boundary with Lot 16, this cannot be stressed enough. It is most readily achieved with a permanent fence compliant with the conditions laid out in the Fencing Act 1978.
2. Capitalise on spray impacts by planting a mixture of eco-sourced native woody species into affected areas, in particular, kanuka, manuka, lemonwood, black beech, five-finger and lancewood. Kohuhu are not recommended as they are already abundant in the area and would be over-represented if they were also planted.
3. *C. tenuiculmis* is an important species for this site, as such its current extent, condition and trends need to be better understood. Photopoints are an inappropriate method for this species so additional monitoring is required to manage this species. The extent of *C. tenuiculmis* needs to be mapped and the population estimated. With this information a monitoring method can be adopted that will ensure changes in the *C. tenuiculmis* population can be objectively measured, and a management approach adopted that will ensure the ongoing health of the population.
4. Continue managing woody weeds in the wetland. In order of importance, grey willow, golden willow, crack willow, Spanish heath, gorse and blackberry.
5. On the north side of the wetland, kill the remaining pine trees and initiate control of cherries and elderberry.
6. Approach the owner of Lot 8, with regard to removing or killing grey and crack willows upstream of the reserve.
7. Kill Spanish heath and barberry, whenever and where ever they are encountered.
8. Continue to manage cherries and elderberry on the south side after the large mature plants on the north side have been removed.

9. Upgrade the fence on the south boundary to fully exclude sheep. Wooden posts are approximately 6m apart with a flat standard at the mid-point, consequently 2 droppers/ties are required between the wooden posts. This is still less than the 1 batten/metre that is normal for an eight wire boundary fence but should prevent fully grown sheep from pushing through the fence.
10. The adjoining forest block has been replanted with new plants over the boundary. Require the responsible parties to remove trees accidentally planted in the reserve and from any required buffer/setback.
11. In order to reduce nitrogen inputs consider managing gorse and broom not only within the wetland but along the margins. Especially where native shrubs are present to suppress weed regeneration, taking care to not harm the shrubs.
12. Where pohuehue is thought to be overwhelming woody vegetation such as manuka, some judicious pruning would not go amiss.

References

Norton, David and Stilwell, Joanne, 1999. Forestdale Wetland Botanical Survey. Unpublished report prepared for Waimakariri District Council, Te Wai Pounamu Conservation, Christchurch.

Buxton, R.P., Roper-Lindsay, J., 1993. Forestdale Forest Proposal, Mt Thomas, Wetland investigation. Unpublished report, Landcare Research and Boffa Miskell.

Ure, G., 2017. Forestdale Wetland: Condition Assessment and repeat of Photopoints August 2017. Unpublished report prepared for Waimakariri District Council.

Appendix I Photopoints

Norton and Stilwell (1999), nailed tree tags to fence posts and wooden stakes to identify photopoints, only the tag for PP 1 was found in 2017 and the peg and for PP 6 this year. While the general location of some was straightforward others were estimated from the photos provided. They also used a zoom lens at different settings (even between sub sets, eg. 4b and 4c) making it difficult to match exactly.

While photopoints were GPS referenced with a handheld GPS in 1999, this was when non-differential GPS had deliberate errors up to 100m, eg. Photopoint 7 on the north side of the wetland is GPS referenced to a site in the pasture on the south side of the wetland. As part of this monitoring new positions were marked and recorded for photopoints 2 and 5 – 9 on the north side of the wetland.

Table 1 Redefined positions for photopoints that have been difficult to locate

Photopoint	Marker	Easting NZTM	Northing NZTM	Notes
PP 2	Fence post	1548800	5217072	Unmarked fencepost
PP 5	Fibreglass rod			Between stream and terrace edge, near terrace corner
PP 6	Wooden stake	1549225	5217003	Original wooden stake found following gorse spraying
PP 6b stump	Stump	1549227	5217010	From standing on nearby stump to see over gorse
PP 7	Fibreglass rod	1549289	5217003	Position estimated from original photos, original map and description "…100m east of photopoint 6" may have even be further south east on next corner.
PP 8	Fibreglass rod	1549533	5216987	Position estimated from original photos
PP 9	Fibreglass rod	1549642	5216946	Position estimated from original photos

Photopoint 1 (April 2019)

Photopoint 2 (August 2017)

Photopoint 3a Original photopoint (April 2019)

Photopoint 3b: additional photopoint looking east from first post south-east of corner post (Photopoint 3a) (April 2019)

Photopoint 3c: new photopoint from first post to SE of the corner post (April 2019) note spray damage on terrace face

Photopoint 4a (August 2017)

Photopoint 4b (August 2017)

Photopoint 4c (August 2017)

Photopoint 5 (August 2017) Correction wrong photo in 2017 report

Photopoint 5 (August 2017)

Photopoint 6a-i (August 2017)

Photopoint 6a-ii Taken from an adjacent vantage point (stump c. 7m NNE)

Photopoint 6b-i (August 2017)

Photopoint 6b-ii Taken from the adjacent vantage point

Photopoint 6c-i (August 2017)

Photopoint 6c-ii Taken from the adjacent vantage point

Photopoint 7a (August 2017)

Photopoint 7b (August 2017)

Photopoint 8a (August 2017)

Photopoint 8b (August 2017)

Photopoint 8c (August 2017)

Photopoint 8d (August 2017)

Photopoint 9a (August 2017)

Photopoint 9b (August 2017)

Photopoint 9c (August 2017)

Photopoint 9d (August 2017)

Appendix II Photos of spray damage and planting too close to boundary

Arrows indicate positions of known survey pegs

Figure 5 view west along line of boundary with the reserve to the left

Figure 6 View west along boundary from survey peg toward peg marked in Figure 5

Figure 7 Spray damage over the terrace edge (area to the left of Figure 6)

Figure 8 View toward the east of the most significant damage in Area 1: mature fivefinger, kohuhu and wineberry killed outright. The survey peg is the photopoint for Figure 6 while the next peg is out of frame to the left

Figure 9 The next peg after Figure 8 looking south into the reserve

Figure 10 View to west along boundary to the peg in Figure 8 and beyond to the peg in Figure 5

Figure 11 Another view of the damage shown in Figure 8Figure 9 from the south side of the reserve.

Figure 12 View north west from the easternmost peg found (below clipboard) with the reserve on the left. The peg in Figure 9 is behind the stump top – right. Note the planted pine seedling to the right of the clipboard.

Figure 13 View west from near photopoint 5, showing the extent of the spray damage over the terrace face. Survey pegs are marked with white arrows and the direction to the next survey point with a blue arrow.

Figure 14 Spray damage to the south east of photopoint 5 (east end of Area 1)

Figure 15 Overview with Spray Area 2 in the centre

Figure 16 Looking south into the reserve from photopoint 6 – ii (pmp6b stump, in Figure 17,below) with the peg for photopoint 6 in the middle foreground. An area that will now probably revert to grass until gorse and blackberry re-establish.

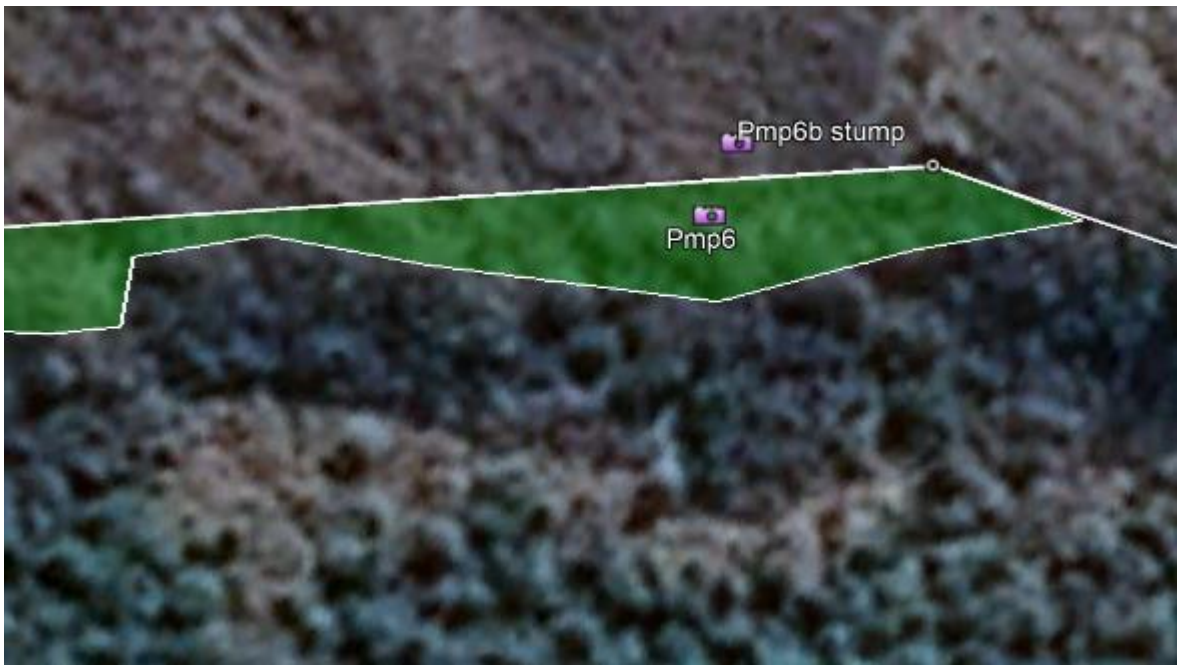

Figure 17 Relative positions of Photopoint 6 and 6b (Figure 16 above) in spray area 2 (green shading).

Figure 18 *Coprosma dumosa*, recovering from a sub-lethal dose of herbicide in an area where the overspray was minor.

Figure 19 Planted radiata near a survey peg with the reserve behind

Figure 20 Planted radiata (by stump in centre) on presumed boundary line.