WAIMAKARIRI
DISTRICT COUNCIL

Land and Water Committee

Agenda

Tuesday 20 July 2021

1pm

Function Room
Rangiora Town Hall
303 High Street
Rangiora

Members:

Cr Sandra Stewart (Chairperson)
Cr Neville Atkinson
Cr Kirstyn Barnett
Cr Al Blackie
Cr Niki Mealings
Cr Paul Williams

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 TUESDAY 20 JULY 2021 AT 1PM.

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 20 April 2021

5-9

RECOMMENDATION

THAT the Land and Water Committee:

(a) **Confirms**, as a true and correct record, the circulated Minutes of the meeting of the Land and Water Committee held on 20 April 2021.

4 MATTERS ARISING

5 DEPUTATION/PRESENTATIONS

5.1 Northbrook Connectivity Trail – to link town and country through an informative walkway – Sam Spencer-Bower (Waimakariri Landcare Trust Chair and Next Generation Farmer Project Chair), Geoff Spark and Richard Stalker)

6 REPORTS

6.1 Zone Implementation Programme Addendum Capital Works Programme – 2021/21 – Sophie Allen (Water Environment Advisor)

10-60

RECOMMENDATION

THAT the Land and Water Committee:

(a) **Receives** report No. 210401054395.

(b) **Supports** the proposed 2021-22 Waimakariri District Council capital expenditure work programme, based on Zone Implementation Programme Addendum (ZIPA) recommendations.

(c) **Circulates** this report to Council, Community Boards, WDC-Rūnanga liaison meeting and the Waimakariri Water Zone Committee for their information.

6.2 Wetland Area in the Lineside Road – Bramleys Road area – update on wetland definition and land owner concerns – Sophie Allen (Water Environment Advisor)

RECOMMENDATION *61-66*

THAT the Land and Water Committee:

(a) **Receives** Report No. 210630106619.

(b) **Notes** that Ministry for the Environment has released draft guidance on the definition of natural inland wetlands, however that this planning definition has not yet been applied to the Lineside-Bramleys Road basin area as to whether it is a natural inland wetland under the National Environmental Standards for Freshwater (2020).

(c) **Notes** the intention of WDC staff to carry out works to improve drainage in the Lineside Road Bramleys Road basin area this summer 2021-2022.

(d) **Notes** that Environment Canterbury interprets the physical works proposed by WDC to be permitted under section (46) National Environmental Standards – Freshwater (2020) even if the area was to be defined as a natural inland wetland.

(e) **Notes** that the Environment Canterbury wetlands GIS layer has been temporarily removed from Canterbury Maps, therefore WDC will continue to use a downloaded version of this map for determination of potential inland natural wetlands where the National Environmental Standards – Freshwater (2020) rules may apply.

(f) **Circulates** this report to the Central Rural Drainage Advisory Group, Community Boards and the Waimakariri Water Zone Committee.

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 1pm, Tuesday 21 September 2021 in the Function Room, Rangiora Town Hall.

Workshop

Cam River Enhancement Fund – Review Workshop – Sophie Allen (Water Environment Advisor)

WAIMAKARIRI DISTRICT COUNCIL

MINUTES OF THE MEETING OF THE LAND AND WATER COMMITTEE HELD IN THE FUNCTION ROOM AT THE RANGIORA TOWN HALL, 303 HIGH STREET, RANGIORA ON TUESDAY 20 APRIL 2021 COMMENCING AT 1PM.

PRESENT

Councillors S Stewart (Chairperson), N Atkinson, A Blackie, N Mealings, P Williams, P Redmond, J Ward and Mayor D Gordon.

IN ATTENDANCE

K Simpson (3 Waters Manager), G MacLeod (Community Greenspace Manager), S Allen (Water Environment Officer), K Steel (Ecologist – Biodiversity), and T Künkel (Governance Team Leader).

1 APOLOGIES

Moved: Councillor Stewart Seconded: Councillor Atkinson

THAT apologies for absence be received and sustained from Councillor K Barnet.

CARRIED

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 16 February 2021

Moved: Councillor Atkinson Seconded: Councillor Blackie

THAT the Land and Water Committee:

(a) **Confirms**, as a true and correct record, the circulated Minutes of the meeting of the Land and Water Committee held on 16 February 2021.

CARRIED

4 MATTERS ARISING

Nil.

5 DEPUTATION/PRESENTATIONS

Nil.

6 REPORTS

6.1 Results of the 2020 private wells study for nitrate – Cust and Eyreton – S Allen (Water Environment Advisor)

S Allen summarised the findings of the Council's private well study done in 2020. She noted that the same 19 wells in Cust and Eyreton were again sampled for nitrate and other chemical parameters as in the 2019 study. She highlighted the following:

- There had been a decrease in the nitrate mean and median from 2019 to 2020 in both Cust and Eyreton samples. This could be due to higher rainfall prior to the 2019 study than for the 2020 study. Increased precipitation tended to lead to the increased leaching of nitrate into the groundwater. It was however too early to confirm any sessional various.

- Similar to 2019, one well in the Cust area measured 17.5 mg/L nitrate-nitrogen, which was above the Maximum Acceptable Value (MAV) set for nitrate in the New Zealand Drinking-water Standards for New Zealand (DWSNZ 2005, amended 2018). The owner of the private well was again notified that the water from the well did not meet DWSNZ.

- None of the other chemical parameters analysed in this pilot study were over any MAVs. Microbiological testing was not carried out due to the risk of contaminating the samples.

- It was the intention of the Council to repeat the nitrate pilot study in spring 2022 with the same wells being tested again. However, provision had been made in the 2021/31 Long Term Plan to add an additional 20 wells from two other groundwater areas in the District to the study, with the purpose of allowing for assessment of trends over time.

- The Council had produced a pamphlet on the management of private well water supply, which could be distributed to potential property owners.

Councillor Williams questioned if the MAV for nitrates were changed for the Drinking Water Safety Plans that the Council had to submit to the Ministry of Heath. K Simpson confirmed that the MAV for nitrates had not been altered. However, the Ministry was still examining the results of international studies that connected the increase in bowel cancer to high nitrate levels in drinking water.

Councillor Mealings sought clarity on what type of properties had been included in the study. S Allen advised that there was a range of properties, however, all the properties had to be for domestic use. Staff had tried to include properties from various geographical areas and also wells of various depths.

Councillor Mealings also enquired what the criteria would be for choosing the additional 20 wells from the other two groundwater areas. S Allen noted that the criteria had not yet been set and was still open for discussion.

Councillor Redmond asked if it was known why the well found to be over the MAV did not comply. S Allen explained that it had been established that there was a correlation between increasing well depth and decreasing nitrate level. The well in question was only 6.7 meters deep, hence the high nitrate levels.

Councillor Stewart noted that private wells did not need to comply with the DWSNZ. S Allen confirmed that this was correct, however, it was expected that the requirement would change once the proposed Water Services Act came into effect. K Simpson advised that as part of the current consent use process for private wells applicants had to provide proof that there was access to potable water on the property at the time of the application. Ongoing compliance was, however, the responsibility of the property owner.

In response to a question from Councillor Atkinson, S Allen advised that it was expected that the $10,000 allocation in the 2021/22 budget would be sufficient to extend the current study to include the 20 wells in the other two groundwater areas.

Councillor Ward noted that in the Ashburton area additional water had been added to water supplies with high nitrate levels to dilute the nitrate. S Allen confirmed that trials were being done as part of the Hinds/Hekeao Managed Aquifer Recharge Project. It should however be noted that large volumes of water were required to dilute the nitrate.

Councillor Mealings asked which water treatment specialists had the Council advised the well owners to contact if their wells were over a MAV. S Allen advised that the Council deliberately did not specified a specific specialist to be contact as there were numerous water treatment specialists that could assist.

Councillor Mealings commented that the Council knew that once the Water Services Act came into effect the Council would be expected to take on the responsibility of supporting private well owners with supplies that were shared between households to be compliant with the DWSNZ. She enquired if the Council had identified how many private wells it would be taking responsibility for. K Simpson advised that the information was not yet available. He elaborated on the anticipated risk based approach that the Council would be taking and noted that a report on this matter would be submitted to the Council for consideration. A report on the proposed costs would be considered during the Council's 2021/31 Long Term Plan considerations.

Moved: Councillor P Williams Seconded: Councillor S Stewart

THAT the Land and Water Committee:

(a) **Receives** report No. 210316043773.

(b) **Notes** the findings of the 2020 study, with one well was above the nitrate Maximum Acceptable Value (MAV) (DWSNZ 2005, amended 2018). The majority (63%) of the 18 wells in Eyreton and Cust were above half of the MAV (5.65 mg/L).

(c) **Notes** that the landowners of the one well that was found to be over the nitrate Maximum Acceptable Value (MAV) (DWSNZ 2005, amended 2018) had been advised and was no longer using the well.

(d) **Notes** that the median nitrate concentration for Cust, as sampled in the 2020 study, would not meet the proposed limit of a median of 5.65 mg/L nitrate-nitrogen in Plan Change 7 of the Land and Water Regional Plan for private water supply wells.

(e) **Notes** that Waimakariri District Council and Environment Canterbury staff would continue to raise awareness of the health impacts of high nitrates, and to encourage private well owners to test water regularly, including with the publication of a 'managing a private well supply' pamphlet for the District.

(f) **Notes** that in the draft Long Term Plan, WDC proposes to repeat this study in spring 2021 (with 10 wells in Eyreton, 10 wells in Cust, and 20 wells in areas yet to be determined). Well owners from the 2019 and 2020 sample rounds would be approached for repeat annual sampling, to allow for assessment of trends over time.

(g) **Notes** that trends for nitrate concentration over time were not able to be concluded from data for only two years.

(h) **Circulates** this report to the Council, Community Boards and the Waimakariri Water Zone Committee for information.

CARRIED

Councillor Williams noted that it was important that the public were made aware that the landowners of the well found to be over the MAV for nitrates have been advised and was no longer using the well.

Councillor Stewart supported the comments made by Councillor Williams. She commented that it was important for the public to know that there was a problem with some water supplies that did not comply with DWSNZ. The study conducted by the University of Otago that found a correlation between bowel cancer and high nitrate levels in drinking water was very worrisome. Especially in light of the lack of information regarding the water quality of private wells.

7 MATTERS FOR INFORMATION

7.1 Canterbury Biodiversity Champions Meeting 9 April Agenda and Presentation

Moved: Councillor N Atkinson Seconded: Councillor P Williams

THAT the Land and Water Committee:

(a) **Receives** and notes the information contained Item 7.1.

8 PORTFOLIO UPDATES

8.1 Biodiversity – Councillor S Stewart

- Arohatia te Awa was progressing well, and it was anticipated that the first planting would be done along the stop bank at Revells Road in Kaiapoi in autumn.
- Waimakariri Biodiversity Trust was calling for Trustees and if members were interested they could contact Judith Roper-Lindsay.
- She encouraged members to attend the upcoming Honda Forest planting days. It was noted that the General Manager of Honda would be unveiling signage at the Honda Forest on 8 May 2021.

8.2 Land based Indigenous Reserves (Including River Margins) – Councillor A Blackie

- The Mahi Tahi Joint Development Committee was discussing the Te Kōhaka o Tūhaitara Trust taking over the “on the ground” management of the proposed Heritage and Mahinga Kai Area in Kaiapoi.

9 QUESTIONS

Nil.

10 URGENT GENERAL BUSINESS

Nil.

NEXT MEETING

The next meeting of the Land and Water Committee was scheduled to be held at 1:00pm, Tuesday 18 May 2021 in the Function Room, Rangiora Town Hall.

THERE BEING NO FURTHER BUSINESS THE MEETING CLOSED AT 1.43PM.

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Chairperson

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Date

BRIEFING

Review of Cam River Enhancement Fund projects – S Allen (Water Environment Advisor)

WAIMAKARIRI DISTRICT COUNCIL

REPORT FOR INFORMATION

FILE NO and TRIM NO:	WAT-10-14 / 210401054395
REPORT TO:	LAND AND WATER COMMITTEE
DATE OF MEETING:	20 July 2021
AUTHOR(S):	Sophie Allen – Water Environment Advisor
SUBJECT:	Zone Implementation Programme Addendum Capital Works Programme – 2021-22

ENDORSED BY:
(for Reports to Council, Committees or Boards)

Department Manager | Chief Executive

1. SUMMARY

1.1 This report details the proposed Waimakariri District Council capital works programme for 2021-22 as developed from the Zone Implementation Programme Addendum (ZIPA), including;

a. deer fencing of Forestdale Wetland,

b. biodiversity and amenity improvements for the South Brook at Townsend Fields,

c. terrestrial planting along the Kaiapoi River, and potential watercress mahinga kai project support, and

d. improvements to inanga (whitebait) spawning areas located on land owned by Waimakariri District Council on the Taranaki Stream.

1.2 There is a proposed capital expenditure allocation of $50,000 per annum from 2021-31 in the draft Long Term Plan, from the Zone Implementation Programme Addendum (ZIPA) budget from the general rate.

1.3 Capital expenditure ZIPA projects post 2021-22 will be scoped and presented to the Land and Water Committee prior to the commencement of each financial year.

Attachments:

i. Waimakariri ZIPA WDC Role and funding review Long Term Plan– March 2021 (210401054372)
ii. Report for Decision Land and Water Committee Forestdale Wetland 201106150208[v2]

2. RECOMMENDATION

THAT the Land and Water Committee:

(a) **Receives** report No. 210401054395.

(b) **Supports** the proposed 2021-22 Waimakariri District Council capital expenditure work programme, based on Zone Implementation Programme Addendum (ZIPA) recommendations.

(c) **Circulates** this report to Council, Community Boards, WDC-Rūnanga liaison meeting and the Waimakariri Water Zone Committee for their information.

3. BACKGROUND

3.1 A report was presented on 29 January 2019 to Council, seeking a decision on the role of WDC in ZIPA implementation, staff resourcing, and funding of projects (refer to TRIM 181217148924).

3.2 A total of $305,000 per annum was approved by Council for 2019-21 on 28 May 2019 (refer to TRIM 190501061992), of which $100,000 was capital expenditure. Due to COVID-19 pandemic budget revisions, the capital expenditure was reduced to $50,000 for 2020-21.

4. ISSUES AND OPTIONS

4.1. Of the $255 per annum total allocation for ZIPA implementation in the 2021-31 Long Term Plan, $50K is allocated to capital expenditure (CAPEX) projects (see Table 1), and $205K to operational expenditure.

Table 1: Summary of capital expenditure for 2021-22 for WDC ZIPA works

CAPEX project	**ZIPA recommendation**	**Budgeted amount**
Fish passage improvements – *Reallocated to Forestdale Wetland Project*	1.8	$10,000
Drainage maintenance and management – projects for improvement of contaminant losses and aquatic life. *Reallocated to Forestdale Wetland Project*	1.14	$10,000
Biodiversity and amenity values in Waimakariri River tributaries – South Brook Townsend Fields project	1.26	$5,000
Terrestrial plantings on the Kaiapoi River (and potential support for a mahinga kai watercress enhancement project on the Cam River)	1.27	$20,000
Inanga spawning habitat improvements - Taranaki Stream bank re-grading and planting project (co-funding also sought from the Environment Canterbury Regional Fish Habitat Fund)	2.11	$5,000

TOTAL		**$50,000**

Forestdale Wetland deer fencing

4.2. Due to a delay with obtaining resource consent for the Forestdale Wetland project, proposed fencing and weed management works were not carried out in 2020-21. Therefore $20,000 of Capex funding will be allocated to fencing costs for the Forestdale Wetland in 2021-22. This is proposed to be from reallocating the budgets for ZIPA Recommendations 1.8 (fish passage improvements) and 1.14 (Drainage maintenance and management).

4.3. The decision of the Land and Water Committee to fund the Forestdale Wetland project and details about the project are contained within Attachment ii.

Biodiversity and amenity - South Brook Townsend Fields

4.4. The allocated ZIPA budget for Recommendation 1.26 will continue works to improve biodiversity and amenity in the South Brook at Townsend Fields, a WDC-owned esplanade reserves, as well as an opportunity for the community to actively restore areas for biodiversity, creating ecological corridors.

4.5. WDC staff have been working in this area since 2019 on improving a WDC-owned esplanade reserve on the South Brook beside the Townsend Fields Stormwater Management Area (see Figure 1). It is recommended to continue planting with eco-sourced indigenous plants.

4.6. The surrounding area is undergoing development of urban housing, including the placement of a nearby retirement village. The area on the south side was cleared of willows in August 2019, with some of the areas planted with native plants in 2019-20 and 2020-21. The planting areas are suitable terrain for community planting events to be held.

4.7. There are two bridges already in place. A further, smaller wooden footbridge could be installed to allow for a rough loop path, (i.e. via mown grass and a dirt track) to be completed. This is out of scope with the current budget, but will be considered from other Drainage or Greenspace budgets.

4.8. Tall vegetation, mostly of exotic trees, shade the waterway, however could be selectively replaced with native species over time. This is also out of scope with the current budget.

4.9. Budget for plant maintenance, such as weeding around plants and weed control (e.g. blackberry) is available under the ZIPA operational budget for 2021-22.

Figure 1: Proposed planting (red areas), existing plantings (green areas), existing bridges (red rectangles) and potential wooden footbridge (blue rectangle) on the South Brook, beside the Townsend Fields Stormwater Management Area.

Terrestrial plantings on the Kaiapoi River, and potential mahinga kai watercress project support

4.10. The Greenspace team has produced a Kaiapoi River spatial planting plan for, which incorporates both terrestrial and aquatic tidal plantings. This plan takes into consideration Kaiapoi town planning, Kaiapoi Regeneration Zone planning, and Environment Canterbury priorities.

4.11. $20,000 will be allocated in the 2021-22 year to Kaiapoi River planting (with potentially some allocation to a watercress mahinga kai project for the Cam River) as there is remaining Cam River Enhancement Funding. When the Cam River Enhancement Fund is exhausted in future years, some of the annual budget will be available for continued Cam River enhancement works.

4.12. Intertidal plantings on the margins of the Kaiapoi River have been completed by WDC staff, with existing plantings predicted to spread in size and distribution over time. Therefore there is no further requirement for intertidal plantings.

4.13. Environment Canterbury and some Ngāi Tūāhuriri members have been scoping a potential mahinga kai watercress enhancement project for the Cam River in 2021-22. WDC staff understand that the works proposed include improving bank access for harvesting, and weeding out of the monkey musk, as competing water plant. If this project is endorsed by Te Ngāi Tūāhuriri Rūnanga, WDC staff propose to allocate partial budget ($10,000) from ZIPA Recommendation 1.27 to this project as it aims to ‘improve habitat for mahinga kai’ in the Cam River.

Taranaki Stream - Inanga spawning habitat improvements

4.14. There are significant inanga spawning sites located on WDC land, (such as at Taranaki Stream, Courtenay Stream and McIntosh Drain), which have been identified for improvements to increase spawning success by Aquatic Ecology Ltd.

4.15. Aquatic Ecology Ltd (AEL) reviewed inanga spawning sites and quality of habitat in the Waimakariri District in reports from 2017, 2019 and 2021. ZIPA works have been carried out in previous years at McIntosh Drain and Courtenay Stream. Additional works, following

recommendations from AEL are proposed to be carried out by WDC staff at Taranaki Stream.

4.16. Re-grading of 105m of the true right bank of Taranaki Stream directly above the tidegate is proposed, followed by planting with suitable native vegetation for inanga spawning (see proposal Trim 210622100360 and Figure 2). The site of the regrading is the WDC-owned Taranaki Reserve. Fencing is proposed to prevent grazing by horses of the native plants.

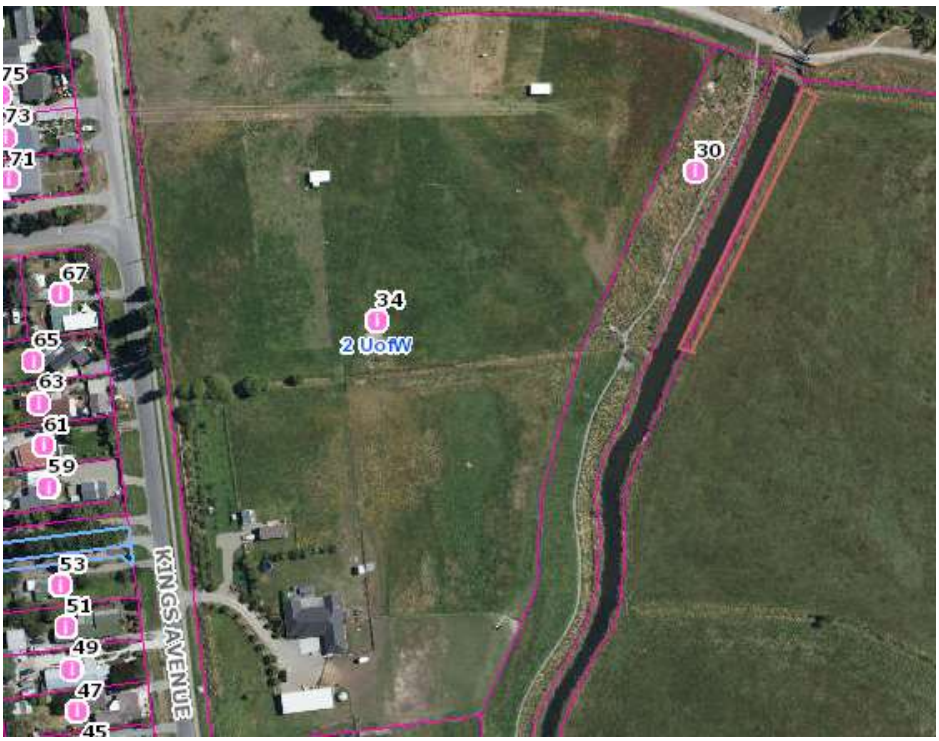

Figure 2: The location of the proposed re-grading and planting on the Taranaki Stream (orange rectangle), Waikuku Beach

4.17. Co-funding for this project may be available from the Environment Canterbury Regional Fish Habitat Fund, and is required for the project to proceed as proposed. An application has been made to this Fund for $14,000, with a response due in mid- August 2021. WDC would provide $5,000 of funding and an estimated $4,000 in kind project management support from staff time.

4.18. Te Ngāi Tūāhuriri Rūnanga expressed an interest at the 1 July 2021 WDC-Rūnanga liaison meeting for a role in the management of this project. WDC Staff are working with Environment Canterbury to include a management role into the Environment Canterbury Regional Fish Habitat Fund application.

Implications for Community Wellbeing

4.19. There are implications on community wellbeing by the issues and options that are the subject matter of this report. The ZIPA recommendations and budget allocations are to meet targets in the Canterbury Water Management Strategy for recreation and amenity, biodiversity and mahinga kai provision for example.

4.20. The Management Team has reviewed this report and support the recommendations.

5. COMMUNITY VIEWS

5.1. Mana whenua

Te Ngāi Tūāhuriri hapū are likely to be affected by, or have an interest in the subject matter of this report. Te Ngāi Tūāhuriri Kaitiaki have been consulted on the Taranaki inanga spawning habitat improvement project at the WDC-Rūnanga meeting on 1 July, who were interested to be involved in management of the project.

5.2. **Groups and Organisations**

There are groups and organisations likely to be affected by, or to have an interest in the subject matter of this report.

5.2.1. Waimakariri Water Zone Committee – An update on the progress of ZIPA projects is presented quarterly to the Water Zone Committee for comment and discussion.

5.3. **Wider Community**

The wider community is not likely to be affected by, or to have an interest in the subject matter of this report. The wider community was consulted on the role of WDC and budget allocation for the ZIPA in the draft Annual Plan public consultation in March-April 2019.

6. OTHER IMPLICATIONS AND RISK MANAGEMENT

6.1. **Financial Implications**

There are no financial implications of the decisions sought by this report. Budget has been already been approved in the Long Term Plan for 2021-31. This report is for more detailed information of the intended projects only.

6.2. **Sustainability and Climate Change Impacts**

The recommendations in this report do have sustainability and/or climate change impacts. The projects for planting of trees will help to sequester carbon.

6.3 **Risk Management**

There are no risks arising from the adoption/implementation of the recommendations in this report. This report is for information only.

ZIPA capex spend is be reported on quarterly in a summary capital expenditure report to the Audit and Risk Committee. This provides governance with information of any risk of an under or overspend.

Health and Safety

There are no health and safety risks arising from the adoption/implementation of the recommendations in this report.

ZIPA capital expenditure project implementation will follow established health and safety processes. There are no new health and safety risks or hazards that have been identified.

7. CONTEXT

7.1. **Consistency with Policy**

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

7.2. **Authorising Legislation**

Resource Management Act (1991). All capital expenditure works requiring consent are anticipated to be covered by the 'Maintenance and Minor Works in Waterways' global consent (CRC195065, CRC195066, CRC195067) that WDC has been granted from Environment Canterbury, and the Waimakariri District Council consent RC19143 for works beside waterways.

7.3. **Consistency with Community Outcomes**

The Council's community outcomes are relevant to the actions arising from recommendations in this report.

7.4. **Authorising Delegations**

No delegations apply to this report. It is a report for information only.

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	10	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	10	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 (funding for Enviroschools Canterbury- decision from S17a review report)

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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	5	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	20	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	0	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	

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
4.2	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**	**50**	**210**	**210**	**350**	**TOTAL ($K per year)**
					450	1,550	500	2,100	2,100	3,500	**Accumulative TOTAL (10 years)**
					Option A	**$ 8.84**	**Option B**	**$ 11.49**	**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 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.

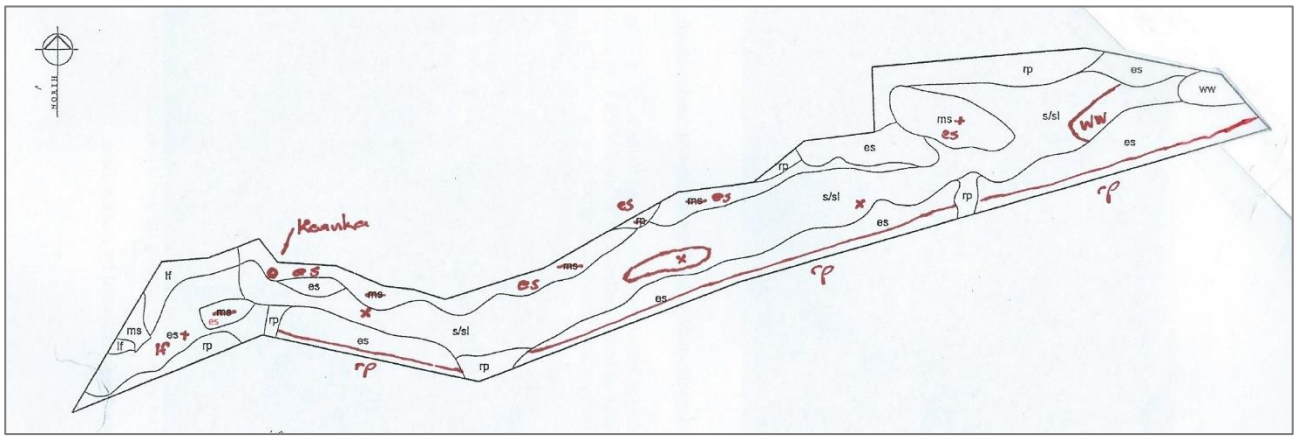


Figure 2 Generalised vegetation patterns, modified from Stillwell and Norton (1999). Es = exotic shrubland; ms = manuka shrubland; lf=low forest; rp=rough pasture; s/sl=swamp and sedgeland; ww=willow wetland; x=*Carex secta.*

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.

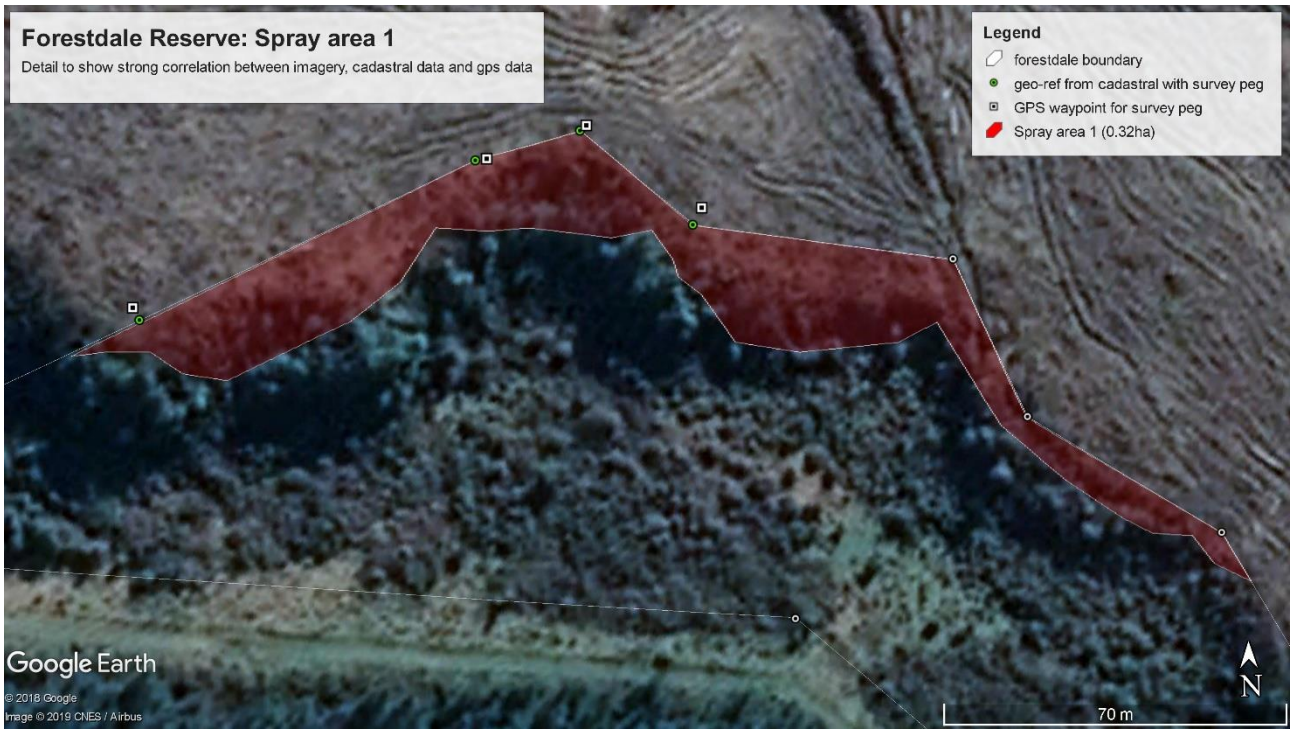


Figure 4 Close up of spray area 1 to demonstrate reliability of the cadastral overlay

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.

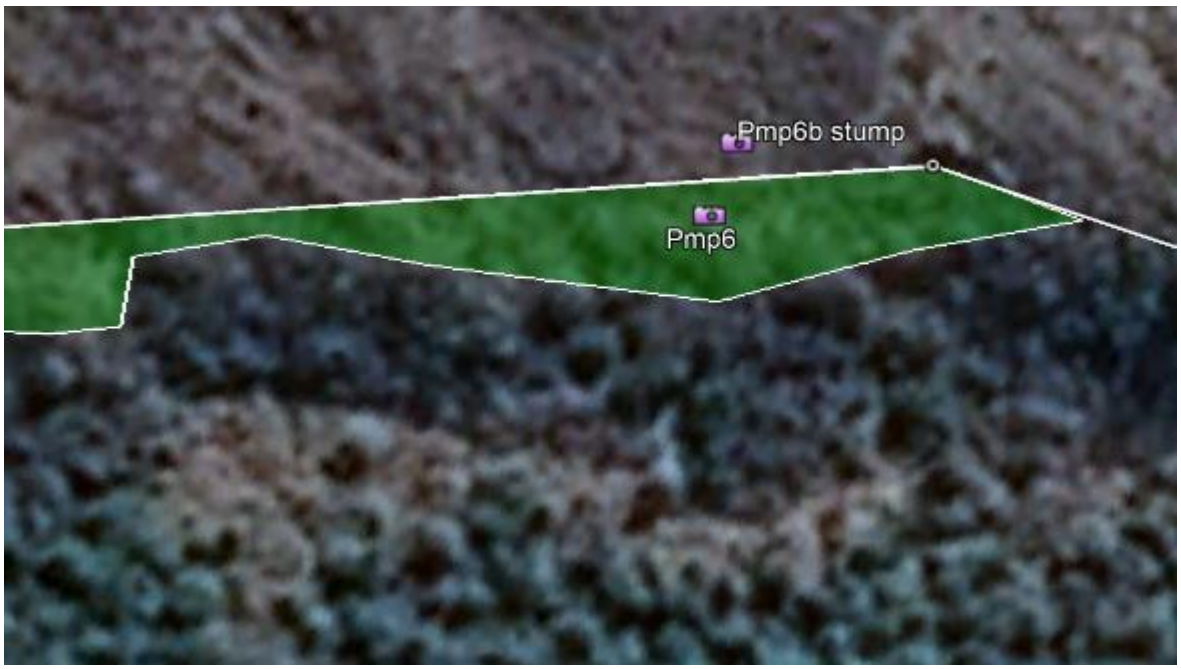


Figure 17 Relative positions of Photopoint 6 and 6b (Figure 16 above) in spray area 2 (green shading).

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.

WAIMAKARIRI DISTRICT COUNCIL

REPORT FOR INFORMATION

FILE NO and TRIM NO:	DRA 06-05-01 / 210630106619
REPORT TO:	LAND AND WATER COMMITTEE
DATE OF MEETING:	20 July 2021
AUTHOR(S):	Sophie Allen – Water Environment Advisor
SUBJECT:	Wetland area in the Lineside Road – Bramleys Road area- update on wetland definition and land owner concerns

ENDORSED BY:
(for Reports to Council, Committees or Boards)

Department Manager | Chief Executive

1. SUMMARY

1.1 This report summarises information about a low-lying basin area within the Lineside Road and Bramleys Road area that is within the Waimakariri District Council (WDC) Central Rural Drainage Area (see Map 1).

1.2 This basin area has triggered concerns from landowners regarding drain maintenance. Pollution incident complaints to Environment Canterbury have been raised by community members about sediment and other water quality contaminants viewed downstream.

1.3 Parts of the basin area were surveyed by Environment Canterbury ecologists in December 2020, who have identified a large part of the area to ecologically be as wetland. However, definition of a wetland area from a planning definition under the National Environmental Standards – Freshwater (2020), has not yet been carried by Environment Canterbury. This is because wetland definition guidance from Ministry for the Environment has not been finalised.

1.4 Following publication of the National Environmental Standards – Freshwater in September 2020, there were calls from both regional and territorial authorities to the Ministry for the Environment to provide further guidance on how to apply the rules and definitions within the National Environmental Standards – Freshwater (2020).

1.5 WDC drainage staff intend to carry out works in summer 2021-22 within the area defined ecologically as a wetland for improvement of drainage for landowners.

1.6 WDC has carried out drainage works within the basin area on a reactive basis over the years. However, due to the basin shape, wetland (heavy) soils present, and low-lying nature of the area (1m above the Lyttelton datum), pooling should be expected to continue in this area during extended periods of time after rainfall events. Drainage of this area will present increasing challenges with sea level rise from climate change.

Attachments:

i. None

2. RECOMMENDATION

THAT the Land and Water Committee:

(a) **Receives** Report No. 210630106619.

(b) **Notes** that Ministry for the Environment has released draft guidance on the definition of natural inland wetlands, however that this planning definition has not yet been applied to the Lineside-Bramleys Road basin area as to whether it is a natural inland wetland under the National Environmental Standards for Freshwater (2020).

(c) **Notes** the intention of WDC staff to carry out works to improve drainage in the Lineside Road Bramleys Road basin area this summer 2021-2022.

(d) **Notes** that Environment Canterbury interprets the physical works proposed by WDC to be permitted under section (46) National Environmental Standards – Freshwater (2020) even if the area was to be defined as a natural inland wetland.

(e) **Notes** that the Environment Canterbury wetlands GIS layer has been temporarily removed from Canterbury Maps, therefore WDC will continue to use a downloaded version of this map for determination of potential inland natural wetlands where the National Environmental Standards – Freshwater (2020) rules may apply.

(f) **Circulates** this report to the Central Rural Drainage Advisory Group, Community Boards and the Waimakariri Water Zone Committee.

3. BACKGROUND

3.1 A report detailing the National Environmental Standards – Freshwater (2020) in relation to Council drainage activities in, and around, wetlands in general was presented to the Land and Water Committee in December 2020 (TRIM 201015138673).

3.2 The basin area bordered by Lineside Road and Bramleys Road is part of what was a large wetland called the Rangiora Swamp. The Rangiora Swamp was progressively drained from about 1860 onwards with the addition of drains. These drains were reported to have had the effect of drying the land, and lowering the level of the ground in places by as much as eight feet (2.4m).

4. ISSUES AND OPTIONS

Complaints to Environment Canterbury and WDC

4.1. A visible plume of sediment in a drain along Lineside Road, and at the outlet into the Kaiapoi River has been reported by community members to Environment Canterbury and WDC on multiple occasions. A pollution incidence response by Environment Canterbury carried out an inspection of properties in the upstream Lineside Road – Bramleys Road area, however did not establish a definitive source of the sediment, with it likely originating from multiple diffuse sources.

Landowner concerns

4.2. Some landowners within the basin area have raised concerns multiple times that further drainage maintenance was required, and have expressed that any maintenance carried out was not sufficient, with claims of deferral of maintenance. The concerns about drainage and uncertainty of how to use the land, has been stated to have impacts such as difficulty selling property, and lack of clarity of rules for land use such as stock exclusion if defined as a natural inland wetland.

Wetland Definition

4.3. Following publication of the National Environmental Standards – Freshwater in September 2020, there were calls from both regional and territorial authorities to the Ministry for the Environment to provide further guidance on how to apply the rules and definitions within the National Environmental Standards – Freshwater (2020), particularly regarding a planning definition for ‘natural inland wetlands’ due to lack of clarity. In particular, definition

has been sought of what qualifies as ‘more than 50% exotic pasture species’ and ‘temporary rain-derived water pooling’, which are criteria to meet to not be defined as a natural inland wetland. An ‘exposure draft’ for guidance on wetland definitions was released by the Ministry for the Environment in April 2021, with a short period for consultation. Finalised guidance has not yet been released.

Ecological wetland survey

4.4. The majority of the basin area was visited by Environment Canterbury ecologists in December 2020, with landowner permission for the properties visited. The findings of the vegetation survey, combined with knowledge of the soil types in the area, were used to produce a map of what is defined as a wetland ecologically (see Map 1).

4.5. As part of the Central Rural Drainage Area, WDC rural drainage staff have assessed the needs for drainage works and carried out drainage maintenance where required. WDC held initial concerns that areas identified for drainage maintenance works were within what could be defined as an inland natural wetland following the release of the National Environmental Standards – Freshwater (2020), however currently there is uncertainty.

4.6. WDC drainage staff intend to carry out works in summer 2021-22 within the area defined ecologically as a wetland for improvement of drainage for landowners. This may happen with on-going uncertainty of whether the area will be defined as a natural inland wetland. The works proposed are vegetation and silt removal, which has been confirmed by Environment Canterbury staff to meet permitted activity conditions, even if defined as natural inland wetland (see Map 1).

Map 1: The area identified as an ecological wetland is shown in blue and green – as identified by ECan ecologists from a December 2020 field visit. Blue indicates areas surveyed on the ground, and green indicates areas that were not ground surveyed. The proposed drainage works for summer 2021-22 is shown in red.

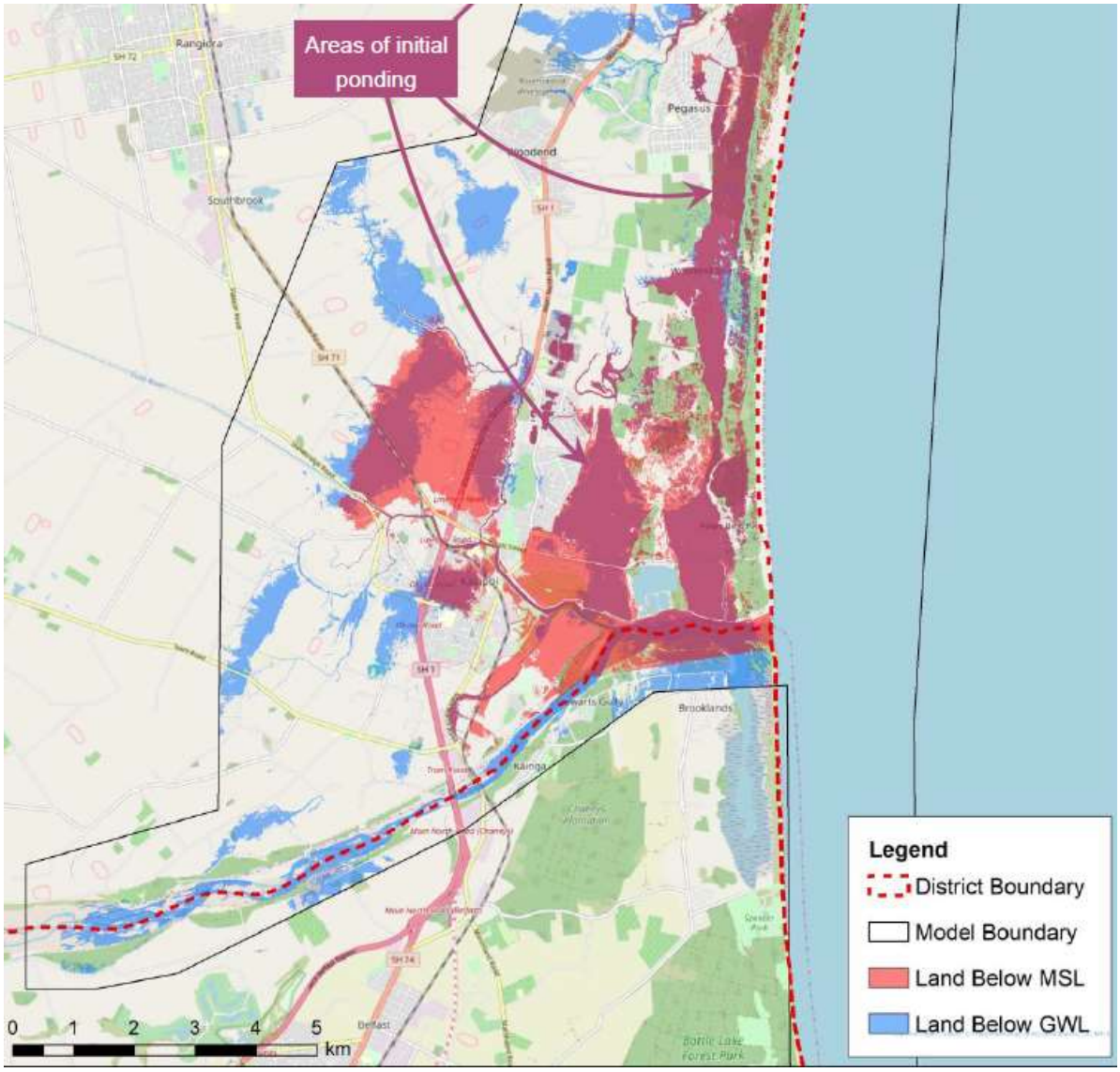
4.7. The Environment Canterbury wetlands GIS layer has been temporarily removed from Canterbury Maps. This map showed wetlands that meet ecological delineation protocols. Environment Canterbury temporarily has removed the map due to confusion that it represented a planning map for implementation of National Environmental Standards – Freshwater (2020). WDC will continue to use a downloaded version of this map for guidance of location of potential inland natural wetlands where the National Environmental

Standards – Freshwater (2020) rules may apply, to protect wetland values. However, WDC staff will take into consideration that it is not a planning map.

Future land use and sea level rise

4.8. The future use of land in the basin area will likely become more difficult to use for stock grazing (see Map 2). Although there is a tide gate at the outlet to the Kaiapoi River, groundwater levels are anticipated to increase gradually until there is permanent ponding, rather than seasonal ponding. It is uncertain of the timeframe of when land will no longer be suitable for grazing and drainage of the area would not be possible. Future land use, such as stock grazing, within the basin will need to reflect and change with variability of water levels.

4.9. WDC or Environment Canterbury could take a proactive role to engage with landowners of the basin area to discuss the future use of the land. The proposed Climate Change Adaptation Bill, when gazetted, may clarify what are the roles of each respective agency for climate change adaptation in this area.



Map 2: Modelling of where areas of ponding will occur with a 1.88m sea level rise scenario, if below Mean Sea Level (MSL) and median Groundwater Level (GWL). Source: Jacobs report to WDC Phase 2 Coastal Inundation Modelling Final Study Report (2020)

Implications for Community Wellbeing

There are implications on community wellbeing by the issues and options that are the subject matter of this report, in particular for the community who live in the Lineside Road – Bramleys Road basin area.

4.10. The Management Team has reviewed this report and support the recommendations.

5. COMMUNITY VIEWS

5.1. Mana whenua

Te Ngāi Tūāhuriri hapū are likely to be affected by, or have an interest in the subject matter of this report.

5.2. Groups and Organisations

There are groups and organisations likely to be affected by, or to have an interest in the subject matter of this report, such as the Central Rural Drainage Advisory Group, Federated Farmers and the Waimakariri Landcare Trust.

5.3. Wider Community

The wider community is not likely to be affected by, or to have an interest in the subject matter of this report, as it is primarily landowners that are affected.

6. OTHER IMPLICATIONS AND RISK MANAGEMENT

6.1. Financial Implications

There are not financial implications of the decisions sought by this report. Any proposed works for drainage would be from within existing budgets.

6.2. Sustainability and Climate Change Impacts

The recommendations in this report do have sustainability and/or climate change impacts. As sea level increases, it will become more difficult to drain the Lineside Road – Bramleys Road basin area, as it is currently on average about 1m above the Lyttelton datum, as shown by WDC LIDAR data.

6.3 Risk Management

There are no risks arising from the adoption/implementation of the recommendations in this report. Environment Canterbury has provided guidance that sediment removal works in the Lineside Road basin area (even if defined as an inland natural wetland) would be classified as permitted works under the NES-F (2020).

WDC will continue to use a downloaded version of the Environment Canterbury wetland map for guidance of location of potential inland natural wetlands where the National Environmental Standards – Freshwater (2020) rules may apply. However, there is a risk that WDC may carry out drainage works within areas that could be defined as a wetland by Environment Canterbury, due to the lack of a planning map and lack of clarity of definitions at present.

Health and Safety

There are no health and safety risks arising from the adoption/implementation of the recommendations in this report.

7. CONTEXT

7.1. Consistency with Policy

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

7.2. Authorising Legislation

7.2.1. National Environmental Standards – Freshwater (2020)

7.3. Consistency with Community Outcomes

The Council's community outcomes are relevant to the actions arising from recommendations in this report.

7.4. Authorising Delegations

7.4.1. This report is for information only.