CERTIFIED FARM ENVIRONMENT PLAN – Example

Sheep and Beef Farm
PARKVALE CATCHMENT

Greater Wellington
Te Pane Matua Taiao

Plan summary

Certified Farm Environment Plans (cFEP's) are required by Greater Wellingtons Natural Resources Plan for properties within the priority catchments. cFEP's are a practical way for farmers and growers to identify, manage and reduce the impact of farming on the freshwater environment.

This farm plan is based on fictious information to cover possible options for a sheep and beef farming system and does not truly reflect the current farming situation, risks or actions for the land.

Greater Wellington has produced this cFEP example to assist landowners and professionals with farm planning in the Greater Wellington region. It is based on information current at the time of publishing and may be changed or altered as regulations develop. It must be noted Freshwater Farm Plans (FWFP's) that were introduced by the Government under the National Environment Standard – Freshwater Management (NES-FM 2020) are currently paused. This plan aims to cover both regulations as best possible.

The template and format used is **one option** to consider when farm planning, there are a number of industry and professional plans available for landowners and rural professionals to use.

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1. Farm overview

1.1 Farm story

Farm history

Sheep and Beef Farm was purchased by Mr and Mrs John Farmers, as a lifestyle for their young family. The original farm was then expanded as neighbouring area became available. Previously the farms were intensively grazed and cropped.

Over the past seven years, John Farmer has been trading stock depending on pasture production and market conditions. Wetland areas are slowly being fenced and planted, with the assistance of Greater Wellington's funding initiatives.

Farm goals

- Build soil to make more summer safe on the Eastern side.
- Build breeding cow herd to 40, reduce other stock and finish any youngstock from cows.
- Continue to establish a long-term farm system and lifestyle.

1.2 Property Details

Summary	
Property name	Sheep and Beef Farm
Address	123 Sheep and Beef Road, Carterton
Name and contact details (email/phone)	John Farmer John@farming.co.nz 027 123 1234
Legal description of land	Lot 2, Section 1 DP 595959
Legal description and ownership of land parcels (if different from above)	N/A
Farm identifiers	N/A
Irrigation scheme and water permits	N/A – Nil held
Other consents i.e., discharge	N/A – Nil held

2. Catchment information

2.1 Ruamāhanga Whaitua - catchment

Sheep and Beef Farm is located within the Ruamāhanga Whaitua. The mana of the Ruamāhanga is carved across the lower North Island. Ruamāhanga has massive scale, great diversity and a generative force that enables and empowers all life in the Wairarapa Valley.

2.2 Parkvale – sub-catchment

The Parkvale catchment is located on the lowland plains of the Valley floor streams Freshwater Management Unit group (FMU) in the Ruamāhanga Whaitua. This is an area of intensive farming activity and productive soils. Parkvale Stream is identified in Schedule H2 of the PNRP as a second priority water body for improvements for secondary contact recreation.

Some parts of the Parkvale Stream have the highest nitrate levels of any monitored waterway in the Ruamāhanga catchment. Data gathered on the catchment has noted that levels of nitrate-nitrogen in ground water are generally elevated, which affects freshwater stream quality and ecology due to the inter-connected nature of the catchment's hydrology. A significant amount of flow is derived from groundwater (particularly during times of low flow) and these result in low dissolved oxygen.

Soil type plays a big part in how nutrients are held or lost within the catchment. In areas that have well drained soils, you will find a close connection to surface water and ground water. In poor drained soils, the surface water is less connected to ground water. In poorly drained soils, nutrients can stay within the soil profile for longer which gives plants more opportunity to use it, in a well-drained soil this opportunity is not the same. Nutrients are often leached into the ground water or into nearby streams before plants have a chance to use it.

2.3 Challenges

The Parkvale Stream has the following challenges:

- **E. coli** - The Parkvale Stream falls below the national bottom line for E. coli, which is a national driver for improvement in water quality for swimmability. Modelling shows high E. coli levels are driven through high rainfall. The stream is used for supplying stock water, so the improvements in E. coli will have a positive effect on the economic value (stock health) as well as other values.
- **High Nitrate levels (surface and groundwater)** - Some parts of the Parkvale Stream have the highest nitrate levels of any monitored waterway in the Ruamāhanga catchment. Data gathered on the catchment has noted that levels of nitrate-nitrogen in ground water are generally elevated, which affects freshwater stream quality and ecology due to the inter-connected nature of the catchment's hydrology.
- **Run-off contamination including phosphorous and sediment** - Soil quality is also affected through elevated nutrients, particularly excessive phosphorus which can run off into waterways during storm events, and from intensified land use.

Table 1. Data for Parkvale Stream using Greater Wellingtons CCCV tool. See Appendix C

Issue	Base Grade	Objective
E-Coli	**E** For more than 30% of the time, the estimated risk of Campylobacter infection is ≥50 in 1,000 (>5% risk). The predicted average infection risk is 7%.	**C (by 2040)** For at least half the time, the estimated risk of Campylobacter infection is <1 in 1,000 (0.1% risk). The predicted average infection risk is 3%.
Periphyton	**B** Occasional blooms reflecting low nutrient enrichment and/or alteration of the natural flow regime or habitat.	**B (by 2040)** Occasional blooms reflecting low nutrient enrichment and/or alteration of the natural flow regime or habitat.
Ammonia toxicity	**B** 95% species protection level: Starts impacting occasionally on the 5% most sensitive species.	**A (by 2040)** 99% species protection level: No observed effect on any species tested.
Nitrate toxicity	**B** Some growth effect on up to 5% of species.	**A (by 2040)** High conservation value system. Unlikely to be effects even on sensitive species.
MCI	**Fair**	**Good (by 2040)**

2.4 Community values

Mana whenua are Ngāti Kahungunu ki Wairarapa, who have Hurunui marae and Pahikitea pa located within the catchment, and Rangitāne o Wairarapa. Ngāti Kahungunu at marae level (Hurunui marae), note the following:

- Mana Whenua view Parkvale stream and Taratahi water race as one
- The industrial zone needs further investigation regarding its potential contribution to nitrate levels
- Wetlands have had a key role to play in the past and now in terms of cleaning water, as a growing and nurturing zone, a carbon sink, and a collection point for sediment.

Parkvale contains sites of significance to Tangata Whenua, including:

- Te Para, Te Para Stream. Te Para stream is a significant ancestral place (wāhi tūpuna), water is and was used for healing (wai ora) and the gathering of kai (mahinga kai).
- Te Awa Tapu o Ruamāhanga (Ruamāhanga River and names tributaries). The Ruamāhanga River as a whole is significant. The Ruamāhanga is the largest flowing body of water in the Wellington region. The Ruamāhanga is at times is strengthened, as it receives water from many tributaries, and at others diminished, as water is given to the land, forming springs and streams that ultimately return to the main stem.

2.5 Farm focuses

The following is a list of good management practices that can assist in actions taken on farm, addressing the issues identified within the catchment (see Appendix A for a more extensive list):

- For E. coli: Mitigation efforts should focus on managing overland flow and critical source areas.
- Soil type plays a bit part in how nutrients are held or lost within the catchment. Consideration should be given to the soil's drainage class and therefore connection between the surface and ground water.
- Consider wetlands for water quality treatment before discharges reach the stream
- Locate any springs on the property- Exclude stock and manage effects from the surrounding area.
- Setbacks from depressions and waterways should be necessary for intensive land uses including winter grazing and winter cropping
- Riparian planting should be undertaken in strategic spots, including to provide shade to help improve periphyton and macrophyte problems
- Good management of stock access to streambanks and of winter grazing may prove important in this catchment

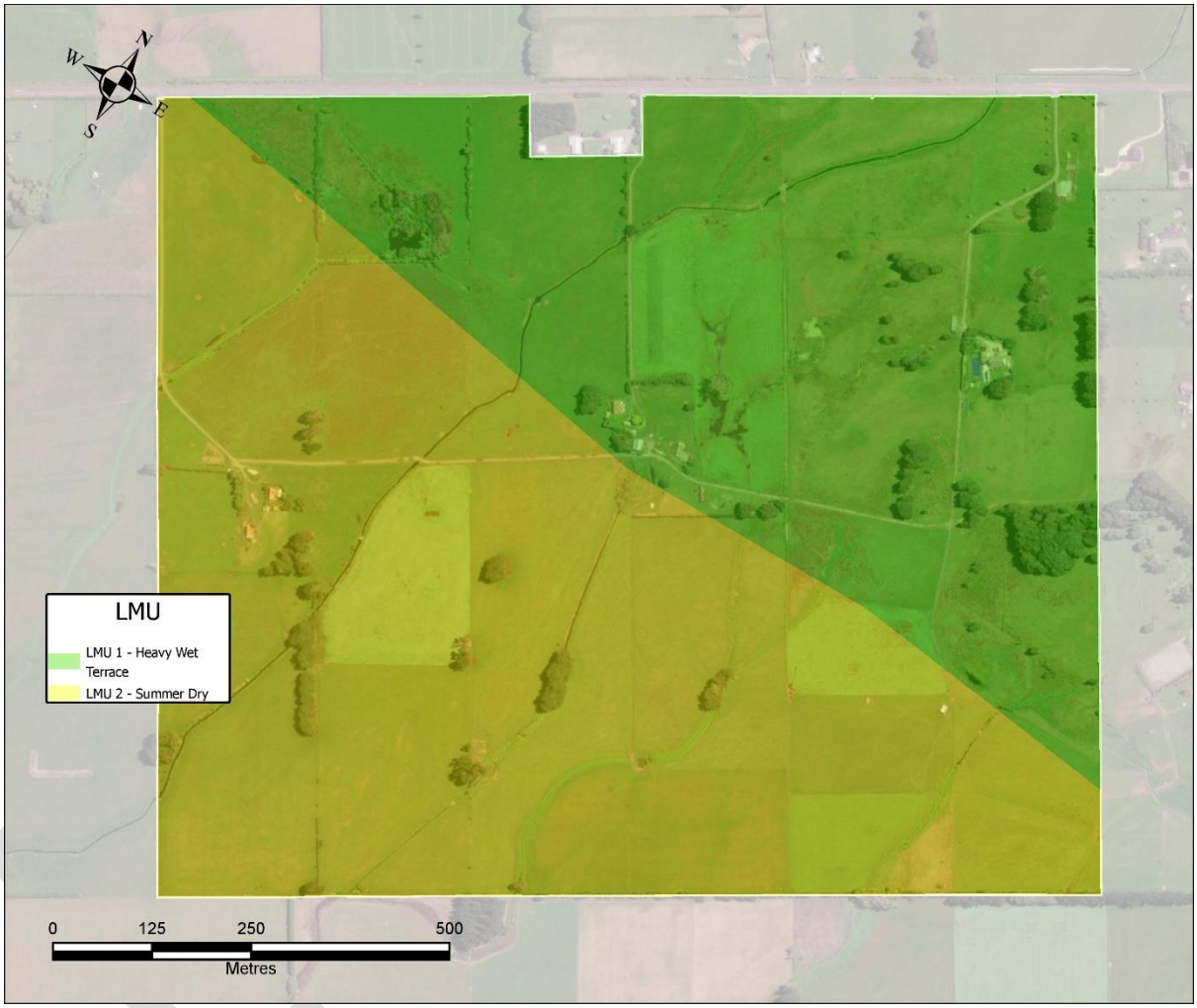
Source: www.gw.govt.nz/your-region

Parkvale Stream flowing through Sheep & beef farm, this is an area the young family spend time together exploring and observing their eco system.

3. Land Management Units & Inherent Vulnerabilities

Land Management Units (LMU's) are areas of land that can be farmed or managed in a similar way because of underlying physical similarities. LMU's for Sheep and Beef Farm are based on the soil types, with varying soil water holding capacities and during wet and dry periods are managed slightly differently.

3.1 Farm Map – Land Management Units



3.2 Land Management Unit 1: Heavy wet terrace

Description and Management

Primarily flat land, with slight undulation. Poorly drained soils, with potential wetland areas. Sheep and beef grazing rotationally around the LMU. Sheep and beef grazing, primarily pasture with chicory rotating around for summer feed. Dryland causes summer feed shortages so stocking rate varies. Depending on budget, little to no fertiliser is applied. Stock water races are fenced with drinking bays to reduce bank damage and reduce contamination.

Inherent Risks

The soils have a very low to medium nitrogen leaching vulnerability, and high-water logging vulnerability creating high potential for pugging and sediment movement in times of high rainfall.

A significant wetland is neighbouring this LMU (over the boundary). There is a potential wetland in this area, with surface water during wet periods, the soil holds the water well.

Artificial stock water races run through the LMU as the primary stock water, very little flood potential, but with poor management banks may erode causing contaminants to enter the waterways. These flow into the Parkvale Stream and/or Ruamāhanga river. Stock access can increase the contaminants (i.e., E. coli) which is a water quality issue in the Parkvale catchment.

Actions within this LMU

- Remove cattle from LMU over winter
- Install reticulation to paddocks using water races for stock water
- Temporarily fence off water races to ensure cattle are only drinking from designated bays
- Permanently fence and plant water races
- Permanently fence and plant Parkvale Stream
- Seek advice regarding managing suspected wetlands

3.3 Land Management Unit 2: Summer Dry

Description and Management

Primarily flat land, with slight undulation. Imperfectly drained soils, with potential wetland areas. Sheep and beef grazing rotationally around the LMU. This is primarily pasture with chicory rotating around for summer feed. Dryland causes summer feed shortages so stocking rate varies. Little to no fertiliser year to year, depending on budget. Stock water races are fenced with drinking bays to reduce bank damage and reduce contamination.

Inherent Risks

Artificial stock water races run through the LMU as the primary stock water, very little flood potential, but with poor management banks may erode causing contaminants to enter the waterways. These flow into the Parkvale Stream and/or Ruamāhanga river. Stock access can increase the contaminants (i.e., E. coli) which is a water quality issue in the Parkvale catchment. These soils are moderately well drained to imperfectly drained. The soils have a moderate to high N leaching vulnerability, with a moderate water logging vulnerability. Due to the gravel sub-soil with high groundwater in the area increases the risk of Nitrogen contamination to groundwater which is highly connected to surface water.

Actions within this LMU

- Install reticulation to paddocks using water races for stock water
- Temporarily fence off water races to ensure cattle are only drinking from designated bays
- Permanently fence and plant water races
- Permanently fence and plant Parkvale Stream

****For a hill country LMU example please refer to the guidance document – additional resources section****

4. Farming Activities & Risk Assessment [completed by a certifier]

4.1 Introduction

In identifying the level of risk specific to a farm, the lands inherent vulnerabilities must be considered alongside the farming or growing activities occurring. Any catchment context information relevant to each identified risk must also be considered. To fully understand the level, location and type of risks with potential mitigations the risk assessment is conduct at LMU scale.

Likelihood	Consequence		
	Slight	Serious	Major
Low	Low	Low	Medium
Medium	Low	Medium	High
High	Medium	High	High

This table has been used to assist in the assessment of risks for each area (Nitrogen, Phosphorous, Sediment and E. Coli). For example, nitrogen through poor fertiliser application near a waterway has a serious consequence, and if the likelihood of it occurring is high then overall the risk is high, however if the likelihood is low then it is a low risk.

4.2 Nutrient Management

4.2.1 Contaminants overview

Four key contaminants have been identified as problematic to New Zealand waterways: nitrogen (N), phosphorus (P), sediment, and *E. coli*.

Nitrogen is a priority issue for the Parkvale catchment.

The cFEP process is designed to identify the ways that these contaminants could enter waterways and implement actions to prevent or lessen the likelihood of this occurring.

The loss of contaminants from land to water depends on several factors: availability of contaminants, presence of a transport pathway, and any treatment or reduction happening along the pathway. Both availability and transport can be significantly influenced by land use and land management. The main pathway for nitrogen loss is via leaching from the root zone of plants.

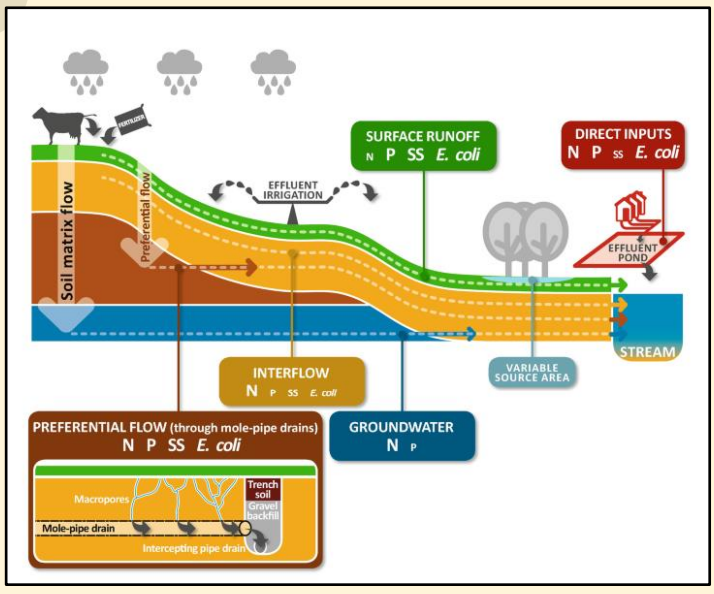


Figure 1 Source: www.lawa.org.nz

Phosphorus and microbial pathogens are principally lost to rivers and lakes via overland flow or artificial drainage. Sediment discharges result from a combination of eroded hill country, overland flows and riverbank and streambank erosion.

4.2.2 Nitrogen

Risk	Risk factors on your farm	Risk rating (High, Medium, Low)		
			Land Management Unit (LMU) or Paddock	
		Whole farm	1: Heavy Wet Terrace	2: Summer Dry
Nitrogen loss risk **Nitrogen potentially entering waterways impacting freshwater health or drinking water quality**	Animal loss risks: stock, feed type, grazing practices, off-paddock feeding	**Low**	**Low**	**Low**
	Fertiliser loss risks: excessive nutrient levels (beyond plant needs), direct application to waterways	**Low**	**Low**	**Low**
	Effluent loss risks: overland flow, application beyond plant requirements	**N/A**	**N/A**	**N/A**
	Nutrient transport risk: artificial drainage, soils, climate, topography, structural mitigations	**Medium**	**High**	**Medium**

Contaminant management and farm context:

Sheep and Beef Farm is primarily pasture, with some summer safe chicory planted every few years for lambs. Limited fertiliser is applied, with no nitrogen applied over the past few years. The farm has several waterways that increase the risk of fertiliser entering if not appropriately spread. GPS is used and shows buffers around waterways adequate to reduce the risk of fertiliser entering.

The lighter soils of LMU 2, increase the risk of nitrogen leaching through the soil profile especially if not appropriately spread and at incorrect times. The picture below shows a temporary fence to create large buffer zone currently employed on seep & beef farm to mitigate nutrient transport risk.

Source: www. beeflambnz.com/news/capturing-benefits-catch-crops

4.2.3 Phosphorus / Sediment / E. coli

Risk	Risk factors on your farm	Risk rating (High, Medium, Low)		
			Land Management Unit (LMU) or Paddock	
		Whole farm	1: Heavy Wet Terrace	2: Summer Dry
Sediment and Phosphorus loss risk **Sediment or phosphorus potentially entering waterways may cause excess algae growth, habitat loss or other harm to freshwater health**	Erosion/Sediment loss risks: stock, grazing practices	**High**	**High**	**High**
	Cropping loss risks: cultivation	**Low**	**Low**	**Low**
	Fertiliser loss risks: excessive nutrient levels, direct application to waterways	**Low**	**Low**	**Low**
	Nutrient transport risks: artificial drainage, soils, climate, topography, structural mitigations	**Medium**	**High**	**Medium**
Faecal microbe loss risk **Contaminants, like pathogens such as *E. Coli*, potentially impacting on human health**	Animal manure loss risks: stock, grazing practices	**High**	**High**	**High**
	Nutrient transport risks: artificial drainage, soils, climate, topography, structural mitigations	**Medium**	**High**	**Medium**

Contaminant management and farm context:

Sheep and Beef Farm is primarily pasture, with some summer safe chicory planted every few years for lambs. Limited fertiliser is applied, with some RPR used to maintain the Olsen P on the farm, along with liming.

The farm has several waterways that increase the risk of fertiliser entering if not appropriately spread. These waterways are used for stock water, with drinking bay areas. Due to stock access to waterways the microbial risk is high on this property, an example of these higher risk areas due to direct access to waterways by stock is below. Re-grassing and chicory are direct drilled, reducing sediment loss risk from cultivation.

Source:www.teara.govt.nz

4.3 Critical Source Areas

4.3.1 Critical source areas (CSA)

Critical source areas are areas within a paddock or catchment that contribute a disproportionately large (relative to their area) quantity of contaminants to water, negatively impacting water quality.

CSA's are overland flow paths, small low-lying parts of farms such as gullies and swales, that can accumulate and move runoff (water and contaminants) to waterways. These areas can transport large amounts of soil, phosphorus and E. coli to waterways. For a CSA to exist it must have both a potential contaminant source and a loss pathway or transport mechanism. Refer to map 7.4 & 7.6.

Sheep and Beef Farm has a network of stock water races throughout the farm which are used for stock water as there is no reticulated stock water system in place. The Parkvale stream runs through the property, with some of these stock water races feeding into the stream.

LMU 1 has potential wetlands with areas of springs, and swamp. Two areas have been fenced off, with support and funding from Greater Wellington. The area closest to the road is being planted with natives. There is currently no reticulated stock water system in place.

High traffic areas can be CSA's. These areas refer to specific locations on farm with large amounts of vehicle and livestock movement, including gateways, feeders, troughs, and laneways, leading to potential soil compaction and environmental impacts if not managed properly.

The highest CSA' risk area for Sheep and Beef Farm is waterway crossing points due to their immediate proximity to surface water, the risk of contamination from these critical source areas is high.

4.3.2 Point source areas

Point Source Areas are areas where substantial amounts of contaminants are leached, which have a negative impact on the nearby environment. The key point sources located on farm are unmanaged high concentration stock crossing points, silage pits, rubbish pits, used agrichemical containers, fuel containment, deceased stock, compost and offal pits. Refer map 7.6.

On Sheep and Beef Farm the offal pit is due to be disestablished in the coming year. All other farm and household rubbish is exported. Baleage wrap is collected and recycled through Plasback.

CSA example to left, livestock have access to a critical source area (CSA), directly contaminating an ephemeral waterway (surface transport) with dung and urine (contaminant source). Next time, livestock should be excluded from the critical source area to avoid the deposition of contaminants in the waterway. Livestock should be excluded from the steep, erodible edges of the critical source area using an approximately 5-metre buffer. [Stock image not actually from this farm].

Source: www.environment.govt.nz.

5. Action Plan [Completed by a certifier]

5.1 Action Plan Table

Identified Risk	Action to address risk	Location / LMU/Paddock	Timeline	Person responsible	Budget	Priority	Regulatory/ Supplementary / Catchment	Evidence of completion	Date completed	Expected outcome
Sediment and contaminates entering waterway rom stock	Stock exclusion of Parkvale stream by temporary and permanently fencing.	LMU 1 & 2, refer map 7.4	By 31 July 2025	Farmer, Contact GW to see support	Approx 75m of Fencing. 2 wire electric @18/m.	High	Regulatory Catchment			↓ N, P Sediment and E. coli
Stock access, Sediment and contaminates entering waterway	Temporarily fence the length of the stock water races, forcing stock to utilise the current drinking bays, rather than having access to the whole stock water race when in those paddocks.	LMU 1, refer map 7.4	Immediately	Farmer	Nil, as have equipment in stock	High	Catchment			↓ N, P Sediment and E. coli
Winter grazing	Allow buffer zone to catch & filter contaminates entering waterway. Winter grazing plan: *Est buffer zone of 3-5m around waterbodies depending on slope. *Back fence is applied * Grazed from top to bottom of slope. *CSA temp fenced with pasture cover maintained * Trough on high area *smaller mob sizes	LMU 2 (Where cropped each year)	Each winter or period of prolonged rainfall	Farmer & communicated with all staff	Nil, as have equipment in stock	High	Catchment			↓ N, Sediment and E. coli

Identified Risk	Action to address risk	Location / LMU/Paddock	Timeline	Person responsible	Budget	Priority	Regulatory/ Supplementary / Catchment	Evidence of completion	Date completed	Expected outcome
	*Secondary paddock identified in event of adverse weather									
Sediment and contaminates entering waterway during overland flow	Once Parkvale stream has been fenced, plant out buffer zone to filter contaminates entering the waterway during periods of overland flow	LMU 1 & 2, refer map 7.5	By winter 2026	Farmer	Approx 250 of Native plants. Cost range $1.80-$4.20ea	Medium	Catchment			↓ N, P Sediment and E. coli
Contaminates entering waterway from fertiliser application	Speak with relevant expert or consultant to tailor fertiliser application to each block.	LMU 1 & 2	By winter 2025	Farmer Agronomist	Consultant cost $200-700 or part of supply agreement with fertiliser company	Medium	Catchment			↓ N & P
Nutrient run off into waterway	With stock excluded from all waterways, implement a reticulated stock water, with a trough in each paddock.	LMU's 1 & 2	By May 2026	Farmer, contractor	Troughs: $500ea 20mm pipe@ $2/m Fittings @ $50/trough	Medium	Catchment			↓ N, P and E. coli
Soil pugging and sediment loss	During winter and periods of excessive rain graze cattle on LMU1 to reduce risk of contamination of wet areas and soil pugging damage due to soil type of LMU 1.	LMU 1, refer map 3.1	By winter 2026	Farmer		Medium	Catchment			↓ N, P and E. coli

[Note: This Specific Project plan below is created to represent hill country farm LMU detailed in the guidance document and not specific for this example due to the flat topography of sheep & beef farm]

Specific Project:	Erosion Control of Class 5-7 hills			Time: 2025-29				
Area addressed:	Back country Hills (Refer Map 7.4)		**Desired outcomes:**	Soil stabilisation and reduce sediment loss				
Tasks	**Timeframe**	**Location:**	**Person responsible**	**People involved**	**Budget**	**Priority**	**Date completed**	**Evidence of completion**
Area 1 – Poplar / willow planting for erosion control	Winter 2025	Gully of Paddock 10 "Poles '25"	John Farmer	Farmer GW funding application	Approx 45 poles Pole + Sleeve @ $24ea	High Catchment		
Area 2 - Poplar / willow planting for erosion control	Winter 2026	Gully and upper slope of Paddock 12 "Poles '26"	John Farmer	Farmer GW funding application	Approx 25 poles Pole + Sleeve @ $24ea	High Catchment		
Area 3 - Poplar / willow planting for erosion control	Winter 2027	Upper and mid slope of Paddock 8 "Poles '27"	John Farmer	Farmer GW funding application	Approx 15 poles Pole + Sleeve @ $24ea	High Catchment		
All areas – In fill planting of failed poles & form pruining to improve quality of tree	Winter & Autum 2028	Areas 1 & 2 planted 2025/26	John Farmer	Farmer GW funding application	Poles only as req @ $15 ea. Pruning: Self or contractor @ $70/hr	Medium Catchment		

All areas – In fill planting of failed poles & form pruining to improve quality of tree	Winter & Autum 2029	Areas 2 & 3 planted 2026/27	John Farmer	Farmer GW funding application	Poles only as req @ $15 ea. Pruning: Self or contractor @ $70/hr	Medium Catchment		

Regulations to consider prior to undertaking recommended works	
Stock exclusion rules	Minimum setbacks and exclusion for new fences – GW stock-exclusion-regulations
Mechanical Management of Highly Modified Waterways	Good-practices-for-the-mechanical-management-of-highly-modified-waterways
Culvert installation	Building structures in river and stream
Scheduled sites information	**Sites of significance B**; **Sites of significance C** & **Sites of significance F1 & F3**
Watercourse types	How to determine whether a watercourse is a river, ephemeral watercourse, highly modified river or stream, or artificial watercourse; GW land-use-watercourses

6. Land Use & Stock Details

6.1 Farm Summary

Summary	
Total farm area (ha)	117
Effective farm area (ha)	110
Irrigated area (ha)	0
Dryland area (ha)	110
Intensive winter grazing area (ha)	0
Farm system/type	Sheep and Beef trading
Climate: **Average rainfall (mm)** **Average temperature (^{O}C)** **Sunshine hours**	 800-1000mm 12-19 ^{O}C 1950 hours

6.2 Sheep and Beef

Summary	
Peak breeding sheep numbers	200 ewes 660 hoggets
Lambing %	165%
Peak cattle numbers	100 (14 breeding cows)
Calving %	95%
Total stock units	1312
Sheep:cattle ratio	55:45
Stock units/grazeable ha	11.9

6.3 Crop

Crop	Chicory & Clover	Rape
Area (ha)	12	5
Yield (t DM/ha)		6
Month Sown	September	January
Cultivation Method	Direct Drill	Direct Drill
Month/s Harvested	Grazed over 2 years	May-August
Post Crop Treatment	Direct drill into pasture	Direct drill into pasture
Stock Grazing	Lambs	Cattle

6.4 Other farm management practice

Sheep and Beef Farm is primarily pasture, with some summer safe chicory planted every few years for lambs. This is direct drilled, with new pasture direct drilled after a few years. Grazing rotates around the farm, with timings dependent on pasture production. Due to the drought vulnerability in summer, stock are traded allowing for reduction in stock units before Christmas. Over summer pasture tag is left behind to reduce the risk of wind erosion and maintain as much moisture as possible.

6.5 Farm Infrastructure

Type	Description
Culverts	Culvert crossings on the farm range in age and construction. These are maintained to ensure that water can flow through freely, and contaminates are run through pasture/buffers before entering any waterways.
Unmanaged crossings	Two areas where stock cross the stream by entering the waterway; stock are driven across no more than twice per month.
Offal Pit	An offal pit is in Eastern corner of property. It is old and due to be decommissioned in the coming 1-2 years. A new pit will be dug when required. New pit will need to comply with rule R91 of the natural resources plan; Greater Wellington — Managing waste
Silage stack	Silage pits are near the house in the centre of the property. It is a new concrete lined bunker, significantly reducing potential leaching to nearby water race.
Yards	Small set of wooden sheep & cattle yards in north corner near road, with a capacity of holding 20 cattle and 60 sheep. These yards require regular maintenance to the wood and to limit build-up of dried excrement. Metal is topped up annually to reduce pugging damage.
Hay shed	N/A
Chemical storage	All agrichemicals are brought onto site by contractors. Small quantities of chemicals are stored in a lockable area within the shed.
Fuel Storage	Fuel is stored near the house to reduce chance of theft. These are on higher ground with small lime bunds to contain possible spills, as the tanks are located in close proximity to water race.
Fertiliser storage	All fertiliser is brought on to the farm by spreading contractors. Any excess is removed once work is completed.
Farm laneways / Tracks	Tracks are grass or bare earth and generally in good condition. During winter new metal is spread in gateways to reduce pugging.
Farm dump	There is no rubbish pits located on the property as they are within 10km of a public tip. Baleage wraps and silage covers are recycled through Plasback.

6.6 Nutrient Information

Block	Fertiliser product (month applied)	Rate of application(s) (kg/ha)	Nutrients applied (kg/ha)			Nitrogen Applied (kg/ha)
			P	***K***	***S***	***N***
All Pasture paddocks [LMU 1 & 2]	Lime October/November RPR March	2000 250	31.5			
Chicory and Clover crop [LMU 1]	DAP – September	200	40		2	35.2
		Total Nutrient applied (kg/ha)	71.5		2	35.2

Note fertiliser is not applied annually and is finance dependent.

6.7 Soil test

LMU	pH	Olsen P	Potassium		Potentially available N (crop paddocks)
All pasture paddocks	5.6	17	8		
Chicory and clover	5.8	24	4		

Optimum Olsen be ranges for pasture production is 20-30. The soil tests here indicate low risk of excess levels and rates of fertiliser should maintain these moving forward. However, regular soil testing with a Nutrient Specialist is recommended to continue managing the trend of fertility.

The rates of fertiliser detailed in section 6.6 are the intended ongoing applications planned for Sheep and Beef Farm. Any changes in fertiliser practices will be made in consultation with a fertiliser representative and considering soil test results.

6.8 Supplementary feed information

Feed type	Source	Amount (tonnage)	Distributed location
Hay	Imported	300 bales	Pasture
Baleage	Made on farm	200 bales	Pasture

The cropping practices detailed in section 6.3 and the supplementary feed detailed in section 6.8 are the intended ongoing cropping and feed practices planned for Sheep and Beef Farm. Any changes in cropping paddocks will be done with consideration of the inherent vulnerabilities of the LMU in conjunction with advice from a professional agronomist.

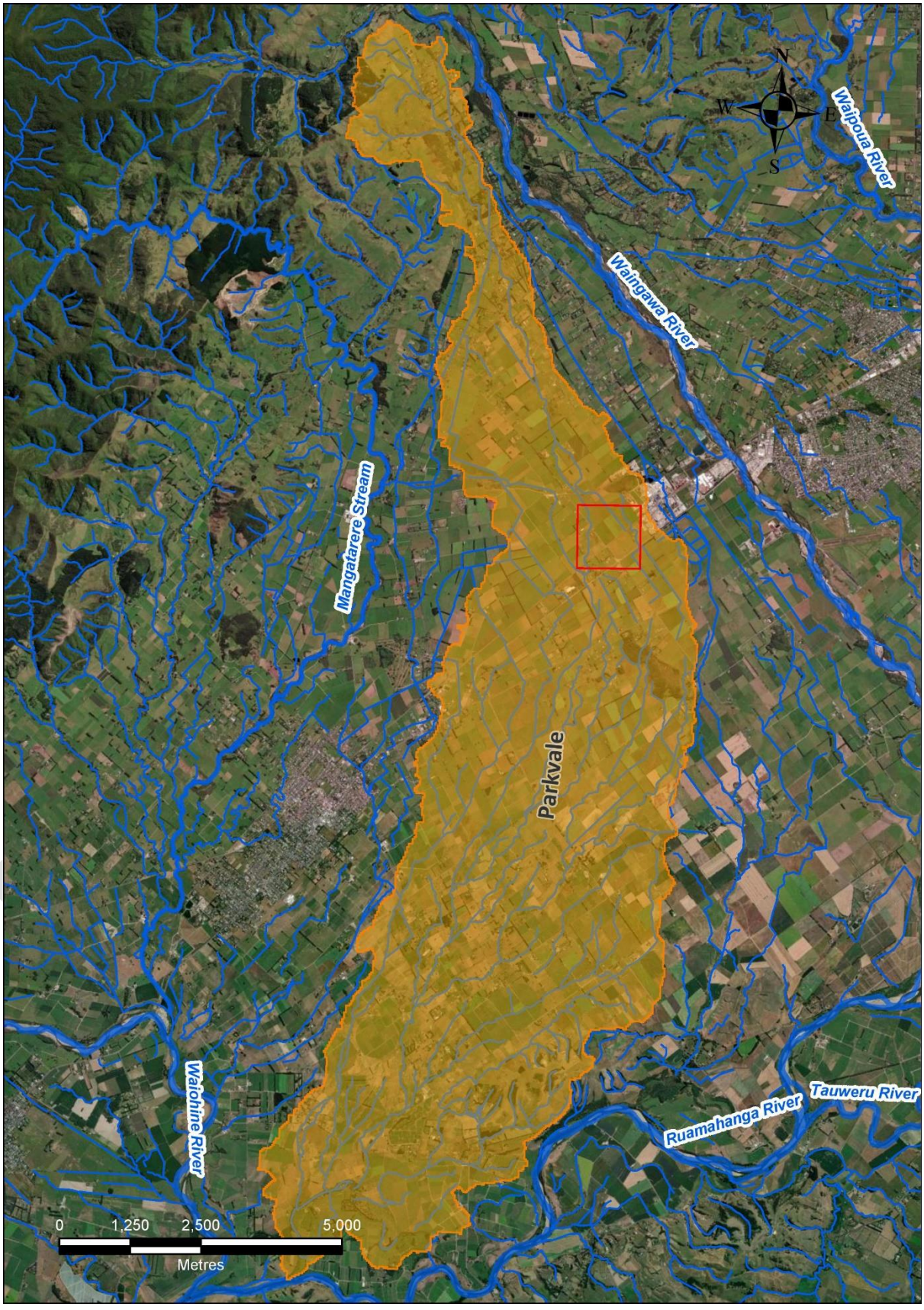
6.9 Irrigation Management

No irrigation on the farm.

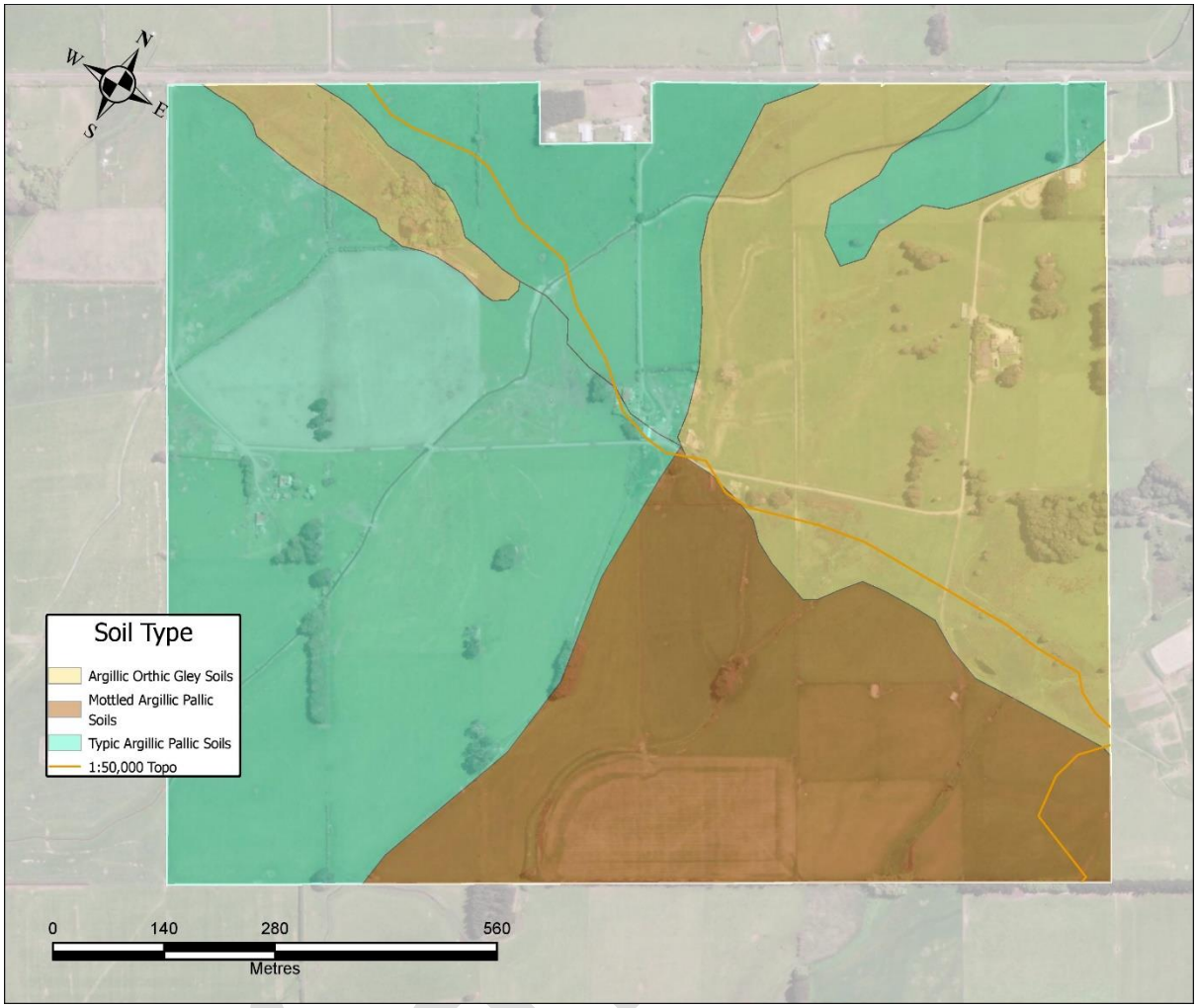
7. Farm maps

Map	Applicable (Yes or NA)	Map (name or number) page number
The property boundaries of the land being farmed	Yes	Map 3.1 Location
The boundaries of the main land management units or land uses on the land being farmed	Yes	Map 3.1 Land Management Unit
The catchment and sub-catchment that the farm is within and a map showing the location of the farm within the sub catchment	Yes	Map 7.1 Sub-Catchment
Soil types and topography at 1:50,000 scale	Yes	Map 7.2 Soils
The location (and for named waterbodies, the names) of any permanently or intermittently flowing waterbodies on the property including; • **rivers,** • **streams,** • **drains,** • **wetlands,** • **lakes, and** • **springs, and** • **specifically identifying any waterbodies that meet the criteria for stock exclusion in the Regional Plan and/or Resource Management (Stock Exclusion) Regulations 2020**	Yes	Map 7.3 & 7.4 Waterbodies & Waterway works
The location of any site or river included in Schedules B, C, F1 and F3 of the Plan that is within, or adjacent to, the property	Yes	Map 7.3 Waterbodies & Waterway works
The location of riparian vegetation and fences (or other stock proof barriers adjacent to water bodies)	Yes	Map 7.5 Waterway works
The location of any stock crossing points or structures on any water bodies where stock have access	Yes	Map 7.4 Waterway works and Point sources
The location of any critical source areas, and hotspots for contaminant loss to groundwater or surface water	Yes	Map 7.6 CSA's & Infrastructure
The location of any surface and (where known) sub-surface drains	N/ A	Nil known on farm
The location(s) of the actions and practices that will be adopted to ensure the effective management of contaminant loss on the farm [completed by a certifier]	Yes	Map 3.1, &.4 & 7.5 – As outlined in action table above.
Any other feature or characteristic of the land necessary to assess the risk factors set out in Tables 1 to 3; • **Effluent applications including liquids and solids** • **Animal types** • **Erosion/sediment issues** • **Cropping areas**	Yes	Features identified through the various maps & plan

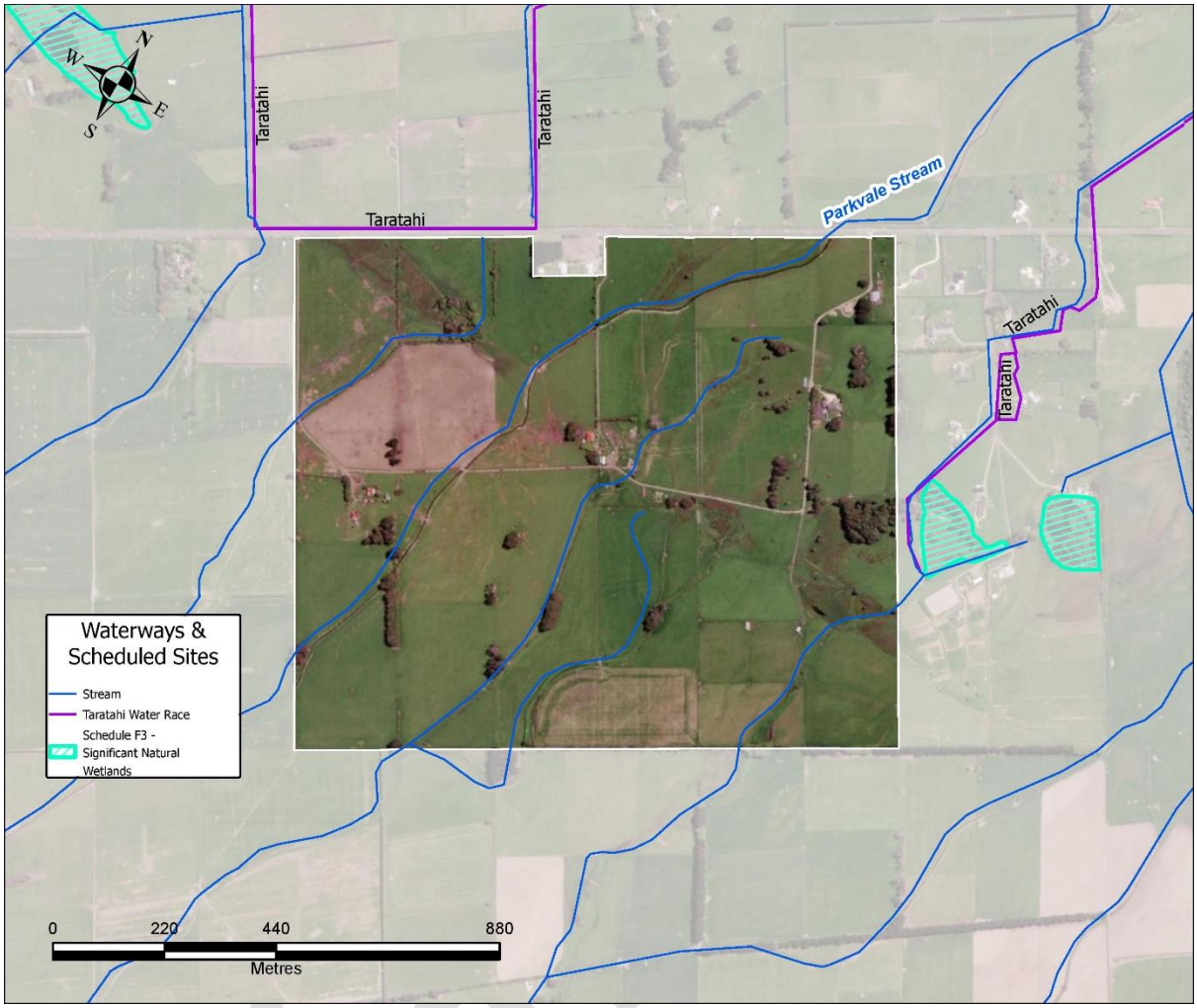
7.1 Farm map – Sub-catchment



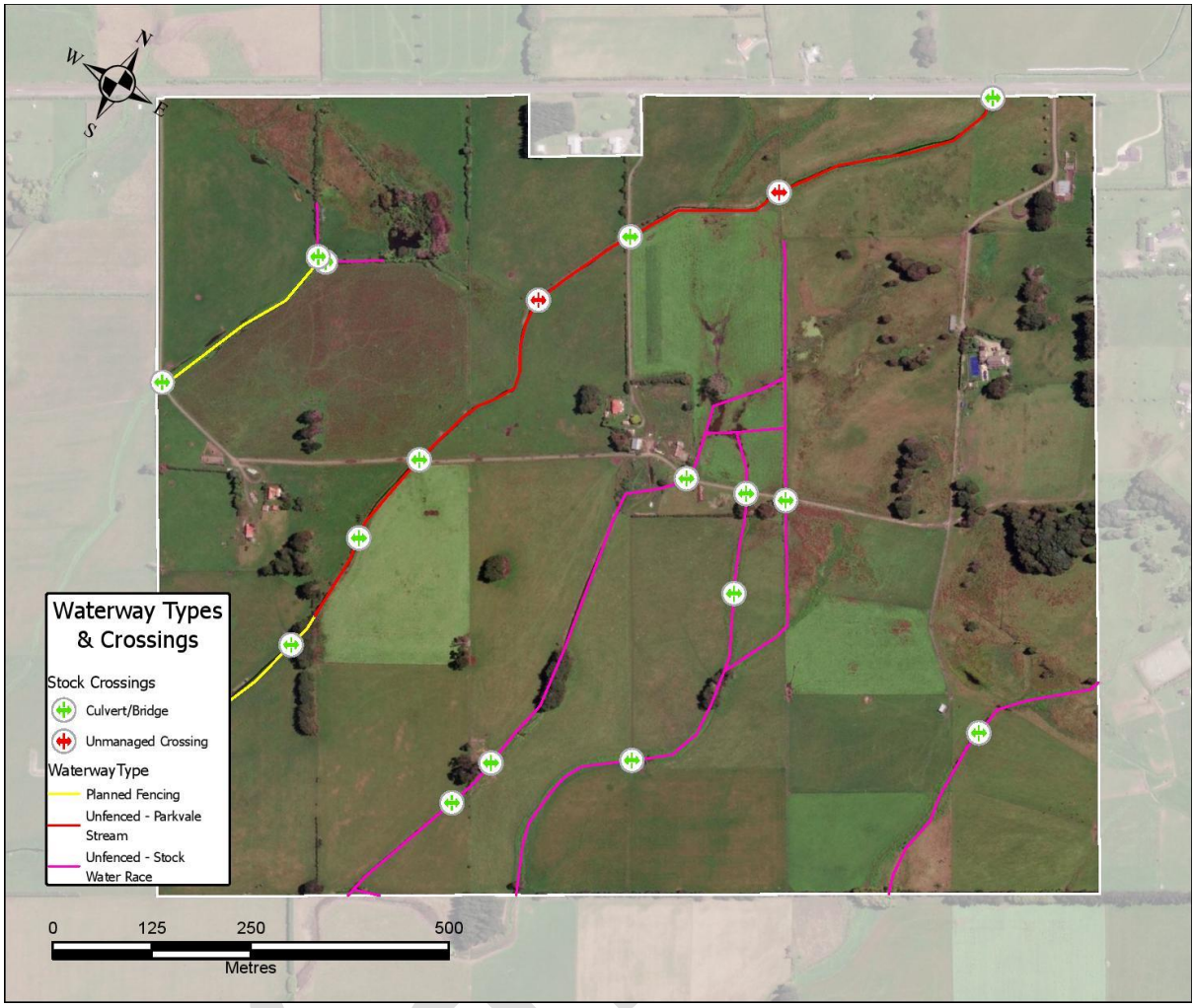
7.2 Farm map – Soil



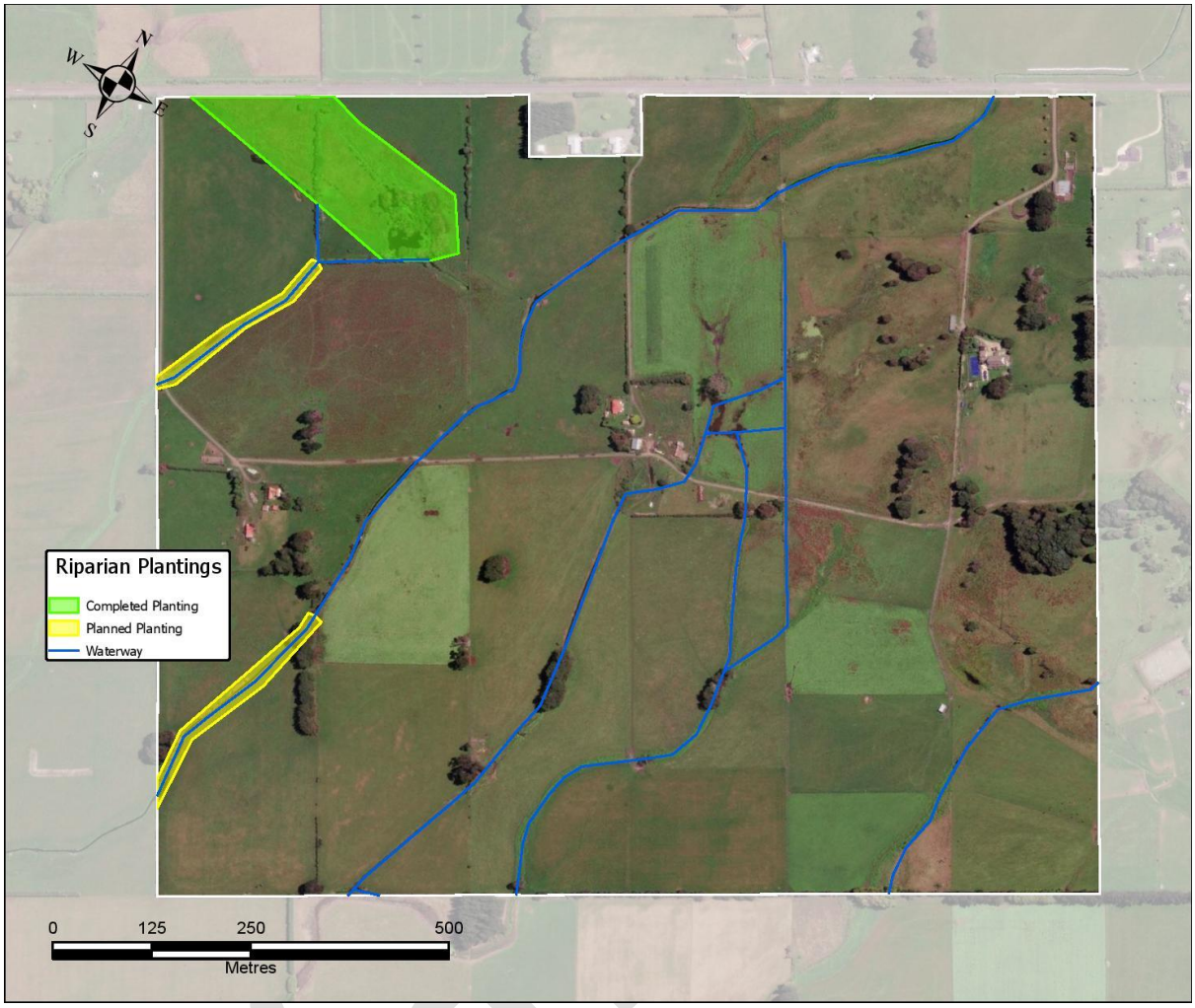
7.3 Farm map – Waterways and scheduled sites



7.4 Farm map - Waterway types and crossings



7.5 Farm map – Riparian planting



7.6 Farm map – Critical source areas & farm Infrastructure

Appendix A: Sheep & Beef Farm mitigations/good management practices (GMPs)

Risk	Mitigation/GMP
Sheep & Beef GMP's / Environmental planning - beeflambnz.com/knowledge-hub/farm-planning	
Soil structure degradation, including erosion through run-off, and wind blow. Soil compaction, e.g., pugging	Continue no tillage or low impact cultivation methods and timing whenever possible. Direct drilling is known to maintain soil structure, reducing the risk of damage i.e., pugging, and can assist in growing the organic matter.
Nutrient contamination to waterways	Continue to feed out supplements away from waterways and/or critical source areas. Feeding out supplement can cause contamination of waterways and reduces utilisation if incorrectly placed. Ensuring that supplements are placed away from waterways and critical source areas reduces contamination risk and loss of feed.
E.coli & Sediment loss	Identify risk of overland flow of sediment and faecal bacteria on the property and implement measures to minimise transport of these to waterbodies. Where appropriate use methods to minimise or eliminate sediment entering waterways such as: vegetated buffer strips/riparian planting adjusted in width for slope, hydrology, bank stability, land use and proximity to critical source areas.
Nutrient loss	Continue with the planning and planting of large riparian buffers. Engagement with Greater Wellington to investigate funding options and plant a selection of suitable native riparian plants.
Nutrient loss	Continue to utilise soil moisture meters, including the soil temperature for fertiliser application, especially in the shoulder seasons. It is recommended to apply nitrogen at temperatures rising from 8 degrees, this ensures that the plant is actively growing and will utilise the nutrient. The soil moisture probes give soil temperature information.

Nutrient loss	Continue to have a nutrient management plan for pasture and crop from a fertiliser advisor. Applying fertiliser to the plant requirements. This ensures that application rates are at optimum levels for plant response and utilisation, reducing losses through drainage and/or run-off.
Nutrient loss	Continue to monitor Nitrogen loss rates and purchased N surplus. Monitoring the Nitrogen loss rates, and the purchased N surplus annually allows for understanding of slight farm system changes and their effect on Nitrogen within the system. This also shows long term trends of whether N losses are reducing or increasing.
Nutrient loss	Continue to monitor soil nutrients through soil testing to ensure Olsen P and other nutrients are maintained at agronomic levels. This is an efficiency and an environmental action, to ensure that the nutrients applied will be utilised and maintained to encourage and support plant health and growth, whilst not exceeding requirements and posing an environmental risk.
Soil damage/compaction. **Nutrient, sediment, E. coli loss**	Manage periods of exposed soil between crops/pasture to reduce risk of erosion, overland flow and leaching. By carefully selecting your paddocks, grazing routines and crops to minimise disrupting the soil and runoff to waterways, particularly during winter months. During wet periods it is best practice to focus on paddocks with moderate to well-draining soils, as these are less likely to have soil damage and therefore reduces the risk of sediment and phosphate entering waterways.
Nutrient, sediment, E. coli loss	Maintain races and direct the water run off away from waterways and into paddocks using cut-offs. Tracks are well maintained, with buffers in place between them and waterways. Culverts and bridges are generally bunded but over time these can erode, with fences needing to be shifted and rebunded to ensure contaminants do not directly enter waterways.
Rubbish	Continue to recycle baleage and silage covers through Plasback. Continue to export rubbish to the local tip.
Contaminant loss to waterways	Ensure when a new offal hole is dug it follows the greater Wellington guidelines https://www.gw.govt.nz/assets/Userguide-for-Offal-Pits-Permitted-Activity.pdf, including ensuring it is at least 50m from a waterway, gully or wet area. When an offal pit is poorly managed or in the wrong place (close to a waterway), it can leach contaminants which negatively affect water quality, and potentially human and animal health.

Contaminant loss	Investigate in a concrete pad with bunds or a spill kit for the fuel storage to ensure that any spills that may occur can be contained. Diesel and petrol can contaminate soil and move with run-off to waterways or bores. It is best practice to ensure that any spills are either contained or able to be mitigated through a spill kit (i.e. lime chip).

Appendix B: Soil nutrient risk table

Identifying and understanding soil types and their limitation is important. These should be accounted for when making land management decisions. Refer Soils map 7.2.

Soil Sibling & Description [Soil map colour]	Common Names	LMU's	Drainage Class	Structure & Leaching	Texture
Wate_10a.1 ***Argillic Orthic Gley Soils*** **[Yellow]**	Watertonf stony silt	1 & 2	The soil is poorly drained with very high vulnerability of water logging in non-irrigated conditions and has moderate to high soil water holding capacity. PAW: 146mm	Inherently these soils have a moderate structural vulnerability and a very low N leaching potential.	The topsoil typically has silt texture and is stoneless. The subsoil has dominantly clay textures, with a very gravelly layer that starts at or below 45 cm soil mineral depth and extends continuously to 100 cm. The plant rooting depth extends beyond 1m.
Darn_14a.1 ***Typic Argillic Pallic Soils*** **[Brown]**	Darnleyf shallow silt	1 & 2	The soil is moderately well drained with moderate vulnerability of water logging in non-irrigated conditions, and has moderate soil water holding capacity PAW: 93mm	Inherently these soils have a high structural vulnerability and a high N leaching potential.	The topsoil typically has silt texture and is moderately stony. The subsoil has dominantly silt textures, with a very gravelly layer from less than 45 cm mineral soil depth to more than 100 cm. The plant rooting depth extends beyond 1m.
Wate_5a.1 ***Argillic Orthic Gley Soils*** **[Green]**	Watertonf shallow silt	1 & 2	The soil is imperfectly drained with high vulnerability of water logging in non-irrigated conditions and has moderate soil water holding capacity. PAW: 118mm	Inherently these soils have a high structural vulnerability and a very low N leaching potential.	The topsoil typically has silt texture and is stoneless. The subsoil has dominantly clay textures, with a very gravelly layer that starts at or below 45 cm soil mineral depth and extends continuously to 100 cm. The plant rooting depth extends beyond 1m.

The farms soils are determined by a terrace, with one side of the farm very heavy and generally wet, with all the waterbodies on this side (LMU 1). The other side can be very dry and is more stoney and imperfectly to well drained areas. Cattle are not grazed on LMU 1 over winter, instead are strip grazed on pasture and hay/straw on LMU 2 with excess supplement feed left to build soil organic matter and for the pasture seed.

Appendix C: CCCV tool information [Above Sch Z requirement]

Freshwater Management Unit

Catchment context, challenges and values (CCCV)

Find information useful for creating a Freshwater Farm Plan, such as contaminant goals, sites of significance, and implementation ideas for your catchment area.

Parkvale Stream

The Parkvale catchment is located on the lowland plains of the Valley floor streams Freshwater Management Unit group (FMU) in the Ruamāhanga Whaitua. The area is known for its high leaching soils and complex hydrologyand waterways. These waterbodies include the spring fed and intermittently flowing Parkvale stream and the Taratahi water race, which are fed by the Waingawa River. The catchment contains a mix of dairy/dairy support, sheep and beef farming, and lifestyle blocks, and sits between Carterton and Masterton townships.This is an area of intensive farming activity and productive soils. The soils tend to be very thin, meaning ground and closely connected surface water are at risk of becoming polluted with highly soluble contaminants such as nitrates. The Parkvale is impacted by high nutrient levels, lowish flows and a lack of shading, meaning that periphyton can be a considerable problem.Parkvale Stream is identified in Schedule H2 of the PNRP as a second priority water body for improvements for secondary contact recreation.

Freshwater Values, Priorities, and Outcomes

The Parkvale Stream falls below the national bottom line for E. coli, which is a national driver for improvement in water quality for swimmability. Modelling shows high E. coli levels are driven through high rainfall. This indicates that mitigation efforts should focus on managing overland flow and critical source areas. The stream is used for supplying stock water, so the improvements in E. coli will have a positive effect on the economic value (stock health) as well as other values.Some parts of the Parkvale Stream have the highest nitrate levels of any monitored waterway in the Ruamāhanga catchment. Data gathered on the catchment has noted that levels of nitrate-nitrogen in ground water are generally elevated, which affects freshwater stream quality and ecology due to the inter-connected nature of the catchment's hydrology. Soil quality is also affected through elevated nutrients, particularly excessive phosphorus which can run off into waterways during storm events, and from intensified land use.
A significant amount of flow is derived from groundwater (particularly during times of low flow) and these result in low dissolved oxygen.Soil type plays a bit part in how nutrients are held or lost within the catchment. In areas that have well drained soils, you will find a close connection to surface water and ground water. In poor drained soils, the surface water is less connected to ground water. In poorly drained soils, nutrients can stay within the soil profile for longer which gives plants more opportunity to use it, in a well-drained soil this opportunity is not the same. Nutrients are often leached into the ground water or into nearby streams before plants have a chance to use it.

Contaminants

Freshwater objectives from Parkvale Stream Whaitua Implementation Plan (as at August 2018)

	Base	Objective
E. Coli	E For more than 30% of the time, the estimated risk of Campylobacter infection is ≥50 in 1,000 (>5% risk). The predicted average infection risk is 7%.	C (by 2040) For at least half the time, the estimated risk of Campylobacter infection is <1 in 1,000 (0.1% risk). The predicted average infection risk is 3%.
Periphyton	B Occasional blooms reflecting low nutrient enrichment and/or alteration of the natural flow regime or habitat.	B (by 2040) Occasional blooms reflecting low nutrient enrichment and/or alteration of the natural flow regime or habitat.
Ammonia toxicity	B 95% species protection level: Starts impacting occasionally on the 5% most sensitive species.	A (by 2040) 99% species protection level: No observed effect on any species tested.

Nitrate toxicity	B Some growth effect on up to 5% of species.	A (by 2040) High conservation value system. Unlikely to be effects even on sensitive species.
MCI	Fair*	Good (by 2040)

Cultural Significance of the Catchment

Mana whenua are Ngāti Kahungunu ki Wairarapa, who have Hurunui marae and Pahikitea pa located within the catchment, and Rangitāne o Wairarapa. Ngāti Kahungunu at marae level (Hurunui marae), note the following:•Mana Whenua view Parkvale stream and Taratahi water race as one•The industrial zone needs further investigation regarding its potential contribution to nitrate levels•Wetlands have had a key role to play in the past and now in terms of cleaning water, as a growing and nurturing zone, a carbon sink, and a collection point for sediment.

Sites of Significance

This area contains sites of significance to Tangata Whenua.

- Te Para, Te Para Stream
- Te Awa Tapu o Ruamāhanga (Ruamāhanga River and named tributaries)

Implementation Ideas

- Consider wetlands for water quality treatment before discharges reach the stream
- Setbacks from depressions and waterways should be necessary for intensive land uses including winter grazing and winter cropping
- Riparian planting should be undertaken in strategic spots, including to provide shade to help improve periphyton and macrophyte problems
- Good management of stock access to streambanks and of winter grazing may prove important in this catchment

Other Relevant Information

Climate Change advice notes that Parkvale will increasingly be prone to drought with reduced rainfall and up to 70 days reaching 25 degrees or more annually by 2040. The change in the number of days of high and extreme forest fire danger will increase by up to 150%.Climate change will mean an increase in the volume of pests (and need for pest control) and tropical diseases. Heat stressed cows will affect milk production so land owners may need to diversify their land use, and alter stocking rates. Water quality will decrease due to increased evaporation and low water flows, particularly in summer (river mean annual flow discharge will decrease by up to 60% by 2040). The lack of water will also lead to water security issues, which, combined with greater demand for water, will lead to a need for more water storage.

About this Information

The content, data, and information used in this app comes from multiple sources, including Greater Wellington's Natural Resources Plan (2018) and Whaitua Implementation Plans, and the National Policy Statement for Freshwater Management 2020 (Amended January 2024).

Appendix D: Links [Above Sch Z requirement]

Stock exclusion regulations

https://www.gw.govt.nz/environment/land-use/stock-exclusion-regulations/

Stock water race information:

https://www.gw.govt.nz/environment/land-use/water-races/

Offal pit information:

https://www.gw.govt.nz/assets/Userguide-for-Offal-Pits-Permitted-Activity.pdf

Good management practices

https://farmmenus.org.nz/

https://beeflambnz.com/knowledge-hub/PDF/industry-agreed-good-management-practices-relating-water-quality.pdf

Greater Wellington Farm plan resources

https://www.gw.govt.nz/environment/land-use/farm-plans/farm-plan-resources/

Greater Wellington Opportunities for funding assistance

https://www.gw.govt.nz/environment/land-use/farm-plans/opportunities-for-funding-assistance/