



greater WELLINGTON
REGIONAL COUNCIL

WRECI Sustainability Plan

Draft

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1. Introduction

This sustainability plan has been prepared as part of the new Wellington Regional Erosion Control Initiative (WRECI). This programme is co-funded via the Ministry of Agriculture and Forestry's Hill Country Erosion Fund as part of the Government's Sustainable Land Management package. WRECI focuses on five selected catchments and isolated hotspots, selected on the basis of sediment discharge and percentage of erosion prone land.

The WRECI sustainability plan is intended as a comprehensive erosion management plan including land resource information, an assessment of erosion risk, a targeted programme of works implementation and an assessment on the economic impact on the farm business.

The WRECI plan also provides a baseline assessment for:

- the biodiversity on the property
- livestock greenhouse gas emissions
- carbon sequestration, and
- nutrient use

The aim of WRECI is to increase the rate that erosion prone land is treated while achieving the co-benefits of enhanced water quality and biodiversity and reduced flood risk.

2. Farm details

2.1 Summary

Property	The Farm
Owner(s)	Jo Farmer
Location	The property is located in the Tinui area approximately 55 kilometres from Masterton.
Average Annual Rainfall	1100mm-1200mm
Area & Legal Description	533 ha Sections 5 22 28 31 Ratanui Farm Settlement Block XVI Puketoi SD 85ha Section 33,45
Description/ comments	The Farm is rolling to steep hill country, underlain by banded mudstone and sandstone. One third of the land is stable, but the remaining two thirds are subject to slips, slumps, earthflows and gully erosion

2.2 Current land use (2010)

Following a field assessment of the landforms of the farm the present land use is summarised below:

Land Use Erosion Management Unit – EMU	Open Pasture	Space-planted pasture	Conservation Woodlots	Scrub, native forest or long term retirement	Area (Ha)
Non eroding flats and undulating land	78.4	1.3	2.2	1.3	83.2
Non eroding productive hill country	99.9	12.7	3.9	12.1	128.6
Slightly eroding hill country	32.6	0	0	0	32.6
Eroding productive hills	143.2	8.2	5.3	21.6	178.3
Eroding low producing steep faces	153.3	23.6	8.7	8.4	194.0
Eroding Unproductive steep faces	0	0	0	1.2	1.2
Total Area	507.4	45.8	20.1	44.6	617.8

2.3 Property/soil conservation history

The Farm (533ha) was purchased by Jo Farmer in 1996. An additional block of land (85ha) was purchased in 2001.

Approximately 95% of the property is in the Whareama Catchment, and 5% of the property is in the Mataikona catchment

Works undertaken since the first farm plan was done include retiring four areas of approximately 20ha from grazing and planting in P.radiata protection forest. In 2006/2007, approximately 23ha of mature native bush was retired from grazing with an aim to place a QEII covenant over the block. Pole planting has been carried out on 46ha of the property.

2.4 Current farming practice

The property is farmed as a mixed livestock enterprise of sheep and beef. The stock wintered (2010) and stock performance for the 2009/2010 year are summarised in the following tables:

Livestock Summary 2010			
Sheep	Number	Av wgt	SU/hd
Ewes Mixed Age	2200	65	1.4
Two tooth ewes	600	61	1.2
Hoggets	750	42	.7
Cattle	Number	Av wgt	
Cows Mixed Age	55	475	6.5
R2 Heifers	18	360	5.4
R1 Heifers	25	170	4.5
Sire Bulls	2	850	5.0
R2 Steers	15	400	6.1
R1 Steers	30	180	4.9

Summary	
Sheep Stock Units (SSU)	4886
Cattle Stock Units (CSU)	622
Revised Stock units	5508
Stock units/grazeable ha.	10.0
Kg liveweight/grazeable ha	530
Emissions/SU for this stock policy	372 kg CO ₂ e / SU

2.5 Performance indicators

Production Indicator	2009/2010
Lambing % hoggets	NA
Lambing % 2ths	122%
Lambing % MA ewes	135%
Wool (kgs)	22000
Wool (kg/ssu)	5.25
Calving %	92

2.6 Goals- business, personal and environmental

Discussions with the owners indicate that in the long term their goals are to:

- Maintain economic grazing while developing a sustainable hill country farm. This requires a base level of stock numbers to provide a satisfactory annual income (close to current stock units carried, approximately 5,500).
- Protect important native bush and streams, either by QEII covenant, or retirement from grazing.
- Carbon neutrality or surplus in regards to the balance between agricultural emissions and storage through forestry.
- Farming operations must be sustainable. This includes wise development programmes with unsustainable land units treated accordingly.
- Integrate woodlots to minimise disruption to the grazing operations.
- Increase the space planted area, to minimise the impacts of erosion on parts of the farm that are needed for grazing, and to provide the benefits of shelter and shade for pasture growth/stock condition.
- Establish shelter belts where required to protect against wind erosion of topsoil, and provide benefits of shelter and shade for pasture growth/stock condition.

2.7 Fertiliser and Nutrient Management

2.7.1 Policy

The fertiliser and nutrient management on The Farm uses three separate regimes based on land use and terrain: flats, hill country and cropping. Due to the recent fluctuations in fertilizer prices, the volume applied has been adjusted yearly according to the budget. Typical fertiliser use on pastures at present are detailed below.

The Farm Fertiliser and Nutrient Management 2010						
Area Treated	Product	Rate	Volume	kg N	kg P	kg K
Flats						
80 ha	Sulphur Super	@ 350kg/ ha	28 t			
80 ha	Urea	@ 80 kg/ ha	6.4 t			
Hill Country						
502 ha	Sulphur Super	@ 250 kg/ ha	150 t			
200 ha	Lime	@ 1 t/ ha	200 t			
Cropping						
10 ha	DAP	@ 150kg/ ha	1.5 t			
Total Nutrients applied to farm kg						

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3. Farm resource assessment

3.1 Land use capability (LUC)

Land use capability mapping is used to divide the property into classes of land based on suitability for sustained use. Eight classes are used, Classes I – IV being arable or suited to cropping, Class V – VII being suitable for grazing or forestry use with Class VIII unproductive land. The assessment is based on geology, soil type and slope. Limitations imposed by soil, drainage, erosion and climate are then used to further determine land use capability. Areas of land with similar management needs and productive potentials are then assigned LUC unit numbers.

Land Use Capability Summary			
Class	Cropping Suitability	Pastoral & Production Forestry Suitability	General Suitability
1	High	High	Multiple use land
2			
3			
4	Medium	Pastoral or forestry land	Retirement & protection land
5	Low		
6	Unsuitable		
7	Unsuitable	High	Retirement & protection land
8		Medium	
		Low	
		Unsuitable	

Increasing limitations to use
Decreasing versatility

A detailed farm survey has been undertaken to determine the mix of landforms found on the property and assign LUC units to them. A map and description of LUC units is provided in appendix 3

LUC units are then grouped together into erosion management units (EMU). These are groups of LUC units that need similar management in relation to erosion control.


3.2 Farm LUC summary

LUC	Description	Area (ha)
EMU 1 : Non eroding flat and undulating land		83.2
3s1	Raised terraced flats	15.6
4e, 4e3	Foot slopes	67.6
EMU 3 : Non eroding productive hill country		128.6
5e	Ridgetops	21.3
5e1, 5e1b	Easy rolling hills on mudstone	63.9
5s3, 5e7, 6e2, 6e2b	Rolling slopes mostly on mudstone, with minor sandstone.	43.4

EMU 4 : Slightly eroding hill country		32.6
6e11	Moderately steep greywacke hill country. Moderate sheet & soil slip erosion. Slight scree.	32.6
EMU 5 : Eroding productive hills		178.3
6e10	Rolling or hummocky Inactive slump basins and earthflow surfaces	64.4
6e7, 6e7b, 6e8b, 6e9, 6e9*	Moderate hill slopes on mudstone, with minor sandstone.	113.9
EMU 6: Eroding low producing steep faces		194.0
7e8	Active slump basins and earthflow surfaces	61.8
7e1, 7e2, 7e4	Steep slopes on mudstone, with minor sandstone.	132.2
EMU 7 : Unproductive steep faces and gullies		1.2
8e1	Very steep slopes & gullies	1.2
Total area		617.9

3.3 Erosion management units (EMU)

The following Erosion Management Units have been mapped for this property.

EMU 1	Description and LUC units
Flat and undulating land	This EMU includes flat and undulating land including land in terraces and on the valley floors. Most is highly productive.
Area	Erosion type for this EMU
82.3 ha	This EMU is not subject to mass movement erosion. Some individual LUC units may be susceptible to rill and wind erosion when cultivated.
	LUC units 2w1, 3w2, 4e3, 4e2, 4e2b, 4e3b, 4e8, 4e5,

EMU 3	Description
Non eroding productive hill country	This EMU contains a mixture of stable ridges and spurs, as well as easy hill slopes. It is productive hill country
Area	Erosion type for this EMU
128.6 ha	There is little mass movement erosion on these LUC units. Erosion may have occurred in the past but it is inactive now.



LUC Units

5e1,

5s3,

5e7,

6e2,

6e2b

EMU 5	Description
Eroding productive hill country	This erosion management unit consists of LUC units that are productive, but are prone to mass movement erosion.
Area	Erosion type for this EMU
178.3 ha	Predominantly earthflow and soil slip. Some LUC units also have gully erosion




LUC Units


6e7,

6e8,

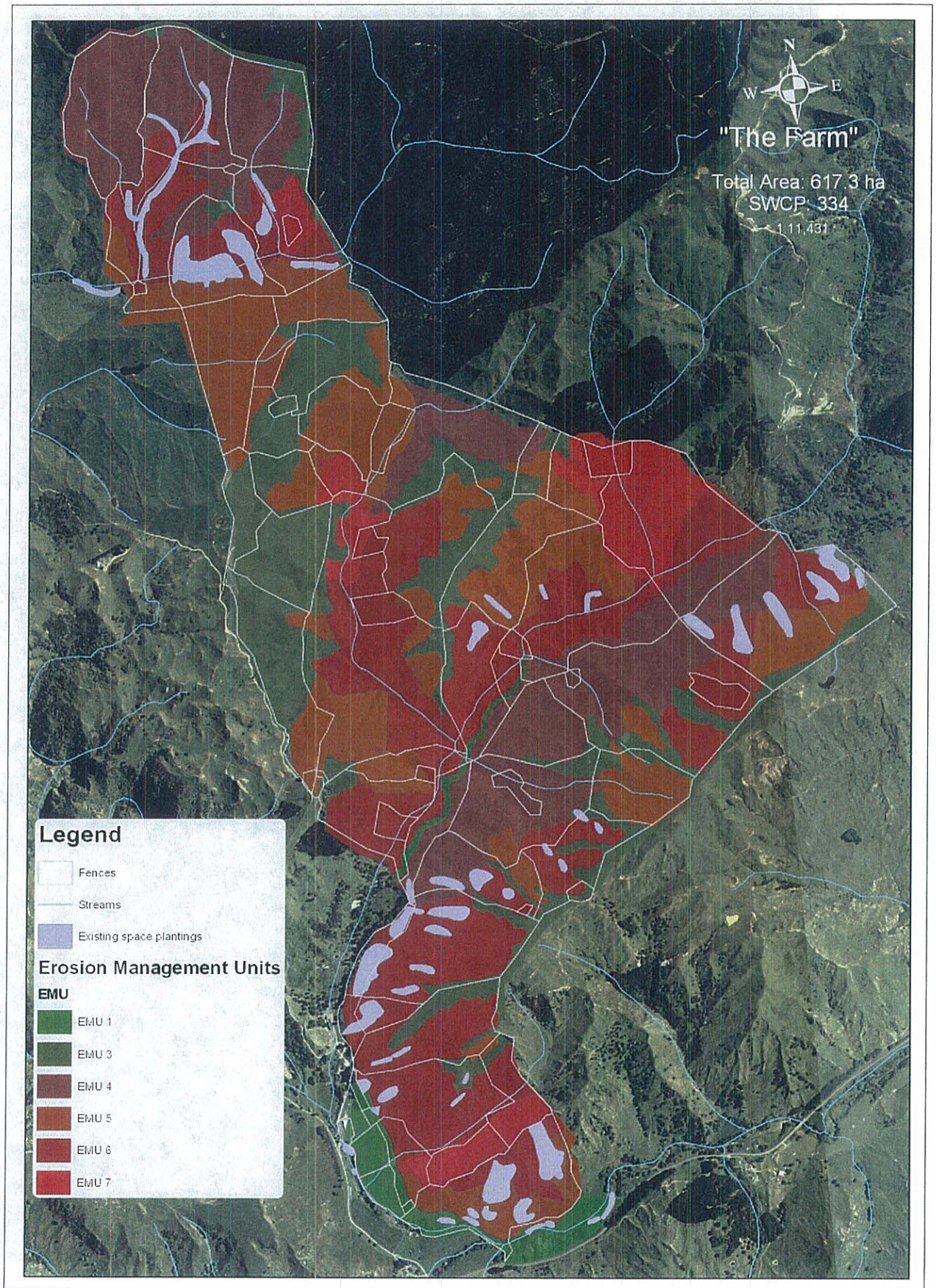
6e9,

6e10

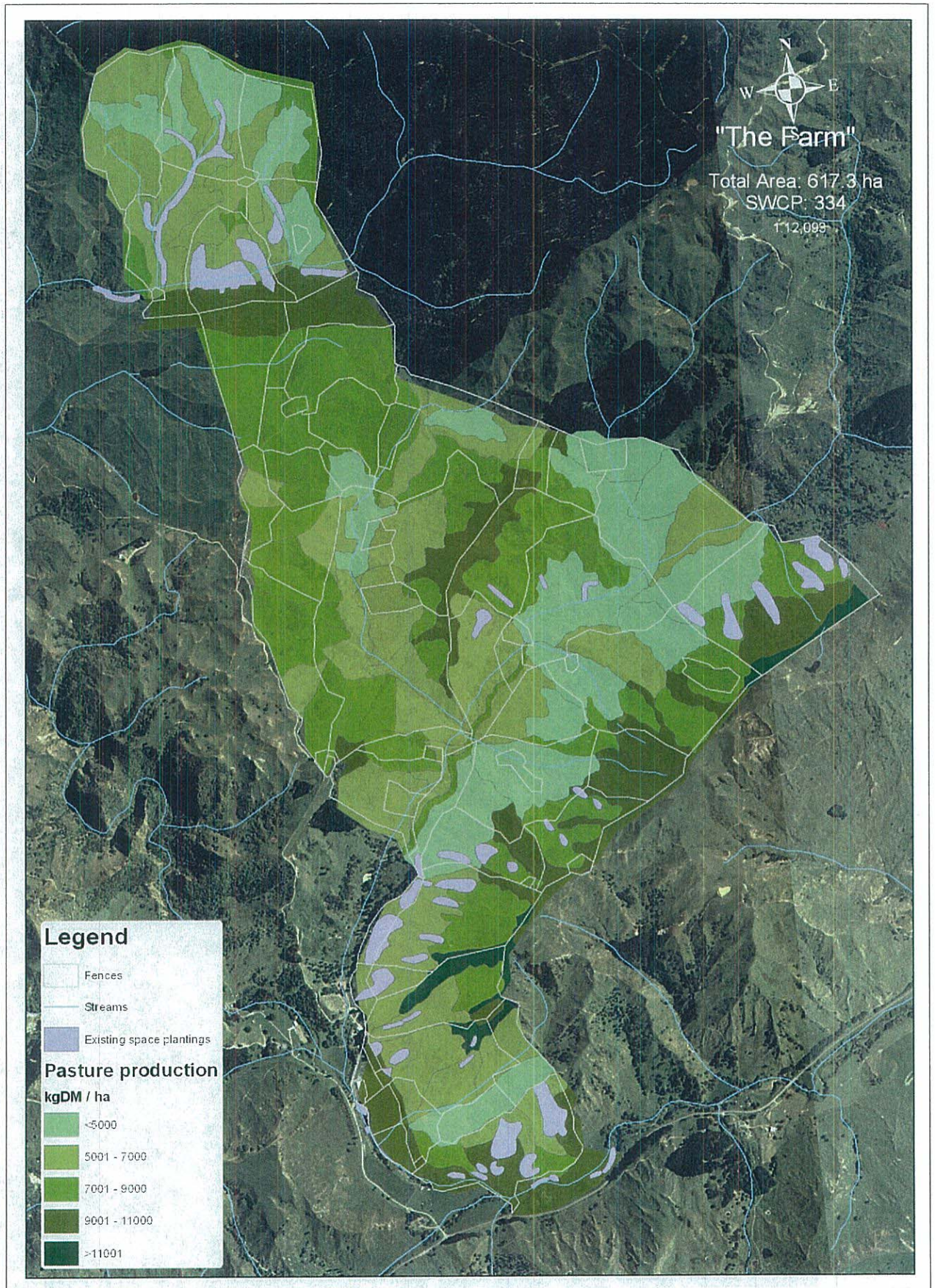
EMU 6	Description	
Eroding low producing steep faces	This EMU has low pasture production levels and is prone to mass movement erosion. It is most suitable for forestry.	
Area	Erosion type for this EMU	
194.0 ha	Soil slip, earthflow, and gully erosion	
	LUC units 7e1, 7e2, 7e6, 7e6b	

EMU 7	Description	
Eroding unproductive steep faces and gullies		
Area	Erosion type for this EMU	
1.2 ha	Severe gully erosion	
	LUC Units 8e2	

3.4 Erosion Management Unit (EMU) map



3.5 Pasture production map



3.6 Forestry

Forestry assets on The Farm have been assessed as follows.

Paddock	Year est	Stock area (ha)	Species	Kyoto compliant*	Status
Steve's	2002	4.5	P.radiata	Yes	Unthinned
Slip Creek	1995	8.2	P.radiata	Yes	Requires Final Thin
Central	Circa 1980s	3.8	P.radiata	No	Unthinned
Swamp	Circa 1980s	3.6	P.radiata	No	Unthinned

* Requires land use change to forest after 1 January 1990

3.7 Stock carrying capacity: 2010

Stock carrying capacity estimates for the various landforms are summarised below. The full breakdown for each LUC unit is provided in Appendix 1. The estimates have been made from available pasture production trial data and woodlot yields on similar landforms. They are adjusted for rainfall, slope angle, and percentage of slope disturbed by erosion for this farm.

These figures are based on 1100 mm/year average rainfall.

Erosion management unit	Total Area (ha)	Grazeable Area (ha)	SU/ha*	Potential SU supported / year
1: Non eroding flat and undulating land	83.2	79.7	16	1275
3: Non eroding productive hill country	128.6	112.6	13	1464
4: Slightly eroding hill country	32.6	32.6	7	228
5: Eroding productive hills	178.3	151.4	11	1665
6: Eroding low producing steep faces	194.0	176.9	6	1060
7: Unproductive steep faces and gullies	1.2	0	3	0
Total	617.9	553.2	-	5692

*Indicative SU/ha figure based on average dry matter production figures for LUC units

3.8 CO2 budget - current

The Emissions Trading Scheme (ETS) is anticipated to have a significant effect on many hill country sheep and beef farmers. The balance between agricultural emissions and carbon storage through eligible forestry is expected to affect farm profitability in the future.

This section estimates the present (2010) GHG emissions from livestock and the amount of carbon sequestered annually in eligible forests on The Farm. GHG emissions for livestock have been calculated in Overseer using 2010 stock numbers.

3.8.1 Livestock GHG emissions 2010

GHG	Tonnes CO ₂ e	Tonnes/ha
Methane	1474	2.39
Nitrous Oxide	512	0.83
Total	1986	3.22

3.8.2 Carbon sequestration 2010

Landcover post 1990	Block name	Area ha	Age	Carbon Seq. t/yr CO ₂ equivalent
Space Planted poplar/ willow ¹		10	20+	0
		20	10-20	260
		16	<10	80
Woodlots ²		4.5	7	189
		8.2	13	254
Native Bush		44		132
Total		102		915

¹ and ² Kyoto compliant forests

3.8.3 Carbon balance 2010

	Tonnes CO ₂ e	Tonnes CO ₂ e / ha
CO ₂ e emissions	-1986	-3.21
CO ₂ e sequestration	915	1.56
Balance (+ve = net sequestration)	-1071	-1.73

3.9 Water resources

The Farm straddles the watershed between the Whareama and Mataikona catchments. The farm contains a total of approximately 23km of waterways. Stock water on the property is from reticulated systems, dams or streams.

Many of the streams drain from gullies and gorges which are deeply incised into the surrounding soft mudstone geology. A significant proportion of these gullies are well protected with mature and reverting indigenous vegetation.

3.9.1 Sediment discharge

The main erosion types on The Farm are earthflow, soil slip and gully erosion. Most of the sedimentation to the waterways comes from gully and earthflow erosion, predominantly from class VI, VII and VIII country. Sedimentation also comes from streambank erosion on the property.

Soil erosion models for the Wairarapa estimate that sedimentation rates on The Farm are in the high range. This means that The Farm contributes significant amounts of sediment to the Whareama and Mataikona catchments.

3.10 Biodiversity

The Farm contains approximately 40 ha of mature and reverting indigenous vegetation. A large gully block of mature trees of approximately 25 ha was retired from grazing in 2008 and is a significant enhancement on the properties biodiversity. Possum and stoat trapping and baiting is undertaken on the property.

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4. Work programme

4.1 Preferred Land Management scenario

The following table summarises the suggested land use appropriate for long-term sustainable farm management. The limitations to grazing increase with erosion severity to the point where continued grazing is infeasible and forestry is the preferred land use.

Erosion Management Unit	Suggested Land Use
Non eroding flat and undulating land	Grazing
Non eroding productive hill country	Grazing
Slightly eroding hill country	Grazing with spaced tree plantings
Eroding productive hills	Grazing with spaced tree plantings
Eroding low producing steep faces	Woodlots - Carbon storage or natural reversion. Light grazing only if needed to maintain stock numbers.
Unproductive steep faces and gullies	Woodlots - Carbon storage, or natural reversion
Riparian margins	Riparian planting.

In consultation with the Council's Land Management Officer a scenario that closely matches the goals of the owner has been decided upon. The preferred scenario is illustrated on an accompanying photo-plan. How this scenario will affect stock carrying capacity is summarised in sections 4.4 and 4.5.

4.1.1 Preferred land use 2039

Land Use	Open Pasture	Space-planted pasture	Conservation Woodlots	Scrub, Native forest or long term retirement	Area (Ha)
EMU					
Non eroding flat and productive land	78.4	1.3	2.2	1.3	83.2
Non eroding productive hill country	104.5	12.7	3.9	7.5	128.6
Slightly eroding hill country	10.9	21.7	0	0	32.6
Eroding productive hills	30.2	112.2	10.3	25.6	178.3
Eroding low producing steep faces	31.3	75.6	78.7	8.4	194.0
Unproductive steep faces and gullies	0	0	0	1.2	1.2
TOTAL Area	255.3	223.5	95.1	44	617.9

4.2 Programme (30 year)

This scenario will increase erosion control on the farm and reduce sediment yield into the headwaters of the upper Whareama and Mataikona Rivers. The 30 year plan aims to plant a further 156ha in poles and 75ha of conservation forestry. The programme also includes clearing 4.6ha of scrub on the easier stable hill country and retiring a further 4ha of native bush on the erodible hill country. This will mean that there are significant areas of native bush and large lengths of river that can be fully protected from the impacts of stock grazing. This scenario targets woodlot establishment onto more severely erodible landforms that have low pasture production (EMU 6). Spaced planting of poplars and willows are targeted at erodible landforms with higher levels of pasture production that can be sustained in grazing (EMU 5).

Please note AGS woodlots are subject to an application process and their inclusion in this plan does not guarantee funding.

Year	Poles	ha	Woodlot	ha
2010	250 poles	4.2		
2011	240 poles	4	AGS woodlot 1	32
2012	"	4	WRECI woodlot	5
2013	360 poles	6		
2014	"	6		
2015	240 poles	4	WRECI woodlot 2	20
2016	480 poles	8		
2017	"	8		
2018	240 poles	4	WRECI woodlot 3	18
2019	360 poles	6		
2020	290 poles	4.8		
2021	"	4.8		
2022	"	4.8		
2023	"	4.8		
2025	"	4.8		
2026	"	4.8	Replant Slip Creek	8.2
2027	"	4.8		
2028	"	4.8		
2029	"	4.8		
2030	"	4.8		
2031	"	4.8		
2032	"	4.8		
2033	"	4.8	Replant Steve's	4.5
2034	"	4.8		
2035	"	4.8		
2036	"	4.8		
2037	"	4.8		
2038	"	4.8		
2039		4.8		
2040		4.8		
	Total over 30 years	156		87.7

4.3 Programme cost estimates (10 year programme)

Regional Council financial assistance is available for tree establishment costs within the preferred scenario. However, in terms of ongoing silviculture, assistance is available for the first thinning only, with all pruning costs borne directly by the owner.

The rates of regional component are shown in the following table. The bottom of the table summarises the owner's share, and the total Council contribution available to the first ten-year programme of works.

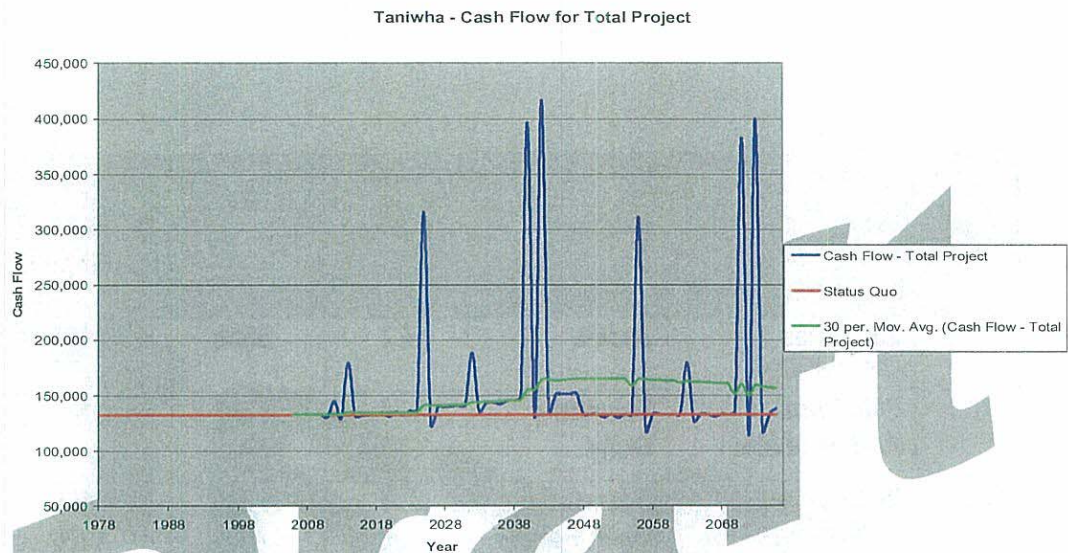
Works and Expenditure Schedule, Years 1 to 10							
Year	Work	Paddock	Area Ha	Cost	WRECI funding	Owner funding	AGS funding*
2010	250 Poles (250 WRECI)	Jack's	4.2	5500	3300	2200	
2011	240 Poles AGS Woodlot	Boundary Gully	4 32	5280 70400	3168	2112	70,400
2012	240 Poles WRECI woodlot 1	Boundary Duck Pond	4 5	5280 7000	3168 4200	2112 2800	
2013	360 Poles (250 WRECI) (110 old grant rate)	Back creek	6 4.2 1.8	7920 5500 2420		3300 2200 1452	
2014	360 Poles (250 WRECI) (110 old grant rate)	Back creek	6 4.2 1.8	7920 5500 2420		3300 2200 1452	
2015	240 Poles WRECI woodlot 2	Stump Back face	4 20	5280 28000	3168 16800	2112 11200	
2016	480 Poles (250 WRECI) (230 old grant rate)	Stump	8 4.2 3.8	10560 5500 5060		3300 2200 3036	
2017	480 Poles (250 WRECI) (230 old grant rate)	Roger's	8 4.2 3.8	10560 5500 5060		3300 2200 3036	
2018	240 Poles WRECI woodlot 3	Homestead Dogleg gully	4 18	5,280 25200	3168 15120	2112 10080	
2019	360 Poles (250 WRECI) (110 old grant rate)	Slimy Pete's	6 4.2 1.8	7920 5500 2420		3300 2200 1452	
Totals			91.2	202100	75544	56156	70,400

* Based on 2009 AGS grant rates. Fluctuations in C price will affect the grant rate

Pole planting is proposed for a further 20 years at similar rate of 290 poles / year.

4.4 Financial Implications of preferred scenario (AEM Model Summary)

The projected annual cashflows for a 60-year period are shown in **Appendix 3**. Note that additional returns in years 1-30 are from harvesting existing plantings. Revenue from new plantings does not accrue until years 31-60. All woodlots harvested will be replanted and receive framing regime silviculture. These cash flows reflect the ongoing pole planting, new woodlots and silviculture and the respective reductions from stock carrying capacity.



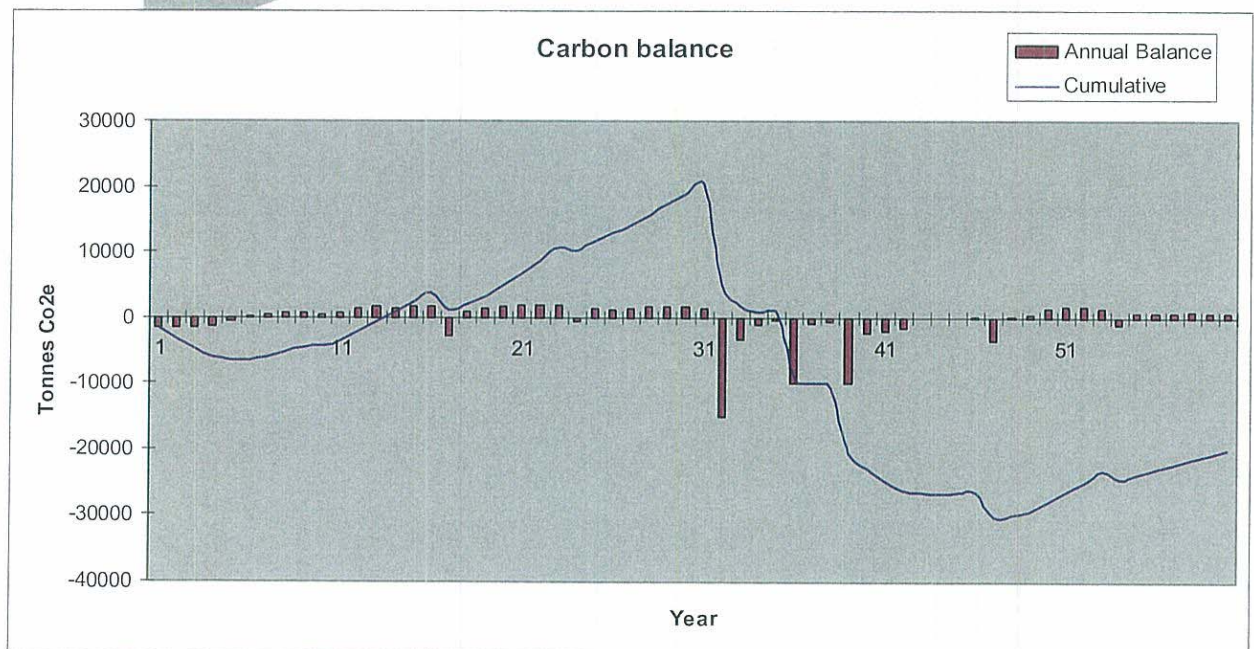
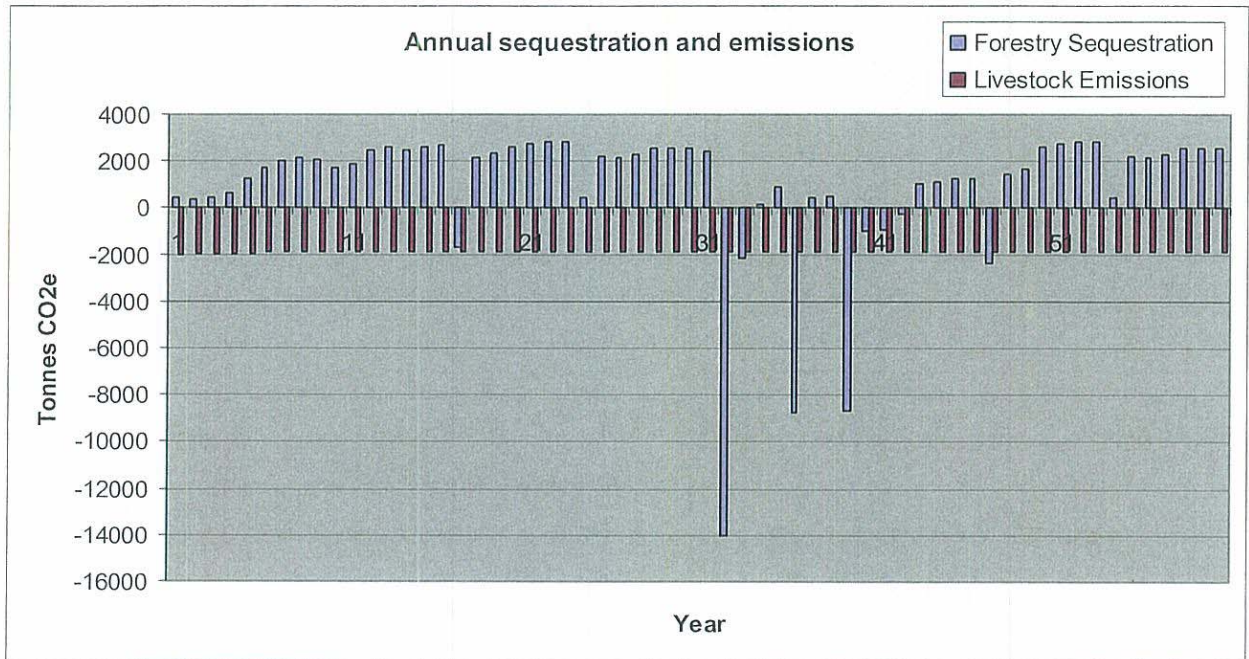
4.5 CO2 balance - preferred scenario

The proposed work programme if completed will have the following effect on the greenhouse gas balance for the property. The introduction of 75ha of forestry, predominantly on low producing land, reduces carrying capacity by approximately 310 stock units. These changes would result in a net balance of approximately 1430 tonnes CO2 equivalent sequestered in 2039. The net balance will then decline between years 31 and 47. This is shown in the following graphs.

Erosion Management Unit	Grazeable Area ha	Carrying Capacity	Potential SU supported / year	GHG emissions (t/yr/ CO ₂ equivalent)
Non eroding flat and undulating land	88.7	16	1419	528
Non eroding productive hill country	117.2	13	1524	567
Slightly eroding hill country	32.6	7	228	85
Eroding productive hills	142.4	11	1566	583
Eroding low producing steep faces	106.9	6	641	238
Unproductive steep faces	0	<3	0	0
Totals	4878.8		5378	2001

4.5.1 Carbon Balance 2039

	Tonnes CO ₂ e	Tonnes CO ₂ e / ha
CO ₂ e emissions	-2001	-3.24
CO ₂ e sequestration	3431	5.86
Balance (+ve = net sequestration)	1430	2.31





5. Monitoring

Year	Planned/Work	Location	Area (ha)	# poles	Completed Yes/No	\$ spent	Comments (e.g. work done, reasons etc)
Year 1 - 2010	Pole planting	Jack's	4.2	240			
Year 2 - 2011	AGS woodlot 1	Gully	32				
Year 2 - 2011	Pole Planting	Boundary	4	240			
Year 3 - 2012	Pole Planting	Boundary	4	240			
Year 3 - 2012	WRECI woodlot 1	Duck pond	5				
Year 4 - 2013	Pole Planting	Back creek	6	360			
Year 5 - 2014	Pole Planting	Back creek	6	360			

Year	Planned/Work	Location	Area (ha)	# poles	Completed Yes/No	\$ spent	Comments (e.g. work done, reasons etc)
Year 6 - 2015	Pole Planting	Stump	4	240			
Year 6 - 2015	WRECI Woodlot 2	Back Face	20				
Year 7 - 2016	Pole Planting	Stump	8	480			
Year 8 - 2017	Pole Planting	Roger's	8	480			
Year 9 - 2018	Pole Planting	Homestead	4	240			
Year 9 - 2018	WRECI woodlot 3	Dogleg Gully	18				
Year 10 - 2019	Pole Planting	Slimy Pete's	6	360			

6. Programme costs and protocols

6.1 WRECI component

The WRECI component rate contained in the above total ten-year estimate is indicative only and is included for the purpose of general technical approval. The allocation of WRECI component after Year 1 will be subject to Greater Wellington Regional Council giving specific funding approval for those annual programmes.

6.2 Physical works programme

The estimated costs of works are based on Greater Wellington carrying out the programme using qualified contractors. All facets of the physical programme qualify for the WRECI component. The costs associated with annual programme planning, preparing contract documents, approving payments, quality control, supervision of works, and maintaining records are covered by an Administration fee. Currently this is set at 18% of the works programme and is included in cost estimates.

6.3 Landowner contributions

In many cases farmers may chose to carry out all, or some of the works themselves. The cost of labour, machinery, and materials contributed by farmers equally qualifies for the WRECI component. Claim forms are sent to farmers when works have been completed.

6.4 Farmer claims

Farmer claims are treated in the same way as other works. The farmer is responsible for meeting the local share of the claim costs, including the addition of the Administration fee. This amount will be identified on an invoice, along with the associated GST, which is then available for refund from IRD. The associated credit balance is either posted against other costs, or available for refund.

6.5 Annual programmes

In each year of the ten-year plan, annual programming is carried out by mutual arrangement with the farmer. The cost of inspections, programme preparation and approvals, as well as plan administration and inventory are covered by the Administration fee. The costs of preparation of the Ten Year Review are at no charge to the farmer.

6.6 Estimated costs

The cost of all works is estimated using the most up-to-date figures available. It is emphasised that the figures are not quotes, recognising there are many contingencies which may arise when establishing and protecting plantations.

Where it appears that actual costs may differ significantly from the estimates, works will not proceed until authorised by the farmer.

GST is not included in the estimates but will be shown on invoices, including those generated from farmer claims.

7. Agreement

The WRECI contribution towards the cost of the erosion control programme is in recognition of the long-term need to sustain our soil resources for the benefit of future generations.

The contribution is subject to a number of conditions set out below. The conditions reflect commonsense management of the plantings covered in the plan, as well as the protection of the land resource.

- Where areas are isolated for tree planting by retirement fences (conservation woodlots), all classes of stock are to be excluded for a minimum period of ten years from completion of planting.
- Where areas of native vegetation have been fenced to protect existing species and to allow regeneration, all classes of stock are to be excluded at all times. Where external contributions have been received to assist with fencing costs, a covenant will be registered against the title.
- Greater Wellington will currently contribute toward the cost of an approved thinning or form pruning treatment for conservation plantings, recognising that correct and timely silviculture is essential for the long-term stability and effectiveness of all conservation plantings. This may not be at the same grant rate as planting costs.
- When conservation woodlots are harvested there is a requirement to replant within eighteen months. The cost of replanting is the responsibility of the landowner. Harvesting of conservation woodlots is covered by regulations within the Regional Soil Plan. Where riparian plantings have been established with WRECI component, the ongoing protection of these areas is required. Advice on all replanting options is available from Greater Wellington.
- Greater Wellington's services are provided to the best of its ability. However natural events may occur, which cause damage or ill thrift to plantings. We may be able to give advice on remedial treatments, but cannot be held accountable.

8. Recommendation

It is recommended that:

1. The Manager, Land Management give technical approval for the proposed Ten Year programme at a total estimated cost of \$131,700 and give specific funding approval for the first year's programme at a total estimated cost of \$5,500 WRECI component \$3,300.

Report prepared by:

Approved by:

Tony Faulkner
Land Management Officer

David Cameron
Manager, Land Management

Date:

Draft

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APPENDICIES

1. LUC Production Tables
2. AGS
3. AEM Cash-Flow Summary
4. LUC units description
5. Funding sources

MAPS

1. Farm Map
2. Work Summary
3. LUC- Simplified

Draft

LUC units

The following LUC units have been mapped on the property

Photo from property	LUC unit	Description
	Area	Erosion type for this unit

Photo from property	LUC unit	Description
	Area	Erosion type for this unit

Photo from property	LUC unit	Description
	Area	Erosion type for this unit

Appendix 5 - Funding Sources

WRECI/ Hill Country Erosion Fund

The HCE fund requires regional authorities to present new initiatives over and above the existing level of regional investment. The WRECI component towards the cost of the erosion control programme within this sustainability plan is in recognition of the long term need to sustain our soil resources for the benefit of future generations. The increase in the regional component of funding is in order to boost the area of treated erosion prone land.

WRECI reduces the landowner contribution for works to 40%, with the remainder funded by GW (30%) and central government (30%). WRECI also covers the cost of plan preparation.

AGS

The Afforestation Grant Scheme (AGS) is a new initiative first flagged in the Sustainable Land Management and Climate Change: Options for a Plan of Action discussion document released in December 2006. The AGS offers an alternative to the proposed New Zealand Emissions Trading Scheme (ETS) as a way to encourage greater levels of greenhouse gas absorption by increasing the area of Kyoto-compliant new forest in New Zealand. AGS guidelines are attached in **Appendix 2**.

AGS is available either through the Regional Council administered funding pool or through MAF public pool which is available via tender. Grants will be allocated and ranked according to sequestration rates along with the co-benefits of soil erosion, water quality and biodiversity. A fixed high-sequestration grant rates are currently set at \$2,400/ha for 2009/2010, however this amount will fluctuate according to the value of carbon.

PFSI

The Permanent Forest Sink Initiative (PFSI) promotes the establishment of permanent forests on previously unforested land. It offers land owners the opportunity to earn Kyoto Protocol compliant emission units (Assigned Amount Units or AAUs) for carbon sequestered in permanent forests established after 1 January 1990.

To be eligible the forest must be "direct human induced ...through planting, seeding and/or the human-induced promotion of natural seed sources". PFSI participants will have a covenant registered against their land titles for a minimum of 50 years. Limited harvesting is allowed, on a continuous forest canopy cover basis.

Forest owners will meet all costs of administration, monitoring, auditing and compliance and also carry the liability for maintaining the carbon stocks. The PFSI is complementary to the [New Zealand Emissions Trading Scheme](#) for forestry. Landowners may also want to consider their options under the ETS and the Afforestation Grant Scheme.

Catchment Scheme Funding

The Mataikona-Whakataki Catchment Scheme has set aside funding to assist landowners with the retirement of erosion prone areas of the headwaters. A portion of this funding could be available for retirements in the Mataikona catchment part of The Farm.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

