greater WELLINGTON
REGIONAL COUNCIL

Report **PE-05.427**
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Committee **Utility Services**
Author **Barry Leonard Plantation Forestry Manager**

Plantation Forestry Annual Report and Proposals

1. Purpose

To apprise Councillors of the results of Plantation Forestry activities in the year ended 30 June 2005 and to advise of the activities proposed for the financial year commencing 1 July 2007.

2. Significance of the decision

The matters in this report do not trigger the significance policy of the Council or otherwise trigger section 76(3)(b) of the *Local Government Act 2002*.

3. Exclusion of the public

Grounds for exclusion of the public under section 7(2)(h) of the *Local Government Official Information and Meetings Act 1987* are:

> *That the public conduct of the whole or relevant part of the proceedings of the meeting would be likely to result in the disclosure of information for which good reason for withholding would exist, i.e.; to allow the carrying out of, without prejudice or disadvantage, commercial activities.*

4. Background

This is the sixth "annual report" on the activities of the Plantation Forestry Department. The report summarises the activities of the previous year, highlighting any variances from planned activities. It also outlines and seeks approval for those activities proposed for the next financial year.

5. Review of operations - year ended 30 June 2005

5.1 Harvesting

The year started with a continuation of the mad scramble to recover as much of the area of windthrown trees as possible before sapstain made them unmerchantable. At times we had four crews harvesting windthrow in

different parts of the estate. This was only possible with the co-operation of the main logging contractor who moved out of their allocated block and restructured their crews to create three crews and moved from windthrow area to windthrow area. It was always realised that once sapstain began to appear the windthrown logs would become unmerchantable and this occurred just before Christmas 2004. We were extremely fortunate to be able to sell these trees for the best part of 10 months. This operation was successful in recovering all the significant areas of windthrow.

With the windthrow recovery exercise completed, the hauler crew returned to the Reservoir Ridge stand they were harvesting through the Gratton property. Although our agreement with the landowner required us to complete logging before June 2005, this did not occur. Because of two different mechanical failures delaying the incoming crew and with the goodwill of the landowner, both operations overlapped for a three week period and we were able to complete the block.

The other Tuckey crew commenced the harvest of block 4/01 in Pakuratahi West. This crew remained here until June, when a decision was taken to relocate them because of ongoing difficulties keeping the access road open. The Marryatt crew moved to Puketiro to complete the Harris South block and then moved down to Blow Fly where they road lined sufficient distance to enable three skids to be constructed. At the same time they harvested sufficient pruned logs to supply a niche market identified by Rayonier. With the onset of winter, this crew harvested the remaining area in Long Spur.

In the last report I indicated that the three crews had salvaged approximately 10,000 tonnes of windthrown logs to June 2004. In the second half of the year I estimate that a further 13,000 tonnes was salvaged. This is an excellent result overall. When the financial returns for the two years are considered, it is worth remembering that most of this volume was harvested at a premium of up to $6 per tonne to compensate for the reduced output and increased risk associated with the windthrow.

These alterations to the cutting plan have meant that neither of the MOT blocks have been harvested and, while the Blow Fly block has been “set up”, no substantive logging has taken place. A decision has been taken to defer any attempt to harvest Kaika Mako at this time, as the roading costs would exceed the projected net revenue. The harvest of this block will revisited when the adjacent Centre North block is harvested, as it may be possible to share roads on a less expensive alignment.

Total production for the year is detailed in table 1 on page 3.

Generally as part of each annual report we report on actual production against the forest inventories (MARVL). As with last year, the planned harvest programme had to be abandoned to permit the recovery of windthrown logs following the February storms, no complete blocks were harvested. For this reason accurate comparisons between actual production and inventories cannot be made.

Grade outturn for the year by block is detailed in table 2, page 3.

Grade outturn compared with predicted outturn is detailed in table 3.

Table 1 - Logging income : all sources - 2004/5 [year end]

	Mill/Port Price $	Cartage $	Harvest Costs $	Commission $	Export Adj. $	Net Return $	m³	Average B4 Roads $
July	351,120	48,228	162,054	28,211	-2,841	**109,785**	5,352	**20.51**
August	267,632	38,624	126,083	22,616	865	**81,174**	4,279	**18.97**
September	377,455	51,630	173,164	30,245	-2,429	**119,987**	5,705	**21.03**
1st Quarter	**996,207**	**138,482**	**461,302**	**81,073**	**-4,405**	**310,946**	**15,337**	**20.27**
October	350,165	50,663	165,896	28,968		**104,665**	5,791	**18.07**
November	336,577	53,321	156,909	27,081	-227	**99,040**	5,638	**17.57**
December	321,804	47,386	151,192	24,293	271	**99,204**	5,215	**19.02**
2nd Quarter	**1,008,546**	**151,370**	**473,970**	**80,342**	**44**	**302,909**	**16,644**	**18.20**
Half Year	**2,004,753**	**289,852**	**935,271**	**161,414**	**-4,361**	**613,855**	**31,981**	**19.19**
January	156,295	26,695	69,751	11,652	-733	**47,465**	2,625	**18.08**
February	314,366	48,315	134,135	21,599		**110,317**	4,939	**22.34**
March	358,210	56,031	159,505	24,479	1	**118,195**	5,734	**20.61**
3rd Quarter	**828,871**	**131,040**	**363,391**	**57,730**	**-733**	**276,710**	**13,297**	**20.81**
Year to Date	**2,833,624**	**420,892**	**1,298,662**	**219,144**	**-5,093**	**890,564**	**45,278**	**19.67**
April	381,980	58,278	165,228	26,157	-375	**131,942**	6,207	**21.26**
May	351,171	52,407	147,494	25,345	55	**125,979**	5,550	**22.70**
June	315,724	44,891	130,209	23,875	-2	**116,746**	4,937	**23.65**
4th Quarter	**1,048,875**	**155,576**	**442,931**	**75,378**	**-322**	**374,667**	**16,694**	**22.44**
Total	**3,882,499**	**576,468**	**1,741,594**	**294,522**	**-5416**	**1,265,232**	**61,972**	**20.42**

Table 2 - Grade outturn for the year by block - tonnes

Grade		Pakuratahi		Puketiro	Valley View	Total	%
		Martins	Tunnel Gully				
51	Pruned			645.46	1,152.99	1,798.45	2.90
52N7	7.3 S grade	845.55	1,687.16	61.22	525.14	3,119.07	5.03
52N2	S grade	2,429.14	2,280.05	482.02	8,692.58	13,883.79	22.40
53K/C	Export s/log	701.89	1,128.07	598.83	4,326.10	6,754.89	10.90
53N	Dom s/log	1,023.57	166.36		4,488.90	5,678.83	9.16
54	Post & Poles	145.70			60.76	206.46	0.33
57K/C	Export s/log	1,615.86	829.84	272.12	4,674.01	7,391.83	11.93
57N	Dom s/log	1,515.67	970.13	29.21	3,119.36	5,634.37	9.09
58K/C	Export rough	857.54	341.17	615.16	6,714.36	8,528.23	13.76
58N	Dom rough	198.65			117.70	316.35	0.51
59K/C	Export pulp	863.60	88.15		1,801.10	2,752.85	4.44
59N1	Dom pulp	252.57	477.34		4,638.48	5,368.39	8.66
59N2	o/s pulp		67.16		321.25	388.41	0.63
FW	Firewood				150.00	150.00	0.24
		10,449.74	8,035.43	2,704.02	40,782.73	61,971.92	

Table 3 - Grade outturn compared with the predicted outturn

	Martins 4/01			Tunnel Gully 6/01			Puketiro 1/01, 8/02			V/View 3/03, 5/02, 6/02		
Grade	Marvl	Actual	Diff	Marvl	Actual	Diff	Marvl	Actual	Diff	Marvl	Actual	Diff
	%	%	%	%	%	%	%	%	%	%	%	%
51							18.40	23.87	5.87	7.77	2.83	-4.94
52	40.10	31.34	-8.76	48.34	49.37	1.04	8.22	20.09	12.09	17.81	22.60	4.79
53	3.17	16.51	13.34	6.22	16.11	9.89	16.43	22.15	6.15	3.40	21.61	18.21
54		1.39	1.39	0.00	0.00	0.00		0.00	0.00	0.00	0.15	0.15
57	17.75	29.97	12.22	17.40	22.40	5.00	21.82	11.14	-10.86	19.51	19.11	-0.40
58	14.58	10.11	-4.47	11.17	4.25	-6.93	17.38	22.75	5.75	16.11	16.75	0.64
59	24.56	10.68	-13.88	18.67	7.87	-10.80	17.67	0.00	-18.00	35.39	16.95	-18.45
O/S												

When considering the following "unusual" circumstances should be borne in mind:

- For the first six months an estimated 50 percent of the trees harvested were windthrown.
    - Trees in Clarkes Creek (Block 6, Valley View) were harvested two years earlier than planned because of windthrow.
    - The windthrow resulted in many stems being downgraded.
    - The Puketiro harvest was structured to minimise skid construction and the contractor was not required to pull pulp grade logs.
    - In most cases only part blocks were felled. These may not have been representative of the whole block.

When estimates are prepared using the Marvl system, it is usual to use a simplified grade range or dictionary. This is normally made up of about eight grades, whereas in "real life" there may be three times that number of options, and the marketing companies are always "tweaking" grade parameters to gain the highest return for their clients.

Martins 4/01 failed to meet the estimated volume for s grade logs. This may be because the block was harvested 18 months earlier than planned to provide a "winter" block close to the public roads. (This move was not successful as, although the access road performed adequately during autumn, in winter it consistently failed to the point where we were forced to withdraw.) This block did return higher than predicted volumes of 57 grade, with consequential shortfalls in 58 and 59 grades. Part of this benefit can be attributed to the Kiwi Mill in Masterton, which purchases big volumes of small sawlogs (57N2), as their mill cannot handle "standard" logs.

Tunnel Gully block, which abuts Martins but is two years older, returned better than anticipated volumes for the better grades and lower volumes of the poorer grades. This can only be attributed to the "growth model" used to update the inventories underestimating the true growth.

The two Puketiro blocks were made up of the remnants of Harris South and limited harvesting of Blow Fly in order to prepare roads and skid for the later substantive logging operation. For these reasons the mismatch between projected output and actual output is not entirely unexpected.

The Valley View data relates to three blocks, only one of which was completely harvested in one financial year. The significant variations related to 53 (A grade), which was higher than estimated, and 59 (pulp), which was lower. Normally there is not a consistent domestic market for A grade logs and the export options have been depressed by the strong dollar. This year, after a flood of logs immediately following the February 2004 storms, this past autumn and winter has resulted in shortages and in order to get logs to maintain their mills in production mills have elected to purchase lower grades than those usually favoured. JNL, which is probably the largest user of

A grade but the most inconsistent purchaser, have been in the market for long periods because of shortages in the Wairarapa. This has benefited Metro forests by giving another option while export markets have been depressed.

Greater Wellington Regional Council (GWRC) owes a debt of gratitude to Gratton Brothers who permitted Council to log part of the Reservoir Ridge block through their land. This arrangement probably saved expenditure in the vicinity $100,000 to construct an access through GWRC land.

The restricted market for pruned logs alluded to last year continued and we were fortunate to obtain a "niche" market to take the pruned logs out of Puketiro. These pruned logs fetched $155 per tonne, which would certainly be at the top of the market.

In summary, stumpage for the year arose as follows;

	$	Tonnes	$/tonne
Martins (4/01)	261,823	10,449	25.06
Tunnel Gully (6/01)	236,542	8,035	29.44
Valley View	676,091	40,782	16.58
Puketiro	90,776	2,704	33.57
Total	1,265,232	61,972	20.42

5.2 Replanting

During the 2004/5 planting season a total of 205,285 trees were planted. At a stocking of 1,500 stems per hectare, this equated to 136.86 ha planted. All trees were GF 17–19. The areas replanted were in the Glider Club and Tunnel Gully at Pakuratahi West, Reservoir Ridge/Clarkes Creek/Longspur at Valley View and Hukinga.

5.3 Silviculture

The 2004/5 silviculture programme consisted of 16 tasks within Pakuratahi and Whakatikei Forests. The successful Tenderers were Forest Developers and Management of Upper Hutt, which initially won 11 of the 16 tasks, with the other going to Green Gold Forestry of Porirua. Apart from a Low Prune at Whakatikei, all the tasks won by Green Gold Forestry were thinning, which could not be carried out until Forest Developers had completed pruning.

Both Contractors had difficulty retaining sufficient staff to carry out their contracted silviculture work (both for GWRC and private forests). Consequently they were unable to complete the tasks within the financial year. After spending a number of years getting silviculture within the forests up-to-date officers have come to the view that we have "overshot" the mark and perhaps got ahead of ourselves. This conclusion is based on comments from the Contractors and the areas within the blocks that cannot be treated as specified because of the lack of size. Following a review of the programme it has been decided to permit the 2004/5 programme to roll over into the 2005/6 year and only offer an additional two small blocks as the 2005/6 silviculture programme.

With this move we hope to achieve our aim of having 75 percent of a block within specification before it is put up for silviculture work.

As at 30 June 2005 the following tasks of the 2004/5 programme had been completed:

Pakuratahi West	7.01	High prune	19.0 ha
Pakuratahi West	8.01	High Prune	25.1 ha
Pakuratahi West	8.02	High Prune	11.0 ha
Pakuratahi West	9.01	High prune	21.5 ha
Whakatikei	2.01	Low Prune	38.0 ha
Pakuratahi West	7.01	Thin to 350 spha	5.0 ha*
Pakuratahi West	9.01	Thin to 350 spha	5.0 ha*

* Blocks not completed at year end

Tasks carried forward into the 2005/6 year are:

Pakuratahi West	7.01	Thin to 350 spha	14.0 ha
Pakuratahi West	9.01	Thin to 350 spha	16.5 ha
Pakuratahi West	16.01	Low Prune	4.80 ha
Pakuratahi West	15.04	Low Prune	1.60 ha
Pakuratahi West	17.01	Low Prune	13.3 ha
Pakuratahi West	17.04	Low Prune	5.6 ha
Pakuratahi West	18.03	Low Prune	6.3 ha
Pakuratahi West	18.04	Low Prune	28.5 ha
Pakuratahi West	18.05	Low Prune	6.4 ha
Pakuratahi West	8.01	Prune to 350 spha	25.1 ha
Pakuratahi West	8.02	Prune to 350 spha	11.0 ha

The two additional blocks to be added to the programme are Huka 15.01, high prune 4.7 ha and Hukinga 1.02 , high prune 13.3 ha

Expenditure to date has been $67,653 out of a budget of $126,090. Likely expenditure in the 2005/6 year is $58,437 carried forward and $12,150 for the additional blocks.

5.4 Forest health

The annual forest health survey was carried out by Forest Health Dynamics during February 2005 at a cost of $ 4,383. This sum included the physical survey and a diagnostic levy to FRI of 15.7 cents per hectare and a FOA Research levy of 31 cents per hectare.

As with previous years, the survey was first conducted by air, followed by specific investigation on land of any problems identified, and a “drive-by” inspection at the rate of 20 m per hectare. Inspection plots are carried out at random locations at 0.5 percent intensity. In some areas this intensity of random inspection could not be achieved because of wet ground and fallen trees.

The survey did not identify any new insect or fungal infestations within the forest.

In summary, their findings were:

Akatarawa	*Dothistroma pini* is present and causing some needle cast.
Hukinga	Evidence of dead branches caused by *Sphaeropsis sapinea.* This is primarily a wound pathogen which has gained access to the trees through existing bark damage. Some possum damage evident in the 1999 plantings
Maungakotukutuku	Access restricted through road washout. The only health issue observed was some damage from *Sphaeropsis sapinea* where wind had caused rubbing and removed areas of bark in the tops of the trees,
Mangaroa	Forest in good health with some low levels of Upper mid crown yellowing.
Pakuratahi	Forest shows signs of nutrient deficiency. Some overstocking through wildings Some deaths through wind buffeting of young trees which were then infected by *Sphaeropsis sapinea* (This block is programmed for both thinning and fertilizing in the current year)
Puketiro	Some evidence of *Dothistroma pïni* and *Cyclaneusma minus* was noted but with only minimal defoliation as a consequence. The Macrocrapa blocks are still effected by *Seiridium unicorne* following pruning. Some deaths were recorded in the 2003 plantings from *Hylastes ater* after girdling near ground level and from wind buffeting on the more exposed ridges.
Spicer	Good growth with only moderate Upper Mid Crown Yellowing in the odd tree.
Valley View	*Dothistroma pini* is evident throughout this forest due to shading with a consequential reduction in growth levels. As with Puketiro the Macrocarpa stands show signs of canker following pruning. There is clear evidence of windthrow due to a combination of the closed canopy slowing drying, greater rainfall and increasing crown mass.
Whakatikei	Some evidence of deaths among the 1999 plantings due to *Armillaria.* This is anticipated to be a short

term risk. Some *Dothistroma pini* evident among the trees in the higher areas where cloud gathering creates a suitable micro climate.

The surveyors commented:

> *When surveying a forest for any organism causing stress or health issues to trees, we only note the negatives. It should be noted that all Wellington forests are in good general health. Good tree growth and apart from exposed ridges, good form.*

5.5 Forest access

At least half of the year was spent endeavouring to recover as much as possible of the windthrow caused by the February 2004 storms. We were fortunate that most of this occurred at the Upper Hutt end of Valley View and in the Tunnel Gully area. This meant that the roading to obtain access was mainly short spur tracks off the main road. The main road is well and truly settled, having been used for at least 10 years and having carried many hundreds of thousands of tonnes. It thus only required minimal maintenance.

We carried out some road construction to access the Blow Fly block and at the same time managed to sell some pruned logs into a niche market at Levin. Again the main road coped with the traffic without any additional maintenance. Following the windthrow recovery we were still faced with a very depressed pruned market but relatively buoyant sawlog market. We thus tried to concentrate of conveniently placed mature sawlog stands. We were able to complete the harvest of Reservoir Ridge through the Gratton farm and placed 20 loads of metal on the road to reinstate after logging was complete. We had also put a crew into a back block in Martins with about an 800 m access road. This road performed well through autumn but failed when the shorter days and colder temperatures of winter arrived.

There was a considerable amount of damage to the Hukinga Road in a storm this February, with a large culvert washed out and a number of slumps on the length of road above the Akatarawa River West. Temporary repairs were carried out to restore 4WD access and to permit the Karapoti Classic cycle race to take place without disruption and substantive repairs to restore full access were completed later in the year after a source of concrete blocks at 2 tonnes a piece) was found.

We have yet to gain access from the two MOT blocks to Paekakariki Hill Road and further discussions on options will take place in the next few months.

A new option has evolved as a consequence of the option for wind turbines in this area. The access road for the wind turbine infrastructure can double as a logging road. Time will tell if this comes to pass.

Elsewhere in the forest estate only the Maungakotukutuku block remains without 4WD access or better.

6. The current year

6.1 Harvesting

The pruned market remains depressed on the back of the strong New Zealand dollar. While domestic demand for sawlog remains relatively strong, there is fluctuating supply, as forests which traditionally cut pruned switch to sawlog and "on and off" supply from the weather dependent forest in the Wairarapa. On the export scene there are signs of demand increasing in Korea, ongoing demand in China and India, and falling shipping costs. Shipping costs in late August are around US$35 per tonne, US$15 less than they were at their peak earlier in the year. The most concerning aspect is the exchange rate which, having fallen to the mid to high 60s earlier, is now back above $US0.70.

On the basis that the New Zealand dollar may fade somewhat in the near future, the current year's harvest will concentrate on the following blocks:

Martins 6/01, Pakuratahi
Martins 4/01, Pakuratahi
Green Knob, Valley View
Beech Spur, Valley View
Long Spur, Valley View
Reservoir Ridge remnants, Valley View
Blow Fly, Puketiro
Blocks 10/01, 9/02 and 9/01, Hukinga

It may also be possible to harvest a proportion of the MOT blocks.

6.2 2005-2009 Harvest Contract

Tenders were invited for bids to undertake the harvesting and marketing of both the Wairarapa and Metro forest harvest programmes for the period 2005 – 2009. Within the Metro forests it is anticipated that 425 ha plus an optional 85 ha will be harvested. This should equate to 240,870 tonnes.

Eight Tenders were received for the Metro harvest. Two of these were to manage a third person harvesting and were eliminated from further consideration. The remaining six were scrutinised in detail and the proposals checked for "reasonableness" against each other, data from our forest valuer and "institutional knowledge". In the end it was decided to offer the Contract to Rayonier New Zealand Ltd, which is the incumbent.

The Wairarapa Division came to the same conclusion and offered its Contract to Bawden Associates Ltd, which is the incumbent.

The Metro Contract takes effect from 1 September 2005.

7. Proposals for the 2006/7 year

7.1 Harvesting

On the assumption that markets return to "normal", harvesting for the 2006/7 year will be centred on the following blocks:

- Completion of Blow Fly 48 ha
- Harvest of Dick's Yard 64.50 ha
- Should the market prove suitable, completion of MOT.

7.2 Replanting

7.2.1 General

It is recommended that the above areas be replanted in the winter following harvest. All blocks have produced reasonable trees to date, with parts of the Blow Fly block producing exceptional pruned butts. Both Dicks Yard and MOT will produce far better trees in future rotations, with current silvicultural practices. The ridge tops will continue to be a problem area but there is no solution to this problem and ridge top trees do provide shelter for the trees further down the slope.

It is proposed that GF19 seedlings be used and these will be planted at 1,500 spha, with a target crop of 350 spha for pruned stands and between 400 and 500 for structural stands.

7.2.2 Environmental issues

There are no specific environmental issues with these blocks. In the first rotation crop trees were planted right up to the stream banks. When replanted, standard riparian margins will be left to regenerate. We will continue our present practice of regular monitoring of harvesting and replanting by an independent soil scientist. Any issues that may arise will be dealt with in accordance with "best industry practice" and on advice from GWRC's Soil Conservator.

7.2.3 Heritage issues

The harvest of the Martins blocks requires the use of a section of the alignment of the Rimutaka Railway. This use and the harvest of the adjoining area have been agreed with the Historic Places Trust. Special conditions relate to this harvest, which are designed to minimise any impact on the old alignment.

7.2.4 Recreational issues

We are not aware of any issues relating to the interface between commercial forestry operations and recreational activities. Any effect on recreational users is minimal, as only equipment maintenance is permitted on weekends unless special arrangements are made, and this is the most popular period for recreational activities.

7.2.5 Suitability for replanting

Present returns confirm that these areas will produce enhanced volumes in the second rotation. In some cases non-merchantable trees on ridgelines will not be harvested but will be retained to provide shelter from the prevailing winds for the new crop.

Returns in the vicinity of 550–600 M3 per hectare can be anticipated.

7.2.6 Financial

Attachments 1 and 2 set out the projected returns on a sample of each of the blocks that may be subject to replanting.

The net present values of the second rotation with sensitivities are:

Table 4 - Net present values

Forest Block	$ - 8%	$ - 9%	$ - 10%
Blow Fly	85,427	51,633	27,054
Dick's Yard	132,509	81,546	44,433
All blocks	217,937	133,178	71,486

Table 4 - Internal rates of return

Forest Block	Base Case	+10% Revenue	-10% Revenue
Blow Fly	11.69%	12.38%	10.87%
Dick's Yard	11.88%	12.59%	11.04%

These figures set out the improved returns that can be anticipated from a well tended second rotation.

7.2.7 Silviculture

Subject to satisfactory growth, the following silviculture is programmed for the 2006/7 year.

Block	Year	Activity	ha
Whaka 2.01	1999	Medium prune	38
Whaka 3.01	2000	Low prune	36.2
Pakuratahi various	1998/9	Low prune	155.4
Hukinga 1.01	1997	High Prune	3.8
Hukinga 1.02	1997	High prune	13.3
Hukinga 11.02	1997	High prune	7.0
Hukinga 15.02	1997	High Prune	12.7

Monitor growth factors and apply fertiliser if required.

Replanting as set out above.

8. Recommendations

That the Committee:

1. ***receive*** *the report.*

2. ***note*** *the content of the report.*

3. ***Approve*** *the replanting of the areas specified within this report in the winter following harvest.*

4. ***Note*** *the changes to earlier Annual Reports because of the salvage of windthrown logs and subsequent replanting.*

Report prepared by:	Report approved by:
Barry Leonard Plantation Forestry Manager	**Murray Kennedy** Acting Divisional Manager, Utility Services

Attachments:

1. Analysis of financial returns from replanting of Dick's Yard
2. Analysis of financial returns from replanting Blow Fly