



## PUBLIC EXCLUDED

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Committee Utility Services  
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## Plantation Forestry Annual Report and Proposals

### 1. Purpose

To appraise Councillors of the results of Plantation Forestry activities in the year ended 30 June 2003 and to advise of the activities proposed for the financial year commencing 1 July 2004.

### 2. 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.*

### 3. Background

This is the fourth "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. This will form the basis for the preparation of the 2004/5 budget

### 4. Review of Operations - Year Ended 30 June 2003

#### 4.1 Harvesting

The Contract contemplated the harvesting of the two MOT blocks within the first year of the Contract. The planned access to these blocks involved a circuitous route through the young trees in Battle Hill in order to get a suitable grade up to the top of the ridgeline to join Puketiro Road. The road to MOT73, while avoiding Battle Hill, involved many short lengths of road serving small proportions of the block and was thus relatively expensive.

In order to examine the options for these blocks, further harvesting commenced in the Harris South and Harris North Blocks.

The Harris North Block was completed within the year and only 12.1 ha remain to be harvested in Harris South. During the winter of 2002 we incurred significant costs keeping the access open through to the Totara Park entrance, so after the weather improved in spring we resolved to prepare a block at Reservoir Ridge to harvest in the 2003 winter. This reduced the length of forestry road used by the trucks from in excess of 25 km to 5.5 km. Sufficient skid sites and associated roading for six months of harvesting were prepared during the summer months.

In the event, because of the uncertainty in the United States' markets, the pruned markets collapsed in May and rather than cease logging all together, a decision was made to retreat to Reservoir Ridge at that time. This was about six weeks earlier than planned. It is unfortunate, as we will now have a block of only 12 ha, as the balance has been replanted or we may elect to combine the balance with the adjacent block and harvest and replant in 2010.

Harvest plans have been prepared for Blow Fly and Kaika Mako, the next two blocks for harvest, and one skid has been constructed.

Total production for the year was:

| Logging Income - Rayonier Contract - 2002/3 (Year End) |                  |                |                  |                |                |                  |               |                  |
|--|------------------|----------------|------------------|----------------|----------------|------------------|---------------|------------------|
|  | Mill Port Price  | Cartage        | Harvest Costs    | Comm. Rayonier | Export Adjust. | Net Return       | M3            | Average B4 Roads |
| July   | 334,249          | 55,508         | 104,333          | 28,298         | 318            | <b>146,428</b>   | 4,239         | <b>34.54</b>     |
| August   | 207,197          | 40,860         | 76,219           | 17,956         | 489            | <b>72,651</b>    | 3,005         | <b>24.18</b>     |
| September  | 267,714          | 51,603         | 94,451           | 23,415         | -150           | <b>98,095</b>    | 3,571         | <b>27.47</b>     |
| <b>1st Quarter</b>                                     | <b>809,160</b>   | <b>147,970</b> | <b>275,004</b>   | <b>69,669</b>  | <b>657</b>     | <b>317,175</b>   | <b>10,815</b> | <b>29.33</b>     |
| October  | 528,254          | 101,146        | 153,624          | 41,599         | 601            | <b>232,486</b>   | 6,134         | <b>37.90</b>     |
| November   | 320,055          | 56,436         | 96,022           | 26,812         | 2,999          | <b>143,785</b>   | 3,755         | <b>38.29</b>     |
| December   | 342,842          | 66,160         | 122,333          | 28,949         | 0              | <b>125,400</b>   | 4,735         | <b>26.49</b>     |
| <b>2nd Quarter</b>                                     | <b>1,191,151</b> | <b>223,741</b> | <b>371,979</b>   | <b>97,360</b>  | <b>3,600</b>   | <b>498,070</b>   | <b>14,624</b> | <b>34.06</b>     |
| <b>Half Year</b>                                       | <b>2,000,311</b> | <b>371,711</b> | <b>646,982</b>   | <b>167,029</b> | <b>4,257</b>   | <b>818,846</b>   | <b>25,439</b> | <b>32.19</b>     |
| January  | 306,943          | 61,832         | 118,205          | 26,927         | 0              | <b>99,979</b>    | 4,696         | <b>21.29</b>     |
| February   | 408,603          | 71,532         | 146,035          | 34,705         |                | <b>156,331</b>   | 5,720         | <b>27.33</b>     |
| March  | 426,807          | 74,599         | 147,072          | 34,797         | 675            | <b>171,015</b>   | 5,687         | <b>30.07</b>     |
| <b>3rd Quarter</b>                                     | <b>1,142,352</b> | <b>207,963</b> | <b>411,312</b>   | <b>96,429</b>  | <b>675</b>     | <b>427,324</b>   | <b>16,104</b> | <b>26.49</b>     |
| <b>Year to Date</b>                                    | <b>3,142,663</b> | <b>579,674</b> | <b>1,058,294</b> | <b>263,459</b> | <b>4,933</b>   | <b>1,246,169</b> | <b>41,543</b> | <b>29.98</b>     |
| April  | 420,618          | 74,953         | 153,004          | 37,160         |                | <b>155,501</b>   | 5,973         | <b>26.03</b>     |
| May  | 296,038          | 54,617         | 123,876          | 25,105         | 124            | <b>92,563</b>    | 4,684         | <b>19.76</b>     |
| June   | 185,237          | 34,637         | 92,763           | 17,568         | -4,590         | <b>35,679</b>    | 3,465         | <b>10.30</b>     |
| 24 -30 June  | 64,848           | 10,735         | 28,737           | 5,470          |                | <b>19,907</b>    | 1,064         | <b>18.70</b>     |
| <b>4th Quarter</b>                                     | <b>966,742</b>   | <b>174,943</b> | <b>398,381</b>   | <b>85,303</b>  | <b>-4,466</b>  | <b>303,650</b>   | <b>15,186</b> | <b>20.00</b>     |
| <b>Total</b>   | <b>4,109,405</b> | <b>754,617</b> | <b>1,456,675</b> | <b>348,762</b> | <b>467</b>     | <b>1,549,819</b> | <b>56,729</b> | <b>27.31</b>     |

When forestry blocks are offered for harvest tender, it is usual to include in the documentation an inventory of the block. This would usually be in the form of

a Marvl analysis. Where possible, it is advantageous to compare the Marvl outturn with the actual in order to verify the accuracy of the Marvl or identify and understand the reasons for any significant variations.

Because of the ever changing specifications of the logs purchased by the local mills, the before and after will never be identical, so the emphasis is on understanding the differences.

The grade outturns for Harris North (all harvested) and Harris South (87 ha of 98.9 ha).

| Grade        | Description      | Harris North | Harris South  | Total         | Percentage |
|--------------|------------------|--------------|---------------|---------------|------------|
| 51NR         | P1 Pruned        | 444          | 7,096         | 7,540         | 19.18      |
| 51N5         | P2 Pruned        | 985          | 642           | 1,627         | 4.41       |
| 52NR         | S/A Grade sawlog |              | 2,058         | 2,058         | 5.24       |
| 53NR         | L Grade sawlog   |              | 4,209         | 4,209         | 10.71      |
| 57NR         | Small sawlog     | 23           | 1,672         | 1,695         | 4.31       |
| 59NR         | Pulp             | 2,479        | 6,544         | 9,023         | 22.96      |
| 53C          | Export sawlog    |              | 403           | 403           | 4.02       |
| 53K          | Export sawlog    | 109          | 1,812         | 1,921         | 4.89       |
| 58K          | Export rough     | 2,036        | 6,244         | 8,280         | 21.1       |
| 58C          | Export rough     | 76           | 1,578         | 1,654         | 4.21       |
| 57K          | Export sawlog    | 14           | 48            | 62            | 0.16       |
| 58N          | Export rough     | 61           | 441           | 502           | 1.28       |
| 50C          | Export pulp      |              | 330           | 330           | 0.84       |
| <b>Total</b> |                  | <b>6,228</b> | <b>33,077</b> | <b>39,305</b> |            |

The grade outturn compared with the predicted outturn was as follows.

| Marvl Grade | Description      | RNZ Grade | Harris Marvl % | North Actual % | Variation % | Harris Marvl % | South Actual % | Variation % |
|-------------|------------------|-----------|----------------|----------------|-------------|----------------|----------------|-------------|
| P1          | Pruned           | 51N       | 10             | 7              | -3          | 22             | 21             | -1          |
| P2          | Small pruned     | 51N5      | 0              | 16             | +16         | 2              | 2              | 0           |
| S           | S grade sawlog   | 52N       | 2              | 0              | -2          | 6              | 6              | 0           |
| L           | L grade sawlog   | 53N       | 6              | 0              | -6          | 19             | 13             | -6          |
| Xport       | A grade          | 53K/C     | 0              | 2              | +2          | 0              | 7              | +7          |
| Renall      | Small sawlog     | 57N       | 1              | 0              | -1          | 3              | 5              | +2          |
| K3          | 3.7 sawlog xport | 57K3      | 4              | 0              | -4          | 3              | 0              | -3          |
| K5          | 5.6 sawlog xport | 57K5      | 1              | 0              | -1          | 4              | 0              | -4          |
| K7          | 7.4 sawlog xport | 57K7      | 2              | 0              | -2          | 7              | 0              | -7          |
|             | Rough sawlog     | 58N       | 0              | 1              | +1          | 0              | 1              | +1          |
| 58K         | Rough xport log  | 58K       | 18             | 34             | +16         | 11             | 24             | +13         |
| Pulp        | Pulplogs         | 59N       | 56             | 40             | -16         | 21             | 20             | -1          |
|             | Xport pulp       | 59C       | 0              | 0              | 0           | 0              | 1              | +1          |

One of the difficulties when comparing the actual outturn with the predicted outturn is that the Marvl inventory is generally based on a limited number of

grade options, whereas in the real world grade options change on a weekly basis. One of the functions expected of Rayonier is that they will seek markets for the trees in the block, rather than be bound by the “standard” grade mix.

Being located on the ridge above Battle Hill, the 19.8 ha Harris North Block was very exposed. The ability to sell short pruned logs as P2 rather than downgrading them to “S” grade improved the overall pruned outturn by 13 percent. The large branch size, caused in part by the low stocking (250 spha), resulted in much of the anticipated sawlog being relegated to 58 grade. The ability to promote some of the pulp to this grade went some way to compensating for the lost value.

By contrast, the larger Harris South Block extended onto the lower ground east of the main ridgeline and had received a full silviculture regime. The Marvl accurately predicted the outputs for Pruned, “S” grade and pulp. There is a degree of similarity in the specifications and returns from “L” grade, 53C/K and 57N. Logs are generally directed to the outlet with the best return on the day. The Marvl predicted 36 percent of output would go to these grades and the result was 25 percent, with the balance falling into the 58 grade. This will have been because of branch size.

In general terms these Marvls have accurately reflected the output of the two blocks.

Attachment 6 shows the area remaining to be logged in the Harris South Block.

In May harvesting operations transferred to Reservoir Ridge in Valley View. This block is only 5.5 km from the main entrance and is a predominately “downhill loaded” journey. We had pre-prepared nine skids and 4.3 km of road. The harvesting has continued without problem and the roads have required only minor maintenance. The roads have remained open at all times. The area harvested was approximately 36.9 ha

To the end of June the output from Reservoir Ridge (roadlining January to June plus two months full harvesting) was:

| Grade          | Tonnes/m <sup>3</sup> | %     |
|----------------|-----------------------|-------|
| Partial pruned | 151.9                 | 1.0   |
| S/A Grade      | 3,683.9               | 24.11 |
| L Grade        | 1,040.36              | 6.81  |
| R Grade        | 1,267.13              | 8.29  |
| K Sawlog       | 2,128.75              | 26.52 |
| K Rough        | 4,052.17              | 18.91 |
| Roundwood      | 27.35                 | 0.18  |
| Pulp           | 2,590.21              | 16.95 |
| O/S Pulp       | 339.9                 | 2.23  |
| <b>Total</b>   | <b>15,281.31</b>      |       |

During the year we were presented with an opportunity to harvest some remnant stands in Maymorn. These stands were unable to be accessed during

the main harvest in the late 1980s. The project was costed as a “standalone” activity and, in order to ensure a positive contribution, a number of special arrangements were put in place. These included agreement from Rayonier that, as far as possible, all logs could be sold to the Eurocell mill at Upper Hutt; a nominated carrier was engaged who agreed to cart to Upper Hutt on a “truck only” basis; and that for more distant destinations agreed to his truck being towed off the skid site. This allowed the road works required to be minimised with steeper grades. At the completion of harvesting a further 2,228 tonnes had been harvested for a stumpage of \$61,620. After roading costs of \$15,250 the net return was \$46,370. This compared favourably with our initial estimates of 2,461 tonnes for a stumpage of \$65,295 and roading costs of \$15,000, giving a predicted net return of \$50,295

The grade outturn for Maymorn was:

| Grade                | Tonnes          | %     |
|----------------------|-----------------|-------|
| S/A Grade            | 949.93          | 42.63 |
| Export sawlog        | 200.70          | 9.01  |
| R Grade small sawlog | 338.26          | 15.18 |
| Roundwood            | 350.61          | 15.8  |
| Export rough         | 200.72          | 9.01  |
| Pulp                 | 188.23          | 8.45  |
| <b>Total</b>         | <b>2,228.45</b> |       |

In summary, stumpage for the year arose as follows:

|              |                  |
|--------------|------------------|
|              | \$               |
| Maymorn      | 60,767           |
| Valley View  | 325,160          |
| Puketiro     | 1,163,892        |
|              | -----            |
| <b>Total</b> | <b>1,549,819</b> |

#### 4.2 Replanting

During the 2002/3 planting season a total of 79 ha were replanted. This was predominantly in the Harris South Block at Puketiro, a small area of the MOT Block, and the remaining areas in Pakuratahi East.

#### 4.3 Silviculture

The 2002/3 silviculture programme consisted of 13 tasks spread over 3 forests. The successful tenderers were Forest Developers and Management of Upper Hutt, which initially won 12 of the 13 blocks, with the other going to Green Gold Forestry of Porirua. Ultimately Forest Developers and Management transferred their Pakuratahi blocks to Green Gold Forestry, which completed them at the rates tendered by Forest Developers and Management. All silviculture was completed within the financial year. Approximately 5 ha of Block 16 at Pakuratahi were withdrawn from the programme, as the trees had not achieved sufficient height for pruning.

The final completed programme is as follows:

|                 |       |               |         |
|-----------------|-------|---------------|---------|
| Akatarawa       |       | Thin to waste | 33.2 ha |
| Pakuratahi West | 3.03  | Low prune     | 13.5 ha |
| Pakuratahi West | 8.02  | Low prune     | 11.0 ha |
| Pakuratahi West | 10.02 | Low prune     | 17.0 ha |
| Pakuratahi West | 11.02 | Low prune     | 39.9 ha |
| Pakuratahi West | 15.03 | Low prune     | 13.0 ha |
| Pakuratahi West | 16.03 | Low prune     | 8.0 ha* |
| Pakuratahi West | 18.03 | Low prune     | 6.9 ha  |
| Hukinga         | 1.01  | Low prune     | 3.8 ha  |
| Hukinga         | 1.02  | Low prune     | 13.3 ha |
| Hukinga         | 11.02 | Low prune     | 3.4 ha  |
| Hukinga         | 15.01 | Medium prune  | 5.8 ha  |
| Hukinga         | 15.02 | Low prune     | 12.7 ha |

\* Part of block withdrawn from the Contract

The Contract Price for the work was \$91,398

#### 4.4 Forest Health

The annual forest health survey was carried out by Forest Health Dynamics during March 2003. 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.

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

In summary, their findings were:

|                  |   |
|------------------|---|
| Akatarawa        | <i>Dothistroma pini</i> at low infection levels but overall the forest is doing well  |
| Hukinga          | <i>Phaeocryptopus gaeumanni</i> (needle cast) infection on the foliage of Douglas fir   |
| Maungakotukutuku | Low level <i>Dothistroma pini</i> and about 20 percent infestation with <i>cyclaneusma minus</i> . Forest showing good form and growth.   |
| Mangaroa         | Forest in good health but high levels of <i>Cyclaneusma minus</i> possibly exacerbated by the dry summer placing trees under stress.  |
| Pakuratahi       | Pathogens identified in slash remaining after harvest. Some nutrient deficiency evident in Compartment 10 (subsequent inspections failed to verify this statement), Some wind wobble evident on west facing slopes. |
| Puketiro         | Moderate levels of <i>Dothistroma pini</i> and increased <i>Cyclaneusma minus</i> this year. Some <i>Seiridium</i>  |

*unicorne* damage adjacent to pruning scars on macrocarpa trees.

Spicer

Some *Dothistroma pini* evident.

Valley View

*Dothistroma pini* evident in the same areas as identified last year with only minimal increase in affected area. As with other blocks, increased levels of *Cyclaneusma minus* and some *Seiridium unicorne* damage evident in the macrocarpa stands. Some damage from the eucalyptus tortoise beetle in the eucalyptus stands.

Whakatikei

Some pathogen damage among the new plantings and *Dothistroma pini* evident in the older trees.

Although the comments above may suggest that there are health problems within the forest, the results are not out of line with other local forests. Staff will continue to monitor the suggested fertility deficiency in Pakuratahi.

#### **4.5 Forest Access**

The weather last winter stayed relatively dry until late June and through this period logging in Puketiro had continued without significant problems. Unfortunately when the rain did arrive it showed up a deficiency in the metal we had used for road making. The metal was contaminated by strips of muddy material and while the weather remained fine the mud did not cause any problems. While in use a proportion of the metal had been crushed by the continual traffic and the mud present was released on arrival of the rain. At this time log prices were good and harvest crews were in demand. We were forced to spend significant sums to maintain access and even then there were instances of truck damage when the loaded trucks lost traction. After the days lengthened towards the end of September, the problem was alleviated but it was well into November before the road could have been described as repaired. On the basis of this experience, and to avoid any repetition in future, a decision was made to move to blocks nearer the front of the forest for future winters. To this end, work commenced in December preparing the Reservoir Ridge Block for logging over the 2003 winter. To date there have been no roading issues with this block. Winter breaks have been identified for the balance of this Contract.

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.

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

### **5. The Current Year**

#### **5.1 Harvesting**

The market remains fickle and to date there does not appear to be an early

improvement in the price of pruned logs. At the same time while there have been some “real” price increases at destination for export logs these benefits have to date been nullified by increases in freight and currency fluctuations. As a consequence, we have developed a number of strategies to deal with whatever the markets will deliver. These are as follows:

Option 1 - “As Planned” - All markets return to approximately the same levels as last year.

- Harvest continues at Reservoir ridge until weather settles.
- Harvest moves to Blow Fly while the last of the roading at Harris South is completed.
- Complete harvest at Harris South while further roading and skids are prepared at Blow Fly
- Continue logging at Blow Fly until weather breaks (around June 2004) and return to Reservoir Ridge for the winter.

Option 2 - Pruned and export markets depressed, domestic sawlog market reasonable.

- Harvest continues at Reservoir Ridge while road constructed to the back of the Blow Fly block.
- Log the back of the Blow Fly Block (predominantly sawlog and part pruned)
- Return to Reservoir Ridge when completed.
- Hold Martins in reserve if required.

Option 3 - Pruned market depressed, both export and domestic reasonable.

- Harvest continues at Reservoir Ridge targeting export volumes.
- Depending on price, consider opening up Kaika Mako (high road cost to get to block)
- As an alternative consider non-pruned section of Clarkes Creek or Long Spur (both in Valley View)
- Hold Martins in reserve.

We are now monitoring returns on a weekly basis and should returns fall to an unacceptable level we have recently amended the harvest contract to permit logging to be suspended until prices return to an acceptable level.

Although it is stated above that the price for pruned logs is unacceptably low, we were approached by a Wairarapa/Hawkes Bay company offering to harvest pruned stands in the Hukinga and offering at pruned rate around \$30 per tonne better than the nearest offer through Rayonier.



Before accepting the offer we gave Rayonier the opportunity to bid for the harvest (the blocks are outside the present Rayonier Contract). They were unable to match the returns offered so we agreed a Contract and logging commenced in early August. Initially the price offered was fixed until 30 September but we recently added an additional 8 ha to the Contract on the basis of the price being fixed for the full volume. This has proved a boon, with the depressed returns from other pruned and export sales.

## 6. Proposals for the 2004/5 Year

### 6.1 Harvesting

It is difficult to predict which blocks will be harvested through the 2004/5 year, as the present market conditions make it difficult to predict the current year's activities.

Of the blocks in the current Contract, Harris North has been completed and it is likely that the last 12.1 ha of Harris South will have been completed. At present it is estimated that around 50 ha of the Reservoir Ridge block have been harvested to date, so it is reasonable to assume that about half of the remaining 56.5 ha will be felled in the current year, leaving 28 ha for the winter of 2004/5. On this assumption the Martin Block will remain. Over the summer of 2003/4 it is likely that at least half of the Blow Fly Block will be harvested and hopefully at least half of the MOT blocks. If this scenario proves correct, the likely remaining blocks at the beginning of the 2004/5 year will be:

|                 |         |                                    |
|-----------------|---------|------------------------------------|
| Reservoir Ridge | 28 ha   | Structural (unpruned)              |
| Blow Fly        | 35 ha   | Maybe either pruned or part pruned |
| MOT             | 30 ha   | Pruned                             |
| Martins         | 20.6 ha | Structural                         |
| Kaika Mako      | 30.8 ha | Structural                         |
| Castle Ridge    | 2.6 ha  | Structural                         |

If necessary, both the Clarke Creek Block (78.3 ha) at Valley View, which contains both pruned and structural sections, and Long Spur Block (28.7 ha), which is structural, can be used as a winter blocks if the market demands. These blocks are not part of the current Contract area.

We would normally expect to harvest in the vicinity of 50,000 tonnes per annum, which would equate to 100 ha. In order to complete these blocks by the nominal end of the Contract (June 2005), we may need to arrange an additional harvest crew or, alternatively, permit the Contract to run over time.

## 7. Replanting

### 7.1 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 Hukinga. Blow Fly and MOT Blocks producing exceptional pruned butts.

The good growth of pruned stems in the Clarkes Creek Block suggest that similar results could be achieved in the adjoining Reservoir Ridge Block under a full silvicultural regime.

It is anticipated that with the improved genetics and a full silvicultural regime even better results can be achieved in the next rotation.

## **7.2 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, except along the main valley between Reservoir Ridge and Clarkes Creek where is proposed to seed the steep faces with tree legumes. This work will be carried out in consultation with the Council's Soil Conservator.

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 the Regional Council's Environment Division.

## **7.3 Heritage Issues**

There are no known heritage issues within the blocks proposed for harvest.

## **7.4 Recreational Issues**

While there were some issues relating to walking tracks when the Reservoir Ridge Block was opened up, these have been resolved.

We are not aware of any issues relating to the interface between commercial forestry operations and recreational activities. With the exception of the Reservoir Ridge areas, recreational activities are generally motorised and we have an ongoing liaison with the main groups. Any effect on other groups 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. In the Reservoir Ridge the walking track has been upgraded to maintain the segregation between the two activities.

## **7.5 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.

## **7.6 Financial**

Attachments 4–6 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:

**Net Present Values**

| Forest Block    | 8%     | 9%     | 10%    |
|-----------------|--------|--------|--------|
| Blow Fly        | 48,795 | 29,616 | 15,718 |
| Reservoir Ridge | 50,098 | 30,551 | 16,379 |
| Martins         | 29,856 | 15,598 | 5,291  |
| MOT             | 38,512 | 21,845 | 9,819  |

**Internal Rates of Return**

| Forest Block    | Base Case % | +10% Revenue % | -10% Revenue % |
|-----------------|-------------|----------------|----------------|
| Blow Fly        | 11.76       | 13.83          | 11.62          |
| Reservoir Ridge | 11.81       | 13.85          | 11.67          |
| Martins         | 10.68       | 12.47          | 10.56          |
| MOT             | 11.17       | 13.30          | 11.04          |

**8. Silviculture**

The following silviculture is programmed for the 2004/5 year:

| Block           | Year | Activity     | ha   |
|-----------------|------|--------------|------|
| Maymorn 1.03    | 1999 | Medium prune | 1.8  |
| PakW 10.02      | 1998 | Medium prune | 17.0 |
| 11.02           | 1998 | Medium prune | 39.9 |
| 15.03           | 1998 | Medium prune | 13.0 |
| 16.03           | 1998 | Medium prune | 13.0 |
| 16.04           | 1999 | Low prune    | 4.8  |
| 15.04           | 2000 | Low prune    | 1.6  |
| 17.02           | 2000 | Low prune    | 13.  |
| 17.04           | 1998 | Low prune    | 5.6  |
| 18.03           | 1998 | Low prune    | 6.3  |
| 18.04           | 1999 | Low prune    | 28.5 |
| 18.05           | 1999 | Lower prune  | 6.4  |
| PakE Various    | 2000 | Low prune    | 90.0 |
| Whakatikei 2.01 | 1999 | Low prune    | 38.0 |

Monitor growth factors and apply fertiliser if required.

Replanting as set out in section 7 above.

**9. Recommendations**

(1) *That the report be received and the information noted.*

- (2) *That the Committee approves the replanting of the areas specified in this report in the winter following the harvest.*

Report prepared by:

Report approved by:

**Barry Leonard**  
Plantation Forestry Manager

**David Benham**  
Divisional Manager, Utility Services

**Attachments:**

- 1 Financial Analysis of Replanting - Blow Fly
- 2 Financial Analysis of Replanting - Reservoir Ridge and Castle Ridge
- 3 Financial Analysis of Replanting - Martins
- 4 Financial Analysis of Replanting - MOT
- 5 Map 1 - Forest Locations
- 6 Map 2 - Area Harvested Puketiro
- 7 Map 3 - Area Harvested Reservoir Ridge
- 8 Map 4 - Valley View Blocks
- 9 Map 5 - Puketiro Blocks
- 10 Map 6 - Martins Blocks

Public excluded