

Plantation Forestry Forest Working Plan

Draft

FOR FURTHER INFORMATION

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Introduction

This Forest Management Plan is prepared pursuant to Greater Wellington Regional Council's (GWRC) obligations under section 49 of the *Wellington Regional Water Board Act 1972*. This section provides:

49. *Working plans*

- (1) *The Board shall from time to time prepare working plans in respect of forestry operations in forestry areas and in other land vested in or under the control of the Board and used for forestry purposes.*
- (2) *A working plan shall not come into force until it is approved by the Minister of Forests and may, with the consent of the Minister, be altered by the Board.*
- (3) *Every such plan shall, subject to any rights existing on the date of its adoption by the Board and to the provisions of this Part of the Act, regulate the management of the forest area to which it relates for such period not exceeding 10 years as may be specified in the plan.*
- (4) *Every working plan shall specify –*
 - (a) *The maximum area of the land affected from which forest produce may be taken annually;*
 - (b) *The maximum quantity of forest produce that may be disposed of annually;*
 - (c) *Forestry operations proposed to be carried out during the currency of the plan;*
 - (d) *The protection and development operations to be carried out; and*
 - (e) *Such other matters as the Board thinks fit.*
- (5) *The Board shall not carry out any forestry operations unless and until a plan relating thereto is in force, and all such operations shall be carried out in accordance with the plan.*

This Forest Working Plan is a review of the 1 July 2000 to 30 June 2010 plan. This review is required five years after the date of approval by the Minister.

This Forest Working Plan should be viewed primarily as a statement of the Council's operational forestry intentions, particularly relating to planting, tending and harvesting regimes, and marketing strategies. The Plan should be read in conjunction with the other Council policy documents and, in particular, the Plantation Forestry Department Operating Plan 2005–2015, which is attached as appendix 4. The 10 year Operating Plan is revised every three years and each year is reviewed to produce the approved annual budget. These

processes are subject to public consultation.

3. Definition of the Area Covered by the Working Plan

The forest areas covered by this working plan are generally bounded by the various mountain ranges west of the Rimutaka Ranges: the southern position of the Tararuas, the Akatarawa subrange in the west, the Rimutakas in the east, and a portion of Orongorongo in the south. The relevant areas are set out.

Table 1 - Area Covered by the Working Plan

Forest Block	Production Forest	Potential Production Forest	Total
Hukinga	132	40	172
Whakatikei	160	71	231
Valley View	1,122	878	2,001
Puketiro	1,268	692	1,960
Akatarawa	47	247	294
Pakuratahi	865	543	1,408
Maungakotukutuku	182	-	182
	3,777	2,471	6,248

- Correct as of June 2004

4. Objectives of Production Forest Management

To operate a successful exotic forestry business by adopting best industry practice and by maximising returns to the Council in the medium-term.

This objective will be achieved by:

- Carrying out cost effective silvicultural operations to best industry standards.
- Monitoring forest health on an ongoing basis and taking remedial action where necessary.
- Actively monitoring and acting to minimise fire risk.
- Seeking external advice on forest management practices to ensure high standards are maintained.
- Marketing mature timber to the best advantage within the Council financial parameters of low risk.
- Conducting all production forest activities in accordance with industry codes (LIRO) with due regard to soil and water values, and the desirability of permitting compatible recreation activities.

- Conducting production forestry activities generally within the area set out in appendix 1, other than to consider the purchase or acquisition of other land where it falls within or adjacent to a current product forestry site and such purchase would simplify forest boundaries.
- Where land currently in production forestry fails to produce a satisfactory crop, such land will not be replanted for production forestry but will be replanted with native species or allowed to regenerate naturally and management transferred to the Landcare Division of GWRC.
- Move towards an age structure, which will permit sustainable harvesting.

5. Maximum Area of Land to be Harvested within the Currency of this Plan

Within the period 1 July 2005 to 30 June 2010 the maximum area that may be harvested is 1214 ha, based on those forest stands which will reach maturity (28 years) within this period.

This area is made up by forest as follows:

Pakuratahi	78 ha
Hukinga	40 ha
Valley View	657 ha
Puketiro	439 ha

The maximum land area that may be harvested in any year of the plans as follows:

Brought forward	52 ha
2005/06	275 ha
2006/07	322 ha
2007/08	178 ha
2008/09	213 ha
2009/10	164 ha

It should be noted that any part of the above areas not harvested in the year indicated may be harvested in any of the subsequent years of the plan. These areas exclude scattered stands of minor species, which may be harvested as market opportunities arise.

Where extreme weather events or other incidents cause damage to crop trees, immediate action will be taken to minimise the effects of the event. This may include harvesting merchantable trees aged less than 28 years.

6. Proposed Silvicultural Programme

5.1 Planting Programme

GWRC shall:

- (1) Replant all harvested areas where fertility levels are suitable for commercial *Pinus radiata* forestry.
- (2) Where possible, replant all harvested areas during the winter following harvest. Exceptions will be where proposed harvest activity precludes unhindered access to the land to be replanted.
- (3) Concentrate the planting of new areas of forest on land adjoining existing plantations rather than new plantings in isolation and consider these on a case by case basis.

5.1 Choice of Species

The predominant species will be *Pinus radiata* of GF17 or better.

Pinus radiata has been chosen as the principal exotic tree species to be planted because of its proven suitability as a commercial crop. It is easily propagated, grows exceptionally fast on a wide variety of sites, is easily tended and has the capacity to produce a diverse range of end products suitable for a multitude of end uses. The predominant use of the harvested product is export logs, domestic sawlog and pulpwood.

Minor species may be planted where the particular conditions of the site or likely market conditions suggest that a commercial crop of at least equivalent value to *Pinus radiata* can be produced.

5.1 Forest Access

Roads, Tracks and Bridges

The arterial routes through the forest shall be maintained to a minimum of four wheel drive suitability for 95 percent of the time. Other tracks will be upgraded to four wheel standard for the period that silvicultural activities are proposed and at other times will be maintained to four wheel drive dry weather access only.

New arterial logging roads constructed or upgraded for logging purposes will be maintained to a minimum of all-weather four wheel drive access.

All bridges will be subject to biannual safety inspections and the maximum weight permitted shall be limited accordingly. Bridges certified for light vehicle use will only be upgraded or replaced when harvesting is due.

5.1 Plantation Establishment

4.4.1 Nursery Stock

GWRC will purchase nursery stock to the best advantage, having regard to genetic quality and the specific climatic conditions of the planting site.

4.4.2 Escapement, Cultivation and Planting

Planting density shall follow “best industry practice” and generally planting density will be reduced for seedling of higher GF ratings.

Current planting density for GF 17 *Pinus radiata* is 1,500 spha.

Planting densities for minor species will be as recommended by the suppliers.

4.4.3 Weed Control

New planting shall be monitored and, where weed competition is suppressing growth, weed control shall be undertaken. The method and type of control shall be assessed after consideration of the site, the problem weed types and the method and chemicals available.

4.4.4 Fertilising

Fertilising shall be undertaken where foliage analyses show it to be necessary and it can be shown to be cost effective.

4.4.5 Pruning and Thinning

Current GWRC policy is to adopt a full silvicultural regime where all *Pinus radiata* stands are pruned to a minimum of 6 m and thinned to final stocking of 350 spha. This regime may be varied where it can be demonstrated that the investment required for silviculture is unlikely to be recovered in the final crop. Unless otherwise required pruning will be 3 lifts to 2.2m 4.2m and 6.2m. Blocks will not be offered for treatment until 75% of the block meets the required specification.

Current practice is only to present blocks for tending when at least 70 percent of the block meets the relevant criteria set out below.

Initial stocking	1,500
Target DOS (m ³)	18
Target age for first prune	5
Minimum green crown remaining (m)	3 - low, 3.5 - medium, 4 - high
Target final pruned height (m)	6.2
Number of lifts	3
Target thin age (to follow final lift)	9
Final stocking (spha)	350

All pruning, thinning and tree selection shall be as specified by the relevant Code of Practice published by the LIFTB or its successors.

The treatment of minor species shall follow “best industry practice”, provided it can be demonstrated that the investment required is likely to be recovered in increased returns at harvest.

5. Stand Records and Management Inventories

GWRC shall maintain sufficient stand information to enable future yields and market values to be calculated. Such records shall record all silviculture undertaken on an individual stand basis.

Stand assessments and area calculations shall be undertaken as required to maintain the validity of the stand records.

6. Proposed Cutting Plan

The proposed cutting plan for the period 1 July 2005 to 30 June 2011 is set out in table 2 on page 5.

7. Timber Marketing

It is unlikely that GWRC will at any stage have the skills and facilities to undertake the marketing of its forestry products. For this reason, the harvesting and sale of logs will be offered for tender in “packages” structured to attract bids from the major companies in this field. Such contracts would seek to combine sales to both local and overseas markets to reduce the relative reliance on any one market.

8. Sale of Forest Cutting Rights

GWRC has from time to time considered the option of offering a Forestry Right to maintain and harvest some or all of the exotic forest plantation pursuant to the *Forestry Rights Registration Act 1983*. Should GWRC wish to offer a right of this kind, the decision will be considered as “significant” pursuant to the *Local Government Act 2002* and thus public consultation as required by that Act will be required prior to any such right being awarded.

9. Forest Health

The predominant threats to forest health in this region are from animal pests in the form of possums and, to a lesser extent, deer and goats. The area is also subject to attack from fungal diseases such as *Dothistroma*.

The control of the possum population is managed in conjunction with the adjacent indigenous forests. Regular monitoring of pest damage is undertaken and, when these become a risk to forest health, a co-ordinated extermination programme is undertaken. The major benefit of this co-ordinated approach is that, as the surrounding area is treated at the same time as the forests, reinfestation is significantly delayed. Financial benefits also accrue from “economies of scale” which follow from a larger operation.

Deer and goats do not pose as serious a risk as possums, as hunters generally control them.

Annual Health Inspections are undertaken under a global contract arranged by the Forest Owners Association. The inspection includes aerial surveillance followed by a “drive through” and specific inspection of any areas of concern. A written report is received after each inspection.

As these forests are in the main surrounded by indigenous forest, staff from both Plantation Forestry and the Landcare Division travel through the forests and, in so doing, provide a surveillance system for incidences of fungal diseases such as *Dothistroma*. At time of higher risk specific additional patrols would be arranged to monitor forest health. Any instances of fungal attack are immediately analysed and remedial action taken.

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Table 2 - Proposed Cutting Plan

Clearfell Year End	Forest/Block	C'part	Year Planted	Area	Age	P1	P2	S1/S2	Ex-K	Dom	Total Pulp	Volume m ³
2006 2005/06												
	Martins	5/1	1977	12.94	29			3688	388	2109	2226	8,411
	Pak West	5/02	1977	3.20	29	16		592	32	598	589	1,827
	Blow Fly	1/01	1976	60.3	30	4764	844	1568	1749	10733	6995	26,653
	Beech Spur	1/03, 0/4	1977	19.2	29			3065	310	3395	2929	9700
	Castle Ridge	3/01	1976	2.60	30	187		187	281	140	140	936
	MOT 73	7/02	1973	14.20	33	1122	511	454	611	3550	2528	8,776
	MOT 74	7/01	1974	30.00	32	1350	690	810	660	5070	5700	14,280
				142.44		7439	2045	10,364	4031	25,595	21,107	70,511
2007 2006/07												
	V View	5/03	1978	19.70	29			3428	650	5890	2049	12,017
	Dicks Yard	5/01**	1977	64.50	30	2000	2580	4128	1806	10127	7998	28,638
	Upper Long Spur	5/01	1978	19.70	29			1103	1064	5358	2916	10,441
				103.9		2,000	2,580	8,659	3,520	21,376	12,962	51,096
2008 2007/08												
	Sth Mill Flats	9/02	1977	2.70	31	194	49	451	181	424	510	1,809
	HU Back Road	9/01	1978	14.90	30	1028	283	2354	969	2175	2801	9,611
	Centre Sth	9/01	1978	50.00	30	900	1400	8150	1750	13700	7200	33,100
	<i>Signis</i>	10/01	1978	11.70	30	620	105	2211	176	1849	1533	6,494
	<i>Hukinga</i>	9/03	1978	7.20	30			122	0	612	2030	2,765
	<i>Hukinga</i>	13/03	1978	2.30	30	55	64	179	0	283	996	1,578
				88.80		2,798	1,901	13,468	3,075	19,043	15,071	55,356
2009 2008/09												
	Long Spur	2/01,02	1978	27.80	31			6894	1056	8757	2863	19,571
	Centre Sth	9/01	1978	27.50	31	550	798	4785	908	7975	4070	19,085
	Kilometre	12/01	1979	45.10	30			10373	1714	15334	5502	32,923
				100.40		550	798	22,052	3,678	32,066	12,436	71,579
2110 2009/10												
	Kilometre	12/01	1979	45.00	31			10919	1804	16142	5792	34,657
	Glider	12/01	1979	32.80	31			6955	1730	9758	3391	21,835
	Parry' Bush	4/01	1979	40.20	31			10730	1484	14801	4750	31,766
				118.00		0	0	28,605	5,019	40,701	13,933	88,258

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Fire Safety

GWRC forests fall within the rural fire districts managed by the following city councils:

Hutt City	Wainuiomata
Upper Hutt City	Pakuratahi (including Mangaroa and Kaitoke), Valley View, Hukinga, Puketiro, Whakatikei
Porirua City	Puketiro
Kapiti District	Whakatikei, Maungakotukutuku, Little Akatarawa

In addition, the Council owns the firefighting equipment shown in appendix 2.

GWRC has contracts with Hutt City, Upper Hutt City, Wellington City and Kapiti Coast District Councils for direct access to their Volunteer Rural Fire Forces. This relationship gives GWRC access to over 90 trained personnel, experienced in rural firefighting and equipped with pagers, to allow prompt response to fires at all times. GWRC supervisors regularly liaise with the Hutt Valley Rural Fire Force, in particular, (the volunteer rural fire force closest to the bulk of GWRC's forest estate) to ensure that force is aware of current operations and current access conditions. A similar relationship exists with the Te Horo Rural Fire Force for the Kapiti forests.

A core of trained staff members are maintained at the GWRC Upper Hutt Depot who are able to assist at any fire on Council lands, with some who are able to assume a fire management role.

Prior to each fire season, a GWRC Plantation Fire Plan is prepared and distributed to all firefighting authorities. This plan includes:

- Locations of the forests
- Descriptions of vegetation
- Internal roads suitable for use by heavy vehicles
- Four wheel drive only tracks
- Water sources by block
- Access routes and approximate distances
- Specific hazards by forest
- Suggested initial firefighting strategy
- The priorities should there be multiple fires.
- Contact details for key GWRC personnel

- Contact details for additional firefighting equipment

A copy of the current Plantation Forestry Fire Plan is attached as appendix 3

10. Other Users

The use of exotic forest areas by other groups will be considered on a case by case basis.

In general terms, the potential for risk and/or damage to the crop will be the prime consideration.

Charges will be levied where access is required for a commercial venture and/or specific arrangements, which require expenditure by GWRC, to cater for the event.

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Appendix 1
Greater Wellington Regional Council Land Areas

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Forest		Legal Description		Area (ha)
Little Akatarawa		437/58		900.0209
		10D/831		87.9161
		10D/832		95.3794
Total				1083.3164
Valley View		20B/569		267.248
		31A/562		1.7839
		25A/510		1615.2796
		226/68		60.4736
		326/97		0.178
		451/130		0.9965
Total				1945.9596
Hukinga		19C/1400		471.1553
		411/118		1634.181
		437/134		2165.475
		814/4		50.3833
		488/297		87.1085
		26D/778		32.3353
		25C/984		0.0573
Total				4440.6957
Puketiro		22B/306		39.87
		22B/305		38.22
		20C/477		257.987
		16C/728		852.9418
		18B/963		83.7699
		26A/229		53.43
		18B/965		113.312
		22D/167		152.183
		48A/529		94.2877
		18D/243		1.1051
		618/54		63.4572
		31C/915		501.0568
Total				2251.6205
Whakatikei		13C/916		97.3933
		41D/398		5578.4817
		25A/637		28.8532
Total				5704.7282
Maungakotukutuku		20C/506		114.6778
		20C/507		217.9738
		20C/508		14.164
Total				346.8156

Forest		Legal Description		Area (ha)
Pakuratahi		44B/133		333.2182
		39D/642		6841.0131
		18B/1237		0.301
		C4/53		0.8017
		20C/497		112.7554
		20C/1018		0.6297
		20C/498		1.2596
		20C/499		1.1987
		21B/552		9.9975
		20C/1016		6.8594
		22D/381		96.6634
	20C/1017		31.5655	
Total				7436.2632
Hutt		20C/1015		394.9731
		F2/361		2.1094
		570/103		33.9936
		30B/396		1155.6768
		589/40		714.1259
		589/41		595.1281
		16B/1131		1255.6889
		821/44		17.5052
		37A/679		7600.1
		41A/458		683.57
Total				12452.871
Wainuiomata/Orongorongo		253/202		46.5389
		248/72		33.7913
		253/199		13.7619
		124/21		21.2207
		102/186		374.1322
		488/55		2454.8253
		121/100		42.3554
		7B/472		62.304
		37/289		421.6828
		485/234		408.5217
		362/136		244.3024
		48/27		212.1086
		704/51		31.3365
		648/43		152.1898
	Gaz	1916/2619		2129.8624
Total				6648.9339
Lower Orongorongo	Stat area	7B 1927 p 837		6191.6958
U/Hutt Depot				0.7203
Total All Blocks				48,503.6202

Appendix 2

Greater Wellington Regional Council Owned Firefighting Equipment

GW MASTER FIRE EQUIPMENT LIST

Godivas	2		Hydro Blender	1	
Robin Pump Units	4		Sprinklers	5	
Rotary Pump Unit	1		Petrol Cans 20L	5	
Trash Pump	1		Petrol Cans 9L	1	
Floating Pump	1		Petrol Cans 7L	2	
Arkos Pumps	1		Controllable Dividing Breaches (Alumin)	4	40mm
Koshin Ponstar Pump	1		Controllable Dividing Breaches (Plastic)	4	40mm
Tandem Equipment Trailers	2		Brass	1	40mm
Single Axle Equipment Trailer	1		Fire Finder Detector	1	
Tanker Trailer	1		Plexone Nozzles (41mm)	41	
Monsoon Buckets	2		Adjustable Nozzles (Alumin 41 mm)	5	
Lengths of 70 mm Non Perc Hose	8		Non Adjustable (Alumin)	2	
Lengths of 70mm Perc Hose	10		Brass 41mm	1	
Packs of 25mm Hose	2		70mm Non adjustable Nozzles (Alumin)	2	
Packs of 41mm Perc Hose	14		Reducers (Double Adaptors) 70-41mm	4	
Packs of Non Perc	2		Double Male Adaptor 70mm	1	
Hoses for Arkos Pumps	3		Reducer 1200-70mm	1	
Wajax Pump Suction Hoses	4		Reducers 70mm-41mm		
Godiva Suction Hoses	4		Stand Pipes and Keys	3	
Arkos Suction Hoses	1		Pump Carrying Frames	4	
Air Bottles	4		Cane Suction Baskets	2	70mm
Portable Tank and Attachments	1		Cane Suction Baskets	1	40mm
Battery Lanterns	2		Wet weather Suits	4	
Instantaneous Couplings	2		Extension Air hoses	1set	
Wire Mesh Strainer for Trash Pump	1		Wet Water Capsules	34	
Air Regulator Kits	2		Flyer Tanks	2	
Bambi Bucket	1	Westpac	Filling Trunk	1	
Hose for Arkos Pumps	4		Short Hoses 41mm	9	
Fire Brigade Helments	20		Hard Hats	5	
Fire Helmets	7		Tool Kits	2	
Rega Packs	4		Foam Inductor	1	
Rega Vests	2		Foam Nozzles	3	
Canvas Buckets	1		Plastic Buckets	2	
Measuring Jug	1		Wheel controlled Dividing Breach	1	70mm
Dragur Masks	8		Shovels	10	
Wajax Priming Pump	1		Bolt Cutters	1	
McLeod Raks	7		Section Coupling Wrench	1	
Strainers for Godivas	2		Camlock Fittings	4	51mm
Gooses Neck Fillers	2		Chainsaw	1	
Trail Bike	1		Hose Laying Box	1	
Leather Gloves	30		Earmuffs	3	

Goggles	8		Axe	1
Beaters	4		Slashers	2
Hose Pressure Reducers	2		First Aid Kit	1
1 x Box of Earplugs			1 Pkt of Unimasks	
Stand Pipe Dividers	3	70-40mm	Collins Axes	4
Fish Bins	2		Water Containers	2
Food Box	1		Phoscheck	1 ton
Silvatect 40kg bags	16	Bags	Forexpan S Foam	16
Silvex 19 L Containers	1		Hose Ramps	3 sets
RTs	19		Mobile Phones	3
Pagers	1		Ground to Air Radios	3
Weather Stations	2		25mm Non Perc Crusader Hoses	6
2200 L Portable Dam				

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Appendix 3
Current Fire Protection Plan

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Appendix 4
10 Year Operating Plan

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Plantation Forestry Department Proposed Operating Plan 2005-2013

January 2005

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1. Role – what we do

Our role is to:

To operate a successful exotic forestry business by adopting best industry practice and by maximising returns to Greater Wellington Regional Council in the medium-term.

2. Outcomes – why we do it

Greater Wellington Regional Council (GWRC) holds significant tracts of land as future water catchment areas west of the Rimutaka Ranges. Approximately 3,700 hectares of this area have been planted in exotic forestry. These areas are managed as a production forest with the dual intention of providing GWRC with a financial return from the land and to maintain the “health” of the area for future catchment use.

The lead time available prior to any of these areas being converted to active catchments is sufficient to enable the area to be prepared for use as an active catchment.

During this interim period the exotic forest estate offers an alternative recreational experience with its different species and management regime.

By ensuring adequate riparian setbacks following harvesting and by ongoing control of pests, particularly possums, the diversity of the area is enhanced and raw water quality improved.

There are areas within the plantation forestry estate where windrun precludes the production of merchantable trees. These areas have been made available to the renewable energy project to potentially assist with GWRC’s sustainable energy targets.

3 Revenue and funding policy – who benefits and who pays

The Plantation Forestry business within GWRC is self-funding. This means that of recent times there has been no call on regional ratepayers to fund any or all of the forestry operations.

Total operating costs may and often do exceed logging revenues. Where this is the case, additional loan funding is acquired to ensure that there is a net funding position of zero.

GWRC holds 18 forestry encouragement loans that were provided from the Ministry of Forestry between 1977 to 1988. Those provided prior to 1983/4 are at the rate of 5 percent, those after are at 7 percent, all compounding annually. These were provided from the Ministry of Forestry to enable specific blocks of land to be planted. At age 30 or when these blocks are logged, whichever occurs first, GWRC is required to repay the loans. The

amount to be repaid is 80 percent of the net revenue obtained from the block until the loan relating to that block is repaid in full. Should GWRC elect not to replant the block, 100 percent of revenue must be put to repayment of the loan.

The first repayments under this scheme commenced in 2002 and they will continue intermittently until 2018.

4. Objectives

- To add value to GWRC's metropolitan plantation forest estate, balancing medium-term profit enhancement with acceptable environmental practices.
- To develop a forest estate managed as a suitable natural resource in perpetuity.
- To ensure that the forests are kept in a healthy condition, free from avoidable fungus and insect attack or damage from fire.
- To ensure that a current accurate record of individual forest stands within the plantation area is developed and maintained.
- To provide a safe working environment for both employees and contractors, and to operate a personnel policy that complies with the principle of being a good employer.
- To adopt and maintain a current Operating Plan.

5. How do we get there

5.1 Legislative framework - Wellington Regional Water Board Act 1972

GWRC's forestry activities are authorised by section 43 and part III of the above Act.

5.2 Operating synergies

Many of the activities related to plantation forestry are common with those of the Landcare Division. Both require road construction and ongoing maintenance programmes. Both natural and exotic forests require pest strategies and fire prevention/fighting strategies.

In such common areas Plantation Forestry will, where it is expedient to do so, co-operate with GWRC departments and/or other forest owners to obtain economies of scale and to minimise costs.

5.3 Technological advances

Through its membership of industry organisations, Plantation Forestry will monitor developments in the industry and adopt any that will enhance the cost effectiveness of the operation.

5.4 Market changes

Similarly, future market trends will be monitored to ensure that GWRC is in the best position to take advantage of any market developments. It is not the intention of GWRC to directly market its own products but to continue to utilise the skills of the professionals in this field.

5.5 Log sale process

To process all sales through the Forestry Management Group to ensure that the best return from the forestry assets in the metropolitan area and Wairarapa are achieved for GWRC.

5.6 Silviculture regime

To operate full silviculture regime on those stands where this is cost effective and to modify or eliminate this regime where the costs of silviculture cannot be recovered in the final saleable product.

It is anticipated that there will be few stands where the full silvicultural regime cannot be justified.

5.7 Harvest planning

To maintain an ongoing harvest plan designed to ensure, as far as possible, maximum cash flows, logical movement between stands to minimise capital expenditure on new roads, and a rationalised replanting strategy.

The harvest proposed for the next three years is shown in table 1. In addition, we have to date been unable to find suitable access to the two MOT blocks. These blocks will be scheduled for harvest as soon as access is achieved.

Table 1

Forest	Block	Block No.	Area (ha)
Valley View	Long Spur	2/01, 2/01	27.8
Valley View	Upper Long Spur	5/01, 5/02	54.4
Valley View		5/03	19.7
Hukinga	South Mill Flats	9/02	2.7
Hukinga	Signis	10/01	11.7
Hukinga		9/01, 9/03, 13/03	24.4
Pakuratahi		4/01	23.9
Forest	Block	Block No.	Area (ha)
Pakuratahi	Martins	5/01	19.6
Pakuratahi		5/02	3.2
Puketiro	Dicks Yard	5/9	64.5
Puketiro	Blowfly	7/91	65.3
Valley View	Green Knob	1/01, 1/02	32.3
Valley View	Castle Ridge	3/01	2.6
Total			352.1

5.8 Interface with recreational activities

Harvesting continues in the western end of Puketiro Forest adjacent to the Battle Hill Forest Park. As a consequence, there is some interface between harvesting activities and recreational activities. These are being managed by ongoing liaison with the Park Rangers at Battle Hill. As the harvesting activity retreats eastward, the level of interaction between the two groups is expected to reduce.

5.9 Capital expenditure

A total \$218,147 of capital is programmed for this year. The major projects are the ongoing upgrade of roads in Puketiro Forest (\$75,000), and the anticipated costs for intra block harvest access (\$118,147). The balance (\$25,000) represents miscellaneous smaller projects. In addition, it is scheduled to replace one four wheel drive utility vehicle (\$30,000).

For accounting purposes, the planned silvicultural work, which is budgeted at \$279,491, is treated as an investment addition.

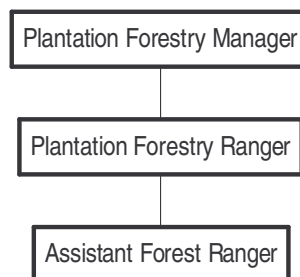
5.10 Personnel strategy

The personnel strategy continues the present practice of contracting through competitive tender all of the major activities in relation to the forest. Field staff members are primarily involved in the supervision of contractors and quality checks.

5.11 Log price assumptions

Log price assumptions used in the June 2004 valuation adopted for this year have been assumed to remain the same in real terms over the period of this plan.

5.12 Department organisation chart



6. Key issues/challenges, assumptions and changes from the LTCCP

6.1 Key issues/challenges

6.1.1 General

Although GWRC's plantation forest investment is beginning to mature at a time when there are global indications of increasing demand for softwood timber and wood products, present prices are significantly below those of four to five years ago. Economic activity in Korea, our major export market, is variable and there is fluctuating demand for the grades of timber currently being harvested. Although both India and China offer further export opportunities, these markets are not as yet fully developed and may offer better returns into the future. In addition, despite some increases in the prices for pulp grade logs, current prices are such that the returns from the more distant stands, or those with higher harvesting costs, do not cover logging and cartage costs.

Despite this variability, more area is being withdrawn from forestry overseas than new areas maturing within New Zealand.

Traditionally around 50 percent of the logs produced from GWRC's metro forest have been exported through Centreport. Export transactions are all based on the United States dollar. In the past this has been a relatively stable currency and the main variable has been the stocks of logs available in Asia. More recently, with the continual weakening of the United States dollar against the New Zealand dollar, export prices firstly became uncompetitive with local mills. Latterly, when real shortages occurred in the Asian market, significant United States dollar price increases were achieved in Korea. These failed to benefit growers in New Zealand as the United States dollar continued to weaken against the New Zealand dollar, absorbing any benefit. This process was exacerbated by a cyclic shortage of ships, which effectively doubled shipping costs.

Indications are that the shipping prices will remain high in the short-term but the relativity of the United States dollar and New Zealand dollar is still an unknown.

Both the Australian and United States' markets for sawn timber remain variable and, while GWRC does not serve these markets directly, they do support an ongoing demand by local mills exporting finished product.

GWRC's plantation forest is based on a full silvicultural regime. As each block develops, it is assessed as to its suitability for the production of pruned logs.

Management of the forests is undertaken in recognition of the scope of recreational activity which takes place within and adjacent to the forests and in accordance with "best industry practice".

6.1.2 Recreation

Being in public ownership, the plantation forests are seen as being available to the public for recreational purposes at all times. This view imposes costs in the form of damage to roads, fences and at times trees, as well as costs in protecting the public from legitimate forestry activities, especially logging.

6.1.3 Roading

The forests are relatively sparse stretching for 29 km from the top of the Rimutaka Ranges through to the Maungakotukutuku Valley above Paraparaumu.

Although there is a network of tracks suitable for use by four wheel drive vehicles, many of them are too narrow and/or too steep for use by loaded logging trucks. It will be necessary to identify the most economical method of accessing these forestry blocks prior to harvesting commencing to ensure the maximum return is achieved for GWRC.

Over the past winter the main logging contractor was allocated a block within Valley View Forest with a cart of less than 5 km to the gate. This compared with over 20 km in the previous year and, as a consequence, only routine maintenance of roads was required. This strategy will be continued, subject to market requirements.

6.1.4 Prices

All export transactions are based on the United States dollar and quantities are based on the Japanese Agricultural Standard (JAS). Export prices initially decreased because of increased shipping costs and a weakening United States dollar. Of late, shortages have forced significant price increases in Asia, which have been greater than price increases related to the shipping and dollar. The relationship between the cubic or weight measurement of the trees - by which local costs are incurred - and the JAS - by which the overseas costs are incurred - caused further price fluctuation.

Because of oversupply as a consequence of the availability of windthrown logs and the reduced returns from export, domestic prices have weakened slightly. It is not expected that the oversupply will continue, unless there are further intense storms. The introduction of a new grade of log through a Masterton mill helped initially but, with new owners restricting purchases, its value has diminished.

At times where either the domestic and export market prices trend downwards those grades of logs that can be substituted between markets are sold into the most favourable market.

6.2 Assumptions

The main assumptions in the document are:

- The forests will be harvested as they mature, with minor adjustments as

required for market and/or cash flow purposes.

- All harvested areas will be replanted in the winter following harvest.
- Unless specific conditions dictate otherwise, all new plantings will be *Pinus radiata*.
- Nominal harvest age will be 30 years for radiata and when mature for other species.
- Harvest programmes will be subject to competitive tender. Smaller “niche” contracts may be let to meet specific market opportunities.
- Log prices will, in general, remain constant in real terms.

6.3 Changes from the Long-term Council Community Plan (LTCCP)

There has been some minor recasting of the figures to reflect current market conditions, for example, modifications to the discrete annual cutting plans. However, this has not impacted upon the overall revenue quantum across the 8 year planning period.

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Part B: Departmental outputs

7. Outputs: long-term

7.1 Planned activities 2005-2013

- Operate the forest as a successful business, by maximising financial returns over the medium-term by prudent management and by adopting “best industry practice”.
- Where appropriate, maintain a comprehensive silvicultural regime to enhance the value of the forest.
- Develop the necessary roading network to ensure adequate access for harvesting.
- Monitor forest health on an ongoing basis and take action to overcome any problems identified.
- Monitor and maintain soil and water quality.
- Adopt a “conservative” approach to innovations in the industry adopting only those which have proven long-term benefits.
- Maintain an up-to-date and comprehensive database on the asset.
- Maintain a prudent pest and fire control strategy.
- Maintain a current Forest Working Plan as required by the *Wellington Regional Water Board Act 1972*.
- The manner in which we carry out our operations will comply with the *Health and Safety in Employment Act 1992*, as amended in 2002, *Health and Safety Regulations 1995*, relevant Codes of Practice and current legislation.

A hazard identification programme will be undertaken at all work locations to eliminate, isolate or minimise the effect of risk to all Plantation Forestry staff and contractors working at those locations. These hazards will be entered on a hazard register, which will be continually updated.

8. Outputs: short-term

- To carry out all GWRC's metropolitan plantation forestry planning and supervision activities to a quality acceptable to GWRC and to an external forest auditor and valuer.
- Continue the harvesting of more distant blocks while the weather remains suitable and withdraw to blocks nearer to public roads in winter to minimise haul distances.
- Complete the planned silvicultural work (pruning and thinning) on GWRC's metropolitan forests to industry accepted standards measured by quality plots within a budget of \$279,941.
- Arrange road and track maintenance, so that all arterial roads other than those used for harvesting are available for use 95 percent of the time and those roads and tracks giving access to compartments scheduled for silvicultural work are accessible for four wheel drive vehicles for 99 percent of the time in summer and 95 percent of the time in winter.
- Ensure all plantation forests are insured, that a current fire plan is in place and that other forest protection activities are carried out to meet NRFFA Code of Practice requirements and MOF standards, within a budget of \$35,000.
- The Hazard Register will be reviewed on a six monthly basis. We will assess the effectiveness of the measures taken to eliminate, isolate or minimise risk to all Plantation Forestry employees and contractors.
- The health and safety plans of all contractors employed by Plantation Forestry will be reviewed prior to their employment. Their activities should comply with the *Health and Safety in Employment Act 1992*, as amended in 2002, the *Health and Safety Regulations 1995*, relevant Codes of Practice and current legislation, and meet or exceed the methods of operation as determined within the Plantation Forestry Health and Safety Plan. Their activities will be monitored on a regular basis, to ensure that any risk to their employees, employees of subcontractors, GWRC staff or the general public is eliminated, isolated or minimised.
- Update the Forest Working Plan as required by the *Wellington Regional Water Board Act 1972*.