
Water Supply

July/August 2001

Operations Group
July/August 2001

Operations Group Review of Operations for the Period Ended 31 August 2001

1. Items of Note

- The first two months of the rollover of the Water Services Agreement have resulted in a definite reduction in performance because of staff absenteeism and the anticipated drop in morale. It has been necessary to use subcontractors to ensure that performance standards are maintained at an acceptable level.

2. Water Quality

A total of 558 samples from trunk mains were tested for coliform organisms. None of these samples tested positive.

A total of 111 samples of treated water from treatment plants were tested for faecal coliforms. None of these samples tested positive.

Secchi disc water clarity in the Te Marua north lake varied between >1.7 m and 5.6 m, and in the south lake between 4.5 m and 6.3 m. These are considered satisfactory.

The dominant phytoplankton were as follows:

- North Lake: *Staurastrum*, *Oscillatoria*, *Cosmarium*
- South Lake: *Botryococcus*, *Staurastrum*, *Cosmarium*

Oscillatoria is a filter clogging algae when present in high concentrations. *Botryococcus* often blooms in hard water lakes. *Asterionella* and *Peridium* produce fishy odours. *Cosmarium* and *Staurastrum* produce a grassy smell when abundant.

Dissolved oxygen (11.10-12.90 mg/L) was satisfactory.

pH values were satisfactory (7.10-7.60).

Giardia and *Cryptosporidium* results were as follows:

Te Marua

- | | |
|--------|------------------------------|
| Lakes |) No <i>Giardia</i> |
| |) No <i>Cryptosporidium</i> |
| Intake |) Low <i>Giardia</i> |
| |) Low <i>Cryptosporidium</i> |

Treated Water) No *Giardia*
) No *Cryptosporidium*

Wainuiomata

Treated Water) No *Giardia*
) No *Cryptosporidium*

Lower George Creek and) Low *Giardia*
 George Creek south arm) Low *Cryptosporidium*
 combined)

Orongorongo and Big Huia) Low *Giardia*
 Intake combined) Low *Cryptosporidium*

Wainuiomata intake) Low *Giardia*
) Low *Cryptosporidium*

Guidelines Criteria

0-10 oocysts = low

10-50 oocysts = medium

>50 oocysts = high

3. Supply Situation

The bi-monthly seasonal forecast for August/September 2001 issued by the Meteorological Service is as follows:

For Wellington

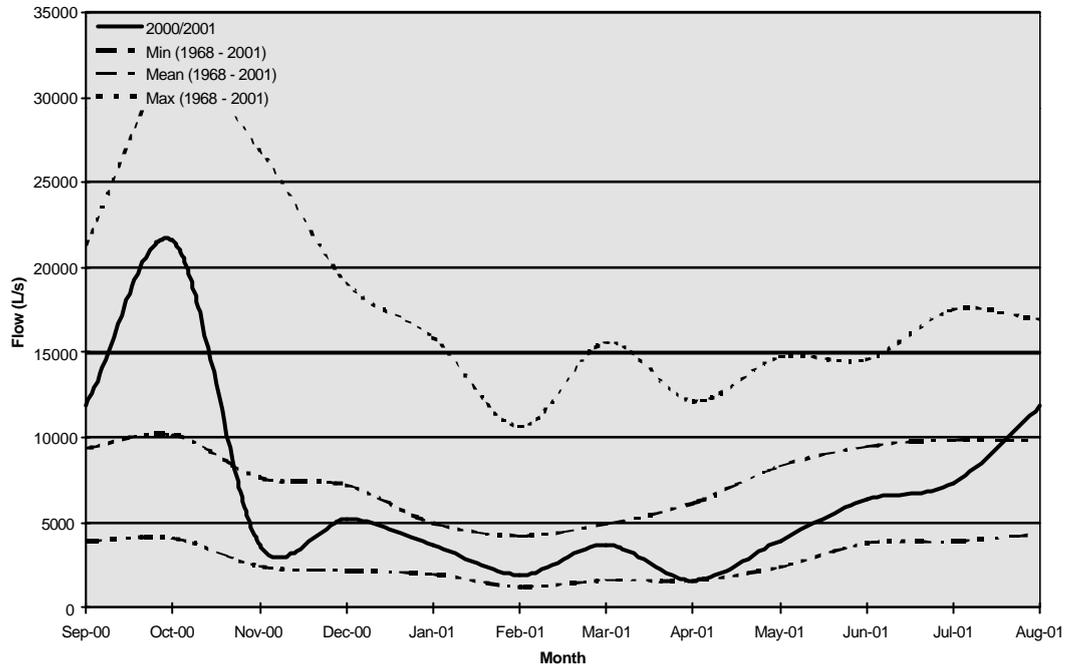
Rain: Near normal
Wind: Near normal, maybe more norwesterlies than normal
Temperature: Becoming slightly above normal, but some cold snaps
Sunshine: Continuing above normal
Confidence: Moderate

Since the indications are that there should be some mobility in the pattern, wind swings from northwest to southerly are expected to be plentiful. A few of these fronts may be preceded by vigorous blasts of northwest wind, and some may be followed by abruptly chilling conditions. This pattern may also be interrupted at times by extended dry periods with light winds.

Hutt River Flows

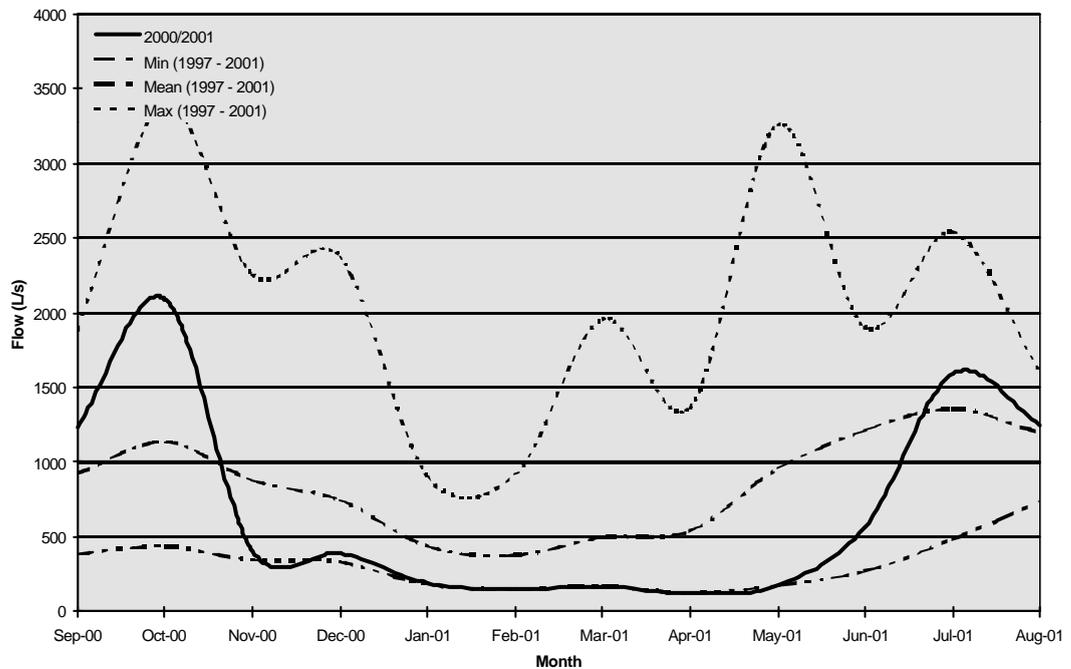
The mean monthly flow in the Hutt River during July was below average, although continued to rise from its near minimum state during April and May.

During August the mean monthly flow was above average and continues to rise from its near minimum state during April and May.



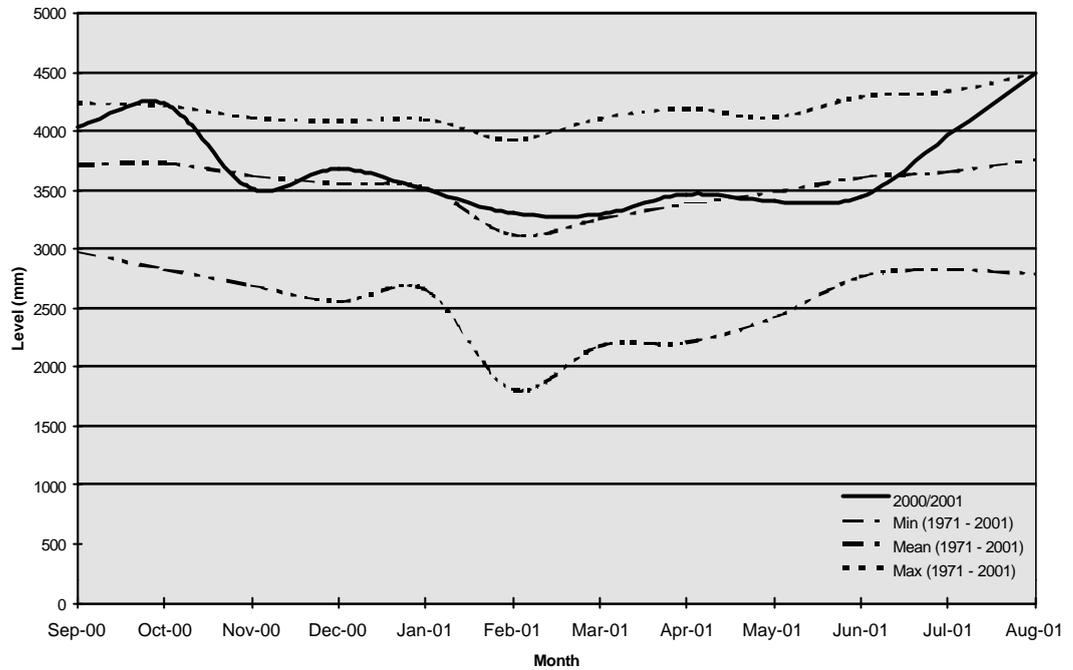
Wainuiomata River Flows

Flow in the Wainuiomata River during July rose from its long reign along the minimum level to above average. Flow during August was above average.



Aquifer Levels

The water level in the Waiwhetu aquifer during July was above average. During August the water level reached its maximum.



4. Production

4.1 Wainuiomata

4.1.1 Quality

There are no quality issues to report

4.1.2 Safety

There are no accidents or incidents to report.

4.1.3 Operations

There are no items to report.

4.1.4 Projects

➤ Operational Projects

- ◆ Two leaks were repaired on the Orongorongo pipe during August.

4.1.5 Plant Tours

There were two tours during the two month period, one being members of an environmental, the other a group of superannuitants.

4.2 Waterloo Water Treatment Plant

4.2.1 Quality

There are no quality issues to report.

4.2.2 Safety

There are no accidents or incidents to report.

4.2.3 Operations

There are no items to report.

4.2.4 Plant Tours

There were two tours during the two month period, one group being members of an environmental and the other a group of superannuitants.

4.2.5 Projects

➤ Capital Works

- ◆ A driveshaft and pump were replaced at Gracefield No. 1 Pumping Station, as the existing ones were worn out.

4.3 Gear Island

4.3.1 Quality

There are no quality issues to report.

4.3.2 Safety

There are no accidents or incidents to report.

4.3.3 Operations

There are no items to report.

4.3.4 Plant Tours

There were no tours during the period.

4.4 Te Marua

4.4.1 Quality

Date	Transgression	Cause
23 July 2001	Low fluoride 0.69 ppm (minimum 0.7 ppm)	Dose adjustment
24 August 2001	Fluoride off for 19 hours	Annual calibration

4.4.2 Safety

There are no accidents or incidents to report.

4.4.3 Operations

Date	Problem	Cause
1 July 2001	High sludge lagoon	Settling tank inlet vale fault
1 July 2001	High treated water colour	Air bubbles in sample line (false alarm)
2 July 2001	High sludge lagoon	Settling tank inlet vale fault
3 July 2001	Filter No. 1 sequence fault	Backwash inlet valve solenoid failure
5 July 2001	High streaming current alarm	Flow fluctuation through plant
22 July 2001	Plant slam-shut	Major power cut
29 July 2001	High Pump Station pH	Caustic dose adjustment
2 August 2001	High filter outlet turbidity	Insufficient polymer dose
2 August 2001	High Pump Station pH	Caustic dose adjustment
4 August 2001	Alarm system fault	Problems with software
13 August 2001	High filter outlet turbidity	Insufficient polymer dose
23 August 2001	Boost Pump No 3 tripped	Mains power fluctuations

4.4.4 Plant Tours

12 July	Opus C Grade Water Treatment Course - 8
30 July	Totara Park School - 90
6 August	Wellington School of Medicine - 15
6 August	Wellington College of Education - 20
8 August	Wellington College of Education - 30
9 August	Opus C Grade Waste Management Course - 15
23 August	Wellesley College - 25
29 August	Super Tours - 35

4.4.5 General

- Drinking-Water Standards 2001 (Turbidity Control Software)

- ◆ Several high turbidity incidents during August provided the first real test for the new turbidity control software. On each occasion the software detected early problems and responded quickly to prevent quality transgressions.
- ◆ Results to date have been very encouraging. However, each incident will vary, depending upon conditions, and some minor tuning may be required in the future.

➤ Lake Valves

The new lake valve actuators and controls have been commissioned. Remote control from the treatment plant is now possible.

5. Distribution

5.1 Health and Safety

There are no accidents or incidents to report.

5.2 Pipeline Section

5.2.1 Maintenance/Repairs

- The two monthly scour valve exercise on the Hutt main was carried out.
- A new aluminium walkway was fitted in the Tunnel Grove valve chamber.
- Redundant pipework was removed from the Korokoro valve chamber and alterations completed to the Petone reticulation.
- The Rocky Point valve chamber was sandblasted and painted out.
- Repairs were carried out on the Hutt main in the Judgeford area. The main was shut down and a new section of pipe on the scour valve elbow was fabricated and installed.
- The OK main was shut in Tinakori Road to allow the Contractor to repair leaks on this section of pipe.
- Welding repairs were completed on the OK main above the Wainuiomata Water Treatment Plant.

- The 1,050 mm main was shut down at Gear Island to carry out welding repairs. A new 200 mm pump-out was fabricated.

- The 1,050 mm main was shut down to repair a broken gearbox on the 900 mm line valve at Korokoro valve chamber.
- Repairs were carried out to a single air valve on the Wellington City Council 800 mm trunk main in Customhouse Quay.
- A non-return valve on the bore line in Willoughby Street was repaired.
- Repairs were carried out on the inlet main to Paremata No. 1.
- A second welding repair was carried out on the OK Main above the Wainuiomata Water Treatment Plant.
- A welding repair to the single air valve on the Ngauranga interconnection pipeline was completed.
- A new 90° bend was fabricated for the Johnsonville rising main.

5.2.2 ISO9002

- The annual testing of the parallel mains and dead legs was completed for ISO 9002.

5.3 Electrical Section

5.3.1 Ascot Park

- The inlet control valve was modified and the inlet flow rate significantly increased.

5.3.2 Thorndon Pumping Station

- A 24 hour sampling system was installed to collect a representative sample of water covering the full 24 hours each day.

5.3.3 Karori Pumping Station

- The protective devices on the Kelburn pumpset were improved.

5.3.4 Turbidity Meters

- Turbidity meters have been installed at Thorndon, Karori and Haywards Pumping Stations.

6. Health and Safety : Total Injury/Illness/Incident Record

➤ Production

There were no accidents or incidents during the period.

➤ Distribution

There were no accidents or incidents during the period.

➤ Network

There were no accidents or incidents during the period.

Water Group Health and Safety Data 2001 : Total Injuries

PRODUCTION (+ 1 OPS ADMIN)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Hours worked	1,909	2,468	2,526	2,041	2,710	2,381	2,510							Mar = breathed in chlorine fumes whilst opening HTH container
Employee numbers	16	16	15	15	15	15	15							Mar = Overalls caught on mixer shaft
Injuries	0	0	2	1	0	0	0							Apr = Near Miss - exploding glass from light fitting - TM Control Room
Days lost	0	0	0	0	0	0	0							
Incidence rate (number of injuries per 100 workers)	0	0	13.3	6.6	0	0	0							
Frequency rate (injuries per 1,000,000 hours exposure)	0	0	791.7	489.9	0	0	0							
Severity rate (days lost to injury per 1,000,000 hours worked)	0	0	0	0	0	0	0							

DISTRIBUTION

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Hours worked	1,671	1,524	1,810	1,539	2,135	1,589	1,851							Feb = welding up pipe & received burn by arc splatter
Employee numbers	11.5	11.5	11.5	11.5	11.5	11.5	11.5							Mar = minor sprain
Injuries	0	1	1	0	2	1	1							May = lower back strain from lifting & jarred right wrist using big hammer
Days lost	0	0	0	0	0	5	0							Jun = stood on nail - went through boot into foot
Incidence rate (number of injuries per 100 workers)	0	8.7	8.7	0	17.4	8.7	8.7							
Frequency rate (injuries per 1,000,000 hours exposure)	0	656	552	0	936.7	629	540							
Severity rate (days lost to injury per 1,000,000 hours worked)	0	0	0	0	0	3,147	0							

NETWORK

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Hours worked	3,603	3,699	3,926	3,207	4,059	3,489	3,441							Jan/Feb /Mar = Days lost due to worker on ACC. Incident recorded in Dec 00
Employee numbers	24	24	24	23	22	21	21							Mar = Dislocated finger
Injuries	0	0	2	3	0	0	0							Mar = Body stress to trunk
Days lost	20	15	22	21	0	0	0							Apr = twisting back, knee injury, damage to gas pipe (near miss)
Incidence rate (number of injuries per 100 workers)	0	0	8.3	13	0	0	0							Apr = 18 days lost due to worker on ACC. Incident recorded in Dec 00
Frequency rate (injuries per 1,000,000 hours exposure)	0	0	509	935	0	0	0							
Severity rate (days lost to injury per 1,000,000 hours worked)	5,551	4,055	5,603.6	6,548	0	0	0							

ENGINEERING CONSULTANCY

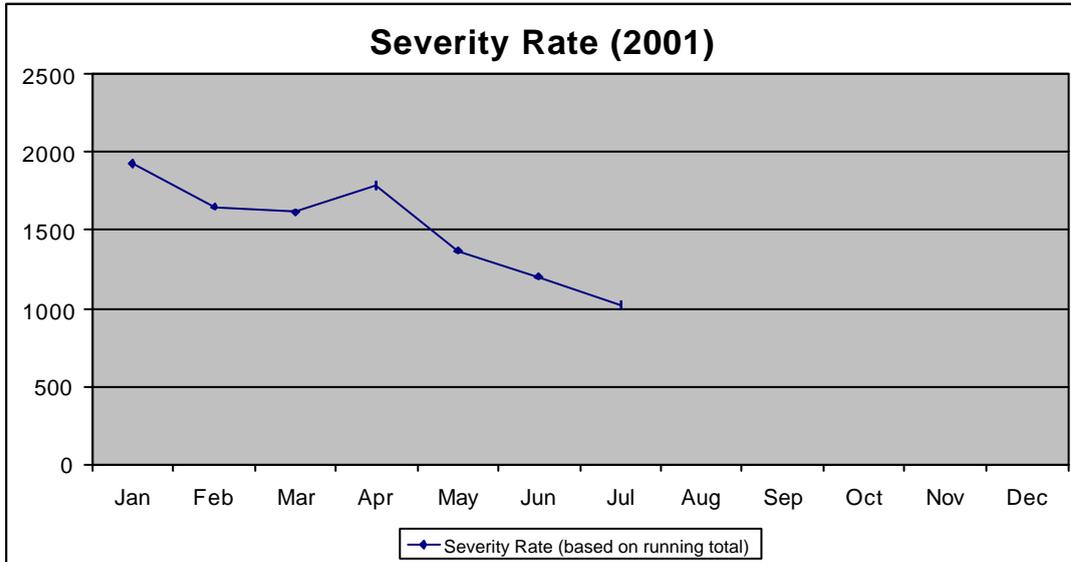
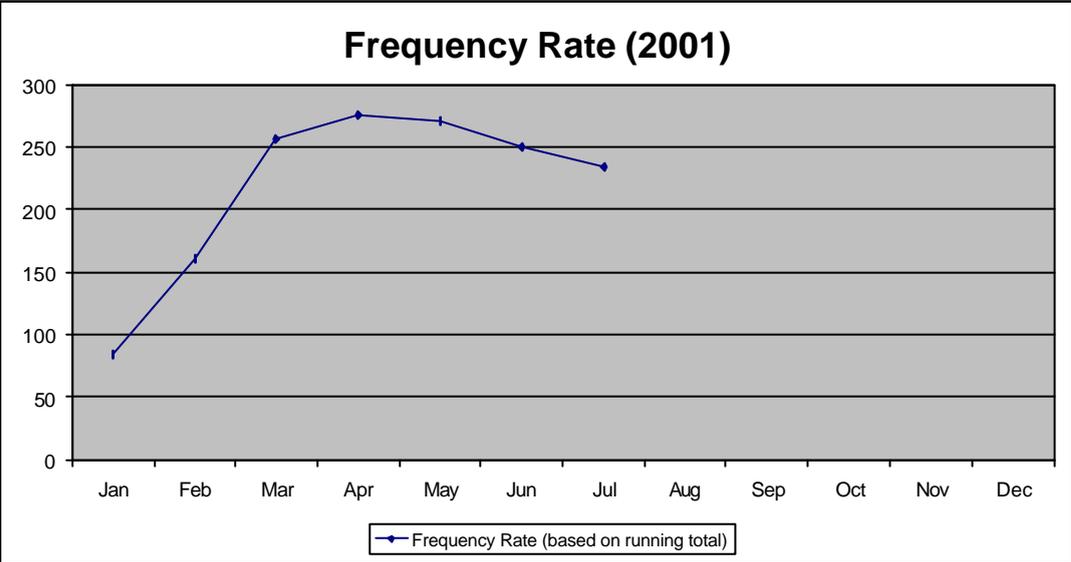
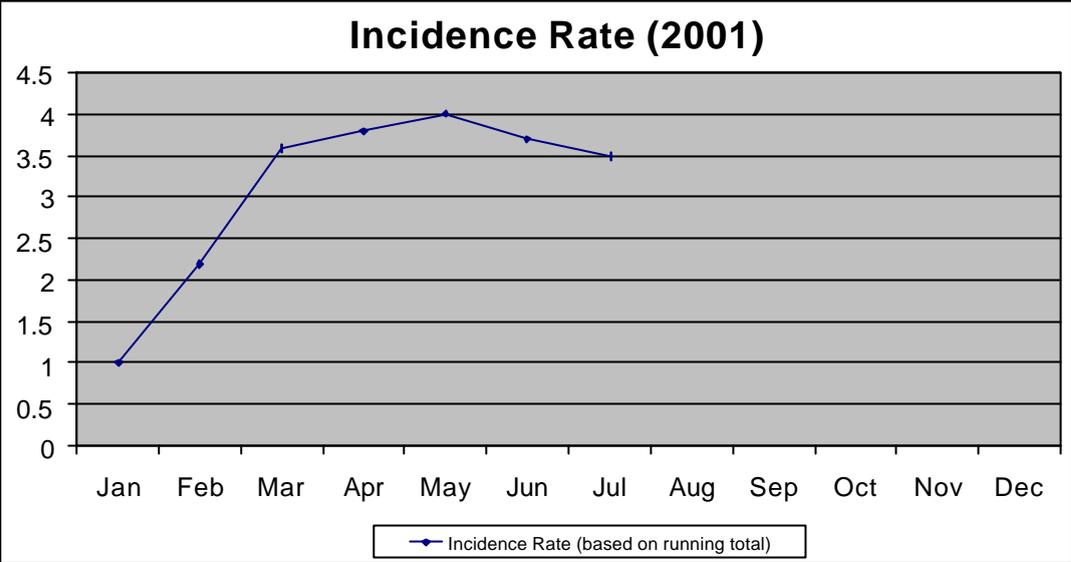
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Hours worked	1,773	1,855	2,209	2,050	2,767	2,289	2,296							Jan = Tree branch struck right elbow
Employee numbers	15	15	15	15	15	15	15							Feb = Tripped on road marker
Injuries	1	1	0	0	2	0	0							May = strained back whilst shutting valve
Days lost	0	0	0	0	0	0	0							May = head on crash aggravated an ankle strain
Incidence rate (number of injuries per 100 workers)	6.6	6.6	0	0	13.3	0	0							
Frequency rate (injuries per 1,000,000 hours exposure)	564	539	0	0	722.8	0	0							
Severity rate (days lost to injury per 1,000,000 hours worked)	0	0	0	0	0	0	0							

UTILITY SERVICES SUPPORT

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Hours worked	1,004	1,160	1,137	1,116	1,340	1,132	1,332							Mar = punctured elbow with staple whilst leaning on pile of documents
Employee numbers	8	8	8	8	8	8	8							Jun = silt thumb on sharp vacuum seal of new coffee container
Injuries	0	0	1	0	0	1	0							
Days lost	0	0	0	0	0	0	0							
Incidence rate (number of injuries per 100 workers)	0	0	12.5	0	0	12.5	0							
Frequency rate (injuries per 1,000,000 hours exposure)	0	0	879.5	0	0	883	0							
Severity rate (days lost to injury per 1,000,000 hours worked)	0	0	0	0	0	0	0							

LABORATORY

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
Hours worked	1,228	1,254	1,368	1,110	1,428	1,299	1,390							Jan/Feb = days lost due to possible chemical exposure during acid washing
Employee numbers	10	10	10	10	10	10	10							Feb = cut thumb on sharp metal in sink
Injuries	0	1	0	0	0	0	1							Mar = days lost due to possible chemical exposure during acid washing



Operations Network Review of Operations for the Period Ended 31 August 2001

1. Items of Note

- During the month there was one burst, which was attended to in conformance with the performance targets.

2. Water Quality

2.1 Routine Testing (A1)

The water quality was monitored and appropriate laboratory tests were completed for August. There were 145 samples from the reticulation system tested for bacteriological compliance during August.

Compliance for the month is 100 percent. Compliance for the year to date is 100 percent.

2.2 Water Tests Initiated by Customers (A2)

	August	Year to Date	Compliance Year to Date (%)
Number received	6	21	-
Within ability of Operations Network to control	1	2	-
Formal response within five days	4	19	100%

3. Customer Services

3.1 Counter and Other Office Services (E)

Information has been provided to customers requesting information by letter, telephone and over the public counter.

A breakdown of enquiries received during the reporting period is as follows:

August 2001	
Counter enquiries	138 + 16 encroachments
Proposals from other utilities	5
Response time requirement compliance	100%

3.2 Performance Standards (G)

August 2001

	Expected Compliance	Number of Activities	Completed to Standard	Compliance Achieved
Miscellaneous				
A Quality complaints (samples)	85-95%	6	6	100%
A System Flushing (M1.4)	85-95%	162	162	100%
B Pressure and flow	85-95%	14	14	100%
B Loss of Supply (M1.5)	85-95%	19	19	100%
C Planned Shutdowns	95%	73	73	100%
C Unplanned Shutdowns	95%	38	38	100%
D Mark-outs	90-95%	93	73	78%
G Workmanship (joint audit results for August 2001)	90-95%			
O Meter Reading	100%	<i>Achieved</i>	<i>Achieved</i>	<i>Achieved</i>
Significant Leaks (M1.2 or o/e)				
H Burst Mains (1 O&E)	85-95%	1	1	100%
H Other	85-95%			
Non-significant Leaks				
H Mains (M1.2) (Includes 3 O&E)	85-95%	28	28	100%
H Valves (M1.3)	85-95%	98	84	85%
H Hydrants (M1.4)	85-95%	118	86	73%
H Domestic Services (M1.5) (2 O&E)	85-95%	225	189	84%
H Stopcocks (M1.6)	85-95%	378	348	92%
H Water Meters (M2.1)	85-95%	49	49	100%
L Damages (Variation)	85-95%	24	19	79%

Locates and Investigations (Wellington Regional Council Internal Target of Three Working Days)

August 2001		
Locate stopcocks	69/75	92%
Leak locations	73/100	73%
Flow tests	5/5	100%
Seepage/investigations	2	

Failures

	Jobs Failed by 1-24 Hours	Jobs Failed by 1- 5 Working Days	Jobs Failed >5 Working Days
Burst mains			
Stopcocks	1	20	9
Hydrants		15	17
Valves		5	9
Mains			
Domestic services	3	23	10
Water meters			
Damages	5		
Quality complaints			
System flushing			
Pressure and flow			
Loss of supply			
Mark-outs	5	15	
Workmanship			

Additional Work Carried Out

Variations (exclusive of burst mains)	8
Service renewals > 4m	2

Burst Mains

There was one burst main during August 2001.

Stewart Duff Drive

18 August 2001

Overs and Extras

Stewart Duff Drive

Burst main

18 August 2001

84 Raroa Road

Major mains repair

9 August 2001

9 Carleton Terrace

Blown service off main

11 August 2001

87 Wilton Road

Major mains repair

15 August 2001

4. Health and Safety

There are no accidents or incidents to report.

5. Meters

A total of 1,456 city and high use meters read and entered into the system by 23 August 2001.

6. Pumping Stations, Reservoirs and System Control

6.1 General

Normal routine maintenance has resulted in the Wellington City system operating satisfactorily.

6.2 Control System

The control system continues to operate satisfactorily. Replacement batteries were installed at the Newlands and Maupuia repeaters.

6.3 Flow Measurement Improvements

Additional flow meters, which were installed by Wellington City Council contractors, have been connected to the telemetry system. The meters were located at:

- Melrose (2)
- Roseneath
- Carmichael
- Mount Crawford

6.4 Croydon Street Reservoir

The supply to the Croydon Street Zone from Verviers Street pressure reducing valve and the small temporary tank has been very satisfactory. The main tank has been overhauled and is about to be recommissioned.

6.5 Maintenance Checks

Maintenance was carried out in August as follows:

Round A	Round B
Rajkot Terrace Nassau Avenue Mark Avenue Chapman Street Burnside Road Ruskin Road Broderick Road Broadmeadows High Pump Station Satara Street Kitchener Terrace Davies Road CV Birch Street CV Ohariu CV Glover Street CV Ironsides CV	Huntington Street Warwick Street Hay Street Epuni Street Mapuia Street/Mt Crawford Sar Street Alexander Road Redwood Greyfriars Road Bell Road CV Webb Street CV Prince of Wales CV Vasanta CV

7. Development

7.1 Development Statistics (F2)

Subdivisions	August	Year to Date
Construction plans approved (lots/units)	24	38
Scheme plans approved	46	70

Subdivisions cleared (lots/units)	46	70
Total subdivisions processed	74	135
Subdivisions processed on time	74	135
Response time compliance	100%	100%

7.2 Development Projects

7.2.1 Churton North Reservoir and Westchester Drive Pumping Station and Rising Main

Work is complete.

7.2.2 Churton North Reticulation

A recent inspection of the pressure reducing valve chambers showed 450 mm of water in the Waverton Terrace chamber and 50 mm of water in the Amesbury Drive chamber after the pumping out on 17 July 2001. We have requested Truebridge Callender Beach Ltd to repair the chamber.

7.2.3 Subdivisions General Items

- A proposal was submitted for a low pressure water supply for a subdivision at 6 Paratu Way, Beacon Hill (SR76405). After consultation with Logen Logeswaran, Wellington City Council Drainage and Water Supply, Wellington Regional Council recommended to the Environmental Control Business Unit that it not be approved. Wellington Regional Council recommended conditions of subdivision requiring construction plans and as-built drawings for the provision of a water supply to the new lot, with a minimum point of supply pressure of 25 m head.
- Wellington Regional Council visited a subdivision at 29 Ranui Terrace, Tawa (SR77636) for Logen Logeswaran. It was found that it would have been possible to lay a service to the rear lot within the right-of-way without disrupting the seal. Wellington Regional Council had recommended conditions to this effect but the Environmental Control Business Unit had allowed a dispensation. Wellington Regional Council advised Logen that in its opinion a dispensation should not have been granted.
- See the subdivisions table for details of the Environmental Control Business Unit not setting recommended conditions.

7.2.4 Construction and As-built Plans

7.2.4.1 Construction Plans

Construction plans were considered for approval of the following subdivisions:

- 130 Fraser Avenue, Johnsonville (2 lot). The required method of

disconnection for the existing copper rider main from the main in Burma Road was advised by letter.

- 5 Oriel Avenue, Tawa (8 lots). An amended plan was received on 30 July and was approved on 6 August.
- 25 Tacy Street, Kilbirnie (approximately 45 Unit Titles). Construction plans for the relaying of the fire service outside the boundaries were received on 29 August and are currently under consideration. The owner of the fire service has advised the developer that he does not want it to be disconnected and abandoned. A recommendation to Wellington City Council from Wellington Regional Council for the City Council to take over the fire service as a public main was submitted. Wellington City Council comments are awaited.
- 28 Hawtrey Terrace, Johnsonville (Johnsonville Poultry Farm site) (15 lots). This plan has not yet been approved, as amendments have been requested.
- Burnham Street, Seatoun (Fort Dorset site) (16 lots). These plans were approved on 29 August.

7.2.4.2 As-built Plans

The following as-built plans were considered for approval during August:

- 87 Hill Street, Thorndon (8 lots). A complete as-built plan was received on 24 August and is currently under consideration.
- 117 Nicholson Road, Khandallah (Bushy Bend Subdivision) (8 lots). Amended as-built plans were received. The plans are not approved, as remedial work has been requested. The Environmental Control Business Unit received a bond of \$914 for the replacement of a gate valve with a manifold. The subdivision has been cleared.
- 7-9 Hindmarsh Street, Johnsonville (7 lots). Amended as-built plans were received on 30 July and were approved on 8 August. An application for a section 224(c) certificate has not yet been received.
- Downing Street, Chartwell (5 lots). The as-built plan has not yet been approved, as remedial work has been requested.

7.2.5 Fire Services Recently Connected

No new fire service connections were installed during August.

Applications Processed	Complying	Compliance
2	2	100%

7.2.6 New Commercial Metered Services

The following new metered services were installed during August:

- 163 The Terrace (80 mm)
- Lambton Bus and Rail Terminal (Building 2) (25 mm)

Applications Processed	Complying	Compliance
3	3	0

7.3 Building Development Appraisals (F1)

	August	
	Commercial	Domestic
Building consents	3	25
PIMS applications	3	29
Compliance with response time requirement	100%	100%

7.4 Land Information Memorandum (F1)

	August
Applications processed	50
Compliance with response time requirement	100%

8. Capital Works

8.1 Main Laying

8.1.1 Contracts in Maintenance Period

The following pipelaying contracts are in the maintenance period:

- Percival Street
- Oriental Terrace
- Taranaki Street
- Tirangi Road and Lyall Parade
- Rex Street

The maintenance periods for the Cuba Street, Bell Road Zone and Allington Road Contracts have expired. The Contractors have been instructed to rectify some minor defects before the maintenance retentions are released.

8.1.2 Tanera Crescent, Brooklyn, 150 mm and 200 mm Water Main Renewals

The Contractor attained Practical Completion on 21 August 2001. This Contract is now in the maintenance period.

8.1.3 Rex Street, Miramar, 100 mm Water Main Renewal

The Contractor attained Practical Completion on 23 July 2001. The Contractor has been requested to complete some minor remedial works and submit the final construction claim.

8.1.4 Thorndon Quay and Central Business District Pipelines

Work on the drawings and documents for replacing the pipelines in Thorndon Quay, Mulgrave Street and Kate Sheppard Place has been put on hold. The Contract has been reprogrammed to next financial year (2002/3).

8.1.5 Bowen and Lower Cuba Streets 200 mm and 250 mm Water Main Renewals

Contract Documents and Drawings were sent out for tendering on 28 August 2001. Tenders close on 10 September 2001.

8.1.6 Southern Suburbs 100 mm and 150 mm Water Main Renewals 2001/2

Contract Documents are almost complete for replacing pipelines in The Esplanade, Kellsmere Crescent, Breton Grove and Halifax Street in Island Bay.

8.2 Reservoirs

8.2.1 Kelburn Reservoir Replacement

Consultant	Sinclair Knight Merz
Work completed	➤ Contract documents prepared to Client Review state
Public complaints	None
Health and safety	No issues
Consultant's performance	Design work proceeding well.
Financial commitments	Invoices up to 8 July received and recommended for payment.
Proposed work	➤ Incorporation of any Client comments and finalisation of Conditions of Contract

8.2.2 Wadestown Reservoir Replacement

Consultant	Montgomery Watson Ltd
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Work completed	Certificate of Practice Completion issued
Consultant's performance	Satisfactory
Financial commitments	Invoice up to end of August recommended for payment
Proposed work	➤ Finalisation of land issues
Contractor	McKee Fehl Constructors Ltd
Work completed	➤ Contractor demobilised
Public complaints	None
Health and safety	No issues
Financial commitment	Total work completed to 31 July 2001 - \$698,000
Proposed work	➤ Grassing

8.2.3 Grenada North High Level Reservoir

Consultant	Truebridge Callender Beach Ltd
Work completed	Certificate of Practical Completion issued
Consultant's performance	Satisfactory
Financial commitments	Forecast Consultant's claim to completion - \$68,000
Proposed work	➤ Finalisation of outstanding issues
Contractor	Juno Civil Ltd
Work completed	➤ Contractor demobilised ➤ Old tanks decommissioned and removed
Public complaints	None
Health and safety	No issues
Financial commitment	Forecast Contract claim to completion - \$525,000

8.2.4 Eastern Suburbs Reservoir

A feasibility report was submitted to the client. The investigations included planning issues, land-ownership, chlorine residuals, proposed pipework and site layouts and preparation of a preliminary design brief.

The brief to consultants is being complete and awaiting instructions to issue.

8.2.5 Southern Suburbs Reservoir

Further investigations have been carried out at the Southgate Park site. Arrangements are under way for some exploratory investigations to be made. The proposal was discussed on-site with Wellington City Council staff and the possibility of using surplus excavated material to improve the park contour was raised.

Strategy and Asset Group
July/August 2001

Strategy and Asset Group Review of Operations for the Period Ended 31 August 2001

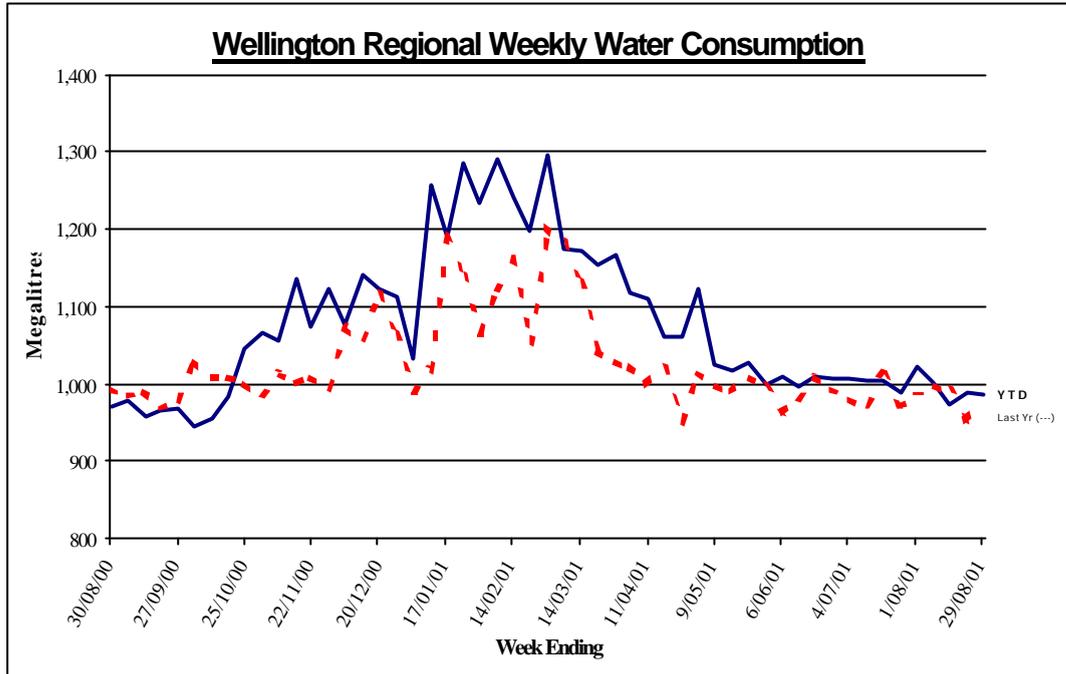
1. Items of Note

- Surface water consents have been granted for extraction from the streams and rivers in Hutt, Wainuiomata and Orongorongo Catchments. This results from a process started over two years ago. In order to obtain the consents it has been necessary to make some compromises with other stakeholders with an interest in the rivers. Overall though, obtaining consents for the next 35 years is a very satisfactory outcome to the process.
- A number of initiatives have seen electrical energy costs reduce from \$2.065 million in the year ended 1997 to \$1.665 million to the June 2001 year. New UnitedNetworks' network charges came into effect on 1 July, resulting in an annual increase of \$70,000 to \$75,000. Energy prices are expected to increase by 25 percent to 35 percent when the energy contract is renewed in October next year. On this basis, expenditure on electrical energy is now expected to increase.
- Hutt City Council's contractor has laid a waste water pipe at floor level in the Wainuiomata water tunnel. Negotiations with Hutt City Council over the easement fee for this are continuing.
- The Landcare Division is to release five goats into the Wainuiomata and Orongorongo Catchments as a trial. Each goat will have a radio tracking collar. Goats usually cluster together, so the collars will enable tracking by animal cullers at a later date. Culling by this method has been very successful on Auckland Regional Council land.
- A legal complication regarding subdivision of the Karori Reservoir has been resolved. Creating the new Titles is now in the administrative phase.
- How water will be supplied in an emergency if the pipe distribution system is unavailable is being discussed with our four customers. Three of the four customers have advised their views on the issue.

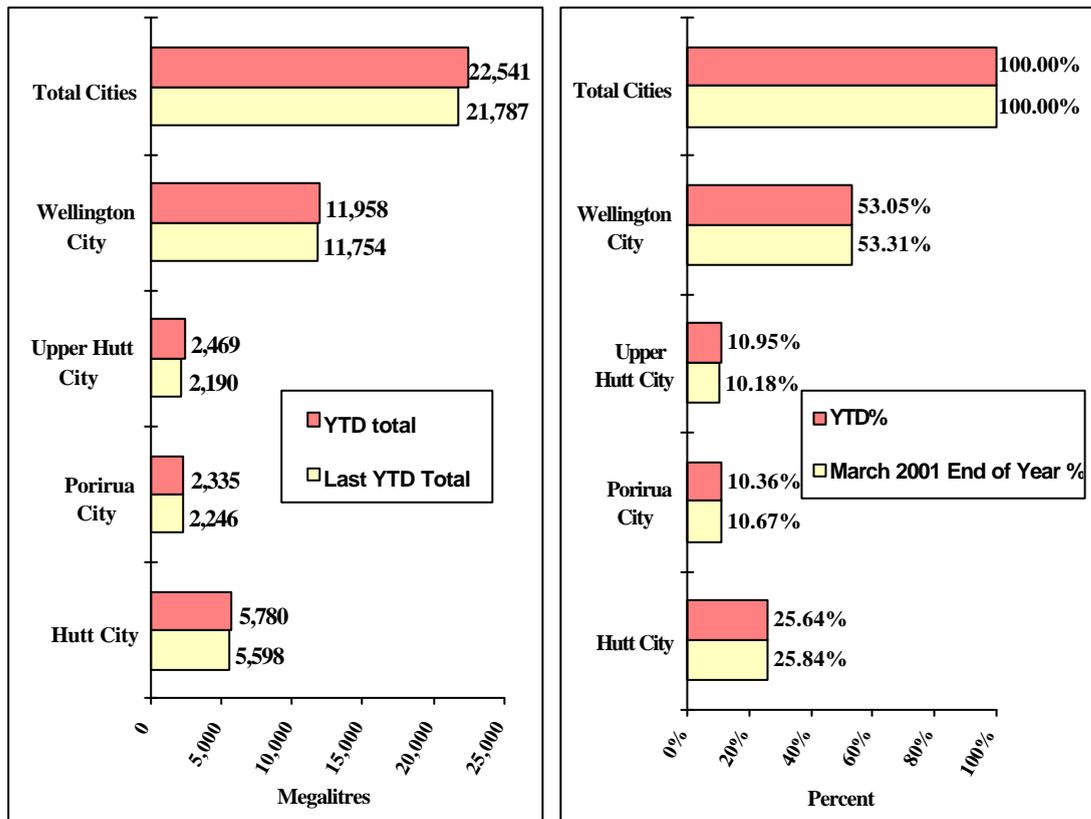
2. Sales Volume

Graphs outlining sales volumes are on page 24.

Water Sold Over the Last 12 Months



Water Sold from 1 April 2000 to 31 August 2001

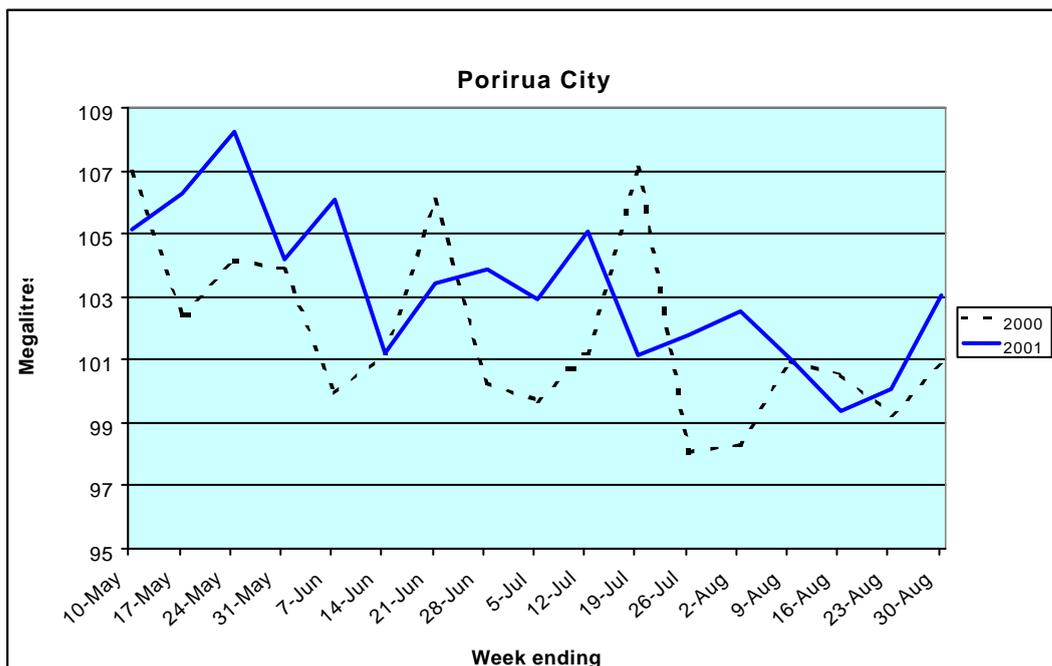
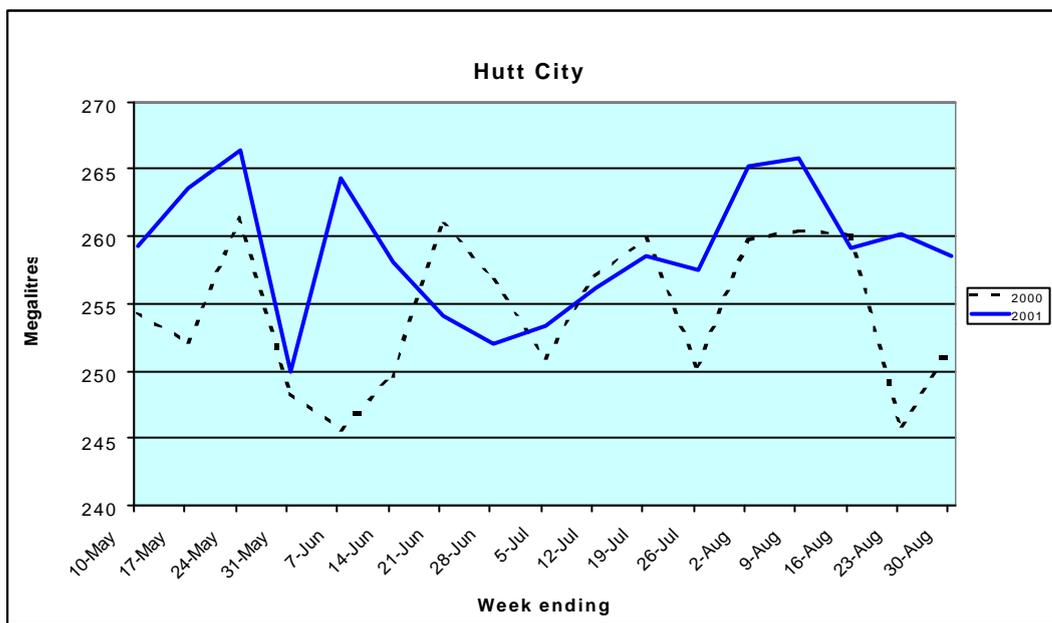


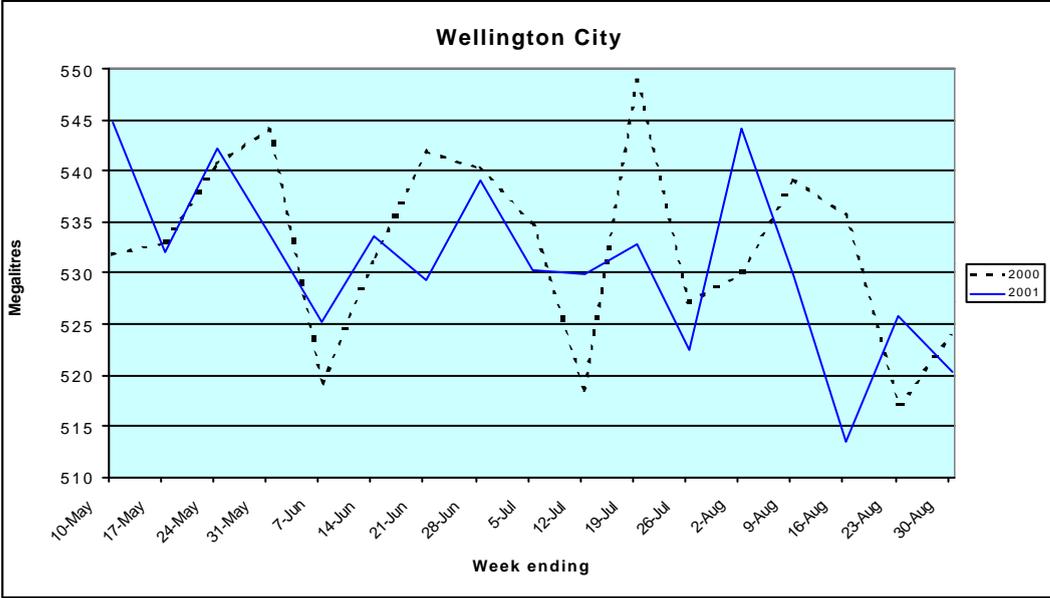
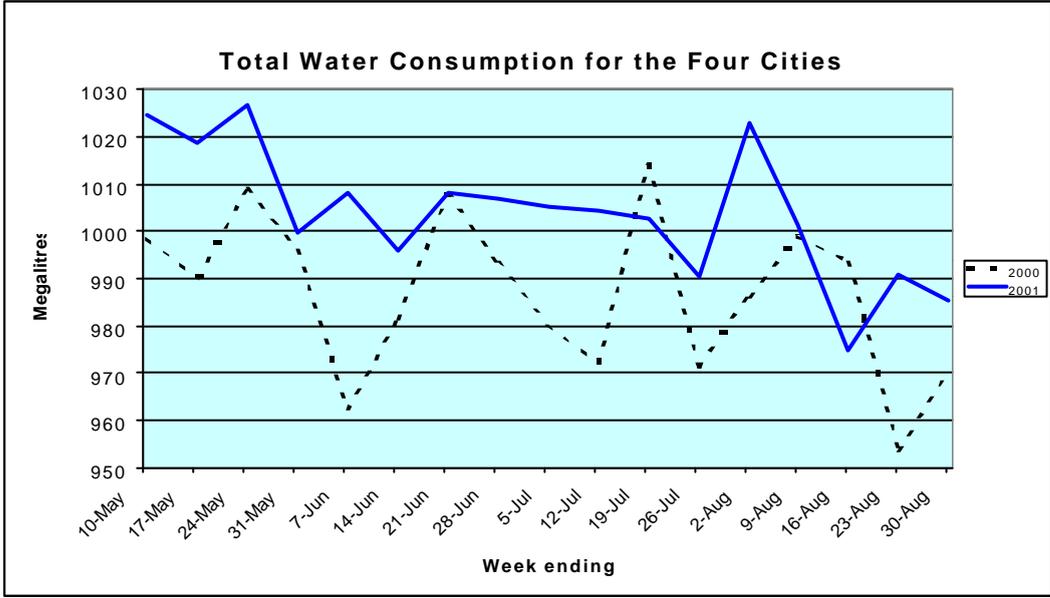
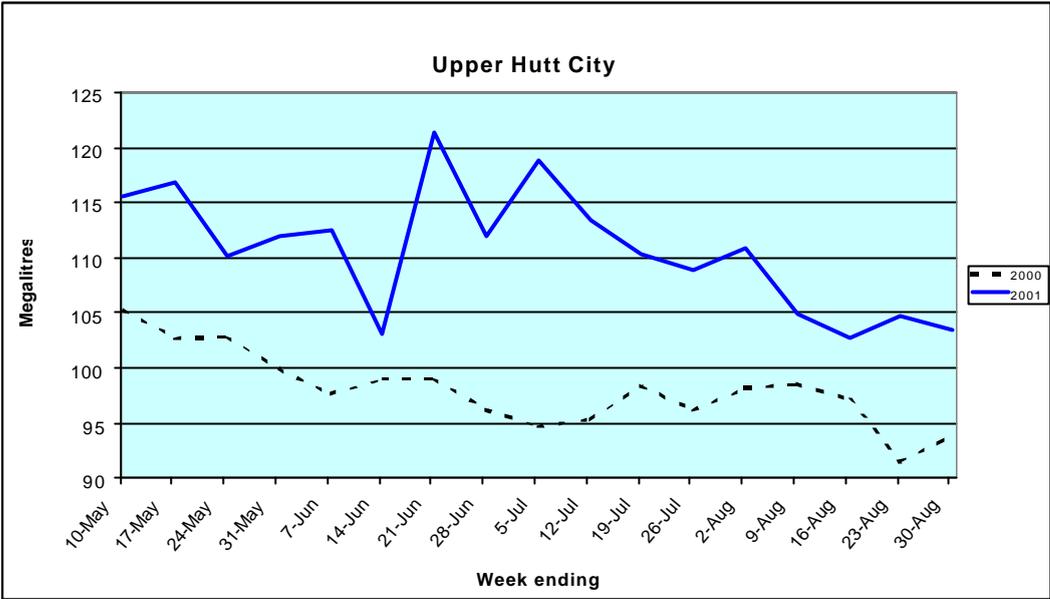
Reviewing the water consumption over the autumn and winter periods provides an indication of the base consumption trend.

Last year it was reported that on the basis of April to August consumption, *the sales trend is probably static or could even be slightly decreasing*. This year autumn was dry, so garden watering continued into May.

Base consumption has been taken from the meter readings on 10 May until the end of August. A series of five graphs indicates the weekly consumption for this period and the same period last year.

Weekly Water Consumption 2000 Compared to 2001





City	May-August 2000 Total ML	May - August 2001 Total ML	Change ML	Change Percentage
Hutt	4,584	4,686	102	2.2
Porirua	1,835	1,874	39	2.1
Upper Hutt	1,773	2,007	234	11.6
Wellington	9,603	9,623	20	0.2
Total	17,795	18,190	395	2.2

Excluding the Upper Hutt City figures, the annual change is 1 percent. Upper Hutt City Council has acknowledged they have a problem, which they are working on.

Population growth continues in Wellington City, while Lower Hutt, Porirua and Upper Hutt are relatively static. It is possible that increased activity in the commercial and industrial sectors has contributed to the increased consumption. Also, the relatively dry winter may have resulted in some garden watering. Overall then, base water consumption over the last year has probably trended upwards.

3. Asset Management

- The new valuation report developed by Hansen USA has been tested in conjunction with local Hansen staff. Some shortcomings were found and these have been reported back to Hansen for correction. Capitalisation for the 2000/1 year has been agreed with Finance at \$2.92 million and the process of capitalising new and refurbished assets in Hansen is under way. Finance has asked for this process to be complete in time for the auditors, who begin this part of their audit on 24 September.
- A review of the June 1998 Asset Management Plan has been commenced but no significant changes will be made until the 2001/2 year.
- The final expenditure on capital works for 2000/1 is \$3.997 million, against a budget of \$4.047 million.

Major capital works for 2001/2 include lining of the Orongorongo/Karori main between Randwick and Korokoro, upgrading of equipment at the Johnsonville Pumping Station, further improvements and refurbishment of the treatment plants, and noise insulation of the Moores Valley Road Pumping Station.

- New consents to take water from the Hutt Wainuiomata and Orongorongo Rivers have been issued. At Wainuiomata and Orongorongo the new provisions have been in operation since 17 August. It is expected that at Kaitoke the new provisions will be put in place early in September. The new consent at Kaitoke will facilitate faster filling of the Te Marua Lakes, which are still at a low level.
- Good progress has been made on updating the Sustainable Yield Model, our primary strategic planning tool for expected water availability. This model

will be refined and used in conjunction with the hydraulic model to improve our understanding of the potential capacity of the system.

- A number of Transit New Zealand highway upgrading proposals that affect our distribution mains are in progress. Relocation of a section of the Pukerua Bay supply main will be undertaken shortly in conjunction with the current realignment work between Plimmerton and Pukerua Bay. The Council is required to meet 50 percent of the cost of this work. Planning is also under way to relocate the branch main to the Plimmerton Reservoir, which will be affected by the new State Highway 1 roading work at Plimmerton. Planning work is also under way to move our main on to the new duplicated Paremata Bridge. This move will greatly reduce the seismic vulnerability of our pipeline to Paremata and Pukerua Bay.
- A further series of toxicity tests has been carried out on the supernatant at Wainuiomata Water Treatment Plant, small quantities of which is discharged into the river. The tests show that the supernatant is not toxic to fish or macroinvertebrates but does have some effect on algae. A depletion of the macroinvertebrate population in the river was noticed during the last survey in March this year.
- A small number of unauthorised people have been encountered in the Wainuiomata Catchment during the report period. A total of 62 applications for group walking tours have been received and to date 22 groups have been hosted. House No. 1 has been sold off-site, as it was no longer required. The area will be tidied up and grassed to facilitate maintenance. Obsolete overhead cabling in the area is to be removed, to further improve the appearance of the entrance to the plant.

4. Quality Assurance

- The new 2000 version of the *Drinking-Water Standards for New Zealand* requires that turbidity be monitored at each filter and be analysed and reported on a daily basis. We are working with Regional Health on adopting control and reporting systems to achieve this. However, a monthly analysis of the turbidity results still provides a useful indication of the high standard achieved by our plants. The current Standard requires turbidity to be less than 0.5 NTU for 95 percent of the time. In 2005 the target turbidity level will reduce to 0.1 NTU.

Percentage Compliance	Turbidity < 0.5 NTU		Turbidity < 0.1 NTU	
	July	August	July	August
Plant				
Te Marua	100%	100%	100%	100%
Wainuiomata	100%	100%	100%	99.89%

The >0.2 NTU change within 10 minutes rule has been tested for both plants. This rule identifies “spikes” in the turbidity results that have the potential to carry protozoa into the treated water. The results are as

follows:

No. of Exceedances	July	August
Te Marua	0	1
Wainuiomata	0	0

Note: The single high reading was recorded at Te Marua and is considered to be spurious

- These rules are intended to reduce the risk of *Giardia* and *Cryptosporidium* passing through the plant. The plants incorporate “slam-shut” valves, so that any water that does not comply with the *Drinking-Water Standards for New Zealand* is not normally delivered to the customers.

5. Marketing

5.1 Summer Water Conservation Campaign

- Maggie Barry has agreed to our continuing to use the water conservation commercial that she recorded for us during the coming summer (2001/2).
- Our customers’ water supply managers have been consulted about conservation advertising for the coming summer. Three have indicated that they are very satisfied with the results of the campaign over the last two years and agree with our proposal to use the advertisement again this year. One council is yet to reply.

5.2 Activities of Note

- The Water Group Report of Business Activity for 200/1 has been designed, content written in consultation with The Water Group’s senior managers, and annual data and financial information compiled. (A near complete draft has been provided separately.) Sustainability has been chosen as the theme for the report, which uses case studies of people who have experienced different water supply conditions in other parts of the world (but now call Wellington home), to highlight the major sustainability issues that we face.
- A press release regarding planned energy savings measures from the water treatment process (*Electricity savings from water source changes – WRC*, August 15) was written in conjunction with Communications.
- Further progress was made on a new brochure covering the wholesale water system.

This will provide adults and children who visit our plants or ask for information with a straightforward explanation of how the Regional Council collects, treats and distributes water, and will replace four

brochures about individual treatment plants created between 1990 and 1994.

6. Projects Undertaken by Engineering Consultancy for Strategy and Asset

➤ Big Huia Intake and Pipeline

New leaf screens have been installed in the Big Huia intake. Holding down straps have been installed on exposed sections of the pipeline.

➤ Orongorongo River Intake

A report is being prepared assessing the current condition of the Orongorongo River intake and identifying any refurbishment requirements.

➤ *Te Marua Lakes Emergency Action Plan*

Work on reviewing the *Te Marua Lakes Emergency Action Plan* has been reactivated.

➤ Waterloo Water Treatment Plant Vibration and Noise

Sinclair Knight Merz Ltd is designing remedial works to reduce the vibration in the building. The vibration is a problem when the Wellington pumps are operating at high speed.

➤ Refurbishment of the OK Main, Petone

The Contract for the refurbishment of the OK main between Hutt Park and Korokoro is out for tender. The pipe will be either cement mortar lined or slip lined with PE pipe. A separate report recommends acceptance of a tender.

➤ Kaitoke Main Operating Pressure

The maximum acceptable operating pressure in the Kaitoke main is being determined.

➤ Pinehaven Branch Main

An assessment is being made of the strength and remaining operational life of the asbestos cement section of this branch main.

➤ Johnsonville Pumping Station Switchboard and Pumpsets

Replacement of the Johnsonville Pumping Station switchboard is

proposed. Investigations into the replacement of the pumpsets are proceeding.

➤ Ascot Park Pumping Station

Flow to the Ascot Park Reservoir has been increased by modifying the inlet control valve. The effect of this modification on maintaining an acceptable water level in the reservoir will be monitored over the 2001/2 summer.

➤ Kaitoke Pipeline Either Side of Strainer Building

The concrete pipeline between the Kaitoke Flume Bridge and the No. 2 Tunnel entrance has been repaired. Further work on some minor leaks on the pipe is proposed.

➤ Hutt Estuary Bridge Pipelines

Additional holding down bolts are being installed on the pipe supports.

➤ Wainuiomata Main Valve Chambers

A proposal is being prepared to rationalise the pipework around the Gear Island valve chamber on the Wainuiomata main. This will remove unused pipe, reducing the risk of contamination.

➤ Pipe Holding Down Straps in Tunnels

Pipe securing straps are being designed for installation in the Kaitoke pipeline tunnels. Access into these tunnels is very restricted. It is proposed to improve access prior to installation of securing straps.

➤ Flow Meters

The option of replacing the head on the Ngauranga interconnection flow meter is being investigated.

Chemical dosing flow meters have been purchased for Te Marua and Wainuiomata Water Treatment Plants.

➤ Gear Island Sewer

A pumped sewer system has been designed for Gear Island Water Treatment Plant. This system will connect to the Hutt City Council sewer. It will replace an existing septic tank.

➤ Review of Seismic Repair Stock

A draft report reviewing the quantity of stock that is held for repair of water distribution pipelines following a major seismic event has been prepared.

Engineering Consultancy Group
July/August 2001

Engineering Consultancy Group Review of Operations for the Period Ended 31 August 2001

1. Work Carried Out for the Strategy and Asset Group

The main capital projects for which the Engineering Consultancy Group has responsibility are itemised in the Strategy and Asset Group report. Support is also provided for other projects being undertaken by this group.

2. Work Carried Out for the Operations Group

The Engineering Consultancy Group has continued to provide support for smaller projects arising from the operation and maintenance of the wholesale water supply system.

3. Work Carried Out for Wellington City Council

3.1 General

Current projects underway are detailed in the following sections.

3.2 Rex Street, Miramar

Work has been completed on this Contract to lay an additional main in this street to supplement the existing 75 mm cast iron main.

3.3 Tanera Crescent, Brooklyn

A Contract was awarded and construction completed.

3.4 Thorndon Quay

This project is for the replacement of a 200 mm asbestos cement main for the full length of Thorndon Quay. This will be a challenging project, as Thorndon Quay has already had significant cable laying operations in recent months. Included in the Contract are short sections in Mulgrave and Bowen Streets, Kate Sheppard Place and lower Cuba Street. During the period advice was received that the Thorndon Quay component would be put on hold. Tenders have been invited for a smaller Contract for Bowen and lower Cuba Street.

3.5 The Esplanade, Island Bay

This project involves replacing water mains in various streets in Island Bay and Kingston. Design work is complete and Contract Documents are being prepared.

3.6 Grenada North High Level Reservoir

This permanent reservoir, 160 m³ capacity, will replace the Grenada North temporary tanks. The reservoir was completed, tested and commissioned in early July. This completes the water supply upgrade in this area following the contamination incident.

3.7 Wadestown Reservoir

The reservoir structure is complete and was commissioned in early July. The old reservoir has been demolished, backfilled and the site has been recontoured and prepared for grassing.

3.8 Eastern Suburbs Storage

There is a storage deficit in the Low Level Zone of 10 ML. This was identified and reported on at the time of approval of the Macalister Park 20 ML Reservoir. Of this storage, approximately 7 ML is required in the Eastern Suburbs (Miramar) and 3 ML in the Southern Suburbs (Island Bay). A report on the preferred site has been completed, along with a brief to consultants for implementing this project. The project will also involve a significant amount of pipelaying.

3.9 Southern Suburbs Reservoir

A report assessing the various potential sites for this reservoir has been completed. More thorough investigations have been carried out at a potential site below Southgate Park. Arrangements are being made for subsurface investigations.

3.10 Kelburn Reservoir

This reservoir will replace two existing reservoirs that are adjacent to the Karori Wildlife Sanctuary. Design work and preparation of Contract Documents is complete, and these will be forwarded to the consultants shortly.

3.11 Water Services Agreement

Under the new agreement, which came into effect on 1 July, the group is carrying out similar functions as were required under the Facilities Management Contract. This agreement runs for five months until 30 November 2001. Functions to be carried out are as follows:

- Building consents
- Subdivisions
- System records
- Counter service
- New services and fire services

However, Wellington City Council has now indicated that it will take these functions back in-house from 1 December 2001. This will have an impact on the Engineering Consultancy Group that is yet to be fully evaluated.

Laboratory Services
July/August 2001

Laboratory Services Department Review of Operations for the Period Ended 31 August 2001

1. Items of Note

- Formal acceptance of our tender for the Porirua City Council Water Testing Services Contract for the 2001/2 year was received. Porirua City Council sought assurance that our laboratory testing methods complied with the terms of the *Drinking-Water Standards for New Zealand 2000* and met with the approval of the Public Health Service.
- Unfortunately our tender for the Testing, Supply and Maintenance of Mangaroa School's Water Contract was unsuccessful (along with all the other tenders). They are now seeking Ministry of Education input and advice to resolve funding issues associated with the provision and maintenance of their potable water supply.
- Several welcome and overdue additions were made to the laboratory equipment list this period. Firstly, a replacement out of necessity, with the centrifuge for concentrating *Giardia/Cryptosporidium* samples. Secondly, a convenient and timely update with the purchase of a compact "multi-function centre" incorporating copier, faxing, printing and scanning functions in a single unit.
- We are presently investigating the feasibility of investing in an instrument to analyse water samples for total organic carbon (TOC). The TOC test is a substitute for the traditional BOD test, which measures organic loading or, more simply, pollution. Our Environment Division has, in fact, just made this substitution this year and, in doing so, has delivered us a double whammy as we previously performed the BOD test in-house but now have to subcontract the TOC work.

2. Business Summary

2.1 Quality

There were no requests for retesting samples and test reports are timely.

2.2 Health and Safety

There were several incidents during this period, neither causing serious harm. One staff member remains off work since an operation in April.

Plantation Forestry
July/August 2001

Plantation Forestry Department Review of Operations for the Period Ended 31 August 2001

1. Log Harvest Contract

Prices through July and August showed signs of recovery, with some good increases being achieved for export grades. Fletchers have been appointed agents for Marubeni and are accepting bundled pulp for export at \$3 tonne better than the domestic price. Not all pulp will meet the export specifications.

Renalls are still taking R grade logs and are proving to be a good outlet for the type of product coming out of Pakuratahi.

Recent grade outputs for the whole month of July were:

Grade	Tonnes	%
Pruned Domestic		
Pruned Export		
Partial Pruned		
S/A Grade	1,172.54	21.17
L Grade	160.36	2.89
R Grade	879.73	15.88
K Sawlog	393.52	7.101
K Rough	926.78	16.73
Pulp	1,673.50	30.21
O/S Pulp	257.04	4.64
Xport Pulp	75.99	1.37
Other		
	5,539.46	

Grades and volumes for the first three weeks of August were:

Grade	Tonnes	%
Pruned Domestic		
Pruned Export		
Partial Pruned		
S/A Grade	679.87	15.71
L Grade	198.38	4.58
R Grade	692.55	16.00
K Sawlog	505.92	11.69
K Rough	737.46	17.04
Pulp	1,310.87	30.29
O/S Pulp	63.364	1.46
Xport Pulp	63.78	1.47
Other	75.60	1.75
	4,327.79	

We have managed to retain the large hauler on-site, as it is unable to commence work at its next assigned site. This will enable us to complete the harvest earlier than previously envisaged. The upper end of the forest should be completed by late October and the two remaining blocks below Commission Siding will be dependent on the weather, as it will be necessary to reinstate the river crossing to extract the logs.

2. Silviculture Contracts

Four hundred and sixty-four hectares of a total 515.8 hectares of the current year's Contract have been completed.

The delay in completion of the silviculture is partly because of the Contractor undertaking land preparation work prior to replanting.

As the weather has continued to be suitable with regular rain, replanting has continued into September. This will effectively gain a year in the rotation.

3. Plantation Forestry Operations

Most focus has been on supervision of the harvest, with regular changes of plan required as the large hauler kept extending its stay and new stands had to be found to keep it fully occupied.

A number of trips to Puketiro and Hukinga have been made with planning staff from Rayonier, as detailed harvest plans are prepared for the shift of the harvest crews out of Pakuratahi.

A further 1080 drop, which includes Valley View and Hukinga Forests, is planned for late September or early October. This will leave only Pakuratahi/Mangaroa, which should be treated as part of the bovine Tb programme and Maungakotukutuku, which has not be treated in the past two years.

4. Forest Access

Access to all areas, except Maungakotukutuku, remains good.

The bulk of the work relating to the upgrade of access into Puketiro Forest for the forthcoming harvest contract has now been completed. After a survey of the road there is a small amount of curve and grade easement which is being carried out now and the road should then be ready for the commencement of preharvest road lining in mid-October.

The recent storms have brought down some small slips in the Rallywood section of the road, which have had to be cleared at short notice to enable access to be maintained for the residents.

Some remedial work will be necessary between McGhie's Bridge and the Hukinga stands programmed for harvest. This consists mainly of pothole removal.

Council has made a submission opposing any increase in the maximum gross weight of heavy motor vehicles. This subject is on the agenda at a forestry forum and no doubt I will hear the other side of the argument. I will still be interested to

hear what effect the proposals might have on the off-road aspect of logging truck operations.

5. Market Trends

We have seen some steady improvements in export prices and hopefully these will lead domestic prices up again when the fourth quarter prices are negotiated in mid-September.

Press articles appear to suggest a slow but steady increase in price in the medium future. A number of companies are looking at new export grades out of Centreport which, if they come to pass, will increase our options for sales.

6. Puketiro Harvest Contract

Agreement has now been reached on the terms and conditions relating to the four year harvest contract with Rayonier NZ Ltd. Each party's legal representative is now reviewing the documentation before it is presented for signature.