

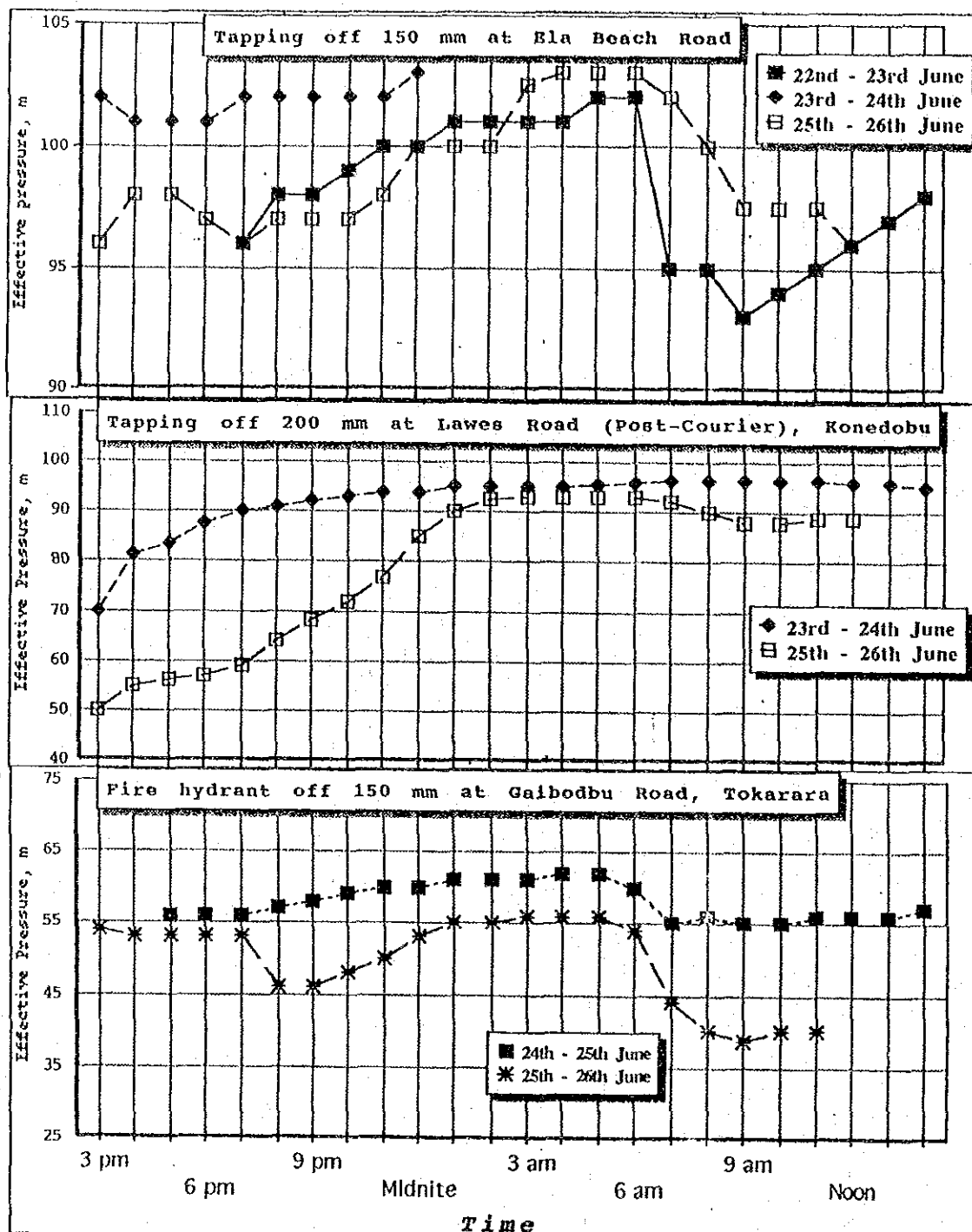
TITLE

LOCATION OF FLOW AND PRESSURE MEASUREMENT
POINTS DURING TRIAL WATER RATIONING

Fig. No.
L.3

PORT MORESBY WATER SUPPLY DEVELOPMENT PLAN

TOKYO ENGINEERING CONSULTANTS in association with PACIFIC CONSULTANTS INTERNATIONAL



23rd - 24th June : Water cut off to Boroko and parts of Korobosea & Kilakila
 24th - 25th June : Water cut off to Geréhu and parts of Walgani
 22nd - 23rd and 25th - 26th June were days of normal operation

TITLE

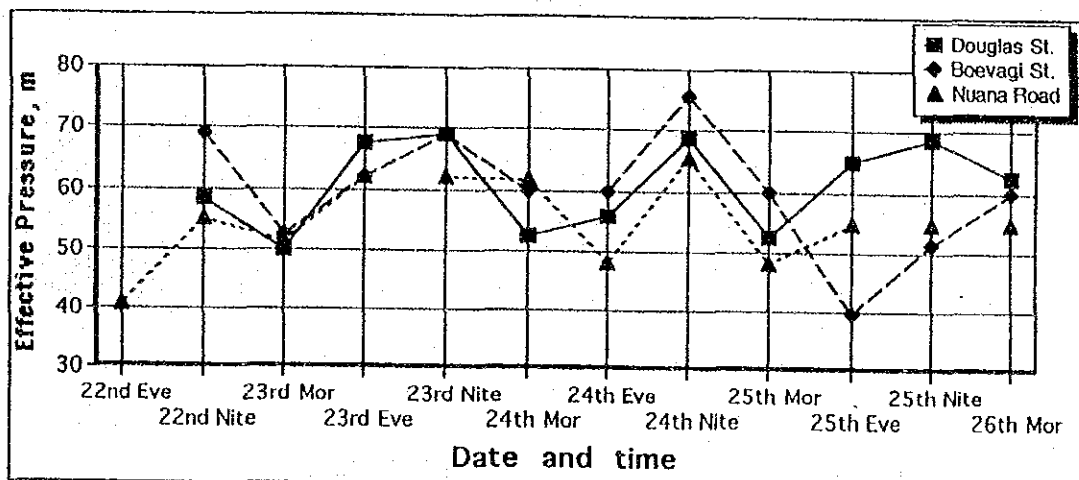
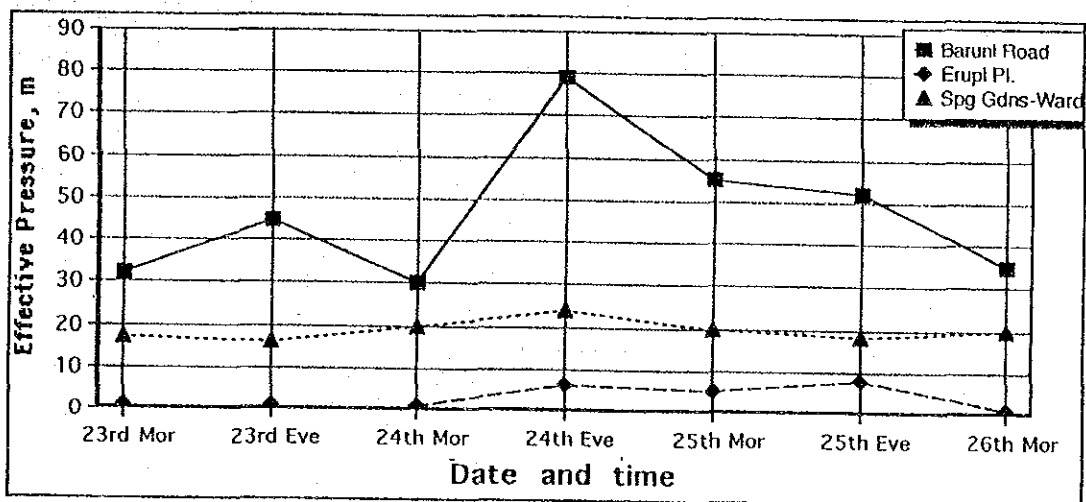
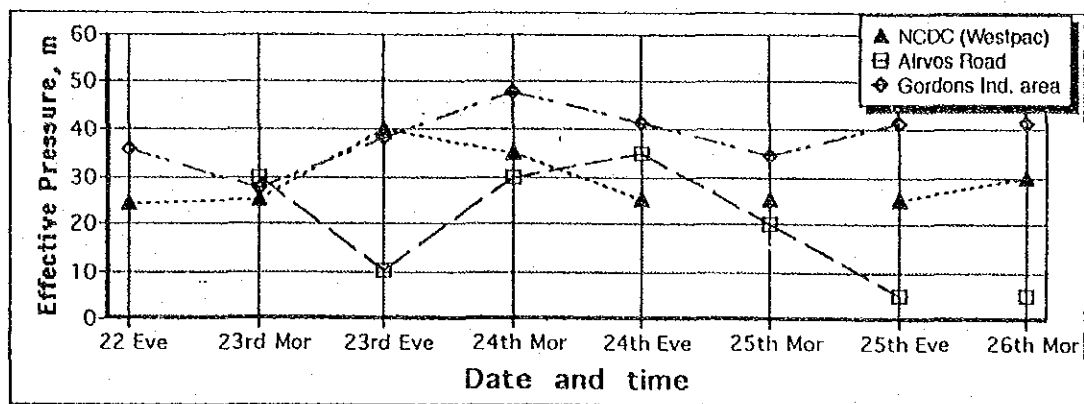
EFFECTIVE PRESSURE VARIATION DURING TRIAL WATER RATIONING

Fig. No.

L.4

PORT MORESBY WATER SUPPLY DEVELOPMENT PLAN

TOKYO ENGINEERING CONSULTANTS in association with PACIFIC CONSULTANTS INTERNATIONAL



23rd - 24th : Water cut off to Boroko and parts of Korobosea & Kilakila
 24th - 25th : Water cut off to Gerehu and parts of Waigani

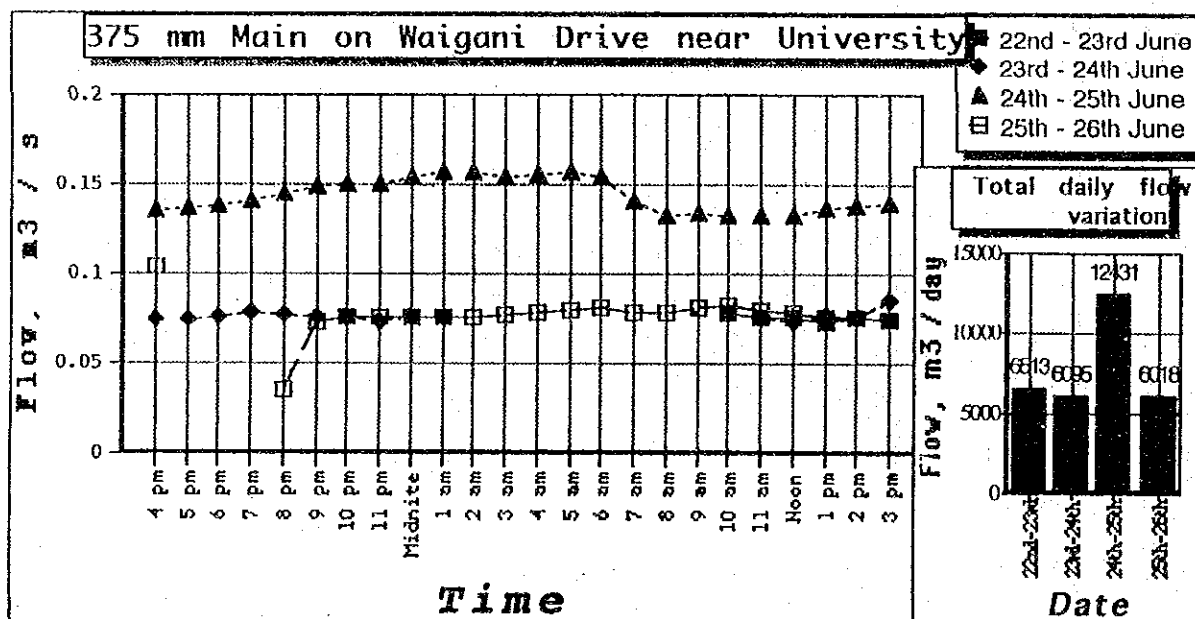
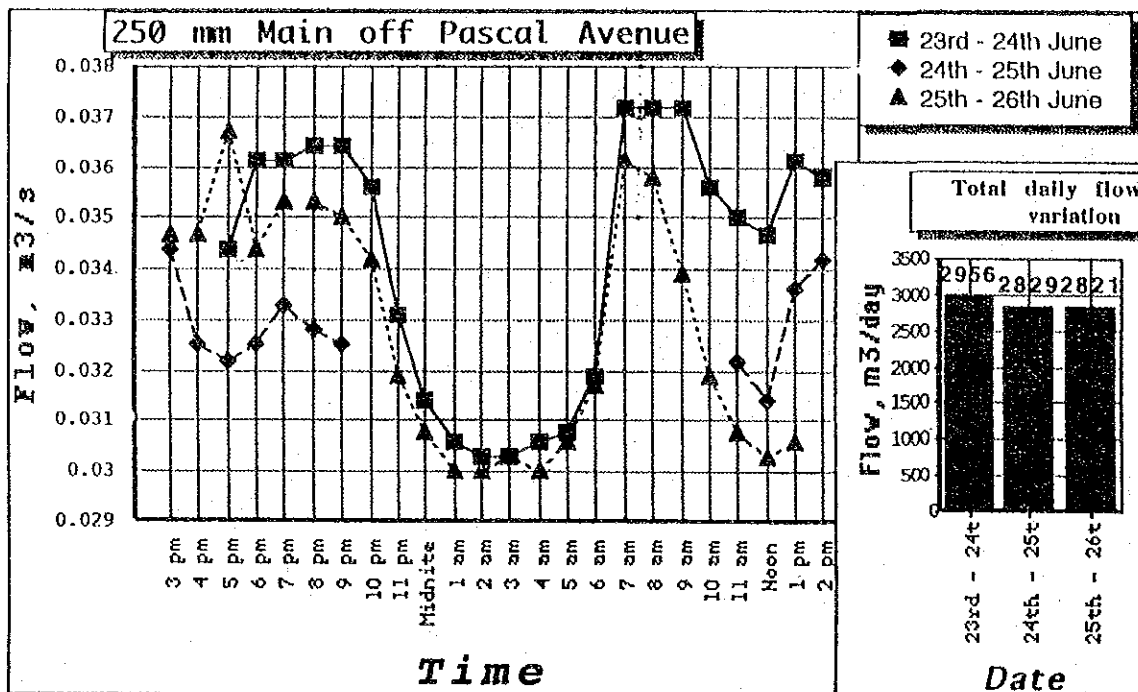
TITLE

SPOT PRESSURE MEASUREMENTS AT VARIOUS
 LOCATIONS DURING TRIAL WATER RATIONING

Fig. No.
 L.5

PORT MORESBY WATER SUPPLY DEVELOPMENT PLAN

TOKYO ENGINEERING CONSULTANS in association with PACIFIC CONSULTANTS INTERNATIONAL



23rd - 24th June : Water cut off to Boroko, Korobosea and parts of Kilakila
24th - 25th June : Water cut off to Gerehu and parts of Waigani

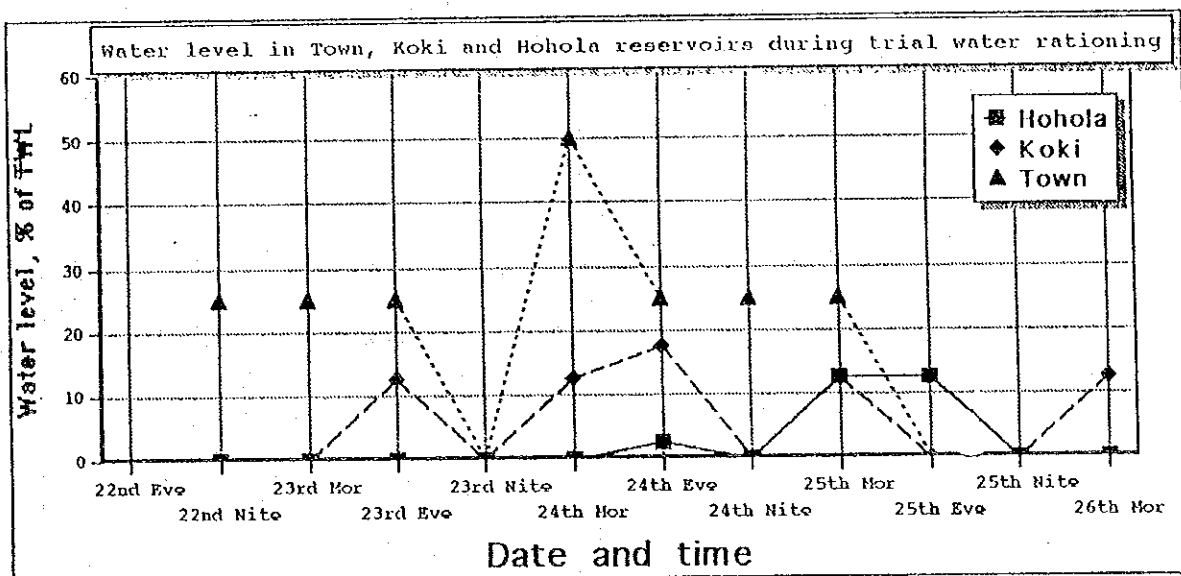
TITLE

WATER FLOW VARIATION AT BADILI AND
WAIGANI DURING TRIAL WATER RATIONING

Fig. No.
L.6

PORT MORESBY WATER SUPPLY DEVELOPMENT PLAN

TOKYO ENGINEERING CONSULTANTS in association with PACIFIC CONSULTANTS INTERNATIONAL



TITLE

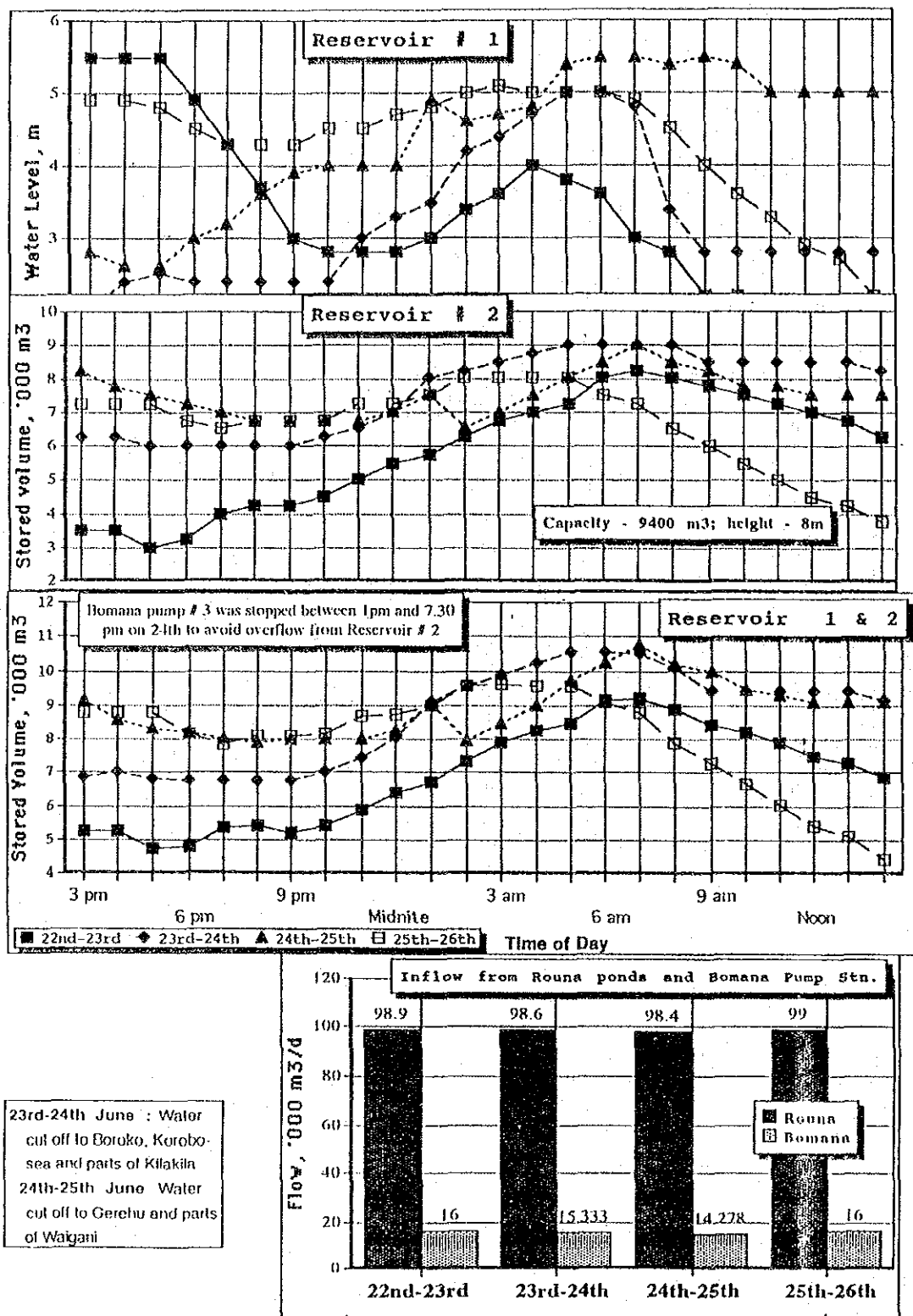
WATER LEVEL VARIATION AT SELECTED SERVICE
RESERVOIR DURING TRIAL WATER RATIONING

Fig. No.

L.7

PORT MORESBY WATER SUPPLY DEVELOPMENT PLAN

TOKYO ENGINEERING CONSULTANTS in association with PACIFIC CONSULTANTS INTERNATIONAL



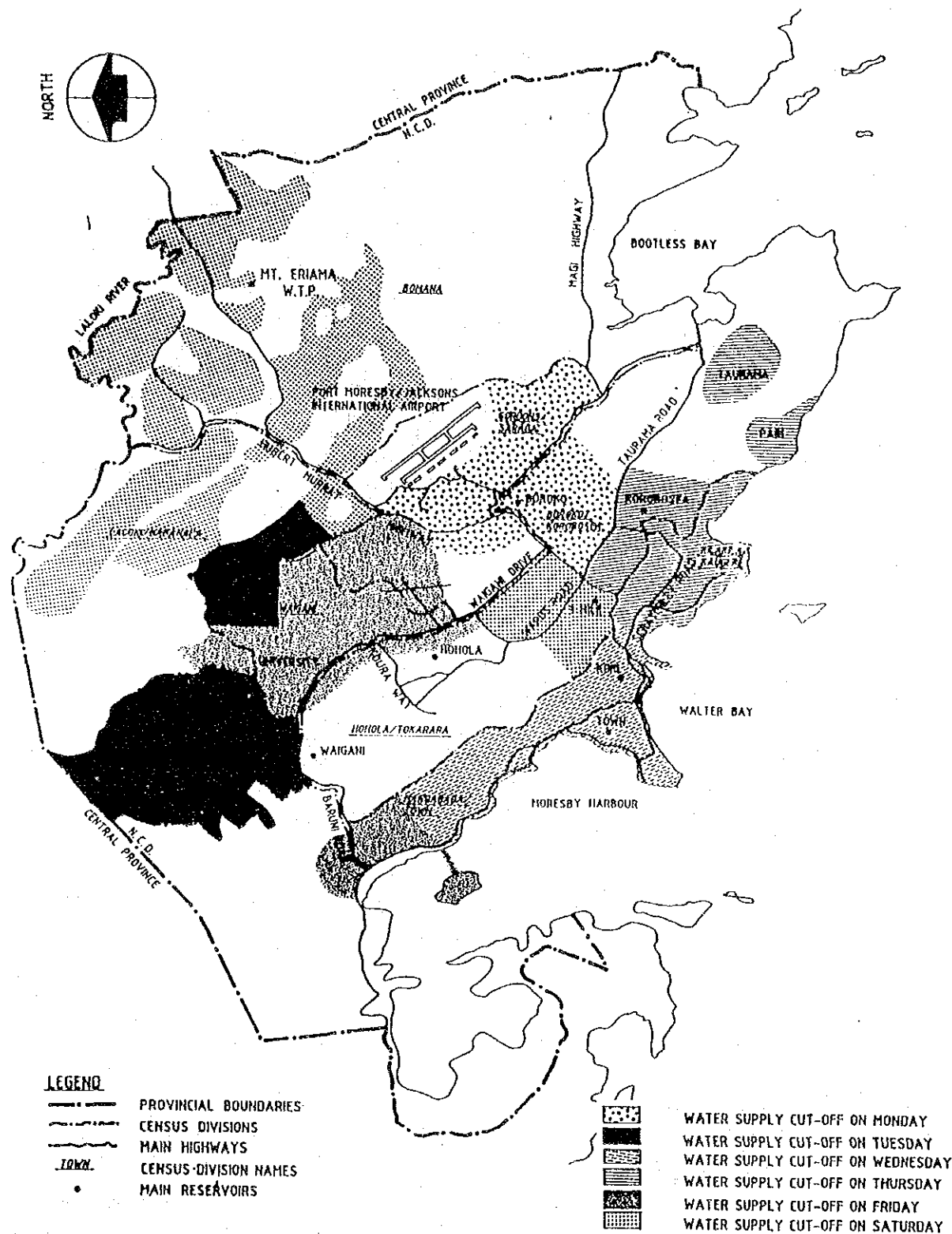
TITLE

RESERVOIR STORAGE AND INFLOW VARIATION
AT MT.ERIAMA W.T.P. DURING TRIAL WATER RATIONING

Fig. No.
L.8

PORT MORESBY WATER SUPPLY DEVELOPMENT PLAN

TOKYO ENGINEERING CONSULTANTS in association with PACIFIC CONSULTANTS INTERNATIONAL

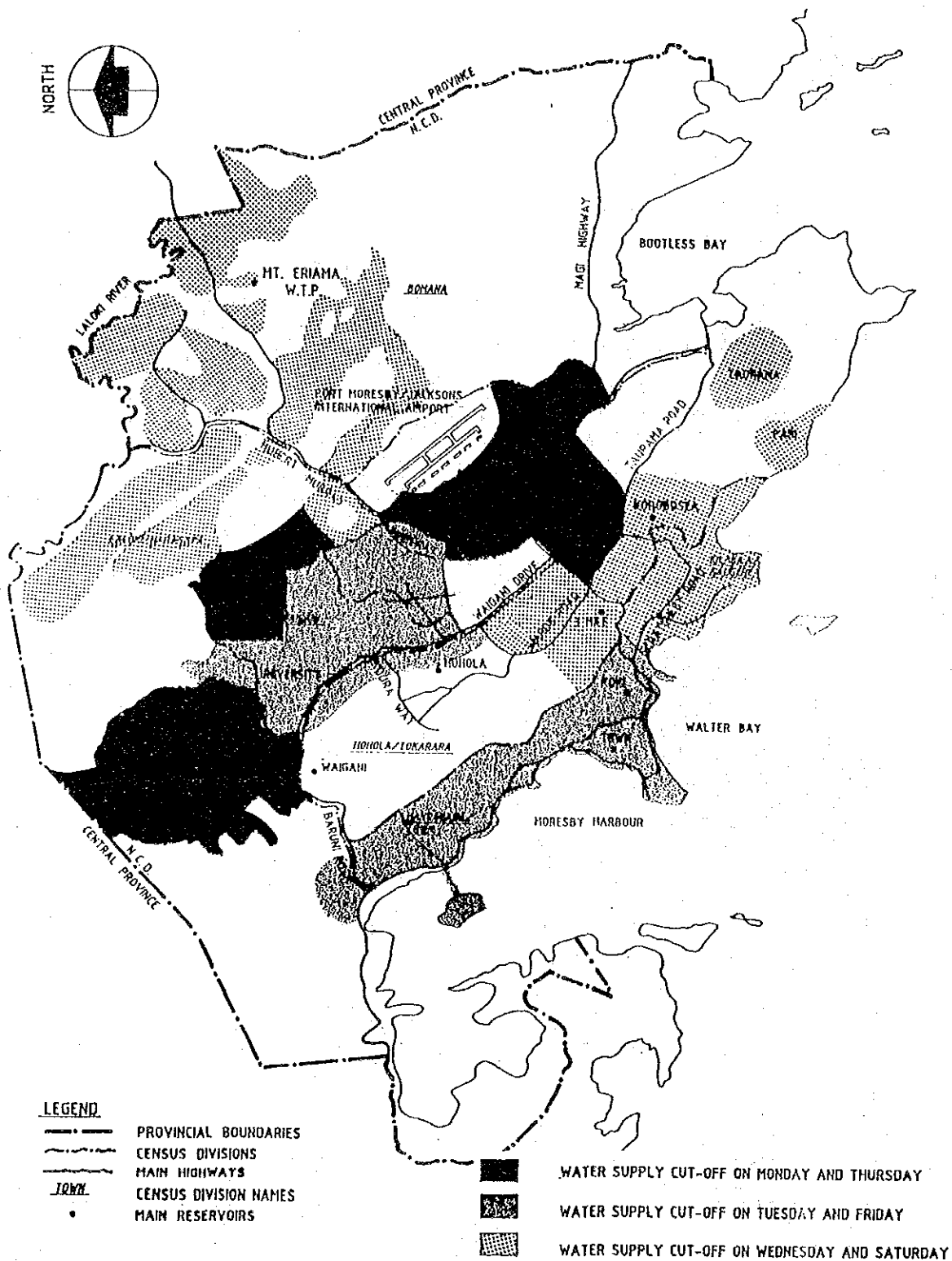


TITLE
DIVISION INTO BLOCKS UNDER MODERATE WATER RATIONING PLAN

Fig. No.
L.9

PORT MORESBY WATER SUPPLY DEVELOPMENT PLAN

TOKYO ENGINEERING CONSULTANTS in association with PACIFIC CONSULTANTS INTERNATIONAL



TITLE

DIVISION INTO BLOCS UNDER SEVERE WATER RATIONING PLAN

Fig. No.

L.10

PORT MORESBY WATER SUPPLY DEVELOPMENT PLAN

TOKYO ENGINEERING CONSULTANS in association with PACIFIC CONSULTANTS INTERNATIONAL

Table 1 : Daily minimum, average and maximum demands, supply and demand shortfall between 1990 and 2000

(Unit : m3/d)

Census Division	1990			1993			1995			1998			2000		
	Daily max	Daily min.	Daily ave.	Daily max	Daily min.	Daily ave.	Daily max	Daily min.	Daily ave.	Daily max	Daily min.	Daily ave.	Daily max	Daily min.	Daily ave.
Gerehu	15,300	9,402	13,431	17,460	10,177	14,538	18,900	10,403	14,862	19,320	10,554	15,077	19,600		
Waigani/Univ.	14,700	8,982	12,831	16,880	9,692	13,846	18,000	10,210	14,585	18,960	10,554	15,077	19,600		
Hohola/Tokarara	24,800	15,357	21,938	28,520	16,692	23,846	31,000	17,242	24,631	32,020	17,608	25,154	32,700		
Gordons/Saraga	32,300	21,204	30,292	39,380	23,746	33,923	44,100	25,556	36,508	47,460	26,762	38,231	49,700		
Korobosea/Boroko	19,700	11,738	16,769	21,800	12,492	17,846	23,200	12,266	17,523	22,780	12,115	17,308	22,500		
Kilakila/Kaugere	19,100	11,771	16,815	21,860	12,762	18,231	23,700	13,117	18,738	24,360	13,354	19,077	24,800		
Hanuabada/Town	21,600	12,794	18,277	23,750	13,570	19,385	25,200	13,504	19,292	25,080	13,462	19,231	25,000		
Napanapa/Laloki	1,900	2,251	3,215	4,180	3,070	4,385	5,700	4,684	6,692	8,700	5,762	8,231	10,700		
Bomana	6,500	5,116	7,308	9,500	6,192	8,846	11,500	7,711	11,015	14,320	8,723	12,462	16,200		
Demand per day	155,900	98,615	140,876	183,140	108,393	154,846	201,300	114,693	163,846	213,000	118,895	169,848	220,800		
Supply per day	125,000	125,000	125,000	125,000	125,000	125,000	125,000	125,000	125,000	125,000	125,000	125,000	125,000		
Shortfall in supply	30,900		15,876	58,140		29,846	76,300		38,846	88,000		44,848	95,800		

Table L.2 : Determination of actual block demands for Trial Water Rationing

(Unit : m³/d)

Census Block/ Division	1990 Daily max.	1995 Daily max.	1993 Daily max.	1993 Daily ave.	Remarks
Gerehu & Waigani (full area)	30,000	36,900	34,140	26,262	Reduce to 16,000 m ³ /d by excluding some areas of Waigani census division
Waigani (not including Morata, UPNG & Tokarara side of Waigani Drive)	4,676	5,463	5,148	3,960	
Gerehu & Waigani (Excl. Morata, UPNG & Tokarara side of Waigani Drive)	25,324	31,437	28,992	17,391	
Boroko/Korobosea (full area)	19,700	23,200	21,800	16,769	Remove areas around General Hospital to ease valve operation and add Horse Camp area
Korobosea (area between HM Hwy, Taurama Rd, Pipi- gari St & Korobosea Dr)	3,290	3,687	3,528	2,714	
Horse Camp area	3,140	4,120	3,728	2,868	
Boroko/Korobosea (excl. areas bounded by HM Hwy, Taurama St, Pipigari St, Korobosea Dr & incl. Horse Camp area)	19,550	23,633	22,000	16,923	

Table L.3 : Details of pressure and flow measurement points for trial water rationing

Sr. No.	Area	Street	Diameter (mm)	Material *	Type of @ measurement	Remarks
Pressure						
1	Gerehu	Arehava Street	150	AC	Fire hydrant	Intersection of Baruni & Sivari St. Next to U PNG compound
2	Baruni	Baruni Road	100	PVC	Tapping	
3	Waigani	Waigani Drive	375	AC	Tapping	
4	Waigani	Curlaw Road	150	AC	Fire hydrant	Second from Koura way
5	Tokarara	Gaibodbu Road	200	AC	Continuous	
6	June Valley	John Guise Road	200	AC	Permanent meter	Inside last house
7	Hohola	Erupi Place	100	CICL	Fire hydrant	
8	Gordon	Nuana Road	150	AC	Fire hydrant	In front of Air Niugini mess
9	Gordon	Gabaka Street	200	AC	Fire hydrant	
10	Boroko	Bava Street	200	CICL	Fire hydrant	Before Lagato Pl.
11	Korobosea	Taurama Street	150	CICL	Fire hydrant	
12	Badili	Scratchley Road	150	CICL	Tapping	In front of Sisters' quarters
13	Hohola	Spring Gardens Road	150	CICL	Fire hydrant	
14	Town	Ela Beach Road	150	CICL	Continuous	In front of Kaugere clinic
15	Town	Airvos Road	150	CICL	Fire hydrant	
16	Town	Douglas Street	150	CICL	Fire hydrant	Intersection with Wards Road
17	Konedobu	Lawes Road	200	CICL	Continuous	
18	Hanuabada	Boevagi Road	200	AC	Fire hydrant	Near Town reservoir
19	NCDC Westpac	Waigani Drive	100	CICL	Permanent meter	
Flow						
1	Waigani	Waigani Drive	375	AC	Flow meter	Near roundabout to Gerehu
2	Badili	Off Pascal Avenue	250	CICL	Flow meter	Near 3-mile Reservoir

@ Fire hydrant was used to measure pressure
 Permanent meter exists on pipe at given location
 Tapping directly on pipe was used for pressure measurement
 Continuous measurements were conducted over 24 hours

* CICL - cast iron, cement lined
 AC - asbestos cement
 PVC - polyvinyl chloride

Table L.4 : Daily minimum, average and maximum water demand, supply and shortfall in Port Moresby upto 1996

Unit : m³/d

Census Division	1990			1994			1995			1996		
	Daily max.	Daily min.	Daily ave.	Daily max.	Daily min.	Daily ave.	Daily max.	Daily min.	Daily ave.	Daily max.	Daily min.	Daily ave.
Gerehu	15,300	9,790	13,985	18,180	10,177	14,538	18,900	10,252	14,646	19,040	10,252	14,646
Waigani/Univ.	14,700	9,337	13,338	17,340	9,692	13,846	18,000	9,864	14,092	18,320	9,864	14,092
Hohola/Tokarara	24,800	16,024	22,892	29,760	16,692	23,846	31,000	16,876	24,108	31,340	16,876	24,108
Gordons/Saraga	32,300	22,476	32,108	41,740	23,746	33,923	44,100	24,350	34,785	45,220	24,350	34,785
Korobosea/Boroko	19,700	12,116	17,308	22,500	12,492	17,846	23,200	12,417	17,738	23,060	12,417	17,738
Kilakila/Kaugere	19,100	12,266	17,523	22,780	12,762	18,231	23,700	12,880	18,400	23,920	12,880	18,400
Hanuabada/Town	21,600	13,182	18,831	24,480	13,570	19,385	25,200	13,548	19,354	25,160	13,548	19,354
Napanapa/Laloki	1,900	2,660	3,800	4,940	3,070	4,385	5,700	3,608	5,154	6,700	3,608	5,154
Bomana	6,500	5,654	8,077	10,500	6,192	8,846	11,500	6,698	9,569	12,440	6,698	9,569
Demand per day	155,900	103,505	147,862	192,220	108,393	154,846	201,300	110,493	157,846	205,200	110,493	157,846
Supply per day	125,000	125,000	125,000	125,000	125,000	125,000	125,000	125,000	125,000	125,000	125,000	125,000
Shortfall in supply	30,900		22,862	67,220		29,846	76,300		32,846	80,200		32,846

Table L.5 : Proposed division of Port Moresby into blocks for Water Rationing

(Unit : m³/d)

Rationing Block	Census division (CD) and part of	Demand											
		1994				1995				1996			
		Daily Min	Daily Ave	Daily Max	Daily Min	Daily Ave	Daily Max	Daily Min	Daily Ave	Daily Min	Daily Ave	Daily Max	Daily Max
1	Gerehu	9,790	13,985	18,180	10,177	14,538	18,900	10,252	14,646	10,252	14,646	19,040	19,040
	Waigani @1	3,299	4,713	6,127	3,417	4,882	6,347	3,393	4,847	3,393	4,847	6,301	6,301
	Laloki / Napanapa (1-3, 5 North)	905	1,293	1,681	1,070	1,528	1,986	1,301	1,858	1,301	1,858	2,415	2,415
	Total	13,994	19,991	25,988	14,664	20,948	27,233	14,946	21,351	14,946	21,351	27,756	27,756
2	Waigani @2	7,804	11,148	14,493	8,166	11,665	15,165	8,512	12,160	8,512	12,160	15,808	15,808
	Baruni/Tatana	1,271	1,815	2,359	1,306	1,866	2,426	1,301	1,858	1,301	1,858	2,415	2,415
	Erima	5,978	8,540	11,102	6,265	8,950	11,635	6,269	8,955	6,269	8,955	11,641	11,641
	Laloki / Napanapa (4,9)	224	320	416	258	369	480	300	428	300	428	557	557
	Total	15,277	21,823	28,370	15,995	22,850	29,706	16,382	23,401	16,382	23,401	30,421	30,421
3	Hohola @3	6,838	9,768	12,699	7,106	10,152	13,198	7,106	10,152	7,106	10,152	13,197	13,197
	Bomana	5,654	8,077	10,500	6,192	8,846	11,500	6,698	9,569	6,698	9,569	12,440	12,440
	Laloki / Napanapa (part of 5,6,7,8)	1,531	2,187	2,843	1,742	2,488	3,234	2,008	2,868	2,008	2,868	3,728	3,728
	Total	14,023	20,032	26,042	15,040	21,486	27,932	15,812	22,589	15,812	22,589	29,365	29,365
4	Gordons @4 & Saraga	10,641	15,202	19,763	11,312	16,160	21,008	11,659	16,655	11,659	16,655	21,652	21,652
	Boroko	5,851	8,359	10,867	5,986	8,551	11,116	5,921	8,458	5,921	8,458	10,996	10,996
	Total	16,492	23,561	30,630	17,298	24,711	32,124	17,580	25,113	17,580	25,113	32,648	32,648
5	Korobosea @5	5,398	7,711	10,024	5,622	8,032	10,442	5,629	8,042	5,629	8,042	10,454	10,454
	Kilakila/Kaugere CD (excl. Koki)	9,449	13,499	17,549	9,890	14,128	18,366	10,018	14,312	10,018	14,312	18,605	18,605
	Total	14,847	21,210	27,573	15,512	22,160	28,808	15,647	22,354	15,647	22,354	29,059	29,059
6	Town/Hanuabada CD(excl.Baruni)	11,911	17,015	22,120	12,263	17,518	22,773	12,247	17,495	12,247	17,495	22,744	22,744
	Koki	2,816	4,023	5,230	2,872	4,103	5,334	2,862	4,088	2,862	4,088	5,315	5,315
	Total	14,727	21,038	27,350	15,135	21,621	28,107	15,109	21,583	15,109	21,583	28,059	28,059
No rationing	Tokarara/Hohola West @6	7,421	10,601	13,781	7,695	10,993	14,291	7,729	11,042	7,729	11,042	14,354	14,354
	Gordons Industrial area @7	4,674	6,677	8,680	4,912	7,017	9,122	5,117	7,310	5,117	7,310	9,503	9,503
	Airport	1,182	1,688	2,195	1,257	1,796	2,335	1,306	1,865	1,306	1,865	2,424	2,424
	General Hospital	867	1,238	1,609	884	1,263	1,642	867	1,238	867	1,238	1,610	1,610
	Total	14,144	20,204	26,265	14,748	21,069	27,390	15,019	21,455	15,019	21,455	27,891	27,891
Grand Total		103,504	147,859	192,218	108,392	154,845	201,300	110,495	157,846	110,495	157,846	205,199	205,199
Shortfall in supply			22,859	67,218		29,845	76,300		32,846		32,846	80,199	80,199

@ 1 : Rainbow village and Morata

@ 2 : all areas Waigani CD (except Rainbow village & Morata) plus areas along Waigani Drive in Tokorara/Hohola CD upto Wards Road

@ 3 : areas between Wards Road, Spring Gardens Road, Hubert Murray Highway and Waigani Drive in Tokorara/Hohola CD

@ 4 : area between Hubert Murray Highway and Geuta drive

@ 5 : areas of Boroko/Korobosea CD, except Boroko and General Hospital

@ 6 : areas between Koura way and Spring Gardens in Tokorara/Hohola CD, west of hills near Waigani Drive

@ 7 : area between Hubert Murray Highway, Waigani Drive, Geuta drive and Cameron road

Table L.6 : Effect of moderate water rationing on different areas

Water rationing in --> Water supply in	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
	Gordons - - Saraga - Boroko	Gerehu-Morata Laloki 1/2/3 /5 North	Town-Koki- Hanuabada- Konedobu	Korobo-Pari Kaugere-Hor Camp, Taura	Waigani- Baruni-Erima Laloki 4/9	Laloki 5S,6- Bomana, S Tokarara/Hohola	No rationing
Cut off volume, m3	19991	21823	19082	23561	21210	21038	
Gordons - Saraga - Boroko							
Gerehu - Morata Laloki 1/2/3/5N							
Town - Hanuabada - Konedobu - Koki							*
Korobosea - Taurama- Pari-Kaugere-H.Camp							
Waigani - Baruni Erima - Laloki 4/9							
Laloki 5S,6-8,Bomana S Tokarara/Hohola							
Tokarara - Hohola # problem areas							

No change from non-rationing supply

No water supply to area on that day

Increased water supply due to water rationing elsewhere

Tokarara-Hohola problem areas & Town/Hanuabada CD (incl. elevated areas) get water from respective reservoirs filled during previous day's increased supply to the area.

Area cannot get maximum benefit of water cut off to upstream areas, e.g. Bomana area due to insufficient pipeline capacity. Should improve after new 600 mm is in place.

* Supply should generally improve with installation of new 600 mm pipe

Intentionally not rationed

Table L.7 : Effect of severe water rationing on different areas

Water rationing in --> Water supply in	Monday	Thursday	Tuesday	Friday	Wednesday	Saturday	Sunday
	Gordons - Saraga - Boroko-Gerehu-Morata - Laloki 1/2/3/5N		Town - Hanuabada - Koki Konedobu - Waigani - Erima Erima - Baruni - Laloki 4/9		Korobosea-Taurama-H.Camp Kaugere-Pari-Laloki 5S,6-8 Bomana,S Tokarara/Hohola		No rationing
Cut off volume, m3		54358		52379		57980	
Gordons - Saraga - Boroko Gerehu-Morata-Laloki 1/2/3/5N							
Town-Hanuabada-Waigani Koki-Baruni-Erima-Laloki 4/9							*
Korobosea-Taurama-Pari Kaugere-H.Camp-Bomana Laloki 5S,6-8, S Tokarara/Hohola							
Tokarara - Hohola# problem areas							

No change from non-rationing supply

No water supply to area on that day

Increased water supply due to rationing elsewhere

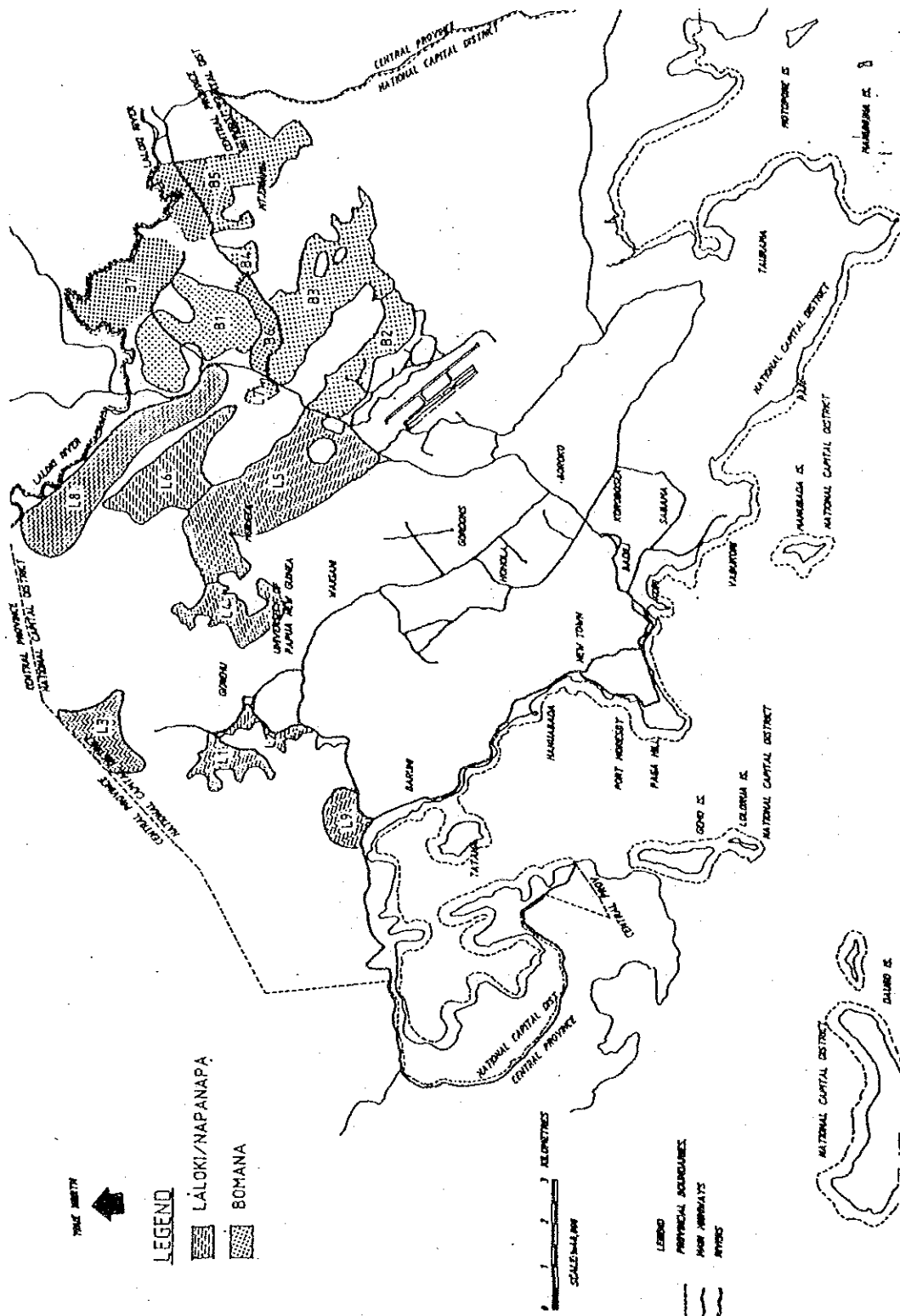
Tokarara-Hohola problem areas get water from reservoir filled during previous 2 day increased supply to the area.

* Supply should generally improve in Town/Hanuabada with installation of new 600 mm

Tokarara / Hohola problem area supply increases but less than Monday & Thursday due to lesser relevant cut off volume

Intentionally not rationed

Appendix



TITLE

LOCATION OF CENSUS DIVISION UNITS IN BOMANA
AND LALOKE/NAPANAPA CENSUS DIVISION

Fig. No.
APPENDIX

1

PORT MORESBY WATER SUPPLY DEVELOPMENT PLAN

TOKYO ENGINEERING CONSULTANTS in association with PACIFIC CONSULTANTS INTERNATIONAL

June 22nd - 26th, 1993

[illegible]

Table 2 : Continuous Pressure measurements at Tokorara, Ela Beach and Lawes Road

(Unit : m)

Date -->	Tokorara				Ela-Beach				Lawes Road			
	22nd-23rd	23rd-24th	24th-25th	25th-26th	22nd-23rd	23rd-24th	24th-25th	25th-26th	22nd-23rd	23rd-24th	24th-25th	25th-26th
03:00 PM	48			54		102		96		70		50
04:00 PM				53		101		98		82		55
05:00 PM	45		56	53		101		98		84		56
06:00 PM	45		56	53		101		97		88		57
07:00 PM	44		55	53	96	102		96		90		59
08:00 PM	43		57	46	98	102		97	85	91		64
09:00 PM	42		58	46	98	102		97	85	93		68
10:00 PM	40		59	48	99	102		97	84	93		72
11:00 PM			60	50	100	102		98	82	94		77
12:00 AM			60	53	100	103		100	80	94		85
01:00 AM			61	55	101			100	78	95		90
02:00 AM			61	55	101			100	76	95		93
03:00 AM			61	56	101			103	75	95		93
04:00 AM			62	56	101			103	75	95		93
05:00 AM			62	56	102			103	82	96		93
06:00 AM			60	54	102			103		96		93
07:00 AM			55	44	95			102		97		92
08:00 AM			56	40	95			100		97		90
09:00 AM			55	39	93		96	98		97	90	88
10:00 AM			55	40	94		95	98		97	84	88
11:00 AM			56	40	95		95	98		97	50	89
12:00 PM	46		56		96		97	96	58	96	48	89
01:00 PM	47		56		97		98		60	96	50	
02:00 PM	47		57		98		97		63	95	51	

23rd - 24th : Water cut off to Boroko, Korobosea and parts of Kilakila

24th - 25th : Water cut off to Gerehu and parts of Waigani

**Table 3 : Continuous flow measurements on 250 mm pipe at
Pascal Avenue and 375 mm pipe on Waigani Drive**

(Unit : Reading in m3:Flow in m3/sec)

	Pascal Avenue						Waigani Drive					
	6/23 - 6/24		6/24 - 6/25		6/25 - 6/26		6/23 - 6/24		6/24 - 6/25		6/25 - 6/26	
	Reading	Flow	Reading	Flow	Reading	Flow	Reading	Flow	Reading	Flow	Reading	Flow
03:00 PM			762	0.0344	542	0.0347			1746	0.1356	1993	0.1038
04:00 PM	0		879	0.0325	667	0.0347					2568	
05:00 PM	62	0.0344	995	0.0322	799	0.0367			2238	0.1367	1870	
06:00 PM	192	0.0361	1112	0.0325	923	0.0344						
07:00 PM	322	0.0361	39	0.0333	1050	0.0353					0	
08:00 PM	453	0.0364	157	0.0328	1172	0.0353					4	
09:00 PM	584	0.0364	196	0.0325	1303	0.035					132	0.0356
10:00 PM	712	0.0356			1426	0.0342					393	0.0725
11:00 PM	831	0.0331			1541	0.0319					664	0.0753
12:00 AM	944	0.0314			1652	0.0308					934	0.075
01:00 AM	1054	0.0306			1760	0.03					1207	0.0758
02:00 AM	1163	0.0303			1868	0.03					1481	0.0761
03:00 AM	1272	0.0303			1977	0.0303					1755	0.0761
04:00 AM	1382	0.0306			2085	0.03					2030	0.0764
05:00 AM	1493	0.0308			2195	0.0306					2310	0.0778
06:00 AM	1608	0.0319			2309	0.0317					2597	0.0797
07:00 AM	1742	0.0372			2439	0.0361					2889	0.0811
08:00 AM	1876	0.0372			2568	0.0358					3170	0.0781
09:00 AM	1943	0.0372			2690	0.0339					3451	0.0781
10:00 AM	128	0.0356	2		2805	0.0319					3741	0.0806
11:00 AM	254	0.035	60	0.0322	2916	0.0308					4036	0.0819
12:00 PM	379	0.0347	173	0.0314	3025	0.0303					4325	0.0803
01:00 PM	509	0.0361	294	0.0336	3080	0.0306					4605	0.0778
02:00 PM	638	0.0358	417	0.0342							4876	0.0753
											4966	0.075

23rd - 24th : Water cut off to Boroko, Korobosea and parts of Kilakila, 24th - 25th : Water cut off to Gerehu and parts of Waigani

Table 4 : Record of service reservoir levels during trial water rationing

(Unit : Fraction)

	22nd	23rd			24th			25th			26th
	Night	Morning	Evening	Night	Morning	Evening	Night	Morning	Evening	Night	Morning
Waigani	0	0	0	0	0	0	0	0	0	0	0
Hohola	0	0	0	0	0	0.025	0	0.125	0.125	0	0
Boroko	0	Little	0	0	0	0	0	-	-	0	0
Korobosea	0	0	0	0	0	0	0	-	-	0	0
3 mile	0	0	0	0	0	0	0	-	-	0	0
Koki	0	0	0.125	0	0.125	0.175	0	0.125	0	0	0.125
Town	0.25	0.25	0.25	0	0.5	0.25	0.25	0.25	0	0	0

Table 5 : Hourly record of reservoir levels, volume of water stored and inflow from Rouna 1-3 pond & Bomana pump station between 22nd - 26th June

Date -->	Reservoir # 1 Level, m						Reservoir # 2 Stored Volume, m3						Flow from Rouna Pond, 1000 m3/hr					
	21-22	22-23	23-24	24-25	25-26	26-27	21-22	22-23	23-24	24-25	25-26	26-27	21-22	22-23	23-24	24-25	25-26	26-27
3 pm		5.5	2	2.8	4.9	2		3500	6250	8250	7250	3750		4.3	4.1	4.1	4.1	4
6 pm		5.5	2.4	2.6	4.9	2.1		3500	6250	7750	7250	3750		3.6	3.8	3.7	3.8	4.1
		5.5	2.5	2.6	4.8	2		3000	6000	7500	7250	3500		4.7	3.5	4.3	4.4	4.2
9 pm		4.9	2.4	3	4.5	2.4		3250	6000	7250	6750	3250		4.1	4.6	4	4.1	4
		4.3	2.4	3.2	4.3	3.4		4000	6000	7000	6500	3000		4.2	4.3	4.1	4.2	4.2
Midnite		3.7	2.4	3.6	4.3	3.6		4250	6000	6750	6750	2500		4.1	4.1	4.2	4.1	4.2
		3.0	2.4	3.9	4.3	3.2		4250	6000	6750	6750	2750		4.0	3.7	4	4.1	4.2
3 am		2.8	2.4	4	4.5	3.4		4500	6250	6750	6750	3000		4.1	4.8	4.2	4.7	3.9
		2.8	3	4	4.5	3.4		5000	6500	6750	7250	3500		3.3	4	4.7	3.6	4.1
6 am		2.8	3.3	4	4.7	3.4		5500	7000	7000	7250	3750		4.6	4.1	3.6	4.1	4.2
	3.4	3	3.5	4.9	4.8		7000	5750	8000	7500	7500		4.5	4.7	4.3	3.8	3.7	
9 am	3.4	3.4	4.2	4.6	5		7250	6250	8250	6500	8000		3.6	3.6	4.1	4.4	4.2	
	3.6	3.6	4.4	4.7	5.1		7580	6750	8500	7000	8000		4.2	4.3	3.3	4.3	4.2	
Noon	4	4	4.7	4.8	5		7750	7000	8750	7500	8000		4	4.3	4.3	4.1	4.5	
	4	3.8	5	5.4	5		8000	7250	9000	8000	8000		4	4.1	4.1	4.4	4.1	
3 pm	4.2	3.6	5	5.5	5		8250	8000	9000	8500	7500		4	4.2	4.8	3.5	3.1	
	4.2	3	4.8	5.5	4.9		7500	8250	9000	9000	7250		3.9	4.2	3.8	3.4	4.9	
6 pm	3.6	2.8	3.4	5.4	4.5		6750	8000	9000	8500	6500		4.4	3.8	4.1	4.4	4.1	
	2.8	2.2	2.8	5.5	4		6000	7750	8500	8250	6000		4.3	4.3	4.2	4.9	4.4	
9 pm	3	2.2	2.8	5.4	3.6		5500	7500	8500	7750	5500		4.1	4.6	4.1	4	4.2	
	3.6	2	2.8	5	3.3		4750	7250	8500	7750	5000		4.2	3.6	4.8	4.1	4	
Midnite	5.5	1.6	2.8	5	2.9		4000	7000	8500	7500	4500		4	3.7	4.2	4.2	4.2	
	5.5	1.6	2.8	5	2.7		4000	6750	8500	7500	4250		4.2	4.4	3.5	4	4.1	
3 am	5.5	2	2.8	5	2.2		4000	6250	8250	7500	3750		3.6	4.1	4	4	4.1	

Flow from Bomana pump station was 16,000 m³/d except between 1pm and 0730 pm on 24th June, when 1 pump was shut off, resulting in flow of only half the flowrate

Construction of Moresby water supply next year

CONSTRUCTION of the first stage of Port Moresby city's water supply will begin in July next year.

That was revealed yesterday at the signing of the minutes of the study of the city water supply between National Capital District Commission chairman, David Unagi, study team leader, Kazufumi Momose, and director of the office of International Development Assistance, Gabriel Pepson, at the city hall.

Mr Momose led a four-men team from the Japan International Co-operation Agency who carried out studies of the water supply since September last year.

They released an interim report in March this year.

Mr Unagi said at the signing the NCDC was committed to ensuring remedial measures were put in place as quickly as possible.

Minutes of study signed by Unagi and Japanese

By JONATHAN TANNOS

He said funding was not a problem.

"Funding is not a problem but we want to get the job done," Mr Unagi said.

He said the study contained a five-year plan to develop a proper water supply for Port Moresby, but there were immediate measures to be taken as well.

He said a design study for the water supply would be completed next March with construction to begin four months later.

The NCDC also announced a trial "water rationing" exercise to run for one week from June 21.

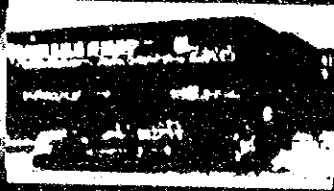
The exercise is among the recommendations made by the study team to determine the best plan of water rationing if the water crisis continued.

It also aimed to work out a contingency plan in the event of the worst drought in the national capital.

The public will be made aware of when and where the water rationing exercises will be carried out for the week.

Institutions like the Port Moresby General Hospital, fire stations, Parliament and others will not be affected by the exercise.

The public has also been asked to co-operate in the exercise and especially not to deliberately break or destroy water pipes and fire hydrants.



NATIONAL CAPITAL DISTRICT COMMISSION

News from the City Hall

NCDC PROPOSING WATER RATIONING

The National Capital District Commission wishes to advise the general public that within the next two weeks JICA Water Supply Study Team will be carrying out some water rationing exercise in the city.

As part of the immediate remedial measures the Jica Study Team would like to determine the best plan of water rationing if the water crises continues and also to work out a contingency plan in the event of the worst drought in the city.

The exact details including days and times of water outage will be made known in the near future.

Please we request all city residents to make early preparations to store water for this very important exercise.

We request your full understanding and co-operation and appeal to residents not to interfere or destroy and pipes, valves or fire hydrants on the street which will make situations worse when the water is fully restored.

For Further information please contact Billy and sevese on Phone Nos. 25 0015 or 25 2643 respectively.

NATIONAL CAPITAL DISTRICT COMMISSION TOKSAVE

The National Capital District Commission (NCDC) wishes to give this very important announcement to all the residents in the National Capital District.

Following our previous water rationing notice NCDC has the following information for the Public to take note of:

- (1) Day 1 — on Wednesday 23rd June 1993 at 2.30pm watersupply to the following areas at Boroko, Korobosea, Sabama, Kilakila and Pari Village will be closed off.
- (2) Day 2 — on Thursday 24th June, 1993 at 2.30pm watersupply to the following areas at Gerehu, University, Waigani and North Waigani will be closed off.
- (3) Government Offices at Waigani, City Hall, Hospital and Foreign Embassies will not be affected including some parts of the city.
- (4) The water supply to each area will be off for a 24 hour period and the exercise will be finished by 2.30pm on Friday 25th June and the watersupply should be fully restored by 6pm.
- (5) For any complaints or request of watercarts during the 2 days of water interruptions the following numbers should be contacted:
 - (i) 24 Hours Base — 25 6127
 - (ii) a/Manager (WS&S) — 25 2643 BH/25 3578 AH
- (6) We request the publics full co-operation and appeal to residents not to interfere or destroy any pipes, valves or fire hydrants on the Street.

We do apologise for any inconvenience that may be caused during this water rationing exercise.

AUTHORISED: MERE NAVURU
City Manager



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AUTHORISED: **MEREA NAVURU**
City Manager



NATIONAL CAPITAL DISTRICT COMMISSION

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As part of the immediate remedial measures the JICA study team would like to determine the best plan of water rationing if the water crisis continues and also to work out a contingency plan in the event of the worst drought in the city.


The exact details including days and times of water outage will be made known in the near future.

Please we request all city residents to make early preparations to store water for this very important exercise.

We request your full understanding and co-operation and appeal to residents not to interfere or destroy any pipes, valves or fire hydrants on the street which will make situations worse when the water is fully restored.

For further information please contact Billy and Sevese on 250015 or 242643 respectively.

Authorised by:


MEREA NAVURU
City Manager

Water rationing experiment next week

PARTS of Port Moresby City will be without water for 24 hours on Wednesday and Thursday next week.

The supply to Boroko, Korobosea, Sabana, Kilaikla and Pari Village will be turned off on Wednesday. Gerehu, University, Waigani and North Waigani will be off on Thursday.

National Capital District Commission water supply officials who asked not to be identified by name said yesterday that the water supply to these areas would be closed off as part of a rationing experiment.

They said it was basically a planning exercise to determine the water needs of different areas in

preparation for formal rationing if necessary during the next dry season.

The idea was to fix everything in advance to make sure that water would be equally distributed to

every area - city residents, settlements and nearby villages - during dry seasons.

The water supply to each of the affected areas would be turned off for a full 24 hours, they said.

Hohola, the Waigani government offices, City Hall, Port Moresby General Hospital, foreign missions and some parts of the city would not be affected.

The National Capital District Commission has appealed to the general public not to interfere with or destroy pipes, valves or fire hydrants on the streets on these days.

The Post-Courier was unable to contact city manager Mereia Navuru for further comments about the planned water interruptions.

By CASPAR KOLMA

JUNE 18,
POST COURIER



NATIONAL CAPITAL DISTRICT COMMISSION

TOKSAVE

The National Capital District Commission (NCDC) wishes to give this very important announcement to all the residents in the National Capital District.

Following our previous water rationing notice NCDC has the following information for the Public to take note of:

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- (2) Day 2 — on Thursday 24th June, 1993 at 2.30pm water supply to the following areas at Gerehu, University, Waigani and North Waigani will be closed off.
- (3) Government Offices at Waigani, City Hall, Hospital and Foreign Embassies will not be affected including some parts of the city.
- (4) The water supply to each area will be off for a 24 hour period and the exercise will be finished by 2.30pm on Friday 25th June and the water supply should be fully restored by 6pm.
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- (6) We request the public's full co-operation and appeal to residents not to interfere or destroy any pipes, valves or fire hydrants on the Street.

We do apologise for any inconvenience that may be caused during this water rationing exercise.

AUTHORISED: **MEREA NAVURU**
City Manager

JUNE 22,
POST COURIER



NATIONAL CAPITAL DISTRICT COMMISSION

TOKSAVE

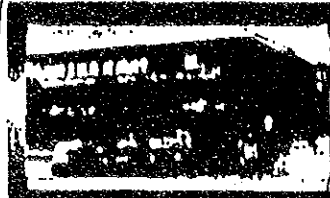
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AUTHORISED: MERE NAVURU
City Manager



NATIONAL CAPITAL DISTRICT COMMISSION

News from the City Hall

Water Rationing

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for the Public to take note of:

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- (2) Day 2 - On Thursday 24th June, 1993 at 2:30pm water supply to the following areas at Gerehu, University, Walgani and North Walgani will be closed off.
- (3) Government Offices at Walgani, City Hall, Hospital and Foreign Embassies will not be affected including some parts of the city.
- (4) The water supply to each area will be off for a 24 hour period and the exercise will be finished by 2:30pm on Friday 25th June and the water supply should be fully restored by 6pm.
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