

TABLE 13.4.22 DISTRIBUTION OF WATER DEMAND IN 2000 (SCENARIO 3)  
BY SOURCE

CITY/ MUNICIPALITY	WATER DEMAND (M3/D)			WSS BREAKDOWN (%)		WSS BREAKDOWN (M3/D)		PRIVATE GROUND- WATER	GROUND- WATER TOTAL	G.W. SHARE (%)
	WSS	PRIVATE	TOTAL	SURFACE WATER	GROUND- WATER	SURFACE WATER	GROUND- WATER			
I. NCR	3,039,444	692,223	3,731,667	98.5	1.5	2,994,546	44,898	692,223	737,121	19.8
1. Manila	715,862	27,866	743,728	100.0	0.0	715,862	0	27,866	27,866	3.7
2. Pasay City	122,662	19,618	142,280	95.9	4.1	117,580	5,082	19,618	24,700	17.4
3. Quezon City	710,182	81,471	791,653	97.4	2.6	691,856	18,326	81,471	99,797	12.6
4. Calookan City	208,070	38,462	246,532	100.0	0.0	208,070	0	38,462	38,462	15.6
5. Las Pinas	100,145	59,013	159,158	98.3	1.7	98,411	1,734	59,013	60,747	38.2
6. Makati	258,098	20,844	278,943	97.1	2.9	250,738	7,360	20,844	28,204	10.1
7. Malabon	87,616	27,304	114,921	98.6	1.4	86,372	1,244	27,304	28,548	24.8
8. Mandaluyong	104,166	10,395	114,560	100.0	0.0	104,166	0	10,395	10,395	9.1
9. Marikina	99,235	16,094	115,328	100.0	0.0	99,235	0	16,094	16,094	14.0
10. Muntinlupa	69,874	78,387	148,261	90.0	10.0	62,855	7,019	78,387	85,406	57.6
11. Navotas	52,977	4,761	57,737	99.4	0.6	52,664	313	4,761	5,074	8.8
12. Paranaque	149,761	56,100	205,861	98.8	1.2	147,993	1,768	56,100	57,868	28.1
13. Pasig	150,009	101,430	251,439	99.8	0.2	149,753	256	101,430	101,686	40.4
14. Pateros	11,041	5,813	16,854	100.0	0.0	11,041	0	5,813	5,813	34.5
15. San Juan	64,108	1,888	65,996	100.0	0.0	64,108	0	1,888	1,888	2.9
16. Taguig	57,060	81,537	138,597	98.5	1.5	56,213	847	81,537	82,384	59.4
17. Valenzuela	78,578	61,241	139,818	98.8	1.2	77,629	949	61,241	62,190	44.5
II. CAVITE	117,566	49,032	166,598	55.4	44.6	65,098	52,468	49,032	101,500	60.9
1. Bacoor	49,666	9,713	59,379	84.8	15.2	42,110	7,556	9,713	17,269	29.1
2. Cavite City	23,500	9,649	33,148	26.1	73.9	6,125	17,375	9,649	27,024	81.5
3. Iaus	18,277	11,351	29,628	38.5	61.5	7,032	11,245	11,351	22,596	76.3
4. Kawit	15,328	1,855	17,183	28.7	71.3	4,399	10,929	1,855	12,784	74.4
5. Noveleta	4,558	1,702	6,260	64.4	35.6	2,937	1,621	1,702	3,323	53.1
6. Rosario	6,238	14,763	21,001	40.0	60.0	2,496	3,742	14,763	18,505	88.1
III. RIZAL	148,897	178,262	327,159	43.8	56.2	65,285	83,612	178,262	261,874	80.0
1. Angono	7,907	2,419	10,326	100.0	0.0	7,907	0	2,419	2,419	23.4
2. Antipolo	30,215	45,283	75,498	6.1	93.9	1,834	28,381	45,283	73,664	97.6
3. Baras	291	658	949	0.0	100.0	0	291	658	949	100.0
4. Binangonan	16,775	5,620	22,395	0.0	100.0	0	16,775	5,620	22,395	100.0
5. Cainta	36,463	67,162	103,625	84.1	15.9	30,677	5,786	67,162	72,948	70.4
6. Cardona	971	1,164	2,135	0.0	100.0	0	971	1,164	2,135	100.0
7. Jala-Jala	414	610	1,024	0.0	100.0	0	414	610	1,024	100.0
8. Montalban	8,189	8,566	16,755	30.6	69.4	2,509	5,680	8,566	14,246	85.0
9. Morong	1,928	1,216	3,144	0.0	100.0	0	1,928	1,216	3,144	100.0
10. Pililla	1,786	1,302	3,088	0.0	100.0	0	1,786	1,302	3,088	100.0
11. San Mateo	10,354	7,844	18,198	35.8	64.2	3,706	6,648	7,844	14,492	79.6
12. Tanay	6,039	2,559	8,598	0.0	100.0	0	6,039	2,559	8,598	100.0
13. Taytay	26,346	33,120	59,466	70.8	29.2	18,651	7,695	33,120	40,815	68.6
14. Teresa	1,219	739	1,958	0.0	100.0	0	1,219	739	1,958	100.0
TOTAL	3,305,908	919,517	4,225,424	94.5	5.5	3,124,929	180,978	919,517	1,100,495	26.0

TABLE 13.4.23 DISTRIBUTION OF WATER DEMAND IN 2005 (SCENARIO 3)  
BY SOURCE

CITY/ MUNICIPALITY	WATER DEMAND (M3/D)			NWSS BREAKDOWN (%)		NWSS BREAKDOWN (M3/D)		PRIVATE GROUND- WATER	GROUND- WATER TOTAL	G.W. SHARE (%)
	NWSS	PRIVATE	TOTAL	SURFACE WATER	GROUND- WATER	SURFACE WATER	GROUND- WATER			
I. NCR	3,451,822	606,845	4,058,667	98.7	1.3	3,406,924	44,898	606,845	651,743	16.1
1. Manila	738,301	27,472	765,773	100.0	0.0	738,301	0	27,472	27,472	3.6
2. Pasay City	136,214	16,708	152,922	96.3	3.7	131,132	5,082	16,708	21,790	14.2
3. Quezon City	760,536	81,874	842,410	97.6	2.4	742,210	18,326	81,874	100,200	11.9
4. Calookan City	235,267	33,970	269,237	100.0	0.0	235,267	0	33,970	33,970	12.6
5. Las Pinas	154,799	48,901	203,700	98.9	1.1	153,065	1,734	48,901	50,635	24.9
6. Makati	272,451	20,920	293,371	97.3	2.7	265,091	7,360	20,920	28,280	9.6
7. Malabon	98,128	25,351	123,479	98.7	1.3	96,884	1,244	25,351	26,595	21.5
8. Mandaluyong	110,518	10,394	120,911	100.0	0.0	110,518	0	10,394	10,394	8.6
9. Marikina	110,371	14,463	124,834	100.0	0.0	110,371	0	14,463	14,463	11.6
10. Muntinlupa	115,142	64,358	179,500	93.9	6.1	108,123	7,019	64,358	71,377	39.8
11. Navotas	55,863	4,737	60,600	99.4	0.6	55,550	313	4,737	5,050	8.3
12. Paranaque	172,221	46,212	218,433	99.0	1.0	170,453	1,768	46,212	47,980	22.0
13. Pasig	199,788	86,967	286,755	99.9	0.1	199,532	256	86,967	87,223	30.4
14. Pateros	14,206	4,613	18,819	100.0	0.0	14,206	0	4,613	4,613	24.5
15. San Juan	64,133	1,888	66,020	100.0	0.0	64,133	0	1,888	1,888	2.9
16. Taguig	95,537	67,700	163,237	99.1	0.9	94,690	847	67,700	68,547	42.0
17. Valenzuela	118,348	50,318	168,666	99.2	0.8	117,399	949	50,318	51,267	30.4
II. CAVITE	151,789	39,537	191,326	65.4	34.6	99,321	52,468	39,537	92,005	48.1
1. Bacoor	60,395	8,749	69,144	87.5	12.5	52,839	7,556	8,749	16,305	23.6
2. Cavite City	31,040	5,847	36,886	44.0	56.0	13,665	17,375	5,847	23,222	63.0
3. Iba	24,300	9,767	34,066	53.7	46.3	13,055	11,245	9,767	21,012	61.7
4. Kawit	18,502	603	19,105	40.9	59.1	7,573	10,929	603	11,532	60.4
5. Noveleta	5,742	1,284	7,027	71.8	28.2	4,121	1,621	1,284	2,905	41.3
6. Rosario	11,810	13,287	25,098	68.3	31.7	8,068	3,742	13,287	17,029	67.9
III. RIZAL	204,739	193,711	398,449	49.9	50.1	102,217	102,522	193,711	296,232	74.3
1. Angono	12,701	2,592	15,293	100.0	0.0	12,701	0	2,592	2,592	16.9
2. Antipolo	39,332	51,175	90,506	21.8	78.2	8,572	50,760	51,175	81,934	90.5
3. Baras	642	708	1,350	0.0	100.0	0	642	708	1,350	100.0
4. Binangonan	25,501	5,671	31,172	0.0	100.0	0	25,501	5,671	31,172	100.0
5. Cainta	48,686	73,627	122,313	88.1	11.9	42,900	5,786	73,627	79,413	64.9
6. Cardona	1,347	1,188	2,535	0.0	100.0	0	1,347	1,188	2,535	100.0
7. Jala-Jala	911	638	1,549	0.0	100.0	0	911	638	1,549	100.0
8. Montalban	10,188	8,936	19,124	44.3	55.7	4,508	5,680	8,936	14,616	76.4
9. Morong	2,833	1,290	4,123	0.0	100.0	0	2,833	1,290	4,123	100.0
10. Pililla	3,462	1,356	4,818	0.0	100.0	0	3,462	1,356	4,818	100.0
11. San Mateo	14,124	7,833	21,958	52.9	47.1	7,476	6,648	7,833	14,481	66.0
12. Tanay	9,425	2,662	12,087	0.0	100.0	0	9,425	2,662	12,087	100.0
13. Taytay	33,754	35,304	69,058	77.2	22.8	26,059	7,695	35,304	42,999	62.3
14. Teresa	1,832	730	2,562	0.0	100.0	0	1,832	730	2,562	100.0
TOTAL	13,808,350	840,092	14,648,442	94.8	5.2	3,608,462	199,888	840,092	1,039,980	22.4

TABLE 13.4.24 DISTRIBUTION OF WATER DEMAND IN 2010 (SCENARIO 3)  
BY SOURCE

CITY/ MUNICIPALITY	WATER DEMAND (M3/D)			MWS BREAKDOWN (%)		MWS BREAKDOWN (M3/D)		PRIVATE GROUND- WATER	GROUND- WATER TOTAL	G.W. SHARE (%)
	MWS	PRIVATE	TOTAL	SURFACE WATER	GROUND- WATER	SURFACE WATER	GROUND- WATER			
I. NCR	3,947,279	598,900	4,546,178	98.9	1.1	3,902,381	44,898	598,900	643,798	14.2
1. Manila	804,366	27,359	831,725	100.0	0.0	804,366	0	27,359	27,359	3.3
2. Pasay City	153,165	16,736	169,901	96.7	3.3	148,083	5,082	16,736	21,818	12.8
3. Quezon City	852,444	82,662	935,106	97.9	2.1	834,118	18,326	82,662	100,988	10.8
4. Calookan City	277,565	27,960	305,524	100.0	0.0	277,565	0	27,960	27,960	9.2
5. Las Pinas	201,123	53,996	255,119	99.1	0.9	199,389	1,734	53,996	55,730	21.8
6. Makati	302,437	21,036	323,473	97.6	2.4	295,077	7,360	21,036	28,396	8.8
7. Malabon	114,113	22,979	137,092	98.9	1.1	112,869	1,244	22,979	24,223	17.7
8. Mandaluyong	122,989	10,456	133,445	100.0	0.0	122,989	0	10,456	10,456	7.8
9. Marikina	124,688	14,763	139,451	100.0	0.0	124,688	0	14,763	14,763	10.6
10. Muntinlupa	143,869	66,423	210,292	95.1	4.9	136,850	7,019	66,423	73,442	34.9
11. Navotas	61,692	4,787	66,479	99.5	0.5	61,379	313	4,787	5,100	7.7
12. Paranaque	186,429	46,797	233,225	99.1	0.9	184,661	1,768	46,797	48,565	20.8
13. Pasig	238,287	87,412	325,700	99.9	0.1	238,031	256	87,412	87,668	26.9
14. Pateros	17,808	3,525	21,334	100.0	0.0	17,808	0	3,525	3,525	16.5
15. San Juan	67,826	1,880	69,706	100.0	0.0	67,826	0	1,880	1,880	2.7
16. Taguig	125,923	62,160	188,083	99.3	0.7	125,076	847	62,160	63,007	33.5
17. Valenzuela	152,554	47,970	200,524	99.4	0.6	151,605	949	47,970	48,919	24.4
II. CAVITE	189,001	33,796	222,797	72.2	27.8	136,533	52,468	33,796	86,264	38.7
1. Bacoor	71,998	10,212	82,210	89.5	10.5	64,442	7,556	10,212	17,768	21.6
2. Cavite City	36,372	4,406	40,778	52.2	47.8	18,997	19,375	4,406	21,781	53.4
3. Iaus	34,530	5,956	40,486	67.4	32.6	23,285	11,245	5,956	17,201	42.5
4. Kawit	21,778	0	21,778	49.8	50.2	10,849	10,929	0	10,929	50.2
5. Noveleta	7,289	816	8,105	77.8	22.2	5,668	1,621	816	2,437	30.1
6. Rosario	17,034	12,406	29,439	78.0	22.0	13,292	3,742	12,406	16,148	54.9
III. RIZAL	283,791	202,608	486,399	53.7	46.3	152,420	131,371	202,608	333,979	68.7
1. Angono	19,296	2,516	21,812	100.0	0.0	19,296	0	2,516	2,516	11.5
2. Antipolo	53,929	55,380	109,309	33.7	66.3	18,149	35,780	55,380	91,160	83.4
3. Baras	1,165	731	1,896	0.0	100.0	0	1,165	731	1,896	100.0
4. Binangonan	36,874	5,250	42,124	0.0	100.0	0	36,874	5,250	42,124	100.0
5. Cainta	66,270	78,127	144,397	91.3	8.7	60,484	5,786	78,127	83,913	58.1
6. Cardona	1,825	1,178	3,003	0.0	100.0	0	1,825	1,178	3,003	100.0
7. Jala-Jala	1,646	632	2,278	0.0	100.0	0	1,646	632	2,278	100.0
8. Montalban	12,542	9,318	21,860	46.7	53.3	5,858	6,684	9,318	16,002	73.2
9. Morong	4,076	1,318	5,394	0.0	100.0	0	4,076	1,318	5,394	100.0
10. Pililla	5,108	1,324	6,432	0.0	100.0	0	5,108	1,324	6,432	100.0
11. San Mateo	19,954	7,193	27,147	59.3	40.7	11,824	8,130	7,193	15,323	56.4
12. Tanay	13,958	2,574	16,542	0.0	100.0	0	13,958	2,574	16,542	100.0
13. Taytay	44,504	36,380	80,884	82.7	17.3	36,809	7,695	36,380	44,075	54.5
14. Teresa	2,634	686	3,320	0.0	100.0	0	2,634	686	3,320	100.0
TOTAL	4,420,071	835,304	5,255,375	94.8	5.2	4,191,334	228,737	835,304	1,064,041	20.2

TABLE 33.4.25 SUMMARY OF PROJECTED WATER DEMAND IN 1995 (SCENARIO 4)

CITY/ MUNICIPALITY	RWSS SERVED WATER DEMAND (M3/D)			PRIVATELY SERVED WATER DEMAND (M3/D)			TOTAL WATER DEMAND (M3/D)			RWSS SERVICE RATIO (%)					
	DOMESTIC	COMMERCIAL/INDUSTRIAL	LOSS	DOMESTIC	COMMERCIAL/INDUSTRIAL	TOTAL	DOMESTIC	COMMERCIAL/INDUSTRIAL	LOSS	TOTAL	D	C	T		
<b>VI. MCR</b>	14,881,645	449,632	113,331	358,552	101,829	324,540	784,931	1,442,197	437,871	886,097	13,316,625	75.1	81.5	25.9	
11. Manila	249,328	187,797	22,519	22,417	4,655	5,766	32,868	271,745	28,304	235,731	109,242	31.8	97.3	79.5	
12. Pasay City	42,308	23,235	1,817	11,775	8,795	3,375	23,946	32,088	5,132	35,006	127,866	78.2	72.6	35.0	
13. Quezon City	284,202	116,705	30,170	28,515	27,641	32,388	83,523	283,117	184,346	82,538	721,950	90.0	80.9	48.2	
14. Caloocan City	79,937	15,433	12,175	41,396	3,674	4,665	49,735	121,254	19,107	57,968	215,066	65.9	80.8	72.3	
15. Las Pinas	24,488	788	189	39,173	4,658	25,348	72,300	66,782	5,444	13,711	111,473	36.7	14.4	0.7	
16. Makati	78,166	63,327	6,342	13,265	11,721	3,383	28,359	91,451	75,058	9,725	79,820	85.5	84.4	65.2	
17. Makabon	30,398	4,600	10,273	16,876	2,016	14,565	32,257	46,074	6,816	24,838	101,304	66.0	69.5	41.4	
18. Mandaluyong	35,755	14,763	10,553	4,103	2,128	5,353	11,584	39,858	16,891	15,906	105,559	89.7	87.4	66.3	
19. Marikina	51,193	4,914	1,701	31,127	5,548	1,773	8,264	56,741	6,687	9,965	31,127	104,520	90.2	73.5	17.1
20. Muntinlupa	16,534	99	97	35,674	10,423	41,469	87,555	52,208	10,521	41,556	113,232	31.7	0.9	0.2	
21. Navotas	24,039	2,748	2,811	15,934	4,432	1,739	1,113	28,797	3,363	4,530	15,934	52,844	83.5	81.5	61.8
22. Paranaque	53,546	8,497	2,031	34,501	5,748	21,356	79,387	105,294	14,720	23,427	34,501	177,943	50.9	57.7	8.7
23. Pasig	60,705	11,436	9,770	11,411	8,431	72,559	92,502	72,117	20,268	82,430	44,322	219,126	84.2	58.4	11.9
24. Pateros	4,147	71	4	0	0	2,124	7,596	9,529	71	2,128	2,473	14,001	43.5	100.0	0.2
25. San Juan	28,777	10,422	1,453	21,890	3,354	59	2,520	38,141	10,510	1,522	21,890	65,063	92.4	93.1	96.1
26. Taguig	8,775	457	11	39,225	4,629	49,826	93,580	48,000	5,066	49,826	4,977	107,901	18.3	9.0	0.0
27. Valenzuela	31,406	2,890	1,406	22,900	4,335	32,171	58,506	53,406	7,224	33,577	19,224	113,431	58.8	40.0	4.2
<b>VII. CAVITE</b>	37,156	1,950	1,389	56,270	6,554	7,122	69,945	93,425	8,103	8,511	17,183	127,223	39.8	19.1	16.3
1. Bacoor	11,988	349	85	17,732	890	0	23,228	34,325	1,230	85	5,320	40,960	34.9	27.6	100.0
2. Cavite City	10,997	921	288	6,468	4,406	0	10,875	17,465	5,327	288	5,231	26,311	63.0	17.3	100.0
3. Iloilo	5,284	82	9	13,540	816	541	14,937	18,304	898	550	2,295	22,547	28.0	9.1	1.3
4. Kawit	6,104	135	634	9,932	3,739	0	3,739	9,843	155	694	2,980	13,671	62.0	100.0	100.0
5. Noveleta	939	6	107	3,141	0	0	4,880	4,880	6	107	451	4,544	23.0	100.0	100.0
6. Rosario	1,864	46	207	7,944	441	6,481	13,965	8,908	487	6,688	908	16,390	20.9	9.5	3.1
<b>VIII. RIZAL</b>	43,110	5,109	3,347	75,531	10,559	87,141	173,221	118,641	15,688	30,479	18,728	243,516	36.3	32.6	3.7
1. Angono	3,115	623	196	1,156	0	985	2,081	4,271	623	1,121	694	6,709	72.9	100.0	17.5
2. Antipolo	8,827	765	2,145	26,039	3,439	14,543	40,082	30,867	4,284	16,583	5,030	56,448	28.5	17.5	12.9
3. Baras	127	25	8	558	0	38	586	685	25	46	28	789	18.5	100.0	17.4
4. Binangonan	7,008	1,402	442	3,109	0	2,081	5,190	10,117	1,492	2,523	1,562	15,694	69.3	100.0	17.5
5. Calamba	5,711	569	158	19,121	4,018	43,748	66,888	24,687	4,587	43,807	3,429	76,685	23.1	12.4	0.1
6. Cardona	480	58	31	968	0	146	1,112	1,456	98	177	109	1,840	33.7	100.0	17.5
7. Jalajala	73	15	5	542	0	22	577	615	15	27	16	673	11.9	100.0	18.5
8. Montalban	3,075	53	21	4,129	1,059	3,557	8,750	7,199	1,122	3,578	1,350	13,248	42.7	4.7	0.6
9. Morong	955	191	60	381	0	284	1,145	1,816	191	344	213	2,564	52.6	100.0	17.4
10. Philippines	703	141	44	993	0	709	1,328	1,441	253	1,247	41.5	41.5	100.0	17.4	
11. San Mateo	4,152	235	66	6,473	494	730	7,697	10,825	795	1,909	14,059	38.1	32.2	8.3	
12. Taseo	2,170	434	137	1,658	0	645	2,301	3,826	434	782	484	5,528	56.7	100.0	17.5
13. Taytay	6,133	462	105	13,459	1,478	20,059	34,856	19,552	1,941	20,164	3,640	45,297	31.7	23.8	0.5
14. Teresa	480	36	30	575	0	443	718	1,055	95	173	107	1,431	45.5	100.0	17.3
<b>TOTAL</b>	11,163,911	465,291	118,068	490,353	118,941	418,793	1,028,087	1,654,264	574,232	636,861	922,093	13,687,364	70.4	79.3	22.0

TABLE 13.4.25 SUMMARY OF PROJECTED WATER DEMAND IN 2000 (SCENARIO 4)

CITY/ MUNICIPALITY	RWSS SERVED WATER DEMAND (M3/D)				PRIVATELY SERVED WATER DEMAND (M3/D)				TOTAL WATER DEMAND (M3/D)				RWSS SERVICE RATIO (%)										
	DOMESTIC		LOSS %		DOMESTIC (COMMERCIAL/INDUSTRIAL)		TOTAL		DOMESTIC (COMMERCIAL/INDUSTRIAL)		LOSS		TOTAL		D		C		I		T		
	COMMERCIAL/INDUSTRIAL	LOSS	COMMERCIAL/INDUSTRIAL	LOSS	COMMERCIAL/INDUSTRIAL	LOSS	COMMERCIAL/INDUSTRIAL	LOSS	COMMERCIAL/INDUSTRIAL	LOSS	COMMERCIAL/INDUSTRIAL	LOSS	COMMERCIAL/INDUSTRIAL	LOSS	COMMERCIAL/INDUSTRIAL	LOSS	COMMERCIAL/INDUSTRIAL	LOSS	COMMERCIAL/INDUSTRIAL	LOSS	COMMERCIAL/INDUSTRIAL	LOSS	
I. NCR	1,561,204	561,191	146,218	886,548	30.0	2,555,161	270,810	110,761	369,650	761,221	1,622,014	671,952	515,468	886,548	13,705,882	83.4	84.5	28.3	79.7				
1. Manila	267,231	205,651	27,550	214,555	30.0	715,217	17,868	4,665	5,756	29,310	285,097	210,528	33,346	214,555	743,535	93.7	97.8	82.5	95.2				
2. Pasay City	51,400	30,375	2,742	35,221	30.0	120,738	3,795	8,795	3,375	20,965	60,135	39,170	6,116	36,221	141,703	85.4	77.5	44.8	85.2				
3. Quezon City	305,535	148,563	41,310	212,747	30.0	709,155	22,811	27,641	32,358	82,183	328,717	176,204	73,677	612,747	751,345	93.3	84.3	56.1	89.5				
4. Caloocan City	105,000	19,550	15,174	59,983	30.0	199,978	35,858	3,674	4,565	44,197	140,548	23,324	19,939	59,963	244,074	74.6	84.2	76.5	81.9				
5. Las Pinas	50,005	359	222	25,356	30.0	84,553	34,378	5,665	29,863	69,937	92,583	5,846	30,086	25,356	154,480	62.8	34.4	0.7	54.7				
6. Malabon	39,499	6,050	14,698	8,074	30.0	255,186	7,779	11,721	3,383	23,683	98,432	31,624	11,458	76,556	278,069	92.1	87.2	70.5	91.8				
7. Marikina	61,331	5,999	2,004	29,715	30.0	99,049	3,015	2,128	5,353	10,497	43,952	20,620	19,739	31,206	114,032	75.1	75.0	50.2	74.2				
8. Mandaluyong	46,935	18,491	13,386	104,019	30.0	309,049	4,324	2,164	9,736	16,224	65,556	8,163	11,739	29,715	115,273	93.4	73.5	17.1	85.9				
9. Muntinlupa	39,775	120	114	17,147	30.0	57,156	25,723	48,844	87,589	65,498	12,843	48,558	17,147	144,446	60.7	9.9	0.2	35.6					
10. Navotas	25,464	3,484	3,621	15,587	30.0	51,956	3,116	621	1,739	5,475	22,379	4,105	5,360	15,247	57,431	90.4	84.9	67.6	90.5				
11. Paranasque	82,972	10,372	2,393	40,937	30.0	136,625	32,481	7,597	25,207	65,295	115,366	17,989	21,600	40,937	261,920	71.3	57.1	3.7	87.7				
12. Pasig	77,244	14,443	11,511	44,230	30.0	147,433	7,339	10,232	85,612	103,233	84,583	24,741	97,113	44,230	250,665	91.3	59.4	11.9	88.8				
13. Pateros	6,555	86	5	2,849	30.0	9,496	4,393	0	2,502	6,895	10,949	86	2,507	2,849	16,391	59.9	100.0	0.2	87.9				
14. San Juan	30,191	12,732	1,735	19,225	30.0	64,802	1,750	97	59	1,906	32,141	13,829	1,794	19,225	65,988	94.6	99.2	95.7	97.1				
15. Taguig	28,387	558	13	12,411	30.0	41,369	28,169	5,650	58,702	96,421	56,555	5,208	59,715	12,411	132,890	50.2	9.6	0.0	30.9				
16. Valenzuela	47,034	3,528	1,656	22,379	30.0	74,597	20,834	5,281	37,902	64,028	87,863	3,819	39,558	22,379	138,624	69.3	40.0	4.2	53.8				
17. Valenzuela	69,492	1,892	1,637	30,823	30.0	102,743	43,017	8,000	8,391	59,408	111,409	3,892	10,037	30,823	162,151	61.4	19.1	16.3	62.4				
III. RIZAL	85,238	7,396	5,440	31,033	25.3	132,107	73,529	12,889	103,472	189,991	158,863	28,265	108,313	34,033	322,098	53.7	35.5	5.0	41.0				
1. Angono	5,138	1,028	555	1,186	15.0	7,907	1,124	0	1,255	2,419	6,282	1,028	1,850	1,186	10,326	82.1	100.0	30.0	76.6				
2. Antipolo	15,624	534	2,527	8,668	30.0	28,692	24,957	4,271	17,134	46,373	41,591	5,205	19,661	8,608	75,064	40.0	17.9	12.9	38.2				
3. Baras	189	38	20	44	15.0	291	810	0	48	658	799	38	68	44	949	23.7	100.0	29.5	30.6				
4. Brangohan	10,992	2,180	1,177	2,516	15.0	16,775	2,873	0	2,747	5,620	13,175	2,180	3,324	2,516	22,355	79.1	100.0	30.0	74.9				
5. Calina	18,459	695	68	8,242	30.0	27,475	17,007	4,905	51,541	73,454	35,478	5,600	51,610	4,302	16,886	78.0	100.0	100.0	84.9				
6. Cardona	631	126	68	146	15.0	971	1,005	0	159	1,164	1,636	128	227	146	2,135	38.6	100.0	30.0	45.5				
7. Jala-Jala	269	54	29	82	15.0	414	542	0	89	610	811	54	97	62	1,624	33.2	100.0	29.3	40.4				
8. Kuntalan	5,342	64	24	2,328	30.0	7,758	3,348	1,305	4,191	8,845	8,691	1,770	4,215	2,328	16,503	51.5	4.7	0.6	45.7				
9. Morong	1,259	251	135	289	15.0	1,928	900	0	318	1,216	2,153	251	451	289	3,144	58.2	100.0	29.9	61.3				
10. Piliilla	1,181	232	135	268	15.0	1,786	1,010	0	292	1,302	2,171	417	268	3,088	53.5	100.0	30.0	57.8					
11. San Mateo	6,504	337	78	2,858	30.0	9,527	6,936	603	860	8,399	13,240	899	938	2,858	17,926	47.6	32.2	3.3	53.1				
12. Tayay	3,824	785	424	306	15.0	6,039	1,570	0	989	2,559	5,494	785	1,413	908	9,598	71.4	100.0	30.0	70.2				
13. Tayay	14,240	565	134	6,338	30.0	21,325	11,198	1,804	23,634	36,634	25,437	2,859	23,765	6,998	57,960	56.0	23.8	0.5	46.8				
14. Teresa	792	158	85	183	15.0	1,219	539	0	200	739	1,331	158	286	183	1,958	59.5	100.0	30.1	62.3				
TOTAL	1,514,835	570,478	163,295	951,404	29.8	3,919,012	387,456	131,651	481,513	1,400,620	1,902,291	709,123	634,808	961,404	14,190,632	79.6	81.2	24.1	76.1				

TABLE 13.4.27. SUMMARY OF PROJECTED WATER DEMAND IN 2005 (SCENARIO 4)

CITY/ MUNICIPALITY	RWSS SERVED WATER DEMAND (M3/D)				PRIVATELY SERVED WATER DEMAND (M3/D)				TOTAL WATER DEMAND (M3/D)				RWSS SERVICE RATIO (%)				
	DOMESTIC		INDUSTRIAL		DOMESTIC		INDUSTRIAL		DOMESTIC		INDUSTRIAL		DOMESTIC		INDUSTRIAL		
	LOSS	TOTAL	LOSS	TOTAL	LOSS	TOTAL	LOSS	TOTAL	LOSS	TOTAL	LOSS	TOTAL	LOSS	TOTAL	LOSS	TOTAL	
I. MCR	1,609,016	672,476	176,980	819,491	205,801	119,593	411,846	737,240	1,814,818	792,069	588,825	819,491	4,015,202	88.7	84.9	30.1	81.6
1. Manila	277,501	243,494	32,276	184,424	17,476	4,865	5,706	27,925	294,978	248,160	38,082	184,424	755,624	94.1	98.1	84.8	95.4
2. Pasay City	59,712	37,377	3,607	33,565	6,003	8,795	3,375	18,172	65,715	46,172	19,581	33,565	152,134	90.3	81.0	51.7	88.1
3. Quezon City	337,840	180,961	51,750	188,878	22,535	27,641	32,358	82,543	360,477	207,702	84,037	183,878	842,154	93.7	86.7	61.5	90.2
4. Caloocan City	131,128	21,820	17,980	57,842	29,154	4,865	37,493	160,282	22,644	57,642	256,062	81.8	256,062	86.5	79.4	86.0	
5. Las Pinas	98,987	1,131	254	33,457	23,339	6,703	34,087	64,628	122,826	7,833	31,457	198,457	80.5	14.4	0.7	67.4	
6. Makati	96,241	96,288	9,694	58,072	5,937	11,721	3,382	21,041	104,178	108,003	13,978	66,072	233,231	94.3	89.1	74.1	92.8
7. Malabon	46,062	7,504	18,836	24,134	9,363	2,016	14,355	26,543	56,026	33,491	24,334	123,081	82.2	78.2	56.4	78.4	
8. Mandaluyong	44,558	22,177	16,036	27,594	3,019	2,128	5,353	10,500	21,389	24,305	21,389	120,876	93.7	91.2	75.0	91.3	
9. Marikina	69,650	7,071	2,287	26,336	4,589	2,651	11,113	18,233	74,219	9,622	13,400	25,138	123,577	93.8	73.5	12.1	85.2
10. Muntinlupa	63,994	142	130	21,422	15,899	14,997	55,751	86,448	79,694	15,199	55,882	21,422	173,137	80.3	0.9	0.2	49.8
11. Navotas	33,182	4,218	4,379	13,926	2,495	6,21	1,733	4,855	35,677	4,839	6,118	13,926	60,560	93.0	87.2	71.6	92.0
12. Paranaque	101,609	12,428	2,731	38,855	21,085	8,955	28,772	58,812	122,694	21,181	31,503	38,855	214,224	82.8	57.7	8.7	72.5
13. Pasig	90,714	17,031	13,139	40,295	6,084	12,132	97,702	115,924	96,798	29,163	110,847	49,095	277,103	93.7	88.4	11.9	58.2
14. Pateros	9,320	102	6	3,142	0	2,866	5,841	8,841	12,304	102	2,862	3,142	19,410	75.7	100.0	0.2	68.3
15. San Juan	31,068	15,025	1,988	16,027	1,750	97	1,906	39	32,818	15,122	2,941	16,027	66,014	94.7	99.4	97.1	97.1
16. Taguig	45,146	658	15	16,606	15,669	6,660	67,004	89,534	65,015	7,318	67,019	16,008	155,859	75.6	9.0	0.0	42.6
17. Valenzuela	66,282	4,158	1,891	24,114	17,239	6,237	43,262	66,738	83,531	10,395	45,153	24,114	163,193	79.4	40.0	4.2	59.1
III. CAVITE	99,546	2,430	1,868	34,561	30,627	9,430	9,577	49,635	130,273	11,560	11,445	34,561	187,959	76.5	19.1	16.3	73.6
11. Bacoor	43,263	489	114	14,618	8,909	1,281	0	10,150	52,161	1,770	114	14,618	63,663	82.9	27.6	100.0	85.2
12. Cavite City	18,334	1,225	387	6,682	2,740	6,341	0	9,081	21,074	4,665	387	6,682	35,803	87.0	17.3	100.0	74.6
13. Imus	16,507	118	12	5,545	9,313	1,174	893	11,355	25,825	1,282	874	5,448	33,537	83.9	9.1	1.3	66.1
14. Kawit	12,125	222	834	4,427	1,199	1,199	0	1,199	13,323	222	934	4,427	19,306	91.0	100.0	100.0	93.7
15. Noveleta	3,869	9	143	1,337	1,579	0	0	1,579	5,439	9	143	1,337	6,928	71.0	100.0	100.0	77.2
16. Rosario	5,559	86	278	1,971	6,882	635	8,715	16,231	12,451	701	8,993	1,971	24,116	44.7	9.5	3.1	32.7
III. RIZAL	134,704	10,320	9,149	43,570	65,440	15,193	118,376	199,009	200,144	65,513	127,524	43,570	396,752	67.3	40.4	7.2	49.8
11. Angono	7,927	1,585	1,284	1,905	1,022	0	1,570	2,592	8,919	1,585	2,854	1,905	15,293	88.6	100.0	45.0	83.1
12. Antipolo	24,301	1,101	2,864	9,429	27,811	6,035	19,557	52,402	52,112	6,136	22,441	9,429	90,117	46.6	17.9	12.9	41.9
13. Baras	491	80	65	96	629	0	79	708	1,039	80	144	96	1,350	39.9	100.0	45.1	47.6
14. Binangonan	15,915	3,182	2,578	3,825	2,520	0	3,151	5,671	13,483	5,729	3,825	3,172	85.3	100.0	45.0	81.8	
15. Calamba	31,823	319	78	11,573	10,808	5,782	38,831	75,421	44,632	6,801	59,908	11,573	121,715	75.8	12.4	0.1	38.0
16. Cardona	841	168	136	202	1,021	0	1,188	188	303	392	2,835	45.2	100.0	44.9	53.1		
17. Jala-Jala	588	114	92	137	326	0	112	638	1,094	114	204	137	1,549	51.9	100.0	45.1	58.8
18. Kuntalaban	7,183	76	23	2,431	3,001	1,539	4,784	9,323	10,190	1,614	4,811	2,431	19,046	70.5	4.7	0.5	51.0
19. Morong	1,768	354	286	425	340	0	350	2,708	354	638	425	4,123	55.3	100.0	45.0	68.7	
20. Piliilla	2,161	432	350	519	628	0	428	1,358	3,098	432	778	519	4,818	70.0	100.0	45.0	71.9
11. San Mateo	5,510	338	89	3,312	6,796	711	982	8,468	16,306	1,049	1,071	3,312	21,738	59.3	32.2	8.3	61.0
12. Tausog	5,382	1,176	953	1,414	1,497	0	1,165	2,662	7,379	1,176	2,118	1,414	12,087	79.7	100.0	45.0	78.0
13. Taytay	23,774	665	141	8,027	7,137	2,127	26,976	35,539	30,712	2,762	27,118	8,027	68,647	75.8	23.8	0.5	46.8
14. Teresa	1,143	229	185	275	594	0	226	739	1,647	229	411	275	2,562	69.4	100.0	45.0	71.5
TOTAL	1,943,365	685,026	181,997	897,642	301,868	144,216	539,798	985,883	2,145,234	828,242	727,795	897,642	14,599,914	85.9	82.6	25.8	78.6

TABLE 13.4.28 SUMMARY OF PROJECTED WATER DEMAND IN 2010 (SCENARIO 4)

CITY/ MUNICIPALITY	WSS SERVED WATER DEMAND (MG/D)				PRIVATELY SERVED WATER DEMAND (MG/D)				TOTAL WATER DEMAND (MG/D)				WSS SERVICE RATIO (%)							
	DOMESTIC (COMMERCIAL/INDUSTRIAL)		LOSS		DOMESTIC (COMMERCIAL/INDUSTRIAL)		TOTAL		DOMESTIC (COMMERCIAL/INDUSTRIAL)		LOSS		TOTAL		D		I		T	
	DOMESTIC (COMMERCIAL/INDUSTRIAL)	LOSS	LOSS #	TOTAL	DOMESTIC (COMMERCIAL/INDUSTRIAL)	LOSS	TOTAL	DOMESTIC (COMMERCIAL/INDUSTRIAL)	LOSS	TOTAL	DOMESTIC (COMMERCIAL/INDUSTRIAL)	LOSS	TOTAL	D	C	I	T			
11. MCR	11,800,513	784,697	206,731	930,647	25.0	3,722,588	186,264	128,498	452,655	167,418	1,986,777	913,196	659,385	930,647	14,490,006	90.6	85.9	31.4	82.9	
12. Manila	284,500	281,444	35,837	200,841	25.0	803,782	17,561	4,655	5,786	27,812	301,501	286,109	42,853	200,841	831,574	94.2	88.4	86.4	96.7	
13. Pasay City	65,733	44,438	4,443	38,205	25.0	152,819	4,826	8,795	3,375	16,995	70,560	53,233	7,818	38,205	169,835	93.2	83.5	56.8	90.0	
14. Quezon City	364,893	211,824	61,807	212,841	25.0	851,366	23,463	27,641	32,368	83,471	388,356	239,464	94,175	212,841	934,868	94.0	88.5	55.6	91.1	
15. Caloocan City	155,532	28,024	20,893	68,083	25.0	272,332	23,463	3,674	4,665	31,884	179,877	31,698	25,358	68,083	304,216	86.9	88.4	81.6	89.5	
16. Las Pinas	133,167	1,303	284	44,918	25.0	179,674	24,184	1,726	38,171	70,063	157,351	9,031	38,456	44,918	249,757	84.6	14.4	0.7	71.9	
17. Alabang	102,644	112,798	11,262	75,568	25.0	302,212	6,056	11,721	3,383	21,169	108,700	124,519	14,645	75,568	323,432	94.4	90.5	76.9	93.5	
18. Muntinlupa	52,507	8,959	22,839	28,102	25.0	112,407	7,877	2,016	14,565	24,258	60,135	10,975	37,404	28,102	136,665	87.2	81.6	61.1	82.2	
19. Marikina	77,239	8,153	2,561	29,338	25.0	171,350	4,980	2,341	12,444	20,266	50,723	28,092	33,952	30,711	133,408	93.9	92.4	77.7	92.1	
20. Mandaluyong	79,552	163	146	26,620	25.0	106,481	14,748	17,291	62,432	94,464	94,292	17,454	62,578	26,620	200,945	84.4	0.9	0.2	53.0	
21. Navotas	36,075	4,988	5,112	15,382	25.0	61,521	2,651	1,739	4,911	38,626	5,578	5,578	15,382	65,438	83.4	86.9	74.6	92.6		
22. Parañaque	107,673	14,096	3,059	43,609	25.0	181,568	6,547	13,987	109,417	129,951	108,375	33,623	124,130	45,332	311,520	94.0	83.4	11.9	58.3	
23. Pasig	11,613	117	6	3,912	25.0	15,648	1,947	3,198	5,145	11,550	117	3,205	3,912	20,794	85.6	100.0	0.2	75.3		
24. Patroños	31,280	17,338	2,334	16,950	25.0	67,801	1,742	97	59	33,022	17,435	2,293	16,950	69,708	94.7	99.4	97.4	97.3		
25. San Juan	62,459	768	17	21,078	25.0	84,313	10,655	7,679	75,083	83,367	73,114	8,437	75,083	177,680	85.4	9.0	0.0	47.5		
26. Valenzuela	86,080	4,794	2,117	30,997	25.0	123,988	13,787	7,191	48,446	63,394	99,837	11,985	50,584	30,997	193,482	86.2	40.0	4.2	64.1	
27. Cavite	125,262	2,571	2,092	43,308	25.0	173,232	24,026	10,873	10,795	45,623	149,287	13,443	12,817	43,308	218,855	83.9	19.1	16.3	79.2	
28. Bacoor	52,713	564	126	17,801	25.0	71,206	9,329	1,477	0	10,806	62,043	2,041	128	17,801	82,012	85.0	27.6	100.0	86.8	
29. Cavite City	21,741	1,528	439	7,901	25.0	31,903	673	7,310	0	7,983	22,414	8,388	433	7,901	39,566	97.0	17.3	100.0	79.8	
30. Imus	22,901	136	13	7,583	25.0	30,733	6,484	1,454	966	8,804	29,385	1,490	7,683	39,537	77.9	9.1	1.3	77.7		
31. Kawit	14,731	256	1,045	5,344	25.0	21,377	301	0	0	301	15,032	256	1,045	5,344	21,578	98.0	100.0	100.0	98.5	
32. Noveleta	5,070	10	161	1,747	25.0	6,988	1,042	0	0	1,042	6,112	10	161	1,747	8,030	83.0	100.0	100.0	87.0	
33. Esmerio	8,106	77	312	2,831	25.0	11,328	6,196	732	9,459	16,687	14,302	808	10,071	2,831	28,012	56.7	9.5	3.1	40.4	
34. Rizal	186,214	13,454	14,834	60,088	21.9	274,989	59,876	17,517	131,930	209,323	246,090	31,370	146,164	60,088	484,312	75.7	44.2	10.1	55.8	
35. Angono	11,583	2,317	2,502	2,894	15.0	19,295	848	0	1,568	2,516	12,431	2,317	4,170	2,394	21,812	93.2	100.0	60.0	88.5	
36. Antipolo	34,023	1,269	3,230	12,841	25.0	51,362	29,680	5,805	21,901	57,366	63,704	7,074	26,130	12,841	198,748	53.4	17.9	12.9	47.2	
37. Baras	699	140	151	175	15.0	1,165	630	0	101	731	1,329	140	252	175	1,895	52.6	100.0	59.9	61.4	
38. Binangonan	22,185	4,427	4,781	5,531	15.0	35,874	2,053	0	3,187	5,250	24,158	4,427	7,968	5,531	42,124	91.5	100.0	60.0	87.5	
39. Calamba	46,480	944	88	15,841	25.0	63,462	7,761	5,667	65,380	80,368	54,251	7,610	65,968	15,841	143,670	85.7	12.4	0.1	44.1	
40. Cardona	1,985	219	237	274	15.0	1,625	1,020	0	153	1,178	2,115	219	395	274	3,003	51.8	100.0	60.0	60.8	
41. Jala-Jala	988	198	213	307	15.0	1,287	499	0	142	632	1,478	198	355	247	2,278	66.8	100.0	60.0	72.3	
42. Mookalihan	5,022	97	31	3,047	15.0	12,187	2,490	1,774	5,357	9,620	11,851	1,881	5,388	3,047	21,808	78.4	4.7	0.5	55.9	
43. Koroing	2,447	489	529	611	15.0	4,076	866	0	352	1,313	3,413	489	881	611	5,394	71.7	100.0	60.0	75.6	
44. Piliilla	3,067	619	652	766	15.0	5,108	882	442	1,324	3,949	613	1,004	766	652	6,432	77.7	100.0	60.0	79.4	
45. San Mateo	13,689	390	100	4,730	25.0	19,519	6,047	819	1,099	7,966	19,717	1,203	1,999	4,730	26,885	69.4	32.2	8.3	70.4	
46. Tamy	8,305	1,877	1,811	2,095	15.0	13,968	1,365	0	1,208	2,574	9,571	1,677	3,019	2,095	16,542	85.0	100.0	60.0	84.4	
47. Taytay	30,999	767	158	10,641	25.0	42,565	5,175	2,452	30,287	37,834	36,174	3,129	30,365	10,641	80,397	85.7	23.8	0.5	52.9	
48. Teresa	1,581	315	342	395	15.0	2,534	463	0	228	686	2,039	315	570	395	3,320	77.5	100.0	60.0	79.3	
TOTAL	2,411,989	801,121	223,657	1,034,043	24.8	4,170,810	270,165	156,888	595,310	1,022,363	2,382,154	988,009	818,967	1,034,043	15,193,173	88.7	83.5	27.3	80.3	

TABLE 13.4.29 DISTRIBUTION OF WATER DEMAND IN 1995 (SCENARIO 4),  
BY SOURCE

CITY/ MUNICIPALITY	WATER DEMAND (K3/D)			MWSS BREAKDOWN (%)		MWSS BREAKDOWN (K3/D)		PRIVATE GROUND- WATER	GROUND- WATER TOTAL	G.W. SHARE (%)
	MWSS	PRIVATE	TOTAL	SURFACE WATER	GROUND- WATER	SURFACE WATER	GROUND- WATER			
I. NCR	2,531,704	784,921	3,316,625	98.2	1.8	2,486,806	44,898	784,921	829,819	25.0
1. Manila	676,375	32,868	709,242	100.0	0.0	676,375	0	32,868	32,868	4.6
2. Pasay City	103,720	23,946	127,666	95.1	4.9	98,638	5,082	23,946	29,028	22.7
3. Quezon City	832,427	89,523	921,950	97.1	2.9	614,101	18,326	89,523	107,849	14.9
4. Calookan City	165,331	49,735	215,066	100.0	0.0	165,331	0	49,735	49,735	23.1
5. Las Pinas	39,173	72,300	111,473	95.6	4.4	37,439	1,734	72,300	74,034	66.4
6. Makati	227,485	28,369	255,854	96.8	3.2	220,125	7,360	28,369	35,729	14.0
7. Malabon	69,647	32,257	101,904	98.2	1.8	68,403	1,244	32,257	33,501	32.9
8. Mandaluyong	93,955	11,584	105,539	100.0	0.0	93,955	0	11,584	11,584	11.0
9. Marikina	88,936	15,584	104,520	100.0	0.0	88,936	0	15,584	15,584	14.9
10. Muntinlupa	25,737	87,555	113,292	72.7	27.3	18,718	7,019	87,555	94,574	83.5
11. Navotas	45,526	7,118	52,644	99.3	0.7	45,213	313	7,118	7,431	14.1
12. Paranaque	98,575	79,367	177,943	98.2	1.8	96,807	1,768	79,367	81,135	45.6
13. Pasig	126,634	92,502	219,136	99.8	0.2	126,378	256	92,502	92,758	42.3
14. Pateros	6,495	7,505	14,001	100.0	0.0	6,495	0	7,505	7,505	53.6
15. San Juan	62,542	2,520	65,063	100.0	0.0	62,542	0	2,520	2,520	3.9
16. Taguig	14,221	93,680	107,901	94.0	6.0	13,374	847	93,680	94,527	87.6
17. Valenzuela	54,925	58,506	113,431	98.3	1.7	53,976	949	58,506	59,455	52.4
II. CAVITE	57,278	69,945	127,223	17.8	82.2	10,176	47,102	69,945	117,047	92.0
1. Bacoor	17,732	23,228	40,960	57.4	42.6	10,176	7,556	23,228	30,784	75.2
2. Cavite City	17,436	10,875	28,311	0.0	100.0	0	17,436	10,875	28,311	100.0
3. Inus	7,649	14,997	22,647	0.0	100.0	0	7,649	14,997	22,647	100.0
4. Kawit	9,932	3,739	13,671	0.0	100.0	0	9,932	3,739	13,671	100.0
5. Noveleta	1,503	3,141	4,644	0.0	100.0	0	1,503	3,141	4,644	100.0
6. Rosario	3,025	13,965	16,990	0.0	100.0	0	3,025	13,965	16,990	100.0
III. RIZAL	70,295	173,221	243,516	16.1	83.9	11,346	58,949	173,221	232,170	95.3
1. Angono	4,628	2,081	6,709	100.0	0.0	4,628	0	2,081	2,081	31.0
2. Antipolo	16,767	40,082	56,848	0.0	100.0	0	16,767	40,082	56,848	100.0
3. Baras	188	596	784	0.0	100.0	0	188	596	784	100.0
4. Binangonan	10,414	5,190	15,604	0.0	100.0	0	10,414	5,190	15,604	100.0
5. Cainta	9,798	66,888	76,685	40.9	59.1	4,012	5,786	66,888	72,674	94.8
6. Cardona	728	1,112	1,840	0.0	100.0	0	728	1,112	1,840	100.0
7. Jala-Jala	109	564	673	0.0	100.0	0	109	564	673	100.0
8. Montalban	4,499	8,750	13,248	0.0	100.0	0	4,499	8,750	13,248	100.0
9. Morong	1,419	1,145	2,564	0.0	100.0	0	1,419	1,145	2,564	100.0
10. Pililla	1,045	1,202	2,247	0.0	100.0	0	1,045	1,202	2,247	100.0
11. San Mateo	6,362	7,697	14,059	0.0	100.0	0	6,362	7,697	14,059	100.0
12. Tanay	3,225	2,301	5,526	0.0	100.0	0	3,225	2,301	5,526	100.0
13. Taytay	10,401	34,896	45,297	26.0	74.0	2,706	7,695	34,896	42,591	94.0
14. Teresa	713	718	1,431	0.0	100.0	0	713	718	1,431	100.0
TOTAL	2,659,277	1,028,087	3,687,364	94.3	5.7	2,508,328	150,949	1,028,087	1,179,036	32.0



TABLE 13.4.30 DISTRIBUTION OF WATER DEMAND IN 2000 (SCENARIO 4),  
BY SOURCE

CITY/ MUNICIPALITY	WATER DEMAND (M3/D)			WSSS BREAKDOWN (%)		WSSS BREAKDOWN (M3/D)		PRIVATE GROUND- WATER	GROUND- WATER TOTAL	G.W. SHARE (%)
	WSSS	PRIVATE	TOTAL	SURFACE WATER	GROUND- WATER	SURFACE WATER	GROUND- WATER			
I. NCR	2,955,161	751,221	3,706,382	98.5	1.5	2,910,263	44,898	751,221	796,119	21.5
1. Manila	715,217	28,317	743,535	100.0	0.0	715,217	0	28,317	28,317	3.8
2. Pasay City	120,738	20,965	141,703	95.8	4.2	115,656	5,082	20,965	26,047	18.4
3. Quezon City	709,156	82,189	791,345	97.4	2.6	690,830	18,326	82,189	100,515	12.7
4. Calookan City	199,878	44,197	244,074	100.0	0.0	199,878	0	44,197	44,197	18.1
5. Las Pinas	84,553	69,927	154,480	97.9	2.1	82,819	1,734	69,927	71,661	46.4
6. Makati	255,186	22,883	278,069	97.1	2.9	247,826	7,360	22,883	30,243	10.9
7. Malabon	84,652	29,380	114,032	98.5	1.5	83,408	1,244	29,380	30,624	26.9
8. Mandaluyong	104,019	10,497	114,516	100.0	0.0	104,019	0	10,497	10,497	9.2
9. Marikina	99,049	16,224	115,273	100.0	0.0	99,049	0	16,224	16,224	14.1
10. Muntinlupa	57,156	87,289	144,446	87.7	12.3	50,137	7,019	87,289	94,308	65.3
11. Navotas	51,956	5,475	57,431	99.4	0.6	51,643	313	5,475	5,788	10.1
12. Paranaque	136,625	65,295	201,920	98.7	1.3	134,857	1,768	65,295	67,063	33.2
13. Pasig	147,433	103,233	250,666	99.8	0.2	147,177	256	103,233	103,489	41.3
14. Pateros	9,496	6,895	16,391	100.0	0.0	9,496	0	6,895	6,895	42.1
15. San Juan	64,082	1,906	65,988	100.0	0.0	64,082	0	1,906	1,906	2.9
16. Taguig	41,359	92,521	133,890	98.0	2.0	40,522	847	92,521	93,368	69.7
17. Valenzuela	74,597	64,028	138,624	98.7	1.3	73,648	949	64,028	64,977	46.9
II. CAVITE	102,743	59,408	162,151	36.9	63.1	37,868	64,875	59,408	124,283	76.6
1. Bacoor	41,123	15,693	56,816	81.6	18.4	33,567	7,556	15,693	23,249	40.9
2. Cavite City	21,886	10,778	32,664	0.0	100.0	0	21,886	10,778	32,664	100.0
3. Iba	16,374	12,683	29,057	0.0	100.0	0	16,374	12,683	29,057	100.0
4. Kawit	14,338	2,548	16,886	30.0	70.0	4,302	10,037	2,548	12,585	74.5
5. Noveleta	3,454	2,475	5,928	0.0	100.0	0	3,454	2,475	5,928	100.0
6. Rosario	5,569	15,231	20,800	0.0	100.0	0	5,569	15,231	20,800	100.0
III. RIZAL	132,107	189,991	322,098	35.1	64.9	46,346	85,761	189,991	275,752	85.6
1. Angono	7,907	2,419	10,326	100.0	0.0	7,907	0	2,419	2,419	23.4
2. Antipolo	28,692	46,373	75,064	6.4	93.6	1,834	26,858	46,373	73,230	97.6
3. Baras	291	658	949	0.0	100.0	0	291	658	949	100.0
4. Binangonan	16,775	5,620	22,395	0.0	100.0	0	16,775	5,620	22,395	100.0
5. Cainta	27,475	73,454	100,929	78.9	21.1	21,689	5,786	73,454	79,240	78.5
6. Cardona	971	1,164	2,135	0.0	100.0	0	971	1,164	2,135	100.0
7. Jala-Jala	414	610	1,024	0.0	100.0	0	414	610	1,024	100.0
8. Montalban	7,758	8,845	16,603	8.4	91.6	652	7,106	8,845	15,951	96.1
9. Morong	1,928	1,216	3,144	0.0	100.0	0	1,928	1,216	3,144	100.0
10. Pililla	1,786	1,302	3,088	0.0	100.0	0	1,786	1,302	3,088	100.0
11. San Mateo	9,527	8,399	17,926	6.6	93.4	633	8,894	8,399	17,293	96.5
12. Tanay	6,039	2,559	8,598	0.0	100.0	0	6,039	2,559	8,598	100.0
13. Taytay	21,325	36,634	57,960	63.9	36.1	13,630	7,695	36,634	44,329	76.5
14. Teresa	1,219	739	1,958	0.0	100.0	0	1,219	739	1,958	100.0
TOTAL	3,190,012	1,000,620	4,190,632	93.9	6.1	2,994,477	195,534	1,000,620	1,196,154	28.5

TABLE 13.4.31 DISTRIBUTION OF WATER DEMAND IN 2005 (SCENARIO 4),  
BY SOURCE

CITY/ MUNICIPALITY	WATER DEMAND (M3/D)			MWSS BREAKDOWN (%)		MWSS BREAKDOWN (M3/D)		PRIVATE GROUND- WATER	GROUND- WATER TOTAL	G.W. SHARES (%)
	MWSS	PRIVATE	TOTAL	SURFACE WATER	GROUND- WATER	SURFACE WATER	GROUND- WATER			
I. MCR	3,277,963	737,240	4,015,202	98.6	1.4	3,233,065	44,898	737,240	782,138	19.5
1. Manila	737,695	27,926	765,621	100.0	0.0	737,695	0	27,926	27,926	3.6
2. Pasay City	134,261	18,172	152,434	96.2	3.8	129,179	5,082	18,172	23,254	15.3
3. Quezon City	759,511	82,643	842,154	97.6	2.4	741,185	18,326	82,643	100,969	12.0
4. Calookan City	230,569	37,493	268,062	100.0	0.0	230,569	0	37,493	37,493	14.0
5. Las Pinas	133,829	64,628	198,457	98.7	1.3	132,095	1,734	64,628	66,362	33.4
6. Makati	272,289	21,041	293,331	97.3	2.7	264,929	7,360	21,041	28,401	9.7
7. Kalabon	96,536	26,545	123,081	98.7	1.3	95,292	1,244	26,545	27,789	22.6
8. Mandaluyong	110,375	10,500	120,876	100.0	0.0	110,375	0	10,500	10,500	8.7
9. Marikina	105,344	18,233	123,577	100.0	0.0	105,344	0	18,233	18,233	14.8
10. Muntinlupa	85,689	86,448	172,137	91.8	8.2	78,670	7,019	86,448	93,467	54.3
11. Navotas	55,705	4,855	60,560	99.4	0.6	55,392	313	4,855	5,168	8.5
12. Paranaque	155,422	58,812	214,234	98.9	1.1	153,654	1,768	58,812	60,580	28.3
13. Pasig	161,179	115,924	277,103	99.8	0.2	160,923	256	115,924	116,180	41.9
14. Pateros	12,569	5,841	18,410	100.0	0.0	12,569	0	5,841	5,841	31.7
15. San Juan	64,108	1,906	66,014	100.0	0.0	64,108	0	1,906	1,906	2.9
16. Taguig	66,425	89,534	155,959	98.7	1.3	65,578	847	89,534	90,381	58.0
17. Valenzuela	96,455	66,738	163,193	99.0	1.0	95,506	949	66,738	67,687	41.5
II. CAVITE	138,325	49,635	187,959	41.9	58.1	58,001	80,324	49,635	129,959	69.1
1. Bacoor	58,474	10,190	68,663	87.1	12.9	50,918	7,556	10,190	17,746	25.8
2. Cavite City	26,727	9,081	35,808	0.0	100.0	0	26,727	9,081	35,808	100.0
3. Iaus	22,182	11,355	33,537	0.0	100.0	0	22,182	11,355	33,537	100.0
4. Kawit	17,708	1,199	18,906	40.0	60.0	7,083	10,625	1,199	11,823	62.5
5. Noveleta	5,349	1,579	6,928	0.0	100.0	0	5,349	1,579	6,928	100.0
6. Rosario	7,885	16,231	24,116	0.0	100.0	0	7,885	16,231	24,116	100.0
III. RIZAL	197,743	199,009	396,752	47.1	52.9	93,167	104,576	199,009	303,585	76.5
1. Angono	12,701	2,592	15,293	100.0	0.0	12,701	0	2,592	2,592	16.9
2. Antipolo	37,714	52,402	90,117	22.7	77.3	8,572	29,142	52,402	81,545	90.5
3. Baras	642	708	1,350	0.0	100.0	0	642	708	1,350	100.0
4. Binangonan	25,501	5,671	31,172	0.0	100.0	0	25,501	5,671	31,172	100.0
5. Cainta	46,294	75,421	121,715	87.5	12.5	40,508	5,786	75,421	81,207	66.7
6. Cardona	1,347	1,188	2,535	0.0	100.0	0	1,347	1,188	2,535	100.0
7. Jala-Jala	911	638	1,549	0.0	100.0	0	911	638	1,549	100.0
8. Montalban	9,723	9,323	19,046	26.9	73.1	2,617	7,106	9,323	16,429	86.3
9. Morong	2,833	1,290	4,123	0.0	100.0	0	2,833	1,290	4,123	100.0
10. Pililla	3,462	1,356	4,818	0.0	100.0	0	3,462	1,356	4,818	100.0
11. San Mateo	13,250	8,488	21,738	32.9	67.1	4,356	8,894	8,488	17,382	80.0
12. Tanay	9,425	2,662	12,087	0.0	100.0	0	9,425	2,662	12,087	100.0
13. Taytay	32,108	36,539	68,647	76.0	24.0	24,413	7,695	36,539	44,234	64.4
14. Teresa	1,832	730	2,562	0.0	100.0	0	1,832	730	2,562	100.0
TOTAL	3,614,031	985,883	4,599,914	93.6	6.4	3,384,232	229,798	985,883	1,215,681	26.4

TABLE 13.4.32 DISTRIBUTION OF WATER DEMAND IN 2010 (SCENARIO 4),  
BY SOURCE

CITY/ MUNICIPALITY	WATER DEMAND (M3/D)			WSSS BREAKDOWN (%)		WSSS BREAKDOWN (M3/D)		PRIVATE GROUND- WATER	GROUND- WATER TOTAL	G.W. SHARE (%)
	WSSS	PRIVATE	TOTAL	SURFACE WATER	GROUND- WATER	SURFACE WATER	GROUND- WATER			
I. NCR	3,722,588	767,418	4,490,006	98.8	1.2	3,677,690	44,898	767,418	812,316	18.1
1. Manila	803,762	27,812	831,574	100.0	0.0	803,762	0	27,812	27,812	3.3
2. Pasay City	152,819	16,996	169,815	96.7	3.3	147,737	5,082	16,996	22,078	13.0
3. Quezon City	851,366	83,471	934,836	97.8	2.2	833,040	18,326	83,471	101,797	10.9
4. Calookan City	272,332	31,884	304,216	100.0	0.0	272,332	0	31,884	31,884	10.5
5. Las Pinas	179,674	70,083	249,757	99.0	1.0	177,940	1,734	70,083	71,817	28.8
6. Makati	302,272	21,160	323,432	97.6	2.4	294,912	7,360	21,160	28,520	8.8
7. Malabon	112,407	24,258	136,665	98.9	1.1	111,163	1,244	24,258	25,502	18.7
8. Mandaluyong	122,843	10,566	133,409	100.0	0.0	122,843	0	10,566	10,566	7.9
9. Marikina	117,350	20,266	137,616	100.0	0.0	117,350	0	20,266	20,266	14.7
10. Muntinlupa	106,481	94,464	200,945	93.4	6.6	99,462	7,019	94,464	101,483	50.5
11. Navotas	61,527	4,911	66,438	99.5	0.5	61,214	313	4,911	5,224	7.9
12. Paranaque	166,436	61,791	228,227	98.9	1.1	164,668	1,768	61,791	63,559	27.8
13. Pasig	181,568	129,951	311,520	99.9	0.1	181,312	256	129,951	130,207	41.8
14. Pateros	15,648	5,145	20,794	100.0	0.0	15,648	0	5,145	5,145	24.7
15. San Juan	67,801	1,898	69,700	100.0	0.0	67,801	0	1,898	1,898	2.7
16. Taguig	84,313	93,367	177,680	99.0	1.0	83,466	847	93,367	94,214	53.0
17. Valenzuela	123,988	69,394	193,382	99.2	0.8	123,039	949	69,394	70,343	36.4
II. CAVITE	173,232	45,623	218,855	42.9	57.1	74,338	98,894	45,623	144,517	66.0
1. Bacoor	71,206	10,806	82,012	89.4	10.6	63,650	7,556	10,806	18,362	22.4
2. Cavite City	31,603	7,983	39,586	0.0	100.0	0	31,603	7,983	39,586	100.0
3. Imus	30,733	8,804	39,537	0.0	100.0	0	30,733	8,804	39,537	100.0
4. Kawit	21,377	301	21,678	50.0	50.0	10,688	10,688	301	10,989	50.7
5. Novleta	6,988	1,042	8,030	0.0	100.0	0	6,988	1,042	8,030	100.0
6. Rosario	11,326	16,687	28,012	0.0	100.0	0	11,326	16,687	28,012	100.0
III. RIZAL	274,989	209,323	484,312	52.7	47.3	144,999	129,991	209,323	339,313	70.1
1. Angono	19,296	2,516	21,812	100.0	0.0	19,296	0	2,516	2,516	11.5
2. Antipolo	51,362	57,386	108,748	35.3	64.7	18,149	33,213	57,386	90,599	83.3
3. Baras	1,165	731	1,896	0.0	100.0	0	1,165	731	1,896	100.0
4. Binangonan	36,874	5,250	42,124	0.0	100.0	0	36,874	5,250	42,124	100.0
5. Cainta	63,362	80,308	143,670	90.9	9.1	57,576	5,786	80,308	86,094	59.9
6. Cardona	1,825	1,178	3,003	0.0	100.0	0	1,825	1,178	3,003	100.0
7. Jala-Jala	1,646	632	2,278	0.0	100.0	0	1,646	632	2,278	100.0
8. Montalban	12,187	9,620	21,808	41.7	58.3	5,081	7,106	9,620	16,726	76.7
9. Morong	4,076	1,318	5,394	0.0	100.0	0	4,076	1,318	5,394	100.0
10. Pililla	5,108	1,324	6,432	0.0	100.0	0	5,108	1,324	6,432	100.0
11. San Mateo	18,919	7,966	26,885	53.0	47.0	10,025	8,894	7,966	16,860	62.7
12. Tanay	13,968	2,574	16,542	0.0	100.0	0	13,968	2,574	16,542	100.0
13. Taytay	42,565	37,834	80,399	81.9	18.1	34,870	7,695	37,834	45,529	56.6
14. Teresa	2,634	686	3,320	0.0	100.0	0	2,634	686	3,320	100.0
TOTAL	4,170,810	1,022,363	5,193,173	93.4	6.6	3,897,027	273,783	1,022,363	1,296,146	25.0

TABLE 13.4-33 DISTRIBUTION OF GROUNDWATER DISCHARGE (SCENARIO 1)

CITY/MUNICIPALITY	1995			2000			2010		
	1995	2000	2010	1995	2000	2010	1995	2000	2010
<b>I. MCR</b>									
1. Manila	32,961	35,340	37,736	40,123	42,511	44,898	44,898	44,898	44,898
2. Pasay City	4,461	4,585	4,709	4,934	4,958	5,082	5,082	5,082	5,082
3. Quezon City	14,186	15,014	15,842	16,670	17,498	18,326	18,326	18,326	18,326
4. Caloocan City	0	0	0	0	0	0	0	0	0
5. Las Pinas	1,527	1,558	1,610	1,651	1,693	1,734	1,734	1,734	1,734
6. Makati	3,772	4,490	5,207	5,925	6,642	7,360	7,360	7,360	7,360
7. Marikina	554	632	710	788	866	944	944	944	944
8. Mandaluyong	0	0	0	0	0	0	0	0	0
9. Marikina	0	0	0	0	0	0	0	0	0
10. Muntinlupa	5,777	6,025	6,274	6,522	6,771	7,019	7,019	7,019	7,019
11. Navotas	106	147	189	230	272	313	313	313	313
12. Parañaque	1,147	1,211	1,275	1,339	1,403	1,467	1,467	1,467	1,467
13. Pasig	49	90	132	173	215	256	256	256	256
14. Paleros	0	0	0	0	0	0	0	0	0
15. San Juan	0	0	0	0	0	0	0	0	0
16. Taguig	610	681	752	823	894	965	965	965	965
17. Valenzuela	742	783	825	866	908	949	949	949	949
<b>II. CAVITE</b>									
1. Bacoor	6,314	6,562	6,811	7,059	7,308	7,556	7,556	7,556	7,556
2. Cavite City	6,714	7,156	7,598	8,041	8,483	8,925	8,925	8,925	8,925
3. Imus	1,654	3,316	4,979	6,641	8,303	9,965	9,965	9,965	9,965
4. Kawit	4,329	4,969	5,609	6,249	6,889	7,529	7,529	7,529	7,529
5. Noveleta	7,070	7,070	7,070	7,070	7,070	7,070	7,070	7,070	7,070
6. Rosario	889	1,424	1,959	2,494	3,028	3,563	3,563	3,563	3,563
<b>III. RIZAL</b>									
1. Angono	0	0	0	0	0	0	0	0	0
2. Antipolo	11,621	13,297	14,972	16,648	18,323	19,999	19,999	19,999	19,999
3. Baras	29	58	87	116	145	174	174	174	174
4. Binangonan	1,678	3,355	5,033	6,710	8,388	10,065	10,065	10,065	10,065
5. Calatagan	3,785	3,985	4,185	4,385	4,585	4,785	4,785	4,785	4,785
6. Cardona	97	194	291	388	485	582	582	582	582
7. Jala-Jala	41	82	123	164	205	246	246	246	246
8. Hagonoy	3,243	3,730	4,218	4,705	5,193	5,680	5,680	5,680	5,680
9. Morong	193	386	579	772	965	1,158	1,158	1,158	1,158
10. Plaridel	179	357	536	714	893	1,072	1,072	1,072	1,072
11. San Mateo	4,705	5,084	5,463	5,842	6,221	6,600	6,600	6,600	6,600
12. Tayay	604	1,208	1,812	2,416	3,019	3,623	3,623	3,623	3,623
13. Teyateyan	6,453	6,537	6,621	6,705	6,789	6,873	6,873	6,873	6,873
14. Terata	122	244	366	488	610	732	732	732	732
<b>TOTAL</b>	<b>89,739</b>	<b>102,072</b>	<b>114,406</b>	<b>126,739</b>	<b>139,073</b>	<b>151,406</b>	<b>151,406</b>	<b>151,406</b>	<b>151,406</b>

TABLE 12.4-3.3 DISTRIBUTION OF GROUNDWATER DISCHARGE (SCENARIO 1) (cont'd)

CITY/MUNICIPALITY	1995		2005		2010																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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I. NCR	649,937	646,058	651,134	655,323	661,452	666,590	671,709	676,837	681,966	687,095	692,224	696,152	700,100	704,038	707,976	711,915	720,269	728,523	736,977	745,331	753,685																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
1. Manila	12,665	14,185	15,705	17,225	18,745	20,265	21,785	23,305	24,825	26,345	27,865	29,385	30,905	32,425	33,945	35,465	36,985	38,505	40,025	41,545	43,065	44,585	46,105	47,625	49,145	50,665	52,185	53,705	55,225	56,745	58,265	59,785	61,305	62,825	64,345	65,865	67,385	68,905	70,425	71,945	73,465	74,985	76,505	78,025	79,545	81,065	82,585	84,105	85,625	87,145	88,665	90,185	91,705	93,225	94,745	96,265	97,785	99,305	100,825	102,345	103,865	105,385	106,905	108,425	109,945	111,465	112,985	114,505	116,025	117,545	119,065	120,585	122,105	123,625	125,145	126,665	128,185	129,705	131,225	132,745	134,265	135,785	137,305	138,825	140,345	141,865	143,385	144,905	146,425	147,945	149,465	150,985	152,505	154,025	155,545	157,065	158,585	160,105	161,625	163,145	164,665	166,185	167,705	169,225	170,745	172,265	173,785	175,305	176,825	178,345	179,865	181,385	182,905	184,425	185,945	187,465	188,985	190,505	192,025	193,545	195,065	196,585	198,105	199,625	201,145	202,665	204,185	205,705	207,225	208,745	210,265	211,785	213,305	214,825	216,345	217,865	219,385	220,905	222,425	223,945	225,465	226,985	228,505	230,025	231,545	233,065	234,585	236,105	237,625	239,145	240,665	242,185	243,705	245,225	246,745	248,265	249,785	251,305	252,825	254,345	255,865	257,385	258,905	260,425	261,945	263,465	264,985	266,505	268,025	269,545	271,065	272,585	274,105	275,625	277,145	278,665	280,185	281,705	283,225	284,745	286,265	287,785	289,305	290,825	292,345	293,865	295,385	296,905	298,425	299,945	301,465	302,985	304,505	306,025	307,545	309,065	310,585	312,105	313,625	315,145	316,665	318,185	319,705	321,225	322,745	324,265	325,785	327,305	328,825	330,345	331,865	333,385	334,905	336,425	337,945	339,465	340,985	342,505	344,025	345,545	347,065	348,585	350,105	351,625	353,145	354,665	356,185	357,705	359,225	360,745	362,265	363,785	365,305	366,825	368,345	369,865	371,385	372,905	374,425	375,945	377,465	378,985	380,505	382,025	383,545	385,065	386,585	388,105	389,625	391,145	392,665	394,185	395,705	397,225	398,745	400,265	401,785	403,305	404,825	406,345	407,865	409,385	410,905	412,425	413,945	415,465	416,985	418,505	420,025	421,545	423,065	424,585	426,105	427,625	429,145	430,665	432,185	433,705	435,225	436,745	438,265	439,785	441,305	442,825	444,345	445,865	447,385	448,905	450,425	451,945	453,465	454,985	456,505	458,025	459,545	461,065	462,585	464,105	465,625	467,145	468,665	470,185	471,705	473,225	474,745	476,265	477,785	479,305	480,825	482,345	483,865	485,385	486,905	488,425	489,945	491,465	492,985	494,505	496,025	497,545	499,065	500,585	502,105	503,625	505,145	506,665	508,185	509,705	511,225	512,745	514,265	515,785	517,305	518,825	520,345	521,865	523,385	524,905	526,425	527,945	529,465	530,985	532,505	534,025	535,545	537,065	538,585	540,105	541,625	543,145	544,665	546,185	547,705	549,225	550,745	552,265	553,785	555,305	556,825	558,345	559,865	561,385	562,905	564,425	565,945	567,465	568,985	570,505	572,025	573,545	575,065	576,585	578,105	579,625	581,145	582,665	584,185	585,705	587,225	588,745	590,265	591,785	593,305	594,825	596,345	597,865	599,385	600,905	602,425	603,945	605,465	606,985	608,505	610,025	611,545	613,065	614,585	616,105	617,625	619,145	620,665	622,185	623,705	625,225	626,745	628,265	629,785	631,305	632,825	634,345	635,865	637,385	638,905	640,425	641,945	643,465	644,985	646,505	648,025	649,545	651,065	652,585	654,105	655,625	657,145	658,665	660,185	661,705	663,225	664,745	666,265	667,785	669,305	670,825	672,345	673,865	675,385	676,905	678,425	679,945	681,465	682,985	684,505	686,025	687,545	689,065	690,585	692,105	693,625	695,145	696,665	698,185	699,705	701,225	702,745	704,265	705,785	707,305	708,825	710,345	711,865	713,385	714,905	716,425	717,945	719,465	720,985	722,505	724,025	725,545	727,065	728,585	730,105	731,625	733,145	734,665	736,185	737,705	739,225	740,745	742,265	743,785	745,305	746,825	748,345	749,865	751,385	752,905	754,425	755,945	757,465	758,985	760,505	762,025	763,545	765,065	766,585	768,105	769,625	771,145	772,665	774,185	775,705	777,225	778,745	780,265	781,785	783,305	784,825	786,345	787,865	789,385	790,905	792,425	793,945	795,465	796,985	798,505	799,025	800,545	802,065	803,585	805,105	806,625	808,145	809,665	811,185	812,705	814,225	815,745	817,265	818,785	820,305	821,825	823,345	824,865	826,385	827,905	829,425	830,945	832,465	833,985	835,505	837,025	838,545	840,065	841,585	843,105	844,625	846,145	847,665	849,185	850,705	852,225	853,745	855,265	856,785	858,305	859,825	861,345	862,865	864,385	865,905	867,425	868,945	870,465	871,985	873,505	875,025	876,545	878,065	879,585	881,105	882,625	884,145	885,665	887,185	888,705	890,225	891,745	893,265	894,785	896,305	897,825	899,345	900,865	902,385	903,905	905,425	906,945	908,465	909,985	911,505	913,025	914,545	916,065	917,585	919,105	920,625	922,145	923,665	925,185	926,705	928,225	929,745	931,265	932,785	934,305	935,825	937,345	938,865	940,385	941,905	943,425	944,945	946,465	947,985	949,505	951,025	952,545	954,065	955,585	957,105	958,625	960,145	961,665	963,185	964,705	966,225	967,745	969,265	970,785	972,305	973,825	975,345	976,865	978,385	979,905	981,425	982,945	984,465	985,985	987,505	989,025	990,545	992,065	993,585	995,105	996,625	998,145	999,665	1,001,185	1,002,705	1,004,225	1,005,745	1,007,265	1,008,785	1,010,305	1,011,825	1,013,345	1,014,865	1,016,385	1,017,905	1,019,425	1,020,945	1,022,465	1,023,985	1,025,505	1,027,025	1,028,545	1,030,065	1,031,585	1,033,105	1,034,625	1,036,145	1,037,665	1,039,185	1,040,705	1,042,225	1,043,745	1,045,265	1,046,785	1,048,305	1,049,825	1,051,345	1,052,865	1,054,385	1,055,905	1,057,425	1,058,945	1,060,465	1,061,985	1,063,505	1,065,025	1,066,545	1,068,065	1,069,585	1,071,105	1,072,625	1,074,145	1,075,665	1,077,185	1,078,705	1,080,225	1,081,745	1,083,265	1,084,785	1,086,305	1,087,825	1,089,345	1,090,865	1,092,385	1,093,905	1,095,425	1,096,945	1,098,465	1,099,985	1,101,505	1,103,025	1,104,545	1,106,065	1,107,585	1,109,105	1,110,625	1,112,145	1,113,665	1,115,185	1,116,705	1,118,225	1,119,745	1,121,265	1,122,785	1,124,305	1,125,825	1,127,345	1,128,865	1,130,385	1,131,905	1,133,425	1,134,945	1,136,465	1,137,985	1,139,505	1,141,025	1,142,545	1,144,065	1,145,585	1,147,105	1,148,625	1,150,145	1,151,665	1,153,185	1,154,705	1,156,225	1,157,745	1,159,265	1,160,785	1,162,305	1,163,825	1,165,345	1,166,865	1,168,385	1,169,905	1,171,425	1,172,945	1,174,465	1,175,985	1,177,505	1,179,025	1,180,545	1,182,065	1,183,585	1,185,105	1,186,625	1,188,145	1,189,665	1,191,185	1,192,705	1,194,225	1,195,745	1,197,265	1,198,785	1,200,305	1,201,825	1,203,345	1,204,865	1,206,385	1,207,905	1,209,425	1,210,945	1,212,465	1,213,985	1,215,505	1,217,025	1,218,545	1,220,065	1,221,585	1,223,105	1,224,625	1,226,145	1,227,665	1,229,185	1,230,705	1,232,225	1,233,745	1,235,265	1,236,785	1,238,305	1,239,825	1,241,345	1,242,865	1,244,385	1,245,905	1,247,425	1,248,945	1,250,465	1,251,985	1,253,505	1,255,025	1,256,545	1,258,065	1,259,585	1,261,105	1,262,625	1,264,145	1,265,665	1,267,185	1,268,705	1,270,225	1,271,745	1,273,265	1,274,785	1,276,305	1,277,825	1,279,345	1,280,865	1,282,385	1,283,905	1,285,425	1,286,945	1,288,465	1,289,985	1,291,505	1,293,025	1,294,545	1,296,065	1,297,585	1,299,105	1,300,625	1,302,145	1,303,665	1,305,185	1,306,705	1,308,225	1,309,745	1,311,265	1,312,785	1,314,305	1,315,825	1,317,345	1,318,865	1,320,385	1,321,905	1,323,425	1,324,945	1,326,465	1,327,985	1,329,505	1,331,025	1,332,545	1,334,065	1,335,585	1,337,105	1,338,625	1,340,145	1,341,665	1,343,185	1,344,705	1,346,225	1,347,745

TABLE 13-4-34 DISTRIBUTION OF GROUNDWATER DISCHARGE (SCENARIO 2)

CITY/MUNICIPALITY	1999			2000			2005			2010		
	1999	2000	2005	1999	2000	2005	1999	2000	2005	1999	2000	2005
<b>I. MCR</b>												
1. Manila	32,951	35,346	37,735	40,123	42,511	44,898	44,898	44,898	44,898	44,898	44,898	44,898
2. Pasay City	4,461	4,895	4,934	4,958	5,082	5,082	5,082	5,082	5,082	5,082	5,082	5,082
3. Quezon City	14,168	15,014	15,842	16,670	17,498	18,326	18,326	18,326	18,326	18,326	18,326	18,326
4. Caloocan City	0	0	0	0	0	0	0	0	0	0	0	0
5. Las Pinas	1,527	1,568	1,610	1,653	1,734	1,734	1,734	1,734	1,734	1,734	1,734	1,734
6. Makati	3,772	4,490	5,207	5,925	6,642	7,360	7,360	7,360	7,360	7,360	7,360	7,360
7. Malabon	554	592	630	668	706	744	744	744	744	744	744	744
8. Muntinlupa	0	0	0	0	0	0	0	0	0	0	0	0
9. Marikina	0	0	0	0	0	0	0	0	0	0	0	0
10. Muntinlupa	5,777	6,025	6,274	6,522	6,771	7,019	7,019	7,019	7,019	7,019	7,019	7,019
11. Navotas	106	147	188	230	272	313	313	313	313	313	313	313
12. Pasig	1,147	1,271	1,395	1,520	1,644	1,768	1,768	1,768	1,768	1,768	1,768	1,768
13. Pasig	49	90	132	173	215	256	256	256	256	256	256	256
14. Peteron	0	0	0	0	0	0	0	0	0	0	0	0
15. San Juan	0	0	0	0	0	0	0	0	0	0	0	0
16. Taguig	640	681	723	764	806	847	847	847	847	847	847	847
17. Valenzuela	742	783	825	866	908	949	949	949	949	949	949	949
<b>II. CALYRE</b>												
18. Bacoor	26,970	31,098	35,226	39,354	43,482	47,610	51,738	55,866	60,000	64,138	68,276	72,414
19. Cavite City	6,314	6,552	6,811	7,069	7,328	7,586	7,586	7,586	7,586	7,586	7,586	7,586
20. Imus	6,714	7,156	7,598	8,041	8,483	8,925	9,367	9,809	10,251	10,693	11,135	11,577
21. Marikina	1,654	1,816	1,978	2,140	2,302	2,464	2,464	2,464	2,464	2,464	2,464	2,464
22. Marikina	4,329	4,589	4,849	5,109	5,369	5,629	5,629	5,629	5,629	5,629	5,629	5,629
23. Marikina	7,070	7,070	7,070	7,070	7,070	7,070	7,070	7,070	7,070	7,070	7,070	7,070
24. Marikina	889	1,424	1,959	2,494	3,028	3,563	4,098	4,633	5,168	5,703	6,238	6,773
<b>III. RIZAL</b>												
25. Angono	29,808	35,625	41,444	47,262	53,080	58,898	64,716	70,534	76,352	82,170	87,988	93,806
26. Antipolo	11,621	13,297	14,972	16,648	18,323	19,999	21,674	23,349	25,024	26,699	28,374	30,049
27. Baras	29	58	87	116	145	174	203	232	261	290	319	348
28. Binangonan	1,678	3,355	5,033	6,710	8,388	10,065	11,743	13,420	15,098	16,775	18,453	20,130
29. Calamba	3,785	5,985	8,185	10,385	12,585	14,785	16,985	19,185	21,385	23,585	25,785	27,985
30. Cardona	97	194	291	388	485	582	679	776	873	970	1,067	1,164
31. Jala-Jala	41	82	123	164	205	246	287	328	369	410	451	492
32. Marikina	3,243	3,730	4,218	4,705	5,193	5,680	6,168	6,655	7,143	7,630	8,118	8,605
33. Marikina	193	386	578	771	964	1,157	1,350	1,543	1,736	1,929	2,122	2,315
34. Marikina	179	357	536	714	893	1,072	1,250	1,429	1,607	1,786	1,965	2,144
35. Marikina	4,796	5,034	5,272	5,510	5,748	5,986	6,224	6,462	6,700	6,938	7,176	7,414
36. Marikina	604	1,208	1,812	2,416	3,020	3,624	4,228	4,832	5,436	6,040	6,644	7,248
37. Marikina	5,453	6,577	7,701	8,825	9,949	11,073	12,197	13,321	14,445	15,569	16,693	17,817
38. Marikina	112	224	336	448	560	672	784	896	1,008	1,120	1,232	1,344
<b>TOTAL</b>	89,739	102,072	114,405	126,739	139,073	151,406	163,740	176,074	188,408	200,742	213,076	225,410

TABLE 13.4.34 DISTRIBUTION OF GROUNDWATER DISCHARGE (SCENARIO 2) (cont'd)

CITY/MUNICIPALITY	1995				2000				2010																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
	1995	2000	2010	2010	1995	2000	2010	2010	1995	2000	2010	2010																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
I. NCR	640,337	646,066	651,194	656,323	661,452	666,580	671,709	676,837	681,966	687,095	692,221	697,349	702,477	707,605	712,733	717,861	722,989	728,117	733,245	738,373	743,501	748,629	753,757	758,885	764,013	769,141	774,269	779,397	784,525	789,653	794,781	799,909	805,037	810,165	815,293	820,421	825,549	830,677	835,805	840,933	846,061	851,189	856,317	861,445	866,573	871,701	876,829	881,957	887,085	892,213	897,341	902,469	907,597	912,725	917,853	922,981	928,109	933,237	938,365	943,493	948,621	953,749	958,877	964,005	969,133	974,261	979,389	984,517	989,645	994,773	999,901	1,005,029	1,010,157	1,015,285	1,020,413	1,025,541	1,030,669	1,035,797	1,040,925	1,046,053	1,051,181	1,056,309	1,061,437	1,066,565	1,071,693	1,076,821	1,081,949	1,087,077	1,092,205	1,097,333	1,102,461	1,107,589	1,112,717	1,117,845	1,122,973	1,128,101	1,133,229	1,138,357	1,143,485	1,148,613	1,153,741	1,158,869	1,163,997	1,169,125	1,174,253	1,179,381	1,184,509	1,189,637	1,194,765	1,199,893	1,205,021	1,210,149	1,215,277	1,220,405	1,225,533	1,230,661	1,235,789	1,240,917	1,246,045	1,251,173	1,256,301	1,261,429	1,266,557	1,271,685	1,276,813	1,281,941	1,287,069	1,292,197	1,297,325	1,302,453	1,307,581	1,312,709	1,317,837	1,322,965	1,328,093	1,333,221	1,338,349	1,343,477	1,348,605	1,353,733	1,358,861	1,363,989	1,369,117	1,374,245	1,379,373	1,384,501	1,389,629	1,394,757	1,399,885	1,405,013	1,410,141	1,415,269	1,420,397	1,425,525	1,430,653	1,435,781	1,440,909	1,446,037	1,451,165	1,456,293	1,461,421	1,466,549	1,471,677	1,476,805	1,481,933	1,487,061	1,492,189	1,497,317	1,502,445	1,507,573	1,512,701	1,517,829	1,522,957	1,528,085	1,533,213	1,538,341	1,543,469	1,548,597	1,553,725	1,558,853	1,563,981	1,569,109	1,574,237	1,579,365	1,584,493	1,589,621	1,594,749	1,599,877	1,605,005	1,610,133	1,615,261	1,620,389	1,625,517	1,630,645	1,635,773	1,640,901	1,646,029	1,651,157	1,656,285	1,661,413	1,666,541	1,671,669	1,676,797	1,681,925	1,687,053	1,692,181	1,697,309	1,702,437	1,707,565	1,712,693	1,717,821	1,722,949	1,728,077	1,733,205	1,738,333	1,743,461	1,748,589	1,753,717	1,758,845	1,763,973	1,769,101	1,774,229	1,779,357	1,784,485	1,789,613	1,794,741	1,799,869	1,804,997	1,810,125	1,815,253	1,820,381	1,825,509	1,830,637	1,835,765	1,840,893	1,846,021	1,851,149	1,856,277	1,861,405	1,866,533	1,871,661	1,876,789	1,881,917	1,887,045	1,892,173	1,897,301	1,902,429	1,907,557	1,912,685	1,917,813	1,922,941	1,928,069	1,933,197	1,938,325	1,943,453	1,948,581	1,953,709	1,958,837	1,963,965	1,969,093	1,974,221	1,979,349	1,984,477	1,989,605	1,994,733	1,999,861	2,004,989	2,010,117	2,015,245	2,020,373	2,025,501	2,030,629	2,035,757	2,040,885	2,046,013	2,051,141	2,056,269	2,061,397	2,066,525	2,071,653	2,076,781	2,081,909	2,087,037	2,092,165	2,097,293	2,102,421	2,107,549	2,112,677	2,117,805	2,122,933	2,128,061	2,133,189	2,138,317	2,143,445	2,148,573	2,153,701	2,158,829	2,163,957	2,169,085	2,174,213	2,179,341	2,184,469	2,189,597	2,194,725	2,199,853	2,204,981	2,210,109	2,215,237	2,220,365	2,225,493	2,230,621	2,235,749	2,240,877	2,246,005	2,251,133	2,256,261	2,261,389	2,266,517	2,271,645	2,276,773	2,281,901	2,287,029	2,292,157	2,297,285	2,302,413	2,307,541	2,312,669	2,317,797	2,322,925	2,328,053	2,333,181	2,338,309	2,343,437	2,348,565	2,353,693	2,358,821	2,363,949	2,369,077	2,374,205	2,379,333	2,384,461	2,389,589	2,394,717	2,399,845	2,404,973	2,410,101	2,415,229	2,420,357	2,425,485	2,430,613	2,435,741	2,440,869	2,445,997	2,451,125	2,456,253	2,461,381	2,466,509	2,471,637	2,476,765	2,481,893	2,487,021	2,492,149	2,497,277	2,502,405	2,507,533	2,512,661	2,517,789	2,522,917	2,528,045	2,533,173	2,538,301	2,543,429	2,548,557	2,553,685	2,558,813	2,563,941	2,569,069	2,574,197	2,579,325	2,584,453	2,589,581	2,594,709	2,599,837	2,604,965	2,610,093	2,615,221	2,620,349	2,625,477	2,630,605	2,635,733	2,640,861	2,645,989	2,651,117	2,656,245	2,661,373	2,666,501	2,671,629	2,676,757	2,681,885	2,687,013	2,692,141	2,697,269	2,702,397	2,707,525	2,712,653	2,717,781	2,722,909	2,728,037	2,733,165	2,738,293	2,743,421	2,748,549	2,753,677	2,758,805	2,763,933	2,769,061	2,774,189	2,779,317	2,784,445	2,789,573	2,794,701	2,799,829	2,804,957	2,810,085	2,815,213	2,820,341	2,825,469	2,830,597	2,835,725	2,840,853	2,845,981	2,851,109	2,856,237	2,861,365	2,866,493	2,871,621	2,876,749	2,881,877	2,887,005	2,892,133	2,897,261	2,902,389	2,907,517	2,912,645	2,917,773	2,922,901	2,928,029	2,933,157	2,938,285	2,943,413	2,948,541	2,953,669	2,958,797	2,963,925	2,969,053	2,974,181	2,979,309	2,984,437	2,989,565	2,994,693	2,999,821	3,004,949	3,010,077	3,015,205	3,020,333	3,025,461	3,030,589	3,035,717	3,040,845	3,045,973	3,051,101	3,056,229	3,061,357	3,066,485	3,071,613	3,076,741	3,081,869	3,086,997	3,092,125	3,097,253	3,102,381	3,107,509	3,112,637	3,117,765	3,122,893	3,128,021	3,133,149	3,138,277	3,143,405	3,148,533	3,153,661	3,158,789	3,163,917	3,169,045	3,174,173	3,179,301	3,184,429	3,189,557	3,194,685	3,199,813	3,204,941	3,210,069	3,215,197	3,220,325	3,225,453	3,230,581	3,235,709	3,240,837	3,245,965	3,251,093	3,256,221	3,261,349	3,266,477	3,271,605	3,276,733	3,281,861	3,286,989	3,292,117	3,297,245	3,302,373	3,307,501	3,312,629	3,317,757	3,322,885	3,328,013	3,333,141	3,338,269	3,343,397	3,348,525	3,353,653	3,358,781	3,363,909	3,369,037	3,374,165	3,379,293	3,384,421	3,389,549	3,394,677	3,399,805	3,404,933	3,410,061	3,415,189	3,420,317	3,425,445	3,430,573	3,435,701	3,440,829	3,445,957	3,451,085	3,456,213	3,461,341	3,466,469	3,471,597	3,476,725	3,481,853	3,486,981	3,492,109	3,497,237	3,502,365	3,507,493	3,512,621	3,517,749	3,522,877	3,528,005	3,533,133	3,538,261	3,543,389	3,548,517	3,553,645	3,558,773	3,563,901	3,569,029	3,574,157	3,579,285	3,584,413	3,589,541	3,594,669	3,599,797	3,604,925	3,610,053	3,615,181	3,620,309	3,625,437	3,630,565	3,635,693	3,640,821	3,645,949	3,651,077	3,656,205	3,661,333	3,666,461	3,671,589	3,676,717	3,681,845	3,686,973	3,692,101	3,697,229	3,702,357	3,707,485	3,712,613	3,717,741	3,722,869	3,727,997	3,733,125	3,738,253	3,743,381	3,748,509	3,753,637	3,758,765	3,763,893	3,769,021	3,774,149	3,779,277	3,784,405	3,789,533	3,794,661	3,799,789	3,804,917	3,810,045	3,815,173	3,820,301	3,825,429	3,830,557	3,835,685	3,840,813	3,845,941	3,851,069	3,856,197	3,861,325	3,866,453	3,871,581	3,876,709	3,881,837	3,886,965	3,892,093	3,897,221	3,902,349	3,907,477	3,912,605	3,917,733	3,922,861	3,927,989	3,933,117	3,938,245	3,943,373	3,948,501	3,953,629	3,958,757	3,963,885	3,969,013	3,974,141	3,979,269	3,984,397	3,989,525	3,994,653	3,999,781	4,004,909	4,010,037	4,015,165	4,020,293	4,025,421	4,030,549	4,035,677	4,040,805	4,045,933	4,051,061	4,056,189	4,061,317	4,066,445	4,071,573	4,076,701	4,081,829	4,086,957	4,092,085	4,097,213	4,102,341	4,107,469	4,112,597	4,117,725	4,122,853	4,127,981	4,133,109	4,138,237	4,143,365	4,148,493	4,153,621	4,158,749	4,163,877	4,169,005	4,174,133	4,179,261	4,184,389	4,189,517	4,194,645	4,199,773	4,204,901	4,209,029	4,214,157	4,219,285	4,224,413	4,229,541	4,234,669	4,239,797	4,244,925	4,250,053	4,255,181	4,260,309	4,265,437	4,270,565	4,275,693	4,280,821	4,285,949	4,291,077	4,296,205	4,301,333	4,306,461	4,311,589	4,316,717	4,321,845	4,326,973	4,332,101	4,337,229	4,342,357	4,347,485	4,352,613	4,357,741	4,362,869	4,367,997	4,373,125	4,378,253	4,383,381	4,388,509	4,393,637	4,398,765	4,403,893	4,409,021	4,414,149	4,419,277	4,424,405	4,429,533	4,434,661	4,439,789	4,444,917	4,450,045	4,455,173	4,460,301	4,465,429	4,470,557	4,475,685	4,480,813	4,485,941	4,491,069	4,496,197	4,501,325	4,506,453	4,511,581	4,516,709	4,521,837	4,526,965	4,532,093	4,537,221	4,542,349	4,547,477	4,552,605	4,557,733	4,562,861	4,567,989	4,573,117	4,578,245	4,583,373	4,588,501	4,593,629	4,598,757	4,603,885	4,609,013	4,614,141	4,619,269	4,624,397	4,629,525	4,634,653	4,639,781	4,644,909	4,650,037	4,655,165	4,660,293	4,665,421	4,670,549	4,675,677	4,680,805	4,685,933	4,691,061	4,696,189	4,701,317	4,706,445	4,711,573	4,716,701	4,721,829	4,726,957	4,732,085	4,737,213	4,742,341	4,747,469	4,752,597	4,757,725	4,762,853	4,767,981	4,773,109	4,778,237	4,783,365	4,788,493	4,793,621	4,798,749	4,803,877	4,809,005	4

TABLE 13.4.25 DISTRIBUTION OF GROUNDWATER DISCHARGE (SCENARIO 3)

CITY/MUNICIPALITY	1990					2000					2010				
	1990	1995	2000	2005	2010	1990	1995	2000	2005	2010	1990	1995	2000	2005	2010
I. NCR	32,961	35,348	37,736	40,123	42,511	44,898	44,898	44,898	44,898	44,898	44,898	44,898	44,898	44,898	44,898
11. Manila	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12. Pasig City	4,461	4,709	4,957	5,205	5,453	5,701	5,701	5,701	5,701	5,701	5,701	5,701	5,701	5,701	5,701
13. Quezon City	14,185	15,014	15,842	16,670	17,498	18,326	18,326	18,326	18,326	18,326	18,326	18,326	18,326	18,326	18,326
14. Caloocan City	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15. Las Piñas	1,827	1,868	1,909	1,950	1,991	2,032	2,032	2,032	2,032	2,032	2,032	2,032	2,032	2,032	2,032
16. Marikina	3,772	4,490	5,207	5,925	6,642	7,360	7,360	7,360	7,360	7,360	7,360	7,360	7,360	7,360	7,360
17. Malabon	554	592	630	668	706	744	744	744	744	744	744	744	744	744	744
18. Mandaluyong	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19. Marikina	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20. Marikina	5,777	6,025	6,273	6,521	6,769	7,017	7,017	7,017	7,017	7,017	7,017	7,017	7,017	7,017	7,017
21. Muntinlupa	106	147	189	230	272	313	313	313	313	313	313	313	313	313	313
22. Navotas	1,147	1,271	1,395	1,520	1,644	1,768	1,768	1,768	1,768	1,768	1,768	1,768	1,768	1,768	1,768
23. Parañaque	49	90	132	173	215	256	256	256	256	256	256	256	256	256	256
24. Pasig	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25. Patros	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26. San Juan	640	681	723	764	806	847	847	847	847	847	847	847	847	847	847
27. Taguig	742	783	825	866	908	949	949	949	949	949	949	949	949	949	949
28. Valenzuela	26,970	32,070	37,169	42,269	47,369	52,468	52,468	52,468	52,468	52,468	52,468	52,468	52,468	52,468	52,468
II. CAVITE	6,314	6,562	6,811	7,059	7,308	7,556	7,556	7,556	7,556	7,556	7,556	7,556	7,556	7,556	7,556
29. Bacoor	6,314	6,562	6,811	7,059	7,308	7,556	7,556	7,556	7,556	7,556	7,556	7,556	7,556	7,556	7,556
30. Cavite City	1,854	3,972	5,490	7,409	9,327	11,245	11,245	11,245	11,245	11,245	11,245	11,245	11,245	11,245	11,245
31. Imus	4,329	5,649	6,969	8,289	9,609	10,929	10,929	10,929	10,929	10,929	10,929	10,929	10,929	10,929	10,929
32. Kavit	7,070	7,070	7,070	7,070	7,070	7,070	7,070	7,070	7,070	7,070	7,070	7,070	7,070	7,070	7,070
33. Navotas	889	1,460	2,030	2,601	3,171	3,742	3,742	3,742	3,742	3,742	3,742	3,742	3,742	3,742	3,742
34. Rosario	29,808	35,576	43,344	50,112	56,881	63,649	63,649	63,649	63,649	63,649	63,649	63,649	63,649	63,649	63,649
III. RIZAL	11,621	13,297	14,972	16,648	18,324	19,999	21,674	23,349	25,024	26,700	28,375	28,375	28,375	28,375	28,375
35. Angono	38	75	113	150	188	225	225	225	225	225	225	225	225	225	225
36. Baras	2,983	4,166	5,349	6,532	7,715	8,898	8,898	8,898	8,898	8,898	8,898	8,898	8,898	8,898	8,898
37. Binangonan	3,765	4,185	4,585	4,985	5,385	5,785	5,785	5,785	5,785	5,785	5,785	5,785	5,785	5,785	5,785
38. Calamba	146	291	437	583	729	875	875	875	875	875	875	875	875	875	875
39. Cardona	22	44	66	88	110	132	132	132	132	132	132	132	132	132	132
40. Jala-Jala	3,243	3,730	4,218	4,705	5,193	5,680	5,680	5,680	5,680	5,680	5,680	5,680	5,680	5,680	5,680
41. Marikina	284	568	852	1,135	1,419	1,702	1,702	1,702	1,702	1,702	1,702	1,702	1,702	1,702	1,702
42. Morong	209	418	627	835	1,044	1,252	1,252	1,252	1,252	1,252	1,252	1,252	1,252	1,252	1,252
43. Pili	4,706	5,094	5,482	5,871	6,259	6,648	6,648	6,648	6,648	6,648	6,648	6,648	6,648	6,648	6,648
44. San Mateo	645	1,290	1,935	2,580	3,225	3,870	3,870	3,870	3,870	3,870	3,870	3,870	3,870	3,870	3,870
45. Tamy	6,453	6,701	6,950	7,198	7,447	7,695	7,695	7,695	7,695	7,695	7,695	7,695	7,695	7,695	7,695
46. Taytay	143	285	427	570	713	855	855	855	855	855	855	855	855	855	855
47. Teresa	89,739	103,994	118,249	132,505	146,760	161,015	161,015	161,015	161,015	161,015	161,015	161,015	161,015	161,015	161,015
TOTAL	11,621	13,297	14,972	16,648	18,324	19,999	21,674	23,349	25,024	26,700	28,375	28,375	28,375	28,375	28,375



TABLE 13-4-35 DISTRIBUTION OF GROUNDWATER DISCHARGE (SCENARIO 3) (cont'd)

CITY/MUNICIPALITY	1995		2000		2010																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
	1990	1995	2000	2005	2010	2010																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
I. MCE	540,937	545,065	651,154	655,323	661,452	666,580	671,799	676,937	681,165	685,992	692,223	675,148	658,072	640,396	623,921	605,845	585,255	563,667	602,078	609,489	598,990																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
1. Manila	12,665	14,185	15,705	17,225	18,745	20,265	21,785	23,305	24,825	26,345	27,865	29,385	30,905	32,425	33,945	35,465	36,985	38,505	40,025	41,545	43,065	44,585	46,105	47,625	49,145	50,665	52,185	53,705	55,225	56,745	58,265	59,785	61,305	62,825	64,345	65,865	67,385	68,905	70,425	71,945	73,465	74,985	76,505	78,025	79,545	81,065	82,585	84,105	85,625	87,145	88,665	90,185	91,705	93,225	94,745	96,265	97,785	99,305	100,825	102,345	103,865	105,385	106,905	108,425	109,945	111,465	112,985	114,505	116,025	117,545	119,065	120,585	122,105	123,625	125,145	126,665	128,185	129,705	131,225	132,745	134,265	135,785	137,305	138,825	140,345	141,865	143,385	144,905	146,425	147,945	149,465	150,985	152,505	154,025	155,545	157,065	158,585	160,105	161,625	163,145	164,665	166,185	167,705	169,225	170,745	172,265	173,785	175,305	176,825	178,345	179,865	181,385	182,905	184,425	185,945	187,465	188,985	190,505	192,025	193,545	195,065	196,585	198,105	199,625	201,145	202,665	204,185	205,705	207,225	208,745	210,265	211,785	213,305	214,825	216,345	217,865	219,385	220,905	222,425	223,945	225,465	226,985	228,505	230,025	231,545	233,065	234,585	236,105	237,625	239,145	240,665	242,185	243,705	245,225	246,745	248,265	249,785	251,305	252,825	254,345	255,865	257,385	258,905	260,425	261,945	263,465	264,985	266,505	268,025	269,545	271,065	272,585	274,105	275,625	277,145	278,665	280,185	281,705	283,225	284,745	286,265	287,785	289,305	290,825	292,345	293,865	295,385	296,905	298,425	299,945	301,465	302,985	304,505	306,025	307,545	309,065	310,585	312,105	313,625	315,145	316,665	318,185	319,705	321,225	322,745	324,265	325,785	327,305	328,825	330,345	331,865	333,385	334,905	336,425	337,945	339,465	340,985	342,505	344,025	345,545	347,065	348,585	350,105	351,625	353,145	354,665	356,185	357,705	359,225	360,745	362,265	363,785	365,305	366,825	368,345	369,865	371,385	372,905	374,425	375,945	377,465	378,985	380,505	382,025	383,545	385,065	386,585	388,105	389,625	391,145	392,665	394,185	395,705	397,225	398,745	400,265	401,785	403,305	404,825	406,345	407,865	409,385	410,905	412,425	413,945	415,465	416,985	418,505	419,025	420,545	422,065	423,585	425,105	426,625	428,145	429,665	431,185	432,705	434,225	435,745	437,265	438,785	440,305	441,825	443,345	444,865	446,385	447,905	449,425	450,945	452,465	453,985	455,505	457,025	458,545	460,065	461,585	463,105	464,625	466,145	467,665	469,185	470,705	472,225	473,745	475,265	476,785	478,305	479,825	481,345	482,865	484,385	485,905	487,425	488,945	490,465	491,985	493,505	495,025	496,545	498,065	499,585	501,105	502,625	504,145	505,665	507,185	508,705	510,225	511,745	513,265	514,785	516,305	517,825	519,345	520,865	522,385	523,905	525,425	526,945	528,465	529,985	531,505	533,025	534,545	536,065	537,585	539,105	540,625	542,145	543,665	545,185	546,705	548,225	549,745	551,265	552,785	554,305	555,825	557,345	558,865	560,385	561,905	563,425	564,945	566,465	567,985	569,505	571,025	572,545	574,065	575,585	577,105	578,625	580,145	581,665	583,185	584,705	586,225	587,745	589,265	590,785	592,305	593,825	595,345	596,865	598,385	599,905	601,425	602,945	604,465	605,985	607,505	609,025	610,545	612,065	613,585	615,105	616,625	618,145	619,665	621,185	622,705	624,225	625,745	627,265	628,785	630,305	631,825	633,345	634,865	636,385	637,905	639,425	640,945	642,465	643,985	645,505	647,025	648,545	650,065	651,585	653,105	654,625	656,145	657,665	659,185	660,705	662,225	663,745	665,265	666,785	668,305	669,825	671,345	672,865	674,385	675,905	677,425	678,945	680,465	681,985	683,505	685,025	686,545	688,065	689,585	691,105	692,625	694,145	695,665	697,185	698,705	700,225	701,745	703,265	704,785	706,305	707,825	709,345	710,865	712,385	713,905	715,425	716,945	718,465	719,985	721,505	723,025	724,545	726,065	727,585	729,105	730,625	732,145	733,665	735,185	736,705	738,225	739,745	741,265	742,785	744,305	745,825	747,345	748,865	750,385	751,905	753,425	754,945	756,465	757,985	759,505	761,025	762,545	764,065	765,585	767,105	768,625	770,145	771,665	773,185	774,705	776,225	777,745	779,265	780,785	782,305	783,825	785,345	786,865	788,385	789,905	791,425	792,945	794,465	795,985	797,505	799,025	800,545	802,065	803,585	805,105	806,625	808,145	809,665	811,185	812,705	814,225	815,745	817,265	818,785	820,305	821,825	823,345	824,865	826,385	827,905	829,425	830,945	832,465	833,985	835,505	837,025	838,545	840,065	841,585	843,105	844,625	846,145	847,665	849,185	850,705	852,225	853,745	855,265	856,785	858,305	859,825	861,345	862,865	864,385	865,905	867,425	868,945	870,465	871,985	873,505	875,025	876,545	878,065	879,585	881,105	882,625	884,145	885,665	887,185	888,705	890,225	891,745	893,265	894,785	896,305	897,825	899,345	900,865	902,385	903,905	905,425	906,945	908,465	910,985	912,505	914,025	915,545	917,065	918,585	920,105	921,625	923,145	924,665	926,185	927,705	929,225	930,745	932,265	933,785	935,305	936,825	938,345	939,865	941,385	942,905	944,425	945,945	947,465	948,985	950,505	952,025	953,545	955,065	956,585	958,105	959,625	961,145	962,665	964,185	965,705	967,225	968,745	970,265	971,785	973,305	974,825	976,345	977,865	979,385	980,905	982,425	983,945	985,465	986,985	988,505	990,025	991,545	993,065	994,585	996,105	997,625	999,145	1000,665	1002,185	1003,705	1005,225	1006,745	1008,265	1009,785	1011,305	1012,825	1014,345	1015,865	1017,385	1018,905	1020,425	1021,945	1023,465	1024,985	1026,505	1028,025	1029,545	1031,065	1032,585	1034,105	1035,625	1037,145	1038,665	1040,185	1041,705	1043,225	1044,745	1046,265	1047,785	1049,305	1050,825	1052,345	1053,865	1055,385	1056,905	1058,425	1059,945	1061,465	1062,985	1064,505	1066,025	1067,545	1069,065	1070,585	1072,105	1073,625	1075,145	1076,665	1078,185	1079,705	1081,225	1082,745	1084,265	1085,785	1087,305	1088,825	1090,345	1091,865	1093,385	1094,905	1096,425	1097,945	1099,465	1100,985	1102,505	1104,025	1105,545	1107,065	1108,585	1110,105	1111,625	1113,145	1114,665	1116,185	1117,705	1119,225	1120,745	1122,265	1123,785	1125,305	1126,825	1128,345	1129,865	1131,385	1132,905	1134,425	1135,945	1137,465	1138,985	1140,505	1142,025	1143,545	1145,065	1146,585	1148,105	1149,625	1151,145	1152,665	1154,185	1155,705	1157,225	1158,745	1160,265	1161,785	1163,305	1164,825	1166,345	1167,865	1169,385	1170,905	1172,425	1173,945	1175,465	1176,985	1178,505	1180,025	1181,545	1183,065	1184,585	1186,105	1187,625	1189,145	1190,665	1192,185	1193,705	1195,225	1196,745	1198,265	1199,785	1201,305	1202,825	1204,345	1205,865	1207,385	1208,905	1210,425	1211,945	1213,465	1214,985	1216,505	1218,025	1219,545	1221,065	1222,585	1224,105	1225,625	1227,145	1228,665	1230,185	1231,705	1233,225	1234,745	1236,265	1237,785	1239,305	1240,825	1242,345	1243,865	1245,385	1246,905	1248,425	1249,945	1251,465	1252,985	1254,505	1256,025	1257,545	1259,065	1260,585	1262,105	1263,625	1265,145	1266,665	1268,185	1269,705	1271,225	1272,745	1274,265	1275,785	1277,305	1278,825	1280,345	1281,865	1283,385	1284,905	1286,425	1287,945	1289,465	1290,985	1292,505	1294,025	1295,545	1297,065	1298,585	1300,105	1301,625	1303,145	1304,665	1306,185	1307,705	1309,225	1310,745	1312,265	1313,785	1315,305	1316,825	1318,345	1319,865	1321,385	1322,905	1324,425	1325,945	1327,465	1328,985	1330,505	1332,025	1333,545	1335,065	1336,585	1338,105	1339,625	1341,145	1342,665	1344,185	1345,705	1347,225	1348,745	1350,265	1351,785	1353,305	1354,825	1356,345	1357,865	1359,385	1360,905	1362,425	1363,945	1365,465	1366,985	1368,505	1370,025	1371,545	1373,065	1374

TABLE 13.4.36 DISTRIBUTION OF GROUNDWATER DISCHARGE (SCENARIO 4)

CITY/MUNICIPALITY	1990			1995			2000			2005			2010		
	1990	1995	2000	1990	1995	2000	1990	1995	2000	1990	1995	2000	1990	1995	2000
I. NEG	32,961	35,340	37,736	40,123	42,511	44,898	44,898	44,898	44,898	44,898	44,898	44,898	44,898	44,898	44,898
11. Manila	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12. Pasay City	4,461	4,565	4,708	4,934	5,082	5,082	5,082	5,082	5,082	5,082	5,082	5,082	5,082	5,082	5,082
13. Quezon City	14,186	15,014	15,842	16,670	17,498	18,326	18,326	18,326	18,326	18,326	18,326	18,326	18,326	18,326	18,326
14. Caloocan City	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15. Las Pinas	1,627	1,668	1,610	1,651	1,693	1,734	1,734	1,734	1,734	1,734	1,734	1,734	1,734	1,734	1,734
16. Marikina	3,772	4,490	5,207	5,925	6,642	7,360	7,360	7,360	7,360	7,360	7,360	7,360	7,360	7,360	7,360
17. Malabon	554	692	830	968	1,106	1,244	1,244	1,244	1,244	1,244	1,244	1,244	1,244	1,244	1,244
18. Mandaue City	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19. Marikina	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20. Muntinlupa	5,177	5,025	5,274	5,522	5,771	7,019	7,019	7,019	7,019	7,019	7,019	7,019	7,019	7,019	7,019
21. Navotas	106	147	189	230	272	313	313	313	313	313	313	313	313	313	313
22. Parañaque	1,147	1,271	1,395	1,520	1,644	1,768	1,768	1,768	1,768	1,768	1,768	1,768	1,768	1,768	1,768
23. Pasig	49	90	132	173	215	256	256	256	256	256	256	256	256	256	256
24. Patrocos	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25. San Juan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
26. Taguig	640	681	723	764	806	847	847	847	847	847	847	847	847	847	847
27. Valenzuela	742	783	825	866	908	949	949	949	949	949	949	949	949	949	949
II. CAVITE	26,870	30,760	34,550	38,340	42,131	45,921	45,921	45,921	45,921	45,921	45,921	45,921	45,921	45,921	45,921
1. Bacoor	6,314	6,562	6,811	7,059	7,308	7,556	7,556	7,556	7,556	7,556	7,556	7,556	7,556	7,556	7,556
2. Cavite City	6,714	7,745	8,776	9,807	10,838	11,869	11,869	11,869	11,869	11,869	11,869	11,869	11,869	11,869	11,869
3. Imus	1,654	3,126	4,598	6,070	7,542	9,014	10,486	11,958	13,430	14,902	16,374	17,846	19,318	20,790	22,262
4. Kawit	4,329	4,900	5,471	6,042	6,612	7,183	7,754	8,324	8,895	9,466	10,037	10,607	11,178	11,748	12,319
5. Noveleta	7,070	7,070	7,070	7,070	7,070	7,070	7,070	7,070	7,070	7,070	7,070	7,070	7,070	7,070	7,070
6. Rosario	869	1,357	1,825	2,293	2,761	3,229	3,697	4,165	4,633	5,101	5,569	6,037	6,505	6,973	7,441
III. RIZAL	25,808	34,685	43,564	52,442	61,320	70,198	70,198	70,198	70,198	70,198	70,198	70,198	70,198	70,198	70,198
1. Angono	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Antipolo	11,521	12,650	13,779	14,908	16,037	17,166	17,166	17,166	17,166	17,166	17,166	17,166	17,166	17,166	17,166
3. Baras	29	53	77	101	125	149	149	149	149	149	149	149	149	149	149
4. Binangonan	1,678	3,355	5,032	6,710	8,387	10,064	11,741	13,418	15,095	16,772	18,449	20,126	21,803	23,480	25,157
5. Calamba	3,785	3,985	4,185	4,385	4,585	4,785	4,785	4,785	4,785	4,785	4,785	4,785	4,785	4,785	4,785
6. Cardona	97	194	291	388	485	582	582	582	582	582	582	582	582	582	582
7. Jala-Jala	41	83	124	166	207	248	248	248	248	248	248	248	248	248	248
8. Montalban	3,474	3,484	3,745	3,997	4,248	4,499	5,021	5,542	6,064	6,585	7,106	7,627	8,148	8,669	9,190
9. Noron	193	386	579	772	965	1,158	1,351	1,544	1,737	1,930	2,123	2,316	2,509	2,702	2,895
10. Pililla	179	357	535	714	893	1,072	1,250	1,429	1,607	1,786	1,965	2,144	2,322	2,501	2,679
11. San Mateo	5,037	5,368	5,700	6,031	6,362	6,693	7,024	7,355	7,686	8,017	8,348	8,679	9,010	9,341	9,672
12. Tayay	604	1,208	1,812	2,416	3,019	3,623	4,227	4,831	5,435	6,039	6,643	7,247	7,851	8,455	9,059
13. Taytay	6,453	6,577	6,701	6,825	6,950	7,074	7,198	7,322	7,447	7,571	7,695	7,819	7,943	8,067	8,191
14. Teresa	122	244	366	488	610	732	854	976	1,098	1,220	1,342	1,464	1,586	1,708	1,830
TOTAL	89,739	100,795	111,850	122,906	133,962	145,017	155,121	165,225	175,329	185,432	195,536	205,640	215,744	225,848	235,952

TABLE 12-4-36 DISTRIBUTION OF GROUNDWATER DISCHARGE (SCENARIO 4) (cont'd)

CITY/MUNICIPALITY	1995										2005										2010																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	
I. NCR	610,337	651,965	682,934	674,022	665,051	696,079	707,107	718,136	729,164	740,193	751,221	748,445	745,658	742,832	740,035	737,240	743,275	749,311	755,346	761,382	767,418	773,454	779,490	785,526	791,562	797,598	803,634	809,670	815,706	821,742	827,778	833,814	839,850	845,886	851,922	857,958	863,994	870,030			
11. Manila	12,655	14,230	15,795	17,361	18,926	20,491	22,056	23,621	25,187	26,752	28,317	28,239	28,161	28,083	28,005	27,927	27,849	27,771	27,693	27,615	27,537	27,459	27,381	27,303	27,225	27,147	27,069	26,991	26,913	26,835	26,757	26,679	26,601	26,523	26,445	26,367	26,289	26,211	26,133	26,055	
12. Pasig City	17,997	18,294	18,591	18,887	19,184	19,481	19,778	20,074	20,371	20,668	20,965	20,406	19,848	19,290	18,732	18,174	17,616	17,058	16,500	15,942	15,384	14,826	14,268	13,710	13,152	12,594	12,036	11,478	10,920	10,362	9,804	9,246	8,688	8,130	7,572	7,014	6,456	5,898	5,340	4,782	4,224
13. Quezon City	91,324	90,410	89,497	88,583	87,670	86,756	85,843	84,929	84,016	83,102	82,189	80,200	78,210	76,220	74,230	72,240	70,250	68,260	66,270	64,280	62,290	60,300	58,310	56,320	54,330	52,340	50,350	48,360	46,370	44,380	42,390	40,400	38,410	36,420	34,430	32,440	30,450	28,460	26,470	24,480	
14. Caloocan City	27,476	29,148	30,820	32,492	34,164	35,836	37,508	39,180	40,852	42,524	44,196	42,868	41,540	40,212	38,884	37,556	36,228	34,900	33,572	32,244	30,916	29,588	28,260	26,932	25,604	24,276	22,948	21,620	20,292	18,964	17,636	16,308	14,980	13,652	12,324	10,996	9,668	8,340	7,012	5,684	4,356
15. Las Pinas	81,778	80,593	79,408	78,223	77,038	75,853	74,668	73,483	72,298	71,113	69,928	68,743	67,558	66,373	65,188	64,003	62,818	61,633	60,448	59,263	58,078	56,893	55,708	54,523	53,338	52,153	50,968	49,783	48,598	47,413	46,228	45,043	43,858	42,673	41,488	40,303	39,118	37,933	36,748	35,563	34,378
16. Makati	25,179	24,949	24,720	24,490	24,261	24,031	23,802	23,572	23,343	23,113	22,883	22,654	22,424	22,195	21,965	21,735	21,505	21,275	21,045	20,815	20,585	20,355	20,125	19,895	19,665	19,435	19,205	18,975	18,745	18,515	18,285	18,055	17,825	17,595	17,365	17,135	16,905	16,675	16,445	16,215	15,985
17. Malabon	18,473	19,564	20,654	21,745	22,836	23,926	25,017	26,108	27,198	28,289	29,380	28,813	28,246	27,679	27,112	26,545	25,978	25,411	24,844	24,277	23,710	23,143	22,576	22,009	21,442	20,875	20,308	19,741	19,174	18,607	18,040	17,473	16,906	16,339	15,772	15,205	14,638	14,071	13,504	12,937	
18. Mandaluyong	13,573	13,838	14,103	14,368	14,633	14,898	15,163	15,428	15,693	15,958	16,223	16,000	15,777	15,554	15,331	15,108	14,885	14,662	14,439	14,216	13,993	13,770	13,547	13,324	13,101	12,878	12,655	12,432	12,209	11,986	11,763	11,540	11,317	11,094	10,871	10,648	10,425	10,202	9,979	9,756	
19. Marikina	91,618	91,185	90,752	90,319	89,886	89,453	89,020	88,587	88,154	87,721	87,288	86,855	86,422	85,989	85,556	85,123	84,690	84,257	83,824	83,391	82,958	82,525	82,092	81,659	81,226	80,793	80,360	79,927	79,494	79,061	78,628	78,195	77,762	77,329	76,896	76,463	76,030	75,597	75,164	74,731	74,298
20. Muntinlupa	4,051	4,193	4,335	4,477	4,619	4,761	4,903	5,045	5,187	5,329	5,471	5,351	5,231	5,111	4,991	4,871	4,751	4,631	4,511	4,391	4,271	4,151	4,031	3,911	3,791	3,671	3,551	3,431	3,311	3,191	3,071	2,951	2,831	2,711	2,591	2,471	2,351	2,231	2,111	1,991	
21. Parangue	70,158	69,672	69,186	68,699	68,213	67,727	67,241	66,755	66,269	65,783	65,297	64,811	64,325	63,839	63,353	62,867	62,381	61,895	61,409	60,923	60,437	59,951	59,465	58,979	58,493	58,007	57,521	57,035	56,549	56,063	55,577	55,091	54,605	54,119	53,633	53,147	52,661	52,175	51,689	51,203	
22. Pasig	75,958	78,686	81,413	84,141	86,868	89,596	92,323	95,051	97,778	100,506	103,233	105,971	108,700	111,428	114,156	116,884	119,612	122,340	125,068	127,796	130,524	133,252	135,980	138,708	141,436	144,164	146,892	149,620	152,348	155,076	157,804	160,532	163,260	165,988	168,716	171,444	174,172	176,900	179,628	182,356	
23. Pateros	1,356	2,270	2,784	3,298	3,812	4,326	4,840	5,354	5,868	6,382	6,896	6,884	6,872	6,860	6,848	6,836	6,824	6,812	6,800	6,788	6,776	6,764	6,752	6,740	6,728	6,716	6,704	6,692	6,680	6,668	6,656	6,644	6,632	6,620	6,608	6,596	6,584	6,572	6,560	6,548	
24. San Juan	408	558	708	857	1,007	1,157	1,307	1,457	1,606	1,756	1,905	1,906	1,907	1,908	1,909	1,910	1,911	1,912	1,913	1,914	1,915	1,916	1,917	1,918	1,919	1,920	1,921	1,922	1,923	1,924	1,925	1,926	1,927	1,928	1,929	1,930	1,931	1,932	1,933	1,934	
25. Taguig	65,357	68,382	71,598	74,213	76,829	79,444	82,059	84,675	87,290	89,906	92,521	91,923	91,325	90,727	90,129	89,531	88,933	88,335	87,737	87,139	86,541	85,943	85,345	84,747	84,149	83,551	82,953	82,355	81,757	81,159	80,561	79,963	79,365	78,767	78,169	77,571	76,973	76,375	75,777	75,179	74,581
26. Valenzuela	33,180	36,265	39,350	42,434	45,519	48,604	51,689	54,773	57,858	60,943	64,028	64,570	65,112	65,654	66,196	66,738	67,280	67,822	68,364	68,906	69,448	69,990	70,532	71,074	71,616	72,158	72,700	73,242	73,784	74,326	74,868	75,410	75,952	76,494	77,036	77,578	78,120	78,662	79,204	79,746	80,288
27. GAYTES	57,327	58,075	58,823	59,571	59,319	58,867	58,915	59,964	59,112	59,260	59,408	57,453	55,499	53,544	51,589	49,635	48,822	48,009	47,227	46,425	45,623	44,821	44,019	43,217	42,415	41,613	40,811	40,009	39,207	38,405	37,603	36,801	36,000	35,198	34,396	33,594	32,792	31,990	31,188	30,386	
III. RIZAL	141,838	146,653	151,469	156,284	161,099	165,915	170,730	175,545	180,361	185,176	189,991	191,795	193,598	195,402	197,205	199,009	200,812	203,134	205,197	207,260	209,323	211,386	213,449	215,512	217,575	219,638	221,701	223,764	225,827	227,890	229,953	232,016	234,079	236,142	238,205	240,268	242,331	244,394	246,457	248,520	
1. Angono	242	484	726	968	1,210	1,451	1,693	1,935	2,177	2,419	2,419	2,464	2,488	2,523	2,557	2,592	2,577	2,562	2,546	2,531	2,516	2,501	2,486	2,471	2,456	2,441	2,426	2,411	2,396	2,381	2,366	2,351	2,336	2,321	2,306	2,291	2,276	2,261	2,246		
2. Antipolo	44,155	44,377	44,599	44,820	45,042	45,264	45,486	45,707	45,929	46,151	46,373	47,579	48,784	49,989	51,194	52,400	53,605	54,810	56,015	57,220	58,425	59,630	60,835	62,040	63,245	64,450	65,655	66,860	68,065	69,270	70,475	71,680	72,885	74,090	75,295	76,500	77,705	78,910	80,115	81,320	
3. Bacus	66	132	197	263	329	395	461	526	592	658	658	668	678	688	698	708	718	728	738	748	758	768	778	788	798	808	818	828	838	848	858	868	878	888	898	908	918	928	938	948	
4. Binangonan	552	1,124	1,696	2,268	2,840	3,412	3,984	4,556	5,128	5,700	5,820	5,530	5,240	4,950	4,660	4,370	4,080	3,790	3,500	3,210	2,920	2,630	2,340	2,050	1,760	1,470	1,180	890	600	310	20	10	10	10	10	10	10	10	10		
5. Calamba	48,619	51,102	53,586	56,069	58,553	61,037	63,521	66,005	68,489	70,973	73,457	75,941	78,425	80,909	83,393	85,877	88,361	90,845	93,329	95,813	98,297	100,781	103,265	105,749	108,233	110,717	113,201	115,685	118,169	120,653	123,137	125,621	128,105	130,589	133,073	135,557	138,041	140,525	143,009	145,493	
6. Cardona	115	230	345	460	575	690	805	920	1,035	1,150	1,164	1,169	1,174	1,179	1,184	1,189	1,194	1,199	1,204	1,209	1,214	1,219	1,224	1,229	1,234	1,239	1,244	1,249	1,254	1,259	1,264	1,269	1,274	1,279	1,284	1,289	1,294	1,299	1,304	1,309	
7. Jala-Jala	61	122	183	244	305	366	427	488	549	610	610	615	621	627	632	638	643	648	654	659	664	669	674	679	684	689	694	699	704	709	714	719	724	729	734	739	744	749	754	759	
8. Montalban	8,030	8,111	8,193	8,274	8,356	8,437	8,519	8,600	8,682	8,763	8,845	8,940	9,035	9,130	9,225	9,320	9,415	9,510	9,605	9,700	9,795	9,890	9,985	10,080	10,175	10,270	10,365	10,460	10,555	10,650	10,745</										

TABLE 13.4.37 SUMMARY OF GROUNDWATER DISCHARGE (SCENARIO 1)

SYSTEM	RWSS WELL							PRIVATE WELL							TOTAL		
	1990	1995	2000	2005	2010	1990	1995	2000	2005	2010	1990	1995	2000	2005	2010		
<b>CITY/MUNICIPALITY</b>	1990	1995	2000	2005	2010	1990	1995	2000	2005	2010	1990	1995	2000	2005	2010		
<b>I. NCR</b>	32,961	44,898	44,898	44,898	44,898	640,937	665,580	692,223	711,515	752,665	673,898	711,478	737,121	756,813	798,583		
1. Manila	0	0	0	0	0	12,665	20,265	27,866	27,472	27,359	12,665	20,265	27,866	27,472	27,359		
2. Pasay City	4,461	5,082	5,082	5,082	5,082	17,997	18,807	19,618	16,708	16,736	22,458	23,899	24,700	21,790	21,818		
3. Quezon City	14,186	18,326	18,326	18,326	18,326	91,924	86,997	81,471	81,874	82,662	105,510	104,723	99,797	100,200	100,988		
4. Caloocan City	0	0	0	0	0	27,476	32,889	38,462	33,970	27,980	27,476	32,889	38,462	33,970	27,980		
5. Las Pinas	1,527	1,734	1,734	1,734	1,734	81,778	70,395	59,013	59,684	69,889	89,305	72,129	80,747	61,418	71,623		
6. Makati	3,772	7,360	7,360	7,360	7,360	25,179	23,012	20,844	20,920	21,036	28,951	30,372	28,204	28,280	28,396		
7. Malabon	554	1,244	1,244	1,244	1,244	18,473	22,889	27,304	25,351	22,979	19,027	14,133	28,548	25,535	24,223		
8. Mandaluyong	0	0	0	0	0	8,976	9,685	10,395	10,394	10,456	8,976	9,685	10,395	10,394	10,456		
9. Marikina	0	0	0	0	0	13,573	14,833	15,094	18,090	20,112	13,573	14,833	15,094	18,090	20,112		
10. Huntikilupa	106	313	313	313	313	91,618	85,003	78,387	83,225	84,265	97,395	92,022	85,406	90,244	101,284		
11. Navotas	1,147	1,768	1,768	1,768	1,768	70,198	63,129	56,100	56,320	61,722	71,305	64,897	57,868	58,088	63,490		
12. Parañaque	49	256	256	256	256	75,958	68,694	61,430	115,717	129,728	76,007	88,950	101,686	115,973	129,982		
13. Pasig	0	0	0	0	0	1,756	3,785	5,813	5,346	4,609	1,756	3,785	5,813	5,346	4,609		
14. Pasaron	0	0	0	0	0	1,148	1,698	1,888	1,888	1,888	1,148	1,698	1,888	1,888	1,888		
15. San Juan	640	847	847	847	847	66,367	73,952	81,537	86,909	90,416	67,007	74,799	82,384	87,756	91,263		
16. Taguig	742	849	849	849	849	33,180	47,210	61,241	63,311	67,101	33,922	48,159	62,190	64,280	68,050		
<b>II. CAVITE</b>	26,970	47,610	70,858	84,961	103,890	57,927	53,479	49,032	44,868	41,718	84,897	101,090	119,890	129,629	145,608		
1. Bacoor	6,314	7,556	7,556	7,556	7,556	32,210	20,861	9,713	9,140	10,799	38,524	28,517	17,269	16,696	18,355		
2. Cavite City	6,714	11,326	20,838	27,133	32,500	4,328	6,985	9,649	7,781	7,310	11,042	16,914	30,637	34,914	39,810		
3. Imus	1,664	9,965	18,277	23,527	30,851	4,443	7,897	11,351	10,346	6,818	8,097	17,862	29,628	33,873	40,199		
4. Kawit	4,328	7,529	10,730	11,101	10,895	2,820	2,342	1,855	603	0	7,153	9,872	12,585	11,704	10,889		
5. Novleta	7,070	7,070	7,070	7,289	7,289	5,659	3,680	1,702	1,264	816	12,729	10,750	8,772	8,354	8,105		
6. Rosario	889	3,583	6,238	8,573	12,275	9,457	11,610	14,763	15,715	15,975	9,346	15,173	21,001	24,288	28,250		
<b>III. RIZAL</b>	29,808	58,898	86,098	105,008	131,371	141,838	160,050	178,262	189,711	202,608	171,646	218,948	264,360	298,718	333,979		
1. Angono	0	0	0	0	0	1,210	2,419	2,592	2,516	2,516	1,210	2,419	2,592	2,516	2,516		
2. Antipolo	11,621	19,989	28,381	30,760	35,780	44,155	44,719	45,283	51,175	55,980	55,776	64,718	73,664	81,934	91,160		
3. Bazar	145	291	582	582	582	329	658	708	731	731	474	949	1,350	1,696			
4. Binangonan	0	0	0	0	0	2,810	5,620	5,671	5,250	5,250	11,188	22,395	31,172	42,124	42,124		
5. Calinta	3,785	4,786	5,786	5,786	5,786	48,619	57,691	67,162	73,627	78,127	52,404	62,678	72,948	79,413	85,913		
6. Cardona	0	0	0	0	0	582	1,164	1,896	1,896	1,178	1,067	2,135	2,535	3,003	3,003		
7. Talis-Jala	0	0	0	0	0	305	610	638	638	638	512	1,024	1,549	2,278	2,278		
8. Montalban	3,243	5,680	6,684	6,684	6,684	8,030	8,298	8,566	8,936	9,318	11,273	13,978	15,250	15,620	16,002		
9. Morong	0	0	0	0	0	608	1,216	1,290	1,318	1,318	608	1,216	1,290	1,318	1,318		
10. Piliilla	0	0	0	0	0	651	1,302	1,356	1,324	1,324	651	1,302	1,356	1,324	1,324		
11. San Mateo	4,706	6,648	8,130	8,130	8,130	3,641	5,743	7,844	7,833	7,193	8,347	12,331	15,974	15,863	15,323		
12. Tanay	0	0	0	0	0	1,280	2,560	3,840	3,840	2,560	1,280	2,560	3,840	3,840	2,560		
13. Taytay	6,453	7,074	7,695	7,695	7,695	37,393	35,256	33,120	35,304	36,360	43,846	42,330	40,815	42,989	44,075		
14. Teresa	0	0	0	0	0	370	739	739	739	686	370	739	739	686	370		
<b>TOTAL</b>	89,739	151,406	201,655	234,866	280,159	860,702	880,109	919,517	950,493	998,010	930,441	1,031,515	1,121,372	1,155,360	1,275,170		

TABLE 13.4.38 SUMMARY OF GROUNDWATER DISCHARGE (SCENARIO 2)

SYSTEM	PMS WELL										PRIVATE WELL										TOTAL				
	1990	1995	2000	2005	2010	1990	1995	2000	2005	2010	1990	1995	2000	2005	2010	1990	1995	2000	2005	2010					
CITY/MUNICIPALITY	1990	1995	2000	2005	2010	1990	1995	2000	2005	2010	1990	1995	2000	2005	2010	1990	1995	2000	2005	2010					
I. NCR	32,961	44,898	44,898	44,898	44,898	640,937	666,580	662,223	660,888	652,943	673,698	711,478	737,121	705,786	697,841										
11. Manila	0	0	0	0	0	12,665	20,285	27,472	27,472	27,359	12,665	26,885	27,472	27,472	27,359										
12. Pasay City	4,461	5,082	5,082	5,082	5,082	17,997	19,607	19,618	19,708	16,738	22,459	25,839	24,700	21,790	21,818										
13. Quezon City	14,188	18,326	18,326	18,326	18,326	91,324	86,397	81,471	81,874	82,462	105,510	104,723	99,797	100,200	100,868										
14. Caloocan City	0	0	0	0	0	27,476	32,969	38,462	33,970	27,476	32,969	38,462	33,970	38,462	27,476										
15. Las Pinas	1,527	1,734	1,734	1,734	1,734	81,778	70,395	59,013	54,444	59,540	63,305	72,129	60,747	58,176	61,274										
16. Marikina	3,772	7,360	7,360	7,360	7,360	25,179	23,012	20,844	20,390	21,038	29,951	30,372	28,204	28,230	28,398										
17. Malabon	554	1,244	1,244	1,244	1,244	18,473	22,889	27,304	25,351	22,979	19,027	24,133	28,548	28,595	24,223										
18. Mandaue City	0	0	0	0	0	8,976	9,685	10,395	10,394	10,456	9,976	9,685	10,395	10,394	10,456										
19. Marikina	0	0	0	0	0	13,573	14,833	16,094	16,326	16,626	13,573	14,833	16,094	16,326	16,626										
20. Muntinlupa	5,777	7,019	7,019	7,019	7,019	4,051	4,406	4,761	4,737	4,787	4,157	4,719	5,074	5,050	5,100										
21. Navotas	106	313	313	313	313	1,768	1,768	1,768	1,768	1,768	1,768	1,768	1,768	1,768	1,768										
22. Parañaque	1,147	1,768	1,768	1,768	1,768	70,150	63,129	56,100	51,397	51,391	71,305	64,837	57,868	53,165	53,749										
23. Pasig	49	256	256	256	256	75,958	88,694	101,430	101,771	102,226	76,007	88,950	101,666	102,027	102,472										
24. Puteran	0	0	0	0	0	1,756	3,785	5,813	4,392	3,934	1,756	3,785	5,813	4,392	3,934										
25. San Juan	0	0	0	0	0	408	1,148	1,888	1,880	1,880	408	1,148	1,888	1,880	1,880										
26. Taguig	840	847	847	847	847	66,367	73,952	81,537	77,587	72,057	67,007	74,798	82,304	78,444	72,904										
27. Valenzuela	742	949	949	949	949	33,180	47,210	61,241	57,005	54,657	33,922	48,159	62,150	57,954	55,606										
II. CAVITE	26,970	47,610	70,858	70,858	70,858	57,927	53,479	49,032	42,262	36,511	84,897	101,890	113,111	107,370											
1. Bacoor	6,914	7,556	7,556	7,556	7,556	32,210	20,961	9,713	8,945	10,469	38,524	28,517	17,269	16,401	17,985										
2. Cavite City	6,714	11,826	20,988	20,988	20,988	4,328	6,988	9,849	6,813	5,373	11,042	19,814	30,637	27,897	26,367										
3. Imus	1,854	9,965	18,277	18,277	18,277	4,443	7,897	11,351	10,061	6,250	6,097	17,662	29,628	26,338	24,527										
4. Kawit	4,329	7,329	10,730	10,730	10,730	2,980	2,242	1,855	603	0	7,158	9,872	12,585	11,333	10,730										
5. Novalesa	7,870	7,870	7,870	7,870	7,870	5,659	3,680	1,702	1,284	816	12,729	10,750	6,772	8,354	7,866										
6. Rosario	889	3,563	6,238	6,238	6,238	8,457	11,610	14,763	14,539	13,657	8,346	15,173	21,001	20,777	19,895										
III. BIZAL	29,808	56,898	86,098	105,006	131,971	141,836	160,050	178,262	193,711	202,608	171,646	219,948	264,360	296,716	333,979										
1. Angono	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										
2. Antipolo	11,821	19,999	28,391	30,760	35,780	44,155	44,719	45,283	51,175	55,380	55,776	64,718	73,664	81,934	91,160										
3. Baras	145	291	442	642	1,165	0	329	658	708	731	0	474	949	1,350	1,886										
4. Binangonan	0	6,388	16,775	25,501	36,874	0	2,810	5,620	5,671	5,250	0	11,198	22,395	31,172	42,124										
5. Calamba	3,765	4,766	5,766	5,766	5,766	49,619	57,691	67,162	73,627	78,127	53,404	62,876	72,848	79,415	83,913										
6. Cardona	485	971	1,456	1,941	2,426	0	582	1,164	1,188	1,178	0	1,067	2,135	2,535	3,003										
7. Jala-Jala	207	414	621	828	1,035	0	305	610	638	632	0	512	1,024	1,549	2,078										
8. Montalban	3,243	5,680	6,684	6,684	6,684	6,030	6,298	6,566	6,836	6,318	11,273	13,978	15,750	15,620	16,002										
9. Noron	0	864	1,728	2,592	3,456	0	608	1,216	1,824	1,318	0	1,572	3,144	4,123	5,394										
10. Plaridel	0	393	786	1,179	1,572	0	651	1,302	1,954	1,324	0	1,544	3,088	4,618	6,432										
11. San Mateo	4,706	6,668	8,130	8,130	8,130	3,641	5,743	7,844	7,633	7,193	8,947	12,391	15,974	15,863	15,323										
12. Tanay	0	5,015	6,039	6,039	6,039	0	1,280	2,559	2,662	2,574	0	4,289	6,598	12,087	16,542										
13. Taytay	6,453	7,074	7,695	7,695	7,695	37,383	35,256	33,120	35,304	36,360	43,846	42,330	40,815	42,989	44,075										
14. Teresa	0	603	1,206	1,809	2,412	0	370	739	730	686	0	979	1,959	2,562	3,320										
TOTAL	89,759	151,466	201,855	220,765	247,128	840,702	860,109	919,517	896,850	892,082	930,441	1,031,515	1,121,372	1,117,615	1,139,130										

TABLE 13.4.39 SUMMARY OF GROUNDWATER DISCHARGE (SCENARIO 3)

SYSTEM	MNS WELL					PRIVATE WELL					TOTAL				
	1980	1985	2000	2005	2010	1980	1985	2000	2005	2010	1980	1985	2000	2005	2010
<b>I. PCR</b>	32,961	44,898	44,898	44,898	44,898	540,937	556,590	892,223	806,845	598,300	673,898	711,475	737,121	651,743	643,798
1. Manila	0	0	0	0	0	12,665	20,265	27,868	27,472	27,359	12,665	20,265	27,868	27,472	27,359
2. Pasay City	4,481	5,082	5,082	5,082	5,082	18,807	18,807	16,708	16,708	16,736	22,458	23,889	24,700	21,790	21,818
3. Quezon City	14,188	18,326	18,326	18,326	18,326	86,397	81,471	81,471	81,471	82,662	105,510	104,723	99,797	100,200	100,988
4. Caloocan City	0	0	0	0	0	27,478	32,969	38,462	33,970	27,860	27,478	32,969	38,462	33,970	27,860
5. Las Pinas	1,527	1,734	1,734	1,734	1,734	70,395	59,013	48,901	53,996	53,996	83,305	72,129	60,747	50,635	55,730
6. Makati	3,772	7,360	7,360	7,360	7,360	25,179	23,012	20,844	20,820	21,036	28,951	30,372	28,204	28,280	28,396
7. Malabon	554	1,244	1,244	1,244	1,244	22,869	27,304	25,351	22,979	19,027	19,027	24,133	28,548	26,595	24,223
8. Mandaluyong	0	0	0	0	0	9,978	9,685	10,395	10,394	10,456	9,978	9,685	10,395	10,394	10,456
9. Marikina	0	0	0	0	0	13,573	14,833	16,094	14,463	14,763	13,573	14,833	16,094	14,463	14,763
10. Muntinlupa	5,777	7,019	7,019	7,019	7,019	91,618	85,003	78,987	84,858	66,423	97,895	92,022	85,406	71,377	73,442
11. Navotas	106	313	313	313	313	4,408	4,408	4,761	4,737	4,787	4,157	4,157	5,074	5,050	5,100
12. Paranaque	1,147	1,768	1,768	1,768	1,768	70,158	63,129	56,100	46,212	46,797	71,305	64,987	57,868	47,980	48,585
13. Pasig	48	256	256	256	256	75,958	88,694	101,430	86,967	87,412	76,007	88,950	101,686	87,223	87,668
14. Pateros	0	0	0	0	0	1,756	3,755	5,813	4,613	3,525	1,756	3,755	5,813	4,613	3,525
15. San Juan	0	0	0	0	0	408	1,148	1,858	1,858	1,858	408	1,148	1,858	1,858	1,880
16. Taguig	640	847	847	847	847	66,367	73,952	51,537	67,700	62,160	87,007	74,789	82,384	66,547	63,007
17. Valenzuela	742	943	943	943	943	33,130	47,210	61,241	50,313	47,970	33,922	48,159	62,130	51,267	48,919
<b>II. CAVITE</b>	26,970	52,468	52,468	52,468	52,468	57,937	53,479	49,032	39,537	33,796	84,897	105,948	101,500	92,005	86,264
1. Bacoor	6,314	7,556	7,556	7,556	7,556	32,210	20,961	9,713	8,749	10,212	38,524	28,517	17,269	18,305	17,768
2. Cavite City	6,714	11,926	11,926	11,926	11,926	4,328	6,988	9,649	5,947	4,406	11,042	18,914	17,575	17,773	16,322
3. Imus	1,684	11,245	11,245	11,245	11,245	4,443	7,997	11,951	9,767	5,956	6,097	19,142	22,596	21,012	17,201
4. Kawit	4,349	10,923	10,923	10,923	10,923	2,830	2,342	1,955	603	0	7,159	13,272	12,784	11,532	10,930
5. Novaleta	7,070	7,070	7,070	7,070	7,070	5,659	3,680	1,702	1,284	616	12,729	10,750	6,772	6,354	7,856
6. Rosario	889	3,742	3,742	3,742	3,742	6,457	11,810	14,783	13,287	12,406	8,346	15,952	15,505	17,029	16,147
<b>III. RIZAL</b>	29,808	63,645	63,645	63,645	63,645	141,838	160,050	176,262	193,711	202,608	171,646	223,699	264,360	298,718	333,979
1. Angono	0	0	0	0	0	1,210	2,419	2,592	2,592	2,516	1,210	2,419	2,592	2,516	2,516
2. Antipolo	11,621	19,989	26,381	30,760	32,780	44,155	45,719	45,283	51,175	55,380	55,776	64,718	73,664	81,934	91,160
3. Baras	188	291	291	642	1,165	329	658	708	731	731	517	949	1,350	1,886	1,886
4. Binangonan	10,414	16,775	25,591	36,874	46,874	2,810	5,820	5,671	5,671	5,250	13,224	22,395	31,172	42,124	42,124
5. Calinta	3,785	5,766	5,766	5,766	5,766	48,619	57,891	67,162	73,627	78,127	52,404	63,877	72,948	79,413	83,813
6. Cardona	728	871	871	1,847	1,825	592	1,164	1,188	1,188	1,178	1,310	2,135	2,535	3,003	3,003
7. Jala-Jala	109	414	414	811	1,646	305	610	638	638	638	414	1,024	1,549	2,278	2,278
8. Montalban	3,243	5,660	6,634	6,634	6,634	8,030	8,296	8,566	6,936	6,318	11,273	13,978	15,250	15,620	16,002
9. Norzong	1,419	1,928	2,833	4,078	4,078	608	1,216	1,290	1,318	1,318	2,027	3,144	4,123	5,394	5,394
10. Paligila	1,045	1,786	3,462	5,408	5,408	651	1,302	1,356	1,356	1,356	1,698	3,088	4,818	6,522	6,522
11. San Mateo	4,706	6,648	8,130	8,130	8,130	3,641	5,743	7,844	7,833	7,193	8,347	12,300	15,974	15,963	15,323
12. Tanay	3,225	6,039	9,425	13,868	13,868	1,280	2,559	2,662	2,662	2,574	4,504	8,598	12,087	16,542	16,542
13. Taytay	6,453	7,895	7,895	7,895	7,895	37,383	35,256	33,120	36,304	36,380	43,846	42,951	40,815	42,999	44,075
14. Teresa	713	1,219	1,832	2,634	2,634	370	739	730	730	686	1,082	1,958	2,562	3,320	3,320
<b>TOTAL</b>	89,739	161,015	135,465	202,374	229,738	840,702	880,109	919,517	840,092	855,304	930,441	1,041,124	1,102,982	1,042,468	1,064,941

TABLE 13.4.40 SUMMARY OF GROUNDWATER DISCHARGE (SCENARIO 4)

SYSTEM	DRESS WELL										PRIVATE WELL										TOTAL							
	1980	1995	2000	2005	2010	1990	1995	2000	2005	2010	1980	1995	2000	2005	2010	1990	1995	2000	2005	2010	1990	2000	2005	2010				
I. NCR	32,961	44,898	44,898	44,898	44,898	640,937	696,079	751,221	737,240	767,418	673,898	740,977	786,119	782,138	812,336	12,665	20,491	28,317	27,325	27,812	28,491	28,317	27,325	27,812	28,491	28,317	27,325	27,812
1. Manila	0	0	0	0	0	12,665	20,491	28,317	27,925	27,812	12,665	20,491	28,317	27,925	27,812	12,665	20,491	28,317	27,925	27,812	12,665	20,491	28,317	27,925	12,665	20,491	28,317	27,925
2. Pasay City	4,461	5,082	5,082	5,082	5,082	17,997	19,461	20,965	19,172	18,996	22,458	24,563	26,047	25,254	22,078	22,458	24,563	26,047	25,254	22,078	22,458	24,563	26,047	25,254	22,458	24,563	26,047	25,254
3. Quezon City	14,186	18,328	18,328	18,328	18,328	91,324	86,756	82,189	82,643	83,471	105,510	105,082	100,515	100,969	101,797	105,510	105,082	100,515	100,969	101,797	105,510	105,082	100,515	100,969	105,510	105,082	100,515	100,969
4. Calookan City	0	0	0	0	0	27,476	35,836	44,197	37,493	31,984	27,476	35,836	44,197	37,493	31,984	27,476	35,836	44,197	37,493	31,984	27,476	35,836	44,197	37,493	27,476	35,836	44,197	37,493
5. Las Pinas	1,527	1,794	1,794	1,794	1,794	81,778	75,933	69,923	64,628	70,083	83,305	77,587	71,581	66,362	71,317	83,305	77,587	71,581	66,362	71,317	83,305	77,587	71,581	66,362	83,305	77,587	71,581	66,362
6. Makati	3,772	7,360	7,360	7,360	7,360	25,179	24,031	22,883	21,041	21,160	26,951	31,381	30,243	28,401	28,520	26,951	31,381	30,243	28,401	28,520	26,951	31,381	30,243	28,401	26,951	31,381	30,243	28,401
7. Malabon	554	1,244	1,244	1,244	1,244	16,473	23,926	29,380	26,545	24,258	19,027	25,170	30,524	27,789	25,502	19,027	25,170	30,524	27,789	25,502	19,027	25,170	30,524	27,789	19,027	25,170	30,524	27,789
8. Mandaluyong	0	0	0	0	0	8,978	9,737	10,497	10,500	10,566	8,978	9,737	10,497	10,500	10,566	8,978	9,737	10,497	10,500	10,566	8,978	9,737	10,497	10,500	8,978	9,737	10,497	10,500
9. Marikina	0	0	0	0	0	13,573	14,899	16,224	18,233	20,266	13,573	14,899	16,224	18,233	20,266	13,573	14,899	16,224	18,233	20,266	13,573	14,899	16,224	18,233	13,573	14,899	16,224	18,233
10. Muntinlupa	3,777	7,019	7,019	7,019	7,019	31,613	89,454	87,289	86,448	94,464	97,395	96,473	94,308	93,467	101,483	97,395	96,473	94,308	93,467	101,483	97,395	96,473	94,308	93,467	97,395	96,473	94,308	93,467
11. Navotas	106	313	313	313	313	4,051	4,763	5,475	4,855	4,911	4,157	5,076	5,788	5,168	5,224	4,157	5,076	5,788	5,168	5,224	4,157	5,076	5,788	5,168	4,157	5,076	5,788	5,168
12. Paranaque	1,147	1,768	1,768	1,768	1,768	70,158	67,727	65,295	58,812	61,791	71,305	69,485	67,063	60,580	63,559	71,305	69,485	67,063	60,580	63,559	71,305	69,485	67,063	60,580	71,305	69,485	67,063	60,580
13. Pasig	49	256	256	256	256	75,958	89,586	103,233	115,924	129,951	76,007	89,852	103,489	116,180	130,207	76,007	89,852	103,489	116,180	130,207	76,007	89,852	103,489	116,180	76,007	89,852	103,489	116,180
14. Patros	0	0	0	0	0	1,756	4,325	6,895	5,841	5,145	1,756	4,325	6,895	5,841	5,145	1,756	4,325	6,895	5,841	5,145	1,756	4,325	6,895	5,841	1,756	4,325	6,895	5,841
15. San Juan	0	0	0	0	0	408	1,157	1,806	1,806	1,898	408	1,157	1,806	1,806	1,898	408	1,157	1,806	1,806	1,898	408	1,157	1,806	1,806	408	1,157	1,806	1,806
16. Taguig	640	847	847	847	847	66,387	79,444	92,521	89,534	93,367	67,007	80,291	93,368	90,381	94,214	67,007	80,291	93,368	90,381	94,214	67,007	80,291	93,368	90,381	67,007	80,291	93,368	90,381
17. Valenzuela	742	949	949	949	949	33,180	48,604	64,028	66,738	69,394	33,322	49,553	64,977	67,887	70,343	33,322	49,553	64,977	67,887	70,343	33,322	49,553	64,977	67,887	33,322	49,553	64,977	67,887
II. CAVITE	26,970	45,921	64,675	80,324	98,894	37,927	58,687	59,408	49,835	45,823	84,897	104,588	124,283	129,958	144,517	84,897	104,588	124,283	129,958	144,517	84,897	104,588	124,283	129,958	84,897	104,588	124,283	129,958
11. Bacoor	6,314	7,556	7,556	7,556	7,556	32,210	23,951	15,893	10,190	10,806	38,524	31,507	23,249	17,746	18,362	38,524	31,507	23,249	17,746	18,362	38,524	31,507	23,249	17,746	38,524	31,507	23,249	17,746
12. Cavite City	6,714	11,869	16,270	25,006	31,521	4,328	7,553	10,778	9,081	7,883	11,042	19,422	29,048	34,087	39,504	11,042	19,422	29,048	34,087	39,504	11,042	19,422	29,048	34,087	11,042	19,422	29,048	34,087
13. Imus	1,654	9,014	16,374	22,181	30,733	4,443	8,583	12,683	11,955	8,904	6,097	17,577	28,057	33,537	39,537	6,097	17,577	28,057	33,537	39,537	6,097	17,577	28,057	33,537	6,097	17,577	28,057	33,537
14. Kawit	4,329	7,183	10,037	10,625	10,688	2,630	2,689	2,548	1,399	301	7,159	9,872	12,585	11,823	10,989	7,159	9,872	12,585	11,823	10,989	7,159	9,872	12,585	11,823	7,159	9,872	12,585	11,823
15. Noveleta	7,070	7,070	7,070	7,070	7,070	5,658	4,087	2,475	1,579	1,042	12,729	11,137	9,545	8,649	8,112	12,729	11,137	9,545	8,649	8,112	12,729	11,137	9,545	8,649	12,729	11,137	9,545	8,649
16. Rosario	688	3,223	5,569	7,885	11,326	8,457	11,644	15,231	16,231	16,687	9,346	15,073	20,800	24,116	28,012	9,346	15,073	20,800	24,116	28,012	9,346	15,073	20,800	24,116	9,346	15,073	20,800	24,116
III. RIZAL	29,908	54,159	84,734	103,549	128,964	141,938	165,915	189,091	199,009	209,323	171,646	220,113	274,725	302,556	338,286	171,646	220,113	274,725	302,556	338,286	171,646	220,113	274,725	302,556	171,646	220,113	274,725	302,556
11. Angono	0	0	0	0	0	1,210	2,419	2,592	2,592	2,516	2,516	2,419	2,592	2,592	2,516	2,516	2,419	2,592	2,592	2,516	2,516	2,419	2,592	2,592	2,516	2,419	2,592	2,592
12. Antipolo	11,621	16,767	26,858	29,142	33,213	44,155	45,264	46,373	52,402	57,386	55,776	82,031	73,230	81,545	90,589	55,776	82,031	73,230	81,545	90,589	55,776	82,031	73,230	81,545	55,776	82,031	73,230	81,545
13. Baras	145	291	642	1,185	1,185	329	658	708	731	731	474	949	1,350	1,896	1,896	474	949	1,350	1,896	1,896	474	949	1,350	1,896	474	949	1,350	1,896
14. Binangonan	6,388	16,775	25,501	36,974	44,443	2,610	5,620	5,671	5,250	5,250	11,188	22,395	31,172	42,124	42,124	11,188	22,395	31,172	42,124	42,124	11,188	22,395	31,172	42,124	11,188	22,395	31,172	42,124
15. Calamba	3,785	4,786	5,786	5,786	5,786	48,619	61,036	73,454	75,421	80,308	52,404	65,822	79,240	81,207	86,094	52,404	65,822	79,240	81,207	86,094	52,404	65,822	79,240	81,207	52,404	65,822	79,240	81,207
16. Cardona	485	971	1,347	1,347	1,347	582	1,164	1,164	1,164	1,178	582	1,164	1,164	1,164	1,178	582	1,164	1,164	1,164	1,178	582	1,164	1,164	1,164	582	1,164	1,164	1,164
17. Jala-Jala	207	414	911	1,646	1,646	305	608	638	638	632	632	1,264	1,549	2,278	2,278	632	1,264	1,549	2,278	2,278	632	1,264	1,549	2,278	632	1,264	1,549	2,278
18. Montalban	3,243	4,499	6,565	6,565	6,565	8,030	8,437	8,845	9,323	9,620	11,273	12,936	15,430	15,908	16,205	11,273	12,936	15,430	15,908	16,205	11,273	12,936	15,430	15,908	11,273	12,936	15,430	15,908
19. Morong	964	1,928	2,893	4,076	4,076	608	1,216	1,290	1,348	1,348	1,572	3,144	4,123	5,394	5,394	1,572	3,144	4,123	5,394	5,394	1,572	3,144	4,123	5,394	1,572	3,144	4,123	5,394
110. Pili	893	1,786	3,462	5,108	5,108	651	1,302	1,556	1,556	1,544	1,544	3,088	4,632	6,176	6,176	1,544	3,088	4,632	6,176	6,176	1,544	3,088	4,632	6,176	1,544	3,088	4,632	6,176
111. San Mateo	4,706	6,362	8,368	8,368	8,368	3,641	6,020	8,399	8,488	7,966	9,347	12,382	16,787	16,876	18,354	9,347	12,382	16,787	16,876	18,354	9,347	12,382	16,787	16,876	9,347	12,382	16,787	16,876
112. Taytay	3,019	6,039	9,425	13,968	13,968	1,290	2,580	2,580	2,580	2,574	2,574	5,148	7,722	10,296	12,870	2,574	5,148	7,722	10,296	12,870	2,574	5,148	7,722	10,296	2,574	5,148	7,722	10,296
113. Trese	6,453	7,074	7,695																									

TABLE 13.5.1 NUMBER OF CONNECTIONS AND WATER CONSUMPTION IN THE ANTIPOLO BASIN

AREA	NO. OF CONNECTIONS					WATER CONSUMPTION (M <sup>3</sup> /D)				
	DOM.	P.F.	COM.	IND.	TOTAL	DOM.	P.F.	COM.	IND.	TOTAL
ANTIPOLO MUNICIPALITY	4445	1	223	44	4713	3606	4	533	1565	5707
ANTIPOLO BASIN	3535	3	172	28	3738	2962	10	270	46	3288
SHARE (%)	79.5	300	77.1	63.6	79.3	82.1	250	50.7	2.9	57.6

Note: Data on P.F. may be processed improperly. But its influence is negligible.

Source: Computer Service Center, MWSS

TABLE 13.5.2 GROUNDWATER DISCHARGE IN THE ANTIPOLO BASIN (1990)

(UNIT: MCM)

OWNER	NO. OF WELLS	DISCHARGE	USE		
			DOM.	COM.	IND.
MWSS	10	3.5803	1.1884	0.1119	0.0190
PRIVATE	26	3.5210	2.2591	0.2209	1.0410
TOTAL	36	7.1013	3.4475	0.3328	1.0600
DAILY (M <sup>3</sup> /D)		19,456	9,445	912	2,904
MWSS %	27.7	50.4	34.5	33.6	1.8

Source: Study Team



TABLE 13.5.3 PROJECTED MWSS SERVED POPULATION

BARANGAY/ MUNICIPALITY	POPULATION WITHIN STUDY AREA					SERVICE RATIO (%)					POPULATION WITHIN SERVICE AREA					
	1990	1995	2000	2005	2010	1995:2000	2000:2005	2005:2010	1995	2000	2005	2010	1995	2000	2005	2010
1. Bagong Nayon	14,402	18,115	22,117	26,202	30,110	0	0	0	0	0	0	0	0	0	0	0
2. Santa Cruz	9,338	11,763	14,377	17,044	19,597	0	30	50	70	0	4,313	8,522	13,718	18,515	23,483	28,515
3. De La Paz	21,033	26,441	32,269	38,215	43,906	70	80	85	90	18,509	25,815	32,483	39,515	46,515	53,515	60,515
4. Beverly Hills	1,034	1,385	1,767	2,161	2,532	90	90	95	100	1,247	1,590	2,053	2,532	3,015	3,498	3,981
5. San Roque	17,227	21,673	26,465	31,355	36,034	60	80	90	95	13,004	21,172	28,220	34,232	40,244	46,256	52,268
6. Dalig	14,241	17,896	21,843	25,869	29,723	70	80	90	95	12,527	17,474	23,282	28,237	33,192	38,147	43,102
7. San Jose	13,061	16,408	20,014	23,693	27,214	70	90	90	95	11,485	18,013	21,323	25,653	29,983	34,313	38,643
8. San Isidro	19,260	24,220	29,566	35,020	40,240	40	60	70	80	9,688	17,740	24,514	32,192	39,870	47,548	55,226
9. San Luis	3,121	3,955	4,856	5,777	6,656	0	70	90	95	0	3,369	5,189	6,323	7,457	8,591	9,725
SUB-TOTAL	112,717	141,856	173,274	205,335	236,012	47	63	71	77	86,460	109,516	145,596	182,603	219,653	256,703	293,753
10. Taytay	7,970	9,181	10,517	12,268	13,978	50	50	50	50	4,591	5,259	6,134	6,969	7,844	8,719	9,594
11. Angono	1,750	2,225	2,705	3,470	4,189	0	40	50	100	0	1,082	1,735	2,388	3,041	3,694	4,347
12. Binangonan	700	833	958	1,155	1,334	0	0	0	100	0	0	0	1,334	2,668	4,002	5,336
13. Teresa	210	234	256	289	318	0	0	0	100	0	0	0	318	636	954	1,272
SUB-TOTAL	10,630	12,473	14,436	17,182	19,819	37	44	46	65	4,591	6,341	7,869	9,830	11,780	13,729	15,679
TOTAL	123,347	154,329	187,710	222,517	255,831	46	62	69	76	71,050	115,857	153,465	195,433	231,433	268,432	301,432

TABLE 13.5.4 DOMESTIC DEMAND PROJECTION IN THE ANTIPOLO BASIN

POPULATION SYSTEM	POPULATION WITHIN THE BASIN					WSS SERVED POPULATION					P.C.W.D. (2000)					WSS DOMESTIC WATER DEMAND (M <sup>3</sup> /D)					OTHER DOM. DEMAND IN BASIN					TOTAL DOM. DEMAND IN BASIN (M <sup>3</sup> /D)				
	1995	2000	2005	2010	1995	2000	2005	2010	1995	2000	2005	2010	1995	2000	2005	2010	1995	2000	2005	2010	1995	2000	2005	2010	1995	2000	2005	2010		
1. Baguio Mayor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2. Santa Cruz	5,041	5,161	7,305	8,399	0	4,313	8,522	10,718	138	149	155	162	0	643	1,321	2,222	2,222	0	0	0	0	0	0	0	556	518	1,321	2,222		
3. De la Paz	21,353	25,815	30,572	35,125	18,509	25,815	32,463	39,515	138	149	155	162	2,554	3,816	5,005	6,401	6,401	0	0	0	0	0	0	0	2,919	3,846	5,035	6,401		
4. Beverly Hills	0	0	0	0	1,247	1,590	2,053	2,532	138	149	155	162	172	237	318	410	410	0	0	0	0	0	0	0	0	172	237	318	410	
5. San Roque	19,866	23,819	28,220	32,431	13,004	17,474	22,282	28,237	138	149	155	162	1,795	3,155	4,374	5,546	5,546	0	0	0	0	0	0	0	2,692	3,549	4,374	5,546		
6. Dalig	17,889	21,843	25,889	29,923	12,527	17,474	22,282	28,237	138	149	155	162	1,795	2,604	3,509	4,514	4,514	0	0	0	0	0	0	0	2,470	3,255	4,010	4,815		
7. San Jose	16,408	20,034	23,693	27,211	11,485	15,013	19,323	23,463	138	149	155	162	1,585	2,684	3,305	4,188	4,188	0	0	0	0	0	0	0	2,254	2,982	3,672	4,403		
8. San Isidro	19,376	23,653	28,016	32,192	9,688	12,740	16,514	20,192	138	149	155	162	1,331	2,643	3,800	5,215	5,215	0	0	0	0	0	0	0	2,674	3,524	4,342	5,215		
9. San Luis	3,955	4,855	5,777	6,655	0	3,399	5,199	6,923	138	149	155	162	0	506	806	1,024	1,024	0	0	0	0	0	0	0	0	545	724	895	1,078	
SUB-TOTAL	103,335	126,151	149,451	171,740	66,460	109,516	145,596	182,603	138	149	155	162	9,171	16,318	22,557	29,582	29,582	0	0	0	0	0	0	0	14,433	19,035	23,368	30,097		
10. Taytay	0	0	0	0	4,591	5,259	6,134	6,983	180	187	193	200	826	983	1,184	1,338	1,338	0	0	0	0	0	0	0	826	983	1,184	1,338		
11. Angono	3,225	3,785	4,409	5,000	0	1,082	1,735	2,489	141	150	161	170	0	173	314	489	699	0	0	0	0	0	0	0	314	433	528	659		
12. Binangonan	833	956	1,155	1,334	0	0	0	1,334	141	150	161	170	0	0	0	0	0	0	0	0	0	0	0	0	117	154	209	273		
13. Perena	234	256	289	318	0	0	0	318	141	150	161	170	0	0	0	0	0	0	0	0	0	0	0	0	33	41	52	65		
SUB-TOTAL	3,292	3,915	4,914	5,641	4,591	6,341	7,869	10,830	180	187	193	200	826	1,136	1,498	1,835	1,835	0	0	0	0	0	0	0	1,230	1,610	2,073	2,595		
TOTAL	106,627	130,066	154,365	177,381	71,050	115,857	153,465	193,433	141	151	157	165	9,998	17,454	24,055	32,177	32,177	0	0	0	0	0	0	0	15,663	20,645	25,441	32,692		

NOTE: Served population includes served population by the system outside of the basin.

TABLE 13.5.5 WATER DEMAND PROJECTION IN THE ANTIPOLO BASIN

BARANGAY/ MUNICIPALITY	1995					2000					2005					2010				
	DOM.	CON.	IND.	LOSS.	TOTAL	DOM.	CON.	IND.	LOSS.	TOTAL	DOM.	CON.	IND.	LOSS.	TOTAL	DOM.	CON.	IND.	LOSS.	TOTAL
1. Bagong Nayon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Santa Cruz	596	0	0	0	595	918	28	3	284	1,221	1,321	31	5	452	1,809	2,222	45	7	758	3,032
3. De la Paz	2,919	100	19	1,145	4,183	3,846	105	17	1,475	5,443	5,035	117	18	1,321	6,491	6,491	129	19	1,789	8,339
4. Beverly Hills	172	7	1	77	257	237	6	1	105	349	318	7	1	109	435	410	8	1	140	560
5. San Roque	2,632	221	13	101	3,027	3,519	237	14	691	4,491	4,374	253	16	1,001	5,644	5,846	263	17	1,344	7,169
6. Dalig	2,470	67	13	500	3,050	3,255	71	11	220	3,557	4,010	84	13	511	4,618	4,815	92	14	335	5,756
7. San Jose	2,264	62	2,818	711	5,855	2,982	73	2,818	1,187	7,050	3,672	77	2,819	1,141	7,699	4,409	84	2,819	1,428	8,741
8. San Isidro	2,674	506	10	599	3,789	3,324	526	11	1,169	5,230	4,342	543	14	1,301	6,199	5,215	559	16	1,779	7,568
9. San Luis	546	0	0	0	546	724	14	2	224	953	895	19	3	276	1,193	1,078	21	3	343	1,451
SUB-TOTAL	14,432	963	2,873	3,134	21,402	19,035	1,050	2,878	5,354	28,316	23,968	1,132	2,888	6,101	34,089	30,097	1,200	2,896	8,414	42,607
10. Taytay	826	32	6	371	1,235	933	21	4	435	1,449	1,194	28	4	405	1,621	1,398	23	4	477	1,907
11. Angono	314	0	45	0	359	433	5	46	77	560	628	7	46	97	779	859	17	46	101	1,024
12. Binangonan	117	0	0	0	117	153	0	0	0	153	209	0	0	0	209	273	6	1	33	373
13. Teresa	33	0	0	0	33	41	0	0	0	41	52	0	0	0	52	65	1	0	22	89
SUB-TOTAL	1,290	32	51	371	1,744	1,610	32	50	511	2,203	2,073	35	51	502	2,561	2,555	52	53	693	3,393
TOTAL	15,723	995	2,925	3,505	23,147	20,645	1,081	2,928	5,865	30,520	26,041	1,167	2,939	6,603	36,749	32,652	1,252	2,949	9,107	45,000

NOTE: Served population includes served population by the system outside of the basin.

TABLE 13.5.6 WATER DEMAND PROJECTION IN THE MWSS SERVICE AREA

BARANGAY/ MUNICIPALITY	1995				2000				2005				2010			
	DOM.	CON.	IND.	LOSS.	TOTAL	DOM.	CON.	IND.	LOSS.	TOTAL	DOM.	CON.	IND.	LOSS.	TOTAL	
1. Bagong Bayan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2. Santa Cruz	0	0	0	0	0	543	3	284	947	1,321	1,321	31	5	452	1,809	
3. De La Paz	2,554	100	19	1,145	3,818	3,846	105	1,475	5,443	5,035	6,401	129	19	1,780	8,330	
4. Beverly Hills	172	7	1	77	257	237	6	105	349	318	410	8	1	140	560	
5. San Roque	1,735	221	13	101	2,130	3,155	237	631	4,097	4,374	5,546	253	17	1,344	7,169	
6. Dalig	1,729	67	13	500	2,309	2,604	71	220	2,905	3,509	4,574	92	14	836	5,516	
7. San Jose	1,585	62	11	711	2,369	2,684	73	1,187	6,762	3,305	4,188	84	2,819	1,428	8,320	
8. San Isidro	1,337	52	10	599	1,998	2,643	526	1,169	4,349	3,800	5,215	559	16	1,779	7,568	
9. San Luis	0	0	0	0	0	506	14	224	746	805	1,024	21	3	349	1,397	
SUB-TOTAL	9,171	509	66	3,134	12,881	16,318	1,050	2,878	25,599	22,557	29,582	1,200	2,896	8,414	42,092	
10. Taytay	826	32	6	371	1,235	983	27	435	1,449	1,184	1,398	28	4	477	1,907	
11. Angono	0	0	0	0	0	173	5	77	300	314	859	17	48	101	1,024	
12. Binangonan	0	0	0	0	0	0	0	0	0	0	273	5	1	93	373	
13. Teresa	0	0	0	0	0	0	0	0	0	0	65	1	0	22	89	
SUB-TOTAL	826	32	6	371	1,235	1,156	32	511	1,750	1,498	2,595	52	53	693	3,353	
TOTAL	9,998	541	72	3,505	14,116	17,474	1,081	2,928	27,349	24,055	32,177	1,252	2,949	9,107	45,465	
SERVICE RATIO (%)	64	39	2	100	61	85	100	100	90	92	98	100	100	100	99	

NOTE: Served population includes served population by the system outside of the basin.

TABLE 13.5.7 PROJECTED NET WATER DEMAND TO MWSS SYSTEM

BARANGAY/ MUNICIPALITY	1995				2000				2005				2010								
	DOM.	CON.	IND.	LOSS.	TOTAL	DOM.	CON.	IND.	LOSS.	TOTAL	DOM.	CON.	IND.	LOSS.	TOTAL	DOM.	CON.	IND.	LOSS.	TOTAL	
1. Bagong Bayon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2. Santa Cruz	0	0	0	0	0	643	18	3	284	977	1,321	31	5	452	1,809	2,222	45	7	758	3,032	
3. De La Paz	2,554	100	19	1,145	3,818	3,319	105	17	1,475	4,915	3,827	117	18	1,321	5,233	5,193	129	19	1,780	7,122	
4. Beverly Hills	172	7	1	77	257	237	6	1	105	349	318	7	1	109	435	410	8	1	140	560	
5. San Roque	153	70	13	101	337	1,513	86	14	691	2,304	2,733	253	16	1,001	4,002	3,904	112	17	1,344	5,377	
6. Dalig	1,088	67	13	500	1,688	430	71	11	220	732	1,435	34	13	511	2,043	2,401	92	14	836	3,342	
7. San Jose	1,585	62	11	711	2,369	2,684	73	12	1,187	3,953	3,305	77	12	1,131	4,525	4,188	84	13	1,428	5,713	
8. San Isidro	1,337	52	10	599	1,998	2,643	72	11	1,169	3,895	3,800	89	14	1,301	5,203	5,215	105	16	1,779	7,114	
9. San Luis	0	0	0	0	0	505	14	2	224	745	805	19	3	275	1,103	1,024	21	3	349	1,397	
SUB-TOTAL	6,889	359	56	3,134	10,448	11,976	445	71	5,354	17,845	17,544	678	81	6,101	24,404	24,559	595	89	8,414	33,657	
10. Taytay	826	32	6	371	1,235	983	29	4	435	1,449	1,184	28	4	405	1,621	1,398	28	4	477	1,907	
11. Angono	0	0	0	0	0	173	5	1	77	255	282	7	1	97	387	282	17	3	101	492	
12. Binangonan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	273	5	1	93	373	
13. Teresa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	65	1	0	22	89	
SUB-TOTAL	826	32	6	371	1,235	1,156	32	5	511	1,704	1,466	35	5	502	2,008	2,018	52	8	693	2,771	
TOTAL	7,715	390	72	3,505	11,683	13,132	478	76	5,865	19,549	19,010	713	86	6,603	26,412	26,577	647	97	9,107	36,428	
SERVICE RATIO (%)																					
TO TOTAL DEMAND	49	39	2	100	50	64	44	3	100	64	73	61	3	100	72	81	52	3	100	79	
TO MWSS DEMAND	77	72	100	100	83	75	44	3	100	71	79	61	3	100	76	83	52	3	100	80	

NOTE: Served population includes served population by the system outside of the basin.

TABLE 13.5.8 WATER DEMAND AND SUPPLY IN THE ANTIPOLO BASIN  
(UNIT: CU.M/DAY)

ANTIPOLO BASIN															
MWSS SERVICE AREA															
DEMAND						SUPPLY									
YEAR	MWSS			PRIVATE WELL			REHAB. AUGMENT.			NET SHORTAGE					
	AVERAGE	DAILY	MAXIMUM	AVERAGE	DAILY	MAXIMUM	AVERAGE	DAILY	MAXIMUM	EX. WELL	PRIVATE WELL	REHAB. AUGMENT.	DAILY	AVERAGE	MAXIMUM
1990	19,456	9,809	9,647	--	--	--	9,809	2,434	--	--	--	--	--	--	--
1995	23,147	9,809	9,647	2,070	5,810	(4,189)	9,809	2,434	2,070	5,810	(6,007)	1,051			
1996	24,622	9,809	9,647	2,070	5,810	(2,714)	9,809	3,512	2,070	5,810	(4,439)	3,943			
1997	26,096	9,809	9,647	2,070	5,810	(1,240)	9,809	4,591	2,070	5,810	(2,871)	6,834			
1998	27,571	9,809	9,647	2,070	5,810	235	9,809	5,669	2,070	5,810	(1,303)	9,725			
1999	29,045	9,809	9,647	2,070	5,810	1,709	9,809	6,748	2,070	5,810	265	12,617			
2000	30,520	9,809	9,647	2,070	5,810	3,184	9,809	7,826	2,070	5,810	1,834	15,508			
2005	36,749	9,809	9,647	2,070	5,810	9,413	9,809	8,512	2,070	5,810	8,572	25,958			
2010	46,000	9,809	9,647	2,070	5,810	18,664	9,809	9,647	2,070	5,810	18,149	40,892			

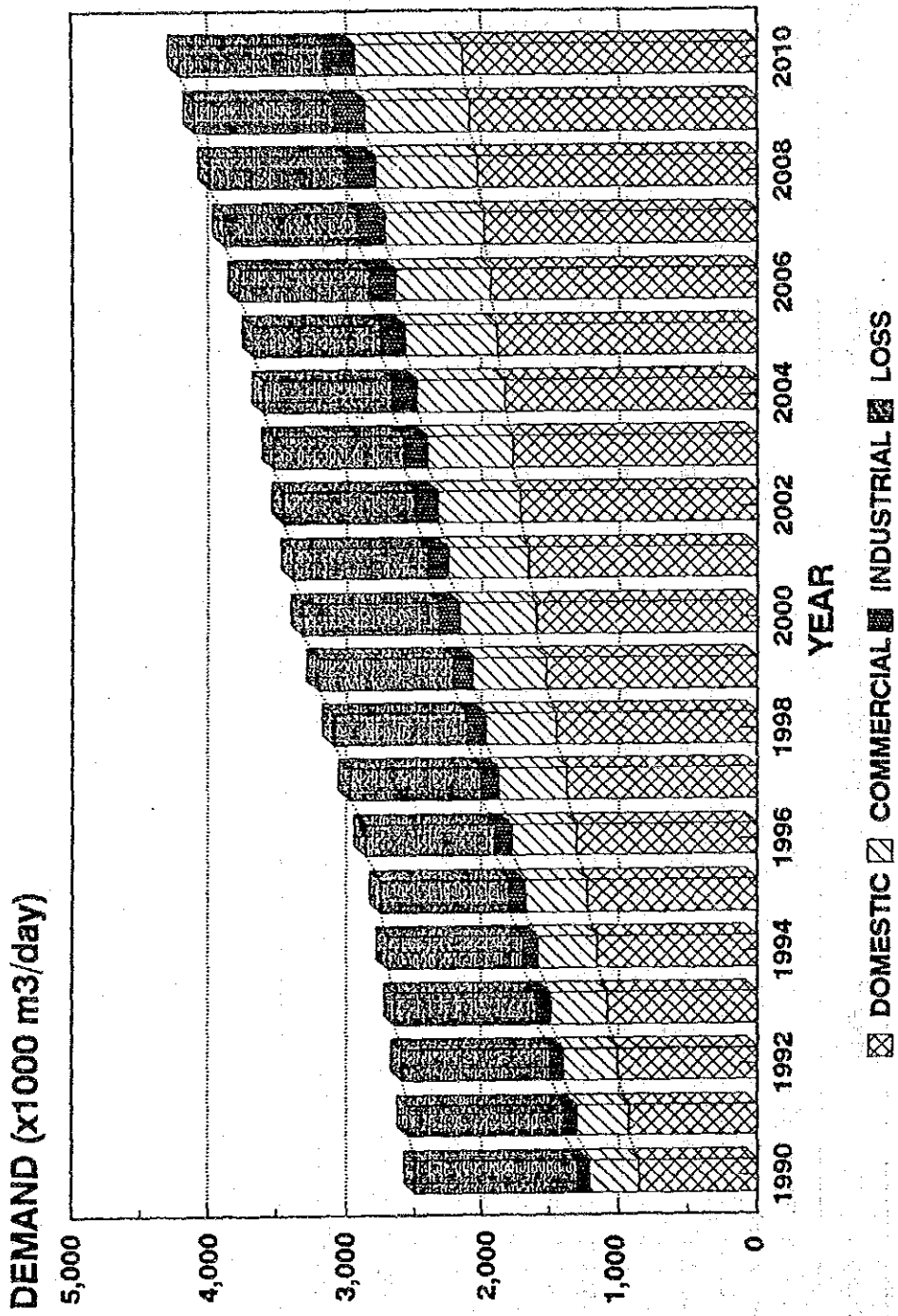


FIGURE 13.2.1 - MWSS WATER DEMAND

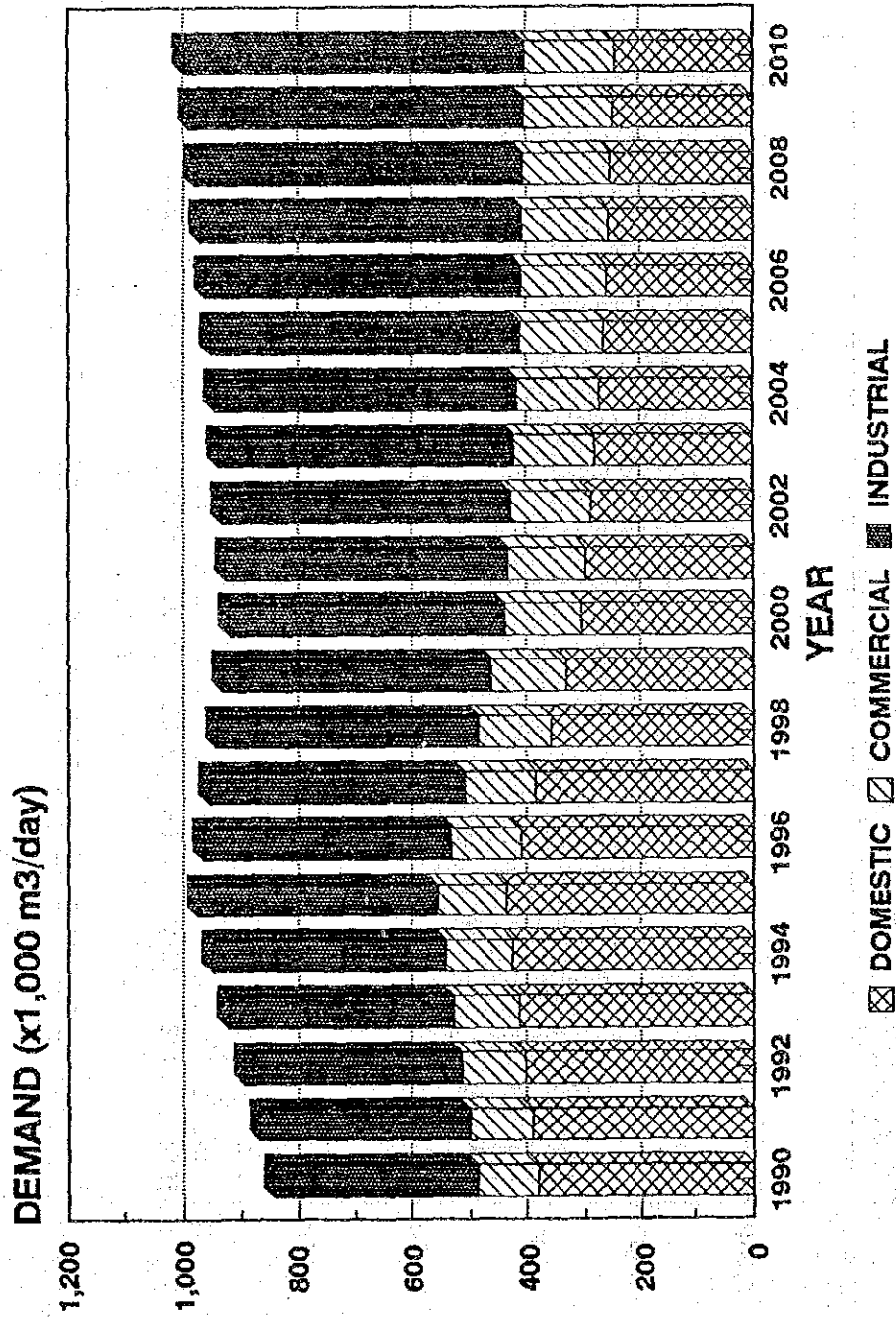


FIGURE 13.2.2 PRIVATE WATER DEMAND



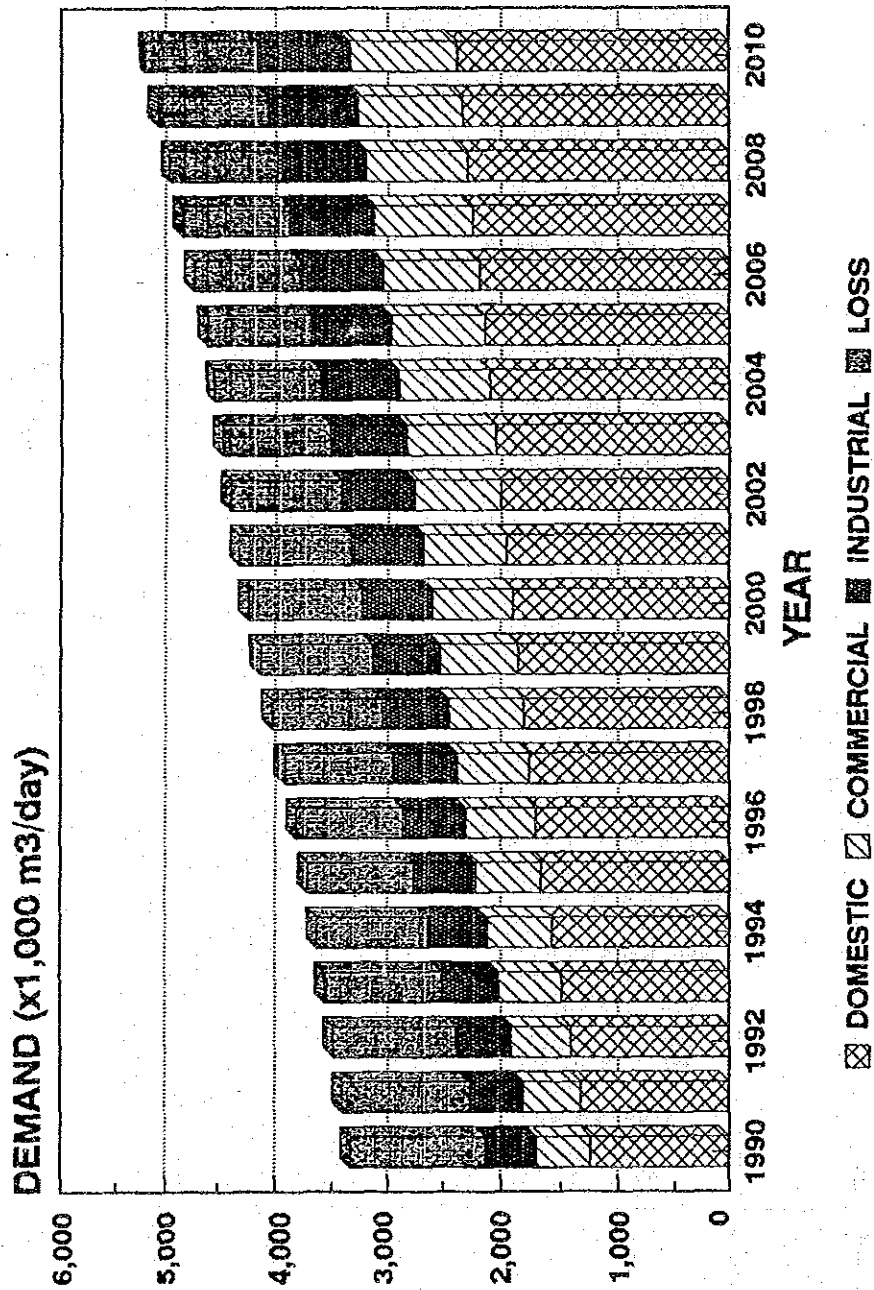
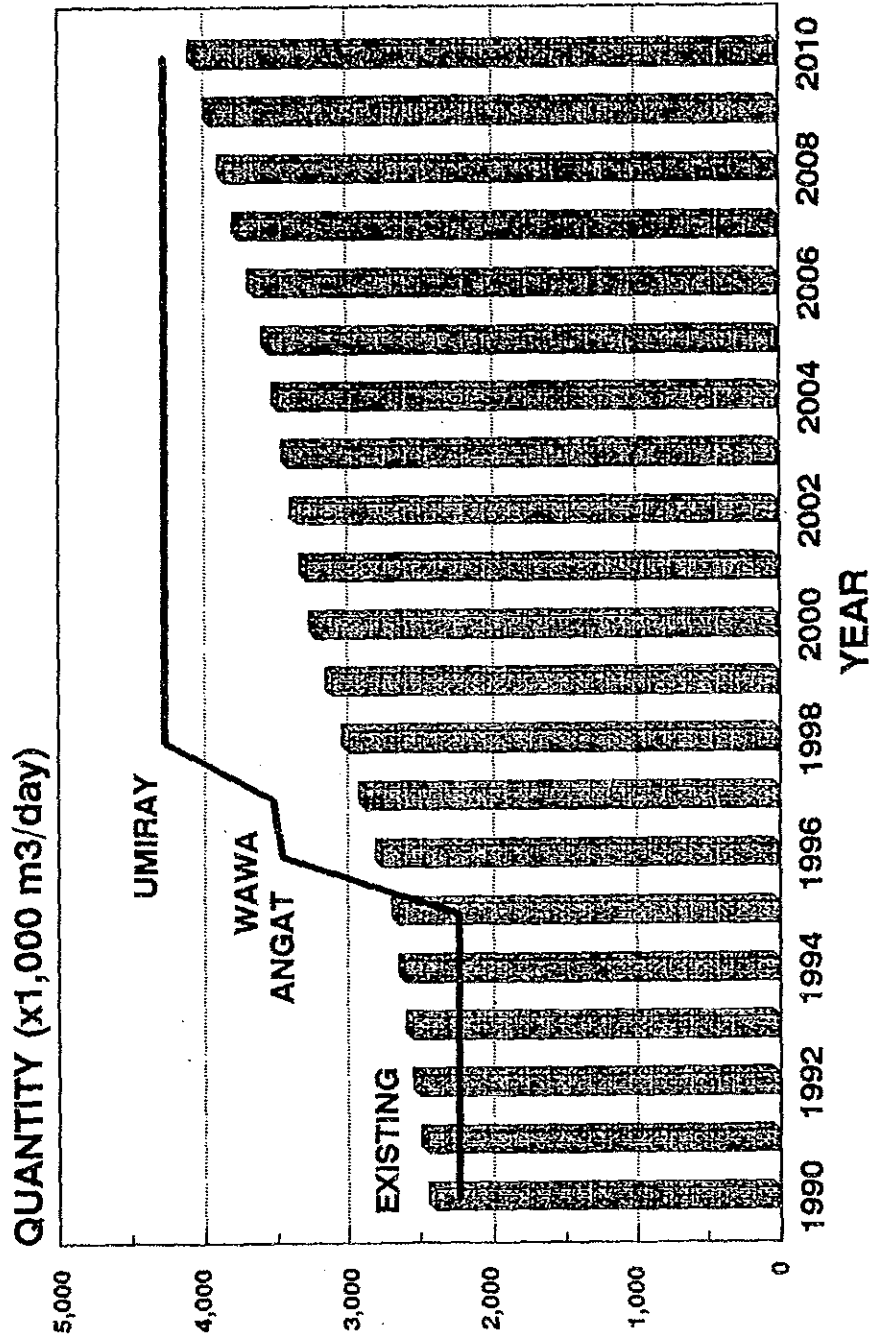
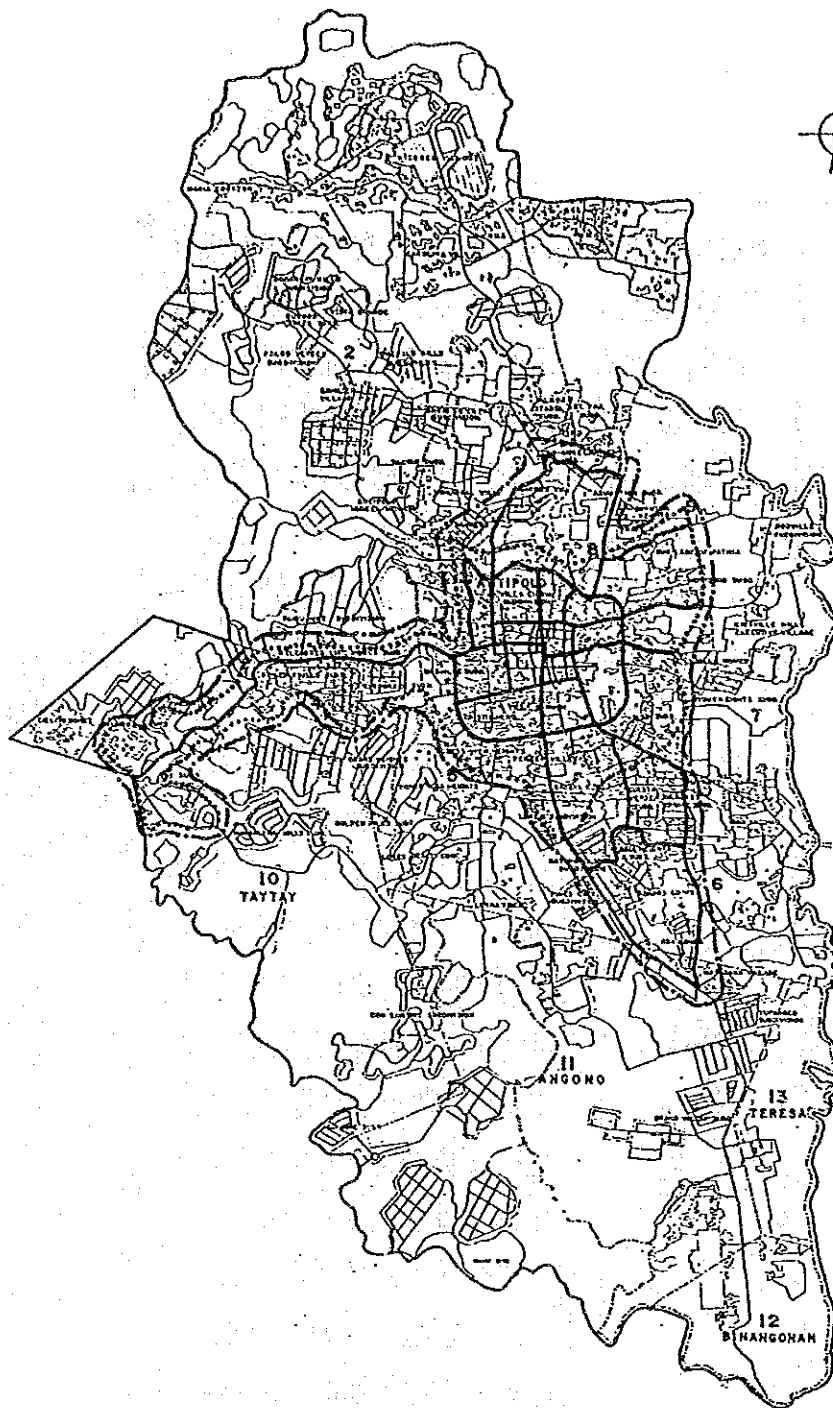


FIGURE 13.2.3 TOTAL WATER DEMAND (MWSS+PRIVATE)



**DEMAND (W/ CDS) PRODUCTION**

FIGURE 13.3.1 DEMAND VS. SUPPLY CAPACITY (WITHIN CDS)



**BARANGAY / MUNICIPALITY**

- 1. Bagong Nayon
- 2. Sta. Cruz
- 3. De la Paz
- 4. Beverly Hills
- 5. San Roque
- 6. Duff
- 7. San Jose
- 8. San Isidro
- 9. San Luis
- 10. Taytay
- 11. Angono
- 12. Sto. Domingo
- 13. Teresita

- STUDY AREA
- WATER BASIN BOUNDARY
- MUNICIPALITY BOUNDARY
- BARANGAY BOUNDARY

SCALE 0 500 1000 METERS

**LEGEND:**

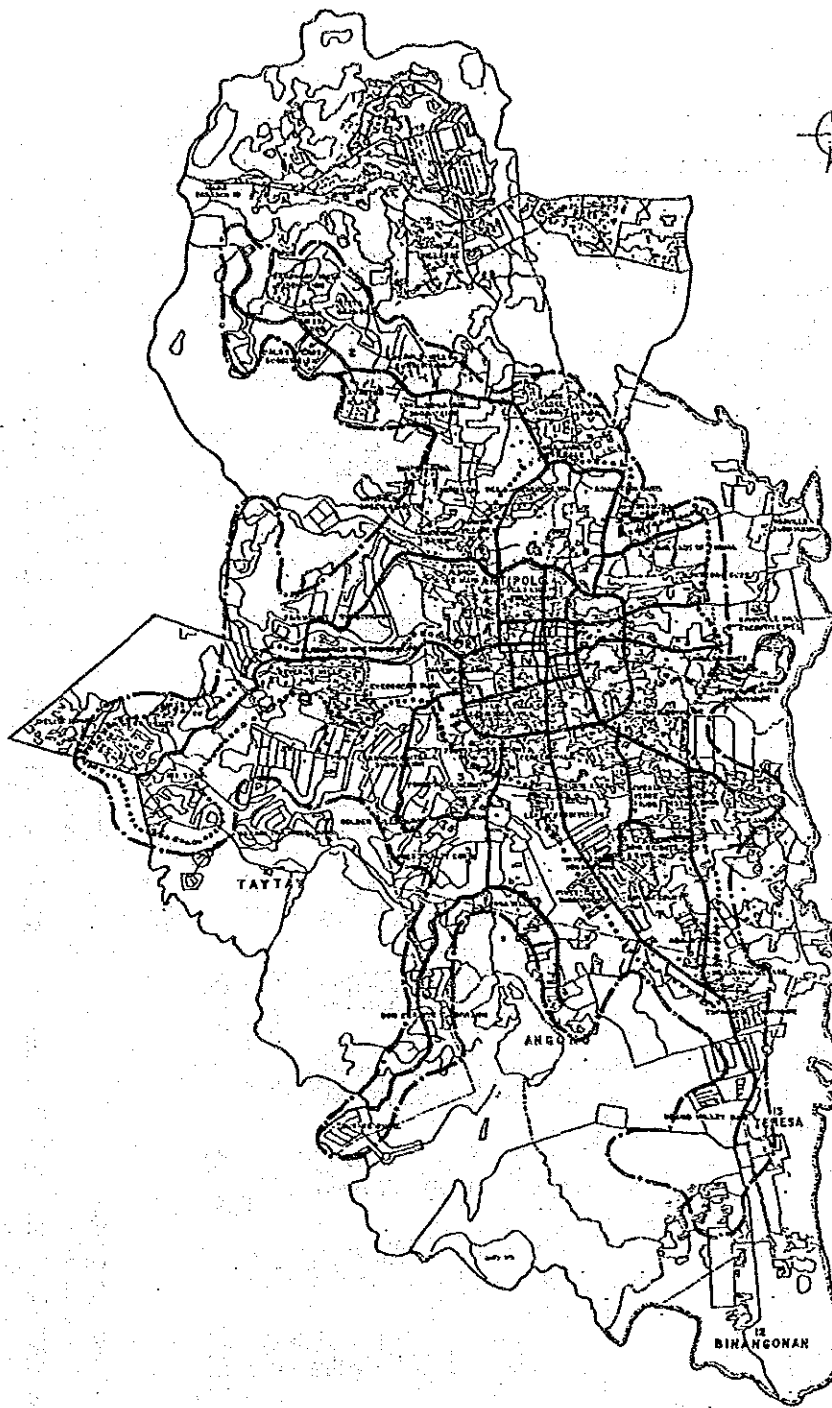
- PROPOSED PIPE LINE
- 1995 SERVICE COVERAGE
- 2000 SERVICE COVERAGE

STUDY FOR THE GROUNDWATER DEVELOPMENT IN METRO MANILA

JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE 13.5.1

MWSS SERVICE COVERAGE IN 1995, AND 2000



**BARANGAY / MUNICIPALITY**

- 1. Sampaguita
- 2. San Juan
- 3. San Miguel
- 4. San Roque
- 5. San Andres
- 6. San Antonio
- 7. San Bartolome
- 8. San Benito
- 9. San Francisco
- 10. San Isidro
- 11. San Jacinto
- 12. San Juan
- 13. San Lorenzo
- 14. San Mateo
- 15. Santa Cruz
- 16. Santa Rosa
- 17. San Vicente
- 18. Tandang Sora
- 19. Tatalon
- 20. Tia Alicia
- 21. Tia Mercedes
- 22. Tia Soledad
- 23. Tia Teresita
- 24. Tia Victoria
- 25. Tia Ysabel
- 26. Tia Zenaida
- 27. Tia Yolanda
- 28. Tia Ysabel
- 29. Tia Zenaida
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- 96. Tia Yolanda
- 97. Tia Zenaida
- 98. Tia Yolanda
- 99. Tia Zenaida
- 100. Tia Yolanda

- STUDY AREA
- ADJACENT BASIN ZONE
- MUNICIPALITY BOUNDARY
- BARANGAY BOUNDARY

SCALE 1:100,000

**LEGEND:**

- PROPOSED PIPE LINE
- 2000 SERVICE COVERAGE
- 2010 SERVICE COVERAGE

STUDY FOR THE GROUNDWATER DEVELOPMENT IN METRO MANILA

JAPAN INTERNATIONAL COOPERATION AGENCY

FIGURE 13.5.2

MWSS SERVICE COVERAGE IN 2010

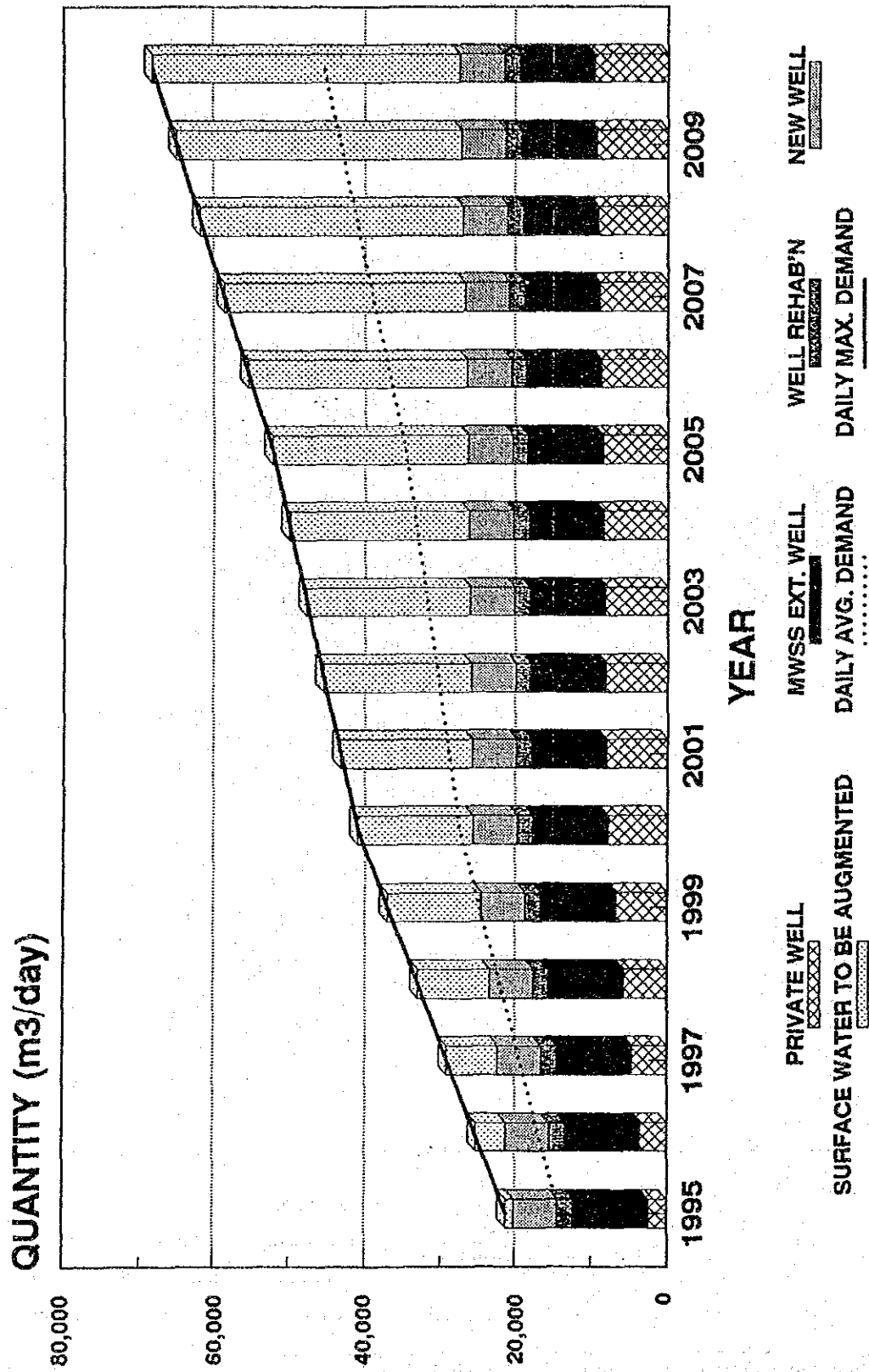


FIGURE 13.5.3 DEMAND VS. SUPPLY CAPACITY (WITHIN MWSS SERVICE AREA IN ANTIPOLO)

## APPENDICES



## APPENDICES

- APPENDIX A SURVEY ON LOCAL DRILLING CONTRACTORS
- APPENDIX B LIST OF COLLECTED DATA
- APPENDIX C ORGANIZATION AND MANAGEMENT
- APPENDIX D WATER DEMAND PROJECTION FOR BP799 AREA  
(UPDATED RPWSIP PROJECTION)
- APPENDIX E WATER DEMAND PROJECTION FOR FRINGE AREA  
(UPDATED FAWSP PROJECTION)
- APPENDIX F HYDRAULIC ANALYSIS ON DISTRIBUTION NETWORK
- APPENDIX G COST ESTIMATES FOR THE PROJECT





APPENDIX A

SURVEY ON

LOCAL DRILLING CONTRACTORS

THE UNIVERSITY OF CHICAGO PRESS

LIST OF TABLES

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1. THE ABILITIES AND CONDITIONS OF PRIVATE DRILLING COMPANIES .....	A-1
2. SCHEDULE OF VISITS .....	A-3
3. SELECTED COMPANIES .....	A-5
4. LOCATION OF OFFICE AND WELL SITES .....	A-7
5. QUESTIONNAIRE .....	A-8



Table THE ABILITIES AND CONDITIONS OF PRIVATE DRILLING COMPANIES

No.	COMPANY NAME	Regis- tration	Date of Estab- lishment	Annual Proceeds	Capital	Number of (Employees)	Warehouse & Repair Shop	Owned Drilling Machines	Core Drilling Machines	Submersible Pumps	Electric Logging	Well-Drilling	Core Rehabili- tation	Testing
1	Aqua-Line Resit Resources, Inc.	SEC BDI PCRB	May 16, 1989	P 2.5 M	P 1 R	32	225 m <sup>2</sup> 760 m <sup>2</sup> P 2 sets (Max 300 m)	R 3 sets (Max 760 m) P 2 sets (Max 300 m)	1 set (Max 800 m)	3 sets (Max 30 HP)	2 sets	Yes	Yes	Yes
2	Desco Holdings and Management, Inc.	SEC BDI	Dec. 18, 1974	P 37 M	P 20 M	202	3,500 m <sup>2</sup> 750 m <sup>2</sup>	R 5 sets (Max 750 m)	1 set (Max 90 m)	1 set	Yes	(Yes)	Yes	Yes
3	Diamond Drilling Corporation of the Philippines		June 8, 1971	P 8 M	P 10 M	110	1,500 m <sup>2</sup> 1,300 m <sup>2</sup>	R 20 sets (Max 1,300 m)	Non	Non	Non	(Yes)	Yes	No
4	Fieldman's Industrial Engineering and Machinery	BDI	1973	P 1.7 M	P 2.6 M	3	Non	Non	Non	Non	Non	(Yes)	No	(Yes)
5	Hydro-Well's Inc.	SEC PCRB	Feb. 25, 1982	P 14 M	P 14 M	110	1,500 m <sup>2</sup> 450 m <sup>2</sup> P 4 (300 m) S 3	R 6 sets (Max 450 m)	Non	17 units (Max 75 HP)	1 set	Yes	No	Yes
6	Island Arc Drilling Corporation	MWB Pending PCRB-LWA	Aug. 11, 1987	P 0.2 M	P 0.5 M	27	375 m <sup>2</sup> 350 m <sup>2</sup>	R 4 sets (Max 350 m)	4 sets (Max 350 m)	1 set (Max 50 GPM)	1 set (Max 50 GPM)	(Yes)	Yes	Yes
7	Metro Drillers, Inc.	SEC PCRB	1, 1981	P 2 M	P 2.4 M	20	75 m <sup>2</sup> 300 m <sup>2</sup> P 2 sets (Max 300 m)	R 1 set (Max 300 m)	Non	3 sets (Max 80 HP)	1 set (Rentall)	Yes	No	Yes
8	Hidex (Philis), Inc.	PCRB SEC	June 16, 1977	P 1 M	P 2.4 M	50	225 m <sup>2</sup> 300 m <sup>2</sup>	R 6 sets (Max 300 m)	6 sets (Max 300 m)	Non	Non	(Yes)	(Yes)	No

Table continued

No.	COMPANY NAME	Registration	Date of Establishment	Annual Proceeds	Capital	Number of Employees	Warehouse & Repair Shop	Owned Drilling Machines	Core Drilling Machines	Submersible Pumps	Electric Logging	Well-Drilling/Rehabilitation	Core Pumping
9	Orbit Wells Construction Corp.	NRAB	Sept. 1, 1980	P 6 M	P 0.5 M	25	300 m <sup>2</sup>	R 2 sets (Max 300 m) P 2 sets (Max )	Non	10 sets (Max 150 HP)	Non	Yes	Yes
10	F.I. Well Drilling Corporation	FCAB SEC	May 17, 1980	P 2 M	P 0.2 M	85	900 m <sup>2</sup>	R 6 sets (Max 340 m) P 1 set (Max 300 m)	Non	5 sets (Max )	Yes	Yes	Yes
11	Quick-Drill Engineering	LRWA FCAB No. 93991	June 21, 1986	P 20 M	P 5 M	18	400 m <sup>2</sup> (and Office)	R 4 sets (Max 300 m) P 1 (Max 240 m)	3 sets (Max 300 m)	9 units (Max 100 HP)	Yes	Yes	Yes
12	Service Contractors		1981	P 1 M	P 2.5 M	50	225 m <sup>2</sup> + 400 m <sup>2</sup> (in a park)	R 2 sets (Max 300 m) P 2 sets (Max 300 m)	R 1 set (Max 60 m)	7 sets (Max 135 HP)	Non	Yes	Yes
13	V.R. Romero Construction, Inc.	FCAB SEC NRAB	1982	P 7.5 M	P 20 M	27	300 m <sup>2</sup>	R 2 sets (Max 150 m) P 2 sets (Max )	Non	3 sets (Max 115 HP)	Yes	Yes	Yes

ABBREVIATION:

- SEC : Securities and Exchange Commission
- BDT : Bureau of Domestic Trade
- PCAB : Philippine Contractors Accreditation Board
- NRAB : National Water Resources Board
- LRWA : Local Water Utilities Administration
- DTI : Department of Trade and Industry
- WFC : National Power Corporation
- NRRC : National Water Resources Council

Filename:ARL1-COM.FRN

Table SCHEDULE OF VISITS

COMPANY NAME	OFFICE	WORKSHOP OR REPAIR HOUSE	WELL-SITE	REMARKS QUESTIONNAIRE SHEET
1. Quick-Drill Engineering	9/10, 9/13	9/10	9/12 Antipolo	OK
2. Hydro-well Inc.	9/11, 9/14 9/17	9/11	9/14 Quezon City	OK
3. P.I. Well Drilling Corporation	(10/3), 10/5 10/8	10/5	10/5 Valenzuela	OK
4. Orbit Wells Construction Co.	9/21, 9/26	9/21	9/26 Pasig	OK
5. Aqua-Line Inc.	9/18, 9/20 9/25	9/25	9/25 Cainta	OK
6. Pioneer Well Drilling	9/21	Non	Non	X
7. Island Arch Drilling Corp.	9/12, (9/18) 9/20	9/12	Too far	OK
8. Service Contractors (SERCON)	9/24, 9/27	9/24	9/27 Las Pinas	OK
9. Fieldman's Industrial E & M	9/11, 9/14 9/17, 9/20	Non	Non	OK
10. V.R. Romero Construction Co.	(9/10), 9/24 9/26	9/24	9/26 Paranaque	OK
11. MIDEK (Phils.) Inc.	9/27, 10/2	9/27	9/29 Antipolo Quisao	OK
12. Diamond Drilling Corp. of the Phils.	9/13, 9/19	9/13	Too far	OK
13. Drilling Equipment Supply Co. (DESCO)	9/13, 9/19	9/13	9/19 Taytay	OK
14. Metro Drillers	9/25, (9/28) 10/1	10/1	10/1 Sucat, Paranaque	OK

Filename:CO-NAME



1. Anson's Drilling and Machinery Enterprises
2. Acoje Oil Exploration and Drilling Co., Inc.
3. Aquatech Industrial Corp.
4. Allied Drilling and pumps Co., Inc.
5. Alpha Tierra Management Corp.
6. Aqua-Line Inc.
7. Aquarius Well Drilling
8. ARGO Systems Inc.
9. Asia Soil Test, Inc.
10. Bago Bantay Well Drilling
11. Bezotte Diamond Core Drilling, Inc.
12. Certeza Geophysical Exploration, Inc.
13. Collosal International Corp. (Well Drilling Division)
14. Construction and Drilling Corp. of the Philippines
15. Diamond Drilling Corp. of the Philippines
16. Dizon B.R. Well Drilling
17. Drilling Corp. of Asia
18. Drilling Equipment Supply Co.
19. DGS Construction Inc.
20. Fieldman's Industrial Engineering and Machinery
21. Goldwater Driller and Machinery Corp.
22. Groconsuls and Associates
23. Hi-Water Marketing, Inc.
24. Hydro Drillers
25. Hydrowells, Inc.
26. Infra-structural Corp.
27. Island Arc Drilling Corp.
28. Katwell Drilling
29. Lopez Well Drilling and Construction
30. Lucas Well Drilling and Water Supply Co., Inc.
31. Markclay Philippines Incorporated
32. MCD Well Drilling Service
33. Metro Driller's Incorporated
34. MIDEX (Phils.) Inc.
35. Miguel Well Driller
36. Orbit Wells Construction Corp.
37. Phil. Geosystems and Industrial Corp.
38. Philippine Pumps and Machinery Corp.
39. P.I. Well Drilling Corp.
40. Pioneer Well Drilling Enterprises
41. Quick-Drill Engineering
42. Sand Rock Wells and Engineering Services
43. Sanvar Development Corporation
44. Service Contractors
45. Supreme Well Drilling
46. Techno Asia General
47. Technotest, Inc.
48. The Pipeline Engineering
49. V.R. Romero Construction, Inc.
50. Water Resource Systems Development Corp.

Filename:ANNEXES

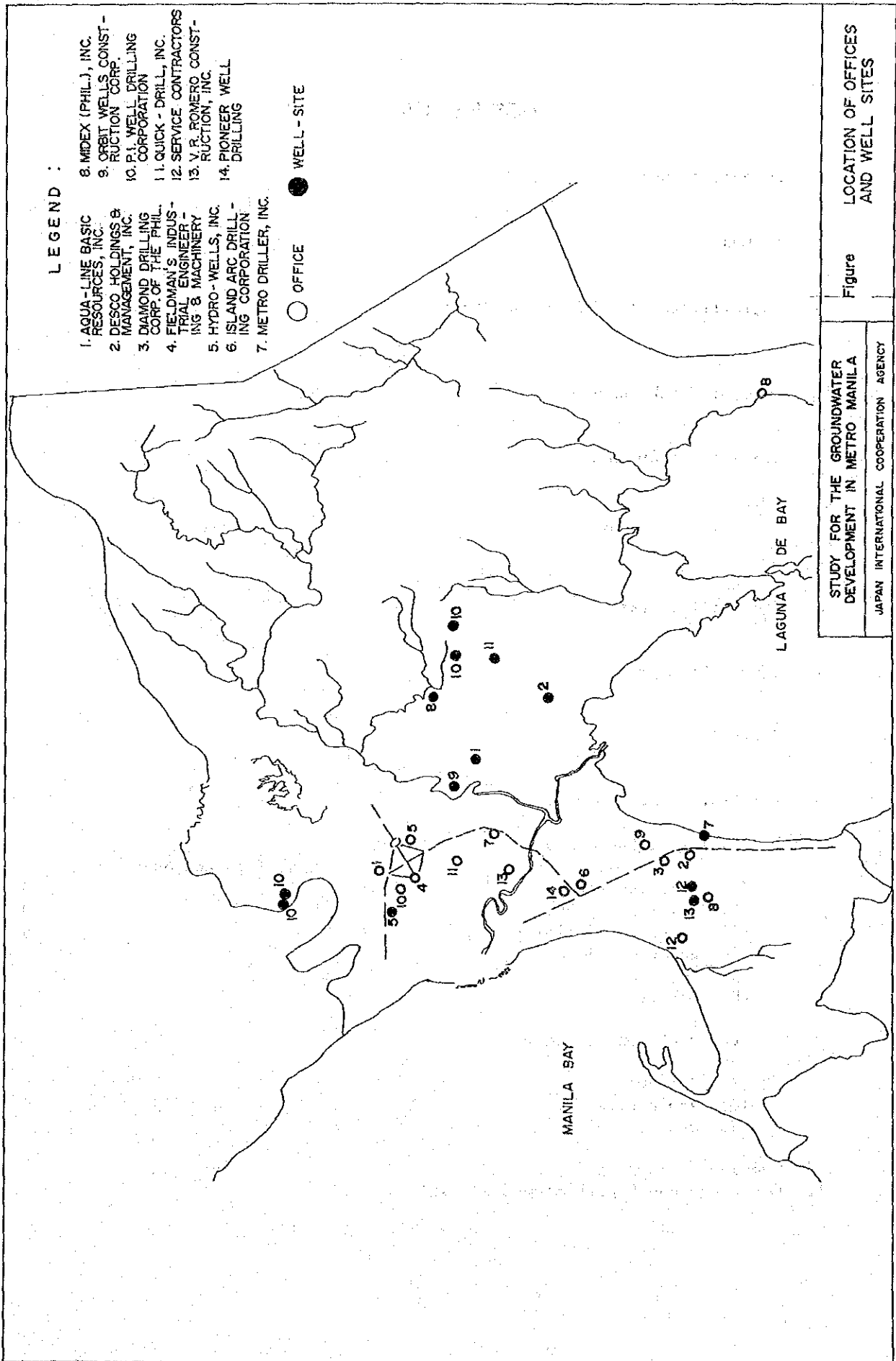
## SELECTED COMPANIES

1. Aqua-Line Inc.  
29-42 PAGASA Bliss  
PAGASA, Quezon City  
Telephone Nos. 96-7025; 99-9870  
Attention: Mr. Victorino Lin Jr.  
General Manager
2. Diamond Drilling Corp. of the Phils.  
344 South Superhighway, Parañaque, M.M.  
Telephone No. 828-9926  
Warehouse: 345 Bo. Santo Niño, Parañaque, M.M.  
Telephone No. 827-4868  
Attention: Mr. F.H. Dumo  
General Manager
3. Drilling Equipment Supply Co. (DESCO)  
9th Floor, Metrobank Plaza  
Sen. Gil J. Puyat Avenue  
Makati, Metro Manila  
Telephone No. 817-2627; 817-2637  
Attention: Mr. Lonnie Richards  
Drilling Operations Manager  
Shop : Telephone Nos. 842-0213; 842-0354; 842-0861
4. Fieldman's Industrial Engineering and Machinery  
Rm. 307 DELTA MOTORS SALES Copr. Bldg.  
West Avenue cor. Quezon Blvd., Quezon City  
Telephone Nos. 99-8766 local 4; 98-0651 to 54 local 4  
Attention: Mr. Rudy J. Fresnosa
5. Hydro-Wells Inc.  
54 Mapagbigay Matiyaga Street  
Luna Road, Quezon City  
Telephone Nos. 922-7605; 922-5973  
Attention: Mr. Louie A. Quizon  
President and General Manager
6. Island Arc Drilling Corp.  
2293 Pasong Tamo Ext. (CMS Compound)  
Makati, Metro Manila  
Telephone Nos. 828-4022; 801-5254  
Attention: Mr. Barry J. Brown  
General Manager
7. Metro Drilling Incorporated  
Suite 3029, VV Soliven Shopping Complex  
EDSA, San Juan, Metro Manila

Telephone Nos. 78-1054; 70-0144  
Attention: Mr. Sergio L. Ongkiko, Jr.

8. MIDEX (Phils.) Inc.  
1763 Concha Cruz Drive, BF Homes Executive Village  
Almanza, Las Piñas, Metro Manila  
Telephone No. 842-5002  
Attention: Mrs. Lilia B. Mondoñeda  
Director
9. Orbit Wells Construction Corporation  
Malonggay Road, FTI Complex  
Taguig, Metro Manila  
Telephone Nos. 818-5174; 828-0031 to 39  
Attention: Mr. Sammy G. Valencia  
President
10. Pioneer Well Drilling Enterprises  
7 Lippay Street, San Lorenzo Village  
Makati, Metro Manila  
Telephone Nos. 815-4821; 815-4823  
Attention: Mr. Esteban C. Fernandez  
President
11. P.I. Well Drilling Corporation  
245 Roosevelt Avenue, SFDM  
Quezon City  
Telephone Nos. 99-6455; 99-9366  
Attention: Mr. Nilo P. Reyes
12. Quick-Drill Engineering  
155 M Paterno Street  
San Juan, Metro Manila  
Telephone Nos. 77-4311; 77-3308  
Attention: Mr. Bobby Reyes Laurel  
General Manager
13. Service Contractors (SERCON)  
J. de Leon Avenue, Parañaque  
Metro Manila  
Telephone No. 828-3124  
Attention: Mr. Romero B. de Guzman  
President
14. V.R. Romero Construction, Inc.  
110 San Miguel St., Plainview  
Mandaluyong, Metro Manila  
Telephone Nos. 79-8476; 79-7413  
Attention: Mr. Virgilio R. Romero

Filename:ANNEXES



QUESTIONNAIRE

1. Company's Name

2. Address

3. Registration to MWSS and/or Others

4. Date of Establishment

5. Contents of Business

6. President's Name

7. Annual Proceeds

8. Capital

9. Numbers of Employees

1) Numbers of Engineers:

Qualified Engineer

- |                          |   |   |
|--------------------------|---|---|
| (1) Drilling Engineer:   | ( | ) |
| (2) Civil Engineer:      | ( | ) |
| (3) Mechanical Engineer: | ( | ) |
| (4) Superintendence:     | ( | ) |
| (5) Foreman:             |   |   |
| (6) Others:              |   |   |

2) Number of Non-engineers

- (7) Driver:
- (8) Administrator:
- (9) Others:

10. Company's Brochure

11. Warehouse and Repair Shop (Address)

12. On-going Well Drilling Sites near Metropolitan Manila Area

13. Owned Machines Related to Well Drilling

1) Well drilling

<u>Name of machines</u>	<u>Type of machines</u>	<u>Capacity</u>	<u>Quantity</u>	<u>Age</u>
(1)				
(2)				
(3)				
(4)				
(5)				
(6)				
(7)				
(8)				
(9)				
(10)				
(11)				
(12)				
(13)				
(14)				
(15)				
(16)				
(17)				
(18)				
(19)				
(20)				

2) Core boring

- (1)
- (2)
- (3)
- (4)
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- (6)
- (7)
- (8)
- (9)
- (10)
- (11)
- (12)
- (13)
- (14)
- (15)

3) Pumping test

<u>Name of machines</u>	<u>Type of machines</u>	<u>Capacity</u>	<u>Quantity</u>	<u>Age</u>
-------------------------	-------------------------	-----------------	-----------------	------------

- (1)
- (2)
- (3)
- (4)
- (5)
- (6)
- (7)
- (8)
- (9)
- (10)
- (11)
- (12)
- (13)
- (14)
- (15)

4) Geophysical logging equipment

- (1)
- (2)
- (3)
- (4)
- (5)
- (6)
- (7)
- (8)
- (9)
- (10)
- (11)
- (12)

5) Vehicles

- (1)
- (2)
- (3)
- (4)
- (5)
- (6)
- (7)
- (8)
- (9)
- (10)
- (11)
- (12)
- (13)
- (14)
- (15)

APPENDIX B

LIST OF COLLECTED DATA



## QUESTION 1

1. The following table shows the results of a survey of 1000 people.

Age Group	Male	Female
18-24	150	180
25-34	200	220
35-44	250	280
45-54	300	320
55-64	350	380
65-74	400	420
75+	450	480

2. The following table shows the results of a survey of 1000 people.

Age Group	Male	Female
18-24	150	180
25-34	200	220
35-44	250	280
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4. The following table shows the results of a survey of 1000 people.

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55-64	350	380
65-74	400	420
75+	450	480

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1. LIST OF REPORTS AND DOCUMENTS RELATED TO GROUNDWATER . B-1
2. LIST OF DATA AND REPORTS TO URBAN DEVELOPMENT  
AND WATER SUPPLY SYSTEMS ..... B-3
3. LIST OF COLLECTED DATA (URBAN DEVELOPMENT PLANNING) .. B-7



APPENDICES B.1 LIST OF REPORTS AND DOCUMENTS  
RELATED TO GROUNDWATER

1. Quaison, Hernando P. (1971): The Groundwater Situation in Manila and Suburbs, Bureau of Mines (unpublished)
2. Quaison, Hernando P. (1975): The Groundwater Situation from Calumpit, Bulacan to Tansa, Cavite and Bay, Laguna, Bureau of Mines (unpublished)
3. National Water Resources Council (1983): Laguna Lake Basins, Framework Plan, Southern Tagalog, PHI/77/803-UNDP Assistance to the NWRC, Report No. 24-4A
4. National Environmental Protection Council (1984): Saltwater Intrusion Along Coastal Areas in the Philippines, Phase I Preliminary Assessment
5. National Environmental Protection Council (1985): Groundwater Salinity Intrusion Control Study, Draft Final Report, Volume I Main Report
6. National Environmental Protection Agency (1985): Groundwater Salinity Intrusion Control Study, Draft Final Report, Volume 2 Annexes
7. National Environmental Protection Council (1985): Economic Losses Due to Saltwater Intrusion
8. National Environmental Protection Council (1985): Groundwater Saline Intrusion Control Study, Advisory Technical Services Interim Report
9. National Environmental Protection Council (1985): Groundwater Salinity Intrusion Control Study, Draft Executive Summary
10. Japan International Cooperation Agency (1987): Manila South Port Rehabilitation Project, Feasibility Study, Final Report
11. National Environmental Protection Council (1987): Philippine Groundwater Salinity Intrusion Control Study, A Digest
12. National Water Resources Board (1987): Manual of Water Data Standards Vol. 3 Soil Moisture and Groundwater (reprinted from 1979 publication)
13. Environmental Management Bureau (1990): Leachate Pollution from Open Dumping Site in Metro Manila, Pre-Study Report, VIAK Consulting Engineers, Stockholm, SWEDEN

14. Japan International Cooperation Agency (1990): The Study on Flood Control and Drainage Project in Metro Manila, Draft Final Report (Supporting Report)
15. Metropolitan Waterworks and Sewerage System (1990): Fringe Areas Water Supply Project (FAWSP), SAN MATEO, RIZAL, Feasibility Study Report No. 1, March 1990
16. Metropolitan Waterworks and Sewerage System (1990): Fringe Areas Water Supply Project (FAWSP), IMUS, CAVITE, Feasibility Study Report No. 1, March 1990
17. Metropolitan Waterworks and Sewerage System (1990): Fringe Areas Water Supply Project (FAWSP), MUNTINLUPA, NCRF (Uncompleted)
18. National Hydraulic Research Center (1990): Water Resources Management Model for Metro Manila, Progress Report No. 1 August 1990

Filename:LIST

APPENDICES B. 2(1) LIST OF DATA AND REPORTS RELATED TO URBAN  
DEVELOPMENT AND WATER SUPPLY SYSTEMS

COLLECTED DATAS AND INFORMATIONS						
Report/ Map	Data/Information	Agency/ Institution	C Complete I Incomplete	P Publication C Copy	Place	
R	Philippine Development Report 1988	NEDA (Pasig)	C	P	Japan	
R	Medium-Term Philippine Development Plan 1987-1992	NEDA (Makati)	C	P	Japan	
R	Medium-Term Public Investment Program 1989-1992	NEDA (Makati)	C	P	Japan	
R	Medium-Term Southern Tagalog Region Development Plan	NEDA (Region IV, Quezon City)	C	P	Japan	
R	Economic Indicators (July - 1990)	NSCB	C	C	Japan	
R	Philippine Yearbook 1989	NSO	C	P	Japan	
R	Preliminary Population Account (1990 Census of Population and Housing, Report No. 1)	NSO	C	C	Japan	
R	Special Release (Highlights of the 1988 Family Income and Expenditures Survey)	NSO	C	C	Japan	
R	1988 Compendium of Philippine Social Statistics	NSCB	C	C	Japan	
R	Mass Media Infra- structure in the Philippines	PIA	C	P	Japan	
R	Cavite Provincial Development Plan	HLURB	I	C	Japan	

COLLECTED DATAS AND INFORMATIONS						
Report/ Map	Data/Information	Agency/ Institution	C Complete I Incomplete	P Publication C Copy	Place	
R	Cavite Provincial Profile 1989	Office of the Provincial Planning and Development Coordinator (Cavite Capitol Bldg.)	I	C	Japan	
R	Province of Cavite Water Supply, Sewerage and Sanitation Development Plan 1990-2000	Office of the Provincial Planning and Development Coordinator (Cavite Capitol Bldg.)	I	C	Japan	
R	Socio Economic Profile 1987 Province of Rizal	Office of the Provincial Planning and Development Coordinator (Rizal Capitol Bldg.)	I	C	Japan	
R	Medium-Term National Capital Region Development Plan 1970-1974	MMA	I	C	Japan	
R	Soil/Land Resources Evaluation Project Rizal Province	BSWM	I	C	Japan	
R	Vegetation and Land Use of Metro Manila	BSWM	I	C	Japan	
R	Preliminary Physical Planning Study of the Capital Investment Folio Project	MMA	I	C	Japan	
R	Marikina Valley Action Plan	MNC (Metro Manila Commission)	C	C	Japan	
M	Metro Manila Physical Survey (MMAPS)	MMA	C	C	Japan	
M	1989 Metro Manila City Guide	Cityguide Inc.	C	P	Japan	

COLLECTED DATAS AND INFORMATIONS						
Report/ Map	Data/Information	Agency/ Institution	C Complete I Incomplete	P Publication C Copy	Place	
X	Province of Cavite General Land Use Map S = 1:75,000	Office of the Provincial Planning and Development Coordinator (Cavite Capitol Bldg.)				
X	Province of Rizal	Office of the Provincial Planning and Development Coordinator (Rizal Capitol Bldg.)	C	C	Japan	
M	Land Use Map Province of Cavite S = 1:75,000	BSWM	C	C	Japan	
M	Ecosystem Appraisal Metro Manila, Water sheds of Manila Bay and Laguna de Bay Land Use Map (5 sheets)	BSWM	C	C	Japan	
M	Land Use and Vegetation Map Province of Rizal (10 sheets)	BSWM	C	C	Japan	
M	Land Use Map S = 1:10,000 (33 sheets)	JICA	C	P	MWSS JICA Office	

Filename:DATAINFO.PRN



APPENDICES B.2(2) LIST OF DATA AND REPORTS RELATED TO URBAN  
DEVELOPMENT PLANNING AND WATER SUPPLY SYSTEMS

1. Annual Report 1989, MWSS
2. Monthly Report on Infrastructure Projects, for the month of August 1990, MWSS
3. Facts and Figures of Existing Water Supply, Sewerage and Sanitation Facilities and Other Civil Works Structures, August 1990, Planning Division, Planning and Programming Department, MWSS
4. Angat Water Supply Optimization Study Final Report (Stage 1) December 1987, MWSS
5. Water Supply, Sewerage and Sanitation Master Plan of the Philippines, 1988-2000, DPWH
6. Report of the Sub-Committee on Water Allocation and Operation of the Angat Dam, January 31, 1974  
Department of Public Works Transportation and Communication
7. (BORROWED) Manila Water Supply III Project, Appendix J Distribution System, December 1979, MWSS
8. Report of Accomplishment for CY 1989 and Work Schedule for 1990 of the Central Laboratory Division, Applied Research and Quality Control Department

Filename:LIST

## APPENDICES B. 3

## LIST OF COLLECTED DATA

(URBAN DEVELOPMENT PLANNING)

CLASSIFIC.	TITLE	OUTLINE
Report	Philippine Development Report 1988	Publisher : National Economic and Development Authority Date : 1989 Orig. or print : print Summary of content : This report covers the macro-economic and regional development and physical frameworks, and indicators of economic and social sectors, infrastructures, development financing and administration, etc.
Report	Five-Year Philippine Development Plan, 1983-1987 Goals, Strategies and Policies	Publisher : National Economic and Development Authority Date : May 1982 Orig. or print : print Development plans related to economic, social and political concerns.
Report	Medium-Term Philippine Development Plan 1987-1992	Publisher : National Economic and Development Authority Orig. or print : print Summary of content : Development framework, economic and social sectors data of the Philippines
Report	Medium-Term Public Investment Program 1989-1992	Publisher : National Economic and Development Authority Date : September 1989 Orig. or print : print Summary of content : This document present the prioritized programs and projects of the National Government and reflects government's response to change in the economic environment and efforts to refocus priorities in the different sectors.

Statistical Report	1986 Economic and Social Indicators	Publisher : National Statistics Coordination Board Date : 1987 Orig. or print : print Summary of content : Annual publication of statistical indicators aimed at measuring and monitoring the degree of achievement of the economic and social development goals set forth in the Republic of the Philippines medium and long- term plans.
Statistical Data	Philippines Yearbook 1989	Publisher : National Statistics Office Date : December 1989 Orig. or print : print Summary of content: Statistical information of the physiography, population and socioeconomic activities of the Philippines.
Statistical Data	1990 Census of Population and Housing	Publisher : National Statistics Office Date : December 1990 Orig. or print : print Summary of content : Population statistical data by Province, City, Municipality and Barangay of the Philippines
Report	Batas Pambansa Blg. 220	Publisher : Housing and Land Use Regulatory Board Orig. or print : print Summary of content : Amended rules and standards for economic and socialized housing projects to implement Batas Pambansa Blg. 220
Report	Socio Economic Profile Province of Rizal	Publisher : Rizal Provincial Capitol Building Date : 1990 Orig. or print : print Summary of content : Socio economic features of the province of Rizal
Report	Cavite Provincial Profile 1989	Publisher : Office of the Provincial Planning and Development Coordinator(Province of Cavite) Date : 1989 Orig. or print : print Summary of content : Socio economic profile of the province of Cavite

**General Information**      **Mass Media Infrastructure in the Philippines**

**Publisher :** Philippine Information Agency  
**Date :** Sept. 1987  
**Orig. or print :** print  
**Summary of content :**  
General infrastructure information in the Philippines

**Report**                      **Angat Water Supply Optimization Project**

**Publisher :** DCCD Engineering Corp. EDCOP and NHRC  
**Date :** June 1988  
**Orig. or print :** print  
**Summary of content :**  
Feasibility Study on Angat Water Supply Project

**Map**                              **Land Use Map NCR Project**

**Publisher :** Bureau of Coast & Geodetic Survey-NAMRIA-JICA  
**Date :** 1987  
**Orig. or print :** print  
**Summary of content :**  
Land use map of Metro Manila  
S= 1:10,000 (33 sheets)



**APPENDIX C**

**ORGANIZATION AND MANAGEMENT**



LIST OF TABLES

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2. LIST OF PERSONNEL CALLED ON .....	C-2
3. HRDD SCHEDULE OF TRAINING AND SEMINAR FOR 1990 .....	C-3





APPENDICES C. 1

Schedule for Visit & Hearing on Organizations of  
Municipalities Outside CDS and Related MWSS Sectors

Revised: 6/14/91

DATE	DAY	A. M.	P. M.	REMARKS
6/10	Mon.	Cavite City	Noveleta, Rosario	
6/11	Tue.	Kawit	Imus, Bacoor	
6/12	Wed.	Independence Day		
6/13	Thu.	Antipolo	Cainta, Taytay	
6/14	Fri.	NWRB North Service Sector, MWSS	San Mateo Montalban	* Legal Power on new well drilling permit, etc.
6/16	Sun.			
6/17	Mon.	Mr. J. H. Dimatulac (RPHSIP/MSHDP)	Antipolo, Cainta, Taytay, Montalban, San Mateo	
6/18	Tue.	Mrs. Evangeline Dacanay (FAWSP) +	S-W Service Sector, Cavite City, Rosario	
6/19	Wed.	Recruitment & Employ- ment Divison Personnel Mgm't Dept.	Tech'l & Skills Dvpm't Div. HRDD	
6/20	Thu.	WDMD, CMD	HARD, PPD	Operations & Maintenance