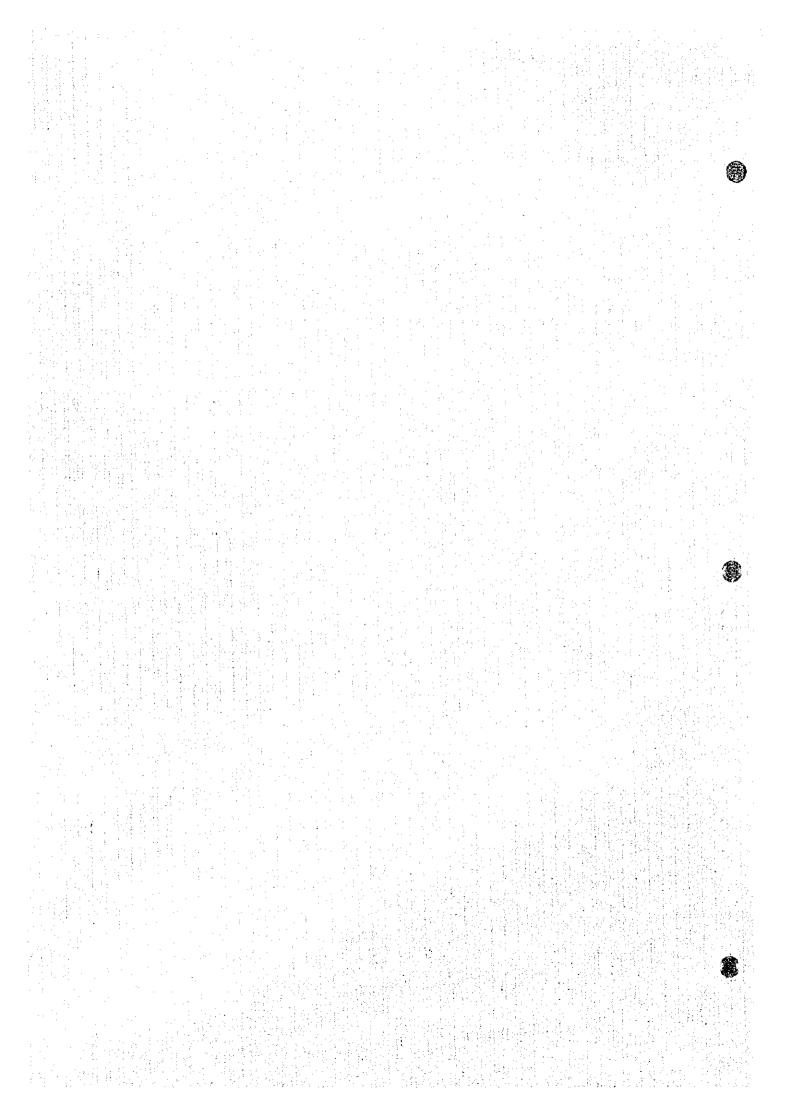
## **TABLES**



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Table 2.1 Domestic and Industrial Water Supply in the District and Major Towns (1/4)

Note	1996 (not committed yet) for Thuan An Tan Ba new piant no water supply	no water supply at present no water supply at present (maximum) no water supply at present	to be abandoned no water supply
Design Capacity m3/day	000000000000000000000000000000000000000		1,000
Stage	Existing Existing Existing Existing Planned Existing Planned	Existing Planned Existing Planned Planned Existing Planned	Existing Planned
Sources	West canal of the Dau Tieng Reservoir Groundwater (8wells) Groundwater (2 wells) Groundwater (1 well) Groundwater (1 well) Groundwater (1 well) Groundwater (2 wells) Groundwater (4 wells) Groundwater (4 wells) Groundwater (2 wells) Groundwater (4 wells) Anigon River Wells Groundwater (4 wells)	Wells Cam Stream Wells Stream/Groundwater Song Be River Wells Tho Son Reservoir	Springs Springs
District and major towns	and h h the stand wot and wot and		Gia Nghia Dak R'Lap
District	Tay Ninh Tay Ninh and Hoa Thanh Trung Bang Go Dau Go Dau Chau Thanh Duong Minh Chau Tan Bien Tan Chau Tan An Thuan An	Ben Cat Dong Phu Binh Long Phuoc Long Loc Ninh Bu Dang	Dak Nong Dak R'Lap
Pro. Capital	Tay Ninh Thu Dau Mot	В.Ма Тћио	
Province	Tay Ninh Song Be	Dac Lac	

Table 2.1 Domestic and Industrial Water Supply in the District and Major Twons (2/4)

Note		by the year 2005			no water supply	no water supply	no water supply		by the year 2005			by the year 2005	no water supply		by the year 2005	Rehabiliation for future use	Rehabiliation for future use	Commission in 1995	Year 2000	no water supply	no water supply			by the year 2000		by the year 2000	by the year 2010	no water supply	no water supply	no water supply	no water supply	
Design Capacity m3/day	27.000	42,000	6.000	4,000				3.020	7,000	2,280	1,040	2,160	:	8	000:1	1,200	800	12,000	12,000			15,000		12,000	1.500	200	3,000		•••			
Stage	Existing	Extension plan	Existing	Existing	· · · · · · · · · · · · · · · · · · ·			Existing	Planned	Existing	Existing	Planned		Existing	Planned	Existing	Existing	Under-const.	Extension			Existing	٠.	planned	Existing	Extention (1)	Extension (2)					
Sources	Suoi Vang Reservoir		Thien Huong treatment plant	Than Tho treatment plant				Groundwater (11 wells)	Groundwater	Groundwater (3 wells)	Groundwater (2 wells)	Groundwater		Springs	Da Dang Reservoir	Groundwater (4 wells)	Thap Cham (Da Nhim HPP)	New Thap Cham				Phu Hoi reservoir	(Muong Man River)	Quao reservoir (Quao R)	Da Dung Weir	(Dinh River)						
District and major towns	Da Lat				Cat Tien	Da Teh	Da Huoai	Bao Lam		Di Linh	Duc Trong	:	Don Duong	Lac Duong	Lam Ha	P.Rang-T.Cham,	Dong Hai and Ninh	a O		Ninh Son	Ninh Phuoc	Phan Thiet	-		Lagi			Tan Lap	Lac Tanh	Vo Xu	Ma Lam	
District	Da Lat			:	Cat Tien	Da Teh	Da Huoai	Bao Lam		Di Linh	Duc Trong		Don Duong	Lac Duong	Lam Ha	P.Rang-T.Cham	and Ninh Hai			Ninh Son	Ninh Phuoc	Phon Thiet			Ham Tan			Ham Thuan Nam	Tanh Linh	Duc Linh	Ham Thuan Bac	(to oc continued)
Pro. Capital	Da Lat															Phan Rang						Phan Thiet										
Province	Lam Dong	-											ě			Ninh Thuan	:					Binh Thuan		:								



Table 2.1 Domestic and Industrial Water Supply in the District and Major Twons (3/4)

V Note		By the year 1997	by the year 2000	no water supply	year 1978	extension		year 2000		by the year 2000	by the year 2010		by the year 1997	Construction commencement in 1996	by the year 2010	by the year 2000		commission in 1997	:		no water supply at present	:	no water supply at present	no water supply				-			no water supply
Design Capacity m3/day	88	009:1	98.7		20,000	10,000	13,000	100,000		98.	2,000	009	15,000	20,000	225,000	2,000	36,000	100,000	300,000	480	٠.	720			420	2,400	2,000	5.000	909	004	
Stage	Existing	Extension (1)	Existing		Existing	Planned	Existing	Planned	3	Figured	Planned	Existing	Planned	Planned	Planned	Planned	Existing	Under-const.	Planned	Existing		Existing			Existing	Planned	Existing	Planned	Existing	Existing	
Sources	Xuong Quang pumping	station I(Luy River)	Groundwater (5 wells)		Dinh River		Groundwater (19 wells)	Da Den Reservoir (Da Den R)	2	Oroundwater (wells)	Phuoc But weir	Groundwater (wells)	Groundwater	Chau Pha and Suoi Sao Rivers	Dong Nai River	Springs	Thien Tan (DNAI R.)			Groundwater (2 wells)		Groundwater (24 wells)			Groundwater (3 wells)	Reservoir	Groundwater (6 wells)	Groundwater	Groundwater (2 wells)	Groundwater (1 wells)	
District and major towns	Bac Binh and	Phon Ri Cua	Lien Huong	Phu Quy	Ba Ria town, Long Son	Vung Tau,	Long Dien, Long Hai,	Phuoc Tinh, Dat Do	and Phuoc Hai	rauoc zun		Phu My				Ngai Giao	Bien Hoa				Tam Phuoc	Long Thanh	Nhon Trach	Thong Nhat	Gia Ray		Xuan Loc		Vinh An	Tan Phu	Unith Quan
District	Bac Binh		Tuy Phong	Phu Quy	Ba Ria Ba Ria -	Vung Tau and	Long Dat			Auyen IMOC		Tan Thanh				Chau Duc	Bien Hoa		:			Long Thanh	Nhon Trach	Thong Nhat	Xuan Loc		Long Khanh		Vinh Cuu	Tan Phu	המוט החוט
Pro. Capital					Ba Ria												Bien Hoa														
Province		····	· · · · · · · · · · · · · · · · · · ·	. :	Ba Ria-	Vung Tau			· ·	. ,					<u> </u>		Dong Nai														







Table 2.1 Domestic and Industrial Water Supply in the District and Major Twons (4/4)

y Note	(first commission in 1966 with 450,000)	committed in 1997	year 2000 year 2010	year 1997 year 2000	year 1997	year 2000	year 2010 year 1993	year 1995	year 2000		no water supply		year 1995						no water supply					
Design Capacity m3/day	000'059	100.000	350,000	100,000	30,000	300,000	20,000	20,000	90,000	2,400			1,000	240	20.02	000:1	1,200	S 500		300	120	00.1	98 G	****
Stage	Existing	Extension/ Rehabilitation	Extension Plan Extension Plan	Under-const. Extension Plan	Existing Under-const	Extension Plan	Existing	Planned	Planned Existing	Planned		:	Existing	Existing	Existing	Planned	Existing	Existing	1.	Existing	Existing	Planned	Existing	A Marina
Sources	Hoa An Intake (DNAI R.)	Hoa An Intake (DNAI R.)	Hoa An Intake (DNAI R.) Hoa An Intake (Dong Nai River)	Binh An (Dong Nai River)	Groundwater(18 wells) Phu Cuong Intake(SGON R)	Phu Cuong Intake(SGON R)	Frid Chong Intake (SOCIN K) Groundwater (8 wells)		Groundwater (22 wells) Groundwater (3 wells)	Groundwater (2 wells)			Groundwater	Groundwater (3 wells)	Groundwater	Groundwater	Groundwater	Groundwater			Groundwater		Reservoir plus groundwater Groundwater	
District and major towns	HochiMinh City, Thu Duc, Binh Chanh	and Nna Be					Hoc Mon		į		Can Gio		Can Duoc	Tan Tru	Can Giuoc		Ben Luc	Duc Hoa	Hiep Hoa	Huu Nghia	Duc Hue		Thu Thua	
District	12 urban districts. Thu Duc district	and parts of Binh Chanh and Nha Be				. :	Hoc Mon				Can Gio		Can Duoc	Tan Tru	Can Giuoc		Ben Luc	Duc Hoa			Duc Hue		Thu Thua	
Pro. Capital	<del></del>									-	<del>-</del>	Tan An		-										1
Province	Ho Chi Minh HCMC City	:										Long An		-										



Table 2.2 Estimate of Growth Rates for Urban Population (1/3)

Province	District	District and	Urban	Population	Annual	Notes
		Major Towns			Increase Rate %	
Tay Ninh			(1989)	(1994)		
	Tay Ninh	Tay Ninh	32,881	35,190	1.37	
	Hoa Thành	Hoa Thanh	18,236	19,187	1.02	
	Trang Bang	Trang Bang	11,237	12,129	1.54	
	Go Dau	Go Dau	21,702	22,438	0.67	
	Ben Cau	Ben Cau			; <u>-</u>	· · · · · · · · · · · · · · · · · · ·
	Chau Thanh	Chau Thanh			-	
	Duong Minh Chau	Duong Minh Chau				
	Tan Bien	Tan Bien		4,695	1.14	·
•	Tan Chau	Tan Chau		7,718	1.14	
			(84,056)	(88,944)		•
Song Be			(1989)	(1994)		•
	Thu Dau Mot	Thu Dau Mot	43,849	56,000	5.01	
	Thuan An	Di An		15,000	5.01	
		Lai Thieu		10,000	5.01	
	Tan Uyen	Tan Uyen		10,000	2.00	:
	Ben Cat	Ben Cat		10,000	2.00	
	Dong Phu	Dong Phu		15,000	8.89	25,000 (year 2000)
	Binh Long	Binh Long	٠.	20,000	1.60	
	Phuoc Long	Phuoc Long	1	20,000	8.89	
	Loc Ninh	Loc Ninh	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	15,000	1.60	
	Bu Dang	Bu Dang		10,000	1.60	
			(43,849	(56,000)		
	:					
Dac Lac	•		(1989	(2000)		
	Dak Nong	Gia Nghia	3,96	8,302	6.95 2	.44% in 2001 onwards
	Dak R'Lap	Dak R'Lap	·	<u> </u>	•	
			(3,964	(8,302)		
	the distribution of the					
Lam Don	g		(1989	(1992)		
	Da Lat	Da Lat	102,583	3 103,558	0.32	1
	Cat Tien	Cat Tien	5,300	6,554	7.30	
	Da Teh	Da Teh	8,253		5.76	
	Da Huoai	Da Huoai	7,63		0.87	*
	Bao Lam	Bao Lam	29,67		5.02	
	Di Linh	Di Linh	11,400	1	4.00	
. :	Duc Trong	Duc Trong	25,46		3.29	



Table 2.2 Estimate of Growth Rates for Urban Population (2/3)

Province	District	District and	Urban	Population	Annual	Notes
	<u></u>	Major Towns		<u> </u>	ncrease Rate %	
	Don Duong	Don Duong	11,087	11,848	2.24	
	Lac Duong	Lac Duong		. <u>-</u>	•	
	Lam Ha	Lam Ha	17,191	19,112	3.59	
			(218,595)	(233,928)		
Ninh Thu	an .		(1989)	(2000)		
	Phan Rang	P.Rang-T.Cham	71,111	95,122	2.68	
	and Ninh Hai	Ninh Chu		17,800	2.68	
	÷	Dong Hai		23,000	2.68	
	Ninh Son	Ninh Son	-	- , <del>-</del>	-	
	Ninh Phuoc	Ninh Phuoc			-	
			(71,111)	(95,122)		
	: :				6.7	:
Binh Thu	ın		(1989)	(1995)		
	Phan Thiet	Phan Thiet	114,236	· -	2.68	
	Ham Tan	Lagi	23,003	3 -	2.68	
	Ham Thuan Nam	Tan Lap		15,500	2.68	
	Tanh Linh	Lac Tanh		- 10,300	2.68	
	Duc Linh	Vo Xu		16,900	2.68	
	Ham Thuan Bac	Ma Lam		11,300	2.68	
1.5	Bac Binh	Bac Binh	29,50	<b>.</b> 19 - 10 - 19	2.68	
		Phan Ri Cua		30,500	2.68	
	Tuy Phong	Lien Huong	21,565	5 · 1 · 1 · 1 · 1	2.68	
	Phu Quy	Phu Quy			<u>.</u>	
Ba Ria-		·	(1989)	(2000)		
Vung Tau	B.Ria-V.Tau	Vung Tau				
		- Dwellers	123,528	225,000	4.52 (5.60)	350,000 (year 2010)
		-Domestic Tourists		70,000	7.92	150,000 (year 2010)
		- Foreign Tourists		7,000	8.62	16,000 (year 2010)
	and Long Dat	Ba Ria	35,219	62,000	6.83 (5.28)	120,000 (year 2010)
		Long Son		20,000	4.81	32,000 (year 2010)
		Long Hai		25,000	3.42	35,000 (year 2010)
		Phuoc Tinh		20,000	2.66	26,000 (year 2010)
		Long Dien	34,450	28,000	2.54 (-)	36,000 (year 2010)
		Dat Do	-	- 28,000	2.54	36,000 (year 210)
		Phuoc Hai		- 15,000	3.90	22,000 (year 2010)

Table 2.2 Estimate of Growth Rates for Urban Population (3/3)

Province	District	District and	Urban	Population	Annual	Notes
	·	Major Towns		: In	ncrease Rate %	
	Xuyen Moc	Phuce Buu		12,000	5.24	20,000 (year 2010
	Tan Thanh	Phu My		200,000	11.61	600,000 (year 2010
	Chau Duc	Ngai Giao		15,000	1.84	18,000 (year 2010
				(625,000)	(	1,295,000)
					•	
Dong Nai			(1989)	(1995)		
	Bien Hoa	Bien Hoa	273,879	305,000	8.09 (1.81)	450,000 (year 2000
						700,000 (year 2010
÷		Tam Phuoc			25.89	20,000 (year 2000
						200,000 (year 2010
	Long Thanh	Long Thanh	18,044	22,000	6.4 (3.36)	30,000 (year 2000
	Long Inam	2016				50,000 (year 2010
	Nhon Trach	Nhon Trach	. 1₌	15,900	49.82	120,000 (year 2000
	THION FIGURE					500,000 (year 2010
	Thong Nhat	Thong Nhat	<u>.</u>	13,000	9.00	20,000 (year 2000
	Xuan Loc	Gia Ray	71,177		3.4 (-)	13,000 (year 2000
	Long Khanh	Xuan Loc	, , ,	46,000	2.48	52,000 (year 2000
	Vinh Cuu	Vinh An	31,492		2.34	55,000 (year 2000
	Tan Phu	Tan Phu	35,747		2.02 (-)	21,000 (year 2000
	Dinh Quan	Dinh Quan	•	38,000	2.41	42,800 (year 2000
	Dim Quan	Dinii Quan	411	(518,900)	•	(651,800)
				(0.10)		
нсмс			(1989)	(1995)		
neste	17 districts			4,483,050	2.46 (3.16)	
	Cu Chi	Cu Chi	214,378		2.47	
	Cu Cin	Cu Cin		4,731,271	:	
			3,20 ,,32	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
Long An			(1989)	(1994)		
Long An	Can Duoc	Can Duoc	10,509	+1	2.89 (-)	
· · · · · · · · · · · ·	Tan Tru	Tan Tru	10,50	4,500	2.89	
		Can Giuoc	9,617		2.89 (-)	
	Can Giuoc	Ben Luc	15,593		2.91	e e e
	Ben Luc		29,530		4.04	$(x,y) = (x,y) \in \mathbb{R}^n$
	Duc Hoa	Huu Nghia	29,330	8,500	4.04	
		Hiep Hoa		9,500	4.04	
		Due Hoa			2.89	
	Duc Hue	Duc Hue	14004	- 5,000	0.29	
	Thu Thua	Thu Thua	(59,418)		0.29	

Table 2.3 Proposed Industrial Development Zones in the Study Area

Name	Accumulated Dev	elopment Area, ha	Unit Water Demand
	2000	2010	m3/ha/day
Ho Chi Minh City			
Tan Thuan	300	300	60
Linh Trung	60	60	60
Hiep Phuoc	200	800	· 60
Cat Lai	100	400	60
Bac Thu Duc	100	500	60
Tay Bac Cu Chi	•	300	50
Tan Qui Cu Chi	: · · · · · · · · · · · · · · · · · · ·	150	50
Dong Nai Province	•		
Bien Hoa I	310	310	50
Bien Hoa II	376	376	50
Amata	400	754	50
Ho Nai 3&4	200	600	50
Tam Phuoc	200	1,000	50
An Phuoc	100	900	50
Long Thanh- Nhon Trach	600	2,520	50
Ba Ria-Vung Tau Province	<b>:</b>		
Vedan	120	120	50
Northern Go Dau	236	236	50
Phu My-My Xuan	1,000	2,000	50
Thi Vai-Cai Mep Harbour	200	450	10
Long Huong & Long Son	200	400	50
Ben Dinh& Phuoc Long	200	540	50
Song Be Province			
An Binh	100	200	50
Thuan An	150	300	50

Table 2.4 Projected Urban Population (1/3)

<b>.</b>		District and	2.2 0	Population	Annual	Projected Po	pulation
Province	District	Major Towns	Base Year	Number	Increase Rate (%)	2000	2015
Tay Ninh							
	Tay Ninh	Tay Ninh	1994	35,190	1.37	38,184	46,829
	Hoa Thanh	Hoa Thanh	1994	19,187	1.02	20,392	23,744
	Trang Bang	Trang Bang	1994	12,129	1.54	13,294	16,719
	Go Dau	Go Dau	1994	22,438	0.67	23,355	25,816
	Ben Cau	Ben Cau	•	•		-	
•	Chau Thanh	Chau Thanh		•	•		-
	Duong Minh Chau	Duong Minh Chau	1994	-	•	-	-
	Tan Bien	Tan Bien	1994	4,695	1.14	5,025	5,957
	Tan Chau	Tan Chau	1994	7,718	1.14	8,261	9,792
	5			(101,357)			
Song Be							
deng 20	Thu Dau Mot	Thu Dau Mot	1994	56,000	5.01	75,088	156,326
٠.	Thuan An	Di An	1994	15,000	5.01	20,113	41,873
		Lai Thieu	1994	10,000	5.01	13,409	27,915
	Tan Uyen	Tan Uyen	1994	10,000	2.00	11,262	15,157
	Ben Cat	Ben Cat	1994	10,000	2.00	11,262	15,157
•	Dong Phu	Dong Phu	1994	15,000	8.89	25,000	89,693
	Binh Long	Binh Long	1994	20,000	1.60	21,998	27,912
	Phuoc Long	Phuoc Long	1994	20,000	8.89	33,339	119,613
	Loc Ninh	Loc Ninh	1994	15,000	1.60	16,499	20,934
	Bu Dang	Bu Dang	1994	10,000	1.60	10,999	13,956
				(181,000)		1	
			: .				
Dac Lac							
	Dak Nong	Gia Nghia	2000	8,302	2.44	8,302	11,919
	Dak R'Lap	Dak R'Lap			- · · · · · ·		
				(8,302)			
Lam Dong	Da Lat	Da Lat	1992	103,558	0.32	106,239	111,454
	Cat Tien	Cat Tien	1992	6,554	7.30	11,516	33,136
	Da Teh	Da Teh	1992	9,763	5.76	15,281	35,398
	Da Huoai	Da Hucai	1992	7,835	0.87	8,397	9,562
	Bao Lam	Bao Lam	1992	34,365	5.02	50,850	106,016
	Di Linh	Di Linh	1992	12,830	4.00	17,559	31,622
	Due Trong	Duc Trong	1992	28,063	3.29	36,358	59,085
	Don Duong	Don Duong	1992	11,848	2.24	14,145	19,721
	Lac Duong	Lac Duong	-		•		
	Lam Ha	Lam Ha	1992	19,112	3.59	25,342	43,015
				(233,928)	,	,	,010

Table 2.4 Projected Urban Population (2/3)

		District and	Urban	Population	Annual	Projected Po	pulation
Province	District	Major Towns	Base Year	Number	Increase Rate (%)	2000	2015
Ninh Thuan							
	Phan Rang	P.Rang-T.Cham	2000	95,122	2.68	95,122	141,439
	and Ninh Hai	Ninh Chu	2000	17,800	2.68	17,800	26,467
		Dong Hai	2000	23,000	2.68	23,000	34,199
	Ninh Son	Ninh Son	-		-	·-	
	Ninh Phuoc	Ninh Phuoc			<del>-</del>	-	
•	•		_	(135,922)			
					:		
Binh Thuan		m( , , , , , , , , , , , , , , , , , , ,	1000	111025	0.40	150 000	227.21.4
	Phan Thiet	Phan Thiet	1989	114,236		152,808	227,214
	Ham Tan	Lagi	1989	23,003	2.68	30,770	45,753
	Ham Thuan Nam	Tan Lap	1995	15,500	2.68	17,691	26,306
•	Tanh Linh	Lac Tanh	1995	10,300	2.68	11,756	17,481
	Duc Linh	Vo Xu	1995	16,900	2.68	19,289	28,682
	Ham Thuan Bac	Ma Lam	1995	11,300	2.68	12,898	19,178
	Bac Binh	Bac Binh	1989	29,504	2.68	39,466	58,683
		Phan Ri Cua	1995	30,500	the state of the s	34,812	51,763
	Tuy Phong	Lien Huong	1989	21,565	2.68	28,847	42,893
	Phu Quy	Phu Quy			•	: F	<del>-</del>
				(272,808)			
						•	
Ba Ria							
Vung Tau	B.Ria-V.Tau	Vung Tau	-				
		- Dwellers	2000	225,000		225,000	436,690
		-Domestic Tourists	2000	70,000		70,000	219,597
		- Foreign Tourists	2000	7,000	8.62	7,000	24,196
			1 4 1				
	and Long Dat	Ba Ria	2000	62,000	6.83	62,000	167,028
		Long Son	2000	20,000	4.81	20,000	40,464
		Long Hai	2000	25,000	3,42	25,000	41,401
		Phuoc Tinh	2000	20,000	2.66	20,000	29,652
		Long Dien	2000	28,000	2.54	28,000	40,790
		Dat Do	2000	28,000	2.54	28,000	40,790
		Phuoc Hai	2000	15,000	3.90	15,000	26,627
	Xuyen Moc	Phuoc Buu	2000	12,000	5.24	12,000	25,816
	Tan Thanh	Phu My	2000	200,000	11.61	200,000	1,038,907
	Chau Duc	Ngai Giao	2000	15,000	1.84	15,000	19,718
			•	(727,000)	- }		



Table 2.4 Projected Urban Population (3/3)

		District and		Population	Annual	Projected P	opulation
Province	District	Major Towns	Base Year	Number	Increase Rate (%)	2000	2015
Dong Nai							
	Bien Hoa	Bien Hoa	1995	305,000	8.09 (4.52)	450.000	873,38
		Tam Phuoc	2000	20.000	25.89	20,000	632,26
	Long Thanh	Long Thanh	1995	22,000	6.4 (5.24)1)	30,000	64,54
	Nhon Trach	Nhon Trach	1995	15,900	49.82 (15.34) <sup>1)</sup>	120,000	1,020,650
	Thong Nhat	Thong Nhat	1995	13,000	9.00	20.000	72.850
	Xuan Loc	Gia Ray	1995	11,000	3.40	13,000	21,460
	Long Khanh	Xuan Loc	1995	46,000	2.48	52.000	75,09
	Vinh Cuu	Vinh An	1995	49,000	2.34	55,000	77,817
	Tan Phu	Tan Phu	1995	19,000	2.02	21,000	28,340
	Dinh Quan	Dinh Quan	1995	38,000	2.41	42.800	61,170
			_	(538,900)			
			•				
HCMC		N	•	•			
	17 districts	•	1995	4,483,050	2.46	5.062.270	7.288,87
	Cu Chi	Cu Chi	1995	248,221	2.47	280.429	404,36
			,	(4,731,271)			
					1		11
Long An							
1	Can Duoc	Can Duoc	1994	9,500	2.89	11.271	17,28
	Tan Tru	Tan Tru	1994	4,500	2.89	5.339	8,186
	Can Givec	Can Giuoc	1994	8,500	2.89	10.085	15,467
	Ben Luc	Ben Luc	1994	18,000	2.91	21,381	32,870
:	Due Hoa	Huu Nghia	1994	18,000	4.04	22,828	41,350
		Hiep Hoa	1994	8,500	4.04	10,780	19,52
		Duc Hoa	1994	9,500	4.04	12,048	21.82
	Duc Hue	Duc Hue	1994	5,000	2.89	5,932	9,09
	Thu Thua	Thu Thua	1994	14,500	0.29	14,754	15,409
:				(96,000)			

Note: 1) Population in the year 2015 is projected with an annual increase rate obtained by relying on the 2000 and 2010 projected population data as given in the parentheses.

Table 2.5 Conditions for Water Demand Projection (1/4)

Tay Ninh         Tay Ninh         At present         2000-2010         2010 coward         At present         2010 coward         At present         Commercial         Public           Tay Ninh         Tay Ninh         100         100         120         80         90         2         8         -           Trang Bang         Trang Bang         Trang Bang         100         100         120         80         90         2         8         -           Cob Dau         100         100         120         80         90         2         8         -         -         8         -         -         8         -	Province	District	District and	Water Consu	Water Consumption Rate, I/day/person	Vday/person	Aerial Ser	Aerial Service Rate, %		Other Uses, %		Loss Rate
Tray Nish Hoat Tay Nish Hoat Than Hoat Tay Nish Hoat Thanh Hoat Minh Chau Hoat Hoat Hoat Hoat Hoat Hoat Hoat Hoat			Major Town	At present		2010 onward	At present	2001 onward	Industrial	Commercial	Public	%
Tay Ninh Hou Tay Ninh Hou Thanh Hoo Thanh Hou Hou Hou Hoo Hoo Hoo Hoo Hoo Hoo Hoo	Tay Ninh											
Hoa Thanh         Hoa Thanh         100         100         120         80         90         2         8         - Farag Sang         Trang			Tay Ninh	8	8	120	08	8	7	8	•	S
Trang Bang 100 100 120 80 90 2 8 8 6 60 Dau Gau Thanh 100 100 120 80 90 2 8 8 6 60 Dau Thanh 100 100 120 80 90 2 8 8 6 60 Dau Thanh 100 100 120 80 90 2 8 8 6 60 Dau Thanh 100 100 120 80 90 2 8 8 6 60 Dau Thanh 100 100 120 80 90 2 8 8 6 60 Dau Thanh 100 100 120 80 90 2 8 8 6 60 Dau Thanh 100 100 120 80 90 2 8 8 6 60 Dau Thanh 100 100 120 80 90 2 8 8 6 60 Dau Thanh 100 100 120 120 80 90 2 8 8 6 60 Dau Thanh 100 100 120 120 70 70 20 5 6 6 Dau Thanh 100 100 120 70 70 20 5 6 6 Dau Thanh 100 100 120 70 70 70 20 5 6 6 Dau Thanh 100 100 120 70 70 70 20 5 6 6 Dau Thanh 100 100 120 70 70 70 20 5 6 6 Dau Thanh 100 100 120 70 70 70 20 5 6 6 Dau Thanh 100 100 120 70 70 70 70 20 5 6 6 Dau Thanh 100 100 120 70 70 70 70 70 70 70 70 70 70 70 70 70			Hoa Thanh	100	82	120	8	8	7	••	•	8
Go Dau         Go Dau         100         100         120         80         90         2         8         -           Ben Car         Ben Cau         100         100         120         80         90         2         8         -           Chau Thanh         Chau Thanh         100         100         120         80         90         2         8         -           Duong Minh Chau         Doog Minh Chau         100         100         120         80         90         2         8         -           Tan Bien         Tan Bien         100         100         120         80         90         2         8         -           Tan Chau         Ton Dau Mot         130         150         180         70         80         90         2         8         -           Thu Dau Mot         Thu Dau Mot         130         150         180         70         80         90         2         8         -           Thu Dau Mot         Thu Dau Mot         130         150         180         70         80         -0         2         8         -           Thu Man Mot         Thu Dau Mot         130         150		Š	Trang Bang	100	201	120	8	8	7	∞	<b></b>	20
Ben Car         Ben Cau         100         120         80         90         2         8         -           Chau Thanh         Chau Thanh         100         100         120         80         90         2         8         -           Ducong Minb Chau         Ducong Minh Chau         100         100         120         80         90         2         8         -           Tan Bien         Tan Bien         100         100         100         120         80         90         2         8         -           Tan Chau         Tan Chau         100         100         100         120         80         90         2         8         -           Thu Dau Mot         Tan Chau         130         150         180         70         80         2         8         -           Thu Dau Mot         130         150         180         70         80         2         8         -           Thu Dau Mot         130         150         180         70         80         20         8         -           Thu An An         Lai Thieu         130         180         70         70         70         70         70			Go Dau	100	8	120	8	85	73	8	1	S
Chau Thanh         Chau Thanh         100         100         120         80         90         2         8         -           Duong Minh Chau         100         100         120         80         90         2         8         -           Tan Bien         Tan Bien         100         100         120         80         90         2         8         -           Tan Chau         Tan Chau         100         100         100         120         80         90         2         8         -           Tan Chau         Tan Chau         100         100         100         100         2         8         -         -           Thu Dau Mot         Thu Dau Wot         130         150         180         70         80         -         10         10         -           Thu Dau Mot         Thu Dau Wot         130         150         180         70         80         -         10         10         -         10         -         10         -         10         -         10         -         -         10         -         -         10         -         -         -         -         -         - <t< td=""><td></td><td></td><td>Ben Cau</td><td>81</td><td>8</td><td>120</td><td>8</td><td>8</td><td>7</td><td>∞</td><td>•</td><td>8</td></t<>			Ben Cau	81	8	120	8	8	7	∞	•	8
Duong Minh Chau         Duong Minh Chau         100         100         120         80         90         2         8         -           Tan Bien         Tan Chau         100         100         120         80         90         2         8         -           Tan Chau         Tan Chau         100         100         120         80         90         2         8         -           Tan Chau         Tan Chau         100         150         150         180         70         80         2         8         -           Thu Dau Mot         Thu Dau Mot         130         150         180         70         80         2         8         -           Thu Dau Mot         Thu Dau Mot         130         150         180         70         80         30         10         1           Thu Dau Mot         Thu Dau Mot         130         150         180         70         80         ***         1         15         1			Chau Thanh	81	201	120	8	8	7	∞		S
Tan Bien Tan Bien 100 100 120 80 90 2 8 - 1  Tan Chau Tan Chau 100 100 120 80 90 2 8 - 1  Tan Chau Tan Chau 100 100 120 80 90 2 8 - 1  Thu Dau Mot Thu Dau Mot 130 150 180 70 80 ** <sup>1</sup> 15 . 15  Thu Uyen Lai Thieu 130 150 180 70 80 ** <sup>1</sup> 15 . 15  Tan Uyen Tan Uyen 100 100 120 70 70 20 5 . 18  Binh Long Bhu Dong Phu 100 100 120 70 70 20 5 . 18  Buh Long Bu Dang 100 100 120 70 70 20 5 . 18  Dak Nong Gia Nghia 130 130 130 70 80 25 . 10  Dak RLap Dak RLap no urban area		Chau	Duong Minh C	81	200	120	8	8	71	<b>«</b>	•	S
Tun Chau Tan Chau I I I I I I I I I I I I I I I I I I I	<del></del>	٠	Tan Bien	100	92	120	8	8	7	80	1	20
Thu Dau Mot         Thu Dau Mot		Tan Chau	Tan Chau	100	82	120	8	8	73	8	1	20
Thu Dau Mot         Thu Dau Mot         130         150         180         70         80         30         10            Thuan An         Di An         130         150         180         70         80         *")         15         .           Thuan An         Di An         130         150         180         70         80         *")         15         .           Tan Uyen         Tan Uyen         100         100         120         70         70         20         5         .           Ben Cat         Ben Cat         100         100         120         70         70         20         5         .           Binh Long         100         100         120         70         70         20         5         .           Phuoc Long         100         100         120         70         70         20         5         .           Loc Ninh         Loc Ninh         100         100         120         70         70         20         5         .           Bu Dang         Bu Dang         130         130         130         70         70         20         20         5												
Thu Dau Mot         Thu Dau Mot         130         150         180         70         80         30         10            Thu Dau Mot         Di An         130         150         180         70         80         *"         15            Thuan An         Lai Thieu         130         150         180         70         70         80         *"         15            Tan Uyen         Tan Uyen         130         100         120         70         70         20         5            Ben Cat         Ben Cat         100         100         120         70         70         20         5            Binh Long         Bun Long         100         100         120         70         70         20         5            Binh Long         Phuoc Long         100         100         120         70         70         20         5            Loc Ninh         Loc Ninh         100         100         120         70         70         20         5            Dak Nong         Gia Nghia         130         130         70         70	Song Be		-									
Thuan An         Di An         130         150         180         70         80         ************************************	•	Thu Dau Mot	Thu Dau Mot	130	150	180	8	8	30	01	•	30
Tan Uyen         Tan Uyen         130         150         180         70         80         ************************************		Thuan An	Di An	61	150	180	0/	08	ą	15	•	30
Tan Uyen         Tan Uyen         100         120         70         70         20         5         -           Ben Cat         Ben Cat         100         100         120         70         70         30         5         -           Dong Phu         100         100         100         120         70         70         20         5         -           Binh Long         Binh Long         100         100         100         120         70         70         20         5         -           Phuoc Long         Phuoc Long         100         100         100         120         70         70         20         5         -           Loc Ninh         Loc Ninh         100         100         100         120         70         70         20         5         -           Bu Dang         Bu Dang         100         100         100         70         70         20         5         -           Dak R Lap         Dak R Lap         no urban area         130         70         80         25         12         10			Lai Thicu	130	55	180	5	8	<b>4</b>	15	,	ક્ષ
Sen Cat         Ben Cat         100         100         120         70         70         30         5         -           Dong Phu         100         100         100         120         70         70         20         5         -           Binh Long         100         100         100         120         70         70         20         5         -           Phuoc Long         100         100         100         120         70         70         20         5         -           Loc Ninh         Loc Ninh         100         100         120         70         70         20         5         -           Bu Dang         Bu Dang         100         100         120         70         70         20         5         -           Dak Nong         Gia Nghia         130         130         70         80         25         12         10			Tan Uyen	138	901	120	92	02	ន	S		8
Dong Phu         Dong Phu         100         100         120         70         70         20         5         -           Binh Long         Binh Long         100         100         120         70         70         20         5         -           Phuoc Long         Phuoc Long         100         100         100         120         70         70         20         5         -           Loc Ninh         Loc Ninh         100         100         120         70         70         20         5         -           Bu Dang         Bu Dang         100         100         100         70         70         20         5         -           Dak Nong         Gia Nghia         130         130         70         80         25         12         10	<del></del>		Ben Cat	001	201	120	5	20	30	'n	•	30
Binh Long         Binh Long         100         120         70         70         20         5         -           Phuoc Long         Phuoc Long         100         100         120         70         70         20         5         -           Loc Ninh         Loc Ninh         100         100         100         120         70         70         20         5         -           Bu Dang         Bu Dang         100         100         130         70         70         20         5         -           Dak Nong         Gia Nghia         130         130         70         80         25         12         10           Dak RLap         no urban area         no urban area         10         10         20         25         12         10			Dong Phu	18	81	120	5	6	22	'n	•	33
Phuoc Long         Phuoc Long         100         100         120         70         70         20         5         -           Loc Ninh         Loc Ninh         100         100         120         70         70         20         5         -           Bu Dang         Bu Dang         100         100         100         70         70         20         5         -           Dak Nong         Gia Nghia         130         130         70         80         25         12         10           Dak R Lap         no urban area         no urban area         10         20         25         12         10			Binh Long	100	100	120	2	0/	8	Ś	•	8
Loc Ninh         Loc Ninh         Loc Ninh         100         100         120         70         20         5         -           Bu Dang         Bu Dang         100         100         120         70         70         20         5         -           Dak Nong         Gia Nghia         130         130         130         70         80         25         12         10           Dak R Lap         no urban area         no urban area         10         12         10         10			Phuoc Long	100	81	120	22	0/	8	Ŋ	(	30
Bu Dang         Bu Dang         100         100         120         70         20         5         -           Dak Nong         Gia Nghia         130         130         130         70         80         25         12         10           Dak RLap         Dak RLap         no urban area         no urban area         130         10<			Loc Ninh	. 18	8	120	92	0,	8	v	•	93
Dak Nong         Gia Nghia         130         130         130         70         80         25         12         10           Dak R'Lap         no urban area         no urban area         no urban area         130         130         10 <td>·<del>····</del></td> <td>Bu Dang</td> <td>Bu Dang</td> <td>8</td> <td>001</td> <td>120</td> <td>2</td> <td>0/</td> <td>8</td> <td>S</td> <td></td> <td>8</td>	· <del>····</del>	Bu Dang	Bu Dang	8	001	120	2	0/	8	S		8
Dak Nong         Gia Nghia         130         130         130         70         80         25         12         10           Dak R'Lap         no urban area         no urban area         no urban area         130         130         10 <td></td> <td>eville Herote</td> <td></td> <td>: : :</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>		eville Herote		: : :								
Gia Nghia         130         130         70         80         25         12         10           Dak R Lap         no urban area         and urban area         130         130         130         10	Dac Lac			:								
Dak R Lap no		Dak Nong	Gia Nghia	130	130	130	20	08	23	12	2	9
		Dak R'Lap	Dak R'Lap	<b>1</b>	no urban area							

Note: 1) Industrial water demand is estimated based on the development plan of industrial estates given in Table 2.3.

Table 2.5 Conditions for Water Demand Projection (2/4)

Province	District	District and	Water C	Water Consumption Rate, Vday/person	. Vday/person	Aerial Ser	Aerial Service Rate. %		Other Uses, %		Loss Rat
		Major Town	At present		2000-2010 2010 onward	At present	At present 2001 onward	Industrial	Commercial	Public	8
Lam Dong			.:		j .	<del>.</del> -					İ
	Da Lat	Da Lat	ř	00 120	150	8	88	m	34	23	87
	Cat Tien	Cat Tien		50 100	81	8	\$	1	8	60	30
-	Da Teh	Da Teh		20 100	81 7	8	\$	•	8	ń	30
	Da Huoai	Da Huoai		20 100	8	8	95	•	28	<b>с</b>	93
	Bao Lam	Bao Lam		50 100	200	08	88	4	30	8	30
	Di Linh	Di Linh		50 100	82	8	ጵ	,	17	78	8
	Duc Trong	Duc Trong		50 100	180	8	95		20	8	တ္တ
i	Don Duong	Don Duong		50 100	200	80	88	•	8	m	30
	Lac Duong	Lac Duong		no urban are	es -						
	Lam Ha	Lam Ha		50 100	8	98	95	,	20	m	30
Ninh Thuan						·		_			
	Phan Rang	P.Rang-T.Cham	<b>=</b>	30 130	130	91	83	17	25	•	36
	Ninh Hai	Ninh Chu	-	30 130	130	30	8	17	83	•	38
		Dong Hai	¥ ;	30 130	130	01	83	1.7	8	•	36
	Ninh Son	Ninh Son		no urban area	4					·	•
	Ninh Phuoc	Ninh Phuoc		no urban are:	ส	:					
Binh Thuan					· · · · · · · · · · · · · · · · · · ·		:				;
	Phan Thiet	Phan Thiet	,~	80 120	120	ม	8	72	20	•	35
	Ham Tan	Lagi		80 120	120	ង	8		7	•	35
	Ham Thuan Nam	Tan Lap		80 120	120	23	8	•	~	•	35
	Tanh Linh	Lac Tanh		80 120	120	23	8	•	۲-	•	35
	Duc Linh	Vo Xu	*	80 120	120	83	8	•	7	•	35
·	Ham Thuan Bac	Ma Lam		80 120	120	প্ত	8	•	7	•	35
	Bac Binh	Bac Binh		80 120	120	ß	8	•	1	1	35
		Phan Ri Cua		80 120	120	25	8	•	7		35
ŀ											



Table 2.5 Conditions for Water Demand Projection (3/4)

Tuy Phong Phu Quy Ba Ria- Vung Tau and Long Dat Xuyen Moc Tan Thanh Chau Duc	Lien Khuong Phu Quy Vung Tau Ba Ria Long Son Long Hai Phuoc Tinh Long Dien Dat Do	At present 80	At present 2000-2010 2010 onwar	2010 onward	At present	t present 2001 onward	Industrial	Commercial	Public	8
Tuy Phong Phu Quy  Ba Ria- Vung Tau and Long Dat  Xuyen Moc Tan Thanh Chau Duc	Lien Khuong Phu Quy Vung Tau Ba Ria Long Son Long Hai Phuoc Tinh Long Dien Dat Do	<b>0</b> 8	120							
Phu Quy  Was Tau  Yung Tau  and Long Dat  Xuyen Moc  Tan Thanh  Chau Duc	Phu Quy Vung Tau Ba Ria Long Son Long Hai Phuoc Tinh Long Dien Dat Do			120	25	8	•	7		35
vung Tau vung Tau and Long Dat Xuyen Moc Tan Thanh Chau Duc	Vung Tau 19 Ba Ria Long Son Long Hai Phuoc Tinh Long Dien Dat Do	. :	no urban area			,		-		
Vung Tau  Vung Tau  and Long Dat  Xuyen Moc  Tan Thanh  Chau Duc	Vung Tau "Ba Ria Ba Ria Long Son Long Hai Phuoc Tinh Long Dien Dat Do				•••					
<b>18</b> (	Ba Ria Long Son Long Hai Phuoc Tinh Long Dien Dat Do	120	130	200	8	08	92	\$5	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	প্ত
	Long Son Long Hai Phuoc Tinh Long Dien Dat Do	180	100	150	8	80	5	75	•	প্ল
	Long Hai Phuoc Tinh Long Dien Dat Do		81	150	8	8	70	27	•	ম
:	Phuce Tinh Long Dien Dat Do	198	18	150	8	8	8	75	•	23
:	Long Dien Dat Do	81	81	જુ	8	8	20	75	1	প্ন
;	Dat Do	180	81	150	8	8	2	75	,	প্ল
: B		81	8	150	8	8	8	75	1	ห
Xuyen Moc Tan Thanh Chau Duc	Phuoc Hai	100	38	150	8	8	2	75	,	ধ
Ten Thanh Chau Duc	Pauce Bun	80	82	150	8	8	25	'n	w	প্ন
Chau Duc	Phu My	. 80	130	180	8	8	R.	10	•	ង
	Ngai Giao	08	81	150	8	08	15	8	ν,	প্ল
		f				:				
Dong Na										
Bien Hoa	Bien Hon	120	150	180	8	8	ស្ន	15	•	ম
	Tam Phuoc	:	130	180	8	08	R.	10	,	83
Long Thanh	Long Thanh	•	130	180	8	08	15	15	1	প্ন
Nhon Trach	Nhon Trach	201	85	180	8	8	R	15	,	প্ল
Thong Nhat	Thong Nhat	8.	120	120	08	8	15	S	'n	ଛ
Xuan Loc	Gia Ray	81	120	120	08	8	23	<b>'</b>	'n	ଛ
Long Khanh	Xuan Loc	81	120	120	08	8	Ş	8	'n	8
Vinh Cut	Vinh An	100	120	120	8	8	15	Ŋ	'n	8
Tan Phu	Tan Phu		120	120	80	80	15	\$	\$	30

Tourist demand in Vong Tau is estimated at 100 lit./day for domestic tourists and 300 lit./day for foreign tourists in the year 2000, whils 150 lit./day for domestic tourists and 500 lit./day for foreign tourists in the year 2015. It is noted that the acrial service rate is estimated at 1.0 for tourist demand. Note: 1)

<sup>2)</sup> Industrial water demand is estimated based on the development plan of industrial estates given in Table 2.3.

Table 2.5 Conditions for Water Demand Projection (4/4)

Province	District	District and	Water	Consum	ption Rate.	Water Consumption Rate. 1/day/nerson	Aerial Ser	Aerial Service Rate. %		Other Uses %		Loss Rate
		Major Town	At pre	At present 2	2000-2010	2010 onward	At present	At present   2001 onward	Industrial	Commercial	Public	%
	Dinh Quan	Dinh Quan		100	120	120	08	8	1.5	\$	S	8
ייים									:			
) 	17 Districts	•		જુ	150	150	98	%	22	91	×	æ
	Cu Chi	Ct Chi		8	81	001	S	20	<b>?</b> *		ı	30
					٠							-
Long An												
	Can Duoc	Can Duce		S S	8	20	S	8	•	01	,	40
	Tan Tru	Tan Tra		90	8	8	8	8	•	10	,	40
	Can Giuco	Can Giuoc		S	8	20	ጽ	8	•	10	·	9
	Ben Luc	Ben Luc		20	98	8	ଝ	8	•	01	•	07
	Duc Hoa	Huu Nghia		ଛ	90	8	ያ	8	,	10	1	04
		Hiep Hoa		S	ጽ	8	8	8	•	9	•	9
•		Duc Hoa		S	ጽ	20	8	8	,	01	•	9
	Duc Hue	Duc Hue		S	20	20	ጽ	8		201	ı	40
	Thu Thua	Thu Thua		S	S	20	8	8	1	91	1	4
					:							
	:							·				
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Note: 1) Industrial water demand is estimated based on that an area of 450 ha is developed as industrial estates (Tay Bac and Tan Qui) by the year 2010.

Table 2.6 Projected Water Demand of Urban Centres (1/3)

		District	Proje	cted			Water Demi	and, m3/day		
Province	District	and	Popul		**********	2000	***************************************	,	2015	
	·	Major Towns	2000	2015	Domestic	Others	Total	Domestic	Others	Total
Tay Ninh										
	Tay Ninh	Tay Ninh	38,184	46,829	4,582	458	5,040	7,586	759	8,345
	Hoa Thanh	Hoa Thanh	20,392	23,744	2,447	245	2,692	3,847	385	4,231
	Trang Bang	Trang Bang	13,294	16,719	1,595	160	1,755	2,708	271	2,979
	Go Dau	Go Dau	23,355	25,816	2,803	280	3,083	4,182	418	4,600
	Ben Cau	Ben Cau	•	-	-	-				=
	Chau Thanh	Chau Thanh		-	•	-	-			-
	Duong Minh Chau	Duong Minh Chau	•		-		-			
	.Tan Bien	Tan Bien	5,025	5,957	603	60	663	965	97	1,062
	Tan Chau	Tan Chau	8,261	9,792	991	. 99	1,090	1,586	159	1,745
						TOTAL	14,323			22,962
						********		-		
Song Be										
· · · · · ·	Thu Dau Mot	Thu Dau Mot	75,088	156,326	10,250	4,100	14,349	29,264	11,706	40,970
	Thuan An	Di An	20,113	41,873	2,745	6,912	9,657	7,839	14,176	22,014
	ı	Lai Thieu	13,409	27,915	1,830	10,025	31,855	5,226	20,284	25,510
	Tan Uyen	Tan Uyen	11,262	15,157	1.025	256	1,281	1,655	414	2,069
· .	Ben Cat	Ben Cat	11,262	15,157	1,025	359	1,383	1,655	579	2,234
	Dong Phu	Dong Phu	25,000	89,693	2,275	569	2,844	9,795	2,449	12,243
	Binh Long	Binh Long	21,998	27,912	2,002	500	2,502	3,048	762	3,810
	Phuce Long	Phuoc Long	33,339	119,613	3,034	758	3,792	13,062	3,265	16,327
	Loc Ninh	Loc Ninh	16,499	20,934	1,501	375	1,877	2,286	572	2,858
	Bu Dang	Bu Dang	10,999	13,956	1,001	250	1,251	1,524	381	1,905
	i .					TOTAL	50,792			129,940
	· ·									
Dac Lac										
	Dak Nong	Gia Nghia	8,302	11,919	1,058	497	1,555	1,735	816	2,551
	Dak R'Lap	Dak R'Lap '	-	1.					-	
			: :			TOTAL	1,555		:	2,551
Lam Dong	Ş									
	Da Lat	Da Lat	106,239	111,454	13,055	7,833	20,887	20,329	12,198	32,527
	Cat Tien	Cat Tien	11,516	33,136	1,198	275	1,473	4,092	941	5,034
	Da Teh	Da Teh	15,281	35,398	1,589	366	1,955	4,372	1,005	5,377
	Da Huoai	Da Huoai	8,397	9,562		201	1,074	1,181	272	1,453
	Báo Lam	Bao Lam	50,850	106,016		2,644	7,933	13,093	6,547	19,640
	Di Liah	Di Linh	17,559	31,622		822	2,648	3,905	1,757	5,663
	Due Trong	Duc Trong	36,358	59,085		870	4,651	7,297	1.678	8,975
	Don Duong	Don Duong	14,145	19,721	1,471	338	1,809	2,436	560	2,996
	Lac Duong	Lac Duong		.,	-			-,		
	Lam Ha	Lam Ha	25,342	43,015	2,636	606	3,242	5,312	1,222	6,534

Table 2.6 Projected Water Demand of Urban Centres (2/3)

•		District	Proje	eted			Water Dem	and, m3/day		
Province	District	and	Popul			2000		*	2015	
		Major Towns	2000	2015	Domestic	Others	Total	Domestic	Others	Total
Nin <b>h T</b> hua	ก									
	Phan Rang	P.Rang-T.Cham	95,122	141,439	1,682	706	2,388	20,755	8,717	29,47
	and Ninh Hai	Ninh Chu	17,800	26,467	315	132	447	3,884	1,631	5,51
		Dong Hai	23,000	34,199	407	171	577	5,019	2,108	7,12
	Ninh Son	Ninh Son	-	-		•	-	: :		
	Ninh Phuoc	Ninh Phuoc	•	-				•	•.	
						TOTAL	3,412			42,11
				÷	-		, :			
Binh Thua	n ·	T.								
	Phan Thiet	Phan Thiet	152,808	227,214	6,189	1,980	8,169	33,128	10,601	43,72
	Ham Tan	Lagi	30,770	45,753	1,246	· 87	1,333	6,671	467	7,13
	Ham Thuan Nam	Tan Lap	17,691	26,306	716	50	767	3,835	268	4,10
	Tanh Linh	Lac Tanh	11,756	17,481	476	33	509	2,549	178	2,7
	Duc Linh	Vo Xu	19,289	28,682	781	55	836	4,182	293	4,4
	Ham Thuan Bac	Ma Lam	12,898	19,178	522	37	559	2,796	196	2,9
	Bac Binh	Bac Binh	39,466	58,683	1,598	112	1,710	8,556	599	9,1
		Phan Ri Cua	34,812	51,763	1,410	99	1,509	7,547	528	8,0
	Tuy Phong	Lien Huong	28,847	42,893	1,168	82	1,250	6,254	438	6,69
	Phu Quy	Pho Quy	•	•	· 			F : " ,-	-	
				· 1		TOTAL	16,642			89.0
				-	100					
Ba Ria-					:					
Vung Tau	B.Ria-V.Tau	Vung Tau					a .			
		- Dwellers	225,000	436,690	21,938	31,809	53,747	87,338	126,640	213,97
	100	-Domestic Tourists	70,000	219,597	8,750		8,750	41,175		41,13
		- Foreign Tourists	7,000	24,196	2,625		2,625	15,123		15,7
	4 1	Total	302,000	680,484	33,313	31,809	65,122	143,635	126,640	270,2
	and Long Dat	Ba Ria	62,000	167,028	4,650	6,743	11,393	25,054	36,329	61,3
		Long Son	20,000	40,464	1,500	2,175	3,675	6,070	8,801	14,8
		Long Hai	25,000	41,401	1,875	2,719	4,594	6.210	9,005	15,2
		Phuod Tinh	20,000	29,652	1,500	2,175	3,675	4,448	6,449	10,8
	•	Long Dien	28,000	40,790	2,100	3,045	5,145	6,119	8,872	14,9
		Dat Do	28,000	40,790	2,100	3,045	5,145	6,119	8,872	14,9
	•	Phuee Hai	15,000	26,627	1,125		2,756	3,994	5,791	9,78
	Xuyen Moc	Phuoe Buu	12,000	25,816	100		1,125	3,872	968	4.8
	Tan Thanh	Phu My		1,038,907	19,500		83,950	1.1	143,700	330,70
	Chau Duc	Ngai Giao	15,000	19,718	1,145	281	1,406	2,958	739	3,69
		·	*		•	TOTAL	187,985			751.6

Table 2.6 Projected Water Demand of Urban Centres (3/3)

		District	Proj	ected			Water Dem	and, m3/day		
Province	District	and	Popu	lation		2000			2015	
		Major Towns	2000	2015	Domestic	Others	Total	Domestic	Others	Total
Dong Nai										
	Bien Hoa	Bien Hoa	450,000	873,381	67,500	90,500	158,000	196,511	156,977	353,48
		Tam Phooe	20,000	632,264	1,950	18,945	20,895	113,808	130,131	243.93
	Long Thanh	Long Thanh	30,000	64,541	2,925	878	3,803	11.617	3,485	15,10
	Nhon Trach	Nhon Trach	120,000	1,020,658	15,600	39,840	55,440	183,719	185,058	368,77
	Thong Nhat	Thong Nhat	20,000	72,850	2,496	624	3,120	9,092	2,273	11,36
	Xuan Loc	Gia Ray	13,000	21,466	1,622	406	2,028	2,679	670	3,34
	Long Khanh	Xuan Loc	52,000	75,091	6,490	1,622	8,112	9,371	2,343	11.7
	Vinh Cuu	Vinh An	55,000	77,812	6,864	1,716	8,580	9,711	2.428	12.1
	Tan Phu	Tan Phu	21,000	28,346	2.621	655	3,276	3,538	884	4.4.
	Dinh Quan	Dinh Quan	42,800	61,176	5,341	1,335	6,677	7,635	1,909	9,5
		•	•		<u>:</u>	TOTAL	269,930			1,033,83
					•					
нсмс			: <sup>'</sup>							
	17 districts	-	5,062,270	7,288,877	586,818	420,162	1,006,980	1,176,862	842,633	2,019,49
	Cu Chi	Cu Chi	280,429	404,365	18,228	4,557	22,785	26,284	35,821	62,10
						TOTAL	1,029,765	*		2,081,60
ong An				2.1						
	Can Duoc	Can Ducc	11,271	17,281	394	39	434	1,089	109	1,19
	Tan Tru	Tan Tro	5,339	8,186	187	19	206	516	52	50
	Can Giuoc	Can Giuoc	10,085	15,462	353	. 35	388	974	97	1,07
	Ben Luc	Ben Luc	21,381	32,876	748	75	823	2.071	207	2,2
	Due Hoa	Hou Nghia	22,828	41,350	799	80	879	2,605	261	2,80
		Hiep Hoa	10,780	19,527	377	38	415	1,230	123	1,35
1		Due Hoa	12,048	21,824	422	42	464	1,375	137	1,5
	Duc Hue	Due Hue	5,932	9,095	208	21	228	573	57	6.
	Thu Thua	Thu Thua	14,754	15,409	516	52	568	971	97	1.00
						TOTAL	4,405			12,5
	•	•			GRAND	OTAL	1,624,484			4,254,47

Table 2.7 Future Water Balance (1/3)

Province	District	District and	Water D	emand	Su	pply Capac	ity	Def	icit -
		Major Towns	2000	2015	Existing	by 2000	by 2015	in 2000	in 2015
Tay Ninh									
	Tay Ninh	Tay Ninh	5,010	8,345	9,700	6,000			
	Hoa Thanh	Hoa Thanh	2,692	4,231		<del>.</del>			
		Sub-Total	7,732	12,576	9,700	6,000		0	0
	Trang Bang	Trang Bang	1,755	2,979	900	1,000		0	1,079
	Go Dau	Go Dau	3,083	4,600	1,000	1,000		1,083	2,600
	Ben Cau	Ben Cau	•	•	-	1,000		Ö	. 0
	Chau Thanh	Chau Thanh	`	•	•	500	· -	0	
	Duong Minh Chau	Duong Minh Chau	-	-	-	500	• •.	0	
	Tan Bien	Tan Bien	663	1,062	-	500	-	163	562
	Tan Chau	Tan Chau	1,090	1,745	-	1,000		90	745
							TOTAL	1,337	4,986
Song Be	Thu Dau Mot	Thu Dau Mot	14,349	40,970	12,500	7,500			
				·					
	Thuan An	Di An	9,657	22,014	3,700	25,000			
÷		Lai Thieu	11,855	25,510	16,200	32,500 65,000			
	Ton In.	Sub-Total	35,861 1,281	88,494	32,400	65,000	40,000	1,281	2,069
	Tan Uyen	Tan Uyen		2,069				383	
	Ben Cat	Ben Cat	1,383	2,234	1,000	6000		0	7,243
	Dong Phu Binh Long	Dong Phu Binh Long	2,844 2,502	12,243	360	5,000		0	7,243
			1	16,327	300	500		3,292	15,827
	Phuoc Long Loc Ninh	Phuoc Long	3,792	2,858	500	300		1,377	2,358
		Loc Ninh	· 1	1000	300	2,000		0.	100
	Bu Dang	Bu Dang	1,251	1,905		3,000	TOTAL		20.721
: H.							IVIAL	6,334	28,731
Dac Lac									
Dat Lat.	Dak Nong	Gia Nghìa	1,555	2 551	700	1,000		0	851
	Dak Nong  Dak R'Lap	Dak R'Lap	1,555	2,551	700	1,000		0	0.51
	Dak K Lap	back cap	•	-	•		TOTAL	· - · · · · · ·	
	4	11					10105		031
Lam Dong									
FWIG TAKES	Da Lat	Da Lat	20,887	32,527	37,000		42,000	0	0
	Cat Tien	Cat Tiea	1,473	5,034	37,000		42,000	1,473	5,034
	Da Teh	Da Teh	1,955	5,377			1 1 1	1,955	- 12
	Da Huoni	Da Huoai	1,074	1,453	_			1,074	1,453
	Bao Lam	Bao Lam	7,933	19,640	3,020		7,000	4,913	9,620
	Di Linh	Di Linh	2,613	5,663	2,280	•	r,ww	368	3,383
	Due Trong	Due Trong	4,651	8,975	1,040	•	2,160	3,611	5,775
					1,040	•	2,100	1,809	2,996
	Don Duong	Don Duong	1,809	2,996	100	•	. •	0	2,550
	Lac Duong Lam Ha	Lac Duong Lam Ha	3,242	6,534	100	•	1,000	3,242	5,534
	L≪(II 113	EMIL 114	J <sub>1</sub> 242	0,554	•	•·	TOTAL	18,445	39,171

Table 2.7 Future Water Balance (2/3)

29,473 5,515 7,126 42,114	Existing	by 2000	by 2015	in 2000	in 2015
5,515 7,126					
5,515 7,126					
7,126					
*					
42,114					
	14,000	12,000	-	0	16,114
		-	-	0	0
-		-,		0	0
		. 3	TOTAL	-	16,114
43,729	15,000	12,000	•	0	16,729
7,138	1,500	500	3,000	0	2,138
4,104	-	•	-	767	4,104
2,727	•		-	509	2,727
4,475	_	-	-	836	4,475
2,992	<u>-</u>	•	-	559	2,992
9,155					100
8,075					
17,230			-	3,219.	17,230
6,691	600		-	650	6,091
· <u>.</u>	•	· . •.	· Interest and store store	0	0
		1	TOTAL.	6,540	56,485
41.77		.] .		1	•
		1			
				:	
213,978				4	
41,175					
15,123			1		
270,275					٠
61,383					
14,871					
15,215				4	
10,897				•	
14,990					:
14,990	1				
9,785					
412,407	33,000	110,000	-	0	269,407
4 841	-	3,000	2,000	0	0
7,071	600	35,000	225,000	48,350	70,104
330,704	_	2,000		0	1,697
	4,841 330,704	4,841 - 330,704 600	4,841 - 3,000	4,841 - 3,000 2,000 330,704 600 35,000 225,000 3,697 - 2,000	4,841     -     3,000     2,000     0       330,704     600     35,000     225,000     48,350

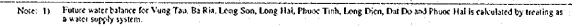






Table 2.7 Future Water Balance (3/3)

			***			• • •			(m3'day
Province	District	District and		Demand		ipply Capac	* ****	Def	
		Major Towns	2000	2015	Existing	by 2000	by 2015	in 2000	in 2015
Dong Nai									
	Bien Hoa	Bien Hoa	158,000	353,487					
		Tam Phuoc	20,895	243,938					
		Sub-Total	178,895	597,426	36,480	100,000	300,000	42,415	160,946
	Long Thanh	Long Thanh	3,803	15,103	720		•	3,083	14,38,
	Nhon Trach	Nhon Trach	55,440	368,776	•		-	55,440	368,776
•	Thong Nhat	Thong Nhat	3,120	11,365		-	•	3,120	11,365
	Xuan Loc	Gia Ray	2,028	3,349	420	2,820	-	0	109
	Long Khanh	Xuan Loc	8,112	11,714	5,000	5,000	-	0	1,71
-	Vinh Cou	Vinh An	8,580	12,139	600		• -	7,980	11,539
	Tan Pho	Tan Phu	3,276	4,422	400	-	-	2,876	4,027
	Dinh Quan	Dình Quan	6,677	9,543			-	6,677	9,543
							TOTAL	121,590	582,396
		•							
нсмс				25 1				•	
	17 districts	· · · ·	1,006,980	2,019,495	700,000	620,000	700,000	0	(
	Cu Chi	Cu Chí	22,785	62,105	2,000	2,400		18,385	57,705
		4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 -					TOTAL	18,385	57,705
				. •	:		200 00000000000000000000000000000000000		
Long An									
	Can Dooc	Can Ducc	434	1,198	1.000		-	0	198
1	Tan Tru	Tan Tru	206	567	240	1,240		. 0	(
	Can Giuoc	Can Giuce	388	1,071	120	1,120		0	
1 1	Ben Luc	Ben Luc	823	2,278	1,200			0	1,078
	Due Hoa	Huu Nghia	879	2,866	300			579	2,560
		Hiep Hoa	415	1,353	300	:		415	1,353
*		Due Hoa	464	1,512	200			264	1,312
	Duc Hue	Duc Hue	228	630	120	1,000		204	1,512
	Thu Thea	The Thea	568	1,068	960	1,000		0	(
	ING INGG	ino mos	200	1,003	200		TOTAL		

GRAND TOTAL 222,238 1,134,151

Table 2.8 Costs to Be Invested for Future Water Supply Development (1/3)

Province	District	District and	Unit F	rice	Development /	Amount, m3/day	Investment Cost	, thousand US\$
		Major Towns	Water Source 1)	US\$/m3	by 2000	by 2015	by 2000	by 2015
ay Ninh								
	Tay Ninh	Tay Ninh						
	Hoa Thanh	Hoa Thanh						
		506-Total	Surface	250	6,000	•	1,500	-
	Trang Bang	Trang Bang	Ground	500	1,000	1,100	500	550
	Go Dau	Go Dau	Ground	500	2,100	2,600	1,050	1,300
	Ben Cau	Ben Cau	Ground	500	1,000	<del>-</del>	500	-
	Chau Thanh	Chou Thanh	Ground	500	500	•	250	-
	Doong Minh Chau	Duong Minh Chau	Ground	500	500		250	•
	Tan Bien	Tan Bien	Ground	500	700	600	350	300
	Tan Chau	Tan Chau	Ground	500	1,100	800	550	400
						TOTAL	4,950	2,550
		•						* 1
Song Be								
	Thu Dau Mot	Thu Dau Mot						
	Thuan An	Di An						
1		Lai Thieu		· · · · · · · · · · · · · · · · · · ·	<u>.</u>	A STATE OF THE STA		
-		Sub-Total	Surface	250	65,000	40,000	16,250	10,000
	Tan Uyen	Tan Uyea	Ground	500	1,300	2,100	650	1,050
	Ben Cat	Ben Cat	Ground	500	400	1,300	200	650
	Dong Phu	Dong Phu	Ground	700	5,000	7,300	3,500	5,110
	Binh Long	Binh Long	Surface	250	5,000	-	1,250	•
	Phuce Long	Phuoe Long	Surface	250	3,800	16,000	950	4,000
	Loc Ninh	Loc Ninh	Ground	700	1,400	2,400	980	1,680
	Bu Dang	Bu Dang	Sufrace	250	3,000	250400274704770	750	<u>.</u>
						TOTAL	24,530	22,490
Dac Lac							14311	
	Dak Nong	Gia Nghĩa	Surface	250	1,000	900	250	225
	Dak R'Lap	Dak R Lap	·	- 1	-			·
:					•	TOTAL	250	225
7			4.5					
am Dong	3					•		
	Da Lat	Da Lat	Surface	250	•	42,000		10,500
	Cat Tien	Cat Tien	Ground	1,000	1,500	5,100	1,500	5,100
1	Da Teh	Da Teh	Ground	1,000	2,000	5,400	2,000	5,400
	Da Huoai	Da Huozi	Ground	1,000	1,100	1,500	1,100	1,500
1 -1	Bao Lam	Bao Lam	Ground	1,000	5,000	17,000	5,000	17,000
: .	Di Linh	Di Linh	Ground	1,000	400	3,400	400	3,400
	Duc Trong	Duc Trong	Ground	1,000	3,700	7,960	3,700	7,960
	Don Duong	Don Duong	Ground	1,000	1,800	3,000	1,800	3,000
	Lac Duong	Lac Duong	Surface	250	•	-	-	•
	Lam Ha	Lam Ha	Surface	250	3,300	6,600	825	1,650
						TOTAL	16,325	55,510

Note: 1) There are two types of water sources; one is the water source to rely on the surface water and the other is groundwater.



Table 2.8 Costs to Be Invested for Future Water Supply Development (2/3)

Province	District	District and	Unit P	rice	Development	Amount, m3/day	Investment Cos	t, thousand US:
		Major Towns	Water Source 1)	US\$/m3	by 2000	by 2015	by 2000	by 2015
Ninh Thua	រហ							
	Phan Rang	P.Rang-T.Cham						
	and Ninh Hai	Ninh Chu						
		Dong Hai Suh-Total	Surface	250	12,000	16,500	3,000	4,125
	Ninh Son	Ninh Son	Ground	700	12,000	10,500	.,000	-
	Ninh Phuce	Ninh Phuoc	Ground	700		-		
	tylini i riocc	Mar Fridoc	Otogra	100	·	TOTAL	3,000	4,125
						12 6 1 <b>2 7 10 5</b> 4	5,000	7,120
Binh <b>Th</b> ua								
2110	Phan Thiet	Phan Thiet	Surface	250	12,000	17,000	3,000	4,250
	Ham Tan	Lagi	Surface	250	500	5,200	125	1,300
	Ham Thuan Nam	Tan Lap	Ground	700	800	4,200	560	2,940
	Tanh Linh	Lac Tanh	Ground	700	500	2,800	350	1,960
	Duc Linh	Vo Xu	Ground	700	900	4,500	630	3,150
•	Ham Thuan Bac	Ma Lam	Ground	700	600	3,000	420	2,100
	Bac Binh	Bac Binh						
		Phan Ri Cua				•		
. :		Sub-Total	Surface	250	3,300	18,000	825	4,500
	Tuy Phong	Lien Huong	Ground	700	700	6,100	490	4,270
	Phu Quy	Phu Quy	Ground	700	-	· · · · ·		
	• .		. ::	•		TOTAL	6,400	24,470
Ba Ria-								
Vong Tau	B.Ria-V.Tau	Vung Tau		* * * * * * * * * * * * * * * * * * * *				
		- Dwellers	e de la companya de l					
		-Domestic Tourists						
1, 4		- Foreign Tourists						
•	1							
	and Long Dat	Ba Ria						
		Long Son						1
	• •	Long Hai						
		Phuoc Tinh		•				
		Long Dien	÷					
		Dat Do			•	1 1		
		Phuoe Ilai						
		Sub-Toiál	Surface	250	110,000	270,000	27,500	67,500
	Xuyen Mee	Phuoe Buu	Surface	250	3,000	2,000	750	500
•	Tan Thanh	Phu My	Surface	250	83,350	296,000	20,838	74,000
	Chau Duc	Ngai Giao	Surface	250	2,000	1,700	500	425
					•	TOTAL	49,588	142,425

Table 2.8 Costs to Be Invested for Future Water Supply Development (3/3)

					<u> </u>		<del></del>	
Province	District	District and	Unit P	rice	Development /	Amount, m3/day	Investment Co	t, thousand US
		Major Towns	Water Source <sup>1)</sup>	US\$/m3	by 2000	by 2015	by 2000	by 2015
Oong Nai								
	Bien Hoa	Bien Hoa						
		Tam Phuoc						
		Sub-Total	Surface	250	142,500	461,000	35,625	115,250
	Long Thanh	Long Thanh	Surface	250	3,100	14,500	775	3,625
	Nhon Trach	Nhon Trach	Surface	250	56,000	369,000	14,600	92,250
	Thong Nhat	Thong Nhat	Ground	700	3,200	11,500	2,240	8,050
	Xuan Lee	Gia Ray	Surface	250	2,820	100	705	- 25
	Long Khanh	Xuan Loc	Ground	700	5,000	1,800	3,500	1,260
	Vinh Cuu	Vinh An	Ground	700	8,000	12,000	5,600	8,400
	Tan Phu	Tan Phu	Ground	700	2,900	4,100	2,030	2,870
	Dinh Quan	Dinh Quan	Ground	700	6,700	000,01	4,690	7,000
						TOTÁL	69,165	238,730
ICMC		.*						
	17 districts	•	Surface	250	620,000	700,000	155,000	175,000
	Cu Chi	Cu Chi	Surface	250	20,900	58,000	5,225	14,500
				1.00		TOTAL	160,225	189,500
ong An		1			4			
	Can Duoc	Can Ducc	Ground	500	<del>-</del> ,	200	-	100
	Tan Tru	Tan Tru	Ground	500	1,240	•	620	
	Can Giuoc	Can Giuce	Ground	500	1,120	•	560	
	Ben Luc	Ben Luc	Ground	500	•	1,100	-	550
	Due Hoa	Huu Nghia	Ground	500	600	2,600	300	1,300
		Hiep Hoa	Ground	500	500	1,400	250	700
		Duc Hoa	Ground	500	300	1,400	150	700
	Due Hue	Due Hue	Ground	500	1,000	i -	500	
1 1 1	Thu Thua	Thu Thua	Ground	500	1,000	<u> </u>	500	
						TOTAL	2,880	3,350
		•		- 1	GRAN	D TOTAL	337,313	683,375



Table 3.1 Water Supply Projects to Seek Water Sources to the Dong Nai River and the Saigon River in the Year 2015

(500,000) a capacity of 70,000 in 7day is sought to groundwater.	Ho Chi Minh 17 districts 1,630,000 (300,000 Out of total demand of 2,000,000 m <sup>3</sup> /day, city	Out of total demand of 410,000 m³/day, a capacity of 158,000 m³/day is sought to other sources.  Out of total demand of 330,000 m³/day, a capacity of 15,000 m³/day is sought to groundwater.  Out of total demand of 2,000,000 m³/day, a capacity of 70,000 m³/day is sought to groundwater.	Saigon River 15,000 25,000 25,000 (300,000)	ģ	Dong an - nh - nh - loc fhanh fhanh	Thu Dau Mot Thuan An Ba Ria - Vung Ta Long Son - Long Long Hai - Phuo Dat Do - Phuoc I Go Dau - Phu M Go Dau - Phu M Tam Phuoc - An Nhon Trach - Lo I7 districts
	to groundwater.				the state of the s	•
17 districts 1,630,000				380,000	Long Thanh	Nhon Trach -
Nhon Trach - Long Thanh 380,000 17 districts 1,630,000				240,000	An Phuoc	Tam Phuce -
Tam Phuce - An Phuce 240,000  Nhon Trach - Long Thanh 380,000  17 districts 1,630,000				350,000	o Nai	Bien Hoa - H
Bien Hoa - Ho Nai       350,000         Tam Phuoc - An Phuoc       240,000         Nhon Trach - Long Thanh       380,000         17 districts       1,630,000	Bien Hoa - Ho Nai Tam Phuoc - An Phuoc Nhon Trach - Long Thanh	a capacity of 15,000 m³/day is sought to groundwater.				
Bien Hoa - Ho Nai       350,000         Tam Phuoc - An Phuoc       240,000         Nhon Trach - Long Thanh       380,000         17 districts       1,630,000	Bien Hoa - Ho Nai Tam Phuoc - An Phuoc Nhon Trach - Long Thanh 380,000	Out of total demand of 330,000 m³/day,		315,000	∞ Hai My - Thi Vai	Dat Do - Phu Go Dau - Phu
Dat Do - Phuce Hai       315,000         Go Dau - Phu My - Thi Vai       315,000         Bien Hoa - Ho Nai       350,000         Tam Phuce - An Phuce       240,000         Nhon Trach - Long Thanh       380,000         17 districts       1,630,000	Thi Vai 315,000 350,000 100 240,000 Thanh 380,000	a capacity of 158,000 m²/day is sought to other sources.	, T		ong Dien - nuoc Tinh -	Long Son - L Long Hai - Pr
Long Son - Long Dien - Long Hai - Phuoc Tinh - Dat Do - Phuoc Hai Go Dau - Phu My - Thi Vai 315,000  Bien Hoa - Ho Nai Tam Phuoc - An Phuoc Nhon Trach - Long Thanh 380,000  17 districts 1.630,000	Long Son - Long Dien - Long Hai - Phuoc Tinh - Dat Do - Phuoc Hai Go Dau - Phu My - Thi Vai 315,000  Bien Hoa - Ho Nai 350,000  Tam Phuoc - An Phuoc Tam Phuoc - An Phuoc 240,000  Nhon Trach - Long Thanh 380,000	Out of total demand of 410,000 m <sup>3</sup> /day,		252,000	g Tau -	
Ba Ria - Vung Tau -  Long Son - Long Dien -  Long Hai - Phuoc Tinh -  Dat Do - Phuoc Hai  Go Dau - Phu My - Thi Vai  315,000  Tam Phuoc - An Phuoc  Tam Phuoc - An Phuoc  Nhon Trach - Long Thanh  380,000  Minh  17 districts  1,630,000	Ba Ria - Vung Tau - Long Son - Long Dien - Long Hai - Phuoc Tinh - Dat Do - Phuoc Hai Go Dau - Phu My - Thi Vai 315,000  Bien Hoa - Ho Nai Tam Phuoc - An Phuoc		15,000	20,000		Thu Dau Mot Thuan An
Thu Dau Mot Thuan An Thuan An Thuan An  Ba Ria - Vung Tau - Long Son - Long Dien - Long Hai - Phuoc Tinh - Dat Do - Phuoc Hai Go Dau - Phu My - Thi Vai 315,000 Tam Phuoc - An Phuoc Tam Phuoc - An Phuoc Tam Phuoc - An Phuoc Ainh 17 districts 1,630,000	Thu Dau Mot  Thuan An  20,000  Z5,000  Ba Ria - Vung Tau -  Long Son - Long Dien -  Long Hai - Phuoc Tinh -  Dat Do - Phuoc Hai  Go Dau - Phu My - Thi Vai  315,000  Tam Phuoc - An Phuoc  Tam Phuoc - An Phuoc  Nhon Trach - Long Thanh  380,000		Saigon Most		TOUR S	
Thu Dau Mot Thu Dau Mot Thuan An  Ba Ria - Vung Tau - Long Son - Long Dien - Long Hai - Phuoc Tinh - Dat Do - Phuoc Hai Go Dau - Phu My - Thi Vai  Bien Hoa - Ho Nai Tam Phuoc - An Phuoc Nhon Trach - Long Thanh 17 districts 1,630,000	Thu Dau Mot Thuan An  20,000 Thuan An  Long Son - Long Dien - Long Hai - Phuoc Tinh - Dat Do - Phuoc Hai Go Dau - Phu My - Thi Vai  Bien Hoa - Ho Nai Tam Phuoc - An Phuoc Nhon Trach - Long Thanh 380,000		Coice Direct	<u>ا ا</u> ا	į.	2
Dong Nai River Saigon 20,000 252,000	Dong Nai River         Saigon River           15,000         20,000           252,000         25,000           252,000         315,000           Ihi Vai         315,000           1000         240,000           1000         240,000           1000         240,000	SOION	, m./day	vater sources	-	?

Note: The figure in the parentheses shows the requirement of the Saigon River in case that the first stage of the Phu Cuong intake under construction is implemented.

Table 4.1 Reservoir Projects for Water Supply to the Areas along National Highway No. 51

Reservoir	Reservoir Development project stage 1)	Proposed supply centre 2)	Catchment area, km²	Proposed FSL, m <sup>3)</sup>	Proposed MOL, m <sup>3)</sup>	Active Storage, million m <sup>3</sup>	Development capacity, m <sup>3</sup> /day <sup>4)</sup>
La Buong	MP	Tam Phuoc	246	50.0	48.0	8.5	220,000
Song Ca-1	MP	Nhon Trach	56	80.0	61.0	27.4	
Song Ca-2	MP	Nhon Trach	49.	0.09	52.0	10.4	270,000 5)
Phuoc Thai	MP	Phu My	06	20.0	16.0	0.6	120,000
Da Den	F/S	Vung Tau	127	40.0	27.0	56.7	250,000 6)
Song Ray	Pre-F/S	Vung Tau	750	70.0	48.0	239.2	1,400,000

1) Feasibility study for the Da Den has been completed by a local company, whilst pre-feasibility study for the Song Ray. Others are originally identified for irrigation, but further detailed studies have not been done yet. Notes:

2) The area to receive water supply from the proposed reservoir is selected based on the geographical condition, i.e. nearest to the demand centre, as well as provincial boundary. The Tam Phuoc area includes the An Phuoc area, whilst the Long Thanh for the Nhon Trach, and the Go Dau and Thi Vai for the Phu My. The Ba Ria-Vung Tau includes the nearby towns

3) The proposed Full Supply Level, FSL, is tentatively selected so as that the reservoir can secure the maximum active storage. On the other hand, the proposed Minimum Operation Level, MOL, is determined by assuming the denudation rate of 1.0 mm/year/km<sup>2</sup>.

4) Development capacity of the reservoir for water supply is estimated by giving right-of-way to irrigation in terms of water use. For the reservoir simulation, hydrologhical data with a drought once in 10 years are used. Furthermore, river maintenance flow besides the imgation use is not taken into account in the simulation.

5) A development capacity of 270,000 m3/day is obtained as the result of the joint operation of the Song Ca-1 & 2 reservoirs.

6) The tentative development capacity is estimated under the condition that water level in the reservoir returns to FSL at the end of wet season in a 10-year drought.

Table 4.2 Water Requirements of Irrigation Schemes Lying Downstream of the Water Supply Reservoirs

	Reservoir	Irrigation	Irrigation Design irrigation	J				Water	Water Requirement, m3/sec	ment, n	n3/sec	٠			
	project	project	area, ha	Jan.	Feb.	Mar.	Apr.	May	June	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	La Buong	Phuoc Tan	100	0.05	0.10	0.07	0.03	0.02	0.00	0.00	0.00	0.00	0.01	0.05	0.03
	Song Ca	Suoi Ca	009	0.28	0.59	0.43	0.16	0.10	0.01	0.02	0.00	0.00	0.07	0.32	0.20
	Phuoc Thai	No project	<b>1</b> ,	•	· ·	•		•	1	•	•	1	•	•	,
	Da Den	Song Dinh I		0.34	0.65	0.49	0.18	0.11	0.13	0.11	0.00	0.00	0.19	0.49	0.28
		Song Xoan Total	1,600	0.56	1.73	0.82	0.30	0.30	0.21	0.30	0.00	0.00	0.32	0.82	0.75
	Song Ray	Song Ray	800	0.45	0.86	0.66	0.24	0.15	0.17	0.15	0.00	00.00	0.26	99.0	0.38

Table 4.3 Construction Costs for the Proposed Six Reservoir Projects for Water Supply along National Highway No. 51

Work Item [A] Direct Cost [A] Preparatory Works Access road Power supply Other [A2] Civil Work	C air		***************************************		11/11									
repar	•	Price	Work	Amount	Work	Аточис	Work	Amount.	Work	Amount	Work	Amount	Work	Amount
repar	1		Quantity	(\$ 000')	Ounmrity	(\$ 000°)	Quantity	(\$ 000')	Quantity	(\$ 000')	Quantity	(\$000')	Quantity	(\$ 000)
w.bar				14,410	0	24,873		6,601		16,295	-	670'6		48,252
i i		:		642		82		1,210		1,03	_	Ξ.		
JAC .	E E	0000	(4	200	\$	200	90	800	\$	200	٧.	Ş		2
Ď	1 "	14,600	.1	29		. 73	•	117	<b>~</b>	12		73		. 53
Š	į	<u>:</u> .		413		70%		293		458		538		707
:		-		13.768		23.592	-	6,769	1	15,264	₹+	326.71		46,735
Keeron		:								***	:			
[-] Care of River	<u>)</u> <u>v</u>		-	161		\$69	-	161	-	202	_	4		930
1	-			4,772		17,381		9979	i - · ·	10,181	-	11,062	-	23,238
ļ	-	-		277.4	1	17.381	-	4.777		8 0		1.062		23.238
	-	9 9	00000	İ	(A) 80C	į.,	27 500	421	308 000	1.144	00y c7	78.4	200 000	1.54
Common excavation	Ē	<u> </u>	23,000	3	3,007	3	è	10*	20000	; ·	3	****	200	
Rock excavation	É	0.0	0	0	<b>3</b>	0	0	0	0	0	3	6	3	8
Embankmentcore	Ê	3.	305,410	2,871	1,180,230	11,094	310,930	2,923	653,140	6,140	0.92	6001	249,510	2.25
Embankment:filter	E .	29.5	17,970	530	65.4.00	2,048	18.28	3.	38,420	1,133	37.560	1,108	83,170	2,454
Embankmentrock	É	10.9	35,930	35.	138,850	1.513	36,580	38	76,840	838	096'009	6.550	1,330,720	14,505
Grouting & others	. 10	,	_	434	_	1,580		434	-	926		-:00 -:00		2,13
1-2-2 Auxiliary Dam 1				3				687			_			
		3,5	0	0	0	0	37.600	· ·	0	0	ō	0	0	
Tentonical and an artist of the second		40					81.470		c		· c		· c	c
Control Class		ý		1	, e		4910	145			: :		÷ c	· c
Embarbar encuring		3 2	, , ,	1 1 1 C		· ·	06%0	201	o <sup>†</sup> c	; >: c	· c	• •	· ć	: > c
Canada Para		÷	> <		5	, ,	2004	176	1	•	o' c	· •	) c	, ,
	 2		<b>.</b>			070		L33		באני	; ·		,	•
Splitway	1	<u> </u>			1	:	1			•	i	401.50 	1	
Common excavation	÷		0.00	0/9	067.00	80.	0.0.17	011	607.61	<u>8</u>	0/0/14	777	00000	1 8
Rock excavation	Ė	00.		66.	2 2 3 3	3.	11,870	25.	15,105		90	XX	000,621	3
Structural concrete	Œ.	142.0		2,95;	7,770	1,103	7,170	1,018	11,823	1,679	12,840		42,220	5,995
Reinforcement-bar	00 20	650.0	83	27.	3:	104	8	91.	320	82	280	691	3 3	Ę.
Others	- S			451		170		142	_	215		22		<u></u>
1-4 River Outlet			1	2595		1,503	j	867	į	ឌ		102,1	į	:
Common excavation	£	3.	29,450	162	17,940	8	12,170	63	7,953	4	18,360	101	49,430	212
Rock excavation	E.	16.0	7. 80,	ă	32,770	524	9,000	256	16.752	268	3,50	8	186,510	2,984
Structural concrete	E,E	142.0	9.76	1,329	681.4	591	2,340	332	2,410	342	4,820	7899	26,830	3,810
Reinforcement-bar	8	650.0	8	124	8	52	ጽ	33	ŝ	æ	8	\$	540	S
Intake gate	Ş	10,000.0	23	200	10	100	01	8	S	ō.	15.	150	ห	ង
	s:			736	::	137	-	ድ		78		155		767
1-5 Miscellaneous Works	z:		_	1,252		2,145	_	888		1,388		1,631	-	4,249
	1													
Indirect Cost			-	7,566		6,763		3,186		4,743	-	7,520		18,053
(B1) Compensation Cost										AND THE PERSON NAMED IN CONTRACT OF THE PERSON NAMED IN CONTRA				:
Reservoir inumention	£m2	400,000	4	007	7	.400	2	008	66 <sup>1</sup>	1,200	×	3,200	8	7,200
ē	<u>.</u>	•	Ē	258	_	497		220		326	-	-8°		8
[B3] Engineering Fec	-50		<u></u>	1,153	-	066,1	_	878	_	1305	-	1,524		3,860
[B4] Physical Contingency	.S.		_	22.	-	2,876	: ;	1,288	-	1.913	Ξ,	2,415		¥20'9
Control to the Contro	 :	<del></del> -									-1	1	:	
Total Construction Cost	1			18,976		0.0.16		(6) <del>(4</del> )		21,038		40507		5 8



Table 4.4 Installation Programme of Water Supply Projects for Alternative 1

I

	Tau	Supply	Capacity	m²/day	33,00			15,000		125,000			:	And the second second second		250,000									:	433,000	412.00
	Vung Tau		Project		Existing		Dinh River	Groundwater		Da Den 1)			***		(53)	Song Ray			A de anada a comme com como como de co						2		
		Supply	Capacity	m³/day	909		15,000	20,000	10,000	125,000					:	200,000			#							370.600	33:000
	Phu My		Project		Existing		Groundwater I	Chau Pha & Suoi Sao	Groundwater II	Da Den 1)	The second section of the section of the section of		And the second s			Song Ray					The second secon						
Demand Centre	Nhon Trach	Supply	Project Capacity	m³/day	Existing 720		Groundwater I 20,000	Groundwater II 20,000			6	Thien Tan I 7 200,000		The second contract of the second contract of	The second secon	A supplied to the supplied to			Thien Tan II 7 150,000							400,720	000 1 80
	Tam Phuoc	Supply	Project Capacity	m³/day			Groundwater I 10,000	Groundwater II 10,000		Groundwater II 10,000		Thien Tan I 2, 100,000						· · · · · · · · · · · · · · · · · · ·	Thien Tan II 7 150,000	;					The second secon	280,000	
	Ioa	Supply	Capacity	m³/day	36,000		100,000					150,000								150,000		redución de la companya de la compan	NAT OF SECURE OF			436,000	
	Bien Hoa		Project		Existing		Thien Tan I		•			Thien Tan II							The second secon	Thien Tan III 150,000					* * * * * * * * * * * * * * * * * * * *		
	4	Year			1995	1998	1997	1988	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total Supply	

1) A development of 250,000 m³/day for the Da Den reservoir is shared by two demand centres, Phu My and Vung Tau. Notes:

2) A pipeline with a conveyance capacity of 300,000 m³/day is developed for the Tam Phuoc and Nhon Trach demand centres.

3) The Song Ray is developed with a scale of 450,000 m³/day of which 200,000 m³/day is for Phu My and 250,000 m³/day is for Vung Tau.

4) Another pipeline with a conveyance capacity of 300,000 m³/day is developed for both of Phuoc and Nhon Trach demand centres.

Installation Programme of Water Supply Projects for Alternative 2 Table 4.5

	:							
				Demand Centre		-		
	Bien Hoa	Hoa	Tam Phuoc	Nhon Trach	Phu My		Vung Tau	30
Year		Supply	Supply	Supply		Supply		Supply
	Project	Capacity	Project Capacity	Project Capacity	Project	Capacity	Project (	Capacity
		m³/day	m³/day	m³/day		m³/day		m³/day
1995	Existing	36,000		Existing 720	Existing	009	Existing	33,000
1996		The state of the s						
1997	Thien Tan I	100,000	Groundwater I 10,000	Groundwater I 20,000	Groundwater I		Dinh River	10,000
1998	The second secon	i	Groundwater II 10,000	Groundwater II 20,000	Chau Pha & Suoi Sao		Groundwater	15,000
1999	AMMA	AND THE PROPERTY OF THE PROPER	:	Groundwater II 10,000	Groundwater II			
2000	MANAGEMENT OF THE COMMISSION OF TRANSPORT AND ARRAY WHEN.	manuscript a span dama	Groundwater II 10,000	e de la companya del companya de la companya del companya de la companya de la companya de la companya de la companya de la companya de la companya de la companya del companya del companya del companya de la companya de la companya del c	Da Den 1)	-	Da Den 1)	125,000
2001			***************************************			April 1		
2002	Thien Tan II 150,000	150,000	Thien Tan I 2) 100,000	Thien Tan I 2 200,000				
2003	-							-
2004							•	
2005					16			
2006				AND THE PROPERTY OF THE PROPER	Thien Tan 3)	200,000	Thien Tan 2)	250,000
2007	and the state of t	** * * * * * * * * * * * * * * * * * *			3			- - - -
2008			The second secon	*				
2009	THE REAL PROPERTY AND ADMINISTRAL PROPERTY AND ADMINISTRAL PROPERTY.		Thien Tan II 150,000	Thien Tan II 150,000		•		
2010	Thien Tan III 150,000	u 150,000	1		Adr 1. Ad			:
2011								
2012								
2013								
2014			The second section of the second section is a second section of the second section of the second section secti	And the second s				
2015	***************************************							
Total Supply		436,000	280.000	400,720		370.600		433,000
Demand in 2015	15.	354,000	244,000	374,000		331,000		412,000

1) A development of 250,000 m³/day for the Da Den reservoir is shared by two demand centres. Phu My and Vung Tau.

2) A pipeline with a conveyance capacity of 300,000 m³/day is developed for the Tam Phuoc and Nhon Trach demand centres.

3) Another pipeline with a conveyance capacity of 450,000 m³/day is developed for the Phu My and Vung Tau demand centres.

4) The second pipeline for Tam Phuoc and Nhon Trach is placed with a conveyance capacity of 300,000 m³/day. Notes:

Table 4.6 Installation Programme of Water Supply Projects for Alternative 3

Tam Phuoc   Nhon Trach   Phu My Supply   Supply   Supply   Supply   Supply   Project   Capacity   Project   Project   Capacity   Project   Project   Capacity   Project   P						4					
Project Capacity		T. Caro	T.	Tom Dhuo		Nhon Tex	a Centre	Phu Mv		Vino Tan	311
Project Capacity		Dien	HOR	LAIN FINGS		TIOIT TI	1011	A TAT THE Y		, Sin ,	3
Project Capacity Project Capacity Project Capacity Project Capacity   Project Capacity   Project Capacity   Project Capacity   Project Capacity   Project Capacity   Project	Year	: .	Supply		npply		Supply		Supply		Supply
Existing	3	Project	Capacity		apacity	Project	Capacity 3/4	Project	Capacity	Project	Capacity
Existing   36,000   Existing   720   Existing   600			m./dav	<u>.</u>	n./cav		m:/day		m:/gay		Apply El
Thien Tan I   100,000   Groundwater I   10,000   Groundwater II   20,000   Choundwater II   10,000   Groundwater II   10,000   Da Den I)   125,000   Thien Tan II   20,000   Song Ca   270,000   Song Ray 3)   200,000   Thien Tan II   20,000   La Buong   80,000   Song Ray 3)   200,000   Thien Tan II   150,000   280,000   280,000   370,000	1995	Existing	36,000			Existing	720	Existing	009	Existing	33,000
Thien Tan I 100,000 Groundwater I 10,000 Groundwater I 15,000 Chau Plat & Suoi Sao 20,000  Groundwater II 10,000 Groundwater II 10,000  Groundwater II 10,000  Groundwater II 10,000  Groundwater II 10,000  Thien Tan II 150,000  Thien Tan II 2 150,000  Thien Tan II 2 150,000  Thien Tan II 2 150,000  Thien Tan II 2 150,000  Thien Tan III 150,000  Thien Tan III 150,000  Thien Tan III 2 150,000  Thien Tan III 150,000  Thien Tan II 150,000  Thien Tan II 150,000  Thien Tan II 150,000  Thien Tan II 150,000	1996	- :						The second secon			
Choundwater II   10,000   Groundwater II   10,000   I.25,000   I.25,000   Song Ca   270,000   Song Ray 3)   200,000   Thien Tan II   150,000   La Buong   80,000   Song Ray 3)   200,000   Thien Tan III   150,000   Thien Tan I	1997	Thien Tan I	100,000		10,000	Groundwater I	20,000	Groundwater I	15.000	Dinh River	10.00
Thien Tan II   150,000   Thien Tan II   100,000   Song Ray   10,000   Song Ray   10,000   125,000	1998				10,000	Groundwater II	20,000	Chau Pha & Suoi Sao	20,000	Groundwater	15,000
Thien Tan II 150,000 Thien Tan II 2) 100,000 Song Ca 270,000 Song Ray 3) 200,000 Thien Tan III 150,000 La Buong 80,000 Song Ray 3) 200,000 Thien Tan III 150,000 La Buong 80,000 370,600	1999	*				Groundwater II	10,000	Groundwater II	10,000		
Thien Tan II 150,000 Thien Tan I <sup>2)</sup> 100,000 Song Ca 270,000 Song Ray <sup>3)</sup> 200,000 Thien Tan III 150,000 La Buong 80,000 280,000 370,600 370,600 374,000 31000	2000			1	10,000	and the second of the second o	The same of the sa	Da Den 1)	125,000	Da Den 1)	125,000
Thien Tan II 150,000 Thien Tan I <sup>2</sup> 100,000 Song Ca 270,000  Thien Tan III 150,000  Thien	2001								:		
Thien Tan III 150,000 Thien Tan III 150,000	2002	Thien Tan II			000.00	Song Ca	270,000			•	
Thien Tan III. 150,000 Thien Tan III. 150,000	2003	The second secon									
Thien Tan III 150,000 Thien Tan III 150,000	2004					ALIAN CANADA STATE OF THE CONTROL OF				:	
Thien Tan III 150,000 Thien Tan III 150,000	2005							•	1		
Thien Tan III 150,000 Thien Tan III 150,000	2006				•			Song Ray	200,000	Song Ray	250,000
Thien Tan III 150,000 Thien Tan II 2) 150,000 La Buong 80,000  Thien Tan III 150,000 La Buong 80,000  436,000 280,000 400,720	2007	:					- :				
Thien Tan III, 150,000 Thien Thien Tan III, 150,000 Thien Tan III, 1	2008			6							
Thien Tan III 150,000 This Tan III 150,000 This 335,000 This 335,000 This 335,000 This 335,000 This 335,000 This 335,000	2009				50,000	La Buong	80,000		:		
436,000 280,000 400,720 400,720 374,000 374,000	2010	Thien Tan II	п 150,000				. :				
436,000 280,000 400,720 400,720 374,000 374,000	2011										
436,000 280,000 400,720 354,000 374,000	2012										
436,000 280,000 400,720 744,000 374,000	2013								5		
436,000 280,000 400,720	2014			The second secon	The second second second	1		Control of the Contro	:		
436,000 280,000 400,720 724,000 374,000	2015				mark mark to the control						
374 (NN) 374 (NN)	otal Supply		436,000		80,000		400,720		370,600		433,000
	amand in 20	15	354,000	2	44,000		374,000		331,000		412,000

Notes:

1) A development of 250,000 m³/day for the Da Den reservoir is shared by two demand centres, Phu My ande Vung Tau.
2) A pipeline with a conveyance capacity of 250,000 m³/day is placed for the Tam Phuoc demand centre. Thus, the second stage development, i.e. Thien Tan II, is the construction of treatment plant.

3) The Song Ray is developed with a scale of 450,000 m³/day, of which 200,000 m³/day is for Phu My and 250,000 m³/day is for Vung Tau.

Table 4.7 Construction Cost Required for Alternative 1

2	· <del></del>	Water Tots	Total		Total	Water supply	yldd		Total	Shared	Cost shared	Development	Tota!	Shared	Cost shared
	<del></del>	supply cons	truction												
				Supply	construction	capacity	٠.	Distance o	Distance construction	capacity	à	Alddus	construction	capacity	â
• •     • • • •     • • • • • • • • • •	: .	capacity	cost	capacity	COST		÷.		1500		demand centre	capacity	tsoo		demand centre
	-	(m³/day) ('00	(2000USS)	(m³/day)	('0000'SS)	(m³/day) (m³/xec)	m³/sec)	(km)	(2000035)	(m³/day)	(2000USS)	(m³/day)	(2000)	(m³/day)	(COCOUSS)
	22			150,000	30,000	300,000	3.48	8	4,733	300,000	4,733	•	•	,	•
	010	•		150,000	30,000						•	•	•		•
		:													
	8	10,000	2,500			. •			•		•	,	•	,	,
	8661	10,000	2.500									,			•
Groundwater III 200	2000	10,000	2,500		•		•			•	•	•	•	•	•
	2002			100,000	20,000	300,000	3.48	21	12,424	100,000	4,141	,	•		•
	2009	•		150,000	30,000	300,000	3.48	21	12,424	150,000	6,212	•	•	1	
Nhon Trach															
	2661	20,000	2,000	•	٠				,	•	٠		•	,	•
	88	20,000	\$,000				•		•	•	•	•	1	•	
:	86.	10,000	2.500					1	•	•	•	•		1	
Thien Tan I 2002	20		•	200,000	40,000	300,000	3,48	21	12,424	200,000	8,282		•	•	
						200,000	2.32	٥	3,550	200,000	3,550				
Thien Tan II 2009	8	•		150,000	30,000	300,000	3.48	21	12,424	150,000	6,212	,	•		
			-		- ;	150,000	1.74	Ď	2,662	150,000	2.662				
Phu My			1.	er.		1									
Groundwater I 199	1997	15,000	3,750	•	•	. •		•	•	•.	:	•	•	•	
Groundwater II 199	86	00001	2.500				•						• :	•	•
Da Den 2000	8		,	125,000	25,000	7.7	2.90	- <u>±</u> -	493	125,000	247	250,000	26.570	125,000	13,285
	<del>-                                 </del>	1	<del></del>			125,000	45	S	1,233	125,000	1,233	1			. •
Song Ray 2006	8	•	•	200,000	000,04	450,000	5.21	23	23,914	75,000	3,986	1,400,000	66,310	200,000	9,473
				:		200,000	2.32	S	1.972	200,000	1.972				
Vung Tau															
Groundwater 1998	<u></u>	15,000	3,750	• ;			• .		•		•	•			
Da Den : 2000	8	•	•	125,000	25,000	250,000	2.90	<u> </u>	7 958	125,000	247	250,000	26,570	125,000	13,285
Sone Ray 2006	8			250.000	20.000	Ć.,	5.21	2	23.914	1	19.928	1.400.000	66.310	250,000	11.841

Table 4.8 Construction Cost Required for Alternative 2

							Disseline				Dam	a	
	Groundwater	ater	51	ent Plant	;		Liberine		[		1	,	7
Projects	Water	Total	Water	Total	Water supply	:	Total	Shared	Cost shared	Development	lotal		Cost snared
	supply cons	construction	supply	construction	capacity	Distance	Distance construction	capacity	à.		construction	capacity	you you
	capacity	cost	capacity	cost			cost		demand centre		180		Oction Conde
Name Year	r (m³/day) ('000USS)	(\$SD00	(m³/day)	(2000USS)	(m³/dav) (m³/scc)	x) (km)	(000USS)	(m <sup>3</sup> /day)	(Y000US\$)	(m³/day)	(1000USS)	(m³/day)	(SSDOO)
Bien Hoa													
Thien Tan II 2002		•	150,000	30,000	300,000	3,48	4,733	300,000	4,733	•	•		
.l			150.000	30.000			,						
١,				·     :   :									
Groundwater I 1997	00001 2	2.500		•	•	•	• ;		٠	•	•		•
Groundwater II 1998	8 10,000	2.500		;	7	•			•	•		• :	•
Groundwater III 2000	000'01	2.500	•			• :		1	•	•	•	,	1.5
Thien Tan I 2002	,	•	100,000	20,000	300,000	3,48 21	12,424		4,141	•			
, ; :	6		150,000	30,000	300,000	:	12,424	150,000	6,212				•
Nhon Trach													
Groundwater I 1997	7 20.000	5,000	• ;			:	•	,	•	• • • • • • • • • • • • • • • • • • • •		·	•
Groundwater II 1998	\$ 20,000	5,000	• :	1		. ,	•		•	•	•	•	
		2,500	• *	1			•	. · .			1	,	•
• • •	<u> </u>		200,000	40,000	300,000	3,48 21	12,424	200,000		•	•		•
			**** :		200,000	232 9	3.550	200,000			:	<del>-</del> -	
Thien Tan II 2009	· ·	•	150,000	30,000	300,000	~			6,212		• :	4	•
					150.000	1.74: 9	2,662	150,000	2,662	21			
Phu My													
Groundwater I 1997	15,000:	3,750				4		1			•	4 . 	
		2.500	•			-		-	* 1			i.	•
	:		125,000	25,000	250,000	2.90	493			7 250,000	26,570	125,000	13,285
					125,000	1,45 5	1,233	125,000	1,233	3	***************************************		
Thien Tan 2006	- 9		200,000	40,000	450,000	5.21 45	39,857	200,000	17,714	,			
Vung Tau													:
Groundwater 1998	000'51 86	3,750	•	•			•	•	•				•
<del>!</del>	Q	•	125,000	25,000	250,000	2.90	493	125,000	247	7 250,000	26.570	125,000	13,285
		•			125,000	1.45 12	2,958	125,000	2,958	90	:	<del></del>	
Thien Tan 2006	, , ,		250,000	50,000	450,000			-	``			1	
		:			250,000	2.90	11,339	250,000	11.339	6			

Table 4.9 Construction Cost Required for Alternative 3

:	1	Grou	Groundwater	Treamer	ont Plant			Pipeline	line				ä	Dam	
Projects		Water	Tetal	Water	Total	Water supply	ylc		Total	Shared	Cost shared	Development	Total	Shared	Cost shared
		supply	construction	· Klddns	construction	capacity		Distance con	construction	capacity		supply	Ö	<del></del>	λq
٠		capacity	1800	capacity	cost			<b></b>	cost		demand centre	capacity	cost		demand centre
Name	Year	(m³/day)	(COOOUSS)	(m³/day)	(SSU000)	(m³/dav) (m³/sec)	<u>.</u> .	(km)	(SSDOOD)	(m <sup>3</sup> /day)	(SCOOOLSS)	(m <sup>3</sup> /day)	(10000135)	(m³/day)	(\$\$11000)
Bien Hoa															
Thien Tan II	2002	•		150,000	30,000	300,000	3.48	8	4,733	300,000	4,733		•		
Thien Tan III	2010	•	•	150.000	30,000				•	±	•	:		•	
Tam Phuoc					, a management										
Groundwater I	1997	10.000	2.500	1	•				•			,		•	
Groundwater II	8661	i		,	•	•	. 1	.,				· ·	•	1	•
Groundwater III	8			•	٠.				•		!	· .	•	•	•
Thien Tan I	2002	: 	•	000,001	20,000	250,000	2.80	21	10,353	250,000	10,353		· •	•	
Thien Tan II	2009			150,000	30,000									•	
Nhon Trach															
Groundwater I	1997	20,000	5,000	4				1		•	,			1	,
Groundwater II	865										•		· •	•	•
Groundwater III	8		2,500	•			· - · - ·			•			•		•
Song Ca	2002	•		270,000	54,000	270,000	3.13	17	9,046	270,000	9.046	270,000	45,810	270,000	45,810
a Buong	2009 2009	,	١	80,000	16,000	80,000	0.93	12	1,897	80.000	1,897	80,000	18,980	80,000	18,980
Phu My															
Groundwater I	1997	15,000	3,750	•	•	•					•	1		,	,
Groundwater II	8	0000:	2.500		,	•			•	•	•	•		1	
Da Den	2000	•	•	125,000	25,000	250,000	290	· '	493	125,000	247	250,000	26,570	125,000	13,285
***************************************	1	:	<del></del>			125,000	1.45	À,	1,233	125,000	1,233				. :
Song Ray	2006		•	200,000	40,000	450,000	5.21	27	23,914	75,000	3,986	1,400,000	66,310	200,000	9,473
			.;			200,000	2.32	8	1,972	200,000	1,972				
Vung Tau	:														
Groundwater	886	15,000	3,750		•	; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;	<del>.</del>		•	•	,	•	,		•
Da Den	900	•		125,000	25,000	250,000	2:30		493	125,000	247	250,000	26,570	125,000	13,285
Sone Rav	2002			250,000	900 05	450,000	1,45	ij Ę	2,958	275,000	2,958	900	V1. 7.77	1	
Zaco Danz	2224			****	1	~~~	1777	,,	4,17,17	313,500	074'4	1.4W.WW	015.00	250,030	1.84

Table 4.10 Benefits Estimated for Respective Demand Centres (1/2)

	Total water demand m3/day) 104,000 117,500 144,500 158,000 168,000 158	Existing Effective 1) supply water capacity demand	Bien Hoa	Hoa					Tam Phuoc	huoc	; ;				Nhon	Nhon Trach		
1997 1997 1988 1989 2000 2000 2000	Total water emand a3/day) 117,500 131,000 144,500 158,000 188,	Existing E supply capacity	(feetive 1)			-												I
1996 1997 1998 1998 2000 2000 2000	mater emand 13/day) 117,500 131,000 144,500 148,000 188,000 178,000	supply capacity		Supply	Sold	3	Total	Existing E	Effective 1)	Supply	Sold	ลิ	Total	Existing E	Effective 1)	Supply	Sold	ล
1996 1997 1998 1998 2000 2000 2000	cm.and 104,000 117,500 131,000 144,500 158,000 178,000 178,000	capacity	water	capacity by	water	Benefit	water	yiddus	water	capacity by	water	Benefit	water	supply	water	capacity by	water	Benefit
19%6 19%7 19%8 2000 2000 2000 2000	104,000 117,500 131,000 144,500 158,000 168,000 178,000		demand		volume		demand	capacity	demand	new projects	volume		demand	capacity	demand	new projects		:
19% 19% 19% 19% 2000 2000 2000	104,000 117,500 131,000 144,500 158,000 178,000 178,000	(m3/day) (m3/day)	(m3/day)	(m3/day) (m3/day) ('000US	(m3/day)	(\$\$0,000)	s) (m3/day) (	(m3/day)	(m3/day)	(m3/day)	(m3/day) ('000USS)		(m3/day)	(m3/day)	(m3/day)	(m3/day)	(m3/day) ('000USS)	(\$50,000
1997 1998 1989 2000 2000 2000	117.500 131.000 144.500 158.000 168.000 178.000		68,000	ō	0	0	4,000	0	4,000	0	0	0	16,000	720	15,280	0	0	0
2002	131,000 144,500 158,000 168,000 178,000	136.000	0	6	, ·	~	8,250	0	8.250	0	0	0	26,750	720	26,030	0	0	0
2002	144,500 158,000 168,000 178,000		0	0	0	0	12,500	0	12,500	10,000	10,000	\$48	37,500	720	36,780	20.000	20,000	200.1
2000	158.000 168.000 178.000 188.000		8,500	0	0	0	16,750	0	16,750	20,000	16,750	917	48,250	720	47,530		40,000	2,190
2007	168,000 178,000 188,000	136,000	22,000	0	0		21,000	o	21,000	20,000	20,000	1,095	29,000	720	58.280	}	\$0,000	2,738
	178,000	136,000	32,000	0	ō	0	30,400	0	30,400	30,000	30,000	1,643	76,000	720	75,280	20,000	20,000	2,738
	188,000		42,000	0	0	0	39,800	0	39 800	30.000	30,000	1,643	93,000	720	92,280	20,000	20,000	2,738
X 2003			\$2,000	150,000	52,000	2,847	49,200	0	49,200	130,000	49,200	2,694	110,000	720	109,280	250,000	109,280	5,983
	198,000		62,000		62,000		28,600	٥	28,600	130,000	28,600	3,208	127,000	720	126,280	250,000	126,280	6.914
	208.000		72,000	•	-		68,000	0	000'89	130,000	000'89	3.723	144,000	720	143,280	250,000	143,280	7,845
2006	221.200		85,200		85,200		83,200	0	83,200	130,000	83,200	4,555	161,200	720	160,480		160,480	8,786
	234,400		98,400	150,000		5.387	98,400	0	98,400	130,000	98,400	5,387	178,400	720	177,680	250,000	177,680	9,728
	247,600		000	:			113,600	0	113,600	130,000	113,600	6,220	195,600	720	194.880	250,000	194,880	10,670
	260.800		124,800				128,800	Ó	128,800	130,000	128,800	7,052	212,800	720	212,080	250,000	212,080	115.11
	274,000		138,000			7.556	144,000	0	144,000	280,000	144,000	7,884	230,000	720	229.280	400,000	229,280	12,553
2011	290,000	1	154,000		i		164,000	٥	164,000	280,000	164,000	8,979	260,800	720	260,080			14,239
2012	306,000		170,000	300,000	170,000	9308	184,000	Ó	184,000	280,000	184,000	10,074	291,600	720	290,880	400,000	290,880	15,926
	322,000		186,000	300,000	186,000	10.184	204,000	0	204,000	280,000	204,000	11,169	322,400	720	321,680	400,000	321,680	17,612
	338,000		202,000			11,060	224,000	Ö	224,000	280,000	224,000	12,264	353,200	720	352,480	400,000	352,480	19,298
	354,000		218,000			11.936	244,000	0	244,000	280,000	244,000	13,359	384,000	720	383,280	400,000	383,280	20,985
		i.					•		•	•	•		•		• .		•	
	•	•	•					• •					•					
		. :							•		•	•	•	•		,	•	٠
•	•		•				 	• •	•			. :						300 OC
50 2045	354,000		218,000	136,000 218,000 300,000	218,000		11,936 244,000	0	244,000	280,000	244,000	13,359	384,000	720	383,280	400,000	383,280	20.985

Notes: 1) Effective water demand is the one to be met by the newly developed projects.

2) Benefit calculation is baxed on the average tariff derived from the revenue for HCMC water supply system, USS 0.15/m3, and sold water volume.

Year         Total         Existing         Effective 10 and and an apacity         Supply and an apacity         Supply and an apacity         Supply and an apacity         Supply and an apacity         An ater apacity         Capacity by and an apacity         An ater apacity         Capacity and an apacity         An ater apacity         Capacity and an apacity         An ater apacity         An a		_					Demand Centre	Centre							
Total   Existing Effective 1   Supply   Sold   Total   Existing Effective 1   Supply   Water   Supply   Supp	, ,	   	S	-	My					Vung	Tau				
1984   1982		L.			Supply	Sold	2)	Total		Effective 1)	Supply	Sold	છ	Total Benefit	
1986   30,000   25,400   15,000   15,		water	<u>.                                    </u>	water	capacity by	water	Benefit	Water	klddns		capacity by	water	Benefit		
1986   30,000   600   23,400   15,000   15,000   15,000   13,000   11,000   15,000		demar			new projects	volume		demand	capacity		new projects		:		
1996   30,000   660   29,400   15,000   15,000   28,500   44,000   33,000   11,000   0   0   0   0   0   0   0   0   0		(m3/da	(wa3/day)	. 1	(m3/day)	(m3/day)	(3SD000)	(m3/day)	(m3/day)	(m3/day)	(m3/day)	(m3/day)	(SSCOOO)	(30000)	_]
1997         43,500         600         42,900         15,000         15,500         0 </th <th></th> <th></th> <th>: </th> <th></th> <th></th> <th>0</th> <th></th> <th>44,000</th> <th>33,000</th> <th>11,000</th> <th>0</th> <th>٥</th> <th>0</th> <th>0</th> <th></th>			: 			0		44,000	33,000	11,000	0	٥	0	0	
1998         57,000         20,600         36,400         15,000         15,000         44,000         15,000 <td>71</td> <td>_</td> <td></td> <td></td> <td></td> <td>•</td> <td></td> <td>58,500</td> <td>43,000</td> <td>15,500</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td></td>	71	_				•		58,500	43,000	15,500	0	0	0	0	
1999         70,500         20,600         49,900         15,000         15,000         43,000         43,000         15,000 <td><del>~</del></td> <td></td> <td></td> <td></td> <td></td> <td>15,000</td> <td></td> <td>73,000</td> <td>43,000</td> <td>30,000</td> <td>0</td> <td>0</td> <td>0</td> <td>2,464</td> <td></td>	<del>~</del>					15,000		73,000	43,000	30,000	0	0	0	2,464	
2000         \$3,400         \$2,500         \$2,500         \$1,500 <td>4</td> <td></td> <td>T</td> <td>_:</td> <td></td> <td></td> <td></td> <td>87,500</td> <td>43,000</td> <td>44,500</td> <td>15,000</td> <td>15,000</td> <td></td> <td>4,749</td> <td></td>	4		T	_:				87,500	43,000	44,500	15,000	15,000		4,749	
2001         93,600         20,600         73,000         150,000         73,000         74,000 </td <td></td> <td></td> <td></td> <td></td> <td>. }</td> <td>25,000</td> <td></td> <td>102,000</td> <td>43,000</td> <td>29,000</td> <td>15,000</td> <td>15,000</td> <td>821</td> <td>6,023</td> <td></td>					. }	25,000		102,000	43,000	29,000	15,000	15,000	821	6,023	
2002         103,200         20,600         82,600         150,000         82,600         150,000         82,600         150,000         92,200         150,000         92,200         150,000         92,200         150,000         92,200         150,000         92,200         150,000         92,200         150,000         92,200         150,000         92,200         150,000         150,000         101,800         150,000         101,800         150,000         101,800         150,000         101,800         150,000         111,400         6,099         280,000         23,000         244,400         43,000         23,000         140,000         140,000         7,665           2004         152,200         150,000         150,000         150,000         150,200         150,000         150,						73,000		137,600	43,000	94,600	140,000	94,600	5,179	13.557	
2004         112,800         20,600         92,200         150,000         92,200         5,048         208,800         43,000         140,000         140,000         7,665           2004         122,400         20,600         101,800         150,000         111,400         150,000         111,400         5,574         244,400         43,000         201,400         140,000         7,665           2004         122,400         20,600         101,800         150,000         111,400         6,609         280,000         237,000         140,000         7,665           2007         173,600         20,600         150,000         150,000         113,200         240,000         140,000         7,665           2007         173,600         20,000         153,000 <td>7</td> <td></td> <td></td> <td></td> <td>_</td> <td></td> <td>4,522</td> <td>173,200</td> <td>43,000</td> <td>130,200</td> <td>140,000</td> <td>130,200</td> <td></td> <td>16,031</td> <td></td>	7				_		4,522	173,200	43,000	130,200	140,000	130,200		16,031	
2004         122,400         20,600         101,800         15,71         244,400         43,000         201,400         140,000         7,665           2005         132,200         20,600         111,400         6,099         280,000         43,000         237,000         140,000         7,665           2006         152,200         150,000         111,400         6,099         280,000         237,000         140,000         7,665           2007         173,600         20,600         150,000         153,000         8,377         283,000         240,200         140,000         7,665           2008         173,600         20,600         173,800         173,800         243,000         244,000         13,151           2009         215,200         173,800         25,400         23,000         243,000         243,000         244,000         13,151           2010         226,000         20,600         173,800         12,874         286,000         243,000         244,000         13,154           2011         226,000         20,600         124,400         12,874         12,800         243,000         256,000         244,000         13,140           2012         226,000         20,600	8	-				92,200		208,800	43,000	165,800	140,000	140,000		24,237	
2006         132,000         20,600         111,400         6,099         280,000         43,000         237,000         140,000         7,665           2006         152,800         20,600         132,200         132,200         132,200         132,200         140,000         140,000         140,000         7,665           2007         173,600         20,600         173,200         153,000         132,200         130,000         240,200         240,200         240,000         7,665           2007         173,600         20,600         173,800         153,000         153,000         153,000         240,200         240,200         240,200         13,151           2008         194,400         350,000         153,000         153,000         154,600         10,654         286,000         243,000         243,400         13,131           2010         236,000         234,400         350,000         234,400         11,793         288,000         243,000         243,400         13,414           2011         236,000         234,400         13,874         337,600         243,000         243,000         269,800         14,772           2012         236,000         236,000         234,400         13,874 <td>9</td> <td></td> <td></td> <td></td> <td></td> <td>101,800</td> <td></td> <td>244,400</td> <td>43,000</td> <td>201,400</td> <td>140,000</td> <td></td> <td></td> <td>26,756</td> <td></td>	9					101,800		244,400	43,000	201,400	140,000			26,756	
2006         152,800         20,600         132,200         150,000         17,238         281,600         43,000         228,600         140,000         7,665           2007         173,600         20,600         153,000         350,000         153,000         240,200         390,000         240,200         13,151           2008         194,600         173,800         350,000         173,800         9,516         284,800         43,000         241,800         390,000         243,400         13,239           2009         215,200         194,600         194,600         19,4600         11,793         288,000         243,000         243,400         390,000         243,400         13,414           2010         236,000         215,400         11,793         288,000         43,000         243,400         243,400         13,414           2011         255,000         224,400         12,834         31,800         243,000         244,200         390,000         244,400         13,414           2012         274,000         235,400         235,400         235,400         235,400         350,000         244,200         390,000         244,200         13,442           2014         312,000         2310,400<	. 1		. !	į	1	111,400		280,000	43,000	237,000	140,000	140,000	7,665	29,274	!
2007         173,600         20,600         153,000         350,000         13,300         233,200         43,000         240,200         390,000         240,200         13,151           2008         194,400         20,600         173,800         1350,000         10,654         286,400         43,000         241,800         390,000         241,800         13,239           2009         215,200         20,600         194,600         350,000         215,400         10,654         286,400         43,000         243,400         13,314           2010         236,000         215,400         350,000         215,400         11,793         288,000         245,000         390,000         245,000         13,414           2011         235,000         215,400         350,000         215,400         12,833         312,800         43,000         294,600         14,712           2011         255,000         224,400         350,000         234,400         13,874         319,400         390,000         245,000         15,487           2012         272,400         350,000         210,400         16,994         412,000         360,000         390,000         319,400         17,487           2014         331,000 </td <td><u>ت</u></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>;</td> <td>281,600</td> <td>43,000</td> <td>238,600</td> <td>140,000</td> <td>140,000</td> <td></td> <td>32,909</td> <td></td>	<u>ت</u>						;	281,600	43,000	238,600	140,000	140,000		32,909	
2008         194,400         20,600         173,800         350,000         173,800         9,516         224,800         43,000         241,800         390,000         241,800         13,239           2009         215,200         20,600         194,600         350,000         215,400         10,654         286,400         43,000         245,000         245,000         13,314           2010         236,000         215,400         350,000         224,400         11,793         288,000         245,000         390,000         245,000         13,414           2011         236,000         234,400         350,000         234,400         12,833         312,800         43,000         294,600         390,000         245,000         13,414           2012         274,000         253,400         13,874         337,600         43,000         390,000         294,600         14,914         362,400         390,000         390,000         344,200         18,845           2013         202,600         210,400         350,000         291,400         15,954         412,000         43,000         390,000         344,200         18,845           2014         331,000         350,000         310,400         16,994         41	12					153,000		283,200	43,000	240,200	390,000	240,200		42,030	
2009         215,200         20,600         194,600         350,000         10,654         286,400         43,000         243,400         350,000         243,400         13,326           2010         236,000         20,600         215,400         350,000         215,400         12,833         312,800         43,000         245,000         245,000         13,414           2011         255,000         20,600         234,400         350,000         234,400         12,833         312,800         43,000         269,800         259,800         14,772           2012         274,000         253,400         253,400         12,833         312,800         43,000         294,600         16,129           2013         293,000         272,400         350,000         272,400         14,914         362,400         43,000         399,000         319,400         15,1487           2014         312,000         20,600         310,400         350,000         310,400         369,000         369,000         369,000         30,200           2045         331,000         310,400         310,400         16,994         412,000         43,000         399,000         369,000         20,203	·					173,800		284,800	43,000	241,800	390,000	241,800		45,755	
2010         226,000         20,600         215,400         350,000         215,400         11,792         288,000         43,000         245,000         245,000         13,414           2011         255,000         20,600         234,400         350,000         234,400         12,833         312,800         43,000         269,800         269,800         269,800         14,772           2012         274,000         253,400         350,000         253,400         13,874         337,600         43,000         294,600         16,129           2013         293,000         272,400         350,000         272,400         14,914         362,400         43,000         390,000         319,400         15,845           2014         312,000         20,600         310,400         350,000         310,400         16,994         412,000         43,000         369,000         369,000         20,203           2045         331,000         350,000         310,400         16,994         412,000         43,000         369,000         369,000         20,203						194,600		286,400	43,000	243,400	390,000	243,400	13,326	49,476	
2011         255,000         20,600         234,400         350,000         12,833         312,800         43,000         269,800         369,000         14,772           2012         274,000         20,600         253,400         13,874         337,600         43,000         294,600         16,129           2013         272,400         272,400         14,914         362,400         43,000         319,400         319,400         17,487           2014         312,000         271,400         350,000         272,400         15,954         387,200         340,000         344,200         17,487           2015         331,000         310,400         350,000         310,400         16,994         412,000         43,000         390,000         369,000         20,203           2045         331,000         350,000         310,400         16,994         412,000         43,000         390,000         369,000         20,203					ĺ	215,400		288,000	43,000	245,000	390,000	245,000	13,414	53,200	
2012         274,000         20,600         253,400         350,000         13,874         337,600         43,000         294,600         390,000         16,129           2013         293,000         20,600         272,400         350,000         14,914         362,400         43,000         319,400         319,400         17,487           2014         312,000         20,600         291,400         350,000         291,400         15,954         312,000         344,200         344,200         18,845           2015         331,000         350,000         310,400         16,994         412,000         43,000         380,000         369,000         20,203           2045         331,000         350,000         310,400         16,994         412,000         43,000         389,000         20,203					` '	234,400	12,833	312,800	43,000	269,800	390,000	269,800	14,772	59,255	
2013         293,000         20,600         272,400         375,400         14,914         362,400         43,000         319,400         319,400         17,487           2014         312,000         20,600         291,400         350,000         310,400         16,994         412,000         43,000         369,000         369,000         20,203           2045         331,000         20,600         310,400         350,000         310,400         16,994         412,000         43,000         369,000         369,000         20,203	17 2				•	253,400	13,874	337,600	43,000	294,600	390,000	294,600		65,311	
2014 312,000 20,600 291,400 350,000 15,954 387,200 344,200 350,000 344,200 18,845 2015 331,000 20,600 310,400 350,000 310,400 16,994 412,000 43,000 369,000 369,000 20,203 20,203 2045 331,000 20,600 310,400 350,000 16,994 412,000 43,000 369,000 369,000 20,203	<u> </u>			2	•	272,400	14,914	362,400	43,000	319,400	390,000	319,400	17,487	71,366	
2015 331,000 20,600 310,400 350,000 16,994 412,000 43,000 369,000 369,000 20,203		<del></del> -		:		291,400	15,954	387,200	43,000	344,200	390,000	344,200	18,845	77,421	
2045 331,000 20,600 310,400 350,000 310,400 16,994 412,000 43,000 369,000 399,000 20,203	20 20					310,400	16,994	412,000	43,000	369.000	390,000	369,000		83,477	
2045 331,000 20,600 310,400 350,000 16,994 412,000 43,000 369,000 369,000 20,203	•	•		•	•	•		•	•	•	•			•	
331,000 20,600 310,400 350,000 310,400 16,994 412,000 43,000 369,000 369,000 20,203			•		•	•	•	•		•			•	•	
2045 331,000 20,600 310,400 350,000 310,400 16,994 412,000 43,000 369,000 389,000 369,000 20,203			• •						•		. 1			• •	
2045 331,000 20,600 310,400 350,000 310,400 16,994 412,000 43,000 369,000 390,000 369,000 20,203		•		•		· ·	•			•		•	•		
						310,400	16,994	412,000	43,000	369,000	390,000	369,000	20.203	83,477	-

Notes: 1) Effective water demand is the one to be met by the newly developed projects.

8

<sup>2)</sup> Benefit calculation is based on the average tariff derived from the revenue for HCMC water supply system, US\$ 0.15/m3, and sold water volume.

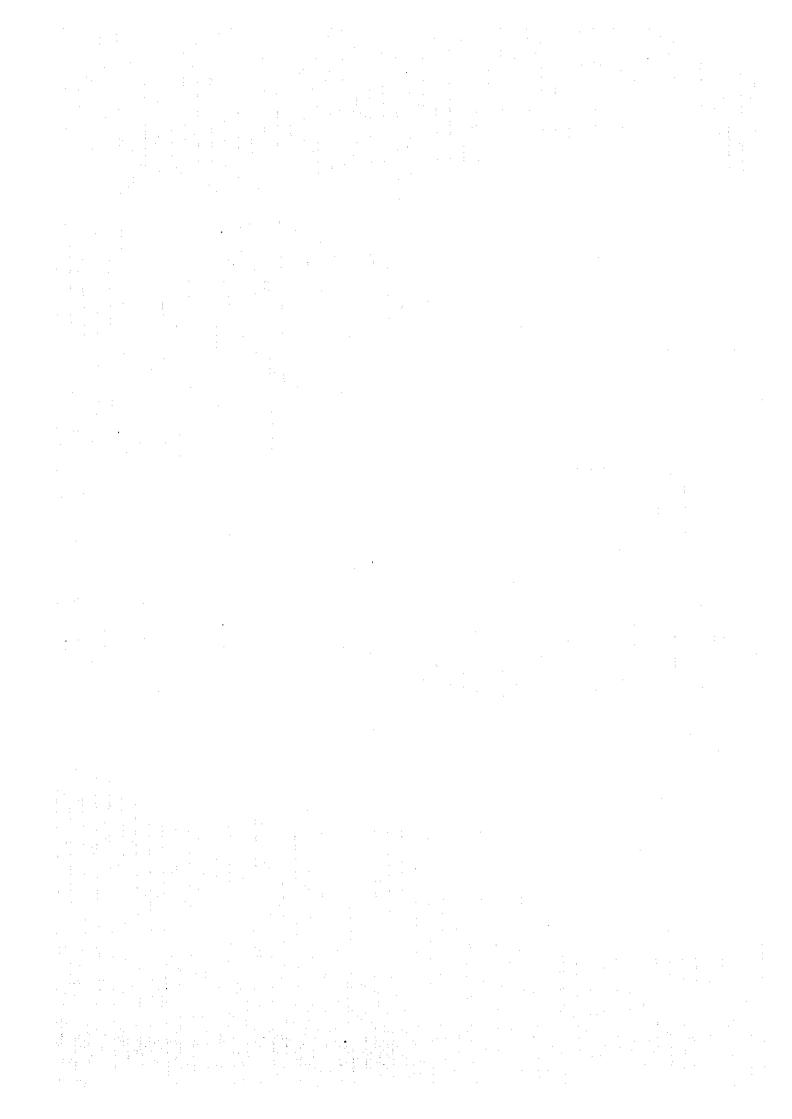


Table 4.11 Cash Flow for Alternative 1

[		E	Bien Hoa I	Demand (	. —— . Centie			[	·· <del>-</del>		Tam	Phood 6	Demand							Nhor	Trach D	emand C	entre							Phu My	Demand	Centre				7				Yung Tau I		Centra				T	Vin Total	.nt: 000US\$
Year	Project	Benefit		C	ost		B	C	Project	Renef				Cost			B-C	Project	Berie	J. 7			est ,			ВC	Project	Benefit				Cost			В	c	Project				. (	Cost			B-C	Benefit	Cost	B.C
ļ		ļ	IP_	FL	OLM	Tota	<u>.</u>				_ _ <u>G</u>	<b>W</b>   1	IP	PL (	OAM	Total			ļ	_ _6	W T	P   F	<u>L O</u>	<u>44</u>	iciai			-	<u>ÇW</u>	1-11	P   14L	. Da	m   08	M Is	131				GW	1P	. PL	Dom	0&M	Total	.]	<b></b>		
1 1996		١ ،	Ì				0	e]			9		İ	j	.	6	0		l	0					0	9		0			1				어	0		d				1	į ·		0 (	o[	બું	
3 1998			3		1	} :	Q .	ł	Groundwater II Broundwater II	5.		.¥25} .¥25;		1	64	2,125		Groundwater II. Groundwater III.	1,0		250 250	1				-1,250; -3,283	Groundwater I	821	3,16	- 1	250 2			- 1		1,188		O						1	0 (		9,563	1 1
4 1999		,	<u> </u>		1	١.	٨	J.	NORMEN SICILIA	   9	1 1	.123	Au Au		27	128	- 1	Groundwater III Groundwater III	2,1	1	230 125		i		2,380		Groundwater I		2 17	5 10,6	1	ı		1 .		1.300 1.300	iroundwater	821	3,18	4,250		5 2,258 2 5,646	,	10,24			23,663	
5 2000		Ì	3,300	805		5.9	05 -5	.905.C	Ground a ater II	1	··	.125 3	,400	204	128	6,357	5,262	Oloungwaler at	2,7			800 2	011				Da Den	1.169			175 3	- 1	5 .				a Den	1		10,625 6,375		2 3,646 1 3,388		1	1 .		39,357	-34,608 -36,343
6 2001				2,012		14.7		762		1.6			. ,	1.760	191	10,451	8,808		2,7		12,			319 2			~: <u>~:</u>	3,997			eserio ore E	~~				.824	4.Det	5,179		0,293	°	1-3300	1,154				42,366 49,887	-36,330
7 2002	Thien Tan II	C		1,207		8,8	57 -8	.857 T	Dien Tan I	1.6	43		5,100	1.056	191			Thico Tan I	2,7			200 3	•	319 1		10,798		4,522	:	1				- (		349		7,128				1	1,15	1 :	4	1 :	31,067	15,036
8 2003		2,847	7	į	886	, s	S6 1,	,961		2,69		ì	:	1	807	507	1,887	. :	5.9	S3			į	046.1	1,640	4,343		5,048		į.,	.	[	1,	173 1	173 3	1,875		7,665			1	1	1,154	ì		1 .	5,660	
9 2004		3,395	•		686			.509	-	3,20		i		:	807	807	2,401		6,9			. [	1			5,274		5,574			300 1,0			173 10,	.597 -5	(023		7,665		B,500	3,38	8 <sup>†</sup> 2,013	1,154	15,05	4 -7,389	9 26,756	28,984	
10, 2005		3,942			886			056		3.77					807	807	2,916		7,8				· · · †			6.205		6,099			25					632		7,665		21,250	T	0 5,033		T	6 -28,240			
11 7006		4,665			884	1 .		279		4.53		1			807	807	3,745		8,7	1		LÍ.			- 4	1	Song Ray	7,238		10,2	200 1,5	19 2,					ong Ray	7,665	ł	12,750	5,08	2 3,020	1	1	5 -14,3 K	1 1		-7,737
12 2007 13 2008		5,387 6,110			886	4		501  124		5,35			1	1.056 2.540	807 807		-1,576		9,7	1						1,479		8,377	i	ļ	i	1				,790		13,551	l .			•	3,239	1				20.107
15 2009		6,833	1 11 1		884 684		•		Dien Tan II	7,05				2.040 1.584	***		.9,977	Thica Tan II	10.6 11.6					1,640 J		-7,492 58		9,516 10,634	1		İ			,	.587 6 .587 8.	.067		13,239 13,326	ĺ				3,23,	1	9 10,000	1 3		
	Thien Tan III	7.555			; 6% ! 886			-980	eville Fill Ell	7,88		•	1	- 1044	1,730	1,730	6,154	p 1.00 to 0.00 13	12,5		1 7		- 1			9,921		11,793		[	1	1	- 1	T '		206		13,414					3,239 3,239					
16 2011		8,432	1		1.63	1		.781		8,97		:	ì		1,730		7,249		14,2							11,607		12,833							587 10			14,772		·		1	3,239		9 11,533		11,635	47,417
17 2012		9.308	8		1,631	1.6	51 7.	,657	:	10.07	74	i		ļ	1,730	1,730	8,344		15,9	26					2,632			13,874			-	1			587 11			16,129				1	3,235		9 12,890	1	11,638	1
18 2013	· ·	10.161	4		1,65	1.6		533	•	11.10		i	1		1,730	1.730	9,439		17,6	12	1.			2.632	2,632 1	14,980	,	14,914			-	1	2.5	587 ≥	587 12	327		17,487				1	3,239	3,23	9 14,245	8 71,356	11,838	59,528
19 2014		11,060			1.651			.409		12.20						1,730			19,2			- j	1		2,632	1		15,954		1		.	2,	587 2	.587 13	367		18,845		i	1		3,239	3,23	9 15,600	6 77,421	11,838	65,583
20 2015		13,930			1,651			285	;	.032		·			1,730	1,730		· • · · · · · · · · · · · · · · · · · ·	20,9			: <del> </del>				13,353		16,991		_!			+		587 14			20,203				·	3,239			P 100 0 1 11 10 0 0 0 0 0 0 0 0	11,838	71,639
21 2016 22 2017		11,935	4.7		1,651 1,651	1	ši 10. 51 10.		1. 1.	13,35 13,35		1	1	ŧ	1,730		11,629	4	20,9							18,353		16,994		Ì					587 [4.			20,203					3,235			1	11,838	71,639
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26 2021	~	11,936	\$		1,651		51 10			13,35	59	-	[			1,730			20,9		77	+			2,632 1	[		16,994		· j		7	,		587 14		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	20,203	::-		i	1	3,239		9 15,954		11,838	
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32 2021		11,936	()		1,65		51 10			13.3		1	1.			1,730			20,9: 20,9:			•			2,632 1 2,632 1	8,353		15,991		. [	ļ				587 14. 587 14.			20,203		1	: :	1	3,239 3,239		9 16,964 9 16,964		11,838	71,639
33 2028		11,936			1,651		51 10		1 11	13.35		. 1	1		730	1,730		100	20,9		[	1				8,353		16,994	:						587 14.			20,203		1.		1	3,239		16,564		11,838	71,639 11,639
34 2029		11,936			1,651		31 10			13,35			, i I,			1,730		4	20.5		1	1	•		2,632			15,924	٠.		- [	1 1			587 14		****	20,203					3,239		16,961			71,639
35 2030		11,936			1,651					13.35	52	1			1,730		11,629		20,9					- 1		8,353		16,924			. 1.	i i			587, 14			20,293					3,239		15.961		11,838	71,639
36 2031	1	11.936	1 (		1,651		51 10		T	13.33		•				1,730	11,629		20.9	83				2,632	2.632	8,353	11	16,994		1	i				587 14			20,203				1	3,239	1 - 11-11	1		11,838	71,639
37 2032	1	11.936	1		1,651		51 IO.	: .	- 11	13.35		13				1.730			20.9			1 .			2,632   1			16,994				1			587 14	1.	1.1	20,203				1: :	3,239		9 16,964	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	(1.838	71,639
38 2033	3	11.936	1	1 1	1,651		51 10.			13,33		1			1,230	1,730			20.90			1			2,632 1			16.994		4		:			557 14		- :	20,203				1:3	3,239		el 16.961		11.635	71,639
39, 2034	1 3	11 936 11 936	1 1		1,651		51 10.			13,32			2.3				11,629		20.99	1		1			. 1	8,353		16,994				ĺ			587 14,		1	20,203	:			.	3,239		16,961		11,838	,
40 2035 41 2036		11,936	]		1,651		51 10. 51 10.	··· I -		13.35 13.35			<del>]</del>		1,730	1,730 1,730			20,9							8,353		16,994 16,994		.		}	2.5		587 14		:	20,203		-			3,239		16,964		11,838	71,639
42 2037		11,936			1,651		51 10.		:	33.35		i				1,730		* *	20,9						2,632   1 2,632   1	. 1		16,994		ļ	1	Ì		4	587 14. 587 14.			20,203		i l			3,239		16,964		11,838	71,639 71,639
43 2038		11.936			1,651		51 10,		3-	13.35				- 1		1,730		:	20,9		i			- 1	2,632 I			16,994			ì		i i		587 14,	- 1		20,203			1.5		3,239		16,964		11,838	71,639
44 2039	. ;	11,936	ł		1,651	1.5	51 10,	,285		13.35				1 -	1,730	1,730			20,9		:	!		1	2,632			16,974		ļ	1	1	7 .		587 84,			20,203		1		1	3,239		16,964		11.838	11,639
45 2040		11,936		أحجا	1.651					13.35	59				1.730		11,629		20,9	55				- 1	2 632			16.904							587 14,			20 203		<u> </u>		1	3,232		15,954		11,838	
46 2041	1	11,936			1.651		. I			13.35	59		ŀ			1,730	11,629		20,9		- 1		3	2,612	2,632	8,353		16.994			1			87 2,	587 14,	407		20,203					3 239	3,239			11,838	71,639
47 2042	: :	11,936			1,651	3 :	51 10.		45.00	13.35		. :				1,730			20,9						2,632 3			16,994		-					587 14,			20.203		!		. '	3,239		16,964		11.838	
48 2043 49 2044	1	11,936 11,936			1.651		51 10,		1	13.35 13.35			1			1,730			20,9		:		F		2,632 1			16,994		į		1			587 14,			20,203				1': '	3.239		16,964		11,838	
50 2045		11,936	]:		1,651	16	51 10. 51 10.	1		13.32	50	1	1	j	1.730	1,730	11.679		20,9		- E	)	•	2,632	2,632 1	8,353		16,994 16,994		j	į	;	2.5	87 2: 82 2:	587 14.	407		20,203					3,239	3,239	16.964		11.838	71,639
<u>د۲۱۷۲۲ ا</u>	<u></u>	11259				1 2.0	~! L 4)!\	<u></u>		_1.425%	- 21	<u>-</u>			1.774	*.*30j	11,029		_ <u>40,98</u>	??!	·			. <u>.n.,z</u> 1	2,032]	<u>ુ.અ</u> મ		1 10.974	<del>-</del>	<u> </u>			<u>+_</u>	0/1 23	28/1 14.	40/1		1 20 203		4		اا	<u> </u>	1 5,233	16.964	83,477	11.838	11.639

Benefit at DR-107 38.834
Cost at DR-107 29,446
Net Benefit at DR+107 9,388
ETRR - 0.133

Benefit at DR-10% 45,067 Cost at DR-10% 31,867 Not Benefit at DR-10% 13,200 EBR = 0145 Benefit at DR+104 76,147
Cost at DR+109 53,953
Net Benefit at DR+104 22,184
EBR+ 0.144

Benefit at DR-1014 64,433 Cost at DR-1014 57,293 Net Benefit at DR-1014 7,140 EIRR = 0,113

Benefix at DR=10%	78,810	Benefix at DR=10%	303,291
Cost at DR=10%	67,229	Cost at DR=10%	239,797
Net Benefix at DR=10%	11,581	Net Benefix at DR=10%	63,493
EIRR =	0,120	EIRR =	0,129

Note: GW = Groundwater

TP = Treatment plant

PL - Pipeline

OSM = Operation and maintenance

Table 4.12 Cash Flow for Alternative 2

Γ		В	Sien Hoa C	remand C	'entre						Tam	Phuor	Dema	nd Centr				1-				Trach De	maid C	nite	<del>-</del>		7	<del></del>			Phu M	ly Dema	and Centre			<u> </u>	<sub>Ì</sub>	<del></del>			Vung T	Fau De	nant C	entre		<del>-</del>			U	ine: 1000015\$
Year	Project	Benefit		: Co	ost	Total	B.	С	Project	Bene	ก			Cost PL		70		ю	Project	Benefi	·	V 19	Co	st	I	Total	ВÇ	Project	Bene		٠,	<u> </u>	Cost		neu I	Total	8 C	Project	Bene		w T			51	оам	Tall	B-C	Benefit	Cost	B-C
1 1996		0	,			1.5	o	0			0			1	-04		٥	0		<u> </u>	0			- (		o	0			0		1			-	0	0			0		1	••	<u> </u>	-	0	0	. 0	0	0
3 1998	Î	0	Ţ				0		iroundwater I toundwater II			,125° ,125°		-		1 '			ionunga ater <b>(</b> Ionunga ater <b>()</b>	1,093	1	250 250		1		4.250 4.378	-4,250 -3,283	Groundwater i		0 3 21	1,188	,250 ·	252	2 258		3,188 6,856	-3.158	Greendwat		9	.188 4.1	250	< 15	2.258	<u> </u>	10,241	-10,241	2,454	9,563 23,663	
4 1999							o .	0		9	17	,,,,			);		128		roundwater fi					i		2.380	1	Groundwater !		- 1	1,125, 10	- 1	629		- 1	19,121	18,300	01001101430	"   8	121			1,362		l l	17,729	1 1	4.749	39,357	1 1
5 2000		0	5,100			5.90			iround water III					204		8 6.		,262		2,735			00 2			9,130		Da Den 🕠	1.3		. 6	,375	377	-: ; -	159			Da Den	_		6,	375	817	3,388		4	1	6,023	42,356	1 1
6 2001	Thien Tan 11	0	7,650			£4.76		.762 853 33	hica Tan I	1.6	1	•	8,500	1.760	L.	3		3,908 - 204 T	hien Tan I	2,735	1		00) S. 00 S.		319 I		-19,609 -10,798	i	3.9		}			- 1		1,173	2,824 3,349		5,1 7,1	,		•	į		1	1,154 1,154			49,887 31,067	
8 2003	14.00 10.0 72	2,847	7,200	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	886			961	mça sau s	2.6		1	3,100	1,0,0	80	•		.887	Inch ten 1	5.983	1	10,2				1,640	4,343		5.0	1	- }	ļ	1	i		1.173	3,875		7.5	•	:	1			1 :		6,511		5,660	
9 2004		3,395			685	1		509		3,2				ļ	80	7 :	807 2	,401		6,914	4		:	1	043,1	1,640	5,274		5.5			800		i	1.03		-5,411		7,6	565	1 '	,500 j			3 -	15,345			29,663	1
10 2005		3,942 4,665			856 855	1		056 779		3.7		<del></del> -			. 80			916		7,84		·				1,640	6,205		7,2			.000					19,603		_   _2,6			250 1					-28,968	29,274	65,668	
12: 2007	1	5,387			856	,	1	501		5.3	- 6	1	\$ 100	1,056	84 84	ſ	•	5.748 1.576		9,728			00 1,			1,540 8,249	1,479	Thien Tan	8.3	- (	100	200	4.517			ſ	-8.632 5,732	Thien Tan	13,1	ſ	12,	.750	B,538;			1	-14,776 9,869	1	41,665 22,025	-8,756 20,005
13 2008		6,110			886			124		6.2		1	12,750	,				977		10.670		i.	50 3,			13,162	-7,492		9,5			į		. 4	1	2,545	6.871		13.2		ĺ				i l	3,282	1 1	45.755	46,272	-517
14 2009	<u> </u>	6,833			886		1		hien Tan H	7.0	1	- 1	7,650	1.584	\$				hien Tan II	11,611		7,6	50 2,		- 1	13.553	- 58		10,6		Ì		1			2,645			13,3		i		1			3,282		49,476	43,357	8,319
16 2011	Thien Tan UI	7,556 8,432	1	·	886 1.651			980		. 7.8 8.9				ļ	1,7			1249		12,55			-			2,632 2,632	9,921	· · · •	11,7							2,645			13,4							3,282	10,132	53 200' 59 255	18,825	34,575 47,315
17 2012		9.308			1,651			657	:	10.0					1.73	•		344		15,926		. [	-			2 632	13,294		13,8			. !				2,645	1		16.1		-	- [	1		1 1	3,282		65.311	11,940	
18 2013		10,184	1		1,651					11,8	1	1			1,73		- 1	,439		17,61		İ	1 .	2	1.632	2 632	14,980		14,9	- 1			1				12,269		17,4	37	1		Ì	1			14,205	. 71 366	11,940	
19 2014 20 2015		11,060	1		1,651	1		1		12.2			. :		1,7			),534		19,298		`				2,632	16,666	· .	15.5		1		i			2,645			18.8				. 1				15,563	77.421	11,940	
21 2016		11.936	T		1,651		10.		7	13.3 13.3			-:		1.7	-3	730 <u>11</u> 730 11	1,629 1,629		20,985		41				2.632 2.632	18,353 18,353		16.9							2,645		<del></del>	20,2				-==	_ : ;	3,282 3,282	1	16,921	83,417. 83,477	11,940	71,537
22 2017		11.936			1,651		10,			13,3					1.73	1	•	629		20,985				,		2.632	18,353		15,9			ŀ	i			2,645			20,2						3.282	1	16,921	83.477	11,940	71,537
23 2018		11,936			1,651		10,	- 1		13,3	- 1				1.73	1 .	730 II			20,585						2.632	18,353		16.9		1	;	- 1				14.349		20,2			ļ			3,282	1	16,921	83,477	11,940	
24 2019 25 2020		11,936			1,651		11 10. 11 10.		. :	13.3 13.3				İ	1.7		730] (1 730] (1	629		20,985 20,985			1		2.3	2,632	18,353 (8,353		16,9 16,9	1	i	:	-	2		2,645 2,645	14,349		20,2			:			3,282 3,282		36,921 16,921	83,427 83,477	11,940	
26 2021		11,936			1,651		1 10			13.3			7	<del>j</del>	1,7		730 11			20,955		-					(8,353	·····	16,94		- ::						** ***		20.2						1	3,282		83,477	13,940	
27 2022	]	11,936			8.651	1	10,			13.3.		1		1	1,73		730 11			20,985		1			- 1		18,353		16,9					4			14,149		20,2	t t						3,282	, ,	83,477	11,910	
28 2023 29 2024		11,936			1,651	1 '	) 10, ) 10.			13,3 13,3	- 1	. !			1,7.		730 11 730 11	629	:	20,955	1					2,632 2,632	18,353 18,353		16,9		į.	. !			- 1	2.645			20,2					j	3,282	3,282	16,921	83,477 83,477	11,940	
30 2025	ļ	11.936			1.651		10,		- 1	13.3		- 1			1,7			,629		20,985	Ł	1 -		- 2		2,632	18,353		16.9	1		i		- 2			14.149	:	20.2	- 1	.		. }	(	3,282		16.921	83,477	(1.940)	
31 2026		11,936	1 1		1,651		1 10.			13.3	59			-	1,7	0 1.	730 1			20,985	£ /		- 1				18,353	7	16.9		Ī			7		2.645		, , , ,	20,2			1			3,202		16,921	83,477	(1,940	
32 2027 33 2028		11,936			1,651		10,			13.3		:			1,33	1 .	730 1	,629 ,629	ı	20,983	1.		11			2.632		** i	16,9		1 1	: :	1				14,349		20,2 20,2	3.1					1 1 1	3,282	, 1	83,477	11,940	
34 2029		11,936			1,651		10.			13.3			:		1,7	4	730 11 730 11			20,985		1111					18.353 18.353		16,9 16,9			÷ ;				- 1	14,349 14,349		20,2			1				3,282 3,282		83.477 83.477	11,940	
35, 2030	:	11,936			1,651		10,			13,3	59	1.1.			3,7,	1 .	230 J			20,583							25 <u>.3</u> 53		16,9				· ;	. 1		. 1	14,349		20,2				1		3,282		16,921	83,477	11,930	
36 2031 37 2032		11,936 11,936		,	1,651 1,651		3 10,3 1 10,3			13,3			:		3.7.	1 1	- 1	.629		20,98						,	18,353	- 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	16,99						· •	,	14,349		20,2				7	i		3,202		83,477	11.940	
38, 2033		11,936	l.	!	1,631		10.			13.3 13.3	1 -			• · · ·	1,7		730   11 730   11		1	20,985						2.632 2.632	18,353		15,95 16,95			·-  -			3 1		14,349		20,2	′ 1						3,282	1 . 1	83,477 83,477	11.940	1 1 1
39 2034		11,936			1,651		10,			13.3		.			1,7			,629		20,98				8 5		2.632			16.9		ì			,		- 1	14,349		20.2	. 1 1 1	. i 🕴 .		į		1 1	3,282	2 . I	83,477	11,940	
49 2035		11,936			1,651					. 33,3		i					វិទៀ ប			20,955		المساؤك			6.12	2,632	18,353		(6,9)			·					14349	122	20,2				1		3.262		16.921	63,477	11.940	71,537
41 2036 42 2037		11,936	]		1,651		1 10. 1 10.			13,3 13,3		į			1,73		•	,629 .629		20,985			;			2,632			15,94			.	;			2,645			20,2			.	- [	j	3,282		16.921	83,477	11.940	
43 2038		11,936		,	1,651	ł	1 10.			13.3					1.7		730) 11 730) 11			20,985		-			- 1	2,632 2,632	18,353		16,99			1	-			2,645			20,2		1 3	.		1	3,282 3,282		16.921 16.921	83,477 83,477	11,940	
44 2039		11.936			1,651	1.65	10,	265		13.3	59	.		-	1.7	o i.	230 ti	,629		20,985		İ	•		- 1	2,632			\$6,99			1				2,645			20.2				i		3,282	1	15,921	83,477	11,910	
45 2040 46 2041		11,936	1		1.651		1 10,			0.3		· · -		-:	1,73			,629		20,985						2.632			15,99			i					14, 149		20,2						3,282		16,921	83,477	31,940	71,597
45 2011		11,936			1.631 1.631		4 30,3 4 30,3		11	13,3 13,3		!			1.7	•	730 11 730 11			20,985				,		2,632 2,632		•	16,9; 16,9;							2,645		11:	20,2		İ				3,282 3,282		16,921 16,921	83,477 83,477	11,940 11,940	l
48 2043	[	11.936			: :	•	1 10.	4		133		i			1,7		1300 11 (00.7			20,985	1		i			2,632			16,9		-	. :		1 -		2,645			20,2				Ì		3,282			83,477	11,940	
49 2044		11,936			1,651	,	10,	,	1	13,3	\$9	1		•	1,73	o  3.5	130 11	(44,	÷	20,985	4	1	.;	2	,632	2,632	18,353		16,99				i	1	2,645	2,645			20,2	03	1	44	j	į	3,282	3,282	16,921	83,477	11,940	
50 <u>2015</u>	i	11.936	1		1.651	1.69	1] [10];	285		_L <u>13.3</u> ;	59]	1_		ـــــ	1,7	o <u>  1.</u>	730 <u> </u> 11	6.9		203,955	L	!	_:	3	·03.5	2,632	18,353		16.99	)4 <b>[</b>	!_				2,645	2.545	14,349			03	<del>-</del>				3,282	3,282	15,921	83,477	11.910	21,532
					enefit at l											DD -1										100													1 2					. 1			78 0 10		• .	

Benefit at DR - 104 | 58.834 Cest at DR - 104 | 29.446 Nes Benefit at DR - 109 | 9.368 EIRR - | 0.132 Benefit at DR-10% 45,067
Cost at DR-10% 31,867
Not Benefit at DR-10% 13,200
EIRR- 0.145

Benefit at DR+10% 76,147 Cost at DR+10% 53,963 Net Benefit at DR+109 22,139 EIRR+ 0,144

Benefit at DR=10% 64,433 Cost at DR=10% 58,235 Not Benefit at DR=10% 6,199 EIRR= 0,111 | Benefit at DR-107 | 78,810 | Benefit at DR-107 | 303,291 |
Cost at DR-107	67,935	Cost at DR-107	241,445
Net Benefit at DR-107	10,875	Net Benefit at DR-107	61,845
EIRR =	0,119	EIRR =	0,128

Note: GW = Groundwater

TP = Treatment plant

FL = Pipeline

O&M = Operation and maintenance

Table 4.13 Cash Flow for Alternative 3

-r		0	ies Hart	Yemand I	Tentre			Т			Tam	Phuor f	Demand	Centre				T			Nhor	Trach f	Demand C	entre.	<del></del>			1		Pi	a My De	mand Co	ntoe						<del></del> ,	Vina Twi	Demonte	Centra	. <b>.</b>					nt : 1000US
ır i	Project	,			ost	Lton		Ĉ.	Project	Benef	u			Cost	OAM	Total	B-C	P	'ro <b>je</b> ct	Benefit			<u> </u>	ost	l OLV	Total	<b>1</b>	Project	Benefit				ost	اسرا	Total	8 C	Project	Benefi	ia		C	ost	0.41		в-с	Benefit	Cost	B-C
996 997 998		. 0		FL	Oam	1004	0	- 1		54	0 0 2	125	<u> </u>		64	2,125		1 :		0 0 1,095	4,250 4,250			Dank	128	4,250	0 -4,25 8 -3,28		821	3,158	4,250	252			0 3.188	0 -3,188 -6,035	Groundwat	er	0					0	0 0 10,241	0 0 2,464	0 9,563 23,663	
999 000 001		0	12,750	2,012		14,76	62 -14,7	62		1,64	13	8	5,500	4,400	191	7,423 13,091	-6,311 -11,44	8		2,738 2,738		9,180 22,950	3,845	19,47	319 319	18,824 46,583	4 - <u>16.08</u> 3 - 43,84	Da Den	1,369 1,997	2,125				159 1,173	3,173	-8,930 2,824		5.17	Y) 'S		1	1	96 1,154	10,675	9,854 4,025	4,749 6,023 13,557	39,357 53,116 76,763	-34,60 -47,00 -63,20
003 004	hien Tan II	2,847 3,395		1,207	886	88	86 1,9 86 2,5	61 09	ien Tan l	2,69 3,20	)4 >S	5	5,100	2,640	965 965	965 965	1,725 2,24	3	Ca	5,983 6,914		13,770	2,307	11,68	3,095 3,095	3,095 3,095	2,88 5 3,81	, •	5,048 5,574					3,173 1,173	1.173 10.597	3,875 -5,023		7.66 7.65	.5 .5			1 1	1,154 3,154	1,154 15,054	6,511 -7,389	24,237 26,756	7,273 30,597	-31,16 16,96 -3,8*
006 007 008		4,665 5,387			886	80	85 3.7 86 4.5	79 101		4,55 5,38	55			;	965 965	965 6,065	3,590 . 670	o 8		8,786 9,728 10,670			Ę.		3,095 3,095	3,095 9,364	5 5,69 4 36	Song Ray	7,238 8,377 9,516						15,308 2,587	-8,070 5,790	Song Ray	7,66 13,15	is il		···-	1	1,154 3,239	22,005 3,239	14,340 9,912	32,909 42,030	42,259 22,140	-36,30 -9,31 19,80 1,40
011 010 009	hien Tan III	6,833 7,556 8,432	12,750 7,650	: •	886 1,651	13.63 8,53 1,65	36 -5,8 36 -9 51 6,7	303 Th (\$0  81	nien Tau II	7,05 7,89 8,97	52 14 19	- 1			965 1,730 1,730	8.615 1,730 1,730	-1.56. 6.15 7.245	3 La Bu 4	ong	11,611 12,553 14,239					3,095 4,035 4,035	12,499 4,035 4,035	8 851 8 51 10,20		10,654 11,793 12,833			••-		2,587 2,587 2,587	2,587 2,587 2,587	8,067 9,206 10,246		13,32 13,41 14,77	4	<u> </u>	-		3,239 3,239 3,239	3,239 3,239 3,239	10,087 10,175 11,533	49,476 53,200 59,255	40,575 20,127 13,242	8,90 33,07 46,01
012 013 014	:	10,184 11,660	; }		1,651 1,651	1,65 1,65	51 8,5 51 9,4	i33 109		11,16 12,26	59 54	- :			1,230 1,230	1,730 1,730	9,439 10,53	9 4		17,512 19,298	- 1				4,035 4,035	4,035 4,035	5 13,57 5 15,26		14,914 15,954					2,587 2,587	2,587 2,587	12,327 13,367		17,48 18,84	17 15 :	1			3,239 3,239	3,239 3,239	14,248 15,606	71,366 77,421	13,242 13,242 13,242	64,17
016 017 018		11,936 11,936	\$		1,651 1,651	1,61	5) 10.2 5) 10.2	85 85		13,35 13,35	59				1,730 1,730	1,730 1,730	11.62 11.62	9 9		20,985 20,985 20,985		: :::::::::::::::::::::::::::::::::::::		·	4,035 4,035 4,035	4,035 4,035	5 16,956 5 16,956	)	16,994 16,994 16,994					1,587 2,587 2,587	2.587 2.587	\$4,407 \$4,407	i 	20,20	13		1		3,239 3,239	3,239 3,239	16,964 16,964	83,477 83,477 83,477 83,477	13,242 13,242 13,242 13,242	70,23 70,23 70,23 70,23
051 050 013		11.936			1,652 1,651	1.65 1.65	51 <u>102</u> 51 102	85 85		13.35 13.35	59 59				1,730 1,730 1,730	1,730	11.62	9	: : : :	20,985 20,985 20,985					4,035 4,035 4,035	4,035 4,035	16,956 16,956		65.994 15.994 16,994	:					2,587 2,587	14,407 14,407	a	20.20 20.20	13				3,239 3,239 3,239	3,239 3,239 3,239	16,964 16,964 16,964	83,477 83,477 83,477	13,242 13,242 13,242	70,23 70,23 70,23
023 024	. :	11.936 11.936	3		1,651 1,651	1.65	51 10.2 51 10.2	85 85		13.35 13.35	9 9		:	1	1,730	1,730 1,730	11.62° 11.62°	9		20,985 20,985					4.035 4.035	4.035 4.035	5 16,956 5 16,956	×	16,994 16,994			:		2.587 2.587	2,587 2,587	14,407 14,407		20,20 20,20	13 13				3,239 3,239	3,239 3,239	16,964 16,964	83,477 83,477	13,242 13,242	70,23 70,23 70,23 70,23
026 027 028		81,936 81,936 81,936			1,651 1,651	1.65 1.65	51 10.2 51 10.2 51 10.2	855 855		13,35 13,35 13,35	59 59 59	1	:		1,730 1,730 1,730	1,730 1,730	11.625 11.625	9		20,985 20,985 20,985			<del></del>		4,035 4,035 4,035	4,035 4,035	\$ 16,956 \$ 16,956		16,994 16,994 16,994					2,587	2,587 2,587	14,407 14,407		20,20 20,20	13 13				3,239	3,239 3,239	16,964 15,961	83,477 83,477 83,477	13.242 13.242 13.242	70.23 70.23 70.23
029 030 031		11,934 11,936			1,651 1,651	1,63	SI 10.2 SI 10.2	85 85		13,35	9	-			1,730 1,730 1,730	1,730 1,730	11.68 11.68	9 :		20,985 20,985					4,035 4,035 4,035	4,035 4,035	16,950 16,950	)	16,994 16,994 16,994			·			2.587 2.587	£4,407 £4,407		20,20 20,20	3				3,239 3,239 3,239	3,239 3,239	16,964 16,964	83,477 83,477 83,477	13.242 13.242 13.242	70.23 70.23 70.23
033 034 035		11,936 11,936	s S		1,651 1,651	1,65 1,65	51 10,2 51 10,2	65 65		13,35 13,35	59 59				1,730 1,730 1,730 1,730	1,730 1,730	1),625	9		20,985 20,985 20,985 20,985					4,035 4,035 4,035	4,035 4,035	16,950 16,950	)	16,994 16,994					2.587 2.587	2,587 2,587	£4,407 £4,407		20,20 20,20	3				3,239 3,239	3,239 3,239	16,964 16,964	83,477 83,477	13,242 13,242	70,23 70,23 70,23
036 037 038		11,936 11,936 11,936	S		1,653 1,653 13,651	1,65 1,65 1,65	51 10,2 51 10,2 51 10,2	85 85 85		13,35 13,35 13,35	59 59				1,730 1,730 1,730	1,730 1,730 1,730	11,62 11,62 11,62	9 9		20,955 20,985 20,985				] 	4,035 4,035 4,035	4,035 4,035 4,035	16,950 16,950 16,950		16,994 16,994 16,994					2,587 2,587 2,587	2,587 2,587 2,587	E4.407 E4.407 E4.407		20,20 20,20 20,26	3 3				3,239 3,239	3,239 3,239	15,954 16,964	83,477 83,477 83,477	13,242 13,242 13,242	70,23 70,23 70,23
039 04) 041		11,036 11,036			1,651 1,651	1.65	21 10'5 21 10'5	85 85		13,35 13,35	i9 				1,730 1,730 1,730	1,730 1,730	0.62 23.01	9	·	20,955 20,955					4,035 4,035 4,035	4,035 4,035	16,930 16,950		16,994 16,994 16,994					2,587 2,587 2,587	2,587 2,587	L4,407 L4,407		20,20 20,20	3				3,239 3,239	3,239 1 3,239 1	6.964 6.964	83,477 83,477 83,477	13,242 13,242 13,242	70,23 70,23 70,23
043 044 045		11.936	\$		1,651 1,651	1,65	51 10.2 51 10.2	195 195		13,35 13,35	59 59	:	Haran Salah Ba		1,730	1.730	11.62 11.62	9		20,985 20,985 20,985 20,985					4,035 4,035 4,035 4,035	4,035	16.950		16,994 16,994				- 1	2.587 2,587	2.587 2.587	14,407 14,407		20,20	3				3,239 3,239	3,239 1 3,239 1	16,964 16,964	83,477 83,477	13,242 13,242 13,242 13,242	70,23 70,23 70,23 70,23
	96 97 99 90 01 T T 00 00 01 T 00 00 01 T 00 00 01 T 01 01 01 01 01 01 01 01 01 01 01 01 01	96 97 98 98 99 99 90 00 101 102 103 103 103 103 103 103 103 103 103 103	Project Benefit  Projec	Project Benefa  1P  96  97  98  99  00  00  00  01  00  12,750  00  12,750  00  12,750  00  12,750  00  12,750  00  12,750  00  12,750  00  12,750  00  12,750  00  12,750  00  12,750  00  12,750  00  13,942  006  44,665  15,387  16,10  5,387  16,10  5,387  16,10  5,387  16,10  5,387  16,10  5,387  16,10  5,387  16,10  5,387  16,10  5,387  16,10  5,387  16,10  5,387  16,10  5,387  16,10  5,387  16,10  5,100  6,833  12,750  10,184  11,936	Project Benefis C  1P PL  96 0  97 0  98 0  99 0  00 0  00 0  00 0  00 12750 2012  00 12750 2012  00 12750 1207	96	Project   Benefit	Project   Peneria   Cost   Description   D	Project   Penefa	Project   Benefication   Project	Project   Proj	Project   Project   Project   Project   Renefit   Graph   Gr	Project   Proj	Project   Benefit     Project   Benefit     Project   Benefit	Project   Renefic	Project   Penefs	Project   Benefit   Cest   B C   Project   Benefit   Cest   O   O   O   O   O   O   O   O   O	Project   Boseff   Cos	Project   Boseff	Project   People	Project   Rode   Project   Rode   Project   Rode	Pagest   P	Project   Proj	Project   Proj	Property   Property	Property   Property	Page   Page	Page   Page	Page   Page	Part	Part	Page   Page	Part	Part	Part	Part	Part	Part	Part	Fine   Part	Fig.   Part	Part	Part	Part	Professor   Prof	Part   Part	Property series   Property s	Part

Benefit at DR=107 38,834
Cost at ER=107 29,446
Net Benefit at ER=107 9,368
EIRR = 0,132

Benefit at DR-10's 45,067 Cost at DR-10's 33,703 Not Benefit at DR-10's 11,764 EIRR = 0,835 Bosofia at DR-109 76,137 Cost at DR-103 87,845 Not Bosofia at DR-104 -11,698 E4RR = 0.085

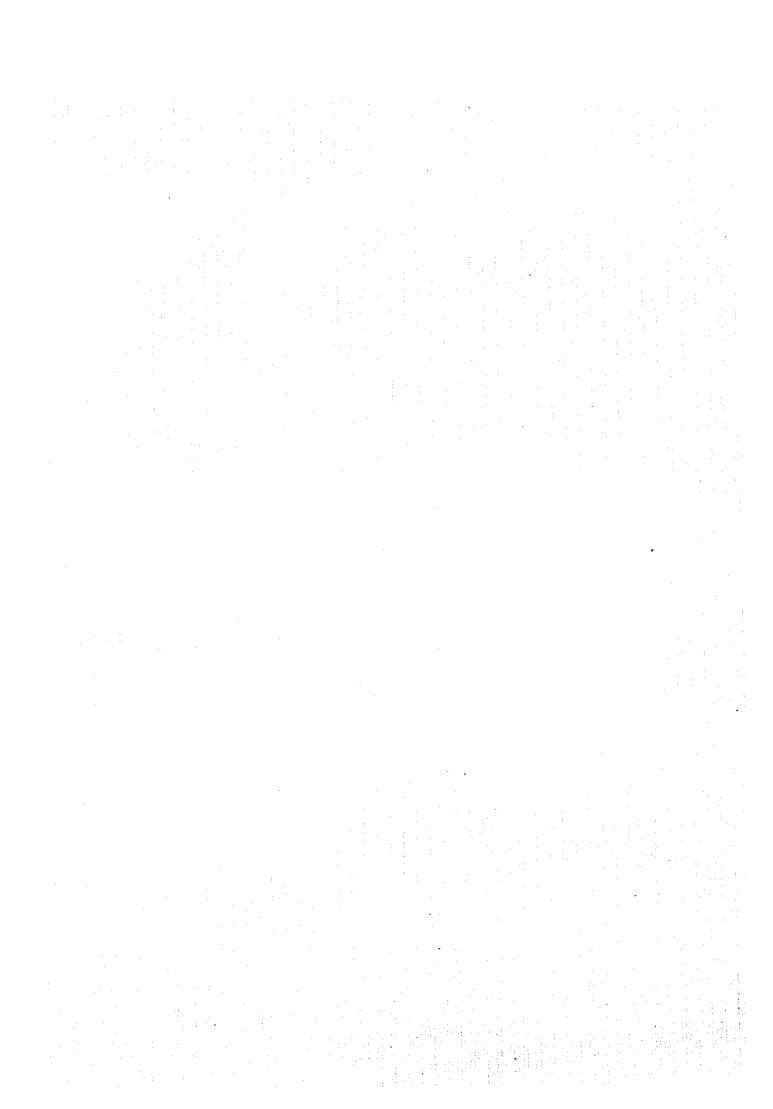
Benefit at DR=10% 64,833 Cost at DR=10% 52,293 Net Benefit at DR=10% 7,140 EtRR= 0.113

Note: GW • Groundwater

TP • Treatment plant

PL - Pipeline

O&M + Operation and maintenance



Performance of Rural Water Supply in the Study Area (1/3) Table 5.1

<u> </u>	-	Population in	Rural Are	Number of	Number of	Performance
Province	District	1,989	1,994		Beneficiaries	Rate %
Tay Ninh	Tay Ninh	4,210	4,805	46	5,520	100.0
·	Trang Bang	108,322	123,636	62	7,440	6.0
	Go Dau	93,495	106,713	64	7,680	7.2
	Ben Cau	49,413	56,399	48	5,760	12.2
	Chau Thanh	100,978	115,254	97	11,640	10.1
	Hoa Thanh	163,095	186,153	83	9,960	5.4
	Duong Minh Chau	74,779	85,351	75	9,000	10.5
	Tan Bien	56,599	64,601	66		12.3
	Tan Chau	57,938	66,129	57		10,3
			809,041	<u>57</u> 598	71,760	8.9
Song Be	Thu Dau Mot	71,203	81,270	59	7,080	8.7
•	Thuan An	135,491	154,646	103	12,360	8.0
	Tan Uyen	106,824	121,927	96	11,520	9.4
	Ben Cat	150,347	171,603	134	16,080	9.4
	Dong Phu	87,505	99,876	• -	-	0.0
	Binh Long	136,202	155,458	101	12,120	7.8
	Phuoc Long	96,424	110,056		_	0.0
÷	Loc Ninh	80,324	91,680	<u>.</u>	-	0.0
	Bu Dang	29,497	33,667		· · · · · · · · · · · · · · · · · · ·	0.0
f			1,020,183	493	59,160	5.8
Dac Lac	Dak Nong		14,985	 <del>.</del> .		0.0
	Dak R'Lap		22,330	<u>20</u>		<u>10.7</u>
	· · · · · · · · · · · · · · · · · · ·		37,315	20		6.4

Notes:

<sup>(1)</sup> An annual increase rate of population is estimated as 2.68 %.(2) The number of beneficiaries is estimated at 120 persons for a water source.

Table 5.1 Performance of Rural Water Supply in the Study Area (2/3)

		1989	1994	water sources	Beneficiaries	Rate %
1 am Dana	Do Lat	13,376	15,276	1	120	0.8
Lam Dong	Cat Tien	20,627	23,543		120	0.0
	Da Teh	26,245	29,955	74	8,880	
-	Da Huoai	14,406	16,443	·		
	Bao Lam	98,916	112,900			
	Di Linh	63,601	72,593			
:	Duc Trong	74,088	84,562			
<i>i</i>	Don Duong	49,117	56,061	80		
	Lac Duong	17,974	20,515			
	Lam Ha	42,279	48,256		•	
	Z IX.	,,,,,,	480,095			
Minh Thua	ı P.Rang-T.Cham	59,526	67,942	<b>571</b>	68,520	100.0
Milli Thua	Ninh Son	61,889	70,639			
	Ninh Hai	76,329	87,120	A CONTRACTOR OF THE CONTRACTOR	,	
	Ninh Phuoc	120,114	137,095		•	* -
	raini i nuoc	120,117	362,796			
		·	302,770	1,507	200,000	
Binh Thua	ı Phan Thiet	36,363	41,504	and the second s		
1 1 1	Ham Tan	84,106	95,997			
	Ham Thuan Nam	62,434	71,261	4 2 4	52,920	
	Tanh Linh	65,489	74,748			
	Duc Linh	86,740	99,003		•	
	Ham Thuan Bac	109,455	124,929			1 .
*	Bac Binh	87,714	100,115		•	4.5
	Tuy Phong	45,635	52,087	· · · · · · · · · · · · · · · · · · ·	•	
	Phu Quy	14,000	15,979			
			675,623	3,410	409,200	60.6
Ba Ria-	Ba Ria-Vung Tau	219,427	250,449			10.2
Vung Tau	Tan Thanh		. •	173		
	Chau Duc	77 270	00 2 <b>0</b> 0			40.8
	Long Dat	77,370 87,063	88,308			and the second s
	Xuyen Moc	67,003	99,372 438,129			

Table 5.1 Performance of Rural Water Supply in the Study Area (3/3)

		Population in Rur	al Area	Number of	Number of	Performance
Province	District	1989	1994	Water Sources	Beneficiaries	Rate %
Dong Nai	Bien Hoa	39,937	45,583	42	5,040	11.0
J	Long Thanh	225,786	257,707		30,000	11.6
	Thong Nhat	252,000	287,627		1,320	0.5
	Xuan Loc	317,572	362,470		2,520	0.7
	Long Khanh		· ·	- 10	•	
	Vinh An	51,082	58,304	4	480	0.8
	Tan Phu	246,622	281,489		960	0.3
	Dinh Quan	·		4	: _	
			1,293,180		40,320	3.1
Ho Chi Mi	District 8			52		
	District 11			5		
	Binh Thanh			24		i
1	Tan Binh			133		
	Go Vap			128		•
	Cu Chi		•	784		
+, +	Hoc Mon			1,011		
- 1 -	Binh Chanh			728		
	Nha Be			189		: .
	Thu Duc			789		- 1 - 1
	Can Gio			<u> 106</u>		
4		1,128,256	1,287,766	3,949	473,880	36.
			:			
Long An	Can Duoc	59,795	68,249	157	18,840	27.
	Tan Tru	27,194	31,039	153	18,360	59.
	Can Giuoc	59,795	68,249	105	12,600	18.
	Ben Luc	35,722	40,722	274	32,880	80.
	Duc Hoa	48,043	54,835	2,444	293,280	100.
	Duc Hue	23,556	26,886	233	27,960	100.
	Thu Thua	21,328	24,343	<u>98</u>	11,760	<u>48.</u>
			314,323		415,680	100.0
Total				<u> </u>		
in the			6,718,451	15,448	1,853,760	27.0
Study Area		• • •				

Table 5.2 Communes Requiring Rural Water Supply (RWS) Projects Urgently (1/7)

District	Commune	Population in 1994	Population in 2015	Number of water sources	Number of beneficiaries with RWS 1)	Number of people requiring RWS	Number of RWS projegts needed
Tay Ninh Province							
Duong Minh Chau	Phan	5,828	9,007	0	0	9,007	6
Chau Thanh	Hao Duoc	15,958	24,664	0	0	24,664	16
Trang Bang	An Hoa	18,455	28,523	0	0	28,523	19
	Don Thuan	13,165	20,347	0	0	20,347	14
	Gia Loc	15,426	23,842	0	0	23,842	16
	Gia Binh	9,728	15,035	0	0	15,035	10
	Loc Hung	16,269	25,145	0	. 0	25,145	17
	An Tinh	16,831	26,013	0	0	26,013	17
Tan Chau	Tan Ha	3,616	5,589	0	0	5,589	4
.*	•		·				119
Song Be Province			•				
Bu Dang	Duc Lieu	4,750	7,341	0	0	7,341	· <b>5</b> .
	The Son	3,850	5,950	0	0	5,950	4
	Nghia Trung	6,493	10,035	0	0	10,035	7
Loc Ninh	Thien Hung	7,938	12,269	0	0	12,269	8
	Thanh Hoa	7,557	11,680	0	0	11,680	8
	Loc Hiep	6,094	9,419	0	0	9,419	6
	Loc Quang	4,203	6,496	0	0	6,496	4
Phuoc Long	Long Tan	4,734	7,317	0	• 0	7,317	5
	Binh Phuoc	12,082	18,673	o	0	18,673	12
	Phuoc Tinh	6,869	10,616	0	0	10,616	7
	Long Hoa	12,083	18,675	0	0	18,675	12
							78
Dac Lac Province							
Dac Nong	Gia Nghia 3)	7,621	11,779	0	0	11,779	8
	Dak Rung	1,685	2,601	0	0	2,604	. 2
	Quang Son	1,698	2,624	0	0	2,624	2
	Quang Thanh	1,943	3,003	0	0	3,003	2

Notes: 1) The number of beneficiaries for the rural water supply projects carried out by UNICEF's programme is 120 persons per water source except for 200 persons/water source for Long An province.

- 2) The number of beneficiaries for the rural water rupply projects with a small distribution proposed in this study is 1,500 persons/project.
- 3) For Gia Nghia which is the district town of Dac Nong, Dac Lac province, population only in the rural area is given.

Table 5.2 Communes Requiring Rural Water Supply (RWS) Projects Urgently (2/7)

District	Commune	Population in 1994	Population in 2015	Number of water sources	Number of beneficiaries with RWS	Number of people requiring RWS	Number of RWS projects needed
	Quang Khe	1,987	3,071	0	0	3,071	2
	Dac B Lao	1,505	2,326	0	0	2,326	2
	Dak Nia	1,498	2,315	. 0	0	2,315	2
	Truong Xuan	1,615	2,496	0	0	2,496	2
	Dac R Mang	1,042	1,610	1	1,500	110	0
	<b>Dac Ha</b>	630	974	0	0	974	1
Dak R'Lap	Kien Duc	4,322	6,680	8	960	5,720	4
	Quang Truc	1,158	1,790	0	0	1,790	1
<b>:</b>	Quang Tin	2,491	3,850	0 .	0	3,850	3
	Quang Tan	2,304	3,561	0	0	3,561	2
	Nhan Co	3,501	5,411	0	0	5,411	4
	Dak Tit	2,500	3,864	12	1,440	2,424	2
	Dao Nghia	3,984	6,157	0	0	6,157	1.4
	Dak Sin	1,569	2,425	0	0	2,425	2
	Dac Buk So	1,195	1,847	0	0	1,847	1.
	5)					3	46
Lam Dong Provin				· ·	;	2 400	
Da Huoai	Da Ploa	2,491	3,850	3	360	3,490	2
	Da Ton	1,220	1,886		120	1,766	
	Madagui	2,895	4,474	3	360	4,114	3 ;
	Madaqui town	6,483	10,020	8	960	9,060	6
	Da Oai	3,543	5,476	4	480	4,996	<b>3</b>
	Da M'Ri town	3,186	4,924	4	480	4,444	3
	Da M'Ri	830	1,283	1	120	1,163	1
	Ha Lam	3,215	4,969	4	480	4,489	3
Da Te	Da Lay	2,749	4,249	2	240	4,009	3
	Huong Lam	1,795	2,774	1	120	2,654	· · · <b>2</b>
	An Nhon	3,297	5,096	3	360	4,736	3
	Da Teh town	12,804	19,789	10	1,200	18,589	12

Notes: 4) A rural water supply project with a small distribution system is implemented for the whole area of Dac R Mang.

5) The performance rate of rural water supply pojects in Lam Dong province is given in percentage by district, so the number of water sources is assumed to be proportional to the number of people in communes.

Table 5.2 Communes Requiring Rural Water Supply (RWS) Projects Urgently (3/7)

District	Commune	Population in 1994	Population in 2015	Number of water sources	Number of beneficiaries with RWS	Number of people requiring RWS	Number of RWS projects needed
	Da Kho	4,056	6,269	3	360	5,909	4
	Trieu Hai	4,103	6,341	3	360	5,981	4
	Quang Tri	2,418	3,737	2	240	3,497	2
	Ha Dong	1,716	2,652	1	120	2,532	2
	My Duc	3,194	4,936	3	360	4,576	3
	Quoc Oai	2,979	4,604	2	240	4,364	3
Cat Tien	Quang Ngai	1,330	2,056	1	120	1,936	. ; 1
	Phu My	3,545	5,479	2	240	5,239	3
	Tu Nghia	1,295	2,001	0	0	2,001	1
	Dong Nai town	8,300	12,828	: <b>4</b> :	480	12,348	8
	Duc Pho	2,448	3,784		120	3,664	2
	Phuoc Cat-1	6,283	9,711	3	360	9,351	6
	Phuoc Cat-2	3,295	5,093	2	240	4,853	3
	Gia Vien	4,440	6,862	2	240	6,622	4
	Nam Ninh	2,178	3,366	1	120	3,246	2
	Tien Hoan	2,330	3,601	1	120	3,481	2
	My Lam	1,045	1,615	0	0	1,615	1
Ninh Thuan Prov	ince						93
Ninh Phuoc	Phuoc Ha	1,954	3,020	6	720	2,300	2
	Phuoc Huu	11,367	17,568	58	6,960	10,608	7
	Phuoc Thai	8,181	12,644	28	3,360	9,284	6
	Phuoc Hai	11,981	18,517	17	2,040	16,477	$\mathbf{H}^{1}$
Ninh Hai	Phuoc Chien	3,092	4,779	- 11	1,320	3,459	2
	Loi Hai	7,591	11,732	19	2,280	9,452	- 6
	P. Khang	1,575	2,434	0	0	2,434	2
	Tan Hai	9,040	13,972	29	3,480	10,492	7
	Cong Hai	5,517	8,527	23	2,760	5,767	4
. †							47







Table 5.2 Communes Requiring Rural Water Supply (RWS) Projects Urgently (4/7)

District	Commune	Population in 1994	Population in 2015	Number of water sources	Number of beneficiaries with RWS	Number of people requiring RWS	Number of RWS projects needed
Binh Thuan Provin	<sub>1Ce</sub> 6)						
Tuy Phong	Chi Cong	13,739	21,234	23	2,739	18,495	12
	Hoa Minh	4,450	6,878	4	450	6,428	4
	Hoa Phu	4,280	6,615	2	280	6,335	4
Bac Binh	Binh Tan	5,394	8,337	3	394	7.943	5
	Song Luy	9,430	14,575	12	1,430	13,145	9
	Phan Hoa	5,780	8,933	7	780	8,153	5
·	Hong Thai	9,896	15,295	16	1,896	13,399	9
	Luong Son	10,982	16,973	33	3,982	12,991	9
Ham Thuan Bac	Hong Son	8,977	13,874	4	477	13,397	9
	Ham Chinh	9,651	14,916	18	2,151	12,765	9
	Thuan Minh	4,620	7,140	: 1	120	7,020	5
Marian Salah Salah Salah Salah Salah Salah Salah Salah Salah Salah Salah Salah Salah Salah Salah Salah Salah S	Ham Tri	6,332	9,786	7 .	832	8,954	6
	Ham Phu	9,203	14,224	2	203	14,021	9
	Thuan Hoa	3,794	5,864	2	294	5,570	4
Ham Thuan Nam	Ham My	11,790	18,222	22	2,590	15,632	10
•	Muong Man	5,526	8,541	9	1,126	7,415	5
	Ham Cuong	6,181	9,553	. 5	581	8,972	6
	Ham Kiem	6,009	9,287	7	809	8,478	6
	Tan Lap	14,163	21,890	35	4,163	17,727	12
Ham Tan	Tan Ha	5,294	8,182	6	694	7,488	. 5.
	Tan Nghia	12,883	19,911	27	3,283	16,628	11
	Song My	7,603	11,751	3	403	11,348	8
•	Tan Thang	9,470	14,636	4	470	14,166	9
	Tan Minh	9,329	14,418	6	729	13,689	9
	Tan Hai	13,989	21,621	17	1,989	19,632	13
					÷		193

Notes: 6) The number of people requiring rural water supply projects in 1994 is given as the information from Binh Thuan province, so the number of water sources and beneficiaries is reversely estimated as the balance between population in 1994 and the number of people requiring rural water supply.

Table 5.2 Communes Requiring Rural Water Supply (RWS) Projects Urgently (5/1)

District	Commune	Population in 1994	Population in 2015	Number of water sources	Number of beneficiaries with RWS	Number of people requiring RWS	Number of RWS projects needed
Ba Ria-Yung Tau	Province						
Tan Thanh	Hac Dinh	8,547	13,210	0	0	13,210	9
	Song Xoai	4,498	6,952	0	0	6,952	5
	Chau Pha	7,553	11,674	0	0	11,674	8
	Toc Tien	2,324	3,592	0	0	3,592	2
Chau Duc	Binh Be	8,742	13,511	0	0	13,511	9
	Suoi Nghe	12,147	18,774	0	0	18,774	13
	Xuan Son	16,967	26,223	0	0	26,223	17
	Binh Gia	14,118	21,820	0	0	21,820	15
	Quang Thanh	8,206	12,683	0	0	12,683	8.
	Nghia Thanh	10,594	16,374	0	0	16,374	1 <b>1</b>
	Ngai Giao	16,846	26,036	0	0	26,036	17
Long Dat	Long Hai	26,761	41,361	0	0	41,361	28
	Phuoc Thanh	6,886	10,643	0	0	10,643	7
	Phuoc Long Tho	13,410	20,726	0	0	20,726	14
	Phuoc Tinh	18,446	28,509	0	0	28,509	19
Xuyen Moc	Bau Lam	12,128	18,744	0	0	18,744	12
	Hoa Binh	12,485	19,296	0	0	19,296	13 :
	Phuoc Tan	14,847	22,947	0	0	22,947	15
	Hoa Hoi	9,835	15,201	0	0	15,201	10
	Hoa Hiep	6,755	10,440	0	0	10,440	7
				÷			239
Dong Nai Provinc	<u>c</u>						
Tan Phu	Phu Binh	9,054	13,993	2	240	13,753	9
	Phu Thinh	7,268	11,233	2	240	10,993	7
	Phu Loc	9,068	14,015	0	0	14,015	9
	Phu Thanh	10,964	16,945	0	0	16,945	11
	Phu Lap	7,256	11,215	0	0	11,215	7
	Tai Lai	7,361	11,377	0	0	11,377	8
	Phu Lam	14,062	21,734	0	0	21,734	14
	Phu Dien	8,952	13,836	0	0	13,836	9
	Nam Cat Tien	6,182	9,555	0	0	9,555	6
	Nui Tuong	5,226	8,077	0	0	8,077	5







 Table 5.2
 Communes Requiring Rural Water Supply (RWS) Projects Urgently (6/7)

District	Commune	Population in 1994	Population in 2015	Number of water sources	Number of beneficiaries with RWS	Number of people requiring RWS	Number of RWS projects needed
Dinh Cuan	Phu Tuc	12,265	18,956	2	240	18,716	12
	Tuc Trung	8,927	13,797	2	240	13,557	9
	Suoi Nho	10,068	15,561	0	0	15,561	10
	Phu Ngoc	15,104	23,344	0	0	23,344	16
	La Nga	10,986	16,979	0	0	16,979	111
	Thanh Son	20,118	31,093	0	. 0	31,093	21
	Gia Canh	13,616	21,044	0	0	21,044	14
	Phu Ĺoi	11,398	17,616	0	; · · 0	17,616	12
							190
Long An Province						•	
Tan Tru	An Nhut Tan	5,510	8,516	1	200	8,316	6
	Binh Trinh Dong	5,571	8,610	1	200	8,410	6
	Tan Phuoc Tay	5,945	9,188	1	200	8,988	. 6
	Nhut Ninh	6,878	10,630	4	800	9,830	<b>7</b>
	My Binh	3,420	5,286	3	600	4,686	3
Can Duoc	Long Dinh	9,429	14,573	0	0	14,573	10
	Long Son	8,157	12,607	0	0	12,607	8
	Phuoc Tuy	8,060	12,457	0	0	12,457	8
	Tan Trach	10,019	15,485	0	0	15,485	10
	Long Cang	5,049	7,803	0	i i o	7,803	5
Can Giuoc	Phuoc Vinh Tay	7,572	11,703	0	0	11,703	8
	Tan Tap	12,447	19,237	0	0	19,237	13
1	Vinh Dong	6,275	9,698	0	0	9,698	6
9	Long Thuong	7,408	11,449	0	: 0	11,449	8
	Phuoc Lai	9,569	14,789	1	200	14,589	10
Thu Thua	Long Thanh	3,229	4,991	0	0	4,991	3
	Long Thuan	3,999	6,181	0	0	6,181	4
•	Tan Thanh	4,376	6,763	0	0	6,763	5
	My Lac	6,544	10,114	0	0	10,114	7
	My An	6,631	10,249	0	0	10,249	7

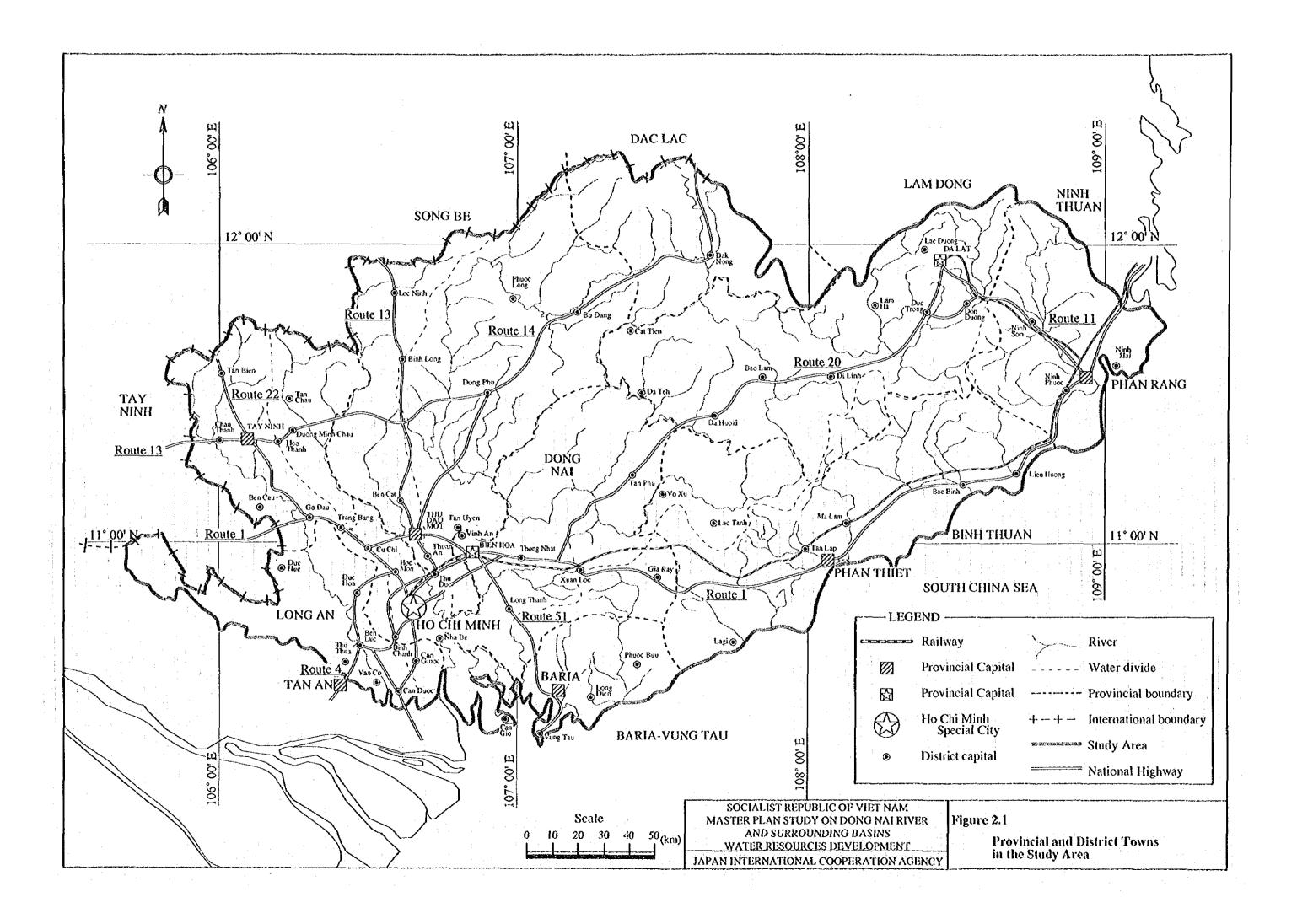
Table 5.2 Communes Requiring Rural Water Supply (RWS) Projects Urgently (7/7)

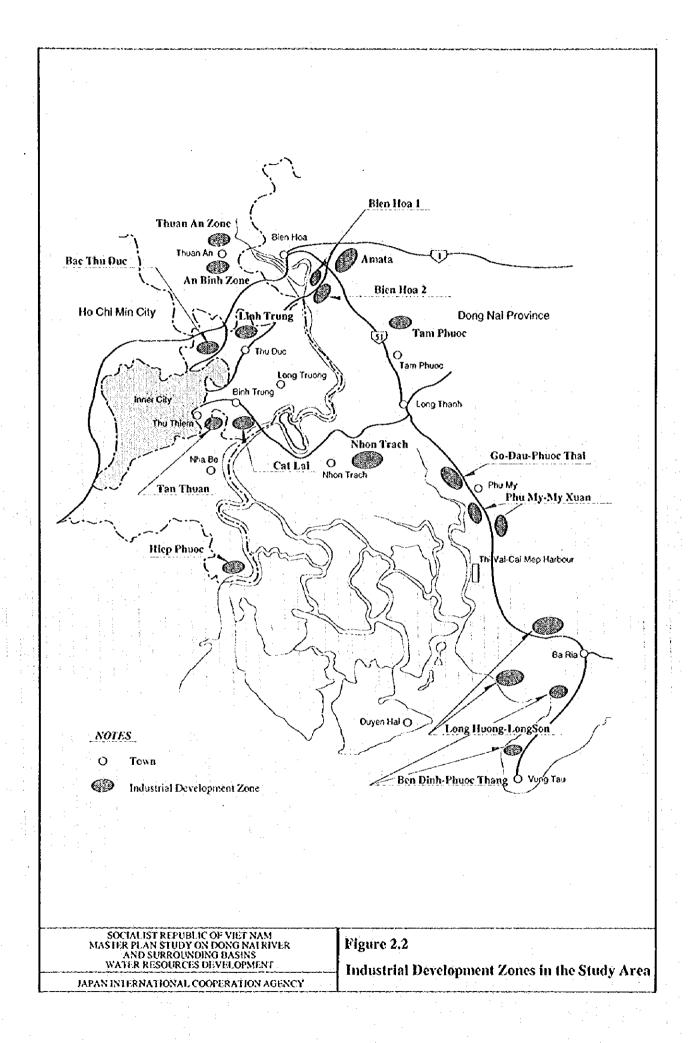
District	Commune	Population in 1994	Population in 2015	Number of water sources	Number of beneficiaries with RWS	Number of people requiring RWS	Number of RWS projects needed
Ben Luc	Thanh Hoa	4,161	6,431	0	0	6,431	4
	Luong Hoa	8,458	13,072	1	200	12,872	9
	Long Hiep	11,263	17,408	2	400	17,008	11 -
	Thanh Loi	6,767	10,459	2	400	10,059	7
	Binh Duc	4,661	7,204	2	400	6,804	5
Duc Hue	My Thanh Bac	7,501	11,593	0	0	11,593	8
·:	Binh Hoa Nam	5,855	9,049	. 0	0	9,049	6
	Binh Hoa Hung <sup>7)</sup>			· · · · · · · · · · · · · · · · · · ·			
	Binh Hoa Bac	7,902	12,213	1	200	12,013	8
	Binh Thanh	4,065	6,283	1	200	6,083	4
						Grand Total	202 1,207

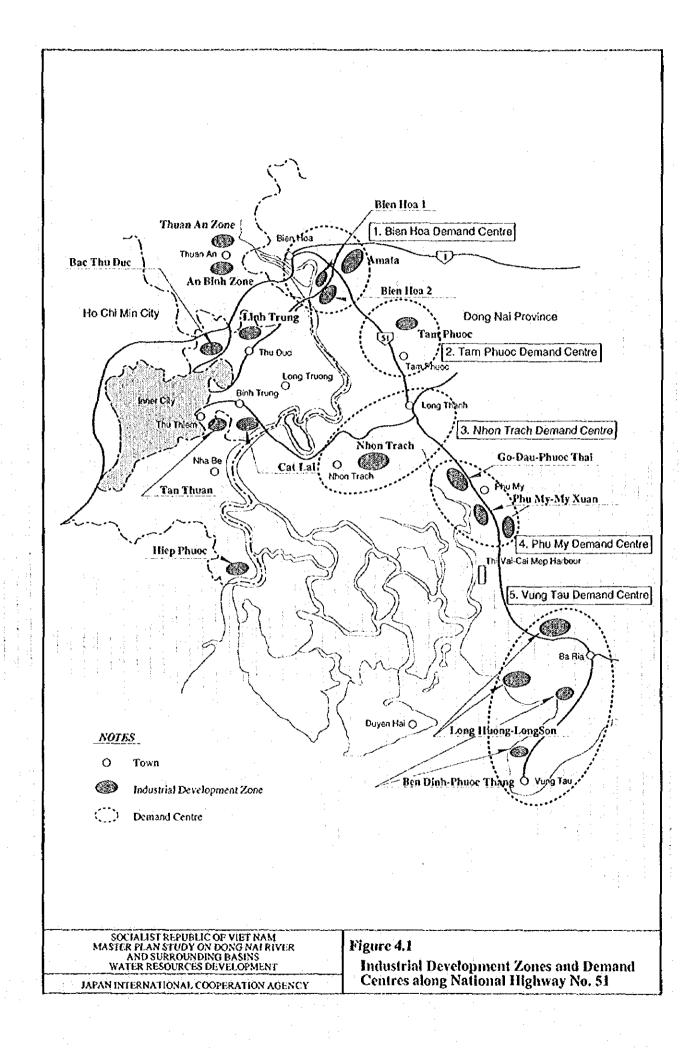
Notes: 7) A new village

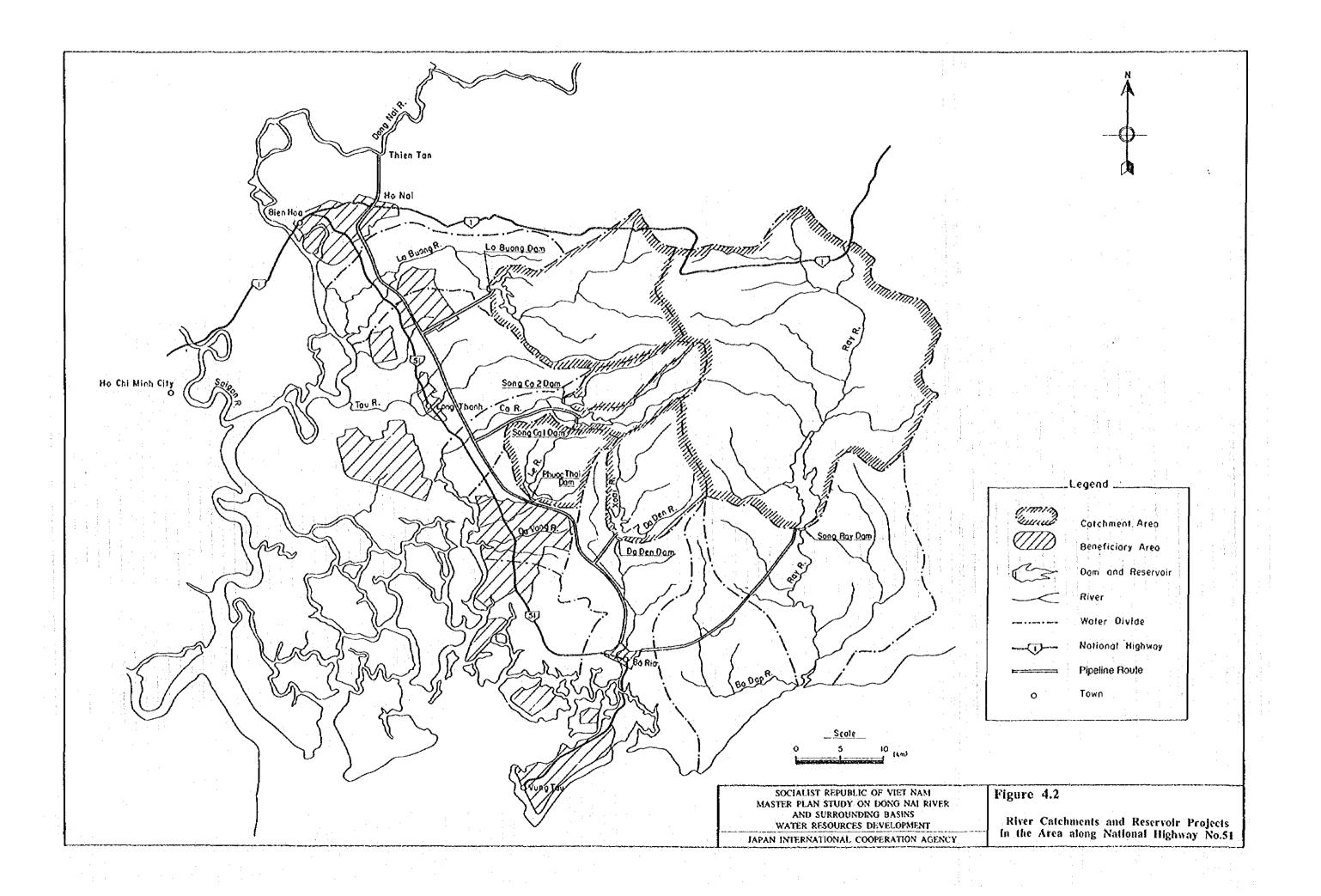
## **FIGURES**

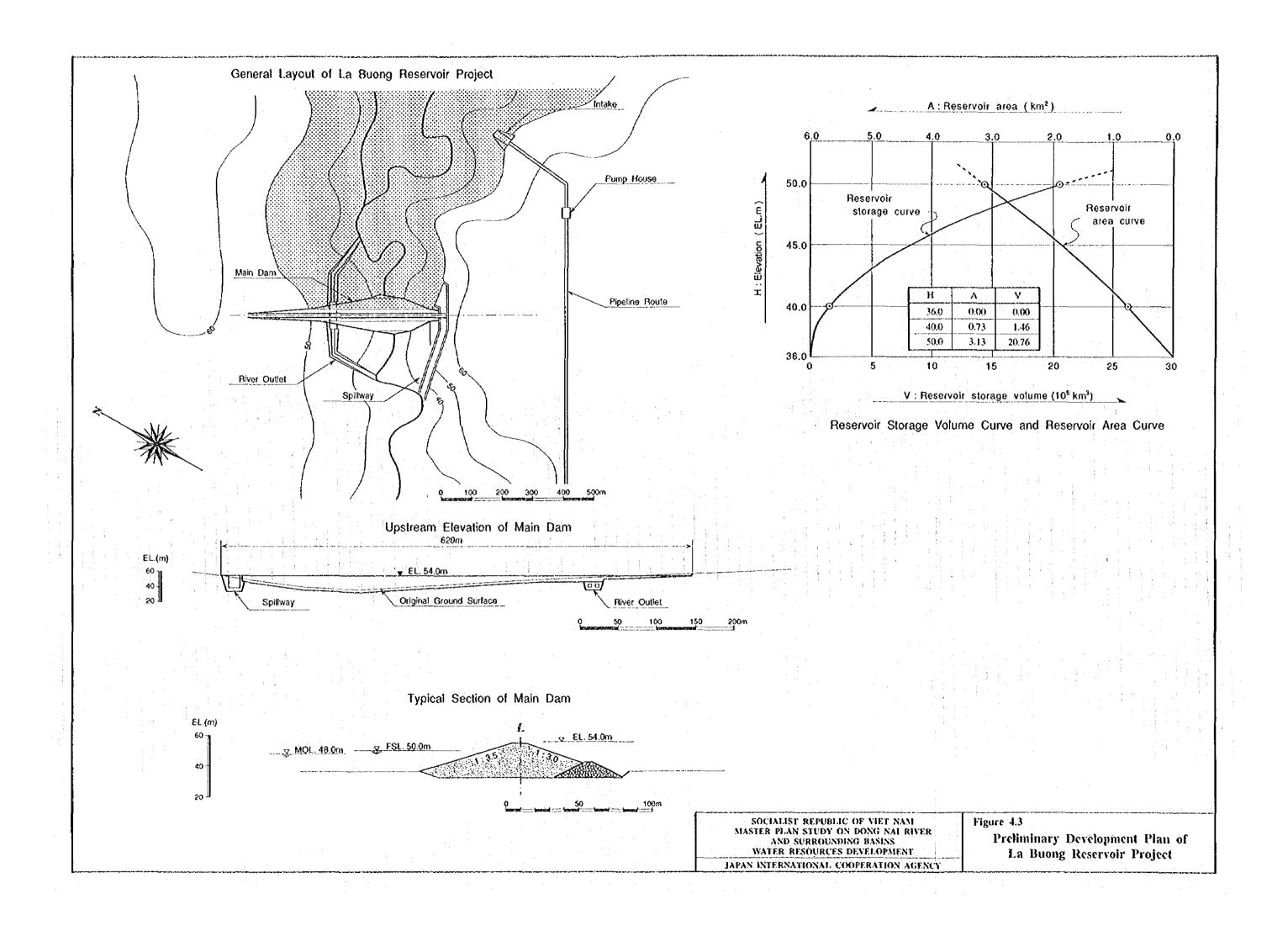


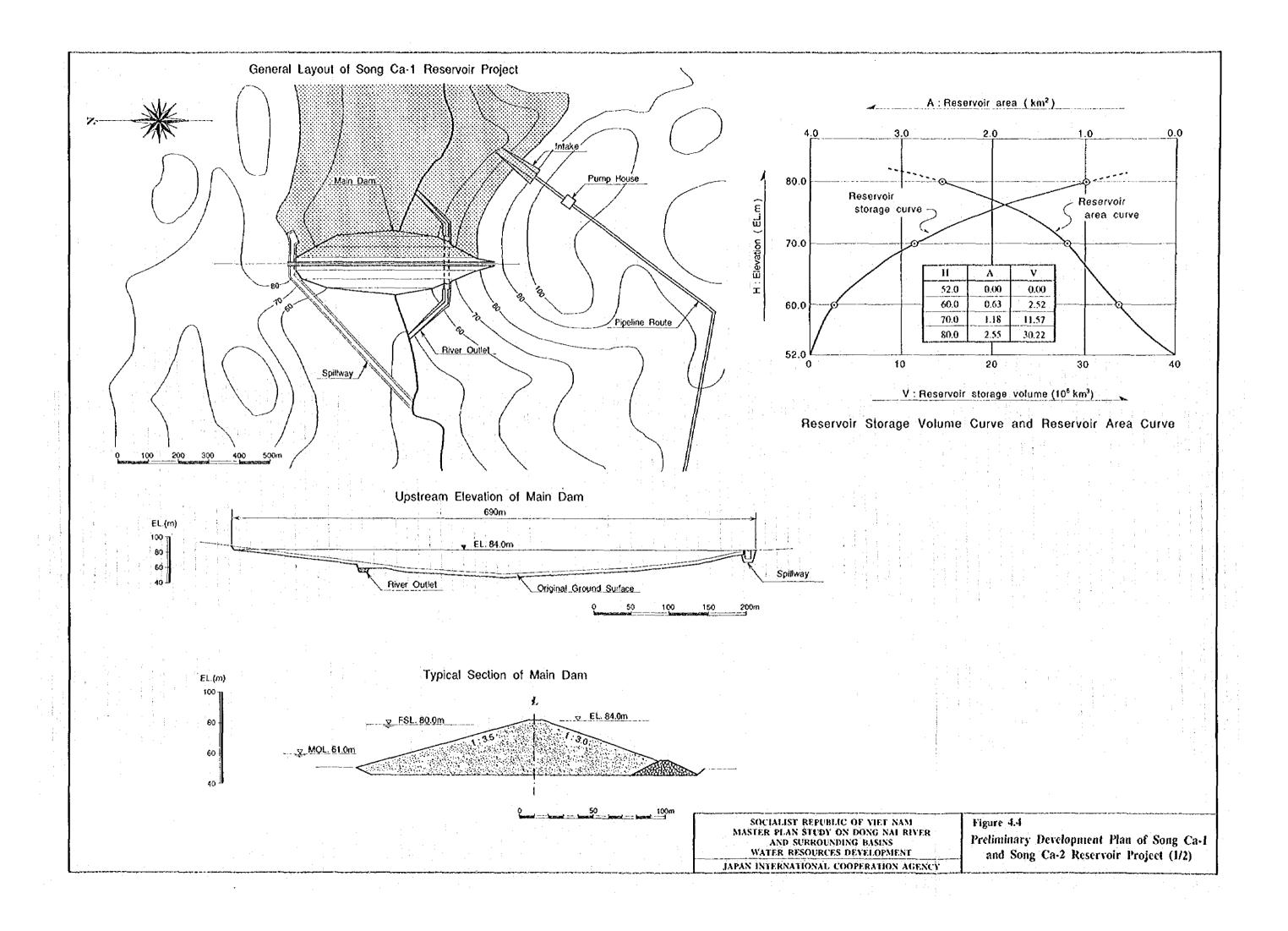


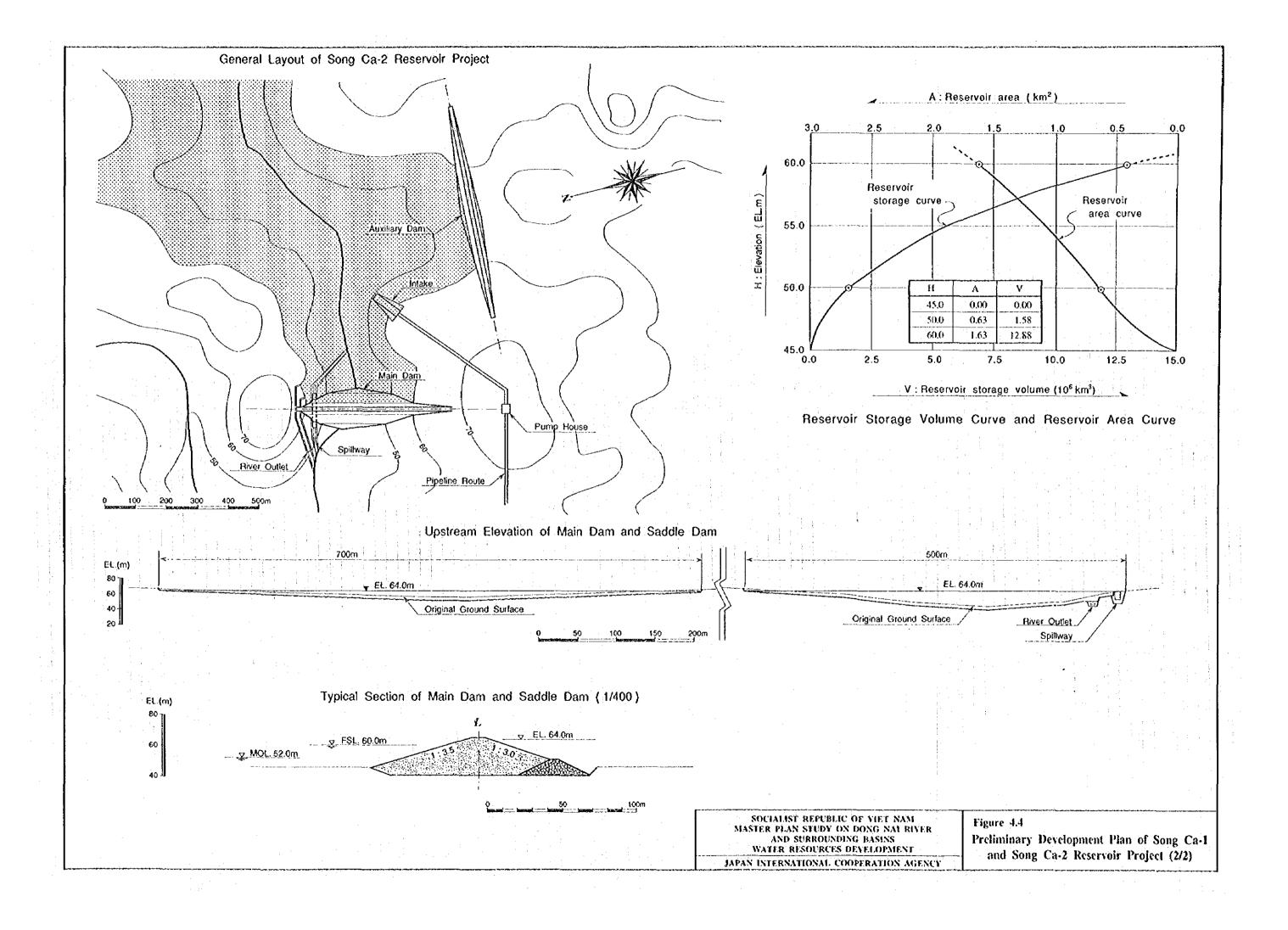


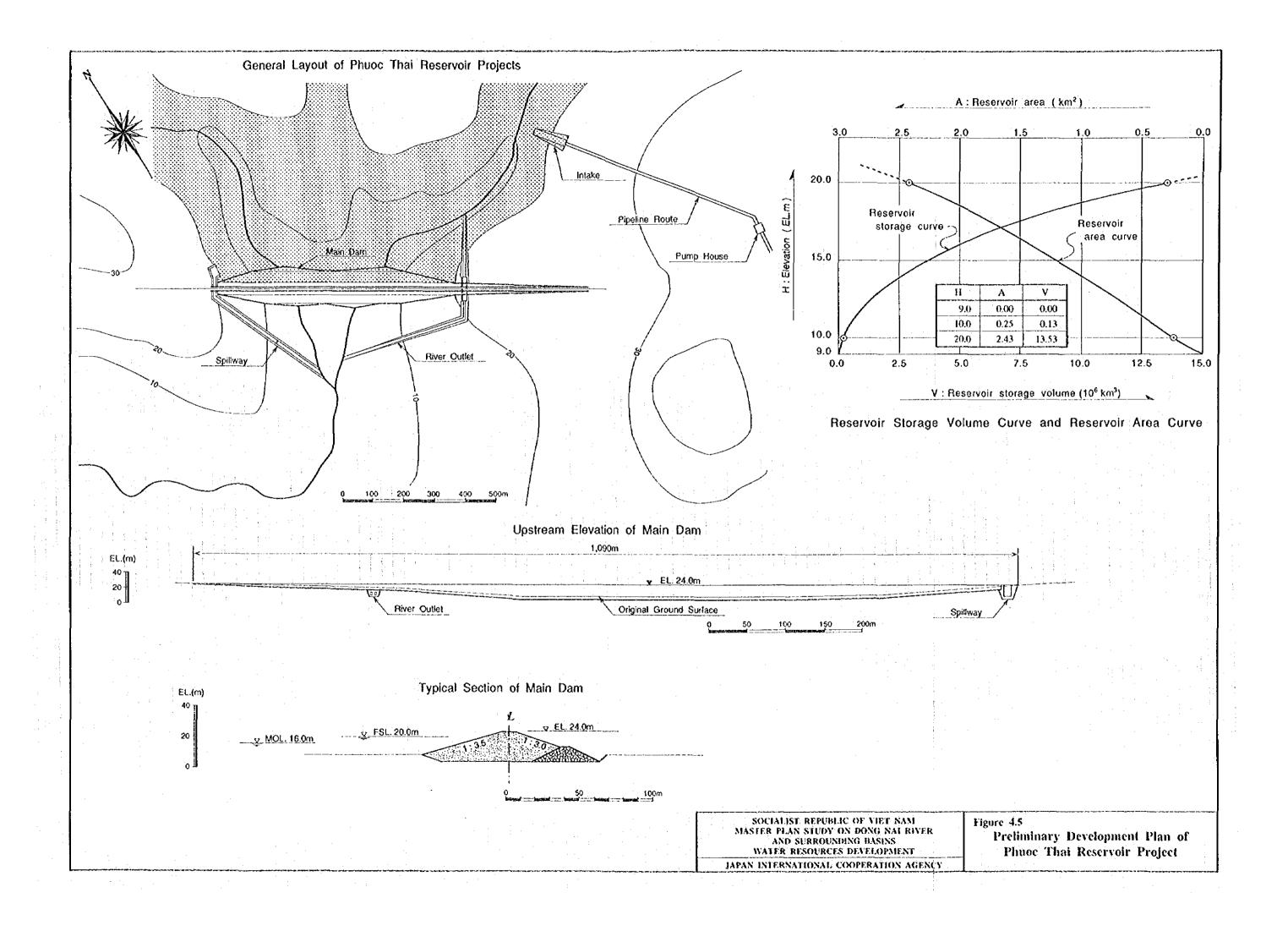


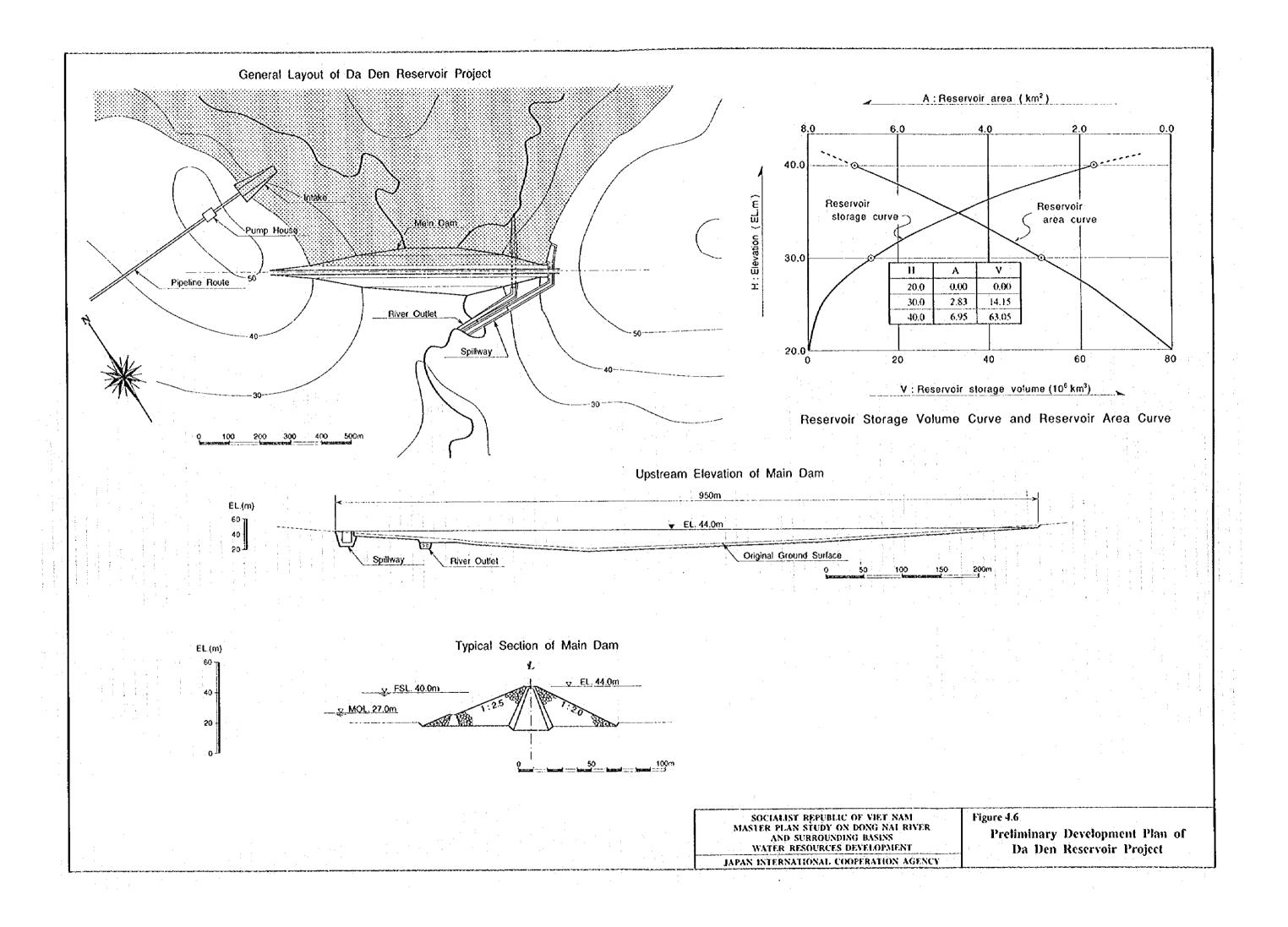


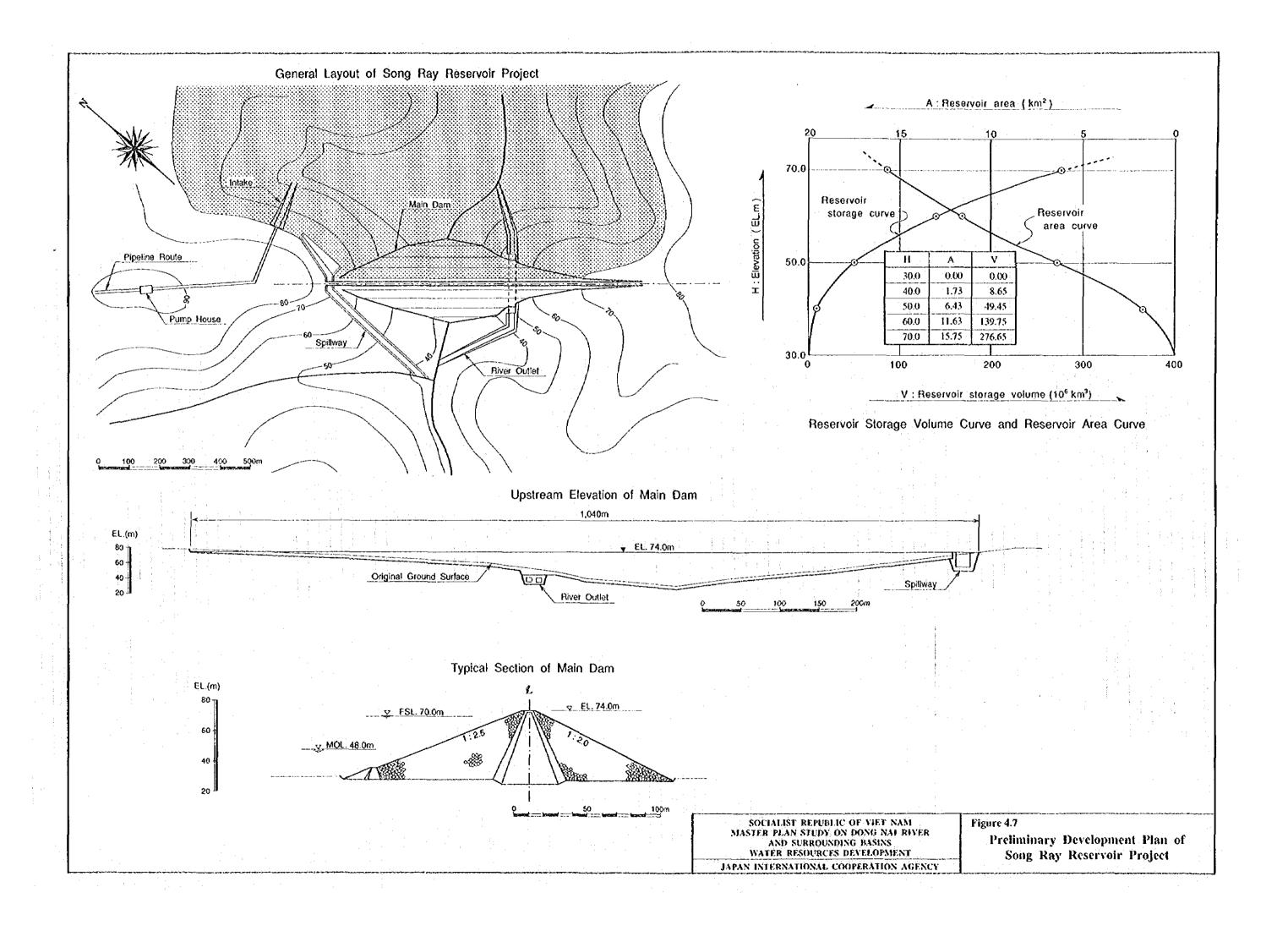


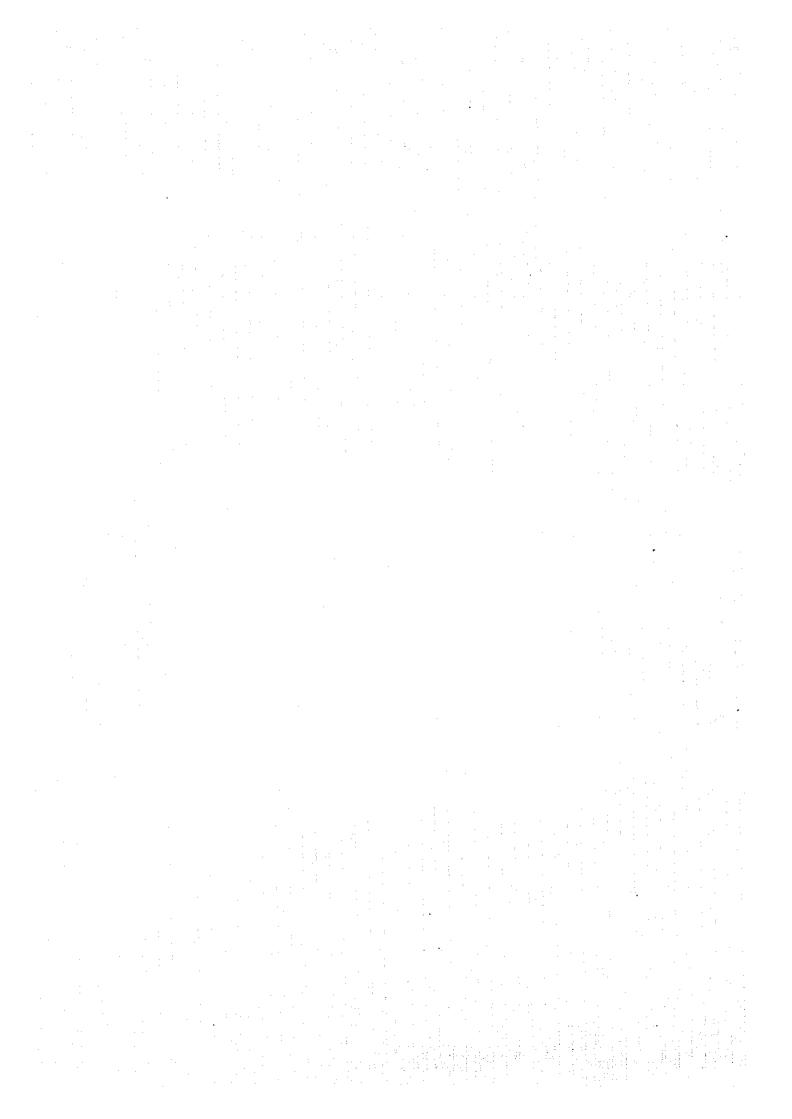












Project/Year	- 8 	1996 1997	88	1999 2000	800	8	2002 2	2003 20	204 20	05 20	8	07 20	8 20	8	200	1   201	2004 2005 2006 2007 2008 2009 2010 2011 2012 2013		2014   2015
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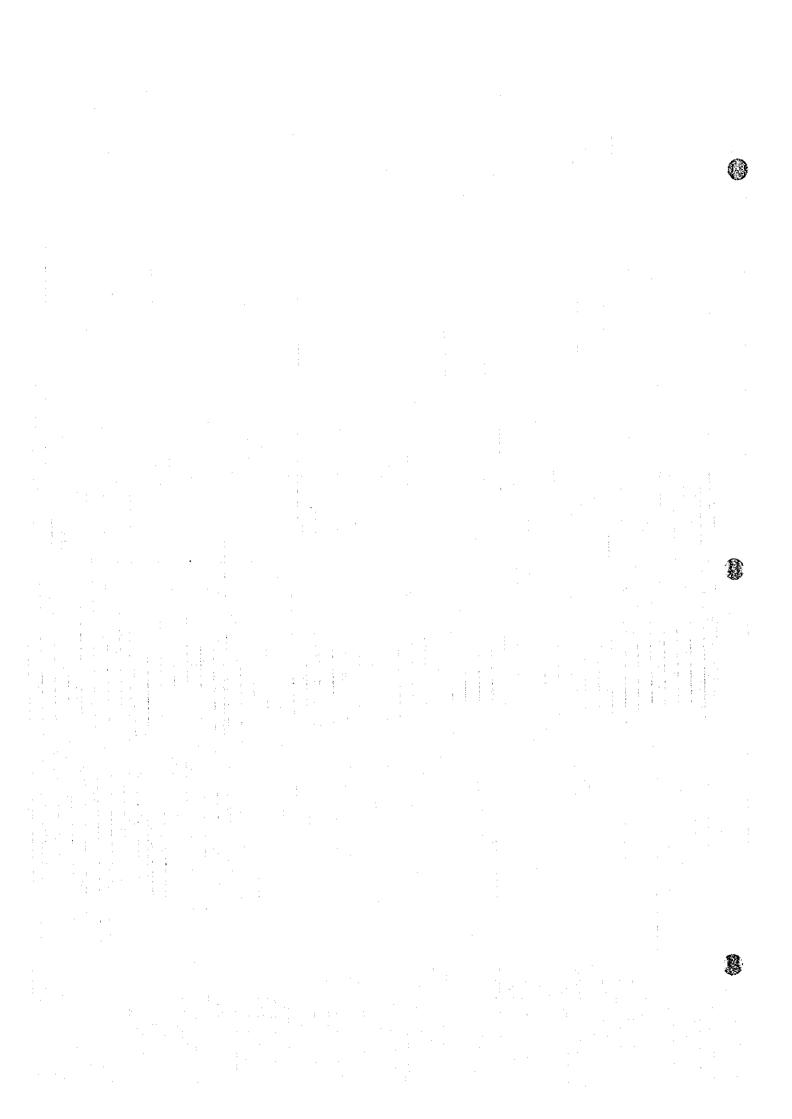
SOCIALIST REPUBLIC OF VIET NAM MASTER PLAN STUDY ON DONG NAI RIVER AND SURROUNDING BASINS WATER RESOURCES DEVELOPMENT

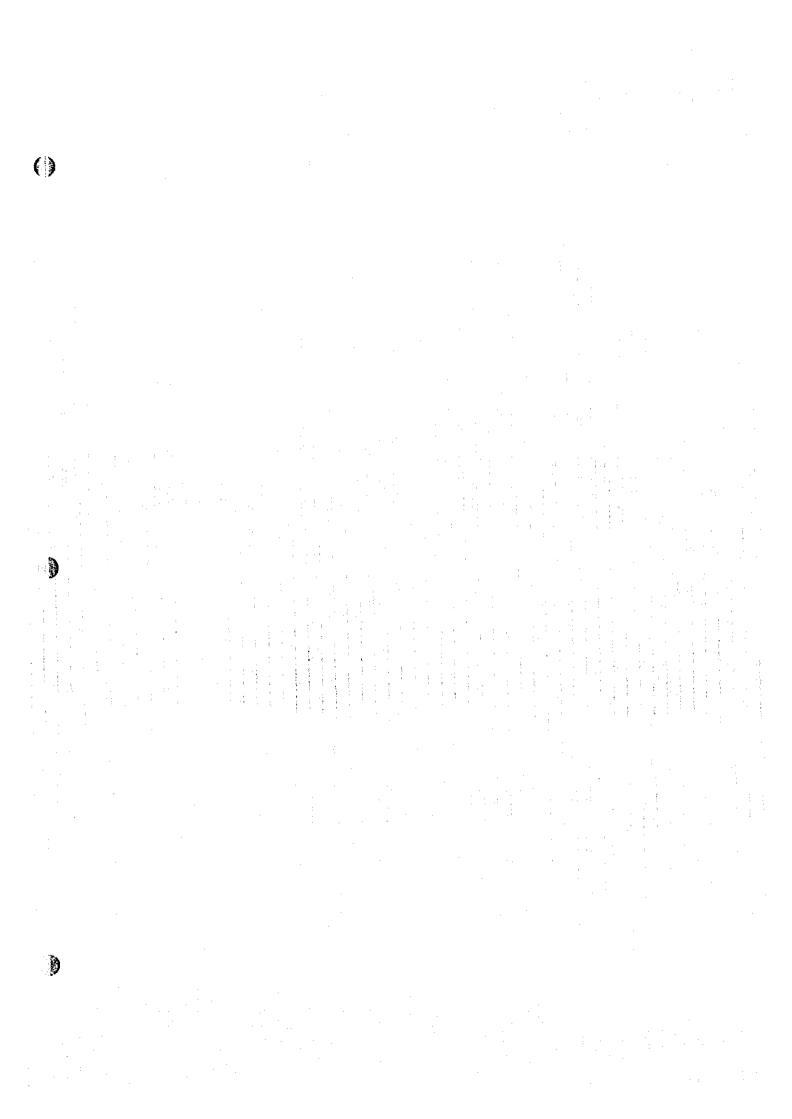
JAPAN INTERNATIONAL COOPERATION AGENCY

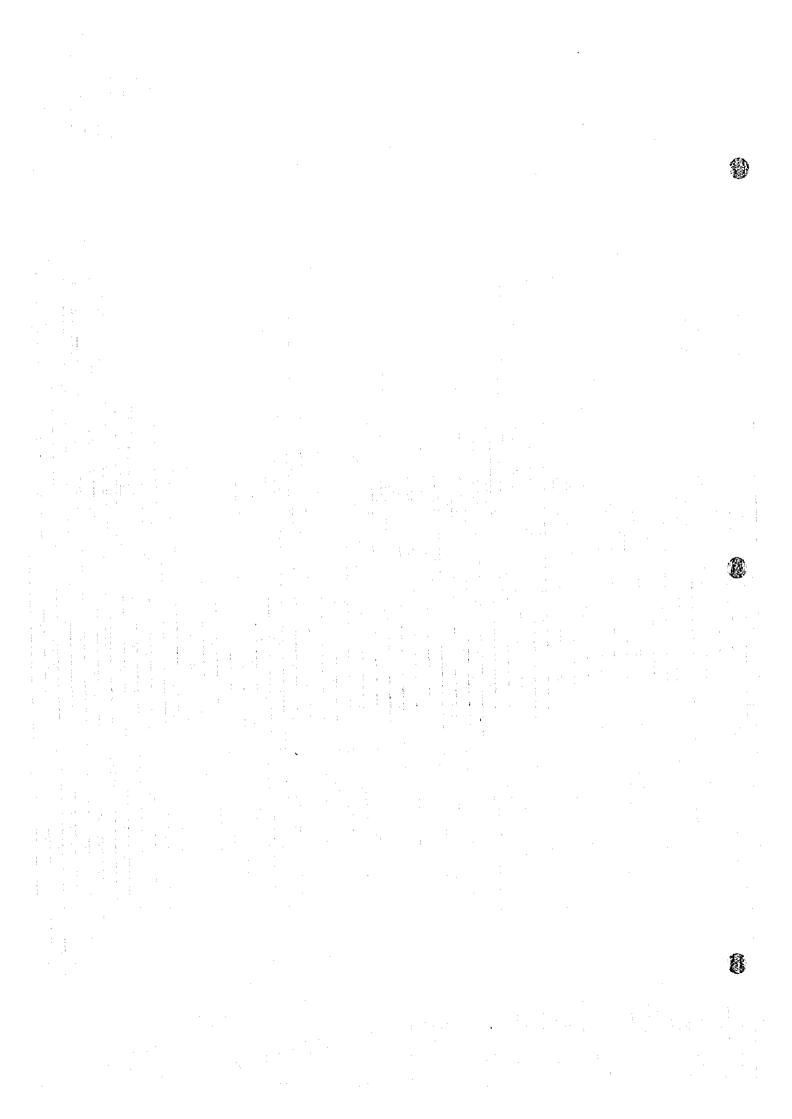
Figure 4.8
Implementation Sequence of the Master Plan
Projects in the Water Supply Sector

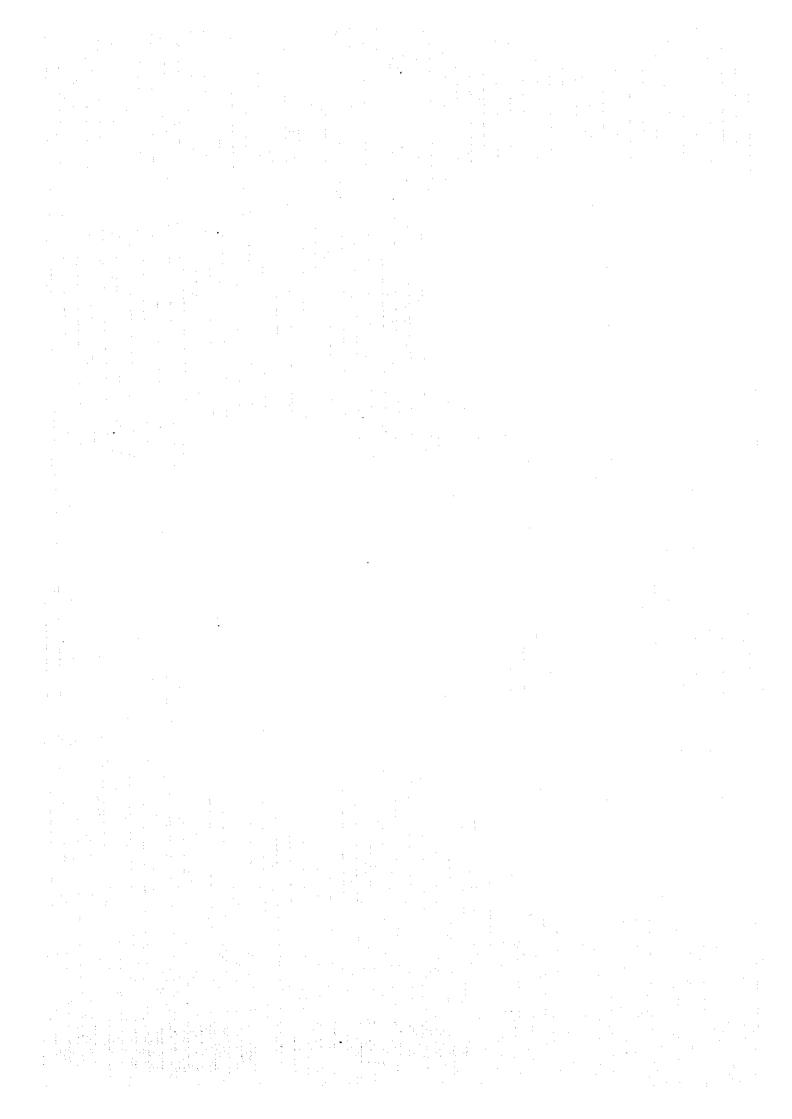
Master Plan Study/Feasibility Study/Investigation

Detailed Design









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