

10 COST ESTIMATES FOR FUTURE SECTOR DEVELOPMENT

10.2 Assumption for Cost Estimates

10.2.1 Unit Construction Cost

(1) Calculation method

The base information in previous PW4SP, such as bill of quantities and unit cost of respective components facilities was fully utilized, which was referred to the standard of relevant sector agencies. Escalation rates experienced between 1995 and 1998 in terms of major construction materials and equipment rental were studied using NSO statistics (whole price index). Market prices of these items were also canvassed to compare with the calculated prices in 1998 from those in 1995 in application of the escalations rates.

In general, escalated prices meet canvassed prices in the most of the materials. Escalation rates between 1995 and 1998 were employed in round figures. Some of them (water closet, etc.) were, however, replace by current price due to considerable increase in the last two years.

The Table 10.2.1 shows the prices of the major materials by facility.

Table 10.2.1 Price of Major Materials by Facility

Major Materials	Water Supply			Sanitation			Projection by major materials				Canvassed & collected price		Comparison (1), (2) & (3)		
	L-I		L-II	L-III		ST. Flush type	VIP. Pit	NSO wholesale price index		Price		DPWH ⁽²⁾		CIA ⁽³⁾	
								1995	1998	Escalation	1995	1998 ⁽¹⁾			
1. Aggregate Sand Gravel	x	x	x	x	x	x	x	311.6	367.5	5.7%	304	359	330	350	Almost same with (2) & (3).
											385	454	418	500	
2. Cement	x	x	x	x	x	x	x	197.4	214.1	2.7%	117	127	126	105	ditto
											1,100	1,358	1306		
3. Fuel	x	x	x					601.6	742.6	7.3%	1,100	1,358			ditto
4. Metal pipe 4" x 3m, GI 4" x 3m, Screen	x	x	x					208.7	226.3	2.7%	2,625	2,846	2763		Price of GI casing is almost same with (2) and screen is 12% lower than (2).
											4,313	4,667	5291		
5. PVC pipe 2" x 3m 1-1/2" elbow	x	x	x	x	x			199.2	223.4	3.9%	813	912	882		Price of PVC pipe is almost same with (2) and 7% higher than (3).
											13	15	40		
6. Reinforcing 12mm x 6m 10mm x 6m	x	x	x	x	x	x	x	201.4	221.9	3.3%	68	75			Almost same with (3).
											49	54	75	45	
7. Lumber				x	x	x		268.5	296.8	3.4%					Almost same with (3).
8. Paint Enamel, QDE				x				128.0	140.1	3.1%	266	291			
9. Machinery	x							254.8	254.8	0.0%					310

L-I: Deep well/shallow well, L-II: Major materials are same as those of L-I spring development.
 ST: School toilet, PT: Public toilet, Flush type: Flush water sealed w/ septic tank and Four flush w/ double latrine.
 CIA: Construction Industry Authority of the Philippines, prevailing prices for the month of December 1998
 GI: Galvanized iron steel pipe for well casing, Screen: Low carbon steel and wound wire type

Table 10.2.2 (a) Unit Cost of Level I (Gravel Packed Deep Well - 40m Depth)

(Cost: Peso)

Description	Qty.	Unit	Unit Cost	Amount
A. Mobilization/Demobilization/Site Preparation		LS		52,000
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 100mm x 3m Steel Casing with coupling	11	pcs.	2,846	31,306
(2) 100mm x 3m Steel Casing with one end closed	1	pc.	2,997	2,997
(3) 100mm x 3m Low Carbon Steel Screen	2	pcs.	4,667	9,334
(4) Casing Centralizer	2	set	1,925	3,850
2. Labor, Fuel, Lubricant and others				
Well Drilling for 40 m depth at 200mm borehole	40	m	2,500	100,000
3. Borehole Logging	1	no	16,000	16,000
4. Freight Cost (8% of Materials)		LS		3,799
Sub-Total of B				167,286
C. Well Development and Pumping Test				
Well Development	24	hr.	5,500	132,000
Pumping Test	6	hr.	5,000	30,000
Sub-Total of C				162,000
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) Improved Deep Well Cylinder Pump (Afridev Type)	1	set	11,815	11,815
(2) 63mm x 6m Riser Pipe and Pump Rod	6	pcs.	1,880	11,280
(3) #10 Sieved Gravel	1	cu.m	1,026	1,026
(4) Coarse Sand	1	cu.m	359	359
(5) Cement for Sanitary Seal	4	bags	127	508
(6) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	2	cu.m	454	908
3) Sand	1	cu.m	359	359
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	294	294
5) Form Lumber (50mm x 75mm x 1,800mm)	6	pcs.	52	312
6) Nail	1	kg.	40	40
Sub-Total of D-1				27,409
2. Labor (40% of D-1.)				10,964
3. Freight Cost (8% of Materials)		LS		2,193
Sub-Total of D				40,566
E. Indirect Cost				
Profit (10% of A, B, C & D)				42,185
Overhead Expense (13% of A, B, C & D)				54,841
VAT (10% of Labor, Profit & Overhead Expense)				20,799
Sub-Total of E				62,984
Total of Construction Cost (A+B+C+D+E)				352,836
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		3,600
2. Construction Supervision		LS		2,400
3. Water Quality Analysis		LS		1,400
Sub-Total of F				7,400
GRAND TOTAL				360,236
SAY				360,200

Note: LS - Lump Sum

Source: DPWH standard price in 1994 & LWUA Water Supply Feasibility Study Methodology Manual 1998

Unit Cost: Adjusted to 1998 Price Level

Table 10.2.2 (b) Unit Cost of Level I (Natural Gravel packed Deep Well - 40m Depth)

(Cost: Peso)

Description	Qty.	Unit	Unit Cost	Amount
A. Mobilization/Demobilization		LS		52,000
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 100mm x 3m Steel Casing with coupling	11	pcs.	2,846	31,306
(2) 100mm x 3m Steel Casing with one end closed	1	pc.	2,997	2,997
(3) 100mm x 3m Low Carbon Steel Screen	2	pcs.	4,667	9,334
(4) Casing Centralizer	0	set	1,925	0
2. Labor, Fuel, Lubricant and others				
Well Drilling for 40 m depth at 150mm borehole	40	m	1,600	64,000
3. Borehole Logging	1	no	16,000	16,000
4. Freight Cost (8% of Materials)		LS		3,491
Sub-Total of B				127,128
C. Well Development and Pumping Test				
Well Development	12	hr.	5,500	66,000
Pumping Test	6	hr.	5,000	30,000
Sub-Total of C				96,000
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) Improved Deep Well Cylinder Pump (Afridev Type)	1	set	11,815	11,815
(2) 63mm x 6m Riser Pipe and Pump Rod	6	pcs.	1,880	11,280
(3) #10 Sieved Gravel	0	cu.m	1,026	0
(4) Coarse Sand	1	cu.m	359	359
(5) Cement for Sanitary Seal	3	bags	127	381
(6) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	2	cu.m	454	908
3) Sand	1	cu.m	359	359
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	294	294
5) Form Lumber (50mm x 75mm x 1,800mm)	6	pcs.	52	312
6) Nail	1	kg.	40	40
Sub-Total of D-1				26,256
2. Labor (40% of D-1.)				10,502
3. Freight Cost (8% of Materials)		LS		2,100
Sub-Total of D				38,858
E. Indirect Cost				
Profit (10% of A, B, C & D)				31,399
Overhead Expense (13% of A, B, C & D)				40,818
VAT (10% of Labor, Profit & Overhead Expense)				14,672
Sub-Total of E				46,071
Total of Construction Cost (A+B+C+D+E)				294,057
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		3,600
2. Construction Supervision		LS		2,400
3. Water Quality Analysis		LS		1,400
Sub-Total of F				7,400
GRAND TOTAL				301,457
SAY				301,500

Note: LS - Lump Sum

Source: DPWH standard price in 1994 & LWUA Water Supply Feasibility Study Methodology Manual 1998

Unit Cost: Adjusted to 1998 Price Level

Table 10.2.2(c) Unit Cost of Level I (Gravel Packed Deep Well - 40m Depth) for Acid Water

(Cost: Peso)

Description	Qty.	Unit	Unit Cost	Amount
A. Mobilization/Demobilization/Site Preparation		LS		52,000
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 100mm x 3m PVC Casing with Socket	11	pcs.	2,038	22,418
(2) 100mm x 3m PVC Casing with Plug	1	pc.	980	980
(3) 100mm x 3m Stainless Steel Screen	2	pcs.	12,700	25,400
(4) Casing Centralizer	2	set	1,925	3,850
2. Labor, Fuel, Lubricant and others				
Well Drilling for 40 m depth at 200mm borehole	40	m	2,500	100,000
3. Borehole Logging	1	no	16,000	16,000
4. Freight Cost (8% of Materials)		LS		4,212
Sub-Total of B				172,860
C. Well Development and Pumping Test				
Well Development	24	hr.	5,500	132,000
Pumping Test	6	hr.	5,000	30,000
Sub-Total of C				162,000
D. Gravel Packing, Installation of Handpump and				
1. Materials				
(1) Improved Deep Well Cylinder Pump (Afridev Type)	1	set	11,815	11,815
(2) 63mm x 3m PVC Riser Pipe and SUS Pump Rod	12	pcs.	2,450	29,400
(3) #10 Sieved Gravel	1	cu.m	1,026	1,026
(4) Coarse Sand	1	cu.m	359	359
(5) Cement for Sanitary Seal	4	bags	127	508
(6) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	2	cu.m	454	908
3) Sand	1	cu.m	359	359
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	294	294
5) Form Lumber (50mm x 75mm x 1,800mm)	6	pcs.	52	312
6) Nail	1	kg.	40	40
Sub-Total of D-1				45,529
2. Labor (40% of D-1.)				18,212
3. Freight Cost (8% of Materials)		LS		3,642
Sub-Total of D				67,383
E. Indirect Cost				
Profit (10% of A, B, C & D)				45,424
Overhead Expense (13% of A, B, C & D)				59,052
VAT (10% of Labor, Profit & Overhead Expense)				22,269
Sub-Total of E				67,693
Total of Construction Cost (A+B+C+D+E)				389,936
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		3,600
2. Construction Supervision		LS		2,400
3. Water Quality Analysis		LS		1,400
Sub-Total of F				7,400
GRAND TOTAL				397,336
SAY				397,300

Note: LS - Lump Sum

Source: DPWH standard price in 1994 & LWUA Water Supply Feasibility Study Methodology Manual 1998

Unit Cost: Adjusted to 1998 Price Level

Table 10.2.3 (a) Unit Cost of Level I (Gravel Packed Deep Well - 80m Depth)

(Cost: Peso)

Description	Qty.	Unit	Unit Cost	Amount
A. Mobilization/Demobilization/Site Preparation		LS		54,000
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 100mm x 3m Steel Casing with coupling	24	pcs.	2,846	68,304
(2) 100mm x 3m Steel Casing with one end closed	1	pc.	2,997	2,997
(3) 100mm x 3m Low Carbon Steel Screen	2	pcs.	4,667	9,334
(4) Casing Centralizer	2	set	1,925	3,850
2. Labor, Fuel, Lubricant and others				
Well Drilling for 40 m depth at 200mm borehole	80	m	2,500	200,000
3. Borehole Logging	1	no	18,000	18,000
4. Freight Cost (8% of Materials)		LS		6,759
Sub-Total of B				309,244
C. Well Development and Pumping Test				
Well Development	24	hr.	5,500	132,000
Pumping Test	6	hr.	5,000	30,000
Sub-Total of C				162,000
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) Improved Deep Well Cylinder Pump (Afridev Type)	1	set	11,815	11,815
(2) 63mm x 6m Riser Pipe and Pump Rod	8	pcs.	1,880	15,040
(3) #10 Sieved Gravel	1	cu.m	1,026	1,026
(4) Coarse Sand	1	cu.m	359	359
(5) Cement for Sanitary Seal	4	bags	127	508
(6) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	2	cu.m	454	908
3) Sand	1	cu.m	359	359
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	294	294
5) Form Lumber (50mm x 75mm x 1,800mm)	6	pcs.	52	312
6) Nail	1	kg.	40	40
Sub-Total of D-1				31,169
2. Labor (40% of D-1.)				12,468
3. Freight Cost (8% of Materials)		LS		2,494
Sub-Total of D				46,131
E. Indirect Cost				
Profit (10% of A, B, C & D)				57,138
Overhead Expense (13% of A, B, C & D)				74,279
VAT (10% of Labor, Profit & Overhead Expense)				34,389
Sub-Total of E				91,527
Total of Construction Cost (A+B+C+D+E)				530,902
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		3,600
2. Construction Supervision		LS		2,400
3. Water Quality Analysis		LS		1,400
Sub-Total of F				7,400
GRAND TOTAL				538,302
SAY				538,300

Note: LS - Lump Sum

Source: DPWH standard price in 1994 & LWUA Water Supply Feasibility Study Methodology Manual 1998

Unit Cost: Adjusted to 1998 Price Level

Table 10.2.3 (b) Unit Cost of Level I (Natural Gravel Packed Deep Well - 80m Depth)

(Cost: Peso)

Description	Qty.	Unit	Unit Cost	Cost
A. Mobilization/Demobilization/Site Preparation		LS		54,000
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 100mm x 3m Steel Casing with coupling	24	pcs.	2,846	68,304
(2) 100mm x 3m Steel Casing with one end closed	1	pc.	2,997	2,997
(3) 100mm x 3m Low Carbon Steel Screen	2	pcs.	4,667	9,334
(4) Casing Centralizer	0	set	1,925	0
2. Labor, Fuel, Lubricant and others				
Well Drilling for 80 m depth at 150mm borehole	80	m	1,600	128,000
3. Borehole Logging	1	no	18,000	18,000
4. Freight Cost (8% of Materials)		LS		6,451
Sub-Total of B				233,086
C. Well Development and Pumping Test				
Well Development	12	hr.	5,500	66,000
Pumping Test	6	hr.	5,000	30,000
Sub-Total of C				96,000
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) Improved Deep Well Cylinder Pump (Afridev Type)	1	set	11,815	11,815
(2) 63mm x 6m Riser Pipe and Pump Rod	8	pcs.	1,880	15,040
(3) #10 Sieved Gravel	0	cu.m	1,026	0
(4) Coarse Sand	1	cu.m	359	359
(5) Cement for Sanitary Seal	3	bags	127	381
(6) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	2	cu.m	454	908
3) Sand	1	cu.m	359	359
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	294	294
5) Form Lumber (50mm x 75mm x 1,800mm)	6	pcs.	52	312
6) Nail	1	kg.	40	40
Sub-Total of D-1				30,016
2. Labor (40% of D-1.)				12,006
3. Freight Cost (8% of Materials)		LS		2,401
Sub-Total of D				44,423
E. Indirect Cost				
Profit (10% of A, B, C & D)				42,751
Overhead Expense (13% of A, B, C & D)				55,576
VAT (10% of Labor, Profit & Overhead Expense)				23,833
Sub-Total of E				66,584
Total of Construction Cost (A+B+C+D+E)				428,093
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		3,600
2. Construction Supervision		LS		2,400
3. Water Quality Analysis		LS		1,400
Sub-Total of F				7,400
GRAND TOTAL				435,493
SAY				435,500

Note: LS - Lump Sum

Source: DPWH standard price in 1994 & LWUA Water Supply Feasibility Study Methodology Manual 1998

Unit Cost: Adjusted to 1998 Price Level

Table 10.2.3 (c) Unit Cost of Level I (Gravel Packed Deep Well - 80m Depth) for Acid Water

(Cost: Peso)

Description	Qty.	Unit	Unit Cost	Cost
A. Mobilization/Demobilization/Site Preparation		LS		54,000
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 100mm x 3m PVC Casing with Socket	24	pcs.	2,038	48,912
(2) 100mm x 3m PVC Casing with Plug	1	pc.	980	980
(3) 100mm x 3m Stainless Steel Screen	2	pcs.	12,700	25,400
(4) Casing Centralizer	2	set	1,925	3,850
2. Labor, Fuel, Lubricant and others				
Well Drilling for 40 m depth at 200mm borehole	80	m	2,500	200,000
3. Borehole Logging	1	no	18,000	18,000
4. Freight Cost (8% of Materials)		LS		6,331
Sub-Total of B				303,473
C. Well Development and Pumping Test				
Well Development	24	hr.	5,500	132,000
Pumping Test	6	hr.	5,000	30,000
Sub-Total of C				162,000
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) Improved Deep Well Cylinder Pump (Afridev Type)	1	set	11,815	11,815
(2) 63mm x 3m PVC Riser Pipe and SUS Pump Rod	16	pcs.	2,450	39,200
(3) #10 Sieved Gravel	1	cu.m	1,026	1,026
(4) Coarse Sand	1	cu.m	359	359
(5) Cement for Sanitary Seal	4	bags	127	508
(6) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	2	cu.m	454	908
3) Sand	1	cu.m	359	359
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	294	294
5) Form Lumber (50mm x 75mm x 1,800mm)	6	pcs.	52	312
6) Nail	1	kg.	40	40
Sub-Total of D-1				55,329
2. Labor (40% of D-1.)				22,132
3. Freight Cost (8% of Materials)		LS		4,426
Sub-Total of D				81,887
E. Indirect Cost				
Profit (10% of A, B, C & D)				60,136
Overhead Expense (13% of A, B, C & D)				78,177
VAT (10% of Labor, Profit & Overhead Expense)				36,045
Sub-Total of E				96,181
Total of Construction Cost (A+B+C+D+E)				565,541
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		3,600
2. Construction Supervision		LS		2,400
3. Water Quality Analysis		LS		1,400
Sub-Total of F				7,400
GRAND TOTAL				572,941
SAY				572,900

Note: LS - Lump Sum

Source: DPWH standard price in 1994 & LWUA Water Supply Feasibility Study Methodology Manual 1998

Unit Cost: Adjusted to 1998 Price Level

Table 10.2.4 (a) Unit Cost of Level I (Gravel Packed Deep Well - 120m Depth)

(Cost: Peso)

Description	Qty.	Unit	Unit Cost	Amount
A. Mobilization/Demobilization/Site Preparation		LS		56,000
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 100mm x 3m Steel Casing with coupling	37	pcs.	2,846	105,302
(2) 100mm x 3m Steel Casing with one end closed	1	pc.	2,997	2,997
(3) 100mm x 3m Low Carbon Steel Screen	2	pcs.	4,667	9,334
(4) Casing Centralizer	2	set	1,925	3,850
2. Labor, Fuel, Lubricant and others				
Well Drilling for 120 m depth at 200mm borehole	120	m	2,500	300,000
3. Borehole Logging	1	no	20,000	20,000
4. Freight Cost (8% of Materials)		LS		9,719
Sub-Total of B				451,202
C. Well Development and Pumping Test				
Well Development	24	hr.	5,500	132,000
Pumping Test	6	hr.	5,000	30,000
Sub-Total of C				162,000
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) Improved Deep Well Cylinder Pump (Afridev Type)	1	set	11,815	11,815
(2) 63mm x 6m Riser Pipe and Pump Rod	10	pcs.	1,880	18,800
(3) #10 Sieved Gravel	1	cu.m	1,026	1,026
(4) Coarse Sand	1	cu.m	359	359
(5) Cement for Sanitary Seal	4	bags	127	508
(6) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	2	cu.m	454	908
3) Sand	1	cu.m	359	359
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	294	294
5) Form Lumber (50mm x 75mm x 1,800mm)	6	pcs.	52	312
6) Nail	1	kg.	40	40
Sub-Total of D-1				34,929
2. Labor (40% of D-1.)				13,972
3. Freight Cost (8% of Materials)		LS		2,794
Sub-Total of D				51,695
E. Indirect Cost				
Profit (10% of A, B, C & D)				72,090
Overhead Expense (13% of A, B, C & D)				93,717
VAT (10% of Labor, Profit & Overhead Expense)				47,978
Sub-Total of E				120,068
Total of Construction Cost (A+B+C+D+E)				708,965
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		3,600
2. Construction Supervision		LS		2,400
3. Water Quality Analysis		LS		1,400
Sub-Total of F				7,400
GRAND TOTAL				716,365
SAY				716,400

Note: LS - Lump Sum

Source: DPWH standard price in 1994 & LWUA Water Supply Feasibility Study Methodology Manual 1998

Unit Cost: Adjusted to 1998 Price Level

Table 10.2.4 (b) Unit Cost of Level I (Natural Gravel Packed Deep Well - 120m Depth)

(Cost: Peso)

Description	Qty.	Unit	Unit Cost	Cost
A. Mobilization/Demobilization/Site Preparation		LS		56,000
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 100mm x 3m Steel Casing with coupling	37	pcs.	2,846	105,302
(2) 100mm x 3m Steel Casing with one end closed	1	pc.	2,997	2,997
(3) 100mm x 3m Low Carbon Steel Screen	2	pcs.	4,667	9,334
(4) Casing Centralizer	0	set	1,925	0
2. Labor, Fuel, Lubricant and others				
Well Drilling for 120 m depth at 150mm borehole	120	m	1,600	192,000
3. Borehole Logging	1	no	20,000	20,000
4. Freight Cost (8% of Materials)		LS		9,411
Sub-Total of B				339,044
C. Well Development and Pumping Test				
Well Development	12	hr.	5,500	66,000
Pumping Test	6	hr.	5,000	30,000
Sub-Total of C				96,000
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) Improved Deep Well Cylinder Pump (Afridev Type)	1	set	11,815	11,815
(2) 63mm x 6m Riser Pipe and Pump Rod	10	pcs.	1,880	18,800
(3) #10 Sieved Gravel	0	cu.m	1,026	0
(4) Coarse Sand	1	cu.m	359	359
(5) Cement for Sanitary Seal	3	bags	127	381
(6) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	2	cu.m	454	908
3) Sand	1	cu.m	359	359
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	294	294
5) Form Lumber (50mm x 75mm x 1,800mm)	6	pcs.	52	312
6) Nail	1	kg.	40	40
Sub-Total of D-1				33,776
2. Labor (40% of D-1.)				13,510
3. Freight Cost (8% of Materials)		LS		2,702
Sub-Total of D				49,988
E. Indirect Cost				
Profit (10% of A, B, C & D)				54,103
Overhead Expense (13% of A, B, C & D)				70,334
VAT (10% of Labor, Profit & Overhead Expense)				32,995
Sub-Total of E				87,098
Total of Construction Cost (A+B+C+D+E)				562,130
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		3,600
2. Construction Supervision		LS		2,400
3. Water Quality Analysis		LS		1,400
Sub-Total of F				7,400
GRAND TOTAL				569,530
SAY				569,500

Note: LS - Lump Sum

Source: DPWH standard price in 1994 & LWUA Water Supply Feasibility Study Methodology Manual 1998

Unit Cost: Adjusted to 1998 Price Level

Table 10.2.4(c) Unit Cost of Level I (Gravel Packed Deep Well - 120m Depth) for Acid Water

(Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
A. Mobilization/Demobilization/Site Preparation		LS		56,000
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 100mm x 3m PVC Casing with Socket	37	pcs.	2,038	75,406
(2) 100mm x 3m PVC Casing with Plug	1	pc.	980	980
(3) 100mm x 3m Stainless Steel Screen	2	pcs.	12,700	25,400
(4) Casing Centralizer	2	set	1,925	3,850
2. Labor, Fuel, Lubricant and others				
Well Drilling for 120 m depth at 200mm borehole	120	m	2,500	300,000
3. Borehole Logging	1	no	20,000	20,000
4. Freight Cost (8% of Materials)		LS		8,451
Sub-Total of B				434,087
C. Well Development and Pumping Test				
Well Development	24	hr.	5,500	132,000
Pumping Test	6	hr.	5,000	30,000
Sub-Total of C				162,000
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) Improved Deep Well Cylinder Pump (Afridev Type)	1	set	11,815	11,815
(2) 63mm x 3m PVC Riser Pipe and SUS Pump Rod	20	pcs.	2,450	49,000
(3) #10 Sieved Gravel	1	cu.m	1,026	1,026
(4) Coarse Sand	1	cu.m	359	359
(5) Cement for Sanitary Seal	4	bags	127	508
(6) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	2	cu.m	454	908
3) Sand	1	cu.m	359	359
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	294	294
5) Form Lumber (50mm x 75mm x 1,800mm)	6	pcs.	52	312
6) Nail	1	kg.	40	40
Sub-Total of D-1				65,129
2. Labor (40% of D-1.)				26,052
3. Freight Cost (8% of Materials)		LS		5,210
Sub-Total of D				96,391
E. Indirect Cost				
Profit (10% of A, B, C & D)				74,848
Overhead Expense (13% of A, B, C & D)				97,302
VAT (10% of Labor, Profit & Overhead Expense)				49,820
Sub-Total of E				124,668
Total of Construction Cost (A+B+C+D+E)				741,146
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		3,600
2. Construction Supervision		LS		2,400
3. Water Quality Analysis		LS		1,400
Sub-Total of F				7,400
GRAND TOTAL				748,546
SAY				748,500

Note: LS - Lump Sum

Source: DPWH standard price in 1994 & LWUA Water Supply Feasibility Study Methodology Manual 1998

Unit Cost: Adjusted to 1998 Price Level

Table 10.2.5 Unit Cost of Level I (Deep Well Rehabilitation)

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
A. Mobilization/Demobilization		LS		8,000
B. Well Rehabilitation				
1. Materials				
(1) Cylinder Pump Set	1	set	9,570	9,570
(2) Cement for Surface Sealing	4	bags	127	508
(3) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	2	cu.m	454	908
3) Sand	1	cu.m	359	359
4) Plywood (4' x 8' x 1/4")	1	pc.	294	294
5) Form Lumber (2" x 3" x 6")	6	pes.	52	312
6) Nail	1	kg.	40	40
Sub-Total of B-1				12,499
2. Labor (40% of B-1)				5,000
3. Freight Cost (8% of Materials)				1,000
Sub-Total of B				18,499
C. Well Development		LS		31,000
D. Indirect Cost				
Profit (10% of A, B & C)				5,750
Overhead Expense (13% of A, B & C)				7,475
VAT (10% of Profit & Labor)				4,175
Sub-Total of D				17,400
Total of Construction Cost (A+B+C+D)				74,899
E. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		1,300
2. Supervision		LS		800
3. Water Quality Analysis		LS		1,400
Sub-Total of E				3,500
GRAND TOTAL				78,399
SAY				78,400

Note: LS - Lump Sum

Source: DPWH standard price in 1994

Unit Cost: Adjusted to 1998 Price Level

Table 10.2.6 Unit Cost of Level I (Shallow Well - 18m Depth)

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
A. Mobilization/Demobilization		LS		20,000
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 63mm x 6m PVC Pipe with socket	2	pcs.	912	1,824
(2) 63mm x 3m PVC Pipe with plug	1	pc.	452	452
(3) 63mm PVC Socket	1	pc.	12	12
(4) 63mm x 3m PVC Screen	1	pc.	1,443	1,443
(5) Casing Centralizer	2	set	725	1,450
2. Labor, Fuel, Lubricant and others				
Well Drilling for 18 m depth at 150mm borehole	18	m	1,600	28,800
3. Freight Cost (8% of Materials)		LS		298
Sub-Total of B				34,279
C. Well Development	4	hr.	2,000	8,000
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) 50mm Jetmatic Handpump	1	set	2,807	2,807
(2) 50mm Riser Pipe and Foot Valve	1	pc.	118	118
(3) #10 Sieved Gravel	0.1	cu.m	1,026	103
(4) Coarse Sand	0.07	cu.m	359	25
(5) Cement for Sanitary Seal	4	bag	127	508
(6) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	1	cu.m	454	454
3) Sand	1	cu.m	359	359
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	294	294
5) Form Lumber (50mm x 75mm x 1,800 mm)	1	pc.	52	52
6) Nail	1	kg.	40	40
Sub-Total of D-1				5,268
2. Labor (40% of D-1.)				2,107
3. Freight Cost (8% of Materials)		LS		421
Sub-Total of D				7,796
E. Indirect Cost				
Profit (10% of A to D)				7,007
Overhead Expense (13% of A to D)				9,110
VAT (10% of Profit & Overhead Expense)				1,612
Sub-Total of E				8,619
Total of Construction Cost (A+B+C+D+E)				78,694
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		2,400
2. Construction Supervision		LS		1,800
3. Water Quality Analysis		LS		1,400
Sub-Total of F				5,600
GRAND TOTAL				84,294
SAY				84,300

Note: LS - Lump Sum

Source: DPWH standard price in 1994 & LWUA Water Supply Feasibility Study Methodology Manual 1998

Unit Cost: Adjusted to 1998 Price Level

Table 10.2.7 Unit Cost of Level I (Spring Development)

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
A. Mobilization/Demobilization		LS		24,000
B. Construction of Spring Box				
1. Materials		LS		42,700
2. Labor (35% of 1.)		LS		14,945
3. Freight Cost (8% of Materials)		LS		3,416
Sub-Total of B				61,061
C. Installation of Pipelines & Fittings				
1. Transmission Materials				
63mm dia. PVC Pipe (Class 12.5 with socket)	330	pcs.	959	316,470
63mm dia. Tee	1	no.	172	172
Solvent Cement	26	cans	140	3,640
63mm dia. Elbow (90 deg.)	3	nos.	89	267
63mm dia. Elbow (45 deg.)	1	pc.	99	99
50mm dia. Gate Valve	2	pcs.	900	1,800
50mm dia. x 1m Stand Pipe	1	pc.	177	177
63mm x 50mm GI Nipple	1	pc.	123	123
50mm dia. Union Patent	3	pcs.	192	576
63mm x 50mm dia. Reducing Socket	2	pcs.	113	226
50mm dia. GI Elbow (90 deg.)	2	pcs.	79	158
63mm x 50mm dia. Socket Adapter	2	pcs.	167	334
50mm dia. GI Gate Valve	2	pcs.	791	1,582
13mm dia. Brass Faucet	2	pcs.	59	118
Sub-Total of Materials				325,624
Labor (35% of Material Cost)		LS		113,968
Freight Cost (8% of Materials)		LS		26,050
Sub-Total of C				465,642
D. Indirect Cost				
1. Transmission Main				
Profit (10% of C)				46,564
Overhead Expense (13% of C)				60,533
VAT (10% of Profit, Overhead Expense & Labor)				22,107
2. Source Facilities				
Profit (10% of A, B)				25,518
Overhead Expense (13% of A, B)				8,506
VAT (10% of Profit, Overhead Expense & Labor)				4,897
Sub-Total of D				168,125
Total Construction Cost (A+B+C+D)				718,828
E. Estimated Government Expenses				
1. Preliminary & Detailed Engineering and RWSA Formation		LS		2,400
2. Supervision		LS		15,000
3. Water Quality Analysis		LS		1,400
Sub-Total of E				18,800
GRAND TOTAL				737,628
SAY				737,600

Note: LS - Lump Sum

Source:

DPWH standard price in 1994

LWUA Water Supply Feasibility Study Methodology Manual 1998

Unit Cost: Adjusted to 1998 Price Level

Table 10.2.8 Unit Cost of Level II (600 Service Population)

Sheet 1 of 2

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
A. Mobilization/Demobilization		LS		36,000
B. Construction of Spring Box & Ground Reservoir				
1. Materials		LS		128,000
2. Labor (35% of 1.)		LS		44,800
3. Freight Cost (8% of Materials)		LS		10,240
Sub-Total of B				183,040
C. Installation of Pipelines & Fittings				
1. Transmission Pipeline Materials				
63mm dia. PVC Pipe (Class 12.5 with socket)	500	pcs.	959	479,500
63mm dia. Tee	1	no.	172	172
Solvent Cement	40	cans	140	5,600
63mm dia. x 50mm Nipple	3	nos.	159	477
63mm dia. Union Patent	1	pc.	203	203
63mm dia. x 50mm dia. Reducing Socket	2	pcs.	123	246
63mm dia. Elbow (90 deg.)	1	pc.	89	89
63mm dia. Elbow (45 deg.)	1	pc.	99	99
63mm dia. Gate Valve	3	pcs.	1,320	3,960
Sub-Total of Materials				490,346
Labor (35% of Material Cost)		LS		171,621
Freight Cost (8% of Materials)		LS		39,228
Sub-Total of Transmission Main				701,195
2. Distribution Pipeline Materials				
50mm dia. PVC Pipe (Class 12.5 with socket)	20	pcs.	531	10,620
38mm dia. PVC Pipe (Class 12.5 with socket)	30	pcs.	353	10,590
20mm dia. PVC Pipe (Class 40 with socket)	10	pcs.	118	1,180
13mm dia. x 1 m Stand Pipe	10	pcs.	110	1,100
Solvent Cement	4	cans	140	560
Fittings				
a. 50mm dia. x 150mm PVC Nipple	3	pcs.	147	441
b. 32mm dia. x 150mm PVC Nipple	3	pcs.	89	267
c. 13mm dia. x 150mm GI Nipple	40	pcs.	29	1,160
d. 50mm dia. Union Patent	1	pcs.	192	192
e. 32mm dia. Union Patent	2	pcs.	83	166
f. 13mm dia. Union Patent	10	pcs.	29	290
g. 50mm dia. x 32mm dia. Reducing Socket	6	pcs.	106	636
h. 32mm dia. x 20mm dia. Reducing Socket	10	pcs.	82	820
i. 20mm dia. x 13mm dia. Reducing Socket	10	pcs.	64	640
j. 50mm dia. PVC Elbow (90 deg.)	2	pcs.	64	128
k. 13mm dia. GI Elbow (90 deg.)	20	pcs.	15	300
l. 20mm dia. x 13mm dia. Socket Adapter	10	pcs.	48	480
m. 50mm dia. GI Gate Valve	2	pcs.	791	1,582
n. 32mm dia. GI Gate Valve	2	pcs.	447	894
o. 13mm dia. GI Gate Valve	24	pcs.	271	6,504
p. 13mm dia. Brass Faucet	24	pcs.	59	1,416
q. 50mm dia. Tee	4	pcs.	153	612
r. 32mm dia. Tee	6	pcs.	129	774
s. Water Meter	24	pcs.	1,004	24,096
t. Water Meter Box	24	pcs.	1,297	31,128
Sub-Total of Materials				96,576

Table 10.2.8 Unit Cost of Level II (600 Service Population)

Sheet 2 of 2

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
Labor (35% of Material Cost)		LS		33,802
Freight Cost (8% of Materials)		LS		7,726
Sub-Total of Distribution Pipeline				138,104
Sub-Total of C				839,299
D. Indirect Cost				
1. Transmission Main				
Profit (10% of C-1)		LS		70,120
Overhead Expense (13% of C-1)		LS		91,155
VAT (10% of Profit, Overhead Expense and Labor)		LS		33,290
2. Source Facilities and Distribution Pipeline				
Profit (10% of A, B, C-2)		LS		35,714
Overhead Expense (13% of A, B and C-2)		LS		46,429
VAT (10% of Profit, Overhead Expense and Labor)		LS		16,075
Sub-Total of D				292,783
Total Construction Cost (A+B+C+D)				1,351,122
E. Estimated Government Expenses				
1. Preliminary & Detailed Engineering and RWSA Formation		LS		2,400
2. Supervision		LS		15,000
3. Water Quality Analysis		LS		1,400
Sub-Total of E				18,800
Total Estimated Cost				1,369,922
Unit Cost per Person Served				2,283
SAY				2,300

Note: LS - Lump Sum

Source:

DPWH standard price in 1994

LWUA Water Supply Feasibility Study Methodology Manual 1998

Unit Cost: Adjusted to 1998 Price Level

Table 10.2.9 Unit Cost of Level III (5,000 Service Population)

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
A. Mobilization/Demobilization		LS		360,000
B. Source Development and Storage				
1. Deep Well	1	No.	2,001,000	2,001,000
2. Deep Well Pump	1	No.	832,000	832,000
3. Chlorinator House & Equipment	1	LS	632,000	632,000
4. Storage Tank (250 cu.m)	1	No.	1,300,000	1,300,000
Sub-Total of B				4,765,000
C. Transmission Main				
1. 160mm dia.	500	LM	1,320	660,000
Sub-Total of C				660,000
D. Distribution Main				
1. 160mm dia.	1,000	LM	1,320	1,320,000
2. 110mm dia.	3,000	LM	1,090	3,270,000
3. 90mm dia.	3,000	LM	684	2,052,000
4. 75mm dia.	6,000	LM	637	3,822,000
Sub-Total of D				10,464,000
E. Service Connections	1,000	Nos.	2,288	2,288,000
F. Miscellaneous				
1. Vehicle	1	No.	649,000	649,000
2. Office & Workshop Bldg.	1	No.	645,000	645,000
3. Office Equipment	1	LS	118,000	118,000
4. Tools and Spare Parts	1	LS	110,000	110,000
Sub-Total of F				1,522,000
Total Direct Cost (A+B+C+D+E+F)				20,059,000
G. Indirect Cost (25% of Direct Cost)				5,014,750
Total Estimated Cost				25,073,750
Unit Cost per Person Served				
For New Construction				5,015
			SAY	5,000
For Expansion of Existing System (Exclude F.)				4,634
			SAY	4,600

Note: LS - Lump Sum

Cost of spring development includes additional transmission main, but it shall be confirmed by survey in the implementation stage.

Source: LWUA standard price in 1994

Unit Cost: Adjusted to 1998 Price Level

Table 10.2.10 Unit Cost of Level III (10,000 Service Population)

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
A. Mobilization/Demobilization		LS		360,000
B. Source Development and Storage				
1. Deep Well	1	No.	2,001,000	2,001,000
2. Deep Well Pump	1	No.	832,000	832,000
3. Chlorinator House & Equipment	1	LS	632,000	632,000
4. Storage Tank (250 cu.m)	1	No.	1,300,000	1,300,000
Sub-Total of B				4,765,000
C. Transmission Main				
1. 160mm dia.	500	LM	1,320	660,000
Sub-Total of C				660,000
D. Distribution Main				
1. 160mm dia.	2,000	LM	1,320	2,640,000
2. 110mm dia.	5,000	LM	1,090	5,450,000
3. 90mm dia.	6,000	LM	684	4,104,000
4. 75mm dia.	9,000	LM	637	5,733,000
Sub-Total of D				17,927,000
E. Service Connections	2,000	Nos.	2,288	4,576,000
F. Miscellaneous				
1. Vehicle	1	No.	649,000	649,000
2. Office & Workshop Bldg.	1	No.	645,000	645,000
3. Office Equipment	1	LS	118,000	118,000
4. Tools and Spare Parts	1	LS	110,000	110,000
Sub-Total of F				1,522,000
Total Direct Cost (A+B+C+D+E+F)				29,810,000
G. Indirect Cost (25% of Direct Cost)				7,452,500
Total Estimated Cost				37,262,500
Unit Cost per Person Served For New Construction				3,726
For Expansion of Existing System (Exclude F.)				3,700
				3,536
				3,500

Note: LS - Lump Sum

Cost of spring development includes additional transmission main, but it shall be confirmed by survey in the implementation stage.

Source: LWUA standard price in 1994

Unit Cost: Adjusted to 1998 Price Level

Table 10.2.11 Unit Cost of Level III (15,000 Service Population)

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
A. Mobilization/Demobilization		LS		360,000
B. Source Development and Storage				
1. Deep Well	2	No.	2,001,000	4,002,000
2. Deep Well Pump	2	No.	832,000	1,664,000
3. Chlorinator House & Equipment	2	LS	632,000	1,264,000
4. Storage Tank (250 cu.m)	2	No.	1,300,000	2,600,000
Sub-Total of B				9,530,000
C. Transmission Main				
1. 160mm dia.	1,000	LM	1,320	1,320,000
Sub-Total of C				1,320,000
D. Distribution Main				
1. 160mm dia.	3,000	LM	1,320	3,960,000
2. 110mm dia.	7,000	LM	1,090	7,630,000
3. 90mm dia.	8,000	LM	684	5,472,000
4. 75mm dia.	10,000	LM	637	6,370,000
Sub-Total of D				23,432,000
E. Service Connections	3,000	Nos.	2,288	6,864,000
F. Miscellaneous				
1. Vehicle	1	No.	649,000	649,000
2. Office & Workshop Bldg.	1	No.	645,000	645,000
3. Office Equipment	1	LS	118,000	118,000
4. Tools and Spare Parts	1	LS	110,000	110,000
Sub-Total of F				1,522,000
Total Direct Cost (A+B+C+D+E+F)				43,028,000
G. Indirect Cost (25% of Direct Cost)				10,757,000
Total Estimated Cost				53,785,000
Unit Cost per Person Served				
For New Construction				3,586
For Expansion of Existing System (Exclude F.)				3,600
				3,459
				3,500

Note: LS - Lump Sum

Cost of spring development includes additional transmission main, but it shall be confirmed by survey in the implementation stage.

Source: LWUA standard price in 1994

Unit Cost: Adjusted to 1998 Price Level

Table 10.2.12 Unit Cost of Flush Water Sealed with Septic Tank Toilet

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
A. Demolition		LS		1,100
B. Earthwork				
1. Materials				
(1) Gravel Fill	1	cu.m	454	454
Sub-Total of B-1				454
2. Labor				
(1) Excavation	6	cu.m	140	840
(2) Backfill	2	cu.m	127	254
(3) Gravel Fill	1	cu.m	166	166
Sub-Total of B-2				1,260
Sub-Total of B				1,714
C. Concrete Work				
1. Materials				
Slab on wood planks				
(1) 16 - 2" x 8" x 6' Coco Lumber	128	bd.ft	8	1,024
(2) 10mm dia x 6.0m Rebar	3	pc.	58	174
(3) #16 Tie Wire	0.5	kg	58	29
(4) Cement	10	bag	137	1,370
(5) Sand	1.5	cu.m	359	539
(6) Gravel	2	cu.m	454	908
(7) Stone Lining with Mortar	1	LS	1,250	1,250
Sub-Total of C-1				5,294
2. Labor (30% of C-1)				1,588
Sub-Total of C				6,882
D. Carpentry Work				
1. Materials				
(1) Nipa	60	pc.	2	120
(2) 1.5m x 1.8m, amakan	3	pc.	75	225
(3) 2" x 3" x 10' Coco Lumber	20	bd.ft	11	220
(4) 2" x 2" x 10' Coco Lumber	33.3	bd.ft	10	333
(5) 3" dia. Bamboo	3	light	21	63
(6) Assorted CWN	4	kg	43	172
(7) Rattan wire	20	pc.	1	20
Sub-Total of C-1				1,153
2. Labor (30% of C-1)				346
Sub-Total of C				1,499
E. Plumbing				
1. Materials				
(1) Water Closet	1	set	4,900	4,900
(2) Water line and sanitary fixtures	1	LS	1,650	1,650
Sub-Total of E-1				6,550
2. Labor (30% of E-1)				1,965
Sub-Total of E				8,515
F. Transportation Cost (excluding indigenous materials)	1	LS	540	540
G. Indirect Cost				
Profit (10% of A - F)				2,025
VAT (10% of Profit & Labor)				718
Sub-Total of F				2,743
Total of Construction Cost (A+B+C+D+E+F+G)			SAY	22,993
				23,000

Note: LS - Lump Sum

Source: DOH standard price in 1993

Unit Cost: Adjusted to 1998 Price Level

Table 10.2.13 Unit Cost of Pour Flush with Double Pit Latrine

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
A. Earthwork				
1. Materials				
(1) Gravel Fill	1	cu.m	454	454
Sub-Total of A-1				454
2. Labor				
(1) Excavation	6	cu.m	140	840
(2) Backfill	2	cu.m	127	254
(3) Gravel Fill	1	cu.m	166	166
Sub-Total of A-2				1,260
Sub-Total of A				1,714
B. Concrete Work				
1. Materials				
Slab on wood planks				
(1) 16 - 2" x 8" x 6' Coco Lumber	128	bd.ft	8	1,024
(2) 10mm dia x 6.0m Rebar	3	pc.	58	174
(3) #16 Tie Wire	0.5	kg	58	29
(4) Cement	10	bag	137	1,370
(5) Sand	1.5	cu.m	359	539
(6) Gravel	2	cu.m	454	908
(7) Stone Lining with Mortar	1	LS	1,250	1,250
Sub-Total of B-1				5,294
2. Labor (25% of B-1)				1,323
Sub-Total of B				6,617
C. Carpentry Work				
1. Materials				
(1) Nipa	60	pc.	2	120
(2) 1.5m x 1.8m, amakan	3	pc.	75	225
(3) 2" x 3" x 10' Coco Lumber	20	bd.ft	11	220
(4) 2" x 2" x 10' Coco Lumber	33.3	bd.ft	10	333
(5) 3" dia. Bamboo	3	light	21	63
(6) Assorted CWN	4	kg	43	172
(7) Rattan wire	20	pc.	1	20
(8) Pale (medium)	1	pc.	203	203
(9) 3" dia. PVC x 3m	1	pc.	665	665
(10) 3" dia. PVC Elbow	2	pc.	70	140
(11) PVC solvent	1	pint	54	54
(12) Ga. 31" x 8' plain GI sheet	1	sheet	214	214
Sub-Total of C-1				2,429
2. Labor (25% of C-1)				607
Sub-Total of C				3,036
D. Plumbing				
1. Material				
(1) Toilet Bowl-Squat Type	1	pc.	220	220
(2) 75mm dia x 6.0m PVC Pipe	1	pc.	152	152
Sub-Total of D-1				372
2. Labor (25% of D-1)				93
Sub-Total of D				465
E. Transportation Cost (excluding indigenous materials)	1	LS	340	340
F. Indirect Cost				
Profit (10% of A - D)				1,487
VAT (10% of Profit & Labor)				477
Sub-Total of F				1,964
Total Construction Cost (A+B+C+D+E+F)				14,136
		SAY		14,100

Note: LS - Lump Sum

Source: DOH standard price in 1993

Unit Cost: Adjusted to 1998 Price Level

Unit Cost of Toilet Bowl: referred to ADB-assisted RW3SP

Table 10.2.14 Unit Construction Cost of Ventilated Improved Pit Latrine

(Cost: Pcs0)

Description	Q'ty	Unit	Unit Cost	Amount
A. Earthwork				
1. Materials				
(1) Gravel Fill	0.5	cu.m	454	227
Sub-Total of A-1				227
2. Labor				
(1) Excavation	3	cu.m	140	420
(2) Backfill	1	cu.m	127	127
(3) Gravel Fill	0.5	cu.m	166	83
Sub-Total of A-2				630
Sub-Total of A				857
B. Concrete Work				
1. Materials				
Slab on wood planks				
(1) 2" x 8" x 6' Coco Lumber	64	bd.ft	8	512
(2) 10mm dia x 6.0m Rebar	2	pc.	58	116
(3) #16 Tie Wire	0.5	kg	58	29
(4) Cement	4	bag	137	548
(5) Sand	0.5	cu.m	359	180
(6) Gravel	0.5	cu.m	454	227
(7) Stone Lining with Mortar	1	LS	1,200	1,200
Sub-total of B-1				2,812
2. Labor (25% of B-1)				703
Sub-Total of B				3,515
C. Carpentry Work				
1. Materials				
(1) Nipa	60	pc.	2	120
(2) 1.5m x 1.8m, amakan	3	pc.	75	225
(3) 2" x 3" x 10' Coco Lumber	20	bd.ft	11	220
(4) 2" x 2" x 10' Coco Lumber	33.3	bd.ft	10	333
(5) 3" dia. Bamboo	3	light	21	63
(6) Assorted CWN	4	kg	43	172
(7) Rattan wire	20	pc.	1	20
(8) 3" x 3" hinges	2	pc.	32	64
Sub-Total of C-1				1,217
2. Labor (25% of C-1)				304
Sub-Total of C				1,521
D. Plumbing				
1. Material				
(1) 50mm dia. PVC Pipe	1	pc.	76	76
(2) Fly Screen	1	pc.	59	59
Sub-Total of D-1				135
2. Labor (25% of D-1)				41
Sub-Total of D				176
E. Transportation Cost (excluding indigenous materials)	1	LS	170	170
F. Indirect Cost				
Profit (10% of A - E)				624
VAT (10% of Profit & Labor)				230
Sub-Total of F				854
Total Construction Cost (A+B+C+D+E+F)				7,093
			SAY	7,100

Note: LS - Lump Sum

Source: DOH standard price in 1993

Unit Cost: Adjusted to 1998 Price Level

Table 10.2.15 Unit Construction Cost of Pit Latrine

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
A. Earthwork				
1. Materials				
(1) Gravel Fill	0.3	cu.m	454	136
Sub-Total of A-1				136
2. Labor				
(1) Excavation	2	cu.m	140	280
(2) Backfill	0.6	cu.m	127	76
(3) Gravel Fill	0.3	cu.m	166	50
Sub-Total of A-2				406
Sub-Total of A				542
B. Concrete Work				
1. Materials				
Slab on wood planks				
(1) 2" x 8" x 6' Coco Lumber	38	bd.ft	8	304
(2) 10mm dia x 6.0m Rebar	1	pc.	58	58
(3) #16 Tie Wire	0.5	kg.	58	29
(4) Cement	3	bag	137	411
(5) Sand	0.3	cu.m	359	108
(6) Gravel	0.3	cu.m	454	136
(7) Stone Lining with Mortar	1	LS	700	700
Sub-total of B-1				1,746
2. Labor (25% of B-1)				436
Sub-Total of B				2,182
C. Carpentry Work				
1. Materials				
(1) Nipa	30	pc.	2	60
(2) 1.0m x 1.8m, amakan	3	pc.	75	225
(3) 2" x 3" x 10' Coco Lumber	14	bd.ft	11	154
(4) 2" x 2" x 10' Coco Lumber	24	bd.ft	10	240
(5) 3" dia. Bamboo	3	light	21	63
(6) Assorted CWN	3	kg	43	129
(7) Rattan wire	14	pc.	1	14
(8) 3" x 3" hinges	2	pc.	32	64
Sub-Total of C-1				949
2. Labor (25% of C-1)				237
Sub-Total of C				1,186
D. Transportation Cost (excluding indigenous materials)	1	LS	170	170
E. Indirect Cost				
Profit (10% of A -D)				391
VAT (10% of Profit & Labor)				164
Sub-Total of E				555
Total Construction Cost (A+B+C+D+E)			SAY	4,635
				4,600

Note: LS - Lump Sum

Source: DOH standard price in 1993

Unit Cost: Adjusted to 1998 Price Level

Table 10.2.16 Unit Cost of School Toilet

Sheet 1 of 5

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
A. Mobilization and Demobilization		LS		6,000
B. Earthwork				
1. Materials				
(1) Gravel Fill	3	cu.m	454	1,362
Sub-Total of B-1				1,362
2. Labor				
(1) Excavation	16	cu.m	140	2,240
(2) Backfill	5	cu.m	127	635
(3) Gravel Fill	3	cu.m	166	498
Sub-Total of B-2				3,373
Sub-Total of B				4,735
C. Concrete Work				
1. Materials				
(1) Cement	61	bags	137	8,357
(2) Sand	4	cu.m	359	1,436
(3) Gravel	8	cu.m	454	3,632
(4) Rebars: 12mm dia x 6m	38	pcs.	79	3,002
10mm dia x 6m	57	pcs.	58	3,306
(5) #16 Tie Wire	8	kg.	58	464
(6) Formworks:				
1/4" Plywood	6	pcs.	477	2,862
2" x 2" x 10', Coco Lumber	200	bd.ft.	10	2,000
Sub-Total of C-1				25,059
2. Labor (30% of C-1)		LS		7,518
Sub-Total of C				32,577
D. Masonry Work				
1. Materials				
(1) 6" CHB	800	pcs.	6	4,800
(2) 4" CHB	260	pcs.	5	1,300
(3) Cement	97	bags	137	13,289
(5) Sand	10	cu.m	359	3,590
(6) Rebars: 12mm dia x 6m	30	pcs.	79	2,370
10mm dia x 6m	11	pcs.	58	638
(7) #16 Tie Wire	4	kg.	58	232
(8) Scaffolding:				
2" x 4" x 8' x 10pcs., Coco Lumber	53	bf.	8	424
Sub-Total of D-1				26,643
2. Labor (30% of D-1)		LS		7,993
Sub-Total of D				34,636
E. Roofing Work				
1. Materials				
(1) GA #26 Corr. GI (1 = 10')	20	pcs.	310	6,200
(2) GA #24 Pln. GI Flashing	3	pcs.	300	900
(3) GA #24 Pln. GI Gutter (Pre-Fab)	9	pcs.	300	2,700
(4) Umbrella Nails 2-1/2"	12	kg.	50	600
(5) Rafter - 2" x 5" x 18' = 5pcs.	75	bf.	35	2,625
(6) Purlins - 2" x 2" x 12' = 18pcs.	72	bf.	35	2,520
(7) WD Cleats - 2" x 2" x 10" = 6pcs.	20	bf.	35	700
(8) Nailers - 2" x 2" x 12' = 30pcs.	120	bf.	35	4,200
- 2" x 2" x 10' = 36pcs.	120	bf.	35	4,200

Table 10.2.16 Unit Cost of School Toilet

Sheet 2 of 5

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
(9) Fascia Board				
1" x 12" x 12' = 4pcs.	48	bf.	35	1,680
1" x 12" x 18' = 2pcs.	36	bf.	34	1,224
(10) Wood Plate				
2" x 4" x 20' = 2pcs.	27	bf.	34	918
(11) 1/4" Thk. Mar. Plywood 4'x8'	14	pcs.	32	448
(12) C.W.N. Assorted	15	kg.	43	645
(13) 3" dia x 3m Downspout (PVC)	3	pcs.	91	273
(14) 3" dia Elbow (PVC)	2	pcs.	70	140
(15) 3" dia Coupling (PVC)	1	pcs.	26	26
(16) Ceiling Vent				
1" x 1" x 8' = 4pcs.	3	bf.	29	87
(17) Screen (1/8" x 1/8")	1	yd.	91	91
Sub-Total of E-1				30,177
2. Labor (30% of E-1)		LS		9,053
Sub-Total of E				39,230
F. Carpentry Work				
1. Materials				
(1) D - 1 Hollow Core Tanguile Flush Type Door w/ Louver (.80x2.20)	2	sets	1,620	3,240
(2) D - 2 Hollow Core Tanguile Flush Type Door (.60x2.10)	1	sets	1,216	1,216
(3) D - 3 Louver Door (.60x1.40)	5	sets	1,013	5,065
(4) Door Jambs (Apitong)				
2" x 6" x 14" = 1pc.	14	bf.	37	518
2" x 6" x 10" = 2pcs.	20	bf.	36	720
2" x 6" x 10" = 1pc.	18	bf.	35	630
2" x 4" x 12" = 5pcs.	40	bf.	34	1,360
(7) Wooden Jalousie Window With 5 Blades (.40x.50)	14	set	338	4,732
(8) Window Jambs (Apitong)				
2" x 6" x 16" = 5pcs.	80	bf.	36	2,880
2" x 6" x 14" = 1pc.	14	bf.	35	490
2" x 6" x 10" = 1pc.	10	bf.	34	340
(9) Cabinet 3/4" x 4' x 8' = 1pc. (plyboard)	1	pc.	878	878
Sub-Total of F-1				22,069
2. Labor (30% of F-1)		LS		6,621
Sub-Total of F				28,690
G. Tile Work				
1. Materials				
(1) 4-1/4" x 4-1/4", Glazed Tiles	1,950	pcs.	5	9,750
(2) 0.10m x 0.20m, Floor Tiles	900	pcs.	7	6,300
(3) Cement	4	bags	137	548
(4) White Cement	1	bag	742	742
Sub-Total of G-1				17,340
2. Labor (30% of G-1)		LS		5,202
Sub-Total of G				22,542

Table 10.2.16 Unit Cost of School Toilet

Sheet 3 of 5

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
H. Plumbing Work				
1. Materials				
(1) Toilet Bowl - Squat Type	3	sets	703	2,109
(2) Toilet Bowl - Sit Type	2	sets	703	1,406
(3) Lavatory	2	sets	3,300	6,600
(4) 4" dia x 3m PVC San. Pipe	4	pcs.	175	700
(5) 3" dia x 3m PVC San. Pipe	7	pcs.	98	686
(6) 1-1/2" dia x 3m, PVC San. Pipe	4	pcs.	59	236
(7) 2" dia. x 3m, PVC San. Pipe	4	pcs.	62	248
(8) 6" x 4", Floor Drain	5	pcs.	98	490
(9) 2" dia. Elbow PVC	4	pcs.	53	212
(10) 4" dia WYB PVC	2	pcs.	38	76
(11) 4" dia. x 3" dia. WYB PVC	12	pcs.	35	420
(12) 4" dia. x 2" dia. TEE PVC	4	pcs.	36	144
(13) 4" dia. TEE PVC	3	pcs.	47	141
(14) 1-1/2" dia. WYB PVC	1	pcs.	20	20
(15) 4" dia. Clean Out PVC	3	pcs.	41	123
(16) 3" dia. Clean Out PVC	1	pcs.	32	32
(17) Faucet	3	pcs.	59	177
(18) 3" dia. x 2" dia. WYB PVC	2	pcs.	32	64
(19) 1-1/2" dia. Elbow PVC	6	pcs.	40	240
(20) PVC Cement	1	can	142	142
(21) Check Valve 1-1/2"	1	pcs.	214	214
(22) 4" P-Trap	5	pcs.	77	385
Sub-Total of H-1				14,865
2. Labor (30% of H-1)		LS		4,460
Sub-Total of H				19,325
I. Painting				
1. Materials				
(1) Acrylic, Semi Gloss	8	gals.	295	2,360
(2) Concrete Sealer	4	gals.	233	932
(3) Acri Color: Wood	4	gals.	200	800
(4) Enamel, QDE	6	gals.	310	1,860
(5) Wood Putty	1	gals.	342	342
(6) Paint Thinner	1	gals.	67	67
(7) Tinting Color	4	pint	45	180
(8) Sand Paper (Assorted)	15	pcs.	8	120
(9) Miscellaneous	1	LS	1,200	1,200
(10) Roof Paint (green, ready-mix)	2	gals.	319	638
Sub-Total of I-1				8,499
2. Labor (30% of I-1)		LS		2,550
Sub-Total of I				11,049
J. Electrical Work				
1. Materials				
(1) 40 Watts Fluorescent Lamp	2	sets	289	578
(2) Elect. Wire TW #12	24	M	7	168
(3) Elect. Conduit - 1/2" dia x 10"	4	pcs.	88	352
(4) Entrance Cap. 1/2" dia	1	pc.	32	32
(5) Switch Outlet, Flush Type	2	pcs.	44	88
(6) Utility Box 2"x3"	2	pcs.	12	24

Table 10.2.16 Unit Cost of School Toilet

Sheet 4 of 5

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
(7) Porcelain Receptacle 2" dia	2	pcs.	7	14
(8) Safety Switch 60A, 250V	1	set	555	555
(9) Electrical Tape	1	roll	25	25
Sub-Total of J-1				1,836
2. Labor (30% of J-1)		LS		551
Sub-Total of J				2,387
K. Hardware				
1. Materials				
(1) 3" x 3" Butt Hinges (Loose Pin)	10	pcs.	20	200
(2) 4" x 4" Butt Hinges (Loose Pin)	12	pcs.	36	432
(3) Door Lockset (Schlage US)	3	pcs.	650	1,950
(4) Barrel Bolt (4")	5	pcs.	45	225
(5) Cabinet Pull (4")	5	pcs.	7	35
(6) Water Storage Cover Checkered Plate 1/4" thick 1-7/16" x 5/8", L-bar & flat bar	1	set	1,116	1,116
5/8" x 9/16", L-bar & flat bar	2	set	629	1,258
(7) Padlock	1	pcs.	429	429
Sub-Total of K-1				5,645
2. Labor (30% of K-1)		LS		1,694
Sub-Total of K				7,339
L. Septic Tank and Sewage Basin				
1. Materials				
(1) 4" CHB	180	pcs.	5	900
(2) Cement	18	bags	137	2,466
(3) Sand	2	cu.m	359	718
(4) Gravel	1	cu.m	454	454
(5) Rebars: 10mm dia x 6m	29	pcs.	58	1,682
(6) #16 Tie Wire	2	kg.	58	116
(7) Formworks: Coco Lumber 2" x 3" x 10' = 12pcs.	60	bf.	11	660
1/4" x 4' x 8', Plywood ord.	2	pcs.	477	954
C.W.N. (Assorted)	2	kg.	43	86
Sub-Total of L-1				8,036
2. Labor (30% of L-1)		LS		2,411
Sub-Total of L				10,447
M. Shallow Well (18 depth)				
a. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 63mm x 6m PVC Pipe with socket	2	pcs.	912	1,824
(2) 63mm x 3m PVC Pipe with plug	1	pc.	452	452
(3) 63mm PVC Socket	1	pc.	12	12
(4) 63mm x 3m PVC Screen	1	pc.	1,443	1,443
Sub-Total of M-a-1				3,731
2. Labor, Fuel, Lubricant and others Well Drilling for 18m depth at 150mm borehole	18	m	1,600	28,800
Sub-Total of M-a				32,531
b. Well Development	1	LS	600	600

Table 10.2.16 Unit Cost of School Toilet

Sheet 5 of 5

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
M. c. Gravel Packing, Installation of Hand-Pump and Construction of Platform				
1. Materials				
(1) 50mm Jetmatic Handpump	1	set	2,807	2,807
(2) 50mm x 1m GI Pipe (Sch. 40)	1	pc.	118	118
(3) #10 Sieved Gravel	0.1	cu.m	1,026	103
(4) Coarse Sand	0.07	cu.m	359	25
(5) Cement for Sanitary Seal	1	bag	127	127
(6) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	1	cu.m	454	454
3) Sand	1	cu.m	359	359
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	294	294
5) Form Lumber (50mmx75mmx1,800mm)	1	pc.	52	52
6) Nail	1	kg.	40	40
Sub-Total of M-c-1				4,887
2. Labor (40% of M-c-1)		LS		1,955
Sub-Total of M-c				6,842
Sub-Total of M				39,973
N. Freight Cost (8% of Materials for A - M excluding sand and gravel)		LS		13,121
O. Indirect Cost				
Profit (10% of A - N)				27,205
VAT (10% of Profit & Labor)				8,059
Sub-Total of O				35,264
Total of Construction Cost (A to O)				307,315
P. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost	1	LS	2,400	2,400
2. Construction Supervision	1	LS	1,800	1,800
Sub-Total of P				4,200
GRAND TOTAL				311,515
			SAY	311,500

Note: LS - Lump Sum

Source: DOH standard price in 1993

Unit Cost: Adjusted to 1998 Price Level

Table 10.2.17 Unit Cost of Public Toilet

Sheet 1 of 5

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
A. Mobilization and Demobilization (2.4% of B - M)		LS		7,000
B. Earthwork				
1. Materials				
(1) Gravel Fill	3	cu.m	454	1,362
Sub-Total of B-1				1,362
2. Labor				
(1) Excavation	15.88	cu.m	140	2,223
(2) Backfill	4.97	cu.m	127	631
(3) Gravel Fill	3	cu.m	166	498
Sub-Total of B-2				3,352
Sub-Total of B				4,714
C. Concrete Work				
1. Materials				
(1) Cement	61	bags	137	8,357
(2) Sand	4	cu.m	359	1,436
(3) Gravel	8	cu.m	454	3,632
(4) Rebars: 12mm dia x 6m	38	pcs.	79	3,002
10mm dia x 6m	57	pcs.	58	3,306
(5) #16 Tie Wire	8	kg.	58	464
(6) Formworks:				
1/4" Plywood	6	pcs.	477	2,862
2" x 2" x 10" (Coco Lumber)	200	bd.ft.	10	2,000
Sub-Total of C-1				25,059
2. Labor (30% of C-1)				7,518
Sub-Total of C				32,577
D. Masonry Work				
1. Materials				
(1) 6" CHB	800	pcs.	6	4,800
(2) 4" CHB	260	pcs.	5	1,300
(3) Cement	97	bags	137	13,289
(5) Sand	10	cu.m	359	3,590
(6) Rebars: 12mm dia x 6m	30	pcs.	79	2,370
10mm dia x 6m	11	pcs.	58	638
(7) #16 Tie Wire	4	kg.	58	232
(8) Scaffolding:				
2" x 4" x 8" = 10pcs. (Coco Lumber)	53.33	bf.	8	427
Sub-Total of D-1				26,646
2. Labor (30% of D-1)				7,994
Sub-Total of D				34,640
E. Roofing Work				
1. Materials				
(1) GA #26 Corr. GI (1 = 10')	20	pcs.	310	6,200
(2) GA #24 Pln. GI Flashing	3	pcs.	300	900
(3) GA #24 Pln. GI Gutter (Pre-Fab)	9	pcs.	300	2,700
(4) Umbrella Nails 2-1/2"	12	kg.	50	600
(5) Rafter - 2" x 5" x 18' = 5pcs.	75	bf.	35	2,625
(6) Purlins - 2" x 2" x 12' = 18pcs.	72	bf.	35	2,520
(7) WD Cleats - 2" x 2" x 10" = 6pcs.	20	bf.	35	700

Table 10.2.17 Unit Cost of Public Toilet

Sheet 2 of 5

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
(8) Nailers - 2" x 2" x 12' = 30pcs.	120	bf.	35	4,200
- 2" x 2" x 10' = 36pcs.	120	bf.	35	4,200
(9) Fascia Board				
1" x 12" x 12' = 4pcs.	48	bf.	35	1,680
1" x 12" x 18' = 2pcs.	36	bf.	34	1,224
(10) Wood Plate				
2" x 4" x 20' = 2pcs.	26.66	bf.	34	906
(11) 1/4" Thk. Mar. Plywood 4' x 8'	14	pcs.	32	448
(12) C.W.N. Assorted	15	kg.	43	645
(13) 3" dia x 3m Downspout (PVC)	3	pcs.	91	273
(14) 3" dia Elbow (PVC)	2	pcs.	70	140
(15) 3" dia Coupling (PVC)	1	pcs.	26	26
(16) Ceiling Vent, 1" x 1" x 8' x 4pcs.	2.67	bf.	29	77
(17) Screen (1/8" x 1/8")	1	yd.	91	91
Sub-Total of E-1				30,156
2. Labor (30% of E-1)				9,047
Sub-Total of E				39,203
F. Carpentry Work				
1. Materials				
(1) D - 1 Hollow Core Tanguile Flush Type Door w/ Louver (0.80 x 2.2)	2	sets	1,620	3,240
(2) D - 2 Hollow Core Tanguile Flush Type Door (0.60 x 2.10)	1	sets	1,216	1,216
(3) D - 3 Louver Door (0.60 x 1.40)	5	sets	1,013	5,065
(4) Door Jambs (Apitong)				
2" x 6" x 14" = 1pc.	14	bf.	37	518
2" x 6" x 10" = 2pcs.	20	bf.	36	720
2" x 6" x 10" = 1pc.	18	bf.	35	630
2" x 4" x 12" = 5pcs.	40	bf.	34	1,360
(7) Wooden Jalousie Window With 5 Blades (0.40 x 0.50)	14	set	338	4,732
(8) Window Jambs (Apitong)				
2" x 6" x 16" = 5pcs.	80	bf.	36	2,880
2" x 6" x 14" = 1pc.	14	bf.	35	490
2" x 6" x 10" = 1pc.	10	bf.	34	340
(9) Cabinet 3/4" x 4' x 8' = 1pc. (plyboard)	1	pc.	878	878
Sub-Total of F-1				22,069
2. Labor (30% of F-1)				6,621
Sub-Total of F				28,690
G. Tile Work				
1. Materials				
(1) 4-1/4" x 4-1/4" Glazed Tiles	1,950	pcs.	5	9,750
(2) 0.10 x 0.20m Floor Tiles	900	pcs.	7	6,300
(3) Cement	4	bags	137	548
(4) White Cement	1	bag	742	742
(5) Tiles Fittings		LS		5,650
Sub-Total of G-1				22,990
2. Labor (30% of G-1)				6,897
Sub-Total of G				29,887

Table 10.2.17 Unit Cost of Public Toilet

Sheet 3 of 5

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
H. Plumbing Work				
1. Materials				
(1) Urinal	3	sets	1,253	3,759
(2) Toilet Bowl - Squat Type	6	sets	703	4,218
(3) 4" dia x 3m PVC San. Pipe	6	pcs.	175	1,050
(4) 3" dia x 3m PVC San. Pipe	4	pcs.	98	392
(5) 2" dia x 3m PVC San. Pipe	3	pcs.	62	186
(6) 3/4" dia x 6m GI Pipe Sch. 40	5	pcs.	288	1,440
(7) 1/2" dia x 6m GI Pipe Sch. 40	1	pcs.	213	213
(8) 4" x 4" WYE PVC	1	pcs.	38	38
(9) 3" dia Elbow PVC	10	pcs.	70	700
(10) 3" dia 45 degrees Bend PVC	2	pcs.	85	170
(11) 2" dia Elbow PVC	6	pcs.	53	318
(12) 2" dia 45 degrees Bend PVC	2	pcs.	68	136
(13) 1/2" dia Elbow GI	5	pcs.	40	200
(14) 4" dia 3" dia WYE PVC	8	pcs.	52	416
(15) 3/4" dia TEE GI	7	pcs.	70	490
(16) 1/2" dia TEE GI	5	pcs.	55	275
(17) 4" dia x 2" dia TEE PVC	6	pcs.	36	216
(18) 4" dia Clean Out PVC	3	pcs.	41	123
(19) 2" dia Clean Out PVC	1	pcs.	29	29
(20) Faucet	10	pcs.	59	590
(21) 3" dia x 2" dia Elbow Reducer PVC	1	pcs.	85	85
(22) 3" dia x 2" dia WYE PVC	3	pcs.	29	87
(23) 2" dia x 2" dia WYE PVC	3	pcs.	17	51
(24) PVC Cement	1	can	142	142
(25) 4" dia x 2" dia WYE PVC	2	pcs.	47	94
(26) Gate Valve 3/4" dia	1	pcs.	142	142
(27) Gate Valve 1/2" dia	1	pcs.	112	112
(28) Water Meter 3/4" dia	1	pcs.	1,488	1,488
(29) 3/4" dia x 1/2" dia Elbow Reducer GI	1	pcs.	21	21
Sub-Total of H-1				17,181
2. Labor (30% of H-1)				5,154
Sub-Total of H				22,335
I. Painting				
1. Materials				
(1) Acrylic, Semi Gloss	8	gals.	295	2,360
(2) Concrete Sealer	4	gals.	233	932
(3) Acri Color: Wood	4	gals.	200	800
(4) Enamel, QDE	6	gals.	310	1,860
(5) Wood Putty	1	gals.	342	342
(6) Paint Thinner	1	gals.	67	67
(7) Tinting Color	4	pint	45	180
(8) Sand Paper (Assorted)	15	pcs.	8	120
(9) Miscellaneous		LS		1,200
(10) Roof Paint (green, ready-mix)	2	gals.	319	638
Sub-Total of I-1				8,499
2. Labor (30% of I-1)				2,550
Sub-Total of I				11,049

Table 10.2.17 Unit Cost of Public Toilet

Sheet 4 of 5

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
J. Electrical Work				
1. Materials				
(1) 40 Watts Fluorescent Lamp	2	sets	289	578
(2) Elect. Wire TW #12	24	m	7	168
(3) Elect. Conduit - 1/2" dia x 10"	4	pcs.	88	352
(4) Entrance Cap. 1/2" dia	1	pc.	32	32
(5) Switch Outlet, Flush Type	2	pcs.	44	88
(6) Utility Box 2" x 3"	2	pcs.	12	24
(7) Porcelain Receptacle 2" dia	2	pcs.	7	14
(8) Safety Switch 60A, 250V	1	set	555	555
(9) Electrical Tape	1	roll	25	25
Sub-Total of J-1				1,836
2. Labor (30% of J-1)				551
Sub-Total of J				2,387
K. Hardware				
1. Materials				
(1) 3" x 3" Butt Hinges (Loose Pin)	10	pcs.	20	200
(2) 4" x 4" Butt Hinges (Loose Pin)	12	pcs.	36	432
(3) Door Lockset (Schlage US)	3	pcs.	650	1,950
(4) Barrel Bolt (4")	5	pcs.	45	225
(5) Cabinet Pull (4")	5	pcs.	7	35
(6) Water Storage Cover Checkered Plate 1/4" thick 1.44x0.633 w/ L bar & flat bar	1	set	1,116	1,116
(7) 0.645x0.633 w/ L bar & flat bar	2	set	629	1,258
(8) Padlock	1	pcs.	429	429
Sub-Total of K-1				5,645
2. Labor (30% of K-1)				1,694
Sub-Total of K				7,339
L. Septic Tank and Sewage Basin				
1. Materials				
(1) 4" CHB	180	pcs.	5	900
(2) Cement	18	bags	137	2,466
(3) Sand	1.50	cu.m	359	539
(4) Gravel	1	cu.m	454	454
(5) Rebars: 10mm dia x 6m	29	pcs.	58	1,682
(6) #16 Tire Wire	2	kg.	58	116
(7) Formworks: Coco Lumber: 2" x 3" x 10' = 12pcs. 1/4" plywood ord. 4' x 8' C.W.N. (Assorted)	60	bf.	11	660
	2	pcs.	477	954
	2	kg.	43	86
Sub-Total of L-1				7,857
2. Labor (30% of L-1)				2,357
Sub-Total of L				10,214
M. Concrete Water Tank (Elevated)				
1. Earth Work				
(1) Materials				
1) Gravel Fill	1	cu.m	454	454
Sub-Total of M-1 (1)				454

Table 10.2.17 Unit Cost of Public Toilet

Sheet-5

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
(2) Labor				
1) Excavation	14.70	cu.m	140	2,058
2) Backfill	13.08	cu.m	127	1,661
3) Gravel Fill	1	cu.m	166	166
Sub-Total of M-1 (2)				3,885
Sub-Total of M-1				4,339
2. Materials				
(1) Cement	62	bags	137	8,494
(2) Sand	4.50	cu.m	359	1,616
(3) Gravel	8	cu.m	454	3,632
(4) Rebars: 12mm dia x 6m	160	pcs.	79	12,640
(5) #16 Tie Wire	4	kg.	58	232
(6) Formworks:				
1/4" plywood	12	pcs.	477	5,724
2" x 3" x 16' = 60pcs.	480	bf.	9	4,320
(7) C.W.N. (Assorted)	5	kg.	43	215
Sub-Total of M-2				49,890
3. Labor (30% of M-2)				14,967
Sub-Total of M				69,196
N. Freight Cost (8% of Materials for A - M excluding sand and gravel)				16,234
O. Indirect Cost				
Profit (10% of A - M)				31,546
VAT (10% of Profit & Labor)				10,413
Sub-Total of O				41,959
Total of Construction Cost (A to O)				357,424
P. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		2,400
2. Construction Supervision		LS		1,800
Sub-Total of P				4,200
GRAND TOTAL				361,624
			SAY	361,600

Note: LS - Lump Sum
 Source: DOH standard price in 1993
 Unit Cost: Adjusted to 1998 Price Level

Table 10.2.18 Cost for New Laboratory

(Cost: Peso)

Item	Unit	Unit Cost	Q'ty	Amount
1. Building				
New Building	m ²	15,000	57	855,000
2. Instruments				
Turbidity meter	set	37,500	1	37,500
Color meter	set	10,500	1	10,500
pH/Residual chlorine checker	set	16,000	1	16,000
Incubator	set	105,000	1	105,000
Refrigerator	set	26,800	2	53,600
Sterilizer	set	54,000	1	54,000
Water quality testing kits	set	320,000	1	320,000
Electric stove	set	1,100	1	1,100
Range hood	set	11,000	1	11,000
Sub-total				608,700
3. Accessories				
Sink	LS			
Working table	LS			
Shelf	LS			
Office desk	LS			
Chair	LS			
Sub-total				65,000
4. Glassware/Chemicals				
Glassware/Chemicals	LS			110,000
Total				1,638,700

Note: LS - Lump Sum

Source: DOH standard price in 1993

Unit Cost: Adjusted to 1998 Price Level

Table 10.2.19 Cost for Upgrading Laboratory

(Cost: Peso)

Item	Unit	Unit Cost	Q'ty	Amount
1. Instruments				
Turbidity meter	set	37,500	1	37,500
Color meter	set	10,500	1	10,500
pH/Residual chlorine checker	set	16,000	1	16,000
Incubator	set	105,000	0	0
Refrigerator	set	26,800	1	26,800
Sterilizer	set	54,000	0	0
Water quality testing kits	set	320,000	1	320,000
Electric stove	set	1,100	1	1,100
Range hood	set	11,000	1	11,000
Sub-total				422,900
2. Glassware/Chemicals				
Glassware/Chemicals	LS			55,000
Total				477,900

Note: LS - Lump Sum

Source: DOH standard price in 1993

Unit Cost: Adjusted to 1998 Price Level

10.2.2 Unit Cost of Equipment

Unit cost (CIF Manila) of equipment was referred to the market price in 1997 as follows.

(1) Medium size rotary drilling rig

Type: Truck-mounted top head drive mud circulation type

Rated drilling capacity: 150 m depth for ϕ 250 bore hole

Equipment composition:

One unit of truck-mounted drilling rig

Each one set of operating accessories, drilling tools, casing tools and fishing tools

One set of spare parts (equivalent to 10% of above equipment/tool cost)

Unit cost: Peso 32,314,000 per set

(2) Medium size percussion drilling equipment

Type: Truck-mounted cable percussion type

Rated drilling capacity: 150 m depth for ϕ 250 mm bore hole

Equipment composition:

One unit of truck-mounted drilling rig

Each one set of operating accessories, drilling tools, pipe handling tools and fishing tools

One set of spare parts (equivalent to 10% of above equipment/tool cost)

Unit cost: Peso 25,582,000 per set

(3) Well rehabilitation equipment

Equipment composition:

One unit of diesel engine driven air compressor (7.5 kg/sq.cm, 500 liter/min.)

One set of air hose and hose fittings

Unit cost: Peso 280,000 per set

(4) Service truck

Type: Diesel engine driven 4 tons truck equipped with crane

Unit cost: Peso 1,200,000 per unit

(5) Support Vehicle

Type: Diesel engine driven pick-up truck with electric winch

Unit cost: Peso 590,000 per unit

(6) Refuse collection truck

Type: Closed type compactor truck with 5 cu.m of payload capacity

Unit cost: Peso 2,057,000 per unit including spare parts

(7) Maintenance tools

One set of maintenance tools for O&M of Level I facility shall be provided to respective municipality.

Unit cost: Peso 10,000 per unit

(8) Water quality testing kits

One set of water quality testing kits for O&M of Level I facility shall be provided to respective municipality.

Type: Ammonia testing kit

Unit cost: Peso 15,300 per unit

10.2.3 Cost of Laboratory and Equipment

Required cost for new laboratory including building/facility and instruments/chemicals and additional cost for upgrading of existing laboratory are shown in Table 10.2.18 and Table 10.2.19, respectively.

10.3 Cost of Required Facilities and Equipment

10.3.1 Cost of Required Facilities

Table 10.3.1 Construction Cost of Water Supply Facilities Required for Phase I (2005)

Unit: P 1,000

Name of Municipality/City	Urban Water Supply Level III		Rural Water Supply New System										Grand Total
	Level II		Level I					Subtotal	Level I Rehabilitation	Total			
	Level I		Deep Well		Shallow Well	Spring Dev.							
	40 m	80 m	80 m	120 m									
Quartero	5,544	3,888		2,755	169			2,924	39	6,851	12,395		
Dao	6,477										6,477		
Dumalag													
Dumarao	6,002										6,002		
Ivisan	5,259										5,259		
Jamundan	3,794	8,384	1,119		422			1,541	24	9,948	13,742		
Ma-ayon	5,355	7,275								7,275	12,630		
Mambusao	7,534		5,968					5,968	125	6,093	13,628		
Panay	3,398		6,714					6,714	141	6,855	10,253		
Panitan	2,820										2,820		
Pilar	5,490										5,490		
Pontevedra	7,139		5,595					5,595	118	5,713	12,852		
President Roxas	7,829	1,205	746		422			1,168	16	2,388	10,216		
Roxas City (Capital)													
Sapi-an	4,758										4,758		
Sigma	2,667	1,172	3,730					3,730	78	4,981	7,648		
Tapaz			4,476		590			5,066	94	5,160	5,160		
Provincial Total	74,067	21,924	28,348	2,755	1,602			32,705	635	55,264	129,331		

Table 10.3.2 Construction Cost of Water Supply Facilities Required for Phase II (2010)

Unit: P 1,000

Name of Municipality/City	Urban Water Supply Level III		Rural Water Supply										Level I Rehabilitation	Total	Grand Total
	New System														
	Level I			Level II											
	Deep Well			Shallow Well		Spring Dev.		Subtotal							
	40 m	80 m	120 m												
Cuartero		68,875		6,997							75,872	980	76,852	96,366	
Dao	24,618										24,618	517	25,135	48,100	
Dumalag	52,966										52,966	1,113	54,079	73,954	
Dumarao		28,652		1,855							30,507	408	30,914	51,195	
Ivisan		71,079									71,079	1,011	72,090	85,894	
Jamindan	62,664			32,961							95,625	1,317	96,942	111,541	
Ma-ayon		50,692		5,058							55,750	721	56,471	74,825	
Mambusao	70,124										70,124	1,474	71,598	89,134	
Panay	153,303										153,303	3,222	156,525	160,323	
Panitan		80,446									80,446	1,145	81,591	86,822	
Pilar	3,357			6,070							9,427	71	9,497	32,005	
Pontevedra	82,806										82,806	1,740	84,546	93,411	
President Roxas	11,936			10,622							22,558	251	22,809	41,003	
Roxas City (Capital)		151,525									151,525	2,156	153,681	383,354	
Sapi-an		50,141									50,141	713	50,854	67,319	
Sigma	77,957										77,957	1,639	79,596	87,741	
Tapaz	49,982			7,418							57,400	1,051	58,451	69,676	
Provincial Total	589,713	501,410		70,981							1,162,104	19,529	1,181,633	1,652,661	

Table 10.3.3 Cost for Sanitation Facilities Required for Phase I (2005)

Unit: P 1,000

Name of Municipality/City	Urban Sanitation						Rural Sanitation						Total Public Investment Cost	Total Construction Cost	Public School Toilets	Total Investment Cost				
	Household Toilets			Public School Toilets	Sub-total of Public Investment	Total Construction Cost	Public Toilets	Total Public Investment Cost	Household Toilets			Sub-total of Public Investment					Sub-total of Construction Cost	Public School Toilets	Total Construction Cost	Total Investment Cost
	Flush	Four Flush	VIP/Dry						Flush	Pour Flush	VIP/Dry									
Cuartero		479	923	1,402	7	234	723	2,126	731	5,267	35,194	11,218	51,679	549	1,868	53,547	2,417			
Dao	483			483		234	723	1,440	957						1,401	1,401	1,401			
Dumalag		578	1,477	2,055	9	234	723	2,778	732		3,708	845	4,553	58	1,401	5,954	1,459			
Dumarao	1,495			1,495		234	1,446	3,175	1,680	6,302	5,471		11,773	85	2,102	13,874	2,187			
Ivisan	1,794			1,794		234	723	2,751	957	3,795	8,305		12,100	130	1,401	13,501	1,531			
Jaminan	2,185	705		2,890	11	234	723	3,613	734	8,556	13,071		21,627	204	2,802	24,429	3,006			
Ma-ayon	598			598		234	723	1,555	957	4,876	1,142	2,535	8,553	18	1,868	10,421	1,886			
Mambusao	3,289			3,289		467	1,808	5,564	2,275	2,645			2,645		1,635	4,280	1,635			
Panay	851			851			723	1,574	723	7,061	1,889		8,950	29	2,102	11,052	2,131			
Panitan	1,219	635		1,854	10		723	2,577	733	5,658	17,019	12,212	34,889	265	1,868	36,757	2,133			
Pilar	1,863			1,863		234	723	2,820	957						2,102	2,102	2,102			
Pontevedra	2,341			2,341	37	467	723	3,531	1,227						2,102	2,102	2,102			
President Roxas	4,324	1,269		5,593	20	467	723	6,783	1,210	276			276		1,168	1,444	1,168			
Roxas City (Capital)	24,266		2,442	26,709	379	3,736	1,808	32,253	5,923	11,153	11,153		11,153	174	4,670	15,823	4,844			
Sapi-an	1,035			1,035			723	1,758	723	3,542	310		3,852	5	1,168	5,020	1,172			
Sigma	1,288			1,288			723	2,011	723	4,600	4,822		9,422	75	1,168	10,590	1,243			
Tapaz	155	155		155	2		723	878	726	28,355	7,398		35,753	442	2,335	38,088	2,777			
Provincial Total	20,424	30,428	4,842	55,694	475	6,305	15,187	77,186	21,966	52,578	130,439	34,208	217,225	2,035	33,157	250,382	35,192			

Table 10.3.4 Cost for Sanitation Facilities Required for Phase II (2010)

Unit: P 1,000

Name of Municipality/City	Urban Sanitation										Rural Sanitation						Total Public Investment Cost		
	Household Toilets					Public School Toilets					Urban Sewerage			Household Toilets				Total Construction Cost	Total Public Investment Cost
	Flush	Pour Flush	VIP/Dry	Sub-total of Construction Cost	Sub-total of Public Investment	Public School Toilets	Public Toilets	Total Construction Cost	Total Public Investment Cost	Urban Sewerage	Flush	Pour Flush	VIP/Dry	Sub-total of Construction Cost	Sub-total of Public Investment				
Cuartero	11,247			11,247		1,168	362	12,776	1,529				54,299	847	9,340	63,639	10,187		
Dao	17,963	860		18,823	13	1,401	362	20,586	1,776				19,796	309	6,071	25,867	6,380		
Dumalag	10,672			10,672	467	934	362	11,501	829				38,584	555	7,239	61,411	7,794		
Dumarao	17,227			17,227	934	934	362	18,523	1,296				41,117	622	10,274	51,391	10,896		
Ivisan	12,006			12,006	701	701	362	13,302	1,296				30,990	354	6,772	37,761	7,125		
Jamindan	8,648			8,648	701	701	362	9,710	1,062				67,962	1,060	14,477	82,439	15,537		
Ma-ayon	10,948			10,948	1,168	1,168	362	12,010	1,062				34,305	535	8,406	42,711	8,941		
Mambusao	16,905			16,905	701	701	362	18,434	1,529				42,159	658	8,406	50,565	9,064		
Panay	6,969			6,969	701	701	362	8,031	1,062				16,974	786	11,442	78,795	12,227		
Panitan	5,980			5,980	467	467	362	6,809	829				12,581	543	9,807	57,215	10,350		
Pilar	15,732			15,732	1,401	1,401	362	17,495	1,763				4,485	468	10,274	44,764	10,742		
Pontevedra	11,224	1,692		12,916	26	1,401	362	14,679	1,789				11,408	620	10,975	62,116	11,594		
President Roxas	14,237			14,237	934	934	362	15,533	1,296				25,606	399	5,371	30,976	5,770		
Roxas City (Capital)	179,699	38,944		218,643	608	16,579	1,085	236,307	18,271	375,541			85,925	1,340	19,848	105,773	21,188		
Sapi-an	9,775			9,775	701	701	362	10,837	1,062				25,324	395	6,305	31,628	6,700		
Sigma	4,830			4,830	234	234	362	5,425	595				34,954	545	6,305	41,258	6,850		
Tapaz	6,187			6,187	467	467	362	7,016	829				44,105	688	11,909	56,013	12,597		
Provincial Total	360,249	41,496		401,745	647	30,355	6,870	438,971	37,873	375,541	73,577	687,530	761,107	10,725	163,217	924,324	173,942		

10.4 Costs of Sector Management

10.4.1 Breakdown of Community Development and Training Cost

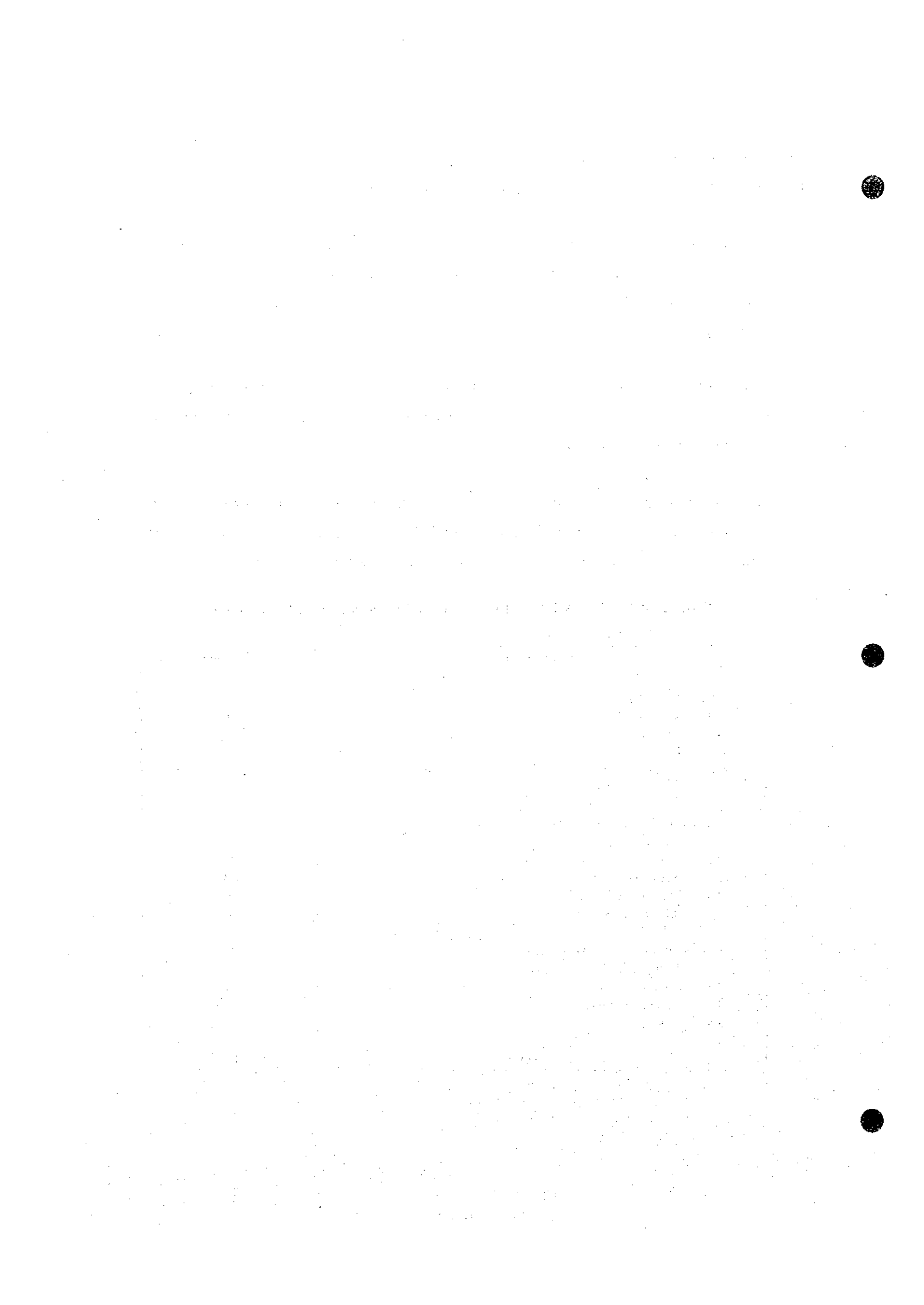
Cost of community development and training was estimated at 12% of the total construction cost of Level I & II water supply facilities and public toilets and at 3% of the total construction cost of Level III water supply systems. This was formulated based on the following:

- (1) The 12% was derived on the basis of DILG's past experience in BWSA formation; and
- (2) The 3% was derived on the basis of LWUA's past experience in the institutional strengthening needs of W.Ds.

These ratios adopted for estimating community development and training cost will allow the province to meet with its needs for community development in the sector management. The following breakdown provides a view of the components under this category.

Table 10.4.1 Breakdown of Community Development and Training Cost

Component	% Share of Cost
1. Preparation for Training Activities	10
1.1 Transportation	1
1.2 Technical Assistance	1
1.3 Food	1
1.4 Supplies and Materials including Production of Training Kits	6
1.5 Generation of Training Aids	1
2. Conduct of Training Activities	53
2.1 Transportation	5
2.2 Food	12
2.3 Accommodation	33
2.4 Training Room Rental	1
2.5 Miscellaneous	2
3. Field Visits to Support BWSA Formation	37
3.1 Transportation	5
3.2 Food	15
3.3 Accommodation	12
3.4 Field	4
Total	100



11. FINANCIAL ARRANGEMENTS FOR MEDIUM-TERM DEVELOPMENT PLAN

11.3 Additional Funding Requirements

Percentages for Annual Investment

Percentages of annual investment for different fields of implementation activities are assumed for each sub-sector as general indication and summarized in Table 11.3.1. Assumptions on investment timing shall be subject to change, especially for individual projects depending on fund availability and relevant conditions such as land acquisition and institutional set-up.

Table 11.3.1 Percentages for Annual Investment

Sub-Sector	Component	2001	2002	2003	2004	2005	Total
Urban Water Supply	Level III System						
	Feasibility Study and Detail Design	50	50	0	0	0	100
	Construction & Supervision	0	20	30	30	20	100
	Institutional Development	30	20	20	20	10	100
Rural Water Supply	Level I Facility						
	Detail Design	50	50	0	0	0	100
	Construction & Supervision	0	20	30	30	20	100
	Institutional Development	30	30	20	10	10	100
	Level II System						
	Detail Design	100	0	0	0	0	100
	Construction & Supervision	50	50	0	0	0	100
	Institutional Development	50	50	0	0	0	100
Sanitation	Urban Household Toilet	12	22	22	22	22	100
	Rural Household Toilet	12	22	22	22	22	100
	Public School Toilet	12	22	22	22	22	100
	Public Toilet	12	22	22	22	22	100
	Disinfection of Level I Wells	12	22	22	22	22	100
	Detail Design	100	0	0	0	0	100
	Construction & Supervision	0	20	30	30	20	100
Institutional Development	30	30	20	10	10	100	

Note: Institutional development includes:

1. Capacity enhancement program
2. Community management program,
3. Health and hygiene education
4. Water quality surveillance, and
5. Administrative support.

Urban water supply:

- Engineering services for feasibility study and detailed design will be undertaken in the first two years.

- Construction work accompanied by supervisory services will be commenced partially in 2nd year and in full operation from 3rd year to 4th year.
- Community development will take place from the first year.

Rural water supply (Level I):

- Engineering services for detailed design will be undertaken during the first two years for Level I and completed within the first year for Level II.
- Construction work accompanied by supervisory services will be partially commenced from the first year and in full operation from 2nd year for Level I, while Level II will be completed within first two years.
- Community development and training will take place from the first year for Level I, while Level II will be completed within the first two years.

Sanitation:

- Engineering services for detailed design will be completed within the first year.
- Construction work accompanied by supervisory services will be partially commenced in the first year and in full operation from 2nd year.
- Community development and training will be in full operation from the first year.

11.4 Medium-Term Implementation Arrangements

11.4.2 Alternative Countermeasures

Comprehensive Investment Need Ranking for the Municipalities

Table 11.4.1 presents the comprehensive investment need ranking for the municipalities.

11.5 National Government Assisted Level I Water Supply and Sanitation Project

Presented in Table 11.5.1 are the available IRA for GOP-Assisted Level I Water Supply and Rural Sanitation Project for Eligible Municipalities. Allotment of IRA for rural water supply and rural sanitation comprise of provincial available IRA and municipal available IRA.

Table 11.5.2 presents the urban sanitation project for eligible municipalities, while Table 11.5.3 presents the summary of the total available IRA for GOP-assisted Level I Water Supply and Sanitation project.

The FIRR for Level I water supply project is calculated using a discount rate of 0.09 percent, as presented in Table 11.5.4.

Table 11.6.1 presents the investment program of GOP-assisted Level I Water supply and Sanitation Project.

O&M for Rural Water Supply

Table 11.6.2 shows the O&M cost for Level I facilities which include the reconstruction cost, rehabilitation cost and recurrent cost per household per year for O&M. Table 11.6.3 presents the O&M cost per III per month by facility and proportion to monthly family income while Table 11.6.4 shows the family income.

O&M for Sanitation

Table 11.6.5 presents the O&M cost for rural sanitation while Table 11.6.6 presents the O&M cost for urban sanitation.

Table 11.4.1 Comprehensive Investment Need Ranking of the Municipalities

Name of Municipality	Evaluation Factor				Score by Sub-Sector						Weighted Score by Sub-Sector				Synthetic Investment Need Ranking			
	(% of Underserved and Unserved Population or Households)				Urban Water Supply	Rural Water Supply	Urban Sanitation	Rural Sanitation	Urban Water Supply	Rural Water Supply	Urban Sanitation	Rural Sanitation	Urban Water Supply	Rural Water Supply		Urban Sanitation	Rural Sanitation	Total Weighted Score
	Urban Water Supply	Rural Water Supply	Urban Sanitation	Rural Sanitation														
Cuartero	N.A.	44	5	94	1.00	0.60	0.20	1.00	0.25	0.15	0.05	0.25	0.05	0.25	0.70	1		
Dao	N.A.	27	7	11	0.76	0.20	0.20	0.20	0.19	0.05	0.05	0.05	0.05	0.05	0.34	15		
Dumalag	N.A.	21	34	13	0.49	0.20	0.80	0.20	0.12	0.05	0.20	0.05	0.20	0.05	0.42	13		
Dumarao	N.A.	14	7	25	0.56	0.20	0.20	0.20	0.14	0.05	0.05	0.05	0.05	0.29	16			
Ivisan	N.A.	40	7	32	0.73	0.40	0.20	0.40	0.18	0.10	0.05	0.10	0.05	0.43	12			
Jamundan	N.A.	96	4	11	1.00	1.00	0.20	0.20	0.25	0.25	0.05	0.05	0.05	0.60	5			
Maayon	N.A.	54	6	29	0.93	0.80	0.20	0.20	0.23	0.20	0.05	0.05	0.05	0.53	8			
Mambusao	N.A.	52	8	12	0.73	0.80	0.20	0.20	0.18	0.20	0.05	0.05	0.05	0.48	10			
Panay	N.A.	84	3	18	0.87	1.00	0.20	0.20	0.22	0.25	0.05	0.05	0.05	0.57	6			
Panitan	N.A.	33	23	71	0.73	0.40	0.60	1.00	0.18	0.10	0.15	0.25	0.05	0.68	2			
Pilar	N.A.	21	11	11	0.59	0.20	0.40	0.20	0.15	0.05	0.10	0.05	0.10	0.35	14			
Pontevedra	N.A.	56	15	11	0.70	0.80	0.40	0.20	0.18	0.20	0.10	0.05	0.05	0.53	8			
President Roxas	N.A.	73	24	16	0.93	1.00	0.60	0.20	0.23	0.25	0.15	0.05	0.05	0.68	2			
Roxas City (Capital)	N.A.	25	2	6	0.33	0.20	0.20	0.20	0.08	0.05	0.05	0.05	0.05	0.23	17			
Sapi-an	N.A.	33	8	21	1.00	0.40	0.20	0.20	0.25	0.10	0.05	0.05	0.05	0.45	11			
Sigma	N.A.	70	14	27	1.00	1.00	0.40	0.20	0.25	0.25	0.10	0.05	0.05	0.65	4			
Tapaz	N.A.	56	8	57	0.49	0.80	0.20	0.80	0.12	0.20	0.05	0.20	0.05	0.57	6			
Provincial Total	N.A.	46	7	26														

Note:

(1) Scoring to Underserved and Unserved Percentage. (2) Assumed Weight by Sub-Sector for Synthetic Evaluation by Municipality.

Score	Range of Underserved and Unserved Percentage				Allocated Weight			
1.0	61	< %	41	< %	61	< %	0.25	0.25
0.8	51	< %	60	< %	40	< %	0.25	0.25
0.6	41	< %	50	< %	30	< %	0.25	0.25
0.4	31	< %	40	< %	20	< %	0.25	0.25
0.2	%	< %	30	%	10	%	0.20	0.20

Table 11.5.1 Available IRA for GOP-Assisted Level I Water and Rural Sanitation Project for Eligible Municipalities

(Unit: 1,000 Pesos)

Name of City or Municipality	Ttl No. of Bg. in Rural Area	Class	Rural Water Supply										Rural Sanitation							Sub-total Avail. IRA			
			No. of Related Bg.		R. Water Supply		No. of LEVEL I Facilities			Rural Sanitation		No. of Related Bg.		Public		Number of Toilets		Prov. Avail. IRA			Mun. Avail. IRA		
			Provl.	Muni.	Deep Wells	Shallow Wells	Spring Dev't	Ttl Related	Provl.	Muni.	Public	Mkt.	Bus Term.	School Toilet	Ttl Related	Ttl Related	Provl.	Muni.	Provl.		Mun.	Provl.	Mun.
Cuartero	19	5th	7	2,135	1,806	5	2	0	0	0	7	2,135	1,806	3,941	384	637	0	0	8	8	584	637	1,521
Dao	18	4th	0	0	0	0	0	0	0	0	0	0	0	0	568	663	0	0	6	6	568	663	1,230
Dumalay	18	5th	0	0	0	0	0	0	0	0	0	2,127	0	0	2,127	0	0	6	6	0	0	2,127	2,127
Dumarao	30	4th	0	0	0	0	0	0	0	0	0	1,268	0	0	812	1,268	0	0	9	9	312	1,268	2,081
Ivisan	13	5th	0	0	0	0	0	0	0	0	0	608	0	0	608	0	0	6	6	608	608	1,297	
Jamindan	29	4th	0	3,100	3,557	3	5	0	0	0	0	1,068	1,075	0	719	576	12	12	8	8	719	576	2,143
Mas-swon	29	4th	0	2,267	2,223	0	0	0	0	0	0	640	459	0	795	873	7	7	7	7	640	459	1,099
Mambuso	24	4th	0	1,899	1,712	16	0	0	0	0	0	796	1,712	0	786	1,159	8	8	8	8	796	1,159	2,508
Panay	39	4th	0	2,136	2,909	18	0	0	0	0	0	796	1,712	0	796	1,159	9	9	9	9	796	1,159	1,945
Panitan	24	4th	0	0	0	0	0	0	0	0	0	796	1,712	0	796	1,159	9	9	9	9	796	1,159	1,945
Pontevedra	22	4th	0	0	0	0	0	0	0	0	0	796	1,712	0	796	1,159	9	9	9	9	796	1,159	1,945
President Roxas	23	4th	0	1,780	1,829	15	0	0	0	0	0	796	1,712	0	796	1,159	9	9	9	9	796	1,159	1,945
Roxas City (Capital)	21	4th	0	744	729	2	5	0	0	0	0	496	766	0	518	511	20	20	5	5	496	766	1,262
Sapi-san	9	5th	0	0	0	0	0	0	0	0	0	990	2,343	0	990	2,343	10	10	10	10	990	2,343	3,340
Sigma	19	5th	0	1,552	2,049	10	0	0	0	0	10	1,552	2,049	3,602	10,967	22,951	0	0	142	142	10,967	22,951	33,918
Tapan	57	3rd	0	1,608	4,354	12	7	0	0	0	17	3,687	3,856	7,543	10,967	22,951	0	0	142	142	10,967	22,951	33,918
Total	394	3rd	17	17,222	21,069	81	19	0	0	0	17	3,687	3,856	7,543	10,967	22,951	0	0	142	142	10,967	22,951	33,918

41.461

Table 11.5.2 Available IRA for GOP-Assisted Urban Sanitation Project for Eligible Municipalities

Name of City or Municipality	Ttl No. of Bg. in Urban	Class	Urban Sanitation							Rural			Sub-total Avail. IRA
			No. of Related Bg.		Public		Number of Toilets		Prov. Avail. IRA		Mun. Avail. IRA		
			Provl.	Muni.	Public	Mkt.	Bus Term.	School	Ttl Related	Provl.	Mun.	Provl.	
Cuartero	3	5th	366	193	1	0	0	0	0	1	366	193	559
Dao	2	4th	436	452	1	0	1	0	0	2	436	452	889
Dumalay	1	5th	0	1,067	1	0	0	0	0	1	0	1,067	1,067
Dumarao	3	4th	549	974	1	0	1	0	1	2	549	974	1,523
Ivisan	2	5th	436	431	1	0	1	0	1	2	436	431	867
Jamindan	1	4th	367	263	1	0	0	0	1	1	367	263	630
Mas-swon	3	4th	436	292	1	0	1	0	2	4	436	292	729
Mambuso	2	4th	735	639	2	0	2	0	4	735	639	1,374	
Panay	3	4th	364	296	1	0	0	0	1	1	364	296	660
Panitan	2	4th	367	588	1	0	0	0	1	1	367	588	955
Pilar	2	4th	436	528	1	0	1	0	1	2	436	528	964
Pontevedra	3	4th	521	393	1	0	2	0	3	521	393	913	
President Roxas	1	4th	515	370	1	0	2	0	3	515	370	885	
Roxas City (Capital)	47	3rd	0	8,634	2	1	16	19	0	0	8,634	8,634	15,696
Sapi-san	1	5th	364	473	1	0	0	0	1	1	364	473	836
Sigma	2	5th	364	298	1	0	0	0	1	1	364	298	661
Tapan	1	3rd	364	612	1	0	0	0	1	1	364	612	977
Total	79	3rd	6,820	16,503	19	1	27	47	0	47	6,820	16,503	23,123

23.123

Table 11.5.3 Total Available IRA for GOP-Assisted Level I Water Supply and Sanitation Project

Name of City or Municipality	Water Supply		Sanitation		Total
	Rural	Urban	Urban	Rural	
Cuartero	3,941	0	559	1,521	6,021
Dao	0	0	889	1,230	2,119
Dumalay	0	0	1,067	2,127	3,194
Dumarao	0	0	1,523	2,081	3,604
Ivisan	0	0	867	1,297	2,165
Jamindan	0	0	630	2,143	2,772
Mas-swon	0	0	729	1,295	2,024
Mambuso	0	0	1,374	1,099	2,473
Panay	0	0	660	1,668	2,328
Panitan	0	0	955	2,508	3,463
Pilar	0	0	964	1,945	2,909
Pontevedra	0	0	913	1,459	2,372
President Roxas	0	0	885	851	1,736
Roxas City (Capital)	0	0	8,634	7,062	15,696
Sapi-san	0	0	836	1,262	2,099
Sigma	3,602	0	661	1,030	5,292
Tapan	0	0	977	3,340	4,317
Total	7,543	0	23,123	33,918	64,564

Table 11.5.4 FIRR for Level I Water Supply

Year	No. of Deep Well	No. of Shallow Well	Spring Dev't.	Construction Cost	Rehab. & Replacement Cost	O&M Cost	Total Costs (Outflow)	No. of Households	Water Rate per month per household	Loans and Subsidies	Cash Inflow	Net Value
1	2	0	0	864,600	0	0	864,600	30	140.80		50,688.00	(813,912.00)
2	5	1	0	2,245,800	0	8,646	2,254,446	120	140.80		202,752.00	(2,051,694.00)
3	5	1	0	2,245,800	0	31,104	2,276,904	210	140.80		354,816.00	(1,922,088.00)
4	3	0	0	1,296,900	0	53,562	1,350,462	255	140.80		430,848.00	(919,614.00)
5					0	66,531	66,531	255	140.80		430,848.00	364,317.00
6					0	66,531	66,531	255	140.80		430,848.00	364,317.00
7					0	66,531	66,531	255	140.80		430,848.00	364,317.00
8					0	66,531	66,531	255	140.80		430,848.00	364,317.00
9					0	66,531	66,531	255	140.80		430,848.00	364,317.00
10					0	66,531	66,531	255	140.80		430,848.00	364,317.00
11					156,800	66,531	223,331	255	140.80		430,848.00	207,517.00
12					476,300	66,531	542,831	255	140.80		430,848.00	(111,983.00)
13					476,300	66,531	542,831	255	140.80		430,848.00	(111,983.00)
14					235,200	66,531	301,731	255	140.80		430,848.00	129,117.00
15					0	66,531	66,531	255	140.80		430,848.00	364,317.00
16					0	66,531	66,531	255	140.80		430,848.00	364,317.00
17					0	66,531	66,531	255	140.80		430,848.00	364,317.00
18					0	66,531	66,531	255	140.80		430,848.00	364,317.00
19					0	66,531	66,531	255	140.80		430,848.00	364,317.00
20					0	66,531	66,531	255	140.80		430,848.00	364,317.00

Province of Capiz

Total: -1,222,836.00
 FIRR: -2.32%
 NPV@9%: -2,919,709.04

Table 11.6.1 Investment Program of GOP-Assisted Level I Water Supply and Sanitation Project

Unit: Peso

Category	Total Amount	1st year	2nd year	3rd year	4th year	5th year
A. Const. & Civil Works						
1. Water Supply	6,653,600	0	1,330,720	1,996,080	1,996,080	1,330,720
2. Sanitation	46,693,500	0	9,338,700	14,008,050	14,008,050	9,338,700
3. Land Acquisition	85,000	0	17,000	25,500	25,500	17,000
B. Equip./Logistic Support	920,600	0	920,600	0	0	0
C. Consultancy Services						
1. Hydrogeological Survey	1,148,000	1,148,000	0	0	0	0
2. D/D and Const. Sv.	5,877,531	2,351,012	1,175,506	1,175,506	587,753	587,753
D. Institutional Devt.						
1. Capacity Enhanc. Prog.	3,200,000	960,000	960,000	640,000	320,000	320,000
2. Commu. Manag. Prog.	183,090	54,927	54,927	36,618	18,309	18,309
3. Health & Hygiene Educ.	30,600	9,180	9,180	6,120	3,060	3,060
4. Water Quality Surveil.	11,900	3,570	3,570	2,380	1,190	1,190
5. NGO Assistance	20,400	6,120	6,120	4,080	2,040	2,040
6. Administrative Support	1,200,000	360,000	360,000	240,000	120,000	120,000
E. Physical Contingency (10% of sub-total A+B+C+D)	6,602,422	489,281	1,417,632	1,813,433	1,708,198	1,173,877
Total (A+B+C+D+E+F)	72,626,643	5,382,090	15,593,956	19,947,768	18,790,180	12,912,649
F. Others						
1. Price Contingency	24,451,005	1,811,973	5,249,973	6,715,758	6,326,036	4,347,265
2. Value Added Tax (VAT)	2,836,612	210,211	609,060	779,109	733,897	504,335
Grand Total	99,914,260	7,404,274	21,452,988	27,442,635	25,850,113	17,764,249

Note: Item A includes equity of users.

O&M Cost for GOP Assisted Level I Water Supply Project

Table 11.6.2 O&M Cost for Level I Facilities

	Deep Well	Shallow Well	Spring Dev't
Nos. of Facilities to be Constructed	15	2	0
Nos. of HHs to be Served	225	30	0
Reconstruction Cost (Peso)			
Unit Cost	432,300	84,300	747,000
Ttl. Reconst. Cost	6,484,500	168,600	
Ttl. Reconst. Cost/year	324,225	16,860	
Cost per HH/year	1,441	562	
Rehabilitation Cost (Peso)			
Unit Cost	78,400		
Ttl. Rehab. Cost	1,176,000		
Ttl. Rehab. Cost/year	117,600		
Cost per HH/year	523		
Recurrent Cost for O&M (Peso)			
Cost per HH/year	100	50	50
O&M Cost Total (Peso)			
Cost per HH/year	2,064	612	50

Note: 1) Reconstruction of deep and shallow wells shall be conducted every 20 and 10 years, respectively.

Spring development is excluded due to more than 20 years facility life.

2) Rehabilitation is applicable to deep wells every 10 years.

Table 11.6.3 O&M Cost per HH/month by Facility and Proportion to Monthly Family Income

	Deep Well	Shallow Well	Spring Dev't
O&M Cost per HH/month	172	51	4
Proportion (Mean)	2.1%	0.6%	0.0%
Proportion (Median)	2.4%	0.7%	0.1%

Table 11.6.4 Family Income (Unit: Pesos)

Annual ¹⁾		Monthly ²⁾	
Mean	Median	Mean	Median
46,880	40,136	8,223	7,040

Note: 1) 1994 NSO Family Income and Expenditure Survey

2) Estimated value in 2005 applying 7% inflation rate/year

O&M Cost for GOP Assisted Sanitation Project

Table 11.6.5 O&M Cost for Rural Sanitation (Unit: Pesos)

Nos. of Facilities to be Constructed		Unit Construction Cost		Yearly O&M Cost
Public Toilets	School Toilets	Public Toilets	School Toilets	
0	142	361,600	233,500	1,657,850

Note: O&M cost includes the salaries of maintenance staff, cost of pumping sludge from septic tanks and rehabilitation cost, which is assumed to be equivalent to 5% of construction cost.

Table 11.6.6 O&M Cost for Urban Sanitation (Unit: Pesos)

Nos. of Facilities to be Constructed		Unit Construction Cost		Yearly O&M Cost
Public Toilets	School Toilets	Public Toilets	School Toilets	
20	27	361,600	233,500	676,825

12. MONITORING FOR MEDIUM-TERM DEVELOPMENT PLAN

12.4 Evaluation of Plan Implementation and Updating the PW4SP

Table 12.4.1 Draft Formats for Annual Sector Performance Summary Report (Provincial and Municipal Levels)

Form P-1

Province of _____
 Provincial Water & Sanitation Monitoring System
 Annual Sector Performance Summary Report
 Period Covered : _____ to _____

I. Service Coverage

Municipality (1)	LAST YEAR				THIS YEAR			
	Population (2)	Persons with Safe Water & Sanitary Toilets (3)	Persons with Safe Water Only (4)	Persons with Sanitary Toilets Only (5)	Population (6)	Persons with Safe Water Sanitary Toilets (7)	Persons with Safe Water Only (8)	Persons with Sanitary Toilets Only (9)
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								
13.								
14.								
15.								
Total								
% Served								
	Targets							

II. Sources & Uses of Capital Development Funds

Source of Fund (1)	Budget for Water Supply & Sanitation (2)	Actual Disbursement (3)	Uses of Funds							
			Water Source Development (4)	Water Supply Transmission (5)	Water Storage/ Treatment & Distribution (6)	Household Toilets (7)	School Toilets (8)	Public Toilets (9)	Others (10)	
A. Local Funds.										
Provincial Funds										
Municipal Funds										
A.										
B.										
C.										
D.										
E.										
F.										
G.										
H.										
I.										
J.										
SUB-TOTAL										
B. National Funds										
DPWH										
DOH										
LWUA										
SUB-TOTAL										
C. External Funds										
NGO										
NGO										
NGO										
SUB-TOTAL										
TOTAL										

III. School Sanitation (Source, DECS)

School (Location) (1)	No. of Students Enrolled (2)	Water Supply Adequate? (Y/N) (3)	No. of Functioning Toilet Units (4)	Facility: Student Ratio (5)

IV. Incidence of Diarrhea (Source IPHO)

Month (1)	Last Year (2)	This Year (3)
January		
February		
March		
April		
May		
June		
July		
August		
September		
October		
November		
December		

V. Water Resources: Report any major changes in the availability and quality of water in the province. Attach map.

VI. Unit Cost Summary : Based on projects actually implemented and paid for during the reporting period, indicate the following average unit costs

1. Shallow Well (w/o hand pump) = _____ / Meter Depth
2. Deep Well (w/o pump) = _____ / Meter Depth
3. Pipeline = _____ / meter
4. Storage Tanks =
5. Others,

Municipality of _____
 Provincial Water & Sanitation Monitoring System

Annual Sector Performance Summary Report

Period Covered : _____ to _____

I. Service Coverage

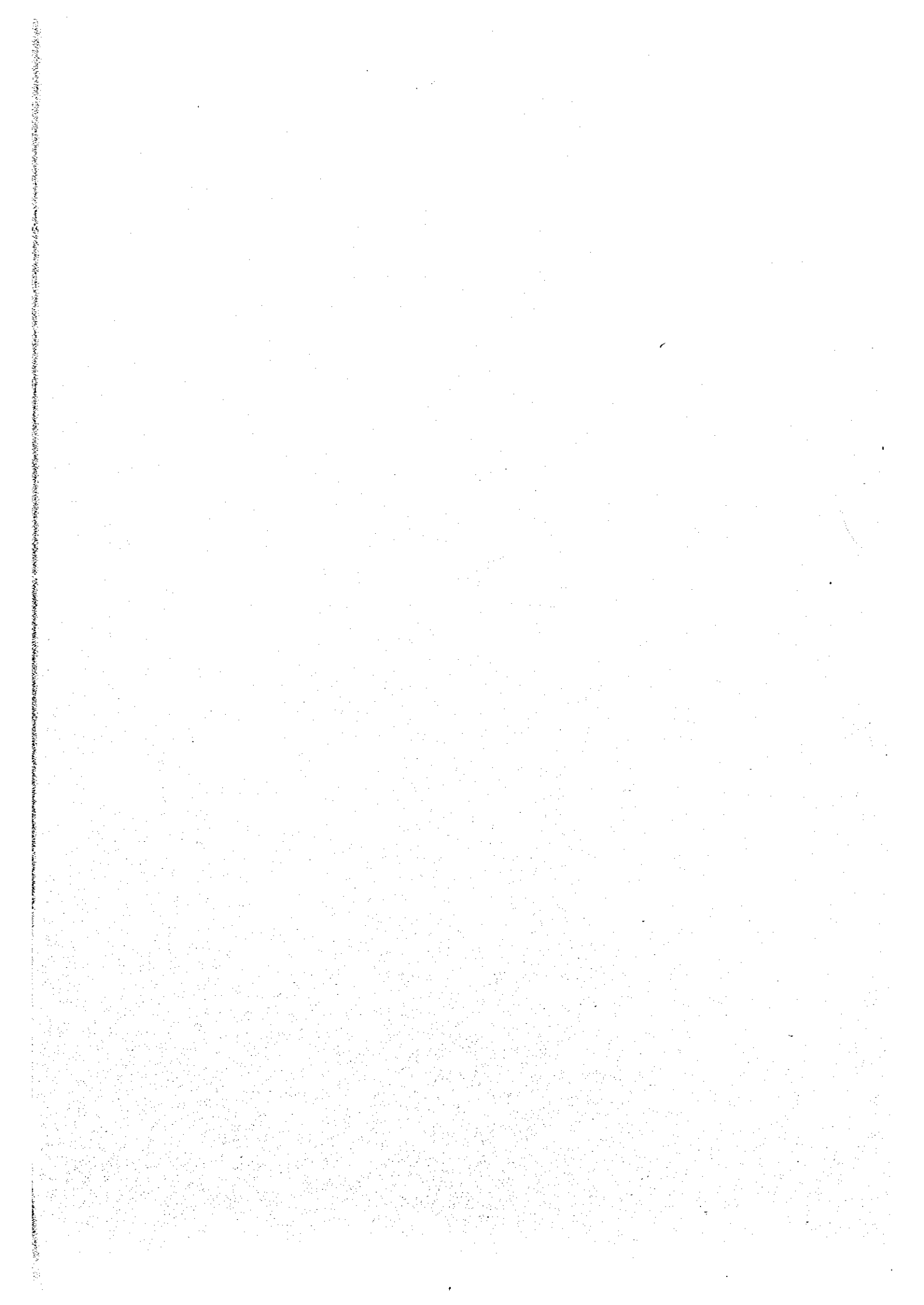
Name of Barangay (1)	LAST YEAR				THIS YEAR			
	Population (2)	Persons with Safe Water & Sanitary Toilets (3)	Persons with Safe Water Only (4)	Persons with Sanitary Toilets Only (5)	Population (6)	Persons with Safe Water & Sanitary Toilets (7)	Persons with Safe Water Only (8)	Persons with Sanitary Toilets Only (9)
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								
13.								
14.								
15.								
16.								
17.								
Total								
% Served								

II. Sources & Uses of Capital Development Funds.

Source of Funds (1)	Budget (2)	Actual Disbursement (3)	Uses of Funds							Others (10)	
			Water Source Development (4)	Water Supply Transmission (5)	Water Storage/ Treatment & Distribution (6)	Household Toilets (7)	School Toilets (8)	Public Toilets (9)			
Municipal Funds											
Barangay Funds											
A.											
B.											
C.											
D.											
E.											
F.											
G.											
H.											
I.											
J.											
K.											
L.											
M.											
N.											
O.											
P.											
Q.											
R.											
S.											
T.											
U.											
W.											
SUB-TOTAL											
NGO											
NGO											
SUB-TOTAL											
TOTAL											







JICA