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 component facilities was fully utilized, which was referred to the standards of relevant sector agencies. Escalation rates experienced between 1995 and 1997 in terms of major construction materials and equipment rental were studied using NSO statistics (wholesale price index). Market prices of these items were also canvassed to compare with calculated prices in 1997 from those in 1995 in application of the escalation rates.

In general, escalated prices meet canvassed prices in most of the materials. Escalation rates between 1995 and 1997 were employed in round figures. Some of them (water closet, etc.) were, however, replaced 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

	Water Supply			Sanitation			Projection by major materials					Canvassed/collected price		Remarks
							NSO wholesale price index			Price				
	L-I	L-II	L-III	ST/PT	Flush type	VIP/ Pit	1995	1997	Escalation	1995	(1) 1997	(2) DPWH	(3) CIA	Compared with (2), (3)
1. Sand, stone, gravel	*	*	*	*	*	*	311.6	343.5	0.050					Almost same with (2),(3)
Sand										304	335	330	350	
Gravel										385	424	418	450	
2. Cement	*	*	*	*	*	*	197.4	200.1	0.007	117	119	126	105	- do -
3. Fuel and Lubricant	*		*				601.6	694.0	0.074	1,100	1,269	1,306		- do -
4. Metal pipe	*	*	*				208.7	211.5	0.007					Price of casing is almost same with (2), screen is 20% lower than (2)
100m/m x 3m, casing										2,625	2,660	2,763		
100m/m x 3m, screen										4,313	4,371	5,291		
5. PVC pipe	*	*	*	*			199.2	221.1	0.054					Price of PVC pipe is almost same with (2) and/or 25% higher than (3)
63m/m pipe w/socket										813	902	882	715	
1 1/2" elbow										13	14		32	
6. Reinforcing steel		*	*	*	*	*	201.4	207.4	0.015					Same with (3)
12m/m x 6m										68	70		70	
10m/m x 6m										49	50		49	
7. Lumber				*	*	*	268.5	277.4	0.016					
8. Paint				*			128.0	132.8	0.019					Same with (3)
Enamel, QDE										266	276		275	
9. Machinery and equipmer	*		*				254.8	254.8	0.000					

L-I: Deep well/shallow well, L-II: Mjor 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 Pour flush w/ double latrine,
CIA: Construction Industry Authority of the Philippines

Table 10.2.2 (a) Unit Cost of Level I (Deep Well - 30m Depth)

(Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
A. Mobilization/Demobilization		L.S.		3,600
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 100mm x 3m Steel Casing with coupling	7	pcs.	2,894	20,258
(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.	4,755	9,510
2. Labor, Fuel, Lubricant and others				0
Well Drilling for 30 m depth at 200mm borehole	30	m	1,212	36,360
3. Freight Cost (11% of Materials)		L.S.		3,604
Sub-Total of B				**72,729**
C. Well Development		L.S.		5,500
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) Improved Deep Well Cylinder Pump (Malawi Type)	1	set	9,922	9,922
(2) 63mm x 6m GI Pipe with coupling	4	pcs.	1,880	7,520
(3) #10 Sieved Gravel	0.53	cu.m	959	508
(4) Coarse Sand	1	cu.m	335	335
(5) Cement for Sanitary Seal	3	bags	128	384
(6) Pump Base and Platform				
1) Cement	4	bags	128	512
2) Gravel	2	cu.m	424	848
3) Sand	1	cu.m	335	335
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	275	275
5) Form Lumber (50mm x 75mm x 1,800mm)	6	pcs.	49	294
6) Nail	1	kg.	35	35
Sub-Total of D-1				20,968
2. Labor (40% of D-1.)				8,387
3. Freight Cost (11% of Materials)		L.S.		2,307
Sub-Total of D				**31,662**
E. Indirect Cost				
Profit (10% of A, B, C & D)				11,349
VAT (10% of Profit & Labor)				5,610
Sub-Total of E				**16,959**
Total of Construction Cost (A+B+C+D+E)				**130,450**
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		L.S.		3,300
2. Construction Supervision		L.S.		2,200
3. Water Quality Analysis		L.S.		1,244
Sub-Total of F				**6,744**
GRAND TOTAL				**137,194**
SAY				**137,200**

Note: L.S. - Lamp Sum
Source: DPWH standard price in 1994
Unit Cost: Adjusted to 1997 Price Level

Table 10.2.2 (b) Unit Cost of Level I (Deep Well, Natural Gravel Pack - 30m Depth)

(Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
A. Mobilization/Demobilization		L.S.		3,600
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 100mm x 3m Steel Casing with coupling	7	pcs.	2,894	20,258
(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.	4,755	9,510
2. Labor, Fuel, Lubricant and others				0
Well Drilling for 30 m depth at 150mm borehole	30	m	935	28,050
3. Freight Cost (11% of Materials)		L.S.		3,604
Sub-Total of B				**64,419**
C. Well Development		L.S.		5,500
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) Improved Deep Well Cylinder Pump (Malawi Type)	1	set	9,922	9,922
(2) 63mm x 6m GI Pipe with coupling	4	pcs.	1,880	7,520
(3) #10 Sieved Gravel	0	cu.m	959	0
(4) Coarse Sand	1	cu.m	335	335
(5) Cement for Sanitary Seal	3	bags	128	384
(6) Pump Base and Platform				
1) Cement	4	bags	128	512
2) Gravel	2	cu.m	424	848
3) Sand	1	cu.m	335	335
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	275	275
5) Form Lumber (50mm x 75mm x 1,800mm)	6	pcs.	49	294
6) Nail	1	kg.	35	35
Sub-Total of D-1				20,460
2. Labor (40% of D-1.)				8,184
3. Freight Cost (11% of Materials)		L.S.		2,251
Sub-Total of D				**30,895**
E. Indirect Cost				
Profit (10% of A, B, C & D)				10,441
VAT (10% of Profit & Labor)				4,668
Sub-Total of E				**15,109**
Total of Construction Cost (A+B+C+D+E)				**119,523**
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		L.S.		3,300
2. Construction Supervision		L.S.		2,200
3. Water Quality Analysis		L.S.		1,244
Sub-Total of F				**6,744**
GRAND TOTAL				**126,267**
SAY				**126,300**

Note: L.S. - Lamp Sum
Source: DPWH standard price in 1994
Unit Cost: Adjusted to 1997 Price Level

Table 10.2.3 (a) Unit Cost of Level I (Deep Well - 50m Depth)

(Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
A. Mobilization/Demobilization		L.S.		3,600
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 100mm x 3m Steel Casing with coupling	14	pcs.	2,894	40,516
(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.	4,755	9,510
2. Labor, Fuel, Lubricant and others				0
Well Drilling for 50 m depth at 200mm borehole	50	m	1,212	60,600
3. Freight Cost (11% of Materials)		L.S.		5,833
Sub-Total of B				**119,456**
C. Well Development		L.S.		5,500
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) Improved Deep Well Cylinder Pump (Malawi Type)	1	set	9,922	9,922
(2) 63mm x 6m GI Pipe with coupling	6	pcs.	1,880	11,280
(3) #10 Sieved Gravel	1.0	cu.m	959	959
(4) Coarse Sand	1	cu.m	335	335
(5) Cement for Sanitary Seal	3	bags	128	384
(6) Pump Base and Platform				
1) Cement	4	bags	128	512
2) Gravel	2	cu.m	424	848
3) Sand	1	cu.m	335	335
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	275	275
5) Form Lumber (50mm x 75mm x 1,800mm)	6	pcs.	49	294
6) Nail	1	kg.	35	35
Sub-Total of D-1				25,179
2. Labor (40% of D-1.)				10,072
3. Freight Cost (11% of Materials)		L.S.		2,770
Sub-Total of D				**38,021**
E. Indirect Cost				
Profit (10% of A, B, C and D)				16,658
VAT (10% of Profit & Labor)				5,135
Sub-Total of E				**21,793**
Total of Construction Cost (A+B+C+D+E)				**188,370**
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		L.S.		3,300
2. Construction Supervision		L.S.		2,200
3. Water Quality Analysis		L.S.		1,244
Sub-Total of F				**6,744**
GRAND TOTAL				**195,114**
SAY				**195,100**

Note: L.S. - Lamp Sum
Source: DPWH standard price in 1994
Unit Cost: Adjusted to 1997 Price Level

Table 10.2.3 (b) Unit Cost of Level I (Deep Well, Natural Gravel Pack - 50m Depth)

(Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
A. Mobilization/Demobilization		L.S.		3,600
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 100mm x 3m Steel Casing with coupling	14	pcs.	2,894	40,516
(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.	4,755	9,510
2. Labor, Fuel, Lubricant and others				0
Well Drilling for 500 m depth at 150mm borehole	50	m	935	46,750
3. Freight Cost (11% of Materials)		L.S.		5,833
Sub-Total of B				**105,606**
C. Well Development		L.S.		5,500
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) Improved Deep Well Cylinder Pump (Malawi Type)	1	set	9,922	9,922
(2) 63mm x 6m GI Pipe with coupling	6	pcs.	1,880	11,280
(3) #10 Sieved Gravel	0	cu.m	959	0
(4) Coarse Sand	1	cu.m	335	335
(5) Cement for Sanitary Seal	3	bags	128	384
(6) Pump Base and Platform				
1) Cement	4	bags	128	512
2) Gravel	2	cu.m	424	848
3) Sand	1	cu.m	335	335
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	275	275
5) Form Lumber (50mm x 75mm x 1,800mm)	6	pcs.	49	294
6) Nail	1	kg.	35	35
Sub-Total of D-1				24,220
2. Labor (40% of D-1.)				9,688
3. Freight Cost (11% of Materials)		L.S.		2,664
Sub-Total of D				**36,572**
E. Indirect Cost				
Profit (10% of A, B, C and D)				15,128
VAT (10% of Profit & Labor)				4,886
Sub-Total of E				**20,014**
Total of Construction Cost (A+B+C+D+E)				**171,292**
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		L.S.		3,300
2. Construction Supervision		L.S.		2,200
3. Water Quality Analysis		L.S.		1,244
Sub-Total of F				**6,744**
GRAND TOTAL				**178,036**
SAY				**178,000**

Note: L.S. - Lamp Sum

Source: DPWH standard price in 1994

Unit Cost: Adjusted to 1997 Price Level

Table 10.2.4 (a) Unit Cost of Level I (Deep Well - 70m Depth)

(Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
A. Mobilization/Demobilization		L.S.		3,600
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 100mm x 3m Steel Casing with coupling	21	pcs.	2,894	60,774
(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.	4,755	9,510
2. Labor, Fuel, Lubricant and others				0
Well Drilling for 70 m depth at 200mm borehole	70	m	1,212	84,840
3. Freight Cost (11% of Materials)		L.S.		8,061
Sub-Total of B				166,182
C. Well Development		L.S.		5,500
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) Improved Deep Well Cylinder Pump (Malawi Type)	1	set	9,922	9,922
(2) 63mm x 6m GI Pipe with coupling	9	pcs.	1,880	16,920
(3) #10 Sieved Gravel	1.5	cu.m	959	1,439
(4) Coarse Sand	1	cu.m	335	335
(5) Cement for Sanitary Seal	3	bags	128	384
(6) Pump Base and Platform				
1) Cement	4	bags	128	512
2) Gravel	2	cu.m	424	848
3) Sand	1	cu.m	335	335
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	275	275
5) Form Lumber (50mm x 75mm x 1,800mm)	6	pcs.	49	294
6) Nail	1	kg.	35	35
Sub-Total of D-1				31,299
2. Labor (40% of D-1.)				12,519
3. Freight Cost (11% of Materials)		L.S.		3,443
Sub-Total of D				47,261
E. Indirect Cost				
Profit (10% of A, B, C and D)				22,254
VAT (10% of Profit & Labor)				6,306
Sub-Total of E				28,560
Total of Construction Cost (A+B+C+D+E)				251,103
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		L.S.		3,300
2. Construction Supervision		L.S.		2,200
3. Water Quality Analysis		L.S.		1,244
Sub-Total of F				6,744
GRAND TOTAL				257,847
SAY				257,800

Note: L.S. - Lamp Sum
Source: DPWH standard price in 1994
Unit Cost: Adjusted to 1997 Price Level

Table 10.2.4 (b) Unit Cost of Level I (Deep Well, Natural Gravel Pack - 70m Depth)

s (Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
A. Mobilization/Demobilization		L.S.		3,600
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 100mm x 3m Steel Casing with coupling	21	pcs.	2,894	60,774
(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.	4,755	9,510
2. Labor, Fuel, Lubricant and others				0
Well Drilling for 70 m depth at 150mm borehole	70	m	935	65,450
3. Freight Cost (11% of Materials)		L.S.		8,061
Sub-Total of B				146,792
C. Well Development		L.S.		5,500
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) Improved Deep Well Cylinder Pump (Malawi Type)	1	set	9,922	9,922
(2) 63mm x 6m GI Pipe with coupling	9	pcs.	1,880	16,920
(3) #10 Sieved Gravel	0.0	cu.m	959	0
(4) Coarse Sand	1	cu.m	335	335
(5) Cement for Sanitary Seal	3	bags	128	384
(6) Pump Base and Platform				
1) Cement	4	bags	128	512
2) Gravel	2	cu.m	424	848
3) Sand	1	cu.m	335	335
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	275	275
5) Form Lumber (50mm x 75mm x 1,800mm)	6	pcs.	49	294
6) Nail	1	kg.	35	35
Sub-Total of D-1				29,860
2. Labor (40% of D-1.)				11,944
3. Freight Cost (11% of Materials)		L.S.		3,285
Sub-Total of D				45,089
E. Indirect Cost				
Profit (10% of A, B, C and D)				20,098
VAT (10% of Profit & Labor)				5,947
Sub-Total of E				26,045
Total of Construction Cost (A+B+C+D+E)				227,026
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		L.S.		3,300
2. Construction Supervision		L.S.		2,200
3. Water Quality Analysis		L.S.		1,244
Sub-Total of F				6,744
GRAND TOTAL				233,770
SAY				233,800

Note: L.S. - Lamp Sum
Source: DPWH standard price in 1994
Unit Cost: Adjusted to 1997 Price Level

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

s (Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
A. Mobilization/Demobilization		L.S.		3,600
B. Well Rehabilitation				
1. Materials				
(1) Cylinder Pump Set	1	set	9,922	9,922
(2) Cement for Surface Sealing	4	bags	128	512
(3) Pump Base and Platform				
1) Cement	4	bags	128	512
2) Gravel	2	cu.m	424	848
3) Sand	1	cu.m	335	335
4) Plywood (4' x 8' x 1/4")	1	pc.	275	275
5) Form Lumber (2" x 3" x 6")	6	pcs.	49	294
6) Nail	1	kg.	35	35
Sub-Total of B-1				12,733
2. Labor (40% of B-1)				5,093
3. Freight Cost (11% of Materials)				1,401
Sub-Total of B				**19,227**
C. Well Development		L.S.		**7,100**
D. Indirect Cost				
Profit (10% of A, B & C)				2,993
VAT (10% of Profit & Labor)				1,519
Sub-Total of D				**4,512**
Total of Construction Cost (A+B+C+D)				34,439
E. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		L.S.		1,200
2. Supervision		L.S.		720
3. Water Quality Analysis		L.S.		1,244
Sub-Total of E				**3,164**
GRAND TOTAL				37,603
SAY				37,600

Note: L.S. - Lamp Sum
Source: DPWH standard price in 1994
Unit Cost: Adjusted to 1997 Price Level

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

(Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
A. Mobilization/Demobilization		**L.S.**		**1,200**
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 63mm x 6m PVC Pipe with socket	2	pcs.	896	1,792
(2) 63mm x 3m PVC Pipe with plug	1	pc.	452	452
(3) 63mm PVC Socket	1	pc.	99	99
(4) 63mm x 3m PVC Screen	1	pc.	1,433	1,433
2. Labor, Fuel, Lubricant and others				
Well Drilling for 18 m depth at 150mm borehole	18	m	573	10,314
3. Freight Cost (11% of Materials)		L.S.		415
Sub-Total of B				**14,505**
C. Well Development		**L.S.**		**600**
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) 50mm Jetmatic Handpump	1	set	2,623	2,623
(2) 50mm x 1m GI Pipe (Sch. 40)	1	pc.	110	110
(3) #10 Sieved Gravel	0.1	cu.m	959	96
(4) Coarse Sand	0.07	cu.m	335	23
(5) Cement for Sanitary Seal	1	bag	128	128
(6) Pump Base and Platform				
1) Cement	4	bags	128	512
2) Gravel	1	cu.m	424	424
3) Sand	1	cu.m	335	335
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	275	275
5) Form Lumber (50mm x 75mm x 1,800 mm)	1	pc.	49	49
6) Nail	1	kg.	35	35
Sub-Total of D-1				4,610
2. Labor (40% of D-1.)				1,844
3. Freight Cost (11% of Materials)		L.S.		507
Sub-Total of D				**6,961**
E. Indirect Cost				
Profit (10% of A, B, C & D)				2,327
VAT (10% of Profit & Labor)				1,449
Sub-Total of E				**3,776**
Total of Construction Cost (A+B+C+D+E)				**27,042**
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		L.S.		2,200
2. Construction Supervision		L.S.		1,650
3. Water Quality Analysis		L.S.		1,244
Sub-Total of F				**5,094**
GRAND TOTAL				**32,136**
SAY				**32,100**

Note: L.S. - Lump Sum
Source: DPWH standard price in 1994
Unit Cost: Adjusted to 1997 Price Level

Table 10.2.7 Unit Cost of Level I (Spring Development)

(Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
A. Mobilization/Demobilization		L.S.		3,600
B. Construction of Spring Box				
1. Materials		L.S.		30,700
2. Labor (35% of 1.)		L.S.		10,745
3. Freight Cost (11% of Materials)		L.S.		3,377
Sub-Total of B				44,822
C. Installation of Pipelines & Fittings				
1. Transmission Main				
(1) Materials				
1) 25mm dia. GI Pippe	330	pcs.	400	132,000
2) 25mm dia. Tee	1	no.	163	163
3) 25mm dia. Coupling	26	cans	23	598
4) 25mm dia. Elbow (90 deg.)	3	nos.	23	69
5) 25mm dia. Elbow (45 deg.)	1	pc.	23	23
6) 25mm dia. Gate Valve	2	pcs.	250	500
7) 13mm dia. x 1m Stand Pipe	1	pc.	103	103
8) 13mm x 25mm GI Nipple	1	pc.	72	72
9) 13mm dia. Union Patente	3	pcs.	35	105
10) 25mm x 13mm dia. Reducing Socket	2	pcs.	72	144
11) 13mm dia. GI Elbow (90 deg.)	2	pcs.	14	28
12) 25mm x 13mm dia. Socket Adaptor	2	pcs.	72	144
13) 13mm dia. GI Gate Valve	2	pcs.	253	506
14) 13mm dia. Brass Faucet	2	pcs.	45	90
Sub-Total of Materials				134,455
(2) Labor (35% of Material Cost)		L.S.		47,059
(3) Freight Cost (11% of Materials)		L.S.		14,790
Sub-Total of C				196,304
D. Indirect Cost				
1. Transmission Main				
(1) Profit (10% of C)				19,630
(2) VAT (10% of Profit and Labor)				6,669
2. Source Facilities				
(1) Profit (10% of A, B)				4,842
(2) VAT (10% of Profit and Labor)				1,559
Sub-Total of D				32,700
Total Construction Cost (A+B+C+D)				277,426
E. Estimated Government Expenses				
1. Preliminary & Detailed Engineering and RWSA Formation				2,200
2. Supervision				13,200
3. Water Quality Analysis				1,244
Sub-Total of E				16,644
GRAND TOTAL				294,070
SAY				294,100

Note: L.S. - Lamp Sum
Source: DPWH standard price in 1994
Unit Cost: Adjusted to 1997 Price Level

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

(Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
A. Mobilization/Demobilization		L.S.		3,300
B. Construction of Spring Box				
1. Materials		L.S.		39,900
2. Labor (35% of 1.)		L.S.		13,965
3. Freight Cost (11% of Materials)		L.S.		4,389
Sub-Total of B				58,254
C. Installation of Pipelines & Fittings				
1. Transmission Main				
(1) Materials				
1) 63mm dia. PVC Pipe (Class 12.5 with pusher type socket)	330	pcs.	896	295,680
2) 63mm dia. Tee	1	no.	97	97
3) Solvent Cement	26	cans	50	1,300
4) 63mm dia. x 150mm Nipple	3	nos.	149	447
5) 63mm dia. Union Patente	1	pc.	190	190
6) 63mm dia. x 50mm dia. Reducing Socket	2	pcs.	115	230
7) 63mm dia. Elbow (90 deg.)	1	pc.	83	83
8) 63mm dia. Elbow (45 deg.)	1	pc.	82	82
9) 63mm dia. Gate Valve	3	pcs.	841	2,523
Sub-Total of Materials				300,632
(2) Labor (35% of Material Cost)		L.S.		105,221
(3) Freight Cost (11% of Materials)		L.S.		33,070
Sub-Total of Transmission Main				438,923
2. Distribution Pipeline				
(1) Materials				
1) 50mm dia. PVC Pipe (Class 12.5 with pusher type socket)	20	pcs.	496	9,920
2) 38mm dia. PVC Pipe (Class 12.5 with pusher type socket)	30	pcs.	330	9,900
3) 20mm dia. PVC Pipe (Class 40 with pusher type socket)	10	pcs.	110	1,100
4) 13mm dia. x 1 m Stand Pipe	10	pcs.	103	1,030
5) Solvent Cement	4	cans	50	200
6) Fittings				
a. 50mm dia. x 150mm PVC Nipple	3	pcs.	137	411
b. 32mm dia. x 150mm PVC Nipple	3	pcs.	83	249
c. 13mm dia. x 150mm GI Nipple	40	pcs.	27	1,080
d. 50mm dia. Union Patente	1	pcs.	179	179
e. 32mm dia. Union Patente	2	pcs.	78	156
f. 13mm dia. Union Patente	10	pcs.	27	270
g. 50mm dia. x 32mm dia. Reducing Socket	6	pcs.	99	594
h. 32mm dia. x 20mm dia. Reducing Socket	10	pcs.	77	770
i. 20mm dia. x 13mm dia. Reducing Socket	10	pcs.	60	600
j. 50mm dia. PVC Elbow (90 deg.)	2	pcs.	74	148
k. 13mm dia. GI Elbow (90 deg.)	20	pcs.	14	280
l. 20mm dia. x 13mm dia. Socket Adaptor	10	pcs.	45	450
m. 50mm dia. GI Gate Valve	2	pcs.	739	1,478
n. 32mm dia. GI Gate Valve	2	pcs.	418	836
o. 13mm dia. GI Gate Valve	24	pcs.	253	6,072
p. 13mm dia. Brass Faucet	24	pcs.	45	1,080
q. 50mm dia. Tee	4	pcs.	143	572
r. 32mm dia. Tee	6	pcs.	121	726
s. Water Meter	24	pcs.	826	19,824
t. Water Meter Box	24	pcs.	1,212	29,088
Sub-Total of Materials				87,013
(2) Labor (35% of Material Cost)				30,455
(3) Freight Cost (11% of Materials)		L.S.		9,571
Sub-Total of Distribution Pipeline				127,039
Sub-Total of C				565,962

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

Sheet-2 (Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
D. Indirect Cost				
1. Transmission Main				
(1) Profit (10% of C-1)				43,892
(2) VAT (10% of Profit and Labor)				14,911
2. Source Facilities and Distribution Pipeline				
(1) Profit (10% of A, B, C-2)				18,859
(2) VAT (10% of Profit and Labor)				6,328
Sub-Total of D				**83,990**
Total Construction Cost (A+B+C+D)				**711,506**
E. Estimated Government Expenses				
1. Preliminary & Detailed Engineering and RWSA Formation				2,200
2. Supervision				13,200
3. Water Quality Analysis				1,244
Sub-Total of E				**16,644**
Total Estimated Cost				**728,150**
Unit Cost per Person Served				**1,214** **1,220**

Note: L.S. - Lamp Sum
Source: DPWH standard price in 1994
Unit Cost: Adjusted to 1997 Price Level

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

(Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
A. Mobilization/Demobilization		L.S.		330,000
B. Spring/Deep Well Source Development and Storage				
1. Spring Development/Deep Well	1	No.	1,770,000	1,770,000
2. Intake Box/Deep Well Pump	1	No.	632,000	632,000
3. Chlorinator House & Equipment	1	L.S.		480,000
4. Storage Tank (250 cu.m)	1	No.	1,200,000	1,200,000
Sub-Total of B				4,082,000
C. Transmission Main				
1. 160mm dia.	500	L.M.	1,234	617,000
Sub-Total of C				617,000
D. Distribution Main				
1. 160mm dia.	1,000	L.M.	1,234	1,234,000
2. 110mm dia.	3,000	L.M.	1,019	3,057,000
3. 90mm dia.	3,000	L.M.	639	1,917,000
4. 75mm dia.	5,000	L.M.	595	2,975,000
Sub-Total of D				9,183,000
E. Service Connections	1,000	Nos.	2,138	2,138,000
F. Miscellaneous				
1. Vehicle	1	No.	606,000	606,000
2. Office & Workshop Bldg.	1	No.	606,000	606,000
3. Office Equipment		L.S.		110,000
4. Tools and Spare Parts		L.S.		110,000
Sub-Total of F				1,432,000
Total Direct Cost (A+B+C+D+E+F)				17,782,000
G. Indirect Cost (25% of Direct Cost)				4,445,500
Total Estimated Cost				22,227,500
Unit Cost per Person Served				
For New Construction				4,446
				4,500
For Expansion of Existing System (Exclude F.)				4,088
				4,100

Note: L.S. - Lamp Sum

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

Source: LWUA standard price in 1994

Unit Cost: Adjusted to 1997 Price Level

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

s (Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
A. Mobilization/Demobilization		L.S.		330,000
B. Spring/Deep Well Source Development and Storage				
1. Spring Development/Deep Well	1	No.	1,770,000	1,770,000
2. Intake Box/Deep Well Pump	1	No.	632,000	632,000
3. Chlorinator House & Equipment	1	L.S.		480,000
4. Storage Tank (250 cu.m)	1	No.	1,200,000	1,200,000
Sub-Total of B				**4,082,000**
C. Transmission Main				
1. 160mm dia.	500	L.M.	1,234	617,000
Sub-Total of C				**617,000**
D. Distribution Main				
1. 160mm dia.	2,000	L.M.	1,234	2,468,000
2. 110mm dia.	5,000	L.M.	1,019	5,095,000
3. 90mm dia.	6,000	L.M.	639	3,834,000
4. 75mm dia.	8,000	L.M.	595	4,760,000
Sub-Total of D				**16,157,000**
E. Service Connections	2,000	Nos.		3,880,000
F. Miscellaneous				
1. Vehicle	1	No.	606,000	606,000
2. Office & Workshop Bldg.	1	No.	606,000	606,000
3. Office Equipment		L.S.		110,000
4. Tools and Spare Parts		L.S.		110,000
Sub-Total of F				**1,432,000**
Total Direct Cost (A+B+C+D+E+F)				**26,498,000**
G. Indirect Cost (25% of Direct Cost)				**6,624,500**
Total Estimated Cost				**33,122,500**
Unit Cost per Person Served				
For New Construction				3,312
				3,400
For Expansion of Existing System (Exclude F.)				3,133
				3,200

Note: L.S. - Lamp Sum
Cost of spring development includes additional transmission main, but it shall be confirmed by survey in implementation stage.
Source: LWUA standard price in 1994
Unit Cost: Adjusted to 1997 Price Level

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

(Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
A. Mobilization/Demobilization		L.S.		330,000
B. Spring/Deep Well Source Development and Storage				
1. Spring Development/Deep Well	2	No.	1,770,000	3,540,000
2. Intake Box/Deep Well Pump	2	No.	632,000	1,264,000
3. Chlorinator House & Equipment	2	L.S.		480,000
4. Storage Tank (250 cu.m)	2	No.	1,200,000	1,200,000
Sub-Total of B				**6,484,000**
C. Transmission Main				
1. 160mm dia.	1,000	L.M.	1,234	1,234,000
Sub-Total of C				**1,234,000**
D. Distribution Main				
1. 160mm dia.	3,000	L.M.	1,234	3,702,000
2. 110mm dia.	7,000	L.M.	1,019	7,133,000
3. 90mm dia.	9,000	L.M.	639	5,751,000
4. 75mm dia.	11,000	L.M.	595	6,545,000
Sub-Total of D				**23,131,000**
E. Service Connections	3,000	Nos.		5,820,000
F. Miscellaneous				
1. Vehicle	1	No.	606,000	606,000
2. Office & Workshop Bldg.	1	No.	606,000	606,000
3. Office Equipment		L.S.		110,000
4. Tools and Spare Parts		L.S.		110,000
Sub-Total of F				**1,432,000**
Total Direct Cost (A+B+C+D+E+F)				**38,431,000**
G. Indirect Cost (25% of Direct Cost)				**9,607,750**
Total Estimated Cost				**48,038,750**
Unit Cost per Person Served				
For New Construction				3,203
				3,300
For Expansion of Existing System (Exclude F.)				3,083
				3,100

Note: L.S. - Lamp Sum

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

Source: LWUA standard price in 1994

Unit Cost: Adjusted to 1997 Price Level

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

(Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
A. Demolition		L.S.		1,000
B. Earthwork				
1. Materials				
(1) Gravel Fill	1	cu.m.	424	424
Sub-Total of B-1				424
2. Labor				
(1) Excavation	6	cu.m.	131	786
(2) Backfill	2	cu.m.	119	238
(3) Gravel Fill	1	cu.m	155	155
Sub-Total of B-2				1,179
Sub-Total of B				1,603
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	pcs.	54	162
(3) #16 Tie Wire	0.5	kg.	54	27
(4) Cement	10	bags	128	1,280
(5) Sand	1.5	cu.m.	335	503
(6) Gravel	2	cu.m.	424	848
(7) Stone Lining with Mortar		L.S.		1,115
Sub-Total of C-1				4,959
2. Labor (30% of C-1)				1,488
Sub-Total of C				6,447
D. Carpentry Work				
1. Materials				
(1) Nipa	60	pcs.	2	120
(2) 1.5m x 1.8m, amakan	3	pcs.	70	210
(3) 2x 3 x 10' Coco Lumber	20	bd.ft	10	200
(4) 2 x 2 x 10' Coco Lumber	33.3	bd.ft	10	333
(5) 3" dia. Bamboo	3	lights	20	60
(6) Assorted CWN	4	kgs.	40	160
(7) Rattan wire	20	pcs.	1	20
Sub-Total of C-1				1,103
2. Labor (30% of C-1)				331
Sub-Total of C				1,434
E. Plumbing				
1. Materials				
(1) Water Closet	1	set	4,500	4,500
(2) Water line and sanitary fixtures		L.S.		1,500
Sub-Total of E-1				6,000
2. Labor (30% of E-1)				1,800
Sub-Total of E				7,800
F. Transportation Cost (excluding indigenous materials)		L.S.		500
G. Indirect Cost				
Profit (10% of A - F)				1,878
VAT (10% of Profit & Labor)				668
Sub-Total of F				2,546
Total of Construction Cost (A+B+C+D+E+F+G)				21,330 21,300

Source: DOH standard price in1993
Cost adjusted to 1997 Price Level

Table 10.2.13 Unit Cost of Pour Flush with Double Pit Latrine

(Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
A. Earthwork				
1. Materials				
(1) Gravel Fill	1	cu.m.	424	424
Sub-Total of A-1				424
2. Labor				
(1) Excavation	6	cu.m.	131	786
(2) Backfill	2	cu.m.	119	238
(3) Gravel Fill	1	cu.m.	155	155
Sub-Total of A-2				1,179
Sub-Total of A				1,603
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	pcs.	54	162
(3) #16 Tie Wire	0.5	kg.	54	27
(4) Cement	10	bags	128	1,280
(5) Sand	1.5	cu.m.	335	503
(6) Gravel	2	cu.m.	424	848
(7) Stone Lining with Mortar		L.S.		1,115
Sub-Total of B-1				4,959
2. Labor (25% of B-1)				1,240
Sub-Total of B				6,199
C. Carpentry Work				
1. Materials				
(1) Nipa	60	pcs	2	120
(2) 1.5m x 1.8m, amakan	3	pcs	70	210
(3) 2x 3 x 10' Coco Lumber	20	bdft	10	200
(4) 2 x 2 x 10' Coco Lumber	33.3	bdft	10	333
(5) 3" dia. Bamboo	3	lights	20	60
(6) Assorted CWN	4	kgs.	40	160
(7) Rattan wire	20	pcs	1	20
(8) Pale (medium)	1	pc.	190	190
(9) 3" dia. PVC x 3m	1	pc.	180	180
(10) 3" dia. PVC Elbow	2	pcs	15	30
(11) PVC solvent	1	pint	50	50
(12) Ga. 31 x 8' plain GI sht.	1	sht.	200	200
Sub-Total of C-1				1,753
2. Labor (25% of C-1)				438
Sub-Total of C				2,191
D. Plumbing				
1. Material				
(1) Toilet Bowl-Squat Type	1	pc.	603	603
(2) 75mm dia x 6.0m PVC Pipe	1	pc.	142	142
Sub-Total of D-1				745
2. Labor (25% of D-1)				186
Sub-Total of D				931
E. Transportation Cost (excluding indigenous materials)		L.S.		300
F. Indirect Cost				
Profit (10% of A - D)				1,311
VAT (10% of Profit & Labor)				435
Sub-Total of F				1,746
Total Construction Cost (A+B+C+D+E+F)			Say	12,970 13,000

Note: L.S. - Lump Sum
Source: DOH standard price in 1993
Unit Cost: Adjusted to 1997 Price Level

Table 10.2.14 Unit Construction Cost of Ventilated Improved Pit Latrine

(Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
A. Earthwork				
1. Materials				
(1) Gravel Fill	0.5	cu.m.	424	212
Sub-Total of A-1				212
2. Labor				
(1) Excavation	3	cu.m.	131	393
(2) Backfill	1	cu.m.	119	119
(3) Gravel Fill	0.5	cu.m.	155	78
Sub-Total of A-2				590
Sub-Total of A				802
B. Concrete Work				
1. Materials				
Slab on wood planks				
(1) 8 - 2" x 8" x 6' Coco Lumber	64	bd.ft	8	512
(2) 10mm dia x 6.0m Rebar	2	pcs.	54	108
(3) #16 Tie Wire	0.5	kg.	54	27
(4) Cement	4	bags	128	512
(5) Sand	0.5	cu.m	335	168
(6) Gravel	0.5	cu.m	424	212
(7) Stone Lining with Mortar		L.S.		1,075
Sub-total of B-1				2,614
2. Labor (25% of B-1)				653
Sub-Total of B				3,267
C. Carpentry Work				
1. Materials				
(1) Nipa	60	pcs	2	120
(2) 1.5m x 1.8m, amakan	3	pcs	70	210
(3) 2x 3 x 10' Coco Lumber	20	bdft	10	200
(4) 2 x 2 x 10' Coco Lumber	33.3	bdft	10	333
(5) 3" dia. Bamboo	3	lights	20	60
(6) Assorted CWN	4	kgs.	40	160
(7) Rattan wire	20	pcs	1	20
(8) 3 x 3" hinges	2	pc.	30	60
Sub-Total of C-1				1,163
2. Labor (25% of C-1)				291
Sub-Total of C				1,454
D. Plumbing				
1. Material				
(1) 50mm dia. PVC Pipe	1	pc.	71	71
(2) Fly Screen		LS.		55
Sub-Total of D-1				126
2. Labor (25% of D-1)				38
Sub-Total of D				164
E. Transportation Cost (excluding indigenous materials)		L.S.		150
F. Indirect Cost				
Profit (10% of A - E)				584
VAT (10% of Profit & Labor)				216
Sub-Total of F				800
Total Construction Cost (A+B+C+D+E+F)			Say	6,636 6,600

Note: L.S. - Lump Sum
Source: DOH standard price in 1993
Unit Cost: Adjusted to 1997 Price Level

Table 10.2.15 Unit Construction Cost of Pit Latrine

(Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
A. Earthwork				
1. Materials				
(1) Gravel Fill	0.3	cu.m.	424	127
Sub-Total of A-1				127
2. Labor				
(1) Excavation	2	cu.m.	131	262
(2) Backfill	0.6	cu.m.	119	71
(3) Gravel Fill	0.3	cu.m.	155	47
Sub-Total of A-2				380
Sub-Total of A				**507**
B. Concrete Work				
1. Materials				
Slab on wood planks				
(1) 8 - 2" x 8" x 6' Coco Lumber	38	bd.ft	8	304
(2) 10mm dia x 6.0m Rebar	1	pcs.	54	54
(3) #16 Tie Wire	0.5	kg.	54	27
(4) Cement	3	bags	128	384
(5) Sand	0.3	cu.m	335	101
(6) Gravel	0.3	cu.m	424	127
(7) Stone Lining with Mortar		L.S.		650
Sub-total of B-1				1,647
2. Labor (25% of B-1)				412
Sub-Total of B				**2,059**
C. Carpentry Work				
1. Materials				
(1) Nipa	30	pcs.	2	60
(2) 1.0m x 1.8m, amakan	3	pcs.	70	210
(3) 2x 3 x 10' Coco Lumber	14	bd.ft	10	140
(4) 2 x 2 x 10' Coco Lumber	24	bd.ft	10	240
(5) 3" dia. Bamboo	3	lights	20	60
(6) Assorted CWN	3	kgs.	40	120
(7) Rattan wire	14	pcs.	1	14
(8) 3 x 3" hinges	2	pcs.	30	60
Sub-Total of C-1				904
2. Labor (25% of C-1)				226
Sub-Total of C				**1,130**
D. Transportation Cost (excluding indigenous materials)		L.S.		**150**
E. Indirect Cost				
Profit (10% of A -D)				370
VAT (10% of Profit & Labor)				154
Sub-Total of E				**524**
Total Construction Cost (A+B+C+D+E)			**Say**	**4,370 4,400**

Note: L.S. - Lump Sum

Source: DOH standard price in 1993

Unit Cost: Adjusted to 1997 Price Level

Table 10.2.16 Unit Cost of School Toilet

Sheet-1 (Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
A. Mobilization and Demobilization		L.S.		5,500
B. Earthwork				
1. Materials				
(1) Gravel Fill	3.00	cu.m	424	1,272
Sub-Total of B-1				1,272
2. Labor				
(1) Excavation	15.88	cu.m	131	2,080
(2) Backfill	4.97	cu.m	119	591
(3) Gravel Fill	3.00	cu.m	155	465
Sub-Total of B-2				3,137
Sub-Total of B				4,409
C. Concrete Work				
1. Materials				
(1) Cement	61.00	bags	128	7,808
(2) Sand	4.00	cu.m	335	1,340
(3) Gravel	8.00	cu.m	424	3,392
(4) Rebars: 12mm dia x 6m	38.00	pcs.	74	2,812
10mm dia x 6m	57.00	pcs.	54	3,078
(5) #16 Tie Wire	8.00	kgs.	54	432
(6) Formworks:				
1/4" Plywood	6.00	pcs.	446	2,676
2"x2"x10" (Coco Lumber)	200.00	bd.ft.	8	1,600
Sub-Total of C-1				23,138
2. Labor (30% of C-1)		L.S.		6,941
Sub-Total of C				30,079
D. Masonry Work				
1. Materials				
(1) 6" CHB	800.00	pcs.	6	4,800
(2) 4" CHB	260.00	pcs.	5	1,300
(3) Cement	97.00	bags	128	12,416
(5) Sand	10.00	cu.m	335	3,350
(6) Rebars: 12mm dia x 6m	30.00	pcs.	74	2,220
10mm dia x 6m	11.00	pcs.	54	594
(7) #16 Tie Wire	4.00	kgs.	54	216
(8) Scaffolding:				
2"x4"x8" = 10 pcs. (Coco Lumber)	53.33	bf.	8	427
Sub-Total of D-1				25,323
2. Labor (30% of D-1)		L.S.		7,597
Sub-Total of D				32,920
E. Roofing Work				
1. Materials				
(1) GA #26 Corr. GI (1 = 10')	20.00	pcs.	290	5,800
(2) GA #24 Pln. GI Flashing	3.00	pcs.	280	840
(3) GA #24 Pln. GI Gutter (Pre-Fab)	9.00	pcs.	280	2,520
(4) Umbrella Nails 2 - 1/2"	12.00	kgs.	46	552
(5) Rafter - 2"x5"x18' = 5 pcs.	75.00	bf.	33	2,475
(6) Purlins - 2"x2"x12' = 18 pcs.	72.00	bf.	33	2,376
(7) WD Cleats - 2"x2"x10" = 6 pcs.	20.00	bf.	33	660

Table 10.2.16 Unit Cost of School Toilet

Sheet-2 (Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
(8) Nailers - 2"x2"x1012' = 30 pcs.	120.00	bf.	33	3,960
- 2"x2"x10' = 36 pcs.	120.00	bf.	33	3,960
(9) Fascia Board				
1"x12"x12' = 4 pcs.	48.00	bf.	33	1,584
1"x12"x18' = 2 pcs.	36.00	bf.	33	1,188
(10) Wood Plate				
2"x4"x20' = 2 pcs.	26.66	bf.	33	880
(11) 1/4" Thk. Mar. Plywood 4'x8'	14.00	pcs.	30	420
(12) C.W.N. Assorted	15.00	kgs.	30	450
(13) 3" dia x 3m Downspout (PVC)	3.00	pcs.	85	255
(14) 3" dia Elbow (PVC)	2.00	pcs.	15	30
(15) 3"dia Coupling (PVC)	1.00	pcs.	14	14
(16) Ceiling Vent				
1"x1"x8' = 4 pcs.	2.67	bf.	27	72
(17) Screen (1/8"x1/8")	1.00	yd.	85	85
Sub-Total of E-1				28,121
2. Labor (30% of E-1)		L.S.		8,436
Sub-Total of E				36,557
F. Carpentry Work				
1. Materials				
(1) D - 1 Hollow Core Tanguile				
Flush Type Door w/ Louver (.80x2.20)	2.00	sets	1,514	3,028
(2) D - 2 Hollow Core Tanguile				
Flush Type Door (.60x2.10)	1.00	sets	1,136	1,136
(3) D - 3 Louver Door (.60x1.40)	5.00	sets	947	4,735
(4) Door Jambs (Apitong)				
2"x6"x14" = 1 pc.	14.00	bf.	33	462
2"x6"x10" = 2 pcs.	20.00	bf.	33	660
2"x6"x10" = 1 pc.	18.00	bf.	33	594
2"x4"x12" = 5 pcs.	40.00	bf.	33	1,320
(7) Wooden Jalousie Window				
With 5 Blades (.40x.50)	14.00	set	316	4,424
(8) Window Jambs (Apitong)				
2"x6"x16" = 5 pcs.	80.00	bf.	33	2,640
2"x6"x14" = 1 pc.	14.00	bf.	33	462
2"x6"x10" = 1 pc.	10.00	bf.	33	330
(9) Cabinet				
3/4"x4'x8' = 1 pc. (plyboard)	1.00	pc.	821	821
Sub-Total of F-1				20,612
2. Labor (30% of F-1)		L.S.		6,184
Sub-Total of F				26,796
G. Tile Work				
1. Materials				
(1) 4 - 1/4"x4 - 1/4" Glazed Tiles	1,950.00	pcs.	4	7,800
(2) 0.10x0.20m Floor Tiles	900.00	pcs.	7	6,300
(3) Cement	4.00	bags	128	512
(4) White Cement	1.00	bag	693	693
Sub-Total of G-1				15,305

Table 10.2.16 Unit Cost of School Toilet

Sheet-3 (Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
2. Labor (30% of G-1)		L.S.		4,592
Sub-Total of G				**19,897**
II. Plumbing Work				
1. Materials				
(1) Toilet Bowl - Squat Type	3.00	sets	657	1,971
(2) Toilet Bowl-Sit Type	2.00	sets	657	1,314
(3) Lavatory	2.00	sets	3,000	6,000
(4) 4" dia x 3m PVC San. Pipe	4.00	pcs.	164	656
(5) 3" dia x 3m PVC San. Pipe	7.00	pcs.	92	644
(6) 1 1/2" dia x 3m PVC San. Pipe	4.00	pcs.	58	232
(7) 2" dia. x 3m PVC San. Pipe	2.00	pcs.	55	110
(8) 6" x 4" Floor Drain	5.00	pcs.	92	460
(9) 2" dia. Elbow PVC	4.00	pcs.	7	28
(10) 4" dia WYB PVC	2.00	pcs.	27	54
(11) 4" dia. x 3" dia. WYB PVC	12.00	pcs.	33	396
(12) 4" dia. x 2" dia. TEE PVC	2.00	pcs.	34	68
(13) 4" dia. TEE PVC	3.00	pcs.	34	102
(14) 1 1/2" dia. WYB PVC	1.00	pcs.	13	13
(15) 4" dia. Clean Out PVC	3.00	pcs.	38	114
(16) 3" dia. Clean Out PVC	1.00	pcs.	30	30
(17) Faucet	3.00	pcs.	55	165
(18) 3" dia. x 2" dia. WYB PVC	2.00	pcs.	27	54
(19) 1 1/2" dia. Elbow PVC	6.00	pcs.	14	84
(20) PVC Cement	1.00	can	133	133
(21) 2" dia. PVC San. Pipe x 3m	2.00	pcs.	87	174
(22) 4" dia. x 2" dia. TEE	2.00	pcs.	23	46
(23) Check Valve 1 1/2"	1.00	pcs.	200	200
(24) 4" P-Trap	5.00	pcs.	72	360
Sub-Total of H-1				13,408
2. Labor (30% of H-1)		L.S.		4,022
Sub-Total of H				**17,430**
I. Painting				
1. Materials				
(1) Acrylic, Semi Gloss	8.00	gals.	276	2,208
(2) Concrete Sealer	4.00	gals.	218	872
(3) Acri Color: Wood	4.00	gals.	84	336
(4) Enamel, QDE	6.00	gals.	282	1,692
(5) Wood Putty	1.00	gals.	320	320
(6) Paint Thinner	1.00	gals.	63	63
(7) Tinting Color	4.00	pint	42	168
(8) Sand Paper (Assorted)	15.00	pcs.	7	105
(9) Misecellaneous		L.S.		1,060
(10) Roof Paint (green, ready-mix)	2.00	gals.	298	596
Sub-Total of I-1				7,420
2. Labor (30% of I-1)		L.S.		2,226
Sub-Total of I				**9,646**

Table 10.2.16 Unit Cost of School Toilet

Sheet-4 (Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
J. Electrical Work				
1. Materials				
(1) 40 Watts Flourescent Lamp	2.00	sets	270	540
(2) Elect. Wire TW #12	24.00	M	7	168
(3) Elect. Conduit - 1/2" dia x 10"	4.00	pcs.	82	328
(4) Entrance Cap. 1/2" dia	1.00	pc.	30	30
(5) Switch Outlet, Flush Type	2.00	pcs.	41	82
(6) Utility Box 2"x3"	2.00	pcs.	7	14
(7) Porcelain Receptacle 2" dia	2.00	pcs.	7	14
(8) Safety Switch 60A, 250V	1.00	set	519	519
(9) Electrical Tape	1.00	roll	23	23
Sub-Total of J-1				1,718
2. Labor (30% of J-1)		L.S.		515
Sub-Total of J				2,233
K. Hardware				
1. Materials				
(1) 3"x3" Butt Hinges (Loose Pin)	10.00	pcs.	15	150
(2) 4"x4" Butt Hinges (Loose Pin)	12.00	pcs.	19	228
(3) Door Lockset (Schlage US)	3.00	pcs.	481	1,443
(4) Barrel Bolt (4")	5.00	pcs.	42	210
(5) Cabinet Pull (4")	5.00	pcs.	7	35
(6) Water Storage Cover				
Checkered Plate 1/4" thick				
1.44x0.645 w/ L bar & flat bar	1.00	set	1,043	1,043
0.645x0.633 w/ L bar & flat bar	2.00	set	588	1,176
(7) Padlock	1.00	pcs.	401	401
Sub-Total of K-1				4,686
2. Labor (30% of K-1)		L.S.		1,406
Sub-Total of K				6,092
L. Septic Tank and Sewage Basin				
1. Materials				
(1) 4" CHB	180.00	pcs.	5	900
(2) Cement	18.00	bags	128	2,304
(3) Sand	1.50	cu.m	335	503
(4) Gravel	1.00	cu.m	424	424
(5) Rebars: 10mm dia x 6m	29.00	pcs.	74	2,146
(6) #16 Tire Wire	2.00	kgs.	54	108
(7) Formworks: Coco Lumber				
2"x3"x10' = 12 pcs.	60.00	bf.	8	480
1/4" plywood ord. 4'x8'	2.00	pcs.	446	892
C.W.N. (Assorted)	2.00	kgs.	31	62
Sub-Total of L-1				7,819
2. Labor (30% of L-1)		L.S.		2,346
Sub-Total of L				10,165

Table 10.2.16 Unit Cost of School Toilet

Sheet-5 (Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
M. Shallow Well (18 depth)				
a. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 63mm x 6m PVC Pipe with socket	2.00	pcs.	896	1,792
(2) 63mm x 3m PVC Pipe with plug	1.00	pc.	452	452
(3) 63mm PVC Socket	1.00	pc.	99	99
(4) 63mm x 3m PVC Screen	1.00	pc.	1,433	1,433
Sub-Total of M-a-1				3,776
2. Labor, Fuel, Lubricant and others				
Well Drilling for 18m depth at 150mm borehole	18.00	m	573	10,314
Sub-Total of M-a				14,090
b. Well Development		L.S.		550
c. Gravel Packing, Installation of Hand-Pump and Construction of Platform				
1. Materials				
(1) 50mm Jetmatic Handpump	1.00	set	2,623	2,623
(2) 50mm x 1m GI Pipe (Sch. 40)	1.00	pc.	82	82
(3) #10 Sieved Gravel	0.10	cu.m	959	96
(4) Coarse Sand	0.07	cu.m	474	33
(5) Cement for Sanitary Seal	1.00	bag	128	128
(6) Pump Base and Platform				
1) Cement	4.00	bags	128	512
2) Gravel	1.00	cu.m	424	424
3) Sand	1.00	cu.m	335	335
4) Plywood (1,200mm x 2,400mm x 6mm)	1.00	pc.	446	446
5) Form Lumber (50mmx75mmx1,800mm)	1.00	pc.	49	49
6) Nail	1.00	kg.	31	31
Sub-Total of M-c-1				4,759
2. Labor (40% of M-c-1)		L.S.		1,904
Sub-Total of M-c				6,663
Sub-Total of M				**21,303**
N. Freight Cost (11% of Materials for A - M excluding sand and gravel)		**L.S.**		**16,081**
O. Indirect Cost				
Profit (10% of A - N)				23,911
VAT (10% of Profit & Labor)				7,322
Sub-Total of O				**31,233**
Total of Construction Cost (A to O)				**270,340**
P. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		L.S.		2,200
2. Construction Supervision		L.S.		1,600
Sub-Total of P				**3,800**
GRAND TOTAL				**274,140**
			Say	**274,100**

Source: DOH standard price in 1993.
Unit Cost: Adjusted to 1997 Price Level

Table 10.2.17 Unit Cost of Public Toilet

Sheet-1 (Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
A. Mobilization and Demobilization (2.4% of B - M)		L.S.		6,800
B. Earthwork				
1. Materials				
(1) Gravel Fill	3.00	cu.m	424	1,272
Sub-Total of B-1				1,272
2. Labor				
(1) Excavation	15.88	cu.m	131	2,080
(2) Backfill	4.97	cu.m	119	591
(3) Gravel Fill	3.00	cu.m	155	465
Sub-Total of B-2				3,137
Sub-Total of B				4,409
C. Concrete Work				
1. Materials				
(1) Cement	61.00	bags	128	7,808
(2) Sand	4.00	cu.m	335	1,340
(3) Gravel	8.00	cu.m	424	3,392
(4) Rebars: 12mm dia x 6m	38.00	pcs.	74	2,812
10mm dia x 6m	57.00	pcs.	52	2,964
(5) #16 Tie Wire	8.00	kgs.	52	416
(6) Formworks:				
1/4" Plywood	6.00	pcs.	446	2,676
2"x2"x10" (Coco Lumber)	200.00	bd.ft.	8	1,600
Sub-Total of C-1				23,008
2. Labor (30% of C-1)				6,902
Sub-Total of C				29,910
D. Masonry Work				
1. Materials				
(1) 6" CHB	800.00	pcs.	6	4,800
(2) 4" CHB	260.00	pcs.	5	1,300
(3) Cement	97.00	bags	128	12,416
(5) Sand	10.00	cu.m	335	3,350
(6) Rebars: 12mm dia x 6m	30.00	pcs.	74	2,220
10mm dia x 6m	11.00	pcs.	54	594
(7) #16 Tie Wire	4.00	kgs.	54	216
(8) Scaffolding:				
2"x4"x8" = 10 pcs. (Coco Lumber)	53.33	bf.	8	427
Sub-Total of D-1				25,323
2. Labor (30% of D-1)				7,597
Sub-Total of D				32,920
E. Roofing Work				
1. Materials				
(1) GA #26 Corr. GI (1 = 10')	20.00	pcs.	290	5,800
(2) GA #24 Pln. GI Flashing	3.00	pcs.	280	840
(3) GA #24 Pln. GI Gutter (Pre-Fab)	9.00	pcs.	280	2,520
(4) Umbrella Nails 2 - 1/2"	12.00	kgs.	46	552
(5) Rafter - 2"x5"x18' = 5 pcs.	75.00	bf.	33	2,475

Table 10.2.17 Unit Cost of Public Toilet

Sheet-2 (Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
(6) Purlins - 2"x2"x12' = 18 pcs.	72.00	bf.	33	2,376
(7) WD Cleats - 2"x2"x10" = 6 pcs.	20.00	bf.	33	660
(8) Nailers - 2"x2"x1012' = 30 pcs.	120.00	bf.	33	3,960
- 2"x2"x10' = 36 pcs.	120.00	bf.	33	3,960
(9) Fascia Board				
1"x12"x12' = 4 pcs.	48.00	bf.	33	1,584
1"x12"x18' = 2 pcs.	36.00	bf.	33	1,188
(10) Wood Plate				
2"x4"x20' = 2 pcs.	26.66	bf.	33	880
(11) 1/4" Thk. Mar. Plywood 4'x8'	14.00	pcs.	479	6,706
(12) C.W.N. Assorted	15.00	kgs.	30	450
(13) 3" dia x 3m Downspout (PVC)	3.00	pcs.	85	255
(14) 3" dia Elbow (PVC)	2.00	pcs.	15	30
(15) 3"dia Coupling (PVC)	1.00	pcs.	14	14
(16) Ceiling Vent, 1"x1"x8', 4 pcs.	2.67	bf.	27	72
(17) Screen (1/8"x1/8")	1.00	yd.	85	85
Sub-Total of E-1				34,407
2. Labor (30% of E-1)				10,322
Sub-Total of E				44,729
F. Carpentry Work				
1. Materials				
(1) D - 1 Hollow Core Tanguile				
Flush Type Door w/ Louver (.80x2.20)	2.00	sets	1,514	3,028
(2) D - 2 Hollow Core Tanguile				
Flush Type Door (.60x2.10)	1.00	sets	1,136	1,136
(3) D - 3 Louver Door (.60x1.40)	5.00	sets	947	4,735
(4) Door Jambs (Apitong)				
2"x6"x14" = 1 pc.	14.00	bf.	33	462
2"x6"x10" = 2 pcs.	20.00	bf.	33	660
2"x6"x10" = 1 pc.	18.00	bf.	33	594
2"x4"x12" = 5 pcs.	40.00	bf.	33	1,320
(7) Wooden Jalousie Window				
With 5 Blades (.40x.50)	14.00	set		4,172
(8) Window Jambs (Apitong)				
2"x6"x16" = 5 pcs.	80.00	bf.	33	2,640
2"x6"x14" = 1 pc.	14.00	bf.	33	462
2"x6"x10" = 1 pc.	10.00	bf.	33	330
(9) Cabinet				
3/4"x4'x8' = 1 pc. (plyboard)	1.00	pc.	821	821
Sub-Total of F-1				20,360
2. Labor (30% of F-1)				6,108
Sub-Total of F				26,468
G. Tile Work				
1. Materials				
(1) 4 - 1/4"x4 - 1/4" Glazed Tiles	1,950	pcs.	4	7,800
(2) 0.10x0.20m Floor Tiles	900.00	pcs.	7	6,300
(3) Cement	4.00	bags	128	512

Table 10.2.17 Unit Cost of Public Toilet

Sheet-3 (Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
(4) White Cement	1.00	bag	693	693
(5) Tiles Fittings		L.S.		5,280
Sub-Total of G-1				20,585
2. Labor (30% of G-1)				6,176
Sub-Total of G				26,761
II. Plumbing Work				
1. Materials				
(1) Urinal	3.00	sets	1,171	3,513
(2) Toilet Bowl - Squat Type	6.00	sets	657	3,942
(3) 4" dia x 3m PVC San. Pipe	6.00	pcs.	164	984
(4) 3" dia x 3m PVC San. Pipe	4.00	pcs.	92	368
(5) 2" dia x 3m PVC San. Pipe	3.00	pcs.	55	165
(6) 3/4" dia x 6m G.I. Pipe Sch. 40	5.00	pcs.	269	1,345
(7) 1/2" dia x 6m G.I. Pipe Sch. 40	1.00	pcs.	197	197
(8) 4"x4" WYE PVC	1.00	pcs.	27	27
(9) 3" dia Elbow PVC	10.00	pcs.	33	330
(10) 3" dia 45 degrees Bend PVC	2.00	pcs.	27	54
(11) 2" dia Elbow PVC	6.00	pcs.	7	42
(12) 2" dia 45 degrees Bend PVC	2.00	pcs.	22	44
(13) 1/2" dia Elbow G.I.	5.00	pcs.	11	55
(14) 4" dia 3" dia WYE PVC	8.00	pcs.	44	352
(15) 3/4" dia TEE G.I.	7.00	pcs.	44	308
(16) 1/2" dia TEE G.I.	5.00	pcs.	22	110
(17) 4" dia x 2" dia TEE PVC	6.00	pcs.	44	264
(18) 4" dia Clean Out PVC	3.00	pcs.	38	114
(19) 2" dia Clean Out PVC	1.00	pcs.	27	27
(20) Faucet	10.00	pcs.	55	550
(21) 3" dia x 2" dia Elbow Reducer PVC	1.00	pcs.	30	30
(22) 3" dia x 2" dia WYE PVC	3.00	pcs.	27	81
(23) 2" dia x 2" dia WYE PVC	3.00	pcs.	16	48
(24) PVC Cement	1.00	can	133	133
(25) 4" dia x 2" dia WYE PVC	2.00	pcs.	44	88
(26) Gate Valve 3/4" dia	1.00	pcs.	133	133
(27) Gate Valve 1/2" dia	1.00	pcs.	105	105
(28) Water Meter 3/4" dia	1.00	pcs.	1,390	1,390
(29) 3/4"dia x1/2"dia Elbow Reducer G.I.	1.00	pcs.	15	15
Sub-Total of H-1				14,814
2. Labor (30% of H-1)				4,444
Sub-Total of H				19,258
I. Painting				
1. Materials				
(1) Acrylic, Semi Gloss	8.00	gals.	276	2,208
(2) Concrete Sealer	4.00	gals.	218	872
(3) Acri Color: Wood	4.00	gals.	84	336
(4) Enamel, QDE	6.00	gals.	282	1,692
(5) Wood Putty	1.00	gals.	320	320
(6) Paint Thinner	1.00	gals.	63	63

Table 10.2.17 Unit Cost of Public Toilet

Sheet-4 (Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
(7) Tinting Color	4.00	pint	42	168
(8) Sand Paper (Assorted)	15.00	pcs.	7	105
(9) Misecellaneous		L.S.		1,066
(10) Roof Paint (green, ready-mix)	2.00	gals.	298	596
Sub-Total of I-1				7,426
2. Labor (30% of I-1)				2,228
Sub-Total of I				9,654
J. Electrical Work				
1. Materials				
(1) 40 Watts Flourescent Lamp	2.00	sets	270	540
(2) Elect. Wire TW #12	24.00	M	7	168
(3) Elect. Conduit - 1/2" dia x 10"	4.00	pcs.	82	328
(4) Entrance Cap. 1/2" dia	1.00	pc.	30	30
(5) Switch Outlet, Flush Type	2.00	pcs.	41	82
(6) Utility Box 2"x3"	2.00	pcs.	7	14
(7) Porcelain Receptacle 2" dia	2.00	pcs.	7	14
(8) Safety Switch 60A, 250V	1.00	set	519	519
(9) Electrical Tape	1.00	roll	23	23
Sub-Total of J-1				1,718
2. Labor (30% of J-1)				515
Sub-Total of J				2,233
K. Hardware				
1. Materials				
(1) 3"x3" Butt Hinges (Loose Pin)	10.00	pcs.	15	150
(2) 4"x4" Butt Hinges (Loose Pin)	12.00	pcs.	19	228
(3) Door Lockset (Schlage US)	3.00	pcs.	481	1,443
(4) Barrel Bolt (4")	5.00	pcs.	42	210
(5) Cabinet Pull (4")	5.00	pcs.	7	35
(6) Water Storage Cover				
Checkered Plate 1/4" thick				
1.44x0.633 w/ L bar & flat bar	1.00	set	1,043	1,043
(7) 0.645x0.633 w/ L bar & flat bar	2.00	set	588	1,176
(8) Padlock	1.00	pcs.	401	401
Sub-Total of K-1				4,686
2. Labor (30% of K-1)				1,406
Sub-Total of K				6,092
L. Septic Tank and Sewage Basin				
1. Materials				
(1) 4" CHB	180.00	pcs.	5	900
(2) Cement	18.00	bags	128	2,304
(3) Sand	1.50	cu.m	335	503
(4) Gravel	1.00	cu.m	424	424
(5) Rebars: 10mm dia x 6m	29.00	pcs.	74	2,146
(6) #16 Tire Wire	2.00	kgs.	54	108

Table 10.2.17 Unit Cost of Public Toilet

Sheet-5 (Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
(7) Formworks: Coco Lumber				
2"x3"x10' = 12 pcs.	60.00	bf.	8	480
1/4" plywood ord. 4'x8'	2.00	pcs.	446	892
C.W.N. (Assorted)	2.00	kgs.	31	62
Sub-Total of L-1				7,819
2. Labor (30% of L-1)				2,346
Sub-Total of L				**10,165**
M. Concrete Water Tank (Elevated)				
1. Earth Work				
(1) Materials				
1) Gravel Fill	1.00	cu.m	424	424
Sub-Total of M-1 (1)				424
(2) Labor				
1) Excavation	14.70	cu.m	131	1,926
2) Backfill	13.08	cu.m	119	1,557
3) Gravel Fill	1.00	cu.m	155	155
Sub-Total of M-1 (2)				3,637
Sub-Total of M-1				4,061
2. Materials				
(1) Cement	62.00	bags	128	7,936
(2) Sand	4.50	cu.m	335	1,508
(3) Gravel	8.00	cu.m	424	3,392
(4) Rebars: 12mm dia x 6m	160.00	pcs.	54	8,640
(5) #16 Tie Wire	4.00	kgs.	54	216
(6) Formworks:				
1/4" plywood	12.00	pcs.	446	5,352
2"x3"x16' = 60 pcs.	480.00	bf.	8	3,840
(7) C.W.N. (Assorted)	5.00	kgs.	31	155
Sub-Total of M-2				43,222
3. Labor (30% of M-2)				12,967
Sub-Total of M				**60,250**
N. Freight Cost (11% of Materials for A - M excluding sand and gravel)				**20,841**
O. Indirect Cost				
Profit (10% of A - M)				30,049
VAT (10% of Profit & Labor)				9,783
Sub-Total of O				**39,832**
Total of Construction Cost (A to O)				**340,321**
P. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		L.S.		2,200
2. Construction Supervision		L.S.		1,600
Sub-Total of P				**3,800**
GRAND TOTAL				**344,121**
			Say	**344,100**

Source: DOH standard price in 1993.
Unit Cost: Adjusted to 1997 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 ϕ250 mm 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 ϕ250 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

10.2.2 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.

Table 10.2.18 Cost for New Laboratory

Item	Unit	Unit Cost (Pesos)	Qty.	Amount (Pesos)
1.Building				
New Building	m^2	15,000	57	855,000
2.Instruments				
Turbidity meter	set	35,000	1	35,000
Color meter	set	9,800	1	9,800
pH/Residual chlorine cheker	set	15,000	1	15,000
Incubator	set	100,000	1	100,000
Refrigerator	set	25,000	2	50,000
Sterilizer	set	50,000	1	50,000
Water quality testing kits	set	300,000	1	300,000
Electric stove	set	1,000	1	1,000
Range hood	set	10,000	1	10,000
Sub-total				570,800
3.Accessories				
Sink	L.S.			
Working table	L.S.			
Shelf	L.S.			
Office desk	L.S.			
Chair	L.S.			
Sub-total				60,000
4.Glassware/Chemicals				
Glassware/Chemicals	L.S.			100,000
Total				1,585,800

Table 10.2.19 Cost for Upgrading Laboratory

Item	Unit	Unit Cost (Pesos)	Qty.	Amount (Pesos)
1.Instruments				
Turbidity meter	set	35,000	1	35,000
Color meter	set	9,800	1	9,800
pH/Residual chlorine cheker	set	15,000	1	15,000
Incubator	set	100,000	0	0
Refrigerator	set	25,000	1	25,000
Sterilizer	set	50,000	0	0
Water quality testing kits	set	300,000	1	300,000
Electric stove	set	1,000	1	1,000
Range hood	set	10,000	1	10,000
Sub-total				395,800
2.Glassware/Chemicals				
Glassware/Chemicals	L.S.			50,000
Total				445,800

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 (2003)

Unit: P 1,000 Pesos

Municipality	Urban Water Supply Level III	Rural Water Supply									Grand Total
		New System							Level I Rehabili-tation	Total	
		Level II	Level I								
			Deep Well			Shallow Well	Spring Dev.	Subtotal			
			30 m	50 m	70 m						
Bansalan		2,406			2,234	257	882	3,373	34	5,813	5,813
Digos (Capital)											
Don Marcelino	21,929	1,286	797			3,306	5,588	9,691	23	11,000	32,929
Hagonoy											
Jose Abad Santos	15,521	1,257		1,883		5,810	9,999	17,692	38	18,987	34,508
Kiblawan	12,427	2,538		6,026		1,477	4,117	11,620	120	14,278	26,705
Magsaysay	3,809										3,809
Malalag	5,740	2,494			3,475	64	882	4,421	53	6,968	12,708
Malita	16,605			6,591		6,227	11,764	24,582	132	24,714	41,319
Matanao	3,661	4,432								4,432	8,093
Padada					6,701	64	1,471	8,236	102	8,338	8,338
Santa Cruz	17,769	615		2,448		1,669	3,235	7,352	49	8,016	25,785
Santa Maria	9,844	1,271		14,723		417	4,412	18,952	282	20,505	30,349
Sarangani	5,054	1,310		2,636		1,027	2,353	6,016	53	7,379	12,433
Sulop	6,909			3,766		64	1,176	5,006	75	5,081	11,990
PW4SP Study Area	119,268	17,609	797	37,473	12,410	20,382	45,879	116,941	961	135,511	254,779

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

Unit: P 1,000 Pesos

Municipality	Urban Water Supply Level III	Rural Water Supply						Level I Rehabili-tation	Total	Grand Total
		New System								
		Level I								
		Deep Well			Shallow Well	Spring Dev.	Subtotal			
		30 m	50 m	70 m						
Bansalan	3,456			22,090	2,825	882	25,797	335	26,132	29,588
Digos (Capital)	60,944			22,338	6,645		28,983	338	29,321	90,262
Don Marcelino	29,152	797			3,531	5,588	9,916	23	9,939	39,091
Hagonoy	21,492		15,817		642		16,459	316	16,775	38,267
Jose Abad Santos (Trini-	8,737		1,883		5,810	9,999	17,692	38	17,730	26,467
Kiblawan	8,725		13,369		3,371	4,117	20,857	267	21,124	29,849
Magsaysay	16,147		25,609		1,091		26,700	511	27,211	43,358
Malalag	12,185			28,295	642	882	29,819	429	30,248	42,433
Malita	12,259		8,850		8,474	11,764	29,088	177	29,265	41,524
Matanao	5,945			28,295	2,440		30,735	429	31,164	37,109
Padada	17,730			14,644	193	1,471	16,308	222	16,530	34,260
Santa Cruz	34,875		7,720		5,136	3,235	16,091	154	16,245	51,120
Santa Maria	13,149		26,927		803	4,412	32,142	538	32,680	45,829
Sarangani	8,380		4,143		1,605	2,353	8,101	83	8,184	16,564
Sulop	14,309		14,499		257	1,176	15,932	290	16,222	30,531
PW4SP Study Area	267,482	797	118,817	115,662	43,465	45,879	324,620	4,150	328,770	596,252

Table 10.3.3 Cost of Sanitation Facilities Required for Phase I (2003)

Unit: ₱ 1,000 Pesos

Municipality	Urban Sanitation									Rural Sanitation							
	Household Toilets									Household Toilets							
	Flush	Pour Flush	VIP/ Dry	Sub-total of Con Struction Cost	Sub-total of Public Investment Cost	Public School Toilets	Public Toilets	Total Construction Cost	Total Public Investment Cost	Flush	Pour Flush	VIP/ Dry	Sub-total of Construction Cost	Sub-total of Public Investment Cost	Public School Toilets	Total Construction Cost	Total Public Investment Cost
Bansalan	5,559		92	5,651		1,022	344	7,017	1,366	7,029		1,729	8,758		6,551	15,309	6,551
Digos (Capital)		1,352	3,689	5,041	16	7,863	688	13,592	8,567	6,113		4,561	10,674		12,847	23,521	12,847
Don Marcelino	9,649	6,760	1,115	17,524	78	1,616	344	19,484	2,038		18,044		18,044	208	2,922	20,966	3,130
Hagonoy	5,666	2,444		8,110	28	1,113	344	9,567	1,485		14,625	422	15,047	868	6,032	21,079	6,200
Jose Abad Santos	3,919	1,027		4,946	12	528		5,474	540		28,431	607	29,038	327	4,455	33,493	4,782
Kiblawan	5,049	2,236		7,284	26	845	344	8,473	1,215		17,082		17,082	196	4,565	21,647	4,761
Magsaysay	5,474	1,690		7,164	19	1,155	344	8,663	1,518	6,795	15,262		22,057	176	6,241	28,298	6,417
Malalag	3,813			3,813		757	344	4,914	1,101	4,707			4,707		4,464	9,171	4,464
Malita	8,967		66	9,033		1,939	1,032	12,004	2,971	8,648	6,968	3,485	19,101	80	10,848	29,949	10,928
Matanao	21	2,678		2,699	31	701	1,721	5,121	2,453	980	20,033		21,013	230	7,698	28,711	7,928
Padada	5,879	6,344	488	12,711	73	1,322	344	14,377	1,739	1,981		2,132	4,113		1,949	6,062	1,949
Santa Cruz	14,505	10,257	26	24,788	118	4,046	688	29,522	4,852	6,923	9,386		16,309	108	7,850	24,159	7,958
Santa Maria	5,176		145	5,321		1,166	688	7,175	1,854		13,468		13,468	155	6,274	19,742	6,429
Sarangani	2,109	533		2,642	6	835		3,477	841		19,136		19,136	220	4,391	23,527	4,611
Sulop	2,812	1,872		4,684	22	761	344	5,789	1,127	3,728	20,839		24,567	240	2,702	27,269	2,942
PW4SP Study Area	78,597	37,193	5,621	121,411	429	25,669	7,569	154,649	33,667	46,904	183,224	12,936	243,114	2,108	89,189	332,303	91,297

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

Unit: 1,000 Pesos

Municipality	Urban Sanitation										Rural Sanitation							
	Household Toilets										Household Toilets							
	Flush	Pour Flush	VIP/ Dry	Sub-total of Construc-tion Cost	Sub-total of Public Investment Cost	Public School Toilets	Public Toilets	Total Construc-tion Cost	Total Public Investment Cost	Urban Sewerage	Flush	Pour Flush	VIP/ Dry	Sub-total of Costruction Cost	Sub-total of Public Investment	Public School Toilets	Total Construction Cost	Total Public Investment Cost
Bansalan	8,392	1,950		10,342	22	1,482	344	12,168	1,848		15,166	29,783		44,949	343	9,496	54,445	9,839
Digos (Capital)	61,834	19,721		81,555	227	11,616	688	93,859	12,531	188,128	28,031	65,052		93,083	748	18,979	112,062	19,727
Don Marcelino	18,615	7,384		26,000	85	2,658		28,658	2,743	53,728		30,628		30,628	352	4,809	35,437	5,161
Hagonoy	19,224	3,445		23,669	40	1,717	344	25,730	2,101			45,552		45,552	524	9,312	54,864	9,836
Jose Abad Santos	7,814	2,405		9,519	28	814		10,333	842			47,346		47,346	544	6,877	54,223	7,421
Kiblawan	9,095	2,873		11,968	33	1,372		13,340	1,405			44,954		44,954	517	7,407	52,361	7,924
Magsaysay	9,734	3,406		13,140	39	1,770		14,910	1,809		13,142	33,618		46,760	387	9,562	56,322	9,949
Malalag	6,582	1,950		8,532	22	1,164		9,696	1,186		11,012	26,260		37,272	302	6,864	44,136	7,166
Malita	17,466	5,642		23,108	65	2,817	688	26,613	3,570	53,027	26,540	56,745		83,285	653	15,755	99,040	16,408
Matanao	5,623	1,755		7,378	20	1,036		8,414	1,056			48,152		48,152	554	10,490	58,642	11,044
Padada	13,313	4,472		17,785	51	2,041	344	20,170	2,436	40,084	5,240	10,959		16,199	126	3,009	19,208	3,135
Santa Cruz	30,970	10,803		41,773	124	5,948		47,721	6,072	92,440	33,376	40,079		53,455	461	11,539	64,994	12,000
Santa Maria	9,585	3,276		12,861	38	1,800		14,661	1,838			42,835		42,835	493	9,687	52,522	10,180
Sarangani	4,154	1,599		5,753	18	1,223	344	7,322	1,587			19,435		19,435	224	6,445	25,880	6,669
Sulop	7,391	1,950		9,341	22	1,065		10,406	1,087		7,285	14,521		21,806	167	3,782	25,588	3,949
PW4SP Study Area	220,093	72,631		292,324	834	38,525	2,752	334,001	42,811	427,407	139,792	555,919		675,711	6,395	134,013	809,724	149,408

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 Transporation	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 Transporation	5
3.2 Food	15
3.3 Accommodation	12
3.4 Field	4
Total	100

11. FINANCIAL ARRANGEMENTS

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	1996	1997	1998	1999	2000	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 .09 percent, as presented in Table 11.5.4.

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

O and M for Rural Water Supply

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

O and M for Sanitation

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

Table 11.4.1 Comprehensive Investment Need Ranking of the Municipalities

Name of Municipality	Evaluation Factor (% of Underserved and Unserved Population or Households)				Score by Sub-Sector				Weighted Score by Sub-Sector					Synthetic Investment Need Ranking
	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	
Bansalan	N.A.	40	29	11	0.27	0.40	0.60	0.20	0.08	0.12	0.12	0.04	0.36	14
Digos (Capital)	N.A.	22	14	2	0.40	0.20	0.40	0.20	0.12	0.06	0.08	0.04	0.30	15
Don Marcelino	N.A.	89	61	24	1.00	1.00	1.00	0.20	0.30	0.30	0.20	0.04	0.84	1
Hagonoy	N.A.	7	41	16	0.33	0.20	1.00	0.20	0.10	0.06	0.20	0.04	0.40	13
Jose Abad Santos (Trinidac	N.A.	80	30	31	1.00	1.00	0.60	0.40	0.30	0.30	0.12	0.08	0.80	3
Kiblawan	N.A.	59	37	16	0.97	0.80	0.80	0.20	0.29	0.24	0.16	0.04	0.73	5
Magsaysay	N.A.	29	42	21	0.70	0.20	1.00	0.20	0.21	0.06	0.20	0.04	0.51	11
Malalag	N.A.	42	12	3	0.97	0.60	0.40	0.20	0.29	0.18	0.08	0.04	0.59	10
Malita	N.A.	64	31	15	0.94	1.00	0.80	0.20	0.28	0.30	0.16	0.04	0.78	4
Matanao	N.A.	33	26	23	0.77	0.40	0.60	0.20	0.23	0.12	0.12	0.04	0.51	11
Padada	N.A.	50	59	5	0.70	0.60	1.00	0.20	0.21	0.18	0.20	0.04	0.63	9
Santa Cruz	N.A.	46	48	12	0.77	0.60	1.00	0.20	0.23	0.18	0.20	0.04	0.65	8
Santa Maria	N.A.	59	33	16	0.97	0.80	0.80	0.20	0.29	0.24	0.16	0.04	0.73	5
Sarangani	N.A.	71	18	51	1.00	1.00	0.40	0.80	0.30	0.30	0.08	0.16	0.84	1
Sulop	N.A.	42	38	38	1.00	0.60	0.80	0.40	0.30	0.18	0.16	0.08	0.72	7
PW4SP Study Area	N.A.	46	33	16										

Note:

(1) Scoring to Underserved and Unserved Percentage.

Score	Range of Underserved and Unserved Percentage		
1.0	61 <%	41 <%	61 <%
0.8	51 <%< 60	31 <%< 40	51 <%< 60
0.6	41 <%< 50	21 <%< 30	41 <%< 50
0.4	31 <%< 40	11 <%< 20	31 <%< 40
0.2	% < 30	% < 10	% < 30

2) Assumed Weight by Sub-Sector for Synthetic Evaluation by Municipality.

0.3	0.3	0.2	0.2	Allocated Weight

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

Name of City or Municipality	Ttl Nos. of Bgy. in Rural Area	Class	Rural Water Supply										Rural Sanitation										
			Nos. of Related Bgy.	R. Water Supply Allotment of IRA		Number of LEVEL I Facilities				Prov. Avail. IRA	Mun. Avail. IRA	Sub-total Avail. IRA	No.of Related Bgy.	Rural Sanitation Allotment of IRA		Number of Toilets				Prov. Avail. IRA	Mun. Avail. IRA	Sub-total Avail. IRA	
				Prov.	Muni.	Deep Wells	Shallow Wells	Spring Dev't	Total Related					Prov.	Muni.	Public Mkt.	Bus Tum.	Public School	Ttl.	Total Related			
Bansalan	24	4th	0	941	2,715	9	8	3				0	24	1,061	3,059	0	0	14	14	14	1,061	3,059	4,120
Digos (Capital)	23	1st	0	0	0	0	0	0				0	0	2,080	6,355	0	0	28	28	0			0
Don Marcelino	14	5th	14	1,781	1,856	6	103	19	128	1,781	1,856	3,637	14	507	528	0	0	9	9	9	507	528	1,035
Hagonoy	18	4th	0	0	0	0	0	0				0	18	1,004	4,196	0	0	15	15	15	1,004	4,196	5,200
Jose Abad Santos (Trini	24	5th	24	3,075	4,227	10	181	34	225	3,075	4,227	7,302	24	774	1,065	0	0	12	12	12	774	1,065	1,839
Kiblawan	29	5th	29	2,312	2,075	32	46	14	92	2,312	2,075	4,387	29	771	692	0	0	14	14	14	771	692	1,463
Magsaysay	21	5th	21	0	0	0	0	0	0	0	0	0	21	1,039	3,384	0	0	15	15	15	1,039	3,384	4,423
Malalag	14	4th	0	1,128	2,470	14	2	3				0	14	723	1,583	0	0	11	11	11	723	1,583	2,306
Malita	29	2nd	0	4,002	6,236	35	194	40				0	0	1,770	2,758	0	0	23	23	0			0
Matanao	32	5th	32	718	1,433	0	0	0	0			0	32	1,187	2,369	0	0	15	15	15	1,187	2,369	2,369
Padada	14	5th	14	1,350	2,531	27	2	5	34	1,350	2,531	3,881	14	316	592	0	0	5	5	5	316	592	592
Santa Cruz	14	4th	0	1,298	1,583	13	52	11				0	14	1,289	1,571	0	0	17	17	17	1,289	1,571	1,571
Santa Maria	21	5th	21	3,321	3,000	75	13	15	103	3,321	3,000	6,321	21	1,041	941	0	0	16	16	16	1,041	941	941
Sarangani	11	6th	11	1,195	1,324	14	32	8	54	1,195	1,324	2,519	11	747	827	0	0	10	10	10	747	827	827
Sulop	24	5th	24	823	1,340	20	2	4	26	823	1,340	2,163	24	476	776	0	0	5	5	5	476	776	776
Total	312		190	21,944	30,790	255	635	156	662	13,857	16,353	30,210	260	14,785	30,696	0	0	209	209	158	10,935	21,583	27,462
Total Available IRA Fund			57,672																				

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

Name of City or Municipality	Ttl Nos. of Bgy. in Urban	Class	Nos. of Related Bgy.	Urban Sanitation Allotment of IRA		Number of Toilets				Prov. Avail. IRA	Mun. Avail. IRA	Sub-total Avail. IRA
				Prov.	Muni.	Public Mkt.	Bus Term.	Public School	Ttl Related			
Bansalan	1	4th	1	221	638	0	1	2	1	221	638	859
Digos (Capital)	3	1st	0	1,387	4,237	0	2	17	0			0
Don Marcelino	1	5th	1	330	344	0	1	5	1	330	344	674
Hagonoy	3	4th	3	240	1,005	0	1	3	1	240	1,005	1,245
Jose Abad Santos (Trini	2	5th	2	87	120	0	0	1	0			0
Kiblawan	1	5th	1	197	177	0	1	2	1	197	177	374
Magsaysay	1	5th	1	246	801	0	1	3	1	246	801	1,047
Malalag	1	4th	1	178	390	0	1	2	1	178	390	568
Malita	1	2nd	0	481	750	2	1	4	0			0
Matanao	1	5th	1	397	793	4	1	2	5	397	793	1,190
Padada	3	5th	3	282	528	0	1	4	1	282	528	810
Santa Cruz	4	4th	4	786	958	1	1	9	2	786	958	1,744
Santa Maria	1	5th	1	300	271	1	1	3	2	300	271	571
Sarangani	1	6th	1	136	151	0	0	2	0			0
Sulop	1	5th	1	183	297	0	1	2	1	183	297	480
Total	25	0	21	5,451	11,460	8	14	61	17	3,360	6,202	9,562
Total Available IRA Fund			9,562									

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

Name of City or Municipality	Water Supply	Saniration		Total
	Rural	Urban	Rural	
Bansalan	0	859	4,120	4,979
Digos (Capital)	0	0	0	0
Don Marcelino	3,637	674	1,035	5,346
Hagonoy	0	1,245	5,200	6,445
Jose Abad Santos (T	7,302	0	1,839	9,141
Kiblawan	4,387	374	1,463	6,224
Magsaysay	0	1,047	4,423	5,470
Malalag	0	568	2,306	2,874
Malita	0	0	0	0
Matanao	0	1,190	2,369	3,559
Padada	3,881	810	592	5,283
Santa Cruz	0	1,744	1,571	3,315
Santa Maria	6,321	571	941	7,833
Sarangani	2,519	0	827	3,346
Sulop	2,163	480	776	3,419
Total	30,210	9,562	27,462	67,234

Table 11.5.4 FIRR for Level I Rural Water Supply

Unit: Pesos

Year	Nos. of Deep Well	Nos. of Shallow Well	Spring Dev't	Construction Cost	Rehab. And Replacement Cost	O&M Cost	Cash Outflow	No. of Households [1]	Water Rate per Month per Household	Loans and Subsidies	Cash Inflow	Net Value
1	37	76	20	15,547,700		0	15,547,833	9,996	50	0	0	(15,547,833)
2	55	113	29	22,897,700		0	22,897,897	9,996	50	0	5,997,600	(16,900,297)
3	55	114	30	23,223,900		155,477	23,379,576	9,996	50		5,997,600	(17,381,976)
4	37	76	20	15,547,700		384,454	15,932,287	9,996	50		5,997,600	(9,934,687)
5						616,693	616,693	9,996	50		5,997,600	5,380,907
6						772,170	772,170	9,996	50		5,997,600	5,225,430
7						289,051	289,051	9,996	50		5,997,600	5,708,549
8						289,051	289,051	9,996	50		5,997,600	5,708,549
9						289,051	289,051	9,996	50		5,997,600	5,708,549
10						289,051	289,051	9,996	50		5,997,600	5,708,549
11						289,051	289,051	9,996	50		5,997,600	5,708,549
12					3,830,800	289,051	4,119,851	9,996	50		5,997,600	1,877,749
13					5,695,300	289,051	5,984,351	9,996	50		5,997,600	13,249
14					5,727,400	289,051	6,016,451	9,996	50		5,997,600	(18,851)
15					3,830,800	289,051	4,119,851	9,996	50		5,997,600	1,877,749
16						289,051	289,051	9,996	50		5,997,600	5,708,549
17						289,051	289,051	9,996	50		5,997,600	5,708,549
18						289,051	289,051	9,996	50		5,997,600	5,708,549
19						289,051	289,051	9,996	50		5,997,600	5,708,549
20						289,051	289,051	9,996	50		5,997,600	5,708,549

TOTAL	11,676,930
FIRR	1.9%
NPV	5,532,050

Discount Rate for NPV = 0.09 per year

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

(Unit: Pesos)

Category	Total Amount	1st year	2nd year	3rd year	4th year	5th year
A. Const. & Civil Works						
1. Water Supply	77,213,300	0	15,442,660	23,163,990	23,163,990	15,442,660
2. Sanitation	65,584,450	0	13,116,890	19,675,335	19,675,335	13,116,890
3. Land Acquisition	3,805,000	0	761,000	1,141,500	1,141,500	761,000
B. Equip./Logistic Support	1,097,700	0	1,097,700	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.	16,126,303	6,450,521	3,225,261	3,225,261	1,612,630	1,612,630
D. Instiutional Devt.						
1. Capacity Enhanc. Prog.	3,200,000	960,000	960,000	640,000	320,000	320,000
2. Commu. Manag. Prog.	3,026,370	907,911	907,911	605,274	302,637	302,637
3. Health & Hygiene Educ.	505,800	151,740	151,740	101,160	50,580	50,580
4. Water Quality Surveil.	196,700	59,010	59,010	39,340	19,670	19,670
5. NGO Assistance	337,200	101,160	101,160	67,440	33,720	33,720
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)	17,344,082	1,013,834	3,618,333	4,889,930	4,644,006	3,177,979
Total (A+B+C+D+E+F)	190,784,905	11,152,176	39,801,665	53,789,229	51,084,068	34,957,766
F. Others						
1. Price Contingency	73,609,302	4,302,772	15,356,418	20,753,150	19,709,435	13,487,528
2. Value Added Tax (VAT)	7,825,434	457,429	1,632,547	2,206,276	2,095,318	1,433,864
Grand Total	272,219,641	15,912,377	56,790,630	76,748,655	72,888,821	49,879,159

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	184	379	99
Nos. of HHs to be Served	2,778	5,723	1,495
Reconstruction Cost (Peso)			
Unit Cost	195,300	32,100	294,100
Ttl. Reconst. Cost	35,935,200	12,165,900	
Ttl. Reconst. Cost/year	1,796,760	1,216,590	
Cost per HH/year	647	213	
Rehabilitation Cost (Peso)			
Unit Cost	37,600		
Ttl. Rehab. Cost	6,918,400		
Ttl. Rehab. Cost/year	691,840		
Cost per HH/year	249		
Recurrent Cost for O&M (Peso)			
Cost per HH/year	100	50	50
O&M Cost Total (Peso)			
Cost per HH/year	996	263	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 toMonthly Family Income

	Deep Well	Shallow Well	Spring Dev't
O&M Cost per HH/month	83	22	4
Proportion (Mean)	1.4%	0.4%	0.1%
Proportion (Median)	1.9%	0.5%	0.1%

Table 11.6.4 Family Income (Unit: Pesos)

Annual *)		Monthly *)	
Mean	Median	Mean	Median
46,474	35,298	5,812	4,415

Note: 1) 1994 NSO Family Income and Expenditure Survey

2) Estimated value in 2003 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	209	344,100	274,100	2,864,345

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

O&M Cost for Urban Sanitation Unit: Peso

Nos. of Facilities to be Constructed		Unit Construction Cost		Yearly O&M Cost
Public Toilets	School Toilets	Public Toilets	School Toilets	
17	0	344,100	274,100	292,485

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,

Form M - 1

Municipality of _____

Provincial Water & Sanitation Monitoring System

Annual Sector Performance Summary Report

Period Covered : _____ to _____

I. Service Coverage

	LAST YEAR				THIS YEAR			
Name of Barangay (1)	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						
			Water Source Development (4)	Water Supply Transmission (5)	Water Storage/ Treatment & Distribution (6)	Household Toilets (7)	School Toilets (8)	Public Toilets (9)	Others (10)
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									
NGO									
SUB-TOTAL									
TOTAL									