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 - 40m 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	11	pcs.	2,894	31,834
(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 40 m depth at 200mm borehole	40	m	1,212	48,480
3. Freight Cost (11% of Materials)		L.S.		4,878
Sub-Total of B				97,699
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	0.7	cu.m	959	671
(4) Coarse Sand	1	cu.m	335	335
(5) Cement for Sanitary Seal	4	bags	128	512
(6) Pump Base and Platform			0	0
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				25,019
2. Labor (40% of D-1.)				10,008
3. Freight Cost (11% of Materials)		L.S.		2,752
Sub-Total of D				37,779
E. Indirect Cost				
Profit (10% of A, B, C & D)				14,458
VAT (10% of Profit & Labor)				7,295
Sub-Total of E				21,753
Total of Construction Cost (A+B+C+D+E)				166,331
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				173,075
SAY				173,100

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 - 40m 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	11	pcs.	2,894	31,834
(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 40 m depth at 150mm borehole	40	m	935	37,400
3. Freight Cost (11% of Materials)		L.S.		4,878
Sub-Total of B				**86,619**
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	4	bags	128	512
(6) Pump Base and Platform			0	0
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				24,348
2. Labor (40% of D-1.)				9,739
3. Freight Cost (11% of Materials)		L.S.		2,678
Sub-Total of D				**36,765**
E. Indirect Cost				
Profit (10% of A, B, C & D)				13,248
VAT (10% of Profit & Labor)				6,039
Sub-Total of E				**19,287**
Total of Construction Cost (A+B+C+D+E)				**151,771**
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				**158,515**
SAY				**158,500**

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 - 80m 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	24	pcs.	2,894	69,456
(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 80 m depth at 200mm borehole	80	m	1,212	96,960
3. Freight Cost (11% of Materials)		L.S.		9,016
Sub-Total of B				**187,939**
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	8	pcs.	1,880	15,040
(3) #10 Sieved Gravel	1.6	cu.m	959	1,534
(4) Coarse Sand	1	cu.m	335	335
(5) Cement for Sanitary Seal	4	bags	128	512
(6) Pump Base and Platform			0	0
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				29,642
2. Labor (40% of D-1.)				11,857
3. Freight Cost (11% of Materials)		L.S.		3,261
Sub-Total of D				**44,760**
E. Indirect Cost				
Profit (10% of A, B, C and D)				24,180
VAT (10% of Profit & Labor)				6,333
Sub-Total of E				**30,513**
Total of Construction Cost (A+B+C+D+E)				**272,312**
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				**279,056**
SAY				**279,100**

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 - 80m 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	24	pcs.	2,894	69,456
(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 80 m depth at 150mm borehole	80	m	935	74,800
3. Freight Cost (11% of Materials)		L.S.		9,016
Sub-Total of B				**165,779**
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	8	pcs.	1,880	15,040
(3) #10 Sieved Gravel	0	cu.m	959	0
(4) Coarse Sand	1	cu.m	335	335
(5) Cement for Sanitary Seal	4	bags	128	512
(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				28,108
2. Labor (40% of D-1.)				11,243
3. Freight Cost (11% of Materials)		L.S.		3,092
Sub-Total of D				**42,443**
E. Indirect Cost				
Profit (10% of A, B, C and D)				21,732
VAT (10% of Profit & Labor)				5,935
Sub-Total of E				**27,667**
Total of Construction Cost (A+B+C+D+E)				**244,989**
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				**251,733**
SAY				**251,700**

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 - 120m 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	37	pcs.	2,894	107,078
(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 120 m depth at 200mm borehole	120	m	1,212	145,440
3. Freight Cost (11% of Materials)		L.S.		13,154
Sub-Total of B				**278,179**
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	15	pcs.	1,880	28,200
(3) #10 Sieved Gravel	2.5	cu.m	959	2,398
(4) Coarse Sand	1	cu.m	335	335
(5) Cement for Sanitary Seal	4	bags	128	512
(6) Pump Base and Platform			0	0
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				43,666
2. Labor (40% of D-1.)				17,466
3. Freight Cost (11% of Materials)		L.S.		4,803
Sub-Total of D				**65,935**
E. Indirect Cost				
Profit (10% of A, B, C and D)				35,321
VAT (10% of Profit & Labor)				8,850
Sub-Total of E				**44,171**
Total of Construction Cost (A+B+C+D+E)				**397,385**
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				**404,129**
SAY				**404,100**

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 - 120m 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	37	pcs.	2,894	107,078
(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 120 m depth at 150mm borehole	120	m	935	112,200
3. Freight Cost (11% of Materials)		L.S.		13,154
Sub-Total of B				**244,939**
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	15	pcs.	1,880	28,200
(3) #10 Sieved Gravel	0.0	cu.m	959	0
(4) Coarse Sand	1	cu.m	335	335
(5) Cement for Sanitary Seal	4	bags	128	512
(6) Pump Base and Platform			0	0
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				41,268
2. Labor (40% of D-1.)				16,507
3. Freight Cost (11% of Materials)		L.S.		4,539
Sub-Total of D				**62,314**
E. Indirect Cost				
Profit (10% of A, B, C and D)				31,635
VAT (10% of Profit & Labor)				8,241
Sub-Total of E				**39,876**
Total of Construction Cost (A+B+C+D+E)				**356,229**
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				**362,973**
SAY				**363,000**

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)

s (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. - Lamp 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)

s

(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. - Lump 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. - 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 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 the 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)

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	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 the 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 (l = 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 II				**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) Miscellaneous		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 (l = 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 Flouresecent 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-nitrogen/Iron 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.

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)

S

Unit: P 1,000 Pesos

Municipality	Urban Water Supply Level III	Rural Water Supply										
		New System										
		Level II	Level I						Level I Rehabilitation	Total	Grand Total
			Deep Well			Shallow II Well	Spring Dev.	Sub-total			
			40 m	80 m	120 m						
Bayugan	18,221	5,929	2,213			417	2,059	4,689	49	10,667	28,888
Bunawan	11,935			3,284		225	1,471	4,980	45	5,025	16,960
Esperanza	6,453	8,169		3,011		353	1,765	5,129	41	13,339	19,792
La Paz	17,415			20,801		417	6,470	27,688	286	27,974	45,389
Loreto	7,457			8,485		161	2,647	11,293	117	11,410	18,867
Prosperidad (Capital)	55,688	654								654	56,342
Rosario		669	2,213			931	2,941	6,085	49	6,803	6,803
San Francisco	939	1,283	3,915			128	2,059	6,102	86	7,471	8,410
San Luis	7,637	5,280		547			294	841	8	6,129	13,766
Santa Josefa	10,344		19,233			385	9,117	28,735	425	29,160	39,504
Sibagat	12,591	15,349								15,349	27,940
Talacogon	8,334	2,053		8,758		161	2,647	11,566	120	13,739	22,073
Trento	17,408	1,237	2,723			1,124	3,823	7,670	60	8,967	26,375
Veruela	20,964	2,002	28,083			578	13,529	42,190	620	44,812	65,776
Provincial Total	195,386	42,625	58,350	44,886		4,880	48,822	156,968	1,906	201,499	396,885

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

S

Unit: P 1,000 Pesos

Municipality	Urban Water Supply Level III	Rural Water Supply								
		New System								
		Level I						Level I Rehabili-tation	Total	Grand Total
		Deep Well			Shallow Well	Spring Dev.	Sub-total			
		40 m	80 m	120 m						
Bayugan	154,250	33,359			6,292	2,059	41,710	737	42,447	196,697
Bunawan	32,283		16,969		1,284	1,471	19,724	233	19,957	52,240
Esperanza	13,182		33,665		3,916	1,765	39,346	462	39,808	52,990
La Paz	23,440		37,771		770	6,470	45,011	519	45,530	68,970
Loreto	18,778		26,549		514	2,647	29,710	365	30,075	48,853
Prosperidad (Capital)	29,542			95,808	1,926		97,734	910	98,644	128,186
Rosario	3,213	7,148			3,146	2,941	13,235	158	13,393	16,606
San Francisco	73,169	27,662			867	2,059	29,988	598	30,586	103,755
San Luis	16,160		27,370		546	294	28,210	376	28,586	44,746
Santa Josefa	19,862	42,890			899	9,117	52,906	948	53,854	73,716
Sibagat	21,469				2,151		2,151		2,151	23,620
Talacogon	80,005		22,717		449	2,647	25,813	312	26,125	106,130
Trento	54,765	7,829			3,403	3,823	15,055	173	15,228	69,993
Veruela	21,686	64,506			1,348	13,529	79,383	1,425	80,808	102,494
Provincial Total	561,804	182,794	165,041	95,808	27,511	48,822	519,976	7,216	527,192	182,829

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

S

Unit: P 1,000 Pesos

Municipality	Urban Sanitation									Rural Sanitation							
	Household Toilets									Household Toilets							
	Flush	Pour Flus	VIP/ Dry	Sub-total of Cons-truction Cost	Sub-total of Public Invest-ment Cost	Public School Toilets	Public Toilets	Total Cons-tructi on Cost	Total Public Invest-ment Cost	Flush	Pour Flush	VIP/ Dry	Sub-total of Cons-truction Cost	Sub-total of Public Invest-ent Cost	Public School Toilets	Total Cons-tructio n Cost	Total Public Invest-ment Cost
Bayugan	27,434		4,759	32,193		10,971	688	43,852	11,659	7,242		19,153	26,395		15,873	42,268	15,873
Bunawan	9,841	4,61	1,346	15,802	53	3,099		18,901	3,152			5,333	5,333		4,503	9,836	4,503
Esperanza	4,132		462	4,594		1,231	344	6,169	1,575	8,946		12,599	21,545		11,842	33,387	11,842
La Paz	3,664	3,01	792	7,472	35	1,599	344	9,415	1,978		9,256	6,072	15,328	106	3,873	19,201	3,979
Loreto	4,878		535	5,413		1,734	688	7,835	2,422			6,191	6,191		6,915	13,106	6,915
Prosperidad	10,906		2,673	13,579		6,562	688	20,829	7,250	16,082		14,942	31,024		13,328	44,352	13,328
Rosario	3,195		363	3,558		794	688	5,040	1,482			7,993	7,993		6,570	14,563	6,570
San Francisco		9,47	3,056	12,533	109	7,938	1,032	21,503	9,079	10,437	3,042	9,702	23,181	35	8,916	32,097	8,951
San Luis	2,087	2,21	548	4,845	25	1,280	344	6,469	1,649		9,555	5,966	15,521	110	4,642	20,163	4,752
Santa Josefa	5,495	1,22	647	7,364	14	1,492		8,856	1,506		17,251	8,950	26,201	198	7,180	33,381	7,378
Sibagat	3,791		898	4,689		2,407	344	7,440	2,751	6,177		7,062	13,239		6,718	19,957	6,718
Talacogon	8,882	6,79	2,218	17,899	78	5,735	2,753	26,387	8,566			4,105	4,105		3,883	7,988	3,883
Trento	14,484		2,013	16,497		5,114	1,032	22,643	6,146	8,690		8,072	16,762		6,965	23,727	6,965
Veruela	7,540	3,00	878	11,421	35	1,608	1,032	14,061	2,675		21,320	13,972	35,292	245	8,930	44,222	9,175
Provincial Total	106,329	30,3	21,188	157,85	349	51,564	9,977	219,40	61,890	57,574	60,424	130,11	248,11	694	110,13	358,248	110,832

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

S

Unit: 1,000 Pesos

Municipality	Urban Sanitation										Rural Sanitation							
	Household Toilets										Household Toilets							
	Flush	Pour Flush	VIP/ Dry	Sub-total of Cons-truction Cost	Sub-total of Public Invest-ment Cost	Public School Toilets	Public Toilets	Total Cons-truc-	Total Public Invest-ment Cost	Urban Sewer age	Flush	Pour Flush	VIP/ Dry	Sub-total of Costruc tion Cost	Sub-total of Public Invest-ment Cost	Public School Toilets	Total Cons-truc tion Cost	Total Public Invest-ment Cost
Bayugan	98,470	22,581		121,051	260	16,899		137,950	17,159	213,051		107,549		107,549	1,237	24,451	132,000	25,688
Bunawan	25,091	4,693		29,784	54	4,782		34,566	4,836	56,174		26,767		26,767	308	6,949	33,716	7,257
Esperanza	9,713	2,288		12,001	26	1,843		13,844	1,869			69,771		69,771	802	17,730	87,501	18,532
La Paz	24,815	8,892		33,707	102	2,452		36,159	2,564	47,822		42,749		42,749	549	5,959	53,708	6,508
Loreto	11,055	2,522		13,577	25	2,611		16,188	2,649			31,655		31,655	364	10,413	42,068	10,777
Prosperidad	53,570	11,661		65,231	134	10,234	1,032	76,497	11,400	117,071	28,393	64,571		92,964	743	20,788	113,752	21,531
Rosario	6,220	910		7,130	10	1,152		8,282	1,152		29,501	19,552		49,053	225	9,532	58,585	9,757
San Francisco	60,684	12,974		73,658	149	12,372	344	86,374	12,865	133,028	26,625	33,150		59,775	381	13,896	73,671	14,277
San Luis	12,311	3,224		15,535	37	1,903	344	17,782	2,284			31,928		31,928	367	6,895	38,823	7,262
Santa Josefa	18,829	6,422		25,251	74	2,935		28,186	3,009	36,953		75,803		75,803	872	14,121	89,924	14,993
Sibagat	18,425	4,160		22,585	48	3,684		26,269	3,732	39,968		38,051		38,051	438	10,278	48,329	10,716
Talacogon	50,651	13,455		64,106	155	8,957	1,032	74,095	10,144	106,273		27,508		27,508	316	6,065	33,573	6,381
Trento	40,768	9,009		49,777	104	8,007	688	58,472	8,799	88,775	1,960	37,336		39,296	429	10,905	50,201	11,334
Veruela	25,219	8,450		33,669	97	2,966		36,635	3,063	49,728		117,247		117,247	1,348	16,468	133,715	17,816
Provincial Total	455,821	111,241		567,062	1,279	80,807	3,440	651,309	85,526	888,849	86,479	728,637		815,116	8,379	174,450	989,566	182,829

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

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	
Bayugan	N.A.	41	16	35	0.63	0.60	0.40	0.40	0.19	0.18	0.08	0.08	0.53	12
Bunawan	N.A.	43	52	22	0.90	0.60	1.00	0.20	0.27	0.18	0.20	0.04	0.69	7
Esperanza	N.A.	53	37	42	1.00	0.80	0.80	0.60	0.30	0.24	0.16	0.12	0.82	5
La Paz	N.A.	88	40	53	1.00	1.00	0.80	0.80	0.30	0.30	0.16	0.16	0.92	1
Loreto	N.A.	55	34	21	1.00	0.80	0.80	0.20	0.30	0.24	0.16	0.04	0.74	6
Prosperidad (Capital)	N.A.	27	20	31	1.00	0.20	0.40	0.40	0.30	0.06	0.08	0.08	0.52	13
Rosario	N.A.	55	17	12	0.27	0.80	0.40	0.20	0.08	0.24	0.08	0.04	0.44	14
San Francisco	N.A.	43	22	50	0.40	0.60	0.60	0.60	0.12	0.18	0.12	0.12	0.54	11
San Luis	N.A.	54	45	59	0.90	0.80	1.00	0.80	0.27	0.24	0.20	0.16	0.87	4
Santa Josefa	N.A.	82	33	53	0.87	1.00	0.80	0.80	0.26	0.30	0.16	0.16	0.88	3
Sibagat	N.A.	31	27	27	1.00	0.40	0.60	0.20	0.30	0.12	0.12	0.04	0.58	10
Talacogon	N.A.	77	37	22	0.46	1.00	0.80	0.20	0.14	0.30	0.16	0.04	0.64	8
Trento	N.A.	59	19	26	0.90	0.80	0.40	0.20	0.27	0.24	0.08	0.04	0.63	9
Veruela	N.A.	83	45	48	1.00	1.00	1.00	0.60	0.30	0.30	0.20	0.12	0.92	1
Provincial Total	N.A.	53	27	36										

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

(Unit:1,000 Pesos)

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		Nos. 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	Ttl Related					Prov.	Muni.	Public Mkt.	Bus Trm.	Public School	Ttl.	Ttl Related			
Bayugan	40	1st	0	1,418	2,090	13	13	7	0	0	0	0	0	2,111	3,111	0	0	31	31	0	0	0	0
Bunawan	8	3rd	0	668	1,216	12	7	5	0	0	0	0	8	599	1,090	0	0	11	11	11	599	1,090	1,688
Esperanza	46	1st	0	1,774	3,388	11	11	6	0	0	0	0	0	1,575	3,008	0	0	29	29	0	0	0	0
La Paz	14	2nd	0	3,720	5,038	76	13	22	0	0	0	0	0	529	717	0	0	10	10	0	0	0	0
Loreto	16	1st	0	1,517	4,355	31	5	9	0	0	0	0	0	919	2,639	0	0	18	18	0	0	0	0
Prosperidad (Capital)	31	1st	0	87	64	0	0	0	0	0	0	0	0	1,772	1,301	0	0	44	44	0	0	0	0
Rosario	10	4th	0	905	2,475	13	29	10	0	0	0	0	10	874	2,390	0	0	14	14	14	874	2,390	3,263
San Francisco	22	1st	0	993	2,093	23	4	7	0	0	0	0	0	1,190	2,508	0	0	34	34	0	0	0	0
San Luis	23	2nd	0	815	2,078	2	0	1	0	0	0	0	0	632	1,611	0	0	15	15	0	0	0	0
Santa Josefa	10	5th	10	3,877	3,937	113	12	31	156	3,877	3,937	7,815	10	981	996	0	0	23	23	23	981	996	1,977
Sibagat	23	4th	0	2,041	2,023	0	0	0	0	0	0	0	23	893	885	0	0	23	23	23	893	885	1,779
Talacogon	11	1st	0	1,827	1,931	32	5	9	0	0	0	0	0	516	546	0	0	10	10	0	0	0	0
Trento	15	2nd	0	1,192	1,650	16	35	13	0	0	0	0	0	926	1,282	0	0	8	8	0	0	0	0
Veruela	19	3rd	0	5,959	3,559	165	18	46	0	0	0	0	19	1,220	729	0	0	33	33	33	1,220	729	1,949
Total	288		10	26,793	35,897	507	152	166	156	3,877	3,937	7,815	70	14,737	22,812	0	0	303	303	104	4,567	6,090	10,657
Total Available IRA Fund			18,471																				

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 Tiolets				Prov. Avail. IRA	Mun. Avail. IRA	Sub-total Avail. IRA
				Prov.	Muni.	Public Mkt.	Bus Term.	Public School	Ttl Related			
Bayugan	3	1st	0	1,550	2,285	0	0	21	0	0	0	0
Bunawan	2	3rd	2	419	763	0	0	7	0	0	0	0
Esperanza	1	1st	0	209	400	0	1	3	0	0	0	0
La Paz	1	2nd	0	263	356	0	1	4	0	0	0	0
Loreto	1	1st	0	322	924	0	1	5	0	0	0	0
Prosperidad (Capital)	1	1st	0	964	708	1	1	21	0	0	0	0
Rosario	1	4th	1	197	539	0	1	2	1	196	538	734
San Francisco	5	1st	0	1,207	2,544	2	0	31	0	0	0	0
San Luis	1	2nd	0	219	559	1	0	4	0	0	0	0
Santa Josefa	1	5th	1	200	203	0	0	5	0	0	0	0
Sibagat	1	4th	1	366	363	0	0	8	0	0	0	0
Talacogon	4	1st	0	1,139	1,204	3	1	16	0	0	0	0
Trento	1	2nd	0	817	1,131	2	0	6	0	0	0	0
Veruela	1	3rd	1	356	212	1	1	6	2	354	212	566
Total	24		6	8,229	12,191	10	7	139	3	550	750	1,300
Total Available IRA Fund			1,300									

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	
Bayugan	0	0	0	0
Bunawan	0	0	1,688	1,688
Esperanza	0	0	0	0
La Paz	0	0	0	0
Loreto	0	0	0	0
Prosperidad (Capi	0	0	0	0
Rosario	0	734	3,263	3,997
San Francisco	0	0	0	0
San Luis	0	0	0	0
Santa Josefa	7,815	0	1,977	9,792
Sibagat	0	0	1,779	1,779
Talacogon	0	0	0	0
Trento	0	0	0	0
Veruela	0	566	1,949	2,515
Total	7,815	1,300	10,657	19,771

Table 11.5.4 FIRR for Level I Rural WaterSupply

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	23	2	6	5,743,400		0	5,743,431	2,465	70	0	0	(5,743,431)
2	34	4	10	8,856,200		0	8,856,248	2,465	70	0	2,070,600	(6,785,648)
3	34	4	9	8,562,100		57,434	8,619,581	2,465	70		2,070,600	(6,548,981)
4	23	2	6	5,743,400		145,996	5,889,427	2,465	70		2,070,600	(3,818,827)
5						231,617	231,617	2,465	70		2,070,600	1,838,983
6						289,051	289,051	2,465	70		2,070,600	1,781,549
7						289,051	289,051	2,465	70		2,070,600	1,781,549
8						289,051	289,051	2,465	70		2,070,600	1,781,549
9						289,051	289,051	2,465	70		2,070,600	1,781,549
10						289,051	289,051	2,465	70		2,070,600	1,781,549
11						289,051	289,051	2,465	70		2,070,600	1,781,549
12					929,000	289,051	1,218,051	2,465	70		2,070,600	852,549
13					1,406,800	289,051	1,695,851	2,465	70		2,070,600	374,749
14					1,406,800	289,051	1,695,851	2,465	70		2,070,600	374,749
15					929,000	289,051	1,218,051	2,465	70		2,070,600	852,549
16						289,051	289,051	2,465	70		2,070,600	1,781,549
17						289,051	289,051	2,465	70		2,070,600	1,781,549
18						289,051	289,051	2,465	70		2,070,600	1,781,549
19						289,051	289,051	2,465	70		2,070,600	1,781,549
20						289,051	289,051	2,465	70		2,070,600	1,781,549
								2,465	70		2,070,600	2,070,600

TOTAL	3,064,331
FIRR	1.2%
NPV	720,177

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	28,734,900	0	5,746,980	8,620,470	8,620,470	5,746,980
2. Sanitation	30,085,750	0	6,017,150	9,025,725	9,025,725	6,017,150
3. Land Acquisition	935,000	0	187,000	280,500	280,500	187,000
B. Equip./Logistic Support	895,300	0	895,300	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.	6,573,122	2,629,249	1,314,624	1,314,624	657,312	657,312
D. Instiutional Devt.						
1. Capacity Enhanc. Prog.	3,200,000	960,000	960,000	640,000	320,000	320,000
2. Commu. Manag. Prog.	818,520	245,556	245,556	163,704	81,852	81,852
3. Health & Hygiene Educ.	136,800	41,040	41,040	27,360	13,680	13,680
4. Water Quality Surveil.	53,200	15,960	15,960	10,640	5,320	5,320
5. NGO Assistance	91,200	27,360	27,360	18,240	9,120	9,120
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)	7,387,179	542,716	1,581,097	2,034,126	1,913,398	1,315,841
Total (A+B+C+D+E+F)	81,258,971	5,969,881	17,392,067	22,375,390	21,047,377	14,474,256
F. Others						
1. Price Contingency	30,880,501	2,268,709	6,609,433	8,503,224	7,998,545	5,500,590
2. Value Added Tax (VAT)	3,143,618	230,953	672,837	865,623	814,247	559,957
Grand Total	115,283,090	8,469,543	24,674,337	31,744,237	29,860,170	20,534,802

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	113	12	31
Nos. of HHs to be Served	1,785	190	490
Reconstruction Cost (Peso)			
Unit Cost	170,200	32,100	294,100
Ttl. Reconst. Cost	19,232,600	385,200	
Ttl. Reconst. Cost/year	961,630	38,520	
Cost per HH/year	539	203	
Rehabilitation Cost (Peso)			
Unit Cost	37,600		
Ttl. Rehab. Cost	4,248,800		
Ttl. Rehab. Cost/year	424,880		
Cost per HH/year	238		
Recurrent Cost for O&M (Peso)			
Cost per HH/year	100	50	50
O&M Cost Total (Peso)			
Cost per HH/year	877	253	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	73	21	4
Proportion (Mean)	1.3%	0.4%	0.1%
Proportion (Median)	1.7%	0.5%	0.1%

Table 11.6.4 Family Income (Unit: Pesos)

Annual [1]		Monthly [2]	
Mean	Median	Mean	Median
46,264	33,467	5,785	4,186

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	104	344,100	274,100	1,425,320

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.

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	
3	0	344,100	274,100	51,615

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 _____

Form M-1

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