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 equipm	*		*				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 (Gravel Packed Deep Well - 40m Depth)

(Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
A. Mobilization/Demobilization/Site Preparation		**L.S.**		**15,000**
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
(4) Casing Centralizer	2	set	1,925	3,850
2. Labor, Fuel, Lubricant and others				
Well Drilling for 40 m depth at 200mm borehole	40	m	2,460	98,400
3. Borehole Logging	1	no	5,000	5,000
4. Freight Cost (11% of Materials)		L.S.		5,301
Sub-Total of B				**156,892**
C. Well Development and Pumping Test				
Well Development	12	hr.	2,353	28,236
Pumping Test	6	hr.	1,472	8,832
Sub-Total of C				**37,068**
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 Riser Pipe and Pump Rod	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				
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)				24,674
Overhead Expense (13% of A,B,C & D)				32,076
VAT (10% of Labor, Profit & Overhead Expense)				16,516
Sub-Total of E				**41,190**
Total of Construction Cost (A+B+C+D+E)				**259,693**
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				**266,437**
SAY				**266,400**

Note: L.S. - Lump Sum

Source: DPWH standard price in 1994, LWUA Water Supply Feasibility Study Methodlogy Manual 1996

Unit Cost: Adjusted to 1997 Price Level

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

(Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
A. Mobilization/Demobilization		L.S.		15,000
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
(4) Casing Centralizer	0	set	1,925	0
2. Labor, Fuel, Lubricant and others				
Well Drilling for 40 m depth at 150mm borehole	40	m	1,534	61,360
3. Borehole Logging	1	no	5,000	5,000
4. Freight Cost (11% of Materials)		L.S.		4,878
Sub-Total of B				**115,579**
C. Well Development and Pumping Test				
Well Development	6	hr.	2,353	14,118
Pumping Test	6	hr.	1,472	8,832
Sub-Total of C				**22,950**
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 Riser Pipeand Pump Rod	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 & D)				19,010
Overhead Expense (13% of A,B,C & D)				24,713
VAT (10% of Labor, Profit & Overhead Expense)				11,477
Sub-Total of E				**30,487**
Total of Construction Cost (A+B+C+D+E)				**206,470**
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				**213,214**
SAY				**213,200**

Note: L.S. - Lump Sum

Source: DPWH standard price in 1994, LWUA Water Supply Feasibility Study Methodlogy Manual 1996

Unit Cost: Adjusted to 1997 Price Level

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

(Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
A. Mobilization/Demobilization/Site Preparation		**L.S.**		**15,000**
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
(4) Casing Centralizer	2	set	1,925	3,850
2. Labor, Fuel, Lubricant and others				
Well Drilling for 40 m depth at 200mm borehole	80	m	2,460	196,800
3. Borehole Logging	1	no	5,000	5,000
4. Freight Cost (11% of Materials)		L.S.		9,439
Sub-Total of B				**297,052**
C. Well Development and Pumping Test				
Well Development	12	hr.	2,353	28,236
Pumping Test	6	hr.	1,472	8,832
Sub-Total of C				**37,068**
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 Riser Pipe and Pump Rod	12	pcs.	1,880	22,560
(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				
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				37,162
2. Labor (40% of D-1.)				14,865
3. Freight Cost (11% of Materials)		L.S.		4,088
Sub-Total of D				**56,115**
E. Indirect Cost				
Profit (10% of A, B, C & D)				40,524
Overhead Expense (13% of A,B,C & D)				52,681
VAT (10% of Labor, Profit & Overhead Expense)				30,487
Sub-Total of E				**71,011**
Total of Construction Cost (A+B+C+D+E)				**448,010**
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				**454,754**
SAY				**454,800**

Note: L.S. - Lump Sum

Source: DPWH standard price in 1994, LWUA Water Supply Feasibility Study Methodlogy Manual 1996

Unit Cost: Adjusted to 1997 Price Level

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

(Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
A. Mobilization/Demobilization/Site Preparation		L.S.		**15,000**
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
(4) Casing Centralizer	0	set	1,925	0
2. Labor, Fuel, Lubricant and others				
Well Drilling for 80 m depth at 150mm borehole	80	m	1,534	122,720
3. Borehole Logging	1	no	5,000	5,000
4. Freight Cost (11% of Materials)		L.S.		9,016
Sub-Total of B				**218,699**
C. Well Development and Pumping Test				
Well Development	6	hr.	2,353	14,118
Pumping Test	6	hr.	1,472	8,832
Sub-Total of C				**22,950**
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 Riser Pipe and Pump Rod	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	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				27,980
2. Labor (40% of D-1.)				11,192
3. Freight Cost (11% of Materials)		L.S.		3,078
Sub-Total of D				**42,250**
E. Indirect Cost				
Profit (10% of A, B, C & D)				29,890
Overhead Expense (13% of A,B,C & D)				38,857
VAT (10% of Labor, Profit & Overhead Expense)				20,266
Sub-Total of E				**50,156**
Total of Construction Cost (A+B+C+D+E)				**334,937**
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				**341,681**
SAY				**341,700**

Note: L.S. - Lump Sum

Source: DPWH standard price in 1994, LWUA Water Supply Feasibility Study Methodlogy Manual 1996

Unit Cost: Adjusted to 1997 Price Level

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

(Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
A. Mobilization/Demobilization/Site Preparation		L.S.		15,000
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
(4) Casing Centralizer	2	set	1,925	3,850
2. Labor, Fuel, Lubricant and others				
Well Drilling for 120 m depth at 200mm borehole	120	m	2,460	295,200
3. Borehole Logging	1	no	5,000	5,000
4. Freight Cost (11% of Materials)		L.S.		13,578
Sub-Total of B				437,213
C. Well Development and Pumping Test				
Well Development	12	hr.	2,353	28,236
Pumping Test	6	hr.	1,472	8,832
Sub-Total of C				37,068
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 Riser Pipe and Pump Rod	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				
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 & D)				55,522
Overhead Expense (13% of A,B,C & D)				72,178
VAT (10% of Labor, Profit & Overhead Expense)				44,037
Sub-Total of E				99,559
Total of Construction Cost (A+B+C+D+E)				626,539
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				633,283
SAY				633,300

Note: L.S. - Lump Sum

Source: DPWH standard price in 1994, LWUA Water Supply Feasibility Study Methodlogy Manual 1996

Unit Cost: Adjusted to 1997 Price Level

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

(Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
A. Mobilization/Demobilization/Site Preparation		**L.S.**		**15,000**
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
(4) Casing Centralizer	0	set	1,925	0
2. Labor, Fuel, Lubricant and others				
Well Drilling for 120 m depth at 150mm borehole	120	m	1,534	184,080
3. Borehole Logging	1	no	5,000	5,000
4. Freight Cost (11% of Materials)		L.S.		13,154
Sub-Total of B				**321,819**
C. Well Development and Pumping Test				
Well Development	6	hr.	2,353	14,118
Pumping Test	6	hr.	1,472	8,832
Sub-Total of C				**22,950**
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 Riser Pipe and Pump Rod	15	pcs.	1,880	28,200
(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				41,140
2. Labor (40% of D-1.)				16,456
3. Freight Cost (11% of Materials)		L.S.		4,525
Sub-Total of D				**62,121**
E. Indirect Cost				
Profit (10% of A, B, C & D)				42,189
Overhead Expense (13% of A,B,C & D)				54,846
VAT (10% of Labor, Profit & Overhead Expense)				29,757
Sub-Total of E				**71,946**
Total of Construction Cost (A+B+C+D+E)				**479,718**
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				**486,462**
SAY				**486,500**

Note: L.S. - Lump Sum

Source: DPWH standard price in 1994, LWUA Water Supply Feasibility Study Methodlogy Manual 1996

Unit Cost: Adjusted to 1997 Price Level

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

(Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
A. Mobilization/Demobilization		**L.S.**		**5,000**
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.**		**28,000**
D. Indirect Cost				
Profit (10% of A, B & C)				5,223
Overhead Expense (13% of A,B & C)				6,790
VAT (10% of Profit & Labor)				3,832
Sub-Total of D				**15,845**
Total of Construction Cost (A+B+C+D)				**68,072**
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				**71,236**
SAY				**71,200**

Note: L.S. - Lump 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.**		**3,000**
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
(5) Casing Centralizer	2	set	725	1,450
2. Labor, Fuel, Lubricant and others				
Well Drilling for 18 m depth at 150mm borehole	18	m	1,534	27,612
3. Freight Cost (11% of Materials)		L.S.		415
Sub-Total of B				**33,253**
C. Well Development	4	hr.	1,482	**5,928**
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) 50mm Jetmatic Handpump	1	set	2,623	2,623
(2) 50mm Riser Pipe and Foot Valve	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	4	bag	128	512
(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				4,994
2. Labor (40% of D-1.)				1,998
3. Freight Cost (11% of Materials)		L.S.		549
Sub-Total of D				**7,541**
E. Indirect Cost				
Profit (10% of A to D)				4,972
Overhead Expense (13% of A to D)				6,464
VAT (10% of Profit & Overhead Expense)				1,144
Sub-Total of E				**6,116**
Total of Construction Cost (A+B+C+D+E)				**55,838**
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				**60,932**
SAY				**60,900**

Note: L.S. - Lump Sum

Source: DPWH standard price in 1994, LWUA Water Supply Feasibility Study Methodlogy Manual 1996

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.		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 push 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. Elbow (90 deg.)	3	nos.	83	249
5) 63mm dia. Elbow (45 deg.)	1	pc.	82	82
6) 50mm dia. Gate Valve	2	pcs.	841	1,682
7) 50mm dia. x 1m Stand Pipe	1	pc.	165	165
8) 63mm x 50mm GI Nipple	1	pc.	115	115
9) 50mm dia. Union Patente	3	pcs.	179	537
10) 63mm x 50mm dia. Reducing Socket	2	pcs.	106	212
11) 50mm dia. GI Elbow (90 deg.)	2	pcs.	74	148
12) 63mm x 50mm dia. Socket Adaptor	2	pcs.	156	312
13) 50mm dia. GI Gate Valve	2	pcs.	739	1,478
14) 13mm dia. Brass Faucet	2	pcs.	45	90
Sub-Total of Materials				302,057
(2) Labor (35% of Material Cost)		L.S.		105,720
(3) Freight Cost (11% of Materials)		L.S.		33,226
Sub-Total of C				**441,003**
D. Indirect Cost				
1. Transmission Main				
(1) Profit (10% of C)				44,100
(2) Overhead Expense (13% of C)				57,330
(3) VAT (10% of Profit, Overhead Expense and Labor)				20,715
2. Source Facilities				
(1) Profit (10% of A, B)				18,556
(2) Overhead Expense (13% ofA, B)				6,185
(3) VAT (10% of Profit, Overhead Expense and Labor)				3,871
Sub-Total of D				**150,757**
Total Construction Cost (A+B+C+D)				**653,614**
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				**670,258**
SAY				**670,300**

Note: L.S. - Lump Sum

Source: DPWH standard price in 1994, LWUA Water Supply Feasibility Study Methodlogy Manual 1996

Unit Cost: Adjusted to 1997 Price Level

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

sheet 1 of 2 (Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
A. Mobilization/Demobilization		L.S.		5,000
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)	500	pcs.	896	448,000
2) 63mm dia. Tee	1	no.	97	97
3) Solvent Cement	40	cans	50	2,000
4) 63mm dia. x 50mm 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				453,652
(2) Labor (35% of Material Cost)		L.S.		158,778
(3) Freight Cost (11% of Materials)		L.S.		49,902
Sub-Total of Transmission Main				662,332
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				789,371

Table 10.2.8 Unit Cost of Level II (600 Service Population) (Cont'd.)

Sheet 2 of 2 (Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
D. Indirect Cost				
1. Transmission Main				
(1) Profit (10% of C-1)				66,233
(2) Overhead Expense (13% of C-1)				86,103
(3) VAT (10% of Profit, Overhead Expense and Labor)				31,111
2. Source Facilities and Distribution Pipeline				
(1) Profit (10% of A, B, C-2)				19,029
(2) Overhead Expense (13% of A,B and C-2)				24,738
(3) VAT (10% of Profit, Overhead Expense and Labor)				8,819
Sub-Total of D				**236,033**
Total Construction Cost (A+B+C+D)				**1,088,658**
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				**1,105,302**
Unit Cost per Person Served				**1,842**
				1,800

Note: L.S. - Lump Sum

Source: DPWH standard price in 1994, LWUA Water Supply Feasibility Study Methodlogy Manual 1996

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. Source Development and Storage				
1. Deep Well	1	No.	1,770,000	1,770,000
2. 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
				4,400
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)

(Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
A. Mobilization/Demobilization		**L.S.**		**330,000**
B. Source Development and Storage				
1. Deep Well	1	No.	1,770,000	1,770,000
2. 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
				3,300
For Expansion of Existing System (Exclude F.)				3,133
				3,100

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 10.2.11 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. Source Development and Storage				
1. Deep Well	2	No.	1,770,000	3,540,000
2. 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
				3,200
For Expansion of Existing System (Exclude F.)				3,083
				3,100

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 10.2.12 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 of 5 (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 of 5 (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 of 5 (Cost: Peso)

Description	Quantity	Unit	Unit Cost	Cost
2. Labor (30% of G-1)		L.S.		4,592
Sub-Total of G				**19,897**
H. 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 of 5 (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 of 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 of 5 (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 of 5 (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 of 5

(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**
H. 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 of 5

(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 of 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

Table 10.3.1 Construction Cost of Water Supply Facilities Required for Phase I (2003)

Unit: P 1,000

Name of 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			
			40 m	80 m	120 m						
Alubijid	2,899		4,219			61	1,341	5,621	114	5,735	8,633
Balingasag	18,383	4,995	12,130			1,827	6,033	19,990	328	25,312	43,695
Balingoan	1,882										1,882
Binuangan	1,107										1,107
Claveria	20,899			2,695		487	1,341	4,522	43	4,565	25,464
El Salvador	2,948		5,274			1,218	2,681	9,173	142	9,316	12,264
Gingoog City	16,252										16,252
Gitagum		895								895	895
Initao			2,901			122	670	3,693	78	3,771	3,771
Jasaan	9,717		1,319				670	1,989	36	2,024	11,741
Kinoguitan	488		1,846				670	2,516	50	2,566	3,054
Lagonglong	5,203		3,164			974	2,011	6,150	85	6,235	11,438
Laguindingan											
Libertad	1,636	1,920	2,637			365	1,341	4,343	71	6,335	7,970
Lugait											
Magsaysay	275			38,174			6,703	44,877	605	45,482	45,756
Manticao	2,374	923	2,110			731	1,341	4,181	57	5,161	7,535
Medina			1,055			244	670	1,969	28	1,997	1,997
Naawan	2,025		2,373			1,218	2,011	5,602	64	5,666	7,692
Opol	18,889		13,449			2,071	6,703	22,222	363	22,585	41,474
Salay			2,373			61	670	3,105	64	3,169	3,169
Sugbongcogon											
Tagoloan	14,965										14,965
Talisayan	4,379		8,175			731	3,352	12,257	221	12,478	16,856
Villanueva	12,075		14,504				4,022	18,525	392	18,917	30,991
Provincial Total	**136,394**	**8,734**	**77,528**	**40,868**		**10,109**	**42,229**	**170,734**	**2,741**	**182,209**	**318,603**

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

Unit: P 1,000

Name of Municipality	Urban Water Supply Level III	Rural Water Supply								Grand Total
		New System Level I						Level I Rehabilitation	Total	
		Deep Well			Shallow Well	Spring Dev.	Subtotal			
		40 m	80 m	120 m						
Alubijid	16,121	25,843			609	1,341	27,792	698	28,490	44,611
Balingasag	33,703	22,678			3,410	6,033	32,121	612	32,734	66,437
Balingoan	7,765	3,000			122		3,122	78	3,200	10,965
Binuangan	6,134	3,428					3,428	93	3,521	9,654
Claveria	38,927		18,413		3,715	1,341	23,469	292	23,761	62,687
El Salvador	10,631	26,106			5,968	2,681	34,756	705	35,461	46,092
Gingoog City	55,754	36,391			914		37,304	983	38,287	94,040
Gitagum	1,917	10,548					10,548	285	10,833	12,750
Initao	531	12,130			670	670	13,470	328	13,798	14,329
Jasaan	68,671	24,788				670	25,458	669	26,127	94,799
Kinoguitan	5,638	15,295				670	15,965	413	16,378	22,015
Lagonglong	7,893	7,647			2,558	2,011	12,216	206	12,422	20,315
Laguindingan	3,209	14,767					14,767	399	15,166	18,374
Libertad	7,880	3,956			609	1,341	5,905	107	6,012	13,892
Lugait	5,301	7,120					7,120	192	7,312	12,613
Magsaysay	7,298		49,401			6,703	56,104	783	56,887	64,185
Manticao	16,146	10,021			3,410	1,341	14,772	271	15,042	31,188
Medina	4,041	9,493			2,192	670	12,356	256	12,612	16,653
Naawan	5,580	3,956			2,071	2,011	8,037	107	8,144	13,724
Opol	16,490	19,514			2,984	6,703	29,201	527	29,728	46,217
Salay	23,365	7,911			183	670	8,764	214	8,978	32,342
Sugbongcogon	16,646	3,428					3,428	93	3,521	20,166
Tagoloan	95,387									95,387
Talisayan	18,700	12,921			1,218	3,352	17,491	349	17,840	36,540
Villanueva	22,342	30,589				4,022	34,611	826	35,437	57,779
Provincial Total	**496,068**	**311,529**	**67,814**		**30,633**	**42,229**	**452,204**	**9,484**	**461,688**	**957,756**

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

Unit: P 1,000

Name of 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	Public School Toilets	Public Toilets	Total Cons-truction Cost	Total Public Invest-ment Cost	Flush	Pour Flush	VIP/Dry	Sub-total of Cons-truction Cost	Sub-total of Public Invest-ment	Public School Toilets	Total Cons-truction Cost	Total Public Invest-ment Cost
Alubijid	5,282		686	5,969		822	1,032	7,823	1,855		18,382	1,749	20,131	211	2,193	22,324	2,404
Balingasag	12,098	4,615	528	17,241	53	1,645	1,032	19,918	2,730		26,871		26,871	309	4,112	30,983	4,421
Balingoan	3,515		442	3,957		548	1,032	5,537	1,581		741	475	1,216	9	822	2,039	831
Binuangan	1,257		165	1,422			1,032	2,454	1,032			416	416		274	690	274
Claveria	21,215	6,825		28,040	78		1,032	29,072	1,111	8,989	36,517		45,506	420		45,506	420
El Salvador	6,688	91	832	7,611	1		1,032	8,643	1,033	10,416	21,216	3,227	34,859	244	548	35,407	792
Gingoog City		3,081		3,081	35	4,112	1,032	8,225	5,179			1,472	1,472		7,127	8,598	7,127
Gitagum	1,981		257	2,238			1,032	3,271	1,032		1,625	904	2,529	19		2,529	19
Initao	5,900		733	6,633			1,032	7,665	1,032		12,376		12,376	142	548	12,924	691
Jasaan	20,235		2,376	22,611		1,919	1,032	25,562	2,951	5,006	6,019	488	11,513	69	1,371	12,883	1,440
Kinoguitan	1,917		238	2,155			1,032	3,187	1,032		8,476	1,016	9,492	97		9,492	97
Lagonglong	3,664		455	4,119		548	1,032	5,700	1,581	4,814	4,420	1,492	10,725	51	1,919	12,644	1,970
Laguindingan	2,428			2,428			1,032	3,461	1,032	5,112			5,112			5,112	
Libertad	3,578		33	3,611			1,032	4,644	1,032		1,833	429	2,262	21		2,262	21
Lugait	5,964		792	6,756		1,096	1,032	8,885	2,129	2,961	5,629	917	9,507	65	1,371	10,878	1,435
Magsaysay	1,299	559		1,858	6		1,032	2,891	1,039		26,663		26,663	307	2,467	29,130	2,774
Manticao	2,002	949	40	2,991	11		1,032	4,023	1,043		8,697		8,697	100		8,697	100
Medina	5,410		673	6,083		548	1,032	7,664	1,581	5,858	6,513	1,214	13,585	75	1,371	14,955	1,445
Naawan			317	317			1,032	1,349	1,032		4,381		4,381	50		4,381	50
Opol	7,540	5,395	858	13,793	62	1,096	1,032	15,922	2,191		5,668		5,668	65	3,015	8,683	3,080
Salay		689	792	1,481	8	822	1,032	3,336	1,863		3,783	1,307	5,090	44	1,371	6,460	1,414
Sugbongcogon	3,472		429	3,901			1,032	4,933	1,032	1,172		363	1,535			1,535	
Tagoloan	41,918		5,920	47,839		6,853	1,032	55,723	7,885								
Talisayan	4,430	1,248	548	6,226	14		1,032	7,259	1,047		12,961	970	13,931	149		13,931	149
Villanueva	10,650	1,079	561	12,290	12	1,371	1,032	14,693	2,415	5,155	9,672		14,827	111	1,645	16,471	1,756
Provincial Total	**172,445**	**24,531**	**17,675**	**214,651**	**282**	**21,380**	**25,808**	**261,838**	**47,469**	**49,480**	**222,443**	**16,441**	**288,364**	**2,558**	**30,151**	**318,515**	**32,709**

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

Unit: P 1,000

Name of Municipality	Urban Sanitation										Rural Sanitation							
	Household Toilets					Public School Toilets	Public Toilets	Total Cons-truction Cost	Total Public Invest-ment Cost	Urban Sewerage	Household Toilets					Public School Toilets	Total Cons-truction Cost	Total Public Invest-ment Cost
	Flush	Pour Flush	VIP/Dry	Sub-total of Cons-truction Cost	Sub-total of Public Invest-ment						Flush	Pour Flush	VIP/Dry	Sub-total of Cons-truction Cost	Sub-total of Public Invest-ment			
Alubijid	13,909	1,001		14,910	12	822	1,032	16,765	1,866			32,877		32,877	378	7,127	40,004	7,505
Balingasag	26,710	1,326		28,036	15	822	1,032	29,891	1,870	57,466		59,254		59,254	681	13,705	72,959	14,386
Balingoan	7,050			7,050			1,032	8,083	1,032			5,993		5,993	69	1,645	7,638	1,714
Binuangan	3,238	351		3,589	4		1,032	4,621	1,036			6,084		6,084	70	1,371	7,455	1,440
Claveria	47,052	2,847		49,899	33	1,645	1,032	52,576	2,710	100,616	30,906	23,621		54,527	272	10,964	65,491	11,236
El Salvador	17,104	2,288		19,392	26	822	1,032	21,247	1,881		13,014	56,758		69,772	653	11,786	81,559	12,439
Gingoog City	13,675	18,200		31,875	209	1,645	1,032	34,552	2,886	129,327	78,448	25,571		104,019	294	21,106	125,125	21,400
Gitagum	4,324	91		4,415	1		1,032	5,447	1,033			13,572		13,572	156	3,015	16,587	3,171
Initao	10,309			10,309			1,032	11,342	1,032			20,696		20,696	238	5,756	26,452	5,994
Jasaan	55,231	7,878		63,109	91	2,741	1,032	66,882	3,864	112,603	21,066	19,734		40,800	227	6,304	47,104	6,531
Kinoguitan	5,304	871		6,175	10		1,032	7,207	1,042			20,982		20,982	241	3,837	24,819	4,079
Lagonglong	8,627	793		9,420	9		1,032	10,452	1,041		18,169	15,665		33,834	180	5,482	39,316	5,662
Laguindingan	5,900	585		6,485	7		1,032	7,517	1,039		19,064	16,146		35,210	186	5,756	40,966	5,942
Libertad	7,072			7,072			1,032	8,104	1,032			9,646		9,646	111	2,193	11,839	2,304
Lugait	12,780	13		12,793	0	274	1,032	14,099	1,307		7,711	3,315		11,026	38	2,741	13,767	2,779
Magsaysay	3,515	208		3,723	2		1,032	4,755	1,035			40,248		40,248	463	9,319	49,567	9,782
Manticao	15,080	1,573		16,653	18	548	1,032	18,234	1,599			30,875		30,875	355	6,030	36,905	6,385
Medina	11,651	520		12,171	6		1,032	13,203	1,038		3,941	26,741		30,682	308	6,304	36,986	6,612
Naawan	9,415			9,415			1,032	10,447	1,032			17,173		17,173	197	4,660	21,833	4,857
Opol	18,978	2,080		21,058	24	1,096	1,032	23,187	2,153	39,464		40,079		40,079	461	8,497	48,576	8,958
Salay	17,743			17,743			1,032	18,775	1,032			13,767		13,767	158	4,112	17,879	4,270
Sugbongcogon	8,712	1,092		9,804	13		1,032	10,836	1,045		4,729	4,355		9,084	50	1,645	10,728	1,695
Tagoloan	144,222	29,718		173,940	342	8,771	1,032	183,744	10,145	282,970								
Talisayan	9,990	702		10,692	8		1,032	11,724	1,040			28,717		28,717	330	6,304	35,021	6,635
Villanueva	32,759	5,642		38,401	65	1,919	1,032	41,352	3,016	65,627	22,898	23,010		45,908	265	7,401	53,308	7,665
Provincial Total	**510,348**	**77,779**		**588,127**	**894**	**21,106**	**25,808**	**635,040**	**47,808**	**788,072**	**219,944**	**554,879**		**774,823**	**6,381**	**157,059**	**931,882**	**163,440**

10.4 Costs of Sector Management

10.4.1 Breakdown of Community Development and Training Cost

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

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

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

Table 10.4.1 Breakdown of Community Development and Training Cost

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

11. FINANCIAL ARRANGEMENTS FOR MEDIUM-TERM DEVELOPMENT PLAN

11.3 Additional Funding Requirements

Percentages for Annual Investment

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

Table 11.3.1 Percentages for Annual Investment

Sub-Sector	Component	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 0.09 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.

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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	
Alubijid	N.A.	24	27	62	0.43	0.20	0.60	1.00	0.11	0.05	0.15	0.25	0.56	7
Balingasag	N.A.	45	46	45	0.76	0.60	1.00	0.60	0.19	0.15	0.25	0.15	0.74	3
Balingoan	N.A.	14	25	29	0.43	0.20	0.60	0.20	0.11	0.05	0.15	0.05	0.36	20
Binuangan	N.A.	11	20	27	0.59	0.20	0.40	0.20	0.15	0.05	0.10	0.05	0.35	21
Claveria	N.A.	9	26	60	0.53	0.20	0.60	0.80	0.13	0.05	0.15	0.20	0.53	9
El Salvador	N.A.	23	34	58	0.27	0.20	0.80	0.80	0.07	0.05	0.20	0.20	0.52	11
Gingoog City	N.A.	17	0	20	0.46	0.20	0.20	0.20	0.12	0.05	0.05	0.05	0.27	24
Gitagum	N.A.	24	24	37	0.20	0.20	0.60	0.40	0.05	0.05	0.15	0.10	0.35	22
Initao	N.A.	31	17	51	0.20	0.40	0.40	0.80	0.05	0.10	0.10	0.20	0.45	14
Jasaan	N.A.	15	26	40	0.36	0.20	0.60	0.40	0.09	0.05	0.15	0.10	0.39	19
Kinoguitan	N.A.	17	31	56	0.30	0.20	0.80	0.80	0.08	0.05	0.20	0.20	0.53	9
Lagonglong	N.A.	28	29	40	0.60	0.20	0.60	0.40	0.15	0.05	0.15	0.10	0.45	15
Laguindingan	N.A.	3	10	21	0.20	0.20	1.00	0.20	0.05	0.05	0.25	0.05	0.40	18
Libertad	N.A.	60	21	35	0.43	0.80	0.60	0.40	0.11	0.20	0.15	0.10	0.56	8
Lugait	N.A.	15	31	60	0.20	0.20	0.80	0.80	0.05	0.05	0.20	0.20	0.50	12
Magsaysay	N.A.	55	42	55	0.79	0.80	1.00	0.80	0.20	0.20	0.25	0.20	0.85	1
Manticao	N.A.	35	23	21	0.43	0.40	0.60	0.20	0.11	0.10	0.15	0.05	0.41	17
Medina	N.A.	23	37	47	0.20	0.20	0.80	0.60	0.05	0.05	0.20	0.15	0.45	13
Naawan	N.A.	39	6	26	0.43	0.40	0.20	0.20	0.11	0.10	0.05	0.05	0.31	23
Opol	N.A.	53	61	17	1.00	0.80	1.00	0.20	0.25	0.20	0.25	0.05	0.75	2
Salay	N.A.	29	24	41	0.32	0.20	0.60	0.60	0.08	0.05	0.15	0.15	0.43	16
Sugbongcogon	N.A.	1	5	23	0.29	0.20	0.20	0.20	0.07	0.05	0.05	0.05	0.22	25
Tagoloan	N.A.	100	22	100	0.27	1.00	0.60	1.00	0.07	0.25	0.15	0.25	0.72	4
Talisayan	N.A.	37	46	48	0.56	0.40	1.00	0.60	0.14	0.10	0.25	0.15	0.64	5
Villanueva	N.A.	44	23	42	0.47	0.60	0.60	0.60	0.12	0.15	0.15	0.15	0.57	6
Provincial Total	N.A.	28	23	40										

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.

0.25	0.25	0.25	0.25	Allocated Weight

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

(Unit:1,000 Pesos)

Name of City or Municipality	Ttl Nos. of Bgy. in Rural Area	Class	Rural Water Supply: Nos. of Related Bgy.	R. Water Supply Allotment of IRA: Prov.	Mun.	Nos. of LEVEL I Facilities: Deep Wells	Shallow Wells	Spring Dev't	Ttl Related	Prov. Avail. IRA	Mun. Avail. IRA	Sub-total Avail. IRA	Rural Sanitation: No.of Related Bgy.	Rural Sanitation Allotment of IRA: Prov.	Mun.	Number of Toilets: Public Mkt.	Bus Term.	School Toilet	Ttl.	Ttl Related	Prov. Avail. IRA	Mun. Avail. IRA	Sub-total Avail. IRA
Alubijid	14	5	14	865	1,849	16	1	2	19	865	1,849	2,714	14	416	775			8	8	8	416	775	1,191
Balingasag	22	4	0	3,801	3,286	46	30	9	0	0	0	0	22	719	574			15	15	15	719	574	1,292
Balingoan	7	5	0	0	0	0	0	0	0	0	0	0	7	180	482			3	3	3	180	482	662
Binuangan	7	6	0	0	0	0	0	0	0	0	0	0	7	97	243			1	1	1	97	243	340
Claveria	17	2	0	690	1,706	6	8	2	0	0	0	0	0	119	157			0	0	0	0	0	0
El Salvador	14	4	0	1,402	3,119	20	20	4	0	0	0	0	14	174	265			2	2	2	174	265	440
Gingoog City	49	1	0	0	0	0	0	0	0	0	0	0	0	0	10,421			26	26	0	0	0	0
Gitagum	10	5	0	42	1,267	0	0	0	0	0	0	0	0	1	26			0	0	0	0	0	0
Initao	15	5	15	571	2,834	11	2	1	14	571	2,834	3,405	15	159	519			2	2	2	159	519	678
Jasaan	8	3	0	309	614	5	0	1	0	0	0	0	8	272	437			5	5	5	272	437	708
Kinoguitan	14	5	14	390	1,663	7	0	1	8	390	1,663	2,054	0	70	63			0	0	0	0	0	0
Lagonglong	9	5	9	940	1,380	12	16	3	31	940	1,380	2,320	9	351	436			7	7	7	351	436	787
Laguindingan	10	5	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0	0	0	0	0
Libertad	9	5	9	955	1,721	10	6	2	18	955	1,721	2,676	0	25	6			0	0	0	0	0	0
Lugait	7	5	0	0	0	0	0	0	0	0	0	0	7	271	1,091			5	5	5	271	1,091	1,362
Magsaysay	24	5	24	6,826	4,318	85	0	10	95	6,826	4,318	11,144	24	472	263			9	9	9	472	263	735
Manticao	12	4	0	779	2,440	8	12	2	0	0	0	0	0	71	47			0	0	0	0	0	0
Medina	17	4	0	305	1,797	4	4	1	0	0	0	0	17	272	1,301			5	5	5	272	1,301	1,573
Naawan	9	5	9	855	2,093	9	20	3	32	855	2,093	2,948	0	55	19			0	0	0	0	0	0
Opol	11	4	0	3,392	1,992	51	34	10	0	0	0	0	11	518	272			11	11	11	518	272	789
Salay	16	5	16	481	1,846	9	1	1	11	481	1,846	2,327	16	268	824			5	5	5	268	824	1,092
Sugbongcogon	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0	0	0	0	0
Tagoloan		4	0	0	0	0	0	0	0	0	0	0	0	0	0			0	0	0	0	0	0
Talisayan	17	5	17	1,877	2,836	31	12	5	48	1,877	2,836	4,713	0	78	34			0	0	0	0	0	0
Villanueva	7	4	0	2,842	1,940	55	0	6	0	0	0	0	7	319	180			6	6	6	319	180	499
Total	333		127	27,324	38,701	385	166	63	276	13,761	20,540	34,301	178	4,905	18,435	0	0	110	110	84	4,486	7,662	12,148
Total Available IRA Fund			46,449																				

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: Prov.	Mun.	Number of Tiolets: Public Mkt.	Bus Term.	School	Ttl Related	Prov. Avail. IRA	Mun. Avail. IRA	Sub-total Avail. IRA
Alubijid	2	5	2	335	598	1	1	3	5	335	598	933
Balingasag	8	4	8	466	354	1	1	6	8	466	354	821
Balingoan	2	5	2	294	917	1	1	2	4	294	917	1,211
Binuangan	1	6	1	212	916	1	1	0	2	212	916	1,128
Claveria	7	2	0	223	415	1	1	0	0	0	0	0
El Salvador	1	4	1	212	346	1	1	0	2	212	346	558
Gingoog City	30	1	0	0	7,574	1	1	15	0	0	0	0
Gitagum	1	5	1	48	1,461	1	1	0	2	48	1,461	1,509
Initao	1	5	1	212	776	1	1	0	2	212	776	987
Jasaan	7	3	7	499	896	1	1	7	9	499	896	1,395
Kinoguitan	1	5	1	212	669	1	1	0	2	212	669	881
Lagonglong	1	5	1	294	350	1	1	2	4	294	350	644
Laguindingan	1	5	1	0	1,510	1	1	0	2	0	1,510	1,510
Libertad	1	5	1	212	280	1	1	0	2	212	280	492
Lugait	1	5	1	376	1,618	1	1	4	6	376	1,618	1,994
Magsaysay	1	5	1	213	99	1	1	0	2	213	99	311
Manticao	1	4	1	213	493	1	1	0	2	213	493	706
Medina	2	4	2	294	1,422	1	1	2	4	294	1,422	1,716
Naawan	1	5	1	212	381	1	1	0	2	212	381	593
Opol	3	4	3	385	193	1	1	4	6	385	193	579
Salay	2	5	2	336	1,085	1	1	3	5	336	1,085	1,421
Sugbongcogon	2	5	2	0	1,510	1	1	0	2	0	1,510	1,510
Tagoloan	10	4	10	1,239	1,934	1	1	25	27	1,239	1,934	3,173
Talisayan	1	5	1	214	238	1	1	0	2	214	238	452
Villanueva	2	4	2	419	248	1	1	5	7	419	248	667
Total	90		53	7,119	26,284	25	25	78	109	6,895	18,295	25,190
Total Available IRA Fund			25,190									

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

Name of City or Municipality	Water Supply	Sanitation		Total
	Rural	Urban	Rural	
Alubijid	2,714	933	1,191	4,838
Balingasag	0	821	1,292	2,113
Balingoan	0	1,211	662	1,873
Binuangan	0	1,128	340	1,468
Claveria	0	0	0	0
El Salvador	0	558	440	997
Gingoog City	0	0	0	0
Gitagum	0	1,509	0	1,509
Initao	3,405	987	678	5,070
Jasaan	0	1,395	708	2,103
Kinoguitan	2,054	881	0	2,934
Lagonglong	2,320	644	787	3,751
Laguindingan	0	1,510	0	1,510
Libertad	2,676	492	0	3,168
Lugait	0	1,994	1,362	3,356
Magsaysay	11,144	311	735	12,190
Manticao	0	706	0	706
Medina	0	1,716	1,573	3,289
Naawan	2,948	593	0	3,541
Opol	0	579	789	1,368
Salay	2,327	1,421	1,092	4,840
Sugbongcogon	0	1,510	0	1,510
Tagoloan	0	3,173	0	3,173
Talisayan	4,713	452	0	5,164
Villanueva	0	667	499	1,166
Total	34,301	25,190	12,148	71,639

Table 11.5.4 FIRR for Level 1 Water Supply

	190	58	28									
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	Water Rate per Month per Household	Loans and Subsidies	Cash Inflow	Net Value
1	38	12	6	17,923,400		0	17,923,400	840	150	0	0	(17,923,400)
3	57	17	8	26,153,900		179,234	26,333,134	2,070	150		3,726,000	(22,607,134)
4	57	17	8	26,153,900		440,773	26,594,673	3,300	150		5,940,000	(20,654,673)
5	38	12	6	17,923,400		702,312	18,625,712	4,140	150		7,452,000	(11,173,712)
6						881,546	881,546	4,140	150		7,452,000	6,570,454
7						881,546	881,546	4,140	150		7,452,000	6,570,454
8						881,546	881,546	4,140	150		7,452,000	6,570,454
9						881,546	881,546	4,140	150		7,452,000	6,570,454
10						881,546	881,546	4,140	150		7,452,000	6,570,454
11						881,546	881,546	4,140	150		7,452,000	6,570,454
12					3,436,400	881,546	4,317,946	4,140	150		7,452,000	3,134,054
13					5,093,700	881,546	5,975,246	4,140	150		7,452,000	1,476,754
14					5,093,700	881,546	5,975,246	4,140	150		7,452,000	1,476,754
15					3,436,400	881,546	4,317,946	4,140	150		7,452,000	3,134,054
16						881,546	881,546	4,140	150		7,452,000	6,570,454
17						881,546	881,546	4,140	150		7,452,000	6,570,454
18						881,546	881,546	4,140	150		7,452,000	6,570,454
19						881,546	881,546	4,140	150		7,452,000	6,570,454
20						881,546	881,546	4,140	150		7,452,000	6,570,454

	TOTAL	9,137,691
Discount Rate for NPV = 0.09 per year	FIRR	1.3%
	NPV	2,466,726

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	88,162,600	0	17,632,520	26,448,780	26,448,780	17,632,520
2. Sanitation	67,508,200	0	13,501,640	20,252,460	20,252,460	13,501,640
3. Land Acquisition	1,520,000	0	304,000	456,000	456,000	304,000
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.	17,290,988	6,916,395	3,458,198	3,458,198	1,729,099	1,729,099
D. Instiutional Devt.						
1. Capacity Enhanc. Prog.	3,200,000	960,000	960,000	640,000	320,000	320,000
2. Commu. Manag. Prog.	2,487,870	746,361	746,361	497,574	248,787	248,787
3. Health & Hygiene Educ.	415,800	124,740	124,740	83,160	41,580	41,580
4. Water Quality Surveil.	88,900	26,670	26,670	17,780	8,890	8,890
5. NGO Assistance	277,200	83,160	83,160	55,440	27,720	27,720
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)	18,439,726	1,036,533	3,829,499	5,214,939	4,965,332	3,393,424
Total (A+B+C+D+E+F)	202,836,984	11,401,859	42,124,487	57,364,331	54,618,647	37,327,659
F. Others						
1. Price Contingency	78,266,796	4,399,528	16,254,179	22,134,634	21,075,183	14,403,272
2. Value Added Tax (VAT)	8,452,886	475,153	1,755,466	2,390,561	2,276,139	1,555,567
Grand Total	289,556,665	16,276,540	60,134,133	81,889,525	77,969,969	53,286,498

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	190	58	28
Nos. of HHs to be Served	2,850	870	420
Reconstruction Cost (Peso)			
Unit Cost	346,600	60,900	670,300
Ttl. Reconst. Cost	65,854,000	3,532,200	
Ttl. Reconst. Cost/year	3,292,700	353,220	
Cost per HH/year	1,155	406	
Rehabilitation Cost (Peso)			
Unit Cost	71,200		
Ttl. Rehab. Cost	13,528,000		
Ttl. Rehab. Cost/year	1,352,800		
Cost per HH/year	475		
Recurrent Cost for O&M (Peso)			
Cost per HH/year	100	50	50
O&M Cost Total (Peso)			
Cost per HH/year	1,730	456	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	144	38	4
Proportion (Mean)	1.7%	0.5%	0.0%
Proportion (Median)	2.2%	0.6%	0.1%

Table 11.6.4 Family Income (Unit: Pesos)

Annual [1]			Monthly [2]		
Mean	Median	Low	Mean	Median	Low
53,908	42,594	43,659	8,259	6,526	6,689

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	84	344,100	274,100	1,151,220

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	
46	63	344,100	274,100	1,654,845

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