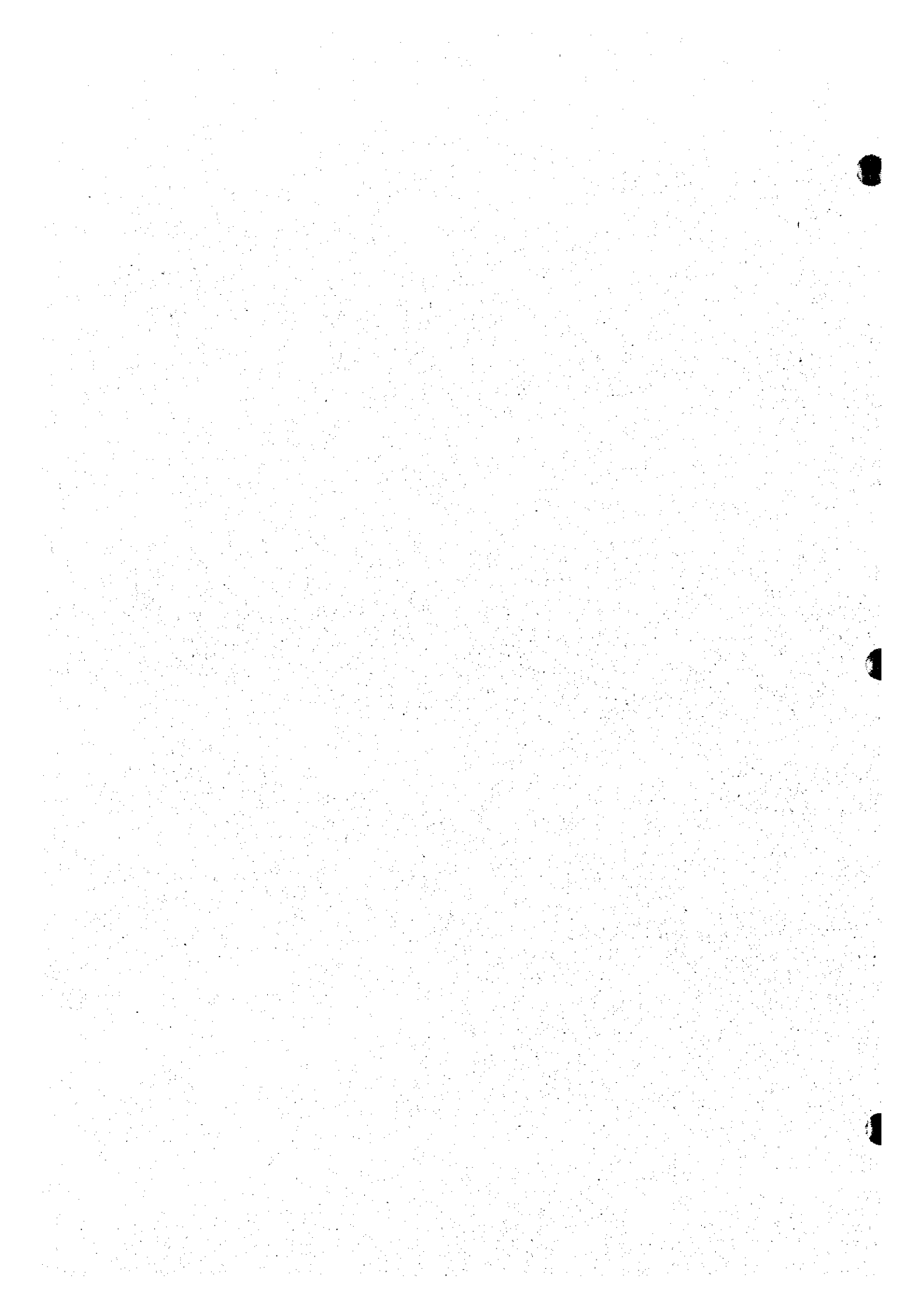

**FUTURE REQUIREMENTS
AND DEVELOPMENT PLAN**





8. FUTURE REQUIREMENTS IN WATER SUPPLY AND SANITATION IMPROVEMENT

8.2 Targets of Provincial Sector Plan

Table 8.2.1 Estimation of Base Year Service Coverage of Water Supply

Name of Municipality	Area	Population (1997)	Population Served by 1997 Facilities				Population Served by Planned On-going Projects				Population Served in the Base Year (1997)					
			Level III	Level II	Level I	Total	Level III	Level II	Level I	Total	Level III	Level II	Level I	Total	Percentage Coverage	
Alegria	Urban	5,764	1,040	1,500	2,258	4,798					1,040	1,500	2,258	4,798	91	
	Rural	6,693		1,233	4,453	5,686						1,233	4,453	5,686	82	
	Total	12,457	1,040	2,733	6,711	10,484					1,040	2,733	6,711	10,484	86	
Bacuag	Urban	8,395	2,875			2,875					2,875			2,875	34	
	Rural	4,440		1,140	1,377	2,517						1,140	1,377	2,517	57	
	Total	12,835	2,875	1,140	1,377	5,392					2,875	1,140	1,377	5,392	42	
Basilisa (Rizal)	Urban	3,205			1,699	1,699							1,699	1,699	53	
	Rural	22,586			20,719	20,719							20,719	20,719	92	
	Total	25,791			22,418	22,418							22,418	22,418	87	
Burgos	Urban	2,213	321	1,188		1,509					321	1,188		1,509	68	
	Rural	667		270	266	536							266	536	80	
	Total	2,880	321	1,458	266	2,045					321	1,458	266	2,045	71	
Cagdianao	Urban	4,172														
	Rural	6,188	544	1,945		2,489					544	1,945		2,489	40	
	Total	11,358	544	1,945		2,489					544	1,945		2,489	22	
Claver	Urban	7,668			5,161	5,161							5,161	5,161	67	
	Rural	7,118		431	4,716	5,147						431	4,716	5,147	72	
	Total	14,786		431	9,877	10,308						431	9,877	10,308	70	
Dapa	Urban	11,760	1,389		6,962	8,351					1,389		6,962	8,351	71	
	Rural	4,818		2,415		2,415						2,415		2,415	50	
	Total	16,578	1,389	2,415	6,962	10,766					1,389	2,415	6,962	10,766	65	
Del Carmen	Urban	3,437	65	3,255	9	3,329							9	3,329	97	
	Rural	9,273	306	1,955	3,452	5,707					306	1,955	3,452	5,707	62	
	Total	12,710	365	5,210	3,461	9,036					365	5,210	3,461	9,036	71	
Diugat	Urban	2,550		2,515	35	2,550							2,515	35	100	
	Rural	6,173		1,351	4,575	5,926							1,351	4,575	96	
	Total	8,723		3,866	4,610	8,476							3,866	4,610	97	
General Luna	Urban	4,632			2,981	2,981							2,981	2,981	64	
	Rural	8,494			6,519	6,519							6,519	6,519	78	
	Total	13,036			9,500	9,500							9,500	9,500	73	
Gigapuh	Urban	6,594	2,445		1,193	3,638					2,445		1,193	3,638	55	
	Rural	9,317	3,100		3,744	6,844						3,100	3,744	6,844	73	
	Total	15,911	5,545		4,937	10,482					5,545		4,937	10,482	66	
Ibigo (Albay)	Urban	3,094		835		835							835	835	27	
	Rural	12,358		3,427	4,438	7,865						3,427	4,438	7,865	64	
	Total	15,452		4,262	4,438	8,700							4,262	4,438	56	
Loreto	Urban	5,662	499	3,773	780	5,052					499	3,773	780	5,052	89	
	Rural	2,789		2,773		2,773							2,773	2,773	99	
	Total	8,451	499	6,546	780	7,825					499	6,546	780	7,825	93	
Mainit	Urban	10,125	1,698	3,373	3,274	8,345					1,698	3,373	3,274	8,345	82	
	Rural	12,198	5,297	1,179	2,873	9,349						5,297	1,179	2,873	9,349	77
	Total	22,323	6,995	4,552	6,147	17,694					6,995	4,552	6,147	17,694	79	
Malibon	Urban	6,777	735	120	855						735	120	855		13	
	Rural	7,385		5,550	1,103	6,653						5,550	1,103	6,653	90	
	Total	14,162	735	5,670	1,103	7,508					735	5,670	1,103	7,508	53	
Pilar	Urban	2,289		1,886		1,886							1,886	1,886	87	
	Rural	6,279		644	2,675	3,319							644	2,675	3,319	53
	Total	8,568		2,530	2,675	5,205							2,530	2,675	5,205	61
Placer	Urban	12,774		660	11,429	12,089							660	11,429	12,089	95
	Rural	8,906	735	1,286	5,098	7,119					735	1,286	5,098	7,119	80	
	Total	21,680	735	1,546	16,527	19,208					735	1,546	16,527	19,208	89	
San Benito	Urban	2,174	420	800		1,220					420	800		1,220	56	
	Rural	2,460		570		570							570	570	23	
	Total	4,634	420	800	570	1,790					420	800	570	1,790	39	
San Francisco (Anao-an)	Urban	4,036	1,603	206	1,688	3,491					1,603	206	1,688	3,491	86	
	Rural	6,303	3,139	1,364	1,251	5,753					3,139	1,364	1,251	5,753	91	
	Total	10,339	4,741	1,564	2,939	9,244					4,741	1,564	2,939	9,244	89	
San Isidro	Urban	1,800		1,720		1,720							1,720	1,720	96	
	Rural	4,239		2,888		2,888							2,888	2,888	73	
	Total	6,039		1,720	2,588	4,708							1,720	2,888	4,708	78
San Jose	Urban	16,011	386	802	3,553	4,741					386	802	3,553	4,741	30	
	Rural	11,574		180	2,586	2,586						180	2,388	2,566	22	
	Total	27,585	386	982	5,939	7,307					386	982	5,939	7,307	26	
Santa Monica (Sapa)	Urban	1,813	1,439	356		1,815					1,439	356		1,815	100	
	Rural	3,581	90	231	3,195	3,516					90	231	3,195	3,516	63	
	Total	7,396	1,549	587	3,195	5,331					1,549	587	3,195	5,331	72	
Sison	Urban	2,896	85	1,227		1,312							1,227	1,312	45	
	Rural	6,270	3,513	2,489	33	6,037					3,513	2,489	33	6,037	96	
	Total	9,166	3,600	2,489	1,260	7,349					3,600	2,489	1,260	7,349	80	
Socorro	Urban	7,725			6,845	6,845							6,845	6,845	88	
	Rural	8,065		5,325		5,325							5,325	5,325	66	
	Total	15,844		12,170		12,170							12,170	12,170	77	
Surigao City (Capital)	Urban	70,705	45,180		22,469	67,649					45,180		22,469	67,649	96	
	Rural	37,570	500		27,165	27,665					500		27,165	27,665	74	
	Total	108,275	45,680		49,634	95,314					45,680		49,634	95,314	88	
Tajama-Aa	Urban	5,676			4,892	4,892							4,892	4,892	86	
	Rural	6,867			5,718	5,718							5,718	5,718	83	
	Total	12,543			10,611	10,611							10,611	10,611	85	
Tubajon	Urban	1,910		708		708							708	708	37	
	Rural	4,485		885	2,798	3,683							885	2,798	62	
	Total	6,395		1,593	2,798	4,391							1,593	2,798	44	
Tubod	Urban	1,526		1,526		1,526							1,526	1,526	100	
	Rural	8,869	3,082		8,869						3,082		8,869	8,869	100	
	Total	10,395	3,113	3,082		10,395					3,113	3,082		10,395	100	
Provincial Total	Urban	217,939	61,726	23,691	76,456	161,873					61,726	23,691	76,456	161,873	74	
	Rural	238,079	23,006	33,830	117,437	174,273					23,006	33,830	117,437	174,273	73	
	Total	456,018	84,732	57,521	193,893	336,146					84,732	57,521	193,893	336,146	74	

Table 8.2.2 Population Coverage in Phase I Provided by Served Population in the Base Year (Water Supply)

Name of Municipality	Area	Population Served by 1997 Facilities				1997		2003		
		Level III	Level II	Level I	Total	Total Population	Coverage (%)	Total Population	Coverage (%)	
Alegria	Urban	1,040	1,506	2,258	4,798	5,264	91	5,816	82	
	Rural		1,233	4,433	5,686	6,893	82	7,616	75	
	Total	1,040	2,733	6,211	10,484	12,157	86	13,433	78	
Bacuzang	Urban	2,875			2,875	8,395	34	9,506	30	
	Rural		1,140	1,377	2,517	4,440	57	5,028	50	
	Total	2,875	1,140	1,377	5,392	12,835	42	14,534	37	
Basilisa (Rizal)	Urban			1,699	1,699	3,209	53	3,891	44	
	Rural			20,719	20,719	22,596	92	27,402	76	
	Total			22,418	22,418	25,805	87	31,293	72	
Burgos	Urban	321	1,188		1,509	2,213	68	2,450	62	
	Rural		270	266	536	667	80	739	73	
	Total	321	1,458	266	2,045	2,880	71	3,189	64	
Cagdianao	Urban					5,172		5,458		
	Rural	544	1,945		2,489	6,186	40	6,528	38	
	Total	544	1,945		2,489	11,358	22	11,986	21	
Claver	Urban			5,161	5,161	7,668	67	8,485	61	
	Rural		431	4,216	4,647	7,118	72	7,877	65	
	Total		431	9,877	10,308	14,786	70	16,362	63	
Dapa	Urban	1,389		6,962	8,351	11,760	71	12,157	69	
	Rural		2,415		2,415	4,818	50	4,980	48	
	Total	1,389	2,415	6,962	10,766	16,578	65	17,137	63	
Del Carmen	Urban	65	3,235	9	3,309	3,437	97	3,783	88	
	Rural	300	1,955	3,452	5,707	9,273	62	10,208	56	
	Total	365	5,210	3,461	9,036	12,710	71	13,991	65	
Dinagat	Urban		2,515	35	2,550	2,550	100	2,670	96	
	Rural		1,351	4,325	5,926	6,175	96	6,466	92	
	Total		3,866	4,610	8,476	8,725	97	9,136	93	
General Luna	Urban			2,981	2,981	4,632	64	5,187	57	
	Rural			6,519	6,519	8,404	78	9,409	69	
	Total			9,500	9,500	13,036	73	14,596	65	
Gigaquit	Urban	2,445		1,193	3,638	6,594	55	7,465	49	
	Rural	3,100		3,744	6,844	9,317	73	10,547	65	
	Total	5,545		4,937	10,482	15,911	66	18,012	58	
Libja (Albor)	Urban		835		835	3,094	27	3,433	24	
	Rural		3,427	4,438	7,865	12,358	64	13,714	57	
	Total		4,262	4,438	8,700	15,452	56	17,147	51	
Loxeto	Urban	499	3,773	780	5,052	5,662	89	6,538	77	
	Rural		2,773		2,773	2,789	99	3,221	86	
	Total	499	6,546	780	7,825	8,451	93	9,759	80	
Mainit	Urban	1,698	3,373	3,274	8,345	10,125	82	10,936	76	
	Rural	5,297	1,179	2,873	9,349	12,198	77	13,125	71	
	Total	6,995	4,552	6,147	17,694	22,323	79	24,111	73	
Malmiono	Urban	735	120		855	6,777	13	6,802	13	
	Rural		5,550	1,103	6,653	7,385	90	7,411	90	
	Total	735	5,670	1,103	7,508	14,162	53	14,213	53	
Pilar	Urban		1,886		1,886	2,289	82	2,525	75	
	Rural		644	2,675	3,319	6,279	53	6,919	48	
	Total		2,530	2,675	5,205	8,568	61	9,441	55	
Placer	Urban		660	11,429	12,089	12,774	95	14,620	83	
	Rural	735	1,286	5,098	7,119	8,966	80	10,193	70	
	Total	735	1,946	16,527	19,208	21,680	89	24,813	77	
San Benito	Urban	420	800		1,220	2,174	56	2,382	51	
	Rural			570	570	2,460	23	2,696	21	
	Total	420	800	570	1,790	4,634	39	5,078	35	
San Francisco (Anao-Aon)	Urban	1,603	200	1,688	3,491	4,036	86	4,458	78	
	Rural	3,138	1,364	1,251	5,753	6,303	91	6,962	83	
	Total	4,741	1,564	2,939	9,244	10,339	89	11,420	81	
San Isidro	Urban		1,720		1,720	1,800	96	2,030	85	
	Rural			2,988	2,988	4,229	71	4,769	63	
	Total		1,720	2,988	4,708	6,029	78	6,799	69	
San Jose	Urban	386	802	3,553	4,741	16,011	30	16,330	29	
	Rural		180	2,386	2,566	11,574	22	11,804	22	
	Total	386	982	5,939	7,307	27,585	26	28,134	26	
Santa Monica (Sapao)	Urban	1,459	356		1,815	1,815	100	1,958	93	
	Rural	90	231	3,195	3,516	5,581	63	6,020	58	
	Total	1,549	587	3,195	5,331	7,396	72	7,978	67	
Sison	Urban	85		1,221	1,312	2,896	45	3,216	41	
	Rural		3,515	2,489	33	6,037	6,270	96	6,963	87
	Total	3,600	2,489	1,260	7,349	9,166	80	10,179	72	
Soocoro	Urban			6,845	6,845	7,775	88	8,784	78	
	Rural			5,325	5,325	8,065	66	9,116	58	
	Total			12,170	12,170	15,844	77	17,900	68	
Surigao City (Capital)	Urban	45,180		22,469	67,649	70,705	96	77,841	87	
	Rural	500		27,155	27,655	37,570	74	41,362	67	
	Total	45,680		49,624	95,314	108,275	88	119,203	80	
Tagana-An	Urban			4,893	4,893	5,676	86	6,241	78	
	Rural			5,718	5,718	6,867	83	7,551	76	
	Total			10,611	10,611	12,543	85	13,792	77	
Tubojon	Urban		708		708	1,910	37	2,141	33	
	Rural		885	2,798	3,683	4,485	82	5,028	73	
	Total		1,593	2,798	4,391	6,395	69	7,169	61	
Tubod	Urban	1,526			1,526	1,526	100	1,572	97	
	Rural	5,787	3,082		8,869	8,869	100	9,153	97	
	Total	7,313	3,082		10,395	10,395	100	10,707	97	
Provincial Total	Urban	61,726	23,691	76,456	161,873	217,939	74	238,672	68	
	Rural	23,006	33,830	117,437	174,273	238,079	73	262,839	66	
	Total	84,732	57,521	193,893	336,146	456,018	74	501,511	67	

Table 8.2.3 Number of Households Served by Sanitary Toilets in the Base Year (1997)

Name of Municipality	Area	Population (1997)	Number of Households (1997)	Households Using Sanitary Toilets in 1997				Recipients HHs of Planned/On-going Projects				Households Using Sanitary Toilets in the Base Year (1997)					
				Flush Toilets	Pour Flush	VIP/Dry	Total	Flush	Pour Flush	VIP/Dry	Total	Flush	Pour Flush	VIP/Dry	Total	Coverage (%)	
																Pour Flush	VIP/Dry
Alegria	Urban	5,264	892	690		690						690		77		77	
	Rural	6,893	1,267	775		775						775		61		61	
	Total	12,157	2,159	1,465		1,465						1,465		68		68	
Bacwang	Urban	8,395	1,502	1,200		1,200						1,200		80		80	
	Rural	4,440	723	527		527						527		73		73	
	Total	12,835	2,225	1,727		1,727						1,727		78		78	
Basilisa (Rural)	Urban	3,209	568	328		328						328		58		58	
	Rural	22,596	4,079	2,811		2,811						2,811		69		69	
	Total	25,805	4,647	3,139		3,139						3,139		68		68	
Buegos	Urban	2,213	458	371		371						371		81		81	
	Rural	667	124	85		85						85		69		69	
	Total	2,880	582	456		456						456		78		78	
Caglagan	Urban	5,172	1,060	531		531						531		50		50	
	Rural	6,186	1,215	905		905						905		74		74	
	Total	11,358	2,275	1,436		1,436						1,436		63		63	
Claver	Urban	7,688	1,524	1,371		1,371						1,371		90		90	
	Rural	7,118	1,418	963		963						963		68		68	
	Total	14,806	2,942	2,334		2,334						2,334		79		79	
Dapa	Urban	11,760	2,400	1,829		1,829						1,829		76		76	
	Rural	4,818	952	654		654						654		69		69	
	Total	16,578	3,352	2,483		2,483						2,483		74		74	
Del Carmo	Urban	3,437	671	646		646						646		96		96	
	Rural	9,273	1,783	867		867						867		49		49	
	Total	12,710	2,454	1,513		1,513						1,513		62		62	
Dinagat	Urban	2,550	523	355		355						355		68		68	
	Rural	6,175	1,206	779		779						779		65		65	
	Total	8,725	1,729	1,134		1,134						1,134		66		66	
General Luna	Urban	4,632	919	619		619						619		67		67	
	Rural	8,404	1,556	1,062		1,062						1,062		68		68	
	Total	13,036	2,475	1,681		1,681						1,681		68		68	
Gigaquit	Urban	6,594	1,217	865		865						865		71		71	
	Rural	9,317	1,706	1,288		1,288						1,288		75		75	
	Total	15,911	2,923	2,153		2,153						2,153		74		74	
Lilips (Albor)	Urban	3,094	602	578		578						578		96		96	
	Rural	12,558	2,319	1,259		1,259						1,259		54		54	
	Total	15,652	2,921	1,837		1,837						1,837		63		63	
Loreto	Urban	5,662	1,202	959		959						959		80		80	
	Rural	2,789	568	222		222						222		39		39	
	Total	8,451	1,770	1,181		1,181						1,181		67		67	
Mainit	Urban	10,125	1,940	1,415		1,415						1,415		73		73	
	Rural	12,198	2,255	1,854		1,854						1,854		82		82	
	Total	22,323	4,195	3,269		3,269						3,269		78		78	
Malimono	Urban	6,777	1,337	752		752						752		56		56	
	Rural	7,385	1,409	1,137		1,137						1,137		81		81	
	Total	14,162	2,746	1,889		1,889						1,889		69		69	

Table 8.2.3 Number of Households Served by Sanitary Toilets in the Base Year (1997)

Name of Municipality	Area	Population (1997)	Number of Households (1997)	Households Using Sanitary Toilets in 1997				Recipient HHs of Planned/Ongoing Projects				Households Using Sanitary Toilets in the Base Year (1997)					
				Flush Toilets	Pour Flush	VIP/Dry	Total	Flush	Pour Flush	VIP/Dry	Total	Flush	Pour Flush	VIP/Dry	Total	Coverage (%)	
																Pour Flush	VIP/Dry
Pilar	Urban	2,289	441	389			389						389			88	88
	Rural	6,279	1,113	705			705						705			63	63
	Total	8,568	1,554	1,094			1,094						1,094			70	70
Placer	Urban	12,774	2,366	2,072			2,072						2,072			88	88
	Rural	8,906	1,803	1,175			1,175						1,175			65	65
	Total	21,680	4,169	3,247			3,247						3,247			78	78
San Benito	Urban	2,174	388	373			373						373			96	96
	Rural	2,460	463	158			158						158			34	34
	Total	4,634	851	531			531						531			62	62
San Francisco (Anso-Aon)	Urban	4,036	827	552			552						552			67	67
	Rural	6,303	1,210	888			888						888			73	73
	Total	10,339	2,037	1,440			1,440						1,440			71	71
San Isidro	Urban	1,800	314	301			301						301			96	96
	Rural	4,229	735	373			373						373			51	51
	Total	6,029	1,049	674			674						674			64	64
San Jose	Urban	16,011	2,895	1,966			1,966						1,966			68	68
	Rural	11,574	1,955	1,178			1,178						1,178			60	60
	Total	27,585	4,850	3,144			3,144						3,144			65	65
Santa Monica (Sapao)	Urban	1,815	341	175			175						175			51	51
	Rural	5,581	966	556			556						556			58	58
	Total	7,396	1,307	731			731						731			56	56
Sison	Urban	2,896	562	540			540						540			96	96
	Rural	6,270	1,146	946			946						946			83	83
	Total	9,166	1,708	1,486			1,486						1,486			87	87
Socongo	Urban	7,775	1,359	1,301			1,301						1,301			96	96
	Rural	8,069	1,368	862			862						862			63	63
	Total	15,844	2,727	2,163			2,163						2,163			79	79
Surigao City (Capital)	Urban	70,705	13,571	1,921			1,921						1,921			41	41
	Rural	37,570	7,309	5,845			5,845						5,845			80	80
	Total	108,275	20,880	1,921			13,383						13,383			55	55
Tagana-Ao	Urban	5,076	1,066	938			938						938			85	85
	Rural	6,867	1,313	942			942						942			72	72
	Total	12,543	2,419	1,880			1,880						1,880			78	78
Tubajou	Urban	1,910	398	398			398						398			100	100
	Rural	4,485	871	422			422						422			48	48
	Total	6,395	1,269	820			820						820			65	65
Tubod	Urban	1,526	295	287			287						287			97	97
	Rural	8,869	1,742	1,337			1,337						1,337			77	77
	Total	10,395	2,037	1,624			1,624						1,624			80	80
Provincial Total	Urban	217,959	41,678	1,921			1,921						1,921			66	66
	Rural	238,079	44,576	30,575			30,575						30,575			69	69
	Total	456,038	86,254	1,921			59,914						59,914			67	67

Table 8.2.4 Number of Public School Student Served by School Toilets in Base Year (1997)

Name of Municipality	1997 Total Number of Public School Student	Standard No. of Student that can be Served by 1997	No. of Student to be Served by Planned /On-going Projects	Standard No. of Students that can be Served by Toilets in Base Year (1997)	Coverage (%)
Alegria	3,189	1,040		1,040	33
Bacuag	2,138	2,138		2,138	100
Basilisa (Rizal)	4,460	3,000		3,000	67
Burgos	1,506	240		240	16
Cagdianao	2,928	2,840		2,840	97
Claver	3,760	3,600		3,600	96
Dapa	5,631	480		480	9
Del Carmen	2,156	2,156		2,156	100
Dinagat	3,152	880		880	28
General Luna	3,156	1,920		1,920	61
Gigaquit	3,009	3,009		3,009	100
Libjo (Albor)	3,535	520		520	15
Loreto	1,458	1,458		1,458	100
Maimit	5,690	3,040		3,040	53
Mahimono	3,932	1,680		1,680	43
Pilar	1,578	960		960	61
Placer	4,919	4,919		4,919	100
San Benito	2,301	1,600		1,600	70
San Francisco (Anao-Aon)	2,524	2,524		2,524	100
San Isidro	1,578	1,578		1,578	100
San Jose					
Santa Monica (Sapao)	1,365	640		640	47
Sison	2,320	1,840		1,840	79
Socorro	3,886	2,640		2,640	68
Surigao City (Capital)	32,028	20,720		20,720	65
Tagana-An	2,775	1,040		1,040	37
Tubajon	1,869	1,320		1,320	71
Tubod	2,400	960		960	40
Provincial Total	109,243	68,742		68,742	63

Table 8.2.5 Number of Public Utilities with Sanitary Toilets in the Base Year (1997)

Name of Municipality	Type	No. of PU with Toilets in 1997	No. of PU with Sanitary Toilets in 1997	No. of PU with Toilets in Planned/Ongoing Project	No. of PU with Sanitary Toilets in Planned/Ongoing Projects	No. of PU with Toilets in Base Year 1997	No. of PU with Sanitary Toilets in Base year 1997	Coverage (%)
Alegria	Public Market	1	1			1	1	100
	Bus/JEEPNEY Terminal							
	Parks/Playground							
	Total	1	1			1	1	100
Bacuag	Public Market	2	2			2	2	100
	Bus/JEEPNEY Terminal							
	Parks/Playground							
	Total	2	2			2	2	100
Basilisa (Rizal)	Public Market	1	1			1	1	100
	Bus/JEEPNEY Terminal							
	Parks/Playground							
	Total	1	1			1	1	100
Burgos	Public Market	1	1			1	1	100
	Bus/JEEPNEY Terminal							
	Parks/Playground	2	2			2	2	100
	Total	3	3			3	3	100
Cagdianao	Public Market	1	1			1	1	100
	Bus/JEEPNEY Terminal							
	Parks/Playground							
	Total	1	1			1	1	100
Claver	Public Market	1	1			1	1	100
	Bus/JEEPNEY Terminal	1	1			1	1	100
	Parks/Playground	1	1			1	1	100
	Total	3	3			3	3	100
Dapa	Public Market	2	2			2	2	100
	Bus/JEEPNEY Terminal	2	2			2	2	100
	Parks/Playground	1	1			1	1	100
	Total	5	5			5	5	100
Del Carmen	Public Market	1	1			1	1	100
	Bus/JEEPNEY Terminal							
	Parks/Playground							
	Total	1	1			1	1	100
Dinagat	Public Market	1	1			1	1	100
	Bus/JEEPNEY Terminal							
	Parks/Playground	4	4			4	4	100
	Total	5	5			5	5	100
General Luna	Public Market							
	Bus/JEEPNEY Terminal							
	Parks/Playground							
	Total							
Gigaquit	Public Market	1	1			1	1	100
	Bus/JEEPNEY Terminal							
	Parks/Playground	3	3			3	3	100
	Total	4	4			4	4	100
Libjo (Albor)	Public Market							
	Bus/JEEPNEY Terminal							
	Parks/Playground	5	5			5	5	100
	Total	5	5			5	5	100
Loreto	Public Market	1	1			1	1	100
	Bus/JEEPNEY Terminal							
	Parks/Playground	2	2			2	2	100
	Total	3	3			3	3	100
Mainit	Public Market	1	1			1	1	100
	Bus/JEEPNEY Terminal	3	3			3	3	100
	Parks/Playground							
	Total	4	4			4	4	100
Malinono	Public Market	1	1			1	1	100
	Bus/JEEPNEY Terminal	1	1			1	1	100
	Parks/Playground	6	6			6	6	100
	Total	8	8			8	8	100

Table 8.2.5 Number of Public Utilities with Sanitary Toilets in the Base Year (1997)

Name of Municipality	Type	No. of PU with Toilets in 1997	No. of PU with Sanitary Toilets in 1997	No. of PU with Toilets in Planned/Ongoing Project	No. of PU with Sanitary Toilets in Planned/Ongoing Projects	No. of PU with Toilets in Base Year 1997	No. of PU with Sanitary Toilets in Base year 1997	Coverage (%)
Pilar	Public Market	1	1			1	1	100
	Bus/Jeepney Terminal							
	Parks/Playground	1	1			1	1	100
	Total	2	2			2	2	100
Placer	Public Market	1	1			1	1	100
	Bus/Jeepney Terminal	2	2			2	2	100
	Parks/Playground							
	Total	3	3			3	3	100
San Benito	Public Market	1	1			1	1	100
	Bus/Jeepney Terminal	1	1			1	1	100
	Parks/Playground	1	1			1	1	100
	Total	3	3			3	3	100
San Francisco (Anao-Aon)	Public Market	1	1			1	1	100
	Bus/Jeepney Terminal							
	Parks/Playground							
	Total	1	1			1	1	100
San Isidro	Public Market	1	1			1	1	100
	Bus/Jeepney Terminal							
	Parks/Playground							
	Total	1	1			1	1	100
San Jose	Public Market	2	2			2	2	100
	Bus/Jeepney Terminal							
	Parks/Playground	2	2			2	2	100
	Total	4	4			4	4	100
Santa Monica (Sapao)	Public Market	1	1			1	1	100
	Bus/Jeepney Terminal							
	Parks/Playground							
	Total	1	1			1	1	100
Sison	Public Market	1	1			1	1	100
	Bus/Jeepney Terminal							
	Parks/Playground							
	Total	1	1			1	1	100
Socorro	Public Market	2	2			2	2	100
	Bus/Jeepney Terminal							
	Parks/Playground	1	1			1	1	100
	Total	3	3			3	3	100
Surigao City (Capital)	Public Market	6	6			6	6	100
	Bus/Jeepney Terminal	2	2			2	2	100
	Parks/Playground	2	2			2	2	100
	Total	10	10			10	10	100
Tagana-An	Public Market	1	1			1	1	100
	Bus/Jeepney Terminal							
	Parks/Playground							
	Total	1	1			1	1	100
Tubajon	Public Market	1	1			1	1	100
	Bus/Jeepney Terminal							
	Parks/Playground							
	Total	1	1			1	1	100
Tubod	Public Market	1	1			1	1	100
	Bus/Jeepney Terminal							
	Parks/Playground							
	Total	1	1			1	1	100
Provincial Total	Public Market	35	35			35	35	100
	Bus/Jeepney Terminal	12	12			12	12	100
	Parks/Playground	31	31			31	31	100
	Total	78	78			78	78	100

Table 8.2.6 Households Coverage in Phase I Provided by Existing Facilities in the Base Year (Household Toilets)

Name of Municipality	Area	No. of Household Served by Existing Facilities					Coverage in 1997					Coverage in 2003					
		Flush	Pour Flush	VIP/Dry	Total	No. of HHs	Percentage of Served Households			No. of HHs	Percentage of Served Households			No. of HHs	Percentage of Served Households		
							Flush	Pour Flush	VIP/Dry		Flush	Pour Flush	VIP/Dry		Flush	Pour Flush	VIP/Dry
		Number	%	Total	Number	%	Total	Number	%	Total	Number	%	Total	Number	%	Total	
Alegria	Urban	690		690	892	77	77	4,053	77	77	4,053	77	77	4,053	77	77	4,053
	Rural	775		775	1,267	61	61	3,211	61	61	3,211	61	61	3,211	61	61	3,211
	Total	1,465		1,465	2,159	68	68	7,264	68	68	7,264	68	68	7,264	68	68	7,264
Bacuang	Urban	1,200		1,200	1,502	80	80	6,716	80	80	6,716	80	80	6,716	80	80	6,716
	Rural	527		527	723	73	73	6,128	73	73	6,128	73	73	6,128	73	73	6,128
	Total	1,727		1,727	2,225	78	78	12,844	78	78	12,844	78	78	12,844	78	78	12,844
Basilisa (Rizal)	Urban	328		328	568	58	58	1,861	58	58	1,861	58	58	1,861	58	58	1,861
	Rural	2,811		2,811	4,079	69	69	22,114	69	69	22,114	69	69	22,114	69	69	22,114
	Total	3,139		3,139	4,647	68	68	4,075	68	68	4,075	68	68	4,075	68	68	4,075
Burgos	Urban	371		371	458	81	81	1,793	81	81	1,793	81	81	1,793	81	81	1,793
	Rural	85		85	124	69	69	1,527	69	69	1,527	69	69	1,527	69	69	1,527
	Total	456		456	582	78	78	3,320	78	78	3,320	78	78	3,320	78	78	3,320
Cagdianao	Urban	531		531	1,060	50	50	2,586	50	50	2,586	50	50	2,586	50	50	2,586
	Rural	905		905	1,215	74	74	3,827	74	74	3,827	74	74	3,827	74	74	3,827
	Total	1,436		1,436	2,275	63	63	6,413	63	63	6,413	63	63	6,413	63	63	6,413
Claver	Urban	1,371		1,371	1,524	90	90	6,901	90	90	6,901	90	90	6,901	90	90	6,901
	Rural	963		963	1,418	68	68	5,214	68	68	5,214	68	68	5,214	68	68	5,214
	Total	2,334		2,334	2,942	79	79	12,115	79	79	12,115	79	79	12,115	79	79	12,115
Dapa	Urban	1,829		1,829	2,400	76	76	8,938	76	76	8,938	76	76	8,938	76	76	8,938
	Rural	654		654	952	69	69	8,114	69	69	8,114	69	69	8,114	69	69	8,114
	Total	2,483		2,483	3,352	74	74	17,052	74	74	17,052	74	74	17,052	74	74	17,052
Del Carmen	Urban	646		646	671	96	96	3,300	96	96	3,300	96	96	3,300	96	96	3,300
	Rural	867		867	1,783	49	49	1,684	49	49	1,684	49	49	1,684	49	49	1,684
	Total	1,513		1,513	2,454	62	62	4,984	62	62	4,984	62	62	4,984	62	62	4,984
Dinagat	Urban	355		355	523	68	68	1,734	68	68	1,734	68	68	1,734	68	68	1,734
	Rural	779		779	1,206	65	65	1,658	65	65	1,658	65	65	1,658	65	65	1,658
	Total	1,134		1,134	1,729	66	66	3,392	66	66	3,392	66	66	3,392	66	66	3,392
General Luna	Urban	619		619	919	67	67	3,103	67	67	3,103	67	67	3,103	67	67	3,103
	Rural	1,062		1,062	1,556	68	68	3,150	68	68	3,150	68	68	3,150	68	68	3,150
	Total	1,681		1,681	2,475	68	68	6,253	68	68	6,253	68	68	6,253	68	68	6,253
Gigaquit	Urban	865		865	1,217	71	71	4,682	71	71	4,682	71	71	4,682	71	71	4,682
	Rural	1,288		1,288	1,706	75	75	4,946	75	75	4,946	75	75	4,946	75	75	4,946
	Total	2,153		2,153	2,923	74	74	9,628	74	74	9,628	74	74	9,628	74	74	9,628
Libjo (Albor)	Urban	578		578	602	96	96	2,970	96	96	2,970	96	96	2,970	96	96	2,970
	Rural	1,259		1,259	2,319	54	54	1,671	54	54	1,671	54	54	1,671	54	54	1,671
	Total	1,837		1,837	2,921	63	63	4,641	63	63	4,641	63	63	4,641	63	63	4,641
Loreto	Urban	959		959	1,202	80	80	4,530	80	80	4,530	80	80	4,530	80	80	4,530
	Rural	222		222	568	39	39	2,208	39	39	2,208	39	39	2,208	39	39	2,208
	Total	1,181		1,181	1,770	67	67	6,738	67	67	6,738	67	67	6,738	67	67	6,738
Mainit	Urban	1,415		1,415	1,940	73	73	7,391	73	73	7,391	73	73	7,391	73	73	7,391
	Rural	1,854		1,854	2,355	82	82	8,303	82	82	8,303	82	82	8,303	82	82	8,303
	Total	3,269		3,269	4,195	78	78	15,694	78	78	15,694	78	78	15,694	78	78	15,694
Malimono	Urban	752		752	1,337	56	56	3,795	56	56	3,795	56	56	3,795	56	56	3,795
	Rural	1,137		1,137	1,409	81	81	5,489	81	81	5,489	81	81	5,489	81	81	5,489
	Total	1,889		1,889	2,746	69	69	9,284	69	69	9,284	69	69	9,284	69	69	9,284

Table 8.2.6 Households Coverage in Phase I Provided by Existing Facilities in the Base Year (Household Toilets)

Name of Municipality	Area	No. of Household Served by Existing Facilities					Coverage in 1997										Coverage in 2003				
		No. of HHs		Percentage of Served Households		Served Population		No. of HHs		Percentage of Served Households		Served Population		No. of HHs		Percentage of Served Households		Served Population			
		Flush	Pour Flush	VIP/Dry	Total	Flush	VIP/Dry	Total	Number	%	Flush	VIP/Dry	Total	Number	%	Flush	VIP/Dry	Total	Number	%	
Pilar	Urban	389			389	88		88	2,014	88	486		80	2,222	80			80	2,222	80	
	Rural	705			705	63		63	1,442	63	1,227		57	4,343	57			57	4,343	57	
	Total	1,094			1,094	70		70	3,456	70	1,713		64	6,565	64			64	6,565	64	
Placer	Urban	2,072			2,072	88		88	11,241	88	2,707		77	12,875	77			77	12,875	77	
	Rural	1,175			1,175	65		65	8,303	65	2,093		57	6,644	57			57	6,644	57	
	Total	3,247			3,247	78		78	19,544	78	4,770		68	19,519	68			68	19,519	68	
San Benito	Urban	373			373	96		96	2,087	96	425		88	2,296	88			88	2,296	88	
	Rural	158			158	34		34	739	34	510		31	915	31			31	915	31	
	Total	531			531	62		62	2,826	62	935		57	3,211	57			57	3,211	57	
San Francisco (Anaon)	Urban	552			552	67		67	2,704	67	914		60	2,953	60			60	2,953	60	
	Rural	888			888	73		73	2,946	73	1,336		66	5,073	66			66	5,073	66	
	Total	1,440			1,440	71		71	5,650	71	2,250		64	8,026	64			64	8,026	64	
San Isidro	Urban	301			301	96		96	1,728	96	354		85	1,945	85			85	1,945	85	
	Rural	373			373	51		51	918	51	829		45	2,418	45			45	2,418	45	
	Total	674			674	64		64	2,646	64	1,183		57	4,363	57			57	4,363	57	
San Jose	Urban	1,966			1,966	68		68	10,887	68	2,953		67	11,157	67			67	11,157	67	
	Rural	1,178			1,178	60		60	9,607	60	1,994		59	7,101	59			59	7,101	59	
	Total	3,144			3,144	65		65	20,494	65	4,947		64	18,258	64			64	18,258	64	
Santa Monica (Sapao)	Urban	175			175	51		51	926	51	368		48	1,013	48			48	1,013	48	
	Rural	556			556	58		58	1,053	58	1,042		53	3,440	53			53	3,440	53	
	Total	731			731	56		56	1,979	56	1,410		52	4,453	52			52	4,453	52	
Sison	Urban	540			540	96		96	2,780	96	624		87	3,105	87			87	3,105	87	
	Rural	946			946	83		83	2,404	83	1,273		74	5,719	74			74	5,719	74	
	Total	1,486			1,486	87		87	5,184	87	1,897		78	8,824	78			78	8,824	78	
Socomo	Urban	1,301			1,301	96		96	7,464	96	1,536		85	8,429	85			85	8,429	85	
	Rural	862			862	63		63	4,898	63	1,545		56	5,764	56			56	5,764	56	
	Total	2,163			2,163	79		79	12,362	79	3,081		70	14,193	70			70	14,193	70	
Surigao City (Capital)	Urban	1,921			1,921	41		41	39,595	41	14,941		13	42,825	13			13	42,825	13	
	Rural	5,845			5,845	80		80	56,564	80	8,047		73	33,222	73			73	33,222	73	
	Total	11,462			11,462	55		55	96,159	55	22,988		8	76,047	8			8	76,047	8	
Tagna-An	Urban	938			938	85		85	4,825	85	1,217		77	5,281	77			77	5,281	77	
	Rural	942			942	72		72	4,087	72	1,444		65	5,394	65			65	5,394	65	
	Total	1,880			1,880	78		78	8,912	78	2,661		71	10,675	71			71	10,675	71	
Tubajon	Urban	398			398	100		100	1,910	100	446		89	2,135	89			89	2,135	89	
	Rural	422			422	48		48	917	48	976		43	2,422	43			43	2,422	43	
	Total	820			820	65		65	2,827	65	1,422		58	4,557	58			58	4,557	58	
Tubod	Urban	287			287	97		97	1,480	97	304		94	1,522	94			94	1,522	94	
	Rural	1,337			1,337	77		77	1,175	77	1,795		74	6,961	74			74	6,961	74	
	Total	1,624			1,624	80		80	2,655	80	2,099		77	8,483	77			77	8,483	77	
Provincial Total	Urban	1,921			1,921	5		5	153,994	5	45,629		4	168,348	4			4	168,348	4	
	Rural	30,575			30,575	69		69	1,543,397	69	49,197		62	1,797,744	62			62	1,797,744	62	
	Total	57,993			57,993	2		2	3,088,391	2	94,826		61	3,488,092	61			61	3,488,092	61	

Table 8.2.7 Public School Students and Public Utilities Coverage in Phase I by Existing Facilities in the Base Year

Name of Municipalities	Public School Toilets				Public Toilets						
	Coverage in 1997		Coverage in 2003		Coverage in 1997		Coverage in 2003				
	Std. No. of Student that can be Served by Base Year	Total No. of Public School Students	%	Total No. of Public School Student	%	No. of PU with Toilets in Base Year	No. of PU with Sanitary Toilets in Base Year	%	No. of PU with Toilets	No. of PU with Sanitary Toilets in Base Year	%
Alegria	1,040	3,189	33	3,508	30	1	1	100	2	1	50
Bacua	2,138	2,138	100	2,421	88	2	2	100	3	2	67
Basilisa (Rizal)	3,000	4,460	67	5,392	56	1	1	100	2	1	50
Burgos	240	1,506	16	935	26	3	3	100	3	3	100
Cagdianao	2,840	2,928	97	2,862	99	1	1	100	2	1	50
Claver	3,600	3,760	96	4,149	87	3	3	100	4	3	75
Dapa	480	5,631	9	4,858	10	5	5	100	5	5	100
Del Carmen	2,156	2,156	100	2,364	91	1	1	100	2	1	50
Dinagat	880	3,152	28	2,503	35	5	5	100	5	5	100
General Luna	1,920	3,156	61	3,528	54				2		
Gigauit	3,009	3,009	100	3,418	88	4	4	100	5	4	80
Libjo (Albor)	520	3,535	15	3,910	13	5	5	100	6	5	83
Loreto	1,458	1,458	100	1,673	87	3	3	100	4	3	75
Mainit	3,040	5,690	53	6,151	49	4	4	100	5	4	80
Malimono	1,680	3,932	43	3,949	43	8	8	100	9	8	89
Pilar	960	1,578	61	1,752	55	2	2	100	2	2	100
Placer	4,919	4,919	100	5,610	88	3	3	100	4	3	75
San Benito	1,600	2,301	70	1,499	107	3	3	100	3	3	100
San Francisco (Anao-)	2,524	2,524	100	2,799	90	1	1	100	2	1	50
San Isidro	1,578	1,578	100	1,784	88	1	1	100	2	1	50
San Jose						4	4	100	4	4	100
Santa Monica (Sapao)	640	1,365	47	1,479	43	1	1	100	2	1	50
Sison	1,840	2,320	79	2,567	72	1	1	100	2	1	50
Socorro	2,640	3,886	68	4,382	60	3	3	100	3	3	100
Surigao City (Capital)	20,720	32,028	65	32,264	64	10	10	100	10	10	100
Tagana-An	1,040	2,775	37	3,038	34	1	1	100	2	1	50
Tubajon	1,320	1,869	71	1,920	69	1	1	100	2	1	50
Tubod	960	2,400	40	2,472	39	1	1	100	2	1	50
Provincial Total	68,742	109,243	63	113,187	61	78	78	100	99	78	79

8.3 Projection of Frame Values

8.3.1 Review of Past Population Development and Population Projection

(1) Review of past population development

1) Characteristics of past population development

Major statistical data of past population development are shown in Table 8.3.1, in which urban and rural population was adjusted by PPDO to reflect present conditions.

Table 8.3.1 Past Population Development

Area	Description	Total			Urban			Rural		
		1980	1990	1995	1980	1990	1995	1980	1990	1995
Region-X	Population	2,758,985	3,509,753	3,938,252	748,903	1,514,157	1,517,068	2,010,082	1,995,596	2,421,184
	Growth Rate	2.44%		2.33%	7.29%		0.04%	-0.07%		3.94%
Surigao del Norte	Population	363,414	425,978	442,203	109,422	204,304	211,645	253,992	221,674	230,558
	Growth Rate	1.60%		0.75%	6.44%		0.71%	-1.35%		0.79%
	Percentage 1/	13.2%	12.1%	11.2%	14.6%	13.5%	14.0%	12.6%	11.1%	9.5%

Note: 1/ Provincial population percentage to regional population

During the census year from 1980 to 1990 and from 1990 to 1995 which was the latest census year, the following population development was observed:

- The province recorded 1.60% of average annual growth rate (1980-1990) and 0.75% (1990-1995) which were lower than of the region at 2.44%, and 2.33% respectively.
- Percentage of provincial population to the regional population decreased from 13.2% in 1980 to 11.2% in 1995 in accordance with lower growth rates than those of the region.

2) 1995 population distribution in urban and rural areas

The 1995 population census results conducted by NSO were reviewed in terms of population distribution to urban and rural areas. In application of revised classification of barangays in urban and rural category to reflect present conditions, the population by municipality was adjusted as shown in Table 8.3.2.

Table 8.3.2 Population Distribution in Urban and Rural Areas

Municipality	Total Population	1995 Census Data		Adjusted Population	
		Urban	Rural	Urban	Rural
Alegria	11,764	3,010	8,754	5,094	6,670
Bacuag	12,309	5,416	6,893	8,051	4,258
Basilisa (Rizal)	24,141	504	23,637	3,002	21,139
Burgos	2,785	1,402	1,383	2,140	645
Cagdianao	11,175		11,175	5,089	6,086
Claver	14,300	6,468	7,832	7,416	6,884
Dapa	16,435	6,488	9,947	11,659	4,776
Del Carmen	12,316	3,330	8,986	3,330	8,986
Dinagat	8,609	7,557	1,052	2,516	6,093
General Luna	12,554	1,748	10,806	4,461	8,093
Gigaquit	15,261	2,976	12,285	6,325	8,936
Libjo (Albor)	14,928	2,989	11,939	2,989	11,939
Loreto	8,048	4,634	3,414	5,392	2,656
Mainit	21,780	4,845	16,935	9,879	11,901
Malimono	14,191	867	13,324	6,791	7,400
Pilar	8,299	1,802	6,497	2,217	6,082
Placer	20,712	10,328	10,384	12,204	8,508
San Benito	4,498	2,110	2,388	2,110	2,388
San Francisco (Anao-Aon)	10,005	1,442	8,563	3,906	6,099
San Isidro	5,791	1,729	4,062	1,729	4,062
San Jose	27,481	27,481		15,951	11,530
Santa Monica (Sapao)	7,219	1,772	5,447	1,772	5,447
Sison	8,853	2,797	6,056	2,797	6,056
Socorro	15,208	7,463	7,745	7,463	7,745
Surigao City (Capital)	104,909	46,513	58,396	68,507	36,402
Tagana-An	12,159	4,106	8,053	5,502	6,657
Tubajon	6,155	2,315	3,840	1,838	4,317
Tubod	10,318	1,515	8,803	1,515	8,803
Provincial Total	442,203	153,275	595,478	211,645	230,558

(2) Manner of population projection

The latest population study, National and Regional Population Projections was issued by NSO based on 1995 census results including the growth rates and demographic conditions of the respective regions. However, provincial/municipal population has not yet been published by the time of this PW4SP preparation. It seems to be caused by time constraint since the conduct of 1995 Population Census, while the NSO's possible method to be applied for provincial and municipal population projection was confirmed.

As a local based projection, Regional Development Council of Caraga is currently preparing Regional Development Master Plan (1998-2008), however, the population projection has not been concluded yet. In this respect, the possible method of NSO was adopted for this PW4SP. The regional population projected by the NSO was employed

- 1) Population projections for the provinces are first generated based on population projections for the Region X taken from a published volume on regional population projection for the years 1995 to 2020. The regional population is projected based on the 1995 Census of Population
- 2) The ratio method is used for the projection of both provincial and municipal population.
 - For the provincial level projections, ratio (R) of the population of the concerned provinces to the population of the region are projected. These ratios are multiplied to the projected population of the region for each projection year.
 - Similarly, for the municipal population projections, ratios of the population of the municipalities of each concerned province to the population of the province are projected. These ratios are multiplied to the projected population of the province for each projection year.
 - The basic assumption adopted is that for each concerned province, and for each of the municipality in the province, the rate (r) at which the ratios change will gradually decline so that they will all become zero after 50 years from 1995. This implies that stability of the ratios will be attained after 50 years from 1995.
 - Based on this assumption, a schedule of ratios of the provinces in the same region, and of the municipalities in the same province is derived for each projection year using the formula:

$$R(k) = R(0) \prod_{i=1}^k (1 + r - kr/50)$$

where; R(k) = ratio in kth year from 1995 of the population of the province to that of the region or of the population of the municipality to that of the province

R(0) = ratio in 1995 of the population of the province to that of the region or of the population of the municipality to that of the province

r = initial rate of change of the ratio

k = "k"th year from 1995

- The initial rate of the change is derived based on the levels and trends of the ratios observed in the 1970, 1980 and 1995 censuses.

- The initial rate of the change is derived based on the levels and trends of the ratios observed in the 1970, 1980 and 1995 censuses.
 - A geometric formula for calculating the rate at which the ratio changes is adopted, that is, r is equal to $(\ln(P_2/P_1))/n$, where P_2 is the ratio in Year₂, P_1 , in Year₁, and n is the number of years between Year₁ and Year₂. Thus for instance, for the intercensal period 1970-1980, the rate of change in the ratio is equal to $\ln(P_{1980}/P_{1970})$.
- 3) In the present application(r), the concerned provinces and municipalities are classified into following four types based on the trends of their ratios as observed in the censuses of 1970, 1980, 1990 and 1995:
- Type I – provinces/municipalities that showed unidirectional trend in their ratios, that is, consistently increasing or decreasing from 1970 to 1995 (r is positive or negative for intercensal periods 1970-1980, 1980-1990 and 1990-1995);
 - Type II – provinces/municipalities that showed unidirectional trend in their ratios only from 1980 to 1995 (r is positive or negative for the last two intercensal periods only, that is, 1980-1990 and 1990-1995);
 - Type III – provinces/municipalities that showed unidirectional trend in their ratios only from 1970 to 1990 (r is positive or negative for the first two intercensal periods only, that is 1970-1980 and 1980-1990);
 - Type IV – provinces/municipalities with erratic trends.

In general, the initial rate to be used for each type of province or municipality is determined according to the following criteria.

- For a type I province or municipality, the initial rate is equal to the lowest observed annual rate change in the ratio or the lower of the average annual rates observed during the 1980-1990 and 1990-1995 periods, whichever produces a more demographically probable result;
- For a type II province or municipality, the initial rate is equal to the lower of the average annual rates observed during 1980-1990 and 1990-1995 periods;
- For a type III province or municipality, the initial rate is equal to one-half of the average annual rate during the period 1990-1995; and

The province of Surigao del Norte is classified as "type II" based on the past level and trend of ratios of change, and initial rate of change was estimated at -0.008. While, those of the municipalities were established as shown below.

<u>Municipality</u>	<u>Initial Ratio</u>	<u>Municipality</u>	<u>Initial Ratio</u>
Alegria	0.00049	Malimono	-0.00853
Bacuag	0.00269	Pilar	0.00024
Basilisa (Rizal)	0.00864	Placer	0.00361
Burgos	0.00067	San Benito	-0.00026
Cagdianao	-0.00373	San Francisco (Anao-Aon)	0.00046
Claver	0.00062	San Isidro	0.00232
Dapa	-0.00568	San Jose	-0.00697
Del Carmen	0.00015	Santa Monica (Sapao)	-0.0017
Dinagat	-0.00446	Sison	0.00094
General Luna	0.00168	Socorro	0.00248
Gigaquit	0.00266	Surigao City (Capital)	0.00016
Libjo (Albor)	0.00088	Tagana-An	0.00005
Loreto	0.00442	Tubajon	0.00180
Mainit	-0.00158	Tubod	-0.00602

(3) Present population (1997)

The present population of the province including municipalities was estimated in application of the initial rates of change as mentioned above. This means that the trend of past population development is assumed to have been prevailing up to the present. Household size in 1997 was also assumed to be the same as that in 1995.

(4) Projection of provincial population by target year

Review of provincial population projected by target year applying aforementioned method, as shown in Table 8.3.3, revealed that the future provincial population also reflected the discounted growth rate, which is same as regional population projection.

- Population in 2003 is resulted from average annual growth rate of 1.59 % (1995-1998) and 1.58 % (1998-2003).
- Population in 2010 with the base year of 2003 is resulted from average annual growth rate of 1.38 % (2003-2010).
- Present profile of municipal population distribution both in urban and rural areas is assumed to prevail through the future.
- Household size in the year 2003 is assumed to be the same as the 1995 population census results, while that in the year 2010 is assumed to be 4 persons/household for the whole province in accordance with the target of the national family planning.

- Population in 2010 with the base year of 2003 is resulted from average annual growth rate of 1.38 % (2003-2010).
- Present profile of municipal population distribution both in urban and rural areas is assumed to prevail through the future.
- Household size in the year 2003 is assumed to be the same as the 1995 population census results, while that in the year 2010 is assumed to be 4 persons/household for the whole province in accordance with the target of the national family planning.

Table 8.3.3 Growth Rates and Population Projection for Target Years: Region and Province

Area	Growth Rate (%)					Population and Provincial Share in the Region			
	1980 – 1990	1991 – 1995	1995 – 1998	1998 – 2003	2003 – 2010	1995	1997	2003	2010
						NSO Census	Base Year	Medium Term	Long Term
Region X	2.44	2.33	2.49	2.30	2.02	3,938,252	4,139,703	4,955,545	5,465,272
		(4.5)	6.9	(7.6)	(12.2)				
Surigao del Norte	1.60	0.75	1.59	1.58	1.38	442,203	456,018	501,512	552,184
						11.2%	11.0%	10.1%	10.1%

Note: () shows percentage of growth rate decline from the previous period.

Table 8.3.4 shows provincial population by urban and rural area for the target years and the year 1995. Table 8.3.5 presents projected number of households for the target years.

Table 8.3.4 Provincial Population for Target Years

Area	Population/ Composition	1995	1997	2003	2010
Total	Population	442,203	456,018	501,512	552,184
Urban Area	Population	211,645	217,939	238,672	261,594
	Composition (%)	48	48	48	47
Rural Area	Population	230,558	238,079	262,839	290,591
	Composition (%)	52	52	52	53

Table 8.3.5 Projected Number of Households by Urban and Rural Area by Municipality by Target Year

Name of Municipality	Household Size			Number of Households											
	1995			1997			2003			2010					
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total			
Alegria	5.90	5.44	5.63	864	1,227	2,091	892	1,267	2,159	986	1,400	2,386	1,606	2,103	3,709
Bacuag	5.59	6.14	5.77	1,440	693	2,133	1,502	723	2,225	1,701	819	2,520	2,690	1,423	4,113
Basilisa (Rizal)	5.65	5.54	5.55	531	3,817	4,348	568	4,079	4,647	689	4,946	5,635	1,179	8,300	9,479
Burgos	4.83	5.38	4.95	443	120	563	458	124	582	507	137	644	678	204	882
Cagdianao	4.88	5.09	5.00	1,042	1,195	2,237	1,060	1,215	2,275	1,118	1,283	2,401	1,440	1,722	3,162
Claver	5.03	5.02	5.02	1,475	1,371	2,846	1,524	1,418	2,942	1,687	1,569	3,256	2,346	2,178	4,524
Dapa	4.90	5.06	4.95	2,377	943	3,320	2,400	952	3,352	2,481	984	3,465	3,141	1,287	4,428
Del Carmen	5.12	5.20	5.17	651	1,729	2,380	671	1,783	2,454	739	1,963	2,702	1,041	2,808	3,849
Dunagat	4.88	5.12	5.05	516	1,189	1,705	523	1,206	1,729	547	1,263	1,810	699	1,692	2,391
General Luna	5.04	5.40	5.27	885	1,499	2,384	919	1,556	2,475	1,029	1,742	2,771	1,451	2,632	4,083
Gigaquit	5.42	5.46	5.44	1,168	1,636	2,804	1,217	1,706	2,923	1,377	1,932	3,309	2,111	2,983	5,094
Libjo (Albor)	5.14	5.33	5.29	581	2,239	2,820	602	2,319	2,921	668	2,573	3,241	952	3,802	4,754
Loreto	4.71	4.91	4.77	1,145	541	1,686	1,202	568	1,770	1,388	656	2,044	1,886	929	2,815
Mainit	5.22	5.41	5.33	1,892	2,198	4,090	1,940	2,255	4,195	2,095	2,435	4,530	2,952	3,556	6,508
Malimono	5.07	5.24	5.16	1,339	1,412	2,751	1,337	1,409	2,746	1,342	1,416	2,756	1,706	1,859	3,565
Pilar	5.19	5.64	5.51	427	1,079	1,506	441	1,113	1,554	486	1,227	1,713	695	1,905	2,600
Placer	5.40	4.94	5.20	2,258	1,722	3,980	2,366	1,803	4,169	2,707	2,063	4,770	4,180	2,914	7,094
San Benito	5.60	5.29	5.43	377	451	828	388	465	853	425	510	935	652	738	1,390
San Francisco (Anao-Aon)	4.88	5.21	5.07	801	1,171	1,972	827	1,210	2,037	914	1,336	2,250	1,231	1,922	3,153
San Isidro	5.73	5.75	5.74	302	707	1,009	314	735	1,049	354	829	1,183	572	1,344	1,916
San Jose	5.53	5.92	5.69	2,894	1,948	4,832	2,895	1,955	4,850	2,953	1,994	4,947	4,163	3,009	7,172
Santa Monica (Sapao)	5.32	5.78	5.66	333	942	1,275	341	966	1,307	368	1,042	1,410	528	1,623	2,151
Sison	5.15	5.47	5.36	543	1,108	1,651	562	1,146	1,708	624	1,273	1,897	892	1,932	2,824
Socorro	5.72	5.90	5.81	1,305	1,313	2,618	1,359	1,368	2,727	1,536	1,545	3,081	2,479	2,573	5,052
Surigao City (Capital)	5.21	5.14	5.18	13,160	7,080	20,240	13,571	7,309	20,880	14,941	8,047	22,988	21,412	11,378	32,790
Tagana-An	5.13	5.23	5.19	1,072	1,273	2,345	1,106	1,313	2,419	1,217	1,444	2,661	1,715	2,075	3,790
Tubajon	4.80	5.15	5.04	383	839	1,222	398	871	1,269	446	976	1,422	600	1,408	2,008
Tubod	5.17	5.09	5.10	293	1,729	2,022	295	1,742	2,037	304	1,795	2,099	405	2,352	2,757
Provincial Total	5.23	5.34	5.29	40,487	43,171	83,658	41,678	44,576	86,254	45,629	49,197	94,826	65,402	72,651	138,053

8.3.2 School Enrollment Projection

Table 8.3.6 Projected School Enrollment by Municipality by Target Year

Name of Municipality	1997			2003			2010					
	School Age Population	Total Enrollment		School Age Population	Total Enrollment		School Age Population	Total Enrollment				
		Number	Participation Rate		Number	Participation Rate		Number	Participation Rate			
Alegria	3,414	3,374	99	3,189	3,774	99	3,508	3,957	95	4,165	3,749	90
Bacurg	3,239	2,559	79	2,138	3,668	66	2,421	2,906	70	4,151	2,698	65
Basilisa (Rizal)	6,841	4,460	65	4,460	8,296	65	5,392	7,036	70	10,052	7,036	70
Bugos	844	1,506	178	1,506	935	100	935	983	95	1,035	983	95
Cagdanoa	2,712	2,928	108	2,928	2,862	100	2,862	2,868	95	3,019	2,868	95
Claver	4,076	4,054	99	3,760	4,510	99	4,149	4,759	95	4,988	4,489	90
Dapa	4,700	5,631	120	5,631	4,858	100	4,858	4,769	95	5,020	4,769	95
Del Carmen	3,767	2,156	57	2,156	4,147	57	2,364	2,965	65	4,562	2,965	65
Dinagat	2,390	3,573	149	3,152	2,503	100	2,503	2,489	95	2,620	2,489	95
General Luna	3,890	3,156	81	3,156	4,356	81	3,528	4,143	85	4,874	4,143	85
Gigaquit	4,506	3,233	72	3,009	5,101	72	3,418	4,328	75	5,771	4,328	75
Lorito	4,297	3,535	82	3,535	4,768	82	3,910	4,495	85	5,288	4,495	85
Loreto	2,300	1,663	72	1,458	2,656	63	1,912	2,992	65	3,065	1,992	65
Mainit	6,546	6,340	97	5,690	7,070	87	6,151	6,869	90	7,652	6,869	90
Malimono	4,231	3,932	93	3,932	4,246	93	3,949	4,048	95	4,261	4,048	95
Pilar	2,484	1,578	64	1,578	2,737	64	1,752	2,110	70	3,014	2,110	70
Placer	5,699	5,150	90	4,919	6,523	90	5,610	6,714	90	7,460	6,341	85
San Benito	1,368	2,301	168	2,301	1,499	100	1,499	1,560	95	1,642	1,560	95
San Francisco (Anao-Aon)	2,816	2,719	97	2,524	3,110	97	2,799	3,262	95	3,434	3,262	95
San Isidro	1,797	1,578	88	1,578	2,027	88	1,784	2,056	90	2,284	2,056	90
San Jose	5,175	5,278	102	5,278	5,382	102	5,382	5,382	100	5,382	5,382	100
Santa Monica (Sapao)	2,046	1,365	67	1,365	2,207	67	1,479	1,666	70	2,380	1,666	70
Sison	2,656	2,320	87	2,320	2,950	87	2,567	3,110	95	3,274	3,110	95
Socorro	4,673	3,886	83	3,886	5,279	83	4,382	5,066	85	5,960	5,066	85
Sungao City (Capital)	29,306	36,228	124	32,028	32,264	100	32,264	33,725	95	35,500	33,725	95
Tagana-An	3,454	2,775	80	2,775	3,798	80	3,038	3,548	85	4,174	3,548	85
Tubajon	1,713	1,869	109	1,869	1,920	100	1,920	2,043	95	2,151	2,043	95
Tubod	2,857	2,400	84	2,400	2,943	84	2,472	2,728	90	3,031	2,728	90
Provincial Total	123,797	116,269	94	109,243	136,283	88	113,187	126,175	84	150,189	126,175	84

8.3.3 Projection of the Number of Public Utilities

Table 8.3.7 Projected Number of Public Utilities by Municipality by Target Year

Name of Municipality	Type	1997	2003		2010	
		No. of Public Utilities	Proposed Construction	Total	Proposed Construction	Total
Alegria	Public Market	1		1		1
	Bus/Jeepney Terminal		1	1		1
	Parks/Playground				1	1
	Total	1	1	2	1	3
Bacuag	Public Market	2		2		2
	Bus/Jeepney Terminal		1	1		1
	Parks/Playground				1	1
	Total	2	1	3	1	4
Basilisa (Rizal)	Public Market	1		1		1
	Bus/Jeepney Terminal					
	Parks/Playground		1	1		1
	Total	1	1	2		2
Burgos	Public Market	1		1		1
	Bus/Jeepney Terminal					
	Parks/Playground	2		2		2
	Total	3		3		3
Cagdianao	Public Market	1		1		1
	Bus/Jeepney Terminal					
	Parks/Playground		1	1		1
	Total	1	1	2		2
Claver	Public Market	1		1		1
	Bus/Jeepney Terminal	1	1	2		2
	Parks/Playground	1		1		1
	Total	3	1	4		4
Dapa	Public Market	2		2		2
	Bus/Jeepney Terminal	2		2		2
	Parks/Playground	1		1		1
	Total	5		5		5
Del Carmen	Public Market	1		1		1
	Bus/Jeepney Terminal					
	Parks/Playground		1	1		1
	Total	1	1	2		2
Dinagat	Public Market	1		1	1	2
	Bus/Jeepney Terminal					
	Parks/Playground	4		4		4
	Total	5		5	1	6
General Luna	Public Market		1	1		1
	Bus/Jeepney Terminal					
	Parks/Playground		1	1		1
	Total		2	2		2
Gigaquit	Public Market	1		1		1
	Bus/Jeepney Terminal		1	1		1
	Parks/Playground	3		3		3
	Total	4	1	5		5
Libjo (Albor)	Public Market		1	1		1
	Bus/Jeepney Terminal					
	Parks/Playground	5		5		5
	Total	5	1	6		6
Loreto	Public Market	1		1		1
	Bus/Jeepney Terminal					
	Parks/Playground	2	1	3		3
	Total	3	1	4		4
Mainit	Public Market	1		1	1	2
	Bus/Jeepney Terminal	3		3		3
	Parks/Playground		1	1		1
	Total	4	1	5	1	6

Name of Municipality	Type	1997	2003		2010	
		No. of Public Utilities	Proposed Construction	Total	Proposed Construction	Total
Malimono	Public Market	1		1		1
	Bus/Jeepney Terminal	1		1		1
	Parks/Playground	6	1	7		7
	Total	8	1	9		9
Pilar	Public Market	1		1		1
	Bus/Jeepney Terminal					
	Parks/Playground	1		1		1
	Total	2		2		2
Placer	Public Market	1		1		1
	Bus/Jeepney Terminal	2		2		2
	Parks/Playground		1	1	1	2
	Total	3	1	4	1	5
San Benito	Public Market	1		1		1
	Bus/Jeepney Terminal	1		1		1
	Parks/Playground	1		1		1
	Total	3		3		3
San Francisco (Anao-Aon)	Public Market	1		1		1
	Bus/Jeepney Terminal		1	1		1
	Parks/Playground				1	1
	Total	1	1	2	1	3
San Isidro	Public Market	1		1		1
	Bus/Jeepney Terminal					
	Parks/Playground		1	1		1
	Total	1	1	2		2
San Jose	Public Market	2		2		2
	Bus/Jeepney Terminal					
	Parks/Playground	2		2		2
	Total	4		4		4
Santa Monica (Sapao)	Public Market	1		1		1
	Bus/Jeepney Terminal		1	1		1
	Parks/Playground					
	Total	1	1	2		2
Sison	Public Market	1		1		1
	Bus/Jeepney Terminal		1	1		1
	Parks/Playground				1	1
	Total	1	1	2	1	3
Socorro	Public Market	2		2		2
	Bus/Jeepney Terminal					
	Parks/Playground	1		1		1
	Total	3		3		3
Surigao City (Capital)	Public Market	6		6		6
	Bus/Jeepney Terminal	2		2		2
	Parks/Playground	2		2		2
	Total	10		10		10
Tagana-An	Public Market	1		1		1
	Bus/Jeepney Terminal		1	1		1
	Parks/Playground				1	1
	Total	1	1	2	1	3
Tubajon	Public Market	1		1		1
	Bus/Jeepney Terminal					
	Parks/Playground		1	1		1
	Total	1	1	2		2
Tubod	Public Market	1		1		1
	Bus/Jeepney Terminal		1	1		1
	Parks/Playground				1	1
	Total	1	1	2	1	3
Provincial Total	Public Market	35	2	37	2	39
	Bus/Jeepney Terminal	12	9	21		21
	Parks/Playground	31	10	41	7	48
	Total	78	21	99	9	108

8.4 Types of Facilities and Implementation Criteria

8.4.1 Water Supply

(1) Urban water supply

1) Untapped spring

First priority is given to seek for utilization of untapped spring with large discharge capacity. During the course of PW4SP preparation, various untapped spring sources have been identified. Considerably large scale untapped spring sources having discharge capacity of more than 100 cu.m/day are then selected as potential water sources and rapidly evaluated as shown in Table 8.4.1.

Table 8.4.1 Rapid Evaluation of Untapped Spring for Use in Urban Water Supply

Name of Municipality	Location (Name of Barangay)	Untapped Spring				Population can be Served by Untapped Spring	Population Served by Existing Water Supply System/Facility in Base Year		Future Urban Population	
		Discharge Capacity (cu.m/day)		Elev. Diff. (m)	Dist. from Mon. (km)		Level III	Total	2003	2010
		100%	70%							
General Luna	Catangnan	2,380	1,670	7	2.0	16,700	0	2,981	5,187	5,803
	Dide	1,730	1,200	Unknown	2.0	12,000				
San Francisco	Jubgan	3,450	2,420	Unknown	3.0	24,200	1,603	3,491	4,458	4,922
	Sub-total	5,180	3,620			36,200				

A total of three (3) untapped spring sources in two municipalities was selected as potential water source for urban water supply and evaluated as shown below based on the information gathered at this moment.

General Luna

One large scale untapped spring was identified having discounted discharge capacity of about 1,670 cu.m/day which is equivalent to serve for some 16,700 persons by Level III service.

There is no Level III system in the urban area, while approximately 3,000 persons are depending on Level II system or Level I facilities. When the future urban population in Phase I, at about 5,200 persons, is taken into account, the said untapped spring is deemed to have more than enough supply capacity even to cover the whole municipality. In this respect, extension of water supply to neighboring municipality may be available, if technical and financial feasibility is confirmed.

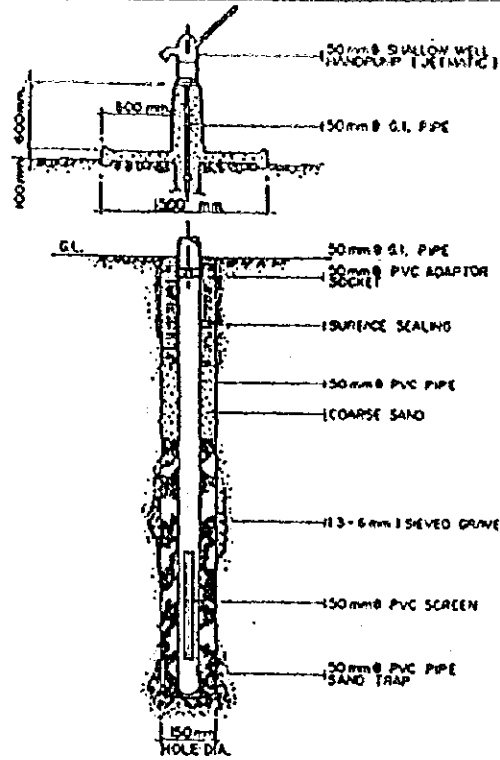
San Francisco

There are two (2) large scale untapped springs identified during the PW4SP preparation. Although the elevation of these springs are not yet confirmed, they are located at about 2 to 3 km away from the poblacion which is quite a reasonable distance.

At present, Level III system is serving for about 1,600 persons in the urban area and another 3,500 persons are using Level II system or Level I facilities. The urban population is estimated to reach about 4,500 persons in Phase I period and about 4,900 persons in Phase II period, respectively.

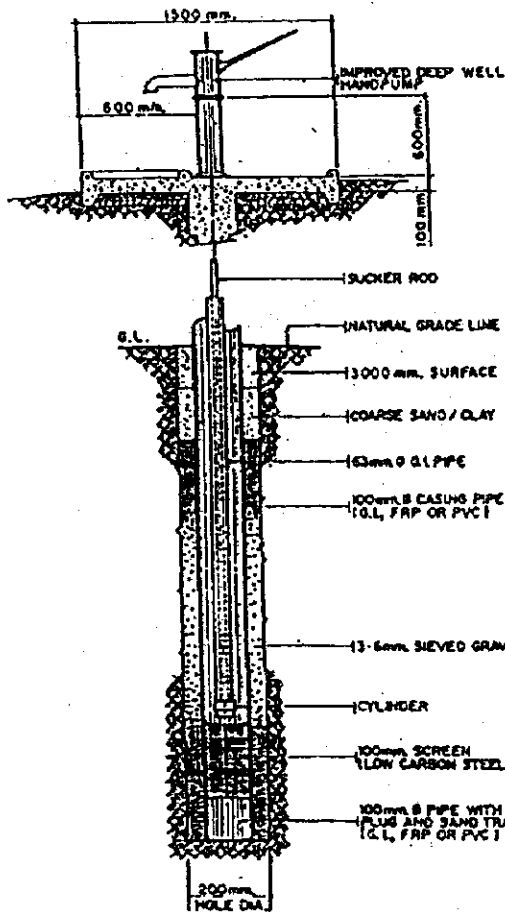
When the magnitude of future water demand is taken into account, the said untapped spring has more than the required supply capacity and its excess water can be utilized to expand Level III service to rural barangays and further to neighboring municipalities, if technical and financial feasibility is confirmed.

As evaluated, the two municipalities have favorable untapped spring sources for Level III system. Both municipalities will have excess volume of spring discharge beyond their water demand and are capable to serve not only in rural barangays, but also for neighboring municipality. It shall be noted, however, that confirmation of difference of elevation between untapped spring and potential service area, as well as distance and topographic conditions is prerequisite to realize this option. Discharge measurement of each spring throughout the year is also indispensable to obtain dependable/reliable discharge of the springs.

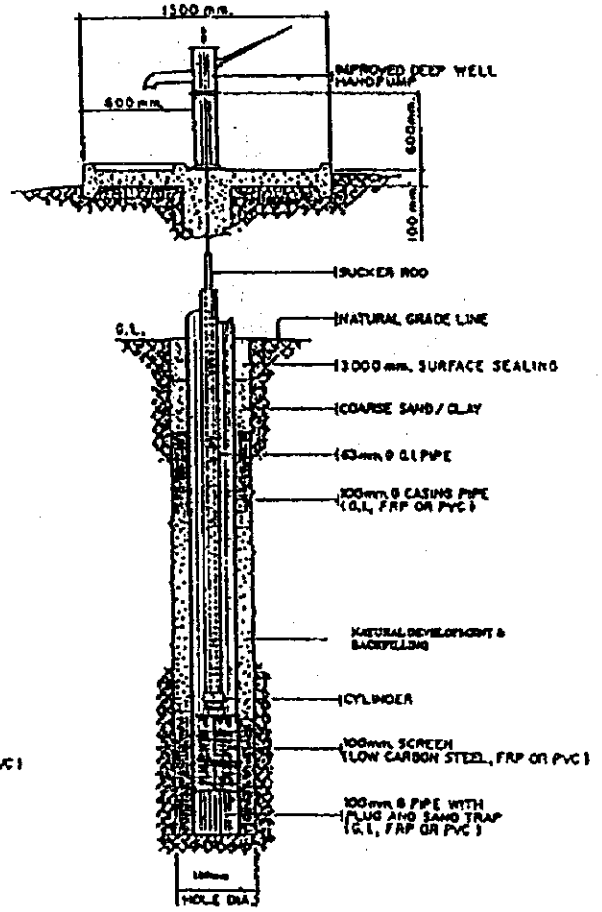


OPEN HOLE DRILLING & GRAVEL PACK METHOD

SHALLOW WELLS



OPEN HOLE DRILLING & GRAVEL PACK METHOD



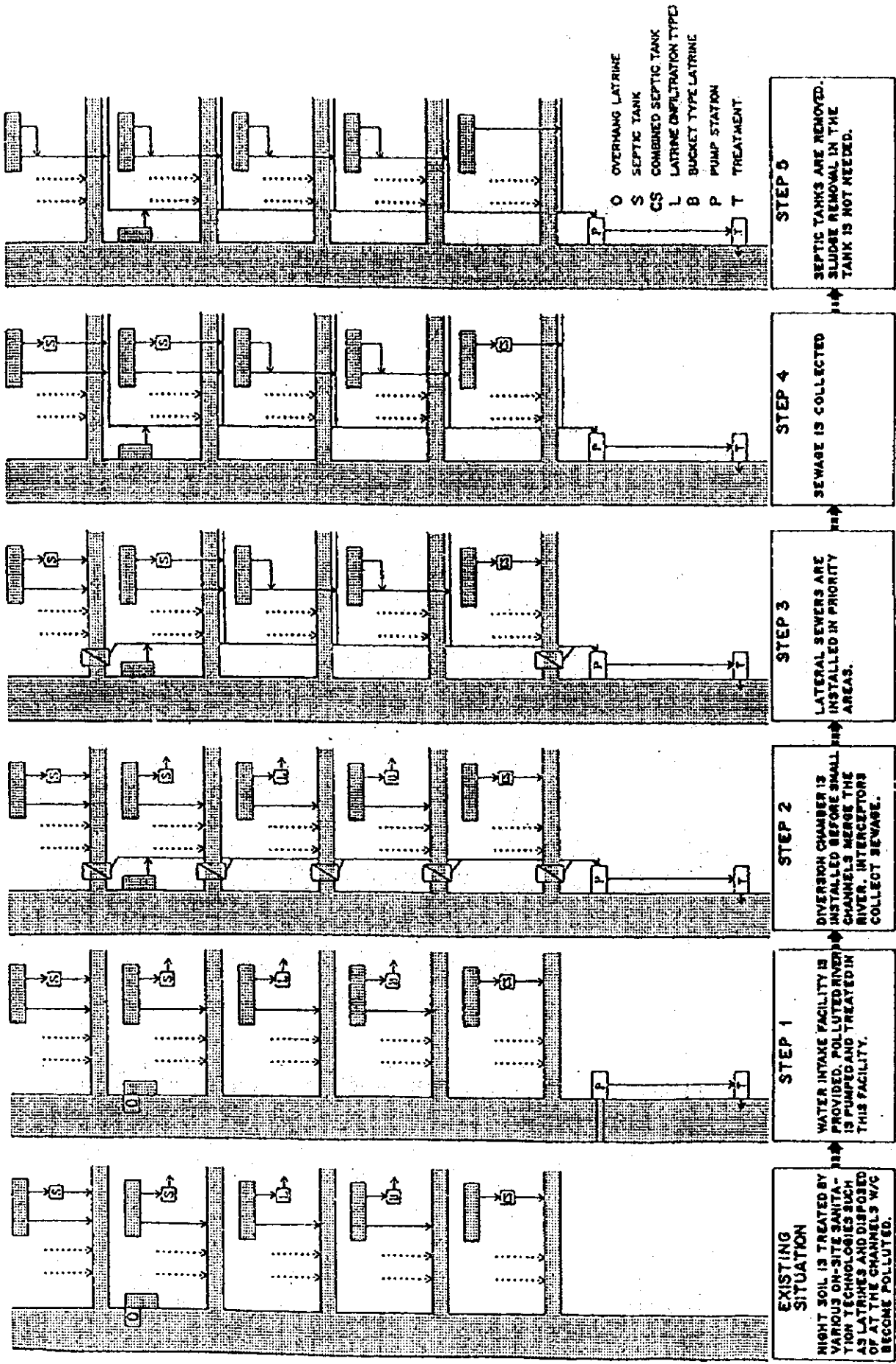
OPEN HOLE DRILLING & NATURAL GRAVEL PACK METHOD

DEEP WELLS

FIGURE 8.4.1

TYPICAL STRUCTURE OF LEVEL I WELL FACILITY

FIGURE 8.4.2 STAGED IMPROVEMENT IN SEWAGE COLLECTION METHOD



8.5 Service Coverage by Target Year

8.5.1 Water Supply

(1) Population to be served by Level II system in Phase I

Thirty-four (34) untapped spring sources were confirmed to be suitable for Level II systems in rural water supply by the time of PW4SP preparation as shown in Table 8.5.1.

Conditions and assumptions applied for this estimate are as follows:

Table 8.5.1 Potential Population to be Served by Level II System in Phase I

Name of Municipality	Number of Untapped Spring	Number of Barangay to be Served	Number of Households to be Served	Population to be Served
Alegria	8	8	800	4,352
Bacuag	6	6	600	3,684
Basilisa (Rizal)				
Burgos				
Cagdianao				
Claver				
Dapa				
Del Carmen	1	1	100	520
Dinagat	9	9	900	4,608
General Luna	1	1	100	540
Gigaquit				
Libjo (Albor)				
Loreto				
Mainit				
Malimono	1	1	100	524
Pilar				
Placer				
San Benito				
San Francisco (Anao-Aon)	2	2	200	1,042
San Isidro	6	6	600	3,450
San Jose				
Santa Monica (Sapao)				
Sison				
Socorro				
Surigao City (Capital)				
Tagana-An				
Tubajon				
Tubod				
Provincial Total	34	34	3,400	18,720

Source capacity:

The average source capacity of untapped spring was assumed to meet the need of 100 households based on the review of existing Level II systems with spring sources.

Number of system:

Thirty-four (34) untapped springs were considered to serve thirty-four (34) Level II systems in thirty-four (34) rural barangays of 8 municipalities.

(2) Population to be served by target year

Phase I

For urban area, the additional service coverage was estimated to be served by Level III service. For rural area, the population to be served by Level II systems with untapped springs was first calculated and the rest of additional service coverage was estimated to be served by Level I facilities.

Phase II

For urban area, the population served by Level I and II facilities in base year was considered to be absorbed by Level III service aside from the additional service coverage to be estimated by the sector target. For rural area, all existing facilities in Phase I was assumed to be utilized through the future.

The population to be served by target year is exhibited in Table 8.5.2 and Table 8.5.3.

Table 8.5.2. Population to be Served in Phase I (Water Supply)

Name of Municipality	Area	Population Served in the Base Year					Phase I Coverage (2003)									
		Total Population					Service Coverage			Additional Population to be Served						
		Level III	Level II	Level I	Total	Total	Level III	Level II	Level I	Total	Level III	Level II	Level I	Total		
Alegria	Urban	1,040	1,500	2,258	4,798	5,816	1,040	1,500	2,258	4,798						
	Rural		1,233	4,453	5,686	7,616		5,585	889	6,474		4,352		4,352		
	Total	1,040	2,733	6,711	10,484	13,432	1,040	7,085	3,147	11,272		4,352		4,352		
Bacuag	Urban	2,875				2,875	2,875	9,506	7,605	7,605	4,730					
	Rural		1,140	1,377	2,517	5,028		4,824		4,274		3,684		3,684		
	Total	2,875	1,140	1,377	5,392	14,534	2,875	4,824	11,879	11,879	4,730	3,684		8,414		
Basilisa (Nizal)	Urban			1,699	1,699	3,891	1,414		1,699	3,113						
	Rural			20,719	20,719	27,402			23,292	23,292			2,573	2,573		
	Total			22,418	22,418	31,293	1,414		24,991	26,405	1,414		2,573	3,987		
Burgos	Urban	321	1,138		1,509	2,450	772	1,188		1,960	451			451		
	Rural		270	266	536	739		270	358	628			92	92		
	Total	321	1,438	266	2,045	3,189	772	1,458	358	2,588	451		92	543		
Cagdianao	Urban						3,458	4,366		4,366				4,366		
	Rural	544	1,945		2,489	6,528	544	1,945	3,060	5,549			3,060	3,060		
	Total	544	1,945		2,489	11,986	4,910	1,945	3,060	9,915	4,366		3,060	7,426		
Claver	Urban			5,161	5,161	8,485	1,627		431	6,264	6,695			1,548		
	Rural		431	4,716	5,147	7,877	1,627		431	11,425	13,483	1,627		1,548		
	Total		431	9,877	10,308	16,362	3,254		862	17,750	20,168	3,254		3,096		
Dapa	Urban	1,389		6,982	8,351	12,157	2,764		2,415	1,818	4,233			1,818		
	Rural		2,415		2,415	4,980			2,415	8,780	13,959	1,375		1,818		
	Total	1,389	2,415	6,982	10,766	17,137	2,764	2,415	4,233	13,959	16,332	3,190		3,636		
Del Carmen	Urban	65	3,255	9	3,329	3,783	65	3,255	9	3,299						
	Rural	300	1,955	3,452	5,707	10,208	300	2,475	5,902	8,677	520	2,450	2,970			
	Total	365	5,210	3,461	9,036	13,991	365	5,730	5,911	12,006	520	2,450	2,970			
Dinagat	Urban		2,515	35	2,550	2,670		2,515	35	2,550						
	Rural		1,351	4,575	5,926	6,466		5,939	4,575	5,926		4,608		4,608		
	Total		3,866	4,610	8,476	9,136		8,474	4,610	8,476		4,608		4,608		
General Luna	Urban			2,981	2,981	3,187	1,169		2,981	4,150	1,169			1,169		
	Rural			6,519	6,519	9,409		540	7,438	7,998	540	939	1,479			
	Total			9,500	9,500	14,596	1,169	540	10,439	12,148	1,169	939	1,479			
Gigaqui	Urban	2,443		1,193	3,638	7,465	4,779		1,193	5,972	2,334			2,334		
	Rural	3,100		3,744	6,844	10,447	3,100		5,865	8,965			2,121	2,121		
	Total	5,543		4,937	10,482	17,912	7,879		7,038	14,937	2,334		2,121	4,455		
Libjo (Albor)	Urban		835		835	3,433	1,911		835	2,746	1,911			1,911		
	Rural		3,427	4,438	7,865	13,714		3,427	8,230	11,657			3,792	3,792		
	Total		4,262	4,438	8,700	17,147	1,911	4,262	8,230	14,403	1,911		3,792	5,703		
Loreto	Urban	499	3,773	780	5,052	6,538	677	3,773	780	2,773	178			178		
	Rural		2,773		2,773	3,521										
	Total	499	6,546	780	7,825	9,759	677	3,773	780	2,773	178			178		
Maunir	Urban	1,696		3,274	4,970	10,936	2,102	3,274	8,769	404				404		
	Rural	5,297	1,179	2,875	9,349	13,175	5,297	1,179	4,723	11,999			1,850	1,850		
	Total	6,993	4,552	6,149	17,694	24,111	7,399	4,452	7,997	19,968	404		1,850	2,254		
Malimono	Urban	735	120		855	6,802	5,322	120		5,442	4,587			4,587		
	Rural		5,550	1,103	6,653	7,411	6,074	1,103	6,653	324			324	524		
	Total	735	5,670	1,103	7,508	14,213	5,322	6,194	1,103	12,095	4,587		324	5,111		

Table 8.5.2. Population to be Served in Phase I (Water Supply)

Name of Municipality	Area	Population Served in the Base Year					Phase I Coverage (2003)													
		Level III			Level II		Level I		Total		Total Population			Service Coverage			Additional Population to be Served			
		Level III	Level II	Level I	Total	Level III	Level II	Level I	Total	Level III	Level II	Level I	Total	Level III	Level II	Level I	Total			
Pilar	Urban	1,886	1,886	1,886	1,886	2,522	132	1,886	2,018	132										
	Rural	644	644	644	644	6,919		5,237	7,891											
	Total	2,530	2,530	2,530	2,530	8,441	132	7,891	7,891	132										
Placer	Urban	660	660	660	660	14,829		12,089	12,089											
	Rural	735	735	735	735	10,193	735	8,664	8,664											
	Total	1,395	1,395	1,395	1,395	25,022	735	20,753	20,753											
San Benito	Urban	429	429	429	429	2,382	1,106	1,906	1,906	686										
	Rural	800	800	800	800	2,696		2,292	2,292											
	Total	1,229	1,229	1,229	1,229	5,078	1,106	4,198	4,198	686										
San Francisco (Amapa-Ant)	Urban	1,603	200	1,688	3,491	4,458	1,678	200	1,688	3,566	75									
	Rural	3,138	1,364	1,251	5,753	6,962	3,138	2,406	3,74	5,918	1,042									
	Total	4,741	1,364	2,939	9,244	11,420	4,816	2,606	2,606	9,484	75	1,042								
San Isidro	Urban	1,720	1,720	1,720	1,720	2,030		1,720	1,720											
	Rural	2,988	2,988	2,988	2,988	4,799		4,054	4,054											
	Total	4,708	4,708	4,708	4,708	6,799		5,774	5,774											
San Jose	Urban	366	802	3,553	4,721	16,310	8,709	802	3,553	13,064	8,323									
	Rural	180	2,866	2,866	2,866	11,804		9,953	10,033											
	Total	546	5,418	6,419	7,587	28,114	8,709	982	13,406	23,097	8,323									
Santa Monica (Sapas)	Urban	1,459	356	1,815	1,938	1,459	356		1,815											
	Rural	90	231	3,195	3,516	6,020	90	231	4,796	5,117										
	Total	1,549	587	5,010	5,454	7,479	346	462	6,592	6,932										
Sison	Urban	85	1,227	1,312	1,312	3,216	1,346		1,227	2,573	1,261									
	Rural	3,515	2,489	33	6,037	6,903	3,515	2,489	33	6,037										
	Total	3,600	2,489	1,260	7,349	10,179	4,861	2,489	1,260	8,610	1,261									
Socorro	Urban	6,845	6,845	6,845	6,845	8,784	182		7,449	7,449										
	Rural	5,325	5,325	5,325	5,325	9,116		7,449	7,449											
	Total	12,170	12,170	12,170	12,170	17,900	182	14,594	14,776	182										
Sunjiso City (Capital)	Urban	45,180	22,469	67,649	67,649	77,841	45,180		22,469	67,649										
	Rural	900	27,165	27,665	27,665	41,362	900		34,658	35,158										
	Total	46,080	49,634	95,314	95,314	119,203	45,080		57,127	102,807										
Taganas-An	Urban	4,893	4,893	4,893	4,893	6,241	100		4,893	4,993	100									
	Rural	5,718	5,718	5,718	5,718	7,551		6,418	6,418											
	Total	10,611	10,611	10,611	10,611	13,792	100	11,311	11,411	100										
Tubajon	Urban	708	708	708	708	2,141	1,005	708		1,713	1,005									
	Rural	885	2,798	3,683	5,028		885	3,389	4,274											
	Total	1,593	2,798	4,391	7,169	1,005	1,593	3,389	5,987	1,005										
Tubod	Urban	1,526	1,526	1,526	1,526	1,526		1,526												
	Rural	5,787	3,082	8,869	9,135	5,787	3,082		8,369											
	Total	7,313	3,082	10,495	10,707	7,313	3,082		10,395											
Provincial Total	Urban	61,726	23,691	76,456	161,873	238,672	98,036	23,691	76,456	198,183	36,310									
	Rural	23,006	33,830	117,437	174,273	262,839	23,006	52,550	155,383	225,457	18,720	46,348								
	Total	84,732	57,521	193,893	336,146	501,511	121,042	76,241	232,039	423,640	55,030	46,348								

Table 8.5.3. Population to be Served in Phase II (Water Supply)

Name of Municipality	Area	Population Served in 2003				Phase II Coverage (2010)							
		Total Population				Service Coverage			Additional Population to be Served				
		Level III	Level II	Level I	Total	Level III	Level II	Level I	Total	Level III	Level II	Level I	Total
Alegria	Urban	1,940	1,500	2,238	4,798	6,423	6,102	6,102	6,102	5,062			5,062
	Rural		5,585	889	6,474	8,410		2,336	2,336	2,336			1,347
	Total	1,940	7,085	3,127	14,833	14,833	6,102	13,923	13,923	5,062			6,409
Bacuag	Urban	7,605	4,824		12,429	16,448	10,220	10,220	10,220	4,684	468	468	468
	Rural		4,824		4,824	5,690		4,824	4,824	4,824	468	468	468
	Total	7,605	9,648		17,073	22,138	15,044	15,044	15,044	9,508	936	936	936
Basilisa (Kizal)	Urban	1,414		23,292	23,292	33,201	4,479	4,479	30,877	30,877	7,585	7,585	
	Rural	772	1,188	24,991	26,405	37,916	4,479	4,479	30,877	35,356	7,585	10,650	
	Total	2,186	1,188	48,283	50,000	71,117	8,958	8,958	61,754	65,712	15,170	18,200	
Burgos	Urban	772	270	358	628	817	270	270	490	760	132	132	
	Rural		1,438	388	2,588	3,529	2,576	2,576	490	3,336	192	192	
	Total	772	1,438	746	1,216	1,346	5,105	5,105	980	6,672	324	324	
Cagdianao	Urban	4,366		3,060	7,426	8,886	544	1,945	3,915	6,404	855	855	
	Rural		1,945	3,060	4,995	6,886	544	1,945	3,915	1,104	855	1,959	
	Total	4,366	1,945	6,120	12,421	15,772	1,088	3,890	7,820	7,508	1,710	2,814	
Claver	Urban	1,627	431	6,264	6,995	8,711	431	431	7,670	8,101	1,406	1,406	
	Rural		431	11,425	11,856	18,095	8,915	8,915	7,670	17,016	1,406	8,694	
	Total	1,627	862	17,689	18,851	26,806	17,830	17,830	15,340	34,022	2,812	10,100	
Dapa	Urban	2,764	2,415	1,818	4,233	5,147	11,935	2,415	2,372	4,282	584	584	
	Rural		2,415	8,780	11,195	17,710	11,935	2,415	2,372	16,722	584	9,725	
	Total	2,764	4,830	10,698	15,428	32,857	23,870	4,787	4,744	33,444	1,168	19,449	
Del Carmen	Urban	65	3,253	9	3,299	4,162	3,954	2,475	7,669	10,444	1,767	1,767	
	Rural	300	2,475	5,902	8,677	11,230	300	2,475	7,669	14,398	1,767	5,656	
	Total	365	5,728	5,911	12,006	15,392	4,254	2,475	7,669	25,842	3,534	7,423	
Dinagat	Urban		2,515	35	2,550	2,795	2,655	5,959	4,575	10,534			
	Rural		5,959	4,575	10,534	6,768	2,655	5,959	4,575	13,789			
	Total		8,474	4,610	13,084	9,463	5,310	11,914	9,150	24,323			
General Luna	Urban	1,169	540	7,458	7,998	10,529	5,513	540	9,252	9,792	1,794	1,794	
	Rural		540	10,439	10,979	16,332	5,513	540	9,252	15,305	1,794	6,138	
	Total	1,169	1,080	17,897	18,977	26,861	11,026	1,080	18,504	25,097	3,588	7,932	
Gigaquit	Urban	4,779		1,193	5,972	8,445	8,023	7,997	11,092	2,132	2,132		
	Rural		3,100	5,865	8,965	11,932	3,100	7,997	11,092	2,132	2,132		
	Total	4,779	3,100	7,058	14,937	20,377	11,123	7,997	19,120	4,264	4,264		
Libjo (Albor)	Urban	1,911	835	2,746	3,808	3,618	3,618	3,618	3,618	1,707			
	Rural		3,427	8,250	11,677	15,209	3,618	3,618	10,717	14,444	2,487	2,487	
	Total	1,911	4,262	11,096	15,486	18,826	7,236	7,236	14,335	28,888	2,487	4,974	
Loreto	Urban	677	3,773	780	5,230	7,545	7,168	2,773	683	3,456	683	683	
	Rural		2,773	780	3,553	4,823	3,553	2,773	683	3,456	683	683	
	Total	677	6,546	1,560	8,783	12,368	11,121	10,441	9,441	6,912	1,366	1,366	
Mainit	Urban	2,102	3,373	3,274	8,749	11,806	11,216	1,179	6,751	13,227	2,028	2,028	
	Rural	5,297	1,179	4,723	11,199	14,223	5,297	1,179	6,751	24,443	2,028	11,142	
	Total	7,399	4,552	7,997	19,948	26,029	16,513	7,930	13,502	37,670	4,056	13,170	
Matinong	Urban	5,322	120	5,442	6,825	6,484	6,484	6,074	1,103	7,177			
	Rural		6,074	1,103	7,177	7,437	6,484	6,074	1,103	7,177			
	Total	5,322	6,194	6,545	14,002	13,921	12,968	13,147	8,277	14,354			

Table 8.5.3 Population to be Served in Phase II (Water Supply)

Name of Municipality	Population Served in 2003					Phase II Coverage (2010)											
	Area	Level III			Level II		Level I		Total Population	Service Coverage			Additional Population to be Served				
		Level III	Level II	Level I	Total	Level III	Level II	Level I		Level III	Level II	Level I	Total	Level III	Level II	Level I	Total
Pilar	Urban	132	1,886		2,018	2,778	2,639		2,639	2,639		2,639	2,639		2,639	2,639	2,639
	Rural		944	5,237	5,881	7,620	644	6,443	7,087	644	6,443	7,087	644	6,443	7,087	644	6,443
	Total	132	2,530	5,237	7,899	10,398	2,639	6,443	9,726	2,639	6,443	9,726	2,639	6,443	9,726	2,639	9,726
Placer	Urban	735	1,286	6,643	8,664	11,657	735	1,286	8,320	10,341	15,885	15,885		15,885		15,885	
	Rural	735	1,946	18,072	20,753	28,378	16,620	1,286	8,320	26,726	15,885	15,885		15,885		15,885	
	Total	1,470	3,232	24,715	29,506	40,035	27,350	2,572	16,646	47,067	31,226	31,770		31,770		31,770	
San Benito	Urban	1,106	800	2,292	4,198	5,662	2,479	2,479	2,479	2,479	2,479	2,479		2,479	454	454	
	Rural	1,106	800	2,292	4,198	5,662	2,479	2,479	2,479	2,479	2,479	2,479		2,479	454	454	
	Total	2,212	1,600	4,584	8,396	11,324	4,958	4,958	4,958	4,958	4,958	4,958		4,958	908	908	
San Francisco (Anaboon)	Urban	1,078	200	1,698	3,566	4,922	4,676	4,676	4,676	4,676	4,676	4,676		4,676	2,998	2,998	
	Rural	3,138	2,406	374	5,916	7,686	3,138	2,406	1,604	7,148	1,230	1,230		1,230	1,230	1,230	
	Total	4,816	2,606	2,072	9,482	12,608	7,814	2,406	1,604	8,824	2,460	2,460		2,460	4,200	4,200	
San Isidro	Urban	1,720	2,288	2,174	6,182	2,174	2,174	2,174	2,174	2,174	2,174	2,174		2,174	944	944	
	Rural	3,450	604	4,054	5,374	7,662	2,174	2,174	2,174	2,174	2,174	2,174		2,174	944	944	
	Total	5,170	2,892	6,228	11,548	14,836	4,348	4,348	4,348	4,348	4,348	4,348		4,348	1,888	1,888	
San Jose	Urban	8,709	802	3,553	13,064	16,632	15,819	15,819	15,819	15,819	15,819	15,819		15,819	1,160	1,160	
	Rural	180	9,853	10,033	12,036	180	11,013	11,193	180	11,013	11,193	11,193		11,193	1,160	1,160	
	Total	8,889	10,755	13,586	25,100	16,688	16,819	27,012	16,688	16,819	27,012	16,688		16,688	2,320	2,320	
Santa Monica (Sapao)	Urban	1,459	356	1,815	2,111	2,005	546	2,005	546	2,005	546	2,005		2,005	920	920	
	Rural	90	231	4,796	5,117	6,491	30	6,037	6,037	30	6,037	6,037		6,037	920	920	
	Total	1,549	587	6,611	7,228	8,502	2,095	2,095	2,095	2,095	2,095	2,095		2,095	1,840	1,840	
Sison	Urban	1,346	2,489	33	6,037	7,728	3,515	2,489	1,183	7,187	3,911	2,045		3,911	1,150	1,150	
	Rural	3,515	2,489	33	6,037	7,728	3,515	2,489	1,183	7,187	3,911	2,045		3,911	1,150	1,150	
	Total	4,861	4,978	66	12,074	15,456	7,030	4,978	8,374	7,030	8,374	6,055		6,055	2,300	2,300	
Socorro	Urban	182	6,845	7,027	9,917	9,421	9,421	9,421	9,421	9,421	9,421	9,421		9,421	1,823	1,823	
	Rural		7,749	7,749	10,292	9,421	9,421	9,421	9,421	9,421	9,421	9,421		9,421	1,823	1,823	
	Total	182	14,594	14,776	20,209	18,842	18,842	18,842	18,842	18,842	18,842	18,842		18,842	3,646	3,646	
Surigao City (Capital)	Urban	45,180	22,469	67,649	85,649	81,367	81,367	81,367	81,367	81,367	81,367	81,367		81,367	36,187	36,187	
	Rural	500	34,658	35,158	45,510	500	41,824	42,324	500	41,824	42,324	42,324		42,324	7,166	7,166	
	Total	45,680	57,127	102,807	131,159	81,867	41,824	42,324	42,824	42,324	42,824	42,824		42,824	43,353	43,353	
Tagana-An	Urban	100	4,893	4,993	6,838	6,515	6,515	6,515	6,515	6,515	6,515	6,515		6,515	6,415	6,415	
	Rural		6,418	6,418	8,298	6,418	6,418	6,418	6,418	6,418	6,418	6,418		6,418	6,415	6,415	
	Total	100	11,311	11,411	15,136	12,933	12,933	12,933	12,933	12,933	12,933	12,933		12,933	12,830	12,830	
Tubajon	Urban	1,005	708	1,713	2,399	2,279	2,279	2,279	2,279	2,279	2,279	2,279		2,279	1,274	1,274	
	Rural	1,005	883	3,389	4,274	5,633	885	4,354	5,239	885	4,354	5,239		5,239	965	965	
	Total	2,010	1,591	5,102	6,673	7,912	3,164	8,688	10,518	3,164	8,688	10,518		10,518	2,239	2,239	
Tubod	Urban	1,526	3,082	8,869	12,477	12,477	12,477	12,477	12,477	12,477	12,477	12,477		12,477	12	12	
	Rural	5,787	3,082	8,869	12,477	12,477	12,477	12,477	12,477	12,477	12,477	12,477		12,477	12	12	
	Total	7,313	6,164	17,738	24,954	24,954	24,954	24,954	24,954	24,954	24,954	24,954		24,954	24	24	
Provincial Total	Urban	98,036	23,691	76,456	198,183	261,594	248,516	248,516	248,516	248,516	248,516	248,516		248,516	150,480	150,480	
	Rural	23,006	52,550	155,583	231,139	290,591	23,006	52,550	199,315	274,871	23,006	52,550		274,871	43,732	43,732	
	Total	121,042	76,241	232,039	429,322	552,185	271,522	523,867	547,887	523,867	547,887	547,887		547,887	194,212	194,212	

8.5.2 Sanitation

Table 8.5.4 Additional Number of Households to be Served in Phase I (Household Toilets)

Name of Municipality	Area	No. of Household Served in the Based Year				Total No. of HHs	Household Coverage				Phase I Coverage (2003)			
		Flush	Pour Flush	VIP/Dry	Total		Flush	Pour Flush	VIP/Dry	Total	Flush	Pour Flush	VIP/Dry	Total
Alegria	Urban	680			680	986	111	555	74	740	111	74	185	
	Rural		775		775	1,400		892	158	1,050		117	275	
	Total	1,465			1,465	2,386	111	1,447	232	1,790	111	117	460	
Bacuag	Urban	1,200			1,200	1,701	191	957	128	1,276	191	128	319	
	Rural		527		527	819		522	92	614		92	92	
	Total	1,727			1,727	2,520	191	1,479	220	1,890	191	220	411	
Basilisa (Rizal)	Urban	328			328	689	78	387	52	517	78	52	189	
	Rural		2,811		2,811	4,946		3,153	557	3,710		342	899	
	Total	3,139			3,139	5,635	78	3,540	609	4,227	78	401	1,028	
Burgos	Urban	371			371	507	57	285	38	380	57	38	95	
	Rural		85		85	137		88	15	103		3	15	
	Total	456			456	644	57	373	53	483	57	3	53	
Cagdianao	Urban	531			531	1,118	126	629	84	839	126	84	308	
	Rural		905		905	1,283		818	144	962		144	144	
	Total	1,436			1,436	2,401	126	1,447	228	1,801	126	98	452	
Claver	Urban	1,371			1,371	1,687		1,234	137	1,371		137	137	
	Rural		963		963	1,569		1,000	177	1,177		37	177	
	Total	2,334			2,334	3,256		2,234	314	2,548		37	314	
Dapa	Urban	1,829			1,829	2,481	279	1,396	186	1,861	279	186	465	
	Rural		654		654	984		627	111	738		111	111	
	Total	2,483			2,483	3,465	279	2,023	297	2,599	279	297	576	
Del Carmen	Urban	646			646	739		581	65	646		65	65	
	Rural		867		867	1,963		1,251	221	1,472		384	221	
	Total	1,513			1,513	2,702		1,832	286	2,118		384	286	
Dinagat	Urban	355			355	547		369	41	410		41	41	
	Rural		779		779	1,263		805	142	947		26	142	
	Total	1,134			1,134	1,810		1,174	183	1,357		40	183	
General Luna	Urban	619			619	1,029	116	579	77	772	116	77	193	
	Rural		1,062		1,062	1,742		1,111	196	1,307		49	196	
	Total	1,681			1,681	2,771	116	1,690	273	2,079	116	49	273	
Gigauit	Urban	865			865	1,377	155	775	103	1,033	155	103	258	
	Rural		1,288		1,288	1,932		1,232	217	1,449		217	217	
	Total	2,153			2,153	3,309	155	2,007	320	2,482	155	320	475	
Libjo (Albor)	Urban	578			578	668		520	58	578		58	58	
	Rural		1,259		1,259	2,573		1,640	290	1,930		381	290	
	Total	1,837			1,837	3,241		2,160	348	2,508		381	348	
Loreto	Urban	959			959	1,388	156	781	104	1,041	156	104	260	
	Rural		222		222	656		418	74	492		196	74	
	Total	1,181			1,181	2,044	156	1,199	178	1,533	156	196	178	
Mainit	Urban	1,415			1,415	2,095	236	1,178	157	1,571	236	157	393	
	Rural		1,854		1,854	2,435		1,576	278	1,854		278	278	
	Total	3,269			3,269	4,530	236	2,754	435	3,425	236	435	671	
Mallimono	Urban	752			752	1,342	151	755	101	1,007	151	101	255	
	Rural		1,137		1,137	1,414		966	171	1,137		171	171	
	Total	1,889			1,889	2,756	151	1,721	272	2,141	151	272	426	

Table 8.5.4 Additional Number of Households to be Served in Phase I (Household Toilets)

Name of Municipality	Area	No. of Household Served in the Based Year				Total No. of HHs	Phase I Coverage (2003)			
		Flush	Four Flush	VIP/Dry	Total		Household Coverage		Additional No. of HHs to be Served	
							Flush	Four Flush	Flush	Four Flush
Pilar	Urban	389	389	486	39	350	39	389	39	39
	Rural	705	705	1,227	138	782	138	920	77	138
	Total	1,094	1,094	2,013	177	1,308	177	1,308	77	177
Placer	Urban	2,072	2,072	2,707	207	1,865	207	2,072	207	207
	Rural	1,175	1,175	2,063	232	1,315	232	1,547	140	232
	Total	3,247	3,247	4,770	439	3,180	439	3,619	140	439
San Benito	Urban	373	373	425	37	336	37	373	37	37
	Rural	158	158	510	57	326	57	383	168	57
	Total	531	531	935	94	662	94	756	168	94
San Francisco (Anaao-Aon)	Urban	552	552	914	69	514	69	586	103	69
	Rural	888	888	1,336	150	852	150	1,002	103	150
	Total	1,440	1,440	2,250	219	1,366	219	1,688	103	219
San Isidro	Urban	301	301	354	30	271	30	301	30	30
	Rural	373	373	829	93	529	93	622	156	93
	Total	674	674	1,183	123	800	123	923	156	123
San Jose	Urban	1,966	1,966	2,933	332	1,661	332	2,215	332	332
	Rural	1,178	1,178	1,994	224	1,272	224	1,496	94	224
	Total	3,144	3,144	4,947	332	2,933	332	3,711	332	332
Santa Monica (Sapao)	Urban	175	175	368	41	207	41	276	32	41
	Rural	556	556	1,042	117	665	117	782	109	117
	Total	731	731	1,410	145	872	145	1,058	143	145
Sison	Urban	540	540	624	54	486	54	540	54	54
	Rural	946	946	1,273	82	822	82	955	143	82
	Total	1,486	1,486	1,897	136	1,398	136	1,495	197	136
Socorro	Urban	1,301	1,301	1,516	130	1,171	130	1,301	130	130
	Rural	862	862	1,545	985	174	1,159	123	174	985
	Total	2,163	2,163	3,061	304	2,156	304	2,460	123	304
Surigao City (Capital)	Urban	1,921	1,921	7,538	1,681	8,404	1,121	11,206	2,787	1,121
	Rural	5,845	5,845	8,047	905	5,130	905	6,035	905	905
	Total	1,921	1,921	5,845	2,026	13,534	2,026	17,241	2,787	2,026
Tagana-An	Urban	938	938	1,217	94	844	94	938	94	94
	Rural	942	942	1,444	162	921	162	1,083	162	162
	Total	1,880	1,880	2,661	256	1,765	256	2,021	256	256
Tubajon	Urban	398	398	446	40	358	40	398	40	40
	Rural	422	422	976	622	110	732	200	622	110
	Total	820	820	1,422	150	980	150	1,130	200	150
Tubod	Urban	287	287	304	29	258	29	287	29	29
	Rural	1,337	1,337	1,795	202	1,144	202	1,346	202	202
	Total	1,624	1,624	2,099	231	1,402	231	1,633	231	231
Provincial Total	Urban	1,921	1,921	27,706	3,813	27,706	3,813	35,024	2,993	3,505
	Rural	30,575	30,575	49,197	5,550	31,464	5,550	37,004	2,602	5,550
	Total	1,921	1,921	59,914	9,055	59,160	9,055	72,028	2,132	9,055

Table 8.5.5 Additional Number of Households to be Served in Phase II (Household Toilets)

Name of Municipality	Area	No. households Served in 2003					Phase II Coverage (2010)									
		Total No. of HHs					Household Coverage					Additional No. of HHs to be Served				
		Flush	Pour Flush	VIP/Dry	Total	Total	Flush	Four Flush	VIP/Dry	Total	Total	Flush	Four Flush	VIP/Dry	Total	
Alegria	Urban	111	555	74	740	1,606	747	673	74	1,494	636	118			754	
	Rural		892	158	1,050	2,103		1,735	158	1,893		843			843	
	Total	111	1,447	232	1,790	3,709	747	2,408	232	3,387	636	961			1,597	
Bacuag	Urban	191	957	128	1,276	2,690	1,251	1,123	128	2,502	1,060	166			1,226	
	Rural		522	92	614	1,423		1,189	92	1,281		667			667	
	Total	191	1,479	220	1,890	4,113	1,251	2,312	220	3,783	1,060	833			1,893	
Basilisa (Rizal)	Urban	78	387	52	517	1,179	548	496	52	1,096	470	109			579	
	Rural		3,153	557	3,710	8,300		6,913	557	7,470		3,760			3,760	
	Total	78	3,540	609	4,227	9,479	548	7,409	609	8,566	470	3,869			4,339	
Burgos	Urban	57	285	38	380	678	316	277	38	631	259				259	
	Rural		88	15	103	204		169	15	184		81			81	
	Total	57	373	53	483	882	316	446	53	815	259	81			340	
Cagdianao	Urban	126	629	84	839	1,440	670	585	84	1,339	544				544	
	Rural		818	144	962	1,722		1,096	144	1,550		278			588	
	Total	126	1,447	228	1,801	3,162	980	1,681	228	2,889	854	278			1,132	
Claver	Urban		1,234	137	1,371	2,346	1,091	954	137	2,182	1,091				1,091	
	Rural		1,000	177	1,177	2,178		1,783	177	1,960		783			783	
	Total		2,234	314	2,548	4,524	1,091	2,737	314	4,142	1,091	783			1,874	
Dapa	Urban	279	1,396	186	1,861	3,141	1,461	1,274	186	2,921	1,182				1,182	
	Rural		627	111	738	1,287		1,047	111	1,158		420			420	
	Total	279	2,023	297	2,599	4,428	1,461	2,321	297	4,079	1,182	420			1,602	
Del Carmen	Urban		581	65	646	1,041	484	419	65	968	484				484	
	Rural		1,251	221	1,472	2,808		2,006	221	2,527		755			1,055	
	Total		1,832	286	2,118	3,849	784	2,425	286	3,495	784	755			1,539	
Dinagat	Urban		369	41	410	699	325	284	41	650	325				325	
	Rural		805	142	947	1,692		1,381	142	1,523		576			576	
	Total		1,174	183	1,357	2,391	325	1,665	183	2,173	325	576			901	
General Luna	Urban	116	579	77	772	1,451	675	597	77	1,349	559	18			577	
	Rural		1,111	196	1,307	2,632		2,173	196	2,369		1,062			1,062	
	Total	116	1,690	273	2,079	4,083	675	2,770	273	3,718	559	1,080			1,639	
Gigaquit	Urban	155	775	103	1,033	2,111	982	878	103	1,963	827	103			930	
	Rural		1,232	217	1,449	2,983		1,931	217	2,685		699			1,236	
	Total	155	2,007	320	2,482	5,094	1,519	2,809	320	4,648	1,364	802			2,166	
Libjo (Alibor)	Urban		520	58	578	952	443	384	58	885	443				443	
	Rural		1,640	290	1,930	3,802		3,132	290	3,422		1,492			1,492	
	Total		2,160	348	2,508	4,754	443	3,516	348	4,307	443	1,492			1,935	
Loreto	Urban	156	781	104	1,041	1,886	877	773	104	1,754	721				721	
	Rural		418	74	492	929		762	74	836		344			344	
	Total	156	1,199	178	1,533	2,815	877	1,535	178	2,590	721	344			1,065	
Maimit	Urban	236	1,178	157	1,571	2,952	1,373	1,215	157	2,745	1,137	37			1,174	
	Rural		1,576	278	1,854	3,556		2,400	278	3,200		706			1,346	
	Total	236	2,754	435	3,425	6,508	2,013	3,497	435	5,945	1,777	743			2,520	
Malimono	Urban	151	755	101	1,007	1,706	794	692	101	1,587	643				643	
	Rural		966	171	1,137	1,859		1,502	171	1,673		536			536	
	Total	151	1,721	272	2,144	3,565	794	2,194	272	3,260	643	536			1,179	

Table 8.5.5 Additional Number of Households to be Served in Phase II (Household Toilets)

Name of Municipality	Area	No. households Served in 2003				Total No. of HHs	Phase II Coverage (2010)				Total
		Household Coverage		Additional No. of HHs to be Served			Household Coverage		Additional No. of HHs to be Served		
		Flush	VIP/Dry	Total	Flush		VIP/Dry	Four Flush	VIP/Dry	Flush	
Pilar	Urban	350	39	389	695	323	284	39	646	323	323
	Rural	782	138	920	1,905	1,377	1,377	138	1,715	795	795
	Total	1,132	177	1,309	2,600	323	323	138	2,361	323	1,113
Placer	Urban	1,865	207	2,072	4,180	1,944	1,736	207	3,887	1,944	1,944
	Rural	1,315	232	1,547	2,914	2,525	2,366	232	2,623	551	1,076
	Total	3,180	439	3,619	7,094	2,469	3,602	439	6,510	2,469	3,020
San Benito	Urban	336	37	373	652	303	266	37	606	303	303
	Rural	326	57	383	738	607	607	57	664	281	281
	Total	662	94	756	1,390	303	873	94	1,270	303	584
San Francisco (Anao-Aon)	Urban	514	69	686	1,231	573	503	69	1,145	470	470
	Rural	852	150	1,002	1,922	346	1,234	150	1,730	346	728
	Total	1,366	219	1,688	3,153	919	1,737	219	2,875	816	1,198
San Isidro	Urban	271	30	301	572	266	236	30	532	266	266
	Rural	529	93	622	1,344	1,117	1,117	93	1,210	588	588
	Total	800	123	923	1,916	266	1,353	123	1,742	266	854
San Jose	Urban	1,651	222	2,215	4,163	1,916	1,714	222	3,872	1,604	1,657
	Rural	1,272	224	1,496	3,009	2,484	2,484	224	2,708	1,212	1,212
	Total	3,322	446	3,711	7,172	1,936	4,198	446	6,580	1,604	2,869
Santa Monica (Sapao)	Urban	41	28	76	152	246	217	28	491	205	215
	Rural	665	117	782	1,623	90	1,254	117	1,461	90	589
	Total	872	145	1,058	2,151	336	1,471	145	1,952	295	894
Sison	Urban	486	54	540	892	415	361	54	830	415	415
	Rural	812	143	955	1,932	348	1,248	143	1,739	348	784
	Total	1,298	197	1,495	2,824	763	1,609	197	2,569	763	1,199
Socorro	Urban	1,171	130	1,301	2,479	1,153	1,022	130	2,305	1,153	1,153
	Rural	985	174	1,159	2,573	214	2,142	174	2,316	1,157	1,157
	Total	2,156	304	2,460	5,052	1,153	3,164	304	4,621	1,153	2,310
Surigao City (Capital)	Urban	1,681	1,121	11,206	21,412	9,957	8,835	1,121	19,913	8,276	431
	Rural	5,130	905	6,035	11,378	500	8,835	905	10,240	500	4,205
	Total	13,534	2,026	17,241	32,790	10,457	17,670	2,026	30,153	8,776	12,912
Tagana-An	Urban	844	94	938	1,715	798	703	94	1,595	798	798
	Rural	921	162	1,083	2,075	1,706	1,706	162	1,868	785	785
	Total	1,765	256	2,021	3,790	2,984	2,984	256	3,463	785	1,583
Tubajon	Urban	358	40	398	600	279	239	40	558	279	279
	Rural	622	110	732	1,408	1,157	1,157	110	1,267	535	535
	Total	980	150	1,130	2,008	279	1,396	150	1,825	279	814
Tubod	Urban	258	29	287	405	189	159	29	377	189	189
	Rural	1,144	202	1,346	2,352	423	1,492	202	2,117	423	348
	Total	1,402	231	1,633	2,757	612	1,651	231	2,494	612	960
Provincial Total	Urban	27,706	3,505	35,024	65,402	30,419	26,899	3,505	60,823	26,606	1,045
	Rural	31,454	5,550	37,004	72,651	40,119	55,820	5,550	65,389	40,119	28,385
	Total	59,160	9,055	72,028	138,053	34,438	82,719	9,055	126,212	30,625	56,036

Table 8.5.6 Additional Number of Public School Students to be Served in Phases I and II (School Toilets)

Name of Municipality	Std. No. of Public School Student that can be Served in the Base Year (1997)	Projected No. of Public School Student in 2003	Phase I Coverage (2003)		Projected Number of Public School Students in 2010	Phase II Coverage (2010)	
			Public School Students Coverage	Additional No. of Public School Student to be Served		Public School Students Coverage	Additional No. of Public School Students to be Served
Alegria	1,040	3,508	2,982	1,942	3,749	3,374	392
Bacuag	2,138	2,421	2,058		2,698	2,428	370
Basilisa (Rizal)	3,000	5,392	4,583	1,583	7,036	6,332	1,749
Burgos	240	935	795	555	983	885	90
Cagdianao	2,840	2,862	2,433		2,868	2,581	148
Claver	3,600	4,149	3,527		4,489	4,040	513
Dapa	480	4,858	4,129	3,649	4,769	4,292	163
Del Carmen	2,156	2,364	2,009		2,965	2,669	660
Dinagat	880	2,503	2,128	1,248	2,489	2,240	112
General Luna	1,920	3,528	2,999	1,079	4,143	3,729	730
Gigaquit	3,009	3,418	2,905		4,040	3,636	731
Libjo (Albor)	520	3,910	3,324	2,804	4,495	4,046	722
Loreto	1,458	1,673	1,422		1,839	1,655	233
Mainit	3,040	6,151	5,228	2,188	6,106	5,495	267
Malirmono	1,680	3,949	3,357	1,677	4,048	3,643	296
Pilar	960	1,752	1,489	529	2,110	1,899	410
Placer	4,919	5,610	4,769		6,341	5,707	938
San Benito	1,600	1,499	1,274		1,560	1,404	130
San Francisco (Anao-Aon)	2,524	2,799	2,379		2,919	2,627	248
San Isidro	1,578	1,784	1,516		2,056	1,850	334
San Jose							
Santa Monica (Sapao)	640	1,479	1,257	617	1,666	1,499	242
Sison	1,840	2,567	2,182	342	3,110	2,799	617
Socorro	2,640	4,382	3,725	1,085	5,066	4,559	834
Surigao City (Capital)	20,720	32,264	27,424	6,704	31,950	28,755	1,331
Tagana-An	1,040	3,038	2,582	1,542	3,548	3,193	611
Tubajon	1,320	1,920	1,632	312	2,043	1,839	207
Tubod	960	2,472	2,101	1,141	2,728	2,455	354
Provincial Total	68,742	113,187	96,209	28,997	121,814	109,631	13,422

Table 8.5.7 Additional Number of Public Utilities with Sanitary Toilets in Phase I and II

Name of Municipality	Type	Coverage in Base Year (1997)			Phase I Coverage (2003)			Phase I Coverage (2010)		
		No. of PU with Toilets Facilities	No. of PU with Sanitary Toilets	No. of PU with Toilets Facilities	Add'l No. of Public Utilities with Sanitary Toilets	No. of PU with Sanitary Toilets	No. of PU with Toilets Facilities	Add'l No. of Public Utilities with Sanitary Toilets	No. of PU with Sanitary Toilets	No. of PU with Sanitary Toilets
Alegria	Public Market	1	1	1		1	1		1	1
	Bus/Jeepney Terminal			1	1		1		1	1
	Parks/Playground							1	1	1
	Total	1	1	2	1	2	3	1	3	3
Bacuag	Public Market	2	2	2		2	2		2	2
	Bus/Jeepney Terminal			1	1		1		1	1
	Parks/Playground							1	1	1
	Total	2	2	3	1	3	4	1	4	4
Basilisa (Rizal)	Public Market	1	1	1		1	1		1	1
	Bus/Jeepney Terminal									
	Parks/Playground			1	1	1	1		1	1
	Total	1	1	2	1	2	2		2	2
Burgos	Public Market	1	1	1		1	1		1	1
	Bus/Jeepney Terminal									
	Parks/Playground	2	2	2		2	2		2	2
	Total	3	3	3		3	3		3	3
Cagdianao	Public Market	1	1	1		1	1		1	1
	Bus/Jeepney Terminal									
	Parks/Playground			1	1	1	1		1	1
	Total	1	1	2	1	2	2		2	2
Claver	Public Market	1	1	1		1	1		1	1
	Bus/Jeepney Terminal			2	1	2	2		2	2
	Parks/Playground	1	1	1		1	1		1	1
	Total	3	3	4	1	4	4		4	4
Dapa	Public Market	2	2	2		2	2		2	2
	Bus/Jeepney Terminal	2	2	2		2	2		2	2
	Parks/Playground	1	1	1		1	1		1	1
	Total	5	5	5		5	5		5	5
Del Carmen	Public Market	1	1	1		1	1		1	1
	Bus/Jeepney Terminal									
	Parks/Playground			1	1	1	1		1	1
	Total	1	1	2	1	2	2		2	2

Table 8.5.7 Additional Number of Public Utilities with Sanitary Toilets in Phase I and II

Name of Municipality	Type	Coverage in Base Year (1997)			Phase I Coverage (2003)			Phase I Coverage (2010)		
		No. of PU with Toilets Facilities	No. of PU with Sanitary Toilets	No. of PU with Toilets Facilities	Add'l. No. of Public Utilities with Sanitary Toilets	No. of PU with Sanitary Toilets	No. of PU with Toilets Facilities	Add'l. No. of Public Utilities with Sanitary Toilets	No. of PU with Sanitary Toilets	No. of PU with Sanitary Toilets
Dinagat	Public Market	1	1	1					1	2
	Bus/Jeepney Terminal									
	Parks/Playground	4	4	4		4	4			4
General Luna	Total	5	5	5		5	6	1	1	6
	Public Market			1		1	1			1
	Bus/Jeepney Terminal									
Gigaquit	Parks/Playground			1		1	1			1
	Total	1	1	1		1	1			1
	Bus/Jeepney Terminal									
Libjo (Albor)	Parks/Playground	3	3	3		3	3			3
	Total	4	4	5		5	5			5
	Public Market			1		1	1			1
Loreto	Bus/Jeepney Terminal									
	Parks/Playground	5	5	5		5	5			5
	Total	5	5	6		6	6			6
Mainit	Public Market	1	1	1		1	1			1
	Bus/Jeepney Terminal									
	Parks/Playground	2	2	3		3	3			3
Malimono	Total	3	3	4		4	4			4
	Public Market	1	1	1		1	2		1	2
	Bus/Jeepney Terminal	3	3	3		3	3			3
Pilar	Parks/Playground	1	1	1		1	1			1
	Total	4	4	5		5	6		1	6
	Public Market	1	1	1		1	1			1
Pilar	Bus/Jeepney Terminal									
	Parks/Playground	1	1	1		1	1			1
	Total	2	2	2		2	2			2

Table 8.5.7 Additional Number of Public Utilities with Sanitary Toilets in Phase I and II

Name of Municipality	Type	Coverage in Base Year (1997)			Phase I Coverage (2003)			Phase I Coverage (2010)		
		No. of PU with Toilets with Facilities	No. of PU with Sanitary Toilets	No. of PU with Toilets with Facilities	Add'l No. of Public Utilities with Sanitary Toilets	No. of PU with Sanitary Toilets	No. of PU with Toilets with Facilities	Add'l No. of Public Utilities with Sanitary Toilets	No. of PU with Sanitary Toilets	
Placer	Public Market	1	1	1			1		1	
	Bus/Jeepney Terminal	2	2	2			2		2	
	Parks/Playground			1	1		2	1	2	
San Benito	Total	3	3	4	1	4	5	1	5	
	Public Market	1	1	1			1		1	
	Bus/Jeepney Terminal	1	1	1			1		1	
San Francisco (Anaon)	Parks/Playground	1	1	1			1		1	
	Total	3	3	3		3	3		3	
	Public Market	1	1	1			1		1	
San Isidro	Bus/Jeepney Terminal	1	1	1			1		1	
	Parks/Playground	1	1	1			1		1	
	Total	2	2	2		2	2		2	
San Jose	Public Market	1	1	1			1		1	
	Bus/Jeepney Terminal	2	2	2			2		2	
	Parks/Playground	4	4	4		4	4		4	
Santa Monica (Sapao)	Total	7	7	7		7	7		7	
	Public Market	1	1	1			1		1	
	Bus/Jeepney Terminal	1	1	1			1		1	
Sison	Parks/Playground	1	1	2	1	2	2	1	2	
	Total	1	1	1		1	1		1	
	Public Market	1	1	1			1		1	
Socorro	Bus/Jeepney Terminal	2	2	2			2		2	
	Parks/Playground	1	1	1			1		1	
	Total	3	3	3		3	3		3	

Table 8.5.7 Additional Number of Public Utilities with Sanitary Toilets in Phase I and II

Name of Municipality	Type	Coverage in Base Year (1997)			Phase I Coverage (2003)			Phase I Coverage (2010)		
		No. of PU with Toilets Facilities	No. of PU with Sanitary Toilets	No. of PU with Toilets Facilities	Add'l. No. of Public Utilities with Sanitary Toilets	No. of PU with Sanitary Toilets	No. of PU with Toilets Facilities	Add'l. No. of Public Utilities with Sanitary Toilets	No. of PU with Sanitary Toilets	
Surigao City (Capital)	Public Market	6	6	6		6	6		6	
	Bus/Jeepney Terminal	2	2	2		2	2		2	
	Parks/Playground	2	2	2		2	2		2	
	Total	10	10	10		10	10		10	
Tagana-An	Public Market	1	1	1		1	1		1	
	Bus/Jeepney Terminal			1	1	1	1		1	
	Parks/Playground							1	1	
	Total	1	1	2	1	2	3	1	3	
Tubajon	Public Market	1	1	1		1	1		1	
	Bus/Jeepney Terminal									
	Parks/Playground			1	1	1	1		1	
	Total	1	1	2	1	2	2		2	
Tubod	Public Market	1	1	1		1	1		1	
	Bus/Jeepney Terminal			1	1	1	1		1	
	Parks/Playground							1	1	
	Total	1	1	2	1	2	3	1	3	
Provincial Total	Public Market	35	35	37	2	37	39	2	39	
	Bus/Jeepney Terminal	12	12	21	9	21	21		21	
	Parks/Playground	31	31	41	10	41	48	7	48	
	Total	78	78	99	21	99	108	9	108	

8.6 Facilities, Equipment and Rehabilitation Required to Meet the Target Services

8.6.1 Water Supply

(1) Required water supply facilities

Urban water supply:

Urban water supply facilities required by target year shown in Table 8.6.1 were estimated as the required number of house connections based on the additional service coverage.

As reference, the following requirements were also estimated:

- daily average water demand at 100 lpcd consumption rate, and
- number of deep wells to meet the daily maximum water demand based on the groundwater productivity.

(daily maximum water demand = 1.3 x daily average water demand)

Information pertaining to the expansion plan of Level III systems was arranged to be indicated in Table 8.6.1 and details in Table 8.6.2, however, required data were not available during this PW4SP preparation.

Rural water supply:

Rural water supply facilities required by target year shown in Table 8.6.3(a) were estimated as the number of Level II systems with number of communal faucets and the number of Level I wells broken-down to deep and shallow wells. Thirty four (34) untapped springs suitable for Level II system were confirmed during this PW4SP preparation.

(2) Required well drilling and rehabilitation equipment

Presently, only one unit of manual type drilling rig is available at DPWH-DEO in the province.

Taking into account the maximum utilization of existing equipment, additional number of required equipment is estimated as described below.

Applicable type of well drilling equipment is determined considering the geological formation of the province the easiness to technical to operate. Both types of percussion and rotary are suitable for the soft and hard formations, and the percussion type can be easily operated and maintained without special training to drillers compared with the latter, it is very useful to bores in the boulders or cobbles formations. Thus, the drilling equipment of percussion type is recommendable to be selected in the PW4SP preparation.

Table 8.6.1 Urban Water Supply Facilities Required by Target Year

Name of Municipality	Reference on Expansion of Existing Level III System				Phase I (2003) Requirements				Phase II (2010) Requirements					
	Name of Operating Body	Area	Coverage in 1997		Type of Water Source	Plan for Expansion	Additional Population to be Served	Number of House Connections	Water Demand (m ³ /day)	Number of Spring Dev't/Deen Well	Additional Population to be Served	Number of House Connections	Daily Average Demand (m ³ /day)	Number of Spring Dev't/Deen Well
			No. of Barangays Served	Served Population										
Alegria	Begy. Ojano	Urban		1,040	SP	No					5,062	1,266	506	1
		Rural		1,040										
Bacauag	Bacauag WD	Urban		2,875	SP	No	4,730	846	473	1	2,615	654	262	1
		Rural		2,875										
Basilisa (Rizal)	Not Applicable	Urban	N.A.	N.A.	N.A.	N.A.	1,414	250	141	1	3,065	766	307	1
		Rural	N.A.	N.A.										
Burgos	LGS-Burgos	Urban	2	321	SP	No	451	93	45	1	1,804	451	180	1
		Rural		321										
Caglitano	LGU-Caglitano	Urban		544	SP	No	4,366	895	437	1	1,104	276	110	1
		Rural		544										
Claver	Not Applicable	Urban	N.A.	N.A.	N.A.	N.A.	1,627	325	163	1	7,288	1,822	729	1
		Rural	N.A.	N.A.										
Dapa	Consolacion	Urban	1	1,389	SP	No	1,375	281	138	1	9,171	2,293	917	2
		Rural		1,389										
Del Carmen	Del Caruwas Inc.	Urban	2	65	SP/Surf	No					3,889	972	389	1
		Rural		300										
Dmugat	Not Applicable	Urban	3	963	N.A.	N.A.					2,655	664	266	1
		Rural	N.A.	N.A.										
General Luna	Not Applicable	Urban	N.A.	N.A.	N.A.	N.A.	1,169	232	117	1	4,344	1,086	434	1
		Rural	N.A.	N.A.										
Gigaquit	Alambique	Urban		393	DgW	No	2,334	431	233	1	3,244	811	324	1
		Rural		393										
Ipil		Urban		556	DgW	No								
		Rural		556										
Mahabub		Urban		1,303	SP	No								
		Rural		1,303										
Poniente		Urban		1,597	SP	No								
		Rural		1,597										
San Antonio		Urban		702	SP	No								
		Rural		702										
San Isidro		Urban		794	DgW	No								
		Rural		794										
Municipal Total		Urban	4	2,445										
		Rural	2	3,100										
		Total	6	5,545										

Table B.6.1 Urban Water Supply Facilities Required by Target Year

Name of Municipality	Reference on Expansion of Existing Level III System				Phase I (2003) Requirements				Phase II (2010) Requirements					
	Name of Operating Body	Area	No. of Barangay Served	Coverage in 1997	Type of Water Source	Plan for Expansion	Additional Population to be Served	Number of House Connections	Daily Average Water Demand (m ³ /day)	Number of Spring Dev't/ Deep Well	Additional Population to be Served	Number of House Connections	Daily Average Water Demand (m ³ /day)	Number of Spring Dev't/ Deep Well
Libjo (Albor)	Not Applicable	Urban	N.A.	N.A.	N.A.	N.A.	1,911	372	191	1	1,707	427	171	1
		Rural	N.A.	N.A.			Total	499	499	649	1,623	1	649	1,623
Loreto	LGU-Loreto	Urban	4	499	SP	No	178	38	18	1	6,491	1,623	649	1
		Rural	4	499			Total	499	499	911	2,279	1	911	2,279
Maimit	Mun. Government	Urban	2	1,698		No	404	77	40	1	9,114	2,279	911	2
		Rural	19	5,297			Total	21	5,995	905	459	1	1,162	291
Malimono	Government	Urban	1	735		No	4,587	905	459	1	1,162	291	116	1
		Rural	1	735			Total	2	1,470	1,162	918	2	2,324	582
Pilar	Not Applicable	Urban	N.A.	N.A.	N.A.	N.A.	132	25	13	1	2,507	627	251	1
		Rural	N.A.	N.A.			Total	2	2,507	627	251	1	2,507	627
Placer	Ansilagan	Urban	1	675	SP	No					15,885	3,971	1,589	3
		Rural	1	675			Total	2	675	675	1,589	3	1,589	3
Bugas-bugas		Urban	1	60	SP	No								
		Rural	1	60			Total	2	60	60				
Municipal Total		Urban	2	735										
		Rural	2	735			Total	4	735	735				
San Benito	LGU-San Benito	Urban	2	420		No	686	123	69	1	1,373	343	137	1
		Rural	2	420			Total	4	420	420	137	2	1,373	343
San Francisco (Anao-Aon)	Bahit	Urban	1	600	SP	No	75	15	8	1	2,998	750	300	1
		Rural	1	600			Total	2	600	600	300	2	2,998	750
Banbanon		Urban	1			No								
		Rural	1				Total	2						
Hubas		Urban	1	742		No								
		Rural	1	1,034			Total	2	1,776	1,776				
Julogan		Urban	1	161	SP	No								
		Rural	1	161			Total	2	161	161				
Magsangale		Urban	1	804	SP	No								
		Rural	1	804			Total	2	804	804				
Orlao		Urban	1	700	SP	No								
		Rural	1	700			Total	2	700	700				
Municipal Total		Urban	2	1,603										
		Rural	5	3,138			Total	7	4,741	4,741				

Table 8.6.J Urban Water Supply Facilities Required by Target Year

Name of Municipality	Reference on Expansion of Existing Level III System				Phase I (2003) Requirements				Phase II (2010) Requirements					
	Name of Operating Body	Area	No. of Barangay Served	Coverage in 1997	Type of Water Source	Plan for Expansion	Additional Population to be Served	Number of House Connections	Water Demand (m ³ /day)	Number of Spring Dev't/Deep Well	Additional Population to be Served	Number of House Connections	Daily Average Water Demand (m ³ /day)	Number of Spring Dev't/Deep Well
San Isidro	Not Applicable	Urban	N/A	N/A	N/A	N/A					2,174	544	217	1
		Rural	N/A	N/A										
		Total												
San Jose	Brgy. Cuartita	Urban		386	SP	No	8,323	1,505	832	2	7,110	1,778	711	1
		Rural		90										
		Total		386										
Santa Monica (Sapao)	Garcia	Urban		90	SP	No					546	137	55	1
		Rural		90										
		Total		1,459										
Sison	LGU-Sison	Urban		85	SP	No					2,045	511	205	1
		Rural		2,475			1,261	245	126	1				
		Total		2,560										
Socorro	Mabuhay	Urban		1,040	SP	No								
		Rural		1,040										
		Total		3,315										
Surgao City (Capital)	Surgao Metro WD	Urban		45,180	N/A	N/A					9,239	2,310	924	2
		Rural		500	DW/Surf	No					36,187	9,047	3,619	5
		Total		45,680										
Tagana-Ao	Not Applicable	Urban		N/A	N/A	N/A					6,415	1,604	642	1
		Rural		N/A			100	19	10	1				
		Total		N/A										
Tubajon	Not Applicable	Urban		N/A	N/A	N/A					1,274	319	127	1
		Rural		N/A			1,005	209	101	1				
		Total		N/A										
Tubod	LGU-Brgys	Urban		2,194	SP	No					12	3	1	1
		Rural		2,194										
		Total		1,099										
Tumana	Manga	Urban		1,099	SP	No								
		Rural		1,099										
		Total		1,576										
Provincial Total	Not Applicable	Urban		1,000	SP	No					150,480	37,625	15,049	37
		Rural		5,787			36,310	6,916	3,632	21				
		Total		7,313										

Table 8.6.2 Plan for Expansion of Existing Level III Systems

Name of Municipality	Name of Operating Body	Additional Areas Barangay to be Covered	Additional Population to be Served	Additional Water Sources	
				Type	Capacity (m ³ /day)
Alegria	Brgy. Ouano				
Bacuag	Bacuag WD				
Burgos	LGS-Burgos				
Cagdianao	LGU-Cagdiano				
Dapa	Consolacion				
Del Carmen	Del Caruwas Inc.				
Gigaquit	Alambique				
	Ipil				
	Mahanub				
	Poniente				
	San Antonio				
	San Isidro				
	Municipal Total				
Loreto	LGU-Loreto				
Mainit	Mun.Government				
Malimono	Government				
Placer	Anislagan				
	Bugas-bugas				
	Municipal Total				
San Benito	LGU-San Benito				
San Francisco (Anao-Aon)	Balite				
	Banbanon				
	Hubas				
	Jubgan				
	Magtangale				
	Oslao				
	Municipal Total				
San Jose	Brgy. Cuarinta				
Santa Monica (Sapao)	Garcia				
	LGU-Santa Monica				
	Municipal Total				
Sison	LGU-Sison				
	Mabuhay				
	Municipal Total				
Surigao City (Capital)	Surigao Metro WD				
Tubod	LGU-Brgys				
	Marga				
	Poblacion				
	Timamana				
	Municipal Total				

Table 8.6.3(a) Rural Water Supply Facilities Required by Target Year

Name of Municipality	Phase I (2003) Requirements										Phase II (2010) Requirements								
	Level II		Level I						Level I										
	Number of System	No. of Communal Faucets	Number of Deep Wells			No. of Shallow Wells	Total	Number of Deep Wells			No. of Shallow Wells	Total							
			30 m	50 m	70 m			Sub-total	30 m	50 m			70 m	Sub-total					
Alegria	8	160									10				10			13	23
Bacuang	6	120											2					6	8
Basilisa (Rizal)										31								127	127
Burgos										1								3	3
Cagchanao										40								15	15
Claver										2								2	2
Dapa										20								8	8
Del Carmen	1	20	22						22	9						21		9	30
Dinagat	9	180								7								18	30
General Luna	1	20	5						5	6								28	36
Gigaquit									6	2								2	2
Libjo (Albor)										2								2	2
Loreto										12								12	12
Maimit										11						17		17	34
Malimono	1	20								9								6	21
Pilar									21	21								37	37
Placer										8								3	8
San Benito									14									11	21
San Francisco (Anao-Aon)	2	40																14	16
San Isidro	6	120								84								20	20
San Jose										14								16	16
Santa Monica (Sapao)																		19	20
Sison										27								31	31
Socomo										23								72	120
Surigao City (Capital)									16									4	22
Tagana-An									2	7								17	17
Tubajon										8									
Tubod																			
Provincial Total	34	680	80	6	12	98	344	442	140	11	17	168	511	679					

Table 8.6.3(b) Rural Water Supply Facilities Required by Target Year

Name of Municipality	Phase I (2003) Requirements										Phase II (2010) Requirements													
	Percentage Allocated to Public Facility (80%)					Percentage Allocated to Public Facility (80%)					Percentage Allocated to Public Facility (80%)					Percentage Allocated to Public Facility (80%)								
	Percentage Allocated for Public Wells (90%) and Percentage Allocated for Public Spring Development (10%)					Percentage Allocated for Public Wells (90%) and Percentage Allocated for Public Spring Development (10%)					Percentage Allocated for Public Wells (90%) and Percentage Allocated for Public Spring Development (10%)					Percentage Allocated for Public Wells (90%) and Percentage Allocated for Public Spring Development (10%)								
	Number of Deep Wells		No. of Shallow Wells		No. of Spring Dev.	Total	Number of Deep Wells		No. of Shallow Wells		No. of Spring Dev.	Total	Number of Deep Wells		No. of Shallow Wells		No. of Spring Dev.	Total	Number of Deep Wells		No. of Shallow Wells		No. of Spring Dev.	Total
30 m	50 m	70 m	Sub-total	30 m			50 m	70 m	Sub-total	30 m			50 m	70 m	Sub-total	30 m			50 m	70 m	Sub-total			
Alegria																								
Bacuag																								
Basilisa (Rizal)																								
Burgos																								
Cagdianao																								
Ciaver																								
Dapa																								
Del Carmen	16																							
Dinagat																								
General Luna	4																							
Gigaquit		4																						
Libjo (Albor)																								
Loreto																								
Maimit																								
Malimono																								
Pilar	16																							
Placer																								
San Benito	10																							
San Francisco (Anao-Aon)																								
San Isidro																								
San Jose																								
Santa Monica (Sapao)																								
Sison																								
Socorro																								
Surigao City (Capital)	12																							
Tagana-An	1																							
Tubajon																								
Tubod																								
Provincial Total	59	4	8	71	245	316	43	359	103	8	12	123	364	487	61	548								

Medium size percussion drilling rig (truck-mounted type for deep well):

Average performance

- 1 well/30 days (5 m/day of drilling rate with finishing work)

Annual accomplishment

- 9 wells/year (365 days/year ÷ 30 days/well x 0.75)

Required number

- 2 sets for the total 71 deep wells

Well rehabilitation equipment:

Average performance

- 1 well/7 days (well redevelopment and finishing work)

Annual accomplishment

- 39 wells/year (365 days/year ÷ 7 days/well x 0.75)

Required number

- 1 set for 10% of 71 Level I deep wells

Support vehicle:

Type - pick-up truck with winch, double cab

Required number

- 1 unit for well rehabilitation

Considering the utilization of existing percussion drilling rig, the following equipment shall be mobilized/procured either by private sector or LGUs to accomplish the physical targets:

- 1 set of medium size percussion rig for total number of deep wells,
- 1 set of well rehabilitation equipment for 10% of deep wells (at least 1 set shall be held by the provincial government), and
- 1 unit of support vehicle for well rehabilitation.

In addition to the above, service trucks equipped with crane are required for one unit of medium size percussion rig for hauling drilling tools and water.

8.6.2 Sanitation

Table 8.6.4 Urban Household Toilets Required by Target Year

Name of Municipality	Phase I (2003) Requirements										Phase II (2010) Requirements									
	Additional HHs to be Served					No. of HHs to be Served					Additional HHs to be Served					No. of HHs to be Served				
	Flush	Pour Flush	VIP/Dry	Total	Total	Flush	Pour Flush	VIP/Dry	Total	Total	Flush	Pour Flush	VIP/Dry	Total	Total	Flush	Pour Flush	VIP/Dry	Total	
Alegria	111		74	185	111		74	185	636	118	754	636	118	754	636	118			754	
Bacuaug	191		128	319	191		128	319	1,060	166	1,226	1,060	166	1,226	1,060	166			1,226	
Basilisa (Rizal)	78	59	52	189	78	59	52	189	470	109	579	470	109	579	470	109			579	
Burgos	57		38	95	57		38	95	259		259	259		259	259				259	
Cagdianao	126	98	84	308	126	98	84	308	544		544	544		544	544				544	
Claver	279		137	416	279		137	416	1,091		1,091	1,091		1,091	1,091				1,091	
Dapa			186	465	279		186	465	1,182		1,182	1,182		1,182	1,182				1,182	
Del Carmen			65	65			65	65	484		484	484		484	484				484	
Dinagat		14	41	55			41	55	325		325	325		325	325				325	
General Luna	116		77	193	116		77	193	559	18	577	559	18	577	559	18			577	
Gigaquit	155		103	258	155		103	258	827	103	930	827	103	930	827	103			930	
Libjo (Albor)			58	58			58	58	443		443	443		443	443				443	
Lenete	156		104	260	156		104	260	721		721	721		721	721				721	
Mamit	236		157	393	236		157	393	1,137	37	1,174	1,137	37	1,174	1,137	37			1,174	
Malimono	151	3	101	255	151	3	101	255	643		643	643		643	643				643	
Pilar			39	39			39	39	323		323	323		323	323				323	
Placer			207	207			207	207	1,944		1,944	1,944		1,944	1,944				1,944	
San Benito			37	37			37	37	303		303	303		303	303				303	
San Francisco (Anao-Aon)	103		69	172	103		69	172	470		470	470		470	470				470	
San Isidro			30	30			30	30	266		266	266		266	266				266	
San Jose	332		222	554	332		222	554	1,604	53	1,657	1,604	53	1,657	1,604	53			1,657	
Santa Monica (Sapao)	41	32	28	101	41	32	28	101	205	10	215	205	10	215	205	10			215	
Sison			54	54			54	54	415		415	415		415	415				415	
Socorro			130	130			130	130	1,153		1,153	1,153		1,153	1,153				1,153	
Sungao City (Capital)		2,787	1,121	3,908		2,787	1,121	3,908	8,276	431	8,707	8,276	431	8,707	8,276	431			8,707	
Tagana-An			94	94			94	94	798		798	798		798	798				798	
Tubajon			40	40			40	40	279		279	279		279	279				279	
Tubod			29	29			29	29	189		189	189		189	189				189	
Provincial Total	2,132	2,993	3,505	8,630	2,132	2,993	3,505	8,630	26,606	1,045	27,651	26,606	1,045	27,651	26,606	1,045			27,651	

Table 8.6.5 Rural Household Toilets Required by Target Year

Name of Municipality	Phase I (2003) Requirements										Phase II (2010) Requirements									
	Additional HHs to be Served					No. of HHs to be Served					Additional HHs to be Served					No. of HHs to be Served				
	Flush	Pour Flush	VIP/Dry	Total	Flush	Pour Flush	VIP/Dry	Total	Flush	Pour Flush	VIP/Dry	Total	Flush	Pour Flush	VIP/Dry	Total	Flush	Pour Flush	VIP/Dry	Total
Alegria		117	158	275			158	275			158	275			843		843			843
Bacuag			92	92			92	92			92	92			667		667			667
Basilisa (Rizal)		342	557	899			557	899			557	899			3,760		3,760			3,760
Burgos		3	15	18			15	18			15	18			81		81			81
Cagdianao			144	144			144	144			144	144			588		588			588
Claver		37	177	214			177	214			177	214			783		783			783
Dapa			111	111			111	111			111	111			420		420			420
Del Carmen		384	221	605			221	605			221	605			300		300			300
Dinagat		26	142	168			142	168			142	168			576		576			576
General Luna		49	196	245			196	245			196	245			1,062		1,062			1,062
Gigaquit			217	217			217	217			217	217			537		537			537
Libjo (Albor)		381	290	671			290	671			290	671			1,492		1,492			1,492
Loreto		196	74	270			74	270			74	270			344		344			344
Mainit			278	278			278	278			278	278			640		640			640
Malimono			171	171			171	171			171	171			536		536			536
Pilar		77	138	215			138	215			138	215			795		795			795
Placer		140	232	372			232	372			232	372			525		525			525
San Bemito		168	57	225			57	225			57	225			281		281			281
San Francisco (Anao-Aon)			150	150			150	150			150	150			346		346			346
San Isidro		156	93	249			93	249			93	249			588		588			588
San Jose		94	224	318			224	318			224	318			1,212		1,212			1,212
Santa Monica (Sapao)		109	117	226			117	226			117	226			90		90			90
Sison			143	143			143	143			143	143			348		348			348
Socorro		123	174	297			174	297			174	297			1,157		1,157			1,157
Surigao City (Capital)			905	905			905	905			905	905			500		500			500
Tagana-An			162	162			162	162			162	162			785		785			785
Tubajon		200	110	310			110	310			110	310			535		535			535
Tubod			202	202			202	202			202	202			423		423			423
Provincial Total		2,602	5,550	8,152			5,550	8,152			5,550	8,152			28,385		28,385			28,385
															4,019		4,019			24,366

Table 8.6.6 Public School Toilets Required by Target Year

Name of Municipality	Phase I (2003) Requirements			Phase II (2010) Requirements		
	Additional Public School Students to be Served	No. of Toilet Unit	No. of Toilet Facilities	Additional Public School Students to be Served	No. of Toilet Unit	No. of Toilet Facilities
Alegria	1,942	49	10	392	10	2
Bacuag				370	10	2
Basilisa (Rizal)	1,583	40	8	1,749	44	9
Burgos	555	14	3	90	3	1
Cagdianao				148	4	1
Claver				513	13	3
Dapa	3,649	92	19	163	5	1
Del Carmen				660	17	4
Dinagat	1,248	32	7	112	3	1
General Luna	1,079	27	6	730	19	4
Gigauit				731	19	4
Libjo (Albor)	2,804	71	15	722	19	4
Loxto				233	6	2
Mainit	2,188	55	11	267	7	2
Malimono	1,677	42	9	286	8	2
Pilar	529	14	3	410	11	3
Placer				938	24	5
San Benito				130	4	1
San Francisco (Anao-Aon)				248	7	2
San Isidro				334	9	2
San Jose						
Santa Monica (Sapao)	617	16	4	242	7	2
Sison	342	9	2	617	16	4
Socorro	1,085	28	6	834	21	5
Surigao City (Capital)	6,704	168	34	1,331	34	7
Tagana-An	1,542	39	8	611	16	4
Tubajon	312	8	2	207	6	2
Tubod	1,141	29	6	354	9	2
Provincial Total	28,997	733	153	13,422	351	81

Table 8.6.7 Public Toilets Required by Target Year

Name of Municipality	Phase I (2003) Requirements					Phase II (2010) Requirements						
	Number of Public Toilets					Number of Public Toilets						
	Public Market	Bus/Jeepney Terminal	Parks/Playground	Total	Public Market	Bus/Jeepney Terminal	Parks/Playground	Total	Public Market	Bus/Jeepney Terminal	Parks/Playground	Total
Alegria		1		1				1			1	1
Bacuag		1		1							1	1
Basilisa (Rizal)			1	1								
Burgos												
Cagdianao			1	1								
Claver		1		1								
Dapa												
Del Carmen			1	1								
Dinagat					1				1			1
General Luna	1		1	2								
Gigaquit		1		1								
Libjo (Albor)	1			1								
Loreto			1	1								
Mainit			1	1					1			1
Malimono			1	1								
Pilar												
Placer			1	1							1	1
San Benito												
San Francisco (Anao-Aon)		1		1							1	1
San Isidro			1	1								
San Jose												
Santa Monica (Sapao)		1		1								
Sison		1		1							1	1
Socorro												
Surigao City (Capital)												
Tagana-An		1		1							1	1
Tubajon			1	1								
Tubod		1		1							1	1
Provincial Total	2	9	10	21	2	9	10	21	2	7	7	9