
**FUTURE REQUIREMENTS
AND DEVELOPMENT PLAN**

B

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	
Alubijid	Urban	5,714	3,050	200	1,666	4,916					3,050	200	1,666	4,916	86	
	Rural	16,992			3,568	9,344	12,912					3,568	9,344	12,912	76	
	Total	22,706	3,050	3,768	11,010	17,828					3,050	3,768	11,010	17,828	79	
Balingasag	Urban	12,799			8,438	8,438							8,438	8,438	66	
	Rural	35,114		875	18,443	19,318						875	18,443	19,318	55	
	Total	47,913		875	26,881	27,756						875	26,881	27,756	58	
Balingoan	Urban	3,628	1,720	210	1,236	3,166					1,720	210	1,236	3,166	87	
	Rural	4,286		400	3,273	3,673						400	3,273	3,673	86	
	Total	7,914	1,720	610	4,509	6,839					1,720	610	4,509	6,839	86	
Binuangan	Urban	1,533		715	454	1,169						715	454	1,169	76	
	Rural	3,953		2,535	983	3,518						2,535	983	3,518	89	
	Total	5,486		3,250	1,437	4,687						3,250	1,437	4,687	85	
Claveria	Urban	19,674	7,100	300	8,363	15,763					7,100	300	8,363	15,763	80	
	Rural	22,991	21,027			21,027					21,027			21,027	91	
	Total	42,665	28,127	300	8,363	36,790					28,127	300	8,363	36,790	86	
El Salvador	Urban	6,207		5,817		5,817						5,817			5,817	94
	Rural	27,405	1,100	3,340	16,662	21,102					1,100	3,340	16,662	21,102	77	
	Total	33,612	6,917	3,340	16,662	26,919					6,917	3,340	16,662	26,919	80	
Gingoog City	Urban	32,098	11,710	2,766	11,304	25,780					11,710	2,766	11,304	25,780	80	
	Rural	57,401	4,365	41,102	2,171	47,638					4,365	41,102	2,171	47,638	83	
	Total	89,499	16,075	43,868	13,475	73,418					16,075	43,868	13,475	73,418	82	
Gitagum	Urban	2,214		2,040		2,040					2,040				92	
	Rural	9,238		2,550	4,499	7,049						2,550	4,499	7,049	76	
	Total	11,452	2,040	2,550	4,499	9,089					2,040	2,550	4,499	9,089	79	
Initao	Urban	6,112		6,094		5	6,099				6,094			5	6,099	100
	Rural	17,298		1,838	10,028	11,866						1,838	10,028	11,866	69	
	Total	23,410	6,094	1,838	10,033	17,965					6,094	1,838	10,033	17,965	77	
Jasaan	Urban	21,071	4,785	2,988	11,449	19,222					4,785	2,988	11,449	19,222	91	
	Rural	14,454	7,840	1,144	3,254	12,238					7,840	1,144	3,254	12,238	85	
	Total	35,525	12,625	4,132	14,703	31,460					12,625	4,132	14,703	31,460	89	
Kinoguitan	Urban	1,968	1,280	678	4	1,962					1,280	678	4	1,962	100	
	Rural	9,151		3,456	4,149	7,605						3,456	4,149	7,605	83	
	Total	11,119	1,280	4,134	4,153	9,567					1,280	4,134	4,153	9,567	86	
Lagonglong	Urban	3,459	1,520		935	2,455					1,520			935	2,455	71
	Rural	12,942	1,800	1,800	5,678	9,278					1,800	1,800	5,678	9,278	72	
	Total	16,401	3,320	1,800	6,613	11,733					3,320	1,800	6,613	11,733	72	
Laguindingan	Urban	2,497		2,497		2,497					2,497				100	
	Rural	14,432	4,086	4,122	5,835	14,043					4,086	4,122	5,835	14,043	97	
	Total	16,929	6,583	4,122	5,835	16,540					6,583	4,122	5,835	16,540	98	
Libertad	Urban	3,554	1,780	690	539	3,009					1,780			539	3,009	85
	Rural	6,021		828	1,582	2,410						828	1,582	2,410	40	
	Total	9,575	1,780	1,518	2,121	5,419					1,780	1,518	2,121	5,419	57	
Lugait	Urban	6,356	6,172	100		6,272					6,172	100		6,272	99	
	Rural	7,083	756	4,685	612	6,053					756	4,685	612	6,053	85	
	Total	13,439	6,928	4,785	612	12,325					6,928	4,785	612	12,325	92	
Magsaysay	Urban	1,546		1,353	41	1,394						1,353	41	1,394	90	
	Rural	22,843			10,361	10,361							10,361	10,361	45	
	Total	24,389		1,353	10,402	11,755						1,353	10,402	11,755	48	
Manticao	Urban	6,601	3,660		1,845	5,505					3,660		1,845	5,505	83	
	Rural	16,497		120	10,680	10,800						120	10,680	10,800	65	
	Total	23,098	3,660	120	12,525	16,305					3,660	120	12,525	16,305	71	
Medina	Urban	5,820	5,650		5,650						5,650			5,650	97	
	Rural	18,113	460	7,407	6,002	13,869					460	7,407	6,002	13,869	77	
	Total	23,933	6,110	7,407	6,002	19,519					6,110	7,407	6,002	19,519	82	
Naawan	Urban	3,140	1,760		762	2,522					1,760			762	2,522	80
	Rural	11,946		708	6,572	7,280						708	6,572	7,280	61	
	Total	15,086	1,760	708	7,334	9,802					1,760	708	7,334	9,802	65	
Opol	Urban	7,205	510	450	1,950	2,910					510	450	1,950	2,910	40	
	Rural	18,280			8,504	8,504							8,504	8,504	47	
	Total	25,485	510	450	10,454	11,414					510	450	10,454	11,414	45	
Salay	Urban	6,861		6,747	86	6,833						6,747	86	6,833	100	
	Rural	12,381		2,077	6,746	8,823						2,077	6,746	8,823	71	
	Total	19,242		8,824	6,832	15,656						8,824	6,832	15,656	81	
Sugbongcogon	Urban	3,700	970	2,730		3,700					970	2,730		3,700	100	
	Rural	3,589	522	2,086	952	3,560						522	2,086	952	3,560	99
	Total	7,289	1,492	4,816	952	7,260					1,492	4,816	952	7,260	100	
Tagoloan	Urban	44,079	39,230	4,849		44,079					39,230	4,849		44,079	100	
	Rural															
	Total	44,079	39,230	4,849		44,079					39,230	4,849		44,079	100	
Talisayan	Urban	4,505		3,250	431	3,681						3,250	431	3,681	82	
	Rural	16,426		2,230	8,176	10,406						2,230	8,176	10,406	63	
	Total	20,931		5,480	8,607	14,087						5,480	8,607	14,087	67	
Villanueva	Urban	10,281	7,154		1,452	8,606					7,154		1,452	8,606	84	
	Rural	12,953	3,993	100	3,157	7,250					3,993	100	3,157	7,250	56	
	Total	23,234	11,147	100	4,609	15,856					11,147	100	4,609	15,856	68	
Provincial Total	Urban	222,622	114,499	28,026	50,960	193,485					114,499	28,026	50,960	193,485	87	
	Rural	391,789	45,949	86,971	147,663	280,583					45,949	86,971	147,663	280,583	72	
	Total	614,411	160,448	114,997	198,623	474,068					160,448	114,997	198,623	474,068	77	

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 (%)
Alubijid	Urban	3,050	200	1,666	4,916	5,714	86	6,463	76
	Rural		3,568	9,344	12,912	16,992	76	19,222	67
	Total	3,050	3,768	11,010	17,828	22,706	79	25,685	69
Balingasag	Urban			8,438	8,438	12,799	66	14,394	59
	Rural		875	18,443	19,318	35,114	55	39,488	49
	Total		875	26,881	27,756	47,913	58	53,882	52
Balingoan	Urban	1,720	210	1,236	3,166	3,628	87	4,167	76
	Rural		400	3,273	3,673	4,286	86	4,923	75
	Total	1,720	610	4,509	6,839	7,914	86	9,090	75
Binuangan	Urban		715	454	1,169	1,533	76	1,626	72
	Rural		2,535	983	3,518	3,953	89	4,190	84
	Total		3,250	1,437	4,687	5,486	85	5,816	81
Claveria	Urban	7,100	300	8,363	15,763	19,674	80	25,625	62
	Rural	21,027			21,027	22,991	91	29,947	70
	Total	28,127	300	8,363	36,790	42,665	86	55,572	66
El Salvador	Urban	5,817			5,817	6,207	94	7,513	77
	Rural	1,100	3,340	16,662	21,102	27,405	77	33,173	64
	Total	6,917	3,340	16,662	26,919	33,612	80	40,686	66
Gingoog City	Urban	11,710	2,766	11,304	25,780	32,098	80	34,189	75
	Rural	4,365	41,102	2,171	47,638	57,401	83	61,139	78
	Total	16,075	43,868	13,475	73,418	89,499	82	95,328	77
Gitagum	Urban	2,040			2,040	2,214	92	2,280	89
	Rural		2,550	4,499	7,049	9,238	76	9,511	74
	Total	2,040	2,550	4,499	9,089	11,452	79	11,791	77
Initao	Urban	6,094		5	6,099	6,112	100	6,145	99
	Rural		1,838	10,028	11,866	17,298	69	17,389	68
	Total	6,094	1,838	10,033	17,965	23,410	77	23,534	76
Jasaan	Urban	4,785	2,988	11,449	19,222	21,071	91	24,818	77
	Rural	7,840	1,144	3,254	12,238	14,454	85	17,024	72
	Total	12,625	4,132	14,703	31,460	35,525	89	41,842	75
Kinoguitan	Urban	1,280	678	4	1,962	1,968	100	2,392	82
	Rural		3,456	4,149	7,605	9,151	83	11,122	68
	Total	1,280	4,134	4,153	9,567	11,119	86	13,514	71
Lagonglong	Urban	1,520		935	2,455	3,459	71	4,280	57
	Rural	1,800	1,800	5,678	9,278	12,942	72	16,015	58
	Total	3,320	1,800	6,613	11,733	16,401	72	20,295	58
Laguindingan	Urban	2,497			2,497	2,497	100	2,677	93
	Rural	4,086	4,122	5,835	14,043	14,432	97	15,473	91
	Total	6,583	4,122	5,835	16,540	16,929	98	18,150	91
Libertad	Urban	1,780	690	539	3,009	3,554	85	3,917	77
	Rural		828	1,582	2,410	6,021	40	6,638	36
	Total	1,780	1,518	2,121	5,419	9,575	57	10,555	51
Lugait	Urban	6,172	100		6,272	6,356	99	6,977	90
	Rural	756	4,685	612	6,053	7,083	85	7,776	78
	Total	6,928	4,785	612	12,325	13,439	92	14,753	84
Magsaysay	Urban		1,353	41	1,394	1,546	90	1,672	83
	Rural			10,361	10,361	22,843	45	24,708	42
	Total		1,353	10,402	11,755	24,389	48	26,380	45
Manticao	Urban	3,660		1,845	5,505	6,601	83	6,993	79
	Rural		120	10,680	10,800	16,497	65	17,478	62
	Total	3,660	120	12,525	16,305	23,098	71	24,471	67
Medina	Urban	5,650			5,650	5,820	97	6,270	90
	Rural	460	7,407	6,002	13,869	18,113	77	19,511	71
	Total	6,110	7,407	6,002	19,519	23,933	82	25,781	76
Naawan	Urban	1,760		762	2,522	3,140	80	3,467	73
	Rural		708	6,572	7,280	11,946	61	13,192	55
	Total	1,760	708	7,334	9,802	15,086	65	16,659	59
Opol	Urban	510	450	1,950	2,910	7,205	40	8,640	34
	Rural			8,504	8,504	18,280	47	21,923	39
	Total	510	450	10,454	11,414	25,485	45	30,563	37
Salay	Urban		6,747	86	6,833	6,861	100	7,187	95
	Rural		2,077	6,746	8,823	12,381	71	12,970	68
	Total		8,824	6,832	15,656	19,242	81	20,157	78
Sugbongcogon	Urban	970			3,700	3,700	100	4,239	87
	Rural	522	2,086	952	3,560	3,589	99	4,113	87
	Total	1,492	4,816	952	7,260	7,289	100	8,352	87
Tagoloan	Urban	39,230	4,849		44,079	44,079	100	54,861	80
	Rural								
	Total	39,230	4,849		44,079	44,079	100	54,861	80
Talisayan	Urban		3,250	431	3,681	4,505	82	5,349	69
	Rural		2,230	8,176	10,406	16,426	63	19,506	53
	Total		5,480	8,607	14,087	20,931	67	24,855	57
Villanueva	Urban	7,154		1,452	8,606	10,281	84	13,277	65
	Rural	3,993	100	3,157	7,250	12,953	56	16,726	43
	Total	11,147	100	4,609	15,856	23,234	68	30,003	53
Provincial Total	Urban	114,499	28,026	50,960	193,485	222,622	87	259,418	75
	Rural	45,949	86,971	147,663	280,583	391,789	72	443,157	63
	Total	160,448	114,997	198,623	474,068	614,411	77	702,575	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				Recipient 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	Flush	Pour Flush	VIP/Dry	Total
Abubijid	Urban	5,714	1,198	40	821	11	872					40	821	11	872	3	69	1	73
	Rural	16,992	3,613	11	1,336	42	1,389					11	1,336	42	1,389		37	1	38
	Total	22,706	4,813	51	2,157	53	2,261					51	2,157	53	2,261	1	45	1	47
Balingasag	Urban	12,799	2,410	8	1,143	150	1,301					8	1,143	150	1,301		47	6	54
	Rural	35,114	6,503	8	2,861	683	3,552					8	2,861	683	3,552		44	11	55
	Total	47,913	8,913	16	4,004	833	4,853					16	4,004	833	4,853		45	9	54
Balingoan	Urban	3,628	687	3	510		513					3	510		513		74		75
	Rural	4,286	831		587		587						587		587		71		71
	Total	7,914	1,518	3	1,097		1,100					3	1,097		1,100		72		72
Binuangan	Urban	1,533	276	3	218		221					3	218		221	1	79		80
	Rural	3,953	794	4	575		579					4	575		579	1	72		73
	Total	5,486	1,070	7	793		800					7	793		800	1	74		75
Claveria	Urban	19,674	3,597		2,063	585	2,648						2,063	585	2,648		57	16	74
	Rural	22,991	4,322		569	1,170	1,739						569	1,170	1,739		13	27	40
	Total	42,665	7,919		2,632	1,755	4,387						2,632	1,755	4,387		33	22	55
El Salvador	Urban	6,207	1,219		808		808						808		808		66		66
	Rural	27,405	5,384		2,278		2,278						2,278		2,278		42		42
	Total	33,612	6,603		3,086		3,086						3,086		3,086		47		47
Gingoog City	Urban	32,098	6,197	3,477	1,862	857	6,196					3,477	1,862	857	6,196	56	30	14	100
	Rural	57,401	11,322		8,396	685	9,081						8,396	685	9,081		74	6	80
	Total	89,499	17,519	3,477	10,258	1,542	15,277					3,477	10,258	1,542	15,277	20	59	9	87
Giatugum	Urban	2,214	451	6	337		343					6	337		343	1	75		76
	Rural	9,238	1,909	2	1,200	10	1,212					2	1,200	10	1,212		63	1	63
	Total	11,452	2,360	8	1,537	10	1,555					8	1,537	10	1,555		65		66
Initao	Urban	6,112	1,298		1,080		1,080						1,080		1,080		83		83
	Rural	17,298	3,596		1,488	280	1,768						1,488	280	1,768		41	8	49
	Total	23,410	4,894		2,568	280	2,848						2,568	280	2,848		52	6	58
Jassan	Urban	21,071	3,968	43	2,858	37	2,938					43	2,858	37	2,938	1	72	1	74
	Rural	14,454	2,732	6	1,469	167	1,642					6	1,469	167	1,642		54	6	60
	Total	35,525	6,700	49	4,327	204	4,580					49	4,327	204	4,580	1	65	3	68
Kinoguitan	Urban	1,968	351	1	240		241					1	240		241		68		69
	Rural	9,151	1,691		736		736						736		736		44		44
	Total	11,119	2,042	1	976		977					1	976		977	1	48		48
Laganglong	Urban	3,459	654		464		464						464		464		71		71
	Rural	12,942	2,433		1,466		1,466						1,466		1,466		60		60
	Total	16,401	3,087		1,930		1,930						1,930		1,930		53		63
Laguindingan	Urban	2,497	510	2	373	84	459					2	373	84	459		73	16	90
	Rural	14,432	2,988		2,091	266	2,357						2,091	266	2,357		70	9	79
	Total	16,929	3,498	2	2,464	350	2,816					2	2,464	350	2,816		70	10	81

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

Name of Municipality	Area	Population (1997)	Households Using Sanitary Toilets in				Recipients HHs of Planned/On-going				Households Using Sanitary Toilets in the Base Year (1997)			
			Number of Households (1997)	Households Using Sanitary Toilets in			Total	Flush	Pour	VIP/Dry	Households Using Sanitary Toilets in the Base Year (1997)			Coverage (%)
				Number of Households (1997)	Flush Toilets	Pour Flush					Flush	Pour Flush	VIP/Dry	
Libertad	Urban	3,554	724	2	505	63	570				2	505	63	570
	Rural	6,021	1,160	3	719	31	753				3	719	31	753
	Total	9,575	1,884	5	1,224	94	1,323				5	1,224	94	1,323
Lugait	Urban	6,356	1,284	20	863		883				20	863		883
	Rural	7,083	1,686		677		677					677		677
	Total	13,439	2,970	20	1,540		1,560				20	1,540		1,560
Magsaysay	Urban	1,546	294		139	32	171					139	32	171
	Rural	22,843	4,393		1,157	830	1,987					1,157	830	1,987
	Total	24,389	4,687		1,296	862	2,158					1,296	862	2,158
Manitaco	Urban	6,601	1,302	199	689	111	999				199	689	111	999
	Rural	16,497	3,306	356	1,339	904	2,599				356	1,339	904	2,599
	Total	23,098	4,608	555	2,028	1,015	3,598				555	2,028	1,015	3,598
Medina	Urban	5,820	1,109		704		704					704		704
	Rural	18,113	3,398		1,695	91	1,786					1,695	91	1,786
	Total	23,933	4,507		2,399	91	2,490					2,399	91	2,490
Naawan	Urban	3,140	632		584	12	596					584	12	596
	Rural	11,946	2,468		1,503	316	1,819					1,503	316	1,819
	Total	15,086	3,100		2,087	328	2,415					2,087	328	2,415
Opol	Urban	7,205	1,435	12	536	16	564				12	536	16	564
	Rural	18,280	3,663	10	2,519	500	3,029				10	2,519	500	3,029
	Total	25,485	5,098	22	3,055	516	3,593				22	3,055	516	3,593
Salay	Urban	6,861	1,348	8	1,019		1,027				8	1,019		1,027
	Rural	12,381	2,516		1,488		1,488					1,488		1,488
	Total	19,242	3,864	8	2,507		2,515				8	2,507		2,515
Sugbongcogon	Urban	3,589	642		495		495					495		495
	Rural	7,289	1,310		1,128		1,128					1,128		1,128
	Total	10,878	2,052		1,623		1,623					1,623		1,623
Tagoloan	Urban	44,079	8,477	274	6,368		6,642				274	6,368		6,642
	Rural													
	Total	44,079	8,477	274	6,368		6,642				274	6,368		6,642
Talisayan	Urban	4,505	824		444		444					444		444
	Rural	16,426	3,065		1,459	126	1,585					1,459	126	1,585
	Total	20,931	3,889		1,903	126	2,029					1,903	126	2,029
Villanueva	Urban	10,281	2,012	52	1,332	136	1,540				52	1,332	136	1,540
	Rural	12,953	2,501		1,194	256	1,450					1,194	256	1,450
	Total	23,234	4,513	52	2,546	392	2,990				52	2,546	392	2,990
Provincial Total	Urban	222,622	42,925	4,150	26,613	2,094	32,857				4,150	26,613	2,094	32,857
	Rural	391,789	76,918	400	39,297	6,357	46,054				400	39,297	6,357	46,054
	Total	614,411	119,843	4,550	65,910	8,451	78,911				4,550	65,910	8,451	78,911

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 (%)
Alubijid	5,901	2,760		2,760	47
Balingasag	13,874	6,880		6,880	50
Balingoan	2,129	800		800	38
Binuangan	1,769	800		800	45
Claveria	12,096	12,096		12,096	100
El Salvador	6,482	6,482		6,482	100
Gingoog City	22,544	12,440		12,440	55
Gitagum	2,145	1,680		1,680	78
Initao	6,755	4,480		4,480	66
Jasaan	8,879	5,760		5,760	65
Kinoguitan	2,171	2,080		2,080	96
Lagonglong	3,859	2,160		2,160	56
Laguindingan	4,474	4,474		4,474	100
Libertad	3,106	2,440		2,440	79
Lugait	3,882	1,360		1,360	35
Magsaysay	7,535	4,040		4,040	54
Manticao	5,203	5,080		5,080	98
Medina	7,803	4,000		4,000	51
Naawan	3,624	3,624		3,624	100
Opol	7,666	3,120		3,120	41
Salay	5,919	2,680		2,680	45
Sugbongcogon	2,395	2,395		2,395	100
Tagoloan	9,977	6,000		6,000	60
Talisayan	5,528	4,720		4,720	85
Villanueva	6,029	4,160		4,160	69
Provincial Total	161,745	106,511		106,511	66

Table 8.2.5 Number of Public Utilities with Sanitary Toilets in the Base Year (1997)
Part 1 of 2

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/On-going Project	No. of PU with Sanitary Toilets in Planned/On-going Projects	No. of PU with Toilets in Base Year 1997	No. of PU with Sanitary Toilets in Base year 1997	Coverage (%)
Alubijid	Public Market	1	1			1	1	100
	Bus/JEEPNEY Terminal							
	Parks/Playground	1	1			1	1	100
	Total	2	2			2	2	100
Balingasag	Public Market	2	2			2	2	100
	Bus/JEEPNEY Terminal							
	Parks/Playground							
	Total	2	2			2	2	100
Balingoan	Public Market	2	2			2	2	100
	Bus/JEEPNEY Terminal							
	Parks/Playground							
	Total	2	2			2	2	100
Binuangan	Public Market	2	2			2	2	100
	Bus/JEEPNEY Terminal							
	Parks/Playground	2	2			2	2	100
	Total	4	4			4	4	100
Claveria	Public Market	2	2			2	2	100
	Bus/JEEPNEY Terminal	1	1			1	1	100
	Parks/Playground	1	1			1	1	100
	Total	4	4			4	4	100
El Salvador	Public Market	2	2			2	2	100
	Bus/JEEPNEY Terminal							
	Parks/Playground							
	Total	2	2			2	2	100
Gingoog City	Public Market	2	2			2	2	100
	Bus/JEEPNEY Terminal	2	2			2	2	100
	Parks/Playground	2	2			2	2	100
	Total	6	6			6	6	100
Gitagum	Public Market	2	2			2	2	100
	Bus/JEEPNEY Terminal							
	Parks/Playground							
	Total	2	2			2	2	100
Initao	Public Market	4	4			4	4	100
	Bus/JEEPNEY Terminal							
	Parks/Playground							
	Total	4	4			4	4	100
Jasaan	Public Market	3	3			3	3	100
	Bus/JEEPNEY Terminal	1	1			1	1	100
	Parks/Playground							
	Total	4	4			4	4	100
Kinoguitan	Public Market	1	1			1	1	100
	Bus/JEEPNEY Terminal							
	Parks/Playground							
	Total	1	1			1	1	100
Lagonglong	Public Market							
	Bus/JEEPNEY Terminal							
	Parks/Playground							
	Total							
Laguindingan	Public Market	1	1			1	1	100
	Bus/JEEPNEY Terminal							
	Parks/Playground							
	Total	1	1			1	1	100

Table 8.2.5 Number of Public Utilities with Sanitary Toilets in the Base Year (1997)
Part 2 of 2

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/On-going Project	No. of PU with Sanitary Toilets in Planned/On-going Projects	No. of PU with Toilets in Base Year 1997	No. of PU with Sanitary Toilets in Base year 1997	Coverage (%)
Libernad	Public Market	2	2			2	2	100
	Bus/JEEPNEY Terminal							
	Parks/Playground							
	Total	2	2			2	2	100
Lugait	Public Market	1	1			1	1	100
	Bus/JEEPNEY Terminal							
	Parks/Playground							
	Total	1	1			1	1	100
Magsaysay	Public Market	2	2			2	2	100
	Bus/JEEPNEY Terminal							
	Parks/Playground	1	1			1	1	100
	Total	3	3			3	3	100
Manticao	Public Market	3	3			3	3	100
	Bus/JEEPNEY Terminal							
	Parks/Playground							
	Total	3	3			3	3	100
Medina	Public Market	1	1			1	1	100
	Bus/JEEPNEY Terminal							
	Parks/Playground							
	Total	1	1			1	1	100
Naawan	Public Market	1	1			1	1	100
	Bus/JEEPNEY Terminal							
	Parks/Playground							
	Total	1	1			1	1	100
Opol	Public Market	1	1			1	1	100
	Bus/JEEPNEY Terminal							
	Parks/Playground							
	Total	1	1			1	1	100
Salay	Public Market	1	1			1	1	100
	Bus/JEEPNEY Terminal							
	Parks/Playground							
	Total	1	1			1	1	100
Sugbongcogon	Public Market	1	1			1	1	100
	Bus/JEEPNEY Terminal							
	Parks/Playground							
	Total	1	1			1	1	100
Tagoloan	Public Market	1	1			1	1	100
	Bus/JEEPNEY Terminal							
	Parks/Playground	1	1			1	1	100
	Total	2	2			2	2	100
Talisayan	Public Market	1	1			1	1	100
	Bus/JEEPNEY Terminal							
	Parks/Playground							
	Total	1	1			1	1	100
Villanueva	Public Market	1	1			1	1	100
	Bus/JEEPNEY Terminal							
	Parks/Playground							
	Total	1	1			1	1	100
Provincial Total	Public Market	40	40			40	40	100
	Bus/JEEPNEY Terminal	4	4			4	4	100
	Parks/Playground	8	8			8	8	100
	Total	52	52			52	52	100

Table 8.2.6 Households Coverage in Phase I Provided by Existing Facilities in the Base Year (Household Toilets)
Part 1 of 3

Name of Municipality	Area	No. of Household Served by Existing Facilities				Coverage in 1997						No. of HHs	Coverage in 2003										
		Flush	Pour Flush	VIP/Dry	Total	Percentage of Served Households			Served Population	Percentage of Served Households			Served Population										
						Flush	Pour Flush	VIP/ Dry		Total	Flush			Pour Flush	VIP/ Dry	Total							
Alubijid	Urban	40	821	11	872	1,198	3	69	1	73	4,171	73	1,355	3	61	1	64	3	61	1	64	5,180	64
	Rural	11	1,336	42	1,389	3,615	1	37	1	38	2,171	38	4,090	1	33	1	34	1	33	1	34	8,184	34
	Total	51	2,157	53	2,261	4,813	1	45	1	47	6,342	47	5,445	1	40	1	42	1	40	1	42	13,364	42
Balingasag	Urban	8	1,143	150	1,301	2,410	47	6	6	54	6,911	54	2,711	42	6	48	7,557	42	6	48	7,557	42	
	Rural	8	2,861	683	3,552	6,503	44	11	11	55	7,039	55	7,313	39	9	49	21,165	39	9	49	21,165	49	
	Total	16	4,004	833	4,833	8,913	45	9	9	54	13,950	54	10,024	40	8	48	28,722	40	8	48	28,722	48	
Balingoan	Urban	3	510		513	687	74	71	71	75	2,721	75	789	65	65	65	2,787	65	65	65	2,787	65	
	Rural		587		587	831	72	72	72	72	2,576	72	934	62	62	62	3,140	62	62	62	3,140	62	
	Total	3	1,097		1,100	1,518	72	72	72	72	5,297	72	1,743	63	63	63	5,927	63	63	63	5,927	63	
Binuangan	Urban	3	218		221	276	1	79		80	1,226	80	292	1	75		76	1	75		76	1,394	76
	Rural	4	575		579	794	1	72		73	1,119	73	841	68	68		69	68	68		69	3,262	69
	Total	7	793		800	1,070	1	74		75	2,345	75	1,133	1	70		71	1	70		71	4,656	71
Ciaveria	Urban		2,063	585	2,648	3,597	57	16	16	74	14,559	74	4,685	44	44	12	57	44	12	57	15,713	57	
	Rural		569	1,170	1,739	4,322	13	27	27	40	7,870	40	5,629	10	21	31	9,987	10	21	31	9,987	31	
	Total		2,632	1,755	4,387	7,919	33	33	33	55	22,429	55	10,314	26	17	43	25,700	26	17	43	25,700	43	
El Salvador	Urban		808		808	1,219	66	42	42	66	4,097	66	1,476	55	55	55	5,285	55	55	55	5,285	55	
	Rural		2,278		2,278	5,384	42	42	42	42	2,607	42	6,517	35	35	35	14,849	35	35	35	14,849	35	
	Total		3,086		3,086	6,603	47	47	47	47	6,704	47	7,993	39	39	39	20,134	39	39	39	20,134	39	
Gingoog City	Urban	3,477	1,862	857	6,196	6,197	56	30	14	100	32,098	100	6,600	53	28	13	94	53	28	13	94	33,305	94
	Rural		8,396	685	9,081	11,322	74	6	6	80	25,678	80	12,059	70	6	75	47,520	70	6	75	47,520	75	
	Total	3,477	10,258	1,542	15,277	17,519	20	59	9	87	57,776	87	18,659	19	55	8	82	80,825	19	55	8	82	80,825
Gitagum	Urban	6	337		343	451	1	75		76	1,683	76	464	1	73		74	1	73		74	1,921	74
	Rural	2	1,200	10	1,212	1,909	63	63	1	63	1,395	63	1,965	61	61	1	62	61	61	1	62	6,715	62
	Total	8	1,537	10	1,555	2,360	65	65	65	66	3,078	66	2,429	63	63	64	8,636	63	63	64	8,636	64	
Initao	Urban		1,080		1,080	1,298	83	83		83	5,073	83	1,305	83	83	83	5,427	83	83	83	5,427	83	
	Rural		1,488	280	1,768	3,596	41	41	8	49	2,995	49	3,615	41	41	8	49	41	8	49	9,068	49	
	Total		2,568	280	2,848	4,894	52	52	6	58	8,068	58	4,920	52	52	58	14,495	52	52	58	14,495	58	

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

Part 2 of 3

Name of Municipality	Area	No. of Household Served by Existing				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			Total	Number	%			
							Flush	Pour Flush	VIP/Drv		Total	Number	%						
Jasaan	Urban	43	2,858	37	2,938	3,968	1	72	1	74	15,593	74	4,674	1	63	19,435	63		
	Rural	6	1,469	167	1,642	2,732	54	60	6	60	12,643	60	3,218	46	5	10,793	51		
	Total	49	4,327	204	4,580	6,700	1	65	3	68	28,236	68	7,892	1	55	30,228	58		
	Urban	1	240		241	351	68	69		69	1,358	59	427	56	36	1,635	56		
Kinoguitan	Rural		736		736	1,691	44	44		44	866	44	2,056	36	36	4,887	36		
	Total	1	976		977	2,042	48		48	2,224	48	2,483	39	39	6,522	39			
	Urban		464		464	654	71	71		71	2,456	71	809	57	57	2,828	57		
	Rural		1,466		1,466	2,433	60	60		60	4,531	60	3,819	51	49	9,097	49		
Lagonglong	Total		1,930		1,930	3,087	63	63		63	2,247	90	546	68	15	84	2,838	84	
	Urban	2	373	84	459	510	70	79	9	79	1,973	79	3,204	65	8	74	14,449	74	
	Rural		2,091	266	2,357	2,988	70	70	10	81	4,220	81	3,750	66	9	75	17,287	75	
	Total	2	2,464	350	2,816	3,498	70	79	9	79	2,808	79	798	63	8	71	3,065	71	
Libertad	Urban	2	505	63	570	724	70	70	9	79	2,310	65	1,279	56	2	59	4,316	59	
	Rural	3	719	31	753	1,160	62	65	3	65	5,118	70	2,077	59	5	64	7,381	64	
	Total	5	1,224	94	1,323	1,884	65	5	5	70	4,386	69	1,409	1	61	63	4,874	63	
	Urban	20	863		883	1,284	2	67		69	4,386	69	1,409	1	61	63	4,874	63	
Lugait	Rural		677		677	1,686	40	40		40	2,542	40	1,851	37	37	3,190	37		
	Total	20	1,540		1,560	2,970	1	52	53	53	6,928	53	3,260	1	47	48	8,064	48	
	Urban		139	32	171	294	47	47	11	58	897	58	318	44	10	54	1,047	54	
	Rural		1,157	830	1,987	4,393	26	26	19	45	696	45	4,752	24	17	42	12,030	42	
Magsaysay	Total		1,296	862	2,158	4,687	28	28	18	46	1,593	46	5,070	26	17	43	13,077	43	
	Urban	199	689	111	999	1,302	15	53	9	77	5,083	77	1,379	14	50	8	72	6,197	72
	Rural	356	1,339	904	2,599	3,306	11	41	27	79	5,215	79	3,503	10	38	26	74	15,920	74
	Total	555	2,028	1,015	3,598	4,608	12	44	22	78	10,298	78	4,882	11	42	21	74	22,117	74
Manticao	Urban		704		704	1,109	63	63		63	3,667	63	1,194	59	59	4,067	59		
	Rural		1,695	91	1,786	3,398	50	50	3	53	3,085	53	3,661	46	2	49	10,511	49	
	Total		2,399	91	2,490	4,507	53	53	2	55	6,752	55	4,855	49	2	51	14,378	51	

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

Part 3 of 3

Name of Municipality	Area	No. of Household Served by Existing					Coverage in 1997					Coverage in 2003				
		Flush	Pour Flush	VIP/Dry	Total	No. of HHs	Percentage of Served Households			No. of HHs	Served Population	Percentage of Served Households			Served Population	%
							Flush	Pour	VIP/ Dry		Number	Flush	Pour	VIP/ Dry		
Naawan	Urban		584	12	596	632		92	2	94	2,952		84	2	85	85
	Rural		1,503	316	1,819	2,468		61	13	74	2,324		55	12	67	67
	Total		2,087	328	2,415	3,100		67	11	78	5,276		61	10	71	71
Opol	Urban	12	536	16	564	1,435	1	37	1	39	2,810	1	31	1	33	33
	Rural	10	2,519	500	3,029	3,663		69	14	83	5,980		57	11	69	69
	Total	22	3,055	516	3,593	5,098		60	10	70	8,790		50	8	59	59
Salay	Urban	8	1,019		1,027	1,348	1	76		76	5,214	1	72		73	73
	Rural		1,488		1,488	2,516		59		59	4,048		56		56	56
	Total	8	2,507		2,515	3,864		65		65	9,262		62		62	62
Sugbongcogon	Urban		633		633	668		95		95	3,515		83		83	83
	Rural		495		495	642		77		77	2,849		67		67	67
	Total		1,128		1,128	1,310		86		86	6,364		75		75	75
Tagoloan	Urban	274	6,368		6,642	8,477	3	75		78	34,382	3	60		63	63
	Rural															
	Total	274	6,368		6,642	8,477	3	75		78	34,382	3	60		63	63
Talisayan	Urban		444		444	824		54		54	2,433		45		45	45
	Rural		1,459	126	1,585	3,065		48	4	52	2,343		40	3	44	44
	Total		1,903	126	2,029	3,889		49	3	52	4,776		41	3	44	44
Villanueva	Urban	52	1,352	136	1,540	2,012	3	67	7	77	7,916	2	52	5	59	59
	Rural		1,194	256	1,450	2,501		48	10	58	5,963		37	8	45	45
	Total	52	2,546	392	2,990	4,513	1	56	9	66	13,879	1	44	7	51	51
Provincial Total	Urban	4,150	26,613	2,094	32,857	42,925	10	62	5	77	170,256	8	53	4	66	66
	Rural	400	39,297	6,357	46,054	76,918	1	51	8	60	108,362		45	7	53	53
	Total	4,550	65,910	8,451	78,911	119,843	4	55	7	66	278,618	3	48	6	58	58

8.3 Projection of Frame Values

8.3.1 Review of Past Population Development and Population Projection

Since NSO has not yet prepared/issued future population of the provinces, the provincial population for the years 1997 (planning base year), 2003 (medium-term target year) and 2010 (long-term target year) were projected. Available information for the study at present is as follows:

- NSO population census results in 1980, 1990 and 1995
- 1995 Census-based National and Regional Population Projection prepared by the NSO
- Provincial Physical Framework Plan/Comprehensive Provincial Land Use Plan (1993-2002)

(1) 1995 Census-Based National and Regional Population Projections: NSO

The NSO conducted the national population projections for the period 1995-2040 and the regional projections for the period 1995-2020. The assumptions take into account future trends in the demographic processes of fertility, mortality and migration required by the cohort-component method for projecting population. The 1995 Population Census was used as the basis for the projection.

In the regional population projection, Region X and XI, the subject regions for the 2nd batch areas of this study are classified as medium-sized regions (at least 5 million but less than 10 million by year 2000). The following are the result of projection for the two regions in 2000, 2005 and 2010.

Table 8.3.1 Regional Population Projection

Year		1980	1990	1995	2000	2005	2010
Region X	Population	2,758,985	3,509,753	3,938,252	4,441,739	4,955,545	5,465,272
	Growth	-	2.44 %	2.33 %	2.44 %	2.21 %	1.98 %
Region X (Revised)	Population	1,765,120	2,197,554	2,472,947	2,737,148	NA	NA
	Growth	-	2.22 %	2.39 %	2.05 %	NA	NA
Region IX	Population	3,346,803	4,458,829	5,052,730	5,749,821	6,456,464	7,146,889
	Growth	-	2.91 %	2.53 %	2.62 %	2.35 %	2.05 %

Notes: Region X (Revised) excludes CARAGA Region. NA: Not Available
Growth rates of Region X and Region X (Revised) from 1990 to 2000 are projected at 2.38% and 2.22%, respectively.

The growth rates from 1980-1995 between Region X (previous composition of the provinces used by the NSO) and recently arranged Region X (excluding the provinces in the CARAGA Region) are almost the same. The growth rate (2.22%) of the revised Region X adopted from 1990 to 2000 is the same as that experienced from 1980 to 1990

(10 years). However, the growth rates between 1990 and 1995, and 1995 and 2000 become 2.39% and 2.05% respectively, as a result of 1995 census.

(2) Provincial Physical Framework Plan/comprehensive Provincial Land Use Plan: Misamis Oriental: Planning period 1993-2002

The provincial total population and the component municipalities for the year 2002 was projected with 1990 as the base year in the Comprehensive Provincial Land Use Plan (hereafter referred to as "Land Use Plan"). The modified provincial growth rates, which refer to the experience between 1980 and 1990 is adopted for the projection. This is applying the linear formula of $P_n = P_0 \times (1+nr)$. The provincial growth rate (excluding Cagayan de Oro City) used in the Land Use Plan is 1.36%.

While, the growth rate between 1980 and 1990 using the formula $P_n = P_0 \times (1+r)^n$ is computed at 1.28%. On the other hand, the recorded/ projected growth rate of Region X (excluding CARAGA Region) from 1980 to 1990 and from 1990 to 2000 is 2.22 %

Table 8.3.2 shows the past population developments in census years (1980-1995) and projections for the years 1995 and 2002 with 1990 as base year using the assumed growth rates (linear formula) for the period 1990 to 2002.

Comparing the census and the projected population in 1995, the provincial population based on the census is 12% higher than the projected one. The growth rate from 1990 to 1995 was increased from the previous 1.36% to 2.36% (applying linear formula). Thus, it is recommended to use the recently experienced growth rates for the medium-term projection (either using linear or simple compounded formula). Regarding the municipal population in 1995, all of the municipalities/city increased their average growth rates from 1990. The differences between actual and projected population ranged from 1 to 25%. In this connection, the municipal growth rates experienced between 1990 and 1995 may be applied for the medium-term plan to reflect the current trend.

(3) Population Projection of the Province

The growth rates in the Land Use Plan are calculated using the linear formula of $P_n = P_0 \times (1+nr)$, however, in this study, a simple compounded formula of $P_n = P_0 \times (1+r)^n$ is applied, which was used in the land use plan of other provinces.

Where; P_n : Population in "n"th year P_0 : Population in base year

n: "n"th year from base year: Growth rate

Table 8.3.2 Census Population and Projected Population

Municipality	Census Population and Growth Rate					Projected Population/Adopted		
	1980	1990	G.R. (%)	1995	G.R. (%)	1995	2002	G.R. (%)
Alubijid	15,443	19,531	2.65	21,765	2.29	19,532	29,050	4.06
Balingasag	38,364	41,506	0.82	46,018	2.17	41,507	48,955	1.50
Balingoan	6,596	6,689	0.14	7,548	2.57	6,690	7,103	0.52
Binaungan	4,457	5,090	1.42	5,374	1.12	5,091	6,332	2.03
Claveria	29,088	31,130	0.70	39,020	5.07	31,131	35,682	1.22
El Salvador	20,446	26,721	3.07	31,500	3.58	26,722	41,206	4.52
Gingoog City	79,937	82,582	0.33	87,530	1.20	82,583	88,790	0.63
Gitagum	9,639	10,994	1.41	11,327	0.61	10,995	13,891	2.20
Initao	21,842	23,113	0.58	23,340	0.20	23,114	26,010	1.04
Jasaan	23,366	29,146	2.47	33,598	3.05	29,147	42,803	3.90
Kinoguitan	7,203	8,795	2.21	10,406	3.66	8,796	12,520	3.53
Lagonlong	13,576	12,705	-0.64	15,258	4.02	12,706	12,705	0.00
Laguindingan	12,059	15,503	2.86	16,521	1.31	15,504	23,366	4.23
Libertad	7,770	8,487	0.92	9,258	1.82	8,488	10,142	1.63
Lugait	10,785	11,973	1.10	13,012	1.74	11,974	14,456	1.73
Magsaysay	22,830	22,099	-0.32	23,730	1.48	22,100	22,099	0.00
Manticao	17,294	21,443	2.40	22,630	1.11	21,444	30,962	3.70
Medina	19,888	21,796	0.96	23,319	1.40	21,797	25,934	1.58
Naawan	12,215	13,345	0.93	14,578	1.85	13,346	15,828	1.55
Opol	16,149	20,473	2.68	23,958	3.40	20,474	30,405	4.04
Salay	17,945	18,101	0.09	18,923	0.91	18,102	18,515	0.19
Sugbongcogon	6,243	6,175	-0.11	6,957	2.53	6,176	6,175	0.00
Tagoloan	22,023	33,919	5.40	40,929	4.13	33,920	62,061	6.91
Talisayan	15,667	17,015	0.86	19,742	3.21	17,016	19,912	1.42
Villa Nueva	11,895	17,122	4.39	21,310	4.89	17,123	29,124	5.84
	462,720	525,453	1.36	587,551	2.36	525,454	674,026	2.36

Note: Growth rates are those in application of a linear formula.

The population of Lagonlong, Magsaysay and Sugbongcogon for the year 2002 is arranged to keep that in 1990 (Census results show the decrease of the population during the period.).

The following conditions are considered/assumed in the population projection.

Provincial Population

- 1) The regional population (Region X including CARAGA Region at present) projected by the NSO for the year 2010 is referred to, as the fixed frame value of the Region. The following are the population ratios of the province to the Region from 1980 to 1995 and for the year 2003 (provincial population is projected, with 1995 as base year, using a simple compounded growth rate from 1990 to 1995). The provincial population in 2002 was projected in the Land Use Plan.

Year	1980	1990	1995	2002	2003
Province	462,720	525,453	587,551	674,026	702,574
Region	2,758,985	3,509,753	3,938,252	4,647,150	4,749,853
P/R	16.8%	15.0%	14.9%	14.5%	14.8%

The provincial ratio to the Region is stable with a range of 15% to 17%. The population share of the province to the regional total in the long-term period is assumed to be 15%. Therefore, the population in 2010 is set up at 819,791 (15% of the regional population of 5,465,272).

Based on the above study, the growth rate experienced during the period 1990 to 1995 (2.26%) is basically applied for the medium-term projection (1995-2003) with 1995 as base year. For the long-term projection (2004 to 2010), the provincial average growth rate of 2.23 % was estimated applying the aforementioned manner of projection. This figure is slightly higher than the regional average growth rate (1.98%). The projected population for the years 1997, 2003 and 2010 is summarized as follows:

Year	Population	Growth rate
1995	587,551	Census result
1997	614,408	2.26 % (1990-1995 Census)
2003	702,574	2.26 % (1990-1995 Census)
2010	819,791	2.23 % (estimated from projected population in 2010)

Municipal population

- 1) The total population of the province by target year is fixed.
- 2) The growth rates of the respective municipalities for the years 1997 and 2003 are determined referring to the development trend between 1990 and 1995 (a simple compounded formula). The municipal population for the respective target years was finally adjusted according to the initially calculated population sizes to meet the fixed provincial population. Accordingly, the growth rates of the municipalities were modified. Table 8.3.3 presents the calculation results under the above conditions/assumptions.

For the year 2010 in the long-term, it is assumed that the trend of population growth of the respective municipalities between 1990 and 2002, which is considered in the Land Use Plan, will be realized in line with the land use plan of the province. Thus, the growth rates of the municipal population between 1990 and 2002 (projected figure in the Land Use Plan) are calculated using a simple compounded formula in order to apply for the projection in 2010 from the year 2003.

Table 8.3.3 Municipal Population Projection for Year 1997 and 2003

Municipality	Annual Growth Rate (%)			Population (person)/Growth Rate				
	'80-'90	Land	'90-'95	1995	1997	Estimated	2003	Estimated
Alubijid	2.38	3.36	2.19	21,765	22,706	2.14	25,685	2.09
Balingasag	0.79	1.39	2.09	46,018	47,913	2.04	53,882	1.99
Balingoan	0.14	0.50	2.45	7,548	7,914	2.40	9,090	2.35
Binaungan	1.34	1.84	1.09	5,374	5,486	1.04	5,816	0.99
Claveria	0.68	1.14	4.62	39,020	42,665	4.57	55,572	4.52
El Salvador	2.71	3.68	3.35	31,500	33,612	3.30	40,686	3.25
Gingoog City	0.33	0.61	1.17	87,530	89,499	1.12	95,328	1.07
Gitagum	1.32	1.97	0.6	11,327	11,452	0.55	11,791	0.50
Initao	0.57	0.99	0.2	23,340	23,410	0.15	23,534	0.10
Jasaan	2.23	3.25	2.88	33,598	35,525	2.83	41,842	2.78
Kinoguitan	2.02	2.99	3.42	10,406	11,119	3.37	13,514	3.32
Lagonlong	-0.66	2.02	3.73	15,258	16,401	3.68	20,295	3.63
Laguindingan	2.54	3.48	1.28	16,521	16,929	1.23	18,150	1.18
Libertad	0.89	1.50	1.75	9,258	9,575	1.70	10,555	1.65
Lugait	1.05	1.58	1.68	13,012	13,439	1.63	14,753	1.58
Magsaysay	-0.32	2.02	1.43	23,730	24,389	1.38	26,380	1.33
Manticao	2.17	3.11	1.08	22,630	23,098	1.03	24,471	0.98
Medina	0.92	1.46	1.36	23,319	23,933	1.31	25,781	1.26
Naawan	0.89	1.43	1.78	14,578	15,086	1.73	16,659	1.68
Opol	2.40	3.35	3.19	23,958	25,485	3.14	30,563	3.09
Salay	0.09	0.19	0.89	18,923	19,242	0.84	20,157	0.79
Sugbongcogon	-0.11	2.02	2.41	6,957	7,289	2.36	8,352	2.31
Tagoloan	4.41	5.16	3.83	40,929	44,079	3.78	54,861	3.73
Talisayan	0.83	1.32	3.02	19,742	20,931	2.97	24,855	2.92
Villa Nueva	3.71	4.53	4.47	21,310	23,234	4.42	30,003	4.37
Province	1.28	2.02	2.26	587,551	614,408	2.26	702,574	2.26

Note: 1995 population is census results.

In the Land Use Plan, the population of 3 municipalities for the year 2002 (Lagonlong, Magsaysay and Sugbongcogon) is arranged to use the same figures in 1990, since the population of these municipalities was reduced from 1980 to 1990. However, referring to the 1995 census result, the growth rates of the relevant municipalities from 1990 to 1995 had increased with a range of 1.4-3.7% (using the compounded formula). Under the population development of these municipalities in the recent census, the provincial average growth rate (2.23% by using the compounded formula) from 2003 to 2010 is commonly employed to these municipalities.

According to the above mentioned manner, the initial estimated municipal population is adjusted in proportion to the population size of each municipality to meet the total fixed provincial population for the year 2010 (819,791 persons). Table 8.3.4 shows

the study process results and the projected population by municipality for the year 2010 and adjusted growth rates.

Table 8.3.4 Municipal Population Projection for the Year 2010

Municipality	Pop. Projection Using Calculated G.R based on Projected Year 2002 Pop. in Land Use Plan			Pop. Projection/ Growth Rate	
	2003 Pop.	¹⁾ G.R. (%)	2010 Pop.	²⁾ Adjusted	³⁾ G.R. (%)
Alubijid	25,685	3.36	32,629	32,165	3.27
Balingasag	53,882	1.39	59,787	58,938	1.29
Balingoan	9,090	0.50	9,487	9,352	0.41
Binaungan	5,816	1.84	6,657	6,562	1.74
Claveria	55,572	1.14	60,643	59,781	1.05
El Salvador	40,686	3.68	52,787	52,036	3.58
Gingoog City	95,328	0.61	100,215	98,791	0.51
Gitagum	11,791	1.97	13,619	13,426	1.87
Initao	23,534	0.99	25,407	25,046	0.89
Jasaan	41,842	3.25	52,761	52,011	3.16
Kinoguitan	13,514	2.99	16,733	16,496	2.89
Lagonlong	20,295	2.23	23,866	23,527	2.13
Laguindingan	18,150	3.48	23,236	22,905	3.38
Libertad	10,555	1.50	11,801	11,633	1.40
Lugait	14,753	1.58	16,595	16,359	1.49
Magsaysay	26,380	2.23	31,023	30,582	2.13
Manticao	24,471	3.11	30,554	30,120	3.01
Medina	25,781	1.46	28,753	28,344	1.36
Naawan	16,659	1.43	18,545	18,281	1.34
Opol	30,563	3.35	38,792	38,241	3.25
Salay	20,157	0.19	20,583	20,290	0.09
Sugbongcogon	8,352	2.23	9,822	9,683	2.13
Tagoloan	54,861	5.16	78,644	77,526	5.06
Talisayan	24,855	1.32	27,453	27,063	1.22
Villa Nueva	30,003	4.53	41,218	40,632	4.43
Province	702,574	2.23	831,612	819,791	2.23

Notes: G.R.: Annual Growth Rate

1) Provincial average growth rate is applied for Lagonlong, Magsaysay and Sugbongcogon.

2) Municipal population (provincial total of 831,612) is proportionally adjusted to meet the fixed provincial total of 819,791.

3) Estimated growth rates using projected population for the year 2010.

Population by urban and rural area

In the Land Use Plan, the urban/rural population by municipality for the year 2002 is projected with 1990 as base year. The annual growth rate of the urban population for the year 2002 by municipality (linear formula) is estimated referring to the experience from 1980 to 1990 and the future land use plan. Applying the simple compounded formula (using the projected population in the Land Use Plan), the provincial average growth rate of urban area is estimated at 6.14 %.

The rural population by municipality is estimated as the balance between the total population and the urban population. The provincial average growth rate of the rural area (compounded formula) is estimated at -4.82 %. These growth rates may not be important because of the unclear classification of barangays in the respective census years, but rather, these will just serve as reference figures for the study. Nevertheless, the urban and rural population by municipality was studied considering the 1995 census results and the estimated figures in the Land Use Plan.

1) Past population development

Table 8.3.5 shows the urban and rural population with growth rates in census years (1980-1995) by municipality. With regard to the urban population of the province to the total population, the provincial averages in 1980, 1990 and 1995 were 21 %, 49 % and 36 %, respectively. These fluctuated percentages are caused by the classification of barangays by census year in terms of urban and rural barangays. Likewise, the historical shares of the rural population changed without an order from 79% to 51% (1980-1990) and 64% in 1995.

2) Projection of urban and rural population for the years of 1997, 2003 and 2010

The urban population by municipality for the target years was first projected and the rural population was then calculated to meet the aforementioned total population by smoothing the urban population.

In the projection of municipal urban population, the census results in 1995 (provincial average of 36%) are applied in terms of the share of urban population to the total population for both short/medium-term and long-term purposes. Under this assumption, the provincial average share of the urban population for the target years was arrived at 36 - 38%. Table 8.3.6 presents the projected urban and rural population for the years of 1997, 2003 and 2010.

Table 8.3.5 Past Population Development by Urban and Rural Area

Municipality		1980			1990				1995			
		Total	Urban/ Rural	Share (%)	Total	Urban/ Rural	G.R. (%)	Share (%)	Total	Urban/ Rural	G.R. (%)	Share (%)
Urban Area	Alubijid	15,443	2347	15.2	19,531	6986	11.52	35.8	21,765	5477	-4.75	25.2
	Balingasag	38,364	6041	15.7	41,506	17773	11.39	42.8	46,018	12293	-7.11	26.7
	Balingoan	6,596	2433	36.9	6,689	4975	7.42	74.4	7,548	3460	-7.01	45.8
	Binaungan	4,457		0.0	5,090	2234	N.A	43.9	5,374	1502	-7.63	27.9
	Claveria	29,088	4573	15.7	31,130	16524	13.71	53.1	39,020	17993	1.72	46.1
	El Salvador	20,446	3643	17.8	26,721	9610	10.19	36.0	31,500	5817	-9.55	18.5
	Gingoog City	79,937	20128	25.2	82,582	45496	8.50	55.1	87,530	31392	-7.15	35.9
	Gitagum	9,639		0.0	10,994	4208	N.A	38.3	11,327	2190	-12.24	19.3
	Initao	21,842	4787	21.9	23,113	13040	10.54	56.4	23,340	6094	-14.11	26.1
	Jasaan	23,366	5623	24.1	29,146	14085	9.62	48.3	33,598	19928	7.19	59.3
	Kinoguitan	7,203	1679	23.3	8,795	4844	11.18	55.1	10,406	1842	-17.58	17.7
	Lagonlong	13,576	2167	16.0	12,705	4608	7.84	36.3	15,258	3218	-6.93	21.1
	Laguindingan	12,059	1572	13.0	15,503	4387	10.81	28.3	16,521	2437	-11.09	14.8
	Libertad	7,770	2925	37.6	8,487	3729	2.46	43.9	9,258	3436	-1.62	37.1
	Lugait	10,785	4779	44.3	11,973	8612	6.07	71.9	13,012	6154	-6.50	47.3
	Magsaysay	22,830	1522	6.7	22,099	4067	10.33	18.4	23,730	1504	-18.04	6.3
	Manticao	17,294	3959	22.9	21,443	16176	15.11	75.4	22,630	6467	-16.75	28.6
	Medina	19,888	4596	23.1	21,796	10523	8.64	48.3	23,319	5671	-11.63	24.3
	Naawan	12,215	1905	15.6	13,345	11079	19.25	83.0	14,578	3034	-22.82	20.8
	Opol	16,149	1818	11.3	20,473	10630	19.31	51.9	23,958	6773	-8.62	28.3
Salay	17,945	4935	27.5	18,101	9402	6.66	51.9	18,923	6747	-6.42	35.7	
Sugbongcogon	6,243	1810	29.0	6,175	3193	5.84	51.7	6,957	3531	2.03	50.8	
Tagoloan	22,023	4960	22.5	33,919	15954	12.39	47.0	40,929	40929	20.73	100.0	
Talisayan	15,667	3130	20.0	17,015	8441	10.43	49.6	19,742	4249	-12.83	21.5	
Villa Nueva	11,895	5440	45.7	17,122	6514	1.82	38.0	21,310	9430	7.68	44.3	
Province	462,720	96772	20.9	525,45	257090	10.26	48.9	587,551	211568	-3.82	36.0	
Rural Area	Alubijid	15,443	13,096	84.8	19,531	12,545	-0.43	64.2	21,765	16,288	5.36	74.8
	Balingasag	38,364	32,323	84.3	41,506	23,733	-3.04	57.2	46,018	33,725	7.28	73.3
	Balingoan	6,596	4,163	63.1	6,689	1,714	-8.49	25.6	7,548	4,088	18.99	54.2
	Binaungan	4,457	4,457	100	5,090	2,856	-4.35	56.1	5,374	3,872	6.28	72.1
	Claveria	29,088	24,515	84.3	31,130	14,606	-5.05	46.9	39,020	21,027	7.56	53.9
	El Salvador	20,446	16,803	82.2	26,721	17,111	0.18	64.0	31,500	25,683	8.46	81.5
	Gingoog City	79,937	59,809	74.8	82,582	37,086	-4.67	44.9	87,530	56,138	8.64	64.1
	Gitagum	9,639	9,639	100	10,994	6,786	-3.45	61.7	11,327	9,137	6.13	80.7
	Initao	21,842	17,055	78.1	23,113	10,073	-5.13	43.6	23,340	17,246	11.35	73.9
	Jasaan	23,366	17,743	75.9	29,146	15,061	-1.63	51.7	33,598	13,670	-1.92	40.7
	Kinoguitan	7,203	5,524	76.7	8,795	3,951	-3.30	44.9	10,406	8,564	16.73	82.3
	Lagonlong	13,576	11,409	84.0	12,705	8,097	-3.37	63.7	15,258	12,040	8.26	78.9
	Laguindingan	12,059	10,487	87.0	15,503	11,116	0.58	71.7	16,521	14,084	4.85	85.2
	Libertad	7,770	4,845	62.4	8,487	4,758	-0.18	56.1	9,258	5,822	4.12	62.9
	Lugait	10,785	6,006	55.7	11,973	3,361	-5.64	28.1	13,012	6,858	15.33	52.7
	Magsaysay	22,830	21,308	93.3	22,099	18,032	-1.66	81.6	23,730	22,226	4.27	93.7
	Manticao	17,294	13,335	77.1	21,443	5,267	-8.87	24.6	22,630	16,163	25.14	71.4
	Medina	19,888	15,292	76.9	21,796	11,273	-3.00	51.7	23,319	17,648	9.38	75.7
	Naawan	12,215	10,310	84.4	13,345	2,266	-14.06	17.0	14,578	11,544	38.49	79.2
	Opol	16,149	14,331	88.7	20,473	9,843	-3.69	48.1	23,958	17,185	11.79	71.7
Salay	17,945	13,010	72.5	18,101	8,699	-3.95	48.1	18,923	12,176	6.96	64.3	
Sugbongcogon	6,243	4,433	71.0	6,175	2,982	-3.89	48.3	6,957	3,426	2.81	49.2	
Tagoloan	22,023	17,063	77.5	33,919	17,965	0.52	53.0	40,929	0	-100.0	0.0	
Talisayan	15,667	12,537	80.0	17,015	8,574	-3.73	50.4	19,742	15,493	12.56	78.5	
Villa Nueva	11,895	6,455	54.3	17,122	10,608	5.09	62.0	21,310	11,880	2.29	55.7	
Province	462,720	365,948	79.1	525,45	268,36	-3.05	51.1	587,551	375,983	6.98	64.0	

Table 8.3.6 Population Projection by Urban and Rural Area

Municipality	1997			2003			2010			
	Total	Urban/ Rural	Share (%)	Total	Urban/ Rural	Share (%)	Total	Urban/ Rural	Share (%)	
Urban Area	Alubijid	22,706	5,714	25.2	25,685	6,463	25.2	32,165	8,094	25.2
	Balingasag	47,913	12,799	26.7	53,882	14,394	26.7	58,938	15,744	26.7
	Balingoan	7,914	3,628	45.8	9,090	4,167	45.8	9,352	4,287	45.8
	Binaungan	5,486	1,533	27.9	5,816	1,625	27.9	6,562	1,834	27.9
	Claveria	42,665	19,674	46.1	55,572	25,625	46.1	59,781	27,566	46.1
	El Salvador	33,612	6,207	18.5	40,686	7,513	18.5	52,036	9,609	18.5
	Gingoog City	89,499	32,098	35.9	95,328	34,189	35.9	98,791	35,431	35.9
	Gitagum	11,452	2,214	19.3	11,791	2,280	19.3	13,426	2,596	19.3
	Initao	23,410	6,112	26.1	23,534	6,145	26.1	25,046	6,539	26.1
	Jasaan	35,525	21,071	59.3	41,842	24,818	59.3	52,011	30,850	59.3
	Kinoguitan	11,119	1,968	17.7	13,514	2,392	17.7	16,496	2,920	17.7
	Lagonlong	16,401	3,459	21.1	20,295	4,280	21.1	23,527	4,962	21.1
	Laguindingan	16,929	2,497	14.8	18,150	2,677	14.8	22,905	3,379	14.8
	Libertad	9,575	3,554	37.1	10,555	3,917	37.1	11,633	4,318	37.1
	Lugait	13,439	6,356	47.3	14,753	6,977	47.3	16,359	7,737	47.3
	Magsaysay	24,389	1,546	6.3	26,380	1,672	6.3	30,582	1,938	6.3
	Manticao	23,098	6,601	28.6	24,471	6,993	28.6	30,120	8,607	28.6
	Medina	23,933	5,820	24.3	25,781	6,270	24.3	28,344	6,893	24.3
	Naawan	15,086	3,140	20.8	16,659	3,467	20.8	18,281	3,805	20.8
	Opol	25,485	7,205	28.3	30,563	8,640	28.3	38,241	10,811	28.3
	Salay	19,242	6,861	35.7	20,157	7,187	35.7	20,290	7,234	35.7
	Sugbongcogon	7,289	3,699	50.8	8,352	4,239	50.8	9,683	4,914	50.8
	Tagoloan	44,079	44,079	100.0	54,861	54,861	100.0	77,526	77,526	100.0
	Talisayan	20,931	4,505	21.5	24,855	5,349	21.5	27,063	5,825	21.5
	Villa Nueva	23,234	10,281	44.3	30,003	13,277	44.3	40,632	17,980	44.3
	Province	614,408	222,621	36.2	702,574	259,419	36.9	819,791	311,40	38.0
Rural Area	Alubijid	22,706	16,992	74.8	25,685	19,221	74.8	32,165	24,071	74.8
	Balingasag	47,913	35,114	73.3	53,882	39,488	73.3	58,938	43,193	73.3
	Balingoan	7,914	4,286	54.2	9,090	4,923	54.2	9,352	5,065	54.2
	Binaungan	5,486	3,953	72.1	5,816	4,190	72.1	6,562	4,728	72.1
	Claveria	42,665	22,991	53.9	55,572	29,946	53.9	59,781	32,214	53.9
	El Salvador	33,612	27,405	81.5	40,686	33,173	81.5	52,036	42,427	81.5
	Gingoog City	89,499	57,401	64.1	95,328	61,139	64.1	98,791	63,360	64.1
	Gitagum	11,452	9,238	80.7	11,791	9,511	80.7	13,426	10,830	80.7
	Initao	23,410	17,297	73.9	23,534	17,389	73.9	25,046	18,507	73.9
	Jasaan	35,525	14,454	40.7	41,842	17,024	40.7	52,011	21,162	40.7
	Kinoguitan	11,119	9,150	82.3	13,514	11,121	82.3	16,496	13,576	82.3
	Lagonlong	16,401	12,942	78.9	20,295	16,014	78.9	23,527	18,565	78.9
	Laguindingan	16,929	14,432	85.2	18,150	15,473	85.2	22,905	19,527	85.2
	Libertad	9,575	6,021	62.9	10,555	6,637	62.9	11,633	7,316	62.9
	Lugait	13,439	7,083	52.7	14,753	7,776	52.7	16,359	8,622	52.7
	Magsaysay	24,389	22,843	93.7	26,380	24,708	93.7	30,582	28,643	93.7
	Manticao	23,098	16,497	71.4	24,471	17,478	71.4	30,120	21,513	71.4
	Medina	23,933	18,113	75.7	25,781	19,511	75.7	28,344	21,451	75.7
	Naawan	15,086	11,946	79.2	16,659	13,192	79.2	18,281	14,477	79.2
	Opol	25,485	18,280	71.7	30,563	21,923	71.7	38,241	27,430	71.7
	Salay	19,242	12,381	64.3	20,157	12,970	64.3	20,290	13,056	64.3
	Sugbongcogon	7,289	3,589	49.2	8,352	4,113	49.2	9,683	4,768	49.2
	Tagoloan	44,079	0	0.0	54,861	0	0.0	77,526	0	0.0
	Talisayan	20,931	16,426	78.5	24,855	19,506	78.5	27,063	21,238	78.5
	Villa Nueva	23,234	12,953	55.7	30,003	16,726	55.7	40,632	22,652	55.7
	Province	614,408	391,788	63.8	702,574	443,155	63.1	819,791	508,39	62.0

Table 8.3.7 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	Urban	Rural	Total	Urban	Rural	Total
Alubijid	4.77	4.70	4.72	4.77	4.70	4.72	4.77	4.70	4.72	4.77	4.70	4.72	4.77	4.70	4.72	4.77	4.70	4.72
Balingasag	5.31	5.40	5.37	5.31	5.40	5.37	5.31	5.40	5.37	5.31	5.40	5.37	5.31	5.40	5.37	5.31	5.40	5.37
Balingoan	5.28	5.16	5.21	5.28	5.16	5.21	5.28	5.16	5.21	5.28	5.16	5.21	5.28	5.16	5.21	5.28	5.16	5.21
Binuangan	5.56	4.98	5.13	5.56	4.98	5.13	5.56	4.98	5.13	5.56	4.98	5.13	5.56	4.98	5.13	5.56	4.98	5.13
Claveria	5.47	5.32	5.39	5.47	5.32	5.39	5.47	5.32	5.39	5.47	5.32	5.39	5.47	5.32	5.39	5.47	5.32	5.39
El Salvador	5.09	5.09	5.09	5.09	5.09	5.09	5.09	5.09	5.09	5.09	5.09	5.09	5.09	5.09	5.09	5.09	5.09	5.09
Gingoog City	5.18	5.07	5.11	5.18	5.07	5.11	5.18	5.07	5.11	5.18	5.07	5.11	5.18	5.07	5.11	5.18	5.07	5.11
Gitagum	4.91	4.84	4.86	4.91	4.84	4.86	4.91	4.84	4.86	4.91	4.84	4.86	4.91	4.84	4.86	4.91	4.84	4.86
Imitao	4.71	4.81	4.78	4.71	4.81	4.78	4.71	4.81	4.78	4.71	4.81	4.78	4.71	4.81	4.78	4.71	4.81	4.78
Jasaan	5.31	5.29	5.30	5.31	5.29	5.30	5.31	5.29	5.30	5.31	5.29	5.30	5.31	5.29	5.30	5.31	5.29	5.30
Kinoguitan	5.60	5.41	5.44	5.60	5.41	5.44	5.60	5.41	5.44	5.60	5.41	5.44	5.60	5.41	5.44	5.60	5.41	5.44
Lagonglong	5.29	5.32	5.32	5.29	5.32	5.32	5.29	5.32	5.32	5.29	5.32	5.32	5.29	5.32	5.32	5.29	5.32	5.32
Laguindingan	4.90	4.83	4.84	4.90	4.83	4.84	4.90	4.83	4.84	4.90	4.83	4.84	4.90	4.83	4.84	4.90	4.83	4.84
Libertad	4.91	5.19	5.08	4.91	5.19	5.08	4.91	5.19	5.08	4.91	5.19	5.08	4.91	5.19	5.08	4.91	5.19	5.08
Lugait	4.95	4.20	4.53	4.95	4.20	4.53	4.95	4.20	4.53	4.95	4.20	4.53	4.95	4.20	4.53	4.95	4.20	4.53
Magsaysay	5.26	5.20	5.20	5.26	5.20	5.20	5.26	5.20	5.20	5.26	5.20	5.20	5.26	5.20	5.20	5.26	5.20	5.20
Manicao	5.07	4.99	5.01	5.07	4.99	5.01	5.07	4.99	5.01	5.07	4.99	5.01	5.07	4.99	5.01	5.07	4.99	5.01
Medina	5.25	5.33	5.31	5.25	5.33	5.31	5.25	5.33	5.31	5.25	5.33	5.31	5.25	5.33	5.31	5.25	5.33	5.31
Naawan	4.97	4.84	4.86	4.97	4.84	4.86	4.97	4.84	4.86	4.97	4.84	4.86	4.97	4.84	4.86	4.97	4.84	4.86
Opol	5.02	4.99	5.00	5.02	4.99	5.00	5.02	4.99	5.00	5.02	4.99	5.00	5.02	4.99	5.00	5.02	4.99	5.00
Salay	5.09	4.92	4.98	5.09	4.92	4.98	5.09	4.92	4.98	5.09	4.92	4.98	5.09	4.92	4.98	5.09	4.92	4.98
Sugbongcogon	5.54	5.59	5.57	5.54	5.59	5.57	5.54	5.59	5.57	5.54	5.59	5.57	5.54	5.59	5.57	5.54	5.59	5.57
Tagoloan	5.20		5.20	5.20		5.20	5.20		5.20	5.20		5.20	5.20		5.20	5.20		5.20
Talisayan	5.47	5.36	5.38	5.47	5.36	5.38	5.47	5.36	5.38	5.47	5.36	5.38	5.47	5.36	5.38	5.47	5.36	5.38
Villanueva	5.11	5.18	5.15	5.11	5.18	5.15	5.11	5.18	5.15	5.11	5.18	5.15	5.11	5.18	5.15	5.11	5.18	5.15
Provincial Total	5.18	5.09	5.12	5.18	5.09	5.12	5.18	5.09	5.12	5.18	5.09	5.12	5.18	5.09	5.12	5.18	5.09	5.12

8.3.2 School Enrollment Projection

Table 8.3.8 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
Alubid	5,669	5,901	104	6,413	6,092	95	8,031	7,629	95
Balingasag	13,682	15,398	113	15,387	15,387	100	16,831	15,989	95
Balingoan	2,109	2,129	101	2,422	2,180	90	2,492	2,367	95
Binuangan	1,427	1,769	124	1,513	1,513	100	1,707	1,622	95
Claveria	12,294	12,096	98	16,013	15,212	95	17,226	16,365	95
El Salvador	8,897	7,667	86	10,769	9,692	90	13,773	13,084	95
Gingoog City	24,251	24,381	101	25,830	24,539	95	26,768	26,768	100
Gitagum	2,912	2,145	74	2,998	2,398	80	3,414	2,902	85
Initao	6,086	7,055	116	6,118	6,118	100	6,511	6,185	95
Jasaan	9,726	10,144	104	11,455	10,882	95	14,239	13,527	95
Kinogutan	2,942	2,317	79	3,376	3,040	85	4,365	3,929	90
Lagonglong	4,580	4,284	94	5,667	5,384	95	6,569	6,241	95
Laguindingan	4,288	4,474	104	4,597	4,597	100	5,801	5,511	95
Libertad	2,470	3,106	126	2,723	2,723	100	3,001	2,851	95
Lugait	3,634	3,932	108	3,989	3,989	100	4,423	4,202	95
Magsaysay	7,135	8,067	113	7,717	7,717	100	8,946	8,499	95
Manicao	6,461	6,175	96	6,845	6,503	95	8,425	8,004	95
Medina	6,417	7,988	124	6,912	6,912	100	7,599	7,219	95
Naawan	4,177	3,624	87	4,613	4,152	90	5,062	4,809	95
Opol	6,717	7,788	116	8,055	8,055	100	10,079	10,079	100
Salay	5,129	5,919	115	5,373	5,373	100	5,408	5,138	95
Subongcogon	2,076	2,395	115	2,379	2,379	100	2,758	2,620	95
Tagoloan	12,238	10,607	87	15,231	13,708	90	21,523	19,371	90
Talisayan	5,523	5,810	105	6,558	6,558	100	7,141	6,784	95
Villanueva	6,437	6,029	94	8,312	7,896	95	11,257	10,694	95
Provincial Total	167,277	171,200	102	191,465	182,999	96	223,349	212,389	95
									92

8.3.3 Projection of the Number of Public Utilities

Table 8.3.9 Projected Number of Public Utilities by Municipality by Target Year

Part 1 of 2

Name of Municipality	Type	1997	2003		2010	
		No. of Public Utilities	Proposed Construction	Total	Proposed Construction	Total
Alubijid	Public Market	1	1	2	1	3
	Bus/Jeepney Terminal		1	1	1	2
	Parks/Playground	1	1	2	1	3
	Total	2	3	5	3	8
Balingasag	Public Market	2	1	3	1	4
	Bus/Jeepney Terminal		1	1	1	2
	Parks/Playground		1	1	1	2
	Total	2	3	5	3	8
Balingoan	Public Market	2	1	3	1	4
	Bus/Jeepney Terminal		1	1	1	2
	Parks/Playground		1	1	1	2
	Total	2	3	5	3	8
Binuangan	Public Market	2	1	3	1	4
	Bus/Jeepney Terminal		1	1	1	2
	Parks/Playground	2	1	3	1	4
	Total	4	3	7	3	10
Claveria	Public Market	2	1	3	1	4
	Bus/Jeepney Terminal	1	1	2	1	3
	Parks/Playground	1	1	2	1	3
	Total	4	3	7	3	10
El Salvador	Public Market	2	1	3	1	4
	Bus/Jeepney Terminal		1	1	1	2
	Parks/Playground		1	1	1	2
	Total	2	3	5	3	8
Gingoog City	Public Market	2	1	3	1	4
	Bus/Jeepney Terminal	2	1	3	1	4
	Parks/Playground	2	1	3	1	4
	Total	6	3	9	3	12
Gitagum	Public Market	2	1	3	1	4
	Bus/Jeepney Terminal		1	1	1	2
	Parks/Playground		1	1	1	2
	Total	2	3	5	3	8
Initao	Public Market	4	1	5	1	6
	Bus/Jeepney Terminal		1	1	1	2
	Parks/Playground		1	1	1	2
	Total	4	3	7	3	10
Jasaan	Public Market	3	1	4	1	5
	Bus/Jeepney Terminal	1	1	2	1	3
	Parks/Playground		1	1	1	2
	Total	4	3	7	3	10
Kinoguitan	Public Market	1	1	2	1	3
	Bus/Jeepney Terminal		1	1	1	2
	Parks/Playground		1	1	1	2
	Total	1	3	4	3	7
Lagonglong	Public Market		1	1	1	2
	Bus/Jeepney Terminal		1	1	1	2
	Parks/Playground		1	1	1	2
	Total		3	3	3	6
Laguindingan	Public Market	1	1	2	1	3
	Bus/Jeepney Terminal		1	1	1	2
	Parks/Playground		1	1	1	2
	Total	1	3	4	3	7

Table 8.3.9 Projected Number of Public Utilities by Municipality by Target Year

Part 2 of 2

Name of Municipality	Type	1997	2003		2010	
		No. of Public Utilities	Proposed Construction	Total	Proposed Construction	Total
Libertad	Public Market	2	1	3	1	4
	Bus/JEEPNEY Terminal		1	1	1	2
	Parks/Playground		1	1	1	2
	Total	2	3	5	3	8
Lugait	Public Market	1	1	2	1	3
	Bus/JEEPNEY Terminal		1	1	1	2
	Parks/Playground		1	1	1	2
	Total	1	3	4	3	7
Magsaysay	Public Market	2	1	3	1	4
	Bus/JEEPNEY Terminal		1	1	1	2
	Parks/Playground	1	1	2	1	3
	Total	3	3	6	3	9
Manticao	Public Market	3	1	4	1	5
	Bus/JEEPNEY Terminal		1	1	1	2
	Parks/Playground		1	1	1	2
	Total	3	3	6	3	9
Medina	Public Market	1	1	2	1	3
	Bus/JEEPNEY Terminal		1	1	1	2
	Parks/Playground		1	1	1	2
	Total	1	3	4	3	7
Naawan	Public Market	1	1	2	1	3
	Bus/JEEPNEY Terminal		1	1	1	2
	Parks/Playground		1	1	1	2
	Total	1	3	4	3	7
Opol	Public Market	1	1	2	1	3
	Bus/JEEPNEY Terminal		1	1	1	2
	Parks/Playground		1	1	1	2
	Total	1	3	4	3	7
Salay	Public Market	1	1	2	1	3
	Bus/JEEPNEY Terminal		1	1	1	2
	Parks/Playground		1	1	1	2
	Total	1	3	4	3	7
Sugbongcogon	Public Market	1	1	2	1	3
	Bus/JEEPNEY Terminal		1	1	1	2
	Parks/Playground		1	1	1	2
	Total	1	3	4	3	7
Tagoloan	Public Market	1	1	2	1	3
	Bus/JEEPNEY Terminal		1	1	1	2
	Parks/Playground	1	1	2	1	3
	Total	2	3	5	3	8
Talisayan	Public Market	1	1	2	1	3
	Bus/JEEPNEY Terminal		1	1	1	2
	Parks/Playground		1	1	1	2
	Total	1	3	4	3	7
Villanueva	Public Market	1	1	2	1	3
	Bus/JEEPNEY Terminal		1	1	1	2
	Parks/Playground		1	1	1	2
	Total	1	3	4	3	7
Provincial Total	Public Market	40	25	65	25	90
	Bus/JEEPNEY Terminal	4	25	29	25	54
	Parks/Playground	8	25	33	25	58
	Total	52	75	127	75	202

8.4 Types of Facilities and Implementation Criteria

8.4.1 Water Supply

(1) Urban water supply

With regard to development/expansion of urban water supply by municipality, existing conditions, future requirements and planned/on-going projects were reviewed during the preparation of this PW4SP. The potential water source for future development was also evaluated in Chapter 7, taking into account the possibility to utilize untapped spring sources. The location of urban areas of respective municipalities/city was referred to Figure 3.4.1 in Chapter 3. Table 8.4.1 presents the basic figures on the existing service coverage, water sources and future requirements. The following show the results of this rapid study by municipality.

Alubijid

Only one Level III exists which is managed by the RWSA (served population is 3,000, 53% of urban population) under the supervision of the provincial government. Water source (total capacity of 700 cu.m/day) is a combination of spring (RWSA owned) and deep well (municipal government owned). Service extension to the hilly area is necessary. For future development, some shortage is projected. Deep well has good potential, but saline water may be encountered. Augmentation of well source shall be sought.

Balingasag

There is no Level III system at present and utilizes Level I free flowing wells in the Poblacion area. There is quality problem (odor). There is a need to construct Level III using a spring source located in Barangay Camuayan, about 5km from the Poblacion. The discharge rate of the spring is 1000 cu.m/day (15,000 persons shall be served in the year 2010). It is necessary to confirm water rights.

Balingoan

One Level III system exists, which is managed by the RWSA (converted from Level II). The service is extended to about 50% of the urban population. The water source is spring with pumped system due to topographical condition. Rehabilitation/ improvement of the pipe system is a requisite (3" dia pipe). Water source does not have any problem both in quality and quantity. System expansion is required. As for water source development, priority shall be given to spring source development.

Table 8.4.1 Existing Condition and Future Requirements of Urban Water Supply by Municipality

Name of Municipality/City	Existing Condition (1997)										Phase I (2003)										Phase II (2010)			
	Existing Level III System and Others					Population Served by Level III and Others					Newly Developed/Additional Water Source (m3/d)					Pop. Served by Level III					Newly developed/Additional Water source required (m3/d)			
	Urban Population (1997)	No. of Level III and Operating	Pop. Served by Level III	Pop. Served by Level III	Total Pop. Served (%)	Type	Production (m3/d)	Urban Population (2003)	Additional Pop. Served by Level III	Total Pop. Served by Level III	%	Additional Pop. Served by Level III	Total Pop. Served by Level III	%	Total Water Source Required (m3/d)	Urban Population (2010)	Additional Pop. Served	Total	%	Additional Pop. Served	Total	%	Additional Pop. Served	Total
Alubijid	5,714 (Asce)	1,866	3,050	53%	86%	DW/SP	691	6,463	707	3,757	58%	None	5,623	87%	100	8,094	3,932	12,026	95%	3,932	16,000	95%	3,932	19,932
Balinguag	12,799	None	8,438	66%	86%	SP	200	14,394	4,055	4,085	28%	None	12,523	87%	600	15,744	10,872	26,616	95%	10,872	37,500	95%	10,872	48,372
Balinguag	3,628 (Asce)	1,446	1,720	47%	87%	SP	200	4,167	459	2,179	52%	None	3,625	87%	100	4,237	1,894	6,131	95%	1,894	8,025	95%	1,894	9,919
Bumanga	1,533	None	1,169	76%	86%	SP	115	1,625	245	245	15%	None	1,414	87%	100	1,834	1,497	3,331	95%	1,497	3,331	95%	1,497	4,828
Claveria	19,674 (WD)	8,663	7,100	36%	80%	SP	70	25,625	6,531	13,631	53%	None	22,294	87%	900	27,356	12,557	39,913	95%	12,557	42,470	95%	12,557	55,027
El Salvador	8,207 (Mun)	5,817	5,817	94%	94%	DW	70	7,513	720	6,537	87%	None	29,744	87%	100	9,609	3,592	13,201	95%	3,592	16,793	95%	3,592	20,385
Gingoog City	32,098 (WD)	11,710	11,710	36%	80%	DW	3,302	34,189	3,664	15,674	46%	None	29,744	87%	100	35,431	17,983	53,414	95%	17,983	71,397	95%	17,983	89,380
Gingum	2,214 (Mun)	2,040	2,040	92%	92%	SP	544	2,280	2,280	2,040	89%	None	2,040	89%	300	2,596	426	3,022	95%	426	3,448	95%	426	3,874
Inilao	6,112 (Mun)	4,785	6,094	100%	100%	DW	544	6,145	2,369	6,094	99%	None	6,099	99%	800	6,539	118	6,657	95%	118	6,775	95%	118	6,893
Jasaan	21,071 (Asce)	14,437	14,437	68%	91%	SP	82	24,818	2,369	7,154	29%	None	21,591	87%	400	30,850	22,153	52,993	95%	22,153	55,143	95%	22,153	77,296
Kinogunan	1,968 (Asce)	682	1,280	65%	100%	DW	18	2,392	120	1,460	59%	None	2,081	87%	100	2,920	1,374	4,294	95%	1,374	4,668	95%	1,374	6,042
Lagonglong	3,459 (Mun)	935	1,520	44%	71%	SP	38	4,280	1,269	2,789	65%	None	3,724	87%	200	4,962	1,925	6,887	95%	1,925	6,980	95%	1,925	8,905
Lagundian	2,497 (Mun, Asce)	2,497	2,497	100%	100%	DW/SP	765	3,917	399	2,497	93%	None	2,497	93%	400	4,318	3,379	7,697	95%	3,379	8,076	95%	3,379	11,455
Liberad	3,554 (Asce)	1,229	1,780	50%	85%	DW	48	3,917	697	2,179	56%	None	3,408	87%	100	4,318	1,925	6,243	95%	1,925	6,335	95%	1,925	8,260
Maguayay	1,546	None	1,394	90%	90%	DW/SP	765	6,977	61	6,172	88%	None	6,272	90%	100	7,178	1,780	8,958	95%	1,780	9,738	95%	1,780	11,518
Manitaco	6,601 (Prov)	1,845	3,600	55%	83%	SP	1,344	6,993	579	4,239	61%	None	6,084	87%	100	8,607	3,938	12,545	95%	3,938	16,483	95%	3,938	20,421
Medina	5,820 (Asce)	5,650	5,650	97%	97%	DW/SP	1,266	6,270	6,270	5,650	90%	None	5,650	90%	300	6,893	898	7,791	95%	898	8,689	95%	898	9,587
Naawan	3,140 (Mun)	762	1,760	56%	80%	DW	864	3,467	494	2,354	65%	None	3,016	87%	100	3,805	1,360	5,165	95%	1,360	5,525	95%	1,360	6,885
Opol	7,205 (Cagayan, C)	2,400	510	7%	40%	None	491	8,640	4,607	5,117	59%	None	2,517	87%	600	10,811	5,153	15,964	95%	5,153	16,554	95%	5,153	21,707
Salay	6,861	6,833	6,833	100%	100%	SP	138	7,187	491	7,187	95%	None	6,833	95%	200	7,387	6,873	14,260	95%	6,873	14,260	95%	6,873	15,153
Sugbongogon	3,700 (Mun)	2,730	970	26%	100%	SP	138	4,239	3,650	42,880	78%	None	47,729	87%	500	4,914	3,699	8,613	95%	3,699	8,613	95%	3,699	12,312
Tagoloan	44,079 (Mun)	48,491	39,230	89%	100%	SP	6,394	54,861	3,650	42,880	78%	None	47,729	87%	500	55,600	30,770	86,370	95%	30,770	117,140	95%	30,770	147,910
Talisayan	4,505	None	3,681	82%	82%	None	4,544	5,349	973	773	18%	None	4,654	87%	200	5,825	4,561	10,386	95%	4,561	10,386	95%	4,561	14,947
Villanueva	10,281 (Mun, Asce)	1,452	7,154	70%	84%	SP	4,544	13,277	2,945	10,099	76%	None	11,551	87%	400	17,950	6,982	24,932	95%	6,982	24,932	95%	6,982	31,914
Province	222,622	78,985	114,499	51%	87%		259,419	259,419	34,176	148,675	57%		227,661	88%	5,300	311,400	147,155	458,555	95%	147,155	472,850	95%	147,155	620,000

(Note) WD: Water District, Prov: Province, Mun: Municipality, Asce: Association
Unit consumption: 100 pop
Additional population served in 2010 includes the served population that will be absorbed by Level III system.

Binuangan

There is no Level III system at present (urban population is 1,500 only) and is covered either by Level II or Level I. The water source is spring with pumping system is used. Upgrading of Level II to Level III or an integrated system with neighboring municipalities should be studied. Priority should be given to spring source development.

Claveria

There is one WD covering about 7,000 population (36% of urban population). Water source is spring with sufficient discharge (many good spring sources exist). Expansion shall be provided using spring sources.

El Salvador

One Level III system exists being operated by the municipal government. About 5,800 persons (94% of the urban population) are served. Water source is deep well. There is no untapped spring source, thus deep wells shall be used. Expansion may be minimal for the future.

Gingoog City

One Water District exists covering 11,700 (36% of the urban population). Water source is deep well (3,800 cu.m/day) which is sufficient enough. Expansion of the system is a requisite.

Gitagum

There is a Level III that is managed by the municipality. The system covers around 2,000 persons (92% of the urban population). Spring source is used for the supply. Minor expansion will be required.

Initao

One Level III exists, which is managed by the municipal government. Served population is 6,100 (100% service coverage of urban population). The water sources are deep wells. Minor expansion to meet population growth will be required.

Jasaan

One Level III that is managed by the RWSA exists. About 4,800 persons are served by the system (23% of urban population). Water source is spring (there are many good spring sources). Expansion of the system is required with augmentation of the water source.

Kinoguitan

One Level III exists that is operated by the municipality. The system serves 1,300 persons (65% of urban population). Water source is deep well (80 cu.m/day). Scheduled water supply is practiced due to insufficient water source and inadequate facility capacity (constructed in 1970s). Augmentation and expansion of the system are required. As an alternative, an integrated water supply (spring water use) with the neighboring municipalities shall be studied.

Lagonglong

One Level III is operated by the municipality. Served population is 1,500 (44% of the urban population). Water source is spring in application of pumping system. There are many spring sources. Expansion of the system will be required using spring source (2-5 km from the service area).

Laguindingan

An international airport project is under way. There are two Level III systems (managed by the RWSA and the municipal government). Service population is 2,500 (100% of the urban population). A deep well (owned by the municipal government) and a spring (owned by the RWSA) are utilized. Scheduled water supply is practiced (4 hours a day). The limited capacity of facilities and insufficiency of water source are major reasons of the problem. Rehabilitation/augmentation of the system is required. Deep well (fair potential) shall be developed, since spring source is poor.

Libertad

One Level III exists that is managed by the RWSA. The system serves 1,800 (50% of the urban population). Water source is a deep well (50 cu.m/day). Scheduled water supply is practiced (4 hours a day). Augmentation of water source using deep wells shall be studied. Deep well (fair potential) shall be developed, since spring source is poor.

Lugait

One Level III exists being operated by the municipal government. About 6,200 persons are served by the system (100% of the urban population). Water sources are combined (spring and deep well). Rehabilitation of the piping system is required. Spring source is poor. Deep well may be developed, but the influence of saline water intrusion shall be studied.

Magsaysay

There are no Level III systems and are served by Level I and II systems. These deep well sources are salty. Nonetheless, deep wells have good potential except that saline water problem may be encountered. Investigations on deep wells shall be conducted and appropriate measures shall be provided.

Manticao

One Level III exists being supervised by the provincial government. Service population is 3,700 (55% of the urban population). Water source is spring (1,300 cu./day). Inappropriate pipe arrangements caused some problems. The review of the piping system is required and countermeasures should be provided. Expansion of the system is also necessary using spring sources.

Medina

One Level III exists operated by RWSA. 5,700 persons are served by the system (100% of urban population). Main source is spring and supplemented by deep well.

Naawan

One Level III exists that is operated by the municipal government. Around 1,800 persons are served by the system (56% of the urban population). Water source is deep well (capacity of 860 cu.m/day). System extension is required using deep wells. Chlorination practice shall be properly done. Deep wells may be developed, but the influence of saline water intrusion shall be studied.

Opol

Approximately 7% of the urban population is covered by the Cagayan de Oro City WD. The WD has a plan to extend the services to the municipality. However, the plan is not yet realized due to financial problem. Other people rely on Level I or Level II systems. Expansion/construction of Level III either by the WD or the municipality shall be implemented. Water source to be used is deep wells/river bed water.

Salay

There is one Level III system, but majority is served by Level II systems. Water source is spring. The study for expansion of Level III or upgrading of Level II shall be conducted. Untapped spring sources shall be developed.

Sugbongcogon

There is 1 Level III that is managed by the municipal government. Served population is 1,000 (26% of the urban population). Water source is spring (140 cu.m/day). Expansion of the system entailing augmentation of pipeline capacity is necessary. An integrated water supply shall be sought with the neighboring municipalities.

Tagoloan

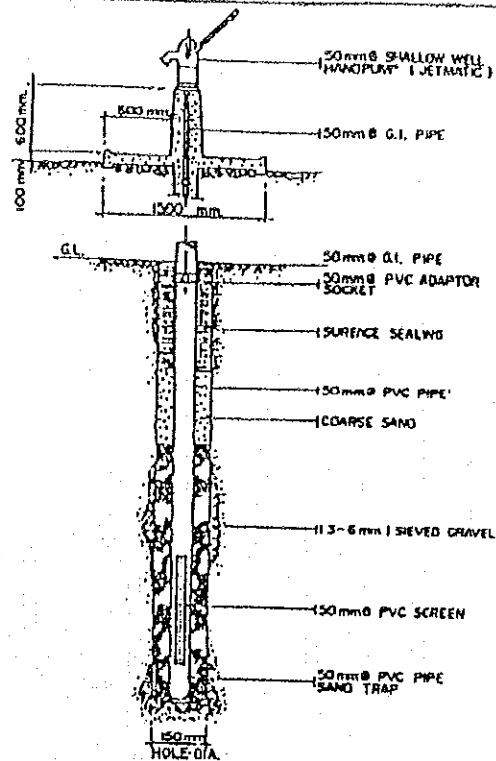
One Level III being operated by the municipal government exists. Around 39,000 persons (90% of the urban population) are served by the system. Water source is spring.

Talisayan

No Level III exists. Majority of the urban population is served by Level II. Water source is spring but the discharge rate is limited. Deep well may be used for water source augmentation. Upgrading of Level II shall be studied using deep well sources.

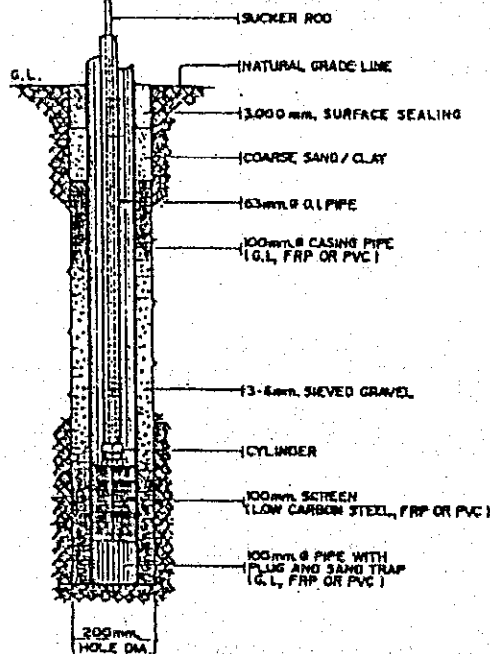
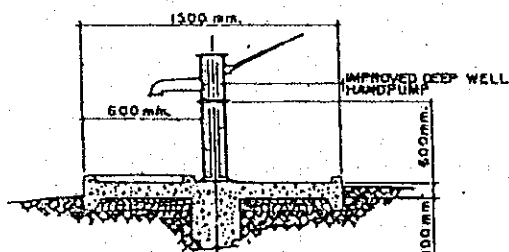
Villanueva

There are two Level III, one managed by the municipality and the other by the RWSA. About 7,200 persons are served by these systems (70% of the urban population) Water sources are springs for both systems. Discharge rates are sufficient for the waterworks. System expansion using spring sources is required. Distribution network shall be improved/ replaced.

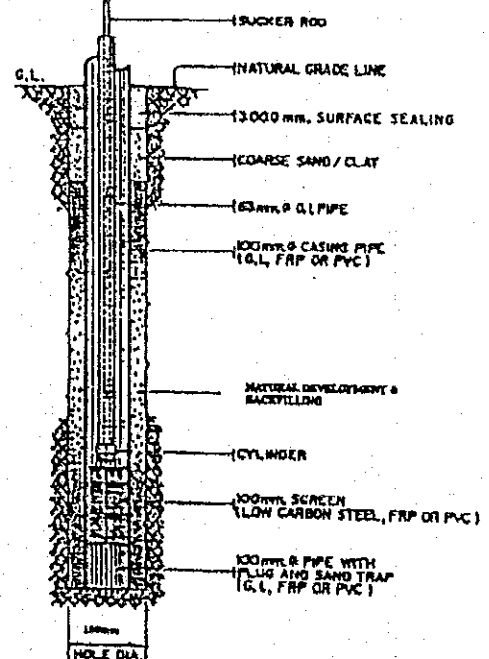
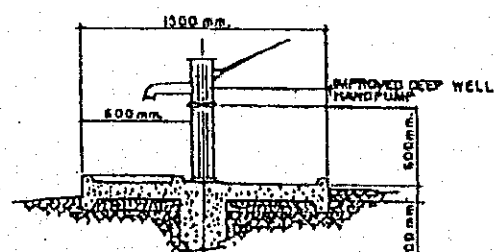


OPEN HOLE DRILLING & GRAVEL PACK METHOD

SHALLOW WELLS



OPEN HOLE DRILLING & GRAVEL PACK METHOD

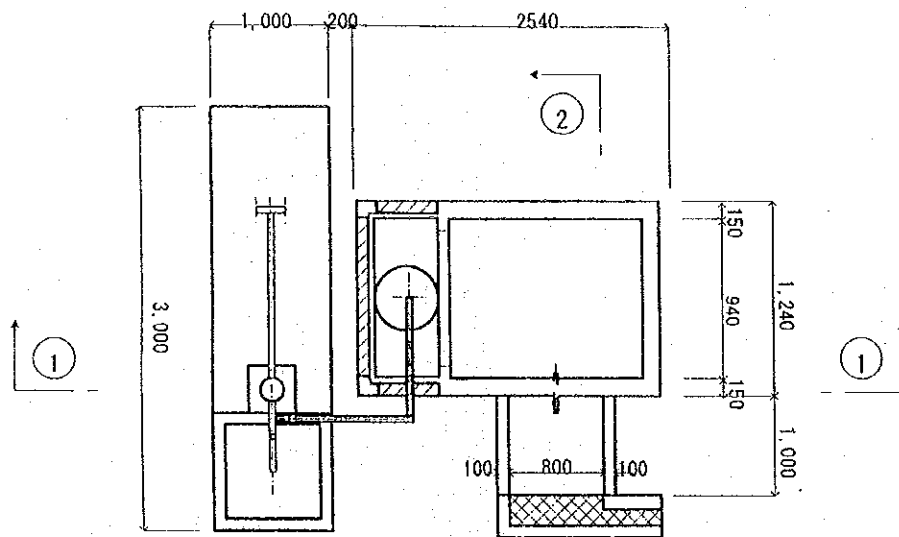


OPEN HOLE DRILLING & NATURAL GRAVEL PACK METHOD

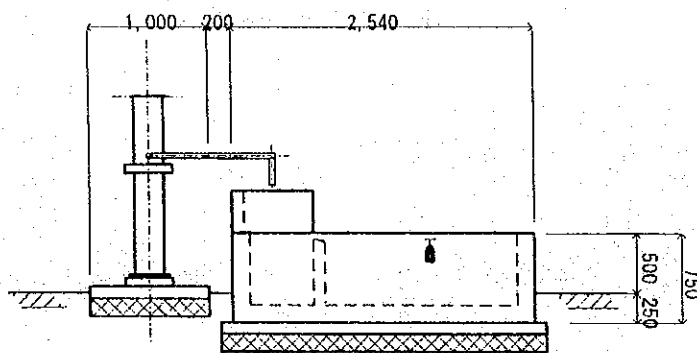
DEEP WELLS

FIGURE 8.4.1

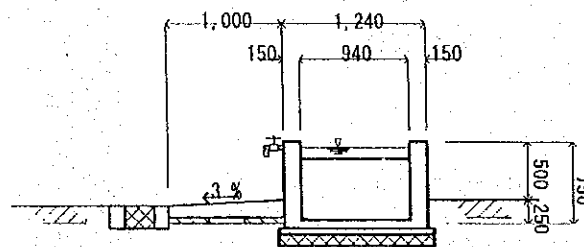
TYPICAL STRUCTURE OF LEVEL I WELL FACILITY



PLAN $S = 1/30$

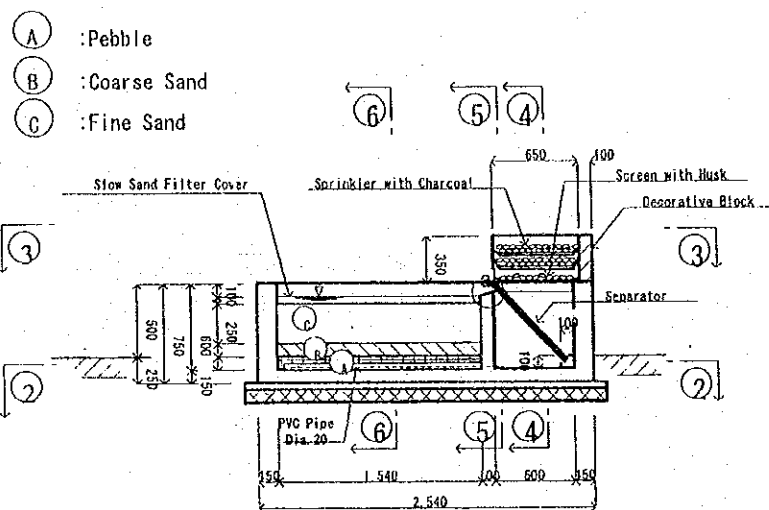


Section ① — ① $S = 1/30$

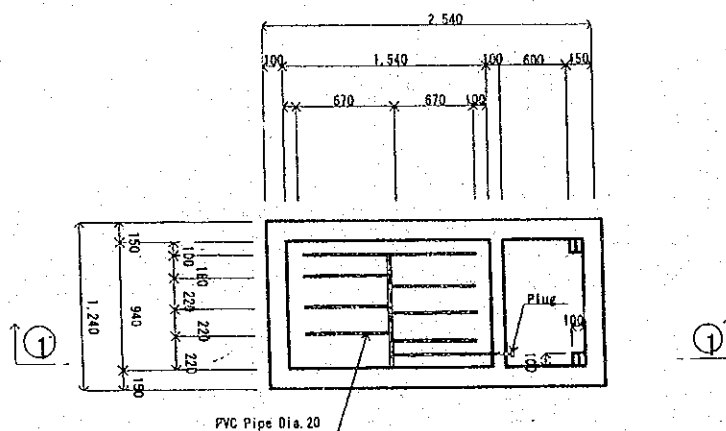


Section ② — ② $S = 1/30$

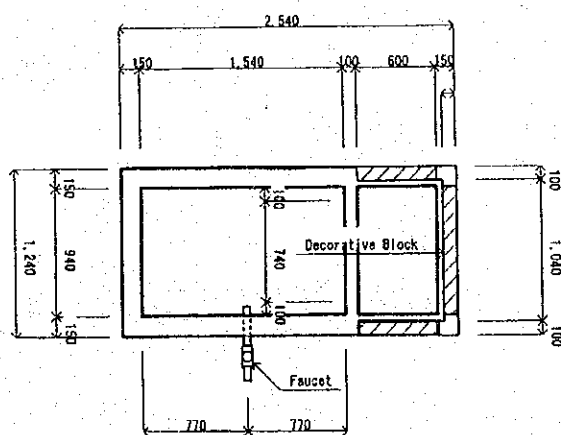
Figure 8.4.2(a) Iron Removal Facility



Section ① - ① $s = 1/20$



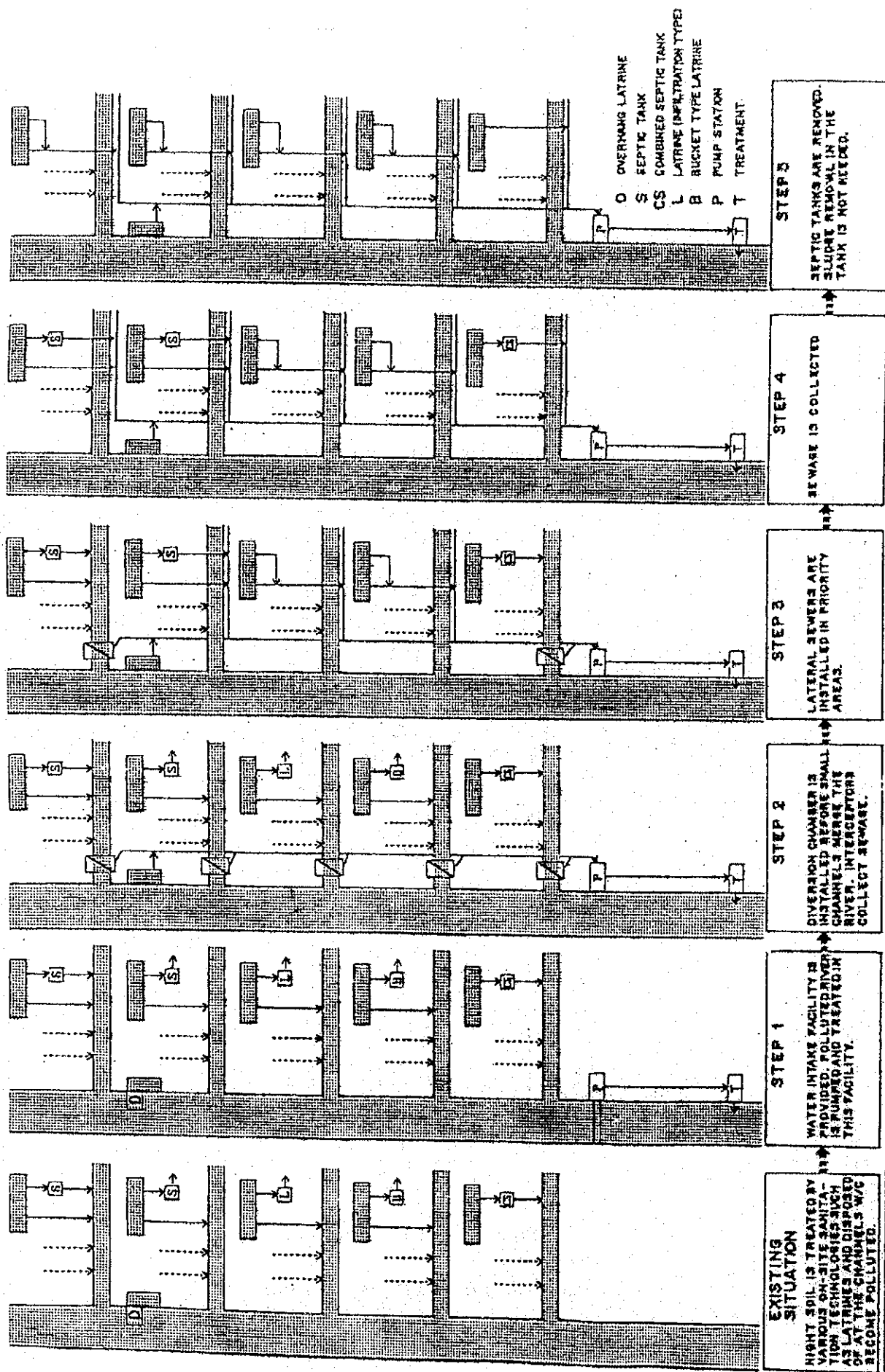
Section ② - ② $s = 1/20$



Section ③ - ③ $s = 1/20$

Figure 8.4.2(b) Iron Removal Facility

Figure 8.4.3 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

Fourteen (14) untapped spring sources were confirmed to be suitable for Level II systems in rural water supply during the PW4SP preparation as shown in Table 8.5.1. The conditions and assumptions applied for this estimate are as follows:

Source capacity:

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

Number of system:

Out of 14 untapped springs identified, 9 were considered to serve 9 Level II systems in 9 rural barangays of 4 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 the 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 were assumed to be utilized throughout the future.

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

Table 8.5.1 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
Alubijid				
Balingasag	5	5	500	2,700
Balingoan				
Binuangan	2			
Claveria				
El Salvador				
Gingoog City				
Gitagum	1	1	100	484
Initao				
Jasaan				
Kinoguitan				
Lagonglong				
Laguindingan				
Libertad	2	2	200	1,038
Lugait				
Magsaysay				
Manticao	1	1	100	499
Medina				
Naawan				
Opol				
Salay				
Sugbongcogon	3			
Tagoloan				
Talisayan				
Villanueva				
Provincial Total	14	9	900	4,721

Table 8.5.2 Population to be Served in Phase I (Water Supply)
Part 1 of 2

Name of Municipality	Area	Population Served in the Base Year				Phase I Coverage (2003)									
		Level			Total Population	Service Coverage			Additional Population to be Served				Level I	Level II	Total
		Level III	Level II	Level I		Level III	Level II	Level I	Level III	Level II	Level I	Level I	Level II	Level I	Total
Alubijid	Urban	3,050	200	1,666	4,916	3,757	200	1,666	707						707
	Rural		3,568	9,344	19,222		3,568	10,849				1,505			1,505
	Total	3,050	3,768	11,010	17,828	3,757	3,768	12,515	707			1,505			2,212
Balingasag	Urban		8,438	8,438	14,394	4,085		8,438	4,085						4,085
	Rural		875	18,443	19,318	39,488	3,575	26,041	29,616			2,700		7,598	10,298
	Total		875	26,881	27,756	53,882	4,085	34,479	42,139			2,700		7,598	14,383
Balingoan	Urban	1,720	210	1,236	3,166	4,167	210	1,236	3,625	459					459
	Rural		400	3,273	3,673	4,923	400	3,292	3,692			19			19
	Total	1,720	610	4,509	6,839	9,090	610	4,528	7,317	459		19			478
Binuangan	Urban		715	454	1,169	1,626	246	715	454	1,415					246
	Rural		2,535	983	3,518	4,190		2,535	983	3,518					
	Total		3,250	1,437	4,687	5,816	246	3,250	1,437	4,933	246				246
Claveria	Urban	7,100	300	8,363	15,763	25,625	13,631	300	8,363	22,294	6,531				6,531
	Rural	21,027			21,027	21,027			1,433	22,460		1,433			1,433
	Total	28,127	300	8,363	36,790	55,572	34,658	300	9,796	44,754	6,531	1,433			7,964
El Salvador	Urban	5,817			5,817	7,513	6,536			6,536	719				719
	Rural	1,100	3,340	16,662	21,102	33,173	1,100	3,340	20,440	24,880		3,778			3,778
	Total	6,917	3,340	16,662	26,919	40,886	7,636	3,340	20,440	31,416	719	3,778			4,497
Gingoog City	Urban	11,710	2,766	11,304	25,780	34,189	15,674	2,766	11,304	29,744	3,964				3,964
	Rural	4,365	41,102	2,171	47,638	61,139	4,365	41,102	2,171	47,638					
	Total	16,075	43,868	13,475	73,418	95,328	20,039	43,868	13,475	77,382	3,964				3,964
Gitagum	Urban	2,040			2,040	2,280	2,040			2,040					
	Rural		2,550	4,499	7,049	9,511		3,034	4,099	7,133	484				484
	Total	2,040	2,550	4,499	9,089	11,791	2,040	3,034	4,099	9,173	484				484
Initao	Urban	6,094			6,094	6,145	6,094			6,094					
	Rural		1,838	10,028	11,866	17,389		1,838	11,204	13,042		1,176			1,176
	Total	6,094	1,838	10,028	17,965	23,534	6,094	1,838	11,204	19,141		1,176			1,176
Jasaan	Urban	4,785	2,988	11,449	19,222	24,818	7,155	2,988	11,449	21,592	2,370				2,370
	Rural	7,840	1,144	3,254	12,238	17,024	7,840	1,144	3,784	12,768					
	Total	12,625	4,132	14,703	31,460	41,842	14,995	4,132	15,233	34,360	2,370				2,370
Kinoguitan	Urban	1,280	678	4	1,962	2,392	1,399	678	4	2,081	119				119
	Rural		3,456	4,149	7,605	11,122		3,456	4,886	8,342		737			737
	Total	1,280	4,134	4,153	9,567	13,514	1,399	4,134	4,890	10,423	119	737			856
Lagonglong	Urban	1,520			1,520	4,280	2,789		935	3,724	1,269				1,269
	Rural	1,800	1,800	5,678	9,278	16,015	1,800	1,800	8,411	12,011		2,733			2,733
	Total	3,320	1,800	6,613	11,733	20,295	4,589	1,800	9,346	15,735	1,269	2,733			2,733
Leguindingan	Urban	2,497			2,497	2,677				2,497					
	Rural	4,086	4,122	5,835	14,043	15,473	4,086	4,122	5,835	14,043					
	Total	6,583	4,122	5,835	16,540	18,150	6,583	4,122	5,835	16,540					

Table 8.5.2 Population to be Served in Phase I (Water Supply)
Part 2 of 2

Name of Municipality	Area	Population Served in the Base Year				Phase I Coverage (2003)				Additional Population to be Served				
		Population Served in the Base Year				Service Coverage				Additional Population to be Served				
		Level III	Level II	Level I	Total	Total Population	Level III	Level II	Level I	Total	Level III	Level II	Level I	Total
Liberad	Urban	1,780	690	539	3,009	3,917	2,179	690	539	3,408	399			399
	Rural		828	1,582	2,410	6,638		1,866	3,113	4,979		1,038	1,531	2,569
	Total	1,780	1,518	2,121	5,419	10,555	2,179	2,556	3,652	8,387	399	1,038	1,531	2,968
		6,172	100		6,272	6,977	6,172	100		6,272				
Lugait	Urban	756	4,685	612	6,053	7,776	756	4,685	612	6,053				
	Rural	6,928	4,785	612	12,325	14,735	6,928	4,785	612	12,325				
	Total													
Magsaysay	Urban		1,353	41	1,394	1,672	61	1,353	41	1,455	61			61
	Rural			10,361	10,361	24,708			18,531	18,531			8,170	8,170
	Total												8,170	8,231
Manticao	Urban	3,660		1,845	5,505	6,993	4,239		1,845	6,084	579			579
	Rural		120	10,680	10,800	17,478		619	12,490	13,109		499	1,810	2,309
	Total	3,660	120	12,525	16,305	24,471	4,239	619	14,335	19,193	579	499	1,810	2,888
Medina	Urban	5,650			5,650	6,270	5,650			5,650				
	Rural	460	7,407	6,002	13,869	19,511	460	7,407	6,766	14,633			764	764
	Total	6,110	7,407	6,002	19,519	25,781	6,110	7,407	6,766	20,283			764	764
		1,760		762	2,522	3,467	2,254		762	3,016	494			494
Naawan	Urban		708	6,572	7,280	13,192		708	9,186	9,894			2,614	2,614
	Rural		708	7,334	9,802	16,659	2,254	708	9,948	12,910	494		2,614	3,108
	Total	1,760	708	7,334	9,802	16,659	2,254	708	9,948	12,910	494		2,614	3,108
		510	450	1,950	2,910	8,640	5,117	450	1,950	7,517	4,607		4,607	
Opol	Urban			8,504	8,504	21,923			16,442	16,442			7,938	7,938
	Rural													
	Total	510	450	10,454	11,414	30,563	5,117	450	18,392	23,959	4,607		7,938	12,545
Salay	Urban		6,747	86	6,833	7,187		6,747	86	6,833			905	905
	Rural		2,077	6,746	8,823	12,970		2,077	7,651	9,728			905	905
	Total		8,824	6,832	15,656	20,157		8,824	7,737	16,561			905	905
Sugbongcogon	Urban	970	2,730		3,700	4,239	970	2,730		3,700				
	Rural	522	2,086	952	3,560	4,113	522	2,086	952	3,560				
	Total	1,492	4,816	952	7,260	8,352	1,492	4,816	952	7,260				
		39,230	4,849		44,079	54,861	42,880	4,849		47,729	3,650			3,650
Tagoloan	Urban													
	Rural													
	Total	39,230	4,849		44,079	54,861	42,880	4,849		47,729	3,650			3,650
Talisayan	Urban		3,250	431	3,681	5,349	973	3,250	431	4,654	973			973
	Rural		2,230	8,176	10,406	19,506		2,230	12,400	14,630			4,224	4,224
	Total		5,480	8,607	14,087	24,855	973	5,480	12,831	19,284	973		4,224	5,197
Villanueva	Urban	7,154		1,452	8,606	13,277	10,099		1,452	11,551	2,945			2,945
	Rural	3,993	100	3,157	7,250	16,726	3,993	100	8,452	12,545			5,295	5,295
	Total	11,147	100	4,609	15,856	30,003	14,092	100	9,904	24,096	2,945		5,295	8,240
Provincial Total	Urban	114,499	28,026	50,960	193,485	259,418	148,676	28,026	50,960	227,662	34,177		52,760	57,481
	Rural	45,949	86,971	147,663	280,583	443,157	45,949	91,692	200,023	337,664	4,721		52,760	57,481
	Total	160,448	114,997	198,623	474,068	702,575	194,625	119,718	250,983	565,326	34,177	4,721	52,760	91,658

Table 8.5.3 Population to be Served in Phase II (Water Supply)
Part I of 2

Name of Municipality	Area	Population Served in 2003				Phase II Coverage (2010)									
		Population Served in 2003			Total Population	Service Coverage			Additional Population to be Served			Level I	Level II	Level III	Total
		Level III	Level II	Level I		Level III	Level II	Level I	Total	Level III	Level II				
Alubijid	Urban	3,757	200	1,666	5,623	8,094	7,689		7,689	3,932					3,932
	Rural		3,568	10,849	14,417	24,071		3,568	18,818						7,969
	Total	3,757	3,768	12,515	20,040	32,165	7,689	3,568	18,818	3,932					11,901
Balingasag	Urban	4,085		8,438	12,523	15,744	14,957		14,957	10,872					10,872
	Rural		3,575	26,041	29,616	43,194		3,575	36,595						10,554
	Total	4,085	3,575	34,479	42,139	58,938	14,957	3,575	36,595	10,872					21,426
Balingoan	Urban	2,179	210	1,236	3,625	4,287	4,073		4,073	1,894					1,894
	Rural		400	3,292	3,692	5,065		400	4,310						1,018
	Total	2,179	610	4,528	7,317	9,352	4,073	400	4,310	1,894					2,912
Binuangan	Urban	246	715	454	1,415	1,834	1,742		1,742	1,496					1,496
	Rural		2,535	983	3,518	4,728		2,535	1,862						879
	Total	246	3,250	1,437	4,933	6,562	1,742	2,535	1,862	1,496					879
Claveria	Urban	13,631	300	8,363	22,294	27,566	26,188		26,188	12,557					12,557
	Rural	21,027		1,433	22,460	32,215	21,027		8,933	29,960					7,500
	Total	34,658	300	9,796	44,754	59,781	47,215		8,933	56,148					20,057
El Salvador	Urban	6,536			6,536	9,609	9,129		9,129	2,593					2,593
	Rural	1,100	3,340	20,440	24,880	42,427	1,100	3,340	35,017	39,457					14,577
	Total	7,636	3,340	20,440	31,416	52,036	10,229	3,340	35,017	48,586					17,170
Gingoog City	Urban	15,674	2,766	11,304	29,744	35,431	33,659			17,985					17,985
	Rural	4,365	41,102	2,171	47,638	63,360	4,365	41,102	13,458	58,925					11,287
	Total	20,039	43,868	13,475	77,382	98,791	38,024	41,102	13,458	92,584					29,272
Gitagum	Urban	2,040			2,040	2,596	2,466		2,466	426					426
	Rural		3,034	4,099	7,133	10,830		3,034	7,038	10,072					2,939
	Total	2,040	3,034	4,099	9,173	13,426	2,466	3,034	7,038	12,538					3,365
Initao	Urban	6,094		5	6,099	6,539	6,212			118					118
	Rural		1,838	11,204	13,042	18,507		1,838	15,374	17,212					4,170
	Total	6,094	1,838	11,209	19,141	25,046	6,212	1,838	15,374	23,424					4,288
Jasaan	Urban	7,155	2,988	11,449	21,592	30,849	29,307			22,152					22,152
	Rural	7,840	1,144	3,784	12,768	21,162	7,840		1,144	10,697					6,913
	Total	14,995	4,132	15,233	34,360	52,011	37,147		1,144	10,697					29,065
Kinoguitan	Urban	1,399	678	4	2,081	2,920	2,774			1,375					1,375
	Rural		3,456	4,886	8,342	13,576		3,456	9,170	12,626					4,284
	Total	1,399	4,134	4,890	10,423	16,496	2,774	3,456	9,170	15,400					5,659
Lagonglong	Urban	2,789		935	3,724	4,962	4,714			1,925					1,925
	Rural	1,800	1,800	8,411	12,011	18,565	1,800		1,800	13,665					5,254
	Total	4,589	1,800	9,346	15,735	23,527	6,514		1,800	13,665					7,179
Laguindingan	Urban	2,497		2,497	4,994	3,379	3,210			713					713
	Rural	4,086	4,122	5,835	14,043	19,526	4,086		4,122	9,951					4,116
	Total	6,583	4,122	5,835	16,540	22,905	7,296	4,122	9,951	21,369					4,829

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

Part 2 of 2

Name of Municipality	Area	Population Served in 2003				Phase II Coverage (2010)								
		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
Libertad	Urban	2,179	690	539	3,408	4,317	4,101			4,101	1,922			1,922
	Rural		1,866	3,113	4,979	7,316		1,866	4,938	6,804			1,825	1,825
	Total	2,179	2,556	3,652	8,387	11,633	4,101	1,866	4,938	10,905	1,922		1,825	3,747
	Urban	6,172	100		6,272	7,737	7,350			7,350	1,178			1,178
Lugait	Rural	756	4,685	612	6,053	8,622	756	4,685	2,577	8,018			1,965	1,965
	Total	6,928	4,785	612	12,325	16,359	8,106	4,685	2,577	15,368	1,178		1,965	3,143
	Urban	61	1,353	41	1,455	1,938	1,841			1,841	1,780			1,780
	Rural			18,531	18,531	28,644			26,639	26,639			8,108	8,108
Magsaysay	Total	61	1,353	18,572	19,986	30,582	1,841		26,639	28,480	1,780		8,108	9,888
	Urban	4,239		1,845	6,084	8,607	8,177			8,177	3,938			3,938
	Rural		619	12,490	13,109	21,513		619	19,388	20,007			6,898	6,898
	Total	4,239	619	14,335	19,193	30,120	8,177	619	19,388	28,184	3,938		6,898	10,836
Medina	Urban	5,650			5,650	6,893	6,548			6,548	898			898
	Rural	460	7,407	6,766	14,633	21,451	460	7,407	12,082	19,949			5,316	5,316
	Total	6,110	7,407	6,766	20,283	28,344	7,008	7,407	12,082	26,497	898		5,316	6,214
	Urban	2,254		762	3,016	3,805	3,615			3,615	1,361			1,361
Naawan	Rural		708	9,186	9,894	14,476		708	12,755	13,463			3,569	3,569
	Total	2,254	708	9,948	12,910	18,281	3,615	708	12,755	17,078	1,361		3,569	4,930
	Urban	5,117	450	1,950	7,517	10,811	10,270			10,270	5,153			5,153
	Rural			16,442	16,442	27,430			25,510	25,510			9,068	9,068
Opol	Total	5,117	450	18,392	23,959	38,241	10,270		25,510	35,780	5,153		9,068	14,221
	Urban		6,747	86	6,833	7,234	6,872			6,872	6,872			6,872
	Rural		2,077	7,651	9,728	13,056		2,077	10,065	12,142			2,414	2,414
	Total		8,824	7,737	16,561	20,290	6,872	2,077	10,065	19,014	6,872		2,414	9,286
Sugbongcogon	Urban	970	2,730		3,700	4,915	4,669			4,669	3,699			3,699
	Rural	522	2,086	952	3,560	4,768	522	2,086	1,826	4,434			874	874
	Total	1,492	4,816	952	7,260	9,683	5,191	2,086	1,826	9,103	3,699		874	4,573
	Urban	42,880	4,849		47,729	77,526	73,650			73,650	30,770			30,770
Tagoloan	Rural													
	Total	42,880	4,849		47,729	77,526	73,650			73,650	30,770			30,770
	Urban	973	3,250	431	4,654	5,825	5,534			5,534	4,561			4,561
	Rural		2,230	12,400	14,630	21,238		2,230	17,521	19,751			5,121	5,121
Talisayan	Total	973	5,480	12,831	19,284	27,063	5,534	2,230	17,521	25,285	4,561		5,121	9,682
	Urban	10,099		1,452	11,551	17,980	17,081			17,081	6,982			6,982
	Rural	3,993	100	8,452	12,545	22,652	3,993	100	16,973	21,066			8,521	8,521
	Total	14,092	100	9,904	24,096	40,632	21,074	100	16,973	38,147	6,982		8,521	15,503
Provincial Total	Urban	148,676	28,026	50,960	227,662	311,398	295,828			295,828	147,152			147,152
	Rural	45,949	91,692	200,023	337,664	508,392	45,949	91,692	335,162	472,803			135,139	135,139
	Total	194,625	119,718	250,983	565,326	819,790	341,777	91,692	335,162	768,631	147,152		135,139	282,291

8.5.2 Sanitation

Table 8.5.4 Additional Number of Households to be Served in Phase I (Household Toilets)
Part 1 of 2

Name of Municipality	Area	No. of Household Served in the Based Year				Total	Phase I Coverage (2003)								
		Flush		VIP/Dry			Total No. of HHs	Household Coverage				Additional No. of HHs to be Served			
		Flush	Pour Flush	VIP/Dry	Total			Flush	Pour Flush	VIP/Dry	Total	Flush	Pour Flush	VIP/Dry	Total
Alubijid	Urban	40	821	11	872	1,355	288	749	115	1,152	248		104	352	
	Rural	11	1,336	42	1,389	4,090	11	2,750	307	3,068		1,414	265	1,579	
	Total	51	2,157	53	1,389	5,445	299	3,499	422	4,220	248	1,414	369	2,031	
	Urban	8	1,143	150	1,301	2,711	576	1,498	230	2,304	568	355	80	1,003	
	Rural	8	2,861	683	3,552	7,313	8	4,928	549	5,485		2,067		2,067	
Balingasag	Total	16	4,004	833	3,552	10,024	584	6,426	779	7,789	568	2,422	80	3,070	
	Urban	3	510		513	789	168	436	67	671	165		67	232	
	Rural		587		587	954		644	72	716		57	72	129	
	Total	3	1,097		587	1,743	168	1,080	139	1,387	165	57	139	361	
	Urban	3	218		221	292	62	161	25	248	59		25	84	
Binuangan	Rural	4	575		579	841	4	564	63	631			63	63	
	Total	7	793		579	1,133	66	725	88	879	59		88	147	
	Urban		2,063	585	2,648	4,685	996	2,588	398	3,982	996	525		1,521	
	Rural		569	1,170	1,739	5,629	422	3,378	422	4,222	422	2,809		3,231	
	Total		2,632	1,755	1,739	10,314	1,418	5,966	820	8,204	1,418	3,334		4,752	
El Salvador	Urban		808		808	1,476	314	815	126	1,255	314	7	126	447	
	Rural		2,278		2,278	6,517	489	3,910	489	4,888	489	1,632	489	2,610	
	Total		3,086		2,278	7,993	803	4,725	615	6,143	803	1,639	615	3,057	
	Urban	3,477	1,862	857	6,196	6,600	3,477	2,099	620	6,196		237		237	
	Rural		8,396	685	9,081	12,059		8,173	908	9,081			223	223	
Gingoog City	Total	3,477	10,258	1,542	9,081	18,659	3,477	10,272	1,528	15,277		237	223	460	
	Urban	6	337		343	464	99	256	39	394	93		39	132	
	Rural	2	1,200	10	1,212	1,965	2	1,325	147	1,474		125	137	262	
	Total	8	1,537	10	1,212	2,429	101	1,581	186	1,868	93	125	176	394	
	Urban		1,080		1,080	1,305	277	721	111	1,109	277		111	388	
Iritao	Rural		1,488	280	1,768	3,615		2,440	271	2,711		952		952	
	Total		2,568	280	1,768	4,920	277	3,161	382	3,820	277	952	111	1,340	
	Urban	43	2,858	37	2,938	4,674	993	2,583	397	3,973	950		360	1,310	
	Rural	6	1,469	167	1,642	3,218	241	1,932	241	2,414	235	463	74	772	
	Total	49	4,327	204	1,642	7,892	1,234	4,515	638	6,387	1,185	463	434	2,082	
Kinogutan	Urban	1	240		241	427	91	236	36	363	90		36	126	
	Rural		736		736	2,056		1,388	154	1,542		652	154	806	
	Total	1	976		736	2,483	91	1,624	190	1,905	90	652	190	932	
	Urban		464		464	809	172	447	69	688	172		69	241	
	Rural		1,466		1,466	3,010	226	1,806	226	2,258	226	340	226	792	
Lagonglong	Total		1,930		1,466	3,819	398	2,253	295	2,946	398	340	295	1,033	
	Urban	2	373	84	459	546	116	302	46	464	114			114	
	Rural		2,091	266	2,357	3,204	240	1,923	240	2,403	240			240	
	Total	2	2,464	350	2,357	3,750	356	2,225	286	2,867	354			354	

Table 8.5.4 Additional Number of Households to be Served in Phase I (Household Toilets)
Part 2 of 2

Name of Municipality	Area	No. of Household Served				Phase I Coverage (2003)				Additional No. of HHs to be Served			
		Flush		VIP/Dry		Total No. of HHs	Household Coverage		Total	Pour		Flush	Total
		Flush	Pour	Flush	VIP/Dry		Flush	Pour		Flush	VIP/Dry		
Libertad	Urban	2	505	63	570	798	170	440	68	678	168	5	173
	Rural	3	719	31	753	1,279	3	860	96	959	141	65	206
	Total	5	1,224	94	753	2,077	173	1,300	164	1,637	168	70	379
Lugait	Urban	20	863		883	1,409	300	778	120	1,198	280	120	400
	Rural		677		677	1,851	139	1,110	139	1,388	433	139	711
	Total	20	1,540		677	3,260	439	1,888	259	2,586	419	259	1,111
Magsaysay	Urban		139	32	171	318	61	182	27	270	61	43	104
	Rural		1,157	830	1,987	4,752		3,208	356	3,564	2,051		2,051
	Total		1,296	862	1,987	5,070	61	3,390	383	3,834	2,094		2,155
Manticao	Urban	199	689	111	999	1,379	293	762	117	1,172	94	73	173
	Rural	356	1,339	904	2,599	3,503	356	2,008	263	2,627	669		669
	Total	555	2,028	1,015	2,599	4,882	649	2,770	380	3,799	94	742	842
Medina	Urban		704		704	1,194	254	659	102	1,015	254	102	336
	Rural		1,695	91	1,786	3,661	275	2,196	275	2,746	275	184	960
	Total		2,399	91	1,786	4,855	529	2,855	377	3,761	529	286	1,316
Naawan	Urban		584	12	596	698		536	60	596		48	48
	Rural		1,503	316	1,819	2,726		1,840	205	2,045	337		337
	Total		2,087	328	1,819	3,424		2,376	265	2,641	337	48	385
Opol	Urban	12	536	16	564	1,721	366	951	146	1,463	354	415	130
	Rural	10	2,519	500	3,029	4,393	10	2,955	330	3,295	436		436
	Total	22	3,055	516	3,029	6,114	376	3,906	476	4,758	354	851	1,335
Salay	Urban	8	1,019		1,027	1,412	8	1,072	120	1,200		53	173
	Rural		1,488		1,488	2,636		1,779	198	1,977		291	489
	Total	8	2,507		1,488	4,048	8	2,851	318	3,177		344	662
Sugbongcoogon	Urban		633		633	765	163	422	65	650	163	65	228
	Rural		495		495	736	55	442	55	552	55	55	110
	Total		1,128		495	1,501	218	864	120	1,202	218	120	338
Tagoloan	Urban	274	6,368		6,642	10,550	2,242	5,829	897	8,968	1,968	897	2,865
	Rural												
	Total	274	6,368			10,550	2,242	5,829	897	8,968	1,968	897	2,865
Talisayan	Urban		444		444	978	208	540	83	831	208	96	387
	Rural		1,459	126	1,585	3,639		2,456	273	2,729	997	147	1,144
	Total		1,903	126	1,585	4,617	208	2,996	356	3,560	208	1,093	1,531
Villanueva	Urban	52	1,352	136	1,540	2,598	552	1,435	221	2,208	500	83	668
	Rural		1,194	256	1,450	3,229	242	1,938	242	2,422	242	744	986
	Total	52	2,546	392	1,450	5,827	794	3,373	463	4,630	742	827	1,654
Provincial Total	Urban	4,150	26,613	2,094	32,857	49,953	12,246	26,497	4,305	43,048	8,096	1,887	12,661
	Rural	400	39,297	6,357	46,054	86,876	2,723	55,953	6,521	65,197	2,323	17,111	21,925
	Total	4,550	65,910	8,451	78,911	136,829	14,969	82,450	10,826	108,245	10,419	18,998	34,586

Table 8.5.5 Additional Number of Households to be Served in Phase II (Household Toilets)
Part I of 2

Name of Municipality	Area	No. households Served in 2003				Phase II Coverage (2010)							
		Flush		VIP/Dry		Total	Total No. of HHs	Household Coverage			Additional No. of HHs to be Served		
		Flush	Pour Flush	Flush	VIP/Dry			Flush	Pour Flush	VIP/Dry	Flush	Pour Flush	Total
Alubijid	Urban	288	749	115	1,152	2,024	941	826	115	1,882	653	77	730
	Rural	11	2,750	307	3,068	6,018	11	5,279	307	5,997		2,529	2,529
	Total	299	3,499	422	4,220	8,042	952	6,105	422	7,479	653	2,606	3,259
	Urban	576	1,498	230	2,304	3,936	1,830	1,600	230	3,660	1,254	102	1,356
	Rural	8	4,928	549	5,485	10,799	8	9,486	549	10,043	4,558		4,558
Balingasag	Total	584	6,426	779	7,789	14,735	1,838	11,086	779	13,703	1,254	4,660	5,914
	Urban	168	436	67	671	1,072	499	431	67	997	331		331
	Rural		644	72	716	1,266		1,105	72	1,177		461	461
	Total	168	1,080	139	1,387	2,338	499	1,536	139	2,174	331	461	792
	Urban	62	161	25	248	459	214	188	25	427	152	27	179
Binuangan	Rural	4	564	63	631	1,182	4	1,032	63	1,099		468	468
	Total	66	725	88	879	1,641	218	1,220	88	1,526	152	495	647
	Urban	996	2,588	398	3,982	6,892	3,205	2,807	398	6,410	2,209	219	2,428
	Rural	422	3,378	422	4,222	8,054	1,873	5,195	422	7,490	1,451	1,817	3,268
	Total	1,418	5,966	820	8,204	14,946	5,078	8,002	820	13,900	3,660	2,036	5,696
Claveria	Urban	314	815	126	1,255	2,402	1,117	991	126	2,234	803	176	979
	Rural	489	3,910	489	4,888	10,607	1,100	8,276	489	9,865	611	4,366	4,977
	Total	803	4,725	615	6,143	13,009	2,217	9,267	615	12,099	1,414	4,542	5,956
	Urban	3,477	2,099	620	6,196	8,858	4,119	3,499	620	8,238	642	1,400	2,042
	Rural		8,173	908	9,081	15,840	3,683	10,140	908	14,731	3,683	1,967	5,650
Gingoog City	Total	3,477	10,272	1,528	15,277	24,698	7,802	13,639	1,528	22,969	4,325	3,367	7,692
	Urban	99	256	39	394	649	302	263	39	604	203	7	210
	Rural	2	1,325	147	1,474	2,708	2	2,369	147	2,518		1,044	1,044
	Total	101	1,581	186	1,868	3,357	304	2,632	186	3,122	203	1,051	1,254
	Urban	277	721	111	1,109	1,635	761	649	111	1,521	484		484
Initao	Rural		2,440	271	2,711	4,627		4,032	271	4,303		1,592	1,592
	Total	277	3,161	382	3,820	6,262	761	4,681	382	5,824	484	1,592	2,076
	Urban	993	2,583	397	3,973	7,712	3,586	3,189	397	7,172	2,593	606	3,199
	Rural	241	1,932	241	2,414	5,291	1,230	3,450	241	4,921	989	1,518	2,507
	Total	1,234	4,515	638	6,387	13,003	4,816	6,639	638	12,093	3,582	2,124	5,706
Kinoguitan	Urban	91	236	36	363	730	340	303	36	679	249	67	316
	Rural		1,388	154	1,542	3,394		3,002	154	3,156		1,614	1,614
	Total	91	1,624	190	1,905	4,124	340	3,305	190	3,835	249	1,681	1,930
	Urban	172	447	69	688	1,241	577	508	69	1,154	405	61	466
	Rural	226	1,806	226	2,258	4,641	1,079	3,011	226	4,316	853	1,205	2,058
Lagolong	Total	398	2,253	295	2,946	5,882	1,656	3,519	295	5,470	1,258	1,266	2,524
	Urban	116	302	46	464	845	393	347	46	786	277	45	322
	Rural	240	1,923	240	2,403	4,882	1,135	3,165	240	4,540	895	1,242	2,137
	Total	356	2,225	286	2,867	5,727	1,528	3,512	286	5,326	1,172	1,287	2,450

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)				Additional No. of HHs to be Served			
		Flush		VIP/Dry	Total	Total No. of HHs	Household Coverage			Additional No. of HHs to be Served			
		Flush	Pour Flush	VIP/Dry	Flush		Pour Flush	VIP/Dry	Total	Flush	Pour Flush	VIP/Dry	Total
Libertad	Urban	170	440	68	678	1,079	502	433	68	1,003	332		332
	Rural	3	860	96	959	1,829	3	1,602	96	1,701		742	742
	Total	173	1,300	164	1,637	2,908	505	2,035	164	2,704	332	742	1,074
Lugait	Urban	300	778	120	1,198	1,934	900	779	120	1,799	600	1	601
	Rural	139	1,110	139	1,388	2,156	501	1,365	139	2,005	362	255	617
	Total	439	1,888	259	2,586	4,090	1,401	2,144	259	3,804	962	256	1,218
Magsaysay	Urban	61	182	27	270	485	226	198	27	451	165	16	181
	Rural		3,208	356	3,564	7,161		6,304	356	6,660		3,096	3,096
	Total	61	3,390	383	3,834	7,646	226	6,502	383	7,111	165	3,112	3,277
Mariticao	Urban	293	762	117	1,172	2,152	1,001	883	117	2,001	708	121	829
	Rural	356	2,008	263	2,627	5,378	356	4,383	263	5,002	708	2,375	2,375
	Total	649	2,770	380	3,799	7,530	1,357	5,266	380	7,003	1,416	2,496	3,204
Medina	Urban	254	659	102	1,015	1,723	801	699	102	1,602	547	40	587
	Rural	275	2,196	275	2,746	5,363	460	4,253	275	4,988	185	2,057	2,242
	Total	529	2,855	377	3,761	7,086	1,261	4,952	377	6,590	732	2,097	2,829
Naawan	Urban		536	60	596	951	442	382	60	884	442		442
	Rural		1,840	205	2,045	3,619		3,161	205	3,366		1,321	1,321
	Total		2,376	265	2,641	4,570	442	3,543	265	4,250	442	1,321	1,763
Opol	Urban	366	951	146	1,463	2,703	1,257	1,111	146	2,514	891	160	1,051
	Rural	10	2,955	330	3,295	6,858	10	6,038	330	6,378		3,083	3,083
	Total	376	3,906	476	4,758	9,561	1,267	7,149	476	8,892	891	3,243	4,134
Salay	Urban	8	1,072	120	1,200	1,809	841	721	120	1,682	833		833
	Rural		1,779	198	1,977	3,264		2,838	198	3,036		1,059	1,059
	Total	8	2,851	318	3,177	5,073	841	3,559	318	4,718	833	1,059	1,892
Sugbongcogon	Urban	163	422	65	650	1,229	572	506	65	1,143	409	84	493
	Rural	55	442	55	552	1,192	277	777	55	1,109	222	335	557
	Total	218	864	120	1,202	2,421	849	1,283	120	2,252	631	419	1,050
Tagoloan	Urban	2,242	5,829	897	8,968	19,382	9,013	8,115	897	18,025	6,771	2,286	9,057
	Rural												
	Total	2,242	5,829	897	8,968	19,382	9,013	8,115	897	18,025	6,771	2,286	9,057
Talisayan	Urban	208	540	83	831	1,456	677	594	83	1,354	469	54	523
	Rural		2,456	273	2,729	5,310		4,665	273	4,938		2,209	2,209
	Total	208	2,996	356	3,560	6,766	677	5,259	356	6,292	469	2,263	2,732
Villanueva	Urban	552	1,435	221	2,208	4,495	2,090	1,869	221	4,180	1,538	434	1,972
	Rural	242	1,938	242	2,422	5,663	1,317	3,708	242	5,267	1,075	1,770	2,845
	Total	794	3,373	463	4,630	10,158	3,407	5,577	463	9,447	2,613	2,204	4,817
Provincial Total	Urban	12,246	26,497	4,305	43,048	77,853	36,206	31,891	4,305	72,402	23,960	5,983	29,943
	Rural	2,723	55,953	6,521	65,197	127,102	13,049	98,636	6,521	118,206	10,326	42,683	53,009
	Total	14,969	82,450	10,826	108,245	204,955	49,255	130,527	10,826	190,608	34,286	48,666	82,952

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
Alubijid	2,760	6,092	4,874	2,114	7,629	6,866	1,992
Balingasag	6,880	13,848	11,078	4,198	15,148	13,633	2,555
Balingoan	800	2,180	1,744	944	2,367	2,130	386
Binuangan	800	1,513	1,210	410	1,622	1,460	250
Claveria	12,096	15,212	12,170	74	16,365	14,729	2,559
El Salvador	6,482	8,615	6,892	410	11,707	10,536	3,644
Gingoog City	12,440	25,830	20,664	8,224	26,768	24,091	3,427
Gitagum	1,680	2,398	1,918	238	2,902	2,612	694
Gitano	4,480	6,118	4,894	414	6,185	5,567	673
Initao	5,760	10,310	8,248	2,488	12,815	11,534	3,286
Jasaan	2,080	2,861	2,289	209	3,710	3,339	1,050
Kinoguitan	2,160	4,817	3,854	1,694	5,584	5,026	1,172
Laguanglong	4,474	4,597	3,678		5,511	4,960	1,282
Laguindingan	2,440	2,723	2,178		2,851	2,566	388
Libertad	1,360	3,989	3,191	1,831	4,202	3,782	591
Lugait	4,040	7,331	5,865	1,825	8,051	7,246	1,381
Magsaysay	5,080	5,476	4,381		6,740	6,066	1,685
Manticao	4,000	6,566	5,253	1,253	6,839	6,155	902
Medina	3,624	4,152	3,322		4,809	4,328	1,006
Naawan	3,120	7,652	6,122	3,002	9,575	8,618	2,496
Opol	2,680	5,373	4,298	1,618	5,138	4,624	326
Salay	2,395	2,379	1,903		2,620	2,358	455
Sugbongcogon	6,000	13,708	10,966	4,966	19,371	17,434	6,468
Tagoloan	4,720	6,230	4,984	264	6,427	5,784	800
Talisayan	4,160	7,896	6,317	2,157	10,694	9,625	3,308
Villanueva							
Provincial Total	106,511	177,866	142,293	38,333	205,630	185,069	42,776

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

Part I of 2

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
Alubijid	Public Market	1	1	2	1	2	3	1	3
	Bus/JEEPNEY Terminal			1	1	1	2	1	2
	Parks/Playground	1	1	2	1	2	3	1	3
	Total	2	2	5	3	5	8	3	8
Balingasag	Public Market	2	2	3	1	3	4	1	4
	Bus/JEEPNEY Terminal			1	1	1	2	1	2
	Parks/Playground			1	1	1	2	1	2
	Total	2	2	5	3	5	8	3	8
Balingoan	Public Market	2	2	3	1	3	4	1	4
	Bus/JEEPNEY Terminal			1	1	1	2	1	2
	Parks/Playground			1	1	1	2	1	2
	Total	2	2	5	3	5	8	3	8
Binuangan	Public Market	2	2	3	1	3	4	1	4
	Bus/JEEPNEY Terminal			1	1	1	2	1	2
	Parks/Playground	2	2	3	1	3	4	1	4
	Total	4	4	7	3	7	10	3	10
Claveria	Public Market	2	2	3	1	3	4	1	4
	Bus/JEEPNEY Terminal	1	1	2	1	2	3	1	3
	Parks/Playground	1	1	2	1	2	3	1	3
	Total	4	4	7	3	7	10	3	10
El Salvador	Public Market	2	2	3	1	3	4	1	4
	Bus/JEEPNEY Terminal			1	1	1	2	1	2
	Parks/Playground			1	1	1	2	1	2
	Total	2	2	5	3	5	8	3	8
Gingoog City	Public Market	2	2	3	1	3	4	1	4
	Bus/JEEPNEY Terminal	2	2	3	1	3	4	1	4
	Parks/Playground	2	2	3	1	3	4	1	4
	Total	6	6	9	3	9	12	3	12
Gitagum	Public Market	2	2	3	1	3	4	1	4
	Bus/JEEPNEY Terminal			1	1	1	2	1	2
	Parks/Playground			1	1	1	2	1	2
	Total	2	2	5	3	5	8	3	8
Initao	Public Market	4	4	5	1	5	6	1	6
	Bus/JEEPNEY Terminal			1	1	1	2	1	2
	Parks/Playground			1	1	1	2	1	2
	Total	4	4	7	3	7	10	3	10
Jasaan	Public Market	3	3	4	1	4	5	1	5
	Bus/JEEPNEY Terminal	1	1	2	1	2	3	1	3
	Parks/Playground			1	1	1	2	1	2
	Total	4	4	7	3	7	10	3	10
Kinoguitan	Public Market	1	1	2	1	2	3	1	3
	Bus/JEEPNEY Terminal			1	1	1	2	1	2
	Parks/Playground			1	1	1	2	1	2
	Total	1	1	4	3	4	7	3	7
Lagonglong	Public Market			1	1	1	2	1	2
	Bus/JEEPNEY Terminal			1	1	1	2	1	2
	Parks/Playground			1	1	1	2	1	2
	Total			3	3	3	6	3	6
Laguindingan	Public Market	1	1	2	1	2	3	1	3
	Bus/JEEPNEY Terminal			1	1	1	2	1	2
	Parks/Playground			1	1	1	2	1	2
	Total	1	1	4	3	4	7	3	7

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

Part 2 of 2

Name of Municipality	Type	Coverage in Base Year		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
Libertad	Public Market	2	2	3	1	3	4	1	4
	Bus/JEEPNEY Terminal			1	1	1	2	1	2
	Parks/Playground			1	1	1	2	1	2
	Total	2	2	5	3	5	8	3	8
Lugait	Public Market	1	1	2	1	2	3	1	3
	Bus/JEEPNEY Terminal			1	1	1	2	1	2
	Parks/Playground			1	1	1	2	1	2
	Total	1	1	4	3	4	7	3	7
Magsaysay	Public Market	2	2	3	1	3	4	1	4
	Bus/JEEPNEY Terminal			1	1	1	2	1	2
	Parks/Playground	1	1	2	1	2	3	1	3
	Total	3	3	6	3	6	9	3	9
Manticao	Public Market	3	3	4	1	4	5	1	5
	Bus/JEEPNEY Terminal			1	1	1	2	1	2
	Parks/Playground			1	1	1	2	1	2
	Total	3	3	6	3	6	9	3	9
Medina	Public Market	1	1	2	1	2	3	1	3
	Bus/JEEPNEY Terminal			1	1	1	2	1	2
	Parks/Playground			1	1	1	2	1	2
	Total	1	1	4	3	4	7	3	7
Naawan	Public Market	1	1	2	1	2	3	1	3
	Bus/JEEPNEY Terminal			1	1	1	2	1	2
	Parks/Playground			1	1	1	2	1	2
	Total	1	1	4	3	4	7	3	7
Opol	Public Market	1	1	2	1	2	3	1	3
	Bus/JEEPNEY Terminal			1	1	1	2	1	2
	Parks/Playground			1	1	1	2	1	2
	Total	1	1	4	3	4	7	3	7
Salay	Public Market	1	1	2	1	2	3	1	3
	Bus/JEEPNEY Terminal			1	1	1	2	1	2
	Parks/Playground			1	1	1	2	1	2
	Total	1	1	4	3	4	7	3	7
Sugbongcogon	Public Market	1	1	2	1	2	3	1	3
	Bus/JEEPNEY Terminal			1	1	1	2	1	2
	Parks/Playground			1	1	1	2	1	2
	Total	1	1	4	3	4	7	3	7
Tagoloan	Public Market	1	1	2	1	2	3	1	3
	Bus/JEEPNEY Terminal			1	1	1	2	1	2
	Parks/Playground	1	1	2	1	2	3	1	3
	Total	2	2	5	3	5	8	3	8
Talisayan	Public Market	1	1	2	1	2	3	1	3
	Bus/JEEPNEY Terminal			1	1	1	2	1	2
	Parks/Playground			1	1	1	2	1	2
	Total	1	1	4	3	4	7	3	7
Villanueva	Public Market	1	1	2	1	2	3	1	3
	Bus/JEEPNEY Terminal			1	1	1	2	1	2
	Parks/Playground			1	1	1	2	1	2
	Total	1	1	4	3	4	7	3	7
Provincial Total	Public Market	40	40	65	25	65	90	25	90
	Bus/JEEPNEY Terminal	4	4	29	25	29	54	25	54
	Parks/Playground	8	8	33	25	33	58	25	58
	Total	52	52	127	75	127	202	75	202

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 and indicated in Table 8.6.1 and the details are presented in Table 8.6.2. However, the 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 the number of communal faucets and the number of Level I wells broken-down to deep and shallow wells. Nine (9) untapped springs suitable for Level II system were confirmed during this PW4SP preparation.

(2) Required well drilling and rehabilitation equipment

Presently, there are 2 units and one unit of percussion type drilling rigs (bit diameter 10") available at the PEO and DPWH-DEO, respectively in the province.

Taking into account the maximum utilization of existing equipment, the 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 operate technically. Both types of percussion and rotary are suitable for the soft and hard formations, but the percussion type can be easily operated and maintained without special training to drillers compared with the latter. Also, it is very useful to bore in 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

Part I of 3

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	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
			No. of Barangay Served	Served Population										
Alubijid	Alubijid RWSA	Urban	1	3,050	DW/SP	No	707	148	71	1	3,932	983	393	1
		Rural												
		Total	1	3,050										
Balingasag	Not Applicable	Urban	N.A.	N.A.	N.A.	N.A.	4,085	769	409	1	10,872	2,718	1,087	2
		Rural	N.A.	N.A.										
		Total												
Balingoan	Balingoan RWSA	Urban	2	1,720	SP	No	459	87	46	1	1,894	474	189	1
		Rural												
		Total	2	1,720										
Binaungan	Not Applicable	Urban	N.A.	N.A.	N.A.	N.A.	246	44	25	1	1,496	374	150	1
		Rural	N.A.	N.A.										
		Total												
Claveria	Claveria WD	Urban	1	7,100	SP	No	6,531	1,194	653	1	12,557	3,139	1,256	2
		Rural	17	21,027										
		Total	18	28,127										
El Salvador	El Salvador WWS	Urban	1	5,817	DW	No	719	141	72	1	2,593	648	259	1
		Rural												
		Total	1	5,817										
Molugan	Molugan WWS	Urban			DW	No								
		Rural	1	1,100										
		Total	1	1,100										
Municipal Total		Urban	1	5,817										
		Rural	1	1,100										
		Total	2	6,917										
Gingoog City	Gingoog WD	Urban	50	11,710	DW	No	3,964	765	396	1	17,985	4,496	1,799	3
		Rural		4,365										
		Total	50	16,075										
Gitagum	Gitagum WS	Urban	1	2,040	DW/SP	N.A.					426	107	43	1
		Rural												
		Total	1	2,040										

Table 8.6.1 Urban Water Supply Facilities Required by Target Year

Part 2 of 3

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	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
			No. of Barangay Served	Served Population										
Initao	Initao LGU WWS	Urban	1	6,094	DW	No					118	30	12	1
		Rural												
		Total	1	6,094										
Jasaan	Jasaan RWSA	Urban	2	4,785	SP	N.A.	2,370	446	237	1	22,152	5,538	2,215	3
		Rural	6	6,205										
		Total	8	10,990										
Kinoguitan	KRWASA	Urban	1	1,280	DW	No	119	21	12	1	1,375	344	138	1
		Rural												
		Total	1	1,280										
Laganglong	Laganglong LGU WS	Urban	1	1,520	SP	No	1,269	240	127	1	1,925	481	193	1
		Rural	3	1,800										
		Total	4	3,320										
Laguindingan	Mun. Water Sys.	Urban	1	1,652	DW/SP	No					713	178	71	1
		Rural												
		Total	1	1,652										
Sinai RWSA	Sinai RWSA	Urban	1	845	SP	No								
		Rural	3	4,086										
		Total	4	4,931										
Municipal Total		Urban	2	2,497										
		Rural	3	4,086										
		Total	5	6,583										
Liberad	Liberad WWA	Urban	1	1,780	DW	No	399	81	40	1	1,922	481	192	1
		Rural												
		Total	1	1,780										
Lugait	Mun. of Lugait	Urban	1	6,172	DW/SP	No					1,178	295	118	1
		Rural	1	756										
		Total	2	6,928										
Magsaysay	Not Applicable	Urban	N.A.	N.A.	N.A.	N.A.	61	12	6	1	1,780	445	178	1
		Rural	N.A.	N.A.										
		Total												

Table 8.6.1 Urban Water Supply Facilities Required by Target Year

Part 3 of 3

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	Daily Average Water Demand (m ³ /day)	Spring Dev't./ Deep Well	Additional Population to be Served	Number of House Connections	Daily Average Water Demand (m ³ /day)	Spring Dev't./ Deep Well
			No. of Barangay Served	Served Population										
Manticao	Prov'l. Gov't.	Urban	1	3,660	SP	No	579	114	58	1	3,938	985	394	1
		Rural	1											
		Total	2	3,660										
Medina	Medina RWSA	Urban	2	5,650	DW/SP	No					898	225	90	1
		Rural	3	460										
		Total	5	6,110										
Naawan	LGU-Naawan	Urban	3	1,760		No	494	99	49	1	1,361	340	136	1
		Rural												
		Total	3	1,760										
Opol	Cagayan del Oro CWD	Urban	1	510		N.A.	4,607	918	461	1	5,153	1,288	515	1
		Rural												
		Total	1	510										
Salay	Not Applicable	Urban	N.A.	N.A.	N.A.	N.A.					6,872	1,718	687	1
		Rural	N.A.	N.A.										
		Total												
Sugbongcoogon	Sugbongcoogon LGU WS	Urban	1	970	SP	No					3,699	925	370	1
		Rural	4	522										
		Total	5	1,492										
Tagoloan	Tagoloan	Urban	8	39,230	SP	No	3,650	702	365	1	30,770	7,693	3,077	5
		Rural												
		Total	8	39,230										
Talisayan	Not Applicable	Urban	N.A.	N.A.	N.A.	N.A.	973	178	97	1	4,561	1,140	456	1
		Rural	N.A.	N.A.										
		Total												
Villanueva	Napotong LGU WS	Urban			SP	No	2,945	576	295	1	6,982	1,746	698	1
		Rural	1	2,009										
		Total	1	2,009										
	Soligao-Laglak WS	Urban	2	7,154	SP	No								
		Rural	1	1,984										
		Total	3	9,138										
	Municipal Total	Urban	2	7,154										
		Rural	2	3,993										
		Total	4	11,147										
Provincial Total		Urban	83	114,499			34,177	6,535	3,419	18	147,152	36,791	14,716	35
		Rural	42	45,949										
		Total	125	160,448										

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)
Alubijid	Alubijid RWSA				
Balingoan	Balingoan RWSA				
Claveria	Claveria WD				
El Salvador	El Salvador WWS				
	Molugan WWS				
	Municipal Total				
Gingoog City	Gingoog WD				
Initao	Initao LGU WWS				
Kinoguitan	KRWASA				
Lagonglong	Lagonglong LGU WS				
Laguindingan	Mun. Water Sys.				
	Sinai RWSA				
	Municipal Total				
Libertad	Libertad WWA				
Lugait	Mun. of Lugait				
Manticao	Prov'l. Gov't.				
Medina	Medina RWSA				
Naawan	LGU-Naawan				
Sugbongcogon	Sugbongcogon LGU WS				
Tagoloan	Tagoloan				
Villanueva	Napopong LGU WS				
	Soligao-Lagtak WS				
	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				Sub-total	No. of Shallow Wells	Total	Number of Deep Wells				No. of Shallow Wells	Total		
			40 m	80 m	120 m	40 m				80 m	120 m	Sub-total					
Alubijid			19				19	2	21		120			120	13	133	
Balingasag	5	100	57				57	37	94		106			106	70	176	
Balingoan											14			14	3	17	
Binuangan	2										15			15		15	
Claveria					8		8	10	18			50		50	75	125	
El Salvador			25				25	24	49		122			122	121	243	
Gingoog City											171			171	18	189	
Gitagum	1	20									49			49		49	
Initao			13				13	3	16		56			56	14	70	
Jasaan			7				7		7		116			116		116	
Kinoguitan			9				9		9		72			72		72	
Lagonglong			14				14	20	34		36			36	52	88	
Laguindingan											69			69		69	
Libertad	2	40	12				12	8	20		19			19	12	31	
Lugait											33			33		33	
Magsaysay												136		136		136	
Manticao	1	20	10				10	14	24		46			46	69	115	
Medina			5				5	5	10		45			45	44	89	
Naawan			11				11	25	36		18			18	42	60	
Opol			64				64	42	106		92			92	60	152	
Salay			11				11	1	12		37			37	4	41	
Sugbongcogon	3										15			15		15	
Tagoloan																	
Talisayan			38				38	15	53		61			61	25	86	
Villanueva			68				68		68		143			143		143	
Provincial Total	14	180	363	113			476	206	682		1,455	186		1,641	622	2,263	

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 (90%)											Percentage Allocated to Public Facility (90%)										
	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	Total	No. of Spring Dev.	Grand Total	Number of Deep Wells				No. of Shallow Wells	Total	No. of Spring Dev.	Grand Total						
	40 m	80 m	120 m	Sub-total					40 m	80 m	120 m	Sub-total										
Alubijid	16			16	1	17	2	19	98			98	10	108	12	120						
Balingasag	46			46	30	76	9	85	86			86	56	142	16	158						
Balingoan									11			11	2	13	2	15						
Binuangan									13			13		13	1	14						
Claveria		6		6	8	14	2	16			41	41	61	102	11	113						
El Salvador	20			20	20	40	4	44	99			99	98	197	22	219						
Gingoog City									138			138	15	153	17	170						
Gitagum									40			40		40	4	44						
Initao	11			11	2	13	1	14	46			46	11	57	6	63						
Jasaan	5			5		5	1	6	94			94		94	10	104						
Kinoguitan	7			7		7	1	8	58			58		58	7	65						
Lagonglong	12			12	16	28	3	31	29			29	42	71	8	79						
Laguindingan									56			56		56	6	62						
Libertad	10			10	6	16	2	18	15			15	10	25	3	28						
Lugait									27			27		27	3	30						
Magsaysay		85		85		85	10	95			110		110	12	122							
Manticao	8			8	12	20	2	22	38			38	56	94	10	104						
Medina	4			4	4	8	1	9	36			36	36	72	8	80						
Naawan	9			9	20	29	3	32	15			15	34	49	5	54						
Opol	51			51	34	85	10	95	74			74	49	123	14	137						
Salay	9			9	1	10	1	11	30			30	3	33	4	37						
Sugbongcogon									13			13		13	1	14						
Tagoloan																						
Talisayan	31			31	12	43	5	48	49			49	20	69	8	77						
Villanueva	55			55	55	55	6	61	116			116		116	13	129						
Provincial Total	294	91		385	166	551	63	614	1,181	151		1,332	503	1,835	203	2,038						

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 ($365 \text{ days/year} \div 30 \text{ days/well} \times 0.75$)

Required number

- 9 sets for the total 385 deep wells

Well rehabilitation equipment:

Average performance

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

Annual accomplishment

- 39 wells/year ($365 \text{ days/year} \div 7 \text{ days/well} \times 0.75$)

Required number

- 1 set for 10% of 385 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 the existing percussion drilling rigs, the following equipment shall be mobilized/procured either by the private sector or LGUs to accomplish the physical targets:

- 6 sets of medium size percussion rig for the 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 each 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	Flush	Pour Flush	VIP/Dry	Total	Flush	Pour Flush	VIP/Dry	Total	Flush	Pour Flush	VIP/Dry	Total	Flush	Pour Flush	VIP/Dry	Total
Alubijid	248		104	352	248		104	352	653	77		730	653	77		730				730
Balingasag	568	355	80	1,003	568	355	80	1,003	1,254	102		1,356	1,254	102		1,356				1,356
Balingoan	165		67	232	165		67	232	331			331	331			331				331
Bimuanigan	59		25	84	59		25	84	152	27		179	152	27		179				179
Claveria	996	525		1,521	996	525		1,521	2,209	219		2,428	2,209	219		2,428				2,428
El Salvador	314	7	126	447	314	7	126	447	803	176		979	803	176		979				979
Gingoog City		237		237		237		237	642	1,400		2,042	642	1,400		2,042				2,042
Gitagum	93		39	132	93		39	132	203	7		210	203	7		210				210
Initao	277		111	388	277		111	388	484			484	484			484				484
Jasaan	950		360	1,310	950		360	1,310	2,593	606		3,199	2,593	606		3,199				3,199
Kinoguitan	90		36	126	90		36	126	249	67		316	249	67		316				316
Lagonglong	172		69	241	172		69	241	405	61		466	405	61		466				466
Laguindingan	114			114	114			114	277	45		322	277	45		322				322
Libertad	168		5	173	168		5	173	332			332	332			332				332
Lugait	280		120	400	280		120	400	600	1		601	600	1		601				601
Magsaysay	61	43		104	61	43		104	165	16		181	165	16		181				181
Manticao	94	73	6	173	94	73	6	173	708	121		829	708	121		829				829
Medina	254		102	356	254		102	356	547	40		587	547	40		587				587
Naawan			48	48		48		48	442			442	442			442				442
Opol	354	415	130	899	354	415	130	899	891	160		1,051	891	160		1,051				1,051
Salay		53	120	173		53	120	173	833			833	833			833				833
Sugbongcogon	163		65	228	163		65	228	409	84		493	409	84		493				493
Tagoloan	1,968		897	2,865	1,968		897	2,865	6,771	2,286		9,057	6,771	2,286		9,057				9,057
Talisayan	208	96	83	387	208	96	83	387	469	54		523	469	54		523				523
Villanueva	500	83	85	668	500	83	85	668	1,538	434		1,972	1,538	434		1,972				1,972
Provincial Total	8,096	1,887	2,678	12,661	8,096	1,887	2,678	12,661	23,960	5,983		29,943	23,960	5,983		29,943				29,943

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
Alubijid		1,414		265	1,679					265	1,414				2,529					2,529
Balingasag		2,067			2,067						2,067				4,558					4,558
Balingoan		57		72	129					72	57				461					461
Bimangan				63	63					63					468					468
Claveria	422	2,809			3,231	422	2,809				422	2,809			3,268	1,451	1,817			3,268
El Salvador	489	1,632		489	2,610	489	1,632			489	489	1,632			4,977	611	4,366			4,977
Gingoog City				223	223					223					5,650	3,683	1,967			5,650
Gitagum		125		137	262					137	125				1,044					1,044
Initao		952			952						952				1,592					1,592
Jasaan	235	463		74	772	235	463			74	235	463			2,507	989	1,518			2,507
Kinoguitan		652		154	806					154	652				1,614					1,614
Lagonglong	226	340		226	792	226	340			226	226	340			2,058	853	1,205			2,058
Laguindingan	240				240	240					240				2,137	895	1,242			2,137
Libertad		141		65	206					65	141				742					742
Lugait	139	433		139	711	139	433			139	362	255			617	362	255			617
Magsaysay		2,051			2,051						2,051				3,096					3,096
Manticao		669			669						669				2,375					2,375
Medina	275	501		184	960	275	501			184	960	185			2,242	185	2,057			2,242
Naawan		337			337						337				1,321					1,321
Opol		436			436						436				3,083					3,083
Salay		291		198	489					198	489				1,059					1,059
Sugbongcogon	55			55	110	55				55	222	335			557	222	335			557
Tagoloan																				
Talisayan		997		147	1,144					147	997				2,209					2,209
Villanueva	242	744			986	242	744				986	1,075	1,770		2,845	1,075	1,770			2,845
Provincial Total	2,323	17,111		2,491	21,925	2,323	17,111		2,491	21,925	10,326	42,683		53,009	10,326	42,683			53,009	

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
Alubijid	2,114	53	11	1,992	50	10
Balingasag	4,198	105	21	2,555	64	13
Balingoan	944	24	5	386	10	2
Binuangan	410	11	3	250	7	2
Claveria	74	2	1	2,559	64	13
El Salvador	410	11	3	3,644	92	19
Gingoog City	8,224	206	42	3,427	86	18
Gitagum	238	6	2	694	18	4
Initao	414	11	3	673	17	4
Jasaan	2,488	63	13	3,286	83	17
Kinogutan	209	6	2	1,050	27	6
Lagonglong	1,694	43	9	1,172	30	6
Laguindingan				1,282	33	7
Libertad				388	10	2
Lugait	1,831	46	10	591	15	3
Magsaysay	1,825	46	10	1,381	35	7
Manticao				1,685	43	9
Medina	1,253	32	7	902	23	5
Naawan				1,006	26	6
Opol	3,002	76	16	2,496	63	13
Salay	1,618	41	9	326	9	2
Sugbongcogon				455	12	3
Tagoloan	4,966	125	25	6,468	162	33
Talisayan	264	7	2	800	20	4
Villanueva	2,157	54	11	3,308	83	17
Provincial Total	38,333	968	205	42,776	1,082	225

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
Alubijid	1	1	1	3	1	1	1	3
Balingasag	1	1	1	3	1	1	1	3
Balingoan	1	1	1	3	1	1	1	3
Binuangan	1	1	1	3	1	1	1	3
Claveria	1	1	1	3	1	1	1	3
El Salvador	1	1	1	3	1	1	1	3
Gingoog City	1	1	1	3	1	1	1	3
Gitagum	1	1	1	3	1	1	1	3
Initao	1	1	1	3	1	1	1	3
Jasaan	1	1	1	3	1	1	1	3
Kinoguitan	1	1	1	3	1	1	1	3
Lagonglong	1	1	1	3	1	1	1	3
Laguindingan	1	1	1	3	1	1	1	3
Libertad	1	1	1	3	1	1	1	3
Lugait	1	1	1	3	1	1	1	3
Magsaysay	1	1	1	3	1	1	1	3
Manticao	1	1	1	3	1	1	1	3
Medina	1	1	1	3	1	1	1	3
Naawan	1	1	1	3	1	1	1	3
Opol	1	1	1	3	1	1	1	3
Salay	1	1	1	3	1	1	1	3
Sugbongcogon	1	1	1	3	1	1	1	3
Tagoloan	1	1	1	3	1	1	1	3
Talisayan	1	1	1	3	1	1	1	3
Villanueva	1	1	1	3	1	1	1	3
Provincial Total	25	25	25	75	25	25	25	75