

7. WATER SOURCE DEVELOPMENT

7.3 Groundwater Sources

7.3.2 Groundwater Availability in the Province

(1) Major Information and References

The Groundwater Availability Map was prepared using the following information and reference (detailed list of reference is presented in Table 7.1.2, Data Report):

- Administrative and Topographical Maps of the Province published by NAMRIA with scales of 1:250,000 and 1:50,000, respectively.
- Geological Map of the Philippines published by BMGS with a scale of 1:1,000,000.
- Water Resource Investigation conducted by NWRB, 1986.
- Well Inventory Database prepared by NWRB, LWUA and DPWH.
- Well Inventory Database in the province.
- General information on groundwater condition by DPWH-DEO and PPDO.
- Well Log Data by DPWH-DEO and PEO.
- Water source information by Water Districts.

(2) Approach and Methodology

The procedure in preparing the Groundwater Availability Map is explained below with workflow depicted in Figure 7.3.1.

- 1) Prepare a base map with an approximate scale of 1:450,000 (fit to the A4 map size). The topographical map of NAMRIA (1:250,000) was used as a reference map. Basic information including rivers and provincial and municipal boundaries are indicated in the prepared base map.
- 2) The groundwater potential areas, based on the geology of the province, are delineated on the base map. The Recent alluvial and/or beach deposits, Pliocene-Quaternary sedimentary formation (clay, silt, sand and gravel) and Pliocene-Quaternary volcanic rock units (pyroclastics, debris flow and tuff) are regarded as possible aquifers considering their high porosity and permeability.

Boundaries between groundwater development potential area and difficult area were defined and delineated as presented in Figure 7.3.1, Main Report.

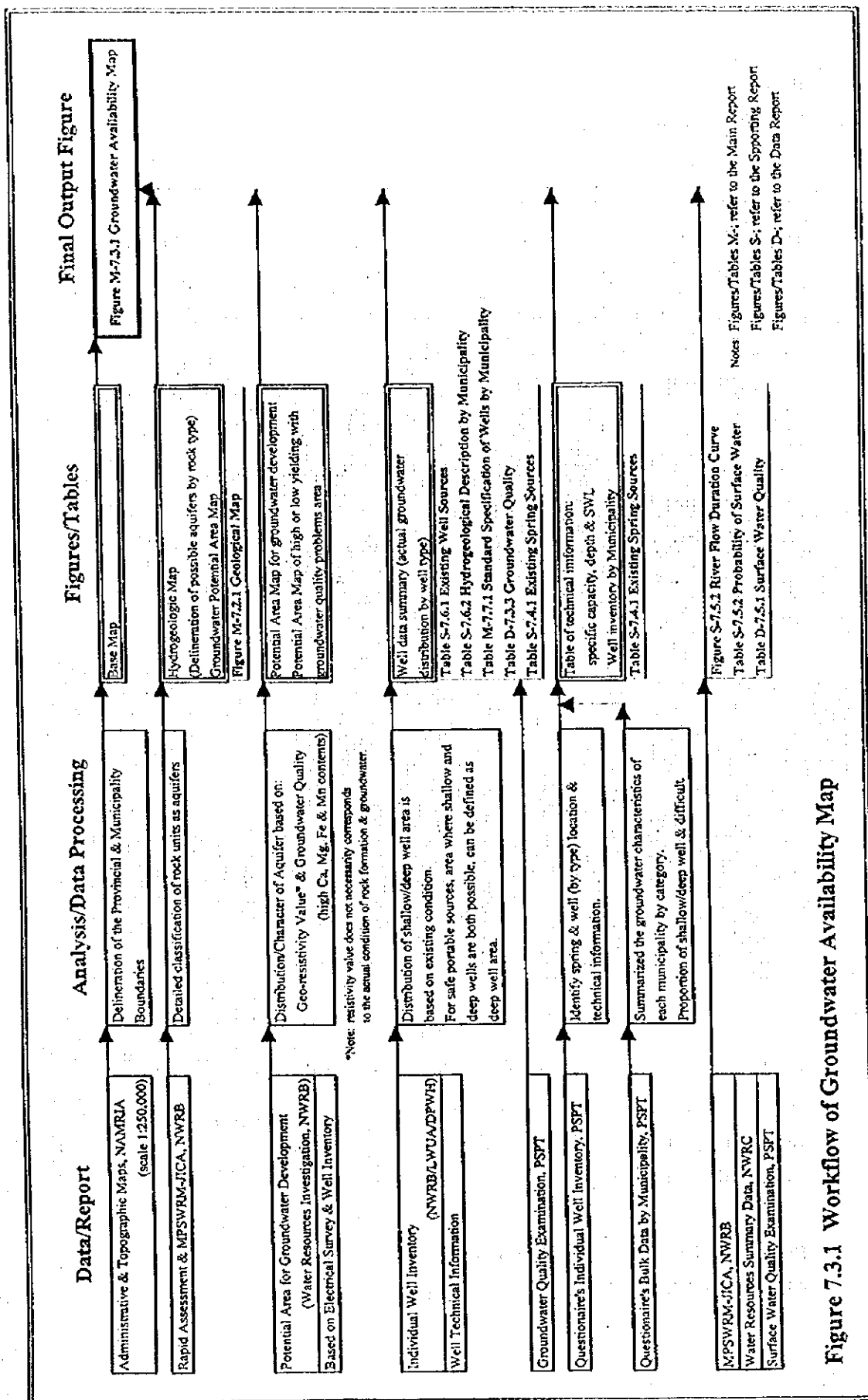


Figure 7.3.1 Workflow of Groundwater Availability Map

- 3) Areas with potential high yielding aquifer in the Water Resources Investigation of NWRB, are reflected in the defined groundwater potential areas.

Based on the results of electric resistivity survey of the above investigation, resistivity values from 20 to 210 ohm-meter indicate a potential high yielding formation. Values less than 10 ohm-meter suggest clayey layer. Figure 7.3.1, Main Report, shows the boundaries of areas with high and low yielding aquifers.

- 4) Delineate shallow and deep well areas based on well database of NWRB and DPWH central office, well inventory of DPWH-DEO and rock distribution. Figure 7.3.2 presents the categorization in terms of groundwater utilization.

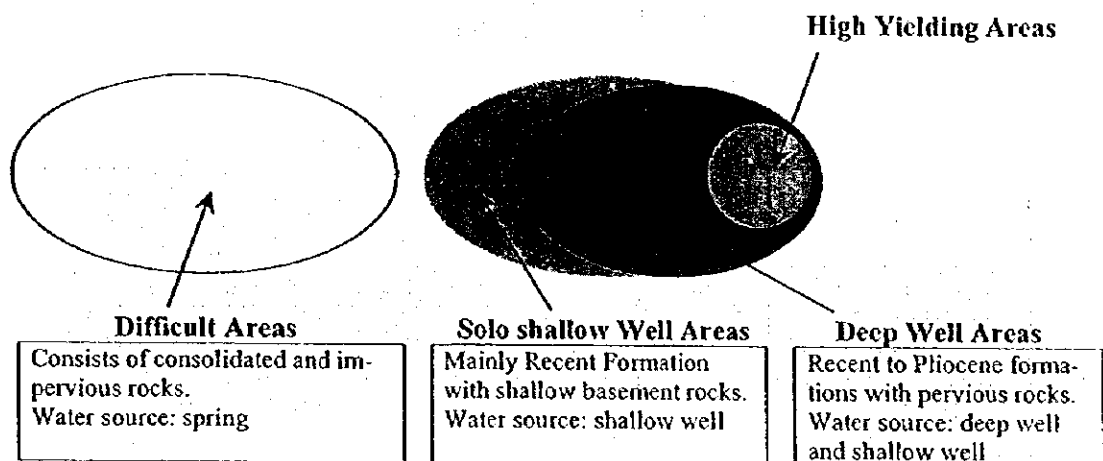


Figure 7.3.2 Area Category by Groundwater Utilization

Solo shallow well areas are defined on the following basis:

- (a) Predominance of serviceable shallow wells and presence of deep wells with water quality problem and/or low yielding aquifers.
- (b) Occurrence of impervious rocks beneath the Recent formation at shallow depth.

- 5) Based on the information provided by NWRB's well inventory and the data obtained through the questionnaires, well specification for each municipality is established as shown in the map. These specifications are used as references in evaluating the groundwater availability in each locality. Individual well locations with technical information are presented in Figure 7.6.1, Data Report.

(3) Future Updating and Utilization of the Map

For future updating of the map, the following procedure shall be employed.

- 1) Referring to the results of any supplementary water sources investigation by various agencies, re-define the potential area for groundwater development by applying the aforementioned procedures.
- 2) Update the provincial database using the questionnaire made for the study to make necessary revision of the delineated boundaries of groundwater categories.

7.4 Spring Sources

The numbers and discharge of developed and untapped springs by municipality are shown in Table 7.4.1. The dividing discharge of 2.0 lps for existing developed spring sources means that this capacity is enough for Level II water supply and can be applied to upgrade small-size Level III water supply. The data are derived from the questionnaires and Table 7.1.1 Water Source Information, Data Report.

Table 7.4.1 Existing Spring Sources

| Municipality | No. of Developed Spring | | Untapped Spring | | |
|-----------------|-------------------------|-----------|-----------------|----------|---------------|
| | Q<2.0 lps | Q>2.0 lps | No. | Ave. lps | Range lps |
| Anahawan | 8 | - | 4 | 0.6 | 0.5 ~ 0.8 |
| Bontoc | 3 | 5 | 2 | 11.1 | 0.1 ~ 22.0 |
| Hinunangan | 1 | 9 | 4 | 0.5 | 0.5 ~ 0.5 |
| Hinundayan | - | - | 3 | 1.0 | 1.0 ~ 1.0 |
| Libagon | - | 14 | 3 | 3.3 | 2.0 ~ 5.0 |
| Liloan | - | 6 | 1 | 5.7 | 5.7 ~ 5.7 |
| Limasawa Island | - | 1 | - | | ~ |
| Maasin | 55 | - | - | | ~ |
| Macrohon | - | 19 | 5 | 376.5 | 240.0 ~ 553.9 |
| Malitbog | - | 18 | 7 | 8.7 | 2.0 ~ 25.0 |
| Padre Burgos | 5 | 1 | 1 | 0.5 | 0.5 ~ 0.5 |
| Pintuyan | 1 | - | 15 | 2.9 | 2.0 ~ 4.0 |
| Saint Bernard | - | 6 | - | | ~ |
| San Francisco | 18 | 3 | 22 | 4.0 | 0.5 ~ 15.0 |
| San Juan | 6 | 12 | 7 | 2.6 | 1.1 ~ 4.0 |
| San Ricardo | 15 | - | 1 | 1.0 | 1.0 ~ 1.0 |
| Silago | 6 | 9 | 5 | 5.4 | 0.6 ~ 13.3 |
| Sogod | 16 | 2 | 4 | 0.4 | 0.2 ~ 0.5 |
| Tomas Oppus | - | 24 | 6 | 0.2 | 0.1 ~ 0.5 |

Note: Ave. lps & Range lps mean the average discharge and the range of discharges in lps (liter/second), respectively.

7.5 Surface Water Sources

The major rivers in the province were selected to evaluate their potential as water supply sources to meet the future water needs of the province. The following criteria were adopted for the selection:

- rivers which have been utilized for domestic use,
- rivers which have gauging stations, and
- rivers with watershed of 100 km² or more.

Based on the above criteria, the selected major rivers are Dasay, Lawigan, Buac, Salog, Amparo and Canturing Rivers. Bonbon River is tributary of the Salog River as shown in Figure 7.5.1 River Network Map.

The gauging stations in the province are located at the Dasay and Lawigan Rivers, which are shown in Figure 7.5.1. The runoff records are obtained from the "Philippine Water Resources Summary Data" prepared by the NWRC in 1980. The information on the gauging stations and the present uses (water rights) of the major rivers in the province is summarized in Table 7.5.1.

(1) Surface Water Utilization/Water Rights

As seen in Table 7.5.1, the present water uses in the watershed of tributaries of the major rivers total to 2.9 m³/sec. The major diversion points, operated by private associations, are located in Bontoc (Salog River), Hinunangan (Dasay River), Sogod (Buac River) and Saint Bernard (Lawigan River). Mining sites are located in the mountainous area. Most of them are located in Hinundayan and Limasawa Island as shown in the Figure 7.5.1.

(2) River Flow Analysis

The flow duration curves, derived from the available runoff records, are shown in Figure 7.5.2. For the Pagangahan River duration curve, the specific discharge at the Calingaguin and Valencia Gauging Stations are added for comparison.

The stream flow, maintenance flow, diversion flow and return flow are usually used to estimate the exploitable surface water potential. In this study, the stream flow was considered as the flow potential for domestic use and the diversion flow value was treated

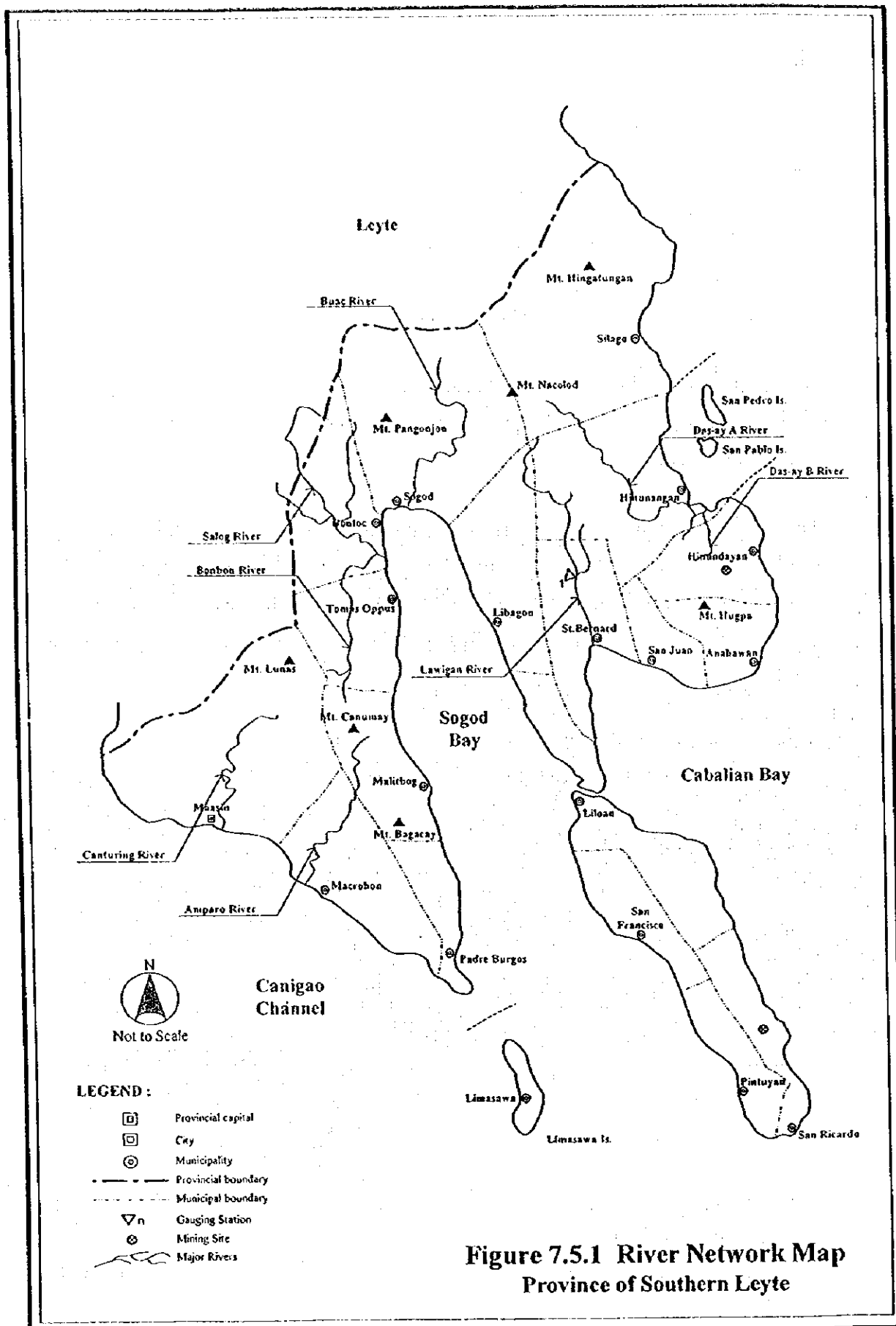


Table 7.5.1 Gauging Station & River Water Use by Major River Basin

| River Basin | | Information from Gauging Station | | | | | | Surface Water Use (Water Rights) in Watershed | | | | |
|-------------|-----------------------|----------------------------------|---------------------------------|------------------------------|---------|----------|------------------------------|---|-----------------------|-----------------------|---------------------|-------------|
| Major River | Stream & Main Systems | Drainage*1 sq.km | Location No. in Figure 7.5.1 | River Flow Rate (Q: cum/sec) | | | Municipality in watershed | Domestic cum/sec | Industrial cum/sec | Irrigation cum/sec | Others*3 cum/sec | |
| | | | | Peak Qp | Max. Qm | Mini. Qm | | | | | | Data Period |
| Das-ay | Das-ay A | No Gauging Station exists. | | | | | Hinundayan | NR ⁴ | NR ⁴ | NR ⁴ | NR ⁴ | |
| | | | | | | | Hinunangan | - | - | - | - | |
| | Das-ay B | | | | | | Silago | NR ⁴ | NR ⁴ | NR ⁴ | NR ⁴ | |
| Lawigan | | 62.0 (1): Carublian | | 86.09 | 83.58 | 1.68 | Hinunangan | - | - | 0.58 | - | |
| | | | | | | | Silago | NR ⁴ | NR ⁴ | NR ⁴ | NR ⁴ | |
| | | | | | | | Sogod | NR ⁴ | NR ⁴ | NR ⁴ | NR ⁴ | |
| | | | | | | | Libagon | NR ⁴ | NR ⁴ | NR ⁴ | NR ⁴ | |
| | | | | | | | Hinunangan | NR ⁴ | NR ⁴ | NR ⁴ | NR ⁴ | |
| Bucalog | | 85.0 (2): Auyuan | | 100.42 | 71.53 | 0.85 | St. Bernard | - | - | 0.82 | - | |
| | | No Gauging Station exists. | | | | | Sogod | - | - | 0.67 | - | |
| | Bonbon | No Gauging Station exists. | | | | | Maasin | NR ⁴ | NR ⁴ | NR ⁴ | NR ⁴ | |
| | | | | | | | Malitbog | NR ⁴ | NR ⁴ | NR ⁴ | NR ⁴ | |
| | | | | | | | Tomas Oppus | NR ⁴ | NR ⁴ | NR ⁴ | NR ⁴ | |
| Main | | | | | | | Bontoc | - | - | 0.02 | - | |
| | | No Gauging Station exists. | | | | | (Leyte)*5 | NR ⁴ | NR ⁴ | NR ⁴ | NR ⁴ | |
| | | | | | | | Bontoc | - | - | 0.55 | - | |
| | | | | | | | Maasin | NR ⁴ | NR ⁴ | NR ⁴ | NR ⁴ | |
| | | No Gauging Station exists. | | | | | Malitbog | NR ⁴ | NR ⁴ | NR ⁴ | NR ⁴ | |
| Amparo | | | | | | | Macrohon | - | - | 0.05 | - | |
| | | No Gauging Station exists. | | | | | Maasin | - | - | 0.21 | - | |

Source: Philippine Water Resources Summary Data, established January 1980 by NWRC

Notes: Drainage*1 : Watershed Area at Gauging Station Qp : Peak Discharge of Daily Maximum Discharge
 NA*2 : Recorded River Gauge Height only Qdx : Maximum Daily Discharge of Weighted Daily Discharge
 Others*3 : Including Livestock, Recreation & Fisheries Qdn : Minimum Daily Discharge of Weighted Daily Discharge
 NR**4 : Surface water utilization was not registered in NWRB Database, as of March 1997.
 (Province)*5 : Out of Applicable Area

as the equivalent to the discharge of water rights registration in surface water use. No detailed study on the return flow has been performed yet due to the difficulties in investigating the irrigation, evapotranspiration and recharge value to groundwater, etc. within the entire watersheds in the province. Therefore, the return flow was not considered for the estimation of exploitable potential.

It is generally accepted that to secure the required volume for water supply, each water use sector adopts the different return periods. Usually, the dependability of domestic water supply is taken to be 90% or higher (10-year or longer return-period) of the whole hydrological period.

In determining the river maintenance flow, such factors as runoff characteristics, navigation, fishing, picturesque scenery, salt water intrusion, clogging of river mouth, riparian structures, groundwater table, flora and fauna, and river water quality shall be considered to maintain the normal function of the river. In the Philippines, 10% of the dependable flow of the river is required as minimum maintenance flow. Therefore, the maintenance flow was calculated as the dependable flow for irrigation, which equals to 80% (5-year return-period) of the whole hydrological period.

Finally, the exploitable potential of surface water in the province was studied in the case of inflow to and outflow from the respective municipalities. The results are summarized in Table 7.5.2.

(3) Surface Water Quality

Mining sites exist upstream of the Dasay River and in southern mountains area of Panaon Island. Majority of their products is copper. The locations of the mining sites are shown in Figure 7.5.1.

The results of water quality analysis are summarized in Table 7.5.1, Data Report. The sampling locations were selected upstream of the respective municipalities. In the said table, Class AA and Class A of the DENR "Water Quality Criteria for Fresh Water" are shown as reference for raw water evaluation. The PNSDW-1994 is also used to evaluate water quality with reference to turbidity and trace elements. The water quality of the Dasay River is classified as "B" standard and selected other major rivers falls within the class "A" standard, although the parameters tested are limited.

| Percent of Time (%) (No. in Figure 7.5.1) | Specific Discharge (cum/sec/100sq km) | | | |
|---|---------------------------------------|---------------|-------------------------|-------------------------------|
| | Das-ay River | Lawigan River | Pagangahan-Baleon River | Pagangahan-Calingcaguin River |
| | 1 | 2 | Leyte | Leyte |
| 10% | 25.61 | 14.62 | 7.47 | 11.11 |
| 20% | 20.78 | 10.51 | 6.58 | 9.33 |
| 30% | 16.03 | 9.08 | 5.63 | 7.81 |
| 40% | 11.55 | 7.33 | 5.37 | 6.63 |
| 50% | 8.42 | 5.04 | 4.95 | 5.59 |
| 60% | 7.37 | 3.99 | 4.63 | 4.97 |
| 70% | 5.58 | 2.70 | 4.32 | 4.26 |
| 80% | 4.74 | 2.11 | 4.11 | 3.68 |
| 90% | 3.69 | 2.03 | 3.68 | 3.18 |
| 100% | 1.66 | 1.00 | 1.53 | 1.86 |
| Data Period | 1958-'70 | 1958-'70 | 1956-'70 | 1948-'70 |

Source: Philippine Water Resources Summary Data, as of Jan. 1980 by NWRC

Interim Report, Master Plan Study on Water Resources Management, as of Oct. 1997 by NWRB

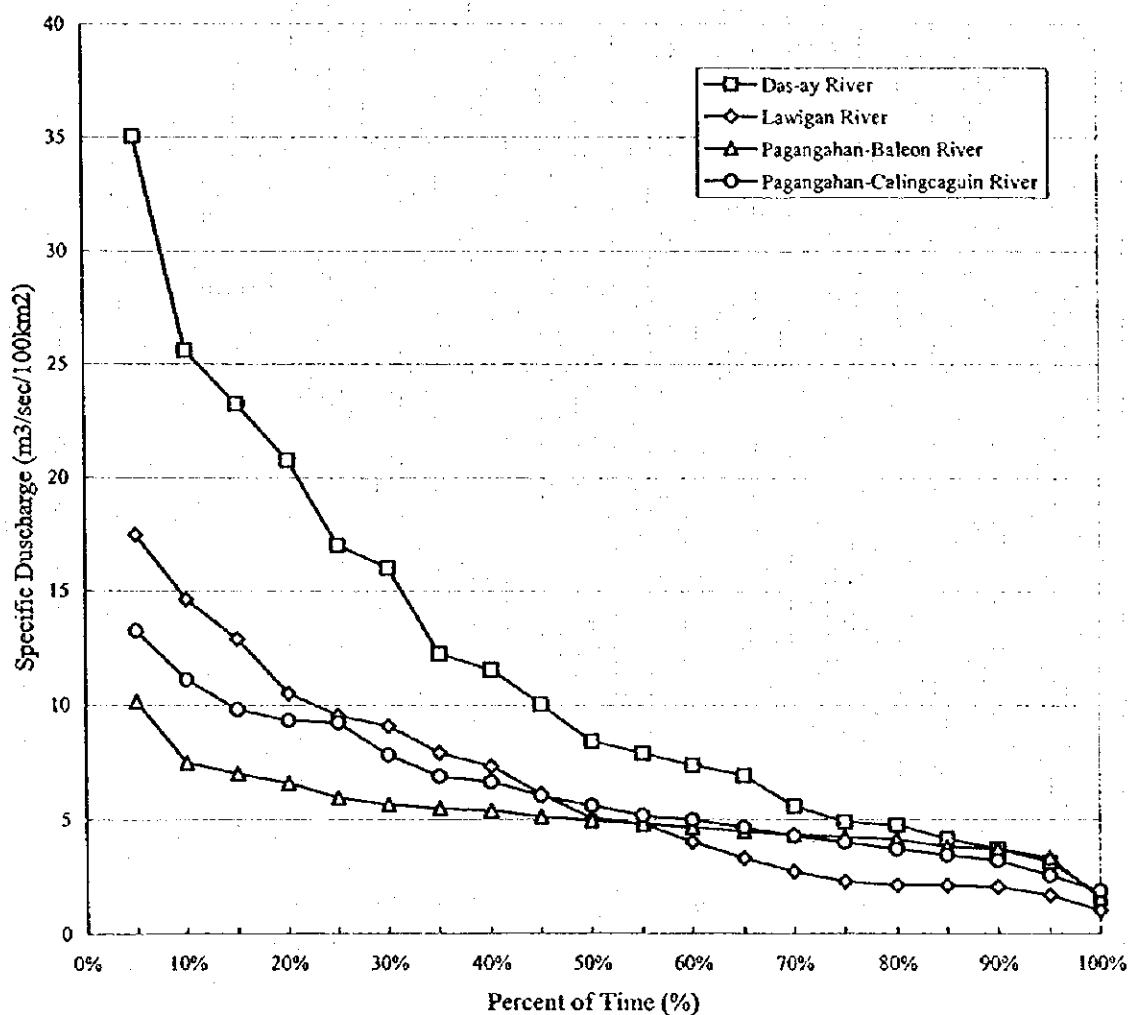


Figure 7.5.2 River Flow Duration Curve

Table 7.5.2 Probability of Surface Water

| Table 1.5.2 Probability of Surface Water | | | | | | | | | | | | | | | |
|--|---------------|--|------------------|-------------------|--------------|-----------------------|--|--|--|-------------------------------------|---|--|---|----------------------------|--------------------------------------|
| Surface Water Sources | | | Related Data | | | | Probability of Surface Water (10-year return-period) | | | | | | | | |
| Major River Water | System & Main | Location Municipality & other Province | River Connection | Watershed Area in | | Sp. D (return-period) | | Inlet Flow to Municipality | | | Outlet Flow from Municipality | | | Potential (12) (x1000 L/s) | |
| | | | | Location (1) | Upstream (2) | 10-year (3) | 5-year (4) | S/Flow (5) (x1000 m ³ /sec) | M/Flow (6) (x1000 m ³ /sec) | Use (7) (x1000 m ³ /sec) | Potential (8) (x1000 m ³ /sec) | S/Flow (9) (x1000 m ³ /sec) | M/Flow (10) (x1000 m ³ /sec) | | Use (11) (x1000 m ³ /sec) |
| | | upstream to down | outlet or inlet | sq. km | sq. km | Q | Q | cu.m/sec | cu.m/sec | cu.m/sec | cu.m/sec | cu.m/sec | cu.m/sec | cu.m/sec | cu.m/sec |
| Das-ay | Das-ay A | Hinundayan | | 15.76 | 0.00 | 3.69 | 4.74 | 0.00 | 0.00 | 0.00 | 0.00 | 0.58 | 0.07 | 0.00 | 0.51 |
| | | Hinundayan to B | | 2.03 | 15.76 | 3.69 | 4.74 | 0.58 | 0.07 | 0.00 | 0.51 | 0.66 | 0.08 | 0.00 | 0.57 |
| | Das-ay B | Silago | | 15.42 | 0.00 | 3.69 | 4.74 | 0.00 | 0.00 | 0.00 | 0.00 | 0.57 | 0.07 | 0.00 | 0.50 |
| | | Hinunangan from A | | 72.89 | 33.21 | 3.69 | 4.74 | 1.23 | 0.16 | 0.00 | 1.07 | 3.92 | 0.50 | 0.58 | 2.84 |
| Lawigan | | Silago | | 1.54 | 0.00 | 2.03 | 2.11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.03 | 0.00 | 0.00 | 0.03 |
| | | Sogod | | 4.16 | 1.54 | 2.03 | 2.11 | 0.03 | 0.00 | 0.00 | 0.03 | 0.12 | 0.01 | 0.00 | 0.10 |
| | | Libagon | | 5.09 | 5.71 | 2.03 | 2.11 | 0.12 | 0.01 | 0.00 | 0.10 | 0.22 | 0.02 | 0.00 | 0.20 |
| | | Hinunangan | | 46.57 | 10.79 | 2.03 | 2.11 | 0.22 | 0.02 | 0.00 | 0.20 | 1.16 | 0.12 | 0.00 | 1.04 |
| Buac | | St. Bernard | | 62.35 | 57.36 | 2.03 | 2.11 | 1.16 | 0.12 | 0.00 | 1.04 | 2.43 | 0.25 | 0.82 | 1.35 |
| | | Sogod | | 83.09 | 0.00 | 3.18 | 3.68 | 0.00 | 0.00 | 0.00 | 0.00 | 2.64 | 0.31 | 0.67 | 1.66 |
| | Salog | Maasin | | 4.08 | 0.00 | 3.18 | 3.68 | 0.00 | 0.00 | 0.00 | 0.00 | 0.13 | 0.02 | 0.00 | 0.11 |
| | | Malitbog | | 12.25 | 4.08 | 3.18 | 3.68 | 0.13 | 0.02 | 0.00 | 0.11 | 0.52 | 0.06 | 0.00 | 0.46 |
| | | Tomas Oppus | | 55.13 | 16.34 | 3.18 | 3.68 | 0.52 | 0.06 | 0.00 | 0.46 | 2.27 | 0.26 | 0.00 | 2.01 |
| | | Bontoc to Main | | 8.17 | 71.47 | 3.18 | 3.68 | 2.27 | 0.26 | 0.00 | 2.01 | 2.53 | 0.29 | 0.02 | 2.22 |
| | Main | Bontoc from Bonbor | | 83.72 | 124.56 | 3.18 | 3.68 | 3.96 | 0.46 | 0.02 | 3.48 | 6.62 | 0.77 | 0.57 | 5.28 |
| | | Maasin | | 12.18 | 0.00 | 3.18 | 3.68 | 0.00 | 0.00 | 0.00 | 0.00 | 0.39 | 0.04 | 0.00 | 0.34 |
| Amparo | | Malitbog | | 11.08 | 12.18 | 3.18 | 3.68 | 0.39 | 0.04 | 0.00 | 0.34 | 0.74 | 0.09 | 0.00 | 0.65 |
| | | Macrohon | | 26.58 | 23.26 | 3.18 | 3.68 | 0.74 | 0.09 | 0.00 | 0.65 | 1.58 | 0.18 | 0.05 | 1.35 |
| | Canturing | Maasin | | 45.41 | 0.00 | 3.18 | 3.68 | 0.00 | 0.00 | 0.00 | 0.00 | 1.44 | 0.17 | 0.21 | 1.07 |
| | | | | | | | | | | | | | | | |

Notes: Sp. D (Specific Discharge) was analyzed by monthly mean flow records from gauging station.

S/Flow (Stream Flow) was estimated specific discharge (10-year return-period) multiplied by upstream area.

M/Flow (Maintenance Flow) was estimated 10% of river flow in case of 5-year return-period.

Sp.D (10-year or 5-year return-period) without gauging station was adopted by the other analysis result from near gauging station.

Inlet & outlet "Use" (Water Rights) are summed up by NWRB Database, as of March 1997.

Unit Q for Specific Discharge is cu.m/sec/100 sq. km.

S/Flow, M/Flow & Use in final outlet flow of each stream system was added to respective inlet flows' of main system.

7.6 Future Development Potential of Water Sources

(1) Groundwater

A well inventory covering all the municipalities shows that there are 3,508 existing wells in the province, while 323 wells are recorded in the inventory prepared by PSPT (See Table 7.1.1 and 7.3.1, Data Report). Despite the smaller number of wells included in the PSPT data, these were used in the analysis, since these provided technical information. Of the total 323 wells, 281 wells are classified into shallow well and 273 have complete information: depth, static water level and specific capacity. Data are summarized in Table 7.6.1 Existing Well Sources.

Table 7.6.1 Existing Well Sources

| Municipality | Type | No. | Depth (m) | | SWL (mbgs) | | Sp. Cap. (lpsm) | |
|-----------------|------|-----|-----------|-------------|------------|-----------|-----------------|-----------|
| | | | Ave. | Range | Ave. | Range | Ave. | Range |
| Anahanwan | DW | - | - | - | - | - | - | - |
| | SW | 10 | 9.5 | 6.0 - 18.0 | 3.1 | 3.0 - 6.0 | 1.1 | 0.2 - 6.9 |
| Bontoc | DW | 13 | 34.3 | 21.0 - 48.0 | 1.8 | ff - 3.0 | 0.2 | 0.2 - 0.2 |
| | SW | 17 | 12.3 | 3.0 - 19.0 | 3.0 | 3.0 - 3.0 | 0.2 | 0.2 - 0.2 |
| Hinunangan | DW | 2 | 60.0 | 60.0 - 60.0 | 3.0 | 3.0 - 3.0 | 0.2 | 0.2 - 0.2 |
| | SW | 24 | 15.5 | 12.0 - 18.0 | 3.0 | 3.0 - 3.0 | 0.2 | 0.2 - 0.2 |
| Hinudayan | DW | - | - | - | - | - | - | - |
| | SW | 6 | 7.5 | 5.0 - 12.0 | 3.0 | 3.0 - 3.0 | 0.2 | 0.2 - 0.2 |
| Libagon | DW | - | - | - | - | - | - | - |
| | SW | 16 | 5.9 | 5.4 - 6.0 | 3.8 | 3.0 - 6.0 | 0.2 | 0.2 - 0.2 |
| Liloan | DW | - | - | - | - | - | - | - |
| | SW | 4 | 8.8 | 6.0 - 10.0 | 3.0 | 3.0 - 3.0 | 0.2 | 0.2 - 0.2 |
| Limasawa Island | DW | - | - | - | - | - | - | - |
| | SW | 12 | 10.2 | 6.0 - 17.6 | 2.8 | 2.0 - 3.0 | 1.3 | 0.2 - 6.7 |
| Maasin | DW | 3 | 25.6 | 21.2 - 29.0 | 3.0 | 3.0 - 3.0 | 0.2 | 0.2 - 0.2 |
| | SW | 68 | 11.8 | 4.0 - 18.0 | 3.0 | 3.0 - 3.0 | 0.2 | 0.2 - 0.2 |
| Macrohon | DW | 6 | 27.4 | 24.0 - 35.0 | 5.1 | 3.0 - 9.5 | 1.3 | 0.2 - 6.7 |
| | SW | 21 | 9.9 | 4.0 - 18.0 | 3.0 | 3.0 - 6.0 | 0.2 | 0.2 - 0.2 |
| Malitbog | DW | 12 | 23.1 | 21.0 - 28.0 | 4.5 | 3.0 - 6.0 | 0.2 | 0.2 - 0.2 |
| | SW | 19 | 5.8 | 5.4 - 6.0 | 3.2 | 3.0 - 6.0 | 0.2 | 0.2 - 0.2 |
| Padre Burgos | DW | - | - | - | - | - | - | - |
| | SW | 17 | 7.3 | 5.0 - 12.0 | 3.0 | 3.0 - 3.0 | 0.2 | 0.2 - 0.2 |

Table 7.6.1 Existing Well Sources

(cont'd)

| Municipality | Type | No. | Depth (m) | | SWL (mbgs) | | Sp. Cap. (lpsm) | |
|---------------|------|-----|-----------|-------------|------------|-----------|-----------------|-----------|
| | | | Ave. | Range | Ave. | Range | Ave. | Range |
| Pintuyan | DW | - | | - | | - | | - |
| | SW | - | | - | | - | | - |
| Saint Bernard | DW | - | | - | | - | | - |
| | SW | - | | - | | - | | - |
| San Fernando | DW | - | | - | | - | | - |
| | SW | 16 | 5.4 | 4.0 - 11.0 | 3.7 | 3.0 - 6.0 | 0.8 | 0.2 - 1.9 |
| San Juan | DW | 3 | 20.3 | 20.0 - 21.0 | 4.5 | 3.0 - 6.0 | 0.2 | 0.2 - 0.2 |
| | SW | 19 | 10.6 | 6.0 - 16.0 | 3.0 | 3.0 - 3.0 | 0.2 | 0.2 - 0.2 |
| San Ricardo | DW | - | | - | | - | | - |
| | SW | 2 | 15.0 | 12.0 - 18.0 | 3.0 | 3.0 - 3.0 | 0.2 | 0.2 - 0.2 |
| Silago | DW | - | | - | | - | | - |
| | SW | 9 | 6.8 | 4.6 - 9.2 | 4.7 | 3.0 - 6.0 | 0.2 | 0.2 - 0.2 |
| Sogod | DW | - | | - | | - | | - |
| | SW | 14 | 10.0 | 6.0 - 19.0 | 2.9 | 2.0 - 3.0 | 0.3 | 0.2 - 1.4 |
| Tomas Oppus | DW | 3 | 24.0 | 24.0 - 24.0 | 3.0 | 3.0 - 3.0 | 0.2 | 0.2 - 0.2 |
| | SW | 7 | 14.2 | 6.0 - 18.0 | 3.0 | 3.0 - 3.0 | 0.2 | 0.2 - 0.2 |

Notes; The values of "Ave. depth, SWL and Sp.Cap." by municipality are estimated using the weighted average based on 1995 census population in respective barangays at well location.

Legend; SWL=static water level, Sp.Cap.=specific capacity, Ave.=average, SW=shallow well, DW=deep well and ff=free flowing well

Considering the well information, the most productive wells are those with the depth ranging from 5.0m to 12.0m and from 24.0m to 60.0m. The good yielding wells have static water level varying from about 3.0m to 6.0mbgs and specific capacity of about 0.9 lpsm to 6.9 lpsm.

Based on the hydraulic characteristics and location of wells in Southern Leyte, aquifers are widely distributed in most area of western peninsula and western-half of eastern peninsula in the province. Solo shallow well area is not distributed in the province. The Miocene and older rock units are widely distributed in eastern-half of eastern peninsula and southern islands of the province that are classified as difficult area for groundwater development.

As indicated in Figure 7.3.1 Main Report, the river mouse is a high yielding potential area covering some coastal parts of the province. In eastern peninsula areas where surroundings are Mt. Hugpa and Mt. Hingatungan, groundwater examination indicates

acidic trend of pH values ranging from 5.9 to 6.6.

As alternative water sources, the untapped springs can be developed for future use. These are the most reliable sources for water supply in the province because groundwater quality has a serious problem of ironic/acidic water. Existing spring sources of 496 are utilized for water supply and they originate from the highlands or mountains in promontory areas of both side peninsulas and southern islands of the province. The untapped springs of 52 are proposed as future water sources in the areas of Bontoc, Ligon, Liloan, Macrohon, Malitbog, Pintuyan, San Francisco, San Juan and Silago.

Iron removal facilities shall be considered for Level-I deep well facilities in case there are no alternative spring sources in deep well areas with water quality problem of ironic groundwater. The proportion of the iron removal facilities to be constructed for Level-I deep well facilities covering entire province is estimated at 10%.

The detailed hydrogeological characteristics of each municipality are summarized in Table 7.6.2, while individual well locations with technical information are shown in Figure 7.6.1 individual Well Location and Specification Map, Data Report.

Additional wells shall be designed employing "gravel packed well" with a gravel thickness of about 50mm or more depending on the grain sizes of aquifers and pumping capacity. While, natural gravel packed well may be adopted within the areas where well-sorted natural gravel formation is distributed at the expected aquifer. Such areas are usually the upstream areas of alluvial fans or plains in the province. The application of such method for Level-I well is also justifiable, since inflow velocity of groundwater through the screen is very low because of minimal pumping rate by means of hand-pump operation.

Generally, shallower well has a higher possibility to be constructed by the natural gravel packed method than the deeper one in areas formed by recent deposits. This is because the layers at different depths of alluvial plain or fan deposits had been formed by different situations of transportation and sedimentation between varied grain sizes. The adaptability of the natural gravel packed well is experimentally assumed referring to the limited information such as topography, geology, static water levels, etc., as shown in Table 7.6.3.

Table 7.6.2 Hydrogeological Descriptions by Municipality

| Municipality | Ground Information | | | | Well Information | | | | Groundwater Information | | | | | | | | | | | |
|---------------|---------------------|----------------|---------------------------------|---------------------------------------|---------------------------------|----------|-------|------|-------------------------|------|-----------|-------|---------|---------|---------|--------------|-------|--------|--------|-----------------|
| | Topography | | Geology | | Depth | | SWL | | Availability | | Potential | | Quality | | | | | | | |
| | Area Proportion (%) | | Lithofacies (Major Aquifers) | Q | Stratigraphy of Geological Age* | | minl. | max. | minl. | max. | DW | Diff. | Wells | Springs | Problem | Area Feature | | | | |
| | Plain-Plateau | Hilly-Piedmont | | | Mountain | Tertiary | | | | | | | | | | | C | | | |
| | | | | | | Neo. | | | | | | | | | | | | Paleo. | | |
| | | | | | | | | | | | | | | | | | | | | |
| Anahawan | 4% | 0% | 96% | weathered volcanic | X | | | | 6 | 18 | 3.0 | 6.0 | 1.1 | 0 | 0% | 100% | risky | rich | mining | |
| Bontoc | 5% | 87% | 8% | limestone sediments | | X | X | | 3 | 48 | ff | 3.0 | 0.2 | 1 | 0% | 86% | 14% | poor | few | |
| Hinunangan | 8% | 5% | 87% | recent deposits & limestone sediments | X | X | X | | 12 | 60 | 3.0 | 3.0 | 0.2 | 0 | 0% | 28% | 72% | fair | rich | acidic & ironie |
| Hinundayan | 6% | 25% | 69% | recent deposits & limestone sediments | X | X | X | | 5 | 12 | 3.0 | 3.0 | 0.2 | 0 | 0% | 14% | 86% | fair | rich | acidic & ironie |
| Libagon | 27% | 51% | 22% | recent deposits & limestone sediments | X | X | X | | 5 | 6 | 3.0 | 6.0 | 0.2 | 0 | 0% | 96% | 4% | good | poor | |
| Liloan | 3% | 26% | 71% | limestone sediments | | X | X | | 6 | 10 | 3.0 | 3.0 | 0.2 | 0 | 0% | 24% | 76% | fair | few | |
| Limasawa Is. | 2% | 18% | 80% | weathered volcanic | | | X | | 6 | 18 | 2.0 | 3.0 | 1.3 | 0 | 0% | 100% | risky | rich | | |
| Maasin | 2% | 81% | 17% | limestone sediments | | X | X | | 4 | 29 | 3.0 | 3.0 | 0.2 | 0 | 0% | 94% | 6% | poor | rich | |
| Macrohon | 5% | 30% | 15% | recent deposits & limestone sediments | X | X | X | | 4 | 35 | 3.0 | 9.5 | 0.4 | 0 | 0% | 98% | 2% | poor | rich | |
| Malibog | 2% | 32% | 16% | limestone sediments | | X | X | | 5 | 28 | 3.0 | 6.0 | 0.2 | 1 | 0% | 77% | 23% | poor | rich | |
| Padre Burgos | 4% | 81% | 15% | limestone sediments | | X | X | | 5 | 12 | 3.0 | 3.0 | 0.2 | 0 | 0% | 91% | 9% | poor | few | |
| Pintuyan | 2% | 64% | 34% | weathered volcanic | X | X | X | | - | - | - | - | - | 0 | 0% | 100% | risky | rich | mining | |
| Saint Bernard | 16% | 37% | 47% | recent deposits & limestone sediments | X | X | X | | - | - | - | - | - | 0 | 0% | 47% | 53% | fair | rich | acidic & ironie |
| San Francisco | 10% | 21% | 69% | recent deposits & limestone sediments | X | X | X | | 4 | 11 | 3.0 | 6.0 | 0.8 | 0 | 0% | 42% | 58% | fair | rich | |
| San Juan | 9% | 14% | 77% | recent deposits | X | X | X | | 6 | 21 | 3.0 | 6.0 | 0.2 | 0 | 0% | 8% | 92% | poor | rich | acidic & ironie |
| San Ricardo | 1% | 3% | 96% | weathered volcanic | X | X | X | | 12 | 18 | 3.0 | 3.0 | 0.2 | 0 | 0% | 100% | risky | rich | mining | |
| Silago | 4% | 13% | 83% | recent deposits | X | X | X | | 5 | 9 | 3.0 | 6.0 | 0.2 | 0 | 0% | 19% | 81% | fair | rich | acidic & ironie |
| Sogod | 11% | 41% | 48% | recent deposits & limestone sediments | X | X | X | | 6 | 19 | 2.0 | 3.0 | 0.3 | 0 | 0% | 79% | 21% | good | few | |
| Tomas Oppus | 2% | 81% | 17% | limestone sediments | | X | X | | 6 | 24 | 3.0 | 3.0 | 0.2 | 0 | 0% | 83% | 17% | poor | few | |

Legend: Geological Age, Q=Quaternary, Neo=Neogene, Paleo=Paleogene, O=Cretaceous

Well Information, SWL=static water level, Sp.Cap.=specific capacity, L-III=wells operated for L-III service
Groundwater Information, SW=solo shallow well area, DW=deep well area, Diff.=difficult area, ff=free flowing well

Table 7.6.3 Proportion of Gravel Packed and Natural Gravel Packed Wells

| Municipality (only potential area) | Proposed Well Depth | Proportion (%) of Level-I Deep Wells | |
|---------------------------------------|------------------------|--------------------------------------|-----------------------|
| | | Gravel Packed | Natural Gravel Packed |
| Hinunangan | 80 m | 90 % | 10 % |
| Hinundayan | 40 m | 90 % | 10 % |
| Libagon | 80 m | 90 % | 10 % |
| Liloan | 80 m | 90 % | 10 % |
| Macrohon | 80 m | 90 % | 10 % |
| Saint Bernard | 80 m | 80 % | 20 % |
| San Francisco | 40 m | 90 % | 10 % |
| Silago | 40 m | 90 % | 10 % |
| Sogod | 120 m | 90 % | 10 % |

Examination on the effective grain sizes and uniformity coefficient by sieve analysis at the influential aquifers (composed of coarse sand and/or fine gravel) should be conducted during the implementation period. Such analysis and actual well construction results (sand pumping, ect.) are very helpful to apply the natural gravel packed method in future planning.

In eastern peninsula of the Leyte Central Highlands area, it is reported by DPWH/DEO that numerous deep wells present high Fe contents (PNSDW; $Fe \leq 1.0\text{ppm}$). The groundwater quality examination was performed by the PSPT. Groundwater with high Fe and acid pH values seems to be present in this Leyte Central Highlands based on examination results. Ironic water pumped from deep wells is caused by groundwater itself, well materials eluded in acid water, or combination of groundwater and well materials. There are four cases on water quality problem in terms of Fe and pH value as follows:

- (1) Iron concentration is less than the PNSDW (1ppm) and the pH value of groundwater indicates neutral or alkaline. There is a low possibility of iron contamination through the future.
- (2) Although iron concentration is within the PNSDW, groundwater shows an acid pH value. There is a possibility of iron contamination from steel materials.
- (3) Iron concentration exceeds the PNSDW and groundwater shows neutral or alkaline. There is iron contamination caused by groundwater itself.
- (4) Iron concentration exceeds the PNSDW and groundwater shows acid pH side. There is a possibility of iron contamination caused by groundwater and/or well materials.

Where groundwater has high Fe contains, the Iron Removal Facility shall be additionally installed. Where the parameter of groundwater indicates acid pH side, the well materials shall be designed to use anti-corrosive materials, such as anti-metallic (polyvinyl chloride; PVC) or anti-corrosive metal (stainless steel; SUS) materials.

Generally, shallower well presents alkalinity. This is because the shallow wells are usually constructed in alluvial plain or fan deposits. The well casing materials of the said anti-corrosive shall be used for deep wells. The development of deep wells using anti-corrosive materials in the province is experimentally assumed referring to the limited information such as results of water quality examination, geology, etc., as shown in Table 7.6.4.

Table 7.6.4 Proportion of Wells to be Constructed by Different Materials

| Municipality (only potential area) | Proposed Well Depth | Proportion (%) of Level-I Deep Wells | |
|---------------------------------------|------------------------|--------------------------------------|------------------|
| | | GI Casing Pipes | PVC Casing Pipes |
| Hinunangan | 80 m | 50 % | 50 % |
| Hinundayan | 40 m | 50 % | 50 % |
| Saint Bernard | 80 m | 50 % | 50 % |
| Silago | 40 m | 60 % | 40 % |

Water quality examination on Fe and pH parameters should be conducted during the implementation period. Such groundwater quality analysis is very helpful to design well materials in future planning.

(2) Spring

Untapped spring sources identified are shown in Table 7.6.5. These data were collected and tabulated using the questionnaire sheet-untapped spring information format, Data Report. Data also include barangay name, owner, discharge, transmission pipeline length and relative elevation.

Table 7.6.5 Untapped Spring Sources Identified

| Location | | Untapped Spring | | | |
|--------------------------|----------------|-----------------|-----------------|--------------|------------------------|
| Municipality | Barangay | Owner | Discharge (lps) | T.L.L.* (km) | Relative Elevation (m) |
| Anahawan | Amagusan | NA | 0.5 | 2.0 | NA |
| | Calintaan | NA | 0.5 | 1.0 | NA |
| | Capacuhan | NA | 0.6 | 1.0 | NA |
| | Kagingkingan | NA | 0.8 | 1.0 | NA |
| Bontoc | Beniton | NA | 0.1 | 0.8 | NA |
| | San Ramon | NA | 22.0 | 6.0 | NA |
| Hinunangan | Calinao | NA | 0.5 | 0.8 | NA |
| | Santo Nino I | NA | 0.5 | 2.0 | NA |
| | Tuburan | NA | 0.5 | 1.0 | NA |
| | Upper Bantawon | NA | 0.5 | 1.3 | NA |
| Hinundayan | Amaga | NA | 1.0 | 5.0 | NA |
| | Biasong | NA | 1.0 | 3.5 | NA |
| | Hubasan | NA | 1.0 | 3.0 | NA |
| Libagon | Biasong | NA | 2.0 | 0.2 | NA |
| | Cawayan | NA | 3.0 | 1.5 | NA |
| | Nahulid | NA | 5.0 | 3.5 | NA |
| Liloan | Poblacion | NA | 5.7 | 8.0 | NA |
| Macrohon | Cambaro | NA | 498.5 | 2.1 | NA |
| | Canlusay | NA | 250.0 | 0.8 | NA |
| | Danao | NA | 553.9 | 0.2 | NA |
| | Mabini | NA | 340.0 | 0.5 | NA |
| | Salvador | NA | 240.0 | 2.0 | NA |
| Malitbog | Candatag | NA | 5.0 | 3.0 | NA |
| | Juangon | NA | 2.0 | 1.8 | NA |
| | Maningning | NA | 5.0 | 2.0 | NA |
| | San Jose | NA | 2.0 | 3.5 | NA |
| | Sangahon | NA | 20.0 | 3.5 | NA |
| | Tigbawan II | NA | 2.0 | 1.3 | NA |
| | Tima | NA | 25.0 | 2.2 | NA |
| | Bunga | NA | 0.5 | 1.5 | NA |
| Padre Burgos Pintuyan | Balongbalong | NA | 2.5 | 2.7 | NA |
| | Buнавista | NA | 3.0 | 3.0 | NA |
| | Bulawan | NA | 3.0 | 2.0 | NA |
| | Canlawis | NA | 2.0 | 3.0 | NA |
| | Catbawan | NA | 4.0 | 3.0 | NA |

Table 7.6.5 Untapped Spring Sources Identified

(Cont'd)

| Location | | Untapped Spring | | | |
|---------------|----------------------|-----------------|-----------------|--------------|------------------------|
| Municipality | Barangay | Owner | Discharge (lps) | T.L.L.* (km) | Relative Elevation (m) |
| San Francisco | Caubang | NA | 3.0 | 1.5 | NA |
| | Lobo | NA | 2.5 | 3.0 | NA |
| | Mainit | NA | 2.5 | 3.0 | NA |
| | Nueva Estrella Norte | NA | 2.5 | 3.0 | NA |
| | Nueva Estrella Sur | NA | 3.0 | 2.5 | NA |
| | Poblacion Ibabao | NA | 3.0 | 3.0 | NA |
| | Ponod | NA | 3.5 | 1.7 | NA |
| | Santa Cruz | NA | 3.5 | 3.0 | NA |
| | Sonok II | NA | 3.0 | 3.0 | NA |
| | Tautag | NA | 2.5 | 3.0 | NA |
| | Anislagon | NA | 1.2 | 2.2 | NA |
| | Bongawisan | NA | 5.0 | 2.0 | NA |
| | Bongbong | NA | 0.8 | 3.0 | NA |
| | Cahayag | NA | 7.0 | 0.1 | NA |
| | Causi | NA | 2.0 | 0.2 | NA |
| | Central | NA | 15.0 | 6.0 | NA |
| | Dakit | NA | 15.0 | 6.0 | NA |
| | Gabi | NA | 5.0 | 2.0 | NA |
| | Habay | NA | 0.5 | 0.8 | NA |
| | Malico | NA | 5.0 | 1.5 | NA |
| | Marayag | NA | 5.0 | 2.0 | NA |
| | Napantao | NA | 0.7 | 0.8 | NA |
| | Pasanon | NA | 1.0 | 2.5 | NA |
| | Pinamudlan | NA | 0.6 | 0.5 | NA |
| | Punta | NA | 3.0 | 1.5 | NA |
| | Santa Cruz | NA | 0.8 | 1.1 | NA |
| | Santa Paz Norte | NA | 1.0 | 1.5 | NA |
| | Santa Paz Sur | NA | 1.2 | 1.2 | NA |
| | Sudmon | NA | 1.2 | 1.2 | NA |
| | Tinaan | NA | 0.6 | 0.3 | NA |
| | Tuno | NA | 0.8 | 0.3 | NA |
| San Juan | Ubos | NA | 15.0 | 6.0 | NA |
| | Minoyho | NA | 1.2 | 3.0 | NA |
| | Osao | NA | 1.1 | 1.8 | NA |
| | Pongoy | NA | 2.0 | 2.8 | NA |

Table 7.6.5 Untapped Spring Sources Identified

(Cont'd)

| Location | | Untapped Spring | | | |
|-----------------------|-----------------------|-----------------|-----------------|--------------|------------------------|
| Municipality | Barangay | Owner | Discharge (lps) | T.L.L.* (km) | Relative Elevation (m) |
| San Ricardo Silago | San Jose | NA | 4.0 | 5.0 | NA |
| | Santa Cruz | NA | 4.0 | 5.0 | NA |
| | Santo Nino | NA | 4.0 | 5.0 | NA |
| | Somoje | NA | 2.2 | 1.7 | NA |
| | Benit | NA | 1.0 | 6.0 | NA |
| | Hingatungan | NA | 6.0 | 4.0 | NA |
| | Imelda | NA | 4.0 | 1.4 | NA |
| | Poblacion District II | NA | 13.3 | 11.0 | NA |
| | Sapang | NA | 0.6 | 2.0 | NA |
| | Tubaon | NA | 3.0 | 3.0 | NA |
| Sogod | Dagsa | NA | 0.2 | 0.1 | NA |
| | Javier | NA | 0.4 | 0.1 | NA |
| | Mac | NA | 0.5 | 0.2 | NA |
| | Maria Plana | NA | 0.3 | 1.0 | NA |
| Yomas Oppus | Anahawan | NA | 0.1 | 0.3 | NA |
| | Biasong | NA | 0.3 | 0.3 | NA |
| | Luan | NA | 0.1 | 0.5 | NA |
| | Mapgap | NA | 0.1 | 0.2 | NA |
| | Maslog | NA | 0.5 | 0.2 | NA |
| | San Agustin | NA | 0.2 | 0.3 | NA |

Note: T.L.L. - Transmission line length
NA - Data not available

7.7 Water Source Development for Medium-Term Development Plan

7.7.1 Detailed Groundwater Investigation Required

(1) Water Quality Examination

Water quality problem areas are distributed in most eastern part of the province. Such water quality problem depends on the types of water source (e.g., water from well, spring or river).

For the deep well source, high Fe contents is the most serious problem. The causes of this high Fe content are that: (a) raw groundwater is ironic and/or (b) Fe is released from well materials made of steel due to low pH value (acid water). The countermeasures are considered in this report, such as construction of the iron removal facility for Fe contents

groundwater and well construction using the anti-corrosive materials for acid groundwater.

Spring source shows slightly acidic, but it is potable. However, there are mining sites in mountain area where spring eyes exist. The wastewater discharged during operation of mining production might have affected in the watershed/recharge areas for spring sources.

Water quality examination was conducted by the PSPT through the PW4SP preparation. However, water quality parameters are limited and not enough for future project implementation. Following additional examination shall be conducted.

Level-I Deep Well

- Sampling Site; Leyte Central Highlands Area
- Examination Parameters; to include Fe, Mn, pH, Color and Turbidity, etc.

Developed and Undeveloped Spring

- Sampling Site; Leyte Central Highlands Area
- Examination Parameters; to include Fe, Mn, pH, SO₄, Hg, Cu, etc.

7.7.2 Spacing Allocation for Level II and III Wells

The pumping rates required for Level I facilities are fairly lower than that for Level II and III systems. The well interference in Level I facilities need not to be studied in terms of spacing of wells and production rate, since most formations in shallow and deep well areas generally have enough groundwater development potential. As Level II and III wells are usually expected to produce larger discharge to meet the water demand, the spacing of wells to avoid well interference has to be considered. Spacing allocation for Level II and III wells was examined considering specific capacity, pumping rate, and assumed drawdown of 1cm at the interference radius for a pumping duration of 16 hours.

(1) Specific Capacity

According to the existing well source information, specific capacity was considered with ranges from 0.5 lpsm to 6.5 lpsm. To simplify the calculation, an average value in each range is adopted in the calculation of interference radius.

(2) Pumping Rate

The pumping rate was estimated by assuming a drawdown of 10m with the average value of specific capacity and pump operation of 16 hours/day. The formula used to determine proper well spacing is the Jacob modified equation. Drawdown at the interference boundary is assumed at 1cm after a pumping duration of 16 hours.

Table 7.7.1 presents the estimated spacing requirements and number of wells to be constructed within a well field of one km². The spacing interval between adjacent wells to avoid well interference is planned to be more than twice the distances of the calculated interference radius.

Table 7.7.1 Spacing Arrangements for Planned Wells

| Range of Specific Capacity (lpsm) | Estimated Pumping Rate (m ³ /day) | Estimated Interference Radius (m) | Estimated Number of Wells/km ² |
|-----------------------------------|--|-----------------------------------|---|
| 0.5 - 1.5 | 500 | 80 | 45 |
| 1.5 - 3.0 | 1,000 | 120 | 20 |
| 3.0 - 4.5 | 2,000 | 160 | 11 |
| 4.5 - 6.0 | 2,500 | 200 | 7 |
| > 6.0 | >2,500 | >200 | >7 |

**FUTURE REQUIREMENTS
AND DEVELOPMENT PLAN**

B

8. FUTURE REQUIREMENT 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 (1998) | Population Served by 1998 Facilities | | | | Population Served by Planned/On-going Projects | | | | Population Served in the Base Year (1998) | | | | Percentage Coverage |
|----------------------|-------|-------------------|--------------------------------------|----------|---------|--------|--|----------|---------|-------|---|----------|---------|--------|---------------------|
| | | | Level III | Level II | Level I | Total | Level III | Level II | Level I | Total | Level III | Level II | Level I | Total | |
| Anahawan | Urban | 2,805 | 1,483 | 186 | | 1,669 | | | | | 1,483 | 186 | | 1,669 | 60 |
| | Rural | 3,473 | 955 | 1,016 | 1,306 | 3,277 | | | | | 955 | 1,016 | 1,306 | 3,277 | 94 |
| | Total | 6,278 | 2,438 | 1,202 | 1,306 | 4,946 | | | | | 2,438 | 1,202 | 1,306 | 4,946 | 79 |
| Bontoc | Urban | 3,780 | 1,068 | 1,012 | 458 | 2,538 | | | | | 1,068 | 1,012 | 458 | 2,538 | 67 |
| | Rural | 20,015 | 1,160 | 5,486 | 5,590 | 12,236 | | | | | 1,160 | 5,486 | 5,590 | 12,236 | 61 |
| | Total | 23,795 | 2,228 | 6,498 | 6,048 | 14,774 | | | | | 2,228 | 6,498 | 6,048 | 14,774 | 62 |
| Hinunangan | Urban | 1,575 | 1,226 | | 201 | 1,427 | | | | | 1,226 | | 201 | 1,427 | 91 |
| | Rural | 20,502 | 6,097 | 5,463 | 5,556 | 17,116 | | | | | 6,097 | 5,463 | 5,556 | 17,116 | 83 |
| | Total | 22,077 | 7,323 | 5,463 | 5,757 | 18,543 | | | | | 7,323 | 5,463 | 5,757 | 18,543 | 84 |
| Hinundayan | Urban | 4,307 | 1,270 | 1,782 | 615 | 3,667 | | | | | 1,270 | 1,782 | 615 | 3,667 | 85 |
| | Rural | 6,523 | 2,328 | 3,990 | | 6,318 | | | | | 2,328 | 3,990 | | 6,318 | 97 |
| | Total | 10,830 | 3,598 | 5,772 | 615 | 9,985 | | | | | 3,598 | 5,772 | 615 | 9,985 | 92 |
| Libagon | Urban | 1,450 | 409 | 300 | 478 | 1,187 | | | | | 409 | 300 | 478 | 1,187 | 82 |
| | Rural | 9,146 | 859 | 5,532 | 1,247 | 7,638 | | | | | 859 | 5,532 | 1,247 | 7,638 | 84 |
| | Total | 10,596 | 1,268 | 5,832 | 1,725 | 8,825 | | | | | 1,268 | 5,832 | 1,725 | 8,825 | 83 |
| Liloan | Urban | 4,557 | 1,075 | 40 | 2,844 | 3,959 | | | | | 1,075 | 40 | 2,844 | 3,959 | 87 |
| | Rural | 12,204 | 349 | 3,692 | 6,916 | 10,957 | | | | | 349 | 3,692 | 6,916 | 10,957 | 90 |
| | Total | 16,761 | 1,424 | 3,732 | 9,760 | 14,916 | | | | | 1,424 | 3,732 | 9,760 | 14,916 | 89 |
| Limasawa | Urban | 1,229 | | | 360 | 360 | | | | | | | 360 | 360 | 29 |
| | Rural | 3,831 | | 721 | 538 | 1,259 | | | | | | 721 | 538 | 1,259 | 33 |
| | Total | 5,060 | | 721 | 898 | 1,619 | | | | | | 721 | 898 | 1,619 | 32 |
| Maasin (Capital) | Urban | 30,316 | 10,815 | 4,948 | 8,488 | 24,251 | | | | | 10,815 | 4,948 | 8,488 | 24,251 | 80 |
| | Rural | 33,120 | 5,210 | 12,763 | 2,223 | 20,196 | | | | | 5,210 | 12,763 | 2,223 | 20,196 | 61 |
| | Total | 63,436 | 16,025 | 17,711 | 10,711 | 44,447 | | | | | 16,025 | 17,711 | 10,711 | 44,447 | 70 |
| Macarhon | Urban | 6,698 | 2,115 | | 3,369 | 5,484 | | | | | 2,115 | | 3,369 | 5,484 | 82 |
| | Rural | 13,290 | 797 | 7,101 | 2,568 | 10,466 | | | | | 797 | 7,101 | 2,568 | 10,466 | 79 |
| | Total | 19,988 | 2,912 | 7,101 | 5,937 | 15,950 | | | | | 2,912 | 7,101 | 5,937 | 15,950 | 80 |
| Malibog | Urban | 2,882 | 1,240 | | 889 | 2,129 | | | | | 1,240 | | 889 | 2,129 | 74 |
| | Rural | 15,757 | | 3,352 | 5,139 | 8,491 | | | | | | 3,352 | 5,139 | 8,491 | 54 |
| | Total | 18,639 | 1,240 | 3,352 | 6,028 | 10,620 | | | | | 1,240 | 3,352 | 6,028 | 10,620 | 57 |

Table 8.2.1 Estimation of Base Year Service Coverage of Water Supply (Cont'd)

| Name of Municipality | Area | Population (1998) | Population Served by 1998 Facilities | | | | Population Served by Planned/On-going Projects | | | | Population Served in the Base Year (1998) | | | |
|----------------------|-------|-------------------|--------------------------------------|----------|---------|---------|--|----------|---------|-------|---|----------|---------|---------|
| | | | Level III | Level II | Level I | Total | Level III | Level II | Level I | Total | Level III | Level II | Level I | Total |
| Padre Burgos | Urban | 2,543 | 2,065 | | 302 | 2,367 | | | | | 2,065 | | 302 | 2,367 |
| | Rural | 5,121 | 1,123 | 1,226 | 1,880 | 4,229 | | | | | 1,123 | 1,226 | 1,880 | 4,229 |
| | Total | 7,664 | 3,188 | 1,226 | 2,182 | 6,596 | | | | | 3,188 | 1,226 | 2,182 | 6,596 |
| Pintuyan | Urban | 1,048 | 283 | | | 283 | | | | | 283 | | | 283 |
| | Rural | 7,409 | 889 | 2,127 | | 3,016 | | | | | 889 | 2,127 | | 3,016 |
| | Total | 8,457 | 1,172 | 2,127 | | 3,299 | | | | | 1,172 | 2,127 | | 3,299 |
| Saint Bernard | Urban | 3,475 | 3,400 | | | 3,400 | | | | | 3,400 | | | 3,400 |
| | Rural | 18,085 | 4,976 | 2,350 | 7,181 | 14,507 | | | | | 4,976 | 2,350 | 7,181 | 14,507 |
| | Total | 21,560 | 8,376 | 2,350 | 7,181 | 17,907 | | | | | 8,376 | 2,350 | 7,181 | 17,907 |
| San Francisco | Urban | 2,222 | 1,844 | | 112 | 1,956 | | | | | 1,844 | | 112 | 1,956 |
| | Rural | 7,029 | | 3,049 | 567 | 3,616 | | | | | | 3,049 | 567 | 3,616 |
| | Total | 9,251 | 1,844 | 3,049 | 679 | 5,572 | | | | | 1,844 | 3,049 | 679 | 5,572 |
| San Juan (Cabalian) | Urban | 3,800 | | | 1,716 | 1,716 | | | | | | | 1,716 | 1,716 |
| | Rural | 7,490 | | 4,399 | 885 | 5,284 | | | | | | 4,399 | 885 | 5,284 |
| | Total | 11,290 | | 4,399 | 2,601 | 7,000 | | | | | | 4,399 | 2,601 | 7,000 |
| San Ricardo | Urban | 695 | 487 | | | 487 | | | | | 487 | | | 487 |
| | Rural | 6,569 | 1,120 | 3,991 | 109 | 5,220 | | | | | 1,120 | 3,991 | 109 | 5,220 |
| | Total | 7,264 | 1,607 | 3,991 | 109 | 5,707 | | | | | 1,607 | 3,991 | 109 | 5,707 |
| Silago | Urban | 2,168 | 824 | 384 | 833 | 2,041 | | | | | 824 | 384 | 833 | 2,041 |
| | Rural | 7,634 | 3,390 | 2,841 | 845 | 7,076 | | | | | 3,390 | 2,841 | 845 | 7,076 |
| | Total | 9,802 | 4,214 | 3,225 | 1,678 | 9,117 | | | | | 4,214 | 3,225 | 1,678 | 9,117 |
| Sogod | Urban | 8,841 | 5,583 | 123 | | 5,706 | | | | | 5,583 | 123 | | 5,706 |
| | Rural | 22,129 | 9,584 | 3,792 | 879 | 14,255 | | | | | 9,584 | 3,792 | 879 | 14,255 |
| | Total | 30,970 | 15,167 | 3,915 | 879 | 19,961 | | | | | 15,167 | 3,915 | 879 | 19,961 |
| Tomas Oppus | Urban | 1,932 | 771 | 342 | 389 | 1,502 | | | | | 771 | 342 | 389 | 1,502 |
| | Rural | 10,487 | | 8,168 | | 8,168 | | | | | | 8,168 | | 8,168 |
| | Total | 12,419 | 771 | 8,510 | 389 | 9,670 | | | | | 771 | 8,510 | 389 | 9,670 |
| Provincial Total | Urban | 86,323 | 35,958 | 9,117 | 21,054 | 66,129 | | | | | 35,958 | 9,117 | 21,054 | 66,129 |
| | Rural | 229,814 | 38,837 | 81,059 | 43,429 | 163,325 | | | | | 38,837 | 81,059 | 43,429 | 163,325 |
| | Total | 316,137 | 74,795 | 90,176 | 64,483 | 229,454 | | | | | 74,795 | 90,176 | 64,483 | 229,454 |

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 1998 Facilities | | | | 1998 | | 2004 | |
|----------------------|-------|--------------------------------------|----------|---------|---------|------------------|--------------|------------------|--------------|
| | | Level III | Level II | Level I | Total | Total Population | Coverage (%) | Total Population | Coverage (%) |
| Anahawan | Urban | 1,483 | 186 | | 1,669 | 2,805 | 60 | 2,936 | 57 |
| | Rural | 955 | 1,016 | 1,306 | 3,277 | 3,473 | 94 | 2,938 | 100 * |
| | Total | 2,438 | 1,202 | 1,306 | 4,946 | 6,278 | 79 | 5,874 | 84 |
| Bontoc | Urban | 1,068 | 1,012 | 458 | 2,538 | 3,780 | 67 | 3,780 | 67 |
| | Rural | 1,160 | 5,486 | 5,590 | 12,236 | 20,015 | 61 | 19,488 | 63 |
| | Total | 2,228 | 6,498 | 6,048 | 14,774 | 23,795 | 62 | 23,268 | 63 |
| Hinunangan | Urban | 1,226 | | 201 | 1,427 | 1,575 | 91 | 1,980 | 72 |
| | Rural | 6,097 | 5,463 | 5,556 | 17,116 | 20,502 | 83 | 19,903 | 86 |
| | Total | 7,323 | 5,463 | 5,757 | 18,543 | 22,077 | 84 | 21,883 | 85 |
| Hinundayan | Urban | 1,270 | 1,782 | 615 | 3,667 | 4,307 | 85 | 5,399 | 68 |
| | Rural | 2,328 | 3,990 | | 6,318 | 6,523 | 97 | 5,876 | 100 * |
| | Total | 3,598 | 5,772 | 615 | 9,985 | 10,830 | 92 | 11,275 | 89 |
| Libagon | Urban | 409 | 300 | 478 | 1,187 | 1,450 | 82 | 1,450 | 82 |
| | Rural | 859 | 5,532 | 1,247 | 7,638 | 9,146 | 84 | 8,815 | 87 |
| | Total | 1,268 | 5,832 | 1,725 | 8,825 | 10,596 | 83 | 10,265 | 86 |
| Liloan | Urban | 1,075 | 40 | 2,844 | 3,959 | 4,557 | 87 | 4,726 | 84 |
| | Rural | 349 | 3,692 | 6,916 | 10,957 | 12,204 | 90 | 11,200 | 98 |
| | Total | 1,424 | 3,732 | 9,760 | 14,916 | 16,761 | 89 | 15,926 | 94 |
| Limasawa | Urban | | | 360 | 360 | 1,229 | 29 | 1,327 | 27 |
| | Rural | | 721 | 538 | 1,259 | 3,831 | 33 | 4,012 | 31 |
| | Total | | 721 | 898 | 1,619 | 5,060 | 32 | 5,339 | 30 |
| Maasin (Capital) | Urban | 10,815 | 4,948 | 8,488 | 24,251 | 30,316 | 80 | 42,311 | 57 |
| | Rural | 5,210 | 12,763 | 2,223 | 20,196 | 33,120 | 61 | 20,477 | 99 |
| | Total | 16,025 | 17,711 | 10,711 | 44,447 | 63,436 | 70 | 62,788 | 71 |
| Macrohon | Urban | 2,115 | | 3,369 | 5,484 | 6,698 | 82 | 6,698 | 82 |
| | Rural | 797 | 7,101 | 2,568 | 10,466 | 13,290 | 79 | 13,069 | 80 |
| | Total | 2,912 | 7,101 | 5,937 | 15,950 | 19,988 | 80 | 19,767 | 81 |
| Malibog | Urban | 1,240 | | 889 | 2,129 | 2,882 | 74 | 3,665 | 58 |
| | Rural | | 3,352 | 5,139 | 8,491 | 15,757 | 54 | 16,360 | 52 |
| | Total | 1,240 | 3,352 | 6,028 | 10,620 | 18,639 | 57 | 20,025 | 53 |
| Padre Burgos | Urban | 2,065 | | 302 | 2,367 | 2,543 | 93 | 3,021 | 78 |
| | Rural | 1,123 | 1,226 | 1,880 | 4,229 | 5,121 | 83 | 4,792 | 88 |
| | Total | 3,188 | 1,226 | 2,182 | 6,596 | 7,664 | 86 | 7,813 | 84 |
| Pintuyan | Urban | 283 | | | 283 | 1,048 | 27 | 1,129 | 25 |
| | Rural | 889 | 2,127 | | 3,016 | 7,409 | 41 | 7,472 | 40 |
| | Total | 1,172 | 2,127 | | 3,299 | 8,457 | 39 | 8,601 | 38 |
| Saint Bernard | Urban | 3,400 | | | 3,400 | 3,475 | 98 | 4,559 | 75 |
| | Rural | 4,976 | 2,350 | 7,181 | 14,507 | 18,085 | 80 | 17,413 | 83 |
| | Total | 8,376 | 2,350 | 7,181 | 17,907 | 21,560 | 83 | 21,972 | 81 |
| San Francisco | Urban | 1,844 | | 112 | 1,956 | 2,222 | 88 | 2,222 | 88 |
| | Rural | | 3,049 | 567 | 3,616 | 7,029 | 51 | 6,418 | 56 |
| | Total | 1,844 | 3,049 | 679 | 5,572 | 9,251 | 60 | 8,640 | 64 |
| San Juan (Cabalian) | Urban | | | 1,716 | 1,716 | 3,800 | 45 | 3,800 | 45 |
| | Rural | | 4,399 | 885 | 5,284 | 7,490 | 71 | 7,278 | 73 |
| | Total | | 4,399 | 2,601 | 7,000 | 11,290 | 62 | 11,078 | 63 |
| San Ricardo | Urban | 487 | | | 487 | 695 | 70 | 695 | 70 |
| | Rural | 1,120 | 3,991 | 109 | 5,220 | 6,569 | 79 | 5,303 | 98 |
| | Total | 1,607 | 3,991 | 109 | 5,707 | 7,264 | 79 | 5,998 | 95 |
| Silago | Urban | 824 | 384 | 833 | 2,041 | 2,168 | 94 | 2,280 | 90 |
| | Rural | 3,390 | 2,841 | 845 | 7,076 | 7,634 | 93 | 7,558 | 94 |
| | Total | 4,214 | 3,225 | 1,678 | 9,117 | 9,802 | 93 | 9,838 | 93 |
| Sogod | Urban | 5,583 | 123 | | 5,706 | 8,841 | 65 | 11,882 | 48 |
| | Rural | 9,584 | 3,792 | 879 | 14,255 | 22,129 | 64 | 18,896 | 75 |
| | Total | 15,167 | 3,915 | 879 | 19,961 | 30,970 | 64 | 30,778 | 65 |
| Tomas Oppus | Urban | 771 | 342 | 389 | 1,502 | 1,932 | 78 | 1,932 | 78 |
| | Rural | | 8,168 | | 8,168 | 10,487 | 78 | 10,089 | 81 |
| | Total | 771 | 8,510 | 389 | 9,670 | 12,419 | 78 | 12,021 | 80 |
| Provincial Total | Urban | 35,958 | 9,117 | 21,054 | 66,129 | 86,323 | 77 | 105,792 | 63 |
| | Rural | 38,837 | 81,059 | 43,429 | 163,325 | 229,814 | 71 | 207,357 | 79 |
| | Total | 74,795 | 90,176 | 64,483 | 229,454 | 316,137 | 73 | 313,149 | 73 |

Table 8.2.3 Number of Households Served by Sanitary Toilets in the Base Year (1998)

| Name of Municipality | Area | Population (1998) | Households Using Sanitary Toilets in 1998 | | | | Recipient HHs of Planned/On-going Projects | | | | Households Using Sanitary Toilets in the Base Year (1998) | | | | | |
|----------------------|-------|-------------------|---|---------------|------------|---------|--|-------|------------|---------|---|-------|------------|---------|-------|--------------|
| | | | Number of Households (1998) | Flush Toilets | Pour Flush | VIP/Dry | Total | Flush | Pour Flush | VIP/Dry | Total | Flush | Pour Flush | VIP/Dry | Total | Coverage (%) |
| | | | | | | | | | | | | | | | | |
| Anahawan | Urban | 2,805 | 598 | 10 | 567 | | 577 | | | | | 10 | 567 | | 577 | 95 |
| | Rural | 3,473 | 762 | 5 | 650 | | 655 | | | | | 5 | 650 | | 655 | 85 |
| | Total | 6,278 | 1,360 | 15 | 1,217 | | 1,232 | | | | | 15 | 1,217 | | 1,232 | 89 |
| Bontoc | Urban | 3,780 | 758 | 100 | 585 | | 685 | | | | | 100 | 585 | | 685 | 77 |
| | Rural | 20,015 | 3,932 | 30 | 2,906 | | 2,936 | | | | | 30 | 2,906 | | 2,936 | 74 |
| | Total | 23,795 | 4,690 | 150 | 3,491 | | 3,641 | | | | | 150 | 3,491 | | 3,641 | 76 |
| Hinunangan | Urban | 1,575 | 339 | 30 | 259 | | 289 | | | | | 30 | 259 | | 289 | 76 |
| | Rural | 20,502 | 4,496 | 20 | 4,156 | | 4,176 | | | | | 20 | 4,156 | | 4,176 | 92 |
| | Total | 22,077 | 4,835 | 50 | 4,415 | | 4,465 | | | | | 50 | 4,415 | | 4,465 | 91 |
| Hinundayan | Urban | 4,307 | 911 | 45 | 755 | | 800 | | | | | 45 | 755 | | 800 | 85 |
| | Rural | 6,523 | 1,365 | 17 | 1,303 | | 1,320 | | | | | 17 | 1,303 | | 1,320 | 95 |
| | Total | 10,830 | 2,276 | 62 | 2,058 | | 2,120 | | | | | 62 | 2,058 | | 2,120 | 90 |
| Libagon | Urban | 1,450 | 290 | 4 | 273 | | 277 | | | | | 4 | 273 | | 277 | 94 |
| | Rural | 9,146 | 1,890 | 2 | 1,695 | | 1,697 | | | | | 2 | 1,695 | | 1,697 | 90 |
| | Total | 10,596 | 2,180 | 6 | 1,968 | | 1,974 | | | | | 6 | 1,968 | | 1,974 | 90 |
| Lilean | Urban | 4,557 | 934 | 23 | 790 | | 813 | | | | | 23 | 790 | | 813 | 85 |
| | Rural | 12,204 | 2,575 | 8 | 2,344 | | 2,352 | | | | | 8 | 2,344 | | 2,352 | 91 |
| | Total | 16,761 | 3,509 | 31 | 3,134 | | 3,165 | | | | | 31 | 3,134 | | 3,165 | 89 |
| Linasawa | Urban | 1,229 | 253 | 234 | | | 234 | | | | | | | | 234 | 92 |
| | Rural | 3,831 | 769 | | 706 | | 706 | | | | | | 706 | | 706 | 92 |
| | Total | 5,060 | 1,022 | | 940 | | 940 | | | | | | 940 | | 940 | 92 |
| Maasin (Capital) | Urban | 30,316 | 6,264 | 140 | 4,047 | | 4,187 | | | | | 140 | 4,047 | | 4,187 | 65 |
| | Rural | 33,120 | 7,017 | 45 | 5,361 | | 5,406 | | | | | 45 | 5,361 | | 5,406 | 76 |
| | Total | 63,436 | 13,281 | 185 | 9,408 | | 9,593 | | | | | 185 | 9,408 | | 9,593 | 71 |
| Macarhon | Urban | 6,698 | 1,410 | | 1,130 | | 1,130 | | | | | | | | 1,130 | 80 |
| | Rural | 13,290 | 2,752 | | 2,317 | | 2,317 | | | | | | 2,317 | | 2,317 | 84 |
| | Total | 19,988 | 4,162 | | 3,447 | | 3,447 | | | | | | 3,447 | | 3,447 | 83 |
| Malibog | Urban | 2,882 | 561 | 40 | 476 | | 516 | | | | | 40 | 476 | | 516 | 85 |
| | Rural | 15,757 | 2,967 | | 2,489 | | 2,489 | | | | | | 2,489 | | 2,489 | 84 |
| | Total | 18,639 | 3,528 | 40 | 2,965 | | 3,005 | | | | | 40 | 2,965 | | 3,005 | 84 |
| Padre Burgos | Urban | 2,543 | 486 | 18 | 166 | | 184 | | | | | 18 | 166 | | 184 | 34 |
| | Rural | 5,121 | 1,002 | 4 | 982 | | 986 | | | | | 4 | 982 | | 986 | 98 |
| | Total | 7,664 | 1,488 | 22 | 1,148 | | 1,170 | | | | | 22 | 1,148 | | 1,170 | 77 |
| Pintuyan | Urban | 1,043 | 206 | | 142 | | 142 | | | | | | | | 142 | 69 |
| | Rural | 7,409 | 1,411 | | 1,347 | | 1,347 | | | | | | 1,347 | | 1,347 | 95 |
| | Total | 8,452 | 1,617 | | 1,489 | | 1,489 | | | | | | 1,489 | | 1,489 | 92 |

Table 8.2.3 Number of Households Served by Sanitary Toilets in the Base Year (1998) (Cont'd)

| Name of Municipality | Area | Population (1998) | Number of Households (1998) | Households Using Sanitary Toilets in 1998 | | | | Recipient HHs of Planned/Ongoing Projects | | | | Households Using Sanitary Toilets in the Base Year (1998) | | | | | |
|----------------------|-------|-------------------|-----------------------------|---|------------|---------|--------|---|------------|---------|-------|---|------------|---------|--------|--------------|-------|
| | | | | Flush Toilets | Pour Flush | VIP/Dry | Total | Flush | Pour Flush | VIP/Dry | Total | Flush | Pour Flush | VIP/Dry | Total | Coverage (%) | |
| | | | | | | | | | | | | | | | | Flush | Total |
| Saint Bernard | Urban | 3,475 | 721 | 69 | 545 | | 614 | | | | | 69 | 545 | | 614 | 10 | 76 |
| | Rural | 18,085 | 3,654 | 298 | 2,794 | | 3,092 | | | | | 298 | 2,794 | | 3,092 | 8 | 76 |
| | Total | 21,560 | 4,375 | 367 | 3,339 | | 3,706 | | | | | 367 | 3,339 | | 3,706 | 8 | 76 |
| San Francisco | Urban | 2,222 | 488 | 26 | 360 | | 386 | | | | | 26 | 360 | | 386 | 5 | 74 |
| | Rural | 7,029 | 1,545 | 9 | 1,349 | | 1,358 | | | | | 9 | 1,349 | | 1,358 | 1 | 87 |
| | Total | 9,251 | 2,033 | 35 | 1,709 | | 1,744 | | | | | 35 | 1,709 | | 1,744 | 2 | 84 |
| San Juan (Cabalán) | Urban | 3,800 | 835 | 50 | 450 | | 500 | | | | | 50 | 450 | | 500 | 6 | 54 |
| | Rural | 7,490 | 1,635 | | 1,026 | | 1,026 | | | | | | 1,026 | | 1,026 | 63 | 63 |
| | Total | 11,290 | 2,470 | 50 | 1,476 | | 1,526 | | | | | 50 | 1,476 | | 1,526 | 2 | 60 |
| San Ricardo | Urban | 695 | 153 | | 118 | | 118 | | | | | | 118 | | 118 | | 77 |
| | Rural | 6,569 | 1,309 | | 1,286 | | 1,286 | | | | | | 1,286 | | 1,286 | | 98 |
| | Total | 7,264 | 1,462 | | 1,404 | | 1,404 | | | | | | 1,404 | | 1,404 | | 96 |
| Silago | Urban | 2,168 | 461 | | 430 | | 430 | | | | | | 430 | | 430 | | 93 |
| | Rural | 7,634 | 1,652 | | 1,595 | | 1,595 | | | | | | 1,595 | | 1,595 | | 97 |
| | Total | 9,802 | 2,113 | | 2,025 | | 2,025 | | | | | | 2,025 | | 2,025 | | 96 |
| Sogod | Urban | 8,841 | 1,801 | 45 | 1,361 | | 1,406 | | | | | 45 | 1,361 | | 1,406 | 2 | 76 |
| | Rural | 22,129 | 4,489 | 19 | 2,748 | | 2,767 | | | | | 19 | 2,748 | | 2,767 | 1 | 61 |
| | Total | 30,970 | 6,290 | 64 | 4,109 | | 4,173 | | | | | 64 | 4,109 | | 4,173 | 1 | 65 |
| Tomas Oppus | Urban | 1,932 | 388 | 11 | 368 | | 379 | | | | | 11 | 368 | | 379 | 3 | 95 |
| | Rural | 10,487 | 2,162 | 36 | 1,996 | | 2,032 | | | | | 36 | 1,996 | | 2,032 | 2 | 92 |
| | Total | 12,419 | 2,550 | 47 | 2,364 | | 2,411 | | | | | 47 | 2,364 | | 2,411 | 2 | 93 |
| Provincial Total | Urban | 86,323 | 17,857 | 611 | 13,056 | | 13,667 | | | | | 611 | 13,056 | | 13,667 | 3 | 73 |
| | Rural | 229,814 | 47,384 | 513 | 39,050 | | 39,563 | | | | | 513 | 39,050 | | 39,563 | 1 | 82 |
| | Total | 316,137 | 65,241 | 1,124 | 52,106 | | 53,230 | | | | | 1,124 | 52,106 | | 53,230 | 2 | 80 |

Table 8.2.4 Number of Public School Student Served by School Toilets in Base Year (1998)

| Name of Municipality | 1998 Total Number of Public School Student | Standard No. of Student that can be Served by 1998 | No. of Student to be Served by Planned /On- going Projects | Standard No. of Students that can be Served by Toilets in Base Year (1998) | Coverage (%) |
|-------------------------|--|---|---|--|--------------|
| Anabawan | 1,189 | 1,189 | | 1,189 | 100 |
| Bontoc | 6,403 | 3,600 | | 3,600 | 56 |
| Hinunangan | 4,720 | 4,600 | | 4,600 | 97 |
| Hinundayan | 2,310 | 1,800 | | 1,800 | 78 |
| Libagon | 2,625 | 2,320 | | 2,320 | 88 |
| Liloan | 4,333 | 4,333 | | 4,333 | 100 |
| Limasawa | 1,271 | 1,200 | | 1,200 | 94 |
| Maasin (Capital) | 13,071 | 9,360 | | 9,360 | 72 |
| Macrohon | 5,166 | 4,000 | | 4,000 | 77 |
| Malibog | 3,389 | 3,280 | | 3,280 | 97 |
| Padre Burgos | 1,407 | 1,120 | | 1,120 | 80 |
| Pintuyan | 1,668 | 1,668 | | 1,668 | 100 |
| Saint Bernard | 4,641 | 4,641 | | 4,641 | 100 |
| San Francisco | 2,393 | 2,160 | | 2,160 | 90 |
| San Juan (Cabalian) | 2,611 | 1,920 | | 1,920 | 74 |
| San Ricardo | 2,260 | 2,260 | | 2,260 | 100 |
| Silago | 2,102 | 2,102 | | 2,102 | 100 |
| Sogod | 7,447 | 5,760 | | 5,760 | 77 |
| Tomas Oppus | 3,056 | 3,056 | | 3,056 | 100 |
| Provincial Total | 72,062 | 60,369 | | 60,369 | 84 |

Table 8.2.5 Number of Public Utilities with Sanitary Toilets in the Base Year (1998)

| Name of Municipality | Type | No. of PU with Toilets in 1998 | No. of PU with Sanitary Toilets in 1998 | No. of PU with Sanitary Toilets in Planned On-going Projects | No. of PU with Toilets in Base Year 1998 | No. of PU with Sanitary Toilets in Base year 1998 | Coverage (%) |
|----------------------|----------------------|--------------------------------|---|--|--|---|--------------|
| Anahawan | Public Market | 1 | 1 | | 1 | 1 | 100 |
| | Bus/JEEPNEY Terminal | | | | | | |
| | Parks/Playground | | | | | | |
| | Total | 1 | 1 | | 1 | 1 | 100 |
| Bontoc | Public Market | 1 | 1 | | 1 | 1 | 100 |
| | Bus/JEEPNEY Terminal | | | | | | |
| | Parks/Playground | | | | | | |
| | Total | 1 | 1 | | 1 | 1 | 100 |
| Hinunangan | Public Market | 1 | 1 | | 1 | 1 | 100 |
| | Bus/JEEPNEY Terminal | 1 | 1 | | 1 | 1 | 100 |
| | Parks/Playground | | | | | | |
| | Total | 2 | 2 | | 2 | 2 | 100 |
| Hinundayan | Public Market | 1 | 1 | | 1 | 1 | 100 |
| | Bus/JEEPNEY Terminal | | | | | | |
| | Parks/Playground | 1 | 1 | | 1 | 1 | 100 |
| | Total | 2 | 2 | | 2 | 2 | 100 |
| Libagon | Public Market | 1 | 1 | | 1 | 1 | 100 |
| | Bus/JEEPNEY Terminal | | | | | | |
| | Parks/Playground | 1 | 1 | | 1 | 1 | 100 |
| | Total | 2 | 2 | | 2 | 2 | 100 |
| Liloan | Public Market | 1 | 1 | | 1 | 1 | 100 |
| | Bus/JEEPNEY Terminal | 1 | 1 | | 1 | 1 | 100 |
| | Parks/Playground | 1 | 1 | | 1 | 1 | 100 |
| | Total | 3 | 3 | | 3 | 3 | 100 |
| Limasawa | Public Market | | | | | | |
| | Bus/JEEPNEY Terminal | | | | | | |
| | Parks/Playground | 2 | 2 | | 2 | 2 | 100 |
| | Total | 2 | 2 | | 2 | 2 | 100 |
| Maasin (Capital) | Public Market | 3 | 3 | | 3 | 3 | 100 |
| | Bus/JEEPNEY Terminal | 1 | 1 | | 1 | 1 | 100 |
| | Parks/Playground | 1 | 1 | | 1 | 1 | 100 |
| | Total | 5 | 5 | | 5 | 5 | 100 |
| Macrohon | Public Market | | | | | | |
| | Bus/JEEPNEY Terminal | | | | | | |
| | Parks/Playground | 1 | 1 | | 1 | 1 | 100 |
| | Total | 1 | 1 | | 1 | 1 | 100 |
| Malibog | Public Market | 1 | 1 | | 1 | 1 | 100 |
| | Bus/JEEPNEY Terminal | | | | | | |
| | Parks/Playground | 1 | 1 | | 1 | 1 | 100 |
| | Total | 2 | 2 | | 2 | 2 | 100 |
| Padre Burgos | Public Market | 1 | 1 | | 1 | 1 | 100 |
| | Bus/JEEPNEY Terminal | 1 | 1 | | 1 | 1 | 100 |
| | Parks/Playground | 1 | 1 | | 1 | 1 | 100 |
| | Total | 3 | 3 | | 3 | 3 | 100 |
| Pintuyan | Public Market | | | | | | |
| | Bus/JEEPNEY Terminal | | | | | | |
| | Parks/Playground | | | | | | |
| | Total | | | | | | |
| Saint Bernard | Public Market | 1 | 1 | | 1 | 1 | 100 |
| | Bus/JEEPNEY Terminal | 1 | 1 | | 1 | 1 | 100 |
| | Parks/Playground | 1 | 1 | | 1 | 1 | 100 |
| | Total | 3 | 3 | | 3 | 3 | 100 |
| San Francisco | Public Market | 1 | 1 | | 1 | 1 | 100 |
| | Bus/JEEPNEY Terminal | 1 | 1 | | 1 | 1 | 100 |
| | Parks/Playground | 1 | 1 | | 1 | 1 | 100 |
| | Total | 3 | 3 | | 3 | 3 | 100 |
| San Juan (Cabalian) | Public Market | 1 | 1 | | 1 | 1 | 100 |
| | Bus/JEEPNEY Terminal | 1 | 1 | | 1 | 1 | 100 |
| | Parks/Playground | 1 | 1 | | 1 | 1 | 100 |
| | Total | 3 | 3 | | 3 | 3 | 100 |
| San Ricardo | Public Market | | | | | | |
| | Bus/JEEPNEY Terminal | | | | | | |
| | Parks/Playground | | | | | | |
| | Total | | | | | | |
| Sitago | Public Market | | | | | | |
| | Bus/JEEPNEY Terminal | 1 | 1 | | 1 | 1 | 100 |
| | Parks/Playground | 1 | 1 | | 1 | 1 | 100 |
| | Total | 2 | 2 | | 2 | 2 | 100 |
| Sogod | Public Market | 2 | 2 | | 2 | 2 | 100 |
| | Bus/JEEPNEY Terminal | 1 | 1 | | 1 | 1 | 100 |
| | Parks/Playground | | | | | | |
| | Total | 3 | 3 | | 3 | 3 | 100 |
| Tomas Oppus | Public Market | 1 | 1 | | 1 | 1 | 100 |
| | Bus/JEEPNEY Terminal | | | | | | |
| | Parks/Playground | | | | | | |
| | Total | 1 | 1 | | 1 | 1 | 100 |
| Provincial Total | Public Market | 17 | 17 | | 17 | 17 | 100 |
| | Bus/JEEPNEY Terminal | 9 | 9 | | 9 | 9 | 100 |
| | Parks/Playground | 13 | 13 | | 13 | 13 | 100 |
| | Total | 39 | 39 | | 39 | 39 | 100 |

Table 5.2.6 Households Coverage in Phase 1 Provided by Existing Facilities in the Base Year (Household Toilets)

| Name of Municipality | Area | No. of Household Served by Existing Facilities | | | | | Coverage in 1998 | | | | | Coverage in 2004 | | | | |
|-----------------------|-------|--|------------|---------|--------|------------|---------------------------------|------------|---------|-------|------------|---------------------------------|------------|---------|-------|-----|
| | | No. of Household Served by Existing Facilities | | | | | Percentage of Served Households | | | | | Percentage of Served Households | | | | |
| | | Flush | Pour Flush | VIP/Dry | Total | No. of HHs | Flush | Pour Flush | VIP/Dry | Total | No. of HHs | Flush | Pour Flush | VIP/Dry | Total | % |
| Anahawan | Urban | 10 | 263 | | 273 | 58 | 2 | 95 | | 97 | 2,693 | 2 | 97 | | 99 | 92 |
| | Rural | 5 | 650 | | 655 | 362 | 1 | 85 | | 86 | 2,412 | 1 | 100 | | 100 | 100 |
| | Total | 15 | 913 | | 928 | 920 | 3 | 90 | | 91 | 5,105 | 3 | 96 | | 99 | 96 |
| Bantoc | Urban | 100 | 383 | | 483 | 258 | 13 | 77 | | 90 | 3,402 | 13 | 77 | | 90 | 90 |
| | Rural | 30 | 2,005 | | 2,035 | 3,023 | 3 | 74 | | 77 | 2,835 | 3 | 76 | | 79 | 77 |
| | Total | 130 | 2,388 | | 2,518 | 5,601 | 16 | 75 | | 83 | 6,237 | 16 | 76 | | 89 | 83 |
| Hinunangan | Urban | 30 | 259 | | 289 | 139 | 9 | 76 | | 85 | 1,339 | 9 | 61 | | 68 | 68 |
| | Rural | 20 | 4,156 | | 4,176 | 4,408 | 2 | 92 | | 94 | 1,653 | 2 | 95 | | 96 | 96 |
| | Total | 50 | 4,415 | | 4,465 | 4,547 | 11 | 84 | | 89 | 3,002 | 11 | 92 | | 93 | 82 |
| Himamaydan | Urban | 45 | 755 | | 800 | 911 | 5 | 83 | | 88 | 3,760 | 5 | 100 | | 100 | 100 |
| | Rural | 13 | 1,363 | | 1,376 | 1,653 | 1 | 95 | | 96 | 4,178 | 1 | 100 | | 100 | 100 |
| | Total | 58 | 2,118 | | 2,176 | 2,564 | 6 | 89 | | 92 | 7,938 | 6 | 100 | | 100 | 100 |
| Lubang | Urban | 4 | 233 | | 237 | 290 | 1 | 94 | | 95 | 1,392 | 1 | 94 | | 95 | 95 |
| | Rural | 2 | 1,955 | | 1,957 | 1,686 | 0 | 90 | | 90 | 1,305 | 0 | 93 | | 93 | 93 |
| | Total | 6 | 2,188 | | 2,194 | 2,576 | 1 | 92 | | 92 | 2,697 | 1 | 93 | | 94 | 94 |
| Lubang | Urban | 23 | 790 | | 813 | 834 | 2 | 85 | | 87 | 3,605 | 2 | 82 | | 84 | 84 |
| | Rural | 8 | 2,344 | | 2,352 | 2,575 | 1 | 89 | | 90 | 8,112 | 1 | 94 | | 95 | 95 |
| | Total | 31 | 3,134 | | 3,165 | 3,409 | 3 | 92 | | 92 | 11,717 | 3 | 88 | | 89 | 89 |
| Majayjay | Urban | 40 | 476 | | 516 | 551 | 7 | 82 | | 84 | 2,651 | 7 | 67 | | 72 | 72 |
| | Rural | 2 | 2,489 | | 2,491 | 2,957 | 1 | 84 | | 85 | 5,073 | 1 | 79 | | 80 | 80 |
| | Total | 42 | 2,965 | | 3,005 | 3,508 | 8 | 83 | | 84 | 7,724 | 8 | 73 | | 76 | 76 |
| Mabuhay | Urban | 184 | 1,092 | | 1,276 | 1,486 | 4 | 98 | | 98 | 2,492 | 4 | 98 | | 98 | 98 |
| | Rural | 41 | 982 | | 1,023 | 1,170 | 1 | 77 | | 78 | 3,453 | 1 | 76 | | 77 | 77 |
| | Total | 225 | 2,074 | | 2,299 | 2,656 | 5 | 88 | | 88 | 5,945 | 5 | 87 | | 88 | 88 |
| Mabuhay | Urban | 142 | 1,421 | | 1,563 | 1,617 | 10 | 76 | | 86 | 2,954 | 10 | 75 | | 85 | 85 |
| | Rural | 69 | 543 | | 612 | 654 | 8 | 76 | | 84 | 3,518 | 8 | 75 | | 84 | 84 |
| | Total | 211 | 1,964 | | 2,175 | 2,271 | 18 | 76 | | 85 | 6,472 | 18 | 75 | | 84 | 84 |
| Saint Bernard | Urban | 298 | 2,794 | | 3,092 | 3,654 | 8 | 76 | | 84 | 5,908 | 8 | 75 | | 84 | 84 |
| | Rural | 367 | 3,339 | | 3,706 | 4,273 | 5 | 74 | | 79 | 1,755 | 5 | 74 | | 79 | 79 |
| | Total | 665 | 6,133 | | 6,801 | 7,927 | 13 | 75 | | 81 | 7,663 | 13 | 74 | | 81 | 81 |
| San Francisco | Urban | 26 | 360 | | 386 | 488 | 3 | 87 | | 88 | 1,955 | 3 | 96 | | 96 | 96 |
| | Rural | 6 | 1,409 | | 1,415 | 1,451 | 1 | 84 | | 85 | 3,710 | 1 | 90 | | 92 | 92 |
| | Total | 32 | 1,769 | | 1,795 | 1,939 | 4 | 85 | | 86 | 5,665 | 4 | 93 | | 94 | 94 |
| San Juan (Cabanatuan) | Urban | 50 | 430 | | 480 | 500 | 6 | 54 | | 60 | 2,280 | 6 | 54 | | 60 | 60 |
| | Rural | 10 | 1,026 | | 1,036 | 1,025 | 2 | 63 | | 65 | 2,394 | 2 | 65 | | 65 | 65 |
| | Total | 60 | 1,456 | | 1,516 | 1,525 | 8 | 58 | | 62 | 4,674 | 8 | 60 | | 62 | 62 |
| San Ricardo | Urban | 118 | 1,181 | | 1,299 | 1,331 | 10 | 77 | | 87 | 5,551 | 10 | 77 | | 87 | 87 |
| | Rural | 128 | 1,285 | | 1,413 | 1,404 | 9 | 96 | | 96 | 1,216 | 9 | 100 | | 100 | 100 |
| | Total | 246 | 2,466 | | 2,712 | 2,735 | 19 | 86 | | 91 | 6,767 | 19 | 88 | | 93 | 93 |
| Silago | Urban | 450 | 1,595 | | 2,045 | 1,652 | 6 | 97 | | 97 | 2,103 | 6 | 97 | | 97 | 97 |
| | Rural | 19 | 2,748 | | 2,767 | 2,831 | 2 | 96 | | 96 | 4,116 | 2 | 96 | | 96 | 96 |
| | Total | 469 | 4,343 | | 4,812 | 4,483 | 8 | 96 | | 96 | 6,219 | 8 | 96 | | 96 | 96 |
| Sogod | Urban | 45 | 1,361 | | 1,406 | 1,801 | 2 | 76 | | 78 | 6,896 | 2 | 56 | | 58 | 58 |
| | Rural | 19 | 2,748 | | 2,767 | 2,831 | 2 | 96 | | 96 | 4,116 | 2 | 96 | | 96 | 96 |
| | Total | 64 | 4,109 | | 4,173 | 4,632 | 4 | 86 | | 87 | 10,012 | 4 | 76 | | 77 | 77 |
| Tomas Opus | Urban | 11 | 303 | | 314 | 318 | 3 | 97 | | 97 | 1,816 | 3 | 96 | | 96 | 96 |
| | Rural | 36 | 1,906 | | 2,032 | 2,162 | 2 | 97 | | 97 | 2,089 | 2 | 96 | | 96 | 96 |
| | Total | 47 | 2,209 | | 2,346 | 2,480 | 5 | 97 | | 97 | 3,905 | 5 | 96 | | 96 | 96 |
| Provincial Total | Urban | 811 | 13,056 | | 14,867 | 17,857 | 3 | 73 | | 77 | 66,081 | 3 | 67 | | 71 | 71 |
| | Rural | 213 | 14,026 | | 14,239 | 14,584 | 1 | 82 | | 83 | 69,354 | 1 | 97 | | 97 | 97 |
| | Total | 1,024 | 27,082 | | 29,106 | 32,441 | 4 | 77 | | 80 | 135,435 | 4 | 82 | | 84 | 84 |

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

| Name of Municipalities | Public School Toilets | | | | Public Toilets | | | | | | |
|------------------------|---|-------------------------------------|-----|------------------|------------------------------------|----|------------------|-----|----|----|-----|
| | Std. No. of Student that can be Served by Base Year | Coverage in 1998 | | Coverage in 2004 | Coverage in 1998 | | Coverage in 2004 | | | | |
| | | Total No. of Public School Students | % | | Total No. of Public School Student | % | | | | | |
| Anahawan | 1,189 | 1,189 | 100 | 1,114 | 107 | 1 | 1 | 100 | 1 | 1 | 100 |
| Bontoc | 3,600 | 6,403 | 56 | 6,603 | 55 | 1 | 1 | 100 | 2 | 1 | 50 |
| Hinunangan | 4,600 | 4,720 | 97 | 5,098 | 90 | 2 | 2 | 100 | 3 | 2 | 67 |
| Hinundayan | 1,800 | 2,310 | 78 | 2,495 | 72 | 2 | 2 | 100 | 2 | 2 | 100 |
| Libagon | 2,320 | 2,625 | 88 | 2,464 | 94 | 2 | 2 | 100 | 2 | 2 | 100 |
| Liloan | 4,333 | 4,333 | 100 | 3,728 | 116 | 3 | 3 | 100 | 4 | 3 | 75 |
| Limasawa | 1,200 | 1,271 | 94 | 1,375 | 87 | 2 | 2 | 100 | 1 | 2 | 200 |
| Maasin (Capital) | 9,360 | 13,071 | 72 | 14,130 | 66 | 5 | 5 | 100 | 6 | 5 | 83 |
| Macrohon | 4,000 | 5,166 | 77 | 4,678 | 86 | 1 | 1 | 100 | 1 | 1 | 100 |
| Malibog | 3,280 | 3,389 | 97 | 4,038 | 81 | 2 | 2 | 100 | 3 | 2 | 67 |
| Padre Burgos | 1,120 | 1,407 | 80 | 1,879 | 60 | 3 | 3 | 100 | 3 | 3 | 100 |
| Pintuyan | 1,668 | 1,668 | 100 | 1,834 | 91 | | | | | | |
| Saint Bernard | 4,641 | 4,641 | 100 | 4,886 | 95 | 3 | 3 | 100 | 4 | 3 | 75 |
| San Francisco | 2,160 | 2,393 | 90 | 2,130 | 101 | 3 | 3 | 100 | 3 | 3 | 100 |
| San Juan (Cabalian) | 1,920 | 2,611 | 74 | 2,709 | 71 | 3 | 3 | 100 | 3 | 3 | 100 |
| San Ricardo | 2,260 | 2,260 | 100 | 1,694 | 133 | | | | | | |
| Silago | 2,102 | 2,102 | 100 | 2,273 | 92 | 2 | 2 | 100 | 2 | 2 | 100 |
| Sogod | 5,760 | 7,447 | 77 | 7,642 | 75 | 3 | 3 | 100 | 4 | 3 | 75 |
| Tomas Oppus | 3,056 | 3,056 | 100 | 3,118 | 98 | 1 | 1 | 100 | 1 | 1 | 100 |
| Provincial Total | 60,369 | 72,062 | 84 | 73,888 | 82 | 39 | 39 | 100 | 45 | 39 | 87 |

8.3 Projection of Frame Values

8.3.1 Review of Past Population Development and Population Projection

Since the NSO has not yet prepared/issued future population of the provinces, the provincial population for the years 1998 (planning base year), 2004 (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 from 1903 to 1995 (conducted 10 times)
- 1995 Census-based National and Regional Population Projection prepared by the NSO
- 1995 Census-based Regional and Provincial Population Projection prepared by the NEDA Regional Office-VIII
- Provincial Physical Framework Plan/Comprehensive Provincial Land Use Plan (1993-2002) prepared by the Provincial Office (hereafter referred to as "the Land Use Plan")

(1) Comparison of regional population projected by NSO and NEDA

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.

In the regional population projection of Region VIII (Eastern Visayas), the subject region composed of the 3rd batch provinces of this study is classified as medium-sized region (projected population of at least 5 million but less than 10 million by year 2020).

On the other hand, the NEDA Regional Office-VIII projected regional population together with provincial population for year 2006 based on the 1995 census result.

Table 8.3.1 shows the comparison between the two agencies' projection on the regional population for the years 2000, 2005 and 2010. In the past development, the annual growth rate between 1990 and 1995 drastically increased compared with that of the previous census period. The NSO considered the latest development for its projection. Thus, the growth rates with 5-year interval for the years 1995, 2005 and 2010 are assumed at 2.21%, 2.00% and 1.82%, respectively.

The NEDA Regional Office also projected the population for year 2006 based on the 1995 census result. In this study, the annual growth rate between the two years was calculated at 1.00% using the compounded formula for the purpose of comparison with

NSO projection. Thus, the population in a 5-year interval from year 1995 was estimated as shown below applying 1.00% as annual growth rate. Comparing with the projected population by NSO, the NEDA projection is rather conservative in consideration of the past trend between 1948 and 1995 as shown in Table 8.3.1 and Figure 8.3.1.

| Year | Population | Source/Growth Rate |
|------|------------|--------------------------------------|
| 1995 | 3,366,917 | Census result |
| 2000 | 3,538,664 | Estimated/ 1.00% (1995 - 2006) |
| 2005 | 3,719,171 | Estimated/ 1.00% (1995 - 2006) |
| 2006 | 3,756,193 | NEDA projection/ 1.00% (1995 - 2006) |

Table 8.3.1 Comparison of Regional Population Projection by the NSO and NEDA

| Year | | 1980 | 1990 | 1995 | 2000 | 2005 | 2010 |
|-----------------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Census | Population | 2,799,534 | 3,054,490 | 3,366,917 | | | |
| | Growth Rate | | 0.88% | 1.97% | | | |
| NSO Projection | Population | | | 3,356,854 | 3,743,895 | 4,132,242 | 4,523,762 |
| | Growth Rate | | | | 2.21% | 2.00% | 1.82% |
| NEDA Projection | Population | | | 3,366,917 | 3,538,664 | 3,719,171 | |
| | Growth Rate | | | | 1.00% | 1.00% | |

Note: The 1995 population as of July 1995 was used as a basis for NSO population projection.

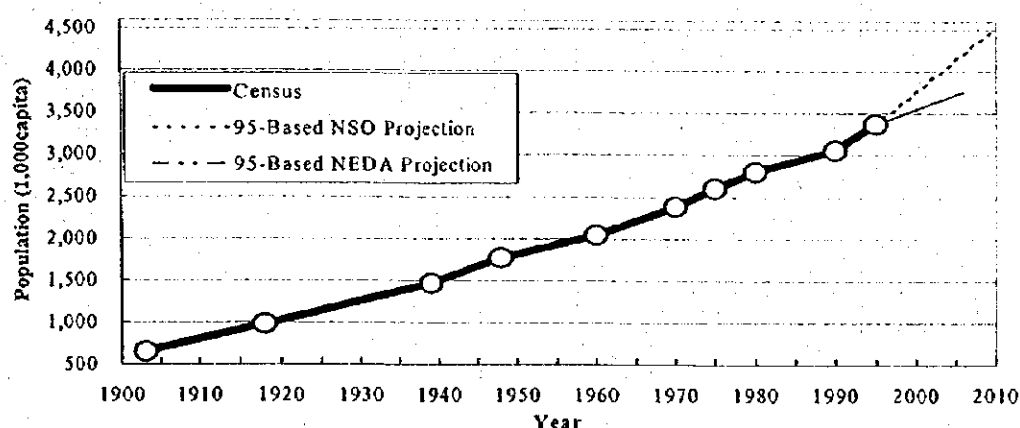


Figure 8.3.1 Past (Census) and Projected Population (prepared by NSO and NEDA) of Region-VIII

The NEDA population in 2000 and 2005 were estimated in the study.

(2) The Land Use Plan: Province of Southern Leyte (Planning period 1993-2002)

The provincial and municipal population for the year 2002 was projected with 1990 as base year. The population growth rates by municipality experienced between 1980 and 1990 were basically adopted for the projection. The provincial growth rate was 0.83% between 1980 and 1990. While the experienced and projected growth rates of Region VIII are 0.88 % between 1980 and 1990 and 0.95 % between 1990 and 2002.

The population projection on the provincial total and component municipalities was made with 1990 as base year. The population for the year 2002 was projected using a uniform growth rate between 1990 and 2002 referring to the experience from 1980 to 1990 (census years).

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 applying the assumed growth rates for the period 1990 to 2002 in the said comprehensive Provincial Land Use Plan.

Table 8.3.2 Census Population and Projected Population in Land Use Plan

| Municipality | Census Population | | | | | Land Use Plan | | |
|-----------------|-------------------|----------------|-------------------------|----------------|-------------------------|----------------|----------------|-------------------------|
| | 1980 | 1990 | Growth Rate (1980-1990) | 1995 | Growth Rate (1990-1995) | 1995* | 2002 | Growth Rate (1990-2002) |
| Anahawan | 6,544 | 7,063 | 0.77% | 6,471 | 12.16% | 7,346 | 7,762 | 0.79% |
| Bontoc | 22,655 | 24,818 | 0.92% | 24,047 | -14.86% | 26,020 | 27,800 | 0.95% |
| Hinunangan | 20,568 | 22,454 | 0.88% | 22,170 | -16.99% | 23,506 | 25,062 | 0.92% |
| Hinundayan | 9,746 | 9,965 | 0.22% | 10,617 | 37.31% | 10,075 | 10,231 | 0.22% |
| Libagon | 10,516 | 11,239 | 0.67% | 10,754 | 6.99% | 11,632 | 12,206 | 0.69% |
| Liloan | 16,923 | 18,383 | 0.83% | 17,160 | 13.27% | 19,187 | 20,372 | 0.86% |
| Limasawa | - | 4,519 | - | 4,927 | 17.31% | 4,564 | 4,628 | 0.20% |
| Maasin | 59,731 | 64,694 | 0.80% | 63,746 | -31.09% | 67,424 | 71,440 | 0.83% |
| Macrohon | 18,693 | 20,416 | 0.89% | 20,093 | -11.67% | 21,372 | 22,787 | 0.92% |
| Malitbog | 16,114 | 15,946 | -0.10% | 17,976 | -12.77% | 16,652 | 17,693 | 0.87% |
| Padre Burgos | 10,790 | 7,375 | -3.73% | 7,593 | -3.34% | 7,453 | 7,563 | 0.21% |
| Pintuyan | 7,872 | 8,177 | 0.38% | 8,388 | 3.53% | 8,338 | 8,568 | 0.39% |
| Saint Bernard | 19,153 | 20,760 | 0.81% | 21,363 | -4.99% | 21,647 | 22,952 | 0.84% |
| San Francisco | 9,995 | 10,438 | 0.43% | 9,543 | -19.02% | 10,670 | 11,003 | 0.44% |
| San Juan | 11,614 | 11,703 | 0.08% | 11,392 | 0.84% | 11,750 | 11,816 | 0.08% |
| San Ricardo | 7,331 | 9,723 | 2.86% | 7,869 | -10.86% | 10,255 | 11,048 | 1.07% |
| Silago | 9,323 | 9,733 | 0.43% | 9,785 | 26.50% | 9,949 | 10,259 | 0.44% |
| Sogod | 26,246 | 31,342 | 1.79% | 31,062 | -16.60% | 34,502 | 39,469 | 1.94% |
| Tomas Oppus | 12,480 | 13,192 | 0.56% | 12,609 | 3.97% | 13,572 | 14,123 | 0.57% |
| Province | 296,294 | 321,940 | 0.83% | 317,565 | -0.86% | 335,913 | 356,782 | 0.86% |

Note: * Population in 1995 was estimated using growth rate employed in the Land Use Plan

Comparing the census and the projected population in 1995, the provincial population based on the census is about 6% lower than the projected. Regarding the municipal census population in 1995, fourteen (14) out of 19 municipalities were lower with a range of -1% to -23% comparing with the projected figures, while the remaining five (5) municipalities were higher with a range of 1% to 23%.

In addition to this, the province is presently updating its Land Use Plan using the NEDA projection based on the 1995 census population. Thus, future projection shall be made using the 1995 census results as the base year.

(3) Population Projection of the Province

The following conditions are considered in the population projection.

Regional Population

For the regional population in the study, the projection conducted by the NEDA Regional Office may be adopted assuming that a rather conservative population growth will be realized comparing with that of the NSO projection.

- 1) The regional population projected by the NEDA for the year 2006 is referred to for the short and medium-term periods. The annual growth rate of 1.00% between 1995 and 2006 will be adopted for the projection in 1998 and 2004 using the compounded formula with 1995 as the base year.
- 2) For the long-term projection, it is assumed that the annual growth rates will decrease gradually as adopted in the NSO projection. The annual growth rates adopted in NSO projection decline from 2.00% (2000 - 2005) to 1.82% (2005 - 2010), which indicates that the relative reduction rate is 0.09%. In this study, the same reduction rate may be used to the NEDA projected growth rate of 1.00% (2000 - 2005). Thus, the population in year 2010 is estimated at 3,891,501 applying the growth rate of 0.91% from year 2005. The growth rates adopted in the study correspond to half of the figures employed by NSO.

| <u>Year</u> | <u>Population</u> | <u>Growth Rate</u> |
|-------------|-------------------|---------------------|
| 1995 | 3,366,917 | Census result |
| 1998 | 3,468,938 | 1.00% (1995 - 1998) |
| 2004 | 3,682,348 | 1.00% (1995 - 2004) |
| 2005 | 3,719,171 | 1.00% (1995 - 2005) |
| 2010 | 3,891,501 | 0.91% (2005 - 2010) |

Provincial Population

In the NEDA projection, the regional population to be increased from 1995 to 2006 was distributed to each province in proportion to the share of the provincial population increase to the regional population experienced between 1990 and 1995. In this study, it is assumed that the tendency of population growth by province will not drastically change. Thus, the same manner as adopted by the NEDA projection was employed both for short/medium-term and long-term periods in the population distribution from the regional population to those for concerned provinces. The distribution of the regional population to be increased to the provincial population was made between the respective

base/target years. Table 8.3.3 shows the projected population in years 1998, 2004 and 2010 together with NEDA projection.

Table 8.3.3 Projected Population of the Province

| Province | NEDA Projection | | | | Projected Population | | |
|----------------|------------------|------------------|---------------------|----------------|----------------------|------------------|------------------|
| | Population | | Population Increase | | | | |
| | 1995 | 2006 | Number | Share | 1998 | 2004 | 2010 |
| Biliran | 132,209 | 149,921 | 17,712 | 4.55% | 136,851 | 146,561 | 156,077 |
| Eastern Samar | 362,324 | 403,509 | 41,185 | 10.58% | 373,118 | 395,697 | 417,825 |
| Leyte | 1,511,251 | 1,689,501 | 178,250 | 45.79% | 1,557,966 | 1,655,686 | 1,751,458 |
| Northern Samar | 454,195 | 542,288 | 88,093 | 22.63% | 477,282 | 525,577 | 572,908 |
| Samar | 589,373 | 658,859 | 69,486 | 17.85% | 607,584 | 645,678 | 683,012 |
| Southern Leyte | 317,565 | 312,115 | -5,450 | -1.40% | 316,137 | 313,149 | 310,221 |
| Region | 3,366,917 | 3,756,193 | 389,276 | 100.00% | 3,468,938 | 3,682,348 | 3,891,501 |

Municipal Population

- 1) The total population of the province in 1998, 2004 and 2010 was fixed.
- 2) For the population projection by municipality, the same method employed in NEDA projection for the distribution of regional population to provincial population was applied. The provincial population to be increased in respective planning years was distributed to each municipality in proportion to the share of the population increase of each municipality to the provincial total experienced between 1990 and 1995. Table 8.3.4 presents the census results (1990 and 1995) and the projected population of the municipalities.

Table 8.3.4 Census results and Projected Population of Municipalities

| Municipality | Census Result | | | | Projected Population | | | | | |
|-----------------|----------------|----------------|---------------|---------------------------------------|----------------------|----------|----------------|---------------|----------------|---------------|
| | 1990 | 1995 | Pop. Growth | Share to Prov. Pop Growth/ Prov. Pop. | 1998 | | 2004 | | 2010 | |
| | | | | | Population | GR | Population | GR | Population | GR |
| Anahawan | 7,063 | 6,471 | -592 | 13.5% | 6,278 | - | 5,874 | -1.10% | 5,478 | -1.16% |
| Bontoc | 24,818 | 24,047 | -771 | 17.6% | 23,795 | - | 23,268 | -0.37% | 22,752 | -0.37% |
| Hinunangan | 22,454 | 22,170 | -284 | 6.5% | 22,077 | - | 21,883 | -0.15% | 21,693 | -0.15% |
| Hinundayan | 9,965 | 10,617 | 652 | -14.9% | 10,830 | 0.66% | 11,275 | 0.67% | 11,711 | 0.63% |
| Libagon | 11,239 | 10,754 | -485 | 11.1% | 10,596 | - | 10,265 | -0.53% | 9,940 | -0.53% |
| Liloan | 18,383 | 17,160 | -1,223 | 28.0% | 16,761 | - | 15,926 | -0.85% | 15,107 | -0.88% |
| Limasawa | 4,519 | 4,927 | 408 | -9.3% | 5,060 | 0.89% | 5,339 | 0.90% | 5,612 | 0.83% |
| Maasin | 64,694 | 63,746 | -948 | 21.7% | 63,436 | - | 62,788 | -0.17% | 62,153 | -0.17% |
| Macrohon | 20,416 | 20,093 | -323 | 7.4% | 19,988 | - | 19,767 | -0.19% | 19,551 | -0.18% |
| Malitbog | 15,946 | 17,976 | 2,030 | -46.4% | 18,639 | 1.21% | 20,025 | 1.20% | 21,384 | 1.10% |
| Padre Burgos | 7,375 | 7,593 | 218 | -5.0% | 7,664 | 0.31% | 7,813 | 0.32% | 7,959 | 0.31% |
| Pintuyan | 8,177 | 8,388 | 211 | -4.8% | 8,457 | 0.27% | 8,601 | 0.28% | 8,742 | 0.27% |
| Saint Bernard | 20,760 | 21,363 | 603 | -13.8% | 21,560 | 0.31% | 21,972 | 0.32% | 22,376 | 0.30% |
| San Francisco | 10,438 | 9,543 | -895 | 20.5% | 9,251 | - | 8,640 | -1.13% | 8,041 | -1.19% |
| San Juan | 11,703 | 11,392 | -311 | 7.1% | 11,290 | - | 11,078 | -0.32% | 10,870 | -0.32% |
| San Ricardo | 9,723 | 7,869 | -1,854 | 42.4% | 7,264 | - | 5,998 | -3.14% | 4,757 | -3.79% |
| Silago | 9,733 | 9,785 | 52 | -1.2% | 9,802 | 0.06% | 9,838 | 0.06% | 9,873 | 0.06% |
| Sogod | 31,342 | 31,062 | -280 | 6.4% | 30,970 | - | 30,778 | -0.10% | 30,591 | -0.10% |
| Tomas Oppus | 11,192 | 12,609 | -583 | 13.3% | 12,419 | - | 12,021 | -0.54% | 11,631 | -0.55% |
| Province | 321,940 | 317,565 | -4,375 | 100.0% | 316,137 | - | 313,149 | -0.16% | 310,221 | -0.16% |

Note: Growth rates in 1998, 2004 and 2010 were calculated using compounded formula.

Population by Urban and Rural Area

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 ratio of the urban population of the province to the total population, the provincial averages in 1980 and 1990 were 15.1% and 20.5% and it increased to 24.7% in 1995. The provincial growth rate of 3.94% between 1980 and 1990 slightly decreased to 3.58% in 1995. While, the growth rates of the rural population were 0.18% (1980 - 1990) and -0.65%(1990 - 1995) as provincial averages.

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 | Anahawan | 6,544 | 916 | 14.0% | 7,063 | 2,640 | 11.17% | 37.4% | 6,471 | 2,742 | 0.76% | 42.4% |
| | Bontoc | 22,655 | 3,818 | 16.9% | 24,818 | 4,092 | 0.70% | 16.5% | 24,047 | 3,780 | -1.57% | 15.7% |
| | Hinunangan | 20,568 | 793 | 3.9% | 22,454 | 912 | 1.41% | 4.1% | 22,170 | 1,405 | 9.03% | 6.3% |
| | Hinundayan | 9,746 | 2,187 | 22.4% | 9,965 | 2,443 | 1.11% | 24.5% | 10,617 | 3,847 | 9.51% | 36.2% |
| | Libagon | 10,516 | 1,521 | 14.5% | 11,239 | 1,528 | 0.05% | 13.6% | 10,754 | 1,450 | -1.04% | 13.5% |
| | Liloan | 16,923 | 2,514 | 14.9% | 18,383 | 4,341 | 5.61% | 23.6% | 17,160 | 4,475 | 0.61% | 26.1% |
| | Limasawa | - | - | - | 4,519 | 1,110 | - | 24.6% | 4,927 | 1,183 | 1.28% | 24.0% |
| | Maasin | 59,731 | 11,151 | 18.7% | 64,694 | 13,561 | 1.98% | 21.0% | 63,746 | 25,661 | 13.60% | 40.3% |
| | Macrohon | 18,693 | 1,783 | 9.5% | 20,416 | 7,150 | 14.90% | 35.0% | 20,093 | 6,698 | -1.30% | 33.3% |
| | Malitbog | 16,114 | 2,387 | 14.8% | 15,946 | 2,092 | -1.31% | 13.1% | 17,976 | 2,556 | 4.09% | 14.2% |
| | Padre Burgos | 10,790 | 2,652 | 24.6% | 7,375 | 2,021 | -2.68% | 27.4% | 7,593 | 2,333 | 2.91% | 30.7% |
| | Pintuyan | 7,872 | 838 | 10.6% | 8,177 | 2,894 | 13.19% | 35.4% | 8,388 | 1,010 | - | 12.0% |
| | Saint Bernard | 19,153 | 1,593 | 8.3% | 20,760 | 1,528 | -0.42% | 7.4% | 21,363 | 3,034 | 14.70% | 14.2% |
| | San Francisco | 9,995 | 2,390 | 23.9% | 10,438 | 2,287 | -0.44% | 21.9% | 9,543 | 2,222 | -0.58% | 23.3% |
| | San Juan | 11,614 | 4,113 | 35.4% | 11,703 | 4,148 | 0.08% | 35.4% | 11,392 | 3,800 | -1.74% | 33.4% |
| | San Ricardo | 7,331 | - | 0.0% | 9,723 | 2,097 | - | 21.6% | 7,869 | 695 | - | 8.8% |
| | Silago | 9,323 | 1,537 | 16.5% | 9,733 | 2,027 | 2.81% | 20.8% | 9,785 | 2,114 | 0.84% | 21.6% |
| Sogod | 26,246 | 4,602 | 17.5% | 31,342 | 5,961 | 2.62% | 19.0% | 31,062 | 7,626 | 5.05% | 24.6% | |
| Tomas Oppus | 12,480 | - | 0.0% | 13,192 | 3,065 | - | 23.2% | 12,609 | 1,932 | -8.82% | 15.3% | |
| Province | 296,294 | 44,795 | 15.1% | 321,940 | 65,897 | 3.94% | 20.5% | 317,565 | 78,563 | 3.58% | 24.7% | |
| Rural Area | Anahawan | 6,544 | 5,628 | 86.0% | 7,063 | 4,423 | -2.38% | 62.6% | 2,742 | 3,729 | -2.42% | 57.6% |
| | Bontoc | 22,655 | 18,837 | 83.1% | 24,818 | 20,726 | 0.96% | 83.5% | 3,780 | 20,267 | -0.43% | 84.3% |
| | Hinunangan | 20,568 | 19,775 | 96.1% | 22,454 | 21,542 | 0.86% | 95.9% | 1,405 | 20,765 | -0.43% | 93.7% |
| | Hinundayan | 9,746 | 7,559 | 77.6% | 9,965 | 7,522 | -0.05% | 75.5% | 3,847 | 6,770 | -1.19% | 63.8% |
| | Libagon | 10,516 | 8,995 | 85.5% | 11,239 | 9,711 | 0.77% | 86.4% | 1,450 | 9,304 | -0.59% | 86.5% |
| | Liloan | 16,923 | 14,409 | 85.1% | 18,383 | 14,042 | -0.26% | 76.4% | 4,475 | 12,685 | -1.32% | 73.9% |
| | Limasawa | - | - | - | 4,519 | 3,409 | - | 75.4% | 1,183 | 3,744 | 0.82% | 76.0% |
| | Maasin | 59,731 | 48,550 | 81.3% | 64,694 | 51,133 | 0.51% | 79.0% | 25,661 | 38,085 | -0.28% | 59.7% |
| | Macrohon | 18,693 | 16,910 | 90.5% | 20,416 | 13,266 | -2.40% | 65.0% | 6,698 | 13,395 | -2.31% | 66.7% |
| | Malitbog | 16,114 | 13,727 | 85.2% | 15,946 | 13,854 | 0.09% | 86.9% | 2,556 | 15,420 | 1.40% | 85.8% |
| | Padre Burgos | 10,790 | 8,138 | 75.4% | 7,375 | 5,354 | -4.10% | 72.6% | 2,333 | 5,260 | -0.87% | 69.3% |
| | Pintuyan | 7,872 | 7,034 | 89.4% | 8,177 | 5,283 | -2.82% | 64.6% | 1,010 | 7,378 | 0.15% | 88.0% |
| | Saint Bernard | 19,153 | 17,560 | 91.7% | 20,760 | 19,232 | 0.91% | 92.6% | 3,034 | 18,329 | -0.29% | 85.8% |
| | San Francisco | 9,995 | 7,605 | 76.1% | 10,438 | 8,151 | 0.70% | 78.1% | 2,222 | 7,321 | -1.40% | 76.7% |
| | San Juan | 11,614 | 7,501 | 64.6% | 11,703 | 7,555 | 0.07% | 64.6% | 3,800 | 7,592 | -0.47% | 66.6% |
| | San Ricardo | 7,331 | 7,331 | 100.0% | 9,723 | 7,626 | - | 78.4% | 695 | 7,174 | -3.02% | 91.2% |
| | Silago | 9,323 | 7,786 | 83.5% | 9,733 | 7,706 | -0.10% | 79.2% | 2,114 | 7,671 | -0.16% | 78.4% |
| Sogod | 26,246 | 21,644 | 82.5% | 31,342 | 25,381 | 1.61% | 81.0% | 7,626 | 23,436 | -1.31% | 75.4% | |
| Tomas Oppus | 12,480 | 12,480 | 100.0% | 13,192 | 10,127 | - | 76.8% | 1,932 | 10,677 | -0.62% | 84.7% | |
| Province | 296,294 | 251,499 | 84.9% | 321,940 | 256,043 | 0.18% | 79.5% | 78,563 | 239,002 | -0.65% | 75.3% | |

2) Projection of urban and rural population for the years 1998, 2004 and 2010

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

In the projection of municipal urban population, the following are assumed by short/medium-term and long-term periods.

- Short/Medium-term target: 1998 and 2004

Growth rates between 1990 and 1995 in terms of the profile of urban population to total population by municipality were basically adopted. However, for the municipalities having drastic change of growth rates between the two census periods of 1990 - 1995 and 1980 - 1990 (negative to positive/positive to negative), the average growth rates between 1980 and 1995 were employed in order to avoid a negative growth. These municipalities are Pintuyan and Saint Bernard.

In addition, some modifications were made as follows:

- Municipalities of Hinunangan, Himundayan and Maasin; Respective average growth rates from 1980 to 1995 were employed considering that growth rates between 1990 and 1995 indicated very high increase (about 10% or more).
 - Municipalities of Bontoc, Libagon, San Francisco, San Juan, San Ricardo and Tomas Oppus; Population in 1995 was fixed for short/medium-term to avoid a negative growth rate.
 - Municipality of Macrohon; Population in 1995 was fixed for short/medium-term considering a higher growth rate between 1980 and 1995, although a negative growth rate was recorded between 1990 and 1995.
- Long-term target: 2010

For the long-term projection, the adopted share of urban/rural population in 2004 may be applied for the municipal population in 2010, assuming that the share of urban/rural population in the medium-term period will not drastically change.

Under the above assumptions, the provincial average share of urban population for the year 2010 was arrived at 33.9%, higher than the figures in 1995 (24.7%) and in 1990 (20.5%). Table 8.3.6 presents the projected urban and rural population. The growth rates and shares on rural population were calculated using the estimated rural population.

Table 8.3.6 Population Projection by Urban and Rural Area: 1998, 2004 and 2010

| Municipality | | 1998 | | | | 2004 | | | | 2010 | | | |
|--------------|---------------|---------|-----------------|-------------|--------------|---------|-----------------|-------------|--------------|---------|-----------------|-------------|--------------|
| | | Total | Urban/ Rural | G.R. (%) | Share (%) | Total | Urban/ Rural | G.R. (%) | Share (%) | Total | Urban/ Rural | G.R. (%) | Share (%) |
| Urban Area | Anahawan | 6,278 | 2,805 | 0.76% | 44.7% | 5,874 | 2,936 | 0.76% | 50.0% | 5,478 | 2,738 | - | 50.0% |
| | Bontoc | 23,795 | 3,780 | 0.00% | 15.9% | 23,268 | 3,780 | 0.00% | 16.3% | 22,752 | 3,696 | - | 16.2% |
| | Hinunangan | 22,077 | 1,575 | 3.88% | 7.1% | 21,883 | 1,980 | 3.88% | 9.0% | 21,693 | 1,963 | - | 9.0% |
| | Hinundayan | 10,830 | 4,307 | 3.84% | 42.7% | 11,275 | 5,399 | 3.84% | 52.2% | 11,711 | 5,608 | 0.64% | 52.2% |
| | Libagon | 10,596 | 1,450 | 0.00% | 13.7% | 10,265 | 1,450 | 0.00% | 14.1% | 9,940 | 1,404 | - | 14.1% |
| | Liloan | 16,761 | 4,557 | 0.61% | 27.2% | 15,926 | 4,726 | 0.61% | 29.7% | 15,107 | 4,483 | - | 29.7% |
| | Limasawa | 5,060 | 1,229 | 1.28% | 24.3% | 5,339 | 1,327 | 1.29% | 24.9% | 5,612 | 1,395 | 0.84% | 24.9% |
| | Maasin | 63,436 | 30,316 | 5.71% | 47.8% | 62,788 | 42,311 | 5.71% | 67.4% | 62,153 | 41,883 | - | 67.4% |
| | Macrohon | 19,988 | 6,698 | 0.00% | 33.5% | 19,767 | 6,698 | 0.00% | 33.9% | 19,551 | 6,625 | - | 33.9% |
| | Malitbog | 18,639 | 2,882 | 4.08% | 15.5% | 20,025 | 3,665 | 4.09% | 18.3% | 21,384 | 3,914 | 1.10% | 18.3% |
| | Padre | 7,664 | 2,543 | 2.91% | 33.2% | 7,813 | 3,021 | 2.91% | 38.7% | 7,959 | 3,077 | 0.31% | 38.7% |
| | Pintuyan | 8,457 | 1,048 | 1.24% | 12.4% | 8,601 | 1,129 | 1.25% | 13.1% | 8,742 | 1,148 | 0.28% | 13.1% |
| | Saint Bernard | 21,560 | 3,475 | 4.63% | 16.1% | 21,972 | 4,559 | 4.63% | 20.7% | 22,376 | 4,643 | 0.30% | 20.7% |
| | San Francisco | 9,251 | 2,222 | 0.00% | 24.0% | 8,640 | 2,222 | 0.00% | 25.7% | 8,041 | 2,068 | - | 25.7% |
| | San Juan | 11,290 | 3,800 | 0.00% | 33.7% | 11,078 | 3,800 | 0.00% | 34.3% | 10,870 | 3,729 | - | 34.3% |
| | San Ricardo | 7,264 | 695 | 0.00% | 9.6% | 5,998 | 695 | 0.00% | 11.6% | 4,757 | 551 | - | 11.6% |
| | Silago | 9,802 | 2,168 | 0.84% | 22.1% | 9,838 | 2,280 | 0.84% | 23.2% | 9,873 | 2,288 | 0.06% | 23.2% |
| | Sogod | 30,970 | 8,841 | 5.05% | 28.5% | 30,778 | 11,882 | 5.05% | 38.6% | 30,591 | 11,810 | - | 38.6% |
| | Tomas Oppus | 12,419 | 1,932 | 0.00% | 15.6% | 12,021 | 1,932 | 0.00% | 16.1% | 11,631 | 1,869 | - | 16.1% |
| | Province | 316,137 | 86,323 | 3.19 | 27.4% | 313,149 | 105,792 | 3.45% | 33.9% | 310,221 | 104,892 | - | 33.9% |
| Rural Area | Anahawan | 6,278 | 3,473 | - | 55.3% | 5,874 | 2,938 | -2.75% | 50.0% | 5,478 | 2,740 | - | 50.0% |
| | Bontoc | 23,795 | 20,015 | - | 84.1% | 23,268 | 19,488 | -0.44% | 83.8% | 22,752 | 19,056 | - | 83.8% |
| | Hinunangan | 22,077 | 20,502 | - | 92.9% | 21,883 | 19,903 | -0.49% | 91.0% | 21,693 | 19,730 | - | 91.0% |
| | Hinundayan | 10,830 | 6,523 | - | 60.2% | 11,275 | 5,876 | -1.73% | 52.1% | 11,711 | 6,103 | 0.63% | 52.1% |
| | Libagon | 10,596 | 9,146 | - | 86.3% | 10,265 | 8,815 | -0.61% | 85.9% | 9,940 | 8,536 | - | 85.9% |
| | Liloan | 16,761 | 12,204 | - | 72.8% | 15,926 | 11,200 | -1.42% | 70.3% | 15,107 | 10,624 | - | 70.3% |
| | Limasawa | 5,060 | 3,831 | 0.77% | 75.7% | 5,339 | 4,012 | 0.77% | 75.1% | 5,612 | 4,217 | 0.83% | 75.1% |
| | Maasin | 63,436 | 33,120 | - | 52.2% | 62,788 | 20,477 | -7.70% | 32.6% | 62,153 | 20,270 | - | 32.6% |
| | Macrohon | 19,988 | 13,290 | - | 66.5% | 19,767 | 13,069 | -0.28% | 66.1% | 19,551 | 12,926 | - | 66.1% |
| | Malitbog | 18,639 | 15,757 | 0.72% | 84.5% | 20,025 | 16,360 | 0.63% | 81.7% | 21,384 | 17,470 | 1.10% | 81.7% |
| | Padre | 7,664 | 5,121 | - | 66.8% | 7,813 | 4,792 | -1.10% | 61.3% | 7,959 | 4,882 | 0.31% | 61.3% |
| | Pintuyan | 8,457 | 7,409 | 0.14% | 87.6% | 8,601 | 7,472 | 0.14% | 86.9% | 8,742 | 7,594 | 0.27% | 86.9% |
| | Saint Bernard | 21,560 | 18,085 | - | 83.9% | 21,972 | 17,413 | -0.63% | 79.3% | 22,376 | 17,733 | 0.30% | 79.3% |
| | San Francisco | 9,251 | 7,029 | - | 76.0% | 8,640 | 6,418 | -1.50% | 74.3% | 8,041 | 5,973 | - | 74.3% |
| | San Juan | 11,290 | 7,490 | - | 66.3% | 11,078 | 7,278 | -0.48% | 65.7% | 10,870 | 7,141 | - | 65.7% |
| | San Ricardo | 7,264 | 6,569 | - | 90.4% | 5,998 | 5,303 | -3.51% | 88.4% | 4,757 | 4,206 | - | 88.4% |
| | Silago | 9,802 | 7,634 | - | 77.9% | 9,838 | 7,558 | -0.17% | 76.8% | 9,873 | 7,585 | 0.06% | 76.8% |
| | Sogod | 30,970 | 22,129 | - | 71.5% | 30,778 | 18,896 | -2.60% | 61.4% | 30,591 | 18,781 | - | 61.4% |
| | Tomas Oppus | 12,419 | 10,487 | - | 84.4% | 12,021 | 10,089 | -0.64% | 83.9% | 11,631 | 9,762 | - | 83.9% |
| | Province | 316,137 | 229,814 | - | 72.6% | 313,149 | 207,357 | - | 66.1% | 310,221 | 205,329 | - | 66.1% |

TABLE 827. Projected Number of Households by Urban and Rural Area by Municipality by Target Year

| Name of Municipality | Household Size | | | Number of Households | | | | | | | | | | | | | | |
|----------------------|----------------|-------|-------|----------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | 1995 | | | 1996 | | | 1997 | | | 1998 | | | 1999 | | | 2000 | | |
| | Urban | Rural | Total | Urban | Rural | Total | Urban | Rural | Total | Urban | Rural | Total | Urban | Rural | Total | Urban | Rural | Total |
| Anahawan | 4.69 | 4.56 | 4.62 | 585 | 817 | 1,402 | 598 | 762 | 1,360 | 626 | 644 | 1,270 | 685 | 685 | 1,370 | 685 | 685 | 1,370 |
| Bontoc | 4.99 | 5.09 | 5.08 | 757 | 3,978 | 4,735 | 758 | 3,932 | 4,690 | 758 | 3,829 | 4,587 | 924 | 4,764 | 5,688 | 924 | 4,764 | 5,688 |
| Hinunangan | 4.65 | 4.56 | 4.57 | 302 | 4,549 | 4,851 | 339 | 4,496 | 4,835 | 426 | 4,365 | 4,791 | 491 | 4,933 | 5,424 | 491 | 4,933 | 5,424 |
| Hinundayan | 4.73 | 4.78 | 4.76 | 814 | 1,416 | 2,230 | 911 | 1,365 | 2,276 | 1,141 | 1,229 | 2,370 | 1,402 | 1,526 | 2,928 | 1,402 | 1,526 | 2,928 |
| Libagon | 5.00 | 4.84 | 4.86 | 290 | 1,921 | 2,211 | 290 | 1,890 | 2,180 | 290 | 1,821 | 2,111 | 351 | 2,134 | 2,485 | 351 | 2,134 | 2,485 |
| Liloan | 4.88 | 4.74 | 4.77 | 917 | 2,677 | 3,594 | 934 | 2,575 | 3,509 | 968 | 2,363 | 3,331 | 1,121 | 2,656 | 3,777 | 1,121 | 2,656 | 3,777 |
| Limasawa | 4.85 | 4.98 | 4.95 | 244 | 752 | 996 | 253 | 769 | 1,022 | 274 | 806 | 1,080 | 349 | 1,054 | 1,403 | 349 | 1,054 | 1,403 |
| Maasin (Capital) | 4.84 | 4.72 | 4.77 | 5,298 | 8,062 | 13,360 | 6,264 | 7,017 | 13,281 | 8,742 | 4,338 | 13,080 | 10,471 | 5,068 | 15,539 | 10,471 | 5,068 | 15,539 |
| Macarhon | 4.75 | 4.83 | 4.80 | 1,411 | 2,774 | 4,185 | 1,410 | 2,752 | 4,162 | 1,410 | 2,706 | 4,116 | 1,656 | 3,232 | 4,888 | 1,656 | 3,232 | 4,888 |
| Malibog | 5.14 | 5.31 | 5.28 | 497 | 2,906 | 3,403 | 561 | 2,967 | 3,528 | 713 | 3,081 | 3,794 | 979 | 4,368 | 5,347 | 979 | 4,368 | 5,347 |
| Padre Burgos | 5.23 | 5.11 | 5.14 | 446 | 1,030 | 1,476 | 486 | 1,002 | 1,488 | 578 | 938 | 1,516 | 769 | 1,221 | 1,990 | 769 | 1,221 | 1,990 |
| Pintuyan | 5.08 | 5.25 | 5.23 | 199 | 1,406 | 1,605 | 206 | 1,411 | 1,617 | 222 | 1,423 | 1,645 | 287 | 1,899 | 2,186 | 287 | 1,899 | 2,186 |
| Saint Bernard | 4.82 | 4.95 | 4.93 | 629 | 3,703 | 4,332 | 721 | 3,654 | 4,375 | 946 | 3,518 | 4,464 | 1,161 | 4,433 | 5,594 | 1,161 | 4,433 | 5,594 |
| San Francisco | 4.55 | 4.55 | 4.55 | 488 | 1,610 | 2,098 | 488 | 1,545 | 2,033 | 488 | 1,411 | 1,899 | 517 | 1,493 | 2,010 | 517 | 1,493 | 2,010 |
| San Juan (Cabalian) | 4.55 | 4.58 | 4.57 | 836 | 1,658 | 2,494 | 835 | 1,635 | 2,470 | 835 | 1,589 | 2,424 | 932 | 1,785 | 2,717 | 932 | 1,785 | 2,717 |
| San Ricardo | 4.54 | 5.02 | 4.97 | 153 | 1,430 | 1,583 | 153 | 1,309 | 1,462 | 153 | 1,056 | 1,209 | 138 | 1,052 | 1,190 | 138 | 1,052 | 1,190 |
| Silago | 4.70 | 4.62 | 4.64 | 450 | 1,660 | 2,110 | 461 | 1,652 | 2,113 | 485 | 1,636 | 2,121 | 572 | 1,896 | 2,468 | 572 | 1,896 | 2,468 |
| Sogod | 4.91 | 4.93 | 4.92 | 1,554 | 4,757 | 6,311 | 1,801 | 4,489 | 6,290 | 2,420 | 3,833 | 6,253 | 2,953 | 4,695 | 7,648 | 2,953 | 4,695 | 7,648 |
| Tomas Oppus | 4.98 | 4.85 | 4.87 | 388 | 2,203 | 2,591 | 388 | 2,162 | 2,550 | 388 | 2,080 | 2,468 | 467 | 2,441 | 2,908 | 467 | 2,441 | 2,908 |
| Provincial Total | 4.83 | 4.85 | 4.84 | 16,258 | 49,309 | 65,567 | 17,857 | 47,384 | 65,241 | 21,863 | 42,666 | 64,529 | 26,225 | 51,335 | 77,560 | 26,225 | 51,335 | 77,560 |

8.3.2 School Enrollment Projection

Table 8.3.8 Projected School Enrollment by Municipality by Target Year

| Name of Municipality | 1998 | | | 2004 | | | 2010 | | |
|----------------------|-----------------------|-------------------------|---|-----------------------|-------------------------|---|-----------------------|-------------------------|---|
| | School Age Population | Total Enrollment Number | Public Sch. Enrollment Participation Rate | School Age Population | Total Enrollment Number | Public Sch. Enrollment Participation Rate | School Age Population | Total Enrollment Number | Public Sch. Enrollment Participation Rate |
| Anahawan | 1,702 | 1,690 | 99 | 1,189 | 1,592 | 95 | 1,114 | 1,485 | 95 |
| Bontoc | 7,108 | 6,403 | 90 | 6,403 | 6,603 | 95 | 6,603 | 6,457 | 95 |
| Hinunangan | 6,051 | 5,235 | 87 | 4,720 | 5,098 | 95 | 5,098 | 5,649 | 95 |
| Hinundayan | 2,819 | 2,719 | 96 | 2,310 | 2,783 | 95 | 2,495 | 2,896 | 95 |
| Libagon | 2,992 | 3,039 | 102 | 2,625 | 2,754 | 95 | 2,464 | 2,667 | 95 |
| Liloan | 4,616 | 4,781 | 104 | 4,333 | 4,386 | 95 | 3,728 | 4,160 | 95 |
| Limasawa | 1,571 | 1,271 | 93 | 1,271 | 1,375 | 95 | 1,375 | 1,445 | 95 |
| Maasin (Capital) | 16,796 | 15,357 | 91 | 13,071 | 16,624 | 95 | 14,130 | 16,456 | 95 |
| Macaroni | 5,565 | 5,679 | 102 | 5,166 | 5,228 | 95 | 4,678 | 5,171 | 95 |
| Malibagos | 4,698 | 3,839 | 82 | 3,389 | 4,542 | 90 | 4,038 | 5,121 | 95 |
| Padre Burgos | 2,169 | 1,892 | 87 | 1,407 | 2,100 | 95 | 1,879 | 2,252 | 95 |
| Pinuyan | 2,254 | 1,668 | 74 | 1,668 | 1,834 | 80 | 1,834 | 1,981 | 85 |
| Saint Bernard | 5,991 | 5,108 | 85 | 4,641 | 6,108 | 90 | 4,836 | 6,220 | 95 |
| San Francisco | 2,534 | 2,862 | 113 | 2,393 | 2,367 | 100 | 2,130 | 2,093 | 95 |
| San Juan (Cabanhan) | 3,068 | 2,611 | 85 | 2,611 | 3,010 | 90 | 2,709 | 2,805 | 95 |
| San Ricardo | 2,032 | 2,260 | 110 | 2,260 | 1,694 | 100 | 1,694 | 1,277 | 95 |
| Silago | 2,516 | 2,102 | 84 | 2,102 | 2,273 | 90 | 2,273 | 2,407 | 95 |
| Sogod | 9,047 | 7,992 | 88 | 7,447 | 8,541 | 95 | 7,642 | 8,439 | 95 |
| Tomas Oppus | 3,579 | 3,471 | 97 | 3,056 | 3,464 | 100 | 3,118 | 3,352 | 95 |
| Provincial Total | 86,930 | 79,999 | 92 | 72,062 | 80,939 | 94 | 73,888 | 80,686 | 95 |
| | | | | | | | 85,177 | 72,994 | 86 |

8.3.3 Projection on the Number of Public Utilities

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

| Name of Municipality | Type | 1998 | 2004 | | 2010 | |
|----------------------|---------------------|-------------------------|-----------------------|-------|-----------------------|-------|
| | | No. of Public Utilities | Proposed Construction | Total | Proposed Construction | Total |
| Anabawan | Public Market | 1 | | 1 | | 1 |
| | Bus/Jepney Terminal | | | | | |
| | Parks/Playground | | | | | |
| | Total | 1 | | 1 | | 1 |
| Bontoc | Public Market | 1 | 1 | 2 | | 2 |
| | Bus/Jepney Terminal | | | | | |
| | Parks/Playground | | | | | |
| | Total | 1 | 1 | 2 | | 2 |
| Hinunangan | Public Market | 1 | | 1 | | 1 |
| | Bus/Jepney Terminal | 1 | 1 | 2 | | 2 |
| | Parks/Playground | | | | | |
| | Total | 2 | 1 | 3 | | 3 |
| Hinundayan | Public Market | 1 | | 1 | | 1 |
| | Bus/Jepney Terminal | | | | | |
| | Parks/Playground | 1 | | 1 | | 1 |
| | Total | 2 | | 2 | | 2 |
| Libagon | Public Market | 1 | | 1 | | 1 |
| | Bus/Jepney Terminal | | | | | |
| | Parks/Playground | 1 | | 1 | | 1 |
| | Total | 2 | | 2 | | 2 |
| Liloan | Public Market | 1 | 1 | 2 | | 2 |
| | Bus/Jepney Terminal | 1 | | 1 | | 1 |
| | Parks/Playground | 1 | | 1 | | 1 |
| | Total | 3 | 1 | 4 | | 4 |
| Limasawa | Public Market | | | | | |
| | Bus/Jepney Terminal | | | | | |
| | Parks/Playground | 1 | | 1 | | 1 |
| | Total | 1 | | 1 | | 1 |
| Maasin (Capital) | Public Market | 3 | | 3 | | 3 |
| | Bus/Jepney Terminal | 1 | 1 | 2 | | 2 |
| | Parks/Playground | 1 | | 1 | | 1 |
| | Total | 5 | 1 | 6 | | 6 |
| Macrohon | Public Market | | | | | |
| | Bus/Jepney Terminal | | | | | |
| | Parks/Playground | 1 | | 1 | | 1 |
| | Total | 1 | | 1 | | 1 |
| Malibog | Public Market | 1 | 1 | 2 | | 2 |
| | Bus/Jepney Terminal | | | | | |
| | Parks/Playground | 1 | | 1 | | 1 |
| | Total | 2 | 1 | 3 | | 3 |
| Padre Burgos | Public Market | 1 | | 1 | | 1 |
| | Bus/Jepney Terminal | 1 | | 1 | | 1 |
| | Parks/Playground | 1 | | 1 | | 1 |
| | Total | 3 | | 3 | | 3 |
| Pintuyan | Public Market | | | | 1 | 1 |
| | Bus/Jepney Terminal | | | | | |
| | Parks/Playground | | | | | |
| | Total | | | | 1 | 1 |
| Saint Bernard | Public Market | 1 | | 1 | | 1 |
| | Bus/Jepney Terminal | 1 | 1 | 2 | | 2 |
| | Parks/Playground | 1 | | 1 | | 1 |
| | Total | 3 | 1 | 4 | | 4 |
| San Francisco | Public Market | 1 | | 1 | | 1 |
| | Bus/Jepney Terminal | 1 | | 1 | | 1 |
| | Parks/Playground | 1 | | 1 | | 1 |
| | Total | 3 | | 3 | | 3 |
| San Juan (Cabanian) | Public Market | 1 | | 1 | | 1 |
| | Bus/Jepney Terminal | 1 | | 1 | | 1 |
| | Parks/Playground | 1 | | 1 | | 1 |
| | Total | 3 | | 3 | | 3 |
| San Ricardo | Public Market | | | | 1 | 1 |
| | Bus/Jepney Terminal | | | | | |
| | Parks/Playground | | | | | |
| | Total | | | | 1 | 1 |
| Sitago | Public Market | | | | | |
| | Bus/Jepney Terminal | 1 | | 1 | | 1 |
| | Parks/Playground | 1 | | 1 | | 1 |
| | Total | 2 | | 2 | | 2 |
| Sogod | Public Market | 2 | 1 | 3 | | 3 |
| | Bus/Jepney Terminal | 1 | | 1 | | 1 |
| | Parks/Playground | | | | | |
| | Total | 3 | 1 | 4 | | 4 |
| Tomas Oppus | Public Market | 1 | | 1 | | 1 |
| | Bus/Jepney Terminal | | | | | |
| | Parks/Playground | | | | | |
| | Total | 1 | | 1 | | 1 |
| Provincial Total | Public Market | 17 | 4 | 21 | 2 | 23 |
| | Bus/Jepney Terminal | 9 | 3 | 12 | | 12 |
| | Parks/Playground | 12 | | 12 | | 12 |
| | Total | 38 | 7 | 45 | 2 | 47 |

8.4 Types of Facilities and Implementation Criteria

8.4.1 Water Supply

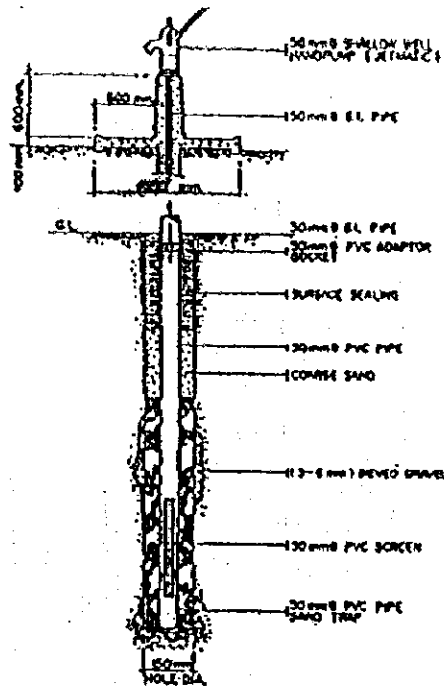
(1) Urban water supply

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

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

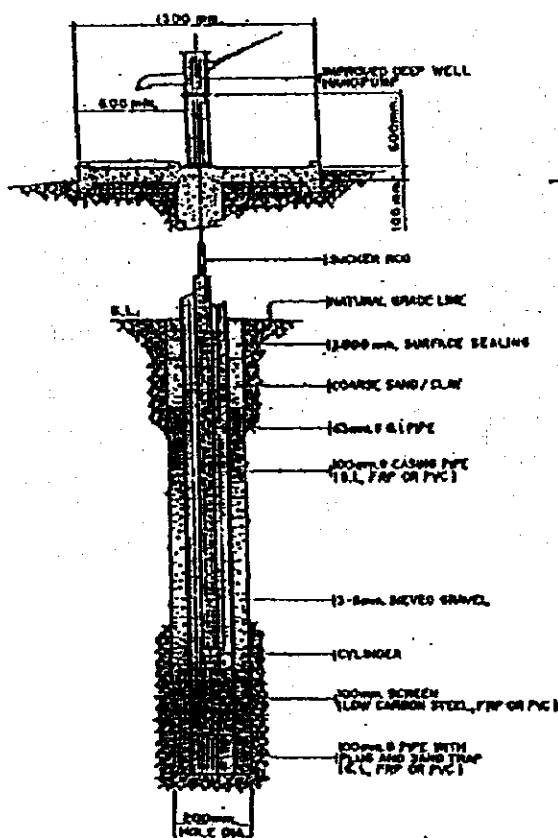
| Name of Municipality | Existing Condition (1998) | | | | | Phase I (2004) | | | | | Phase II (2010) | | | | |
|----------------------|--------------------------------------|--------------------------------------|--------------------------|-------------------------|-----------------------|-------------------------------------|-------------------------|-------------------------------------|--------------------------------|-----------------------|--|--------------------------------|-----------------------|--|------------------------------------|
| | Existing Level III System and Others | | | | | Pop. Served by Level III and Others | | | | | Newly Developed/ Additional Water Source Required (m3/d) | | | | |
| | Urban Population (1998) | No. of Level-III and Operating Brgy. | Pop. Served by Level-III | Pop. Served by Level-II | Total Pop. Served (%) | Level-III Water Source Type | Urban Population (2004) | Additional Pop. Served by Level-III | Total Pop. Served by Level-III | % Served by Level-III | Additional Pop. Served by Level-III | Total Pop. Served by Level-III | % Served by Level-III | Newly Developed/ Additional Water Source Required (m3/d) | Total Water Source Required (m3/d) |
| | | | | | | | | | | | | | | | |
| Abuhawen | 2,803 (Mun) | 1,483 (Brgy) | 1,861 | 1,669 | 69% | SP | 2,936 | 559 | 2,022 | 69% | None | 2,208 | 75% | 100 | 300 |
| Bontoc | 3,789 (Mun) | 1,068 (Brgy) | 1,068 | 2,538 | 67% | DW/SP | 3,780 | 694 | 1,762 | 47% | None | 3,232 | 86% | 100 | 300 |
| Hinunangan | 1,575 (Mun) | 1,226 (Brgy) | 1,226 | 1,427 | 91% | SP | 1,980 | 364 | 1,590 | 80% | None | 1,791 | 90% | 100 | 300 |
| Hinunangan | 4,307 (Mun) | 1,270 (Brgy) | 1,270 | 3,647 | 85% | SP | 5,390 | 992 | 2,362 | 42% | None | 4,659 | 86% | 200 | 300 |
| Ligonan | 1,450 (Mun) | 409 (Brgy) | 409 | 1,187 | 82% | SP | 1,430 | 1,073 | 409 | 28% | None | 1,187 | 82% | 100 | 300 |
| Ligonan | 4,557 (Mun) | 1,075 (Brgy) | 1,075 | 3,959 | 87% | N.A. | 4,726 | 244 | 1,073 | 23% | None | 3,959 | 84% | 100 | 300 |
| Linau | 1,229 (Mun) | 360 (Brgy) | 360 | 360 | 29% | N.A. | 1,377 | 244 | 244 | 18% | None | 604 | 45% | 100 | 300 |
| Linau | 30,316 (Mun) | 10,813 (Brgy) | 10,813 | 24,251 | 80% | SP | 42,311 | 7,771 | 18,386 | 44% | None | 30,022 | 70% | 1,100 | 2,500 |
| Macaron | 6,698 (Mun) | 2,115 (Brgy) | 2,115 | 5,484 | 82% | SP | 6,698 | 673 | 1,913 | 29% | None | 5,484 | 82% | 100 | 300 |
| Macaron | 2,882 (Mun) | 1,240 (Brgy) | 1,240 | 2,129 | 74% | DW | 3,665 | 673 | 2,063 | 56% | None | 2,367 | 78% | 100 | 300 |
| Malibong | 2,543 (Mun) | 2,063 (Brgy) | 2,063 | 2,367 | 93% | N.A. | 3,021 | 207 | 2,063 | 68% | None | 2,367 | 78% | 100 | 300 |
| Padre Burgos | 1,048 (Mun) | 283 (Brgy) | 283 | 283 | 27% | SP | 1,129 | 837 | 437 | 39% | None | 490 | 43% | 200 | 300 |
| Pinuyan | 3,475 (Mun) | 1,844 (Brgy) | 1,844 | 3,400 | 98% | SP | 4,559 | 837 | 4,237 | 94% | None | 4,237 | 94% | 200 | 600 |
| San Bernardino | 2,222 (Mun) | 1,716 (Brgy) | 1,716 | 1,956 | 88% | SP | 2,222 | 1,844 | 1,844 | 83% | None | 1,956 | 88% | 100 | 300 |
| San Francisco | 3,800 (Mun) | 487 (Brgy) | 487 | 3,216 | 85% | SP | 3,800 | 693 | 693 | 18% | None | 2,414 | 64% | 100 | 300 |
| San Juan | 695 (Mun) | 824 (Brgy) | 824 | 2,041 | 94% | SP | 2,280 | 128 | 615 | 27% | None | 615 | 27% | 100 | 300 |
| San Ricardo | 1,668 (Mun) | 1,226 (Brgy) | 1,226 | 1,427 | 86% | SP | 1,980 | 364 | 1,590 | 80% | None | 1,791 | 90% | 100 | 300 |
| Silgo | 8,841 (Mun) | 5,383 (Brgy) | 5,383 | 5,705 | 65% | SP | 11,832 | 2,182 | 7,765 | 65% | None | 7,888 | 66% | 300 | 1,100 |
| Sogod | 1,032 (Mun) | 771 (Brgy) | 771 | 1,302 | 70% | SP | 1,952 | 771 | 771 | 40% | None | 1,302 | 70% | 100 | 200 |
| Tomas Oropesa | 86,323 | 35,938 | 35,938 | 30,172 | 66,120 | 77% | 105,792 | 15,330 | 51,288 | 48% | None | 81,460 | 77% | 3,300 | 7,700 |
| Provincial Total | | | | | | | | | | | | | | | |

(Note) W/D: Water District, P: Province, M: Municipality, A: Association
Unit consumption: 100 lpd
Additional population served in 2010 includes the served population that will be absorbed by Level III system.

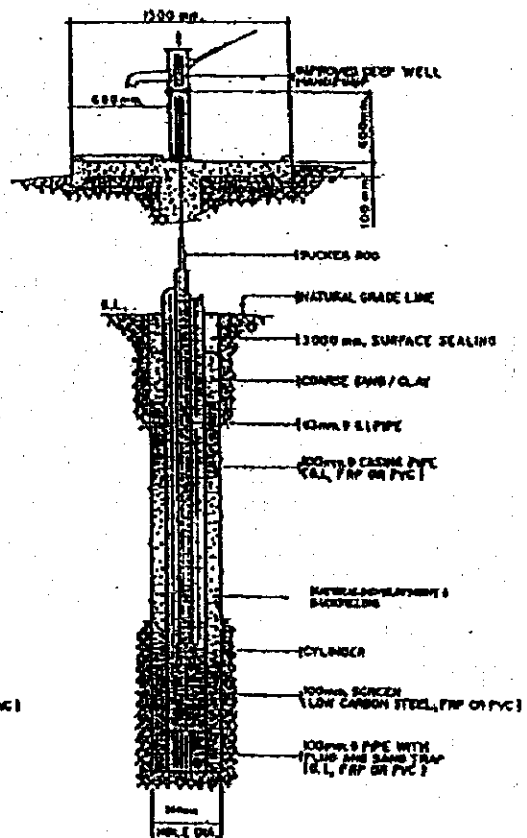


OPEN HOLE DRILLING & GRAVEL PACK METHOD

SHALLOW WELLS



OPEN HOLE DRILLING & GRAVEL PACK METHOD

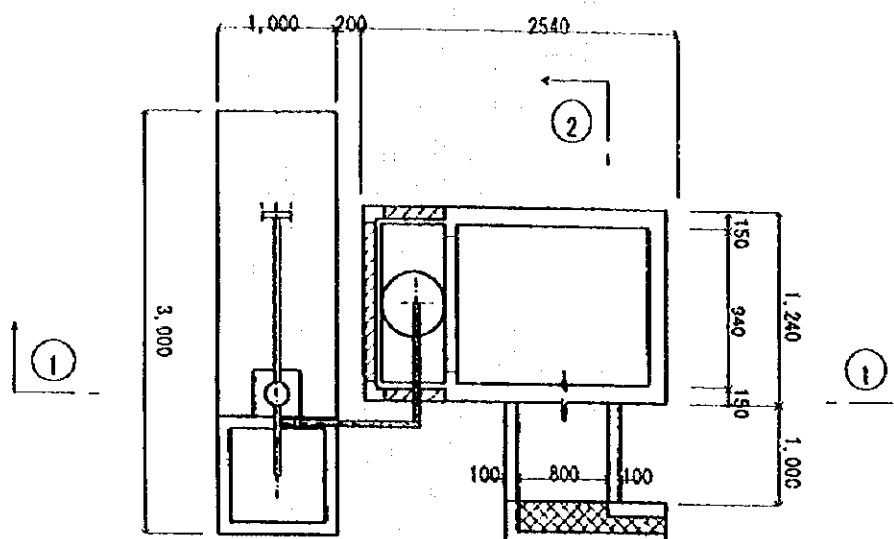


OPEN HOLE DRILLING & NATURAL GRAVEL PACK METHOD

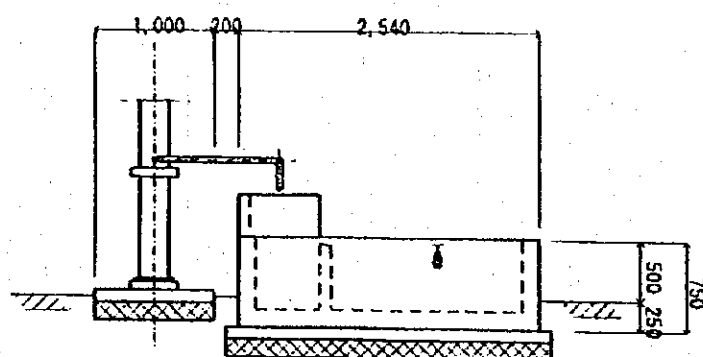
DEEP WELLS

FIGURE 8.4.1

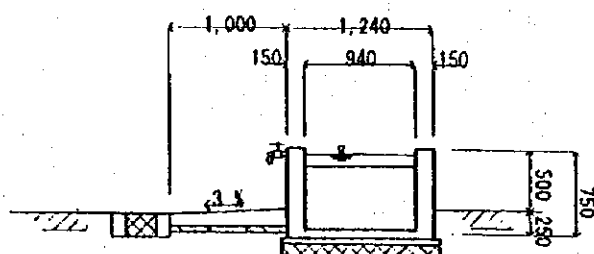
TYPICAL STRUCTURE OF LEVEL I WELL FACILITY



PLAN $S = 1/30$



Section ① — ① $S = 1/30$



Section ② — ② $S = 1/30$

Figure 8.4.2(a) Iron Removal Facility

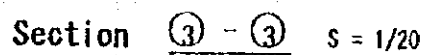
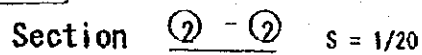
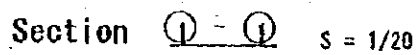
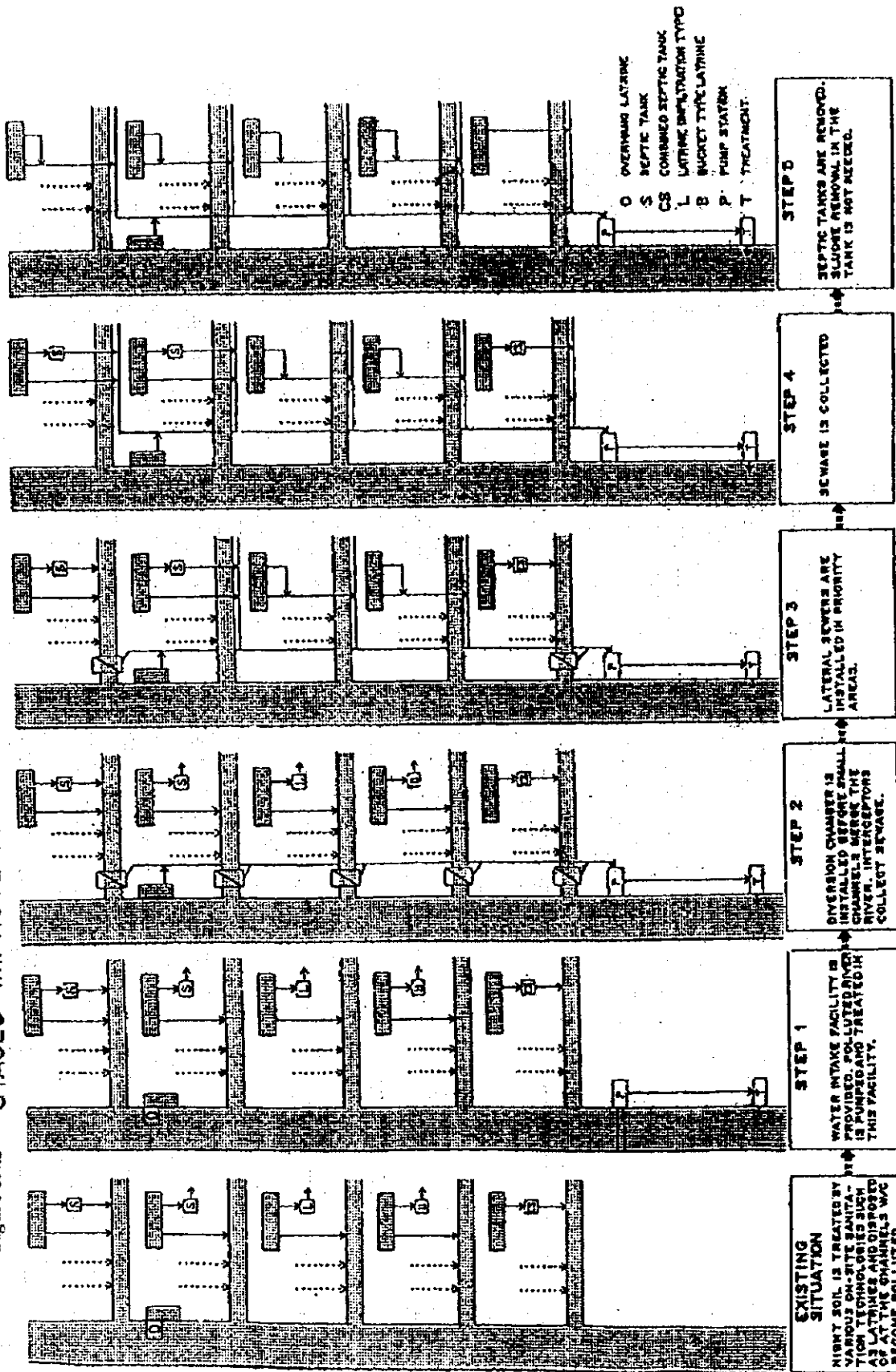


Figure 8.4.3 STAGED IMPROVEMENT IN SEWAGE COLLECTION METHOD



8.5 Service Coverage by Target Year

8.5.1 Water Supply

(1) Population to be served by Level I facilities under ADB-assisted project

With regard to development of rural water supply by municipality, the ADB-assisted Rural Water Supply and Sanitation Sector Project (RW3SP) plays a major role in medium-term plan of PW4SP. To set up the target, additional population to be served under this project shall be subject to a due consideration.

Physical targets:

Physical targets for rural water supply are construction of shallow well (109 units), deep well (95 units) and developed spring (66 units) in the whole province. A total of 270 units were allocated by the province to the recipient municipalities as shown in Table 8.5.1.

Table 8.5.1 Proposed Number of Facility to be Constructed under ADB-Assisted RW3SP (1998-2001)

| Municipality | Class | Shallow Well | Deep Well | Developed Spring | Total |
|-------------------------|-------|--------------|-----------|------------------|------------|
| Anahawan | 5th | 0 | 10 | 7 | 17 |
| Bontoc | 5th | 1 | 16 | 7 | 24 |
| Hinunangan | 4th | 0 | 0 | 2 | 2 |
| Hinundayan | 4th | 0 | 1 | 2 | 3 |
| Libagon | 5th | 0 | 0 | 2 | 2 |
| Liloan | 5th | 0 | 1 | 0 | 1 |
| Limasawa | 6th | 21 | 2 | 1 | 24 |
| Maasin | 2nd | 4 | 37 | 14 | 55 |
| Macrohon | 5th | 6 | 4 | 7 | 17 |
| Malitbog | 5th | 20 | 1 | 6 | 27 |
| Padre Burgos | 5th | 30 | 8 | 5 | 43 |
| Pintuyan | 5th | 0 | 0 | 3 | 3 |
| Saint Bernard | 5th | 0 | 0 | 1 | 1 |
| San Francisco | 5th | 0 | 1 | 1 | 2 |
| San Juan | 5th | 1 | 0 | 0 | 1 |
| San Ricardo | 5th | 0 | 0 | 0 | 0 |
| Silago | 5th | 7 | 4 | 1 | 12 |
| Sogod | 4th | 16 | 3 | 3 | 22 |
| Tomas Oppus | 5th | 3 | 7 | 4 | 14 |
| Provincial Total | | 109 | 95 | 66 | 270 |

Current status

Implementation of the project was originally scheduled to commence in 1997 with 5 years implementation period (1997-2001), however, the construction of the facilities has not yet started as of now due to delay of fund release. In addition, delivery of required materials has not completed for the 1st year allocation. Thus, the above physical targets

under the ADB-assisted project may be a major part of the requirements in the medium-term plan (year 2000 - 2004).

Additional population to be served:

The additional population to be served under the ADB-assisted project is assumed at 24,300 persons based on the total number of physical targets (270 units) applying served population of 90 persons per one Level I facility (serving 6 persons/III x 15 IIIs/unit).

(2) Population to be served by target year

Phase I

For urban area, the additional service coverage was estimated by Level III service. For rural area, the population to be served under the ADB-assisted project is the target of rural water supply. The additional service coverage by Level II system was not considered, since Level II systems with untapped springs were not included in the ADB-assisted project.

Phase II

For urban area, the population served by Level I and II facilities in the 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.

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

| Name of Municipality | Area | Population Served in the Base Year | | | | Phase I Coverage (2004) | | | | | | | | | |
|----------------------|-------|------------------------------------|----------|---------|--------|-------------------------|----------|---------|------------------|----------|---------|------------------------------------|----------|---------|--------|
| | | Level III | | | Total | Total Population | | | Service Coverage | | | Additional Population to be Served | | | |
| | | Level III | Level II | Level I | | Level III | Level II | Level I | Level III | Level II | Level I | Level III | Level II | Level I | Total |
| Anahawan | Urban | 1,483 | 186 | | 1,669 | 2,936 | 2,022 | 186 | 2,208 | | | 539 | | | 539 |
| | Rural | 955 | 1,016 | 1,306 | 3,277 | 2,938 | 955 | 1,016 | 2,321 | 2,321 | | | | 1,530 | 1,530 |
| | Total | 2,438 | 1,202 | 1,306 | 4,946 | 5,874 | 2,977 | 1,202 | 2,321 | 6,500 | 539 | 539 | | 1,530 | 2,069 |
| Bontoc | Urban | 1,068 | 1,012 | 458 | 2,538 | 3,780 | 1,762 | 1,012 | 458 | 3,232 | | 694 | | | 694 |
| | Rural | 1,160 | 5,486 | 5,590 | 12,236 | 19,488 | 1,160 | 5,486 | 7,402 | 14,048 | | | | 2,160 | 2,160 |
| | Total | 2,228 | 6,498 | 6,048 | 14,774 | 23,268 | 2,922 | 6,498 | 7,860 | 17,280 | 694 | 694 | | 2,160 | 2,854 |
| Hinunangan | Urban | 1,226 | | 201 | 1,427 | 1,980 | 1,590 | | 201 | 1,791 | | 364 | | | 364 |
| | Rural | 6,097 | 5,463 | 5,556 | 17,116 | 19,903 | 6,097 | 5,463 | 5,139 | 16,699 | | | | 180 | 180 |
| | Total | 7,323 | 5,463 | 5,757 | 18,543 | 21,883 | 7,687 | 5,463 | 5,340 | 18,490 | 364 | 364 | | 180 | 544 |
| Hinundayan | Urban | 1,270 | 1,782 | 615 | 3,667 | 5,399 | 2,262 | 1,782 | 615 | 4,659 | | 992 | | | 992 |
| | Rural | 2,328 | 3,990 | | 6,318 | 5,876 | 2,328 | 3,642 | 5,970 | | | | | 270 | 270 |
| | Total | 3,598 | 5,772 | 615 | 9,985 | 11,275 | 4,590 | 5,424 | 615 | 10,629 | 992 | 992 | | 270 | 1,262 |
| Libagon | Urban | 409 | 300 | 478 | 1,187 | 1,450 | 409 | 300 | 478 | | | | | | |
| | Rural | 859 | 5,532 | 1,247 | 7,638 | 8,815 | 859 | 5,532 | 1,194 | 7,585 | | | | 180 | 180 |
| | Total | 1,268 | 5,832 | 1,725 | 8,825 | 10,265 | 1,268 | 5,832 | 1,672 | 8,772 | | | | 180 | 180 |
| Liloan | Urban | 1,075 | 40 | 2,844 | 3,959 | 4,726 | 1,075 | 40 | 2,844 | 3,959 | | | | | |
| | Rural | 349 | 3,692 | 6,916 | 10,957 | 11,200 | 349 | 3,692 | 6,129 | 10,170 | | | | 90 | 90 |
| | Total | 1,424 | 3,732 | 9,760 | 14,916 | 15,926 | 1,424 | 3,732 | 8,973 | 14,129 | | | | 90 | 90 |
| Limasawa | Urban | | | 360 | 360 | 1,327 | 244 | | 360 | 604 | | 244 | | | 244 |
| | Rural | | 721 | 538 | 1,259 | 4,012 | | 721 | 2,763 | 3,484 | | | | 2,160 | 2,160 |
| | Total | | 721 | 898 | 1,619 | 5,339 | 244 | 721 | 3,123 | 4,088 | 244 | 244 | | 2,160 | 2,404 |
| Maasin (Capital) | Urban | 10,815 | 4,948 | 8,488 | 24,251 | 42,311 | 18,587 | 4,948 | 8,488 | 32,023 | 7,772 | | | | 7,772 |
| | Rural | 5,210 | 12,763 | 2,223 | 20,196 | 20,477 | 5,210 | 12,231 | | 17,441 | | | | 4,950 | 4,950 |
| | Total | 16,025 | 17,711 | 10,711 | 44,447 | 62,788 | 23,797 | 17,179 | 8,488 | 49,464 | 7,772 | | | 4,950 | 12,722 |
| Macrohon | Urban | 2,115 | | 3,369 | 5,484 | 6,698 | 2,115 | | 3,369 | 5,484 | | | | | |
| | Rural | 797 | 7,101 | 2,568 | 10,466 | 13,069 | 797 | 7,101 | 3,957 | 11,855 | | | | 1,530 | 1,530 |
| | Total | 2,912 | 7,101 | 5,937 | 15,950 | 19,767 | 2,912 | 7,101 | 7,326 | 17,339 | | | | 1,530 | 1,530 |

Table 8.5.2 Population to be Served in Phase I (Water Supply) (Cont'd)

| Name of Municipality | Area | Population Served in the Base Year | | | | Phase I Coverage (2004) | | | | | | | | |
|----------------------|-------|------------------------------------|----------|---------|------------------|-------------------------|-----------|----------|------------------------------------|---------|-----------|----------|---------|--------|
| | | Population Served in the Base Year | | | Total Population | Service Coverage | | | Additional Population to be Served | | | | | |
| | | Level III | Level II | Level I | | Total | Level III | Level II | Level I | Total | Level III | Level II | Level I | Total |
| Malitbog | Urban | 1,240 | | 889 | 2,129 | 3,665 | 1,913 | | 889 | 2,802 | 673 | | | 673 |
| | Rural | | 3,352 | 5,139 | 8,491 | 16,360 | | 3,352 | 7,912 | 11,264 | | | 2,430 | 2,430 |
| | Total | 1,240 | 3,352 | 6,028 | 10,620 | 20,025 | 1,913 | 3,352 | 8,801 | 14,066 | 673 | | 2,430 | 3,103 |
| Padre Burgos | Urban | 2,065 | | 302 | 2,367 | 3,021 | 2,065 | | 302 | 2,367 | | | | |
| | Rural | 1,123 | 1,226 | 1,880 | 4,229 | 4,792 | 1,123 | 1,226 | 5,498 | 7,847 | | | 3,870 | 3,870 |
| | Total | 3,188 | 1,226 | 2,182 | 6,596 | 7,813 | 3,188 | 1,226 | 5,800 | 10,214 | | | 3,870 | 3,870 |
| Pintuyan | Urban | 283 | | | 283 | 1,129 | 490 | | | 490 | 207 | | | 207 |
| | Rural | 889 | 2,127 | | 3,016 | 7,472 | 889 | 2,127 | 318 | 3,334 | | | 270 | 270 |
| | Total | 1,172 | 2,127 | | 3,299 | 8,601 | 1,379 | 2,127 | 318 | 3,824 | 207 | | 270 | 477 |
| Saint Bernard | Urban | 3,400 | | | 3,400 | 4,559 | 4,237 | | | 4,237 | 837 | | | 837 |
| | Rural | 4,976 | 2,350 | 7,181 | 14,507 | 17,413 | 4,976 | 2,350 | 6,694 | 14,020 | | | 90 | 90 |
| | Total | 8,376 | 2,350 | 7,181 | 17,907 | 21,972 | 9,213 | 2,350 | 6,694 | 18,257 | 837 | | 90 | 927 |
| San Francisco | Urban | 1,844 | | 112 | 1,956 | 2,222 | 1,844 | | 112 | 1,956 | | | | |
| | Rural | | 3,049 | 567 | 3,616 | 6,418 | | 3,049 | 404 | 3,453 | | | 180 | 180 |
| | Total | 1,844 | 3,049 | 679 | 5,572 | 8,640 | 1,844 | 3,049 | 516 | 5,409 | | | 180 | 180 |
| San Juan (Cabalitan) | Urban | | | 1,716 | 1,716 | 3,800 | 698 | | 1,716 | 2,414 | 698 | | | 698 |
| | Rural | | 4,399 | 885 | 5,284 | 7,278 | | 4,399 | 858 | 5,257 | | | 90 | 90 |
| | Total | | 4,399 | 2,601 | 7,000 | 11,078 | 698 | 4,399 | 2,574 | 7,671 | 698 | | 90 | 788 |
| San Ricardo | Urban | 487 | | | 487 | 695 | 615 | | | 615 | 128 | | | 128 |
| | Rural | 1,120 | 3,991 | 109 | 5,220 | 5,303 | 1,120 | 3,069 | | 4,189 | | | | |
| | Total | 1,607 | 3,991 | 109 | 5,707 | 5,998 | 1,735 | 3,069 | | 4,804 | 128 | | | 128 |
| Silago | Urban | 824 | 384 | 833 | 2,041 | 2,280 | 824 | 384 | 833 | 2,041 | | | | |
| | Rural | 3,390 | 2,841 | 845 | 7,076 | 7,558 | 3,390 | 2,841 | 1,878 | 8,109 | | | 1,080 | 1,080 |
| | Total | 4,214 | 3,225 | 1,678 | 9,117 | 9,838 | 4,214 | 3,225 | 2,711 | 10,150 | | | 1,080 | 1,080 |
| Sogod | Urban | 5,583 | 123 | | 5,706 | 11,882 | 7,766 | 123 | | 7,889 | 2,183 | | | 2,183 |
| | Rural | 9,584 | 3,792 | 879 | 14,255 | 18,896 | 9,584 | 3,792 | 697 | 14,073 | | | 1,980 | 1,980 |
| | Total | 15,167 | 3,915 | 879 | 19,961 | 30,778 | 17,350 | 3,915 | 697 | 21,962 | 2,183 | | 1,980 | 4,163 |
| Tomas Oppus | Urban | 771 | 342 | 389 | 1,502 | 1,932 | 771 | 342 | 389 | 1,502 | | | | |
| | Rural | | 8,168 | | 8,168 | 10,089 | | 8,168 | 961 | 9,129 | | | 1,260 | 1,260 |
| | Total | 771 | 8,510 | 389 | 9,670 | 12,021 | 771 | 8,510 | 1,350 | 10,631 | | | 1,260 | 1,260 |
| Provincial Total | Urban | 35,958 | 9,117 | 21,054 | 66,129 | 105,792 | 51,289 | 9,117 | 21,054 | 81,460 | 15,331 | | | 15,331 |
| | Rural | 38,837 | 81,059 | 43,429 | 163,325 | 207,357 | 38,837 | 79,257 | 54,125 | 172,219 | | | 24,300 | 24,300 |
| | Total | 74,795 | 90,176 | 64,483 | 229,454 | 313,149 | 90,126 | 88,374 | 75,179 | 253,679 | 15,331 | | 24,300 | 39,631 |

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

| Name of Municipality | Area | Population Served in 2004 | | | | 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 | |
| | | | | | | | | | | | | | | | |
| Anahawan | Urban | 2,022 | 186 | | 2,208 | 2,738 | 2,601 | | | 2,601 | 579 | | | | 579 |
| | Rural | 955 | 1,016 | 2,321 | 4,292 | 2,740 | 955 | 1,016 | 2,321 | | | | 4,292 | | |
| | Total | 2,977 | 1,202 | 2,321 | 6,500 | 5,478 | 3,556 | 1,016 | 2,321 | | | | 6,893 | 579 | |
| Bontoc | Urban | 1,762 | 1,012 | 458 | 3,232 | 3,696 | 3,511 | | | 3,511 | 1,749 | | | | 1,749 |
| | Rural | 1,160 | 5,486 | 7,402 | 14,048 | 19,056 | 1,160 | 5,486 | 11,076 | | | | 17,722 | 3,674 | |
| | Total | 2,922 | 6,498 | 7,860 | 17,280 | 22,752 | 4,671 | 5,486 | 11,076 | | | | 21,233 | 5,423 | |
| Hinunangan | Urban | 1,590 | | 201 | 1,791 | 1,963 | 1,865 | | | 1,865 | 275 | | | | 275 |
| | Rural | 6,097 | 5,463 | 5,139 | 16,699 | 19,730 | 6,097 | 5,463 | 6,789 | | | | 18,349 | 1,650 | |
| | Total | 7,687 | 5,463 | 5,340 | 18,490 | 21,693 | 7,962 | 5,463 | 6,789 | | | | 20,214 | 1,925 | |
| Hinundayan | Urban | 2,262 | 1,782 | 615 | 4,659 | 5,608 | 5,328 | | | 5,328 | 3,066 | | | | 3,066 |
| | Rural | 2,328 | 3,642 | | 5,970 | 6,103 | 2,328 | 3,642 | | | | | 5,970 | | |
| | Total | 4,590 | 5,424 | 615 | 10,629 | 11,711 | 7,656 | 3,642 | | | | | 11,298 | 3,066 | |
| Libagon | Urban | 409 | 300 | 478 | 1,187 | 1,404 | 1,334 | | | 1,334 | 925 | | | | 925 |
| | Rural | 859 | 5,532 | 1,194 | 7,585 | 8,536 | 859 | 5,532 | 1,547 | | | | 7,938 | 353 | |
| | Total | 1,268 | 5,832 | 1,672 | 8,772 | 9,940 | 2,193 | 5,532 | 1,547 | | | | 9,272 | 1,278 | |
| Liloan | Urban | 1,075 | 40 | 2,844 | 3,959 | 4,483 | 4,259 | | | 4,259 | 3,184 | | | | 3,184 |
| | Rural | 349 | 3,692 | 6,129 | 10,170 | 10,624 | 349 | 3,692 | 6,129 | | | | 10,170 | | |
| | Total | 1,424 | 3,732 | 8,973 | 14,129 | 15,107 | 4,608 | 3,692 | 6,129 | | | | 14,429 | 3,184 | |
| Limasawa | Urban | 244 | | 360 | 604 | 1,395 | 1,325 | | | 1,325 | 1,081 | | | | 1,081 |
| | Rural | | 721 | 2,763 | 3,484 | 4,217 | | 721 | 3,201 | | | | 3,922 | 438 | |
| | Total | 244 | 721 | 3,123 | 4,088 | 5,612 | 1,325 | 721 | 3,201 | | | | 5,247 | 1,519 | |
| Maasin (Capital) | Urban | 18,587 | 4,948 | 8,488 | 32,023 | 41,883 | 39,789 | | | 39,789 | 21,202 | | | | 21,202 |
| | Rural | 5,210 | 12,231 | | 17,441 | 20,270 | 5,210 | 12,231 | 1,410 | | | | 18,851 | 1,410 | |
| | Total | 23,797 | 17,179 | 8,488 | 49,464 | 62,153 | 44,999 | 12,231 | 1,410 | | | | 58,640 | 22,612 | |
| Macrohon | Urban | 2,115 | | 3,369 | 5,484 | 6,625 | 6,294 | | | 6,294 | 4,179 | | | | 4,179 |
| | Rural | 797 | 7,101 | 3,957 | 11,855 | 12,926 | 797 | 7,101 | 4,123 | | | | 12,021 | 166 | |
| | Total | 2,912 | 7,101 | 7,326 | 17,339 | 19,551 | 7,091 | 7,101 | 4,123 | | | | 18,315 | 166 | |

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

| Name of Municipality | Area | Population Served in 2004 | | | | Total Population | Service Coverage | | | Additional Population to be Served | | | | | | |
|----------------------|-------|---------------------------|----------|---------|---------|------------------|------------------|----------|---------|------------------------------------|-----------|----------|---------|--------|--------|--------|
| | | Level III | Level II | Level I | Total | | Level III | Level II | Level I | Total | Level III | Level II | Level I | Total | | |
| | | | | | | | | | | | | | | | | |
| Malitbog | Urban | 1,913 | | 889 | 2,802 | 3,914 | 3,718 | | | | | | 3,718 | 1,805 | | 1,805 |
| | Rural | | 3,352 | 7,912 | 11,264 | 17,470 | | 3,352 | 12,895 | | | | 16,247 | | 4,983 | 4,983 |
| | Total | 1,913 | 3,352 | 8,801 | 14,066 | 21,384 | 3,718 | 3,718 | 12,895 | 1,805 | | | 19,965 | 1,805 | 4,983 | 6,788 |
| | | 2,065 | | 302 | 2,367 | 3,077 | 2,923 | | | | 858 | | 2,923 | 858 | | 858 |
| Padre Burgos | Urban | 1,123 | 1,226 | 5,498 | 7,847 | 4,882 | 1,123 | 1,226 | 5,498 | | | | 7,847 | | | |
| | Rural | 3,188 | 1,226 | 5,800 | 10,214 | 7,959 | 4,046 | 1,226 | 5,498 | | | | 10,770 | 858 | | 858 |
| | Total | 490 | | | 490 | 1,148 | 1,091 | | | | 601 | | 1,091 | 601 | | 601 |
| | | 889 | 2,127 | 318 | 3,334 | 7,594 | 889 | | 2,127 | 4,046 | | | 7,062 | | 3,728 | 3,728 |
| Pintuyan | Rural | 1,379 | 2,127 | 318 | 3,824 | 8,742 | 1,980 | 2,127 | 4,046 | | | | 8,153 | 601 | | 601 |
| | Total | 4,237 | | | 4,237 | 4,643 | 4,411 | | | | 174 | | 4,411 | 174 | | 174 |
| | Urban | 4,976 | 2,350 | 6,694 | 14,020 | 17,733 | 4,976 | 2,350 | 9,166 | | | | 16,492 | | 2,472 | 2,472 |
| | Rural | 9,213 | 2,350 | 6,694 | 18,257 | 22,376 | 9,387 | 2,350 | 9,166 | | | 174 | 20,903 | 174 | 2,472 | 2,646 |
| Saint Bernard | Total | 1,844 | | 112 | 1,956 | 2,068 | 1,965 | | | | 121 | | 1,965 | 121 | | 121 |
| | Urban | | 3,049 | 404 | 3,453 | 5,973 | | 3,049 | 2,506 | | | | 5,555 | | 2,102 | 2,102 |
| | Rural | 1,844 | 3,049 | 516 | 5,409 | 8,041 | 1,965 | 3,049 | 2,506 | | | 121 | 7,520 | 121 | 2,102 | 2,223 |
| | Total | 698 | | 1,716 | 2,414 | 3,729 | 3,543 | | | | | 2,845 | 3,543 | 2,845 | | 2,845 |
| San Francisco | Urban | | 4,399 | 858 | 5,257 | 7,141 | | 4,399 | 2,242 | | | | 6,641 | | 1,384 | 1,384 |
| | Rural | 698 | 4,399 | 2,574 | 7,671 | 10,870 | 3,543 | 4,399 | 2,242 | | | | 10,184 | 2,845 | 1,384 | 4,229 |
| | Total | 615 | | | 615 | 551 | 615 | | | | | | 615 | | | |
| | Urban | | 3,069 | | 4,189 | 4,206 | 1,120 | 3,069 | | | | | 4,189 | | | |
| San Ricardo | Rural | 1,120 | 3,069 | | 4,189 | 4,206 | 1,120 | 3,069 | | | | | 4,189 | | | |
| | Total | 1,735 | 3,069 | | 4,804 | 4,757 | 1,735 | 3,069 | | | | | 4,804 | | | |
| | Urban | 824 | 384 | 833 | 2,041 | 2,288 | 2,174 | | | | | | 2,174 | 1,350 | | 1,350 |
| | Rural | 3,390 | 2,841 | 1,878 | 8,109 | 7,585 | 3,390 | 2,841 | 1,878 | | | | 8,109 | | | |
| Silago | Total | 4,214 | 3,225 | 2,711 | 10,150 | 9,873 | 5,564 | 2,841 | 1,878 | | | | 10,283 | 1,350 | | 1,350 |
| | Urban | 7,766 | 123 | | 7,889 | 11,810 | 11,220 | | | | | | 11,220 | 3,454 | | 3,454 |
| | Rural | 9,584 | 3,792 | 697 | 14,073 | 18,781 | 9,584 | 3,792 | 4,090 | | | | 17,466 | | 3,393 | 3,393 |
| | Total | 17,350 | 3,915 | 697 | 21,962 | 30,591 | 20,804 | 3,792 | 4,090 | | | | 28,686 | 3,454 | 3,393 | 6,847 |
| Sogod | Urban | 771 | 342 | 389 | 1,502 | 1,869 | 1,776 | | | | | | 1,776 | 1,005 | | 1,005 |
| | Rural | | 8,168 | 961 | 9,129 | 9,762 | | 8,168 | 961 | | | | 9,129 | | | |
| | Total | 771 | 8,510 | 1,350 | 10,631 | 11,631 | 1,776 | 8,168 | 961 | | | | 10,905 | 1,005 | | 1,005 |
| | Urban | 51,289 | 9,117 | 21,054 | 81,460 | 104,892 | 99,742 | | | | | | 99,742 | 48,453 | | 48,453 |
| Tomas Oppus | Rural | 38,837 | 79,257 | 54,125 | 172,219 | 205,329 | 38,837 | 79,257 | 4,090 | | | | 17,466 | | 25,753 | 25,753 |
| | Total | 90,126 | 88,374 | 75,179 | 253,679 | 310,221 | 138,579 | 79,257 | 4,090 | | | | 28,686 | 3,454 | 25,753 | 74,206 |
| | Urban | | | | | | | | | | | | | | | |
| | Rural | | | | | | | | | | | | | | | |
| Provincial Total | Total | | | | | | | | | | | | | | | |
| | Urban | | | | | | | | | | | | | | | |
| | Rural | | | | | | | | | | | | | | | |
| | Total | | | | | | | | | | | | | | | |

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

| Name of Municipality | Area | No. of Household Served in the Based Year | | | Phase I Coverage (2004) | | | | | | |
|----------------------|-------|---|------------|---------|-------------------------|------------------|--------------------|------------|---------|------------------------------------|-------|
| | | Flush | Pour Flush | VIP/Dry | Total | Total No. of HHs | Household Coverage | | | Additional No. of HHs to be Served | |
| | | | | | | | Flush | Pour Flush | VIP/Dry | Flush | Total |
| Anahawan | Urban | 10 | 567 | | 577 | 626 | 10 | 567 | | 577 | |
| | Rural | 5 | 650 | | 655 | 644 | 5 | 650 | | 655 | |
| | Total | 15 | 1,217 | | 655 | 1,270 | 15 | 1,217 | | 1,232 | |
| Bontoc | Urban | 100 | 585 | | 685 | 758 | 100 | 585 | | 685 | |
| | Rural | 50 | 2,906 | | 2,956 | 3,829 | 34 | 3,336 | | 430 | 430 |
| | Total | 150 | 3,491 | | 2,956 | 4,587 | 134 | 3,921 | | 4,055 | 430 |
| Hinunangan | Urban | 30 | 259 | | 289 | 426 | 38 | 345 | | 383 | 94 |
| | Rural | 20 | 4,156 | | 4,176 | 4,365 | 20 | 4,156 | | 4,176 | |
| | Total | 50 | 4,415 | | 4,176 | 4,791 | 58 | 4,501 | | 4,559 | 94 |
| Hinundayan | Urban | 45 | 755 | | 800 | 1,141 | 103 | 924 | | 1,027 | 227 |
| | Rural | 17 | 1,303 | | 1,320 | 1,229 | 17 | 1,303 | | 1,320 | |
| | Total | 62 | 2,058 | | 1,320 | 2,370 | 120 | 2,227 | | 2,347 | 227 |
| Libagon | Urban | 4 | 273 | | 277 | 290 | 4 | 273 | | 277 | |
| | Rural | 2 | 1,695 | | 1,697 | 1,821 | 2 | 1,695 | | 1,697 | |
| | Total | 6 | 1,968 | | 1,697 | 2,111 | 6 | 1,968 | | 1,974 | |
| Liloan | Urban | 23 | 790 | | 813 | 968 | 87 | 784 | | 871 | 64 |
| | Rural | 8 | 2,344 | | 2,352 | 2,363 | 8 | 2,344 | | 2,352 | |
| | Total | 31 | 3,134 | | 2,352 | 3,331 | 95 | 3,128 | | 3,223 | 64 |
| Limasawa | Urban | | 234 | | 234 | 274 | 25 | 222 | | 247 | 25 |
| | Rural | | 706 | | 706 | 806 | | 709 | | 709 | 3 |
| | Total | | 940 | | 706 | 1,080 | 25 | 931 | | 956 | 28 |
| Maasin (Capital) | Urban | 140 | 4,047 | | 4,187 | 8,742 | 787 | 7,081 | | 7,868 | 3,034 |
| | Rural | 45 | 5,361 | | 5,406 | 4,338 | 45 | 5,361 | | 5,406 | |
| | Total | 185 | 9,408 | | 5,406 | 13,080 | 832 | 12,442 | | 13,274 | 3,034 |
| Macrohon | Urban | | 1,130 | | 1,130 | 1,410 | 127 | 1,142 | | 1,269 | 12 |
| | Rural | | 2,317 | | 2,317 | 2,706 | 24 | 2,357 | | 2,381 | 40 |
| | Total | | 3,447 | | 2,317 | 4,116 | 151 | 3,499 | | 3,650 | 52 |

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

| Name of Municipality | Area | No. of Household Served in the Based Year | | | | Phase I Coverage (2004) | | | | | | |
|----------------------|-------|---|------------|---------|--------|-------------------------|--------------------|------------|---------|------------------------------------|-------|------------|
| | | Flush | Pour Flush | VIP/Dry | Total | Total No. of HHs | Household Coverage | | | Additional No. of HHs to be Served | | |
| | | | | | | | Flush | Pour Flush | VIP/Dry | Total | Flush | Pour Flush |
| Malitbog | Urban | 40 | 476 | | 516 | 713 | 64 | 578 | | 642 | 24 | 102 |
| | Rural | | 2,489 | | 2,489 | 3,081 | | 2,711 | | 2,711 | | 222 |
| | Total | 40 | 2,965 | | 2,489 | 3,794 | 64 | 3,289 | | 3,353 | 24 | 324 |
| Padre Burgos | Urban | 18 | 166 | | 184 | 578 | 52 | 468 | | 520 | 34 | 302 |
| | Rural | 4 | 982 | | 986 | 938 | 4 | 982 | | 986 | | |
| | Total | 22 | 1,148 | | 986 | 1,516 | 56 | 1,450 | | 1,506 | 34 | 302 |
| Pintuyan | Urban | | 142 | | 142 | 222 | 20 | 180 | | 200 | 20 | 38 |
| | Rural | | 1,347 | | 1,347 | 1,423 | | 1,347 | | 1,347 | | |
| | Total | | 1,489 | | 1,347 | 1,645 | 20 | 1,527 | | 1,547 | 20 | 38 |
| Saint Bernard | Urban | 69 | 545 | | 614 | 946 | 85 | 766 | | 851 | 16 | 221 |
| | Rural | 298 | 2,794 | | 3,092 | 3,518 | 31 | 3,065 | | 3,096 | | 271 |
| | Total | 367 | 3,339 | | 3,092 | 4,464 | 116 | 3,331 | | 3,947 | 16 | 492 |
| San Francisco | Urban | 26 | 360 | | 386 | 488 | 44 | 395 | | 439 | 18 | 35 |
| | Rural | 9 | 1,349 | | 1,358 | 1,411 | 9 | 1,349 | | 1,358 | | |
| | Total | 35 | 1,709 | | 1,358 | 1,899 | 53 | 1,744 | | 1,797 | 18 | 35 |
| San Juan (Cabalian) | Urban | 50 | 450 | | 500 | 835 | 75 | 677 | | 752 | 25 | 227 |
| | Rural | | 1,026 | | 1,026 | 1,589 | | 1,398 | | 1,398 | | 372 |
| | Total | 50 | 1,476 | | 1,026 | 2,424 | 75 | 2,075 | | 2,150 | 25 | 599 |
| San Ricardo | Urban | | 118 | | 118 | 153 | 14 | 124 | | 138 | 14 | 6 |
| | Rural | | 1,286 | | 1,286 | 1,056 | | 1,286 | | 1,286 | | |
| | Total | | 1,404 | | 1,286 | 1,209 | 14 | 1,410 | | 1,424 | 14 | 6 |
| Silago | Urban | | 430 | | 430 | 483 | 44 | 393 | | 437 | 44 | |
| | Rural | | 1,595 | | 1,595 | 1,636 | | 1,595 | | 1,595 | | |
| | Total | | 2,025 | | 1,595 | 2,121 | 44 | 1,988 | | 2,032 | 44 | |
| Sogod | Urban | 45 | 1,361 | | 1,406 | 2,420 | 218 | 1,960 | | 2,178 | 173 | 599 |
| | Rural | 19 | 2,748 | | 2,767 | 3,833 | 34 | 3,339 | | 3,373 | 15 | 591 |
| | Total | 64 | 4,109 | | 2,767 | 6,253 | 252 | 5,299 | | 5,551 | 188 | 1,190 |
| Tomas Oppus | Urban | 11 | 368 | | 379 | 388 | 11 | 368 | | 379 | | |
| | Rural | 36 | 1,996 | | 2,032 | 2,080 | 36 | 1,996 | | 2,032 | | |
| | Total | 47 | 2,364 | | 2,032 | 2,468 | 47 | 2,364 | | 2,411 | | |
| Provincial Total | Urban | 611 | 13,056 | | 13,667 | 21,863 | 1,908 | 17,332 | | 19,740 | 1,297 | 4,831 |
| | Rural | 513 | 39,050 | | 39,563 | 42,666 | 269 | 40,979 | | 41,248 | 39 | 1,929 |
| | Total | 1,124 | 52,106 | | 53,230 | 64,529 | 2,177 | 58,811 | | 60,988 | 1,336 | 6,760 |

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

| Name of Municipality | No. households Served in 2004 | | | | Phase II Coverage (2010) | | | | | | | | |
|----------------------|-------------------------------|-------|------------|------------------|--------------------------|-------|--------|------------|------------------------------------|-------|-------|------------|---------|
| | Area | Total | | 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 |
| Anahawan | Urban | 10 | 567 | 577 | 685 | 326 | 325 | | 651 | 316 | | | 316 |
| | Rural | 5 | 650 | 655 | 685 | 5 | 650 | | 655 | | | | |
| | Total | 15 | 1,217 | 1,232 | 1,370 | 331 | 975 | | 1,306 | 316 | | | 316 |
| | Urban | 100 | 585 | 685 | 924 | 439 | 439 | | 878 | 339 | | | 339 |
| Bontoc | Rural | 34 | 3,336 | 3,370 | 4,764 | 886 | 3,545 | | 4,431 | 852 | 209 | | 1,061 |
| | Total | 134 | 3,921 | 4,055 | 5,688 | 1,325 | 3,984 | | 5,309 | 1,191 | 209 | | 1,400 |
| | Urban | 38 | 345 | 383 | 491 | 233 | 233 | | 466 | 195 | | | 195 |
| | Rural | 20 | 4,156 | 4,176 | 4,933 | 918 | 3,670 | | 4,588 | 898 | | | 898 |
| Hinunangan | Total | 58 | 4,501 | 4,559 | 5,424 | 1,151 | 3,903 | | 5,054 | 1,093 | | | 1,093 |
| | Urban | 103 | 924 | 1,027 | 1,402 | 666 | 666 | | 1,332 | 563 | | | 563 |
| | Rural | 17 | 1,303 | 1,320 | 1,526 | 284 | 1,135 | | 1,419 | 267 | | | 267 |
| | Total | 120 | 2,227 | 2,347 | 2,928 | 950 | 1,801 | | 2,751 | 830 | | | 830 |
| Libagon | Urban | 4 | 273 | 277 | 351 | 167 | 166 | | 333 | 163 | | | 163 |
| | Rural | 2 | 1,695 | 1,697 | 2,134 | 397 | 1,588 | | 1,985 | 395 | | | 395 |
| | Total | 6 | 1,968 | 1,974 | 2,485 | 564 | 1,754 | | 2,318 | 558 | | | 558 |
| | Urban | 87 | 784 | 871 | 1,121 | 533 | 532 | | 1,065 | 446 | | | 446 |
| Liloan | Rural | 8 | 2,344 | 2,352 | 2,656 | 349 | 2,121 | | 2,470 | 341 | | | 341 |
| | Total | 95 | 3,128 | 3,223 | 3,777 | 882 | 2,653 | | 3,535 | 787 | | | 787 |
| | Urban | 25 | 222 | 247 | 349 | 166 | 166 | | 332 | 141 | | | 141 |
| | Rural | 709 | | 709 | 1,054 | | 980 | | 980 | 271 | | | 271 |
| Limasawa | Total | 25 | 931 | 956 | 1,403 | 166 | 1,146 | | 1,312 | 141 | 271 | | 412 |
| | Urban | 787 | 7,081 | 7,868 | 10,471 | 4,974 | 4,973 | | 9,947 | 4,187 | | | 4,187 |
| | Rural | 45 | 5,361 | 5,406 | 5,068 | 45 | 5,361 | | 5,406 | | | | |
| | Total | 832 | 12,442 | 13,274 | 15,539 | 5,019 | 10,334 | | 15,353 | 4,187 | | | 4,187 |
| Maasin (Capital) | Urban | 127 | 1,142 | 1,269 | 1,656 | 787 | 786 | | 1,573 | 660 | | | 660 |
| | Rural | 24 | 2,357 | 2,381 | 3,232 | 601 | 2,405 | | 3,006 | 577 | 48 | | 625 |
| | Total | 151 | 3,499 | 3,650 | 4,888 | 1,388 | 3,191 | | 4,579 | 1,237 | 48 | | 1,285 |

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

| Name of Municipality | Area | No. households Served in 2004 | | | | Phase II Coverage (2010) | | | | | | | |
|----------------------|-------|-------------------------------|------------|---------|--------|--------------------------|--------------------|------------|---------|------------------------------------|--------|------------|--------|
| | | Flush | Pour Flush | VIP/Dry | Total | Total No. of HHs | Household Coverage | | | Additional No. of HHs to be Served | | | |
| | | | | | | | Flush | Pour Flush | VIP/Dry | Total | Flush | Pour Flush | Total |
| Malitbog | Urban | 64 | 578 | | 642 | 979 | 465 | 465 | | 930 | 401 | | 401 |
| | Rural | | 2,711 | | 2,711 | 4,368 | | 4,062 | | 4,062 | | 1,351 | 1,351 |
| | Total | 64 | 3,289 | | 3,353 | 5,347 | 465 | 4,527 | | 4,992 | 401 | 1,351 | 1,752 |
| | | | | | | | | | | | | | |
| Padre Burgos | Urban | 52 | 468 | | 520 | 769 | 366 | 366 | | 731 | 314 | | 314 |
| | Rural | 4 | 982 | | 986 | 1,221 | 227 | 909 | | 1,136 | 223 | | 223 |
| | Total | 56 | 1,450 | | 1,506 | 1,990 | 593 | 1,274 | | 1,867 | 537 | | 537 |
| | | | | | | | | | | | | | |
| Pintuyan | Urban | 20 | 180 | | 200 | 287 | 137 | 136 | | 273 | 117 | | 117 |
| | Rural | | 1,347 | | 1,347 | 1,899 | 353 | 1,413 | | 1,766 | 353 | 66 | 419 |
| | Total | 20 | 1,527 | | 1,547 | 2,186 | 490 | 1,549 | | 2,039 | 470 | 66 | 536 |
| | | | | | | | | | | | | | |
| Saint Bernard | Urban | 85 | 766 | | 851 | 1,161 | 552 | 551 | | 1,103 | 467 | | 467 |
| | Rural | 31 | 3,065 | | 3,096 | 4,433 | 825 | 3,298 | | 4,123 | 794 | 233 | 1,027 |
| | Total | 116 | 3,831 | | 3,947 | 5,594 | 1,377 | 3,849 | | 5,226 | 1,261 | 233 | 1,494 |
| | | | | | | | | | | | | | |
| San Francisco | Urban | 44 | 395 | | 439 | 517 | 246 | 245 | | 491 | 202 | | 202 |
| | Rural | 9 | 1,349 | | 1,358 | 1,493 | 9 | 1,379 | | 1,388 | | 30 | 30 |
| | Total | 53 | 1,744 | | 1,797 | 2,010 | 255 | 1,624 | | 1,879 | 202 | 30 | 232 |
| | | | | | | | | | | | | | |
| San Juan (Cabalian) | Urban | 75 | 677 | | 752 | 932 | 443 | 442 | | 885 | 368 | | 368 |
| | Rural | | 1,398 | | 1,398 | 1,785 | | 1,660 | | 1,660 | | 262 | 262 |
| | Total | 75 | 2,075 | | 2,150 | 2,717 | 443 | 2,102 | | 2,545 | 368 | 262 | 630 |
| | | | | | | | | | | | | | |
| San Ricardo | Urban | 14 | 124 | | 138 | 138 | 14 | 124 | | 138 | | | |
| | Rural | | 1,286 | | 1,286 | 1,052 | | 1,286 | | 1,286 | | | |
| | Total | 14 | 1,410 | | 1,424 | 1,190 | 14 | 1,410 | | 1,424 | | | |
| | | | | | | | | | | | | | |
| Siliago | Urban | 44 | 393 | | 437 | 572 | 272 | 271 | | 543 | 228 | | 228 |
| | Rural | | 1,595 | | 1,595 | 1,896 | 353 | 1,410 | | 1,763 | 353 | | 353 |
| | Total | 44 | 1,988 | | 2,032 | 2,468 | 625 | 1,681 | | 2,306 | 581 | | 581 |
| | | | | | | | | | | | | | |
| Sogod | Urban | 218 | 1,960 | | 2,178 | 2,953 | 1,403 | 1,402 | | 2,805 | 1,185 | | 1,185 |
| | Rural | 34 | 3,339 | | 3,373 | 4,695 | 873 | 3,493 | | 4,366 | 839 | 154 | 993 |
| | Total | 252 | 5,299 | | 5,551 | 7,648 | 2,276 | 4,895 | | 7,171 | 2,024 | 154 | 2,178 |
| | | | | | | | | | | | | | |
| Tomas Oppus | Urban | 11 | 368 | | 379 | 467 | 222 | 222 | | 444 | 211 | | 211 |
| | Rural | 36 | 1,996 | | 2,032 | 2,441 | 36 | 2,234 | | 2,270 | | 238 | 238 |
| | Total | 47 | 2,364 | | 2,411 | 2,908 | 258 | 2,456 | | 2,714 | 211 | 238 | 449 |
| | | | | | | | | | | | | | |
| Provincial Total | Urban | 1,908 | 17,832 | | 19,740 | 26,225 | 12,411 | 12,509 | | 24,920 | 10,503 | | 10,503 |
| | Rural | 269 | 40,979 | | 41,248 | 51,335 | 6,161 | 42,599 | | 48,760 | 5,892 | 2,862 | 8,754 |
| | Total | 2,177 | 58,811 | | 60,988 | 77,560 | 18,572 | 55,108 | | 73,680 | 16,395 | 2,862 | 19,257 |

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 (1998) | Projected No. of Public School Student in 2004 | Phase I Coverage (2004) | | 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 |
| Anahawan | 1,189 | 1,114 | 1,114 | (75) | 1,040 | 1,040 | |
| Bontoc | 3,600 | 6,603 | 4,500 | 900 | 6,457 | 6,134 | 1,634 |
| Hinunangan | 4,600 | 5,098 | 4,705 | 105 | 5,054 | 4,801 | 96 |
| Hinundayan | 1,800 | 2,495 | 2,140 | 340 | 2,591 | 2,461 | 321 |
| Libagon | 2,320 | 2,464 | 2,371 | 51 | 2,386 | 2,267 | |
| Liloan | 4,333 | 3,728 | 3,728 | (605) | 3,536 | 3,536 | |
| Limasawa | 1,200 | 1,375 | 1,359 | 159 | 1,445 | 1,373 | 14 |
| Maasin (Capital) | 9,360 | 14,130 | 11,685 | 2,325 | 13,988 | 13,289 | 1,604 |
| Macrohon | 4,000 | 4,678 | 4,296 | 296 | 4,627 | 4,396 | 100 |
| Malibog | 3,280 | 4,038 | 3,830 | 550 | 4,582 | 4,353 | 523 |
| Padre Burgos | 1,120 | 1,879 | 1,576 | 456 | 1,914 | 1,818 | 242 |
| Pintuyan | 1,668 | 1,834 | 1,706 | 38 | 1,981 | 1,882 | 176 |
| Saint Bernard | 4,641 | 4,886 | 4,741 | 100 | 4,976 | 4,727 | |
| San Francisco | 2,160 | 2,130 | 2,360 | 200 | 1,762 | 1,762 | |
| San Juan (Cabalian) | 1,920 | 2,709 | 2,289 | 369 | 2,805 | 2,665 | 376 |
| San Ricardo | 2,260 | 1,694 | 1,694 | (566) | 1,277 | 1,277 | |
| Silago | 2,102 | 2,273 | 2,149 | 47 | 2,407 | 2,287 | 138 |
| Sogod | 5,760 | 7,642 | 6,801 | 1,041 | 7,149 | 6,792 | |
| Tomas Oppus | 3,056 | 3,118 | 3,456 | 400 | 3,017 | 3,017 | |
| Provincial Total | 60,369 | 73,888 | 66,500 | 6,131 | 72,994 | 69,877 | 5,224 |

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

| Name of Municipality | Type | Coverage in Base Year (1998) | | | Phase I Coverage (2004) | | | 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 | |
| Anahawan | Public Market | 1 | 1 | 1 | | 1 | 1 | | 1 | |
| | Bus/Jeepney Terminal | | | | | | | | | |
| | Parks/Playground | | | | | | | | | |
| | Total | 1 | 1 | 1 | | 1 | 1 | | 1 | |
| Bontoc | Public Market | 1 | 1 | 2 | 1 | 2 | 2 | | 2 | |
| | Bus/Jeepney Terminal | | | | | | | | | |
| | Parks/Playground | | | | | | | | | |
| | Total | 1 | 1 | 2 | 1 | 2 | 2 | | 2 | |
| Hinunangan | Public Market | 1 | 1 | 1 | | 1 | 1 | | 1 | |
| | Bus/Jeepney Terminal | 1 | 1 | 2 | 1 | 2 | 2 | | 2 | |
| | Parks/Playground | | | | | | | | | |
| | Total | 2 | 2 | 3 | 1 | 3 | 3 | | 3 | |
| Hinundayan | Public Market | 1 | 1 | 1 | | 1 | 1 | | 1 | |
| | Bus/Jeepney Terminal | | | | | | | | | |
| | Parks/Playground | 1 | 1 | 1 | | 1 | 1 | | 1 | |
| | Total | 2 | 2 | 2 | | 2 | 2 | | 2 | |
| Libagon | Public Market | 1 | 1 | 1 | | 1 | 1 | | 1 | |
| | Bus/Jeepney Terminal | | | | | | | | | |
| | Parks/Playground | 1 | 1 | 1 | | 1 | 1 | | 1 | |
| | Total | 2 | 2 | 2 | | 2 | 2 | | 2 | |
| Liloan | Public Market | 1 | 1 | 1 | | 1 | 1 | | 1 | |
| | Bus/Jeepney Terminal | 1 | 1 | 1 | | 1 | 1 | | 1 | |
| | Parks/Playground | 1 | 1 | 1 | | 1 | 1 | | 1 | |
| | Total | 3 | 3 | 4 | 1 | 4 | 4 | | 4 | |
| Limasawa | Public Market | | | | | | | | | |
| | Bus/Jeepney Terminal | | | | | | | | | |
| | Parks/Playground | 2 | 2 | 2 | | 2 | 2 | | 2 | |
| | Total | 2 | 2 | 2 | | 2 | 2 | | 2 | |

Table 8.5.7 Additional Number of Public Utilities with Sanitary Toilets in Phase I and II (Cont'd)

| Name of Municipality | Type | Coverage in Base Year (1998) | | | Phase I Coverage (2004) | | | 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 | |
| Maasin (Capital) | Public Market | 3 | 3 | 3 | | 3 | 3 | | 3 | |
| | Bus/JEEPney Terminal | 1 | 1 | 2 | 1 | 2 | 2 | | 2 | |
| | Parks/Playground | 1 | 1 | 1 | | 1 | 1 | | 1 | |
| | Total | 5 | 5 | 6 | 1 | 6 | 6 | | 6 | |
| Macrohon | Public Market | | | | | | | | | |
| | Bus/JEEPney Terminal | | | | | | | | | |
| | Parks/Playground | 1 | 1 | 1 | | 1 | 1 | | 1 | |
| | Total | 1 | 1 | 1 | | 1 | 1 | | 1 | |
| Malibog | Public Market | 1 | 1 | 2 | 1 | 2 | 2 | | 2 | |
| | Bus/JEEPney Terminal | | | | | | | | | |
| | Parks/Playground | 1 | 1 | 1 | | 1 | 1 | | 1 | |
| | Total | 2 | 2 | 3 | 1 | 3 | 3 | | 3 | |
| Padre Burgos | Public Market | 1 | 1 | 1 | | 1 | 1 | | 1 | |
| | Bus/JEEPney Terminal | 1 | 1 | 1 | | 1 | 1 | | 1 | |
| | Parks/Playground | 1 | 1 | 1 | | 1 | 1 | | 1 | |
| | Total | 3 | 3 | 3 | | 3 | 3 | | 3 | |
| Pintuyan | Public Market | | | | | | 1 | 1 | 1 | |
| | Bus/JEEPney Terminal | | | | | | | | | |
| | Parks/Playground | | | | | | | | | |
| | Total | | | | | | | | | |
| Saint Bernard | Public Market | 1 | 1 | 1 | | 1 | 1 | | 1 | |
| | Bus/JEEPney Terminal | 1 | 1 | 2 | 1 | 2 | 2 | | 2 | |
| | Parks/Playground | 1 | 1 | 1 | | 1 | 1 | | 1 | |
| | Total | 3 | 3 | 4 | 1 | 4 | 4 | | 4 | |
| San Francisco | Public Market | 1 | 1 | 1 | | 1 | 1 | | 1 | |
| | Bus/JEEPney Terminal | 1 | 1 | 1 | | 1 | 1 | | 1 | |
| | Parks/Playground | 1 | 1 | 1 | | 1 | 1 | | 1 | |
| | Total | 3 | 3 | 3 | | 3 | 3 | | 3 | |

Table 8.5.7 Additional Number of Public Utilities with Sanitary Toilets in Phase I and II (Cont'd)

| Name of Municipality | Type | Coverage in Base Year (1998) | | | Phase I Coverage (2004) | | | 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 | |
| San Juan (Cabalian) | Public Market | 1 | 1 | 1 | | 1 | 1 | | 1 | |
| | Bus/Jeepney Terminal | 1 | 1 | 1 | | 1 | 1 | | 1 | |
| | Parks/Playground | 1 | 1 | 1 | | 1 | 1 | | 1 | |
| | Total | 3 | 3 | 3 | | 3 | 3 | | 3 | |
| San Ricardo | Public Market | | | | | | 1 | 1 | 1 | |
| | Bus/Jeepney Terminal | | | | | | | | | |
| | Parks/Playground | | | | | | 1 | 1 | 1 | |
| | Total | | | | | | 1 | 1 | 1 | |
| Silago | Public Market | | | | | | | | | |
| | Bus/Jeepney Terminal | 1 | 1 | 1 | | 1 | 1 | | 1 | |
| | Parks/Playground | 1 | 1 | 1 | | 1 | 1 | | 1 | |
| | Total | 2 | 2 | 2 | | 2 | 2 | | 2 | |
| Sogod | Public Market | 2 | 2 | 3 | 1 | 3 | 3 | | 3 | |
| | Bus/Jeepney Terminal | 1 | 1 | 1 | | 1 | 1 | | 1 | |
| | Parks/Playground | | | | | | | | | |
| | Total | 3 | 3 | 4 | 1 | 4 | 4 | | 4 | |
| Tomas Oppus | Public Market | 1 | 1 | 1 | | 1 | 1 | | 1 | |
| | Bus/Jeepney Terminal | | | | | | | | | |
| | Parks/Playground | | | | | | | | | |
| | Total | 1 | 1 | 1 | | 1 | 1 | | 1 | |
| Provincial Total | Public Market | 17 | 17 | 21 | 4 | 21 | 23 | 2 | 23 | |
| | Bus/Jeepney Terminal | 9 | 9 | 12 | 3 | 12 | 12 | | 12 | |
| | Parks/Playground | 13 | 13 | 13 | | 13 | 13 | | 13 | |
| | Total | 39 | 39 | 46 | 7 | 46 | 48 | 2 | 48 | |