#### JAPAN INTERNATIONAL COOPERATION AGENCY

DEPARTMENT OF THE INTERIOR AND LOCAL GOVERNMENT
THE REPUBLIC OF THE PHILIPPINES

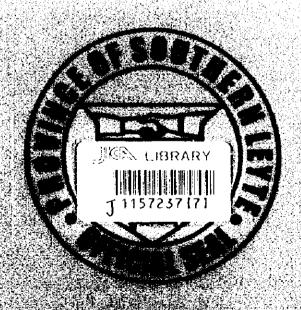
# THE STUDY ON THE PROVINCIAL WATER SUPPLY, SEWERAGE AND SANITATION SECTOR PLAN IN THE REPUBLIC OF THE PHILIPPINES

VOLUME II - [6]

#### SUPPORTING REPORT

PROVINCIAL WATER SUPPLY, SEWERAGE AND SANITATION SECTOR PLAN
FOR THE PROVINCE OF

#### SOUTHERN LEYTE



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#### JAPAN INTERNATIONAL COOPERATION AGENCY

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#### **VOLUME II**

#### SUPPORTING REPORT

PROVINCIAL WATER SUPPLY, SEWERAGE AND SANITATION SECTOR PLAN FOR THE PROVINCE OF

SOUTHERN LEYTE



DECEMBER 1999
NIPPON JOGESUIDO SEKKEI CO., LTD.

1157237 (7)

# PROVINCIAL WATER SUPPLY, SEWERAGE AND SANITATION SECTOR PLAN

#### **VOLUME II SUPPORTING REPORT**

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# PROVINCIAL WATER SUPPLY, SEWERAGE AND SANITATION SECTOR PLAN

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# PROVINCIAL WATER SUPPLY, SEWERAGE AND SANITATION SECTOR PLAN

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## BACKGROUND INFORMATION AND EXISTING CONDITIONS



- I. INTRODUCTION
- 1.3 The Provincial Plan for the Province of Southern Leyte
- 1.3.1 Preparation of the Plan

#### MINUTES OF DISCUSSIONS

ON

#### THE INCEPTION REPORT

FOR

# THE STUDY ON PROVINCIAL WATER SUPPLY, SEWERAGE AND SANITATION SECTOR PLANS

FOR

VISAYAS AND MINDANAO

IN

#### THE REPUBLIC OF THE PHILIPPINES

AGREED UPON BETWEEN

#### THE DEPARTMENT OF THE INTERIOR AND

LOCAL GOVERNMENT

AND

THE STUDY TEAM OF

JAPAN INTERNATIONAL COOPERATION AGENCY

MR. NORMANDO J. TOLEDO

Director

Office of the Project Development

Services

Dept. of the Interior and Local Government

MANILA, JANUARY 26, 1998

MR. MASATOSHI MOMOSE

Team Leader, Study Team

Japan International Cooperation

Agency

Japan International Cooperation Agency (hereinaster referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation programs of the Government of Japan, dispatched the Study Team to the Republic of the Philippines on January 13, 1998 to conduct "The Study on Provincial Water Supply, Sewerage and Sanitation Sector Plans for Visayas and Mindanao" (hereinaster referred to as "the Study") in accordance with the Implementing Arrangement for the Study executed between the JICA and the Department of the Interior and Local Government (hereinaster referred to as "DILG") on August 27, 1997.

A series of discussions were made on the Inception Report for the Study between the Study Team and the officials of DILG and other agencies concerned. In the course of the discussions, both parties have agreed with the general approach and methodology, and implementation arrangements detailed in the Inception Report. Also agreed upon were the changes made as to which provinces are to be covered in 1st batch and 2nd batch (refer to 1. Study Area). The list of attendees in the series of discussions is presented in Appendix A.

#### 1. Study Area

The subject twenty-one (21) provinces were grouped into four batches in the "Implementing Arrangement on the Study". However, a delay in the organization of the Provincial Sector Planning Team (PSPT) in the 1st batch provinces of Misamis Oriental and Surigao del Sur prompted their transfer to the 2nd batch. Instead, Davao del Sur and Davao Oriental from the 2nd batch whose PSPTs were already formed were moved up in their place. In this connection, the DILG completed to exchange MOA with the provinces on the participation and full support by the provinces.

The present study area covers the following 21 provinces grouped into four batches.

1 <sup>st</sup> BATCH	2 <sup>nd</sup> BATCH	3 <sup>rd</sup> BATCH	4 <sup>th</sup> BATCH
1. Agusan del Norte	1. Davao	I. Biliran	1. Aklan
2. Agusan del Sur	2. Misamis Oriental	2. Eastern Samar	2. Antique
3. Davao del Sur	3. Sarangani	3. Leyte	3. Capiz
4. Davao Oriental	4. South Cotabato	4. Northern Samar	4. Iloilo
5. Surigao del Norte	5. Surigao del Sur	5. Southern Leyte	5. Negros
		6. Western Samar	Occidental

With regard to Davao province, the separation into two provinces is currently under legislative process. Upon the formalization of an additional province, the total number of the provinces in the study area would be 22. The DILG has requested that the forthcoming province be included in the study area. The JICA Study Team will relay the request to JICA headquarters for consideration. The DILG is expected to complete the execution of the MOAs of the 2<sup>nd</sup> batch provinces by early July to catch up with the planned schedule. The required arrangements in terms of subject provinces and study period will be discussed between the DILG and JICA.



### 2. General Approach and Methodology to the Study

The PW4SPs will be prepared with the full participation of the respective PSPTs together with DILG coordinators and the Study team in accordance with the approach and methodology outlined in the Inception Report. The following topics were confirmed during the discussions:

- (1) Planning framework for future sector development
  - a) Planning base year is 1997 for 1<sup>st</sup> and 2<sup>nd</sup> batches and 1998 for 3<sup>rd</sup> and 4<sup>th</sup> batches. Medium-term and long-term target years are 2005 (implementation program: year 2001 to year 2005) and 2010, respectively.
  - b) Plan will be prepared in compliance with "Implementing Rules and Regulations of NEDA Board Resolution No. 4".
- (2) Standard provision of school toilets

Discussions and confirmation on the provision of school toilets will be arranged with DECS.

- (3) Options on the sludge removal from septic tank and its disposal will be shown in the plan.
- (4) Model province for 1<sup>st</sup> batch is Agusan del Sur.

#### 3. Sector Information Collection

The DILG and the JICA Study Team will continuously collect information on the projects/programs assisted by various financial sources. The information will be reflected in the plans.

#### 4. Implementation Set-Up for the Study

In accordance with the Implementing Arrangements between the DILG and the JICA, the DILG shall:

- (1) Secure the safety of the JICA Study Team;
- (2) Assign DILG counterpart staff members who will coordinate and assist PSPTs at the provincial level;
- (3) Set-up PSPTs by respective provincial governments in the study area and secure budget to carry out the Study;
- (4) Through PSPT in each study area province; facilitate and coordinate in data gathering with municipal government and other agencies concerned, and participate in workshops and preparation of PW4SP;



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(5) Facilitate coordination with concerned agencies like DPWH, DOH, NEDA, LWUA and with appropriate bodies.

The JICA Study Team shall:

- (1) Pursue technology transfer to the Philippine counterpart personnel in the course of the Study and;
- (2) Assist PSPTs in the preparation of the PW4SP.

#### LIST OF ATTENDEES IN THE SERIES OF DISCUSSIONS

#### **ATTENDEES**

#### DESIGNATION

Director, Office of Project

#### A. DILG

1. Mr. Normando J. Toledo

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2. Mr. Orville M. Roque Program Manager, WSS-PMO

3. Ms. Ellen I. Pascua Asst. Program Manager, WSS-PMO

4. Mr. Rogelio B. Ocampo Chief, Planning Division, WSS-PMO

5. Ms. Fc Crisilla M. Banluta PW4SP Project Officer, WSS-PMO

B. Other Agencies

1. Mr. Sam Siao Officer, PMO-RWS, DPWH

2. Dr. Mario Villaverde Director, EHS, DOH

C. JICA Advisory Committee

1. Ms. Keiko Yamamoto Chairman, Advisory Committee

2. Mr. Keiichi Kanaya Member, Advisory Committee

D. JICA Headquarters

1. Mr. Shigeyuki Matsumoto Second Development Study Division, Social Development Study Dept.

E. JICA Study Team

1. Mr. Masatoshi Momose Team Leader/Water Supply Planning

2. Mr. Nobuki Abe Water Supply/Sanitation Engineer

3. Ms. Consuelo B. Estepa Community Dev't/WID Specialist

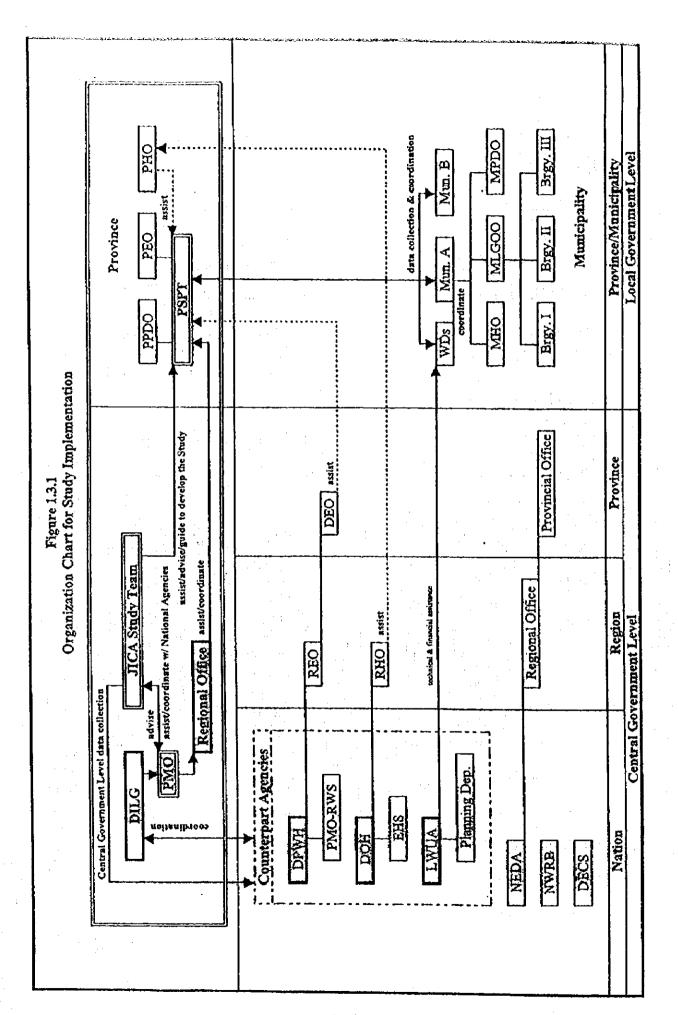
4. Ms. Elizabeth L. Verzola Socio-Economic/Financial Specialist

5. Mr. Kenji Takayanagi Water Source Development Specialist

6. Mr. Emmanuel L. Patingo Data Management Specialist

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#### MINUTES OF DISCUSSIONS

ON

#### THE PROGRESS REPORT

FOR

#### THE STUDY ON PROVINCIAL WATER SUPPLY, SEWERAGE AND

SANITATION SECTOR PLANS

FOR

VISAYAS AND MINDANAO

IN

#### THE REPUBLIC OF THE PHILIPPINES

AGREED UPON BETWEEN

THE DEPARTMENT OF THE INTERIOR AND

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THE STUDY TEAM OF

JAPAN INTERNATIONAL COOPERATION AGENCY

MANILA, MARCH 18, 1998

MR. NORMANDO J. TOLEDO

Director

Office of the Project Development

Service

Dept. of the Interior and Local Government

MR. MASATOSHI MOMOSE

Team Leader, Study Team

Japan International Cooperation

Agency

The Stage I fieldwork for "the Study on Provincial Water Supply, Sewerage and Sanitation Sector Plan" started on January 13, 1998 and completed on March 23, 1998.

A series of discussions were held throughout the course of the Study, between JICA Study Team and officials concerned including DILG, NEDA, DOH, DPWH and other central government agencies and provinces. The general approach and methodologies, as presented in the Inception Report, have been employed for the fieldwork.

A Progress Report, which covers all outputs during the work period, was prepared entailing part of PW4SP for the respective provinces. The contents of the report were basically agreed upon on March 18,1998 between JICA Study Team and officials of the DILG. The list of attendees to the meeting is presented in Appendix A. The following issues/problems on the arrangements required for the implementation of the Study were discussed, and the Study Team will relay the modified arrangements required to JICA headquarters.

(1) Modified Arrangements Required for 1st batch Study

- 1) Due to the presidential election scheduled on May 11, 1998, the second workshop may be held from May 18 to May 22, 1998 after the election, and tentatively starting the 2<sup>nd</sup> field work on May 13, 1998.
- 2) The venue for the final workshop was requested by concerned PPDCs to be held in Mindanao rather than in Manila as originally planned. This is because of the financial constraint on the travel expenses required for 7 members of respective PSPTs under the current GOP instruction to LGUs to reduce its planned annual expenditures of up to 25%.

#### (2) Provinces to be Covered by the 2<sup>nd</sup> Batch

The total number of provinces for the 2<sup>nd</sup> batch (5 provinces) will be kept as previously agreed between the two parties. However, Surigao del Sur will be omitted from the Study, since timely establishment of the PSPT by the province seems to be difficult. Instead of the said province, either the newly created Compostela Valley or Bukidnon (Region X) would be included.

The DILG will inform the Study Team of the possibility in the setting up of PSPT by the administration of Compostela Valley by the middle of June 1998. If not, DILG will make an advanced arrangement with Bukidnon.

#### (3) Electric Resistivity Prospecting and Test Boring

Comparatively reliable data to evaluate the development potential of water source were collected for 1<sup>st</sup> batch provinces during the fieldwork. It is assumed that the conduct of the field test for groundwater analysis, given a limited period, cannot be able to contribute significantly to the level of accuracy in the preparation of M/P and F/S. The situation will remain the same for 2<sup>nd</sup> batch provinces. Accordingly, it is not recommended to conduct field test for this study.

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The required areas and the scope of work/surveys, such as field tests, will be recommended in the PW4SP and will be considered during detailed design and construction stages.

#### (4) Time Constraint in Data Collection/Validation/Follow-up

It was found, both by the Study Team and the DILG through the fieldwork, the following problems on data collection/validation/follow-up:

1) The summary reports on the sector status prepared by NEDA Regional Office through UNICEF fund were field confirmed as the materials to provide approximate sector situations in the fact of no existence of sector related information at present.

2) Data collection by PSPTs had sometimes to be done at the barangay level, due to limited data available in the municipal level. Thus, additional time was required for PSPTs to access to remote rural barangays.

3) Comprehensive planning work by the province in Mindanao area is still initial stage. It is necessary for the activities to ensure much more time through intensive technology transfer to DILG coordinators and PSPTs.

Based on the lessons learned, the Study Team and the DILG recognized the need of the review on the allotted period for the activities. The Study Team will relay this matter to JICA headquarters.

#### (5) Cities to be Covered in the Preparation of PW4SP

Of the three classes of cities in the Local Government Code, only component cities, which are under the jurisdiction of the provincial government will be considered. The subject cities are as follows:

Province Component City
Surigao del Norte Surigao City

Davao Tagum City and Island Garden City
Leyte Tacloban City

Western Samar Calbayog City
Capiz Roxas City
Iloilo Passi City

Negros Occidental Bago City, Cadiz City, La Carlota City, San Carlos

City and Silay City

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#### LIST OF ATTENDEES IN THE SERIES OF DISCUSSION

#### **ATTENDEES**

#### DESIGNATION

A.	 )]	L	G

- 1. Mr. Orville M. Roque
- 2. Ms. Ellen I. Pascua
- 3. Mr. Rogelio B. Ocampo
- 4. Ms. Fe Crisilla M. Banluta
- 5. Ms. Charito Araza
- 6. Ms. Maria Contessa Navarro
- 7. Ms. Josephine Ramos
- 8. Ms. Susan Mangoda
- 9. Ms. Crisanta Rapirap

#### B. JICA Study Team

- 1. Mr. Masatoshi Momose
- 2. Mr. Nobuki Abe
- 3. Mr. Kenji Takayanagi
- 4. Ms. Consuelo B. Estepa
- 5. Ms. Elizabeth L. Verzola

Program Manager, WSS-PMO

Asst. Program Manager, WSS-PMO

Chief, Planning Division, WSS-PMO

PW4SP Project Officer, WSS-PMO

Area Coordinator, WSS-PMO

Team Leader/Water Supply Planning

Water Supply/Sanitation Engineer

Water Source Development Specialist

Community Dev't./WID Specialist

Socio-economic/Financial Specialist



#### MINUTES OF DISCUSSIONS

ON

#### THE DRAFT FINAL REPORT

**FOR** 

### THE STUDY ON PROVINCIAL WATER SUPPLY, SEWERAGE AND

SANITATION SECTOR PLANS

FOR

VISAYAS AND MINDANAO

IN

THE REPUBLIC OF THE PHILIPPINES

AGREED UPON BETWEEN

THE DEPARTMENT OF THE INTERIOR AND

LOCAL GOVERNMENT

AND

THE STUDY TEAM OF

JAPAN INTERNATIONAL COOPERATION AGENCY

MR. BENITO R. CATINDIG

()

Assistant Secretary for Support Services and Regional Offices

Dept. of the Interior and Local Government

MANILA, AUGUST 27, 1998

MR MASATOSHI MOMOSE

Team Leader, Study Team

Japan International Cooperation

The Stage II fieldwork for "the Study on Provincial Water Supply, Sewerage and Sanitation Sector Plan" (hereinafter referred to as "the Study") resumed on May 20, 1998 and will be completed on March 30, 1999. Upon completion of the 1<sup>st</sup> batch study, the study for the 2<sup>nd</sup> batch will start on August 30 with an "Orientation Workshop". It is further scheduled that the 2<sup>nd</sup> batch study will be finalized by February 1999 and 3<sup>rd</sup> batch work will be commenced before the completion of this fieldwork.

Major conditions and assumptions for the development of Medium-Term and Long-Term sector plans for the subject provinces under the 1<sup>st</sup> batch were discussed and finalized between respective PSPTs and the JICA Study Team (hereinafter referred to as "the Team") through Workshop No. 2 (held between May 26 and 28, 1998) and during planning work thereafter. In this connection, the target year for the Medium-Term development plan was revised from 2005 to 2003 in order to realize the plan earlier.

The Draft Final Reports for the five (5) provinces of the 1st batch were prepared and the final workshop was conducted between August 24 and 26, 1998 to present and discuss the contents of the reports. The contents of the reports were basically agreed upon on August 27, 1998 by the Team and officials concerned on the Philippine side. The list of attendees to the meeting is presented in Appendix A. The following were confirmed and agreed upon by both parties.

- Correction of typographical errors of the Draft Final Report will be undertaken by the Team prior to printing of the Final Report. The Final Report will be submitted by October 1998.
- Adoption of the Plans by the Provincial Council (Sangguniang Panlalawigan) shall be facilitated by the DILG.
- 3. Inclusion of the Message of the Governor in the Main Report of respective PW4SPs.

With regard to the 2<sup>nd</sup> batch study, both parties have agreed on the general approach and methodology, and implementation arrangements adopted for the 1<sup>st</sup> batch study. Among them, the following are the basic conditions to be applied for the planning.



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#### (1) Study Area

The DILG completed the exchange of MOA with the 2<sup>nd</sup> batch provinces on the participation and full support by the concerned provinces. The subject provinces are Misamis Oriental, Bukidnon, Davao del Norte, South Cotabato and Sarangani. The province of Bukidnon was selected for model province study.

#### (2) Planning Framework for Future Sector Development

- a) Planning base year is 1997 and Medium-Term and Long-Term target years are 2003 (implementation program: year 1999 to year 2003) and 2010, respectively.
- b) Plans will be prepared in compliance with the "Implementing Rules and Regulations of NEDA Board Resolution No. 4".

#### (3) Implementation Set-Up/Arrangements for the Study

The study will be conducted in accordance with the Implementing Arrangements between the DILG and the JICA, as done with the 1<sup>st</sup> batch study.

Both parties will make timely and effective arrangements through the study period to achieve the purpose of the Study within the set time-table based on the lessons learned from the 1<sup>st</sup> batch study. In this regard, the following are put into practice.

- a) Data collection by the PSPTs will be commenced in advance (overlapped activity with the preceding batch study) to ensure longer period for this activity as compared with the original time allotted.
- b) Planning period by the PSPTs will be extended by adjusting the timing for the conduct of 2<sup>nd</sup> worshop for data encoding and discussions to set-up planning fundamentals.
- c) Practical arrangements will be made to increase the opportunities for further collaboration in the planning work among PSPTs, DILG coordinators and the Team.

For the arrangement of the 3<sup>rd</sup> batch study, the DILG will confirm the subject provinces including the model province through the MOA by December 1998.



#### LIST OF ATTENDEES IN THE SERIES OF DISCUSSIONS

	ATTENDEES	DESIGNATION
A.	DILG	
	1. Mr. Normando J. Toledo	Director, Office of Project Development Services
	2. Ms. Ellen I. Pascua	Acting Program Manager, WSS-PMO
	3. Mr. Rogelio B. Ocampo	Chief, Planning Division, WSS-PMO
	4. Ms. Fe Crisilla M. Banluta	PW4SP Project Officer, WSS-PMO
В.	Other Agencies	
	1. Ms. Cristina Santiago	PIS, NEDA
<i>C</i> .	JICA Advisory Committee	
	1. Ms. Keiko Yamamoto	Chairman, Advisory Committee
	2. Mr. Keiichi Kanaya	Member, Advisory Committee
D.	JICA Headquarters	
	1. Ms. Akiko Hayashi	Second Development Study Division, Social Development Study Depart.
E.	JICA Study Team	
	1. Mr. Masatoshi Momose	Team Leader/Water Supply Planning
	2. Mr. Nobuki Abe	Water Supply/Sanitation Engineer
	3. Mr. Kenji Hiramatsu	Institutional Specialist
	4. Ms. Consuelo B. Estepa	Community Dev't./Gender Specialist
	5. Ms. Elizabeth L. Versola	Socio-Economic/Financial Specialist
	6. Mr. Enumanuel L. Palingo	Data Management Specialist

4

#### MINUTES OF DISCUSSIONS

ON

THE DRAFT FINAL REPORT (2nd BATCH)

**FOR** 

THE STUDY ON PROVINCIAL WATER SUPPLY, SEWERAGE AND SANITATION SECTOR PLANS

FOR ...

VISAYAS AND MINDANAO

IN

THE REPUBLIC OF THE PHILIPPINES

AGREED UPON BETWEEN

THE DEPARTMENT OF THE INTERIOR AND

LOCAL GOVERNMENT

AND

THE STUDY TEAM OF

JAPAN INTERNATIONAL COOPERATION AGENCY

MR. BENITO R. CATINDIG

Assistant Secretary

(

Dept. of the Interior and Local Government

MR. MASATOSHI MOMOSE

QUEZON CITY, FEBRUARY 22, 1999

Team Leader, Study Team

Japan International Cooperation Agency

The Stage II fieldwork for "the Study on Provincial Water Supply, Sewerage and Sanitation Sector Plan" (hereinafter referred to as "the Study") resumed on May 20, 1998 and will be completed on March 30, 1999.

The study for the 2<sup>nd</sup> batch started on August 30,1998 and will be completed with the final workshop scheduled between February 24 and 26, 1999. During the finalization stage of the 2<sup>nd</sup> batch study, the study for the 3<sup>nd</sup> batch was started with an "Orientation Workshop" on February 8 to 10, 1999. It is further scheduled that the 3<sup>nd</sup> batch study will be finalized by the end of this year.

With regard to the 2<sup>nd</sup> batch study, major conditions and assumptions for the development of Medium-Term and Long-Term sector plans for the subject provinces were discussed and finalized between the respective PSPTs and the JICA Study Team (hereinafter referred to as "the Team") during Workshop No. 2 between November 4 to 6, 1998 and also at the time of the planning work thereafter. For the entire duration of the planning work, the Team stayed intermittently in Davao City, Cagayan de Oro City and Malaybalay City for better collaboration with the PSPTs.

The Draft Final Reports for the five (5) provinces of the 2<sup>rd</sup> batch were prepared and discussed on the contents of the reports between the respective PSPTs and the Team during February 15 and 19, 1999. The contents of the reports were basically agreed upon on February 22, 1999 by the Team and the officials concerned in the Philippine side in consideration of the discussion results with PSPTs.

The list of attendees to the meeting on February 22, 1999 is presented in Appendix A. The followings were confirmed and agreed upon by both parties.

- Further modification/correction on the Draft Final Report will be undertaken by the Team prior to printing of the Final Report based on the discussions with PSPTs. The Final Report will be sent by May, 1999.
- Adoption of the Plans by the Provincial Council (Sanggunian Panlalawigan) will be pursued and facilitated by the DILG.
- 3. Inclusion of the Message of the Governor in the Main Report of respective PW4SPs.

Concerning the 3<sup>rd</sup> batch study, both parties have agreed on the general approach and methodology, and implementation arrangements adopted for the previous batch studies. Among others, the followings are the basic conditions to be applied for the planning.



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#### (1) Study Area

The DILG completed the exchange of MOAs with the 3<sup>rd</sup> batch provinces regarding the participation and full support by the concerned provinces. The subject provinces are Northern Samar, Eastern Samar, Samar, Biliran, Leyte and Southern Leyte. The province of Leyte was selected for model province study.

#### (2) Planning Framework for Future Sector Development

- a) Planning base year is 1998 and Medium-Term and Long-Term target years are 2004 (implementation program; year 2000 to year 2004) and 2010, respectively.
- b) Plans will be prepared in compliance with the "Implementing Rules and Regulations of NEDA Board Resolution No. 4", Series of 1994.

#### (3) Implementation Set-Up/Arrangements for the Study

The study will be conducted in accordance with the Implementing Arrangements between the DILG and the JICA, as done with the 1<sup>st</sup> and 2<sup>nd</sup> batch studies.

Both parties will make timely and effective arrangements throughout the study period to achieve the purpose of the Study within the set time-table based on the lessons learned from previous batch studies. In this regard, the following will be put into practice.

- a) Data collection by the PSPTs will start in advance (overlapped activity with the preceding batch study) to ensure longer period for this activity as compared with the original time allotted.
- b) Planning period by the PSPTs will be extended by adjusting the timing for the conduct of the 2<sup>nd</sup> workshop for data encoding and discussions to set-up planning fundamentals.
- c) Practical arrangements will be made to increase the opportunities for further collaboration in the planning work among PSPTs, DILG coordinators and the Team.

For the arrangement of the 4th batch study, the DILG will confirm the subject provinces including the model province through a MOA by May, 1999.



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#### DESIGNATION **ATTENDEES** DILG A. l. Mr. Benito R. Catindig Assistant Secretary 2 Ms. Ellen I. Pascua Program Manager, WSS-PMO Chief, Planning Division, WSS-PMO 3 Mr. Rogelio B. Ocampo PW4SP Project Officer, WSS-PMO 4 Ms. Fe Crisilla M. Banluta B. Other Agencies PIS, NEDA I. Ms. Christina Santiago C. JICA Advisory Committee 1. Ms. Keiko Yamamoto Chairman, Advisory Committee Member, Advisory Committee 2. Mr. Keiichi Kanaya D. JICA Study Team Team Leader/Water Supply Planning 1. Mr. Masatoshi Momose 2. Mr. Nobuki Abe Water Supply/Sanitation Engineer 3. Institutional Specialist Mr. Kenji Hiramatsu Water Source Specialist 4. Mr. Nobukatu Sakiyama Community Dev't./Gender Specialist 5. Ms. Consuelo B. Estepa 6 Ms. Elizabeth L. Versola Socio-Economic/financial Specialist Mr. Emmanuel Patingo Data Management Specialist

#### 2. PLANNING APPROACH FOR FUTURE SECTOR DEVELOPMENT

#### 2.6 Planning Principles and Data Management

#### 2.6.2 Data Management

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#### (1) Computer-based System

The data management system was established to support the Provincial Sector Planning Team (PSPT) in the preparation of the Provincial Water Supply, Sewerage and Sanitation Sector Plan (PW4SP). An essential task of data management is to organize various kind of data an effective and efficient information base.

A computer-based system was applied as a viable solution to process large amount of data and to minimize the human-error in calculation. For this particular project, a dynamic system is designed to allow the planner to adjust planning factors and update the information when further data becomes available.

It is viable and economical t choose the microcomputer with software suitable for the average skills of the common user. In this connection, of the two types of software package available, database and spreedsheet, the latter method was selected. Among the available spreadsheet-type software, EXCEL was used. Excel support file conversion (opening and saving), multiple file opening, graphic presentation of data, What-You-See-ls-What-You-Get (WYSIWYG) formatting, scaleable font and view, etc. The following are the advantage and disadvantages of the spreedsheet method with reference to database method.

#### Advantage

- 1. Minimum programming skills
- 2. Friendly environment to users
- 3. Graphics presentation of data at user's option.
- 4. Execution of data linkages at formula level entry
- 5. Guided formula creation using function wizard

#### Disadvantage

- 1. Repeated entry of same formula
- 2. Sorting or indexing is done manually
- 3. All data are loaded in memory, which require huge amount of memory.
- 4. Limited to static data linkages

Data management task starts from the collection of data using the questionnaire forms. The existence and accuracy of data are major concern at this stage to prepare main information bases. Using the microcomputer provided with EXCEL spreadsheet, data in the questionnaire forms are transferred into the forms constructed in EXCEL. Applicable policy, criteria and assumption are entered into key parameter tables. These data are then processed and finally consolidated into target forms. These final provide a map of provincial profite, service coverage, future requirements, cost estimates for future sector development, and funding requirements.

Table 2.6.1 Key Parameter

0.		. :	Description of Key Parameter	Unit	Values		
ī.		Water	Supply				
ļ			Number of household to be served by Level I Facility	HH/Source			
- 1	<b>₹</b>	-	Number of household to be served by Level II System	HH/Public Faucet			
- 1	Service Level	-	Water Consumption Rate for Level III System	Litet/capita/day			
	۲	Sanite					
			Std. number of student to be served by a unit of Sanitary toilet	Student/Toilet			
		-	Standard number of toilets for a public utility	Toilet/Public Facility			
. 1			Water Supply				
1			UrbonWater Supply	% of Population			
ı			Rural Water Supply	% of Population			
			Sanitation				
			Household Toilet				
. ]		2	Urban Household Toiles	% of Household			
- 1		2	Flush	% of Household			
- 1		ן <u>ב</u>	Pour Flush	% of Household			
l		ř		% of Household			
1		Medium Term Plan	VIP Latring	% of Household			
ļ		<del>5</del>	Rural Household Toilet	% of Household			
l		ř	Flush	% of Household			
, [	Provincial Sector Target		Pour Flush	% of Household			
Į	à		VIP Latrine	% of Public Student			
- 1	<u>.</u>		School Toilet	% of Public Utility			
- 1	. S		Public Toilet				
۱ ۱	Š	L	Solid Waste	% of Population			
	ď	ľ	Water Supply		*.		
	ř	ļ	UrbanWater Supply	% of Population	·		
	è	1	Rural Water Supply	% of Population			
. ]	-	1	Sanitation				
	. :				Household Toilet		
1		1 5	Urban Household Toilet	% of Household			
		Long Term Plan	Flush	% of Household			
	ļ	E	Pour Flush	% of Household			
	1 .	ř	VIP Latrine	% of Household			
	1.4	발	Rural Household Toilet	% of Household			
	i	13	Flush	% of Household			
	l	i	Pour Flush	% of Household			
	1	}	VIP Latrine	% of Household			
		1	School Toilet	% of Public Student			
	1	1 .	Public Toilet	% of Public Utility			
		1	Urban Sewerage	% of Urban Population			
3.	Percer	1200	of Level I Deen Wells to be Rehabilitated	%			
4.	Percer	11290	of Sector Management Cost to Construction Cost				
	[ `````	Fag	sibility and Detail Design	% of Construction Cost			
	1		Instruction Supervision	% of Construction Cost			
5.	Comp	neep ide	Development and Training Cost				
٠.	Comb		el III	% of Construction Cost			
			el I, II and Public Toilet	% of Construction Cost			
6.	<del> </del>	11.0	vel III System (Operating Cost)	Pesos/HH/year			
v.	-	120	vel III System (Spare Parts/Equipment)	% of Construction Cost			
	1 5 ~	Jue V	rel II System (Spare Parts/Equipment)	Pesus/HH/year			
	Recurrent			Pesos/HII/year			
	٦٤٥		vel 1 System (Spare Parts/Equipment)	Pesos/Toilet/year			
	I		olic School Toilet Maintenance Cost	Pesos/Toilet/year			
	1	Put	blic Utility Toilet Maintenance Cost	t coos tones year			
7.	Alloca		factors/Percentages of IRA	., 6,	ì		
	1		om Provincial	*	<del></del>		
		Fre	om Municipality and Brgy.	<u>%</u>	<del> </del> -		
8.	Fund	ing Le	evels/Percenatges for Different Financing Scenarios		<b>!</b>		
		İst	Scenario	% Funding Available	ļ <del></del>		
		200	d Scenario	% Funding Available	ļ		
	l	3rd	1 Scenario	% Funding Available	L		
			Scenario	% Funding Available	ļ		
	1		Scenario	% Funding Available	1		

Table 2.6.2 Composition of Well Sources and Specific Capacity

			Proportion	Standard Specification		
Name of Municipality	Туре	Type Water Source	(%)	Depth (m)	SWL (m)	Specific Capacity (liter/sec/m)
		Shallow Well				
	Urban	Deep Well		100000000000000000000000000000000000000		
	Þ	Spring				
•	-	Shallow Well	<u> </u>			
•	Rural	Deep Well				
	ex	Spring				
	5	Shallow Well				
	Crear	Deep Well		10010101010101010101		
	L <u> </u>	Spring	ļ			
•	1 78	Shallow Well	<u> </u>		<del> </del> -	1 1
1	Rural	Deep Well				
	<u> </u>	Spring	<del>  </del>		)	
	E	Shallow Well	<del>                                     </del>		1	
	Urban	Deep Well	<del></del>			
1 1	1	Spring		110111111111111111111111111111111111111		
	펺	Shallow Well	<del> </del>		1	
	Rural	Deep Well				
	+	Spring - Shallow Well		3,5,5,0,2,5, 12,2,15		
	Urban	Deep Well	1			
	1 5	Spring				
	Rural	Shallow Well				
		Deep Well	-			
		Spring				
1:	1	61. 11 11/-11			_1	
:	Crban	Deep Well				
	5	Spring				
	<u> </u>	Shallow Well	11.71.2			<u> </u>
	Rural	Deep Well				
,	\ ~	Spring				
	十-	61.11	i			
	Urban	Deep Well			ene navasistiki	
	⊃	Spring				33 332 332 333 333 333 333 333 333 333
		Shallow Wel	1			<u> </u>
	1 m	Deep Well		30000000000		
	l °	Spring				<u> </u>
		Shallow We	ម			
1		Deep Well				
<b>\$</b>		<u>Opr5</u>				elen libraterin merekan dan menenggan da
l l	\[ \begin{align*}	Shallow We			<del>- }</del> -	
		Deep Well	<u> </u>	1818 1818		
		Spring		\$1850 B		
		Shallow We				
H	[ ]	Shallow Well Deep Well Springe	<u> </u>			
1	<u> </u>	3511118		1,000,000,000	******	
1	1	Shallow Web	ξ(i)			
ll l	Į.	Deep Well		8888888		

Sub-Sector	Component	1999	2000	2001	2002	2003	Tota
Urban Water Supply	Level III System						
	Feasibility Study and Detail Design			100.000000000	1674 (12616-000)	\$0.080\$0M\$40\$	5200503
	Construction & Supervision			i	Ì		
	Community Development & Training		Ì				
Rural Water Supply	Level I Facility				\$15,800		200
	Detail Design		www.come.googs	inconsecutoro	200000000000000000000000000000000000000	10000000000000000000000000000000000000	1808/108/64
	Construction & Supervision						
	Community Development & Training		,			-	
	Level II System			\$30,000	\$ 80000	- 33 (C) X	*******
	Detail Design	1000 S.A. S.A.	4 6 400 10 90000	(600,000,000,000,000,000,000,000,000,000	1004-0009-00000	(2009975065070-)	
	Construction & Supervision	1					
	Community Development & Training	1				į	·
Sanitation	Urban Household Toilet			<u>-</u>			
	Rural Household Toilet	'			-		
	Public School Toilet	,	i l				
	Public Toilet						
	Disinfection of Level I Wells						
	Detail Design	1	:		·		
	Construction & Supervision			- '		• .	
	Community Development & Training						

Table 2.6.4 Level I Safe & Unsafe Percentage

Name of Municipality	Safe (%)	Unsafe (%)		
	·			
		<u></u>		
Provincial Total				

Table 2.6.5 Unit Construction Cost of Different Facilities

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	Unit	Service Coverage	overage	Unit	Unit Cost
Description	Construction Cost	•	Served	Pesos/	Pesos/
	(Pesos)	Population	Honsehold	Person	Household
Water Supply					
Level III - New System					
For 5000 Population					
For 10000 Population					
For 15000 Population					
Level III - Expansion					
For 5000 Population					
For 10000 Population					
For 15000 Population					
Level II					
Level I					
Deep Well - 40 meter depth					
Deep Well - 80 meter depth					
Deep Well - 120 meter depth					
Shallow Well - 18 meter depth					
Spring Development					
Rehabilitation Cost for Level I Deep Well					
Disinfection of Level I Wells					
Sanitation - Committee Commitment					
Flush harman to the contract of	-				
Pour Flush					
VIP / Dry					
School Toilet					•
Public Toiletranson of the second					
Urban Sewerage					

Table 2.6.6 Scoring Factor for Municipal Investment Ranking for Urban Water Supply

Score	Underserved and Unserved Population in Base Year	Underserved and Underserved and Population Unserved Unserved Population by Level III Systems in Base Year	Underserved and Population Unserved nserved Population by Level III Systems in Phase I in Base Year
1.0	%>	%>	%>
8.0	- 07 × ×	>%>	>% >
9.0	< > % < 30	>%>	<b>&gt;%</b> >
4.0	< % < 20	>%>	>%>
0.2	%< 10	>%	>%
Weight Allocation Score			
(%)			

Table 2.6.7 Scoring Factor for Municipal Comprehensive Investment Ranking

Score	Urban Water Supply	Urban Water Supply Rural Water Supply Urban Sanitation	Urban Sanitation	Rural Sanitation
1.0	N.A.	%>	%>	%>
8.0	N.A.	\%\ \%\	>%>	>%>
90	Z.A.	>%>	>%>	>%>
0.4	NA	>%>	>%>	>%>
0.2	N.A.	>%	>%	>%
Weight Allocation Score				
(%)				

#### 3. PROVINCIAL PROFILE

#### 3.3 Socio-economic Conditions

#### **Economic Activities and Family Income** 3.3.1

Table 3.3.1 Distribution of Families by Income Class

		Souther	rn Leyte		Region	VIII
63	Total Fa	unilies	Aunual	Income		Annual
Income Class	Number	Share	Total (P '000.00)	Average (Pesos)	Total Number of Families	Income Average (Pesos)
Under 15,000	10,329	13	154,332	14,941	87,207	13,748
15,000 - 19,999	13,713	17	310,573	22,647		22,862
20,000 - 29,999	25,016	31	704,884	28,178		30,065
30,000 - 39,999	12,983	16	528,291	40,690		42,930
40,000 - 59,999	12,718	16	757,060	59,527		62,345
60,000 - 99,999	4,932	6	549,368	111,384		112,830
100,000 - 249,999	1,261	2	679,086	538,700		232,048
250,000 and over		0			1,418	473,960

Source: 1994 Family Income and Expenditures Survey by NSO

### Notes:

 Derived from Region VIII FIES.
 Based on NEDA and other agencies, poverty threshold in Region VIII was estimated at P-37,053 (P 6,444) annual per capita poverty threshold).

For purposes of the survey, a family is defined as a group of persons usually living together and composed of the head and other persons related by blood, marriage and adoption. A single person living alone is considered as a separate family. A household is composed of 1 or more families in the same housing unit and has a common arrangement of food preparation and consumption.

Table 3.3.2 Employment by Major Industry Group and Class of Worker, 1994

	1				Class of	Worker			
Major ladustry Group	Household Population IS years and Over Who Worked	Worked for Private Household (Domestic Services)	Worked for Private Business/ Enterprise/ Farm	Worked for Government/ Government Corporation	Self- employed Without Any Paid Employee	Employer In Own Farm or Business	Work With Pay in Own Family Operated Farm or Business	Work Without Pay In Own Family Operated Farm oc Business	Net Reported
Agriculture, Hunting and Forestry	52,208	872	11,966	167	26,454	5,905	266	6,228	350
Fishing	7,166	45	900	3	5,290	311	18	412	187
Mining and Quarrying	203	4	56	0	112	10	0	9	12
Manufacturing	2,556	61	1,114	25	1,047	129	13	101	66
Electricity, Gas and Water	277	14	180	22	50	2	<del>-</del>	.0	8
Construction	2,807	305	1,922	85	405	20	4	21	45
Trade	7,470	62	1,358	21	4,402	733	. 14	793	87
Services	26,422	4,550	7,327	10,371	3,020	293	16		299
Not Stated	787	26	250	34	239	27	2	78	l
Provincial Total	99,896	5,939	25,073	10,728	41,019	7,430	334	8,189	1,185

Source: 1995 NSO Socioeconomic and Demographic Characteristics

## 3.3.3 Education

Table 3.3.3 Household Population by Highest Educational Attainment

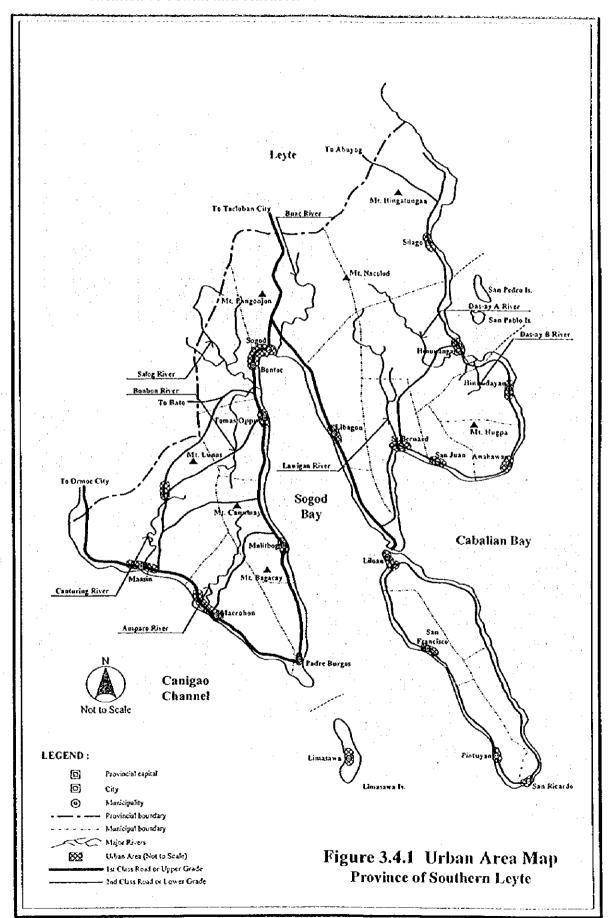
	Household		· A	ge Group		
Highest Educational Attainment	Population 5 years Old and Over	Below 20	20 - 24	25 - 29	30 - 34	35 and Over
No Grade Completed	20,077	12,895	365	359	365	6,093
Pre-school	11,547	11,129	36	37	23	322
Elementary			£	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
Ist - 4th Grade	74,170	40,482	2,129	2,462	2,440	26,657
5th - 7th Grade	69,867	19,968	3,975	5,261	5,471	35,192
High School						
Undergraduate	43,349	21,154	3,936	3,624	3,299	11,336
Graduate	22,836	3,735	3,983	3,620	3,263	8,235
Post Secondary						:-
Undergraduate	605	108	152	115	74	150
Graduate	2,635	155	619	611	433	811
College Undergraduate	11,828		2,705	1,660	1,466	3,740
Academic Degree Holder	14,129	87	1,580	2,423	2,456	7,583
Post-Baccalaureate	326	0	19	34	34	239
Not Stated	4,048	2,615	199	144	142	94
Total	275,417	114,579	19,698	20,350	19,466	101,32

Source: 1995 NSO Socioeconomic and Demographic Characteristics

# 3.4 Population

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## 3.4.1 Classification of Urban and Rural Area



# 3.5 Health Status

Table 3.5.1 Number and Ratio of Population to Health Facilities and/or Medical Practitioners

Health Facilities and	Souther	n Leyte	Phili	ppines
Practitioners	Number	Ratio	Number	Ratio
Health Facilities	,			
Hospital	14	1/26,340	1,700	1/40,206
Rural Health Units	20	1/15,804	2,335	1/29,272
Barangay Health Station	85	1/3,719	11,646	1/5,869
Practitioners				
Doctors	87	1/3,633	6,913	1/9,887
Nurses	173	1/1,827	8,849	1/7,724
Midwives	220	1/1,437	10,831	1/6,311
Dentists	29	1/10,899	1,895	1/36,068
Others Medical Practitioner	69	1/4,581		

Source: PSPT and 1997 Philippine Statistical Yearbook.

### 3.6 Environmental Conditions

### 3.6.2 Water Pollution

Table 3.6.1 Types of Drainage Facilities

Туре	Length (km)
Drainage Main	8
Open Channel (with Concrete & rubble masonry)	15
Open Ditches & Unlined Laterals	26
Reinforced Concrete Circular Pipes	2
Street Gutters	9
Outfalls to rivers from drainage mains	2

Source: PSPT

Table 3.6.2 DENR Water Quality Criteria/Water Usage and Classification for Fresh Water

Parameter	Unit	Class AA	Class A	Class B	Class C	Class D
						(11133 I)
Color	PCU	15	50	(C)	(C)	(C)
Temperature	°C rise		3	3	3	3
(max. rise in deg. Celsius)			-		-	
pH (range)		6.5-8.5	6.5-8.5	6.5-8.5	6.5-8.5	6.0-9.0
Dissolve Oxygen (Minimum)	%satn	70	70	70	60	40
·	mg/L	5.0	5.0	5.0	5.0	3.0
5-Day 20°C BOD	mg/L	1	5	5	7(10)	10(15)
Total Suspended Solids	mg/L	25	50			
Total Dissolved Solids	mg/L	500	1,000			1,000
Surfactants (MBAS)	mg/L	nil	0.2(0.5)	0.3(0.5)	0.5	
Oil/Grease (Petroleum Ether Extract)	mg/L	nil	1	1	2	5
Nitrate as Nitrogen	mg/L	1	10	NR	10	
Phosphate as Phosporous	mg/L	nil	0.1	0.2	0.4	
Phenolic Substances as Phenols	mg/L	nil	0.002	0.005	0.02	
Total Coliforms	MPN/100mL	50	1,000	1,000	5,000	
or Fecal Coliforms	MPN/100mL	20	100	200		
Chloride as Cl	mg/l	250	250		350	
Copper	mg/L	1	1		0.05	

Notes

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Class AA - Public Water Supply Class I. Intended for waters having watersheds that are uninhabited and otherwise protected and which require only approved disinfection in order to meet the national standards for drinking water.

Class A - Public Water Supply Class II. Sources of water supply that will require complete treatment (coagulation, sedimentation, filtration and disinfection) in order to meet drinking water standards.

Class B - Recreational Water Class I. For primary contact recreation such as bathing, swimming skin diving, etc. (particularly for tourism purposes).

Class C - Fishery Water for the propagation and growth of fish and other aquatic resources, recreational (for boating, etc.); industrial water supply class I for manufacturing processes after treatment.

Class D - For agriculture, irrigation, livestock watering, etc.; for industrial water supply class II (cooling, etc.); other inland waters by their quality, belong to this specification.

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# EXISTING FACILITIES AND SERVICE COVERAGE

#### 4.1 Water Supply

# 4.1.3 Level III Systems

				Sheet 1 o	ting Leve f4					
						vel III Ser	vice			
Name of	Name of	N	umber of	<u> </u>		iumber of			Number of	
Municipality	Operating Body	Вага	ngays Sei	ved		eholds Ser			ulation Sec	
		Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Anahawan	Anahawan WWS	3	4	7	585	360	945	1,483	955	2,43
Bontoc	Bontoc WWS	5	1	6	315	4	319	1,068	22	1,09
·	Mahayahay WS		1	1		40	40		240	24
	PAWASA		1	1		150	150		706	70
* .	Brgy, San Vicente		.1	1		32	32		. 192	19
	Municipal Total	5	4	9	315	226	541	1,068	1,160	2,22
Hinunangan	Hinunangan	- 2	19	21	302	2,245	2,547	1,226	5,638	6,86
	Manlico	1	1	1		93	93		459	45
	Municipal Total	2	20	22	302	2,338	2,640	1,226	6,097	7,32
Hinundayan	Hiaundayan	4	8	12	846	. 661	1,507	1,270	2,328	3,59
Libagon	Libagon WS	2	2	4	230	322	552	409	859	1,26
Liloan	Liloan	1	1	2	590	65	655	1,075	349	1,42
Maasin (Capital)	Maasin WD		14	14		2,194	2,194	10,815	5,210	16,02
Macrohon	Amparo WS		1	1	·	180	180		269	26
	Ichon		1	1		586	586		243	24
	San Roque WWS	- 1	3	4	205	30	235	340	285	62
	San Vicente	4	3	. 7	479		479	1,775		1,77
1	Municipal Total	5	8	13	684	796	1,480	2,115	797	2,91
Malitbog	Malithog WW	4	<b> </b>	4	198	·····	198	1,240		1,24
Padre Burgos	Padres Burgos	2	2	4	446	188	634	2,065	1,123	3,18
Pintuyan	Pintuyan WWS	3	18	21 .	85	377	462	283	889	1,17
Saint Bernard	Mun. WWS	3	5	8	360	521	. 881	3,400	4,976	8,37
San Francisco	San Francisco WW	3	<b>†</b>	3	318		318	1,844		1,84
San Ricardo	San Ricardo		2	3	153	223	376	487	1,120	1,60
Silago	Balagawan	<del></del>	1	1		65	66		364	36
	Catmon	<del></del>	1	1		14	14		68	6
	Hingatungan	·	1	1	<del> </del>	161	161		961	96
	lmeida	<del> </del>	1	1	<del></del>	14	14	<del></del>	84	8
	Katipunan		<del>                                     </del>	<del>                                     </del>		50	50		201	20
	Laguma	<u> </u>		i	<del> </del>	69	69		350	- 35
	Mercedes		<del>                                     </del>	i	<del></del>	174	174		309	30
	Puntana WWS	1	<del> </del>	·	324		324	824		82
	Salvacion	<del>                                     </del>	1	1	324	47	47	024	237	23
	Sap-ang	<del> </del> -	<del> </del>	<u> </u>	-	28	28		139	13
	Sudmon	<del> </del>	<del> </del>	<del>                                     </del>	<del> </del>	38	38		191	
	Tuba-on	<del>                                     </del>	'   i	i	<del> </del>	30	30		148	19
	Tubod	<del></del>	1	1		68	68		<b>!</b>	14
	Municipal Total	<del></del>	12	13	. 324	759		<u> </u>	338	33
Sogod	Sogod WD	5	8	13	<del> </del>		1,083	824		4,21
Tornas Oppus	Tomas Oppus	2	<del> °</del> -	2	1,137	1,944	3,081	5,583	9,584	15,16
	Tromas Oppus	ļ	1 100	ļ	<u> </u>	10.00		771	l	71
Provincial Total		46	108	154	6,608	10,974	17,582	35,958	38,837	74,79

Table 4.1.1 Details on Existing Level III Systems

0) . 0 . 0 .	
Sheet 2 of 4	

Name of	Name of Operating				L	evel II Ser	vice			
Municipality	Body	Number o	l Public I	Paucets	Number of	Household	ds Served	Number of	Population	Served
		Urban	Rural	Total	Urban	Rural	l'otal	Urban	Rural	Total
nabawan	Anahawan WWS		7	7	39	117	156	186	538	72
lontec	Bontoc WWS		}		395		395	1,012		1,01
	Mahayahay WS					53	53		270	270
	PAWASA					26	26		136	13
	Brgy, San Vicente			:		60	60		308	30
•	Municipal Total	1			395	139	534	2,012	714	1,72
linunangan	Hinunangan					289	289		1,322	1,32
	Mantico		1							1 1
- 1 T	Municipal Total			11.		289	289	N <sub>2</sub>	1,322	1,32
linundayan	Hinundayan				376	836	1,212	1,782	1,385	3,16
ibagon	Libagon WS		50	50		623	623	in the contract	3,016	3,01
iloan	Liloan	2	2	4	8	394	402	40	1,866	1,90
Azasin (Capital)	Maasin WD	<b>1</b>	4	4		20	20		98	9
Macrohon	Amparo WS				1	117	117		567	56
* *	Ichon	<u> </u>				297	297		1,438	1,43
	San Roque WWS	1	26	26		159	159		772	77
	San Vicente	<del> </del>	22	22		480	480		2,319	2,31
	Municipal Total	<del></del>	48	48	7. 100	1,053	1,053		5,096	5,09
Malitbog	Malithog WW	1	: 2		<u>.                                    </u>	10	10		53	. 5
Padre Burgos	Padres Burgos		7			119	119		613	61
Pintuyan	Pintuyan WWS	<del>                                     </del>	6		5	30	30		156	15
Saint Bernard	Mun. WWS	1	4	-		20	20		98	9
San Francisco	San Francisco WW				1					
San Ricardo	San Ricardo	<del>                                     </del>	7.77		· · ·	390	390		1,958	1,95
Silago	Balagawan	<del> </del>	14	1.	4	27	27		77	7
	Catmon	<del>                                     </del>	3			<del> </del>			<del></del>	
	Hingatungan	1	11	1		33	3.1		105	10
9.00	Imelda	<del> </del>	4		4	12	12		57	
: .	Katipunan	<del>                                     </del>	<del> </del> -	<u> </u>	<del>                                     </del>			<del> </del>		
	Laguma	<del>                                     </del>	7	1	7	23	2		58	
	Mercedes	1	17			31	31	1	94	
	Puntana WWS	<del></del>	3	ļ	3 44			1	46	11
: +	Salvacion	+	3		3	9			46	,
<u> </u>	Sap-ang	<del> </del>	7		<del> </del>	21	L		96	<b> </b> -
	Sudmon	1	12	<del> </del>		32		1	152	1:
	Tuba-on	+	<del>  '</del>		3	9		1	40	·
	Tubod	+	<del> </del>		3	1 7	<del> </del>	7	36	I
	Municipal Total		87					7 139		9
Spand	Sogod WD		°	<del>       °</del>	<u> </u>	1 - 21-3		<del>`</del>	1 30,	<del>                                     </del>
Sogod		10	<del>. </del>	ļ,	0 99	1,588	1,68	7 342	2,114	2,4
Tomas Oppus Provincial Total	Tomas Oppus	1 1		<del></del>		<u> </u>	<del></del>	<del></del>	<u> </u>	<del>!</del>

Table 4.1.1 Details on Existing Level III Systems

Sheet 3 of 4

Name of	Name of Operating	<u> </u>	Water Sour	ces		Consu	imption	4 1
Municipality	Body	Type !	Number	Production (cu.m/day)	Domestic	Institutional (cu.	Commercial n/day)	Industria
Anahawan	Anahawan WWS	SP	5	894		<u> </u>		
3ontoc	Bontoe WWS	DW/SP	2	336	198			
	Mahayahay WS	SP			29			
	PAWASA	SP						
	Brgy, San Vicente	SP		28	11			
* ************************************	Municipal Total		2		238			
Hinunangan	Hinunangan	SP	1	1,800	1,563		. :	
	Manlico	SP	1	64				
	Municipal Total	:	2		1,563			
Hinundayan	Hinundayan	SP	5	2,851		a 1		
Libagon	Libagon WS	SP	ı	259				
Liloan	Liloan		1	240	\$5	, ,		
Maasin (Capital)	Maasin WD	SP	1	2,506	1,210		299	
Macrohon	Amparo WS		1	·				
-:	Ichon	SP	1 1	225				
	San Roque WWS	SP	1	284	4,035	390		
•	San Vicente	SP	1	269			60	
	Municipal Total		3		4,297	405	60	
Malithog	Malitbog WW	DW	: 1	184	368	184	184	
Padre Burgos	Padres Burgos		1 1	345	658	6	20	· · · ·
Pintuyan	Pintuyan WWS	SP	4	403		740	1,575	
Saint Bernard	Mun. WWS	SP	2	1,861	<del></del>	,		
San Francisco	San Francisco WW	SP	1	576	<u> </u>			
San Ricardo	San Ricardo	SP	4	408		<del>                                     </del>		
Silago	Balagawan	SP	1 1		<b> </b>	<del> </del>		· .
$\tilde{\nu}$	Catmon	SP	<del>                                     </del>		<u> </u>			
	Hingatungan	SP	1.		<del> </del>			
	Imelda	SP	1	•	<del> </del>	<del>                                     </del>	.:	
	Katipunan	SP	1		<del>                                     </del>	<b>1</b>		
	Laguma	SP	+	<u> </u>	<u> </u>	†		
	Mercedes	SP	1		<del> </del>	1		
	Puntana WWS	SP	1	<del> </del>	<del> </del>	<del> </del>	<b></b>	
	Salvacion	SP	+	<del> </del>		1 1 1		-
	Sap-ang	SP	1					-
	Sudmon	SP	1 1	1	1 2 7 7	<del>                                     </del>	<del> </del>	
	Tuba-on	SP	<del>                                     </del>	1	<del>                                     </del>	1		
	Tubod	SP	<del>                                     </del>	1.1.11		1		1
٠	Municipal Total	SP	13	<del> </del>	<del> </del>	<del> </del>	<del> </del>	<del> </del>
Sogod	Sogod WD	SP	3	510	d	<del> </del>	<del>                                     </del>	<del></del>
Tomas Oppus	Tomas Oppus	SP SP	2	240		<del> </del>	<del> </del>	
	inclai Total	1 01	40	13,533	1	9 1,335	2,138	1

Note: 1. Type of Water Source; DW - Deep Well, DgW - Dug Well, Surf - Surface Water (River), SP - Spring, and IG - Infiltration Gallery

Table 4.1.1 Details on Existing Level III Systems
Sheet 4 of 4

								C	lasutrers	1					<del></del>	
Nameof	Name of	Domestic	House Co	panections	Domes	stic Publi	e Foucets	Instituti	ional Cor	Sumtra	Comm	erclat Co	nsumers	ladus	rial Con	Sumers
Munkipality	Operating Body	Conne	ction	Con	Conne	ction	Con-	Conne		Cons	Сопле		Con-	Coons		Con-
		Metered	Uame- tered	sumption (m³/day)	Metered	Unme- tered	sumption (m³/day)	Metered	Unme- Tered	umptica (m³/day)	ļ <del></del>	Vorne- tered	sumption (m³/day)	Metered	Unme- lered	samption (m'/day)
lnahawan	Anahawan WWS								1					i		
Sontoc	Bontoc WWS	315	3	198 21												
	Mahayahay WS	40		55.00			7.00									
	PAWASA	150		0.40		1										
•	Brgy, San Vicente	32	6	11.00												
	Municipal Total	Li.					7.00									· · · · · · · · · · · · · · · · · · ·
linunangan	Hinunangan	467		1,563 00												
	Maslico		87		i	1			1							
1.1	Municipal Total	467	87	1,563.00		1			;							i
Hinundayan	Hinunday <b>an</b>					T								1		l
Libagon	Libagon WS						1			1						
Litoan	Liloan .			55.00		1					13					
Maasin	Massin WD	1,81	1	1,210					1		383		299		1	1
Macrohon	Amparo WS				1								]			1
	Echon				1	T				1		1	<del></del>	1	1	-
	San Roque WWS	24	3	3,645.00	26	3	390.00		1	390.00	1			1		
	San Vicente	30		202.00	20	7	60 00	7	7	15.00	3		60.60			ļ
-	Municipal Total	54	5	3,847.00	46	3	450.00	2	!	405.00	,		60.00			
Malithog	Malifbog WW		167	184.00		7	184.00		3	184.00		16	184.00			
Padre Burgos	Padres Burgos	- (3	9 10	658.00	7	7	1		1	6.00			20.00	5		1
Pintuyan	Pintuyan WWS	88	1		1	•		31	1	740.00	63	1	1,575.00	>		
Saint Bornard	Mun. WWS			T		1		1				1	<u> </u>			
San Francisco	San Francisco	31	1			1		1		T		ļ	1		1	1
San Kicardo	San Ricardo		Ι						1	Ť		1				T
cysfi2	Balagawaq									1		1			1	
•	Catmos	T	1		1					T		1		1		
	Hingatungan							1		7		1	1			1
	Imelda :		1			1							1			1
	Katipunas	T				1	T	1	1	1	1		1	1	1	ļ
	Laguma						1		T	1	1	1	1			1
	Mercedes									1	1	1	T	1	T	1
	Pustana WWS						I	1			1	1		T .		1
	Salvacion							1	1	1	1		1		1	1
	Sap-ang		.1.		T	1					1.				Τ	7
:	Sudmon														J	<b>.</b>
}	Tuba-co					1	1	1	1	T	1	1	T	1	T	1
	Tubod							T	1	T	1	1	1	1	1	1
L	Manicipal Total	i				J		1	1	1			T	1	1	1
Sogod	Sogod WD				1	1	Ţ	1	1	1	1		7	1	1	1
Готыз Орриз	Tomas Oppus		3	3		1	0	1	1	1	1	1	1	1	1	1
Prev	incial Total	6,0	12 35	9] 13,15	9 10	))]	1,098.0	ol 4	4 1	0 1,740.0	0 47	31 1	6 2,198.0	iol	1	<del>1</del> -



# 4.1.4 Level II Systems

Table 4.1.2 Details on Existing Level II Systems Sheet 1 of 6

						i. G	Existing Encilities	94	
Name of	Name of		Water Source		Length of	Rese	Reservoir	Length of	Number
Municipality	Operating Body	Type	Number	Discharge (m <sup>3</sup> /day)	Transmission Line (meter)	Number	Volume (m²)	Distribution Line (meter)	of Public Faucets
Anahawan	Calintaan BWSA	SP		54.5	200	1	36.0	100	5
	Capacuhan BWSA	SS	1	65.4	150		10.0	100	. 4
	Kagingkingan BWSA	SP	1	81.8	150	1	15.0	100	5
	Mainit BWSA	SP	1	81.8	175	1	15.0	100	ধ
	Manigawong	SP	1	54.5	250	1	10.0	125	m
	Municipal Total	SP	\$	338.0	925	5	86.0	525	21
Bontoc	Anahao WS	DgW	1	54.5	250	. 1	8.6	200	4
	Catoogan WS	SP	1		2,000	1	27.0	225	寸
	Cawayan WWS	d'S	1	17.3		1	7.0	400	9
	Dao WS	SP	1	32.4				009	\$
	Hibagwan WWS	SP	Ţ	26.8	100	1	14.0	1.200	10
-7-÷	Hilaan WS	SP	1	21.8	1,150	1	23.9	006	25
	Malbago WS	SP	1	26.8	4	1	27.0	528	8
	Mauylab WS	SP	- 1	38.9	25	1	8.7	1.000	9
	Taa WS	SP	1	2,851.2	18	2	1.0	650	11
	Municipal Total	DgW/SP	1/8	3,069.6	3,547	6	117.2	5,703	79
Hinunangan	Bugho WS	SP	1	33.7	1,900	1	6.0	1,000	च
	Calag-itm WS	SP	1	14.4	700	. 1	6.0	100	5
	Ilaya WS	SP	1	9.8	200		9.0	100	2
	Ingan WS	SP	1	48.6	1.000	7	8.0	1.500	5
	Libas WS	SP	1	23.0		1	3,4		(C)
	Matin-ao WS	SP	ŗ	28.8	1,000	1		200	4
-	Nava WS	SP		8.49	1.200		27.0	2.000	10
	Nueva Esperanza WS	SP	1	21.6	800	1	3.5	400	4
	Palongpong WS	SP	ĭ	28.8	1.200	1	5.0	300	CC)
	Pondol WS	SP	1	38.9	1,510	1	12.0	500	9
	Sto. Nino II WS	SP	1	35.6	1,000	7	9.0	1,000	10
:		SP	I	28.8	400		12.0	2	<u>C1</u>
	Municipal Total	SP	12	375.7	11,210	12	100.9	7.102	58

Table 4.1.2 Details on Existing Level II Systems (Cont'd.) Sheet 1 of 6

Particle   Name of Number   Congression   Name of Number   Congression   Name of Number   Congression   Namber   Congression   Name							Tvic	ting Fooilitie	34	
Foreign Bright	:	•		Water Source	<b> </b> -	I enoth of	Rese	rvoir	Length of	Number
Amaga BWSA   SP   1   118.8   3.146   1   22.5   4.     Biascong BWSA   SP   1   118.8   3.146   1   22.0   4.     Biascong BWSA   SP   1   118.8   3.146   1   26.4   2.     Biascong BWSA   SP   1   76.8   1.850   1   24.0   2.     Chebritsen BWSA   SP   1   87.5   1.650   1   24.0   2.     Chebritsen BWSA   SP   1   87.5   1.650   1   24.0   2.     Hibraran BWSA   SP   1   115.4   2.000   1   14.4   1.     Sugbok BWSA   SP   1   129.6   1.793   1   44.0   2.     Manuchal Total   SP   1   129.6   3.500   1   25.0   2.     Libagon WS   SP   1   172.8   1   4.0   4.     Manuchal Total   SP   1   172.8   1   4.0   4.     Manuchal Total   SP   1   172.8   1   12.0       Manuchal Total   SP   1   172.8   1   12.0       Manuchal Total   SP   1   15.5   2.000   1   12.0       Calghungal Ox-Gridan   SP   1   155.5   2.000   1   12.0       Calghungal Ox-Gridan   SP   1   155.5   2.000   1   12.0       Calghungal WS   SP   1   155.5   2.000   1   12.0       Candayuman WS   SP   1   155.5   2.000   1   12.0       Candayuman WS   SP   1   155.5   1.300   1   12.0       Candayuman WS   SP   1   25.50   1   12.0       Candayuman WS   SP   1   25.50   1   12.0       Candayuman WS   SP   1   25.5   1.300   1   12.0       Magangan WS   SP   1   25.5   1.300   1   12.0       Manuchan WS   SP   1   25.5   1.300   1   12.0       Manuchan WS   SP   1   2	Name of Municipality	Name of Operating Body	Type	Number	Discharge	Transmission Line (meter)	Number	ume	Distribution Line (meter)	of Public Faucets
Ambgo BWSA         SP         1         118.8         3.146         1         32.0         4, 4, 4, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2,		V 3/114	αS		916	2.560		22.5	3,713	13
Biacong BWSA   SP   1   76.8   1.890   1   26.4   2.1     Bugho BWSA   SP   1   97.9   2.865   1   27.0   2.2     Bugho BWSA   SP   1   97.9   2.865   1   27.0   2.2     Chulisan BWSA   SP   1   15.4   2.000   1   14.4   1.1     Sugbok BWSA   SP   1   100.8   1.650   1   14.4   1.1     Sugbok BWSA   SP   1   100.8   1.7593   7   160.7   19.     Biacong WS   SP   1   172.8   1   14.4   2.2     Chalazi, Anhaeneg and Nic SP   1   172.8   1   4.0   4.0     Ichagon WS   SP   1   172.8   1   12.0     Ichagon WS   SP   1   172.8   1   12.0     Magkasag WS   SP   1   172.8   1   12.0     Magkasag WS   SP   1   172.8   1   12.0     Chikon WS   SP   1   12.5   2.000   1   12.0     Chalazi, Anna WS   SP   1   155.5   2.000   1   12.0     Chalazi, Anna WS   SP   1   155.5   2.000   1   12.0     Chalazi, WS   SP   1   155.5   2.000   1   12.0     Chalazi, WS   SP   1   155.5   2.000   1   12.0     Chalazi, WS   SP   1   155.5   10.0   1   12.0     Chalazi, WS   SP   1   155.5   10.0   1   12.0     Chalazi, WS   SP   1   155.5   10.0   1   12.0     Magaupas WS   SP   1   2.59.2   2.00   1   12.0     Pandam WS   SP   1   2.59.2   2.00   1   12.0     Pandam WS   SP   1   2.59.2   2.00   1   12.0     Magaupas WS   SP   1   2.59.2   2.00   1   12.0     Pandam WS   SP   1   2.00   1   12.0	Himundayan	Amaga 6 WSA	5 8	•	118.8	3,146		32.0	4,593	21
Bugglo BWSA         SP         1         97.9         2,865           Cabulisan BWSA         SP         1         83.5         1,650         1         27.0         2.           Hubsean BWSA         SP         1         15.4         2,057         1         14.4         1.           Planclel WS         SP         1         10.8         2,057         1         14.4         1.           Saglok BWSA         SP         1         10.8         2,057         1         14.4         1.           Saglok BWSA         SP         1         10.8         2,057         1         14.4         1.           Bascok WS         SP         1         129.6         3,500         1         4.4         4.0           Inbagon WS         SP         1         172.8         1         4.0         4.           Mayuge WS         SP         1         172.8         3.0         1         4.0         4.           Mayuge WS         SP         1         172.8         5.4         5.0         1.4         4.0         4.0           Pangi         W         SP         1         1.2         1.4         4.0         4.0		Piacono BWSA	5 65		76.8	1.890	1	26.4	2,738	7
Finbasan BWSA   SP   1   83.5   1,650   1   27.0   2.     Finbasan BWSA   SP   1   1154   2.000   1   14.4   1.     Findel WS   SP   1   1154   2.000   1   14.4   1.     Municipal Total   SP   8   780.5   17,903   7   160.7   19.     Biasong WS   SP   1   120.6   1,7903   7   160.7   19.     Inbagon WS   SP   1   172.8   1   4.0   4.0     Maguesag WS   SP   1   172.8   1   4.0   4.0     Fangi		Busho BWSA	SP SP	1	6.79	2,865				٥١
Hinbeam BWSA   SP   1   115.4   2.000   1   14.4   1.15     Plantdel WS   SP   1   115.4   2.000   1   14.4   1.15     Sagebok BWSA   SP   1   10.08   2.057   1   14.4   1.15     Municipal Total   SP   1   12.96   17.903   7   160.7   19.     Blasong WS   SP   1   172.8   1   3.0   1   3.0     Caket Nabsong and Na   SP   1   172.8   1   4.0   4.0     Magagaag WS   SP   1   172.8   1   4.0   4.0     Panil Onlicon WS   SP   1   172.8   1   12.0     Panil Onlicon WS   SP   1   12.96   2.100   1   12.0     Panil Onlicon WS   SP   1   12.96   2.100   1   12.0     Catigwigalon-Gudan W   SP   1   12.96   2.100   1   12.0     Catigwigalon-Gudan W   SP   1   12.96   2.100   1   12.0     Catigwiga WS   SP   1   12.96   1.200   1   12.0     Catigwiga WS   SP   1   12.96   1.200   1   12.0     Catigwiga WS   SP   1   12.96   1.300   1   12.0     Catigwiga WS   SP   1   12.96   1.300   1   12.0     Magagapas WS   SP   1   2.99.2   350   1   12.0     Matter Olim WS   SP   1   2.99.2   350   1   12.0     Matter Olim WS   SP   1   2.99.2   350   1   12.0     Matter Olim WS   SP   1   3.90   1   12.0     Panil WS   SP   1   3.90   1   3.90     Panil WS   SP   1   3.90   1   3.90     Panil WS   SP   1   3.90   1   3.90     Panil W		Cabulican RWSA	SP	1	83.5	1,650	1	27.0	2,147	S
Plandel WS         SP         1         115.4         2,000         1         14.4         1.1           Sugbok BWSA         SP         1         100.8         2,057         1         14.4         2.           Municipal Total         SP         1         129.6         17,903         7         16.7         19.           Biascog WS         SP         1         129.6         3.50         1         25.0         2           Libagon WS         SP         1         172.8         1         4.0         4.0           Mayuga WS         SP         1         172.8         1         4.0         4.0           Mayuga WS         SP         1         172.8         1         4.0         4.0           Pangi         SP         1         172.8         1         4.0         4.0           Municipal Total         SP         1         5.4         5.0         1         4.0         4.0           Anilao WW         SP         1         120.6         2,100         1         12.0         3.0           Caldigangan WS         SP         1         155.5         800         1         12.0           Battela W		Huhasan BWSA	ß	1	95.7	1,735		24.0	2,458	
Sagbok BWSA         SP         1         100.8         2.057         1         144         2.2           Municipal Total         SP         1         1296         17,903         7         160.7         19.           Biasong WS         SP         1         1226         3.500         1         25.0         2           Libagon WS         SP         1         172.8         1         4.0         4.           Magkasag WS         SP         1         172.8         1         4.0         4.           Magkasag WS         SP         1         5.4         4.0         4.         4.0         4.           Orikon WS         SP         1         5.4         5.0         1         4.0         4.           Municipal Total         SP         1         5.4         5.0         1         4.0         4.           Pangi         SP         1         5.4         5.0         1         4.0         4.           Municipal Total         SP         1         5.4         5.0         1         4.0         4.0           Pangi         WS         1         1.55.5         2.00         1         1.0         1.0<		Plandel WS	SP	1	115.4	2,000	1	14.4	1,533	8
Municipal Total         SP         8         780.5         17,903         7         160.7         18           Biasong WS         SP         1         129.6         1         3.50         1         3.0         25.0         2           Cakat Nathacong and NS         SP         1         172.8         1         4.0         4		Sacbok BWSA	SS	1	100.8	2,057		14.4	2,417	
Bilasong WS   SP   1   129,6   1   3.0   25.0   2     Galcat, Nathaong and Ne   SP   1   432.0   3.500   1   25.0   2     Libagon WS   SP   1   172.8   1   4.0   4.0     Magkasag WS   SP   1   172.8   1   4.0   4.0     Manyaga WS   SP   1   172.8   1   12.0   1   12.0     Pangi   SP   1   86,4   500   1   12.0   4.0     Pangi   SP   1   129,6   2.100   1   12.0   1   12.0     Pangi   SP   1   129,6   2.100   1   12.0   1   12.0     Dalay WW   SP   1   129,6   2.000   1   12.0   1   12.0     Caligangan WS   SP   1   155.5   800   1   12.0   12.0     Caligangan WS   SP   1   155.5   800   1   12.0   12.0     Calig WS   SP   1   259.2   800   1   12.0   12.0     Estela WS   SP   1   259.2   800   1   12.0     Maggaupas WS   SP   1   259.2   550   1   12.0     Maggawas WS   SP   1   259.2   550   1   12.0     Maggawas WS   SP   1   51.8   2.000   1   12.0     Maggawas WS   SP   1   69.1   12.00     Manggo WS   SP   1   69.1   12.00     Pandan WS   SP   1   69.1   12.00     Pandan WS   SP   1   69.1   12.00     Pandan WS   SP   1   103.7   610   1   15.0     Pandan WS   SP   1   103.7   610   1   10.0     Pandan WS   SP   1   10.0   1   10.0     Pandan WS   SP		Municipal Total	ďS	8	780.5	17,903		160.7	19.599	109
Galcat, Nathanong and Na         SP         1         432.0         3.500         1         25.0         2           Libagen WS         SP         1         172.8         1         4.0         4           Magkasag WS         SP         1         172.8         1         4.0         4           Mayaga WS         SP         1         5.4         50         1         4.0         4           Pangi         SP         1         86.4         500         1         4.0         4           Pangi         SP         1         345.6         4,000         7         146.2         11.           Anilao WW         SP         1         129.6         2,100         1         12.0           Cagbungalon-Gudan WS         SP         1         155.5         2,000         1         12.0           Caligangan WS         SP         1         155.5         800         1         12.0           Caligangan WS         SP         1         155.5         800         1         12.0           Catig WS         SP         1         155.5         800         1         12.0           Estela WS         SP         1 </td <td>Tiboson</td> <td></td> <td>SP</td> <td>1</td> <td>129.6</td> <td></td> <td>1</td> <td>3.0</td> <td>700</td> <td></td>	Tiboson		SP	1	129.6		1	3.0	700	
Libagon WS         SP         1         172.8         1         4.0         4.0           Magkasag WS         SP         1         172.8         1         4.0         4.0           Maynga WS         SP         1         5.4         1         12.0         4.0	108801	١ê			432.0	3,500	1	25.0	2,000	
Maggasag WS         SP         1         172.8         1         4.0         4,           Mayuga WS         SP         1         5.4         1         4.0         4,           Ofticon WS         SP         1         5.4         1         4.0         4,           Pangi         SP         1         86.4         500         1         4.0         4.0           Pangi         SP         1         345.6         4,000         7         146.2         11.           Anilao WW         SP         1         345.6         2,100         1         12.0         3.           Babay WS         SP         1         129.6         2,100         1         12.0         3.           Cagbungalon-Gudan W S         SP         1         155.5         2,000         1         15.0         3.           Caligangan WS         SP         1         190.1         2,500         1         12.0         3.           Caligangan WS         SP         1         155.5         800         1         12.0           Catig WS         SP         1         259.2         800         1         12.0           Magaupas WS		ч		-	172.8		1	94.2	4,000	40
Mayong WS         SP         1         5.4         4.0         4,0         11,0         11,0         11,0         11,0         11,0         11,0         11,0         11,0         11,0         11,0         11,0         11,0         12,0         3,0         11,0         12,0         3,0		Magkasag WS	SP	I	172.8		1	4.0	F-4	
Orikon WS         SP         1         5.4         1         12.0           Pangi         SP         1         86.4         500         1         4.0           Anilao WW         SP         1         345.6         4,000         7         146.2         11.           Bahay WS         SP         1         129.6         2,100         1         12.0         3           Cagbungalon-Gudan WS         SP         1         155.5         2,000         1         15.0         3           Caligangan WS         SP         1         190.1         2,500         1         12.0         3           Candayuman WS         SP         1         155.5         800         1         12.0           Catig WS         SP         1         259.2         800         1         12.0           Estela WS         SP         1         259.2         550         1         12.0           Magaupas WS         SP         1         259.2         550         1         19.0           Maugoc WS         SP         1         259.2         550         1         12.0           Maugoc WS         SP         1         103.7		Maynos WS	SP				1	4.0	4,500	16
Pangit         SP         1         \$6.4         \$00         1         4.0           Municipal Total         SP         1         345.6         4,000         7         146.2         11.           Anilao WW         SP         1         345.6         2,100         1         12.0         3.0           Bahay WS         SP         1         129.6         2,100         1         12.0         3.0           Capebungalon-Gudan WS         SP         1         155.5         2,000         1         15.0         3.           Caligangan WS         SP         1         190.1         2,500         1         12.0         3.           Catig. WS         SP         1         155.5         800         1         12.0           Estela WS         SP         1         259.2         800         1         12.0           Guintoylan WS         SP         1         259.2         550         1         10.0           Magaupas WS         SP         1         259.2         550         1         10.0           Maugec.WS         SP         1         259.2         550         1         10.0           Pandan WS		Oricon WS	dS		5.4		<b>,</b>	12.0	2	3
Auilao WW         SP         6         999.0         4,000         7         146.2         11.           Auilao WW         SP         1         345.6         2,100         1         12.0           Bahay WS         SP         1         129.6         2,100         1         12.0           Caligangan WS         SP         1         190.1         2,500         1         15.0           Caligangan WS         SP         1         155.5         800         1         12.0           Caligangan WS         SP         1         155.5         800         1         12.0           Catig WS         SP         1         25.9         800         1         12.0           Estela WS         SP         1         259.2         800         1         12.0           Magaupas WS         SP         1         259.2         550         1         19.0           Maugoc WS         SP         1         259.2         550         1         19.0           Pandan WS         SP         1         69.1         1.200         1         12.0           Pandan WS         SP         1         1.200         1         15.		Paner	SP	,,	86.4	200	1	4.0	200	9
Anilao WW         SP         1         345.6         1         12.0           Bahay WS         SP         1         129.6         2,100         1         12.0           Caligangan WS         SP         1         155.5         2,000         1         15.0         3.           Caligangan WS         SP         1         155.5         800         1         12.0           Catig WS         SP         1         51.8         720         1         12.0           Estela WS         SP         1         259.2         800         1         18.0           Guintoylan WS         SP         1         259.2         550         1         19.0           Magaupas WS         SP         1         259.2         550         1         19.0           Magauws         SP         1         51.3         1.2.0         1         12.0           Pandan WS         SP         1         60.5         1.300         1         12.0           Pandan WS         SP         1         60.5         1.300         1         12.0           Pandan WS         SP         1         60.5         1.300         1         15.0 <td></td> <td>nicinal</td> <td>dS.</td> <td>٥</td> <td>0.666</td> <td>4,000</td> <td><i>L</i></td> <td>146.2</td> <td>11.703</td> <td>116</td>		nicinal	dS.	٥	0.666	4,000	<i>L</i>	146.2	11.703	116
Bahay WS         SP         1         129.6         2,100         1         12.0         3           Caligangan WS         SP         1         155.5         2,000         1         15.0         3           Caligangan WS         SP         1         155.5         800         1         12.0           Candayuman WS         SP         1         51.8         720         1         12.0           Catig WS         SP         1         259.2         800         1         18.0           Estela WS         SP         1         259.2         800         1         18.0           Magaupas WS         SP         1         259.2         550         1         19.0           Maugoc WS         SP         1         259.2         550         1         19.0           Pandan WS         SP         1         60.5         1,300         1         12.0           Pandan WS         SP         1         69.1         1,200         1         15.0           Pandan WS         SP         1         103.7         610         1         15.0	7 (1000)	1l	SP	-	345.6		1	12.0		4
m-Gudan W         SP         1         155.5         2.000         1         15.0         3.           WS         SP         1         190.1         2,500         1         12.0           n WS         SP         1         155.5         800         1         12.0           WS         SP         1         259.2         800         1         18.0           WS         SP         1         60.5         1,300         1         12.0           VS         SP         1         259.2         550         1         19.0           SP         1         69.1         1,200         1         12.0           WS         SP         1         69.1         1,200         1           SP         1         69.1         1,200         1         15.0           WS         SP         1         103.7         610         1         15.0		Bahay WS	S	-	129.6	2,100	ĭ	12.0	380	
WS         SP         1         190.1         2,500         1         12.0           M WS         SP         1         155.5         800         1         12.0           WS         SP         1         259.2         800         1         12.0           WS         SP         1         259.2         800         1         18.0           WS         SP         1         259.2         550         1         19.0           S         SP         1         559.2         550         1         19.0           S         SP         1         69.1         1,200         1         12.0           S         SP         1         103.7         610         1         15.0         1		Ιġ		1	155.5	2,000	1	15.0	3,200	01
MS         SP         1         155.5         800         1         12.0           SP         1         51.8         720         1         12.0           WS         SP         1         259.2         800         1         18.0           WS         SP         1         60.5         1,300         1         12.0           WS         SP         1         259.2         550         1         19.0           S         SP         1         69.1         1,200         1         12.0           WS         SP         1         103.7         610         1         15.0         1		Caligangan WS		-	190.1	2,500		12.0		
SP         1         51.8         720         1         12.0           WS         SP         1         259.2         800         1         18.0           WS         SP         1         60.5         1,300         1         12.0           WS         SP         1         259.2         550         1         19.0           S         SP         1         69.1         1,200         1         12.0           SWS         SP         1         103.7         610         1         15.0         1	<u></u>	Candavaman WS	SP		155.5	800	ĭ	12.0		
WS         SP         1         259.2         800         1         18.0           WS         SP         1         60.5         1,300         1         12.0           S         SP         1         259.2         550         1         19.0           S         SP         1         69.1         1,200         1         12.0           S         SP         1         103.7         610         1         15.0         1			SP	1	51.8	720		12.0	190	
WS         SP         1         60.5         1,300         1         12.0           WS         SP         1         259.2         550         1         19.0           S         SP         1         51.8         2.000         1         12.0           S         SP         1         69.1         1,200         1         12.0           S         SP         1         103.7         610         1         15.0         1		Tetelo WS	d.S	-	259.2	800	1	18.0		
SP         1         259.2         550         1         19.0           SP         1         51.8         2.000         1         12.0           SP         1         69.1         1.200         1         12.0           As         SP         1         103.7         610         1         15.0		₿	SP	1	60.5	1,300	1	12.0		4
SP         1         51.8         2.000         1         12.0           SP         1         69.1         1.200         1         12.0           xx         SP         1         103.7         610         1         15.0         1		Magainas WS	SP	1	259.2	550	1	19.0		
Sp 1 69.1 1.200 1 12.0 1.000 1		Mangoc WS	SP	-	51.8	2,000	1	12.0		4
VS. SP 1 103.7 610 1 15.0 1.		Pandan WS	ďS	-	69.1	1,200		12.0	340	4
		Dret David WS	d.S.		103.7	610	1	15.0	1.350	6

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Table 4.1.2 Details on Existing Level II Systems (Cont'd.) Sheet 1 of 6

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			77	<u>ن</u>	00	4	SO.	<u> </u>	তা	<u></u> [	<u>~</u> i	<b>37 I</b>		10	(0)	S	<u> </u>	7	7	$\overline{a}$		631	S I	7	iσī	$\overline{a}$	(1)	$\alpha$	10		i.	1
	Number	of Public	Faucets				8/					24	25	15	I	33	12	7.		10	13	12	16		16	40		12	16	22	έà	16
	Length of	Distribution	Line (meter)	800	1.300	1,150	11,960	750	300	1.200	2.250	200	1	150				100	**		120	110	110		130			120		110		90
Existing Facilities		je j		15.0	12.0	12.0	202.0	22.0	21.0	49.2	92.2	25.0		12.5		12.5		12.5		12.5	12.5	12.5	12.5		12.5			12.5	18.8	18.8		12.51
Exist	Reservoir	Number	TA CONTRACT	1 .	1	1	. 15	1	1			1		1		1		1		1	1	1	1		. 1			1	1	Ţ		-
	Length of	Transmission	Line (meter)	1,200	1,500	1,400	18,680			1,950	1,950	009		800				200			800	200	360		009			. 700		009		200
		به	(m³/day)	259.2	216.0	25.9	2,332.8	144.0	144.0	38.9	326.9	70.0	-	43.6		26.0		43.2		43.2	52.0	103.6	0.69		0.69			43.2	43.2	43.2		34.5
	Water Source	Viimbor	isomosi.			-	15	1	1		2/1	11.1		1		, .					ī		1			1		1	1	1		-
	:	T.	1ype	SP	SP	SP	SP	ΜQ	DW	S.P	DW/SP	SP		DW		SP		SP		SP	ďS	SP	SP		SP			SP	SP	SP		ď
	Name of	Operating Body		San Isidro WS	San Roque WS	Tabugon WS	Municipal Total	Lugsongan BWSA	Magallanes BWSA	SARWASA	Municipal Total	Abgao WWS	Asuncion	Badiang	Basak	Bato I	Bato II	Bantan	Banco	Bogo	Cabadiagan	Caemituan	Cansirong	Canturing	Canyuom	Combado	Guadalupe	Haneman	Hinapu Daku	Hmapu Gamay	Ibarra	Lanao
	Name of	Municipality		Liloan				Limasawa	-			Maasin (Capital)					-					-						<del></del>			<del>.</del>	

Table 4.1.2 Details on Existing Level II Systems (Cont'd.) Sheet 1 of 6

	L,	ပ္ပ	8	Ý	1	?	27	0	0,	ō,	7	1	2	×	<u>-  </u>		2	1	1	=1			4	7	S	15	W	11	2	22		1	3
	Number	of Public Faucets													- :	:					:												
88	Length of	Distribution Line (meter)	125	000	207	120								2.00								:											
Existing Facilities	Reservoir	Volume (m)	2.5	0 50	0./2	27.0							:																				
Exis	Rese	Number	-		ľ	1										1			:														
	Length of	Transmission Line (meter)	SOO	200	1,200	909	:																:										
	43	Discharge	73.2	3	69.1	69.1																											
	Water Source	Number		7	1	1																											
		Type	65	7	SP	S						:																					
	Name of	Operating Body		Libertad	Libbu	\ COROX	Z Z Z	Lumas		Majapoc Norte	Mambajao-	Manhilo	Mantahan	Matingo	Noti		Nonok inoric	Nonok Sur	Pansaan	Dinaslmhan	Dira	Alexandaria Con American	San Agusan	San Load	San Jose	3010-3010	Sta. Cut.	Sta. Nosa	Sto. Nino	Sto. Rosario	Tagnipa	Tam-is	Tigbawan
	Nomo	Municipality		Maasin (Capital)															,														

Table 4.1.2 Details on Existing Level II Systems (Cont'd.) Sheet 1 of 6

		•				Exis	Existing Facilities	Sa	
Name of	Name of		water Source	9	Length of	Rese	Reservoir	Length of	Number
Municipality	Operating Body	Type	Number	Discharge	Transmission	Number	2	Distribution	of Public
		~4 F~		(m)/dav)	Line (meter):		(m.)	Line (meter)	Faucers
Maasm (Capital)	Tomoy-tomoy					1			5
	Tunga-tunga								en
	Municipal Total	DW/SP	1/15	865.1	7,660	16	254.1	1.645	663
Macropon		SP	1	220.0	25	1	28.0	420	8
	Laray WWS	SP	1	168.0	150	1	30.0	820	8
	San Joaquin WS	SP	1	150.0	40	1	320.0	650	9
	San Roque WWS	SP		276.9	450	7	32.0	1,900	14
	Sindangan WWS	SP	1	440.0	30	1	40.0	650	. 12
	Sto. Niño WWS	SP	1	443.1	120	1	46.0	780	17
<del>- 3</del>	Macrohon WWS	SP	1	170.0	35	1	48.0	1,950	18
	Municipal Total	SΡ	7	1,868.0	820	7	544.0	7,170	83
Malitbog	Aurora BWSA	ζS	1	22.5	250	Ĭ	1.0		( )
•	Caaga BWSA	SP	1	22.5	1,000	1	5.8	95	5
	Cadaruhan Norte BWS	SP	. 1	17.3	1,200	1	5.0	301	n
	Cadaruhan Sur BWSA	SP	1	17.3	1.500	1	3.3	200	2
	Caraatan BWSA	SP	1	13.0	600	. 2	0.2	300	S
<del> '</del>	Fatima BWSA								
	Gumabonan BWSA	SP	1	34.6	150	<b>p~4</b>	4.0	300	4
-	Iba BWSA	SP	r-1	5.2	140	1	2.0	315	
	Kauswagan BWSA	SP	1	13.8	400	7	5.0	25	m
-	Lambonao BWSA	SP	Ţ	17.3	150	1	3.0	95	9
-	Mahayhay BWSA	SP	1	17.3	200	2	3.0	200	4
<del>-</del>	Maningning BWSA	SP	<b></b> -1	22.5	200	-1	2.0		9
	Maujo BWSA	SP	1	34.6	1,500	1	4.0	304	9
	New Kampunan BWSA	SP	1	22.5	700	7	2.0	100	7
	Pancil BWSA	SP	1	17.3	50	1	5.0	100	
	San Vicente BWSA	SP	1	28.5	1.000	2	4.0	2.000	10
:	Sangahon BWSA	SP	1	17.3	300	1	3.0	100	2
	Sta. Cruz BWSA	SP	1	17.3	200	-~	3.0	800	4

Table 4.1.2 Details on Existing Level II Systems (Cont'd.) Sheet I of 6

						Exis	Existing Facilities	Sa	
Name of	Name of		Water Source	e :	Length of	Rese	Reservoir	Length of	Number
Municipality	Operating Body	Type	Number	Discharge /m³/dav)	Transmission Line (meter)	Number	Volume (m²)	Distribution Line (meter)	of Public Faucets
	CAL NUSA DVIVOA	₽		11.2	150		3.0	80	2
Maintoog	Tichawan BWSA	8	(	17.3	200	1	3.5	135	S
	Timba BWSA	S S		22.5	750	1	3.0	100	4
	Municipal Total	ęs,	20	391.4	11,240	23	64.8	5,312	7
Dodge Durane	Bunea WS	SS		86.4	3		42.0	1.700	9
rame purgos	Captutane WS	ß	1	172.8	059	2.	22.5	3.800	7
	San Juan WS	gy.	-	51.8	30	2	15.0	1.500	4
	Sto. Rosario WS	SP	-	86.4	3	1	42.0	2.300	7
	Municipal Total	ďS	4	397.4	989	9	121.5	9.300	24
Dinawan	Badiane WWS	SP	1	198.7	3,500	1	18.0	1.500	11
	Ralonebalone WWS	S.	1	172.8	1,650		16.8	850	7
	Ruenavista WWS	Sp	1	172.8		1	18.0		
	Bulawan WWS	ds	1	216.0	008	1	14.4	700	
	Cathawan WWS	ďS	-	190.1	1,800	1	18.0	700	ار
	Caubang WWS	dS	1	190.1	320		21.0	280	8
	Coon WWS	SS	7	172.8		1	14.4	***	14
	Dan-an WWS	SS.	-	181.4	1,300	1	18.0	700	
	Tobo WWS	ę,	1	190.1	1,000	Ī	18.0	1,000	
	Mainit WWS	SP		198.7	420		18.0	280	
	Nva. Estrella Norte W	1	Ţ	198.7	1,250		18.0	750	(1)
	Nva. Estrella Sur WW	ĺ	p-4	302.4		<b></b>	54.4	700	
	P.D. Equipilag WWS	Į	<b>, -1</b>	216.0	3,000	,(	48.0	700	
	Son-ok I WWS	1	e4	216.0			21.0	650	
	Son-ok II WWS		. 1	207.4	300	ŗ	21.0	1,200	7
	Tautag WWS		1	172.8	2,646			554	
	Municipal Total	dS.	16	3,196.8	18,838	16	351.4	11,264	2
Caint Bernard		SP	1	1,728.0	1,800	2	6.9		32
	Camaga WWS	SP	1	1.987.2	1.715	-	6.9		9
	Guinsaugon BWSA	SP		2,808.0	2,300		10.4	873	7

Table 4.1.2 Details on Existing Level II Systems (Cont'd.) Sheet 1 of 6

						Exis	Existing Facilities	es	
Name of	Name of		Water Source		Length of	Rese	Reservoir	Length of	Number
Municipality	Operating Body	Туре	Number	Discharge	Transmission	Number	Volume	Distribution Line (meter)	of Public Faucets
Saint Remard	Himos-onan BWSA	dS		3.888.0		2	20.7	715	11
	Magatas BWSA	es.	<b>,</b>	2,419.2	3,000	1	6.9	250	6
	Panian BWSA	જ		2,211.8		1	0.6	822	4
-	Sta. Cruz WWS	SP	1	2,808.0	1,200				C
·	Sug-angon WWS	SP	1	1,036.8	1.800	1 .	119.0	328	13
	Municipal Total	SP	8	18,887.0	17,165	6	179.8	2,988	91
San Francisco	Anislagon WS	SP	7	17.3	200	1	0.9	200	9
	Bongawisan WS	SP	r	69.1	1.800	1	10.0	400	
	Bongbong WS	SP	-	43.2	200	3	12.0	1,000	13
	Cahayag WS	SP	1	43.2	20	1	18.0	200	3
	Cuasi WS	SP	1	51.8	150	2	4.0	700	6
	Gabi WS	SP		69.1	3	1	10.0	400	3
	Habay WS	SP	1	25.9	1,500	• • • • • • • • • • • • • • • • • • •	5.5	1,000	4
	Malico WS	SP	1	34.6	250	. 2	10.0	200	7.
	Marayag WS	SP	1	25.9	490	2	5.0	1.500	7
	Pasanon WS	SP	1	17.3	300	2	9.5	200	5
	Pinamudlan WS	SP	Ţ	51.8	006	2	10.0	006	14
-	Punta WS	SP	1	34.6	100	2	12.0	250	. 3
	Sta. Cruz WS	SP	ĭ	34.6	59	2	18.0	258	6
	Sta. Paz-Norte WS	SP	1	43.2	1,200	7	20.0	2.000	6
	Sta. Paz Sur WS	SP	Ţ	25.9	2,000	ĭ	50.0	150	ξ.
	Sudmon WS	SP	1	25.9	200		18.0	400	10
<del></del> -	Tinaan WS	SP	7	43.2	200	2	7.5	1,000	9
	Tumo WS	SP	1	51.8	140	7	19.2	361	20
	Municipal Total	SP	81	708.5	10,348	30	244.7	11.856	134
San Juan (Cabalian)	Agay-ay BWSA	SP	1	21.6	1.800	_	5.3	650	
-	Basak BWSA	SP	1	138.2	1.876		17.8	686	21
	Bobon A BWSA	SP	1	259.2	2,000	-	18.0	550	19
	Bobon B BWSA	SP	1	216.0	1.500		8.0	700	<u>`!</u>

Table 4.1.2 Details on Existing Level II Systems (Cont'd.) Sheet I of 6

						EXİ	Existing Facilities	ss	
No.	Name of		Water Source	4	Length of	Rese	Reservoir	Length of	Number
Municipality	Operating Body	Туре	Number	Discharge (m <sup>3</sup> /dav)	Transmission Line (meter)	Number	Volume (m²)	Distribution Line (meter)	of Public Faucets
Con Inon (Cahalian)	Davance BWSA	ďS		103.7	1,200	٦	8.0		7
שייים ( במחותיים)	Garrido BWSA	dS.	1	43.2	1,700	2	0.6		19
	Minovho BWSA	ζS		72.0	3,000	1	15.6		
	Osao BWSA	gs	1	172.8	1,000	1	5.3	650	42
	Pong-ov BWSA	 ₽3		129.6	2,800	7	15.6		5
	San Roque BWSA	SS	1	86.4	1,000	Ţ	8.4		S
	San Vicente BWSA	gy		0.26	1,800	2	21.9		19
	Somore BWSA	SS		146.9	1,000	7	7.5	:	2
	Sta Filomena BWSA	SS	-	129.6	3,500		17.0	200	
	Sua BWSA	gs S	-	345.6	1,876	7	20.3		42
	Timba BWSA	જ	1	172.8	3,000		17.9		
	Municinal Total	dS	15	2,132.6	29,052	19	195.6		265
Can Discurdo		S. C.	  -  -	69.1	165	2	22.0	2	
on roce inc	Kinachawa WS	g,	-	43.2	1,940		5.1	800	
	To-or WS	SP	1	51.8	200	. 1	4.6		4
	Malinoin Mun. WS	S. P.	-	43.2	5,500	1	105.5	1	
	il:	dS		172.8	2,090	\$	63.7	1.670	18
	Drivate I and WS	S.	1	51.8	245	1	180.0		S
	San Ramon WS	SS	1	51.8	09	2	9.5	108	7
	Sanh WS	S.	1	138.2	260	2	234.0		
	Timba-Camano WS	dS.	1	129.6	2,040	2	10.0		
	Municipal Total	S	6	751.7	12,800	18	634,4	9.528	23
Cilogo									
Surago	Catmon	SP	1	103.7	4	1	6.0	200	S
	Ties contraction								11
	Tmelde.	2		103.7	1,400	г	14.4	2,500	2
	Vetting	9	_	121.0	2,000		14.4	800	4
	Lagrima								1
	Mercedec								17
	INTELLEGIES								

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Table 4.1.2 Details on Existing Level II Systems (Cont'd.) Sheet 1 of 6

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	Number	of Public Faucets	22	9	th	3	51	4	5	10	168	4	5	3	8	12	8	12	4	9	S	12	3	5	47	2		35	6	5	147
es	Length of	Distribution Line (meter)			200						4.300	200	180	500	1,250	1,000	200	200	099	006	1.000	700	100	009	235		300	1,000	1.000	200	10.525
Existing Facilities	Reservoir	Volume (m <sup>3</sup> )			14.4		:				49.2	1.8	1.8	5.5	4.5	1.8	3.5	2.1	8.2	1.8	5.6	8.9	2.8	1.8	1.8	1.8	5.3	98.0	2.3	2.0	165.2
Exis	Resc	Number			1						4	1	1	1	2	1	1	1	1	1	€.	I	S	1	1	1	. 1 .	4	3	1	29
	Length of	Transmission Line (meter)			1,500						4,904	100	150	213	200	3,000	200	800	120	009	3,000	200	3,000	200	99	150	1,260	100	1,000		15,558
		Discharge (m <sup>3</sup> /day)			114.9						443.3	17.3	25.9	21.6	21.6	148.6	25.9	63.1	16.4	25.9	25.9	63.1	48.4	33.7	10.4	25.9	17.3	69.1	27.6		2.29
	Water Source	Number			Ţ						ų.	1	1	1	ĭ	1	1	1	1	-		H	r.	-	1	1		-	-		18/1
		Type			SS							SP	SP	SP	SP	SP	S.	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SW	SP/SW
	Name of	Operating Body	Pob. District I		•	Salvacion	Sap-ang	Sudmon	Tuba-on	Tubod	Municipal Total	Cabadbaran	Hindangan	Hipantag	Kanangkaan	Libas	Mabicay	Magatas	Malinao	Milagroso	Olisihan	Pancho Villa	San Juan	San Miguel	San Roque	San Vicente	Santa Maria	Suba	Татроопд	Zone III	Municipal Total
	Name of	Municipality	Silago	0.00						<del></del>		Sogod	) 													-					

Table 4.1.2 Details on Existing Level II Systems (Cont'd.) Sheet I of 6

						Fwie	Evicting Eacilities	30	
	70	•	Water Source		Length of	Rese	Reservoir	Length of	Number
Name of Municipality	Operating Body	Type	Number	Discharge	Transmission Line (meter)	Number	Volume	Distribution Line (meter)	of Public Faucets
		ďζ		13.8	40	ľ	7.5	35	3
Lomas Oppus	Camains	5 8		85.0	1,500	1	8.0	007	10
	Cambric	9		13.8	006	1	22.5	1.080	15
31	Campao	5		9.6	55	7	156.0	48	9
	Caramaga	5 2		8.6	300	3	144.0	င္လ	8
	Historian	     		8.6	50	1	22.0	35	5
	Hinsenkan	S	1	13.8	180	2	7.5	150	7
	Hinano	SP	Ţ	10.8		1	25.0	2	
	Huona	SS		14.4	45	1	25.0		9
	Ynionihan .	SP	1	21.6	270	1	12.0		
	, 000	SP	1	86.4	100	1	25.0	1	15
	Magmaga	d.S.		34.6	09			50	5
	Magazina de	6	_	43.2	1,500	2	25.0		
	Macloo	S CS		21.6	150	2	17.5		
	Donong	SP	1	17.3	1,500	2	36.0		31
	Piral	S.	1	21.6	720	7	11.5		4
	San Miguel	es S		21.6	300	2	15.0		
-	San Rome	SP	ľ	8.6	006	3	7.5		
	San Aoustin	S	1	21.6	240	2	8.0	<b>(1)</b>	7
	San Antonio	gy By	1	17.3	200	, ,	28.0		8
	San Teidro	SP	1	28.5		2	24.5		2
	Municipal Total	SP	21	522.4	11,150	34	627.5	8,446	314
	и ч		. 215	39,074.6	198,466	271	4,337.4	151.143	2,650
	Frovincial Total			7/2007/1	County CD County	И.	and IG - Infiltration Gallery	llerv	

Note: 1. Type of Water Source; DW - Deep Well, DgW - Dug Well, Surf - Surface Water (River), SP - Spring, and IG - Infiltration Gallery

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Table 4.1.2 Details on Existing Level II Systems Sheet 2 of 6

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Name of	Name of	Number (	Number of Barangay Served	y Served	Number of Households Served	Househol	ds Served	Number o	Number of Population Served	n Served
Municipality	Operating Body	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Anahawan	Calintaan BWSA			1		20	20		91	91
	Capacuhan BWSA			~		25	25		114	114
	Kagingkingan BWSA	_	-	1	:	25	25		114	114
	Mainit BWSA -		1	1		20	20		91	91
	Manigawong		1	1		15	15		89	68
	Municipal Total		5	\$		105	105		478	478
Bontoc	Anahao WS		ŗ	<b>-</b> -4		39	39		219	219
	Catoogan WS			<b></b> (		09	09		333	333
:	Cawayan WWS		1	1		90	06		495	495
	Dao WS		1	7		52	52		259	259
	Hibagwan WWS		F	ī		95	20		255	255
	Hilaan WS		1	1		300	300		1,650	1,650
	Malbago WS		1	1		66	66		545	545
	Mauylab WS			1		80	80		440	440
	Taa WS		_	-		106	106		576	576
	Municipal Total		6	ο		928	876		4,772	4.772
Hinunangan	Bugho WS		<b>-</b> 1	-	-	20	20		91	16
)	Calag-itan WS					219	219		1.037	1.037
	Ilaya WS		Ţ			74	74		340	340
	Ingan WS			1		190	190		114	114
	Libas WS		1			46	67		68	68
	Matin-ao WS					20	20		91	91
· .	Nava WS	, .	1	, -		356	356		1,406	1,406
	Nueva Esperanza WS			-		129	129		91	91
	Palongpong WS		1	1		15	15		[89]	89
	Pondol WS					30	30		137	137

Table 4.1.2 Details on Existing Level II Systems (Cont'd.) Sheet 2 of 6

<i>y</i>	Urban	Rural 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Total 1 1 12 1 1 1 1 1 1 1	Urban	Rural 170	Total 170	Urban	Rural	Total
		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		170	170			
		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		104			228	228
		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	12 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		- - - - -	104		470	470
			yed yed e-d p.e.		1,376	1,376		4,141	4,141
					99	65		311	311
Biasong BWSA Bugho BWSA Cabulisan BWSA Hubasan BWSA Plaridel WS			-4		105	105		505	202
Bugho BWSA Cabulisan BWSA Hubasan BWSA Plaridel WS			1		15	75		359	359
Cabulisan BWSA Hubasan BWSA Plaridel WS					45	45		215	2.5
Hubasan BWSA Planidel WS					40	40		191	191
Plaridel WS		-	F-4		85	\$8		406	406
Sector DWSA			-		45	45		215	215
		F			85	88		406	406
Municipal Total		8	8		545	545		2.605	2,605
Tihagan Biasong WS			1		25	25		121	121
<u></u>	hulid	6	6		190	190		920	920
ı	2	2	4	09	140	200	300	678	978
Maokasa WS			1		40	40		192	192
Mayiea WS		-			80	80		387	387
Orikon WS		-	1		15	15		73	57
Panoi			end.		30	30		145	145
Municipal Total	7	10	12	09	520	280	300	2.516	2.816
7			1		20	20		95	95
Bahav WS			1		20	20		95	95
Cachinoalon-Gudan WS	S	2	2		909	95		237	237
-		-	1		30	30		142	142
Candavuman WS		-	1		20	20		95	95
Catto WS			-		15	15		71	71

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Table 4.1.2 Details on Existing Level II Systems (Cont'd.) Sheet 2 of 6

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e of Number of Barangay  g Body Urban Rural  l WS  l WS  l WS  l S WS  l I  s WS  l I  l I  l I  l I  l I  l I  l I  l												
Estela WS	Name of	Name of	Number (	of Baranga	y Served	Number of Households Served	f House	olds Se		Number o	Number of Population Served	Served
Estela WS Guintoylan WS Magaupas WS Maugoc WS Pandan WS Pres. Roxas WS San Isidro WS San Isidro WS Tabugon WS Tabugon WS Tabugon WS Tabugon WS Tabugon WS Tabugon WS Tabugon WS Tabugon WS Tabugon WS Tabugon WS Tabugon WS Tabugon WS Tabugon WS Tabugon WS Tabugon WS Magallanes BWSA SARWASA Magallanes BWSA SARWASA Magallanes BWSA SARWASA Magallanes BWSA SARWASA Magallanes BWSA SARWASA Magallanes BWSA SARWASA Magallanes BWSA SARWASA Magallanes BWSA SARWASA Magallanes BWSA SARWASA Magallanes BWSA SARWASA Magallanes BWSA SARWASA Magallanes BWSA SARWASA Magallanes BwSA SARWASA Magallanes BwSA SARWASA SARWASA Magallanes BwSA SARWASA Magallanes BwSA SARWASA SARWASA Magallanes BwSA SARWASA SARWASA SARWASA Magallanes BwSA SARWASA  unicipality	Operating Body	Urban	Rural	Total	Urban	Rural	Total		Urban	Rural	Total	
Guintoylan WS  Magaupas WS  Maugoc WS  Pandan WS  Pres. Roxas WS  San Isidro WS  Tabugon WS  Tabugon WS  Municipal Total  Municipal Total  Magallanes BWSA  Magallanes BWSA  Magallanes BWSA  SARWASA  Magallanes BWSA  Magallanes BWSA  SARWASA  Magallanes BWSA  Bato I  Bato I  Bato I  Bato II  Bato II  Bato II  Bato II  Baugo  Cabadiagan		Estela WS		-	1			20	20		- 95	95
Magaupas WS  Maugoc WS  Pandan WS  San Isidro WS  San Isidro WS  Tabugon WS  Tabugon WS  Municipal Total  Municipal Total  Abgao WWS  Asuncion  Asuncion  Bato I  Bato I  Bato II  Bato		Guintovian WS		Ţ	e~4			20	50		95	56
Maugoc WS Pandan WS San Isidro WS San Isidro WS Tabugon WS Tabugon WS Municipal Total Lugsongan BWSA Municipal Total Abgao WWS I Asuncion Bato I Bato I Bato I Bato I Bato I Bato I Bato I Bato I Bato I Bato I Bato I Bato I	150	Magaupas WS		Ţ	g4			30	30	:	142	142
Pandan WS Pres. Roxas WS San Isidro WS San Roque WS Tabugon WS Municipal Total Magallanes BWSA Magallanes BWSA Magallanes BWSA Magallanes BWSA SARWASA Municipal Total Asuncion Bato I Bato I Bato II		Maugoc WS		1			7	20	20		95	95
Pres. Roxas WS San Isidro WS San Roque WS Tabugon WS Tabugon WS Municipal Total Municipal Total Municipal Total Abgao WWS I Asuncion Bato I Bato I Bato II		Pandan WS		::	1			20	20		95	95
San Isidro WS San Roque WS Tabugon WS  Municipal Total Lugsongan BWSA Magallanes BWSA SARWASA Municipal Total Abgao WWS I Abgao WWS I Asuncion Bato I Bato I Bato II	11	Pres. Roxas WS		Ţ	Ţ			30	30		142	142
San Roque WS Tabugon WS Municipal Total Lugsongan BWSA Magallanes BWSA SARWASA Municipal Total Abgao WWS 1 Abgao WWS 1 Asuncion Batiang Bato I Bato I Bato I Bato I Bato I Bato I Bato I Bato I Bato I Bato I Bato I	1	San Isidro WS			-			30	30	,	142	142
Tabugon WS  Municipal Total  Lugsongan BWSA  Magallanes BWSA  SARWASA  Municipal Total  Abgao WWS  1  Asuncion  Bato I  Bato I  Bato II  Bato II  Baugo  Cabadiagan		San Roque WS		-	-		7	40	40		190	190
Municipal Total  Lugsongan BWSA  Magallanes BWSA  SARWASA  Municipal Total  Abgao WWS  1  Asuncion  Bato I  Bato I  Bato II  Bato II  Bato II  Bato II  Bato II  Bato II  Cabadiagan	1.	Tabugon WS						20	20		95	95
Lugsongan BWSA  Magallanes BWSA  SARWASA  Municipal Total  Abgao WWS  Asuncion  Badiang  Bato I  Bato I  Bato II  Bato II  Bato II  Batuan  Baugo  Cabadiagan	•	Municipal Total		16	16		ξ.	385	385		1.826	1.826
Magallanes BWSA  SARWASA  Municipal Total  Abgao WWS  1 Asuncion  Badiang  Bato I  Bato I  Bato II  Bato Seto  Cabadiagan		Lugsongan BWSA			<b>-~1</b>	2 <u>1</u>		35	35		174	174
SARWASA  Municipal Total  Abgao WWS  I Asuncion  Badiang  Bato I  Bato II  Bato II  Baugo  Cabadiagan				Ţ	-			30	30		149	149
Municipal Total Abgao WWS 1 Asuncion 1 Badiang Basak Bato I Bato I Batuan Baugo Cabadiagan	1.7.2.			2	7		3	80	08		398	398
Abgao WWS 1 Asumcion 1 Badiang Basak Bato I Bato I Batuan Baugo Cabadiagan		Municipal Total		4	7		71	145	145		721	721
Asuncion 1 Badiang Basak Bato I Bato II Batuan Baugo Cabadiagan						206			506	1,030		1,030
uež			1			143		:	143	715		715
uez	15.3	Вадіапк		-	1		17	27	127		635	635
Bato I         1           Bato II         1           Batuan         1           Baugo         1           Bogo         1           Cabadiagan         1		Basak		. 1	-	N 4 10		39	39		195	195
Bato II         I           Batuan         I           Baugo         I           Bogo         I           Cabadiagan         I		Bato I		-	ť		\$	50	20		300	300
Batuan         1           Baugo         1           Bogo         1           Cabadiagan         1		Bato II		ľ	1		(*)	34	34		170	170
Baugo         1           Bogo         1           Cabadiagan         1		Batuan	:	Į.	Ţ	-	ZI	26	126		630	630
Bogo Cabadiagan		Baugo					Z	21	21		105	105
Cabadiagan		Bogo		ľ		:	7	77	77	: :	222	222
	1.3	Cabadiagan		1	1		7	29	59		356	356
Cagnitian		Cagnituan		1	1		,	52	52		314	3 8
Cansirong		Cansirong		1	1		)[	102	102		612	612

Table 4.1.2 Details on Existing Level II Systems (Cont'd.) Sheet 2 of 6

erved	Total	92	400	866	38	395	539	509	670	275	285	590	200	674	240	255	218	400	464	209	177	285	301	183	278	435	282
tion S		92	₹00			395	539	509		275	285	. 065	00	674	240	255		400		209	177	285	301	183	78	435	282
Number of Population Served	Rural	S.	)#			36	5	ξ.		7	7	33	5(	9	5	2		4		2(	4-4	2:	m		7	र्थ	2
ber of	20			366	38			:	029			:					218		464	:			H				
Num	Urban											i					ļ	:									
Number of Households Served	Total	18	67	199	8	79	68	84	134	55	47	118	74	135	48	51	43	08	93	41	35	57	09	37	55	87	\$6
sepolo	Rural	18	29		1	79	68	84		55	47	118	4/	135	48	\$1		08		41	35	57	8	37	55	87	56
of Hot	\$		:		8	_			- T		<u>.</u>		_		_	-	m		<u></u>						_		
Number	Urban			199	-				134		.:						43		93						ŀ		
	Total					-	1		-		1	-				1		-		1							1
angay	Lal					-	-		-			-													-		
of Bar	Rural																										
Number of Barangay Served	Urban		-	-					-								-		-								
•	rody.							,		T							,										
Name of	Operating Body	Ę	\$ E	1 5	ا ء ا ۽	<u> </u>		i i			_				,,,,,		2		2 6	    ç	3	North	21.70		1 to 1 to 1 to 1 to 1 to 1 to 1 to 1 to	1110111	ustin
2	Opera	Continuo	20,0,0	Compodo.	on adalana	Handinan	Hinami Daku	Hinanii Gamay	Thorns	3130	T Shortsd	1,44.	מיים ביים	Comp.	Maharhar	Malanoc Norte	Manaport	Markin	Mantahan	Matin-ao	Nati	Monok Morte	Monot	Doneson	Dimenterhon	Digel	San Agustin
		╬	<u>-1-</u>	<u>- , ~</u>	<u> 1 -</u>	17	-15	<u> </u>	<u> </u>	<u> </u>	·   -	<u>-15</u>	:12	<u> </u>	<u>- 10</u>	- 1-	· • ·	-1		· 1 •				1	-1-		
Name of	Municipality	1	apitai)																			٠					
ž	Muni	3	iviaasin (Capital)			•																					-
L		يٰال	MIZ															-1-7			-	-					

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Table 4.1.2 Details on Existing Level II Systems (Cont'd.) Sheet 2 of 6

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	Number of Barangay	Operating Body Urban Rural Total													Municipal Total 10 40 50			San Joaquin WS	San Roque WWS 2 2	Sindangan WWS 1	Sto. Niño WWS 2 2	Macrohon WWS 2 2	Municipal Total 10 10	Aurora BWSA 1 1	Caaga BWSA	Cadaruhan Norte BWSA 1 1	Cadaruhan Sur BWSA 1 1	Caraatan BWSA   1   1
$\vdash$	-	Total Urban	1				1	-	1	1 1	1	1	1			<b>-</b> *	1	1	2		2	2	10		1	1	1	
of Howesholds	Chronosmon to	Rural	21	6	39	74	14	54	20	110	55	63	25	14	989 2,392	40	40	30	20	09	85	06	415	72	81	72	71	55
-		Total Urban	21	6	39 197	74	14	54	80	110 550	55	63	25	14 68	3,381 4,948	40	40	30	70	09	85	- 06	415	72	. 81	72	71	55
Number of Population Served	Tongara	Rural	103	46	7	369	102	270	250	0	275	316	123	- 8	8 12.665	193	193	145	338	290	411	435	2,005	173	180	143	175	184
O. L.	261 464	Total	103	46	197	369	70	270	250	550	275	316	123	89	17,613	193	193	145	338	290	411	435	2,005	173	180	143	175	184

Table 4.1.2 Details on Existing Level II Systems (Cont'd.) Sheet 2 of 6

400	Name of	Number	Number of Barangay Served	y Served	Number o	Number of Households Served	ls Served	Number o	Number of Population Served	n Served
Municipality	Operating Body	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Marithan	Fatima BWSA		1	1		23	23		104	104
Mantons	Guinabonan BWSA		-			43	43		113	113
	Iba BWSA		r,	1		62	62		112	112
	Kauswagan BWSA		1	T		33	33		145	145
	Lambonao BWSA		1	1		83	83	:	207	207
	Mahayhay BWSA		1	1		77	77		110	0]
	Maninoning BWSA		1			59	59		207	207
	Maurio BWSA		-	1		128	128		241	241
	Ä	WSA	1	1		44	44	:	139	139
	Pancil BWSA		1			09	60	:	148	148
	San Vicente BWSA		1	p=4	1	246	246		244	244
·	Sanoahon BWSA		1			131	131		101	101
	Str Criz BWSA		I	-		175	175		214	214
	Sto Niño BWSA			1		65	59		105	105
	Tiohawani BWSA	1.	-	1		53	53		109	109
	Timba RWSA			,		105	105		145	145
	Municipal Total		21	21		1,732	1.732		3,299	3.299
Dodre Burgas	Runga WS					30	30		153	153
	Cantutang WS		- 7	: [		35	35		179	179
	San Juan WS			gt		20	20		102	102
	Sto Rosano WS			g		35.	35		179	179
	Municipal Total		4	4		120	120		613	613
Dinaliyan	Badiane WWS		2	7		55	55		289	289
וויית שייו די	Balonebalone WWS		g\$	_		25	25		131	131
	Buenavista WWS			-		10	10		53	53
	Bulawan WWS		1	-		25	25		131	131

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Table 4.1.2 Details on Existing Level II Systems (Cont'd.) Sheet 2 of 6

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			ç	7	N-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	Todoscolo	Jo Courted	Vinnekory	Mumber of Decemberion Comed	Somiod
Name of	Name of	Number	Number of Barangay Served	y Served	Number o	number of nouseholds served	us served	1 Jammy	r opuiau	יון פבן גבת
Municipality	Operating Body	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Pintuvan	Catbawan WWS		-1	1		25	25		131	131
•	Caubang WWS					40	40		210	210
<u>.</u>	Cogon WWS			<b>,</b> ~		35	35		184	184
<del></del>	Dan-an WWS		1	1		20	20		105	105
	Lobo WWS			1		15	15		79	79
	Mainit WWS		1	1		30	30		158	158
	Norte	SMM	1	1		15	15		79	79
	Nva. Estrella Sur W	wws	-	1		10	10		53	. 53
	P.D. Equipilag WWS		,	1	:	15	15		79	6.2
	Son-ok I WWS		+	1		15	15		79	79.
	Son-ok II WWS		1	1:		15	51		79	79
	Tautag WWS		-	<b>,</b>		25	25		131	131
	Municipal Total		17	17		375	375		1.971	1.971
Saint Bernard	Ayahag BWSA		F1	1		160	160		792	792
	Carnaga WWS	4		1		80	80		396	396
	Guinsaugon BWSA		:	1		15	15		74	74
-	Himos-onan BWSA		2	2		55	55		272	272
	Magatas BWSA			1		45	45	,	223	223
:	Panian BWSA		-	Ţ		20	20		99	66
	Sta. Cruz WWS		1	1		15	51		74	7.4
	Sug-angon WWS		gt	-		59	65		322	322
	Municipal Total		6	6		455	455		2.252	2.252
San Francisco	Anıslagon WS		<	1		30	30		137	137
	Bongawisan WS			1		15	15		89	89
	Bongbong WS		1	1		65	65	- "	296	296
	Cahayag WS		1	1		\$1	15		89	89

Table 4.1.2 Details on Existing Level II Systems (Cont'd.)
Sheet 2 of 6

									f Download	Sorriod
Normo of	Name of	Number	Number of Barangay Served	y Served	Number o	Number of Households Served	ds Served	Number o	Number of Kopulation Served	מו אבו אבת
Municipality	Operating Body	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
	Ousei WC			1		45	45		205	205
San Francisco	Cabi WC					15	15		89	89
	Habay WS					20	20		91	91
	Malico WS			<del> </del>		35	35		159	159
	Maravag WS		1	1		35	35		159	159
	Pasanon WS			1		25	25		114	114
	Pinamidlan WS			1		70	70		318	3.8
	Punta WS		: · · · · · · · · · · · · · · · · · · ·	1		. 15	15		89	98
	Sta Criz WS			-		45	45		205	205
	Sta Paz Norte WS		-	1		45	45		205	205
	Sto Day Sur WS					15	15		68	89
-	Sudmon WS			1		50	80		228	228
	Tingan W.S.			-		30	30		137	137
	Timo W.S			,		100	100		455	455
	Municinal Total		18	18		0.29	670		3,049	3.049
Car Tine (Ocholion)	A GOV-3V PWSA	-		-		55	55		193	193
San Juan (Caudilan)	Racat RWSA		-			105	105		422	422
	Bohon & RWSA			1		95	95		376	376
	Robon B BWSA					0.2	70		262	262
	Dayanog RWSA			1		35	35		101	101
	Garrido RWSA		-			56	56		376	376
·	Minovho RWSA					75	75		285	285
	Ocao RWSA					210	210		480	480
	Dong on RWCA			-		95	95		376	376
	San Roome RWSA		-	-		40	40		125	125
	San Vicente RWSA					56	95		376	376

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Table 4.1.2 Details on Existing Level II Systems (Cont'd.) Sheet 2 of 6

Served	Total	170	239	481	137	4,399	452	201	100	75	452	100	176	100	377	2,033	270	116	208	46	46	139	93	83	162	61	223
Population	Rural	170	239	481	137	4.399	452	201	100	75	452	100	176	100	377	2.033	270	116	208	46	95	139	93			19	223
Number of Population Served	Urban																							83	162		
	Total	50	99	210	30	1,325	06	70	20	15	06	20	35	20	75	405	80	25	45	10	10	30	20	35	52	10	45
Number of Households Served	Rural	20	9	210	30	1,325	06	40	20	15	06	20	35	20	75	405	80	25	45	10	10	30	20			10	45
Number of	Urban	:																						35	52		
y Served	Total			1	1	15	1		r	3	~	ī	П	1	2	12	1	-7	1	ı	ī						1
Number of Barangay Served	Rural			,	г	15	-	1	-	3	1	1			2	12		1			1						p1
Number	Urban																								-		
Name of	Operating Body	Somoie BWSA.	Sta. Filomena BWSA	Sua BWSA	Timba BWSA	Municipal Total	Esperanza WS	Kinachawa WS	Lo-oc WS	Malingin Mun. WS	5. T.	Private Land WS	San Ramon WS	Saub WS	Timba-Camang WS	Municipal Total	Balagawan	Catmon	Hingatungan	Imelda	Katipunan	Laguma	Mercedes	Pob. District I	Pob. District II	Puntana	Salvacion
Name of	Municipality	San Juan (Cabalian)					San Ricardo									- 1:	Silago	•				:					: