

## 8. UPDATING PW4SP DATA BASE

The following procedures are guide in updating the base data of the PW4SP data management system. The word *column* and *row* in this procedure mean the internal column and row notation in the worksheet environment.

### 8.1. Updating Socio-economic Data Base

1. Click the **F**ile menu, select **O**pen.  
Short-cut: Click the **O**pen button.
2. From the **O**pen Dialog Box. Select the *socio.xls* filename.

3.1 To update the **Municipality/City Status and No. of Barangay** click the tab of *MunCity Status (P.1.1)* sheet.

- **Geopgraphic code:** move mouse pointer to column A. Starting at the row below the column description, select the data you would like to update and type the new value.
- **Name of City or Municipality:** move mouse pointer to column B. Starting at the row below the column description, in reference to column A (Geographic code) select the data you would like to update and type the new value.
- **City/Municipality:** move mouse pointer to column C. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Class:** move mouse pointer to column D. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Urban Barangay:** move mouse pointer to column E. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Rural Barangay:** move mouse pointer to column F. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.

3.2 To update the **Past Population Data**, click the tab of *Past Population (P.1.2.1)* sheet.

- **1903:** move mouse pointer to column C. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **1918:** move mouse pointer to column D. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **1939:** move mouse pointer to column E. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.

- **1948:** move mouse pointer to column F. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **1960:** move mouse pointer to column G. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **1970:** move mouse pointer to column H. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **1975:** move mouse pointer to column I. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **1980:** move mouse pointer to column J. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **1990:** move mouse pointer to column K. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.

click the tab of *Past Population (P.1.2.2)* sheet.

- **Urban Population, Male (last POPCEN):** move mouse pointer to column C. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Urban Population, Female (last POPCEN):** move mouse pointer to column D. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Rural Population, Male (last POPCEN):** move mouse pointer to column F. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Rural Population, Female (last POPCEN):** move mouse pointer to column G. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Urban Population, Male (last POPCEN):** move mouse pointer to column J. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Urban Population, Female (last POPCEN):** move mouse pointer to column K. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Rural Population, Male (last POPCEN):** move mouse pointer to column M. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Rural Population, Female (last POPCEN):** move mouse pointer to column N. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.

3.3 To update the Population Projection Data,  
click the tab of *Project Population (P.1.3.1)* sheet.

- **Urban Population, Male (Medium-term):** move mouse pointer to column C. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Urban Population, Female (Medium-term):** move mouse pointer to column D. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Rural Population, Male (Medium-term):** move mouse pointer to column F. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Rural Population, Female (Medium-term):** move mouse pointer to column G. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Urban Population, Male (Long-term):** move mouse pointer to column C. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Urban Population, Female (Long-term):** move mouse pointer to column D. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Rural Population, Male (Long-term):** move mouse pointer to column F. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Rural Population, Female (Long-term):** move mouse pointer to column G. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.

**3.4 To update the Household Data,**  
click the tab of *Household (P.1.4)* sheet.

- **Urban Household (Last POPCEN):** move mouse pointer to column F. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Rural Household (Last POPCEN):** move mouse pointer to column G. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.

**3.5 To update the Services Data,**  
click the tab of *Services (P.1.5)* sheet.

- **Number of Public Elementary School:** move mouse pointer to column C. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Private Elementary School:** move mouse pointer to column D. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Public High School:** move mouse pointer to column F. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.

- **Number of Private High School:** move mouse pointer to column J. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Vocational:** move mouse pointer to column I. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Colleges:** move mouse pointer to column J. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Hospitals:** move mouse pointer to column K. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Banks:** move mouse pointer to column L. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.

**3.6 To update the Occupation Data,**  
click the tab of *Occupation (P.1.6)* sheet.

- **Number of Professional, Technical and Related Workers:** move mouse pointer to column C. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Administrative, Executive and Managerial:** move mouse pointer to column D. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Sales Workers:** move mouse pointer to column E. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Service Workers:** move mouse pointer to column F. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Agricultural, Animal Husbandry & Forestry Workers, Fisherman and Hunters,** move mouse pointer to column G. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Production & Related Workers, Transportation Equipment Operators and Laborers:** move mouse pointer to column H. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Occupation Not Adequately Defined or Reported:** move mouse pointer to column I. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.

**3.7 To update the Family Income, Education and Literacy Data,**  
click the tab of *Family Income (P.1.7)* sheet.

- **Number of Family Receiving Under P 5,000:** move mouse pointer to column C. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Family Receiving Between P 5,000 to P 14,999:** move mouse pointer to column D. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Family Receiving Between P 15,000 to P 24,999:** move mouse pointer to column E. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Family Receiving Between P 25,000 to P 34,999:** move mouse pointer to column F. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Family Receiving Between P 35,000 to P 44,999:** move mouse pointer to column G. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Family Receiving Between P 45,000 to P 59,999:** move mouse pointer to column H. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Family Receiving over P 60,000:** move mouse pointer to column I. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.

**3.8 To update the Family Expenditure Pattern Data,**  
click the tab of *Expenditure (P. 1.8)* sheet.

- **Average Monthly Food Expenses:** move mouse pointer to column C. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Average Monthly Water Expenses:** move mouse pointer to column D. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Average Monthly Electricity Expenses:** move mouse pointer to column E. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Average Monthly Clothing Expenses:** move mouse pointer to column F. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Average Monthly House Rental Expenses:** move mouse pointer to column G. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Average Monthly Recreation Expenses:** move mouse pointer to column H. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.

- **Average Monthly Other Expenses:** move mouse pointer to column I. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.

3.9 To update the Education and Literacy Data, click the tab of *Education (P.1.9)* sheet.

- **Highest Level of Education – Preschool (by population):** move mouse pointer to column C. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Highest Level of Education – Elementary (by population):** move mouse pointer to column D. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Highest Level of Education – Secondary/High School (by population):** move mouse pointer to column E. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Highest Level of Education – Tertiary (College & Post Graduate) (by population):** move mouse pointer to column F. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Literate Population 10 years old and above:** move mouse pointer to column G. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Illiterate Population 10 years old and above:** move mouse pointer to column H. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.

## 8.2. Updating Land Use Data Base

1. Click the **File** menu, select **Open**.  
Short-cut: Click the **Open** button.
2. From the **Open Dialog Box**. Select the *landuse.xls* filename.

3.1 To update the Existing Land Use Data, click the tab of *Existing Land Use (P.2.1)* sheet.

- **Forest Land Area:** move mouse pointer to column C. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Grass Land Area:** move mouse pointer to column D. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Built-up Land Area:** move mouse pointer to column E. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Agricultural Land Area:** move mouse pointer to column F. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.

- *Fishponds, Mangrove, In-land Area*: move mouse pointer to column G. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- *Open Land Area*: move mouse pointer to column H. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.

3.2 To update the Future Land Use Data,  
click the tab of *Future Land Use (P.2.2)* sheet.

- *Forest Land Area*: move mouse pointer to column C. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- *Grass Land Area*: move mouse pointer to column D. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- *Built-up Land Area*: move mouse pointer to column E. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- *Agricultural Land Area*: move mouse pointer to column F. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- *Fishponds, Mangrove, In-land Area*: move mouse pointer to column G. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- *Open Land Area*: move mouse pointer to column H. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.

### 8.3. Updating Health Data Base

1. Click the **File** menu, select **Open**.

Short-cut: Click the **Open** button.

2. From the **Open Dialog Box**. Select the *health.xls* filename.

3.1 To update the Morbidity, Mortality and Infant Mortality Data,  
click the tab of *Morbidity and Mortality (P.3.1)* sheet.

- *Number of Morbidity Case - Male*: move mouse pointer to column E. Starting at the row below the column description, in reference to column C (name of diseases) select the data you would like to update and type the new value.
- *Number of Morbidity Case - Female*: move mouse pointer to column F. Starting at the row below the column description, in reference to column C (name of diseases) select the data you would like to update and type the new value.
- *Number of Mortality Case - Male*: move mouse pointer to column H. Starting at the row below the column description, in reference to column C (name of diseases) select the data you would like to update and type the new value.
- *Number of Mortality Case - Female*: move mouse pointer to column I. Starting at the row below the column description, in reference to column C (name of diseases) select the data you would like to update and type the new value.

- **Number of Infant Mortality Case - Male:** move mouse pointer to column K. Starting at the row below the column description, in reference to column C (name of diseases) select the data you would like to update and type the new value.
- **Number of Infant Mortality Case - Female:** move mouse pointer to column L. Starting at the row below the column description, in reference to column C (name of diseases) select the data you would like to update and type the new value.

**3.2 To update the Facility and Practitioner Data**  
click the tab of *Facility (P.3.2)* sheet.

- **Number of Hospital Facility:** move mouse pointer to column C. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Rural Health Unit (RHU):** move mouse pointer to column D. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Barangay Health Station (BHS):** move mouse pointer to column E. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.

**3.3 To update the Medical Practitioner Data**  
click the tab of *Facility (P.3.2)* sheet.

- **Number of Practicing Doctors - Male:** move mouse pointer to column C. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Practicing Doctors - Female:** move mouse pointer to column D. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Practicing Nurses - Male:** move mouse pointer to column F. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Practicing Nurses - Female:** move mouse pointer to column G. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Practicing Midwives - Male:** move mouse pointer to column I. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Practicing Midwives - Female:** move mouse pointer to column J. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Practicing Dentists - Male:** move mouse pointer to column L. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Practicing Dentists - Female:** move mouse pointer to column M. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.



- *Number of Other Medical Practitioner – Male*: move mouse pointer to column O. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- *Number of Other Medical Practitioner – Female*: move mouse pointer to column P. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.

#### 8.4. Updating Water Supply Data Base

1. Click the **F**ile menu, select **O**pen.  
Short-cut: Click the **O**pen button.
2. From the **O**pen **D**ialog **B**ox, Select the Chapter 4.xls filename.

- 3.1 To update the Level III Water Supply Data  
Click the tab **S**table 4.1.1 **S**ht 1

- Enter *Name of Municipality or City* under column A, starting from row 7.
- Enter *Name of Operating Body* under column B, starting from row 7.
- Enter *Number of Urban Barangay served by Level III services* under column D, starting from row 7.
- Enter *Number of Rural Barangay served by Level III services* under column E, starting from row 7.
- Enter *Number of Household in Urban area served by Level III services* under column G, starting from row 7.
- Enter *Number of Household in Rural area served by Level III services* under column H, starting from row 7.
- Enter *Number of Population in Urban area served by Level III services* under column J, starting from row 7.
- Enter *Number of Population in Rural area served by Level III services* under column K, starting from row 7.

Click the tab **S**table 4.1.1 **S**ht 2

- Copy the first two columns in **S**table 4.1.1 **S**ht. 1, starting from 7 up to the last entry.
- *Number of Public Faucet in Urban Area*, move mouse pointer to column E. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Number of Public Faucet in Rural Area*, move mouse pointer to column F. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Number of Household in Urban Area*, move mouse pointer to column H. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Number of Household in Rural Area*, move mouse pointer to column I. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.

- *Number of Population in Urban Area*, move mouse pointer to column K. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Number of Population in Rural Area*, move mouse pointer to column L. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.

Click the tab *STable 4.1.1 sheet 3*

- Copy the first two columns in *STable 4.1.1 Sht. 2*, starting from 7 up to the last entry.
- *Type of Water Source*, move mouse pointer to column E. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Number of Water Source*, move mouse pointer to column F. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Production Capacity (cu.m./day)*, move mouse pointer to column G. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Domestic Consumption*, move mouse pointer to column H. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Institutional Consumption*, move mouse pointer to column I. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Commercial Consumption*, move mouse pointer to column J. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Industrial Consumption*, move mouse pointer to column K. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.

Click the tab *STable 4.1.1 sheet 4*

- Copy the first two columns in *STable 4.1.1 Sht. 3*, starting from 7 up to the last entry.
- *Number of Metered Connection (Domestic House Connections)*, move mouse pointer to column D. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Number of Unmetered Connection (Domestic House Connections)*, move mouse pointer to column E. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Consumption, cu.m./day (Domestic House Connections)*, move mouse pointer to column F. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.

- **Number of Metered Connection (Domestic Public Faucet)**, move mouse pointer to column G. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- **Number of Unmetered Connection (Domestic Public Faucet)**, move mouse pointer to column H. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- **Consumption, cu.m/day (Domestic Public Faucet)**, move mouse pointer to column I. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- **Number of Metered Connection (Institutional Consumers)**, move mouse pointer to column J. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- **Number of Unmetered Connection (Institutional Consumer)**, move mouse pointer to column K. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- **Consumption, cu.m/day (Institutional Consumer)**, move mouse pointer to column L. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- **Number of Metered Connection (Commercial Consumers)**, move mouse pointer to column M. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- **Number of Unmetered Connection (Commercial Consumers)**, move mouse pointer to column N. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- **Consumption, cu.m/day (Commercial Consumers)**, move mouse pointer to column O. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- **Number of Metered Connection (Industrial Consumers)**, move mouse pointer to column P. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- **Number of Unmetered Connection (Industrial Consumers)**, move mouse pointer to column Q. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- **Consumption, cu.m/day (Industrial Consumers)**, move mouse pointer to column R. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.

3.2 To update the Level II Water Supply Data  
Click the tab *S*Table 4.1.2 Sht 1

- Enter *Name of Municipality or City* under column A, starting from row 7.

- Enter *Name of Operating Body* under column B, starting from row 7.
- Enter *Type of Water Source* under column D, starting from row 7.
- Enter *Number of Water Source* under column E, starting from row 7.
- Enter *Discharge of Water Source, cu. m/day*, under column B, starting from row 7.
- Enter *Length of Transmission Line (meter)* under column G, starting from row 7.
- Enter *Number of Reservoir* under column H, starting from row 7.
- Enter *Length of Distribution Line (meter)* under column J, starting from row 7.
- Enter *Name of Public Faucets* under column B, starting from row 7.

Click the tab *STable 4.1.2 Sht 2*

- Copy the first two columns in *STable 4.1.2 Sht. 1*, starting from 7 up to the last entry.
- *Number of Barangay in Urban Area*, move mouse pointer to column D. Starting from row 6, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Number of Barangay in Rural Area*, move mouse pointer to column E. Starting from row 6, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Number of Household in Urban Area*, move mouse pointer to column G. Starting from row 6, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Number of Household in Rural Area*, move mouse pointer to column H. Starting from row 6, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Number of Population in Urban Area*, move mouse pointer to column J. Starting from row 6, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Number of Population in Rural Area*, move mouse pointer to column K. Starting from row 6, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.

Click the tab *STable 4.1.2 Sht 3*

- Copy the first two columns in *STable 4.1.2 Sht. 2*, starting from 7 up to the last entry.
- Delete the row with the municipal total.
- *Number of Water Supply in Hours/Day*, move mouse pointer to column C. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Frequency of Dirty Water*, move mouse pointer to column D. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.

- *Taste or Smell of Water*, move mouse pointer to column E. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Number of Power Failure per Month*, move mouse pointer to column F. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Number of Pump Breakdown per Month*, move mouse pointer to column G. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Number of Pipe Burst per Month*, move mouse pointer to column H. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Number of Others Water Supply Interruption per Month*, move mouse pointer to column I. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Supply Water Pressure (Adequate)*, move mouse pointer to column J. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Supply Water Pressure (Inadequate)*, move mouse pointer to column K. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.

Click the tab *STable 4.1.2 Sht 4*

- Copy the first two columns in *STable 4.1.2 Sht. 3*, starting from 7 up to the last entry.
- *Number of Technical Staff*, move mouse pointer to column C. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Number of Administrative Staff*, move mouse pointer to column D. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Number of Collector Staff*, move mouse pointer to column E. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Repair Work*, move mouse pointer to column C. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Number of Technical Staff*, move mouse pointer to column C. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.

Click the tab *STable 4.1.2 Sht 5*

- Copy the first two columns in *STable 4.1.2 Sht. 4*, starting from 7 up to the last entry.

- *Amount of Annual Expenditures*, move mouse pointer to column C. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Amount of Expenditures for Annual Wages*, move mouse pointer to column D. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Amount of Expenditures for Fuel and Chemicals*, move mouse pointer to column E. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Amount of Expenditures for Transport*, move mouse pointer to column F. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Amount of Expenditures for Repair*, move mouse pointer to column G. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Amount of Expenditures for Loan Repayment*, move mouse pointer to column H. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Amount of Other Expenditures*, move mouse pointer to column I. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Annual Consumer Payment*, move mouse pointer to column J. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Cost per Pail*, move mouse pointer to column K. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Cost per Cubic Meter*, move mouse pointer to column L. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Cost per Household*, move mouse pointer to column M. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Other Tariff*, move mouse pointer to column N. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Average Collection Efficiency (%)*, move mouse pointer to column O. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.

Click the tab *S*Table 4.1.2 Sht 6

- Copy the first two columns in *S*Table 4.1.2 Sht. 5, starting from 7 up to the last entry.
- *Number of Annual Billing*, move mouse pointer to column C. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.

- *Amount of Billing for Public Faucet Consumers*, move mouse pointer to column D. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Amount of Billing for House Connection Consumers*, move mouse pointer to column E. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Amount from Expected Subsidies*, move mouse pointer to column F. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Amount from Others*, move mouse pointer to column G. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Amount of Annual Income*, move mouse pointer to column H. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Payment by Public Faucet Consumers*, move mouse pointer to column I. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Payment by House Connection*, move mouse pointer to column J. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.
- *Revenue from Subsidies*, move mouse pointer to column K. Starting from row 7, in reference to column B (Name of Operating Body), select the data you would like to update and type the new value.

3.1 To update the **Level I Facility Data**,  
click the tab of *Level I (P.5.1)* sheet.

**Public Facility:**

- *Deep Well*: move mouse pointer to column F. Starting at the row below the column description, in reference to column B (Name of Municipality)/column C (Area)/ column E (Operating Condition), select the data you would like to update and type the new value.
- *Shallow Well*: move mouse pointer to column G. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- *Covered/Improved Dug Well*: move mouse pointer to column H. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- *Developed Spring*: move mouse pointer to column I. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- *Open Dug Well*: move mouse pointer to column J. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.

- **Undeveloped Spring:** move mouse pointer to column K. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Rain Water Collector:** move mouse pointer to column L. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.

**Private Facility:**

- **Deep Well:** move mouse pointer to column N. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Shallow Well:** move mouse pointer to column O. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Covered/Improved Dug Well:** move mouse pointer to column P. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Open Dug Well:** move mouse pointer to column Q. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Rain Collector:** move mouse pointer to column R. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.

## 8.5. Updating Environmental Sanitation Data base

1. Click the **File** menu, select **Open**.  
Short-cut: Click the **Open** button.
2. From the **Open Dialog Box**. Select the *Sanitation.xls* filename.
- 3.1 To update the **Household Toilet Data**,  
click the tab of *Household Toilet (P.6.1)* sheet.
  - **Number of Urban Households Using Water Sealed Flush Toilet:** move mouse pointer to column C. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
  - **Number of Rural Households Using Water Sealed Flush Toilet:** move mouse pointer to column D. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
  - **Number of Urban Households Using Water Sealed Pour Flush Toilet:** move mouse pointer to column E. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
  - **Number of Rural Households Using Water Sealed Pour Flush Toilet:** move mouse pointer to column F. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
  - **Number of Urban Households Using VIP Latrine Toilet:** move mouse pointer to column G. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.



- **Number of Rural Households Using VIP Latrine Toilet:** move mouse pointer to column H. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Urban Households Using Unsanitary Toilet:** move mouse pointer to column K. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Rural Households Using Unsanitary Toilet:** move mouse pointer to column L. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Urban Households Without Toilet:** move mouse pointer to column N. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Rural Households Without Toilet:** move mouse pointer to column O. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.

### 3.2 To Update the School Toilet

click the tab of *School & Student (P.6.2)* sheet

- **Number of Sanitary Toilets in Public School:** move mouse pointer to column C. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Sanitary Toilets in Private School:** move mouse pointer to column D. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Unsanitary Toilets in Public School:** move mouse pointer to column F. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Unsanitary Toilets in Private School:** move mouse pointer to column G. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.

click the tab of *School Toilets (P.6.3)* sheet.

- **Number of Public School:** move mouse pointer to column C. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Private School:** move mouse pointer to column D. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Student in Public School:** move mouse pointer to column F. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Student in Private School:** move mouse pointer to column G. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.

### 3.2 To Update the Public Toilet

For Public Market

click the tab of *Public Toilets (P.6.4.1)* sheet

- **Number of Public Markets:** move mouse pointer to column C. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Sanitary Toilets in Public Markets - Male:** move mouse pointer to column D. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Sanitary Toilets in Public Markets - Female:** move mouse pointer to column E. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Unsanitary Toilets in Public Markets - Male:** move mouse pointer to column F. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Unsanitary Toilets in Public Markets - Female:** move mouse pointer to column G. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.

For Jeepney/Bus Terminal Data  
click the tab of *Public Toilet (P.6.4.2)*

- **Number of Jeepney/Bus Terminals:** move mouse pointer to column C. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Sanitary Toilets in Jeepney/Bus Terminal-Male:** move mouse pointer to column D. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Sanitary Toilets in Jeepney/Bus Terminal-Female:** move mouse pointer to column E. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Unsanitary Toilets in Jeepney/Bus Terminal-Male:** move mouse pointer to column F. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Unsanitary Toilets in Jeepney/Bus Terminal-Female:** move mouse pointer to column G. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.

For Parks/Playground Data  
click the tab of *Public Toilet (P.6.4.3)*

- **Number of Parks/Playground:** move mouse pointer to column C. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Sanitary Toilets in Parks/Playground-Male:** move mouse pointer to column D. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- **Number of Sanitary Toilets in Parks/Playground-Female:** move mouse pointer to column E. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.

- *Number of Unsanitary Toilets in Parks/Playground-Male*: move mouse pointer to column F. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- *Number of Unsanitary Toilets in Parks/Playground-Female*: move mouse pointer to column G. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.

click the tab of *Drainage Facility (P.6.5)* sheet.

- *Length of Drainage Main*: move mouse pointer to column C. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- *Length of Open Channel (with concrete and masonry)*: move mouse pointer to column D. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- *Length of Open Ditches And Unlined Laterals*: move mouse pointer to column E. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- *Length of Reinforced Concrete Circular Pipes*: move mouse pointer to column F. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- *Length of Street Gutters*: move mouse pointer to column G. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- *Length of Outfalls To Rivers From Drainage Mains*: move mouse pointer to column H. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.

click the tab of *Solid Waste (P.6.6)* sheet.

- *Number of Open Dump Trucks*: move mouse pointer to column C. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- *Number of Closed Type Trucks*: move mouse pointer to column D. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- *Number of Households Served By Open Dump Site*: move mouse pointer to column F. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- *Number of Households Served By Sanitary Landfill*: move mouse pointer to column G. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- *Number of Households by Manner of Disposal (Land or Water)*: move mouse pointer to column H. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.
- *Number of Households by Manner of Disposal (Burying)*: move mouse pointer to column I. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.

- **Number of Households by Manner of Disposal (Composting):** move mouse pointer to column J. Starting at the row below the column description, in reference to column B (name of municipality) select the data you would like to update and type the new value.

## 8.6. Updating Investment Data Base

1. Click the **File** menu, select **Open**.

Short-cut: Click the **Open** button.

2. From the **Open Dialog Box**, Select the *invest.xls* filename.

3.1 To update the **Past Investment Data**, click the tab of **(P) Past Invest** sheet.

- **Shallow Well:** move mouse pointer to column C. Starting at the row below the column description, in reference to column A (name of funding agency) select the data you would like to update and type the new value.
- **Deep Well:** move mouse pointer to column D. Starting at the row below the column description, in reference to column A (name of funding agency) select the data you would like to update and type the new value.
- **Spring Development:** move mouse pointer to column E. Starting at the row below the column description, in reference to column A (name of funding agency) select the data you would like to update and type the new value.
- **Well Rehabilitation:** move mouse pointer to column F. Starting at the row below the column description, in reference to column A (name of funding agency) select the data you would like to update and type the new value.
- **Rain Collector:** move mouse pointer to column G. Starting at the row below the column description, in reference to column A (name of funding agency) select the data you would like to update and type the new value.
- **Level II System:** move mouse pointer to column H. Starting at the row below the column description, in reference to column A (name of funding agency) select the data you would like to update and type the new value.
- **Level III System:** move mouse pointer to column I. Starting at the row below the column description, in reference to column A (name of funding agency) select the data you would like to update and type the new value.
- **Sewer System:** move mouse pointer to column J. Starting at the row below the column description, in reference to column A (name of funding agency) select the data you would like to update and type the new value.
- **Private Latrines:** move mouse pointer to column K. Starting at the row below the column description, in reference to column A (name of funding agency) select the data you would like to update and type the new value.
- **School Toilets:** move mouse pointer to column L. Starting at the row below the column description, in reference to column A (name of funding agency) select the data you would like to update and type the new value.
- **Public Toilets:** move mouse pointer to column M. Starting at the row below the column description, in reference to column A (name of funding agency) select the data you would like to update and type the new value.

3.2 To update the **Planned Future Investment Data** click the tab of **(P) Future Invest** sheet.

- **Project Name:** move mouse pointer to column A. Starting at the row below the column description, type the project identification.
- **Type of Project:** move mouse pointer to column B. Starting at the row below the column description, in reference to column A (name of project) type the new value.
- **Phase of Project:** move mouse pointer to column C. Starting at the row below the column description, in reference to column A (name of project) type the new value.
- **Project Location:** move mouse pointer to column D. Starting at the row below the column description, in reference to column A (name of project) type the new value.
- **Implementing Agency:** move mouse pointer to column E. Starting at the row below the column description, in reference to column A (name of project) type the new value.
- **Start Date of Project:** move mouse pointer to column F. Starting at the row below the column description, in reference to column A (name of project) type the new value.
- **Completion Date of the Project:** move mouse pointer to column G. Starting at the row below the column description, in reference to column A (name of project) type the new value.
- **Accomplishment Status (%):** move mouse pointer to column H. Starting at the row below the column description, in reference to column A (name of project) type the new value.
- **Number of Household Covered by the Project:** move mouse pointer to column I. Starting at the row below the column description, in reference to column A (name of project) type the new value.
- **Finance Agency:** move mouse pointer to column J. Starting at the row below the column description, in reference to column A (name of project) type the new value.
- **Cost of Level I Facility (Thousand of pesos):** move mouse pointer to column K. Starting at the row below the column description, in reference to column A (name of project) type the new value.
- **Cost of Level II System (Thousand of pesos):** move mouse pointer to column L. Starting at the row below the column description, in reference to column A (name of project) type the new value.
- **Cost of Level III System (Thousand of pesos):** move mouse pointer to column M. Starting at the row below the column description, in reference to column A (name of project) type the new value.
- **Cost of Sewer System (Thousand of pesos):** move mouse pointer to column N. Starting at the row below the column description, in reference to column A (name of project) type the new value.
- **Private Latrine (Thousand of pesos):** move mouse pointer to column O. Starting at the row below the column description, in reference to column A (name of project) type the new value.
- **Cost School Toilets (Thousand of pesos):** move mouse pointer to column P. Starting at the row below the column description, in reference to column A (name of project) type the new value.
- **Cost of Public Toilets (Thousand of pesos):** move mouse pointer to column Q. Starting at the row below the column description, in reference to column A (name of project) type the new value.

## 8.7. Updating Key Parameter Data Base

1. Click the **File** menu, select **Open**.  
Short-cut: Click the **Open** button.
2. From the **Open Dialog Box**. Select the *Keyparameter.xls* filename.
3. To update the **Key Parameter Data**,  
click the tab of *STable 2.6.2* sheet.

### **Water Supply:**

- **Number of Household to be Served by Level I Facility:** move mouse pointer to column H-Row 5. Type the new value.
- **Water Consumption Rate for Level III System:** move mouse pointer to column H-Row 6. Type the new value.

### **Sanitation:**

- **Standard Number of Student to be Served by a Unit of Sanitary Toilet:** move mouse pointer to column H-Row 9. Type the new value.
- **Standard Number of Toilets for Public Facility:** move mouse pointer to column H-Row 10. Type the new value.

### **Medium-term Plan:**

- **Percentage of Population Covered by Urban Water Supply:** move mouse pointer to column H-Row 12. Type the new value.
- **Percentage of Population Covered by Rural Water Supply:** move mouse pointer to column H-Row 13. Type the new value.
- **Percentage of Population Covered by Sanitary Toilet in Urban Area:** move mouse pointer to column H-Row 16. Type the new value.
- **Percentage of Urban Household Covered by Flush Toilet:** move mouse pointer to column H-Row 17. Type the new value.
- **Percentage of Urban Household Covered by Pour Flush Toilet:** move mouse pointer to column H-Row 18. Type the new value.
- **Percentage of Urban Household Covered by VIP Latrine:** move mouse pointer to column H-Row 19. Type the new value.
- **Percentage of Population Covered by Sanitary Toilet in Rural Area:** move mouse pointer to column H-Row 20. Type the new value.
- **Percentage of Rural Household Covered by Flush Toilet:** move mouse pointer to column H-Row 21. Type the new value.
- **Percentage of Rural Household Covered by Pour Flush Toilet:** move mouse pointer to column H-Row 22. Type the new value.
- **Percentage of Rural Household Covered by VIP Latrine:** move mouse pointer to column H-Row 23. Type the new value.
- **Percentage of Public Student Covered by School Toilet:** move mouse pointer to column H-Row 24. Type the new value.
- **Percentage of Public Utility Covered by Public Toilet:** move mouse pointer to column H-Row 25. Type the new value.
- **Percentage of Population Covered by Solid Waste Collection:** move mouse pointer to column H-Row 26. Type the new value.

**Long-term Plan:**

- **Percentage of Population Covered by Urban Water Supply:** move mouse pointer to column H-Row 28. Type the new value.
- **Percentage of Population Covered by Rural Water Supply:** move mouse pointer to column H-Row 29. Type the new value.
- **Percentage of Population Covered by Sanitary Toilet in Urban Area:** move mouse pointer to column H-Row 32. Type the new value.
- **Percentage of Urban Household Covered by Flush Toilet:** move mouse pointer to column H-Row 33. Type the new value.
- **Percentage of Urban Household Covered by Pour Flush Toilet:** move mouse pointer to column H-Row 34. Type the new value.
- **Percentage of Urban Household Covered by VIP Latrine:** move mouse pointer to column H-Row 35. Type the new value.
- **Percentage of Population Covered by Sanitary Toilet in Urban Area:** move mouse pointer to column H-Row 36. Type the new value.
- **Percentage of Rural Household Covered by Flush Toilet:** move mouse pointer to column H-Row 37. Type the new value.
- **Percentage of Rural Household Covered by Pour Flush Toilet:** move mouse pointer to column H-Row 38. Type the new value.
- **Percentage of Rural Household Covered by VIP Latrine:** move mouse pointer to column H-Row 39. Type the new value.
- **Percentage of Public Student Covered by School Toilet:** move mouse pointer to column H-Row 40. Type the new value.
- **Percentage of Public Utility Covered by Public Toilet:** move mouse pointer to column H-Row 41. Type the new value.
- **Percentage of Population Covered by Urban Sewerage:** move mouse pointer to column H-Row 42. Type the new value.

**Rehabilitation:**

- **Percentage of Level I Wells for Rehabilitation:** move mouse pointer to column H-Row 43. Type the new value.

**Sector Management Cost:**

- **Percentage of Feasibility and Detail Design:** move mouse pointer to column H-Row 45. Type the new value.
- **Percentage of Construction Supervision:** move mouse pointer to column H-Row 46. Type the new value.

**Community Development and Training Cost:**

- **Percentage for Level III System:** move mouse pointer to column H-Row 48. Type the new value.
- **Percentage for Level I Facility and Level II System:** move mouse pointer to column H-Row 49. Type the new value.

**Recurrent Cost:**

- **Operating Cost for Level III System:** move mouse pointer to column H-Row 50. Type the new value.
- **Cost of Spare Parts/Equipment for Level III System:** move mouse pointer to column H-Row 51. Type the new value.
- **Cost of Spare Parts/Equipment for Level II System:** move mouse pointer to column H-Row 52. Type the new value.
- **Cost of Spare Parts/Equipment for Level I Facility:** move mouse pointer to column H-Row 53. Type the new value.
- **Public School Toilet Maintenance Cost:** move mouse pointer to column H-Row 54. Type the new value.
- **Public Utility Toilet Maintenance Cost:** move mouse pointer to column H-Row 55. Type the new value.

**Allocation Factors/Percentages of IRA:**

- **Percentage Share from Provincial IRA:** move mouse pointer to column H-Row 57. Type the new value.
- **Percentage Share from Municipal/Barangay IRA:** move mouse pointer to column H-Row 58. Type the new value.

**Funding Levels/Percentages for Different Financing Scenarios:**

- **1st Scenario:** move mouse pointer to column H-Row 60. Type the new value.
- **2nd Scenario:** move mouse pointer to column H-Row 61. Type the new value.
- **3rd Scenario:** move mouse pointer to column H-Row 62. Type the new value.
- **4th Scenario:** move mouse pointer to column H-Row 63. Type the new value.
- **5th Scenario:** move mouse pointer to column H-Row 64. Type the new value.

click the tab of **Well Source Composition** sheet:

- **Percentage Proportion of Water Source:** move mouse pointer to column D. Starting at the row below the column description, in reference to column A (name of municipality), column B (type of area), column C (type of source) select the data you would like to update and type the new value.
- **Range Depth of Well:** move mouse pointer to column E. Starting at the row below the column description, in reference to column A (name of municipality), column B (type of area), column C (type of source) select the data you would like to update and type the new value.
- **Average Specific Capacity:** move mouse pointer to column F. Starting at the row below the column description, in reference to column A (name of municipality), column B (type of area), column C (type of source) select the data you would like to update and type the new value.

click the tab of **Level I Safe and Unsafe** sheet.

- **Unsafe Percentage:** move mouse pointer to column C. Starting at the row below the column description, in reference to column A (name of municipality) select the data you would like to update and type the new value.



click the tab of *Unit Cost* sheet.

- *Unit Construction Cost for New Level III System for 5,000 population:* move mouse pointer to column B-Row 7. Type the new value.
- *Unit Construction Cost for New Level III System for 10,000 population:* move mouse pointer to column B-Row 8. Type the new value.
- *Unit Construction Cost for New Level III System for 15,000 population:* move mouse pointer to column B-Row 9. Type the new value.
- *Unit Construction Cost for Level III System Expansion for 5,000 population:* move mouse pointer to column B-Row 11. Type the new value.
- *Unit Construction Cost for Level III System Expansion for 10,000 population:* move mouse pointer to column B-Row 12. Type the new value.
- *Unit Construction Cost for Level III System Expansion for 15,000 population:* move mouse pointer to column B-Row 13. Type the new value.
- *Unit Construction Cost for Level II System:* move mouse pointer to column B-Row 14. Type the new value.
- *Unit Construction Cost for Level I Facility (Deep Well - 40 meter depth):* move mouse pointer to column B-Row 16. Type the new value.
- *Unit Construction Cost for Level I Facility (Deep Well - 80 meter depth):* move mouse pointer to column B-Row 17. Type the new value.
- *Unit Construction Cost for Level I Facility (Deep Well - 120 meter depth):* move mouse pointer to column B-Row 18. Type the new value.
- *Unit Construction Cost for Level I Facility (Shallow Well):* move mouse pointer to column B-Row 19. Type the new value.
- *Unit Construction Cost for Level I Facility (Shallow Well):* move mouse pointer to column B-Row 20. Type the new value.
- *Unit Construction Cost for Rehabilitation of Level I Facility:* move mouse pointer to column B-Row 21. Type the new value.
- *Cost for Disinfection of Level I Wells:* move mouse pointer to column B-Row 22. Type the new value.
- *Unit Construction Cost for Flush Toilet:* move mouse pointer to column B-Row 24. Type the new value.
- *Unit Construction Cost for Pour Flush Toilet:* move mouse pointer to column B-Row 25. Type the new value.
- *Unit Construction Cost for VIP Latrine Toilet:* move mouse pointer to column B-Row 26. Type the new value.
- *Unit Construction Cost for School Toilet:* move mouse pointer to column B-Row 27. Type the new value.
- *Unit Construction Cost for Public Toilet:* move mouse pointer to column B-Row 28. Type the new value.
- *Unit Construction Cost for Urban Sewerage:* move mouse pointer to column B-Row 29. Type the new value.

click the tab of *Annual Investment* sheet.

**Urban Water Supply (Level III System):**

- **Feasibility Study and Detail Design:** move mouse pointer to Row 5. Starting at Column E (start year of medium-term plan) up to Column I (end of year of medium-term plan) select the data you would like to update and type the new value.
- **Construction and Supervision:** move mouse pointer to Row 6. Starting at Column E (start year of medium-term plan) up to Column I (end of year of medium-term plan) select the data you would like to update and type the new value.
- **Community Development and Training:** move mouse pointer to Row 7. Starting at Column E (start year of medium-term plan) up to Column I (end of year of medium-term plan) select the data you would like to update and type the new value.

**Rural Water Supply (Level I Facility):**

- **Detail Design:** move mouse pointer to Row 9. Starting at Column E (start year of medium-term plan) up to Column J (end year of medium-term plan) select the data you would like to update and type the new value.
- **Construction and Supervision:** move mouse pointer to Row 10. Starting at Column E (start year of medium-term plan) up to Column I (end year of medium-term plan) select the data you would like to update and type the new value.
- **Community Development and Training:** move mouse pointer to Row 11. Starting at Column E (start year of medium-term plan) up to Column I (end year of medium-term plan) select the data you would like to update and type the new value.

**Rural Water Supply (Level II System):**

- **Detail Design:** move mouse pointer to Row 13. Starting at Column E (start year of medium-term plan) up to Column I (end year of medium-term plan) select the data you would like to update and type the new value.
- **Construction and Supervision:** move mouse pointer to Row 14. Starting at Column E (start year of medium-term plan) up to Column I (end year of medium-term plan) select the data you would like to update and type the new value.
- **Community Development and Training:** move mouse pointer to Row 15. Starting at Column E (start year of medium-term plan) up to Column I (end year of medium-term plan) select the data you would like to update and type the new value.

**Sanitation:**

- **Urban Household Toilet:** move mouse pointer to Row 16. Starting at Column E (start year of medium-term plan) up to Column I (end year of medium-term plan) select the data you would like to update and type the new value.
- **Rural Household Toilet:** move mouse pointer to Row 17. Starting at Column E (start year of medium-term plan) up to Column I (end year of medium-term plan) select the data you would like to update and type the new value.
- **Public School Toilet:** move mouse pointer to Row 18. Starting at Column E (start year of medium-term plan) up to Column I (end year of medium-term plan) select the data you would like to update and type the new value.
- **Public Toilet:** move mouse pointer to Row 19. Starting at Column E (start year of medium-term plan) up to Column I (end year of medium-term plan) select the data you would like to update and type the new value.

- **Disinfection of Level I Wells:** move mouse pointer to Row 20. Starting at Column E (start year of medium-term plan) up to Column I (end year of medium-term plan) select the data you would like to update and type the new value.
- **Detail Design:** move mouse pointer to Row 21. Starting at Column E (start year of medium-term plan) up to Column I (end year of medium-term plan) select the data you would like to update and type the new value.
- **Construction and Supervision:** move mouse pointer to Row 22. Starting at Column E (start year of medium-term plan) up to Column I (end year of medium-term plan) select the data you would like to update and type the new value.
- **Community Development and Training:** move mouse pointer to Row 23. Starting at Column F (start year of medium-term plan) up to Column J (end year of medium-term plan) select the data you would like to update and type the new value.

click the tab of *Scoring Factor* sheet.

**Scoring Factor for Municipal Investment Ranking for Urban Water Supply:**

- **Minimum Percentage of Underserved and Unserved Population in Base Year:** move mouse pointer to column B, in reference to column A (score) select the data you would like to update and type the new value.
- **Maximum Percentage of Underserved and Unserved Population in Base Year:** move mouse pointer to column D, in reference to column A (score) select the data you would like to update and type the new value.
- **Weight Allocation Score for Underserved and Unserved Population in Base Year:** move mouse pointer to column B-Row 9. Type the new value.
- **Minimum Percentage of Underserved and Unserved Population in Phase I:** move mouse pointer to column E, in reference to column A (score) select the data you would like to update and type the new value.
- **Maximum Percentage of Underserved and Unserved Population in Phase I:** move mouse pointer to column G, in reference to column A (score) select the data you would like to update and type the new value.
- **Weight allocation Score for Underserved and Unserved Population in Phase I:** move mouse pointer to column E-Row 9. Type the new value.
- **Minimum Percentage of Underserved and Unserved by Level III System in the Base Year:** move mouse pointer to column H, in reference to column A (score) select the data you would like to update and type the new value.
- **Maximum Percentage of of Underserved and Unserved by Level III System in the Base Year:** move mouse pointer to column J, in reference to column A (score) select the data you would like to update and type the new value.
- **Weight Allocation Score for Underserved and Unserved by Level III System in the Base Year:** move mouse pointer to column H-Row 9. Type the new value.

**Scoring Factor for Municipal Comprehensive Investment Ranking:**

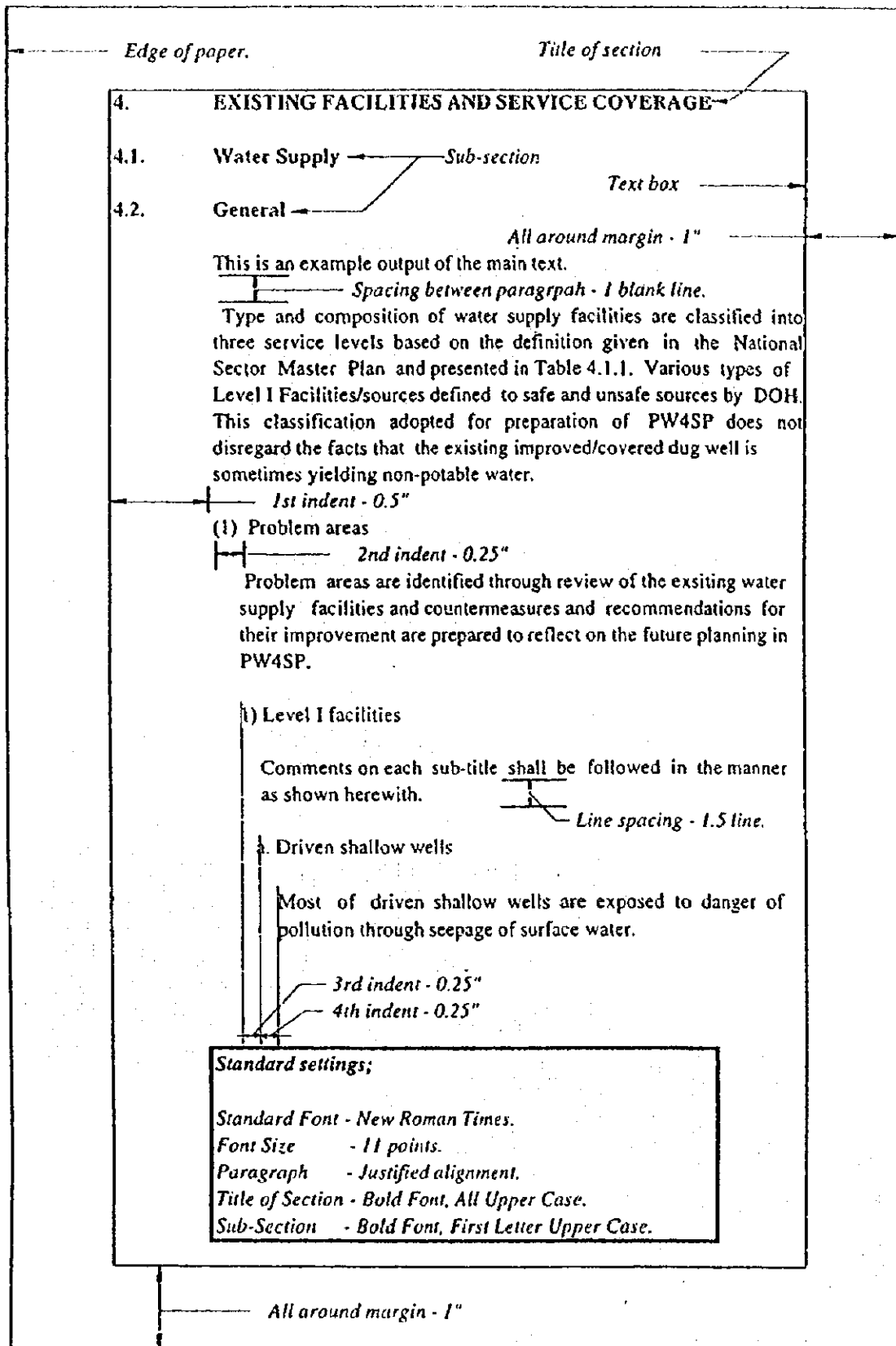
- **Minimum Percentage of Rural Water Supply:** move mouse pointer to column E, in reference to column A (score) at starting at row 15, select the data you would like to update and type the new value.

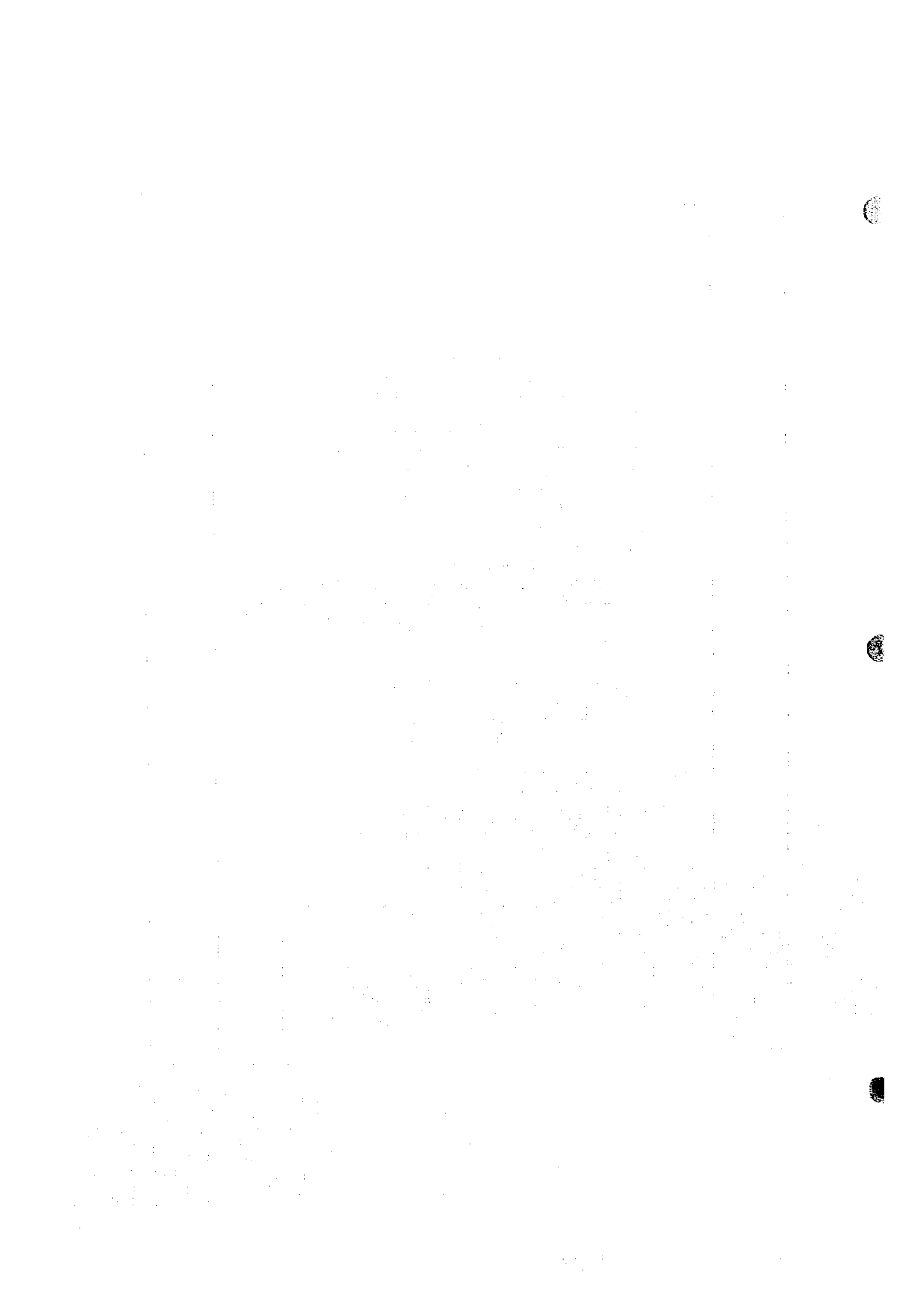
- *Maximum Percentage of Rural Water Supply:* move mouse pointer to column G, in reference to column A (score) at starting at row 15, select the data you would like to update and type the new value.
- *Weight Allocation Score for Rural Water Supply:* move mouse pointer to column E-Row 20. Type the new value.
- *Minimum Percentage of Urban Sanitation:* move mouse pointer to column H, in reference to column A (score) at starting at row 15, select the data you would like to update and type the new value.
- *Maximum Percentage of Urban Sanitation:* move mouse pointer to column J, in reference to column A (score) at starting at row 15, select the data you would like to update and type the new value.
- *Weight Allocation Score for Urban Sanitation:* move mouse pointer to column H-Row 20. Type the new value.
- *Minimum Percentage of Rural Sanitation:* move mouse pointer to column K, in reference to column A (score) at starting at row 15, select the data you would like to update and type the new value.
- *Maximum Percentage of Rural Sanitation:* move mouse pointer to column M, in reference to column A (score) at starting at row 15, select the data you would like to update and type the new value.
- *Weight Allocation Score for Rural Sanitation:* move mouse pointer to column K-Row 20. Type the new value.

## 9. Standard Report Format

The following page describes the standard report format. Please refer to MS-Word Basic Operation in Section 5 for procedure in setting the MS-Word environment.

## Specification for Standard Report Format





3. Provincial Profile  
 3.3 Socio-economic Conditions  
 3.3.2 Basic Infrastructure

Table 3.3.1 Number of Elementary School, High School and Other Served Facilities

Provincial Water Supply, Sewerage And Sanitation Sector Plan (PW4SP)		Page:									
Content: Socio-economic - Services		Date: 04 Nov. 1999									
Data Collection Level: Provincial		Filename: Socio.xls									
Region Number: VIII		Form No.: P.1.5									
Prov. Number: 0826		Prov. Name: Eastern Samar									
Region Number: VIII		Services (As of 1998)									
Geographic Code	Name of City or Municipality	Character	Elementary School			High School		Vocational Schools	Colleges and Universities	Hospitals	Banks and Financing Institutions
			Public	Private	Total	Public	Private				
Number			Number	Number	Number	Number	Number	Number	Number	Number	Number
082601	Arche		11		11	2			1		
082602	Balanga		8		8	1					
082603	Balangayan		10		10						
082604	Bonongan (Capital)		48		48	3	3	4	2		2
082605	Can-avid		19		19						
082606	Dolores		39		39						
082607	General MacArthur		21		21						
082608	Giporios		11		11	2					
082609	Guiuan		42		42	3	2				4
082610	Hemani		10		10						
082611	Ijapad		8		8						
082612	Lawaan		6		6	2					
082613	Llorente		1		1						
082614	Maslog		10		10						
082615	Maydolong		10		10						
082616	Mercedes		9		9	2					
082617	Orms		36		36	2					
082618	Quinabondan		11		11						
082619	Salcedo		31		31	3					
082620	San Julian		11		11						
082621	San Policarpo		13		13	2					
082622	Sular		13		13	2					
082623	Taft		12		12	2					

Source: PSPT, Eastern Samar, 1999

### 3.5 Health Status

#### 3.5.1 Morbidity, Mortality and Infant Mortality

Table 3.5.1 Morbidity, Mortality and Infant Mortality by Municipality

Provincial Water Supply, Sewerage and Sanitation Sector Plan (PW4SP)			Prov. Number 0826			Page						
Content: Health - Morbidity and Mortality			Prov. Name: Eastern Samar			Date: 10 Jun. 1999						
Data Collection Level: Provincial			Municipal Number			Filename: Health.xls						
Region Number: VIII			Municipal Name			Form Number: P.3.1						
Cause Group Diseases of	Disease Code	Name of Diseases (Group)	Water Related Diseases	Annual Incidence per 100,000 People								
				Morbidity			Mortality			Infant Mortality		
				Male	Female	Total	Male	Female	Total	Male	Female	Total
Infective and Parasitic (001-136)	A 01	2-4/ Typhoid/Paratyphoid	X	2	9	11						
	A 02	5-7/ Dysentery	X	17	9	26				1		1
	A 03	8-10/ Intestinal Parasites	X	229	256	485				1		1
	A 04	11-13/ Diarrhea	X	2,934	2,601	5,535				10	3	13
	A 05	14-16/ Tuberculosis		155	134	289	62	41	103			
	A 06	17-19/ Conjunctivitis	X	179	145	324						
	A 07	20-22/ Whooping Cough										
	A 08	23-25/ Throat/Ear/Nose										
	A 09	26-28/ Tetanus					2		2			
	A 10	29-31/ Septicemia					14	15	29			
	A 11	32-34/ Cholera	X									
	A 12	35-37/ Varicella, Chickenpox										
	A 13	38-40/ Measles			132	136	268					
	A 14	41-43/ Dengue Fever	X	620	540	1,160						
	A 15	44-46/ Viral Hepatitis	X	4	3	7						
	A 16	47-49/ Malaria	X									
	A 17	50-52/ Schistosomiasis	X	102	101	203						
	A 18	53-55/ Filariasis	X									
	A 19	56-58/ Venereal Diseases										
	A 20	59-61/ Other Bacter / Viral Dis										
Neoplasms (140-239)	B 01	62-64/ Malignant Neoplasms										
	B 02	65-67/ Leukemia										
Endocrine, Nutritional & Metabolic (250-279)	C 01	68-70/ Diabetes Mellitus										
	C 02	71-73/ Nutritional Deficiencies		12	14	26						
	C 03	74-76/ Endocrine Disorder										
Blood & Blood Forming Organs (280-289)	D 01	77-79/ Anemias		62	57	119						
Mental Disorder (290-319)	E 01											
Nervous System & Sense Organs (320-389)	F 01	80-82/ Meningitis										
	F 02	83-85/ Nervous System										
Circulatory Systems (390-459)	G 01	86-88/ Heart Diseases										
	G 02	89-91/ Vascular Diseases										
Respiratory Systems (460-519)	H 01	92-94/ Bronchitis		2,560	2,899	5,459						
	H 02	95-97/ Pneumonia		155	132	287	95	102	197	13	6	24
	H 03	98-100/ Influenza		2,506	2,473	4,979						
	H 04	101-103/ Obstructive Pulmonary		276	343	591						
	H 05	104-106/ ARI										
Digestive System (520-579)	I 01	107-109/ Appendicitis										
	I 02	110-112/ Gastroint. Colitis										
	I 03	113-115/ Chronic Liver Disease										
	I 04	116-118/ Other Diges. Diseases										
Genito-Urinary System (580-629)	J 01	119-121/ Kidney/ Nephritis										
	J 02	122-124/ Urinary Infections										
Complication of Pregnancy & the Puerperium (630-676)	K 01	125-127/ Prematurity										
Skin & Subcutaneous Tissue (680-709)	L 01	128-130/ Skin Diseases	X	56	67	123						
	L 02	131-133/ Scabies	X									
Musculoskeletal & Connective Tissue (710-739)	M 01	134-136/ Arthrop. Rheumatism										
Congenital Anomalies (740-759)	N 01	137-139/ Congenital Anomalies										
Certain Causes of Prenatal Morbidity & Mortality (760-779)	P 01	140-142/ Birth Trauma										
	P 02	143-145/ Birth Injuries & Difficult Labor										
	P 03	146-148/ Resp. Fetus/Newborn										
	P 04	149-151/ Other Prenatal Causes										
Symptoms & Ill-defined Condition (780-799)	Q 01	152-154/ Senility										
	Q 02	155-157/ Ill-Defined Condition										
Accidents, Poisoning & Violence (800-999)	R 01	158-160/ Burns										
	R 02	161-163/ Suffoc. Foreign Body										
	R 03	164-166/ Other Accidents					23	6	29	1		1



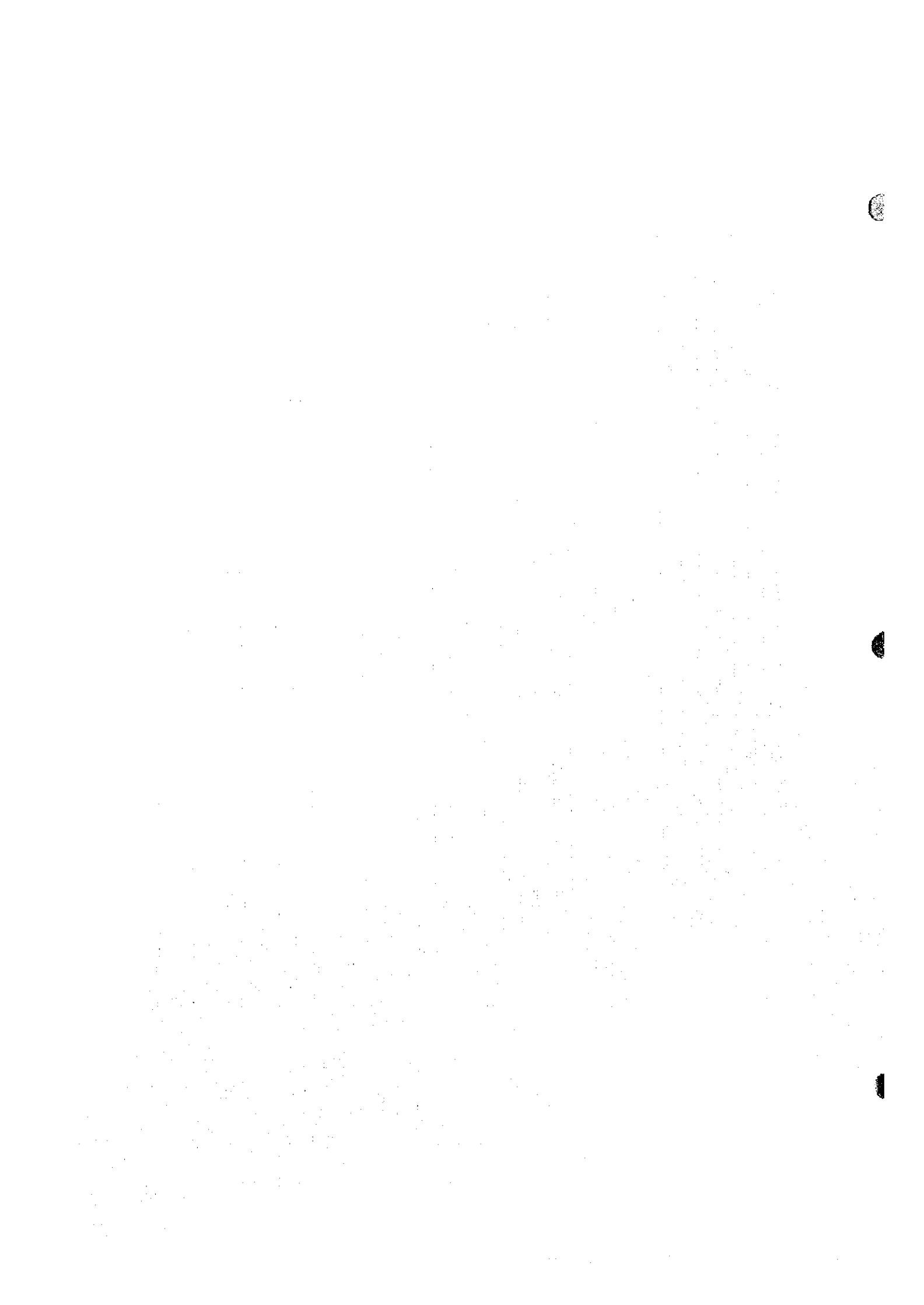
### 3.6 Environmental Conditions

#### 3.6.3 Solid Waste Disposal

Table 3.6.1 Municipal Solid Waste Collection and Disposal by Municipality

Geographic Code	Name of City or Municipality	Number of Collection Trucks				Disposal			Without Service		
		Open Dump Trucks	Closed Type Trucks	Total Units	Number of Households Served by Open Dump Site	Number of Households Served by Sanitary Landfill	Dumping (Land and Water)	Burying	Composting		
Number	Character	Number	Number	Number	Number	Number	Number	Number	Number	Number	
082601	Arteche						1,470	735	245		
082602	Balangiga				997		247	852	51		
082603	Balangkavan						966	615	175		
082604	Borongan (Capital)	1		1	4,116		3,657	1,781	302		
082605	Can-avid						1,060	837	1,037		
082606	Dolores	1		1	1,668		3,580	872	168		
082607	General Macarthur				916		914				
082608	Giporlos	1		1	950		645	170	68		
082609	Guiuan	1		1	1,929		4,375	535	326		
082610	Hernani						1,273	107	27		
082611	Jipapad						778	278	56		
082612	Lawaan						881	500	375		
082613	Llorente	1		1	1,349		1,139	513	172		
082614	Maslog						636	75	11		
082615	Maydolong						1,085	493	627		
082616	Mercedes						50	800	88		
082617	Oras						5,584	318	58		
082618	Quinapondan	1		1	591		1,051	316	142		
082619	Salcedo	1		1	2,939		109	9	159		
082620	San Julian						1,556	140	727		
082621	San Policarpo						1,507	695	116		
082622	Sulat	1		1	951		1,237	412	193		
082623	Taft	1		1		858	1,875	267	129		

Source: PSPT, Eastern Samar, 1999



- 4. EXISTING FACILITIES AND SERVICE COVERAGE
- 4.1 Water Supply
- 4.1.2 Type of Facilities and Definition of Service Level Standard

**NEDA Board Resolution  
No. 12 (s. 1995)**

**APPROVING THE COMMON  
DEFINITION OF TERMS RELATIVE TO WATER  
SUPPLY, SEWERAGE AND SANITATION**

**DEFINITION OF TERMS**

**Water Supply**

**Levels of Service**

Three levels of water service shall be provided to urban and rural communities depending upon technical and financial considerations, the needs of the WDs and RWSAs, and their willingness and ability to share in the costs and the responsibility of constructing and maintaining the water systems, These are:

1. Level I (point source) - a protected well or a developed spring with an outlet but without a distribution system, generally adaptable for rural areas where the houses are thinly scattered. A Level I facility normally serves an average of 15 households.
2. Level II (communal faucet system or standposts) – a system composed of a source, a reservoir, a piped distribution network, and communal faucets. Usually one faucet serves 4 to 6 households. Generally suitable for rural and urban fringe areas where houses are clustered densely to justify a simple piped system.
3. Level III (waterworks system or individual house connections) – a system with a source, a reservoir, a piped distribution network and household taps. It is generally suited for densely populated urban areas.

Urban – the revised definition of urban population included the criteria on the economic and social functions of barrios, poblaciones and central districts resulting to the new definition which states:

1. In their entirety, all municipal jurisdictions which, whether designated as chartered cities, provincial capital or not, have a population density of at least 1,000 persons per square kilometers.
2. Poblaciones or central districts of municipalities and cities which have a population density of at least 500 persons per square kilometer.
3. Poblaciones or central districts (not included in nos. 1 and 2) regardless of population size which have the following:
  - a. Street pattern, i.e., network of streets in either at parallel or right angle orientation;
  - b. At least six establishments (commercial, manufacturing, recreational and/or personal services); and
  - c. At least three of the following:
    - i) a town hall, church or chapel with religious services at least once a month;
    - ii) a public plaza, park or cemetery;
    - iii) a market place or building on at least once a week and
    - iv) a public building like school, hospital, puericulture and health center or library.
4. Barrios having at least 1,000 inhabitants which meet the conditions set forth in no. 3 above, and in which the occupation of the inhabitants is predominantly non-farming/fishing.

Rural – all areas not falling under the urban classification (National Statistics Office).

Rural Waterworks and Sanitation Association (RWSAs) – non-stock, non-profit organizations envisioned to operate and manage Level II water supply facilities.

Barangay Waterworks and Sanitation Association (BWSA) – non-stock, non-profit organizations envisioned to operate and manage Level I water supply facilities.

Water Supply – for purpose of the plan, refers to the supply of the water for domestic, municipal, industrial/commercial uses.

Water Supply Coverage -- refers to the number of people in a given community of geographical area who have access to safe water. The extent to which the population of a geographical area is covered (expressed in terms of the number of people served compared to the total population of that community or area).

Adequate Served – refers to those with the following rate or consumption:

Level I	at least 20 liters/capita/day
Level II	at least 60 liters/capita/day
Level III	at least 100 liters/capita/day

Service Coverage – the no. of people a facility can serve.

#### Level I Water Supply Systems

1. Deepwell – are characterized by aquifers or water bearing formations generally located at a depth of more than 20 (mbs.). Construction of deepwells with depths greater than 20 meters are recommended in these areas.
2. Shallow Well – are areas suitable for construction of well with depths not more than 20 meters and are recommended for rural water supply development, particularly levels I and II services. Static water level in these areas are generally within 6 meters below ground surface.
3. Developed Springs -- developed to capture the natural flow of an aquifer, pollution generally originates close to the point of capture. It is projected by: 1) excluding shallow seepage waters through encircling the spring with a watertight chamber penetrating a safe-distance into the aquifer and; 2) diverting surface run-off away from the immediate vicinity.
4. Protected Dug Wells – WASAMS defines protected dug wells as those which are adequately protected (guarded) against surface or outside contamination through the use of lining or covering, with a rim sufficiently raised above the ground level, and may be equipped with a pump (any type).

Salt Intrusion -- encroachment of salt water upon fresh water.

Potable Water -- water that is satisfactory for drinking, culinary and domestic purposes and meets the requirements of the health authority having jurisdiction. (Plumbing Code).

Population Underserved -- population inadequately served.

Population Unserved -- population without access to water supply facility.

Population Served -- no. of population adequately served of connections x no. of persons served per connection.

Rainwater Cisterns/Collectors/Catchers -- reservoirs, tanks or vessels for the storage of rainwater.

Reliable Water Supply -- efficiency in the delivery of water supply in terms of quantity and quality.

Safe Drinking Water -- water must be free of disease-producing bacteria (pathogens). In addition, the water should not possess undesirable tastes, odors, colors, turbidity or chemicals.

Service Area -- geographic jurisdiction of water utilities.

Non-revenue Water -- unbilled water.

Appropriate Technologies -- suited to local conditions and resources.

Infiltration Galleries -- horizontal wells which collect water over the entire length.

Accounted-for-water -- billed water.

Access to Water Supply Facilities -- access to water supply is categorized as follows:

- Level I - the farthest user is not more than 250 meters from the point source.
- Level II - the farthest house is not more than 25 meters from the communal faucet system.
- Level III - the house have service connection from the system.

Private Water System – privately-owned water supply system.

Public Water System – system owned by the government.

## DEFINITION OF TERMS

### Sewerage and Sanitation

Sanitation – the development and practical application of sanitary measures for the sake of cleanliness and protecting health.

Sanitary Toilet – is an approved type of facility used for receiving and disposing human waste (feces and urine).

### APPROVED TYPES

1. Flush – type of toilet facility with a mechanical device used to wash the waste into the receiving sewer or septic tank by the use of flushing water and with traps to provide a “water seal”.
2. Poor Flush – type of toilet facility without a mechanical device and in hand-flush with “water seal” connected to receiving sewer, septic tank or leaching pit.
3. Ventilated Improved Pit refers to an on-site toilet facility without using any amount of water comprising a vent pipe with a fly screen used to trap flies in a pit and, also allows evacuation of foul air into the atmosphere. This minimizes foul odor with the latrine superstructure and traps flies that could not spread diseases through faecal contamination.
4. Sanitary Pit Privy – type of toilet facility without using any amount of water, with a pit of at least 1-2 meters depth, a hole of one square meter, provided with a floor covering a riser, seat with cover which are all fly-and rodent proof and a building for privacy including the Antipolo type.

Unsanitary Toilet – a type of facility used for receiving and disposing human waste which does not fall under the category of approved types of toilet facilities.

## UNAPPROVED/UNSANITARY TYPES

1. **Open Pit Privy-** a pit of at least the same dimension as the sanitary pit privy, provided with pit flooring, with or without riser and seat and without cover to protect from flies and rodents.
2. **Overhang –** a structure provided with flooring and with an opening built above the body of water or above the ground without pit under it, used for defecation of the disposal of human waste. It can be a part of the house or a separate structure outside the house.

## LEVELS OF TOILET USE

1. **Communal –** a toilet facility shared by two or more households.
2. **Public –** toilet facility located at public places like markets, bus stations, etc. intended for public use.
3. **School –** a toilet facility located in a school.
4. **Household –** a toilet facility being used by an individual household.

**Sewerage -** facilities that collect human waste and sullage from residences and establishments usually piped and conveyed in structures (sewers, pump stations) for eventual central treatment and safe disposal. Piped sewerage includes a collection system (street laterals), a conveyance system (trunk sewers and pump stations), and a treatment plant/disposal system.

**Human Waste –** solid (feces) and liquid (urine) wastes from human.

**Sullage –** liquid wastes resulting from washing, bathing and laundry.

**Drainage System –** facilities that deal with rainwater.

**Unsanitary Drainage System –** facilities without treatment that deal with rainwater and also receive septic tank overflow and sullage. Includes open canals.

**Without Toilet –** households without any toilet but using body of water like rivers, lakes, etc. open field including coastal areas, and other mean to dispose human waste.

**Access –** availability of toilet facility within the household premises that can be used anytime.

**On Site –** the human waste is deposited and treated where the toilet facility is located.

**Off Site –** the human waste is transported for treatment.



4.2 Sanitation and Sewerage

4.2.3 Sanitation Facilities and Service Coverage

Table 4.2.1 Number of Household Toilets, by Type

Geographic Code		Name of City or Municipality		Number of Households Using Sanitary Toilets						Number of Households Using Unsanitary Toilets			Number of Households Without Toilets		
				Pour Flush		Sanitary Pit Latrine (VTP)		Total		Urban	Rural	Total	Urban	Rural	Total
Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Number	Number	Number	Number	Number	Number
082601		360	353	361	353	722	706	34	213	249	146	633	723		
082602		682	492	92	774	548	44	132	176	311	338	649			
082603		356	581	34	77	390	653	30	9	39	155	514	669		
082604	152	1,025	1,555	1,599	3,347	2,959	5,054	159	410	569	728	546	1,274		
082605		592	313	108	702	700	1,015	112	80	192	161	866	1,027		
082606	80	1,358	1,193	328	580	1,766	1,775	80	1,330	1,310	125	1,312	1,437		
082607		345	41	79	412	424	453	43	105	148	337	468	802		
082608		488	382	86	28	574	310	122	291	413	287	249	536		
082609		1,295	1,810	187	394	1,532	2,204	31	122	153	315	2,961	3,276		
082610		69	52	124	645	200	698	19	28	47	161	301	462		
082611		393	151	72	120	465	271	34	65	99	40	237	277		
082612		587	484	25	50	412	524	43	48	91	384	335	719		
082613		828	982	63	39	944	1,021	75	48	123	325	760	1,085		
082614		120	243	17	34	137	277	14	51	65	56	187	243		
082615		615	554	70	144	713	705	134	236	370	154	263	417		
082616		84	396			84	396	52	171	223	62	173	235		
082617		795	2,166			795	2,166				744	2,255	2,999		
082618		354	832			354	832				287	627	914		
082619		447	1,307			447	1,307				154	1,308	1,462		
082620	5	415	1,531			420	1,531				135	337	472		
082621		388		336	886	724	886				115	593	708		
082622		674	1,310			674	1,310				371	438	809		
082623		734	927	13	176	756	1,103	14	236	250	90	930	1,020		

Table 4.2.2 Number of School Toilets by Public and Private Classification

Provincial Water Supply, Sewerage and Sanitation Sector Plan (PW4SP)		Page:					
Content: Environment Sanitation - School and Student		Date: 11 Jun. 1999					
Data Collection Level: Provincial		Prov. Number: 0826					
Region Number: VIII		Prov. Name: Eastern Samar					
Geographic Code	Name of City or Municipality	Number of School			Number of Student		
		Public Number	Private Number	Total Number	Public Number	Private Number	Total Number
082601	Arteche	14	1	14	3,424	109	3,424
082602	Balangiga	9	1	10	2,569	109	2,678
082603	Balangkayan	11	1	11	2,061		2,061
082604	Borongan (Capital)	51	3	54	14,182	572	14,754
082605	Can-avid	20	1	20	3,731		3,731
082606	Dolores	40	1	41	9,264	72	9,336
082607	General Macarthur	22	1	23	2,903	316	3,219
082608	Giporlos	13	1	14	2,668	141	2,809
082609	Guisan	45	2	47	9,152	568	9,720
082610	Hermani	11	1	11	2,121		2,121
082611	Japad	8	1	9	1,002	240	1,242
082612	Lawaan	8	1	9	2,523	157	2,680
082613	Llorente	2	1	3	4,174	176	4,350
082614	Maslog	12	1	12	698		698
082615	Maydolong	11	1	11	6,680		6,680
082616	Mercedes	11	1	11	1,549		1,549
082617	Oras	38	1	39	7,791	510	8,301
082618	Quinapondian	17	1	17	2,772		2,772
082619	Sakdo	34	1	34	4,703		4,703
082620	San Julian	12	1	13	2,998	103	3,101
082621	San Policarpo	15	1	16	2,316	142	2,458
082622	Sulat	15	1	16	3,036	91	3,127
082623	Taft	14	1	14	4,322		4,322

Source:

Table 4.2.2 Number of School Toilets by Public and Private Classification (contd)

Provincial Water Supply, Sewerage and Sanitation Sector Plan (PWASP)		Page:						
Content: Environment Sanitation - School Toilets		Date: 11 Jun. 1999						
Data Collection Level: Provincial		Filename: Sanitation.xls						
Region Number: VIII		Form Number: P.6.3						
Geographic Code	Name of City or Municipality	Number of School Toilets						Total Unit
		Sanitary			Unsanitary			
		Public Number	Private Number	Total Number	Public Number	Private Number	Total Number	
082601	Arteche	10		10				10
082602	Balangiga	57	2	59				59
082603	Balangkayan	42		42				42
082604	Borongan (Capital)	235	38	273				273
082605	Car-avid							
082606	Dolores	22	44	66				66
082607	General Macarthur	65	5	70				70
082608	Giporlos	83	2	85				85
082609	Guan	88	16	104	2		2	106
082610	Hernani	38		38				38
082611	Jipapad	8	2	10				10
082612	Lawaan	55	2	57				57
082613	Llorente	65	3	68				68
082614	Maslog	28		28	6		6	34
082615	Maydolong	136		136				136
082616	Mercedes	18		18				18
082617	Oras	117	8	125				125
082618	Quinapondan	16		16	1		1	17
082619	Salcedo	95		95				95
082620	San Julian	7	2	9				9
082621	San Policarpo	43		43				43
082622	Sulat	81		81				81
082623	Taft	72		72				72

Source:

Table 4.2.3 Number of Public Toilets by Type of Facility

Geographic Code		Name of City or Municipality		Number		Number of Toilets					
Character				Number		Sanitary		Unsanitary		Total	
Number		Character		Number		Male Number	Female Number	Male Number	Female Number	Male Number	Female Number
082601	Arteche			1		1	1			1	1
082602	Balangiga										
082603	Balangkayan										
082604	Borongon (Capital)			1		1	1			1	1
082605	Can-avid			1		1	1			1	1
082606	Dolores			2		2	2			2	2
082607	General Macarthur			2		1	1			1	1
082608	Giporlos			1							
082609	Guruan			2		3	3			3	3
082610	Hernani			1		1	1			1	1
082611	Jipapad										
082612	Lawaan			1		1	1			1	1
082613	Llorente			1		1	1			1	1
082614	Maslog										
082615	Maydolong			1		1	1			1	1
082616	Mercedes			1		1	1			1	1
082617	Oras			2							
082618	Quinapondan			1							
082619	Salcedo			1							
082620	San Julian			1		1	1			1	1
082621	San Policarpo			1							
082622	Sulat			1		1	1			1	1
082623	Taft			1							

Source: PSPT, Eastern Samar, 1999

Table 4.2.3 Number of Public Toilets by Type of Facility (contd)

Geographic		Name of City or Municipality		Number	Jeepney/Bus Terminal					
Region Number: VIII		Province: Eastern Samar		Number	Sanitary		Unsanitary		Total	
Character		Male Number	Female Number	Male Number	Female Number	Male Number	Female Number	Male Number	Female Number	Total
082601	Arteche	1								
082602	Balangiga									
082603	Balangkayan									
082604	Borongan (Capital)	1	1					1		1
082605	Can-avid									
082606	Dolores	1	2					2		2
082607	General Macarthur									
082608	Giporlos									
082609	Guiuan	1								
082610	Hernani									
082611	Jipapad									
082612	Lawaan									
082613	Llorente	1								
082614	Maslog									
082615	Maydolong									
082616	Mercedes									
082617	Oras	1								
082618	Quinapondan									
082619	Salcedo									
082620	San Julian									
082621	San Policarpo	1	1					1		1
082622	Sulat									
082623	Taft									

Source: PSPT, Eastern Samar, 1999

Table 4.2.3 Number of Public Toilets by Type of Facility (contd)

Geographic		Name of City or Municipality		Number		Parks/Playground					
Number	Character	Number	Character	Sanitary		Unsanitary		Total		Male Number	Female Number
				Male Number	Female Number	Male Number	Female Number	Male Number	Female Number		
082601	Arteche										
082602	Balanga										
082603	Balangkayan										
082604	Borongan (Capital)	2									
082605	Can-avid	1									
082606	Dolores	2		1	1					1	1
082607	General Macarthur	1									
082608	Giporlos	1									
082609	Guiuan	1									
082610	Hernani										
082611	Jipapad	1									
082612	Lawaan										
082613	Llorente	1									
082614	Maslog										
082615	Maydolong	1		1	1					1	1
082616	Mercedes										
082617	Oras	1									
082618	Quinaondonan	1									
082619	Salcedo										
082620	San Julian	1									
082621	San Policarpo										
082622	Sular	1									
082623	Taft										

Source: PSPT, Eastern Samar, 1999

## **5. EXISTING SECTOR ARRANGEMENT AND INSTITUTIONAL CAPACITY**

### **5.2 Sector Reforms**

#### **A. IMPLEMENTING RULES AND REGULATION**

#### **IMPLEMENTING RULES AND REGULATIONS OF NEDA BOARD RESOLUTION NO. (SERIES OF 1994), CLAUSE (G)**

##### **PREFACE**

The following Implementing Rules and Regulations (IRR) of Clause (g) of NEDA Board Resolution No. 4 (series of 1994) was prepared with assistance from the World Bank, upon request of the Philippine Government, through the Department of the Interior and Local Government (DILG). It is an update of the earlier draft prepared in August 1995 and incorporates the developments that have occurred in the sector since that time. The intention is to provide a comprehensive and consistent set of IRR that reflects evolving policies in the sector to address basic service deficits. In particular, it attempts to translate the global sectoral principles of managing water as an economic good and managing services at the most appropriate level, into rules and regulations that can be understood and implemented by the local government units. This IRR reflects the following policies currently being developed by the Government:

- a. Encouraging LWUA lending rates to local water districts to be aligned to market rates;
- b. Providing national government grants for source development of Level I systems in support of a national objective of poverty alleviation;
- c. Developing a national sector plan that will provide the basis for provinces and cities/municipalities to plan and implement water and sanitation investments based on what communities want and are willing to pay for;
- d. Instituting a framework for economic regulation of the water supply and sanitation sector and defining the role of the LGU in this framework; and
- e. Instituting a system of public performance audit of public and private water utilities, so that consumers feedback on service coverage and reliability is available at the national and local levels of Government.

A major development was the creation of the Presidential Task Force on Water Resources Development and Management in October 1996, which has the objective of streamlining the regulatory environment of the sector, that is, linking resource regulation with the economic regulation aspects. A proposed bill prepared by the Task Force has been filed with Congress in July 1997 for the creation of a Water Resources Authority of the Philippines (WRAP) to undertake these regulatory functions, among others. Once this is approved by Congress and passed into law, the IRR may have to be revised to reflect the major institutional changes, particularly with regard to the roles of national government agencies in the sector.

## **RULE 1**

### **PURPOSE AND OBJECTIVES**

**Article 1. Title.** These rules shall be known as the Implementing Rules and Regulations of clause (g) of NEDA Board Resolution No. 4, (series of 1994).

**Article 2. Purpose.** The purpose of these rules and regulations is to implement clause (g) of NEDA Board Resolution No. 4, (series of 1994), and is in support of NEDA Board Resolution No. 6, (series of 1996) which defines the executing agency arrangement for devolved infrastructure activities/facilities, including water supply, where national government assistance is provided. Clause (g) of NEDA Board Resolution No. 4 (series of 1994) states that:

*"Level I (point source system), Level II (command faucet) and Level III (house connections water supply projects may be implemented by the concerned LGUs within their jurisdiction. LWUA shall implement only financially viable Level III water supply projects in areas outside the MWSS jurisdiction. DILG's participation will consist of general administration and institution building, such as assistance to LGUs in the formation of Rural and/or Barangay Waterworks and Sanitation Associations (RWSAs/BWSAs) as well as in the identification of water supply systems. MWSS will be responsible for Level III water systems in Metro Manila and adjacent areas. DPWH, together with DILG and DOH, will provide technical assistance (within a period of about two years) to LGUs in the planning, implementation, and operation and maintenance of water supply facilities."*

Annex C presents NEDA Board Resolution No. 6, (series of 1996).

**Article 3. Objectives.** The objectives of the Implementing Rules and Regulations are as follows:

- a. To definite the role of local government units (LGUs) in the provision of water supply services and the assistance to be made available to them by national government agencies concerned;



- b. To provide guidance to the LGUs in the development and implementation of viable and sustainable water supply projects, to the extent feasible, supporting the principles espoused by the sector of managing water as an economic good, promoting a demand-oriented approach in the provision of services and management to be made at the most appropriate level, and greater private sector participation in service delivery; and
- c. To identify institutional strengthening needs of LGUs to further develop their capacity to adequately perform their agreed functions in the sector.

## **RULE 2**

### **SCOPE**

**Article 4. Scope.** These Implementing Rules and Regulations shall apply to water supply projects to be implemented and managed by LGUs where national government assistance is provided.

## **RULE 3**

### **DEFINITION OF TERMS**

**Article 5. Definition of Terms.** For purpose of these Implementing Rules and Regulations, the following terms shall be construed to mean as follows:

- a. **Levels of Service.** Based on NEDA Board Resolution No. 12 (series of 1995), approving the common definition of terms relative to water supply, sewerage and on-site sanitation, levels of service are defined as follows:

**Level I (Point Source)** – a protected well or a developed spring with an outlet but without a distribution system; generally adaptable for rural areas where the houses are thinly scattered. A Level I facility normally serves an average of 15 households.

**Level II (Communal Faucet System or Standposts)** – a system composed of a source, a reservoir, a piped distribution network, and communal faucets. Usually, one faucet serves four to six households. It is generally suited for rural and urban fringe areas where houses are clustered densely to justify a simple piped system.

**Level III (Waterworks System or Individual House Connections)** – a system with a source, a reservoir, a piped distribution network and household taps. It is generally suited for densely populated urban areas.

- b. A **financially viable water supply system** refers to a system wherein its revenues can cover for all costs related to capital and operation and maintenance, including providing for reasonable reserves for future expansion. For those systems managed by water districts, a financially viable system is one that is able to generate revenues directly from user payments sufficient to cover all costs<sup>1</sup>. For LGU-managed directly systems, capital and operations and maintenance costs shall be recovered through a combination of user fees, general municipal taxes and other incomes available to the LGUs.

#### **RULE 4**

#### **ROLE OF LOCAL GOVERNMENT UNITS**

**Article 6. General.** The Local Government Code of 1991 mandates the decentralization and devolution of authority to LGUs in providing for certain basic services, which include safe potable water. At the local level, the LGUs are responsible for providing reliable water supply to their constituents, whether these are in the form of Levels I, II or III systems, depending on the expressed demand by the community for these services. LGUs may both directly provide and finance these services, or involve the private sector to participate in both provision and financing through concession, management or service contracts.

**Article 7. Financing and Cost Recovery.** In financing water supply investments, the LGUs may tap their Internal Revenue Allotment and/or locally generated revenues, or leverage these resources to borrow from government and private financial institutions. The amount that an LGU can borrow, including the required equity, is dependent on its current and expected revenue performance, as well as the amount of user charges and equity contributions from the community. The amount shall be a local decision of the LGUs concerned.

For any national government grant that may be provided for the development of Level I systems, the LGU and beneficiaries, concerned shall be required to provide any remaining amount as equity to the

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<sup>1</sup> The Department of Finance is considering aligning the LWUA lending rates to local water districts toward market rates to allow for a more efficient use of scarce resources, as well as to provide for consistent policy on lending to LGUs by government financial institutions.

investment. No subsidies from the national government shall be provided for Levels II and III systems.<sup>2</sup>

In providing for Level III service, the LGUs may opt to form a water district or an LGU company, provide a franchise to a private party or participate in a joint venture with a private party. Except in areas with water districts, LGUs shall maintain overall responsibility for ensuring consumer satisfaction through the exercise of institutional and/or contractual regulatory powers over local water utilities<sup>3</sup>, in collaboration with other national regulatory agencies, and by instituting a system of public performance audit.

Cost recovery through user payments shall be encouraged for both capital and operation and maintenance costs. However, at the minimum, user payments shall be required to cover the operation and maintenance costs in all services levels. For LGU- owned, operated and/or guaranteed systems, any shortfall in revenues required for loan repayment shall be financed by the LGU from its Internal Revenue Allotment and/or locally-generated revenues, following a process of negotiation between the LGU and the beneficiaries concerned on the level of user payments.

For systems managed by local water districts, full cost recovery, through user charges, is required by LWUA.

In areas where there are existing local water districts, LGUs may finance rehabilitation works and/or expansion of the existing waterworks system on the following conditions:

- a. The local water district concerned is not in LWUA's current program of assistance, that is, it is not included in any loan of LWUA with a financing institution, and
- b. Endorsement by the local water district concerned should have been secured.

In the event that the local water district is servicing a loan from LWUA, the local water district shall seek clearance from LWUA prior to entering into an agreement with the LGU concerned on any program of system expansion.

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<sup>2</sup> This policy has been approved by the Investment Coordination Committee of the NEDA Board.

<sup>3</sup> As per Presidential Decree No. 198 (Provincial Water Utilities Act), LWUA regulates the technical standards and the tariffs of local water districts, based on its requirement to issue a certificate of conformance on every loan disbursed to the latter. Source regulation is done by the National Water Resources Board. At the moment, there is no recourse by the LGU in case of non-performance by the local water district. This is an issue that needs to be addressed by Government.

**Article 8. Management of Systems.** LGUs shall adopt commercial principles in the operation and management of water utilities in order to provide cost-effective and reliable services to consumers, whether management of the system is a direct responsibility of the LGU or is contracted out by the LGU to the private sector. An LGU may also consider amalgamating or consolidating its system with that of its neighboring LGUs in order to benefit from economies of scale that could expand water supply services to consumers at the lowest possible cost.

For the operation and management of Level I and II systems, the LGUs shall initiate the formation of Barangay and Rural Waterworks and Sanitation Associations (BWSAs/RWSAs), respectively, through a participatory approach involving consultation with all stakeholders (Article 20) and assist in their registration with the appropriate authorities (Article 21). Upon request, LGUs may accredit duly registered RWSAs/BWSAs in order to enable them to avail of financial assistance from local governments. LGUs shall have an overall supervision of RWSAs and BWSAs.

**Article 9. Project Planning and Development.** Provinces and cities/municipalities shall be required to prepare, and update on an annual basis, provincial and city/municipal sector plans that are consistent with a national sector plan<sup>4</sup>. These sector plans shall be integrated into the local investment programs. Water supply projects shall be identified from the local investment program, a financing program of foreign and nationally/locally-generated resources, including private sector resources, shall support the local investment program.

**Article 10. Approval and Award of Contracts.** The LGUs shall be required to conduct public bidding, in accordance with the provisions of Law, including Presidential Decree No. 1594, as amended, Executive Order No.302 and other applicable laws, and shall have the final authority to approve and award contracts for water supply and sanitation projects within their jurisdictions.

**Article 11. Application for Water Rights.** LGUs or the concerned water utility shall apply for water rights from the National Water Resources Board prior to implementing a project that would require extraction of water.

**Article 12. Public Performance Audit.** The LGUs shall establish a system of public performance audit for public and private water utilities focusing on critical performance indicators. Upon request of the LGUs, DILG may provide technical assistance for this purpose, in coordination with appropriate national government agencies.<sup>5</sup>

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<sup>4</sup> ADB is assisting the preparation of a National Sector Plan for Water Supply, Sewerage and Sanitation for 1999-2004

<sup>5</sup> This system shall be pilot-tested in Metro Manila by the MWSS with World Bank financing.

**RULE 5**  
**ROLES OF NATIONAL GOVERNMENT AGENCIES**

**Article 13. Department of the Interior and Local Government (DILG).** The DILG shall have the following responsibilities in the sector:

- a. Raise awareness of LGUs on opportunities relating to the sector, within the framework of relevant government policies, such as financing schemes and available assistance from local and foreign financing institutions, technological breakthroughs, management and institutional arrangements, etc.;
- b. Facilitate transactions between LGUs and communities and lending institutions by preparing water supply investment packages, assisting in the financial, economic and institutional and environmental data collection and analysis, etc., in coordination with appropriate national government agencies;
- c. Build capacity of LGUs and BWSAs/RWSAs in the general areas of planning, implementation, management, monitoring and evaluation, and regulation, upon agreement with the LGUs, and as required by financing institutions, in coordination with national government agencies such as DPWH in the case of the engineering aspects;
- d. Develop and maintain a national data management system of LGU-managed water systems to include data on extent of service coverage, cost recovery, collection efficiency, size of water systems, nature of water resources, among others, in coordination with appropriate national government agencies;
- e. Establish a system for monitoring strategic performance of LGUs in relation to the sector, including compliance with technical standards established by LWUA and DPWH;
- f. Upon agreement with the LGU, provide technical assistance in the establishment of a system of public performance audit, in collaboration with appropriate national government agencies;
- g. Coordinate sector activities of LGUs vis-a-vis other national government documents and issue regular bulletins;

- h. Monitor the implementation of this IRR, including the formulation of monitoring and evaluation parameters and reporting requirements; and
- i. Act as the coordinator for projects funded by the National Government per NEDA Board Resolution No. 6 (series of 1996).

**Article 14. Local Water Utilities Administration (LWUA).** The LWUA shall have the following responsibilities in the sector:

- a. Act as a specialized lending institution for local water districts;
- b. Provide technical assistance to local water districts in the areas of operation, maintenance, personnel training and fiscal practices;
- c. Upon agreement with the LGU, provide technical and financial assistance in the conduct of engineering studies;
- d. Approve tariffs of local water districts;
- e. Establish and update, as and when necessary, the technical standards for local water utilities, including LGU-managed systems;
- f. Monitor and evaluate the performance of local water districts; and
- g. Register RWSAs and furnish all registration documents to DILG.

**Article 15. Department of Public Works and Highways (DPWH).** The DPWH shall have the following responsibilities in the sector:

- a. Set and/or update, as and when necessary, technical standards for engineering surveys, design, construction and operation and maintenance of Level I systems;
- b. Upon agreement with the LGUs, assist in the conduct of engineering surveys and in the preparation of plans, specifications and programs of work, through its District Offices;
- c. Upon agreement with the LGUs, assist in construction management, through its District Offices; and

- d. Conduct technical researches in coordination with the LGUs.

**Article 16. Department of Health (DOH).** The DOH shall have the following responsibilities in the sector:

- a. Set and/or update, as and when necessary, standards on water quality testing, treatment and surveillance, and sanitary practices;
- b. Provide technical assistance to the LGUs in the conduct of periodic water quality control and surveillance-related activities; and
- c. Monitor and evaluate, on a regular basis, health and hygiene education programs implemented by local health offices, particularly in areas where waterworks systems are expected to be constructed.

**Article 17. National Water Resources Board (NWRB).** The NWRB shall have the following responsibilities in the sector:

- a. Regulate the use of water resources through the issuance of water rights;
- b. Regulate tariffs of privately-run water system; and
- c. Establish and manage a user-friendly water resources data management system.

**Article 18. Metropolitan Waterworks and Sewerage System (MWSS).** The MWSS shall be responsible for water systems in Metro Manila and its adjacent areas.

## **RULE 6**

### **RURAL/BARANGAY WATERWORKS AND SANITATION ASSOCIATIONS**

**Article 19. General Provision.** A Rural/Barangay Waterworks and Sanitation Association shall be formed to manage public water systems and sanitation facilities: RWSAs for Level II systems and BWSAs for Level I systems. RWSAs/BWSAs shall initiate/assist in site identification, planning, implementation and evaluation of water supply projects as well as guide the construction and/or maintenance of household and community latrines (toilets).

**Article 20. Organization of RWSAs/BWSAs.** RWSAs and BWSAs shall be organized upon initiation of the LGU. A participatory approach shall be adopted in the formation of RWSAs/BWSAs with the LGU concerned taking the lead and non-government organizations (NGOs) providing technical assistance, as necessary. Prior to the formation of RWSAs/BWSAs, dialogues shall be conducted with and among all stakeholders such as women's groups, civic and religious organization, health practitioners, NGOs and other people's organizations.

**Article 21. Registration Requirements.** RWSAs/BWSAs shall register with DILG. BWSAs shall be encouraged to associate with other BWSAs or the RWSAs prior to registration. DILG shall keep a record of all registration documents.

**Article 22. Powers.** Every duly registered RWSAs/BWSA shall be autonomous and shall have the power and capacity to:

- a. Award and enter into a contract(s) with private contractors for the delivery of necessary services or the supply of materials, in the course of managing a public water and sanitation facility, subject to existing laws, rules and regulations;
- b. Oversee the implementation of project undertaken by private contractors;
- c. Own and manage the operation of the water facility in a sustainable manner, including providing for adequate reserves for maintenance and repair, setting appropriate levels of user fees, and implementing billing and collection schemes;
- d. Handle the activities required of any lawful business transaction entered into by the Association;
- e. Enter into agreement with other RWSAs/BWSAs for any merger or consolidation as may be proven advantageous to their operations;
- f. Convene meetings of water users for the purpose of information dissemination, consultation, public hearing on water rates and other activities deemed important;
- g. Initiate improvements in operations found to be advantageous and favorable to the communities concerned;
- h. Decide on matters found to be advantageous and favorable to the communities concerned; and



- i. Prepare an annual report on its operations.

**Article 23. Capability Building of RWSAs/BWSAs.** RWSAs and BWSAs may request assistance for capability building from LGUs and/or DILG, DPWH and other concerned agencies, through the LGUs.

## RULE 7

### PROJECT DEVELOPMENT AND IMPLEMENTATION

**Article 24. Sector Planning.** Planning and development of water supply investment shall be made within the framework of national policies, and shall implement specific targets in the provincial and city/municipal sector plans. These plans shall define the strategies, policies and approaches in sector development at different levels of government. A National Sector Plan for Water Supply, Sewerage and Sanitation shall be prepared, and updated, on a regular basis, by the National Economic and Development Authority (NEDA), in coordination with the concerned oversight water agencies, and shall provide the national policy framework. At the provincial level, the LGUs, through their respective Provincial Planning and Development Offices, shall prepare, and update, on an annual basis, the Provincial Water Supply, Sewerage and Sanitation Sector Plans. At the city/municipal level, a similar sector plan shall be prepared and updated, on an annual basis, by the LGUs, through their City/Municipal Planning and Development Offices. The respective Local Councils shall approve the provincial and city/municipal sector plans.

**Article 25. Project Identification.** On the basis of the provincial and city/municipal sector plans, water supply investments shall be identified and developed into a local investment program that includes an appropriate financing plan. The Local Council concerned shall approve the local investment program. The proposed investments shall then be developed according to a demand-driven approach that would allow beneficiaries to select from among cost-effective technical options and from among financing options. The LGUs may avail of technical assistance from the DILG in the preparation of these project packages (Rule 5).

Water supply investment shall be developed to the principles of managing water services at the most appropriate level and providing services based on what local consumers want and are willing to pay for. This means that LGU systems shall be constructed on the basis of choosing among technical options that are affordable through the financial resources made available by users, communities and LGUs. The process of determining demand for a particular service delivery shall be concluded through a negotiated agreement between the LGU, water utility and the users, on how the costs will be shared at the town, barangay and household levels.

**Article 26. Technical Aspects.** Technically feasible options shall be developed, particularly for a Level II service level. These options may include varying levels of operation (in terms of operating hours), which may have substantial implications on capital and operating and maintenance costs. In addition, the operation and management (O&M) cost of a technical option is strongly influenced by the management mode chosen by an LGU, economies of scale factors and the size of the service area. Thus, for any Level III service, at least two technical options shall be explored; those of an inter-LGU service delivery organization involving amalgamation of service areas and of singled LGU management systems. The former option shall be explored and developed further only upon agreement with the LGU concerned.

In the conduct of the engineering work (i.e., feasibility studies and detailed design), the LGUs may tap the services of the private sector, using their internal resources or may request the DILG, DPWH and/or LWUA for financial and/or technical assistance.

**Article 27. Financing and Management Options.** A range of options is available to the LGUs on financing and management of Level III systems. They include, but are not limited to, the following options:

Options 1: The LGU may finance the system from its internal resources or may borrow from a financial institution. It may then create a **profit center within the LGU office** with a separate cost accounting system. Under this arrangement, the LGU may directly manage the system or may enter into a **management contract** with a private party or a **service contract** with a private party to handle billing and collection and/or repair and maintenance. In these types of management arrangements, the LGU retains the responsibility for providing the service and assumes the commercial risks. Institutions such as neighboring water districts, cooperatives and other private institutions may be tapped by the LGU for these types of contracts.

Option 2: The LGU may enter into a **lease contract** with private party to operate and manage the system. Under this arrangement, the LGU finances the capital expenditures from its internal resources or from borrowings. The LGU then leases the facility to a private party, which assumes the commercial risks and the responsibility for operation and maintenance. The private party is allowed to recover the costs from user fees, and may also collect, on behalf of the LGU, any other charges contributing to the repayment of a loan which the LGU may have taken on behalf of the users.

Option 3: The LGU may enter into **concession contract** with a private party. Under this arrangement, the private party assumes the operations and management of the assets of the LGU, and

undertakes to expand and finance the services according to the terms and conditions of the contract. The private party is then allowed to operate the system, and recover its costs and earn a reasonable return on its investment from user fees. The private party also assumes the commercial risk. After the concession contract expires, the system reverts to the LGU, or may be contracted out again by the LGU.

Option 4: The LGU may create a **local water district**, in accordance with Presidential Decree No. 198, as amended.

Option 5: The LGU may form a **water company** to handle the provision of the service.

The LGU appoints the Board of Directors to be tapped from the private sector who would manage the company along commercial principles.

Options 6: The LGU may enter into contract with a private party under the **Build-Operate-Transfer scheme or any of its variants**, per Republic Act No. 6970, as amended, for the whole water system or a component of it (i.e., source development or distribution).

Option 7: The LGU may enter into a **joint venture agreement** with a private party in providing the service. Under this arrangement, both parties share in the risks of the project, as well as operate the water supply system through a shared management and organization structure.

In the contracts of LGUs with private parties, performance standards shall be stipulated including remedies for non-performance that are consistent with national regulatory laws.

The DILG, in its role of raising awareness of LGUs on opportunities in the sector, shall be responsible for informing the LGUs of these schemes, and in facilitating the implementation of the preferred option. **Annex D** provides a matrix of these various schemes.

## **RULE 8**

### **COORDINATION AND COLLABORATION MECHANISMS**

**Article 28. Inter-LGU Collaboration.** Provinces, cities, municipalities and barangays may assist, coordinate and collaborate with each other, as far as practicable, in the effort of improving the delivery of services to the Filipino people. The DILG shall take the lead in coordinating among the LGUs.

**Article 29. Coordination Between Local and National Governments.** LGUs may avail of the technical, financial and institutional expertise of national agencies like LWUA, DPWH, DILG, NWRB, DOH and DENR. DILG, as appropriate, shall coordinate with other national agencies on behalf of the LGUs.

#### **RULE 9**

#### **TRANSITION ARRANGEMENTS**

**Article 30. Ongoing Projects.** The DPWH, DOH and DILG shall continue to implement ongoing foreign-assisted Level I projects until the completion of such projects.

**Article 31. Pipeline Projects.** Projects in the pipeline shall conform to the provisions of this IRR to the extent possible.

#### **RULE 10**

#### **MISCELLANEOUS PROVISIONS**

**Article 32. Applicability Clause.** The application of this IRR shall be without prejudice to existing and future laws, rules, regulations, and/or international agreements entered into by the Philippine Government.

**Article 33. Effectivity of the IRR.** These Implementing Rules and Regulations shall take effect upon its approval by the NEDA Board, on recommendation by the Infrastructure Committee. It shall then be published in at least two national newspapers of general circulation.