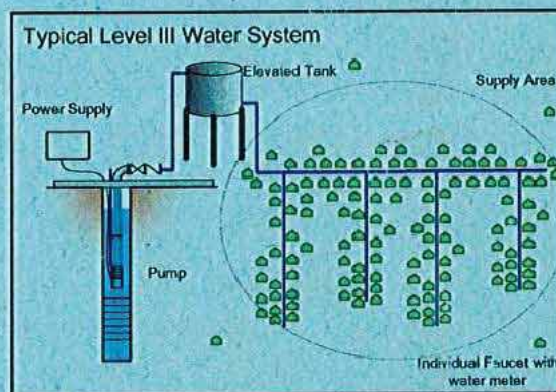
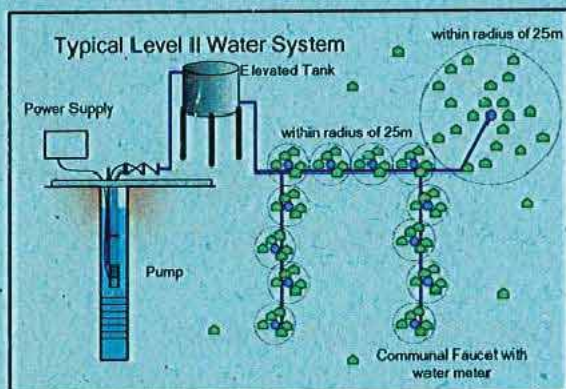
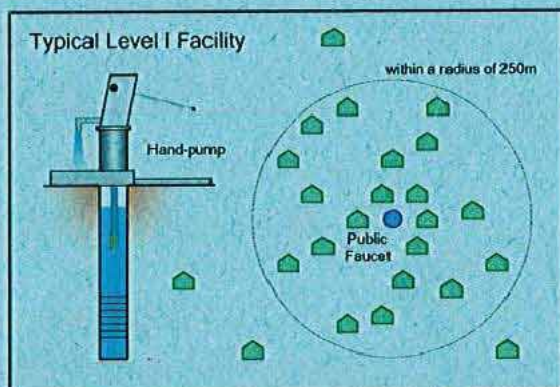




DEPARTMENT OF THE INTERIOR AND LOCAL GOVERNMENT
RURAL WATER SUPPLY AND SANITATION PROJECT

Upgrading Guidelines

Primer



APRIL 2007

CONTENTS

I INTRODUCTION	3
Primer Objectives	3
II CRITERIA FOR UPGRADING	
Criteria for Upgrading	4 3
Description of the Criteria for Level II	4 3
• Technical	4 3
• Financial	5 3-4
• Institutional	5 4-5
Description of the Criteria for Level III	6 6
• Technical	6
• Financial	6
• Institutional	6
III GUIDELINES AND PROCEDURES	7 6-15
IV UPGRADING MECHANISM	
Water and Sanitation Sector Policy	20 16
• National Laws	20 16
• Agency Initiated Policies	20 16-17
Major Stakeholders	22 17-18
• BWSA and <i>Barangay</i>	22 18
• LGU	22 18
Other Stakeholders	22 18
V FINANCING UPGRADING AND COST RECOVERY	24 20
Sources of Funds	24 20
Cost Recovery	25 22
VI PROJECT SUSTAINABILITY	
Sustainability Chain	26 22
• Motivation	26 22-23
• Operation and Maintenance	27 23
• Cost Recovery	27 23
• Continuing Support	27 23
Sustainability Monitoring and Evaluation	27 23-

ACRONYMS

BOD	Board of Directors
BWSA	Barangay Water and Sanitation Association
DBP	Development Bank of the Philippines
DILG	Department of the Interior and Local Government
DOF	Department of Finance
DOH	Department of Health
DPWH	Department of Public Works and Highways
FS	Feasibility Study
GA	General Assembly
GM	General Manager
GFI	Government Financial Institution
GOP	Government of the Philippines
HHs	Households
IRR	Implementing Rules and Regulations
JBIC	Japan Bank for International Cooperation
LBP	Land Bank of the Philippines
LGU	Local Government Unit
LWUA	Local Water Utilities Administration
M & E	Monitoring and Evaluation
MDFO	Municipal Development Fund Office
MEO	Municipal Engineering Office
MSLT	Municipal Sector Liaison Team
NEDA	National Economic and Development Authority
NRW	Non-revenue Water
O & M	Operation and Maintenance
PEO	Provincial Engineer's Office
PMO	Project Management Office
PNB	Philippine National Bank
PNSDW	Philippine National Standards for Drinking Water
PW4SP	Provincial Water Supply, Sewerage and Sanitation Sector Plan
PWSU	Provincial Water and Sanitation Unit
ROI	Return on investment
RWSA	Rural Waterworks and Sanitation Association
RWSSP V	Rural Water Supply and Sanitation Sector Project, Phase V
WATSAN	Water Supply and Sanitation
WD	Water District
WSS-PMO	Water Supply and Sanitation Program Management Office
WTC	Willingness to Connect

I INTRODUCTION

The **Rural Water Supply and Sanitation Project Phase V (RWSSP V)** made possible the installation of Level I water supply facilities in selected municipalities in the provinces of Nueva Viscaya, Ilocos Sur, Mindoro Occidental and Mindoro Oriental. The objectives of the Project are to develop the capability of local government units (LGUs) in managing water and sanitation projects, promote gender-sensitive community participation, and reduce the incidence of water-borne related diseases. The Project has been implemented by the Department of the Interior and Local Government (DILG) with assistance from the Japan Bank for International Cooperation (JBIC).

One of the challenges faced by the project management is sustainability. A good indicator of project sustainability for the RWSSP V is the upgrading of the installed Level I water supply facilities to either Level II or Level III water systems. Upgrading means a wider coverage of water supply services which translates into more beneficiaries. When the need for upgrading is felt by the community or the LGU, local condition must meet the requirements for an upgraded and sustained operation of the water system level. These requirements include technical, institutional, environmental, and financial aspects. The upgrading of the water supply service level has in fact been considered in the design of the installed Level I facilities in the RWSSP V.

Primer Objectives

To support the LGUs in the upgrading of their Level I facilities, a Primer for upgrading has been prepared. The Primer focuses on the criteria, requirements and steps, financing options, mechanism for upgrading and monitoring to be taken by an LGU who would pursue upgrading of their water service supply level from Level I to either Level II or Level III. Clarity, simplicity, and user-friendliness were foremost in mind when the Primer was developed to ensure that it will be very helpful and relevant to LGUs even if they may not have the in-depth technical knowledge of water supply service level upgrading. With the use of this Primer, the LGUs will be able to:

1. Determine whether they have the technical, financial, environmental, and institutional capacities to upgrade their Level I water supply service;
2. Adopt the developed guidelines in upgrading their water supply service level; and
3. Identify the roles and responsibilities of each stakeholder in upgrading.

II CRITERIA FOR UPGRADING

The technical, financial, and institutional criteria for upgrading are identified and described in order to determine if upgrading is doable. It is important to first assess whether the community and its environment meets the requirement for upgrading based on these criteria. The criteria for upgrading water service from Level I to either Level II or Level III are shown below:

Table 1 Criteria for Upgrading Water Service Level

CRITERIA		Level II	Level III
TECHNICAL	1. Water quality	✓	✓
	2. Water quantity	✓	✓
	3. Accessibility	✓	✓
FINANCIAL	4. Availability of funds	✓	✓
	5. Affordability / WTP	✓	✓
	6. ROI / Cost recovery	✓	✓
INSTITUTIONAL	7. Need for upgrading	✓	✓
	8. Functional BWSA	✓	✓
	9. Duly-accredited BWSA	✓	✓
	10. Barangay Resolution	✓	✓
	11. WTC		✓

Description of the Criteria for Level II

Technical

- Water Quality

Water from the existing source must be clear, colourless and free from objectionable taste and odor. Above all, it must not contain any substance, organism, chemical or radioactive substance at a level or concentration which could endanger the health and lives of the consuming public. Water quality thus should be within the parameters set forth in the Philippine National Standards for Drinking Water (PNSDW).

- **Water Quantity**

The water source should be able to supply the demands of the service area. Based on National Economic and Development Authority (NEDA) Board Resolution No. 12, series of 1995, a Level II water supply system will be able to adequately serve the beneficiaries of the system if it can provide between 40 to 80 liters per capita per day.

- **Accessibility**

The farthest household in the service area should not be more than 25 meters from the nearest standpost.

Financial

- **Availability of funds**

Funding must be available for upgrading of facilities especially in constructing the facilities. The funds can be in the form of loan, equity, grant or any combination of the three.

- **Affordability / Willingness-to-pay**

The price of water after upgrading must still be affordable to the public. In computing affordability, the accepted standard is that the monthly water bill should not be more than five percent (5%) of the average income of the low income group in the service area. The willingness-to-pay can be determined through a survey of the targeted beneficiaries or customers.

- **Return on Investment (ROI) / Cost recovery**

Revenues to be generated should recover the cost of upgrading. The recovered costs refer to the following:

- investment cost which is equity and borrowing used in constructing the facilities;
- operating and maintenance cost; and
- financing cost which is the interest charges on borrowing.

From the ROI point of view, financial returns or income must be equal to or preferably more than the cost of investment (construction cost and financial charges) and cost of operation for the upgrading to be financially viable.

Institutional

- **Need for Upgrading**

The need for upgrading of existing water facility must come from the BWSA. A consensus among the members is needed to upgrade the water facilities.

- **Functional BWSA**

The BWSA should be functional to provide effective and efficient water service delivery to its members through proper operation and maintenance of the water facilities. It is characterized by satisfied,

cooperative and supportive members and active and dedicated officers. Its covered water and sanitation (WATSAN) facilities are adequate and serviceable.

- Duly-accredited BWSA

The BWSA must be duly accredited by the *Sangguniang Bayan* as a community-based people's organization operating in the *barangay* whose objectives are to own, operate and maintain WATSAN facilities.

- Barangay Resolution

A Barangay Resolution must be executed favorably endorsing to the LGU the BWSA Board of Directors' (BODs') Resolution formalizing the need of the community to upgrade their water system level.

Description of the Criteria for Level III

Technical

- Water Quality – *same as Level II*

- Water Quantity

The water source should be able to supply 120 to 200 liters per capita per day to adequately serve the beneficiaries of the system.

- Accessibility

The service area is provided with individual household connections.

Financial

- Availability of funds – *same as Level II*

- Affordability / Willingness-to-pay – *same as Level II*

- Return on Investment (ROI) / Cost recovery – *same as Level II*

Institutional

- Need for Upgrading - *same as Level II*

- Functional BWSA – *same as Level II*

- Duly-accredited BWSA - *same as Level II*

- Barangay Resolution – *same as Level II*

- Willingness-to-Connect

A willingness-to-connect (WTC) survey must show that at least 90 percent of the total households (HHs) in the service area are willing to have connections.

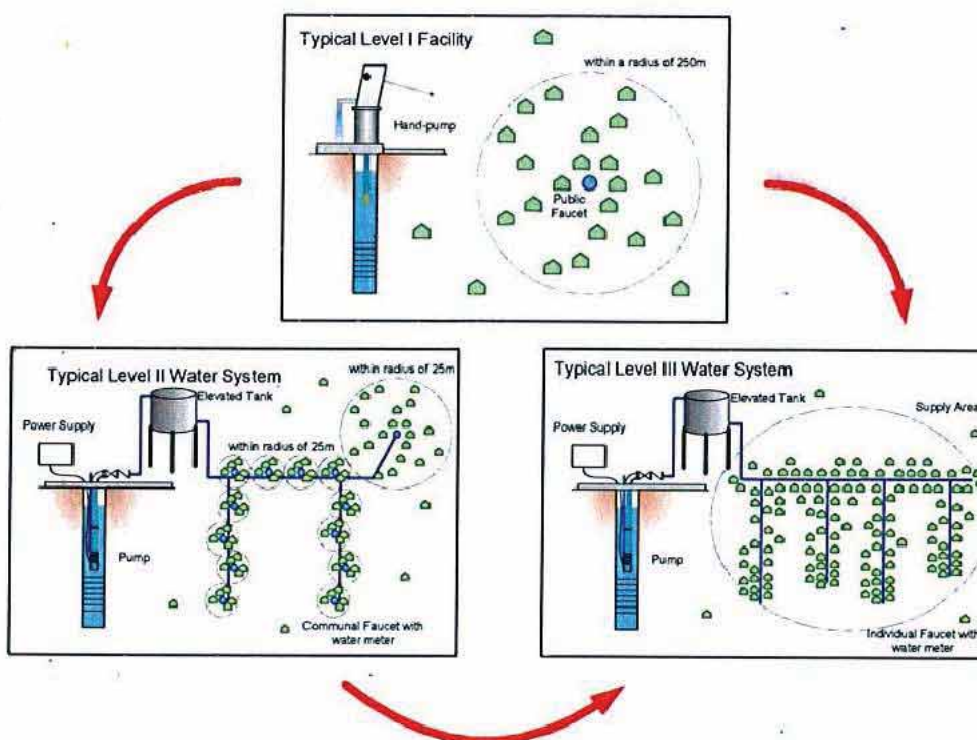
III GUIDELINES AND PROCEDURES

When the need for upgrading the water facility is felt by the users, there are requirements to be complied with and certain processes have to be undertaken by the BWSA. The BWSA should undertake initial activities that will jumpstart the upgrading of the water facility. A consensus among the members is necessary should the BWSA decide to upgrade its service level to either Level II or Level III. A greater responsibility in the O & M rests with the BWSA as its success greatly depends on their capacity to sustain the project.

Under the RWSSP V, the two types of wells, shallow and deep wells, were constructed, with casing diameters of 50 mm and 100 mm, respectively. Shallow wells have design depths of 6 m, 10 m and 20 m while deep wells constructed have depths of 30 m, 50 m and 70 m. Based on these conditions, the most appropriate system upgrading of RWSSP V water sources would be up to Level II only, considering the sizes of casing diameter which limits the capacity of submersible pumps that can be installed. Upgrading from Level I to Level III is technically feasible only if the existing Level I source is augmented by additional sources with higher capacities.

If the existing Level I source does not satisfy the minimum yield requirements for upgrading to Level II, additional existing source/s (wells or springs) within the area would have to be identified and the capacity of such additional sources would have to be established, until the requirements for Level II are met. If there is no other existing additional source/s with potential for upgrading to Level II, additional water sources would have to be constructed to meet the requirements for Level II.

The upgrading guidelines and procedures consist of interfacing of the three components namely: institutional, technical and financial as follows:



Primer on Upgrading Guidelines

Procedure/Task	Responsible	Remarks
A. Level II		
I. Preparatory Activities		
<ul style="list-style-type: none"> Identify the need for upgrading <ul style="list-style-type: none"> Initially assess the readiness of the BWSA Identify additional new members of the BWSA Prepare a list of household (HH) members in the proposed service area 	BWSA BOD / officers, members & barangay officials	
<ul style="list-style-type: none"> Agree on the plan to upgrade the water system <ul style="list-style-type: none"> Conduct meeting of the BWSA BOD/Officers/barangay officials Prepare the minutes of meeting 	BWSA BOD / officers & barangay officials	
<ul style="list-style-type: none"> Request assistance from LGU, through its MSLT/PWSU in the preparation of Feasibility Study (FS) and conduct of needs survey in the proposed service area <ul style="list-style-type: none"> Prepare the letter request Request a resolution from the Barangay Council endorsing the letter request Submit letter request together with the resolution to the LGU/MSLT 	BWSA BOD / officers & barangay officials	
II. Preparation of Feasibility Study		
<ul style="list-style-type: none"> Confirm accessibility of existing Level I water source to additional users in Level II 	MSLT / PWSU	The farthest house should not be more than 25m from the proposed communal faucet system
<ul style="list-style-type: none"> Establish capacity of existing Level I source <ul style="list-style-type: none"> Gather basic information on existing source (well depth, casing diameter, screen location, discharge, water quality) Conduct well development by airlifting (12 hours for shallow wells and 24 hours for deep wells) Conduct 24 hours constant discharge pumping test on source 	MSLT / PWSU	Refer to Well Development by Airlifting Refer to Pumping Test Procedure

Primer on Upgrading Guidelines

<ul style="list-style-type: none"> Conduct water quality tests (physical, chemical, bacteriological) 	MSLT / PWSU	Water quality must conform with the Philippine National Standards for Drinking Water (PNSDW)
<ul style="list-style-type: none"> Conduct population projection based on the design period 	MSLT / PWSU	Refer to Item 1 Estimation of Design Population, Design Procedures, Volume II, Part 2, Hydraulic Design
<ul style="list-style-type: none"> Compute the water demand (average day, maximum day and peak hour demand for the design period) 	MSLT / PWSU	Refer to Item 2 Computation of Water Demands, Design Procedures, Volume II, Part 2, Hydraulic Design
<ul style="list-style-type: none"> Compare the capacity of existing water source against the projected water demand 	MSLT / PWSU	Capacity of existing Level I source should meet the projected water demand.
<ul style="list-style-type: none"> Develop different alternatives for the upgrading of existing Level I source 	MSLT / PWSU	
<ul style="list-style-type: none"> Estimate the construction cost and total investment cost for all options 	MSLT / PWSU	Refer to Construction Cost Estimation
<ul style="list-style-type: none"> Estimate the cost of operation and maintenance for all options 	MSLT / PWSU	Refer to O & M Cost Estimation
<ul style="list-style-type: none"> Conduct financial analysis and estimate water tariff for all options 	MSLT / PWSU	Refer to Financial and Economic Analyses
<ul style="list-style-type: none"> Determine the best option and the final coverage of the service area on the basis of least cost and within the financial capacity of the LGU/BWSA 	MSLT / PWSU	
<ul style="list-style-type: none"> Define the various components of the proposed Level II water supply system 	MSLT / PWSU	
<ul style="list-style-type: none"> Prepare FS Report 	MSLT / PWSU	Refer to Sample Format for FS Report

Primer on Upgrading Guidelines

III. Conduct of Needs Survey		
<ul style="list-style-type: none"> Develop needs survey questionnaire <ul style="list-style-type: none"> Determine the objective, covered area & target population Draft/construct survey questions Consult expert/consultant 	MSLT / PWSU	
<ul style="list-style-type: none"> Pre-test and revise the needs survey questionnaire <ul style="list-style-type: none"> Conduct pretest of questionnaire Analyze and revise the survey questionnaire Finalize the needs survey questionnaire 	MSLT / PWSU	Refer to Sample format of Needs Survey Questionnaire
<ul style="list-style-type: none"> Train the interviewers on how to conduct survey interview and how to use the questionnaire <ul style="list-style-type: none"> Coordinate with the BOD/Officers/barangay officials Identify survey interviewers Train the interviewers Organize the interviewers into Teams Assign specific HH/area to the interviewers 	MSLT / PWSU, BWSA officers, barangay officials & volunteers	
<ul style="list-style-type: none"> Conduct survey interview of the HH heads in the proposed service area 	BWSA officers, barangay officials & volunteers	
<ul style="list-style-type: none"> Process and analyze the obtained data 	MSLT / PWSU	
<ul style="list-style-type: none"> Prepare needs survey report <ul style="list-style-type: none"> Introduction (Statement of the problem includes background, relevance of the study) Survey procedures Results / Body of the report Conclusions and recommendations Summary 	MSLT/PWSU	
IV. Conduct an Information Dissemination Campaign		
<ul style="list-style-type: none"> Conduct a house-to-house information dissemination campaign to the existing and prospective members 	BWSA officers and barangay officials	
<ul style="list-style-type: none"> Recruit additional new members of the BWSA in the proposed service area <ul style="list-style-type: none"> file an application for membership pay membership fee 	BWSA officers and barangay officials	
<ul style="list-style-type: none"> Discuss the concept of upgrading with emphasis on the benefits 	BWSA officers and barangay officials	
<ul style="list-style-type: none"> Inform them on the proposed date and agenda of the General Assembly (GA) meeting 	BWSA officers and barangay officials	

Primer on Upgrading Guidelines

<ul style="list-style-type: none"> Invite HH heads and ensure their attendance in the GA 	BWSA officers and barangay officials	
V. Conduct of the General Assembly Meeting		
<ul style="list-style-type: none"> Prepare for the GA <ul style="list-style-type: none"> Meeting among MSLT / PWSU, BWSA BOD / officers & barangay Officials Delineation of roles to present the FS and needs survey results Prepare the presentation materials & logistics 	MSLT / PWSU, BWSA officers and barangay officials	
<ul style="list-style-type: none"> Registration <ul style="list-style-type: none"> Prepare list of HHs in the service area Prepare registration form 	BWSA and barangay secretaries	
<ul style="list-style-type: none"> Opening Program 	BWSA officers and barangay officials	
<ul style="list-style-type: none"> Discuss the agenda of the GA 	MSLT / PWSU	
<ul style="list-style-type: none"> Present the results of the FS <ul style="list-style-type: none"> Technical Option (conceptual design, program of work, etc.) Financial (proposed water tariff, amount of loan / grant, source of Funds, monthly amortization, etc.) Institutional (needs survey results, new organizational set-up, duties and responsibilities , O & M option) Present the Project Requirements (ECC, Water Permit, Certificate of Public Convenience, etc.) 	MSLT / PWSU	Refer to FS Report Refer to FS Report Refer to Needs Survey Results, Proposed Organizational Set-Up, Duties and Responsibilities of BOD/Officers & Management Staff for Level II & III WS
<ul style="list-style-type: none"> Secure Project Acceptance 	MSLT / PWSU, BWSA officers and barangay officials	
<ul style="list-style-type: none"> Closing Program 	BWSA officers and barangay officials	
<ul style="list-style-type: none"> Prepare the minutes of the GA 	BWSA & barangay secretaries	
VI. Preparation of BOD Resolution and Barangay Council Endorsement		
<ul style="list-style-type: none"> Prepare a BOD resolution formalizing the desire of the BWSA for upgrading based on the results of the GA 	BWSA officers	

Primer on Upgrading Guidelines

<ul style="list-style-type: none"> Request an endorsement of the BOD Resolution (attach the Minutes of GA) from the Barangay Council 	BWSA President	
<ul style="list-style-type: none"> Prepare an endorsement of the BOD Resolution to the Municipality, through the MSLT 	Barangay Council and secretary	
VII. Preparation of Detailed Design		
<ul style="list-style-type: none"> Review FS, master plan, and other relevant studies 	PWSU/ MSLT/Consultant	
<ul style="list-style-type: none"> Establish the design criteria for the different components of the water system 	PWSU/ MSLT/Consultant	Refer to Water Supply Design Criteria and Standards
<ul style="list-style-type: none"> Review the configuration of the proposed water system 	PWSU/ MSLT/Consultant	
<ul style="list-style-type: none"> Conduct water source confirmation as to safe yield and water quality 	PWSU/ MSLT/Consultant	Refer to Water Source Confirmation. If the preparation of detailed design is more than a year after the feasibility study was undertaken
<ul style="list-style-type: none"> Conduct field surveys and engineering studies to validate the preliminary plan <ul style="list-style-type: none"> - Topographic survey of source, reservoir site and other facilities - Line and profile survey for right-of-way of transmission pipeline - Mapping for service area distribution network - Subsurface investigation for reservoir site and other important structures 	PWSU/ MSLT/Consultant	Field surveys and engineering studies may be contracted out
<ul style="list-style-type: none"> Estimate design population 	PWSU/ MSLT/Consultant	Refer to Item 1 Estimation of Design Population, Volume II, Part 2, Hydraulic Design
<ul style="list-style-type: none"> Compute water demands 	PWSU/ MSLT/Consultant	Refer to Item 2 Computation of Water Demands, Volume II, Part 2, Hydraulic Design

Primer on Upgrading Guidelines

<ul style="list-style-type: none"> Prepare detailed engineering design for the water system facilities (well/spring source, main pipe, distribution mains, water tank, pump, treatment facility) 	PWSU/ MSLT/Consultant	Refer to Items 3 to 6, Volume II, Part 2, Hydraulic Design
<ul style="list-style-type: none"> Prepare the construction drawings and technical specifications 	PWSU/ MSLT/Consultant	Refer to LWUA Standard Drawings and Specifications
<ul style="list-style-type: none"> Prepare cost estimates 	PWSU/ MSLT/Consultant	
<ul style="list-style-type: none"> Compute the basic construction cost and total investment cost 	PWSU/ MSLT/Consultant	Refer to Construction Cost Estimation
<ul style="list-style-type: none"> Estimate the cost of operation and maintenance 	PWSU/ MSLT/Consultant	Refer to O & M Cost Estimation
<ul style="list-style-type: none"> Conduct financial and economic analyses and compute appropriate water tariff 		If there are significant revisions in the preliminary design which had cost implications, then redo financial and economic analyses. Refer to Financial and Economic Analyses
<ul style="list-style-type: none"> Prepare Design Report/ Recommendations 	PWSU/ MSLT/Consultant	Refer to Sample format for Detailed Design Report
<ul style="list-style-type: none"> Prepare Bid Documents <ul style="list-style-type: none"> - Pre-qualification documents - Technical specifications - Instruction to bidders - Bill of quantities 	PWSU/ MSLT/Consultant	Bid documents shall be prepared in accordance with Implementing Rules and Regulations Part A (IRR-A) of R.A. 9184
VIII. Conduct of Post Detailed Design General Assembly		
<ul style="list-style-type: none"> Prepare the notice and agenda of the GA 	BWSA Secretary	
<ul style="list-style-type: none"> Invite and ensure the attendance of existing and prospective members 	BWSA officers and barangay officials	
<ul style="list-style-type: none"> Discuss the agenda of the meeting 	MSLT / PWSU	

Primer on Upgrading Guidelines

<ul style="list-style-type: none"> Discuss the detailed plans and specifications to orient them of the technical details of the water system 	MSLT / PWSU	Refer to Design Report Outline
<ul style="list-style-type: none"> Present the options in the implementation and O & M (LGU, private contractor, etc.) 	MSLT / PWSU	
<ul style="list-style-type: none"> Create a Supervision Team 	MSLT / PWSU	
<ul style="list-style-type: none"> Delineate roles and responsibilities of the Supervision Team members 	MSLT / PWSU	
IX Construction		
A. Construction of Level II Water Supply System by Contract		
<ul style="list-style-type: none"> Conduct Pre-qualification and Tendering <ul style="list-style-type: none"> Advertise the pre-qualification process Evaluate and pre-qualify contractor Conduct pre-bid conference Reply to bidder's queries Evaluate bids and prepare Bid Evaluation Report Negotiate with successful bidders Prepare Final Contract Documents 	LGU	Refer to the Implementing Rules and Regulations Part A (IRR-A) of R.A. 9184
<ul style="list-style-type: none"> Supervise Construction Activities <ul style="list-style-type: none"> Conduct Pre-construction Conference Review and approve contractor's pre-construction documentation Review and approve shop drawings, material supplies and equipment submittals Conduct field inspection and maintain records of progress Provide technical instructions and clarification to contractors Review, approve/disapprove and document request for field changes Witness equipment factory tests, installation of equipment and equipment field tests Check as-built drawings Prepare punch-list of outstanding work Conduct tests of major pipelines and equipment prior to commissioning 	LGU Consultant /	Refer to Local Water Utilities Administration (LWUA) Methodology Manual

B. Construction of Level II Water Supply System by the LGU (Administration)		
<ul style="list-style-type: none"> Construct water system facilities <ul style="list-style-type: none"> - Review design drawings and conduct field surveys to validate sites for the project facilities - Procure materials and equipment for the construction of the various components of the system - Construct/install project facilities in accordance with technical designs and specifications - Record progress of construction - Document changes in the design - Witness equipment factory tests, installation of equipment and equipment field tests - Prepare as-built drawings - Conduct tests of major pipelines and equipment prior to commissioning 	PWSU/ MSLT	Refer to LWUA Methodology Manual
X. Conduct of Pre-operational Orientation and Training		
<ul style="list-style-type: none"> Prepare for the Pre-operational Orientation and Training <ul style="list-style-type: none"> - Prepare the design of the orientation and training - Assign/Arrange with the Resource Person - Prepare Handouts/Training Materials 	MSLT / PWSU, BWSA officers and barangay Officials	
<ul style="list-style-type: none"> Registration 	BWSA and barangay secretaries	
<ul style="list-style-type: none"> Opening Program 	BWSA officers and barangay Officials	
<ul style="list-style-type: none"> Objectives of the Orientation & Training 	MSLT / PWSU	
<ul style="list-style-type: none"> Administrative and Financial Management System Bookkeeping and Accounting System Sources of Funds/Loan Amortization Operation and Maintenance (O & M) of Level II Water System 	MSLT / PWSU	
<ul style="list-style-type: none"> Training Evaluation 	MSLT / PWSU	
<ul style="list-style-type: none"> Closing Program 	BWSA officers and barangay Officials	
XI. Operation and Maintenance		
<ul style="list-style-type: none"> Conduct water quality surveillance activities 	BWSA	Refer to Water Quality Surveillance

<ul style="list-style-type: none"> • Regularly check on the surroundings of the water source for any possible source of contamination 	BWSA	
<ul style="list-style-type: none"> • Follow the proper operation and maintenance procedures for pump facilities 	BWSA	Refer to O & M of Pumps
<ul style="list-style-type: none"> • Check pipelines regularly for leaks, water pressure, alignment and damage 	BWSA	Refer to O & M of Pipelines
<ul style="list-style-type: none"> • Check on the operation and maintenance of the water tanks on a regular basis 	BWSA	Refer to O & M of Reservoirs
XII. Conduct of Capacity Building for BOD / Officers and Management and Staff		
<ul style="list-style-type: none"> • Prepare for the Capacity Building <ul style="list-style-type: none"> - Prepare the training design for the Capacity Building - Assign / Arrange with the Resource Person - Prepare Handouts / Training Materials 	MSLT / PWSU, BWSA officers and barangay officials	
<ul style="list-style-type: none"> • Registration 	BWSA & barangay secretaries	
<ul style="list-style-type: none"> • Opening Program 	BWSA officers and barangay officials	
<ul style="list-style-type: none"> • Objectives of the Training 	MSLT / PWSU	
<ul style="list-style-type: none"> • Basic Organizational Development Training <ul style="list-style-type: none"> - Team Building Exercises - Value Formation - Leadership • Skills Training <ul style="list-style-type: none"> - Policy Making - Basic Management Skills - Bookkeeping and Accounting System - O & M of storage tank, pipeline system and pumping facilities, leak detection and repair, water quality control & surveillance and regular preventive maintenance routine • Administrative Procedures (request for repair work, records keeping and system monitoring) 	MSLT / PWSU / Resource Person	
<ul style="list-style-type: none"> • Training Evaluation 	MSLT / PWSU	
<ul style="list-style-type: none"> • Closing Program 	BWSA officers and barangay officials	

XIII. Monitoring and Evaluation (M & E)		
<ul style="list-style-type: none"> Periodic M & E <ul style="list-style-type: none"> Conduct periodic field visit Adopt the M & E tools developed for the RWSSP V Identify problems/issues encountered and provide timely and appropriate intervention Prepare a report and recommendation 	MSLT / PWSU /DILG	Refer to RWSSP Monitoring Forms for Level I water system
<ul style="list-style-type: none"> Provide continuing institutional and technical assistance through job coaching/mentoring for BWSA BOD/Officers and management staff 	MSLT / PWSU / DILG	
B. Level III		
I. Preparatory Activities		
<ul style="list-style-type: none"> Same as Level II 		
II. Preparation of FS		
<ul style="list-style-type: none"> Confirm service area coverage of Level III Same as Level II 	MSLT / PWSU	
III. Conduct of Needs Survey		
<ul style="list-style-type: none"> Same as Level II 		
IV. Conduct an Information Dissemination Campaign		
<ul style="list-style-type: none"> Same as Level II 		
V. Conduct of GA Meeting		
<ul style="list-style-type: none"> Same as Level II 		
VI. Conduct of Willingness-to-Connect (WTC) Survey		
<ul style="list-style-type: none"> Secure a list of HH members in the proposed service area Administer the WTC survey in the proposed service area Tally and count the number of yes and no responses and assign percentage 	MSLT / PWSU / BWSA	
VII. Preparation of BOD Resolution and Barangay Council Endorsement		
<ul style="list-style-type: none"> Same as Level II 		
VIII. Preparation of Detailed Design		
<ul style="list-style-type: none"> Same as Level II 		
IX. Conduct of Post Detailed Design – GA		
<ul style="list-style-type: none"> Same as Level II 		
X. Construction		
<ul style="list-style-type: none"> Same as Level II. But if the existing Level I does not meet the water requirement, additional water source shall be constructed 		Refer to New Well Construction

Primer on Upgrading Guidelines

XI. Conduct of Pre-operational Orientation and Training		
<ul style="list-style-type: none"> Prepare for the Pre-operational Orientation and Training <ul style="list-style-type: none"> Prepare the design for the Orientation and training Assign/Arrange with the Resource Person Prepare Handouts/Training Materials 	MSLT / PWSU, BWSA officers and barangay officials	
<ul style="list-style-type: none"> Registration 	BWSA and barangay secretaries	
<ul style="list-style-type: none"> Opening Program 	BWSA officers and barangay Officials	
<ul style="list-style-type: none"> Objectives of the Orientation & Training 	MSLT/PWSU	
<ul style="list-style-type: none"> Administrative and Financial Management System Billing and Collection Bookkeeping and Accounting System O & M of Level III Water System Loan Computation and Amortization; Pertinent Policies and Guidelines 	MSLT / PWSU / Resource Person	
<ul style="list-style-type: none"> Training Evaluation 	MSLT/PWSU	
<ul style="list-style-type: none"> Closing Program 	BWSA officers and barangay Officials	
XII. O & M		
<ul style="list-style-type: none"> Same as Level II 	Same as Level II	
XIII. Conduct of Capacity Building for BOD, GM and Management Staff		
<ul style="list-style-type: none"> Prepare for the Capacity Building <ul style="list-style-type: none"> Prepare the training design for Capacity Building Assign / Arrange with the Resource Person Prepare Handouts / Training Materials 	MSLT/PWSU, BWSA officers and barangay officials	
<ul style="list-style-type: none"> Registration 	BWSA & barangay secretaries	
<ul style="list-style-type: none"> Opening Program 	BWSA officers and barangay Officials	
<ul style="list-style-type: none"> Objectives of the Training 	MSLT / PWSU	
<ul style="list-style-type: none"> Basic Organizational Development Training <ul style="list-style-type: none"> Team Building Exercises Value Formation Leadership 	MSLT / PWSU / Resource Person	

Primer on Upgrading Guidelines

<ul style="list-style-type: none"> • Skills Training <ul style="list-style-type: none"> - Policy Making for BOD - General Management and Administration for General Manager - Commercial Accounting - Basic Marketing and Public Relations/Commercial Practices - Engineering, Construction and O & M of storage tank, pipeline system and pumping facilities, leak detection and repair, meter reading and repair, water quality control & surveillance and regular preventive maintenance routine • Administrative Procedures (request for repair work, records keeping, monitoring system and report preparation) 	MSLT / PWSU / Resource Person	Refer to Local Water District Training Programs
<ul style="list-style-type: none"> • Training Evaluation 	MSLT / PWSU	
<ul style="list-style-type: none"> • Closing Program 	BWSA officers and barangay Officials	
XIV. Monitoring and Evaluation (M & E)		
<ul style="list-style-type: none"> • Periodic M & E <ul style="list-style-type: none"> - Conduct periodic field visit - Adopt the Monitoring Form for Level III - Identify problems/issues encountered and provide timely and appropriate intervention - Prepare a report and recommendation 	MSLT / PWSU / DILG	Refer to Monitoring Form for Level III WS
<ul style="list-style-type: none"> • Provide continuing institutional and technical assistance through job coaching / mentoring to BWSA BOD, General Manager (GM) and management staff 	MSLT / PWSU / DILG	

IV UPGRADING MECHANISM

The mechanism for upgrading of water supply service from Level I to Level II or Level III involves the active participation and interaction among the BWSA, barangay, and the LGU specifically through the MSLT and the PWSU. The Guidelines and Procedures shows how these three stakeholders interface in a number of identified activities and tasks. It is then important for them to maintain an open, smooth, and supportive relationship. The success of the upgrading is largely dependent on the kind of dynamics that they have. Other stakeholders will play a support role in the upgrading including its O & M.

Water and Sanitation Sector Policy

Consistent with their decentralization, LGUs are now responsible for planning, financing, implementing and managing both urban and rural water supply projects. In support of this, there are several national laws and agency-initiated policies which provide for or support the initiatives taken by the LGUs.

National Laws

1. Executive Order 279: Instituting Reforms in the Financing Policies for the Water Supply and Sewerage Sector and Water Service Providers and Providing for the Rationalization of LWUA's Organizational Structure and Operations in Support Thereof and its Implementing Rules and Regulations
Part III Section 9 B Water Development Financier (WDF) (iv) LGU/WSP (local government units / water supply providers) Resource Coordination for Credit Enhancement this refers to the pooling of resources between semi-creditworthy and/ or pre-creditworthy and/or non-creditworthy WSPs and the relevant LGUs in their service areas to finance water supply and sewerage projects or create the collateral needed to borrow from GFIs and PFIs.

To allow LGU recovery of and some minimal return on its investments in the WSPs pursuant to (c) (i) and (c) (iv) of this Section, LWUA shall formulate benchmarks for LGU sharing in the earnings of the WSPs in coordination with the MFC and the DOF within 180 days upon effectivity of these IRR.

Part IV, Financing Policies Section 11 Responsibility of LGUs - In line with the principle of devolution of the provision of basic services under the Local Government Code, LGUs shall be encouraged to provide delivery of water supply and sewerage services through, but not limited to, investments in, or loans to WSPs. LGUs shall as a general policy, be financially and operationally responsible for the WSPs within their respective jurisdictions.

Part IV, Financing Policies Section 12 Sources of Financing.

2. Republic Act 9275: Philippine Clean Water Act and its Implementing Rules

and Regulations

Chapter 3, Institutional Mechanism Section 20 Rule 20 of the IRR, Role of the LGUs

Chapter 4, Incentives and Rewards Section 26 Financial Assistance Programs

Chapter 5, Civil Liability / Penal Provisions Section 27 Rule 27 Incentives Scheme

3. Republic Act 7160: Local Government Code of 1991 and Its Implementing Rules and Regulations (IRR)

Book 1, General Provisions Title One Basic Principles Chapter 2 Section 17 Basic Services and Facilities

Book 1, General Provisions Title One Basic Principles 1 Chapter 4 Relations with People's and Non-governmental Organizations

4. Republic Act No. 6716: An Act Providing for the Construction of Water Wells, Rainwater Collectors, Development of Springs and Rehabilitation of Existing Water Wells in All Barangays in the Philippines
5. Letter of Instructions No. 683: Establishing Basic Policies for the Water Supply Sector
 - (4) (d) The Department of Local Governments and Community Development shall be responsible for the formations of water associations and cooperatives that will operate and maintain water supply systems for communities in the provinces covered by the Provincial Development Assistance Program (PDAP). It shall provide institutional, technical and financial support to these associations and cooperatives
6. Presidential Decree 1151: The Philippine Environmental Policy
7. Presidential Decree 1152: The Philippine Environmental Code
8. Presidential Decree No. 1067: The Water Code of the Philippines
9. Presidential Decree 856: Code on Sanitation of the Philippines and its Implementing Rules and Regulations
10. Presidential Decree No. 424: Creating a National Water Resources Council, Reconstituting its Membership, Vesting the Same with Powers to Coordinate and Integrate Water Resources Development, and Providing Funds Therefore
11. Presidential Decree No. 198: Declaring a national policy favoring local operation and control of water systems; authorizing the formation of local water districts and providing for the government and administration of such districts; chartering a national administration to facilitate improvement of local water utilities; granting said administration such powers as are necessary to optimize public service from water utility operations, and for other purposes
12. Republic Act No. 6541: An Act to Ordain and Institute a National Building Code of the Philippines

13. Republic Act No. 6234: An Act Creating the Metropolitan Waterworks and Sewerage System and Dissolving the National Waterworks and Sewerage Authority; and for Other Purposes.

Agency Initiated Policies

1. NEDA Board Resolution No. 4
2. NEDA Board Resolution No. 5
3. NEDA Board Resolution No. 6
4. NEDA Board Resolution No. 12
5. Philippine National Standards for Drinking Water

Major Stakeholders

The BWSA and Barangay

The BWSA which include its BOD, officers, and members and the *barangays* which include its *punong barangay*, council, and secretary will work closely in several activities in the upgrading. These activities are from preparatory activities to the conduct of Needs Survey, information dissemination campaign, and GA meeting to the preparation of BOD resolution and barangay council endorsement, up to the conduct of post detailed design – GA, pre-operational orientation and training, and capacity building for BOD / officers / management / staff. In Level II, the BWSA will still be mainly responsible for the O & M of the upgraded waster supply system.

The LGU

The LGU will provide support to the BWSA and the *barangay* in the conduct of preparatory activities, needs survey, GA meeting, post detailed design – GA, pre-operational orientation and training, and capacity building for BOD / officers / management / staff. In cases where the BWSA and the *barangay* lack the needed technical expertise such as in the conduct of needs survey or the more complicated FS, the LGU will assist them. There are MSLT and PWSU members who have been trained to do these tasks. Nonetheless, the LGU is responsible for preparing the FS and for the detailed design as well as for the construction and M & E of the facilities.

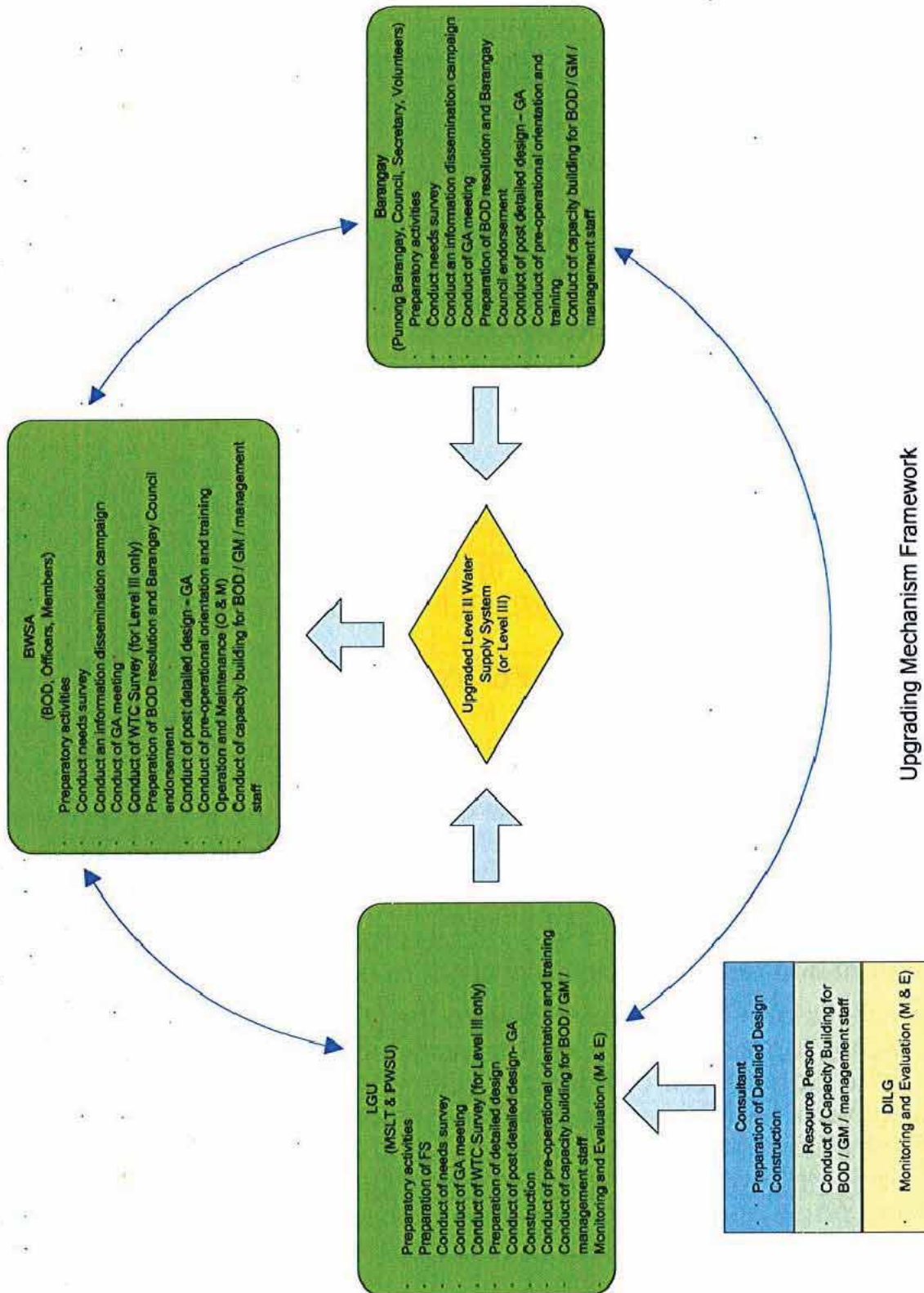
In upgrading to Level II, the LGU may provide the required funds to the BWSA or *barangay*. However, in upgrading to Level III, the LGU may apply for a loan to banks or financial institutions in behalf of the communities or *barangays* who will be included in the service area. Consequently, the LGU will have a bigger role in the operation of a Level III water supply facility considering their investment in the water system facilities.

Other Stakeholders

The LGU may get the services of consultants in tasks where they are responsible for but in which they may not have the technical expertise such as in preparing the detailed design and in the actual construction of the facilities.

Primer on Upgrading Guidelines

During the conduct of the pre-operational orientation and training and capability building of the BWSA, the LGU may get a resource person or a training group. Moreover, the DILG is well-equipped to assist the LGU in the M & E by giving training or introducing innovative and effective M & E tools and strategies.



Upgrading Mechanism Framework

V FINANCING UPGRADING AND COST RECOVERY

In upgrading from Level I to Level II or Level III, there is an investment in new facilities. This implies that funding must be available or accessible to the LGU. The sources of funds are either equity or loan or grant. Equity is internal generated through existing operations. In cases where upgrading projects would mean dissolving an existing water supply systems and organization, equity would refer to the initial contribution and additional fund infusion of the owners or investors in upgrading. It could also mean that there is a merger of two or several systems or organizations to form a larger waterworks.

Grant and loan are outside fund sources. Grant is often preferred since there is no need for repayment and is therefore easier on the cashflow. The possible sources of grant are government and international funding agencies and other donors. Once the grant is received, it actually forms part of the equity in the capital structure of the waterworks and is reflected as such in the balance sheet.

Sources of Funds

Loan or borrowing is usually the source of the largest portion of funds for most projects. Loans have costs in the form of interest charges. Moreover, there are usually additional charges in the form of transaction fees, commitment fees, and other kinds of fees. Repayment is amortized over a period ranging from five to 30 years.

The provincial or municipal LGU plays an important role in providing funds for upgrading water service supply level. In upgrading to Level II, the LGU may provide the grant or loan in constructing the new facilities. While in upgrading to Level III, the LGU can borrow in behalf of the BWSA. However, the ownership of the facilities may become an issue since the LGU may want to have ownership or even control the operation of the facilities considering their risk in making the loan. In such cases, institutional arrangements which satisfy the interest of all concerned parties are devised in order to address issues of ownership and management of the upgraded facilities. The ideal situation for a water system is to be self-sustaining and not to be a burden to the LGU.

There are various loan windows available to the LGUs. The common sources of funds for water supply projects are the Municipal Development Fund Office (MDFO) of the Department of Finance (DOF) which sometimes provide grant and other government financing institutions such as the Development Bank of the Philippines (DBP) and the Land Bank of the Philippines (LBP). The Philippine National Bank (PNB) also lend to municipal water supply projects. **Table 2** in the following page presents a comparison of the loan offered by these three banks. These loan terms are subject to change anytime.

Cost Recovery

Cost recovery is one of the identified criteria for upgrading. The costs to be recovered mainly refer to the investment cost which is the equity and borrowing used in constructing the facilities, operating and maintenance cost, and financing cost which is the interest charges on borrowing. This is explained in the feasibility study which is usually required by the funding or loaning institution. The financial viability of the upgrading is determined using various accepted methods such as Financial Internal Rate of Return (FIRR) and the Net Present Value (NPV).

Table 2 Comparison of Loan Terms of DBP, LBP, and PNB

	LBP	PNB	DBP
Interest Rate	Based on Prime Rate plus a minimum spread of 2%	Based on prevailing T-Bill plus 5% maximum spread	Based on prevailing market rate at the time of the loan
Re-pricing	Quarterly	Monthly or quarterly	Fixed for one year; reviewed yearly
Other Fees	1% handling fee	Notary fees and documentary stamps	1% front-end fee based on the amount approved 125% commitment fee on undisbursed loan amount
	1/2% commitment fee		
	Php 500.00 inspection fee		
	Notary fees & documentary stamps		
Payment Mode	Principal: 20 to 40 equal payments (5 to 10 years)	Principal: 24 equal quarterly payments (7 years)	Maximum of 15 years inclusive of grace period
	1 year grace period	1 year grace period	Can be shorter depending on project cashflow
Pre-payment	3% of the unpaid balance of the whole loan will be charged if the loan is taken over by another bank	No charges	None mentioned but may be specified when the contract is made
Security	Real Estate Mortgage	Assignment of the 20% development fund and 20% of other income	Assignment of a portion of IRA until the loan is fully paid
	Chattel mortgage of equipment	Percentage can be higher according to loan amortization	Assignment of income from the project and other terms and conditions that may be imposed
	Assignment of IRA and other income		
Equity	Requires at least 10% equity participation	No equity requirement	Requires at least 10% equity participation
Default Provision	Collaterals will be claimed by the bank and damages arising from default shall be shouldered by the borrower	Offers loan re-structuring	Offers flexible loan extension for loans not exceeding 15 years Other provisions may be included in contract

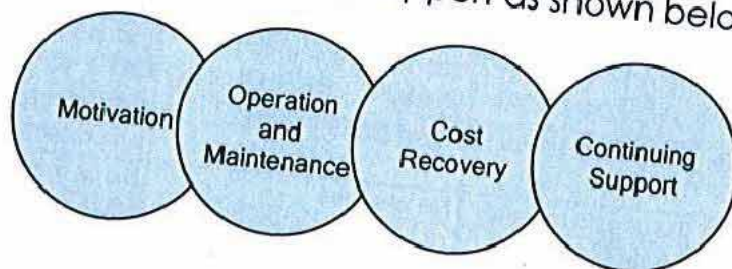
VI PROJECT SUSTAINABILITY

A significant number of Level I water and sanitation facilities were constructed in the barangays of the participating LGUs. These are now owned, operated and maintained by the BWSAs, organized and trained to manage these projects. Some of these functional BWSAs with sustainable capacity to operate these projects through efficient and effective water service delivery felt the need to upgrade their facilities from Level I to Level II or III water system.

Sustainability refers to the project's capacity to continue the delivery of intended benefits and local action, as well as to generate successor services and initiatives over an extended period of time. A pragmatic definition of sustainability therefore means not only "whether or not something continues to work overtime" but permanence through evolution and improvement and/or upgrading of the water and sanitation services.

Sustainability Chain

The sustainability of rural water supply and sanitation systems involves a chain of four (4) essential links; the failure of any one link endangers the entire water project. The sustainability chains are motivation, operation and maintenance, cost recovery and continuing support as shown below:



Motivation

Without motivation of the BWSA to utilize the improved system, sustainability is doomed. The member users must believe that the new facility would lessen their burden of fetching water from distance places. The obvious and immediate benefit of an improved water source is usually access, or proximity, quantity and quality of water while valuing health benefits. Information dissemination campaign, health education and continuous involvement of the community will be necessary to bring such motivation.

The achievement of sustainability requires incentives for the stakeholders (e.g. BWSA, LGUs/MSLT/PWSU) involved in operation and maintenance services. For the Level II water system, incentive in the form of honorarium may be provided to management staff to motivate them in the performance of their assigned tasks. Likewise in Level III, a reasonable salary for the GM and management staff is necessary. Financial incentive is most appropriate for the MSLT/PWSU providing support services to the BWSAs.

Operation and Maintenance

Community participation is an essential foundation-stone of water and sanitation projects but this alone is no automatic guarantee of success. The communities may never have acquired ownership of the new facility and the LGUs may have been under-resourced, so that assistance to the BWSAs in repair and maintenance may have not taken place. The O & M responsibility is lodged with the BWSA, hence, basic knowledge on how the facility is constructed, how it is operated and maintained and the options/alternatives in securing needed support services for its operation and maintenance were provided. However, those trained may have lost interest in due time or transferred or moved away. Greater emphasis should be placed on continuing institutional and technical support to the BWSAs to track their performance in managing the project.

Cost Recovery

The financial cost which the member-users are expected to raise as a savings for operation and maintenance may be unacceptable, unaffordable or impracticable as the payment of contribution may be possible for members who only receive income during harvest time. The water tariff must be reasonable and acceptable to the users. It seems the problem is the non-willingness of the members to pay the water fees. There should be a clear understanding of the policy why a collection from members is made for the operational expenses and for the occasional repair of facility.

Continuing Support

The presence of helping organizations/institutions, accessible and available to provide support to the BWSA is important. Community management does not mean being alone, but also relies on being able to tap the necessary support and resources. Since not one organization has a monopoly of services/programs, it relies on an integrated collaboration of organization/institutions accessible to the communities.

Providing ample institutional support to the BWSA requires an integrated collaboration among implementing partners. LGUs should be readily available and accessible to the BWSAs. Through their PWSUs and MSLTs, LGUs shall provide capability enhancement activities, technical and institutional support services to the BWSAs, when necessary.

Sustainability Monitoring and Evaluation

Monitoring and evaluation is one of the primary management responses to the sustainability challenge. If the project goal is sustainability, how well is the BWSA doing? A monitoring tool is necessary to assess whether or not the system is being managed in a sustained manner.

Monitoring is not independent from the management processes. A good management requires good information and a monitoring system is the means

Primer on Upgrading Guidelines

when it is structured into the process of management, well designed and executed. Monitoring becomes the core, the essential feedback loop, of managing for sustainability.

The ultimate test of sustainability is whether the facility is functioning, that is providing sufficient quantity and quality of potable drinking water to the community members. As a means to this end, the BWSA should provide efficient and effective water service delivery including effective revenue collection for the O & M of the facilities.

MSLT's periodic field visits are necessary to gather first hand information on the on-going activities and performance of BWSAs. Through this, issues and concerns requiring immediate action will be addressed and prevented from becoming huge problems. The LGU, as backstop agency should continue to be visible to the community members, performing institutional and technical/maintenance support role.