FRAMEWORK FOR COMMUNITY DEVELOPMENT

Phase I: FORMATION OF ORGANIZATION

A. Pre-Entry/Preparatory

[illegible]	[illegible]/Objective	Strategy	Facilitator/Organizer
1. Hire /Appoint CD-CO worker/s	Identify and recommend a capable CD-CO worker/s from the area	Review of track records; Interview and screening of applicants	Provincial/Municipal CD Specialists
2. Orient the CD-CO worker/s on the project objectives and requirements	Familiarize the CD-CO worker/s on the project	Group discussion	Provincial/Municipal CD Specialist
3. Gather secondary data *(Barangay maps, socio-economic profile, list of leaders and development workers, peace and order situation, list of organization, history of participation in previous project.)*	Make an initial assessment of the barangay's capability to implement and assume responsibility for the project.	Data gathering	CD-CO worker/s
4. Conduct ocular survey of barangay	Orientation to the physical features/structures of the barangay	Site visits	CD-CO worker/s

B. Community Entry and Integration

5. Deploy the CD-CO Worker/s	Install the CD-CO worker/s by provincial and municipal level implementors	Community meeting	Provincial/Municipal CD Specialist; Barangay Captain
6. Pay courtesy call on barangay officials	CD-CO worker/s to establish rapport with barangay councils and leaders	Group meeting	Municipal Gov't./ Barangay Captain
7. Conduct house-to-house visit and informal interviews with the residents	Establish rapport with the barangay constituents	Home visits; Spending time in most frequented places and look and listen attentively	Barangay Leaders; CD-CO worker/s

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Activity	Objective	Strategy	Facilitator/Organizer
8. Conduct project briefing	Orient community on the project objective and requirements, strategy of implementation, MOA, selection criteria of beneficiaries and activities in order to get their commitment and participation	Community meeting	CD-CO worker/s and Technical Team
9. Undertake project acceptance and signing of Memorandum of Agreement (MOA)	Delineate responsibilities of project beneficiaries and implementing agency	Community meeting	CD-CO worker/s

C. Community Assessment

10. Identify information to be gathered and possible source of information	List down relevant data that should be gathered	Group meeting	CD-CO worker/s
11. Select the method of data collection	Determine the best way of data collection, considering the information needed	Group discussion	CD-CO worker/s
12. Collect data from informants	Establish socio-economic, political and technical information about community	Home visit; focus group discussion; group meeting	CD-CO worker/s
13. Process /validate community profile and spot mapping	Confirm with the barangay officials and leaders data collected	Community and group meeting; spot checking	CD-CO worker/s
14. Present validated profile to the Community	Further enrich and refine data in the profile	Community meeting	CD-CO worker/s
15. Finalize the community profile	Update/finalize community profile	Group meeting	CD-CO worker/s
16. Analyze the problems identified	Know the causes and implications of the problems identified.	Group discussion	CD-CO worker/s

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Phase II: DEVELOPMENT OF ORGANIZATION (Levels I and II)

A. Community Mobilization

Activity	Objective	Strategy	Facilitator/Organizer
1. Formulate action plan for the community	Prepare a plan of action towards the development of a WATSAN Project	Group discussion	CD-CO worker/s
2. Develop criteria to select core group that will comprise the water association	Enlist people who are interested to work actively that will support CO activities	Community meeting	CD-CO worker/s; Barangay Officials
3. Conduct core group orientation and presentation to the community	Familiarize the people comprising the core group of the water association	Barangay assembly	CD-CO worker/s; Barangay Officials

B. Formation of WATSAN Association

4A. Launch formation of WATSAN association	Community residents conduct initial meeting to formalize formation of water association	Community meeting	CD-CO worker/s; Barangay Officials
5A. Facilitate legal works and documents and mobilize committee on documentation	Prepare necessary legal documents	Committee/group discussion	Committee Chairman
6A. Finalize membership	Confirm final membership by tapstand and undertake information campaign on the importance of tapstand grouping and house rules formulation; select tapstand leader	Undertake meeting per tapstand	CD-CO worker/s
7A. Draft and ratify constitution and by-laws	Develop a set of policies and by-laws that will govern the operation of the association	Meeting of core group or tapstand leaders	CD-CO worker/s; LGU
8A. Facilitate registration and accreditation of WATSAN association	Registration of water association to appropriate government agencies	Actual registration with concerned government entity	CD-CO worker/s; Association Officers

Phase II: DEVELOPMENT OF ORGANIZATION (Levels I and II)

A. Community Mobilization

Activity	Objective	Strategy	Facilitator/Organizer
1. Formulate action plan for the community	Prepare a plan of action towards the development of a WATSAN Project	Group discussion	CD-CO worker/s
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C. Project Preparation

			Facilitator/Organizer
4B. Conduct feasibility study	Identify potential water source sites	Mobilize community through committee	Technical Team; CD-CO worker/s
5B. Present technical findings	Inform the community of the results of the feasibility study conducted	Core group meeting	CD-CO worker/s
6B. Prepare technical design	Determine/design the most appropriate technology to be used for WATSAN system	Community meeting	Technical Team
7B. Present draft technical design	Come up with recommendations on the technical study	Community meeting	Technical Team
8B. Finalize technical design	Generate community decision on the proposed WATSAN scheme	Technical Team Dicsussion	Technical Team

D. Project Implementation

9. Undertake project presentation	Present to the community the project to be implemented and the responsibilities required of the beneficiaries	Community meeting	Technical Team/CD-CO Worker/s
10. Conduct Action Planning/Pre-construction Seminar	Generate work plan and tasking for the construction activities; Spell out what to expect during the construction processes	Community meeting	Technical Team
11. Mobilize committee for delivery of materials	Ensure that materials delivered at the community are all accounted for	Specific committee to handle materials	Selected Committee
12. Undertake construction of facility	Construct/Complete WATSAN Facility	Actual Construction	Technical Team

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PHASE III: CONSOLIDATION AND SUSTENANCE OF ORGANIZATION

Activity	Objective	Strategy	Facilitator/Organizer
1. Conduct training on hygiene, sanitation and on health care	Conduct of training on health and sanitation	Community meeting or meeting by tapstand grouping	CD-CO worker/s; Rural Sanitary Inspector
2. Conduct training on organizational management	Conduct of training on organizational management	Seminar-workshop	LGU/CD-CO worker/s
3. Conduct training on financial management	Conduct a financial management training	Seminar-workshop	LGU/CD-CO worker/s
4. Present, compare/collate tapstand and house rules	Collate similar house rules formulated in the previous activity	Meeting of tapstand leader	CD-CO worker/s
5. Conduct test run of facility/system	Solicit community participation in ocular operation and test run of facility installed	Actual Test Run; Community meeting	Technical Team
6. Undertake water quality test	Ensure potability of water from facility	Collect water sample and submit to DOH for test	Technical Team
7. Conduct training on system operation, maintenance and repair	Conduct a training on O&M and repair	Seminar-workshop	Technical Team
8. Turn-over facility/system to WATSAN Association	To have a formal turn-over of facility/system to officers and members	Turn-over ceremony	CD-CO worker/LGU
9. Conduct Final Meeting	Conduct a final meeting with the water association officers and barangay council	Community meeting	CD-CO worker/s
10. EXIT			

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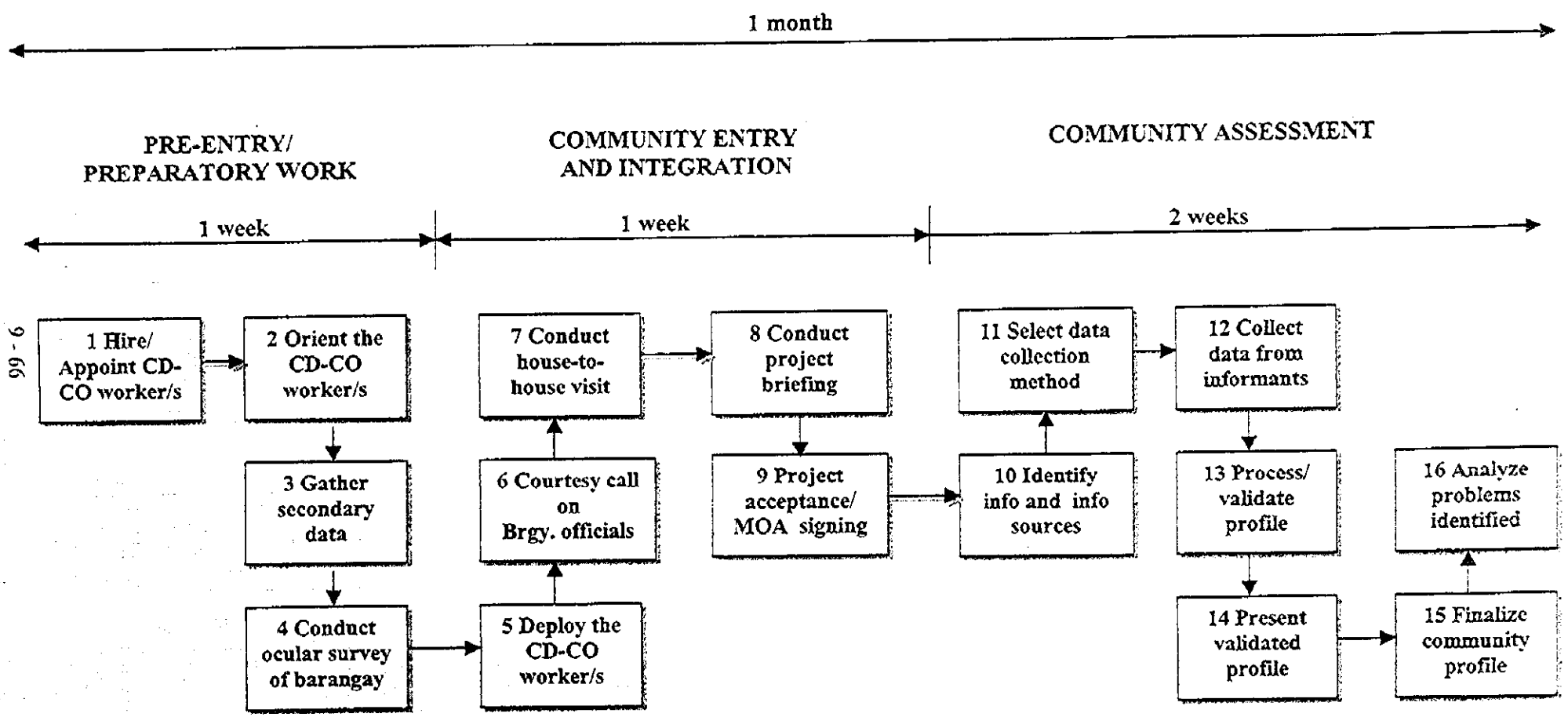
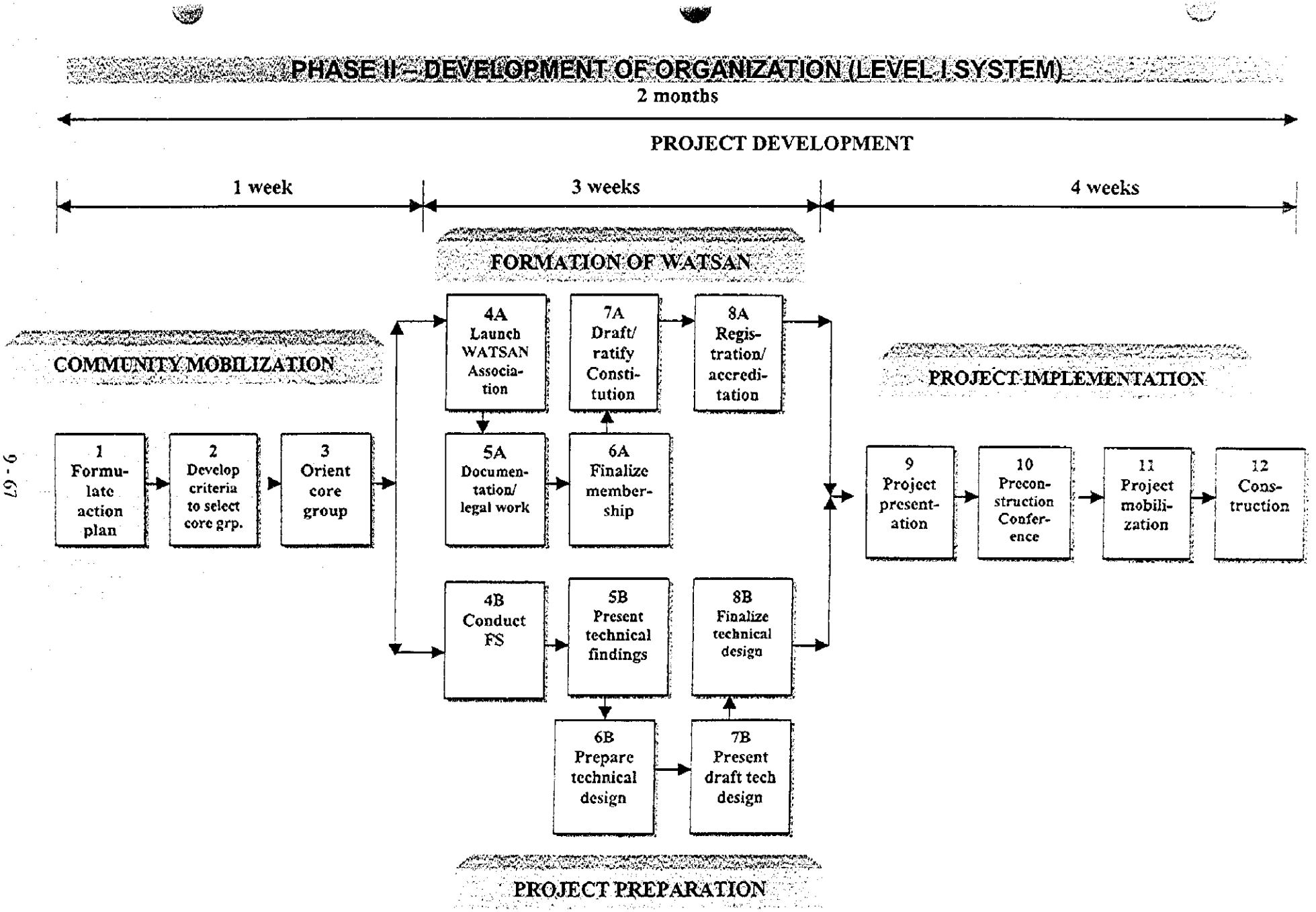
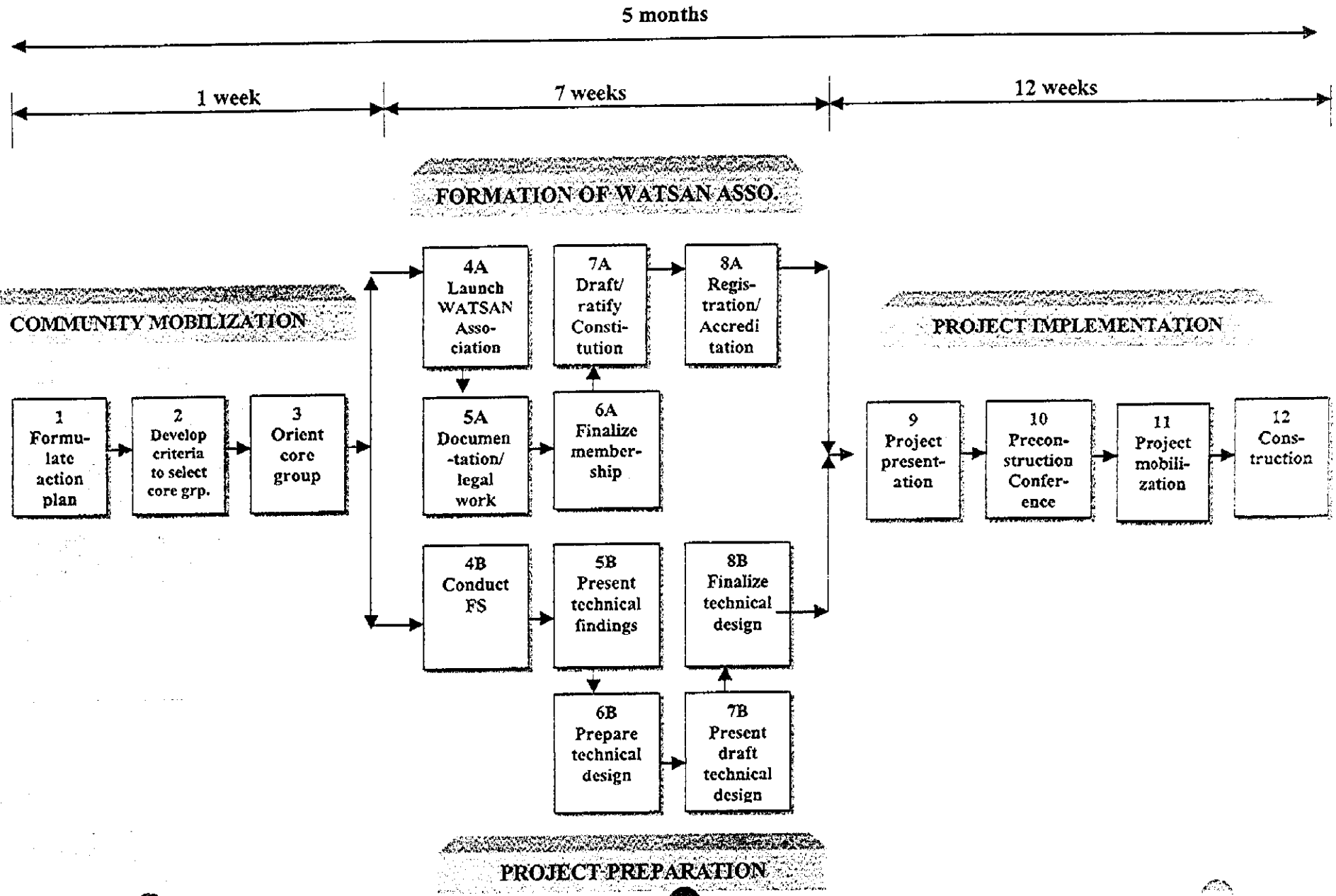
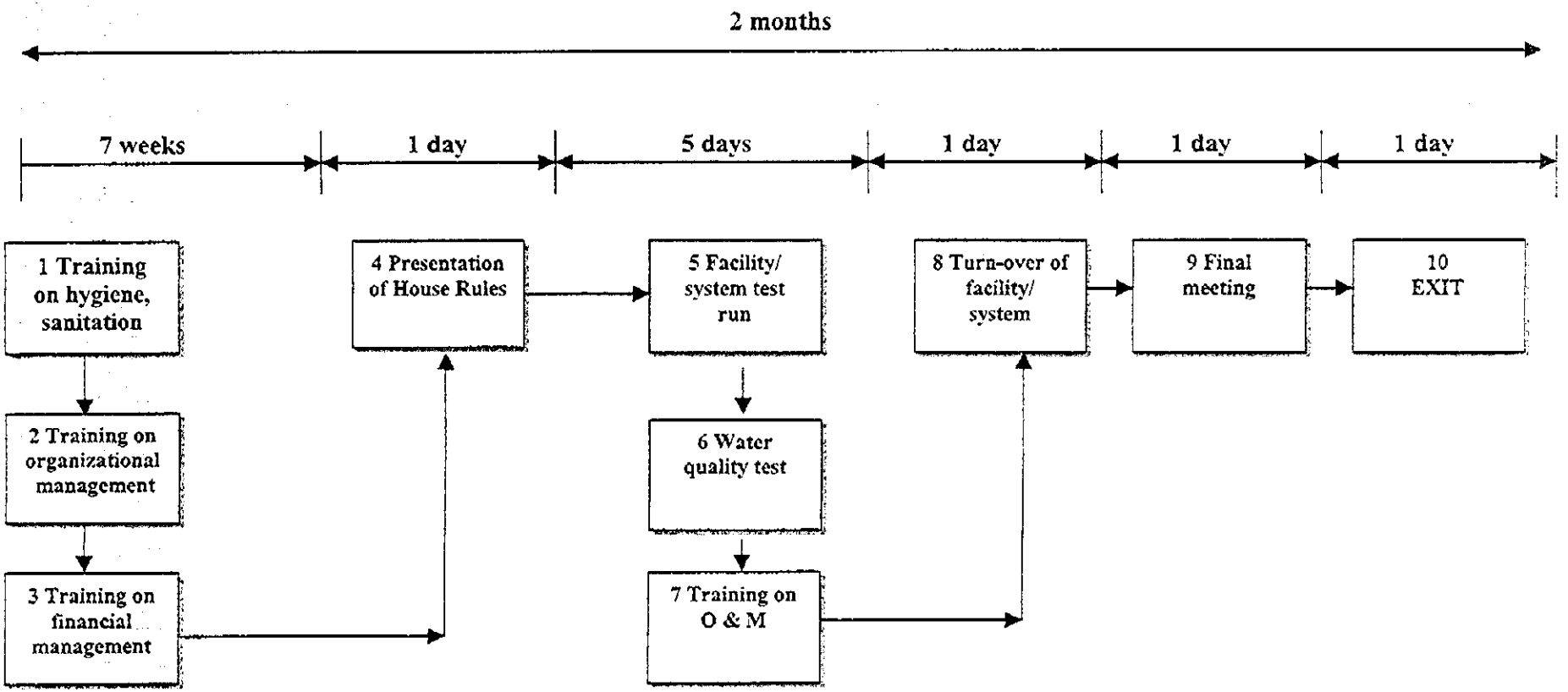



PHASE II – DEVELOPMENT OF ORGANIZATION (LEVEL I SYSTEM)
2 months
PROJECT DEVELOPMENT
1 week
3 weeks
4 weeks
FORMATION OF WATSAN
COMMUNITY MOBILIZATION
PROJECT IMPLEMENTATION
PROJECT PREPARATION
1 Formulate action plan
2 Develop criteria to select core grp.
3 Orient core group
4A Launch WATSAN Association
5A Documentation/ legal work
6A Finalize membership
7A Draft/ ratify Constitution
8A Registration/ accreditation
4B Conduct FS
5B Present technical findings
6B Prepare technical design
7B Present draft tech design
8B Finalize technical design
9 Project presentation
10 Preconstruction Conference
11 Project mobilization
12 Construction

PHASE II – DEVELOPMENT OF ORGANIZATION (LEVEL II)



PHASE III – CONSOLIDATION AND SUSTENANCE OF ORGANIZATION



Typical CD Work

Community Organizing for Water Supply and Sanitation

Community organizing for water supply and sanitation projects is aimed at forming user groups through a process that integrates the hardware (technical aspects) and software (social aspects) components of a water supply and sanitation project.

People's participation, which can be gauged against the extent to which they themselves are involved in the decision-making processes, their willingness to stake local resources, (both in cash and in kind) and the extent to which trainings have improved the knowledge, skills and attitudes of the people are some of the indicators of a good community organizing work.

The Community organizing process is developing a partnership with the community. The Community organizer is simply a catalyst in the community's efforts to build their self-confidence to operate, maintain and sustain their water supply and sanitation service.

The CO Framework

The CO Handbook is one of the tools that a community worker may use as a guide in organizing user's groups for community-managed water supply and sanitation facilities. It is presented in three (3) major stages following the community-organizing framework. These stages are a) Formation of Organization; b) Development of Organization; and c) Consolidation of Organization.

The process contains a chronology of activities that starts with the deployment of community organizer and ends up with his/her exit from the community.

Except for steps 9 and 10 of Stage II and Step 20 of Stage III which need not be undertaken for a Level I, all the rest applies to Levels I and II water supply projects. level I water supply projects refer to point source facility catering to a cluster of ten to fifteen households while level II refers to a waterworks that has a distribution system such as multiple tapstands.

The ***Formation of Organization*** stage covers activities intended to enlist community participation and make community understand the concepts, processes and importance of organizing a group that will become responsible for eliciting maximum participation for WATSAN activities.

The ***Development of Organization*** stage covers activities intended to build capability of water users' organization, which include trainings and full participation in both technical and social activities. It also includes the CO worker's sharing and transferring of organization development and community organizing technology to the leaders of the water users' association. In this way, the community will be able to increase their capability for self-management.

The ***Consolidation of Organization*** stage consists of activities intended to "tie loose ends." This is to ensure that at the exit of the CO worker, the water users' association can sustain its operations without an external catalyst.

The last part of the Handbook is a compilation of useful tips in recording the minutes of the community meetings, contents of a spot map, sample tapstand membership form and tapstand membership list, characteristics of a CO worker and community leaders and others. All these

are appended as additional guides to enhance the organization process and facilitate the attainment of the CO objective.

Community Organizer

The community organization worker as a catalyst is one who believes that the people are the main actors in the processes and that his/her role is that of facilitating the community organizing process; improving the skills and knowledge of the community; and that he/she has to withdraw as soon as the people are ready to manage their affairs.

Objectives of the CO Work

The General Objective of the CO work is to form a community-based water user's association that will operate, maintain and sustain their water supply and sanitation facilities.

Stages of CO Work

Each of the three stages of CO work as contained in the framework is distinctly characterized by various activities needed to ensure that the organization will continue to function even after the exit of the CO worker.

Phase I is characterized by the formal entry of the CO worker to the community. This is marked by courtesy call first to the barangay leaders and then to the community. These activities require thorough understanding of the nature of the project.

The CO worker needs various tools to undertake these activities. A chart preferably in the local dialect that explains the concept of the project and the roles of the various stakeholders is very important. The community profile is one tool that also needs to be validated by the community themselves. The profile serves as a CO tool in facilitating community decisions.

Phase II is characterized by a series of trainings intended to provide adult learning processes to the water users' association. This includes practical and workable approaches needed to synchronize activities and provide appropriate mix of technical and social knowledge and skills to the water users.

Phase III begins when the organization is formalized, water system potability is ensured, legal documents are executed and facility is turned-over to the water users' association for their operation and maintenance. This phase ends when the community organizer exits from the community, leaving behind an organization with positive indicators for sustainability.

1. ENTRY STRATEGIES

CO DEPLOYMENT

Objective	:	Indorse the CO worker to the community by provincial and municipal level implementors
Expected Result	:	CO worker is introduced to the barangay officials and the community
Suggested Strategy	:	Community meeting
Facilitator	:	Barangay Chairman
Co-facilitator	:	Municipal Level Implementor

Agenda in the first orientation meeting and courtesy call to barangay council:

- Title of the project
- Objectives
- Stakeholders and their roles, responsibilities and accountabilities
- Funding and counterparting
- Project features or components
- How the project will be executed
- Timetable
- Inputs and outputs (largely trainings)
- Role of the intermediaries (NGOs)
- Solicit/request for CO volunteers to participate in profiling and spot mapping

VALIDATION OF COMMUNITY PROFILE AND SPOT MAPPING

Objective : To establish socio-economic, political and technical information about community directly or indirectly related to water and sanitation.

Expected Results : Validated secondary data from the community

Suggested Strategies :

- Home visits
- Focus group discussion
- Visit to RHUs, MPDO, MHO, local school
- Community meeting

CONTENTS OF THE SPOT MAP

- Natural features (creeks, river, lakes, mountains, water sources)
- Man-made structure (houses, buildings, bridges, roads, schools, cemetery, halls, markets, water system facilities)
- Technical data (distance, north orientation, elevations, scale, date prepared, source of information, persons/agencies involved, names of places, boundaries, legend, index to adjoining sheets, coordinates)

2. PRESENTATION OF VALIDATED PROFILE TO THE COMMUNITY

Objective : To further enrich and refine data in the profile

Expected Results :

- Profile validated by the community
- Surfacing of thoughts on:
  - How project will be implemented on the site
  - How the facility will be designed and constructed
  - How the community perceived their role in the project
- Solicit counterpart
- Determine/recommend long list of potential core group members

Facilitator : CO worker

Audience : Key informants (farmers, church leaders, teachers, etc.)

3. DEVELOPMENT OF CRITERIA FOR SELECTION OF CORE GROUP

Objectives : To enlist people interested to work actively that will assist in CO activities

Expected Results : Core group members elected

- Role and function of core group drawn
- Adhoc committees formed and functions drawn
- Committee chairman selected
- Plan of action done

IDEAL SELECTION CRITERIA FOR CORE GROUP MEMBERS

- Must have the time and commitment to do community development activities in their locality
- Proven leadership skills
- Direct exposure and experience in community development project/activities
- Have some basic knowledge and/or skills in community organizing
- Good moral standing
- No criminal record
- Should be one of the beneficiaries
- With good interpersonal relationship with the community
- Should be literate

ROLES AND FUNCTIONS OF THE WATER CORE GROUP

- Initiates the planning and implementation of action on water related activities
- Preparation of water project feasibility study/design community survey and spot map to further validate the importance of the project to the community at large
- Mobilize community resources specifically: the time, skills and efforts of the people
- Resources of the local agency, i.e., money, technical know-how, equipment, machines
- Disseminate information, keeps the community informed about the status of the water project
- Hears and considers suggestions of people with regards to the appropriate activities of the project
- Facilitates the expansion of water core group into Barangay/Rural Waterworks Association.

COMPOSITION OF THE CORE GROUP

- Technical persons who can be trained on the technical aspects of the project
- Individual who are trusted and respected by community
- Those who have a strong liking to work for people
- Those who have a spirit of volunteerism
- Those who are resourceful
- Individuals who are understanding and patient enough to go with the pace of the community
- Together with the community, they should be able to identify the:
    - Objectives of the group
    - Define roles and responsibilities
    - Clear expectations to members and group as a whole

ADHOC COMMITTEES CO-TERMINUS WITH THE CORE GROUP

- Education and recruitment
- Monitoring, evaluation and control
- Coordination and manpower
- Documentation (to include preparation of legal documents)

FUNCTIONS OF THE COMMITTEES

a. Education and recruitment
    - Project information drive
    - Advocacy on water supply, sanitation, health care and hygiene

b. Monitoring, evaluation and control
   - Inspects and accepts hardware, tools and equipment
   - Acts as property custodian
   - Monitor the evaluation
   - Initiate action planning relative to construction activities

c. Coordination and manpower
   - Coordinate resources from stakeholders
   - Do follow-ups and issue reminders
   - planning and manpower scheduling in terms of number and distribution
   - Coordinate technical activities in project site

d. Documentation
   - Facilitate the issuance of legal documents such as right of way permit, deed of donation, certification water source site, etc.

4. ASSIST IN SITE SELECTION AND FEASIBILITY STUDY

Objectives	:	To identify potential water source sites
Expected Results	:	Water source site for development identified (or prospecting for wells)
Suggested Strategy	:	Technical data gathered

5. PRESENTATION OF TECHNICAL FINDINGS

Objectives	:	To come up with recommendations on the technical study
Expected Results	:	Decision by the community on the technical findings
	:	Water samples collected from agreed upon water source site (for spring only)
Suggested Strategy	:	Meeting of the core group
Facilitator	:	LGU Technical Team
CO-facilitator	:	CO worker

By the end of Phase I of Community organizing work, the following milestones must have been achieved:

- Water Core Group formed
- Adhoc Committees formed and chairman named
- Water source site identified and initial studies done
- Community profile and spot map completed and validated

While at this stage, there is no way yet of gauging the certainty of making the project succeed in terms of a community-managed facility, a thorough understanding by the beneficiaries of the project features, stockholders, tasks, inputs, outputs and other important information about the project which is done formally as the opening salvo of the CO to the community and, later, on a more informal manner , as the CO integrates to the community is one of the most critical part of this phase.

As community organizing progresses, the deepening sessions of the CO worker in reinforcing project concepts such as strategies for community initiatives towards addressing key issues affecting their community that are directly or indirectly related to water are reinforcing mechanisms in providing impetus to the development of an informal water users' organization, as infant as a water core group.

6. HUMAN RESOURCE DEVELOPMENT TRAINING

Objective	:	To build a strong and cohesive team from among the core group members and barangay officials (if appropriate)
Expected Results	:	Trained core group members on Human Resource Development
Facilitator	:	CO worker
Co-facilitator	:	Core group members

7. PRESENTATION OF TECHNICAL DESIGN

Objective	:	Generate community decision on appropriate technology to be used
Expected Results	:	Generate community decision on appropriate technology to be used
Suggested Strategy	:	Community meeting to discuss - Initial findings on technical feasibility study - Presentation of technology options
Facilitator	:	Technical Team

8. FACILITATION ON LEGAL WORKS AND DOCUMENTS

Objective	:	Prepare necessary legal documents
Expected Results	:	Legal documents required in WATSAN projects prepared
Facilitator	:	Committee Chairman
CO-facilitator	:	CO Worker

LIST OF DOCUMENTS REQUIRED IN IMPLEMENTING WATSAN PROJECTS

- Barangay Resolution desiring to avail of a water facility to be submitted to the LGU
- Building permit of WATSAN facility, from LGU
- Waiver form DENR (if water system components such as the source, tank, pipelines are situated in areas other that private lands) to use the site(s) for community development
- Right of way permit from private land owners, specifically for spring sites and pipeline routes
- Deeds of donation from private landowners for water tank and tapstand sites
- Certificate of water quality source to be developed and tapped, from DOH
- Certificate of water quality produced through the water system facility, from DOH
- Letter of acknowledgment from the municipal mayor endorsing the water system management to the water users' association formed
- Accreditation pertinent papers (needed for the accreditation of RWSAs/BWSAs at the LGU level)
- Water rights
- Water permit
- Drilling permit

9. PRESENTATION OF DRAFT TECHNICAL DESIGN
(Skip This Activity If Level I)

Objective : To inform the community of the results of the feasibility study conducted

Expected Results:

- Location of major components such as well drilling site, transmission and distribution pipelines
- Tanks and tapstands are identified
- Community acceptance of design
- Local counterpart generated

Suggested Strategies:

- Community meeting
- Site visit to proposed structures/facilities' location

INFORMATION TO BE PRESENTED TO THE COMMUNITY

- Role of technical people
- Contents of typical water system technical plan
- Presentation of design specifications and explanation of plan contents /drawings in layman's terms
- Presentation of program of work (POW) , bill of materials and cost estimates
- Validation of data gathered and used in the designing
- Solicit ideas, opinions, comments and preferences
- Come-up with compromises, and if appropriate determine local counterpart

10. MOBILIZATION OF COMMITTEE ON DOCUMENTATION

(skip this activity if Level I)

Objective	:	To facilitate additional legal work requirement for tapstand, pipeline and other major system components
	:	To ensure a formal listing of tapstand membership
Expected Results	:	Completed legal documentation requirement membership per tapstand known
Facilitator	:	Committee Chairman, Committee on Documentation and Education and Membership
CO-facilitator	:	CO worker

11. CONFIRMATION OF MEMBERSHIP BY TAPSTAND

Objective	:	To confirm final membership by tapstand To undertake information campaign on the importance of grouping and houserules formulation
	:	To select tapstand leader
Expected Results	:	Final listing of membership per tapstand
	:	Formulated tapstand houserules
	:	Tapstand leader selected
Suggested Strategy	:	Undertake meeting per tapstand
Facilitator	:	CO worker
CO-facilitator	:	Chairman, Committee on Education and Recruitment

DISCUSSION POINTS IN FORMULATING TAPSTAND HOUSERULES

a. Getting water:
   - How will water be fetched?
   - When will water be fetched?
   - Who can fetch water?

b. Monitoring
   - List down who fetches and how much volume of water was taken

c. Water tariff due the specific tapstand

d. Sanitation around the tapstand and around the cluster

e. Beautification and physical development in the tapstand site

f. Financial management regarding water tariffs

12. PRESENTATION OF FINAL TECHNICAL DESIGN

Objective	:	To present and approve the final technical design
Expected Results	:	Finalized counterpart agreement
	:	Construction scheduling developed
Suggested Strategy	:	Meeting among tapstand leaders, core group and barangay council

13. TRAINING ON HYGIENE, SANITATION AND HEALTH CARE

Objective	:	Conduct of training on health and hygiene
Expected Results	:	Awareness on community health aspects
Suggested Strategy	:	Community meeting, or
	:	Meeting by tapstand grouping
Organizer	:	CO Worker, community and rural sanitary inspector
Training Management	:	LGU
Audience	:	Core Group, Barangay Officials, Barangay Health Workers, Rural Sanitary Inspectors, and Barangay Nutrition Scholars

14. SOURCE FOR EXCRETA DISPOSAL MATERIALS AND/OR FACILITIES

Objective	:	To make available to the community facilities for excreta disposal (if conditions and culture warrant)
Expected Results	:	Materials/facilities for excreta disposal constructed individually by members of the community in their households
Suggested Strategy	:	Core group members together with CO worker make representations with LGUs to source materials or facilities
Facilitator	:	Core group members
CO-facilitator	:	CO worker

15. ORGANIZATIONAL MANAGEMENT TRAINING

Organizer	:	CO and the community
Training Management	:	LGU
Audience	:	tapstand leaders, core group and barangay officials

16. PRE-CONSTRUCTION CONFERENCE

Objective	:	To generate work plan and tasking for the construction activities
Expected Results	:	Activities and roles identified
	:	Commitment to participate generated
Suggested Strategy	:	Hold a community meeting
Facilitator	:	Technical team
Co-facilitator	:	CO worker

AGENDA IN THE PRE-CONSTRUCTION CONFERENCE

- Presentation of schedule of work and tasking
- Determine quantities of resources needed
- Labor arrangements
- Salaries/wages, if any that will be incurred
- Mobilization of committees
- Arrangement on materials storage

17. MOBILIZATION FOR DELIVERY OF MATERIALS

Objective	:	To ensure that materials delivered at the community are all accounted for
Expected Results	:	Materials delivered all accounted for and in accordance to the agreed upon specifications in the technical design
Suggested Strategy	:	Specific committee to handle delivery, and storage of materials , and, if need be, disposition of materials
Facilitator	:	Committee to be agreed upon by the core group
Co-facilitator	:	CO worker

18. ACTION PLANNING FOR CONSTRUCTION

Objective	:	To spell out what to expect during the construction processes
Expected Results	:	Smooth implementation of construction activities
Facilitator	:	CO worker
Co-facilitator	:	Technical Team
Suggested Strategy	:	Core group meeting

STEPS TO BE UNDERTAKEN:

- Identify activities related to construction
- Define activity schedule and resources required
- Identify the type of manpower skills required per activity
- Monitoring and documentation of major water system components
- Progress reporting, evaluation and action planning
- Monitoring and documentation on construction of major water system components
- Repeat cycle until completion

19. DEVELOPMENT OF EXIT PLAN

Objective	:	To plan for the transfer of responsibility from CO worker to core group members
Expected Results	:	Core group informed of activities ahead and the expected time of withdrawal of the CO worker
	:	An exit plan containing task list and specific person responsible
	:	Organizational development program developed
Suggested Strategy	:	Core group meeting
Facilitator	:	CO worker
Co-facilitator	:	Technical Team
Audience	:	Community members

At the end of the Development of Organization Phase, the following milestone must have been achieved:

- Basic organizational development training such as value formation, leadership and team building and sanitation, health care and hygiene education must be done
- CO exit plan jointly developed by the CO together with the community
- All legal documents completed
- Pre-construction conference done
- Materials for construction delivered and accepted by the community
- Organizational strengthening such as involvement of a greater number of community members participating in mobilization activities and increased awareness on key issues through information exchange

The success of the phase rests on the extent the community had participated in the activities and learned from the processes as inputs to the community's capability for self-management. On the other hand, one of the most crucial factors to participation rests on the depth and broadness of their understanding of the project concept, features, processes, stakeholders, tasks, and responsibilities coupled with the need for water supply facility, a condition validated in the first orientation meeting done by the CO upon entry to the community.

The inputs that will be provided by the CO and the technical team will provide the necessary honing skills for the core group and tapstand leaders to have the confidence to accept more challenges in the next phase. These challenges are contained in the Exit Plan, which was formulated by the local stakeholders. The Plan will be implemented in Phase III stage to signal the weaning process of the community from the CO worker.

20. PRESENTATION, COMPARISON & COLLATION OF TAPSTAND HOUSERULES (skip this activity if Level I)

Objectives	:	Collate similar houserules formulated in the previous activity
Expected Results	:	Collated houserules
	:	Identified houserules appropriate for by-laws
Suggested Strategy	:	Meeting of tapstand leaders
Facilitator	:	CO worker
Co-facilitator	:	Core Group Member

21. DRAFTING OF CONSTITUTION AND BY-LAWS

Objective	:	To develop a set of policies and by-laws that will govern the operation of the organization

Expected Results : Constitution and by-laws ready for ratification
Suggested Strategy : Meeting of core group and tapstand leaders

22. RATIFICATION OF CONSTITUTION, BY-LAWS AND POLICIES

Facilitator : CO Worker
Co-facilitator : Core Group Member
Expected Results : Constitution ratified
: Officers elected

23. FACILITY/SYSTEM TEST RUN

The community participates in ocular operation and test run of facility installed

Facilitator : Technical Team

24. WATER QUALITY TEST

Objective : To ensure potability of water from facility
Expected Result : Water facility is to provide potable water to community
Suggested Strategy : Collect water sample from tapstand
: Submit sample to DOH for test and certification

25. TURN-OVER OF FACILITY/SYSTEM

Officers elected organize and manage facility turnover ceremony

26. OPERATION, MAINTENANCE AND REPAIR TRAINING

Trainer : Technical team
Trainees : Community-appointed Plumber, Meter Reader (if there is a meter installed), Tapstand leader and RWSA/BWSA officers

27. FINANCIAL MANAGEMENT TRAINING

Trainer : NGO, LGU or Water District
Trainees : Bookkeeper, Tapstand Leader and RWSA/BWSA officer

28. RWSA/BWSA REGISTRATION AND ACCREDITATION

Facilitator : RWSA/BWSA officer
Co-facilitator : CO worker

Registration of BWSA/RWSA to appropriate government agencies is done. Options on where to register shall be presented and decided upon by the organization.

Possible Options:

In the absence of a clear national policy on B/RWSA registration, the following Registering Agencies could be presented as options:

a. Securities and Exchange Commission
b. Bureau of Rural Workers
c. Local Waterworks Utilities Administration

d. Department of Social Welfare and Development
e. Cooperatives Development Authority

Accreditation of BWSA/RWSA is done through the municipal local government unit.

29. FORMAL EXIT OF THE CO WORKER

Facilitator	:	RWSA Officer
Co-facilitator	:	CO worker
Suggested Strategy	:	Hold a community meeting
Agenda	:	Assessment of CO Exit Plan
	:	Planning for the operation and management of water facility
	:	Scheduling of CO visits
	:	Scheduling of RWSA/BWSA and CO formal linking with other organizations and agencies
	:	Formal turn-over of CO responsibility to RWSA/BWSA

At the end of the Consolidation Phase, the following milestones are achieved:

- Facility is turned-over to the RWSA/BWSA and is functioning as intended and has it set of officers, constitution and by-laws and policies
- Plan for operation, maintenance and repair of system is installed

At the end of the community organizing process, the degree of capability of RWSA/BWSA in the operation and maintenance of water supply facility and maintaining their organizational health can be gauged on the extent of participation of the members in resolving problems and making decisions. The extent of focus of team building and leadership inputs is crucial in how the members of the RWSAs/BWSAs are willing to make amend allow some compromises among each other. On the other hand, the technical soundness of the design and execution of the construction ensures the long-term sustainability of the system.

By this time, the CO has exited but maintains monitoring visits until he/she is fully confident that the organization is strong enough to take decisions, plan and implement their WATSAN related activities and knows where to access support (in terms of financial, institutional and technical) when needed.

Source: ***Water Supply and Sanitation Program Management Office***
Department of the Interior and Local Government

10 COST ESTIMATES FOR FUTURE SECTOR DEVELOPMENT

10.2 Assumption for Cost Estimates

(1) Unit Construction Cost

The base information in previous PW4SP, such as bill of quantities and unit cost of respective component facilities was fully utilized, which was referred to the standards of relevant sector agencies. Escalation rates experienced between 1995 and 1998 in terms of major construction materials and equipment rental were studied using NSO statistics (wholesale price index). Market prices of these items were also canvassed to compare with calculated prices in 1998 from those in 1995 in application of the escalation rates.

In general, escalated prices meet canvassed prices in most of the materials. Escalation rates between 1995 and 1998 were employed in round figures. Some of them (pipe materials, etc.) were, however, deferred at previous level due to considerable price stabilization in the last year.

The Table 10.2.1 shows the prices of the major materials by facility.

Table 10.2.1 Price of Major Materials by Facility

Major Materials	Water Supply			Sanitation			Projection by Major Materials					Canvassed & Collected Price		Comparison (1), (2) & (3)
							NSO Wholesale Price Index			Price				
	L-I	L-II	L-III	ST, PT	Flush type	VIP, Dry	1995	1998	Escalation	1995	1998(1)	DPWH(2)	CIA(3)	
1. Aggregate	x	x	x	x	x	x	311.6	367.5	5.7%					Almost the same with (2) & (3).
Sand										304	359	330	350	
Gravel										385	454	418	500	
2. Cement	x	x	x	x	x	x	197.4	214.1	2.7%	117	127	126	105	ditto
3. Fuel	x		x				601.6	742.6	7.3%	1,100	1,358	1306		ditto
4. Metal pipe	x	x	x				208.7	226.3	2.7%					Price of GI casing is almost the same with (2) and screen is 12% lower than (2).
4" x 3m, GI										2,625	2,846	2763		
4" x 3m, Screen										4,313	4,667	5291		
5. PVC pipe	x	x	x	x			199.2	223.4	3.9%					Price of PVC pipe is almost the same with (2) and 7% higher than (3).
2" x 3m										813	912	882	852	
1-1/2" elbow										13	15		40	
6. Reinforcing	x	x	x	x	x	x	201.4	221.9	3.3%					Almost the same with (3).
12mm x 6m										68	75		75	
10mm x 6m										49	54		45	
7. Lumber				x	x	x	268.5	296.8	3.4%					
8. Paint				x			128.0	140.1	3.1%					Almost the same with (3).
Enamel, QDE										266	291		310	
9. Machinery	x		x				254.8	254.8	0.0%					

L-I: Deep well/shallow well, L-II: Major materials are the same as those of L-I spring development,
ST: School toilet, PT: Public toilet, Flush type: Flush water sealed w/ septic tank and Pour flush w/ double latrine,
CIA: Construction Industry Authority of the Philippines, prevailing prices for the month of December 1998

GI: Galvanized iron steel pipe for well casing, Screen: Low carbon steel and wound wire type

Table 10.2.2 (a) Unit Cost of Level I (Gravel Packed Deep Well - 40m Depth)

(Cost: Peso)

Description	Qty.	Unit	Unit Cost	Amount
A. Mobilization/Demobilization/Site Preparation		LS		52,000
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 100mm x 3m Steel Casing with coupling	11	pcs.	2,846	31,306
(2) 100mm x 3m Steel Casing with one end closed	1	pc.	2,997	2,997
(3) 100mm x 3m Low Carbon Steel Screen	2	pcs.	4,667	9,334
(4) Casing Centralizer	2	set	1,925	3,850
2. Labor, Fuel, Lubricant and others				
Well Drilling for 40 m depth at 200mm borehole	40	m	2,500	100,000
3. Borehole Logging	1	no	16,000	16,000
4. Freight Cost (10% of Materials)		LS		4,749
Sub-Total of B				168,236
C. Well Development and Pumping Test				
Well Development	24	hr.	5,500	132,000
Pumping Test	6	hr.	5,000	30,000
Sub-Total of C				162,000
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) Improved Deep Well Cylinder Pump (Afridev Type)	1	set	11,815	11,815
(2) 63mm x 6m Riser Pipe and Pump Rod	6	pcs.	1,880	11,280
(3) #10 Sieved Gravel	1	cu.m	1,026	1,026
(4) Coarse Sand	1	cu.m	359	359
(5) Cement for Sanitary Seal	4	bags	127	508
(6) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	2	cu.m	454	908
3) Sand	1	cu.m	359	359
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	294	294
5) Form Lumber (50mm x 75mm x 1,800mm)	6	pcs.	52	312
6) Nail	1	kg.	40	40
Sub-Total of D-1				27,409
2. Labor (40% of D-1.)				10,964
3. Freight Cost (10% of Materials)		LS		2,741
Sub-Total of D				41,114
E. Indirect Cost				
Profit (10% of A, B, C & D)				42,335
Overhead Expense (13% of A, B, C & D)				55,036
VAT (10% of Labor, Profit & Overhead Expense)				20,834
Sub-Total of E				63,169
Total of Construction Cost (A+B+C+D+E)				354,519
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		3,600
2. Construction Supervision		LS		2,400
3. Water Quality Analysis		LS		1,400
Sub-Total of F				7,400
GRAND TOTAL				361,919
SAY				361,900

Note: LS - Lump Sum
Source: DPWH standard price in 1994 & LWUA Water Supply Feasibility Study Methodology Manual 1998
Unit Cost: Adjusted to 1998 Price Level

Table 10.2.2 (b) Unit Cost of Level I (Natural Gravel packed Deep Well - 40m Depth)

(Cost: Peso)

Description	Qty.	Unit	Unit Cost	Amount
A. Mobilization/Demobilization		LS		52,000
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 100mm x 3m Steel Casing with coupling	11	pcs.	2,846	31,306
(2) 100mm x 3m Steel Casing with one end closed	1	pc.	2,997	2,997
(3) 100mm x 3m Low Carbon Steel Screen	2	pcs.	4,667	9,334
(4) Casing Centralizer	0	set	1,925	0
2. Labor, Fuel, Lubricant and others				
Well Drilling for 40 m depth at 150mm borehole	40	m	1,600	64,000
3. Borehole Logging	1	no	16,000	16,000
4. Freight Cost (10% of Materials)		LS		4,364
Sub-Total of B				128,001
C. Well Development and Pumping Test				
Well Development	12	hr.	5,500	66,000
Pumping Test	6	hr.	5,000	30,000
Sub-Total of C				96,000
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) Improved Deep Well Cylinder Pump (Afridev Type)	1	set	11,815	11,815
(2) 63mm x 6m Riser Pipe and Pump Rod	6	pcs.	1,880	11,280
(3) #10 Sieved Gravel	0	cu.m	1,026	0
(4) Coarse Sand	1	cu.m	359	359
(5) Cement for Sanitary Seal	3	bags	127	381
(6) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	2	cu.m	454	908
3) Sand	1	cu.m	359	359
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	294	294
5) Form Lumber (50mm x 75mm x 1,800mm)	6	pcs.	52	312
6) Nail	1	kg.	40	40
Sub-Total of D-1				26,256
2. Labor (40% of D-1.)				10,502
3. Freight Cost (10% of Materials)		LS		2,626
Sub-Total of D				39,384
E. Indirect Cost				
Profit (10% of A, B, C & D)				31,539
Overhead Expense (13% of A, B, C & D)				41,000
VAT (10% of Labor, Profit & Overhead Expense)				14,704
Sub-Total of E				46,243
Total of Construction Cost (A+B+C+D+E)				295,628
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		3,600
2. Construction Supervision		LS		2,400
3. Water Quality Analysis		LS		1,400
Sub-Total of F				7,400
GRAND TOTAL				303,028
SAY				303,000

Note: LS - Lump Sum
Source: DPWH standard price in 1994 & LWUA Water Supply Feasibility Study Methodology Manual 1998
Unit Cost: Adjusted to 1998 Price Level

Table 10.2.2(c) Unit Cost of Level I (Gravel Packed Deep Well - 40m Depth) for Acid Water

(Cost: Peso)

Description	Qty.	Unit	Unit Cost	Amount
A. Mobilization/Demobilization/Site Preparation		LS		52,000
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 100mm x 3m PVC Casing with Socket	11	pcs.	2,038	22,418
(2) 100mm x 3m PVC Casing with Plug	1	pc.	980	980
(3) 100mm x 3m Stainless Steel Screen	2	pcs.	12,700	25,400
(4) Casing Centralizer	2	set	1,925	3,850
2. Labor, Fuel, Lubricant and others				
Well Drilling for 40 m depth at 200mm borehole	40	m	2,500	100,000
3. Borehole Logging	1	no	16,000	16,000
4. Freight Cost (10% of Materials)		LS		5,265
Sub-Total of B				**173,913**
C. Well Development and Pumping Test				
Well Development	24	hr.	5,500	132,000
Pumping Test	6	hr.	5,000	30,000
Sub-Total of C				**162,000**
D. Gravel Packing, Installation of Handpump and				
1. Materials				
(1) Improved Deep Well Cylinder Pump (Afridev Type)	1	set	11,815	11,815
(2) 63mm x 3m PVC Riser Pipe and SUS Pump Rod	12	pcs.	2,450	29,400
(3) #10 Sieved Gravel	1	cu.m	1,026	1,026
(4) Coarse Sand	1	cu.m	359	359
(5) Cement for Sanitary Seal	4	bags	127	508
(6) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	2	cu.m	454	908
3) Sand	1	cu.m	359	359
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	294	294
5) Form Lumber (50mm x 75mm x 1,800mm)	6	pcs.	52	312
6) Nail	1	kg.	40	40
Sub-Total of D-1				45,529
2. Labor (40% of D-1.)				18,212
3. Freight Cost (10% of Materials)		LS		4,553
Sub-Total of D				**68,294**
E. Indirect Cost				
Profit (10% of A, B, C & D)				45,621
Overhead Expense (13% of A, B, C & D)				59,307
VAT (10% of Labor, Profit & Overhead Expense)				22,314
Sub-Total of E				**67,935**
Total of Construction Cost (A+B+C+D+E)				**392,142**
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		3,600
2. Construction Supervision		LS		2,400
3. Water Quality Analysis		LS		1,400
Sub-Total of F				**7,400**
GRAND TOTAL				399,542
SAY				399,500

Note: LS - Lump Sum
Source: DPWH standard price in 1994 & LWUA Water Supply Feasibility Study Methodology Manual 1998
Unit Cost: Adjusted to 1998 Price Level

Table 10.2.3 (a) Unit Cost of Level I (Gravel Packed Deep Well - 80m Depth)

(Cost: Peso)

Description	Qty.	Unit	Unit Cost	Amount
A. Mobilization/Demobilization/Site Preparation		LS		54,000
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 100mm x 3m Steel Casing with coupling	24	pcs.	2,846	68,304
(2) 100mm x 3m Steel Casing with one end closed	1	pc.	2,997	2,997
(3) 100mm x 3m Low Carbon Steel Screen	2	pcs.	4,667	9,334
(4) Casing Centralizer	2	set	1,925	3,850
2. Labor, Fuel, Lubricant and others				
Well Drilling for 40 m depth at 200mm borehole	80	m	2,500	200,000
3. Borehole Logging	1	no	18,000	18,000
4. Freight Cost (10% of Materials)		LS		8,449
Sub-Total of B				310,934
C. Well Development and Pumping Test				
Well Development	24	hr.	5,500	132,000
Pumping Test	6	hr.	5,000	30,000
Sub-Total of C				162,000
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) Improved Deep Well Cylinder Pump (Afridev Type)	1	set	11,815	11,815
(2) 63mm x 6m Riser Pipe and Pump Rod	8	pcs.	1,880	15,040
(3) #10 Sieved Gravel	1	cu.m	1,026	1,026
(4) Coarse Sand	1	cu.m	359	359
(5) Cement for Sanitary Seal	4	bags	127	508
(6) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	2	cu.m	454	908
3) Sand	1	cu.m	359	359
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	294	294
5) Form Lumber (50mm x 75mm x 1,800mm)	6	pcs.	52	312
6) Nail	1	kg.	40	40
Sub-Total of D-1				31,169
2. Labor (40% of D-1.)				12,468
3. Freight Cost (10% of Materials)		LS		3,117
Sub-Total of D				46,754
E. Indirect Cost				
Profit (10% of A, B, C & D)				57,369
Overhead Expense (13% of A, B, C & D)				74,579
VAT (10% of Labor, Profit & Overhead Expense)				34,442
Sub-Total of E				91,811
Total of Construction Cost (A+B+C+D+E)				533,499
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		3,600
2. Construction Supervision		LS		2,400
3. Water Quality Analysis		LS		1,400
Sub-Total of F				7,400
GRAND TOTAL				540,899
SAY				540,900

Note: LS - Lump Sum
Source: DPWH standard price in 1994 & LWUA Water Supply Feasibility Study Methodology Manual 1998
Unit Cost: Adjusted to 1998 Price Level

Table 10.2.3 (b) Unit Cost of Level I (Natural Gravel Packed Deep Well - 80m Depth)

(Cost: Peso)

Description	Qty.	Unit	Unit Cost	Cost
A. Mobilization/Demobilization/Site Preparation		LS		54,000
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 100mm x 3m Steel Casing with coupling	24	pcs.	2,846	68,304
(2) 100mm x 3m Steel Casing with one end closed	1	pc.	2,997	2,997
(3) 100mm x 3m Low Carbon Steel Screen	2	pcs.	4,667	9,334
(4) Casing Centralizer	0	set	1,925	0
2. Labor, Fuel, Lubricant and others				
Well Drilling for 80 m depth at 150mm borehole	80	m	1,600	128,000
3. Borehole Logging	1	no	18,000	18,000
4. Freight Cost (10% of Materials)		LS		8,064
Sub-Total of B				234,699
C. Well Development and Pumping Test				
Well Development	12	hr.	5,500	66,000
Pumping Test	6	hr.	5,000	30,000
Sub-Total of C				96,000
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) Improved Deep Well Cylinder Pump (Afridev Type)	1	set	11,815	11,815
(2) 63mm x 6m Riser Pipe and Pump Rod	8	pcs.	1,880	15,040
(3) #10 Sieved Gravel	0	cu.m	1,026	0
(4) Coarse Sand	1	cu.m	359	359
(5) Cement for Sanitary Seal	3	bags	127	381
(6) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	2	cu.m	454	908
3) Sand	1	cu.m	359	359
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	294	294
5) Form Lumber (50mm x 75mm x 1,800mm)	6	pcs.	52	312
6) Nail	1	kg.	40	40
Sub-Total of D-1				30,016
2. Labor (40% of D-1.)				12,006
3. Freight Cost (10% of Materials)		LS		3,002
Sub-Total of D				45,024
E. Indirect Cost				
Profit (10% of A, B, C & D)				42,972
Overhead Expense (13% of A, B, C & D)				55,864
VAT (10% of Labor, Profit & Overhead Expense)				23,884
Sub-Total of E				66,856
Total of Construction Cost (A+B+C+D+E)				430,579
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		3,600
2. Construction Supervision		LS		2,400
3. Water Quality Analysis		LS		1,400
Sub-Total of F				7,400
GRAND TOTAL				437,979
SAY				438,000

Note: LS - Lump Sum
Source: DPWH standard price in 1994 & LWUA Water Supply Feasibility Study Methodology Manual 1998
Unit Cost: Adjusted to 1998 Price Level

Table 10.2.3 (c) Unit Cost of Level I (Gravel Packed Deep Well - 80m Depth) for Acid Water

(Cost: Peso)

Description	Qty.	Unit	Unit Cost	Cost
A. Mobilization/Demobilization/Site Preparation		LS		54,000
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 100mm x 3m PVC Casing with Socket	24	pcs.	2,038	48,912
(2) 100mm x 3m PVC Casing with Plug	1	pc.	980	980
(3) 100mm x 3m Stainless Steel Screen	2	pcs.	12,700	25,400
(4) Casing Centralizer	2	set	1,925	3,850
2. Labor, Fuel, Lubricant and others				
Well Drilling for 40 m depth at 200mm borehole	80	m	2,500	200,000
3. Borehole Logging	1	no	18,000	18,000
4. Freight Cost (10% of Materials)		LS		7,914
Sub-Total of B				305,056
C. Well Development and Pumping Test				
Well Development	24	hr.	5,500	132,000
Pumping Test	6	hr.	5,000	30,000
Sub-Total of C				162,000
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) Improved Deep Well Cylinder Pump (Afridev Type)	1	set	11,815	11,815
(2) 63mm x 3m PVC Riser Pipe and SUS Pump Rod	16	pcs.	2,450	39,200
(3) #10 Sieved Gravel	1	cu.m	1,026	1,026
(4) Coarse Sand	1	cu.m	359	359
(5) Cement for Sanitary Seal	4	bags	127	508
(6) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	2	cu.m	454	908
3) Sand	1	cu.m	359	359
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	294	294
5) Form Lumber (50mm x 75mm x 1,800mm)	6	pcs.	52	312
6) Nail	1	kg.	40	40
Sub-Total of D-1				55,329
2. Labor (40% of D-1.)				22,132
3. Freight Cost (10% of Materials)		LS		5,533
Sub-Total of D				82,994
E. Indirect Cost				
Profit (10% of A, B, C & D)				60,405
Overhead Expense (13% of A, B, C & D)				78,527
VAT (10% of Labor, Profit & Overhead Expense)				36,106
Sub-Total of E				96,511
Total of Construction Cost (A+B+C+D+E)				568,561
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		3,600
2. Construction Supervision		LS		2,400
3. Water Quality Analysis		LS		1,400
Sub-Total of F				7,400
GRAND TOTAL				575,961
SAY				576,000

Note: LS - Lump Sum
Source: DPWH standard price in 1994 & LWUA Water Supply Feasibility Study Methodology Manual 1998
Unit Cost: Adjusted to 1998 Price Level

Table 10.2.4 (a) Unit Cost of Level I (Gravel Packed Deep Well - 120m Depth)

(Cost: Peso)

Description	Qty.	Unit	Unit Cost	Amount
A. Mobilization/Demobilization/Site Preparation		LS		56,000
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 100mm x 3m Steel Casing with coupling	37	pcs.	2,846	105,302
(2) 100mm x 3m Steel Casing with one end closed	1	pc.	2,997	2,997
(3) 100mm x 3m Low Carbon Steel Screen	2	pcs.	4,667	9,334
(4) Casing Centralizer	2	set	1,925	3,850
2. Labor, Fuel, Lubricant and others				
Well Drilling for 120 m depth at 200mm borehole	120	m	2,500	300,000
3. Borehole Logging	1	no	20,000	20,000
4. Freight Cost (10% of Materials)		LS		12,148
Sub-Total of B				453,631
C. Well Development and Pumping Test				
Well Development	24	hr.	5,500	132,000
Pumping Test	6	hr.	5,000	30,000
Sub-Total of C				162,000
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) Improved Deep Well Cylinder Pump (Afridev Type)	1	set	11,815	11,815
(2) 63mm x 6m Riser Pipe and Pump Rod	10	pcs.	1,880	18,800
(3) #10 Sieved Gravel	1	cu.m	1,026	1,026
(4) Coarse Sand	1	cu.m	359	359
(5) Cement for Sanitary Seal	4	bags	127	508
(6) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	2	cu.m	454	908
3) Sand	1	cu.m	359	359
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	294	294
5) Form Lumber (50mm x 75mm x 1,800mm)	6	pcs.	52	312
6) Nail	1	kg.	40	40
Sub-Total of D-1				34,929
2. Labor (40% of D-1.)				13,972
3. Freight Cost (10% of Materials)		LS		3,493
Sub-Total of D				52,394
E. Indirect Cost				
Profit (10% of A, B, C & D)				72,403
Overhead Expense (13% of A, B, C & D)				94,123
VAT (10% of Labor, Profit & Overhead Expense)				48,050
Sub-Total of E				120,453
Total of Construction Cost (A+B+C+D+E)				712,478
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		3,600
2. Construction Supervision		LS		2,400
3. Water Quality Analysis		LS		1,400
Sub-Total of F				7,400
GRAND TOTAL				719,878
SAY				719,900

Note: LS - Lump Sum
Source: DPWH standard price in 1994 & LWUA Water Supply Feasibility Study Methodology Manual 1998
Unit Cost: Adjusted to 1998 Price Level

Table 10.2.4 (b) Unit Cost of Level I (Natural Gravel Packed Deep Well - 120m Depth)

(Cost: Peso)

Description	Qty.	Unit	Unit Cost	Cost
A. Mobilization/Demobilization/Site Preparation		LS		56,000
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 100mm x 3m Steel Casing with coupling	37	pcs.	2,846	105,302
(2) 100mm x 3m Steel Casing with one end closed	1	pc.	2,997	2,997
(3) 100mm x 3m Low Carbon Steel Screen	2	pcs.	4,667	9,334
(4) Casing Centralizer	0	set	1,925	0
2. Labor, Fuel, Lubricant and others				
Well Drilling for 120 m depth at 150mm borehole	120	m	1,600	192,000
3. Borehole Logging	1	no	20,000	20,000
4. Freight Cost (10% of Materials)		LS		11,763
Sub-Total of B				341,396
C. Well Development and Pumping Test				
Well Development	12	hr.	5,500	66,000
Pumping Test	6	hr.	5,000	30,000
Sub-Total of C				96,000
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) Improved Deep Well Cylinder Pump (Afridev Type)	1	set	11,815	11,815
(2) 63mm x 6m Riser Pipe and Pump Rod	10	pcs.	1,880	18,800
(3) #10 Sieved Gravel	0	cu.m	1,026	0
(4) Coarse Sand	1	cu.m	359	359
(5) Cement for Sanitary Seal	3	bags	127	381
(6) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	2	cu.m	454	908
3) Sand	1	cu.m	359	359
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	294	294
5) Form Lumber (50mm x 75mm x 1,800mm)	6	pcs.	52	312
6) Nail	1	kg.	40	40
Sub-Total of D-1				33,776
2. Labor (40% of D-1.)				13,510
3. Freight Cost (10% of Materials)		LS		3,378
Sub-Total of D				50,664
E. Indirect Cost				
Profit (10% of A, B, C & D)				54,406
Overhead Expense (13% of A, B, C & D)				70,728
VAT (10% of Labor, Profit & Overhead Expense)				33,064
Sub-Total of E				87,470
Total of Construction Cost (A+B+C+D+E)				565,530
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		3,600
2. Construction Supervision		LS		2,400
3. Water Quality Analysis		LS		1,400
Sub-Total of F				7,400
GRAND TOTAL				572,930
SAY				572,900

Note: LS - Lump Sum
Source: DPWH standard price in 1994 & LWUA Water Supply Feasibility Study Methodology Manual 1998
Unit Cost: Adjusted to 1998 Price Level

Table 10.2.4(c) Unit Cost of Level I (Gravel Packed Deep Well - 120m Depth) for Acid Water

(Cost: Peso)

ription	Quantity	Unit	Unit Cost	Cost
A. Mobilization/Demobilization/Site Preparation		LS		56,000
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 100mm x 3m PVC Casing with Socket	37	pcs.	2,038	75,406
(2) 100mm x 3m PVC Casing with Plug	1	pc.	980	980
(3) 100mm x 3m Stainless Steel Screen	2	pcs.	12,700	25,400
(4) Casing Centralizer	2	set	1,925	3,850
2. Labor, Fuel, Lubricant and others				
Well Drilling for 120 m depth at 200mm borehole	120	m	2,500	300,000
3. Borehole Logging	1	no	20,000	20,000
4. Freight Cost (10% of Materials)		LS		10,564
Sub-Total of B				436,200
C. Well Development and Pumping Test				
Well Development	24	hr.	5,500	132,000
Pumping Test	6	hr.	5,000	30,000
Sub-Total of C				162,000
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) Improved Deep Well Cylinder Pump (Afridev Type)	1	set	11,815	11,815
(2) 63mm x 3m PVC Riser Pipe and SUS Pump Rod	20	pcs.	2,450	49,000
(3) #10 Sieved Gravel	1	cu.m	1,026	1,026
(4) Coarse Sand	1	cu.m	359	359
(5) Cement for Sanitary Seal	4	bags	127	508
(6) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	2	cu.m	454	908
3) Sand	1	cu.m	359	359
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	294	294
5) Form Lumber (50mm x 75mm x 1,800mm)	6	pcs.	52	312
6) Nail	1	kg.	40	40
Sub-Total of D-1				65,129
2. Labor (40% of D-1.)				26,052
3. Freight Cost (10% of Materials)		LS		6,513
Sub-Total of D				97,694
E. Indirect Cost				
Profit (10% of A, B, C & D)				75,189
Overhead Expense (13% of A, B, C & D)				97,746
VAT (10% of Labor, Profit & Overhead Expense)				49,899
Sub-Total of E				125,088
Total of Construction Cost (A+B+C+D+E)				744,982
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		3,600
2. Construction Supervision		LS		2,400
3. Water Quality Analysis		LS		1,400
Sub-Total of F				7,400
GRAND TOTAL				752,382
SAY				752,400

Note: LS - Lump Sum
Source: DPWH standard price in 1994 & LWUA Water Supply Feasibility Study Methodology Manual 1998
Unit Cost: Adjusted to 1998 Price Level

Table 10.2.5 Unit Cost of Level I (Deep Well Rehabilitation)

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
A. Mobilization/Demobilization		LS		8,000
B. Well Rehabilitation				
1. Materials				
(1) Cylinder Pump Set	1	set	9,570	9,570
(2) Cement for Surface Sealing	4	bags	127	508
(3) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	2	cu.m	454	908
3) Sand	1	cu.m	359	359
4) Plywood (4' x 8' x 1/4")	1	pc.	294	294
5) Form Lumber (2" x 3" x 6")	6	pcs.	52	312
6) Nail	1	kg.	40	40
Sub-Total of B-1				12,499
2. Labor (40% of B-1)				5,000
3. Freight Cost (10% of Materials)				1,250
Sub-Total of B				18,749
C. Well Development		LS		31,000
D. Indirect Cost				
Profit (10% of A, B & C)				5,775
Overhead Expense (13% of A, B & C)				7,507
VAT (10% of Profit & Labor)				4,178
Sub-Total of D				17,460
Total of Construction Cost (A+B+C+D)				75,209
E. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		1,300
2. Supervision		LS		800
3. Water Quality Analysis		LS		1,400
Sub-Total of E				3,500
GRAND TOTAL				78,709
SAY				78,700

Note: LS - Lump Sum

Source: DPWH standard price in 1994

Unit Cost: Adjusted to 1998 Price Level

Table 10.2.6 Unit Cost of Level I (Shallow Well - 18m Depth)

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
A. Mobilization/Demobilization		LS		20,000
B. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 63mm x 6m PVC Pipe with socket	2	pcs.	912	1,824
(2) 63mm x 3m PVC Pipe with plug	1	pc.	452	452
(3) 63mm PVC Socket	1	pc.	12	12
(4) 63mm x 3m PVC Screen	1	pc.	1,443	1,443
(5) Casing Centralizer	2	set	725	1,450
2. Labor, Fuel, Lubricant and others				
Well Drilling for 18 m depth at 150mm borehole	18	m	1,600	28,800
3. Freight Cost (10% of Materials)		LS		373
Sub-Total of B				34,354
C. Well Development	4	hr.	2,000	8,000
D. Gravel Packing, Installation of Handpump and Construction of Platform				
1. Materials				
(1) 50mm Jetmatic Handpump	1	set	2,807	2,807
(2) 50mm Riser Pipe and Foot Valve	1	pc.	118	118
(3) #10 Sieved Gravel	0.1	cu.m	1,026	103
(4) Coarse Sand	0.07	cu.m	359	25
(5) Cement for Sanitary Seal	4	bag	127	508
(6) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	1	cu.m	454	454
3) Sand	1	cu.m	359	359
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	294	294
5) Form Lumber (50mm x 75mm x 1,800 mm)	1	pc.	52	52
6) Nail	1	kg.	40	40
Sub-Total of D-1				5,268
2. Labor (40% of D-1.)				2,107
3. Freight Cost (10% of Materials)		LS		527
Sub-Total of D				7,902
E. Indirect Cost				
Profit (10% of A to D)				7,026
Overhead Expense (13% of A to D)				9,133
VAT (10% of Profit & Overhead Expense)				1,616
Sub-Total of E				8,642
Total of Construction Cost (A+B+C+D+E)				78,898
F. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		1,300
2. Construction Supervision		LS		800
3. Water Quality Analysis		LS		1,400
Sub-Total of F				3,500
GRAND TOTAL				82,398
SAY				82,400

Note: LS - Lump Sum

Source: DPWH standard price in 1994 & LWUA Water Supply Feasibility Study Methodology Manual 1998

Unit Cost: Adjusted to 1998 Price Level

Table 10.2.7 Unit Cost of Level I (Spring Development)

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
A. Mobilization/Demobilization		LS		24,000
B. Construction of Spring Box				
1. Materials		LS		42,700
2. Labor (35% of 1.)		LS		14,945
3. Freight Cost (10% of Materials)		LS		4,270
Sub-Total of B				61,915
C. Installation of Pipelines & Fittings				
1. Transmission Materials				
63mm dia. PVC Pipe (Class 12.5 with socket)	330	pcs.	959	316,470
63mm dia. Tee	1	no.	172	172
Solvent Cement	26	cans	140	3,640
63mm dia. Elbow (90 deg.)	3	nos.	89	267
63mm dia. Elbow (45 deg.)	1	pc.	99	99
50mm dia. Gate Valve	2	pcs.	900	1,800
50mm dia. x 1m Stand Pipe	1	pc.	177	177
63mm x 50mm GI Nipple	1	pc.	123	123
50mm dia. Union Patent	3	pcs.	192	576
63mm x 50mm dia. Reducing Socket	2	pcs.	113	226
50mm dia. GI Elbow (90 deg.)	2	pcs.	79	158
63mm x 50mm dia. Socket Adapter	2	pcs.	167	334
50mm dia. GI Gate Valve	2	pcs.	791	1,582
13mm dia. Brass Faucet	2	pcs.	59	118
Sub-Total of Materials				325,624
Labor (35% of Material Cost)		LS		113,968
Freight Cost (10% of Materials)		LS		32,562
Sub-Total of C				472,154
D. Indirect Cost				
1. Transmission Main				
Profit (10% of C)				47,215
Overhead Expense (13% of C)				61,380
VAT (10% of Profit, Overhead Expense & Labor)				22,256
2. Source Facilities				
Profit (10% of A, B)				25,775
Overhead Expense (13% of A, B)				8,592
VAT (10% of Profit, Overhead Expense & Labor)				4,931
Sub-Total of D				170,149
Total Construction Cost (A+B+C+D)				728,218
E. Estimated Government Expenses				
1. Preliminary & Detailed Engineering and RWSA Formation		LS		2,400
2. Supervision		LS		15,000
3. Water Quality Analysis		LS		1,400
Sub-Total of E				18,800
GRAND TOTAL				747,018
SAY				747,000

Note: LS - Lump Sum

Source:
DPWH standard price in 1994
LWUA Water Supply Feasibility Study Methodology Manual 1998

Unit Cost: Adjusted to 1998 Price Level

Table 10.2.8 Unit Cost of Level II (600 Service Population)

Sheet 1 of 2 (Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
A. Mobilization/Demobilization		LS		36,000
B. Construction of Spring Box & Ground Reservoir				
1. Materials		LS		128,000
2. Labor (35% of 1.)		LS		44,800
3. Freight Cost (10% of Materials)		LS		12,800
Sub-Total of B				185,600
C. Installation of Pipelines & Fittings				
1. Transmission Pipeline Materials				
63mm dia. PVC Pipe (Class 12.5 with socket)	500	pcs.	959	479,500
63mm dia. Tee	1	no.	172	172
Solvent Cement	40	cans	140	5,600
63mm dia. x 50mm Nipple	3	nos.	159	477
63mm dia. Union Patent	1	pc.	203	203
63mm dia. x 50mm dia. Reducing Socket	2	pcs.	123	246
63mm dia. Elbow (90 deg.)	1	pc.	89	89
63mm dia. Elbow (45 deg.)	1	pc.	99	99
63mm dia. Gate Valve	3	pcs.	1,320	3,960
Sub-Total of Materials				490,346
Labor (35% of Material Cost)		LS		171,621
Freight Cost (10% of Materials)		LS		49,035
Sub-Total of Transmission Main				711,002
2. Distribution Pipeline Materials				
50mm dia. PVC Pipe (Class 12.5 with socket)	20	pcs.	531	10,620
38mm dia. PVC Pipe (Class 12.5 with socket)	30	pcs.	353	10,590
20mm dia. PVC Pipe (Class 40 with socket)	10	pcs.	118	1,180
13mm dia. x 1 m Stand Pipe	10	pcs.	110	1,100
Solvent Cement	4	cans	140	560
Fittings				
a. 50mm dia. x 150mm PVC Nipple	3	pcs.	147	441
b. 32mm dia. x 150mm PVC Nipple	3	pcs.	89	267
c. 13mm dia. x 150mm GI Nipple	40	pcs.	29	1,160
d. 50mm dia. Union Patent	1	pcs.	192	192
e. 32mm dia. Union Patent	2	pcs.	83	166
f. 13mm dia. Union Patent	10	pcs.	29	290
g. 50mm dia. x 32mm dia. Reducing Socket	6	pcs.	106	636
h. 32mm dia. x 20mm dia. Reducing Socket	10	pcs.	82	820
i. 20mm dia. x 13mm dia. Reducing Socket	10	pcs.	64	640
j. 50mm dia. PVC Elbow (90 deg.)	2	pcs.	64	128
k. 13mm dia. GI Elbow (90 deg.)	20	pcs.	15	300
l. 20mm dia. x 13mm dia. Socket Adapter	10	pcs.	48	480
m. 50mm dia. GI Gate Valve	2	pcs.	791	1,582
n. 32mm dia. GI Gate Valve	2	pcs.	447	894
o. 13mm dia. GI Gate Valve	24	pcs.	271	6,504
p. 13mm dia. Brass Faucet	24	pcs.	59	1,416
q. 50mm dia. Tee	4	pcs.	153	612
r. 32mm dia. Tee	6	pcs.	129	774
s. Water Meter	24	pcs.	1,004	24,096
t. Water Meter Box	24	pcs.	1,297	31,128
Sub-Total of Materials				96,576

Table 10.2.7 Unit Cost of Level II (600 Service Population)

Sheet 2 of 2 (Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
Labor (35% of Material Cost)		LS		33,802
Freight Cost (10% of Materials)		LS		9,658
Sub-Total of Distribution Pipeline				140,036
Sub-Total of C				851,038
D. Indirect Cost				
1. Transmission Main				
Profit (10% of C-1)		LS		71,100
Overhead Expense (13% of C-1)		LS		92,430
VAT (10% of Profit, Overhead Expense and Labor)		LS		33,515
2. Source Facilities and Distribution Pipeline				
Profit (10% of A, B, C-2)		LS		36,164
Overhead Expense (13% of A, B and C-2)		LS		47,013
VAT (10% of Profit, Overhead Expense and Labor)		LS		16,178
Sub-Total of D				296,400
Total Construction Cost (A+B+C+D)				1,369,038
E. Estimated Government Expenses				
1. Preliminary & Detailed Engineering and RWSA Formation		LS		2,400
2. Supervision		LS		15,000
3. Water Quality Analysis		LS		1,400
Sub-Total of E				18,800
Total Estimated Cost				1,387,838
Unit Cost per Person Served				2,313
SAY				2,300

Note: LS - Lump Sum
Source:
DPWH standard price in 1994
LWUA Water Supply Feasibility Study Methodology Manual 1998
Unit Cost: Adjusted to 1998 Price Level

Table 10.2.9 Unit Cost of Level III (5,000 Service Population)

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
A. Mobilization/Demobilization		LS		360,000
B. Source Development and Storage				
1. Deep Well	1	No.	2,001,000	2,001,000
2. Deep Well Pump	1	No.	832,000	832,000
3. Chlorinator House & Equipment	1	LS	632,000	632,000
4. Storage Tank (250 cu.m)	1	No.	1,300,000	1,300,000
Sub-Total of B				4,765,000
C. Transmission Main				
1. 160mm dia.	500	LM	1,320	660,000
Sub-Total of C				660,000
D. Distribution Main				
1. 160mm dia.	1,000	LM	1,320	1,320,000
2. 110mm dia.	3,000	LM	1,090	3,270,000
3. 90mm dia.	3,000	LM	684	2,052,000
4. 75mm dia.	6,000	LM	637	3,822,000
Sub-Total of D				10,464,000
E. Service Connections	1,000	Nos.	2,288	2,288,000
F. Miscellaneous				
1. Vehicle	1	No.	649,000	649,000
2. Office & Workshop Bldg.	1	No.	645,000	645,000
3. Office Equipment	1	LS	118,000	118,000
4. Tools and Spare Parts	1	LS	110,000	110,000
Sub-Total of F				1,522,000
Total Direct Cost (A+B+C+D+E+F)				20,059,000
G. Indirect Cost (25% of Direct Cost)				5,014,750
Total Estimated Cost				25,073,750
Unit Cost per Person Served				
For New Construction				5,015
			SAY	5,000
For Expansion of Existing System (Exclude F.)				4,634
			SAY	4,600

Note: LS - Lump Sum
Cost of spring development includes additional transmission main, but it shall be confirmed by survey in the implementation stage.
Source: LWUA standard price in 1994
Unit Cost: Adjusted to 1998 Price Level

Table 10.2.10 Unit Cost of Level III (10,000 Service Population)

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
A. Mobilization/Demobilization		LS		360,000
B. Source Development and Storage				
1. Deep Well	1	No.	2,001,000	2,001,000
2. Deep Well Pump	1	No.	832,000	832,000
3. Chlorinator House & Equipment	1	LS	632,000	632,000
4. Storage Tank (250 cu.m)	1	No.	1,300,000	1,300,000
Sub-Total of B				4,765,000
C. Transmission Main				
1. 160mm dia.	500	LM	1,320	660,000
Sub-Total of C				660,000
D. Distribution Main				
1. 160mm dia.	2,000	LM	1,320	2,640,000
2. 110mm dia.	5,000	LM	1,090	5,450,000
3. 90mm dia.	6,000	LM	684	4,104,000
4. 75mm dia.	9,000	LM	637	5,733,000
Sub-Total of D				17,927,000
E. Service Connections	2,000	Nos.	2,288	4,576,000
F. Miscellaneous				
1. Vehicle	1	No.	649,000	649,000
2. Office & Workshop Bldg.	1	No.	645,000	645,000
3. Office Equipment	1	LS	118,000	118,000
4. Tools and Spare Parts	1	LS	110,000	110,000
Sub-Total of F				1,522,000
Total Direct Cost (A+B+C+D+E+F)				29,810,000
G. Indirect Cost (25% of Direct Cost)				7,452,500
Total Estimated Cost				37,262,500
Unit Cost per Person Served				
For New Construction				3,726 3,700
For Expansion of Existing System (Exclude F.)				3,536 3,500

Note: LS - Lump Sum
Cost of spring development includes additional transmission main, but it shall be confirmed by survey in the implementation stage.
Source: LWUA standard price in 1994
Unit Cost: Adjusted to 1998 Price Level

Table 10.2.11 Unit Cost of Level III (15,000 Service Population)

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
A. Mobilization/Demobilization		LS		360,000
B. Source Development and Storage				
1. Deep Well	2	No.	2,001,000	4,002,000
2. Deep Well Pump	2	No.	832,000	1,664,000
3. Chlorinator House & Equipment	2	LS	632,000	1,264,000
4. Storage Tank (250 cu.m)	2	No.	1,300,000	2,600,000
Sub-Total of B				9,530,000
C. Transmission Main				
1. 160mm dia.	1,000	LM	1,320	1,320,000
Sub-Total of C				1,320,000
D. Distribution Main				
1. 160mm dia.	3,000	LM	1,320	3,960,000
2. 110mm dia.	7,000	LM	1,090	7,630,000
3. 90mm dia.	8,000	LM	684	5,472,000
4. 75mm dia.	10,000	LM	637	6,370,000
Sub-Total of D				23,432,000
E. Service Connections	3,000	Nos.	2,288	6,864,000
F. Miscellaneous				
1. Vehicle	1	No.	649,000	649,000
2. Office & Workshop Bldg.	1	No.	645,000	645,000
3. Office Equipment	1	LS	118,000	118,000
4. Tools and Spare Parts	1	LS	110,000	110,000
Sub-Total of F				1,522,000
Total Direct Cost (A+B+C+D+E+F)				43,028,000
G. Indirect Cost (25% of Direct Cost)				10,757,000
Total Estimated Cost				53,785,000
Unit Cost per Person Served				
For New Construction				3,586 3,600
For Expansion of Existing System (Exclude F.)				3,459 3,500

Note: LS - Lump Sum
Cost of spring development includes additional transmission main, but it shall be confirmed by survey in the implementation stage.
Source: LWUA standard price in 1994
Unit Cost: Adjusted to 1998 Price Level

Table 10.2.12 Unit Cost of Flush Water Sealed with Septic Tank Toilet

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
A. Demolition		LS		1,100
B. Earthwork				
1. Materials				
(1) Gravel Fill	1	cu.m	454	454
Sub-Total of B-1				454
2. Labor				
(1) Excavation	6	cu.m	140	840
(2) Backfill	2	cu.m	127	254
(3) Gravel Fill	1	cu.m	166	166
Sub-Total of B-2				1,260
Sub-Total of B				1,714
C. Concrete Work				
1. Materials				
Slab on wood planks				
(1) 16 - 2" x 8" x 6' Coco Lumber	128	bd.ft	8	1,024
(2) 10mm dia x 6.0m Rebar	3	pc.	58	174
(3) #16 Tie Wire	0.5	kg	58	29
(4) Cement	10	bag	137	1,370
(5) Sand	1.5	cu.m	359	539
(6) Gravel	2	cu.m	454	908
(7) Stone Lining with Mortar	1	LS	1,250	1,250
Sub-Total of C-1				5,294
2. Labor (30% of C-1)				1,588
Sub-Total of C				6,882
D. Carpentry Work				
1. Materials				
(1) Nipa	60	pc.	2	120
(2) 1.5m x 1.8m, amakan	3	pc.	75	225
(3) 2" x 3" x 10' Coco Lumber	20	bd.ft	11	220
(4) 2" x 2" x 10' Coco Lumber	33.3	bd.ft	10	333
(5) 3" dia. Bamboo	3	light	21	63
(6) Assorted CWN	4	kg	43	172
(7) Rattan wire	20	pc.	1	20
Sub-Total of C-1				1,153
2. Labor (30% of C-1)				346
Sub-Total of C				1,499
E. Plumbing				
1. Materials				
(1) Water Closet	1	set	4,900	4,900
(2) Water line and sanitary fixtures	1	LS	1,650	1,650
Sub-Total of E-1				6,550
2. Labor (30% of E-1)				1,965
Sub-Total of E				8,515
F. Transportation Cost (excluding indigenous materials)	1	LS	540	540
G. Indirect Cost				
Profit (10% of A - F)				2,025
VAT (10% of Profit & Labor)				718
Sub-Total of F				2,743
Total of Construction Cost (A+B+C+D+E+F+G)			SAY	22,993 23,000

Note: LS - Lump Sum
Source: DOH standard price in 1993
Unit Cost: Adjusted to 1998 Price Level

Table 10.2.13 Unit Cost of Pour Flush with Double Pit Latrine

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
A. Earthwork				
1. Materials				
(1) Gravel Fill	1	cu.m	454	454
Sub-Total of A-1				454
2. Labor				
(1) Excavation	6	cu.m	140	840
(2) Backfill	2	cu.m	127	254
(3) Gravel Fill	1	cu.m	166	166
Sub-Total of A-2				1,260
Sub-Total of A				1,714
B. Concrete Work				
1. Materials				
Slab on wood planks				
(1) 16 - 2" x 8" x 6' Coco Lumber	128	bd.ft	8	1,024
(2) 10mm dia x 6.0m Rebar	3	pc.	58	174
(3) #16 Tie Wire	0.5	kg	58	29
(4) Cement	10	bag	137	1,370
(5) Sand	1.5	cu.m	359	539
(6) Gravel	2	cu.m	454	908
(7) Stone Lining with Mortar	1	LS	1,250	1,250
Sub-Total of B-1				5,294
2. Labor (25% of B-1)				1,323
Sub-Total of B				6,617
C. Carpentry Work				
1. Materials				
(1) Nipa	60	pc.	2	120
(2) 1.5m x 1.8m, amakan	3	pc.	75	225
(3) 2" x 3" x 10' Coco Lumber	20	bd.ft	11	220
(4) 2" x 2" x 10' Coco Lumber	33.3	bd.ft	10	333
(5) 3" dia. Bamboo	3	light	21	63
(6) Assorted CWN	4	kg	43	172
(7) Rattan wire	20	pc.	1	20
(8) Pale (medium)	1	pc.	203	203
(9) 3" dia. PVC x 3m	1	pc.	665	665
(10) 3" dia. PVC Elbow	2	pc.	70	140
(11) PVC solvent	1	pint	54	54
(12) Ga. 31" x 8' plain GI sheet	1	sheet	214	214
Sub-Total of C-1				2,429
2. Labor (25% of C-1)				607
Sub-Total of C				3,036
D. Plumbing				
1. Material				
(1) Toilet Bowl-Squat Type	1	pc.	703	703
(2) 75mm dia x 6.0m PVC Pipe	1	pc.	152	152
Sub-Total of D-1				855
2. Labor (25% of D-1)				214
Sub-Total of D				1,069
E. Transportation Cost (excluding indigenous materials)	1	LS	340	340
F. Indirect Cost				
Profit (10% of A - D)				1,547
VAT (10% of Profit & Labor)				495
Sub-Total of F				2,042
Total Construction Cost (A+B+C+D+E+F)			SAY	14,818 14,800

Note: LS - Lump Sum
Source: DOH standard price in 1993
Unit Cost: Adjusted to 1998 Price Level

Table 10.2.14 Unit Construction Cost of Ventilated Improved Pit Latrine

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
A. Earthwork				
1. Materials				
(1) Gravel Fill	0.5	cu.m	454	227
Sub-Total of A-1				227
2. Labor				
(1) Excavation	3	cu.m	140	420
(2) Backfill	1	cu.m	127	127
(3) Gravel Fill	0.5	cu.m	166	83
Sub-Total of A-2				630
Sub-Total of A				857
B. Concrete Work				
1. Materials				
Slab on wood planks				
(1) 2" x 8" x 6' Coco Lumber	64	bd.ft	8	512
(2) 10mm dia x 6.0m Rebar	2	pc.	58	116
(3) #16 Tie Wire	0.5	kg	58	29
(4) Cement	4	bag	137	548
(5) Sand	0.5	cu.m	359	180
(6) Gravel	0.5	cu.m	454	227
(7) Stone Lining with Mortar	1	LS	1,200	1,200
Sub-total of B-1				2,812
2. Labor (25% of B-1)				703
Sub-Total of B				3,515
C. Carpentry Work				
1. Materials				
(1) Nipa	60	pc.	2	120
(2) 1.5m x 1.8m, amakan	3	pc.	75	225
(3) 2" x 3" x 10' Coco Lumber	20	bd.ft	11	220
(4) 2" x 2" x 10' Coco Lumber	33.3	bd.ft	10	333
(5) 3" dia. Bamboo	3	light	21	63
(6) Assorted CWN	4	kg	43	172
(7) Rattan wire	20	pc.	1	20
(8) 3" x 3" hinges	2	pc.	32	64
Sub-Total of C-1				1,217
2. Labor (25% of C-1)				304
Sub-Total of C				1,521
D. Plumbing				
1. Material				
(1) 50mm dia. PVC Pipe	1	pc.	76	76
(2) Fly Screen	1	pc.	59	59
Sub-Total of D-1				135
2. Labor (25% of D-1)				41
Sub-Total of D				176
E. Transportation Cost (excluding indigenous materials)	1	LS	170	170
F. Indirect Cost				
Profit (10% of A - E)				624
VAT (10% of Profit & Labor)				230
Sub-Total of F				854
Total Construction Cost (A+B+C+D+E+F)			SAY	7,093 7,100

Note: LS - Lump Sum
Source: DOH standard price in 1993
Unit Cost: Adjusted to 1998 Price Level

Table 10.2.15 Unit Construction Cost of Pit Latrine

(Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
A. Earthwork				
1. Materials				
(1) Gravel Fill	0.3	cu.m	454	136
Sub-Total of A-1				136
2. Labor				
(1) Excavation	2	cu.m	140	280
(2) Backfill	0.6	cu.m	127	76
(3) Gravel Fill	0.3	cu.m	166	50
Sub-Total of A-2				406
Sub-Total of A				542
B. Concrete Work				
1. Materials				
Slab on wood planks				
(1) 2" x 8" x 6' Coco Lumber	38	bd.ft	8	304
(2) 10mm dia x 6.0m Rebar	1	pc.	58	58
(3) #16 Tie Wire	0.5	kg.	58	29
(4) Cement	3	bag	137	411
(5) Sand	0.3	cu.m	359	108
(6) Gravel	0.3	cu.m	454	136
(7) Stone Lining with Mortar	1	LS	700	700
Sub-total of B-1				1,746
2. Labor (25% of B-1)				436
Sub-Total of B				2,182
C. Carpentry Work				
1. Materials				
(1) Nipa	30	pc.	2	60
(2) 1.0m x 1.8m, amakan	3	pc.	75	225
(3) 2" x 3" x 10' Coco Lumber	14	bd.ft	11	154
(4) 2" x 2" x 10' Coco Lumber	24	bd.ft	10	240
(5) 3" dia. Bamboo	3	light	21	63
(6) Assorted CWN	3	kg	43	129
(7) Rattan wire	14	pc.	1	14
(8) 3" x 3" hinges	2	pc.	32	64
Sub-Total of C-1				949
2. Labor (25% of C-1)				237
Sub-Total of C				1,186
D. Transportation Cost (excluding indigenous materials)	1	LS	170	170
E. Indirect Cost				
Profit (10% of A -D)				391
VAT (10% of Profit & Labor)				164
Sub-Total of E				555
Total Construction Cost (A+B+C+D+E)			SAY	4,635 4,600

Note: LS - Lump Sum
Source: DOH standard price in 1993
Unit Cost: Adjusted to 1998 Price Level

Table 10.2.16 Unit Cost of School Toilet

Sheet 1 of 5 (Cost: Peso)

	Description	Q'ty	Unit	Unit Cost	Amount
A.	**Mobilization and Demobilization**		LS		6,000
B.	**Earthwork**				
	1. Materials				
	(1) Gravel Fill	3	cu.m	454	1,362
	Sub-Total of B-1				1,362
	2. Labor				
	(1) Excavation	16	cu.m	140	2,240
	(2) Backfill	5	cu.m	127	635
	(3) Gravel Fill	3	cu.m	166	498
	Sub-Total of B-2				3,373
	Sub-Total of B				4,735
C.	**Concrete Work**				
	1. Materials				
	(1) Cement	61	bags	137	8,357
	(2) Sand	4	cu.m	359	1,436
	(3) Gravel	8	cu.m	454	3,632
	(4) Rebars: 12mm dia x 6m	38	pcs.	79	3,002
	10mm dia x 6m	57	pcs.	58	3,306
	(5) #16 Tie Wire	8	kg.	58	464
	(6) Formworks:				
	1/4" Plywood	6	pcs.	477	2,862
	2" x 2" x 10', Coco Lumber	200	bd.ft.	10	2,000
	Sub-Total of C-1				25,059
	2. Labor (30% of C-1)		LS		7,518
	Sub-Total of C				32,577
D.	**Masonry Work**				
	1. Materials				
	(1) 6" CHB	800	pcs.	6	4,800
	(2) 4" CHB	260	pcs.	5	1,300
	(3) Cement	97	bags	137	13,289
	(5) Sand	10	cu.m	359	3,590
	(6) Rebars: 12mm dia x 6m	30	pcs.	79	2,370
	10mm dia x 6m	11	pcs.	58	638
	(7) #16 Tie Wire	4	kg.	58	232
	(8) Scaffolding:				
	2" x 4" x 8' x 10pcs., Coco Lumber	53	bf.	8	424
	Sub-Total of D-1				26,643
	2. Labor (30% of D-1)		LS		7,993
	Sub-Total of D				34,636
E.	**Roofing Work**				
	1. Materials				
	(1) GA #26 Corr. GI (1 = 10')	20	pcs.	310	6,200
	(2) GA #24 Pln. GI Flashing	3	pcs.	300	900
	(3) GA #24 Pln. GI Gutter (Pre-Fab)	9	pcs.	300	2,700
	(4) Umbrella Nails 2-1/2"	12	kg.	50	600
	(5) Rafter - 2" x 5" x 18' = 5pcs.	75	bf.	35	2,625
	(6) Purlins - 2" x 2" x 12' = 18pcs.	72	bf.	35	2,520
	(7) WD Cleats - 2" x 2" x 10" = 6pcs.	20	bf.	35	700
	(8) Nailers - 2" x 2" x 12' = 30pcs.	120	bf.	35	4,200
	- 2" x 2" x 10' = 36pcs.	120	bf.	35	4,200

Table 10.2.16 Unit Cost of School Toilet

Sheet 2 of 5 (Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
(9) Fascia Board				
1" x 12" x 12' = 4pcs.	48	bf.	35	1,680
1" x 12" x 18' = 2pcs.	36	bf.	34	1,224
(10) Wood Plate				
2" x 4" x 20' = 2pcs.	27	bf.	34	918
(11) 1/4" Thk. Mar. Plywood 4'x8'	14	pcs.	32	448
(12) C.W.N. Assorted	15	kg.	43	645
(13) 3" dia x 3m Downspout (PVC)	3	pcs.	91	273
(14) 3" dia Elbow (PVC)	2	pcs.	70	140
(15) 3" dia Coupling (PVC)	1	pcs.	26	26
(16) Ceiling Vent				
1" x 1" x 8' = 4pcs.	3	bf.	29	87
(17) Screen (1/8" x 1/8")	1	yd.	91	91
Sub-Total of E-1				30,177
2. Labor (30% of E-1)		LS		9,053
Sub-Total of E				**39,230**
F. Carpentry Work				
1. Materials				
(1) D - 1 Hollow Core Tanguile				
Flush Type Door w/ Louver (.80x2.20)	2	sets	1,620	3,240
(2) D - 2 Hollow Core Tanguile				
Flush Type Door (.60x2.10)	1	sets	1,216	1,216
(3) D - 3 Louver Door (.60x1.40)	5	sets	1,013	5,065
(4) Door Jambs (Apitong)				
2" x 6" x 14" = 1pc.	14	bf.	37	518
2" x 6" x 10" = 2pcs.	20	bf.	36	720
2" x 6" x 10" = 1pc.	18	bf.	35	630
2" x 4" x 12" = 5pcs.	40	bf.	34	1,360
(7) Wooden Jalousie Window				
With 5 Blades (.40x.50)	14	set	338	4,732
(8) Window Jambs (Apitong)				
2" x 6" x 16" = 5pcs.	80	bf.	36	2,880
2" x 6" x 14" = 1pc.	14	bf.	35	490
2" x 6" x 10" = 1pc.	10	bf.	34	340
(9) Cabinet				
3/4" x 4' x 8' = 1pc. (plyboard)	1	pc.	878	878
Sub-Total of F-1				22,069
2. Labor (30% of F-1)		LS		6,621
Sub-Total of F				**28,690**
G. Tile Work				
1. Materials				
(1) 4-1/4" x 4-1/4", Glazed Tiles	1,950	pcs.	5	9,750
(2) 0.10m x 0.20m, Floor Tiles	900	pcs.	7	6,300
(3) Cement	4	bags	137	548
(4) White Cement	1	bag	742	742
Sub-Total of G-1				17,340
2. Labor (30% of G-1)		LS		5,202
Sub-Total of G				22,542

Table 10.2.16 Unit Cost of School Toilet

Sheet 3 of 5 (Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
H. Plumbing Work				
1. Materials				
(1) Toilet Bowl - Squat Type	3	sets	703	2,109
(2) Toilet Bowl - Sit Type	2	sets	703	1,406
(3) Lavatory	2	sets	3,300	6,600
(4) 4" dia x 3m PVC San. Pipe	4	pcs.	175	700
(5) 3" dia x 3m PVC San. Pipe	7	pcs.	98	686
(6) 1-1/2" dia x 3m, PVC San. Pipe	4	pcs.	59	236
(7) 2" dia. x 3m, PVC San. Pipe	4	pcs.	62	248
(8) 6" x 4", Floor Drain	5	pcs.	98	490
(9) 2" dia. Elbow PVC	4	pcs.	53	212
(10) 4" dia WYB PVC	2	pcs.	38	76
(11) 4" dia. x 3" dia. WYB PVC	12	pcs.	35	420
(12) 4" dia. x 2" dia. TEE PVC	4	pcs.	36	144
(13) 4" dia. TEE PVC	3	pcs.	47	141
(14) 1-1/2" dia. WYB PVC	1	pcs.	20	20
(15) 4" dia. Clean Out PVC	3	pcs.	41	123
(16) 3" dia. Clean Out PVC	1	pcs.	32	32
(17) Faucet	3	pcs.	59	177
(18) 3" dia. x 2" dia. WYB PVC	2	pcs.	32	64
(19) 1-1/2" dia. Elbow PVC	6	pcs.	40	240
(20) PVC Cement	1	can	142	142
(21) Check Valve 1-1/2"	1	pcs.	214	214
(22) 4" P-Trap	5	pcs.	77	385
Sub-Total of H-1				14,865
2. Labor (30% of H-1)		LS		4,460
Sub-Total of H				**19,325**
I. Painting				
1. Materials				
(1) Acrylic, Semi Gloss	8	gals.	295	2,360
(2) Concrete Sealer	4	gals.	233	932
(3) Acri Color: Wood	4	gals.	200	800
(4) Enamel, QDE	6	gals.	310	1,860
(5) Wood Putty	1	gals.	342	342
(6) Paint Thinner	1	gals.	67	67
(7) Tinting Color	4	pint	45	180
(8) Sand Paper (Assorted)	15	pcs.	8	120
(9) Miscellaneous	1	LS	1,200	1,200
(10) Roof Paint (green, ready-mix)	2	gals.	319	638
Sub-Total of I-1				8,499
2. Labor (30% of I-1)		LS		2,550
Sub-Total of I				**11,049**
J. Electrical Work				
1. Materials				
(1) 40 Watts Fluorescent Lamp	2	sets	289	578
(2) Elect. Wire TW #12	24	M	7	168
(3) Elect. Conduit - 1/2" dia x 10"	4	pcs.	88	352
(4) Entrance Cap. 1/2" dia	1	pc.	32	32
(5) Switch Outlet, Flush Type	2	pcs.	44	88
(6) Utility Box 2"x3"	2	pcs.	12	24

Table 10.2.16 Unit Cost of School Toilet

Sheet 4 of 5 (Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
(7) Porcelain Receptacle 2" dia	2	pcs.	7	14
(8) Safety Switch 60A, 250V	1	set	555	555
(9) Electrical Tape	1	roll	25	25
Sub-Total of J-1				1,836
2. Labor (30% of J-1)		LS		551
Sub-Total of J				2,387
K. Hardware				
1. Materials				
(1) 3" x 3" Butt Hinges (Loose Pin)	10	pcs.	20	200
(2) 4" x 4" Butt Hinges (Loose Pin)	12	pcs.	36	432
(3) Door Lockset (Schlage US)	3	pcs.	650	1,950
(4) Barrel Bolt (4")	5	pcs.	45	225
(5) Cabinet Pull (4")	5	pcs.	7	35
(6) Water Storage Cover				
Checkered Plate 1/4" thick				
1-7/16" x 5/8", L-bar & flat bar	1	set	1,116	1,116
5/8" x 9/16", L-bar & flat bar	2	set	629	1,258
(7) Padlock	1	pcs.	429	429
Sub-Total of K-1				5,645
2. Labor (30% of K-1)		LS		1,694
Sub-Total of K				7,339
L. Septic Tank and Sewage Basin				
1. Materials				
(1) 4" CHB	180	pcs.	5	900
(2) Cement	18	bags	137	2,466
(3) Sand	2	cu.m	359	718
(4) Gravel	1	cu.m	454	454
(5) Rebars: 10mm dia x 6m	29	pcs.	58	1,682
(6) #16 Tie Wire	2	kg.	58	116
(7) Formworks: Coco Lumber				
2" x 3" x 10' = 12pcs.	60	bf.	11	660
1/4" x 4' x 8', Plywood ord.	2	pcs.	477	954
C.W.N. (Assorted)	2	kg.	43	86
Sub-Total of L-1				8,036
2. Labor (30% of L-1)		LS		2,411
Sub-Total of L				10,447
M. Shallow Well (18 depth)				
a. Drilling of Well & Installation of Steel Casing/Screen				
1. Materials				
(1) 63mm x 6m PVC Pipe with socket	2	pcs.	912	1,824
(2) 63mm x 3m PVC Pipe with plug	1	pc.	452	452
(3) 63mm PVC Socket	1	pc.	12	12
(4) 63mm x 3m PVC Screen	1	pc.	1,443	1,443
Sub-Total of M-a-1				3,731
2. Labor, Fuel, Lubricant and others				
Well Drilling for 18m depth at 150mm borehole	18	m	1,600	28,800
Sub-Total of M-a				32,531
b. Well Development	1	LS	600	600

Table 10.2.16 Unit Cost of School Toilet

Sheet 5 of 5 (Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
M. c. Gravel Packing, Installation of Hand-Pump and Construction of Platform				
1. Materials				
(1) 50mm Jetmatic Handpump	1	set	2,807	2,807
(2) 50mm x 1m GI Pipe (Sch. 40)	1	pc.	118	118
(3) #10 Sieved Gravel	0.1	cu.m	1,026	103
(4) Coarse Sand	0.07	cu.m	359	25
(5) Cement for Sanitary Seal	1	bag	127	127
(6) Pump Base and Platform				
1) Cement	4	bags	127	508
2) Gravel	1	cu.m	454	454
3) Sand	1	cu.m	359	359
4) Plywood (1,200mm x 2,400mm x 6mm)	1	pc.	294	294
5) Form Lumber (50mmx75mmx1,800mm	1	pc.	52	52
6) Nail	1	kg.	40	40
Sub-Total of M-c-1				4,887
2. Labor (40% of M-c-1)		LS		1,955
Sub-Total of M-c				6,842
Sub-Total of M				**39,973**
N. Freight Cost (11% of Materials for A - M excluding sand and gravel)		**LS**		**18,042**
O. Indirect Cost				
Profit (10% of A - N)				27,697
VAT (10% of Profit & Labor)				8,108
Sub-Total of O				**35,805**
Total of Construction Cost (A to O)				**312,777**
P. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost	1	LS	2,400	2,400
2. Construction Supervision	1	LS	1,800	1,800
Sub-Total of P				**4,200**
GRAND TOTAL				**316,977**
			SAY	**317,000**

Note: LS - Lump Sum
Source: DOH standard price in 1993
Unit Cost: Adjusted to 1998 Price Level

Table 10.2.17 Unit Cost of Public Toilet

Sheet 1 of 5 (Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
A. Mobilization and Demobilization (2.4% of B - M)		**LS**		**7,000**
B. Earthwork				
1. Materials				
(1) Gravel Fill	3	cu.m	454	1,362
Sub-Total of B-1				1,362
2. Labor				
(1) Excavation	15.88	cu.m	140	2,223
(2) Backfill	4.97	cu.m	127	631
(3) Gravel Fill	3	cu.m	166	498
Sub-Total of B-2				3,352
Sub-Total of B				**4,714**
C. Concrete Work				
1. Materials				
(1) Cement	61	bags	137	8,357
(2) Sand	4	cu.m	359	1,436
(3) Gravel	8	cu.m	454	3,632
(4) Rebars: 12mm dia x 6m	38	pcs.	79	3,002
10mm dia x 6m	57	pcs.	58	3,306
(5) #16 Tie Wire	8	kg.	58	464
(6) Formworks:				
1/4" Plywood	6	pcs.	477	2,862
2" x 2" x 10" (Coco Lumber)	200	bd.ft.	10	2,000
Sub-Total of C-1				25,059
2. Labor (30% of C-1)				7,518
Sub-Total of C				**32,577**
D. Masonry Work				
1. Materials				
(1) 6" CHB	800	pcs.	6	4,800
(2) 4" CHB	260	pcs.	5	1,300
(3) Cement	97	bags	137	13,289
(5) Sand	10	cu.m	359	3,590
(6) Rebars: 12mm dia x 6m	30	pcs.	79	2,370
10mm dia x 6m	11	pcs.	58	638
(7) #16 Tie Wire	4	kg.	58	232
(8) Scaffolding:				
2" x 4" x 8" = 10pcs. (Coco Lumber)	53.33	bf.	8	427
Sub-Total of D-1				26,646
2. Labor (30% of D-1)				7,994
Sub-Total of D				**34,640**
E. Roofing Work				
1. Materials				
(1) GA #26 Corr. GI (1 = 10')	20	pcs.	310	6,200
(2) GA #24 Pln. GI Flashing	3	pcs.	300	900
(3) GA #24 Pln. GI Gutter (Pre-Fab)	9	pcs.	300	2,700
(4) Umbrella Nails 2-1/2"	12	kg.	50	600
(5) Rafter - 2" x 5" x 18' = 5pcs.	75	bf.	35	2,625
(6) Purlins - 2" x 2" x 12' = 18pcs.	72	bf.	35	2,520
(7) WD Cleats - 2" x 2" x 10" = 6pcs.	20	bf.	35	700

Table 10.2.17 Unit Cost of Public Toilet

Sheet 2 of 5 (Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
(8) Nailers - 2" x 2" x 12' = 30pcs.	120	bf.	35	4,200
- 2" x 2" x 10' = 36pcs.	120	bf.	35	4,200
(9) Fascia Board				
1" x 12" x 12' = 4pcs.	48	bf.	35	1,680
1" x 12" x 18' = 2pcs.	36	bf.	34	1,224
(10) Wood Plate				
2" x 4" x 20' = 2pcs.	26.66	bf.	34	906
(11) 1/4" Thk. Mar. Plywood 4' x 8'	14	pcs.	32	448
(12) C.W.N. Assorted	15	kg.	43	645
(13) 3" dia x 3m Downspout (PVC)	3	pcs.	91	273
(14) 3" dia Elbow (PVC)	2	pcs.	70	140
(15) 3"dia Coupling (PVC)	1	pcs.	26	26
(16) Ceiling Vent, 1" x 1" x 8' x 4pcs.	2.67	bf.	29	77
(17) Screen (1/8" x 1/8")	1	yd.	91	91
Sub-Total of E-1				30,156
2. Labor (30% of E-1)				9,047
Sub-Total of E				**39,203**
F. Carpentry Work				
1. Materials				
(1) D - 1 Hollow Core Tanguile				
Flush Type Door w/ Louver (0.80 x 2.2	2	sets	1,620	3,240
(2) D - 2 Hollow Core Tanguile				
Flush Type Door (0.60 x 2.10)	1	sets	1,216	1,216
(3) D - 3 Louver Door (0.60 x 1.40)	5	sets	1,013	5,065
(4) Door Jambs (Apitong)				
2" x 6" x 14" = 1pc.	14	bf.	37	518
2" x 6" x 10" = 2pcs.	20	bf.	36	720
2" x 6" x 10" = 1pc.	18	bf.	35	630
2" x 4" x 12" = 5pcs.	40	bf.	34	1,360
(7) Wooden Jalousie Window				
With 5 Blades (0.40 x 0.50)	14	set	338	4,732
(8) Window Jambs (Apitong)				
2" x 6" x 16" = 5pcs.	80	bf.	36	2,880
2" x 6" x 14" = 1pc.	14	bf.	35	490
2" x 6" x 10" = 1pc.	10	bf.	34	340
(9) Cabinet				
3/4" x 4' x 8' = 1pc. (plyboard)	1	pc.	878	878
Sub-Total of F-1				22,069
2. Labor (30% of F-1)				6,621
Sub-Total of F				**28,690**
G. Tile Work				
1. Materials				
(1) 4-1/4" x 4-1/4" Glazed Tiles	1,950	pcs.	5	9,750
(2) 0.10 x 0.20m Floor Tiles	900	pcs.	7	6,300
(3) Cement	4	bags	137	548
(4) White Cement	1	bag	742	742
(5) Tiles Fittings		LS		5,650
Sub-Total of G-1				22,990
2. Labor (30% of G-1)				6,897
Sub-Total of G				**29,887**

Table 10.2.17 Unit Cost of Public Toilet

Sheet 3 of 5 (Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
II. Plumbing Work				
1. Materials				
(1) Urinal	3	sets	1,253	3,759
(2) Toilet Bowl - Squat Type	6	sets	703	4,218
(3) 4" dia x 3m PVC San. Pipe	6	pcs.	175	1,050
(4) 3" dia x 3m PVC San. Pipe	4	pcs.	98	392
(5) 2" dia x 3m PVC San. Pipe	3	pcs.	62	186
(6) 3/4" dia x 6m GI Pipe Sch. 40	5	pcs.	288	1,440
(7) 1/2" dia x 6m GI Pipe Sch. 40	1	pcs.	213	213
(8) 4" x 4" WYE PVC	1	pcs.	38	38
(9) 3" dia Elbow PVC	10	pcs.	70	700
(10) 3" dia 45 degrees Bend PVC	2	pcs.	85	170
(11) 2" dia Elbow PVC	6	pcs.	53	318
(12) 2" dia 45 degrees Bend PVC	2	pcs.	68	136
(13) 1/2" dia Elbow GI	5	pcs.	40	200
(14) 4" dia 3" dia WYE PVC	8	pcs.	52	416
(15) 3/4" dia TEE GI	7	pcs.	70	490
(16) 1/2" dia TEE GI	5	pcs.	55	275
(17) 4" dia x 2" dia TEE PVC	6	pcs.	36	216
(18) 4" dia Clean Out PVC	3	pcs.	41	123
(19) 2" dia Clean Out PVC	1	pcs.	29	29
(20) Faucet	10	pcs.	59	590
(21) 3" dia x 2" dia Elbow Reducer PVC	1	pcs.	85	85
(22) 3" dia x 2" dia WYE PVC	3	pcs.	29	87
(23) 2" dia x 2" dia WYE PVC	3	pcs.	17	51
(24) PVC Cement	1	can	142	142
(25) 4" dia x 2" dia WYE PVC	2	pcs.	47	94
(26) Gate Valve 3/4" dia	1	pcs.	142	142
(27) Gate Valve 1/2" dia	1	pcs.	112	112
(28) Water Meter 3/4" dia	1	pcs.	1,488	1,488
(29) 3/4"dia x1/2"dia Elbow Reducer GI	1	pcs.	21	21
Sub-Total of H-1				17,181
2. Labor (30% of H-1)				5,154
Sub-Total of II				**22,335**
I. Painting				
1. Materials				
(1) Acrylic, Semi Gloss	8	gals.	295	2,360
(2) Concrete Sealer	4	gals.	233	932
(3) Acri Color: Wood	4	gals.	200	800
(4) Enamel, QDE	6	gals.	310	1,860
(5) Wood Putty	1	gals.	342	342
(6) Paint Thinner	1	gals.	67	67
(7) Tinting Color	4	pint	45	180
(8) Sand Paper (Assorted)	15	pcs.	8	120
(9) Miscellaneous		LS		1,200
(10) Roof Paint (green, ready-mix)	2	gals.	319	638
Sub-Total of I-1				8,499
2. Labor (30% of I-1)				2,550
Sub-Total of I				**11,049**

Table 10.2.17 Unit Cost of Public Toilet

Sheet 4 of 5 (Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
J. Electrical Work				
1. Materials				
(1) 40 Watts Fluorescent Lamp	2	sets	289	578
(2) Elect. Wire TW #12	24	m	7	168
(3) Elect. Conduit - 1/2" dia x 10"	4	pcs.	88	352
(4) Entrance Cap. 1/2" dia	1	pc.	32	32
(5) Switch Outlet, Flush Type	2	pcs.	44	88
(6) Utility Box 2" x 3"	2	pcs.	12	24
(7) Porcelain Receptacle 2" dia	2	pcs.	7	14
(8) Safety Switch 60A, 250V	1	set	555	555
(9) Electrical Tape	1	roll	25	25
Sub-Total of J-1				1,836
2. Labor (30% of J-1)				551
Sub-Total of J				**2,387**
K. Hardware				
1. Materials				
(1) 3" x 3" Butt Hinges (Loose Pin)	10	pcs.	20	200
(2) 4" x 4" Butt Hinges (Loose Pin)	12	pcs.	36	432
(3) Door Lockset (Schlage US)	3	pcs.	650	1,950
(4) Barrel Bolt (4")	5	pcs.	45	225
(5) Cabinet Pull (4")	5	pcs.	7	35
(6) Water Storage Cover				
Checkered Plate 1/4" thick				
1.44x0.633 w/ L bar & flat bar	1	set	1,116	1,116
(7) 0.645x0.633 w/ L bar & flat bar	2	set	629	1,258
(8) Padlock	1	pcs.	429	429
Sub-Total of K-1				5,645
2. Labor (30% of K-1)				1,694
Sub-Total of K				**7,339**
L. Septic Tank and Sewage Basin				
1. Materials				
(1) 4" CHB	180	pcs.	5	900
(2) Cement	18	bags	137	2,466
(3) Sand	1.50	cu.m	359	539
(4) Gravel	1	cu.m	454	454
(5) Rebars: 10mm dia x 6m	29	pcs.	58	1,682
(6) #16 Tire Wire	2	kg.	58	116
(7) Formworks: Coco Lumber				
2" x 3" x 10' = 12pcs.	60	bf.	11	660
1/4" plywood ord. 4' x 8'	2	pcs.	477	954
C.W.N. (Assorted)	2	kg.	43	86
Sub-Total of L-1				7,857
2. Labor (30% of L-1)				2,357
Sub-Total of L				**10,214**
M. Concrete Water Tank (Elevated)				
1. Earth Work				
(1) Materials				
1) Gravel Fill	1	cu.m	454	454
Sub-Total of M-1 (1)				454

Table 10.2.17 Unit Cost of Public Toilet

Sheet-5 (Cost: Peso)

Description	Q'ty	Unit	Unit Cost	Amount
(2) Labor				
1) Excavation	14.70	cu.m	140	2,058
2) Backfill	13.08	cu.m	127	1,661
3) Gravel Fill	1	cu.m	166	166
Sub-Total of M-1 (2)				3,885
Sub-Total of M-1				4,339
2. Materials				
(1) Cement	62	bags	137	8,494
(2) Sand	4.50	cu.m	359	1,616
(3) Gravel	8	cu.m	454	3,632
(4) Rebars: 12mm dia x 6m	160	pcs.	79	12,640
(5) #16 Tie Wire	4	kg.	58	232
(6) Formworks:				
1/4" plywood	12	pcs.	477	5,724
2" x 3" x 16' = 60pcs.	480	bf.	9	4,320
(7) C.W.N. (Assorted)	5	kg.	43	215
Sub-Total of M-2				49,890
3. Labor (30% of M-2)				14,967
Sub-Total of M				**69,196**
N. Freight Cost (11% of Materials for A - M excluding sand and gravel)				22,322
O. Indirect Cost				
Profit (10% of A - M)				32,155
VAT (10% of Profit & Labor)				10,474
Sub-Total of O				42,629
Total of Construction Cost (A to O)				364,182
P. Estimated Government Expenses				
1. Preliminary & Detailed Engineering Cost		LS		2,400
2. Construction Supervision		LS		1,800
Sub-Total of P				4,200
GRAND TOTAL				368,382
			SAY	368,400

Note: LS - Lump Sum
Source: DOH standard price in 1993
Unit Cost: Adjusted to 1998 Price Level

(3) Sector Management Cost

Cost of community development and training was estimated at 12% of the total construction cost of Level I & II water supply facilities and public toilets and at 3% of the total construction cost of Level III water supply systems. This was formulated based on the following:

a. The 12% was derived on the basis of DILG's past experience in BWSA formation; and
b. The 3% was derived on the basis of LWUA's past experience in the institutional strengthening needs of WDs.

These ratios adopted for estimating community development and training cost will allow the province to meet with its needs for community development in the sector management. The following breakdown provides a view of the components under this category.

Table 10.2.18 Breakdown of Community Development and Training Cost

Component	Share of Cost (%)
1. Preparation for Training Activities	10
1.1 Transportation	1
1.2 Technical Assistance	1
1.3 Food	1
1.4 Supplies and Materials including Production of Training Kits	6
1.5 Generation of Training Aids	1
2. Conduct of Training Activities	53
2.1 Transportation	5
2.2 Food	12
2.3 Accommodation	33
2.4 Training Room Rental	1
2.5 Miscellaneous	2
3. Field Visits to Support BWSA Formation	37
3.1 Transportation	5
3.2 Food	15
3.3 Accommodation	12
3.4 Field	4
Total	**100**