



COMPREHENSIVE PROJECT PROFILE

I. PROJECT DESCRIPTION

- 1. PROJECT TITLE: Development and Management of Inter-Municipal Water Supply System of BIAD 1 Phase One (1)**
- 2. PROJECT TYPE:** Capital Forming Forming
- 3. PROJECT COMPONENTS**
 - a) Clustering of Municipalities particularly the towns of Cortes, Dauis Maribojoc, Panglao and Tagbilaran City in the Province of Bohol
 - b) Laying of Water Pipeline parallel to the circumferential road and other major thoroughfares passing in particular through the BIAD-1 municipalities of Cortes, Dauis, Maribojoc, Panglao and Tagbilaran City in the Province of Bohol
 - c) Installation of one sump each for the municipalities of Cortes, Dauis, Maribojoc, Panglao and Tagbilaran City with the corresponding accessories
 - d) Construction of an appropriate treatment plant that will be utilized in the purification process of surface water drawn from the Abatan River which will be located in Maribojoc.
 - c) Construction of one appropriate clean water reservoir including chlorination facilities to be utilized as storage facility for treated surface water drawn from the Abatan River in Maribojoc.

4. PROJECT LOCATION/ AREA COVERAGE

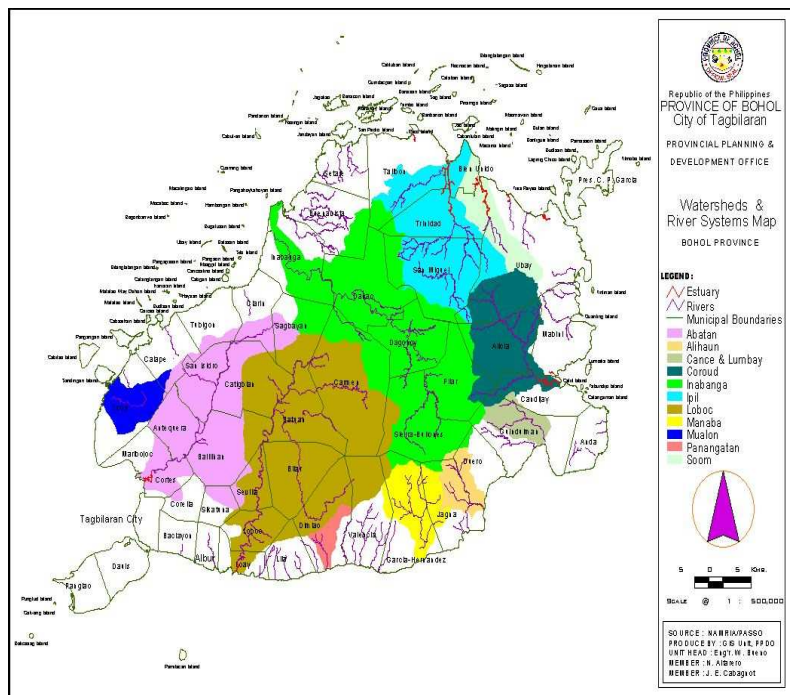
The proposed water supply project using surface water source is hoped to be eventually serviceable in all towns comprising BIAD-1, namely: Alburquerque, Antequera, Baclayon, Balilihan, Corella, Cortes, Dauis, Loay, Lila, Loboc, Maribojoc, Panglao, Sevilla, Sikatuna and Tagbilaran City. However, since this project is specifically intended for the first phase of the Inter-Municipal Water Supply System which covers the whole coverage area of BIAD 1 comprising fifteen municipalities – the project will only cover the four (4) municipalities and one city.

Level 1 facilities are also common in rural barangays particularly in BIAD-1. Of these Level 1 facilities, 50% are covered/ improved and open dug wells, 24% are shallow wells and 10% are deep wells. According to the PSPT, only 10% of the shallow wells and covered/ improved and open dug wells were observed to be safe. An indicator of health problems related to water supply and sanitation is the incidence of water-related diseases throughout the province and specifically in BIAD-1.

Pertaining to water supply, BIAD-1 has a number of service providers for Level III systems under different types of ownership (authority or association). The Bohol Water Utilities is the largest system covering 14 urban barangays in the City of Tagbilaran with a served population of approximately 49,000. Common issues encountered are rationing due to inadequate capacity of distribution pipes due to inappropriate planning and designing, insufficient water quality monitoring and more importantly the limited ground water supply from the Municipality of Corella.

It is obvious that presently most if not all the municipalities in BIAD 1 (*with the exception of Tagbilaran City which has also the BWUI, a private service provider*) have their respective Level II or III Water Works System which are mostly LGU run.

It is worthwhile to note that a pre-Feasibility Study has been made already by the Woodfields Consultant Inc. and funded by AusAID regarding the formulation of an Integrated Water Supply System Master Plan (BHL-01) for the whole province thereby tapping its surface water using the seven identified major rivers.



2. Project Rationale

As Tagbilaran City continues to grow and develop, and so with the rest of the municipalities in BIAD 1, it is imperative that a more serious attention be focused on the long term sustainability of its water supply sources.

The Water Supply project using surface water sources are planned due to the limited availability of ground water supply. This has been a pressing reality particularly for

Tagbilaran City and the Municipality of Daus who relied so much of their water needs from a private water provider who in turn is getting its supply from a ground source in the neighboring Municipality of Corella. Whereas, Corella for now is weighing options whether or not to continue sharing its ground water to BWUI pending resolution of the issues relating to its water conservation and management efforts.

On the other hand, the delineation of the two (2) watersheds that comprise BIAD-1 is seen as the first major step towards formulating an Integrated Water Resources Management. With each watershed as the basic block in this approach, the micro-management scheme of each watershed will play a crucial role in this integrated management scheme for the BIAD-1. This will enable the implementation of a water balance study paving the way for a proper accounting of water in each drainage basin. It is hoped that this approach will contribute to the sustainability of water supply projects.

3. Project Linkages

Said project is in conformity with the Bohol Water Supply, Sewerage and Sanitation Master Plan(BW4SMP) a joint project of Swedish Consultants (SWECO) and the Provincial Government and the newly formulated Provincial Water Supply, Sewerage and Sanitation Sector Plan (PW4SP) of the GTZ-DILG (WSSPMO) still in collaboration with the Provincial Government of Bohol and particularly the respective LGUs comprising BIAD-1.

4. Project Objectives

The proposed BIAD 1 Inter-municipal Water Connection Plan (BIMWCP) will respond to the water needs of the Boholano populace in that area. This will also help in eliminating the occurrence of water borne diseases, improved sanitation while boosting agriculture production through ample supply of potable water in said agricultural areas of the province which will be traversed by the water pipelines.

4. Sectoral Objectives

The project would contribute to the attainment of area's objectives and strategies as follows:

1. To improve the health and sanitation aspects of the target municipalities, city and barangays within BIAD-1, province of Bohol by providing access to safe and abundant water.
2. To develop more reliable water sources and expand transmission lines to meet increasing demand.
3. To increase agriculture production, thus increasing the per capita income of farmers.

5. Compatibility to Physical Plan

1. The project is in conformity with the Provincial Water Supply, Sewerage and Sanitation Sector Plan (PW4SP) of the province which is to provide sufficient water supply particularly on domestic, agricultural, health and sanitation and also for industrial uses.
2. The project is in line with the Philippine Development Plan which is to strengthen the national will and capabilities for self-reliant development through a conscious effort to raise productivity and attain self-sufficiency.

IV. PROJECT METHODOLOGY

The inter-municipal water supply project will tap Abatan and Loboc Rivers among others to be its potential sources of surface water using the **Abatan-Loboc River Option** as contained in the Bohol Water Supply, Sanitation and Sewerage Master Plan (BW4SMP).

The said development scheme intends to develop the Abatan River in the first phase of the project in order to serve Tagbilaran City, and the municipalities of Cortes, Dauis, Maribojoc, and Panglao after having been identified as the top priority areas that need water supply improvement. Tagbilaran City is the center of education, tourism, commerce and industry in the province. While the Panglao Island Tourism Estate in Panglao Island is the center of tourism and the site of the proposed international airport in the province.

As envisioned, the proposed Abatan-Loboc River Water Supply scheme will provide an average daily production of 56,325 cumd benefiting about 203,800 of the population. Initially in 2011, the bulk supply will cover Cortes, Tagbilaran City, Dauis, and Panglao and by 2018, the service will be expanded to cover Loboc, Loay, Albuquerque, and Baclayon. To minimize the development cost, the offtake interconnected with the transmission line of Bohol Water Utilities, Inc.(BWUI) will convey water to Dauis and Panglao through bulk supply.

The Abatan-Loboc river Option will initially utilize Abatan River in 2011 up to 2017. By 2018, Loboc River will then be tapped to supplement the supply thereby, satisfying the increasing projected water demand.

Attaching herewith, a table reflecting suggested Schedule of Pumps for the Abatan River Cluster with the corresponding accessories based on BHL-01 Study which is Phase One (1) of the BIAD 1 Inter-Municipal Water Connection Project.

Pump Schedule	Units
500 Hp Booster Pumps @ Intake	2 units
600 Hp Booster Pumps @ WTP	2 units
50 Hp Pumps @ Tagbilaran	2 units
60 Hp Booster Pumps @ Tagbilaran-Dauis	2 units
10 Hp Pumps @ Dauis	2 units
125 Booster Pumps @ Dauis	2 units

5 Hp Pumps @ Cortes	2 units
250 Hp Booster Pumps @ Cortes	2 units
125 Hp Booster Pumps @ Maribojoc	2 units

Storage Facilities

As further suggested based partly on the study (BHL-01), there will be 1 reservoir and 8 sumps to be constructed at different sites during the first phase of the project. A 2,553 cu.m. capacity clean water reservoir including chlorination facilities will be constructed within the site of the treatment plant. The total capacity of these facilities will be 11,801 cu.m. The storage facilities are summarized as follows:

Reservoir at WTP	: 2,553 cu.m.
Sump.(Tagbilaran)	: 1,625 cu.m.
Sump.(Maribojoc)	: 658 cu.m.
Sump. (Dauis)	: 402 cu.m.
Sump. (Cortes)	: 743 cu.m.

Treatment Plant

During the First Phase of the project which is the intent of this project proposal, the proposed treatment plant will be located in Maribojoc. It will have a design capacity of 960.67 L/s where raw water will undergo a series of purification process. (BHL-01)

Disinfection Facilities

Aside from the chlorination at the water treatment plant, water will be post disinfected at the sump before it will be delivered to interconnected waterworks through offtake.

Transmission Facilities

A total of 77,002 linear meters of pipelines equivalent to a distance of 77 kilometers will be installed in this particular project. However, since the proposed project will only focus the first phase of the program on inter-municipality water connection – then it is logical that only 14,000 lineal meters of pipelines will be installed in this particular project as provided for in the BHL01 Plan. Specific details as to the quantity, dimensions and unit costs of the transmission pipelines and its accessories shall be provided as soon as the commitment and possible funding from a prospective foreign or local donor has been sought upon.

Cost Estimates

The total project cost will be more or less PhP 678,005,815 as recommended by the plan (BHL-01).

ABATAN RIVER CLUSTER OPTION (PHASE ONE)

(Breakdown of Project Cost)

A) FACILITIES/STRUCTURES		
1.0 Source Facility		
1.1 Intake Structure with weir at Abatan River	199 cu.m. @ P20,000	P 3,980,000
2.0 Transmission Pipelines	14,000 lm.	286,139,278
3.0 Pumping Stations		14,845,623
4.0 Storage Facilities		34,982,000
5.0 Water Treatment Plant (Rapid Sand Filtration Plant)		166,200,000
6.0 Power Source Development		10,584,000
7.0 Land/ ROW Acquisition		561,074
B) FEASIBILITY STUDY & DETAILED ENGINEERING DESIGN		120,535,380
C) CONTINGENCY		32,142,768
D) CONSTRUCTION MANAGEMENT SUPERVISION		8,035,692
F) TOTAL PROJECT COST ESTIMATE		P678,005,815

In the final analysis, it should be noted that all the costing stipulated herein are not final ones as they are merely indicative in nature, subject to refinements and/or as the circumstances may so decides.

V. PROJECT FINANCING

1. Funds Needed

Estimation of the total project cost was done by giving provisions of 8% contingencies in addition to direct cost. This brought us to a phase 1 project cost of P687,005,815 Million in consideration of the huge amount needed in the full implementation of the project.

2. Project Financing

This will be sourced out from foreign funding (World Bank, JBIC-JICA, ADB) with a counterpart funds from the Provincial Government. This will be supervised by either PEO or GSO with PPDO doing some kind of monitoring activity, however depending upon the final approval from the Governor.

3. Financial Viability

The Bohol Inter-municipality Water Connection Plan (BIMWCP) project is expected to be financially viable. With the beneficiaries coming mostly from all the towns that would be traversed by the Bohol Circumferential Road (since transmission lines will be laid parallel to said road), it is expected that invested amount will be returned since obviously, this project will be a self-liquidating one.

V. PROJECT BENEFITS AND COSTS

1. Beneficiaries

The direct beneficiaries of the project are the constituents of the municipalities which will be traversed by the Bohol Circumferential Road who will be afforded with a sufficient supply of potable water upon its completion.

2. Social Benefits

The proposed Bohol Inter-municipality Water Connection Plan would bring about desirable outcome to the populace in the area, since this would obviously improve the health and sanitation conditions of the target beneficiaries. Moreover, the direct beneficiaries of this project in which majority of them are farmers will be encouraged to develop and cultivate their lands as a year-round water source will be afforded to them.

3. Economic Benefits

The year-round water supply hopefully upon realization of this project would encourage our target beneficiaries (majority of whom are farmers) to engage in economically useful activities such as backyard gardening, hog raising, poultry raising and the like. These activities would help augment the meager income of our farmers, thus resulting to the upliftment of their living condition.

4. Social Cost

Minimum unwanted effects of the projects are experienced only during construction phase. Noise and slight pollution maybe experienced only during the delivery of materials to the project site.

5. Economic Cost

There are no perceived problems that this project has an effect to our economy. Most of the time, a water works project such as this is always socially, economically and environmentally friendly.

VI. PROJECT IMPLEMENTATION

1. Responsible Agencies

In the advent of local autonomy, and following the essence of decentralization, Local Government Units (LGUs) who are now equipped with Technical Personnel are encouraged to undertake and manage project such as this one. In line with this, the Inter-municipality Water Connection Plan will be directly implemented by the Provincial Government of Bohol, through the PGSO and upon close supervision and monitoring by PPDO and DILG-WSSPMO.

2. Implementation Schedule

The implementation schedule will follow after the acquisition of the funds for the project. The schedule of implementation will be furnished immediately to the

funding donor/agencies and to the monitoring agency before the start of the project.

3. Legal and Political Feasibility

The project has no identified legal obstacle and political opposition since prior to the start of the project, a thorough public information campaign (public hearing) will be done to the populace of the affected municipalities traversed by the project which is also parallel to the Bohol Circumferential Road Project. With this, they will be given a thorough orientation of the details and mechanics of the project (both in institutional, technical and financial aspects).

4. Environmental Clearance

Environmental Clearance and Water Rights Permit will be secured from DENR if needed.

5. Social Adaptability

The Bohol Inter-municipality Water Connection Plan is the long cherished dream of our constituents to be fully developed in order to augment the perennial problem of insufficiency of safe and potable water supply. Hence, opposition coming from various sectors are never been expected. Moreover, all the affected municipalities and barangays of the province will be thoroughly consulted on a public hearing which will be scheduled for this purpose in which no less than the Provincial Governor will be giving his full support on this ambitious project.

With the realization of the aforementioned project, it is envisioned that gigantic impact will be felt by our constituents more particularly to health and economic sectors.

- b) Technical assessment of existing ground water supply in Corella
- c) Tapping the Loboc River (East) and the Abatan River (West)
- d) Laying of Water Pipeline parallel to the circumferential road and other major thoroughfares passing through BIAD-1 municipalities in the Province of Bohol

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