

3.9	Pipe length from source to water box: _____ m	Pipe Material: [<input checked="" type="checkbox"/>] GI pipes [<input checked="" type="checkbox"/>] PVC [] bamboo [] _____
3.10	Overflow of Concrete Water Box: _____ m (height)	Target overflow: dry season _____ m ³ /sec; rainy season _____ m ³ /sec

4.0 Commitment Section

We are committed to:

- Comply with all mitigating measures necessary to minimize negative impacts & address enhancement measures to maximize positive impacts, as presented in Section 5.0 of the PD/EMP Template below;
- Comply with other applicable rules, regulations, guidelines and criteria; and
- Properly inform the contractor, residents of the barangay and other stakeholders on the PD/EMP commitments and other public agreements in connection with the project.

5.0 Environmental Management & Monitoring Plan *(Instructions: Check applicable box/es &/or input data where asked. Attach supplemental information where deemed necessary for planning/costing purposes)*

Project Phase / Activities	Possible Environmental Impacts	Mitigating Measures	Monitoring Parameters	Responsible Agency/ Unit	Cost of Mitigation/ Monitoring
1.0 Pre-construction Phase (Site/Source Selection, Planning/Design, Procurement, Hiring)					
1.1 Site & Water Source Selection and Planning/ Design	<input type="checkbox"/> Inadequate surface water flow downstream due to over-diversion at the WSS intake, resulting to disruption or deprivation of other water uses downstream N/A	<input type="checkbox"/> Base the WSS design and capacity on adequate historical and updated information to correctly estimate the WSS water requirement and the range of discharge or flow of the surface water source in varying seasons <input type="checkbox"/> Integrate in the determination of water flows to be diverted the downstream river water requirements <input type="checkbox"/> Select another water source <input type="checkbox"/> Augment with another water source (surface or groundwater) <input type="checkbox"/> Secure NWRB clearance/ water permits		<input type="checkbox"/> LGU _____ <input type="checkbox"/> PO/NGO _____ _____	Integrate in the Project Selection/Planning/ Design Cost the conduct of hydrological study of the potential WSS sources and river usage survey downstream of WSS intake: PhP _____
	<input type="checkbox"/> Drawdown of groundwater table, or saltwater intrusion (for coastal WSS) due to over-extraction of groundwater source for the WSS N/A	<input type="checkbox"/> Same nature of measures to prevent or mitigate surface water supply issues except that: - yields and extraction rates are for groundwater sources - water use survey will focus on the user requirements of the WSS target sources located within the same groundwater reservoir tapped by the community		<input type="checkbox"/> LGU _____ <input type="checkbox"/> PO/NGO _____ _____	Integrate in the Project Selection/Planning/ Design Cost the conduct of groundwater hydro study and groundwater use survey: PhP _____
	<input type="checkbox"/> Health hazards to community, due to undetected toxic contaminants in the water source, particularly in mineralized and geothermalized areas with high toxic metal background levels N/A	<input type="checkbox"/> Conduct water sampling and testing to assess water quality to determine if water is suited for a WSS and to establish baseline so that any future degradation and public health threats can be detected <input type="checkbox"/> Select another water source if natural contamination is confirmed		<input type="checkbox"/> LGU _____ <input type="checkbox"/> PO/NGO _____ _____	Integrate in the Project Selection/Planning/ Design Cost the conduct of water sampling and analysis: PhP _____

Project Phase / Activities	Possible Environmental Impacts	Mitigating Measures	Monitoring Parameters	Responsible Agency/ Unit	Cost of Mitigation/ Monitoring
	<input type="checkbox"/> Location of WSS within a Protected Area (PA) N/A	<input type="checkbox"/> Secure PAMB Resolution for PA		<input type="checkbox"/> LGU <input type="checkbox"/> PO/NGO	Integrated in Pre-construction Cost: P50/person * # pax * # meetings PhP
	<input type="checkbox"/> Damage to flora and disturbance to fauna (in forested upland WSS intake area) N/A	<input type="checkbox"/> Consider alternative site or design to reduce effects on flora and fauna <input type="checkbox"/> Secure Special Land Use Permit, Tree Cutting Permit and/or Right-of-Way Permit from DENR-FMB and permits from PAWB for affected wildlife		<input type="checkbox"/> LGU <input type="checkbox"/> PO/NGO	Integrated in Pre-construction Cost: Permit fees for SLUP, TCP, ROW PhP
	<input type="checkbox"/> Land acquisition or ROW conflict along the pipeline route or in siting the communal water box/faucet area Yes, there is possibility	<input type="checkbox"/> Consider alternative site with no land or access issues <input type="checkbox"/> Secure Deed of Donation or Quit Claim on lands along the canal route - Deed of donations were secured already <input type="checkbox"/> Prepare compensation package, thru prior consultation with Project Affected Persons (PAPs) <input type="checkbox"/> Implement the payment of compensation at least a month prior to start of Construction Works		<input checked="" type="checkbox"/> LGU <input checked="" type="checkbox"/> MPDO <input type="checkbox"/> PO/NGO	Integrated in Pre-construction Cost: Compensation Package PhP
	<input type="checkbox"/> Encroachment in areas with IPs/lands with Ancestral Domain Claim N/A	<input type="checkbox"/> Relocate WSS location or route to lessen construction impacts on IPs/IP areas unless the IPs are among the beneficiaries of the WSS <input type="checkbox"/> Apply for FBI and secure FPIC from the IPs thru the NCIP		<input type="checkbox"/> LGU <input type="checkbox"/> PO/NGO	Integrated in Pre-construction Cost: P5,000/ Survey; P50/person * # pax * # meetings PhP
	<input type="checkbox"/> Damage or cause disturbance to adjacent or nearby sites of Cultural Heritage N/A	<input type="checkbox"/> Change the WSS location/route to avoid or lessen probability of damage <input type="checkbox"/> Secure NHI clearance & coordinate on construction works		<input type="checkbox"/> LGU <input type="checkbox"/> PO/NGO	Integrated in Pre-construction Cost: Clearance Fees PhP
	<input type="checkbox"/> Negative reactions from the public due to lack of information and coordination N/A	<input type="checkbox"/> Hold consultative meetings with project beneficiaries and affected persons on the project components and mgt plan		<input type="checkbox"/> LGU <input type="checkbox"/> PO/NGO	Integrated in Pre-construction Cost: P50/person * # pax * # meetings

Project Phase / Activities	Possible Environmental Impacts	Mitigating Measures	Monitoring Parameters	Responsible Agency/ Unit	Cost of Mitigation/ Monitoring
				—	PhP _____
	<input type="checkbox"/> Damage existing utilities and structures, resulting in disruption of service N/A	<input type="checkbox"/> Re-locate or redesign WSS route to avoid or minimize damage <input type="checkbox"/> Conduct prior coordination with utility providers and undertake timely information to the public to minimize inconvenience for loss of service		<input type="checkbox"/> LGU _____ — <input type="checkbox"/> PO/NGO _____ —	Incremental project cost for rerouting or redesign: PhP _____ Integrated in Pre-construction Cost: P50/person * # pax * # meetings PhP _____
1.2 Procurement	<input type="checkbox"/> Possible illegal or unauthorized sourcing of raw/construction materials N/A	<input type="checkbox"/> Procure construction materials from licensed sources, i.e. for sand and gravel, from those with valid MGB/EMB permits		<input type="checkbox"/> LGU _____ — <input type="checkbox"/> PO/NGO _____ —	Cost of Purchases from licensed sources -- Integrated in Pre- & Construction Costs: PhP _____
1.3 Hiring of labor and other manpower services	<input type="checkbox"/> Increased employment opportunity and community income Yes	<input type="checkbox"/> Give hiring preference to qualified local community residents, particularly those who will be inconvenienced /affected		<input type="checkbox"/> LGU MEO/MPDO <input type="checkbox"/> PO/NGO _____ —	Local Hiring cost integrated in Pre- & Construction Costs: PhP _____
2.0 Construction Phase					
2.1 WSS Construction: communal water box/ faucet area and pipeline system	<input type="checkbox"/> Localized clearing of vegetation and disturbance to wildlife in the vicinity of a forested upland WSS area N/A	<input type="checkbox"/> Implement the conditions in the DENR permits, if any		Contractor: _____ _____	Integrate in Construction Cost
	<input type="checkbox"/> Damage to cultural property which may be encountered during excavation for communal water box/faucet area and pipes N/A	<input type="checkbox"/> Relocate water box/faucet area and/or reroute pipeline if possible <input type="checkbox"/> If not possible to relocate or reroute, observe reporting and conservation protocols based on prior coordination with the NHI/NM	<input type="checkbox"/> Presence of clearance <input type="checkbox"/> # of public complaints received by Proponent & Contractor	Contractor: _____ _____	Minimal cost (letter or meeting)
	<input type="checkbox"/> Affect activities and rights to land/water use by IPs, women and other vulnerable groups N/A	<input type="checkbox"/> Addressed by measures to prevent soil erosion and water quality impacts <input type="checkbox"/> Prior consultation & coordination to minimize disruption on daily domestic activities	<input type="checkbox"/> # of public complaints received by Proponent & Contractor	Contractor: _____ _____	Coordination integrated in Construction Cost :P50/person * # pax * # meetings:

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					PhP _____
2.2 Monitoring of quality of construction works	<input type="checkbox"/> Poor M&E or lack of it can result to sub-standard construction or use of sub-standard materials , potentially resulting to structural damages shortening the life and effective performance of the WSS Yes, there is possibility <input type="checkbox"/> Good Maintenance result to Quality Assurance for sustainability of WSS	<input type="checkbox"/> Regular Project M&E integrates environmental M&E on conformance to original design/specs <input type="checkbox"/> Allocation of sufficient budget for project M&E <input type="checkbox"/> Designate, deputize or enter into an agreement with the barangay LGU or local community for transparent M&E of construction works <input type="checkbox"/> Provision for Contractor's performance bond or withholding final payment until repairs are done before turn-over by the Contractor to the LGU/PO/NGO	<input type="checkbox"/> Occurrence of damages during construction <input type="checkbox"/> Visual presence of sub-standard materials <input type="checkbox"/> % completion per schedule and budget	Contractor: Project Engineer LGU: MEO/MPD O Local Community Rep: Brgy. Council/BA WASA Rep	Cost of measures integrated in Project M&E: LGU operations PhP _____
3.0 Operation and Maintenance					
	<input type="checkbox"/> Unsustained WSS operations at optimum capacity due to structural damages Yes, there is possibility	<input type="checkbox"/> Prepare and implement an acceptable O & M Plan <input type="checkbox"/> Sustained and regular monitoring and maintenance & repair of WSS structure <input type="checkbox"/> Allocate sufficient budget for M&E and maintenance and repair <input type="checkbox"/> Designate, deputize or enter into an agreement with the barangay LGU or local community for M&E of the WSS status	<input type="checkbox"/> No. of accurate reports on O&M status <input type="checkbox"/> No. of back-jobs <input type="checkbox"/> % repaired cracks <input type="checkbox"/>	Contractor: Project Engineer LGU: MEO/MPD O Local Community Rep: Brgy. Council/BA WASA M&E	Cost of measures integrated in Project M&E: LGU operations _____
	<input type="checkbox"/> Unsustained WSS operations due to critical lowering of water source flow below design and water supply/ demand levels Yes, there is possibility	<input type="checkbox"/> Coordinate with the DENR Regional Offices on the watershed protection program <input type="checkbox"/> Proactive occasional surveys of upstream river uses with focus on illegal diversions/ Coordination with the NWRB	<input type="checkbox"/> Reduction in Water flows <input type="checkbox"/> # of illegal diversions	<input type="checkbox"/> LGU _____ <input type="checkbox"/> PO/NGO _____ BAWASA _____ <input type="checkbox"/> DENR _____ <input type="checkbox"/> NWRB _____	Integrated cost of occasional river usage surveys and coordination with DENR-ROs & NWRB
	<input type="checkbox"/> Lowering of water quality of the water supply Yes, there is possibility	<input type="checkbox"/> Local community to do periodic checks of status/condition of water sources if there are garbage or other sources of contaminants <input type="checkbox"/> Regular sampling to test water quality against Phil National Standards for Drinking Water	<input type="checkbox"/> Sampling & analysis of the water source <input type="checkbox"/> Presence of garbage or other sources of	<input type="checkbox"/> LGU MPDO <input type="checkbox"/> PO/NGO _____ BAWASA _____	Sampling & analysis, removal of debris and Community rep allowance are integrated in the Project O&M:

Project Phase / Activities	Possible Environmental Impacts	Mitigating Measures	Monitoring Parameters	Responsible Agency/ Unit	Cost of Mitigation/ Monitoring
			contaminants at the source		PhP _____

**IMPORTANT REMINDER! HAVE YOU DONE THE FOLLOWING
BEFORE FINALIZING YOUR PROJECT DESIGN & LOAN DOCUMENTS?**

	YES	NO
a) Have you re-evaluated the Project Design and integrated the relevant mitigating measures identified in the PD/EMP above?	xxxxx	
b) Have you actually integrated the corresponding mitigating/monitoring costs into the Final Project Cost?		xxxxx

Prepared by: ENGR. MERCEDITAA G. MANGUNLAY (Signature over Printed Name) LGU: LGU TAPAKAN PO/NGO: _____ _____ 3-5-13 (Date signed)	Endorsed by: HON. LEONARDO V. ESCOBILLO, ME (Signature over Printed Name) LGU: TAPAKAN PO/NGO: _____ _____ 3/5/13 (Date signed)
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Based on the submitted loan application documents:

Final PD/EMP Reviewed by:	Reviewed PD/EMP Approved by:
_____ (Signature over Printed Name) PMO: _____ GA : _____ _____ (Date signed)	_____ (Signature over Printed Name) PMO: _____ GA : _____ _____ (Date signed)

Distribution of approved copies:

Proponent - original

PMO - copy

GA- copy