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USAID/PHILIPPINES BE SECURE PROJECT

ENVIRONMENTAL MANUAL

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ENVIRONMENTAL MANUAL

Submitted to:

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Prepared by:

AECOM

DISCLAIMER:

ACRONYMS

22 CFR 216	Title 22, Part 216 of the U.S. Code of Federal Regulations on environmental procedures
ARMM	Autonomous Region in Muslim Mindanao
COR	Contracting Officer's Representative
CFR	United States Code of Federal Regulations
DENR	Department of Environmental and Natural Resources
DOH	Department of Health
DPWH	Department of Public Works and Highways
EIS	Environmental Impact Statement
EM	Environmental Manual
EMMP	Environmental Mitigation and Monitoring Plan
EMB	Environmental Management Bureau
ESF	Environmental Screening Form
ESR	Environmental Screening Review
IEE	Initial Environmental Examination
LGU	Local Government Unit
MEO	Mission Environmental Officer
MOU	Memorandum of Understanding
O&M	Operation and Maintenance
P&D	Planning and Design
PNSDW	Philippine National Standards for Drinking Water
PPE	Personal Protective Equipment
PPP	Public-Private Partnership
TA	Technical Assistance
US	United States
USAID	United States Agency for International Development
USEPA	United States Environmental Protection Agency
USG	United States Government
WD	Water District
WHO	World Health Organization

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1. INTRODUCTION

The Water Security for Resilient Economic Growth and Stability (Be Secure) Project in the Philippines is a four-year activity funded by the United States Agency for International Development (USAID) that seeks to improve water security to support resilient and stable economic growth in the Philippines. It is being implemented in close coordination with the Government of the Philippines to promote good governance and build capacity in water security, improve access to water and sanitation services, and build more resilient communities.

Be Secure is implemented in the focal areas of Basilan, Iloilo, Leyte, Maguindanao, and Misamis Oriental Provinces and Tuguegarao City. At the national level, activities focus on strengthening water sector regulatory reform. For local and regional activities, the project works with local government units (LGUs) and water service providers at the watershed scale to improve capacities for integrating climate change into local planning and the provision of water supply and sanitation services. Key counterparts include national government agencies, LGUs, and service providers (public and private).

The project facilitates stakeholder dialogues and supports policy reform initiatives designed to increase government accountability on services delivery and improve water and sanitation sector performance. Challenges within the entire value chain of water supply service provision will be addressed, from the source water supplying domestic water systems to sustainable operations of the services themselves. The focus is on providing new water connections and wastewater treatment services, and strengthening the institutional structure, governance, management, regulation, and operation of water service providers and the government agencies that support them in a way that catalyzes larger financial flows, and ensures the viability of high quality services over time.

1.1 OBJECTIVES

Pursuant to the Initial Environmental Examination (IEE) for the Be Secure Project (ASIA-IEE-12-108), an Environmental Manual (EM) must be prepared to guide the review of low and medium risk small-scale infrastructure and global climate change adaptation activities, environmentally sound design, and implementation. The Project will focus its infrastructure activities on water supply systems for schools and health facilities in Leyte (Tacloban City) and the Autonomous Region in Muslim Mindanao (ARMM), and repair of damaged systems following hydrological extreme events. Sanitation and global climate change adaptation infrastructure will not be built by the Project directly; rather, Be Secure will facilitate investments by local partners to increase local ownership and sustainability. Be Secure will also support the development of new water sources and public-private partnerships (PPPs) among its local partners. The objectives of the EM are to:

1. Identify thresholds/significance for project activities;
2. Provide an exclusion list of activities that USAID will not fund (e.g., activities that are proposed close to or in protected areas, coastal lines, sensitive habitats, archaeological, historical and/or religious sites where caution and diligence should be exercised);
3. Establish environmental screening, selection and eligibility criteria, and the environmental review process for small and medium-risk activities;
4. Establish water quality monitoring procedures; and
5. Provide forms and templates, including the Environmental Screening Form (ESF), Environmental Screening Review (ESR) template, illustrative Environmental Mitigation and Monitoring Plan (EMMP), standard conditions and reporting requirements, and references/links to guidelines and best practice acceptable to USAID and the Government of the Philippines.

The original USAID-approved version of this EM was submitted to USAID in April 2014 and addressed the rehabilitation of water supply systems damaged by Typhoon Yolanda. Since then, the Be Secure portfolio of activities has expanded to include the development of new, climate-resilient water supply systems in vulnerable communities, as well as support for septage management planning, feasibility studies for new water sources and PPPs by partner LGUs and water districts (WDs).

1.2 SCOPE OF ACTIVITIES

Be Secure activities will include: 1) the development and rehabilitation of water supply systems; 2) septage management planning; 3) feasibility studies and PPPs; and 4) climate-resilient infrastructure planning.

1.2.1 DEVELOPMENT OR REHABILITATION OF WATER SUPPLY SYSTEMS

Activities that require environmental review include the development of new water supply systems in ARMM or rehabilitation of existing water sources, water transmission and distribution systems, and water storage and treatment facilities following extreme events noted in Table 1 below. Installation of water systems in ARMM will involve connecting rural health units, hospitals and schools to existing Level III systems or developing new Level I or Level II systems if needed.

Table 1. Illustrative Water Supply Components that may be Considered for Rehabilitation

Water Sources
River and stream intakes
Small dams or seasonal impoundments
Spring intakes boxes
Wells with mechanical pumps
Small-diameter boreholes with hand pumps
Hand-dug wells
Rainwater harvesting
Water Transmission and Distribution Systems
Transmission mains
Distribution networks
Bridge and river crossings
Booster pumps
Water Storage Structures
Elevated tanks
Ground level tanks
Underground tanks
Reservoirs and other impoundment facilities
Water Treatment Systems
Chlorinators
Conventional water treatment plants
Package-type water treatment equipment

Damage assessments for rehabilitation activities planned to date have included flooded wells, compromised spring and wellhead protection structures, and damaged filtration systems and distribution networks in WDs throughout the impacted region. These components, along with the development of new water systems, have a risk threshold of low to medium as defined by the IEE.

The IEE for Be Secure (ASIA-IEE-12-108) states on page 7 that activities involving connection of water users to Level III systems are recommended as "Negative Determination with Conditions." It is assumed that most of the rehabilitation activities will involve Level III systems, and that these activities are also recommended as "Negative Determination with Conditions." Level I systems are a single standpipe or well, Level II systems are communal faucets, standpipes or wells, and Level III systems have piped distribution systems to individual taps, households or other buildings.

1.2.2 SEPTAGE MANAGEMENT PLANNING

Be Secure will support capacity building activities in septage management that are being implemented by other donors in partnership with LGUs. It is important to note that the USAID-funded aspects of these multi-donor or multi-stakeholder activities concern technical support in planning, schematic designs, dialogue and training and will not involve the detailed engineering design, construction or operation and maintenance of septage treatment facilities. The focus of Be Secure environmental screening and review will therefore address only these aspects, rather than the detailed design, construction, and operation and maintenance of such septage treatment facilities that may be provided by cities or other donors, which would likely require a more detailed environmental assessment.

Be Secure will prepare a generic ESR for its septage management activities that includes a provision that all resulting implementation by Be Secure partners will include compliance with applicable Philippine environmental and other laws and regulations.

Be Secure will begin by supporting the development of plans for septage management facilities in Tacloban, Iloilo, Cotabato and Cagayan de Oro Cities in participation with relevant key agencies including the Environmental Management Bureau (EMB) of the Department of Environmental and Natural Resources (DENR), Department of Public Works and Highways (DPWH), Department of Health (DOH), and provincial development authorities. Other cities such as Isabela City may also be involved at later stages. It will also support the passage of ordinances on septage and the needed promotion and research activities to generate support and sense of ownership from stakeholders. Be Secure will assist in the training of relevant staff to operate and maintain the proposed facilities in line with best practices and environmental and regulatory compliance, including the conduct of exposure trips or study tours, operations and maintenance (O&M) workshops, and supervised practical training.

In Cotabato, Cagayan de Oro. and Iloilo cities, the septage management program will be jointly undertaken by LGUs and WDs, Be Secure will also work closely with technical working groups in drafting the memorandums of understanding (MOU) between LGUs and city WDs to operationalize the septage management programs in each city and finalize the pre-feasibility studies that were formulated. If they are solely by the LGUs or the WD, Be Secure will support the implementing agency. Lastly, Be Secure will help link LGUs with WDs to access the DPWH grants for septage management programs/projects. Some city mayors have already written letters to DPWH requesting assistance for planned city septage management programs.

In Tacloban City, Be Secure will facilitate the improvement of the existing lime stabilization facility. The City Government of Tacloban has requested assistance from Be Secure to develop a city-wide septage management program, and the Project has offered to first improve the management of the lime pits while the city-wide system is being developed. Be Secure Project will train the operators in the proper design, installation and operation of these facilities and also conduct a training for regional government staff and others working in the sanitation sector in the City. The information conveyed during these training programs will be documented in a Field Implementers' Handbook on Lime Stabilization in the Philippines that will be turned over to DOH for their use throughout the country.

Longer term sanitation improvements in Tacloban will be realized through a proposed city-wide septage management program that will include a septage treatment facility that will be co-located at the proposed new landfill site in barangay San Roque. The proposed work plan activities include the preparation of a detailed feasibility study, a comprehensive local ordinance on wastewater and septage management, a promotions campaign, as well as providing support throughout the tendering and construction process. The proposed framework for this activity follows a bottom up planning and implementation model. The development of a detailed feasibility study will be used by the city government to solicit donor funds that will be used as seed money to pay for initial startup activities. The septage management plan, as envisioned by the city government, would focus initially on providing septage management services to the commercial sector as well as emergency residential desludging needs, and use the funds received from tariffs from those activities to support city-wide residential periodic desludging services.

1.2.3 FEASIBILITY STUDIES AND PUBLIC-PRIVATE PARTNERSHIPS

Be Secure will conduct feasibility studies on the development of new water sources, climate-resilient infrastructure and other project activities that may be developed as PPPs. As with septage management, the USAID-funded aspects of these feasibility studies will not involve detailed engineering design, construction or operation and maintenance but rather technical support in data collection, analysis, planning, preliminary design, and preliminary environmental review. The focus of Be Secure environmental screening and review will therefore address only these preliminary aspects.

The feasibility study analysis will include environmental and hazard impacts, while the preliminary environmental impact reviews will include applicable Philippine laws and regulations, and short and long-term effects on the environment, which include health, land use, cultural/socio-economic, hydrology, water resources, terrestrial ecology, energy, traffic, etc.

Be Secure will prepare a generic ESR for feasibility studies and PPP projects that includes a provision that all resulting implementation of the proposed project will include compliance with applicable Philippine environmental and other laws and regulations.

Be Secure has engaged a subcontractor to provide technical services for the Tacloban City North Water Supply Rapid Feasibility Study and the Metro Cotabato Water Supply Rapid Feasibility Study. The Project is considering conducting a similar feasibility study in partnership with the Cagayan De Oro City Water District. The Project may undertake other feasibility studies in the future and assist other partners in identifying possible projects for PPP; in these cases similar environmental reviews will be conducted.

In Iloilo, Be Secure will assist the Metro Iloilo Water District in evaluating unsolicited proposals and developing the required tender documents for soliciting open competition for private sector involvement in improving water services in their concession area. The Project will insure that the tender documents include a provision that all resulting implementation will include compliance with applicable Philippine environmental and other laws and regulations. Be Secure will not be directly involved in detailed engineering design, construction or operation and maintenance for these PPP projects.

The Be Secure Project will work with local partners to plan climate-resilient infrastructure and activities in its focal areas. This may include water retention and recharge systems, rainwater harvesting and watershed protection. Be Secure may undertake feasibility studies or rapid assessments of these proposed activities that will include environmental considerations, including the requirement that implementation of the activities should comply with applicable Philippine environmental and other laws and regulations.

1.3 ENVIRONMENTAL COMPLIANCE REQUIREMENTS

1.3.1 USAID ENVIRONMENTAL REQUIREMENTS

USAID's environmental policy requires that the potential adverse impacts of USAID-funded and managed activities be assessed prior to implementation via an Initial Environmental Examination or IEE process defined by Title 22, Part 216 of the U.S. Code of Federal Regulations on environmental procedures (22 CFR 216). Activities found to have a significant negative effect on the environment will be subject to an Environmental Assessment in accordance with Part 216.6. USAID may make a Negative Declaration that eliminates the need for an environmental Assessment if the effects can be mitigated or minimized by project design elements. In these cases, USAID requires that the environmental management/mitigation measures be identified as conditions for implementation over the life of the activity, and monitored for compliance and sufficiency.

1.3.2 PHILIPPINE ENVIRONMENTAL REQUIREMENTS

EMB is the agency responsible for policy development and monitoring the implementation of environmental laws in the Philippines, including environmental impact regulations. DENR requires screening as a first step in the Philippine Environmental Impact Statement process to determine which requirement covers the project activities. Development of small water supply systems and repair of damaged systems located outside of environmentally critical areas fall under the DENR-designated Category D, "Projects or undertakings that are deemed unlikely to cause significant adverse impact on the quality of the environment according to the parameters set forth in the Screening Guidelines." Category D proponents are not required to submit any documents; however, they may opt to secure a Certificate of Non-Coverage from the EMB by accomplishing and submitting Part I of a pro-forma project description prescribed by the EMB. Water refilling stations, and Level I and Level II systems are all classified as Category D projects.

Water supply projects (without dams) that are considered non-environmentally critical projects but are still deemed to significantly affect the quality of the environment by virtue of being located in an Environmentally Critical Area (based on Proclamation No. 2146) are classified as Category B projects and are required to secure an Environmental Compliance Certificate. Proponents of Category B projects are required to submit either an Environmental Impact Statement (EIS) or an IEE Checklist. An EIS is required for projects with a water source (e.g., infiltration gallery, etc.) and water treatment facilities including desalination and reverse osmosis. The IEE Checklist is required for projects that consist only of a water distribution system (Level III).

Wastewater treatment and septage management projects are classified as either Category B or Category D. Wastewater treatment facilities with a treatment capacity of $\geq$ 5,000 m^3 (Category B) require an EIS, while facilities with a capacity of > 30 m^3 but < 5,000 m^3 (still Category B) require an IEE Checklist. Wastewater treatment facilities with a treatment capacity of less than or equal to 30 m^3 are considered as Category D projects and are not covered.

The Philippine's DOH enforces the Philippine National Standards for Drinking Water (PNSDW) that establishes the threshold limits of certain impurities in drinking water and also provides limits for disinfectants. The standards are based on the World Health Organization (WHO) guidelines (WHO 2004) and the U.S. Environmental Protection Agency. The standards also include guidelines on frequency of water quality monitoring, acceptable sampling methodology, and disinfection.

1.4 OVERVIEW OF METHODOLOGY

Table 2 below outlines essential steps in the environmental review methodology, and identifies forms in this EM as well as the status or instructions for performing each step.

Table 2. Steps in the Be Secure Environmental Review Process for Water Supply Rehabilitation Activities

Step	Form	Status Or Instructions To Perform This Step
1. Conduct preliminary screening of Be Secure work plan tasks to assign threshold determinations	Table 1, Section Two	Completed
2. Document illustrative EMMP	Illustrative EMMP for Rehabilitation of Water Supply Systems, Section Six	Completed
3. Conduct site-specific environmental risk screening	ESR Template, Annex	Fill in template form
4. Review site-specific environmental impacts and	EMMP table in ESR Template	Use EMMP template, drawing on illustrative EMMP as a model and

Step	Form	Status Or Instructions To Perform This Step
develop EMMP		site-specific ESF screening
5. Verify that appropriate water quality testing is performed and/or necessary permitting is secured.	N/A	Consult the Damage Assessment Form and attached water quality data provided by water service provider
6. Integrate EMMP conditions in activity designs and monitoring plans	N/A	Use monitoring form
7. Perform additional environmental review for activities not addressed in this document.	N/A	Consult with the Mission Environmental Officer (MEO), if necessary

2. ENVIRONMENTAL SCREENING

2.1 SCREENING AND RECOMMENDED DETERMINATION

An environmental screening of all activities identified in the Be Secure Life-of-Project Work Plan is provided in Table 3 below.

Table 3. Screening and Recommended Determination of Be Secure Work Plan Tasks

Work Plan Tasks	Screening result			Recommended Determinations		
	No Risk	Low/Moderate Risk	High Risk	No significant adverse impact	With specified mitigation, no significant adverse impact	Significant Adverse impact
IR 1: Increased sustainable access to water supply and wastewater treatment services						
Sub-IR 1.1: Strengthened enabling environment for sustainable water supply and wastewater treatment service delivery						
Task 1.1.1: Strengthen government accountability for sustainable water supply and wastewater treatment services	✓			✓		
Task 1.1.2: Strengthen regulatory framework for water supply and wastewater treatment service delivery and water security	✓			✓		
Task 1.1.3: Mobilize financing for sustainable water supply and wastewater treatment service delivery	✓			✓		
Task 1.1.4: Strengthen data and information management on water supply sector performance	✓			✓		
Sub-IR 1.2: Strengthened water supply and wastewater treatment service providers for sustainable service delivery						
Task 1.2.1: Increase capacity of water service providers for sustainable water supply and wastewater treatment services		✓			✓	
Task 1.2.2: Increase water supply and wastewater treatment service provider capacity in disaster risk reduction and climate change adaptation	✓			✓		
IR 2: Increased resilience to climate-related water stress and hydrological extremes						
Sub-IR 2.1: Strengthened analysis, communication and use of water resource, weather and climate data						
Task 2.1.1: Improve analysis and sharing of water resource, weather and climate data	✓			✓		
Task 2.1.2: Improve capacity of decision-makers to utilize water resource, weather and climate data	✓			✓		
Sub-IR 2.2: Reduced hydrological risks and improved near-term adaptation at the sub-national level						
Task 2.2.1: Improve understanding of areas at risk to climate-related stresses	✓			✓		

Work Plan Tasks	Screening result			Recommended Determinations		
	No Risk	Low/Moderate Risk	High Risk	No significant adverse impact	With specified mitigation, no significant adverse impact	Significant Adverse impact
Task 2.2.2: Improve climate change and disaster risk reduction inputs to planning at provincial and municipal scales	✓			✓		
Task 2.2.3: Reduce risks associated with impacts of hydrological extreme events		✓			✓	
Sub-IR 2.3: Improved capacity for long-term water resources security						
Task 2.3.1: Improve understanding of long-term water security issues and options and mainstreaming of Integrated Water Resources Management into water supply and wastewater treatment services, policy, planning and investment	✓			✓		
Task 2.3.2: Increase public awareness and support for sustainable use and consumption of water resources	✓			✓		

2.2 DEFINITION OF THRESHOLD/SIGNIFICANCE LEVELS

2.2.1 NO RISK ACTIVITIES

Most of the project tasks were found to bear no risk and were previously issued a Categorical Exclusion in the project IEE. These generally include activities in training and capacity building, awareness raising, regulatory reform, and data analysis and planning.

2.2.2 LOW TO MODERATE RISK ACTIVITIES

Low to moderate risk activities are anticipated to exert some negative impact on the environment, but with proper mitigation measures, the impact is negligible. Task 1.2.1, increasing the capacity of water service providers for sustainable water supply and wastewater treatment, will involve construction of water supply systems for schools and health facilities in ARMM and septage management planning support, while Task 2.2.3, reducing risks associated with impacts of hydrological extreme events, will involve the rehabilitation of water supply systems. Both are therefore identified as having low to moderate risk. Specific impacts are identified using the ESF in Table 3 of Section 2.3 below. Rehabilitation and new construction of water systems and related structures and services will require mitigation measures, including health and safety precautions for workers, safeguarding water quantity and quality and monitoring and oversight of construction to minimize environmental impacts on the site and surrounding area. These mitigation measures are specified in the EMMP in Section 6. With these mitigation measures, little to no impact is anticipated.

2.2.3 HIGH RISK ACTIVITIES

No activities in the Be Secure work plan were found to be high risk. In the event that an activity is determined to be high risk and therefore a positive determination, the required process, including an Environmental Assessment, would be followed as outlined in USAID's environmental regulation 22 CFR 216.

2.3 ENVIRONMENTAL SCREENING FORM FOR PROPOSED ACTIVITIES

Table 4 below shows results of environmental screening for water supply and septage management planning activities. These results guide the development of the EMMP, whereby item numbers identified in the ESF table below as having some level of environmental risk are addressed with specific mitigation measures in EMMP tables in Section 6 of this document.

Table 4. ESF for Be Secure Water Supply and Septage Management Planning Activities

Name of Activity: Development/Rehabilitation of Water Supply Systems and Septage Management Planning **Type of Activity:** Water Supply and Septage Management **Implementer:** AECOM **Date:** March 2013, for Life-of-Project Implementation FY 2014 – FY 2017		**Column A**	**Column B**	**Col C**		
		Yes	**No**	**If answered yes to Col. A. what is the risk?**		
				Low	**Medium**	**High**
Item #	**IMPACT ON NATURAL RESOURCES & COMMUNITIES**					
1	Will the project involve construction[1] of any type of structure (building, check dam, walls, water supply or sanitation system)?	✓		✓		
2	Will the project involve the construction[2] or repair of roads or trails?		✓			
3	Will the project involve the use, involve plans to use or training in the use of any hazardous chemical compounds such as pesticides[3] (including neem), herbicides, paint, varnish, lead-based products, asbestos, etc?		✓			
4	Involve the construction of repair of irrigation systems?		✓			
5	Involve the construction or repair of fish ponds?		✓			
6	Involve the disposal of used engine oil?		✓			
7	Will the project involve implementation of timber management[4] or extraction of forest products?		✓			
8	Are there any potentially sensitive terrestrial or aquatic areas near the project site, including protected areas?	Undetermined				
9	Does the activity impact upon wildlife, forest resources, or wetlands?		✓			
10	Will the activities proposed generate airborne gases, liquids, or solids (i.e. discharge pollutants)		✓			

Name of Activity: Development/Rehabilitation of Water Supply Systems and Septage Management Planning **Type of Activity:** Water Supply and Septage Management **Implementer:** AECOM **Date:** March 2013, for Life-of-Project Implementation FY 2014 – FY 2017		**Column A**	**Column B**	**Col C**		
		Yes	**No**	**If answered yes to Col. A. what is the risk?**		
				Low	**Medium**	**High**
11	Will the waste generated during or after the project impact on neighboring surface or ground water?		✓			
12	Will the activity result in clearing of forest cover?		✓			
13	Will the activity contribute to erosion?	✓		✓		
14	Is the activity incompatible with existing land use in the vicinity?		✓			
15	Will the activity contribute to displace housing?		✓			
16	Will the activity affect unique geologic or physical features?		✓			
17	Will the activity contribute to change in the amount of surface water in any body?	✓		✓		
18	Will the activity affect mangroves and coral reefs?		✓			
19	Will the activity expose people or property to flooding?		✓			
20	Will the activity contribute substantial reduction in the amount of ground water otherwise available for public water supplies?	✓		✓		
21	Will the activity create objectionable odors?		✓			
22	Will the activity violate air standards?		✓			
	ENVIRONMENT & HEALTH					
23	Will the project activities create conditions encouraging an increase of waterborne diseases or populations of disease carrying vectors or other health or safety hazards?		✓		✓	
24	For road rehabilitation as well as water and sanitation grants, has a maintenance plan been submitted?	✓				
25	Will the activity generate hazards or barriers for workers, pedestrians, motorists or persons with disabilities?	✓		✓		
26	Will the activity increase existing noise levels?	✓		✓		

		Column A	Column B	Col C		
Name of Activity: Development/Rehabilitation of Water Supply Systems and Septage Management Planning **Type of Activity:** Water Supply and Septage Management **Implementer:** AECOM **Date:** March 2013, for Life-of-Project Implementation FY 2014 – FY 2017		Yes	No	If answered yes to Col. A. what is the risk?		
				Low	Medium	High
27	Will the project involve the disposal of syringes, gauzes, gloves and other biohazard medical waste?		✓			
	LOCAL PLANNING PERMITS					
28	Does the activity (e.g., infrastructure improvements) require local planning or other environmental permits?	✓		N/A		
29	Does the activity meet the national building code (e.g., infrastructure improvements)?	✓		N/A		
	GENDER[5]					
30	Do men and women benefit disproportionately or are involved unequally in the project's activities?		✓			
31	Are there factors that prevent women's participation in the activity?		✓			
	OTHERS					
32	Will the activity involve the use of any non-native species?		✓			
33	Are environmental considerations critical in early planning, design and stakeholder consultation phases of the activity?	✓		N/A		
34	Is community acceptance critical to the success of the activity?	✓			✓	

RECOMMENDED ACTION *(Check Appropriate Action)*:		*(Check)*
(a)	The activity has no potential for substantial adverse environmental effects. No further environmental review is required (Categorical Exclusion). No EMMP required.	
(b)	The activity has potential for minimal to medium adverse environmental effects, but mitigable environmental effects. Measures to mitigate environmental effects will be incorporated (Negative Determination with Conditions). EMMP Required.	✓
(c)	The activity has potentially substantial or significant adverse environmental effects, but requires more analysis to form a conclusion. An Environmental Assessment will be prepared (Positive Determination). No EMMP required.	
(d)	The activity has potentially substantial adverse environmental effects, and revisions to the activity design or location or the development of new alternatives is required (Deferral).	
(e)	The activity has substantial and substantial environmental effects that cannot be adequately mitigated. Mitigation is insufficient to eliminate these effects and alternatives are not feasible. The activity is not recommended for funding.	

[1] Construction projects need to be reviewed for scale, planned use, building code needs and maintenance. Some small construction projects, such as building an entrance sign to a park, may require simple mitigations, whereas larger buildings will require more extensive review and monitoring.
[2] New construction of roads and trails will require a full environmental assessment of the planned construction, i.e., a Positive Determination.
[3] The planned involvement of pesticides will trigger the need to develop a Supplemental Initial Environmental Examination that meets USAID pesticide procedures (Pesticide Evaluation Report and Safer Use Action Plan or "PERSUAP") for the project.
[4] Any activities that involve harvesting trees or converting forests will require a full environmental assessment of the activity (i.e., Positive Determination).
[5] A positive response to gender questions require follow up only when there are other positive responses on questions 1 – 31, and an EMMP is developed.

3. ACTIVITY SELECTION

3.1 OVERVIEW OF THE SELECTION PROCESS

3.1.1 ACTIVITY IDENTIFICATION AND SHORTLISTING

For Task 1.2.1 activities involving the construction of water supply systems for schools and health facilities or septage management planning, Be Secure staff represented by the Water Services Team Leader or his/her designate and in coordination with the Provincial Coordinators and local stakeholders, will draft a list of potential projects, drawn from a list sourced from national, regional, or local government agencies and local stakeholders and discussions with officials and staff of the institutions to gauge their need for the systems and interest and ability to operate and maintain them. For water supply projects, the identification and shortlisting will use selected criteria to prioritize a number, initially 10 projects per focal site. The Provincial Coordinators will validate the findings and discuss in more detail with the heads and staff of the targeted establishments. The selected projects will be communicated officially to the City/Province that has jurisdiction over the establishments to get their concurrence. We will also seek the concurrence of USAID and discuss the projects with the local water utility and other local partners as appropriate, as well as stakeholder consultations with water users to ensure a participatory approach to the planning and implementation of the systems.

For septage management planning, Be Secure staff will discuss site suitability with stakeholders, using the ESF Checklist in Table 4 above as a guide. For example, sites in mangrove areas (Item 18 in the ESF) or other sensitive habitats and water sources will not be supported. Where possible, local community organizations or parent-teacher associations will be included in the consultations for both water supply and septage management planning activities.

For Task 2.2.3 activities, involving the rehabilitation of water supply systems associated with impacts of hydrological extreme events, Be Secure staff will first obtain Contracting Officer's Representative (COR) concurrence for involvement in disaster recovery, then conduct damage and needs assessment. The staff shall identify priority areas based on a set of selection criteria that include among others the degree of importance of the damaged facility and the number of customers affected. Water systems for schools and health facilities will be prioritized. The staff will then develop recovery action plans for COR's approval.

3.1.2 PROGRAMS OF WORK

After identifying the first 10 projects for each of the two sites in ARMM (Basilan and Maguindanao Provinces), the Be Secure Water Services Team will then develop a work program for each project. Be Secure staff will conduct site visits and develop designs and project cost calculations. The proposed projects will undergo evaluation on cost effectiveness of proposed improvement and rehabilitation measures to determine the final list of projects. Be Secure will then develop a request for proposals for the required design and construction services.

Following COR approval of a recovery action plan, Be Secure staff will work with the water service providers to assist them in preparing programs of work, and then issue a request for proposals for the required construction work.

3.1.3 MEMORANDUM OF UNDERSTANDING

Following discussions and agreement on the details of the activity, Be Secure will enter into an MOU with the project owner that specifies the responsibilities of each party, including how the new system will be supported by proper operation and maintenance and payment of monthly water fees if required. In the case of a school, the MOU will be signed by the school principal, health facilities will be represented by

the top official such as the president or executive director, and water service providers will be represented by the general manager or equivalent.

3.1.4 ENVIRONMENTAL COMPLIANCE

Pursuant to USAID's 22 CFR 216 environmental compliance requirements outlined in the IEE for the Be Secure Project, AECOM will prepare an ESR for each activity or activity cluster before construction begins. The ESR will include an activity description and an evaluation of environmental implications of the proposed infrastructure or rehabilitation project using screening checklist provided in the Environmental Review Form, and a site-specific EMMP. The ESR will be submitted to USAID for approval by the COR and MEO prior to implementation. Because these activities involve construction, the USAID engineer will also review the ESR. Be Secure staff will work with the local project owner (LGU, water service provider, school or health facility) to ensure that all local environmental clearance requirements, building permits, etc. are secured.

3.1.5 PROCUREMENT AND CONSTRUCTION

The Be Secure Operations Manager and Deputy Chief of Party, in coordination with the Be Secure Water Services Team Leader, will manage the procurement for the construction of the identified projects. The request for proposals will include approved plans, specifications, environmental requirements as outlined in the EMMP, and programs of work and will be sent to local contractors. It will also include requirements contained in the EMMP to mitigate environmental impacts and protect worker health and safety. The results of the procurement will be discussed with the project owner before the contracts are awarded. Once the contract is awarded, Be Secure staff will meet with the winning bidder to discuss the environmental compliance requirements and mitigation measures included in the EMMP. The Be Secure Provincial Coordinator, under the direction of the Water Services Team Leader, will monitor compliance through unannounced visits to the construction site. Any problems will be discussed with the contractor and resolved in accordance with contract provisions. Regular meetings will also be held with the project owner to identify and resolve any problems that arise. The COR and/or MEO will be involved as necessary for site inspections before, during or after construction.

3.1.6 COMPLETION AND ACCEPTANCE

A final site inspection will be done by the Be Secure Water Services Team Leader to ascertain compliance with the plans and environmental regulations. The project owner will sign off on the completed project.

3.1.7 CAPACITY DEVELOPMENT TRAINING

Be Secure will provide training in implementation of the EMMP to construction contractors and project owners. Be Secure will also conduct capacity development training for project owner staff to ensure sustainability and proper operation and maintenance of the newly built systems. Be Secure will also train people in the disaster recovery of water supply systems and measure the percentage of people who applied their knowledge two months after the training.

Where indicated in the EMMP, the construction contractor will be required to implement appropriate mitigation measures during construction, and provide monitoring to ensure that these measures are effective. The construction contractor will submit monitoring records to Be Secure on a weekly basis. To provide oversight, the Be Secure Team will review the monitoring forms and conduct independent monitoring review during site visits as needed.

3.2 ELIGIBILITY CRITERIA

Table 5 below lists the criteria used in the selection of water supply activities for implementation. These criteria take into account environmental sustainability.

Table 5. Criteria used in activity selection

Selection Criteria	Relative Importance
Availability of a sustainable water source[1]	15% of total score
Accessibility[2] of project site	10%
Incremental improvement in service	10%
Number of beneficiaries	10%
Cost effectiveness (total cost over number of beneficiaries)	10%
Security/peace and order	20%
Ease of working with stakeholders	10%
Ability to sustain operations and maintenance to pay for water service[3]	15%

[1] A sustainable water source in which water of acceptable quality is readily available at all times of the year without jeopardizing water supply for other uses. Water extraction or rehabilitation activities must not cause harm to sensitive ecosystems such as wetlands or areas surrounding natural springs, streams, rivers or other water bodies.

[2] Accessibility implies that the site will not require clearing of vegetation or the creation of a road or trail to reach the site.

[3]This criterion also takes into account the potential for the improvement of basic water supply facilities to attract increased human activity and migration in the area, and potential unplanned land use consequences which may not be sustainable.

3.3 EXCLUSION LIST OF ACTIVITIES

Rehabilitation or construction of water systems and water-related infrastructure that involves the degradation of forested areas and other sensitive ecosystems or threatens the habitat, activity or lives of endangered species are prohibited from selection. Preliminary damage assessments or discussions with stakeholders will screen for and avoid wetlands, estuaries, coral reefs, and species sensitive to rehabilitation or reconstruction activity. At the same time, the geohazard risk assessment done by the Mines and Geosciences Bureau of DENR will be used to identify high risk areas that will be avoided.

The following is a list of activities that cannot and will not be implemented with USAID funding under this project:

- Activities that are proposed close to or in protected areas, coastal lines, sensitive habitats, archaeological, historical and/or religious sites where caution and diligence should be exercised;
- Procurement or use of asbestos containing materials in piping, roofing, or other infrastructure works; and
- Procurement or use of polychlorinated biphenyls or other toxic/hazardous materials and pesticides prohibited by the U.S. Environmental Protection Agency and the Stockholm Convention on Persistent Organic Pollutants.

4. ENVIRONMENTAL REVIEW METHODOLOGY

This section describes the approach that will be taken for activities identified as having low, medium or high risk elements. Mitigation measures identified for these activities will be integrated as conditions in the subcontract agreements and shall be reflected in activity work plans, as appropriate.

4.1 LOW TO MEDIUM RISK ACTIVITIES

For low and medium risk activities, an ESR will be submitted for approval to the COR and MEO. The ESR will include the preparation of an EMMP that will guide the project in mitigating any potential environmental impacts of the proposed activities. The ESR must be approved prior to initiating implementation of any activities with the potential for environmental impacts.

4.2 HIGH RISK ACTIVITIES

In the event that an activity is determined to be high risk and therefore a positive determination, the required process, including an Environmental Assessment, would be followed as outlined in USAID's environmental regulation 22 CFR 216.

5. WATER QUALITY MONITORING PROCEDURES

Pursuant to the Be Secure IEE (ASIA-IEE-12-108, page 9) and in accordance with the PNSDW, "all water supply sub-projects will be required to undertake water quality testing prior to construction. Results of the water quality testing done by the WDs and/or ENRO will be included in the environmental checklist and the appropriate mitigation measures, if the results exceed the standards, must be identified." Water quality testing is specified in the illustrative EMMP for the Be Secure Project.

The PNSDW (2007) notes that the local health authority at the municipal or city level shall identify the list of parameters that will be examined to determine the potability of the supply of drinking water provided in the local area. Illustrative parameters that will likely be considered for testing in each location are provided in Table 6 below. The specific suite of water quality parameters to be tested and the frequency of sampling will be determined in coordination with the WD or LGU responsible for each site-specific activity. Be Secure understands that USAID requires testing for arsenic for all USAID-funded water supply projects, as there is currently no way to determine which locations may contain natural arsenic deposits (USAID 2013). At a minimum, arsenic and fecal coliform tests will be conducted.

In most cases, the WD or LGU will assume responsibility for water quality testing. In some cases where the water source is not managed by the WD or LGU, as with some schools, or in cases where the project owner is not testing for arsenic or fecal coliforms, Be Secure will assume financial responsibility for testing these minimum water quality parameters. Be Secure will also facilitate awareness raising on the importance of establishing proper protocols to enable the project owner to test for and monitor these parameters following United States Environmental Protection Agency (USEPA) standards (USEPA 2002, USG 2001).

Table 6. Water Quality Guidelines and Recommended Limits for Parameters with Health Significance (Source: WHO 2004 and PNSDW 2007)

Water Quality Parameter	WHO Drinking Water Guidelines (WHO 2004)	PNSDW (Dept. of Health 2007)
Total Coliforms	Not detectable in any 100 mL sample	1.1 mpm/100 mL
Arsenic	0.01 mg/L	0.05 mg/L
Benzene	0.01 mg/L	0.01 mg/L
Cadmium	0.01 mg/L	0.003 mg/L
Chloride		250 mg/L
Color (Apparent)		10 units
Copper	2 mg/L	1 mg/L
Fluoride	1.5 mg/L	1 mg/L
Iron		1 mg/L
Lead	0.01 mg/L	0.01 mg/L
Manganese		0.4 mg/L
Nitrate	50 mg/L	50 mg/L
Nitrite	0.2 mg/L	3 mg/L
pH		6.5 – 8.5
Sulfate		250 mg/L
Total Dissolved Solids (TDS)		500 mg/L
Turbidity		5 NTU

6. PROJECT WIDE EMMP

The illustrative EMMP for the Be Secure Project is provided in Tables 7-9 below:

- Table 7: Development or Rehabilitation of Water Supply Systems;
- Table 8: Septage Management Planning; and
- Table 9: Feasibility Studies and PPPs.

The EMMP tables are noted as "illustrative" because they serve as models for tailoring specific EMMPs for each activity, based on site-specific characteristics. In all cases, Be Secure will include the private contractor's responsibilities listed below in their contract and will train their staff on their responsibilities. Be Secure staff and the COR will conduct unannounced monitoring visits. Be Secure will also include the project owner's responsibilities listed below in the MOU that will be entered into, and will meet with their staff to explain and discuss the contents of the MOU and EMMP.

Table 7. Illustrative Environmental Mitigation and Monitoring Plan for the Development or Rehabilitation of Water Supply Systems

Note: Mitigation measures apply to specified project phases: planning and design (P&D), construction or rehabilitation (C), or O&M. Costs are not included since this is an illustrative EMMP.

Type of Activity: Water Supply Systems				**Activity Size:** To be determined				
Activity Name: Development or Rehabilitation of Water Supply Systems				**Adjacent Land Use to the Activity Site:** To be determined				
Implementing Organization: AECOM				**Person Responsible on Environmental Compliance:** Ariel Lapus				
Location Name: To be determined				**Monitoring Period:**				
# from ESF	**Sub-activity or component**	**Description of Risk or Potential Impact**	**Description of Mitigation Measure(s)**	**Responsible Party(ies)**	**Monitoring Methods**			**Estimated Cost (in US $)**
					Mitigation Indicator[1]	**Method**	**Frequency**	
1, 29, 30	Construction or repair of building and/or water supply structures	Non-compliance with government regulations on construction and design standards	Achieve construction and design compliance with government regulations (P&D)	Project owner and private contractor with oversight by Be Secure	Construction permit acquired and required inspections passed/certified	Document date of permit acquisition and inspections, and file permit in Be Secure archives	Permit acquired prior to construction and other inspections conducted as required	
			Achieve construction and design compliance with government regulations (P&D)	Be Secure	Construction grade drawings obtained and reviewed prior to commencement of construction	Document inspection and approval and file in Be Secure archives	Prior to construction	
1, 17, 29	Construction or repair of building and/or water supply structures	Non-compliance with government	Comply with environmental regulations (P&D)	Project owner with assistance from Be Secure	Environmental and water permits obtained, as	Document date of permit acquisition, and file permit in Be	Permit acquired prior to construction	

[1] Mitigation indicators in the EMMP table are not the same as project indicators used to measure overall project results. Mitigation indicators presented in this table are designed only to gauge the effectiveness of the identified mitigation measure.

Type of Activity: Water Supply Systems				**Activity Size:** To be determined				
Activity Name: Development or Rehabilitation of Water Supply Systems				**Adjacent Land Use to the Activity Site:** To be determined				
Implementing Organization: AECOM				**Person Responsible on Environmental Compliance:** Ariel Lapus				
Location Name: To be determined				**Monitoring Period:**				
# from ESF	**Sub-activity or component**	**Description of Risk or Potential Impact**	**Description of Mitigation Measure(s)**	**Responsible Party(ies)**	**Monitoring Methods**			**Estimated Cost (in US $)**
					Mitigation Indicator[1]	**Method**	**Frequency**	
		environmental regulations on and environmental damage			required	Secure archives		
1, 13	Construction or repair of building and/or water supply structures	Erosion, sedimentation, and damage to local vegetation	Survey for and avoid wetlands, estuaries, coral reefs, and other sensitive sites taking into consideration existing geohazard maps of in the project area (P&D)	Project owner and Be Secure	Construction drawings showing survey of sites and routes obtained and reviewed prior to commencement of construction	Document inspection and approval, site inspection, and file in Be Secure archives	Prior to construction	
			Minimize degradation to existing vegetation by proper cleanup and daily removal of spoils and refuse. Restrict vehicles and heavy machinery to roads (C)	Private contractor, with oversight provided by Be Secure	Daily inspections Number of areas where vegetation has been damaged	Inspect construction site and document areas in need of improvement	Daily	
1, 26	Construction or repair of building and/or water supply structures	Excessive noise and emissions from heavy equipment and truck activity	Trucks and motorized equipment will not be permitted to idle their engines for more than 10 minutes at the project location.	Private contractor, with oversight provided by Be Secure	Number of complaints from local residents. Existence of construction	Document time and schedule of construction. Construction manager to supervise truck	Prior to construction Daily	

Type of Activity: Water Supply Systems				**Activity Size:** To be determined				
Activity Name: Development or Rehabilitation of Water Supply Systems				**Adjacent Land Use to the Activity Site:** To be determined				
Implementing Organization: AECOM				**Person Responsible on Environmental Compliance:** Ariel Lapus				
Location Name: To be determined				**Monitoring Period:**				
# from ESF	**Sub-activity or component**	**Description of Risk or Potential Impact**	**Description of Mitigation Measure(s)**	**Responsible Party(ies)**	**Monitoring Methods**			**Estimated Cost (in US $)**
					Mitigation Indicator[1]	**Method**	**Frequency**	
			Set limits of time of construction operations to occur each day. (C)		time schedule.	and heavy machinery activity. Document complaints and issues raised from community members.	As needed	
1, 25	Worker health and safety during construction	Injury to workers from improper handling of heavy equipment and materials (such as concrete, pipes are heavy machinery) during construction or installation of plumbing	Train and monitor workers in the use of personal protective equipment (PPE) and other safe practices. Provide PPE to all workers Ensure workers follow proper safety requirements (C)	Private contractor, with oversight provided by project owner and Be Secure	Daily safety meetings and oversight noted in log book Designated safety officer on site	Document delivery of safety training/meetings and PPE for each worker. Document occurrence of accidents Conduct safety inspections	Prior to construction and daily	
1, 13	Soakways and drains	Erosion, altered natural flow of rainwater runoff, and	Use rip-rap, gravel or concrete as needed to prevent erosion of drainage structures (C)	Private contractor, with oversight provided by project owner	Provision of adequate erosion control measures	Photo, monitoring log	Weekly	

Type of Activity: Water Supply Systems				**Activity Size:** To be determined				
Activity Name: Development or Rehabilitation of Water Supply Systems				**Adjacent Land Use to the Activity Site:** To be determined				
Implementing Organization: AECOM				**Person Responsible on Environmental Compliance:** Ariel Lapus				
Location Name: To be determined				**Monitoring Period:**				
# from ESF	**Sub-activity or component**	**Description of Risk or Potential Impact**	**Description of Mitigation Measure(s)**	**Responsible Party(ies)**	**Monitoring Methods**			**Estimated Cost (in US $)**
					Mitigation Indicator[1]	**Method**	**Frequency**	
		stagnant water.		and Be Secure				
		Altered natural flow of rainwater runoff Pools of stagnant water created that harbor vector-borne disease	Enable excess water and rainwater to drain to avoid accumulation (C)	Private contractor, with oversight provided by project owner and Be Secure	No erosion noted during site monitoring	Photos, monitoring log	Weekly	
1, 20, 23	Rehabilitation and new construction of water sources, distribution systems, and water treatment facilities	Water contaminated with nutrients, pollutants, bacteria from flooding or tampering that threatens human health	Conduct water quality testing for arsenic, total coliforms at a minimum, and other parameters based on water resource characteristics and human activities in each area, and provide appropriate treatment accordingly (C)	WD or LGU with training and oversight from Be Secure. For schools and health facilities, Be Secure will be responsible for conducting the testing	Arsenic < 0.01 mg/L; Total coliforms not detectable within any 100 mL sample; other parameters within acceptable limits	Coordinate testing with WDs and consult PNSDW on acceptable limits and methodology	Prior to construction	
			Monitor water quality and provide regular monthly or quarterly testing using WHO and/or PNSDW surveillance methods (O&M)				WHO or PNSDW-recommended frequency, depending on parameter	

Type of Activity: Water Supply Systems				**Activity Size:** To be determined				
Activity Name: Development or Rehabilitation of Water Supply Systems				**Adjacent Land Use to the Activity Site:** To be determined				
Implementing Organization: AECOM				**Person Responsible on Environmental Compliance:** Ariel Lapus				
Location Name: To be determined				**Monitoring Period:**				
# from ESF	**Sub-activity or component**	**Description of Risk or Potential Impact**	**Description of Mitigation Measure(s)**	**Responsible Party(ies)**	**Monitoring Methods**			**Estimated Cost (in US $)**
					Mitigation Indicator[1]	**Method**	**Frequency**	
		Risk of bacterial or chemical contamination from handling or unauthorized interference with unprotected wellhead or pump, or infiltration of surface runoff into well during construction or rehabilitation	Provide site security and install wellhead protection during construction(C)	Private contractor and Be Secure	Inspections on site security and integrity of wellhead protection documented	Photos, monitoring log	Daily	
		Pools of stagnant water created that harbor vector-borne disease	Enable excess water and rainwater to drain to avoid accumulation (C)	Private contractor, with oversight provided by project owner and Be Secure	Provision of adequate drainage or soakaway	Photos, monitoring log	Weekly	
			Monitor and repair for leaks, broken pipes, and faulty valves (O&M)	Project owner with oversight provided by Be Secure	System inspections conducted and noted	Note results of inspection in monitoring log	Monthly	

Type of Activity: Water Supply Systems				**Activity Size:** To be determined				
Activity Name: Development or Rehabilitation of Water Supply Systems				**Adjacent Land Use to the Activity Site:** To be determined				
Implementing Organization: AECOM				**Person Responsible on Environmental Compliance:** Ariel Lapus				
Location Name: To be determined				**Monitoring Period:**				
# from ESF	**Sub-activity or component**	**Description of Risk or Potential Impact**	**Description of Mitigation Measure(s)**	**Responsible Party(ies)**	**Monitoring Methods**			**Estimated Cost (in US $)**
					Mitigation Indicator[1]	**Method**	**Frequency**	
1, 17, 20, 23	Well drilling	Changes in groundwater flow, depletion of aquifer, create saltwater intrusions, provide contaminated water, create pools of stagnant water, cause land subsidence, and spillage of oil, bentonite and other materials	Follow best practices for siting wells outlined in USAID Sector Environmental Guidelines for Water Supply and Sanitation (page 14). Maintain water extraction rate within safe yield of the well to avoid interference with other wells and perform water quality testing to monitor saltwater intrusion and contamination (O&M). Prohibit animal grazing or watering uphill from wellhead (P&D, O&M); monitor and repair leaks (O&M); put in place a system for regulating use (P&D); put in place a proper O&M system (O&M); monitor water levels (O&M) (P&D)	Private contractor, with oversight provided by project owner and Be Secure	Reports/complaints on effect on discharges, static and pumping water levels of nearby wells, and detection of saltwater	Record discharges and water levels of the well, and perform water quality tests	Monthly for flow and water level measurements Yearly for water quality	
24	General provision of water supply	Water system failure, deteriorated	Develop and implement an operations and maintenance plan,	Be Secure	Presence and implementation of O&M plan	Adopt and implement plan	Verify presence of O&M plan	

Type of Activity: Water Supply Systems				**Activity Size:** To be determined				
Activity Name: Development or Rehabilitation of Water Supply Systems				**Adjacent Land Use to the Activity Site:** To be determined				
Implementing Organization: AECOM				**Person Responsible on Environmental Compliance:** Ariel Lapus				
Location Name: To be determined				**Monitoring Period:**				
# from ESF	**Sub-activity or component**	**Description of Risk or Potential Impact**	**Description of Mitigation Measure(s)**	**Responsible Party(ies)**	**Monitoring Methods**			**Estimated Cost (in US $)**
					Mitigation Indicator[1]	**Method**	**Frequency**	
		water quality and/or decrease in reliability of service provision due to lack of proper maintenance	including the identification of sustainable funding (O&M)				prior to operation and monitor implementation of plan quarterly for the first year and annually thereafter for the duration of the Be Secure Project	
			Train workers in proper operation and maintenance procedures (O&M)	Be Secure	Workers trained in O&M	Document delivery of training	Prior to operation	
1	Standpipes	Creation of pools of stagnant water, especially in areas of high water table, clay soils, or high population density	Ensure that spilled water and rainwater drain to a soakway or equivalent structure and do not accumulate and create standing water (C)	Private contractor, with oversight provided by Be Secure	Inspections	Photos, monitoring log	At onset of construction and then weekly	
			Monitor and repair leaks from cracked containment structures, broken pipes, faulty valves and similar structures (O&M)	Project owner	Presence and implementation of O&M plan	Adopt and implement plan	Outlined in O&M plan	

Type of Activity: Water Supply Systems				**Activity Size:** To be determined				
Activity Name: Development or Rehabilitation of Water Supply Systems				**Adjacent Land Use to the Activity Site:** To be determined				
Implementing Organization: AECOM				**Person Responsible on Environmental Compliance:** Ariel Lapus				
Location Name: To be determined				**Monitoring Period:**				
# from ESF	**Sub-activity or component**	**Description of Risk or Potential Impact**	**Description of Mitigation Measure(s)**	**Responsible Party(ies)**	**Monitoring Methods**			**Estimated Cost (in US $)**
					Mitigation Indicator[1]	**Method**	**Frequency**	
1	Hand-dug wells, seasonal ponds, improved springs, ground-level catchment and similar structures	Contaminate water with human pathogens	Include focus on proper use and maintenance of the improvement as part of behavior change and education program (P&D)	Be Secure and project owner	Total coliforms not detectable within any 100 ml sample	Coordinate testing with WDs and consult PNSDW on methodology	Education program prior to commissioning Laboratory testing following WHO or PNSDW-recommended frequency	
			Construct spigot or similar system that prevents people from touching impounded water with their hands or mouths (P&D) (C)	Private contractor and oversight provided by Be Secure				
		Contaminate water with animal manure; Create pools of stagnant water; Exhaust water supply (not applicable to improved springs or hand-dug wells)	Use fencing or equivalent that will keep livestock from grazing uphill or uphill of the water supply improvement (P&D) (C); Do not allow animals to drink directly from the water source (O&M); Monitor drains and soakways and keep them clear of debris (see entry on soakways and drains above for more		Total coliforms not detectable within any 100 mL sample	Coordinate testing with WDs and consult PNSDW on methodology	Education program prior to commissioning Laboratory testing following WHO or PNSDW-recommended frequency	

Type of Activity: Water Supply Systems				**Activity Size:** To be determined				
Activity Name: Development or Rehabilitation of Water Supply Systems				**Adjacent Land Use to the Activity Site:** To be determined				
Implementing Organization: AECOM				**Person Responsible on Environmental Compliance:** Ariel Lapus				
Location Name: To be determined				**Monitoring Period:**				
# from ESF	**Sub-activity or component**	**Description of Risk or Potential Impact**	**Description of Mitigation Measure(s)**	**Responsible Party(ies)**	**Monitoring Methods**			**Estimated Cost (in US $)**
					Mitigation Indicator[1]	**Method**	**Frequency**	
			detail) (O&M); Monitor and repair leaks from cracked containment structures, broken pipes, faulty valves and similar structures (O&M); Put in place a system for regulating use, such as a local warden or appropriate pricing (P&D); Give the community training in operating the improvement (P&D) (O&M); Monitor water levels in wells or impoundment structures to detect overdrawing (O&M)					

Table 8. Illustrative Environmental Mitigation and Monitoring Plan for Septage Management Planning Activities

Note: Mitigation measures apply to specified project phases: planning and design (P&D), construction or rehabilitation (C), or operation and maintenance (O&M). Costs are not included since this is an illustrative EMMP.

Type of Activity: Septage Management Planning				**Activity Size:** To be determined				
Activity Name: Facilitate planning on septage management facilities				**Adjacent Land Use to the Activity Site:** To be determined				
Implementing Organization: AECOM				**Person Responsible for Environmental Compliance:** Jay Tecson				
Location Name: To be determined				**Monitoring Period:**				
# from ESF	**Sub-activity or component**	**Description of Risk or Potential Impact**	**Description of Mitigation Measure(s)**	**Responsible Party(ies)**	**Monitoring Methods**			**Estimated Cost (in US $)**
					Mitigation Indicator[2]	**Method**	**Frequency**	
23, 28, 29	Provide support for planning of construction or improvement of septage treatment facilities	Non-compliance with government regulations on construction, design standards, zoning, and environment (P&D)	Communicate the importance of obtaining necessary permits, including: Zoning Clearance (Planning & Development Office); Construction (Engineers Office or Office of Building Officials); Environmental Sanitation Clearance (DOH); Environmental Compliance Clearance from DENR (P&D)	Project proponent with guidance from Be Secure Project proponent	Key points incorporated into training curriculums, dialogues, and workshops; Requirement to assure that permit is obtained is incorporated into subcontract agreement for the detailed design, construction, and/or operation and maintenance of septage treatment facility	Training curriculum, meeting/worksh op minutes Review subcontract agreement for and ensure that the requirement to obtain necessary permits are included	As needed As needed, prior to award of subcontract	

[2] Mitigation indicators in the EMMP table are not the same as project indicators used to measure overall project results. Mitigation indicators presented in this table are designed only to gauge the effectiveness of the identified mitigation measure.

Type of Activity: Septage Management Planning				**Activity Size:** To be determined				
Activity Name: Facilitate planning on septage management facilities				**Adjacent Land Use to the Activity Site:** To be determined				
Implementing Organization: AECOM				**Person Responsible for Environmental Compliance:** Jay Tecson				
Location Name: To be determined				**Monitoring Period:**				
# from ESF	**Sub-activity or component**	**Description of Risk or Potential Impact**	**Description of Mitigation Measure(s)**	**Responsible Party(ies)**	**Monitoring Methods**			**Estimated Cost (in US $)**
					Mitigation Indicator[2]	**Method**	**Frequency**	
			Provide technical assistance (TA) to support compliance with standard design specifications (P&D)	Be Secure	TA provided prior to commencement of construction	Document type of TA provided	As needed, prior to construction	
23, 28, 29, 33	Site selection	Inappropriate site selection that does not take environmental risks into consideration (P&D)	Work with government officials (DENR, DOH, DPWH) in the early planning phase to consider environmental risks and benefits of potential sites, including: • Alternative site comparison; • Environmentally critical areas as identified by Philippine EIS process; • Local zoning designations; • Risks to wetlands, mangroves, forests; • Risk assessment in areas vulnerable to flooding and storm surge	Project proponent and Be Secure Sanitation Team Leader and Project Coordinators	Best practices shared in meetings, workshops, and incorporated into any training materials or guides that may be produced	Document in meeting minutes, workshops, training	As needed, prior to construction	
33, 34	Planning septage	Septage facility not accepted	Support or conduct public stakeholders	Project proponent and Be	Social Acceptability	Document date of acquisition of	Prior to construction	

Type of Activity: Septage Management Planning				**Activity Size:** To be determined				
Activity Name: Facilitate planning on septage management facilities				**Adjacent Land Use to the Activity Site:** To be determined				
Implementing Organization: AECOM				**Person Responsible for Environmental Compliance:** Jay Tecson				
Location Name: To be determined				**Monitoring Period:**				
# from ESF	**Sub-activity or component**	**Description of Risk or Potential Impact**	**Description of Mitigation Measure(s)**	**Responsible Party(ies)**	**Monitoring Methods**			**Estimated Cost (in US $)**
					Mitigation Indicator[2]	**Method**	**Frequency**	
	treatment facility	by community	consultations to enable Social Acceptability Resolution (City, Municipal or Baranguay Council)	Secure Sanitation Team Leader and Project Coordinators	Resolution obtained	resolution		
28, 29	Ordinance development	City or municipal council is not aware of environmental implications	Communicate to city or municipal council relevant environmental considerations for ordinance and/or resolution	Be Secure	Best practices shared in minutes, workshops, training	Document sharing of best practices in meeting minutes, workshops, training	As needed	
24, 28, 29	Operation of septage treatment facility	Non-compliance with government regulations (O&M)	Incorporate in training that necessary permits should be obtained for operation, including: Discharge Permit (DENR); Business Permit (Office of Mayor)	Project proponent with assistance from Be Secure	Permits obtained, as required	Document date of permit acquisition, and file permit in Be Secure archives	Permit acquired prior to construction	
23, 24	Worker health and safety during operation of facility	Contamination and/or injury to workers from improper handling of septage waste (O&M)	Incorporate in training safe septage handling practices for the safety of the workers	Be Secure	Best practices shared in meeting minutes, workshops, training	Document in meeting minutes, workshops, training	As needed	
23, 24	Environmental degradation during operation	Contamination of soil and water resources with	Incorporate in training environmental guidelines	Be Secure	Best practices shared in meeting minutes, workshops,	Document in meeting minutes, workshops,	As needed	

Type of Activity: Septage Management Planning				**Activity Size:** To be determined				
Activity Name: Facilitate planning on septage management facilities				**Adjacent Land Use to the Activity Site:** To be determined				
Implementing Organization: AECOM				**Person Responsible for Environmental Compliance:** Jay Tecson				
Location Name: To be determined				**Monitoring Period:**				
# from ESF	**Sub-activity or component**	**Description of Risk or Potential Impact**	**Description of Mitigation Measure(s)**	**Responsible Party(ies)**	**Monitoring Methods**			**Estimated Cost (in US $)**
					Mitigation Indicator[2]	**Method**	**Frequency**	
	of facility	human pathogens and other pollutants in septage waste (O&M)			training	training		

Table 9. Illustrative Environmental Mitigation and Monitoring Plan for Feasibility Studies and PPPs

Note: Mitigation measures apply to specified project phases: planning and design (P&D), construction or rehabilitation (C), or operation and maintenance (O&M). Costs are not included since this is an illustrative EMMP.

Type of Activity: Feasibility Studies				**Activity Size:** To be determined				
Activity Name: Feasibility Studies				**Adjacent Land Use to the Activity Site:** To be determined				
Implementing Organization: AECOM				**Person Responsible for Environmental Compliance:** Lisa Lumbao				
Location Name: To be determined				**Monitoring Period:**				
# from ESF[3]	**Sub-activity or component**	**Description of Risk or Potential Impact**	**Description of Mitigation Measure(s)**	**Responsible Party(ies)**	**Monitoring Methods**			**Estimated Cost (in US $)**
					Mitigation Indicator[4]	**Method**	**Frequency**	
	Activity implementation or site selection	Inappropriate site selection or activity implementation that does not take environmental risks into consideration (P&D)	Work with government officials (DENR, DOH, DPWH) and/or project owner to consider environmental risks and benefits in feasibility studies or recommendations, including: • Alternative site comparison; • Environmentally critical areas as identified by Philippine EIS process; • Local zoning designations; • Risks to wetlands,	Project proponent and Be Secure Sanitation Team Leader and Project Coordinators	Best practices shared in meeting minutes, workshops, training, recommendations in feasibility studies	Document in meeting minutes, workshops, training, recommendation in feasibility studies	As needed, during feasibility study	

[3] Item or issue # from ESF is not included since this EMMP table is illustrative and environmental risks will depend on the nature of the project to be addressed by the feasibility study.

[4] Mitigation indicators in the EMMP table are not the same as project indicators used to measure overall project results. Mitigation indicators presented in this table are designed only to gauge the effectiveness of the identified mitigation measure.

Type of Activity: Feasibility Studies				**Activity Size:** To be determined				
Activity Name: Feasibility Studies				**Adjacent Land Use to the Activity Site:** To be determined				
Implementing Organization: AECOM				**Person Responsible for Environmental Compliance:** Lisa Lumbao				
Location Name: To be determined				**Monitoring Period:**				
# from ESF[3]	**Sub-activity or component**	**Description of Risk or Potential Impact**	**Description of Mitigation Measure(s)**	**Responsible Party(ies)**	**Monitoring Methods**			**Estimated Cost (in US $)**
					Mitigation Indicator[4]	**Method**	**Frequency**	
			mangroves, forests; • Risk assessment in areas vulnerable to flooding and storm surge					

7. LIST OF EM CONTRIBUTORS

This EM report was prepared by a multi-disciplinary Environmental Review Team consisting of the following individuals:

- Meg Findley, Ph.D., AECOM Environment & Water Resources Specialist;
- Bebet Gozun, Climate Resiliency Team Leader;
- Ariel Lapus, Water Services Team Leader;
- Jay Tecson, Sanitation Team Leader;
- Lisa Kircher Lumbao, Deputy Chief of Party; and
- Mona Grieser, Chief of Party.

8. REFERENCES

Philippine National Standards for Drinking Water (PNSDW). 2007. Government of Philippines, Department of Health.

World Health Organization (WHO). 2004. Guidelines for Drinking Water Quality, 3rd Edition.

United States Agency for International Development (USAID). 2013. Sector Environmental Guidelines for Water Supply and Sanitation, March 2013.

USAID. 2012. Initial Environmental Examination for the Water Security for Economic Growth and Stability Project (Water Secure Project), ASIA-IEE-12-108. USAID/Philippines, Manila, April 30, 2012.

United States Environmental Protection Agency (USEPA). 2002. Complying with the Revised Drinking Water Standard for Arsenic: Small Entity Compliance Guide, EPA 816-R-01-008A, One of the Simple Tools for Effective Performance (STEP), Office of Ground Water and Drinking Water (4606M), and August 2002.

United States Government (USG). 2001. Arsenic and Clarifications to Compliance on New Source Contaminants Monitoring Final Rule, Federal Register (66 FR 6976), January 22, 2001.

USG. U.S. Foreign Assistance Act, Environmental Procedures, 22 CFR 216. www.usaidgems.org/Documents/FAA&Regs/22CFR216.doc.

9. ANNEXES

9.1 ESR REPORT TEMPLATE

The ESR template includes the ESF and EMMP for site-specific activities.

{Indicate Title of Activity[5]}

ENVIRONMENTAL SCREENING REVIEW[6]

I. ENVIRONMENTAL DOCUMENTATION FORM[7]

Summary Data, Certification, and USAID Clearance

Activity	
Activity Location:	
Activity Implementation Partner	
Activity Duration	
Activity Description	
Activity Category, Recommended Determination and Documentation	

Certification: I, the undersigned, certify that:

1. The information in this form is correct and complete

THE FOLLOWING ACTIONS HAVE BEEN TAKEN TO ASSURE THAT THE ACTIVITY COMPLIES WITH ENVIRONMENTAL REQUIREMENTS ESTABLISHED UNDER THE CODE OF FEDERAL REGULATION 22 CFR 216.

[5] *It is a component of a project that contributes to a project purpose. Activity is an award using a specific implementing mechanism or a component of a project.*

[6] *It is a document that is prepared by the Implementing Partner and cleared by the A/COR and MEO. The report should be completed and approved prior to the start of the activity implementation wherein it comprised of an (1) Environmental Documentation Form; (2) Activity Background; (3) Activity Description; (4) Environmental Baseline Information; (5) ESF and the (6) EMMP.*

[7] *Signature page and cover sheet of the ESR*

- ☐ Those responsible for implementing this activity have received training and or documents describing essential design elements and best practices for activities of this nature.

- ☐ These design elements and best practice will follow in implementing this activity, unless USAID specifically requests a change.

- ☐ Any specific mitigation and monitoring measures described in the environmental review will be implemented in their entirety.

- ☐ Complete work in accordance to all technical specification, management processes of natural resources and environment as stated in all relevant procedures for Philippine Building and construction implementation processes. Regulations and Acts include but not limited to Philippine National Standards, Building Code, Fire Code, Water and Sanitation Act and relevant manufactures' manual. The governing technical specification shall be the latest editions.

- ☐ Compliance with the conditions will be regularly confirmed and documented by on-site inspections during activity implementation and its completion.

Approved By:

(Mona Grieser, Be Secure Chief of Party) (Date)

Prepared By:

Dr. Meg Findley, Be Secure Environmental Specialist, January 30, 2015

BELOW THIS LINE FOR USAID USE ONLY

USAID Clearance

USAID COR ☐ Approved ☐ Rejected	(Print Name)	(Signature)	(Date)
USAID MEO ☐ Approved ☐ Rejected	(Print Name)	(Signature)	(Date)

USAID comments: (if documentation is rejected, comments must be provided to applicant)

II. ACTIVITY BACKGROUND

Background	
Rationale	
Objectives	
Expected Results	

III. ACTIVITY DESCRIPTION[8]

IV. ENVIRONMENTAL BASELINE INFORMATION

The table below presents the environmental baseline information that describes the existing condition of the general location of the activity site prior to the activity's implementation.

Site Characteristics	Environmental Parameters	Description
Geographic Location	Latitude Longitude	
Local Topography	Terrain/Slope Elevation	
Local Geology	Soil Type Minerals	
Local Hydrology	River System	
Local Climate	Climate Type Annual Rainfall	
Natural Physical Hazards	Earthquakes/Volcanic Landslide/Erosion/ Flooding	
Vegetation Cover	Type Coverage area	
Protected Areas	Forest	
Land Area and Existing Land Use	Area Land Classification and Use	
Population (Latest Census)	Total Population Total Households	

[8] *Describes different activity development phases, e.g., Planning and Design Phase; Pre-Implementation Phase; Implementation Phase; Post-implementation Phase/turn-over; Operation and Maintenance; Activity Schedule and Funding*

Site Characteristics	Environmental Parameters	Description
	Ethic Group (%)	
Local Economy	Total Labor Force Main Income Source	
Basic Services and Infrastructure	Water Supply Sanitary Toilets Electricity Transportation Communication Education Social Welfare Police/Fire Protection	

Other Sectoral Assessment, e.g., Hydrology Assessment, Certification of Non-Coverage, if applicable

V. ENVIRONMENTAL SCREENING FORM[9]

Name of Activity: Type of Activity: Implementer: Date:		Column A	Column B	Column C			Column D	
		Yes	No	If answer to Column A is "yes", what is the risk?			Duration of Impact	
				Low	Medium	High	Short-term	Long-term
	IMPACT ON NATURAL RESOURCES & COMMUNITIES							
1	Will the activity involve construction[10] of any type of structure (building, check dam, walls, water supply or sanitation systems, etc.)?							
2	Will the activity involve the construction[11] or repair of roads or trails?							
3	Will the activity involve the use, plans to use, or training in the use of any hazardous chemical compounds such as pesticides[12] (including neem), herbicides, paint, varnish, lead-based products, asbestos, etc.?							
4	Will the activity involve the construction of repair of irrigation systems?							
5	Will the activity involve the construction or repair of fish ponds?							
6	Will the activity involve the disposal of used engine oil?							
7	Will the activity involve implementation of timber management[13] or extraction of forest products?							

[9] *A checklist which guides the preparer to formulate appropriate measures to be elaborated in the EMMP*

[10] *Construction activities need to be reviewed for scale, planned use, building code needs and maintenance. Some small-scale construction activities, such as building an entrance sign to a park, may require simple mitigations whereas larger buildings will require more extensive review and monitoring.*

[11] *New construction of roads and trails will require a full environmental assessment of the planned construction, i.e., a Positive Determination.*

[12] *The planned involvement of pesticides will trigger the need to develop a Supplemental Initial Environmental Examination that meets* USAID *pesticide procedures (Pesticide Evaluation Report and Safer Use Action Plan or "PERSUAP") for the activity.*

[13] *Any activities the involve harvesting trees or converting forests will require a full environmental assessment of the activity, i.e., Positive Determination.*

Name of Activity: Type of Activity: Implementer: Date:		Column A	Column B	Column C			Column D	
		Yes	No	If answer to Column A is "yes", what is the risk?			Duration of Impact	
				Low	Medium	High	Short-term	Long-term
8	Are there any potentially sensitive terrestrial or aquatic areas near the activity site, including protected areas?							
9	Will the activity impact upon wildlife, forest resources, or wetlands?							
10	Will the activity proposed generate airborne gases, liquids, or solids (i.e. discharge pollutants)							
11	Will the waste generated during or after the activity affect neighboring surface or ground water?							
12	Will the activity result in clearing of forest cover?							
13	Will the activity contribute to erosion?							
14	Is the activity incompatible with existing land use in the vicinity?							
15	Will the activity contribute to displace housing?							
16	Will the activity affect unique geologic or physical features?							
17	Will the activity contribute to change in the amount of surface water in any body?							
18	Will the activity affect mangroves and coral reefs?							
19	Will the activity expose people or property to flooding?							
20	Will the activity contribute substantial reduction in the amount of ground water otherwise available for public water supplies?							
21	Will the activity create objectionable odors?							
22	Will the activity violate air standards?							
	ENVIRONMENT & HEALTH							

Name of Activity: Type of Activity: Implementer: Date:		Column A	Column B	Column C			Column D	
		Yes	No	If answer to Column A is "yes", what is the risk?			Duration of Impact	
				Low	Medium	High	Short-term	Long-term
23	Will the activity create conditions encouraging an increase of waterborne diseases or populations of disease carrying vectors or other health or safety hazards?							
24	For road rehabilitation as well as water and sanitation grants, has a maintenance plan been submitted?							
25	Will the activity generate hazards or barriers for workers, pedestrians, motorists or persons with disabilities?							
26	Will the activity increase existing noise levels?							
27	Will the activity involve the disposal of syringes, gauzes, gloves and other biohazard medical waste?							
	LOCAL PLANNING PERMITS							
28	Does the activity (e.g., infrastructure improvements) require local planning or environmental permits?			N/A				
29	Does the activity meet the national building code (e.g., infrastructure improvements)?			N/A				
	GENDER[14]							
30	Do men and women benefit disproportionately or are involved unequally in the activity?							
31	Are there factors that prevent women's participation in the activity?							
	OTHERS							
32	Will the activity involve the use of any non-native species?							
33	Are environmental considerations critical in early planning, design and stakeholder consultation phases of the activity?							

[14] *A positive response to gender questions require follow up only when there are other positive responses on questions 1 – 30, and an EMMP is developed.*

Name of Activity: Type of Activity: Implementer: Date:		Column A	Column B	Column C			Column D	
		Yes	No	If answer to Column A is "yes", what is the risk?			Duration of Impact	
				Low	Medium	High	Short-term	Long-term
34	Is community acceptance critical to the success of the activity?							
35	{Indicate other possible impacts}							

RECOMMENDED ACTION *(Check Appropriate Action)*:		*(Check)*
(a)	The activity has no potential for substantial adverse environmental effects. No further environmental review is required (Categorical Exclusion). No EMMP required.	
(b)	The activity has potential for minimal to medium adverse environmental effects, but mitigated environmental effects. Measures to mitigate environmental effects will be incorporated (Negative Determination with Conditions). EMMP Required.	
(c)	The activity has potentially substantial or significant adverse environmental effects, but requires more analysis to form a conclusion. An Environmental Assessment will be prepared (Positive Determination). No EMMP required.	
(d)	The activity has potentially substantial adverse environmental effects, and revisions to the activity design or location or the development of new alternatives is required (Deferral).	
(e)	The activity has substantial environmental effects that cannot be adequately mitigated. Mitigation is insufficient to eliminate these effects and alternatives are not feasible. The activity is not recommended for funding.	

VI. ENVIRONMENTAL MITIGATION AND MONITORING PLAN[15]

{Provide a comprehensive EMMP analysis. Discuss in detail the EMMP Table that can be seen on the following page.}

[15] *Consists of the set of measures to be taken during implementation and operation of the Activity to eliminate, offset, or reduce adverse environmental impacts. Also included in the plan are actions needed to implement them, including monitoring. The EMMP consists of a write-up description and analysis and a summary in table format.*

9.2 EMMP TEMPLATE

Please see the EMMP summary table on the next page.

Environmental Mitigation and Monitoring Plan[16]

(Summary Table)

Type of Activity *(Sectoral)*:	**Activity Size *(Scale)*:**
Activity Name:	**Adjacent Land Use to the Activity Site:**
Activity Implementer:	**Person Responsible on Environmental Compliance *(Name and Designation)*:**
Location Name:	**Monitoring Period:**

# from ESF	Sub-activity or component	Description of Impact	Description of Mitigation Measure(s)	Responsible Party(ies)	Monitoring Methods			Estimated Cost (in US $)
					Mitigation Indicator[17]	Method	Frequency	

[16] *Instructions: Using the numbers from the ESF that had a "yes", fill in the corresponding sections of the EMMP table. You may need more than one (1) mitigation measure for each identified impact.*

[17] *Please note that mitigation indicators in the EMMP table are not the same as project indicators used to measure overall project results. Mitigation indicators presented in this table are designed only to gauge the effectiveness of the identified mitigation measure.*

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