Annexes

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ANNEX 1

Initial Environmental Examination

Initial Environmental Examination

May 2020

Philippines: Water District Development Sector Project

NORZAGARAY WATER DISTRICT

Prepared by Norzagaray Water District for the Local Water Utilities Administration and the Asian Development Bank.

CURRENCY EQUIVALENTS
(as of 20 March 2020)

Currency unit	–	peso (Php)
Php1.00	=	$0.01955
$1.00	=	Php 51.15

ABBREVIATIONS

ADB	–	Asian Development Bank
AO	–	Administrative Order
APs	–	Affected Persons
AWWA	–	American Water Works Association
CADT	–	Certificate of Ancestral Domain Title
CCC	–	Conditional Certificate of Conformance
CDO	–	Cease and Desist Order
CEMP	–	Contractor's Environmental Monitoring Plan
CNC	–	Certificate of Non-Coverage
DAO	–	Department Administrative Order
DDR	–	Due Diligence Report
DENR	–	Department of Environment and Natural Resources
DOH	–	Department of Health
DOLE	–	Department of Labor and Employment
DPWH	–	Department of Public Works and Highways
EA	–	Executing Agency
ECC	–	Environmental Compliance Certificate
EHS	–	Environmental Health and Safety
EIA	–	Environmental Impact Assessment
EMB	–	Environmental Management Bureau
EMB-RO	–	Environmental Management Bureau–Regional Office
EMP	–	Environmental Management Plan
FHSIS	–	Field Health Service Information System
FVR	–	Friendship Village Resources
GIIP	–	Good International Industry Practice
GRM	–	Grievance Redress Mechanism
HIV	–	Human Immunodeficiency Virus
HSE	–	Health, Safety, and Environment
IEE	–	Initial Environmental Examination
IFC	–	International Finance Corporation
IP	–	Indigenous People
IR	–	Involuntary Resettlement
IRA	–	Internal Revenue Allotment
IRR	–	Implementing Rules and Regulations
LGUs	–	Local Government Units
LWUA	–	Local Water Utilities Administration
MTC	–	Municipal Trial Court
MWSS	–	Metropolitan Waterworks and Sewerage System
NAAQGV	–	National Ambient Air Quality Guideline Values
NAPOCOR	–	National Power Corporation
NAV	–	Notice of Alleged Violation
NorWD	–	Norzagaray Water District
NRW	–	Non-Revenue Water
NSCP	–	National Structural Code of the Philippines

NSO	–	National Statistics Office
NWRB	–	National Water Resources Board
OSPF	–	Office of Special Project Facilitators
PD	–	Presidential Decree
PEISS	–	Philippine Environmental Impact Statement System
PIU	–	Project Implementation Unit
PMU	–	Project Management Unit
PNSDW	–	Philippine National Standards for Drinking Water
PPE	–	Personal Protective Equipment
PS	–	Pump Station
PSA	–	Philippine Statistics Authority
RA	–	Republic Act
RCBC	–	Rizal Commercial Banking Corporation
REA	–	Rapid Environmental Assessment
RTC	–	Regional Trial Court
SB	–	Sangguniang Bayan
SDGs	–	Sustainable Development Goals
SEMR	–	Semi-Annual Environmental Monitoring Reports
SPS	–	Safeguard Policy Statement
STD	–	Sexually Transmitted Disease
TSP	–	Total Suspended Particulates
UNDP	–	United Nations Development Program
WD	–	Water District
WDDSP	–	Water District Development Sector Project
WDGRC	–	Water District Grievance Redress Committee
WHO	–	World Health Organization

WEIGHTS AND MEASURES

dB(A)	–	Decibel
dia	–	Diameter
ha	–	Hectare
Hp	–	Horsepower
km	–	Kilometer
km^2	–	Square Kilometer
lm	–	Meter
m	–	Meter
m^3	–	Cubic meter
MLD	–	Million liters per day
mm	–	Millimeter

NOTE
In this report, "$" refers to US dollars.

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EXECUTIVE SUMMARY

1. *Introduction.* Norzagaray Water District (NorWD) is an operational water supply utility located in Norzagaray Bulacan, Republic of the Philippines and one of the selected subprojects under the PHI: Water District Development Sector Project (WDDSP) funded by the Asian Development Bank (ADB). The project intends to improve the livability and competitiveness in urban areas outside Metro Manila through the provision of better water supply and sanitation infrastructure and services to a number of water districts (WDs). The Local Water Utilities Administration (LWUA) is the executing agency. The participating WDs, in this case NorWD, are the implementing agencies for water supply and sanitation subprojects.

2. *Subproject Description.* NorWD's Water Supply Improvement Project include laying of transmission/distribution pipelines and procurement of necessary fittings and appurtenances, and pumping equipment. NorWD Water Supply Improvement Project includes pumping equipment, pipelines, fittings, appurtenances, and all potential changes in material and labor costs.

3. *Legal Framework.* The policy, legal, and administrative frameworks relevant to the environmental assessment of water supply and sanitation projects in the Philippines have long been established by the following laws and regulations: (i) Presidential Decree (PD) 198-Provincial Water Utilities Act of 1973, (ii) PD 1586 – Establishing the Philippine Environmental Impact Statement System, (iii) DOH AO 2017-010 – Philippine National Standards for Drinking Water (PNSDW) of 2017, (iv) PD 1067 – Water Code of the Philippines, (v) PD 856 – Code on Sanitation of the Philippines, (vi) Republic Act (RA) No. 9275 – Philippine Clean Water Act of 2004, (vii) DENR AO 2016-08 – Water Quality Guidelines and General Effluent Standards of 2016, (viii) PD 705 – Forestry Reform Code of the Philippines; and (ix) RA 11058 – Occupational Safety and Health Standards.

4. *Environmental Safeguard.* All ADB funded project are required to strictly comply with Philippine government's environmental laws and requirements as well as ADB's Safeguard Policy Statement of 2009 (SPS). NorWD was assessed under Category B because of some short-term environmental impacts during construction which can be readily mitigated. Preparation of Initial Environmental Examination (IEE) report and securing of an environmental compliance certificate (ECC) prior to construction were required to prevent the possible adverse environmental and public health impact. The NorWD is currently on the process of completing all the documentary requirements for the acquisition of the ECC. Construction will not be started until the ECC has been obtained.

5. *Environmental and Socioeconomic Conditions*. Angat River located at the southeastern part of Central Luzon is located in the Municipality of Norzagaray and is the main source of water in the Province of Bulacan. The water body is classified as Class C by the DENR-EMB that is intended for beneficial uses such as fishery, recreational (boating, fishing, etc.), and agriculture, irrigation, and livestock watering. The administration and management of the forestlands of Norzagaray is defined in several tenurial instruments. These management instruments are: Presidential Proclamations 573, 391, 505, and 599, Certificate of Ancestral Domain Title No RO3-SJM-0204-020 and a Community Based Forest Management Agreement.

6. Based on the Philippine Statistics Authority (PSA), the estimated population of Norzagaray in 2015 is about 111,348 spread across 13 barangays. The increase of population between the years 2010 and 2015 recorded indicated a growth rate of 1.60%, as reported by the NSO. Falling within the 100,000–500,000 population range, Norzagaray is classified as a large town. This first-class municipality had a total income of Php 384 million from tax revenues, Internal Revenue Allotment (IRA), service and business income, and other sources in 2016.

7. *Impacts and EMP.* Anticipated impacts to be considered were assessed through the following activities: (i) gathering of inputs from interested and affected parties through consultation; (ii) desk research of information relevant to the proposed project; (iii) site visit and professional

assessment; and (iv) evaluation of proposed design and potential impacts. Categorization of the project and formulation of mitigation measures have been guided by ADB's General REA Checklist and SPS. Results of the environmental impacts screening shows the impact types and magnitudes for both positive and negative impacts without the mitigating measures and the resulting situations when mitigating measures will be implemented. (See **Section 5**).

8. Project implementation does not pose a significant environmental threat. The potential adverse impacts that are associated with construction, and O&M can be mitigated to acceptable levels with the recommended mitigation measures. Project implementation would generate temporary construction impacts that will be addressed in the EMP.

9. During pre-construction phase, potential nuisances and problems to the public such as noise and dust pollution, vehicular traffic and limited public access, generation of waste, etc. during construction shall be addressed by inclusion in the tender documents the EMP which specifies provisions addressing these issues. There are no known archaeological and cultural assets in these proposed sites. Nevertheless, precautions will be taken to avoid potential damage to any archaeological and cultural assets by inclusion of provisions in tender and construction documents requiring the contractors to immediately stop excavation activities and promptly inform the authorities if archaeological and cultural assets are discovered.

10. The proposed project will not entail any involuntary resettlement and there are no adverse impacts on surrounding structures since the pipeline routes are within right of way.

11. Adverse environmental impacts during construction are temporary, minor and can easily be mitigated. There will be no massive construction activities that can damage the environment. Typical construction issues are manageable with the implementation of environmental management plan for (i) erosion and sediment runoff, (ii) noise and dust, (iii) vehicular traffic, (iv) construction wastes and spoils, (v) oil and fuel spillages, (vi) construction camps, and (vii) occupational and public health and safety.

12. Environmental problems due to operation of the proposed water supply can be avoided by incorporating the necessary measures in the design and use of appropriate operational procedures. NorWD shall ensure that the potable water consistently passes the requirements of the Philippine National Standards for Drinking Water (PNSDW) of 2017. To achieve this, implementation of the water safety plan with regular water quality monitoring shall be undertaken.

13. An Environmental Management Plan (EMP) is developed to effectively manage the environmental issues. This includes: (i) mitigating measures to be implemented, (ii) required monitoring associated with the mitigating measures and environmental ambient conditions, and (iii) implementation arrangement. Institutional set-up is presented in the implementation arrangement and discusses the roles during implementation and the required monitoring. It also outlines the requirements and responsibilities during pre-construction, construction, and operation phases.

14. *Public Consultation and Information Disclosure.* A stakeholder consultation and participation were implemented as part of the preparation and implementation strategy. This were done to address the stakeholders' needs and disclosure of the project details and the benefits they shall receive. The consultation process during the project preparation has solicited inputs from stakeholders, including government officials. Presentation of the proposed project and its details, and purpose of the project was conducted with barangay officials on 1 March 2021 in Brgy. Bigte. The barangay officials of Brgy. Bigte with no objection, allowed this project for the improvement of water supply in the area given that this project aims to improve the water supply of residents of Norzagaray, Bulacan. Additional consultation with project affected stakeholders will be conducted prior to construction.

15. *Grievance Redress Mechanism*. Following discussions during the DDR mission, it was agreed to expand the current consumer feedback measures that are already implemented and are

well established into the project GRM. This GRM provides a mechanism to receive and resolve consumer related concerns on water supply, billing, and environmental matters, along with non-consumer complaints related to project implementation. The system however maybe adjusted or modified according to the need specific to the area of implementation considering its geographical and cultural setting as resolved by its Barangay Council. To protect also the indirect households, the project GRM will include non-water district customer's feedback measures during Construction and Project Implementation affecting the environment. The established GRM at the NorWD will receive, evaluate, and facilitate the resolution of affected persons (APs) concerns, complaints, and grievances about the social and environmental performance related to the various subprojects. The GRM will aim to provide a time-bound and transparent mechanism to voice and resolve social and environmental concerns linked to the subproject. This mechanism shall be disclosed in public consultations during detailed design and in meetings during the construction phase.

16. The NorWD will maintain a full record of all complaints and grievances received, and the actions taken. NorWD will also ensure grievances are recorded and reported in the Integrated Environmental and Social Safeguards reports that are submitted to ADB every six (6) months during project implementation. All costs involved in resolving the complaints (meetings, consultations, communication, and information dissemination) will be borne by NorWD. Complaints about environmental performance of projects issued an Environmental Certificate of Compliance (ECC) can also be brought to the attention of DENR-EMB. The process of handling such complaints is described in the Revised Procedural Manual (2007) for the IRR of PD 1586.

17. *Conclusion and Recommendations.* NorWD's water supply subproject will benefit the general public by contributing to the long-term improvement in the water supply system of its coverage area and providing safe drinking water to residents and commercial establishments in the municipalities and city. The potential adverse environmental impacts are primarily associated with the construction period, which can be minimized through mitigating measures and environmentally sound engineering and construction practices.

18. With the implementation of the mitigation measures as proposed in the EMP, the subproject is not expected to cause irreversible adverse environment impacts. Also, the water supply subproject can be implemented in an environmentally acceptable manner without the need for further environmental assessment study, except for the conduct of a public consultations for compliance and further input. Should there be any significant change in the project scope, an updated or a new IEE will be prepared.

19. The proposed NorWD subproject is hereby recommended for implementation with the following requirements to be strictly followed: (i) Tendering process shall ensure environmentally responsible procurement by including the EMP or IEE and ECC in the bidding and construction contract documents; (ii) Contractor's submittal of a CEMP to be cleared by NorWD, LWUA and ADB before construction starts; (iii) NorWD's creation of the WDGRC as part of the establishment of the GRM; (iv) LWUA, with its regulatory function, shall ensure that capability building for NorWD shall be pursued; and (v) NorWD shall continue the process of public consultation and information disclosure during detailed design and construction phases. The bidders should allocate budget and resources for EMP implementation in their bids.

1 INTRODUCTION

Norzagaray Water District (NorWD) is an operational water supply utility located in Norzagaray Bulacan, Republic of the Philippines and one of the selected subprojects under the PHI: Water District Development Sector Project (WDDSP) funded by the Asian Development Bank (ADB). The project intends to improve the livability and competitiveness in urban areas outside Metro Manila through the provision of better water supply and sanitation infrastructure and services to a number of water districts (WDs). The Local Water Utilities Administration (LWUA) is the executing agency. The participating WDs, in this case NorWD, are the implementing agencies for water supply and sanitation subprojects.

Norzagaray Water District (NorWD) was formally organized and formed on 1 October 1986 by virtue of the Sangguniang Bayan Resolution No. 86-10-48. Subsequently, the Conditional Certificate of Conformance (CCC) No. 261 was issued on 24 October 1986 by the Local Water Utilities Administration (LWUA). The CCC is the accreditation of LWUA to a newly formed water district to operate under the standard specifications. The district became operational in 1997.

NorWD has two (2) types of water supply system. The water supply system includes 13 deep wells/ pumping stations and bulk water supplier (PhilHydro Inc.) Raw water supply from Angat River is treated at the PhilHydro Company's Norzagaray treatment plant.

NorWD serves about 85% of its total population in barangays/areas of Poblacion, Bigte, Bitungol, Matictic, Minuyan, Partida, San Mateo, Tigbe, and Friendship Village Resources.

The proposed project aims to expand and improve water supply coverage of NorWD. The proposed transmission pipelines will be interconnected to bulk supplier designated interconnection points to transport treated water from the source to the consumers. This proposed project is called the Water Supply Improvement Project of the NorWD.

The implementation of the proposed water supply expansion program of the NorWD includes the following: i) laying of transmission lines (includes uPVC and steel pipes); ii) installation of valves and other fittings; iii) construction of booster pump (in-line type booster and station); and iv) excavation, concrete breaking and restoration works. The projected is anticipated to be completed by year 2022.

The project can contribute to the Philippines' efforts in achieving the Sustainable Development Goals (SDGs) given by the United Nations Development Program (UNDP), specifically the SDG no. 6, which is the "Clean Water and Sanitation". The project shall address the increasing water demand of the municipality.

This is part of the Water District Development Sector Project (WDDSP) which is funded by the Asian Development Bank (ADB). All ADB-funded projects are required to comply with the Philippine government's environmental laws and requirements as well as ADB's Safeguard Policy Statement of 2009 (SPS). A preliminary environmental assessment using ADB's General Rapid Environmental Assessment (REA) Checklist (**Annex 1**) was employed and this project is classified environment Category Band warrants the preparation of this Initial Environmental Examination (IEE) Report. Under the Philippine Environmental Impact Statement System (PEISS), an online Environmental Compliance Certificate (ECC) application is required for water supply projects with water source, treatment facilities, and Level III distribution system. The NorWD is currently on the process of completing all the documentary requirements for the acquisition of the ECC. On-line ECC application will be initiated by the end of June 2020 and ECC is expected to be acquired by the end of July. Construction will not be started until the ECC has been obtained.

The SPS of 2009 integrates the three operational safeguard policies of ADB on the environment, involuntary resettlement, and indigenous peoples, into a unified policy framework. ADB shall work with borrowers to implement the provisions of this policy framework in the form of project review and supervision, and capacity development support. The SPS also promotes participation of project-affected people and key stakeholders in project design and implementation.

The provisions of the ADB SPS of 2009 were carefully observed during the preparation of this report. This IEE Report is prepared to meet the following objectives:

(i) Provide a clear description of the proposed projects and all its components;

(ii) To present the national and local legal and institutional framework within which the environmental assessment has been carried out;

(iii) To provide information on the existing geographic, ecological, environmental, and social conditions, and temporal context within the project's area of influence, including associated facilities;

(iv) To assess the project's likely positive and negative direct and indirect impacts on physical, biological, socioeconomic, and physical cultural resources in the project's area of influence;

(v) To present the set of mitigation measures to be undertaken to avoid, reduce, mitigate, and manage adverse environmental impacts;

(vi) To describe the process undertaken during project design to engage stakeholders, the planned information disclosure measures, and the process for carrying out consultation with affected people and facilitating their participation during project implementation;

(vii) To describe the project's grievance redress mechanism for resolving project-related complaints;

(viii) To describe the monitoring measures and reporting procedures to ensure early detection of conditions that necessitate particular mitigation measures; and

(ix) To identify who is responsible for carrying out the mitigation and monitoring measures.

The development of this IEE is based on several field visits, review of secondary data, consultation with the Local Government Units (LGUs), officials of NorWD, and the stakeholders from the community.

2 POLICY, LEGAL, AND ADMINISTRATIVE FRAMEWORK

ADB Safeguard Policy Statement. The ADB, in its operations, requires the consideration of environmental issues in all aspects. The requirement of having an environmental assessment in all of ADB's project loans, program loans, sector loans, sector development program loans, loans involving financial intermediaries, and private sector loans is stated in the SPS.

Screening and categorization. Categorization is to be undertaken using Rapid Environmental Assessment (REA). REA is sector-specific checklist that consist of questions relating to (i) the

sensitivity and vulnerability of environmental resources in project area, and (ii) the potential for the project to cause significant adverse environmental impacts.

Projects are screened to identify their expected environmental impacts which are related to the type and location of the project; the sensitivity, scale, nature, and magnitude of its potential impacts; and the availability of cost-effective mitigation measures. This will determine the category of environmental assessment required for the project. Projects are categorized in the following four (4) categories:

(i) Category A. Projects could have significant adverse environmental impacts. An environmental impact assessment (EIA) is required to address significant impacts.

(ii) Category B. Projects could have some adverse environmental impacts, but of lesser degree or significance than those in Category A. An IEE is required to determine whether significant environmental impacts warranting an EIA are likely. If an EIA is not needed, the IEE is regarded as the final environmental assessment report.

(iii) Category C. Projects are unlikely to have adverse environmental impacts. No EIA or IEE is required, although environmental implications are reviewed.

(iv) Category FI. Projects involve a credit line through a financial intermediary or an equity investment in a financial intermediary. The financial intermediary must apply an environmental management system, unless all projects will result in insignificant impacts.

Environmental Management Plan (EMP). Identification of potential impacts and risks along with the mitigating measures through environmental assessment must be carried out. The level of detail and complexity of the EMP and the priority of the identified measures and actions will be commensurate with the project's impact and risks.

Public disclosure. In order for the affected people, other stakeholders, and the general public to provide inputs to further improve the project's design and implementation, the ADB shall post in their website the following documents:

(i) for Environmental Category A projects, a draft EIA report at least 120 days before Board consideration;

(ii) final or updated EIA and/or IEE upon receipt; and (iii) environmental monitoring reports submitted by the project management unit (PMU) during project implementation upon receipt.

International Guidelines. The International Finance Corporation (IFC) established an Environmental, Health, and Safety (EHS) Guidelines with general and industry-specific examples of Good International Industry Practice (GIIP). In line with this, all ADB-funded projects must adopt the IFC-EHS Noise Guidelines.

Under the noise management section are noise prevention and mitigation measures, noise level guidelines, and noise monitoring. NorWD must closely observe the IFC-EHS Noise Guidelines during the construction phase.

National Laws. The policy, legal, and administrative frameworks relevant to the environmental assessment of water supply and sanitation projects in the Philippines have long been established by the following laws and regulations:

(i) Presidential Decree (PD) 198 – Provincial Water Utilities Act of 1973;

(ii) PD 1586 – Philippine Environmental Impact Statement System;

(iii) Department of Health (DOH) Administrative Order 2017-010 – Philippine National Standards for Drinking Water (PNSDW) of 2017;

(iv) PD 1067 – Water Code of the Philippines;

(v) PD 856 – Code on Sanitation of the Philippines;

(vi) Republic Act (RA) 9275 – Philippine Clean Water Act of 2004;

(vii) Department of Environment and Natural Resources (DENR) Administrative Order 2016-08 – Water Quality Guidelines and General Effluent Standards of 2016;

(viii) PD 705 – Forestry Reform Code of the Philippines; and

(ix) RA 11058 – Occupational Safety and Health Standards

The overall institutional framework is found in PD 198 PD 198 (Provincial Water Utilities Act of 1973). PD 198 indicates that the LWUA and WD setup as defined by LWUA, is mandated to promote the development of WDs in the country as a government corporation. It is mandated to "primarily be a specialized lending institution for the promotion, development, and financing of local water utilities." In order to carry out the said mandate, the LWUA has major subsidiary roles such as:

(i) prescribing minimum standards and regulations in order to assure acceptable standards of construction materials and supplies, maintenance, operation, personnel training, accounting, and fiscal practices for local water utilities; and

(ii) providing technical assistance and personnel training programs.

The formation of local WDs is also mandated in the PD 198. These WDs were initially mandated to serve a single LGU or a cluster of LGUs by resolutions of the Local LGUs. These WDs, once formed becomes a legally autonomous body of the LGU. A board of directors, consisting of five (5) members representing different sectors that are appointed by either the mayor or the governor shall control the WD. The board of directors shall appoint the WD's general manager.

LWUA is the executing agency under the project, while WDs, like NorWD, are the executing agencies for their respective subprojects. LWUA is responsible for the overall coordination, implementation and liaison of the project with ADB and other government offices.

PD 1586 (Philippine Environmental Impact Statement System (PEISS)) and its implementing rules and regulation under the DENR Administrative Order No. 30 of 2003 (DAO 2003-30) cover the environmental assessment provision. The PEISS allows the project manager to receive an Environmental Compliance Certificate (ECC) from the Environmental Management Bureau (EMB) prior to the introduction of an infrastructure or development project. Under ADB's Special Assessment Report on Environmental Safeguards (2006), the Philippine environmental assessment program complies with the environmental assessment criteria of ADB.

To ensure that the quality of the water supplies are kept on a level that is suitable for human consumption, DOH Administrative Order 2017-010 (DAO 2017-010) or the Philippine National Standards for Drinking Water (PNSDW) of 2017 which prescribes the standard quality for drinking waters was issued as guide for government and private developers and operators, bulk water suppliers, water refilling station operators and other drinking-water providers. The established threshold of each water quality parameter in the PNSDW of 2017 will ensure the safety of drinking water and protect the public health.

Appropriation and utilization of waters for various purposes shall be governed by PD 1067 or the Water Code of the Philippines and its amended Implementing Rules and Regulations (IRR). The National Water Resources Board (NWRB) shall administer and enforce the provisions thereof.

Pursuant to RA 9275 or the Philippine Clean Water Act of 2004, DENR Administrative Order No. 08 series of 2016 or the Water Quality Guidelines and General Effluent Standards of 2016, defines the standards for the discharge of all industrial and municipal wastewater while PD 856 (Philippine Sewage Code) also includes sewage and septic tanks. To ensure the compliance of the facility with the specified effluent requirements, the project applicant must obtain a discharge permit from the EMB-RO.

The number of project-affected trees and ownership shall be established prior to the start of construction. During site preparation, when trees (timber or other forest products) are to be removed, a tree cutting permit shall be obtained as stipulated in PD 705 or the Forestry Reform Code of the Philippines.

As a member of the International Labor Organization (ILO), the Department of Labor and Employment (DOLE) developed an Occupational Safety and Health Hazard Standards that is in line with international labor standards To ensure a safe and healthful workplace for all the workforce and protection against all hazards in their work environment, adherence to the DOLE Occupational Safety and Health Hazard Standards must be followed, with emphasis on the following:

(i) Personal Protective Equipment (PPE-Rule 1040) which specify the use and types of eye and face protection, respiratory protection, hand and arm protection, safety belt lifelines and safety nets and safety shoes;

(ii) Personal Protective Equipment, and minimum space requirement for gas, electric welding and cutting operations (Rule1100);

(iii) Fire protection and control rule (Rule 1940);

(iv) Notification and record keeping requirements (Rule 1050);

(v) Mandatory provisions of a safety program for local Contactors in line with overall safety program of the Proponent; and

(vi) Effective preparedness program against accidents and untoward incidents through ready medical assistance as well as early detection, warning and response measures.

Table 2-1 presents the summary of environmental regulations and mandatory requirements for the proposed subproject.

Table 2-1: Summary of Applicable Environmental Regulations and Required Documents for the Subproject

Laws, Rules and Regulations	Description/Salient Features	Permit/Clearance	Required for the Project
PD 1586 and its implementing rules and regulations	Requires project proponents to secure ECC from the DENR before an infrastructure project is constructed. DAO 03-30 provides the implementing rules and regulations for PD1586 and the Revised Procedural Manual of DAO 03-30 integrates DENR policies to promote EIA as a planning and decision-making tool. DENRMCNo.2011-005 further streamlined the PEISS.	ECC for proposed projects under the EIS system or Certificate of Non-Coverage (CNC) for proposed projects not covered by the system.	An online ECC application is required for water supply projects with water source, treatment facilities, and Level III distribution system in order to secure an ECC. On-line ECC application will be initiated by the end of May 2020 and ECC is expected to be acquired by the end of June
PD 705	DENR requires securing a permit before cutting any tree in both public and private properties	Permit to Cut is secured from the EMB-RO where the tree/s to be cut are located	No trees will be cut for this subproject.
RA 9275 and its implementing rules and regulations	Prohibits direct discharge of effluent to the nearby water body	None	To be implemented during construction period
RA 9003 and its implementing rules and regulations	Mandates proper disposal of solid wastes generated during construction.	None	To be implemented during construction period.
RA 8749 and its implementing rules and regulations	Specifies provisions on machineries and heavy equipment to be used and dust particle generation during construction	None	To be implemented during construction period
	Permit to Operate for air pollution source and control equipment (such as generator set) shall be secured	Permit to Operate to be secured from EMB-RO prior to the operation of the project	The subproject will not acquire a generator set
IFC-EHS Noise Guidelines	Provides measures on noise prevention and mitigation measures, noise level guidelines, and noise monitoring.	None	To be implemented during construction period.
DOLE Occupational Safety and Health Hazard Standards	Ensures a safe and healthful workplace for all the workforce and protection against all hazards in their work environment	None	To be implemented during construction and operation period.
DAO 2017-010 or the PNSDW of 2017	Prescribes the standard quality for drinking waters as guide for government and private developers and operators, bulk water suppliers, water refilling station operators and other drinking-water providers. The established threshold of each water quality parameter in the PNSDW of 2017 will ensure the safety of drinking water and protect the public health.	None	Periodic reports shall be submitted to DOH during the operation period.

Local Laws. The legal administrative framework relevant to creating the NorWD is the Sangguniang Panlungsod Resolution No. 86-10-48.

3 DESCRIPTION OF THE PROJECT

A. Existing Situation of Norzagaray Water District's Water Supply and Resources

Two (2) types of water supply system are present in the Municipality of Norzagaray. NorWD has 13 deep wells/pumping stations and bulk water supplier (Bulacan Bulk) that serves as primary water resource for at least 18,000 concessionaires of NorWD. **Figure 3-1** shows the present water system loop while **Table 3-1** and **Table 3-2** summarizes the information about the present water system loop and existing pump stations.

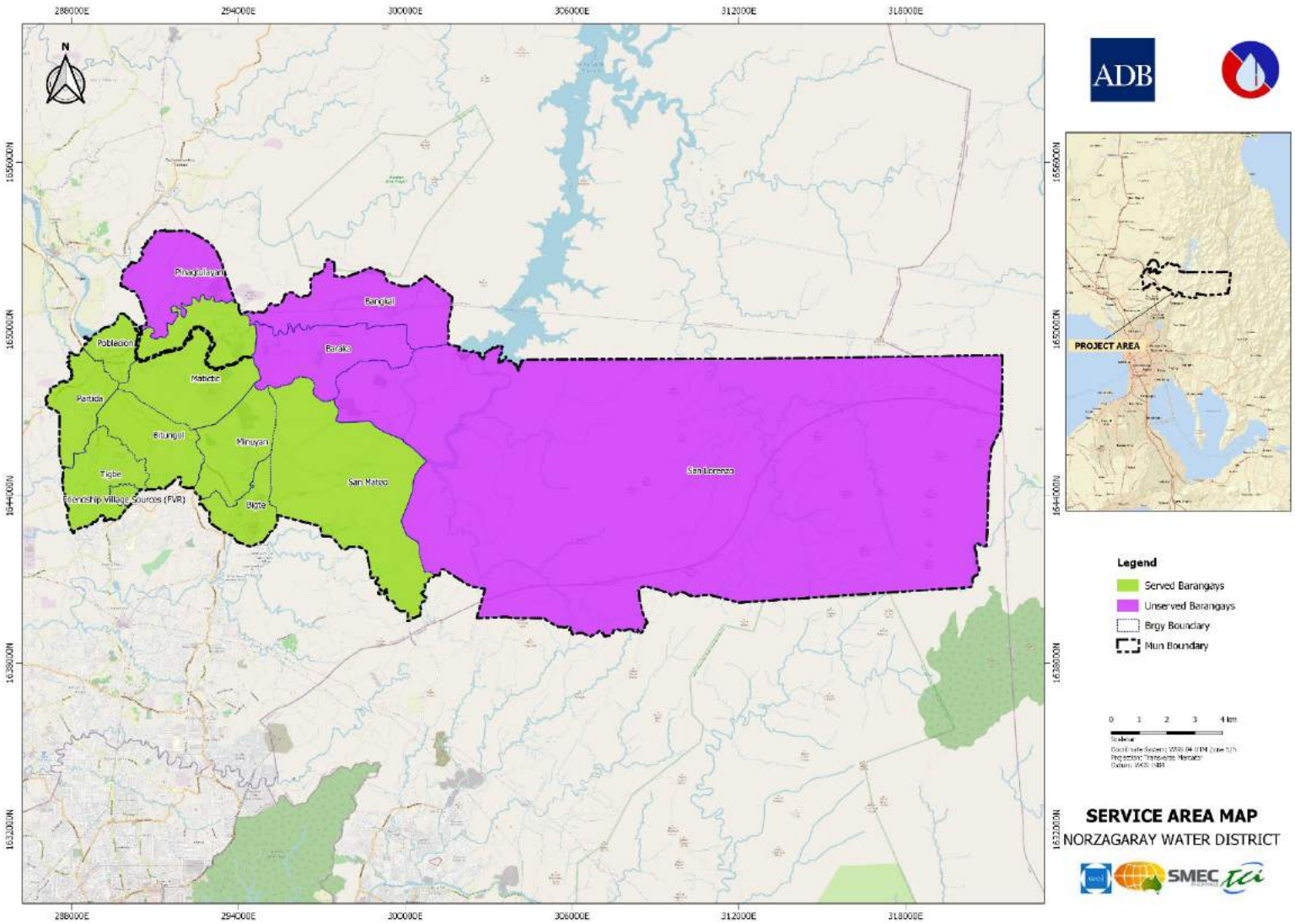


Figure 3-1: Service Area Map of NorWD

Table 3-1: Present Water System Loop in NorWD

Water System Loop	Pump Station Covered
District Meter 1	Barangay Poblacion (PS Lawang), Barangay Partida (PS Partida) and Philhydro Bulk Water
District Meter 2	Barangay Friendship Village Resources (Philhydro Bulk Water)
District Meter 3	Barangay Tigbe (PS phase 1, PS phase 3, PS phase 7 and Philhydro Bulk Water)
District Meter 4	Barangay Minuyan (PS Minuyan and Philhydro Bulk Water)
District Meter 5	Barangay Friendship Village Resources (Philhydro Bulk Water)
Independent System	Barangay Bigte (PS Bigte)
Independent System	Barangay San Mateo (PS San Mateo)
Independent System	Barangay Matictic (PS Matictic)

Table 3-2: Summary of Pump Stations and Reservoirs in NorWD

Pump Station No./ Location	Casing Size (mm)	Pump Type	Motor Rating (Hp)	Reservoir Capacity (m^3)
1. PS Lawang	100	Submersible	20	-
2. PS Partida	100	Submersible	20	-
3. PS Phase 1	100	Submersible	10	120
4. PS Phase 3	100	Submersible	15	120
5. PS Phase 7	100	Submersible	15	120
6. PS Minuyan	200	Submersible	15	-
7. PS San Mateo	50	Submersible	5	-
8. PS Matictic	100	Submersible	10	150

The existing transmission and distribution system consists of various sizes of pipes with diameters ranging 50–200 mm and a total length of approximately 52 kilometers (km). **Table 3-3** presents the summary of existing transmission and distribution pipelines.

Table 3-3: Summary of Existing Transmission and Distribution Pipeline Network

Existing T/D Lines of NorWD Water Supply Loop 1		
Diameter (mm)	**Materials**	**Length (lm)**
200	µPVC	13,050
150	µPVC	12,932
100	µPVC	10,575
75	µPVC	6,004
50	µPVC	8,760
Total		51,321

B. Operation and Maintenance

The operation and maintenance of the existing water supply system is handled by the NorWD's Engineering Division. The operation and maintenance expenses considered comprised of pumping expenses, bulk supplier service, annual dues to be paid to other agencies (e.g., National Water Regulatory Board), customers' account, and administration and general expenses.

C. Water Use

The water usage is classified as residential/domestic/government, commercial consumption, and bulk/wholesale. The residential/domestic consumers are persons and establishments whose connections are intended for their own personal use and other related activities while government establishments' water use are for their operation in performing public service. Meanwhile, commercial usage of water is intended for business, trade activities, occupation, or to produce a commercial or saleable product. This is further classified into Commercial A, B, or C. Finally, bulk/wholesale are connections that are intended and connected to the system for the purpose of reselling the same without transforming into a new product.

The reported total service connection for December 2019 is 18,308 of which 99% (18,152 connections) are classified as total active and were under domestic/ government, commercial/industrial, and bulk/wholesale.

D. Service Coverage

At present, NorWD is serving 9 out of 13 barangays in the municipality. Nine (9) of these barangays are at least fully served namely – Bigte, Bitungol, Matictic, Minuyan, Partida, Poblacion, San Mateo, Tigbe, and Friendship Village Resources (FVR).

E. Service Connections

As of December 2019, the NorWD has about 18,152 active consumers served and is aggressively installing additional connections yearly.

Table 3-4 presents the prevailing water rates within the service area per type of water connection/user.

Table 3-4: Prevailing Water Rates, 2019

Classification	Meter Size	Minimum Charge (Php)	Commodity Charge (Php)			
			11-20 (m^3)	21-30 (m^3)	31-40 (m^3)	41 up (m^3)
Residential/ domestic/ government	½ (15 mm)	245.00	25.30	27.10	29.50	34.10
	1 (25 mm)	784.00	25.30	27.10	29.50	34.10
Commercial/ Industrial	½ (15 mm)	490.00	50.60	54.20	59.00	68.20
Commercial A	½ (15 mm)	428.75	44.25	47.40	51.60	59.65
Commercial B	½ (15 mm)	367.50	37.95	40.65	44.25	51.12
Commercial C	½ (15 mm)	306.25	31.60	33.85	36.85	42.60
Bulk/Wholesale	Three times of the residential rates					

F. Water Consumption and Total Water Production

Based on December 2019 Monthly Data Sheet (MDS), the average water consumption per connection is computed to be about 19.66 m^3/month. Total production capacity is 396,316 m^3/month wherein 28,923 m^3/month is coming from wells and 367,393 m^3/month from bulk supplier. The total billed volume is 308,055 m^3/month.

G. Non-revenue Water

The non-revenue water (NRW) as of December 2019 is estimated at 22.30% or about 88,261 m^3/month. The principal cause of these losses is due to the physical and commercial losses.

Mainline breakage (physical loss) is observed in the area and is primarily caused by the intermittent supply. Furthermore, there are hidden leak or leaks which are not visible on the naked eye along the pipelines causing the highest loses. On the other hand, commercial loss is due to defective and inefficient water meter. To augment this, a program on water meter maintenance was implemented to lower down the loss.

In order to allow utilities to expand and improve service, there are several NRW program recommended. This include: (i) establishing leak detection teams and NRW monitoring; (ii) structured program of active leakage management and pressure management; and (iii) incorporating NRW management within the utility operational strategy as key performance indicator.

H. Description of the Proposed Subproject

NorWD's Water Supply Improvement Project includes: (i) laying of transmission/ distribution pipelines, and; (ii) procurement of necessary fittings and appurtenances, and pumping equipment.

Pipelines, Fittings, and Appurtenances. 2,585 meters (m) of transmission/distribution lines will be laid to enhance and broaden the coverage of the service area, including the barangays currently served and additional barangays to be serviced. The pipes to be laid are composed of uPVC and/or steel pipes with size ranging from 250 to 300 millimeters (mm). Works involving interconnection with the bulk water supplier are also included in this item.

The proposed expansion of pipeline will be traverse Barangay Bigte.

Pumping Equipment. This item includes a booster pump equipment needed to efficiently convey water from Brgy. Bigte to Brgy.Minuyan and Brgy, Bitungol.

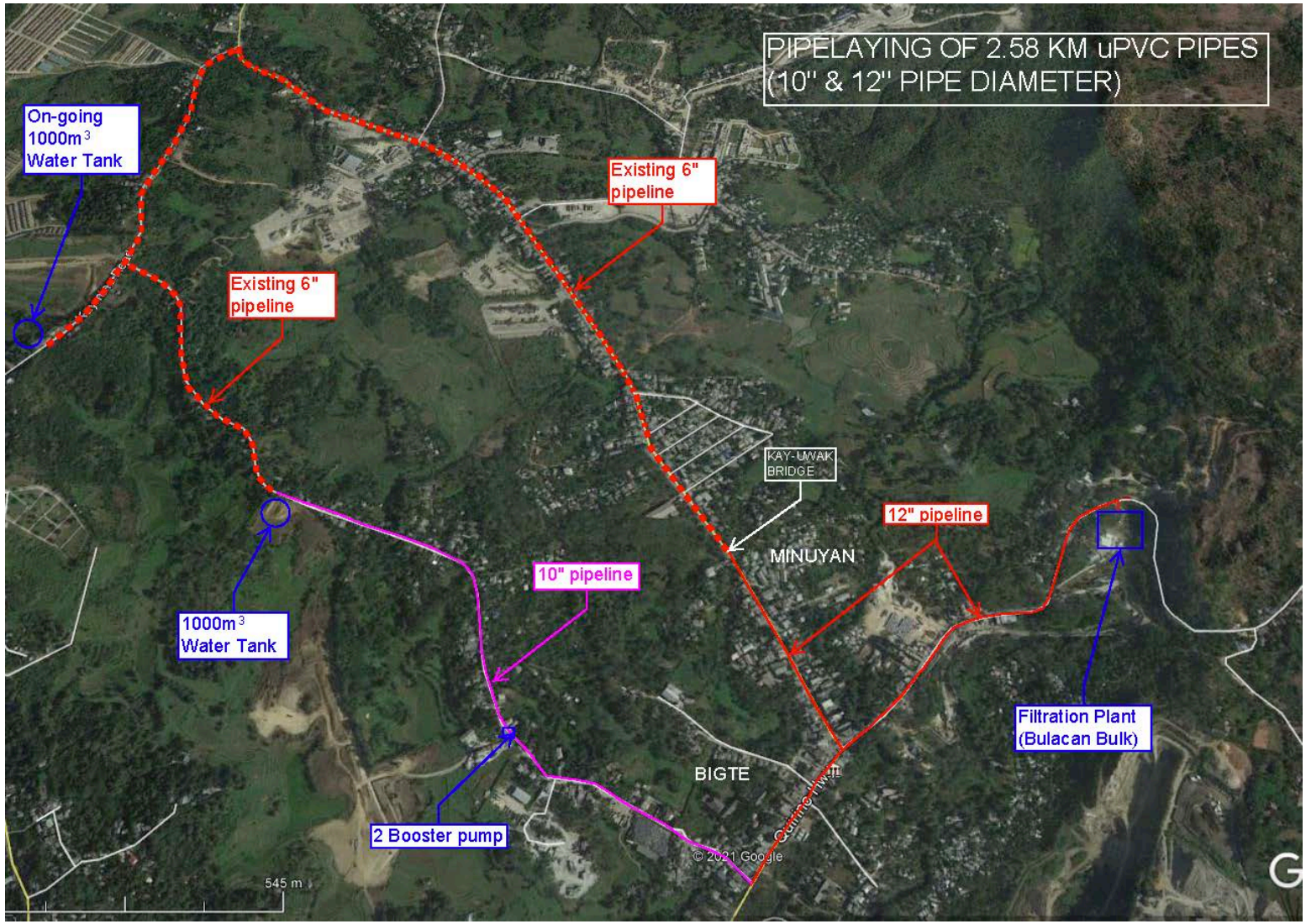


Figure 3-2: Recommended Improvements for NorWD

4 DESCRIPTION OF THE ENVIRONMENT

This section discusses the baseline conditions of the environment of the Municipality of Norzagaray, where the proposed improvement for water supply subproject is located. Upon assessment of the subproject site, there are no identified ecologically/environmentally critical areas, historical/cultural sites within or near the subproject sites.

A. Physical Resources

Geographical Location. The Municipality of Norzagaray is located in the southeastern end of Bulacan and bordering the Municipality of Montalban which is situated in the Rizal province. In the north, it is bounded by the Municipality of Dona Remedios Trinidad, Municipalities of Angat and Santa Maria on the west, and lastly in the southwest, the City of San Jose del Monte.

Land Area. The Municipality of Norzagaray has a total land area of 30,819 hectares (ha). The municipality is politically divided into 13 barangays.

Air Quality and Noise. Bulacan-Pampanga-Bataan is officially designated by DENR as a regular "airshed" which is defined as areas with similar climate, meteorology and topology which affect the interchange and diffusion of pollutants in the atmosphere. The National Air Quality Status Report (2008–2015) provides data on air quality on a regional level. As of 2015, there were 93 air quality monitoring stations (manual and real-time) nationwide which were situated in highly urbanized cities and also rural areas in different regions of the country. These monitoring stations keep track of criteria air pollutants including total suspended particulates (TSP), particulate matter with diameter of less than 10 microns (PM10), particulate matter with diameter of less than 2.5 microns (PM2.5), sulfur dioxide (SO_2), nitrogen dioxide (NO_2) and ozone (O_3) following the National Ambient Air Quality Guideline Values (NAAQGV).

Table 4-1 presents the measured annual mean values of air quality parameters in Region 3, specifically in Bulacan, from 2008–2015. From 2008–2014, one (1) monitoring station located in Saluysoy Stn. continuously measured the annual TSP while one (1) monitoring station located in Intercity Stn. measured the annual TSP from 2011–2012 and 2014–2015.Based on the measured TSP from 2008–2015, the air quality within Region 3 does not comply with the NAAQGV limits. The high TSP readings in Saluysoy Stn. is brought by open burning of solid waste, vehicular emissions, and presence of several legal and illegal smelting plants. On the other hand, Intercity Stn. is located in an industrial area composed of around 90 units/sets of multi-pass rice milling machines owned by about 60 operators.

Due to the high TSP readings, it was recommended by the DENR Air Quality Management Section to implement more stringent monitoring and penalty system by the local government to improve the air quality in the area.

Table 4-1: Air Quality Parameters Annual Mean Values in Region 3 (2008–2015)

Air Quality Parameter/ Station Location	NAAQGV Limit	2008	2009	2010	2011	2012	2013	2014	2015
Saluysoy Stn., Meycauayan, Bulacan									
TSP (µg/Ncm)	90 (annual)	106	124	61	21	14	6	41*	n.d.
Intercity Stn.,Bocaue, Bulacan									

TSP (µg/Ncm)	90 (annual)	n.d.	n.d.	n.d.	344	277	n.d.	482*	244

Source: DENR-EMB,2015
Red font means failure to comply with NAAQGV Limit
n.d. means no data
**did not meet required capture rate*

As per DENR Air Quality Management Section, the National Air Quality Status Report (2015-2020) is currently being drafted.

Noise level measurements will be done during detailed design phase at strategic locations on the areas with sensitive receptors to establish ambient baseline noise levels. The results will be included in the CEMP and mitigation measures will be adjusted, as necessary.

In addition, following the IFC-EHS noise guideline values, noise levels should ideally not exceed the values presented in **Table 4-2**. If, however baseline noise levels already exceed the guideline values, IFC-EHS allows a maximum 3 dB(A) increase in noise levels as a result of project activities. Mitigation measures should be implemented to ensure this.

Table 4-2: IFC-EHS Noise Level Guidelines

Receptor	One Hour L_{Aeq}dB(A)	
	Daytime 07:00 – 22:00	Nighttime 22:00 – 07:00
Residential; institutional; educational	55	45
Industrial; commercial	70	70

Climate. Under the Modified Coronas Classification, Norzagaray belongs to Type III or climate characterized being relatively dry from the month of November to April, and is wet for the rest of the year.

Topography and Soils. Based on collected secondary data on the Municipality of Norzagaray, there are a total of six (6) soil types that can be found in the municipality. These soil types are: (1) Buenavista silt loam, (2) Novaliches loam, (3) Novaliches clay loam, (4) Novaliches loam (undifferentiated), (5) Prensa clay loam, and (6) Sibul clay. The prevailing slope categories of the municipality are of an average midland area.

Surface Water. Angat River located at the southeastern part of Central Luzon is located in the Municipality of Norzagaray and is the main source of water in the Province of Bulacan. The water body is classified as Class C by the DENR-EMB that is intended for beneficial uses such as fishery, recreational (boating, fishing, etc.), and agriculture, irrigation, and livestock watering.

The proposed pipeline route will cross a creek which is a tributary of Angat River, however, this creek is usually dry and no water is flowing except during heavy rain falls.

B. Ecological Resources

Forests. The administration and management of the forestlands of Norzagaray is defined in several tenurial instruments. These management instruments are: Presidential Proclamations 573, 391, 505, and 599, Certificate of Ancestral Domain Title No RO3-SJM-0204-020 and a Community Based Forest Management Agreement, and are shown in **Table 4-3**. These management instruments arose from the recognition of the economic potentials of the Angat River.

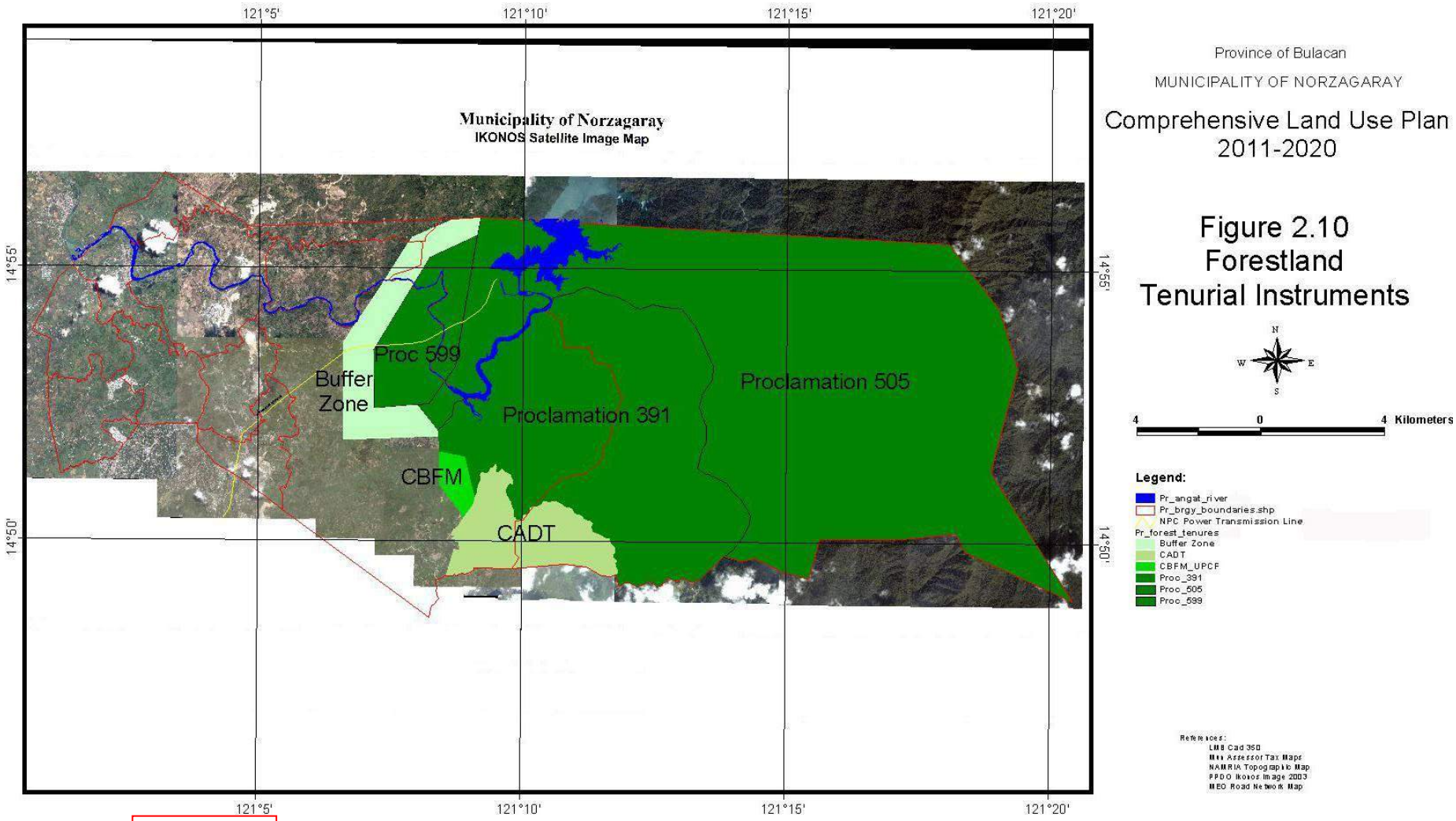
Table 4-3: Forestland Management Related Issuances, 2011

Date/Issuance	Provision	Implications to Norzagaray
March 10, 1927/ Presidential Proclamation No 71	Reserves for Watershed purposes, subject to private rights if any there be, and withdraw from sale or settlement the described parcel of the public domain situated in the municipalities of Montalban, San Jose del Monte, Norzagaray, Angat, San Rafael, San Miguel, Peñaranda, and Infanta, Provinces of Rizal, Bulacan, Nueva Ecija, and Tayabas, Island of Luzon	This proclamation has limited the utilization and use of more than a third of the municipality's land area. However, considering that the area is mountainous, the municipal government has welcomed the entry of the national government in the management and administration of said area.
December 4, 1965/ Presidential Proclamation 505	Amends Pres. Proclamation 71 and transfers the administration of the reserved watershed to the National Power Corporation.	The National Power Corporation has issued rules and regulations over the utilization of lands within the watershed area.
June 26, 1969/ Proclamation 573 Parcel Number 5	Sets aside for watershed forest reserve purposes supporting the operation of Bustos Dam certain parcels of lands that include parts of Norzagaray and withdraws the same from sale or settlement subject to prior private rights, if any.	
June 23, 1959/ Proclamation 599	Reserves for the Angat River Project of the National Power Corporation a certain parcel of the public domain.	
April 30, 1968/ Proclamation No 391	Excludes from the operation of Proclamation 505 a certain portion thereof which contains 6,600 ha in between the Angat Dam and the Ipo Dam reserving the same as Angat Watershed and Forest, Forest Range and Watershed Management Pilot Project Reserve under the administration an control of the Director of Forestry and the General Manager of the National Waterworks and Sewerage Authority who shall jointly have the authority to regulate the use and occupancy of the said watershed forest reserve, cutting, collection and removal of timber and other forest products therein in accordance with forest laws and regulations.	This proclamation transfers the administration and management over the Ipo Dam watershed from NAPOCOR to MWSS and DENR.
Executive Order 224 dated July 16, 1987	Vesting on the National Power Corporation the Complete Jurisdiction, Control and Regulation over Watershed Areas and Reservations Surrounding its Power Generating Plants and Properties of Said Corporation.	
Executive Order 258 dated July 10, 1995	Establishing and Delineating the Responsibilities of the National Power Corporation and the Department of Environment and Natural Resources over Watershed and Reservations under	Clearly defines the responsibilities of the NAPOCOR over the Angat Watershed Reservation.

Date/Issuance	Provision	Implications to Norzagaray
	the former Jurisdiction and Control, and Restoring to the National Power Corporation Jurisdiction and Control over the Angat Watershed Reservation	

Source: Comprehensive Land Use Plan of the Municipality of Norzagaray, 2011

The proposed pipelaying subproject is not located in any of the forestland tenurial instrument areas. The areas covered by each of these instruments as well as the subproject location are shown in **Figure4-1**.



Project Location

Figure 4-1: Forest Tenurial Instruments of Norzagaray, 2011

C. Economic Development

Business Establishments. Norzagaray is largely dominated by the service sector, followed by industry, then the growing agriculture sector. The number of registered business establishments observed an increasing trend from the last five (5) years. In 2017, there are 820 recorded number of registered business establishment in the municipality[1].

Of the total of 820 establishments, 90% belong to the service sector (37% are wholesale and retail outlets; 10% under transportation, storage, and communications; 9% are construction; 8% are finance, insurance, and real estate, and; 25% under community/social and personal services). Included under transportation are 56 companies involved in trucking and hauling of various products, especially those from mining and quarrying. While those classified under the Industry sector make up 10% of all the registered establishments. On the other hand, almost 1% was classified as establishments related to the agriculture sector such as piggery, poultry, calamansi farming, agricultural supplies, etc.

Infrastructure facilities. Roads within the municipality are classified into four (4) which are national road, provincial road, municipal road, and barangay road.

Table 4-4: Length of Roads by Classification

Classification	Length (km)				
	Concrete	Asphalt	Gravel	Earth	Total
National Road	11.053	9.175	-	-	20.228
Provincial Road	-	-	-	-	0
Municipal Road	34.063	3.2	9.59	-	46.853
Barangay Road	17.010	-	43.716	-	60.726
Total	62.126	12.375	53.306	-	127.807

Source: Socioeconomic Profile 2018

Table 4-5: Length of Existing Bridges

Name/ Location	Classification	Length (km)
Matictic	Reinforced Concrete Box Culvert (RCBC)	0.82
Bitbit	RCBC	0.187
Bigte – Settling	RCBC	0.073
Angat	RCBC	0.075
Lingunan	RCBC	0.01
Sulucan	RCBC	0.015
Palale	RCBC	0.02
Bakas – Kanyakan	RCBC	0.085
Kay Uwak	RCBC	0.066
Lambingan	RCBC	0.01
Comparadia	RCBC	0.012
Lawang	RCBC	0.006
Lupa	RCBC	0.01
Bakas – Kanyakan 2	RCBC	0.005
Pinagtulayan	RCBC	0.015
Tigbe	RCBC	0.017
Sapang A	RCBC	0.005
Sapang B	RCBC	0.005
Tabtab	Wooden	0.006

[1] Environmental Performance Report and Management Plan for the Proposed Additional 1.5MT Finish Mill (Mill 6) Project in Barangay Minuyan, Norzagaray, Bulacan under CRH - Aboitiz Company

Name/ Location	Classification	Length (km)
Sulucan	RCBC	0.005
Tigbe Box Culvert	RCBC	0.005
Tigbe 2	RCBC	0.005

Source: Socioeconomic Profile 2018

Transportation. Transport services within, to, and from Norzagaray are provided by a network of public utility buses and jeepneys and tricycle franchisees. Currently, a bus company, Santrans, located in Barangay Tigbe traverses two (2) routes: (i) Tigbe Norzagaray-Via Commonwealth-Baclaran, and; (ii) Tigbe Norzagaray-Via Marilao-Sta. Cruz, Manila.

As of 31 January 2020, there are two (2) transport cooperative listed by the Department of Tranportation, the Norzagaray Meycauyan Transport Service Cooperative and Norzagaray-SM Fairview Transport Service Cooperative.

Agricultural Development. Norzagaray covers about 9,250 hectares of agricultural land, however, only 44% (4,085 ha) are actually used for production and divided into two (2): (i) crops and fruit trees which comprise 80% (3,278 ha), and; (ii) livestock and fishery making up 20% (807 ha) of the total production land.

Farming mostly takes place in San Mateo, Matictic, Pinagtulayan and Tigbe with Poblacion and Minuyan having smaller cultivable land. Rice, mango, banana, and root crops are common crops in the municipality. Rice areas measured 1,364 hectares in 2013 but in 2017 it went down to 1,322 hectares. Rice production similarly went down from 5,677 metric tons on 2013 to 5,407 metric tons in 2017. Average rice yield ranges from 4.07 to 4.19 metric tons per hectare [1].

D. Social and Cultural Resources

Population and Community. The estimated population of Norzagaray in 2018 is about 121,378 spread across 13 barangays and is presented in **Table 4-5**.

Table 4-6: Summary of Population in Norzagaray, 2016

Barangay	Population
Bangkal	1,548
Baraka	636
Bigte	12,911
Bitungol	14,001
Friendship Village Resources	13,194
Matictic	12,106
Minuyan	11,015
Partida	6,516
Pinagtulayan	2,031
Poblacion	15,347
San Lorenzo	2,822
San Mateo	11,350
Tigbe	17,091
Total	121,378

Source: Socioeconomic Profile 2018

Ancestral Domains. In addition, the mountains of Norzagaray were home to the Dumagats, as recorded by the early Spanish historians. The concentration of these Indigenous People (IP) is found in Barangays San Lazaro and San Mateo, as recorded in the 2000 Census of Population. This may also be related to the approval of the Karuhume CADT for the Daumagats of Norzorgaray, City of San Jose del Monte of Bulacan, and Rodriguez, Rizal. Further, although the Dumagats have their own health care practices, they perceive that they are still in need of social services assistance provided by the government.

Health Facilities. Based on the Field Health Service Information System (FHSIS) Annual Report (2017), health facilities in Norzagaray have increased from 2005 to 2017, however, there is a large gap in the number of needed health professionals in the municipality.

In 2017, government health facilities in Norzagaray consisted of: one (1) Municipal Hospital, two (2) Rural Health Units, three (3) Health Centers, and 13 Barangay Health Stations. In terms of medical personnel, there were three (3) doctors, two (2) dentists, two (2) nurses, 13 midwives, two (2) medical technologists and 134 barangay health workers.

For private sector, there is one (1) hospital, nine (9) clinics (including two (2) with laboratory services, one (1) optical clinic and one (1) aesthetic center), and 18 drugstores [1].

Sanitation Facilities. The number of households that owned a septic tank were at 87.84% for the Bulacan province. In the Municipality of Norzagaray, the lowest percentages of households with access to sanitary toilet and safe drinking water is Barangay Bangkal, Baraka, Pinagtuluyan and San Mateo.

There are no sewerage and septage management facilities being provided by the NorWD, however, the water district intends to setup one for the municipality of Norzagaray. The NorWD's septage treatment subproject shall be part of the WDDSP funded by the ADB.

Solid Waste Management. Even before the approval of the solid waste management system of Norzagaray, the SB Ordinance No. 2007-06-06 "Enacting the Municipal Environmental Code of the Municipality of Norzagaray" which was enacted on June 27, 2007, the municipal government has already implemented several measures to comply with the R.A. 9003 or the Ecological Solid Waste Management Act of 2000. Currently, a sanitary landfill located in Sitio Coral in Barangay Matictic is being used by the municipality with an area of 107,698 sq.m. The daily volume of garbage recorded in 2018 was 16 tons. In addition, through the enacted of the environment code of the municipality, all barangays were enjoined to establish and operate their own MRFs.

Educational Facilities. Norzagaray's educational facilities consist of the following: 1 tertiary institution; 6 public and 3 private high schools; 23 public and 7 pre-elementary and elementary schools, and; 45 government day care centers[2].

Socio-economic Conditions. The increase of population between the years 2010 and 2015 recorded indicated a growth rate of 1.60%, as reported by the NSO. Falling within the 100,000–500,000 population range, Norzagaray is classified as a large town. This first-class municipality had a total income of Php 384 million from tax revenues, internal revenue allotment (IRA), service and business income, and other sources in 2016.

[2] Norzagaray Socioeconomic Profile 2018

5 ANTICIPATED IMPACTS AND MITIGATION MEASURES

This section assesses the impacts of the proposed activities on various environmental components of the subproject site.

Methodology. Anticipated impacts to be considered were assessed through the following activities: (i) gathering of inputs from interested and affected parties through consultation; (ii) desktop research of information relevant to the proposed project; (iii) site visit and professional assessment; and (iv) evaluation of proposed design and potential impacts. Categorization of the project and formulation of mitigation measures have been guided by ADB's General REA Checklist (**Annex 1**) and SPS.

A comprehensive screening of environmental impacts is carried out through assessment of general parameters associated with water supply projects against the components of the proposed NorWD subproject and the environment where the facilities will be constructed. A screening checklist was adopted using previous ADB IEE Reports which was developed using various sources such as DENR checklists, ADB's REA Checklist, and World Bank Environmental Source Book. Some items of the checklist may not be applicable to this particular subproject, however, they are still included to indicate its relevance in the screening process.

Impact Assessment. The assessment is made on the following phases of the subproject: (i) pre-construction, (ii) construction, and (iii) operation and maintenance. Results of the environmental impacts screening are summarized in **Table 5-1** which shows the impact types and magnitudes for both positive and negative impacts without the mitigating measures and the resulting situations when mitigating measures will be implemented. Discussions of each issue are presented in the succeeding sections. For ease of identification, a summary of the environmental impacts that should be included in the Environmental Management Plan(EMP) is presented at the end of this section (see **Table 5-3**)

Due to the subproject's relatively long operational life, decommissioning or closure in the near or medium term (e.g., 25–50 years) is not envisaged. Furthermore, environmental impacts arising from decommissioning of the proposed NorWD facilities are deemed to be minimal such as: (i) residual waste cleanup is not a major concern since the facilities are not industrial manufacturing plants with potential problems for toxic and hazardous wastes, and (ii)solid wastes from decommissioning is also not a major concern since the structures are mostly made of reinforced concrete and the solid wastes are mostly recyclable materials such as broken concrete materials, reinforcing steel bars used in the structures, structural steel, roofing materials, electrical wires, etc. In the event that decommissioning becomes an option, the appropriate action plan will be drawn up in accordance with the regulatory requirements of the Philippine Government.

Table 5-1: Summary of Environmental Impacts Screening

Environmental Impacts and Risks	Without Mitigation	With Mitigation
PRE-CONSTRUCTION PHASE		
Encroachment to environmentally sensitive areas	n.a.	n.a.
Impacts and risks to biodiversity conservation	n.a.	n.a.
Encroachment to historical areas and cultural areas	n.a.	n.a.
Potential nuisance and problems to the public	● -	Δ
Interruption of other utility services	● -	Δ
Loss of assets (IR concerns)	n.a.	n.a.

Environmental Impacts and Risks	Without Mitigation	With Mitigation
CONSTRUCTION PHASE		
Modification of construction site topography	Δ -	Δ
Displacement of Rare or Endangered Species	n.a.	n.a.
Soil erosion and sediments of construction sites	● -	Δ
Nuisance/public inconvenience in pipelaying	● -	Δ
Noise from construction equipment	● -	Δ
Local air pollution due to construction activities	● -	Δ
Pollution due to improper waste management (solid, liquid, hazardous, spoils, and construction debris)	● -	Δ
Vehicular traffic congestion and public access	● -	Δ
Hazards to public due to construction activities	● -	Δ
Pollution and health risk due to workers camp	● -	Δ
Occupational health and safety risks to workers	● -	Δ
Improper closure of construction sites	● -	Δ
Increase employment opportunity in work sites	● +	● +
OPERATION AND MAINTENANCE PHASE		
Health hazard due to delivery of poor water quality	● -	Δ
Pollution from increased generation of sewage and sullage	n.a.	n.a.
Increase employment opportunities	n.a.	n.a.

Legend: n.a. = not applicable; Δ = insignificant; ●= significant; + = positive; - = negative

Table 5-2 presents the summary of government environmental compliance documents needed by the sub-project before commencement of construction works, during construction and during operation.

Table 5-2: Summary of Government Environmental Compliance Documents for Water Supply Subproject

Stage of Development	Regulatory Permit	Issuing Agency	Applicable Legislation
Pre-construction	ECC	EMB Regional Office	PD 1586 and its implementing rules and regulations
Construction	Clearing/Fencing/ Excavation Permit	LGU	LGU Ordinance
Operation	Compliance with DOH for Philippine National Standards for Drinking Water (PNSDW) 2017		DOH AO 2007-0012

A. Design/Pre-Construction Phase Considerations

Encroachments. NorWD subproject's components will not be located in areas that are environmentally sensitive and areas with historical and cultural importance. The proposed route of the pipelines is along the Sitio Spar, Upper Bigte to Matandang Barrio, Brgy. Bigte, Norzagaray, Bulacan. There are no known archaeological and cultural assets in these proposed sites. Nevertheless, precautions will be taken to avoid potential damage to any archaeological and cultural assets by inclusion of provisions in tender and construction documents requiring the contractors to immediately stop excavation activities and promptly inform the authorities if archaeological and cultural assets are discovered. Under the Cultural

Properties Preservation Act (Presidential Decree No. 374) in the event that excavators shall strike upon any buried cultural property, suspension of excavation is inevitable and it shall be reported immediately upon occurrence of the event to the Director of the National Museum and shall then take appropriate actions with regards to the matter. The suspension can only be lifted by the Director of the National Museum. Accordingly, in case of archeological, historical, cultural chance finds, in order to avoid damage to cultural properties, the following steps should be observed: (i) detailed design of all civil works will be located away from all cultural/archeological/historical properties; (ii) procedures for chance finds of valued relics and cultural values will be stipulated in the contract with contractors in order to avoid damaging such valuable properties; (iii) site supervisors will be on the watch for chance finds; (iii) upon a chance find, all work will be stopped immediately, find will be left untouched, and notify NorWD who in turn will notify the National Museum; (iv) work at the find site will remain suspended until the National Museum allows work to resume.

Impacts and Risks to Biodiversity Conservation. There are no identified impacts and risks to biodiversity conservation since the NorWD subproject's components will not be located in areas that are environmentally sensitive. The sites are not in undisturbed landscapes and over the years the ecological changes due to human activities in the area have resulted to the present residential and commercial landscapes.

Nuisance and Problems to the Public. Potential nuisances and problems affecting the public during construction can be avoided and immediately addressed through consultation and information dissemination to potentially affected people during detailed design and pre-construction phase. Tender documents shall include provisions addressing potential nuisances and problems to the nearby community during construction including environmental management provisions on the following issues: (i) erosion and sediment runoff, (ii)noise and dust, (iii) vehicular traffic, (iv) construction wastes, (v) oil and fuel spillages,(vi) construction camps, and (v) public safety and convenience.

Interruption of other utility services. Some existing utility services could be temporarily interrupted during construction especially co-located utility lines and may cause inconvenience to the public.

Mitigation. Prior to construction works, the contractor shall coordinate with respective offices in acquiring required clearances with regard to electricity, telephone lines, and other utilities/structures that may be affected. These shall all be reflected in the construction contracts. Affected communities will be informed in advance of possible service interruption.

Loss of Assets. The proposed project will not entail any involuntary resettlement and there are no adverse impacts on surrounding structures since the pipeline routes are within right of way

B. Construction Phase Environmental Impacts

Prior to the commencement of construction activities, the civil works contractor is required to submit a Contractor's Environmental Management Plan (CEMP) which is a refinement of NorWD subproject's initial EMP. The proposed mitigation in the initial EMP may be further modified or enhanced in the CEMP to make it more site-specific and include detailed management plans such as traffic management plan, spoils and wastes management plan, community and occupational health and safety plan, etc. The CEMP will also identify sensitive receptors, including utility lines and infrastructure that will be affected by project activities. The CEMP requirements are further discussed under the Environmental Management Plan (EMP) section. A sample CEMP outline is presented in **Annex 3**.

Site Preparation. Replacement of pipelines will not involve modification of the construction site topography. Water supply pipelines will follow as much as possible the existing site contour. This issue is therefore considered not significant. Upon verification with NorWD, there are no timber species that will be affectedly project during vegetation clearing.

Soil Erosion and Sediment from Construction Sites. During rainy seasons, exposed soil at the construction site can easily be eroded and carried to the natural drainage system if preventive measures are not established.

Mitigation. In preventing erosion, surface runoff must be controlled using structural erosion prevention and sediment control practices which will divert the storm water flows away from the exposed areas, prevent sediments from moving offsite, and reduce the erosive forces of runoff waters. These measures must be established by the contractor: (i) interceptor dikes, (ii) pipe slope drains, (iii) straw bale barriers, (iv) sediment traps, and (v) temporary sediment basins. Whenever possible, total exposed area shall be minimized.

Nuisance/Public Inconvenience during Pipelaying. The prolonged period of water supply service interruptions during pipelaying works may result to public inconvenience. Dumping of construction materials and solid wastes in water bodies will also cause nuisance to the public aside from affecting water quality and the flow regime. Excavation and digging activities will also cause inconvenience and may restrict public access to subproject areas.

Mitigation. The contractor shall be required to perform the following: (i) installation or replacement of pipes within the shortest time possible to minimize water supply cut-off periods and/or use of night time schedules, as well as announcement of water supply interruptions two (2) to three (3) days prior to actual cut-off; and (ii) avoid dumping of earth, stones, and solid wastes in water bodies to avoid adverse impact on water quality and flow regime.

Restriction of access to the site must be done through a combination of institutional and administrative controls, including fencing, signage, and communication of risks to the local community.

Construction Noise. Potential sources of noise may come from vehicles and construction equipment, which can generate noise of 80 dB(A) from a distance of 30 m while loud noise from sources such as blasting are not anticipated. Although there are no residential and commercial establishments along the pipeline alignment, noise brought by construction should be controlled.

Mitigation. Exposure of receptors to increased noise levels can be lessened by scheduling construction during daytime only. In areas near residential areas or noise sensitive sites, noisy equipment shall not be operated during nighttime to early morning (22:00H – 06:00H). The use of noise suppressors (mufflers) in equipment and vehicles is also recommended. Workers using noisy equipment shall be provided with earplugs as well.

Ambient baseline noise levels will be established at designated strategic locations with sensitive receptors. In case baseline noise levels already exceed the guideline values, IFC-EHS allows a maximum 3 dB(A) increase in noise levels as a result of project activities. Mitigation measures may be adjusted in the CEMP based on the baseline noise levels.

Local Air Pollution Due to Construction Activities. Piles of sand, gravel and waste materials that would be generated during trenching, earthworks, and soil preparation activities can contribute to the total suspended particles in the air. Machineries and heavy equipment used in the construction will also account for vehicular emissions during construction. Without any mitigating measures, dust generation could be significant during dry periods.

Mitigation. Machineries and heavy equipment used in the construction must be regularly maintained and operated and must comply with the requirements of the Clean Air Act regarding vehicle emissions. Piles of sand, gravel and waste materials that would be generated during site clearing should be watered frequently to prevent dust particles from affecting nearby areas. Covers for open stockpiles shall be required to prevent dust generation due to the wind current. Vehicles transporting loose construction materials such as sand, gravel, spoils, and the like shall be provided with tarpaulin cover as well.

Waste Generation. Possible wastes that may be generated from the construction activities includes: (i) domestic and office wastes; (ii) domestic wastewater; (iii) hazardous wastes such like excess grease, lubricants, and paints, and; (iv) spoils and construction debris. Improper handling and disposal of these wastes may result to pollution of soil and nearby water resources.

Mitigation. As part of the CEMP, handling and disposal of wastes must be established though a waste management plan. All domestic wastes including construction debris will be disposed of in accordance with the construction and operations waste management procedures. The project contractor will be required to install portable toilets at the construction site. As part of good construction practice, the contractors will be required to conduct an awareness program for all workers regarding the prevention and management of spills and proper disposal of used containers. Fuel and oil shall be stored in a designated secured area provided with an impermeable liner to prevent the accidental spills from seeping into the ground. Proper handling and disposal of excavated materials and other spoils shall be undertaken in accordance with existing local guidelines. Stockpiling of spoils must be avoided.

Vehicular Traffic Congestion and Public Access. Traffic flow will be disrupted if routes for delivery of construction materials and temporary blockages in heavily traveled highways and narrow streets are not planned and coordinated. Potential traffic congestion is expected due to construction activities, but of minimal magnitude.

Mitigation. A traffic management plan shall be included in the CEMP. The traffic management plans which may include traffic diversion schemes should be properly coordinated with the LGU and the local office in charge of traffic management. Prior to implementation of the traffic re-routing plan, the public must be informed in advance. The method of informing the public would be left to the discretion of the proponent. Options include posting notices in public places, in local newspapers, through local radio and television programs or through public address system. Billboards placed in strategic locations will also serve the purpose. It is recommended to place appropriate and sufficient signages at strategic locations to forewarn the public of the expected traffic problem and to suggest alternative routes that they may take. During this period, traffic aides must be assigned to manage the traffic.

Hazards to Public Due to Construction Activities. Inconvenience to the general public which may result to accidents is one of anticipated impacts during construction activities. Pipelaying along the roads as well as movement of construction vehicles and excavations would pose some hazards to the driving public. There is also risk of people falling down in open trenches since pipelaying trenches are normally left uncovered until pipeline testing is completed.

Mitigation. NorWD and the contractor should ensure that sufficient and appropriate safety warning devices, safety signs, safety nets or safety guards and cover for open ditches must be implemented at strategic locations to ensure the safety of the people. NorWD may also consult the provincial and local government units to delineate the public safety zone or measurable distance prohibiting public entry and other possible forms of encroachment during construction operations.

Pollution and Health Risk due to Workers Camp. During the construction period, workers are expected to erect temporary workers' camps. Due to run-off of from sanitary sewage, wastewater and solid wastes brought by workforce, potential pollution may occur as a result of improper waste disposal.

Mitigation. The construction contractor shall be required to carry out the following: (i) install proper sanitary facilities to prevent the indiscriminate discharge of sanitary wastes at the camps' surroundings, (ii) implement proper solid waste management, and (iii) prevent surface runoffs from flowing into the workers camps to avoid carrying away any contaminants. The contractor shall be required to use temporary diversion drains, catch drains, and silt-traps at these camps.

Occupational health and safety risks to workers. Workers' health and safety hazards may include inadequate supply of safe and potable water and inadequate sanitation facilities; poor sanitation practices on site; poor housing conditions; handling of hazardous substances and operation of construction equipment; exposure to extreme weather and non-observance of health and safety measures. Construction workers may also be potentially exposed to communicable and transmittable diseases.

Mitigation. Implementation of an occupational health and safety plan shall include international best practices on occupational health and safety. As minimum and whichever are applicable, the occupational health and safety plan may include the following:

(i) Communication and Training:
- Training of all workers on occupational health and safety prior to construction works;
- Conduct of orientation to visitors on health and safety procedures at work sites;
- Signages strategically installed to identify all areas at work sites, including hazard or danger areas;
- Proper labelling of equipment and containers at construction and storage sites; and
- Suitable arrangements to cater for emergencies.

(ii) Physical Hazards:
- Use of personal protective equipment (PPE) by all workers and ensure these are used properly;
- Avoidance of slips and falls through good house-keeping practices;
- Use of bracing or trench shoring on deep excavation works;
- Adequate lighting in dark working areas and areas with night works;
- Rotating and moving equipment inspected and tested prior to use during construction works. Specific site traffic rules and routes in place and known to all personnel, workers, drivers, and equipment operators; and
- Use of air pollution source equipment and vehicles that are well maintained and with valid permits.

(iii) General Facility Design and Operation:
- Regular checking of integrity of workplace structures to avoid collapse or failure;
- Ensuring workplace can withstand severe weather conditions;
- Enough workspaces available for workers, including exit routes during emergencies;
- Fire precautions and firefighting equipment installed;
- First aid stations and kits and trained personnel are available.

- Secured storage areas for chemicals and other hazardous and flammable substances are installed with access limited to authorized personnel only;
- Good working environment temperature maintained;
- Worker camps and work sites provided with housekeeping facilities; and

Maintain records and make reports concerning health, safety and welfare of persons, and damage to property. Guidelines and health protocols to prevent COVID-19 transmission in the workplace will be included in the CEMP.

Improper Closure of Construction Sites. Generation of solid wastes (*e.g.*used wood materials, steel works cuttings, paint and solvents containers, used oil from equipment, unused aggregates, etc.) after construction activities may cause aesthetic problems and potential contamination of the surrounding environment.

Mitigation. The project site shall not be abandoned in disorderly condition but instead restored for functional use. Following the completion of the construction, the NorWD shall deactivate the project offices, and the construction yard including unserviceable vehicles and equipment. Wastes arising from the abandonment must be taken care of the contractor.

Increase Employment Opportunities at Work Sites. Construction activities require a considerable number of workers. The impact would be beneficial and significant to people since employment opportunities in the area will increase.

Enhancement. A robust "local first" hiring policy will be designed and implemented by the contractor in coordination with local officials and community leaders especially at the barangay and municipal levels. No preference in terms of gender during the hiring process will be observed.

C. Operation Phase Environmental Impacts

Health Hazard Due to Delivery of Poor Water Quality. Delivery of water with poor quality to distribution system is a health risk to the consumers. Threats of contamination due to presence of bacteria, viruses, protozoa, or chemicals are usually present in raw water sources up to the service connections, thus, post-treatment contamination is still anticipated as the water is transported to the consumer and considered to be a significant impact.

Mitigation. NorWD shall ensure that the potable water consistently passes the requirements of the Philippine National Standards for Drinking Water (PNSDW) of 2017. To achieve this, implementation of the water safety plan with regular water quality monitoring shall be undertaken.

A water safety plan shall enable NorWD to (i) prevent contamination of its water sources, (ii) treat the water to reduce or remove contamination that could be present to the extent necessary to meet the water quality targets, and (iii) prevent recontamination during storage, distribution and handling of drinking water.

For controlling microbial contamination, gas chlorine disinfection will ensure that water will be chlorinated and adequate residual disinfection will be maintained. The standards for chlorine residual of the 2017 PSDW are: (i) 0.3 mg/l minimum for detection at the farthest point of the distribution system and (ii) 1.5 mg/l maximum for detection at the farthest point of the distribution system.

Pollution from Increased Generation of Sewage and Sullage. Since majority of the water supply are used for domestic purposes, increasing the water supply to the service area will

also increase the generation of sewage and sullage. This wastewater will contribute to pollution of the surrounding areas if not addressed properly and impact would be significant.

Mitigation. Sewage and sullage will be discharged to the individual septic tanks system of the water consumers. The septic tank system will: (i) treat the wastewater and reduce the pollution potential and (ii) reduce the public's exposure to untreated domestic wastewater. This will help in avoiding disease transmission.

Increase Employment Opportunities. After the pipeline system is expanded, employment opportunities during the operation phase are not expected.

After careful and thorough assessment of impacts and risk screening, this proposed subproject is expected to have an overall beneficial net effect on the water supply system of the WD because it will improve the water resiliency in the Province of Bulacan. In addition, the subproject will ensure a longer service life of pipelines and reduced water loss.

Table 5-3 lists the environmental impacts and risks that requires mitigation and shall be carried to the EMP Section.

Table 5-3: Environmental Impacts and Risks for Inclusion in EMP

Environmental Impacts and Risks	Without Mitigation	With Mitigation
PRE-CONSTRUCTION PHASE		
Potential nuisance and problems to the public	● -	Δ
Interruption of other utility services	● -	Δ
CONSTRUCTION PHASE		
Soil erosion and sediments of construction sites	● -	Δ
Nuisance/public inconvenience in pipelaying	● -	Δ
Noise from construction equipment	● -	Δ
Local air pollution due to construction activities	● -	Δ
Pollution due to improper waste management (solid, liquid, hazardous, spoils, and construction debris)	● -	Δ
Vehicular traffic congestion and public access	● -	Δ
Hazards to public due to construction activities	● -	Δ
Pollution and health risk due to workers camp	● -	Δ
Occupational health and safety risks to workers	● -	Δ
Improper closure of construction sites	● -	Δ
Increase employment opportunity in work sites	● +	● +
OPERATION AND MAINTENANCE PHASE		
Health hazard due to delivery of poor water quality	● -	Δ

Legend: n.a. = not applicable; Δ = insignificant; ●= significant; + = positive; - = negative

The subproject is unlikely to cause significant adverse impacts. However, there are no impacts that are significant or complex in nature, or that needs an in-depth study to assess the impact. The potential adverse impacts that are associated with design, construction, and O&M can be mitigated to acceptable levels with the recommended mitigation measures.

6 PUBLIC CONSULTATION AND INFORMATION DISCLOSURE

A stakeholder consultation and participation were implemented as part of the preparation and implementation strategy. This were done to address the stakeholders' needs and disclosure of the project details and the benefits they shall receive. The consultation process during the project preparation has solicited inputs from stakeholders, including government officials.

Key stakeholders were consulted during the project preparation, EMP implementation, and project implementation including the following:

(i) Local NGOs;
(ii) WDs representatives and consultants, and
(iii) ADB representatives

The public consultation activities conducted by the NorWD with its stakeholders, specifically the barangay officials of Brgy.Bigte, were carried out in preparation for the construction of the proposed additional transmission and distribution pipelines in the area. The summary of the activities conducted is presented in **Table 6-1**.

Table 6-1: Summary of Activities Conducted

Date	Activity	Number of Attendees	Location	Remarks
01 March 2021	Staff consultation with barangay officials	15	Brgy. Bigte, Norzagaray, Bulacan	Presentation of the proposed project and its details, and purpose of the project

NorWD consulted the barangay officials of Brgy. Bigte to disclose the NorWD Water Supply Improvement Project. Laying of pipelines mainly covers Brgy. Bigte. The scope of work for the pipelaying includes approximately 2,585 linear meter, compose of 1,680 lm of 300mm diameter uPVC, 780 lm of 250mm diameter uPVC; and 125 linear meter bridge crossing using 300mm diameter steel pipes, demolition and surface restoration, supply, installation, testing and commissioning of submersible pump, valves and its accessories.

The additional network of pipelines will provide more water supply in the area; in line with NorWD's continuous efforts to improve the water supply in different parts of Norzagaray.

The Brgy. Bigte officials, especially Hon. Jovina A. Lamadrid, Brgy. Captain, with no objection, allowed this project for the improvement of water supply in the area given that this project aims to improve the water supply of residents of Norzagaray, Bulacan. Additional consultation with project affected stakeholders will be conducted prior to construction with the following considerations:

1. The consultation will be jointly undertaken by NorWD and the contractor and the supervision consultant, if already mobilized.
2. The stakeholders who will be directly affected by construction work shall be invited.
3. If COVID-19 is still a major threat during the consultation, the face to face consultations will be conducted in an open-air venue where the health and safety protocols can be observed.
4. Alternative ways to conduct meaningful consultation shall be implemented if item 3 is not feasible.

NorWD acknowledged the permission and coordination of the respective barangay officials. The documentations of the meeting are presented in the **Annex 4**.

7 ENVIRONMENTAL MANAGEMENT PLAN (EMP)

The EMP addresses the need for mitigation and management measures for the NorWD subproject. This includes: (i) mitigating measures to be implemented, (ii) required monitoring associated with the mitigating measures, and (iii) implementation arrangement. Institutional set-up is presented in the implementation arrangement and discusses the roles during implementation and the required monitoring. It also outlines the requirements and responsibilities during pre-construction, construction, and operation phases. The EMP shall be included in the contract documents to guarantee an environmentally responsible procurement. Tender documents and construction contracts shall include environmental management provisions on the following issues: (i) erosion and sediment runoff, (ii) noise and dust, (iii) vehicular traffic, (iv) construction wastes, (v) oil and fuel spillages, (vi) construction camps, and (vii) public safety and convenience.

A. Environmental Mitigation

Table 7-1 presents the information on: (i) required measures for each environmental impact that requires mitigation, (ii) locations where the measures apply, (iii) associated cost, and (iv) responsibility for implementing the measures. Details of mitigating measures are already discussed in **Section 5** where the need for mitigation of each impacts was determined in the screening process.

Table 7-1: Environmental Mitigation Plan

Project Activity	Potential Environmental Impact	Proposed Mitigation Measure or Enhancement Measure	Location	Mitigation Cost	Responsibility Implementation/ Supervision
PRE-CONSTRUCTION PHASE					
Excavation requirements	Excavation requirements	• Provision in tender documents that will require construction activities to be stopped immediately upon discovery of any archaeological and cultural relics and promptly reporting to the National Museum	Pipeline trenches, civil works excavations	Part of detailed design cost	Design Consultants/ LWUA Project Management Unit (PMU)
CEMP preparation	Improper EMP implementation	• Upon mobilization the Contractor shall assign a qualified Environmental, Health, and Safety (EHS) Officer who shall ensure the proper implementation of the EMP and EMoP and take the lead in the preparation of a contractor's environmental management plan (CEMP). The CEMP will update the EMP and baseline information if necessary, make it more site-specific and include detailed management plans such as traffic management plan, spoils and wastes management plan, community and occupational health and safety plan. The EMP shall be reviewed and cleared by PMU, PIU and	All project sites	Included in construction contract cost.	Contractor/ NorWD PIU, PMU, Supervision Consultant, LWUA

Project Activity	Potential Environmental Impact	Proposed Mitigation Measure or Enhancement Measure	Location	Mitigation Cost	Responsibility Implementation/ Supervision
		ADB prior to start of construction.			
Assessment of social and community concerns	Potential nuisance and concerns from the public	• Consultation with the affected communities regarding the expected impacts and proposed mitigation measures of the project • Provisions to address the potential nuisances and concerns from the public during construction phase must be included in the CEMP.	Pipelines routes	Part of detailed design cost	NorWD Project Implementation Unit (PIU), Design Consultants/ LWUA PMU
	Damage to utility infrastructure or disruption of utility services	• Possible utility lines that may be affected during the construction must be identified. • Proper coordination with utility providers with regard to electricity, telephone lines, and other utilities/structures that may be affected. Permit/s or clearance/s must be secured, if necessary	Pipelines routes, ground reservoirs, and new office	Part of detailed design cost	NorWD Project Implementation Unit (PIU), Design Consultants/ LWUA PMU
Preparation of detailed engineering design	Natural hazards, such as earthquake and flood	• Structural integrity of the water supply system shall conform with the requirements of the 2015 National Structural Code of the Philippines (NSCP) and the latest edition of the American Water Works Association (AWWA) Standards pipes, valves, and fittings • Projection of flood level using 50-year return period for catchment areas less than 40 km², and 100-year return period for catchment areas more than 40 km²	All structural components	Part of detailed design cost	Design Consultants/ LWUA PMU
	Project-related complaints	• Establishment of a grievance redress mechanism (GRM).			NorWD PIU, PMU/ Supervision Consultant, LWUA
Site preparation	Tree cutting (if applicable)	• Assess the project area and pipe alignment and check if there are trees need to be cut. Establish ownership and avoid cutting trees of ecological importance. • Identify the number of affected trees, apply for a tree cutting permit from the DENR and comply with all government requirements.	To be identified.	Included in construction contract cost.	Contractor/ NorWD PIU, PMU, Supervision Consultant, LWUA, DENR
Baseline survey	Ambient noise level	• Baseline measurement of ambient noise shall be conducted and will be incorporated in the CEMP	To be identified.	Included in construction contract cost.	Contractor/ NorWD PIU, PMU, Supervision

Project Activity	Potential Environmental Impact	Proposed Mitigation Measure or Enhancement Measure	Location	Mitigation Cost	Responsibility Implementation/ Supervision
		• If baseline noise levels already exceed the IFC-EHS guideline values, a maximum 3 dB(A) increase in noise levels as a result of project activities shall be allowed. Mitigation measures should be implemented to ensure this.			Consultant, LWUA, DENR
	Non-compliance with government requirements	• All applicable government permits such as ECC/CNC, water permit, permit to operate, etc. shall be secured prior to start of construction.	All project sites	Included in construction contract cost.	Contractor NorWD PIU/ PMU, Supervision Consultant, LWUA
CONSTRUCTION PHASE					
Pipelaying and other civil works	Soil erosion and sediments from construction sites during rainy periods	• Minimize total exposed area • Use of structural erosion prevention and sediment control practices which may include: interceptor dikes, pipe slope drains, straw bale barriers, sediment traps, and temporary sediment basins	Pipelines routes	Incorporated in construction contract	Contractor/ NorWD PIU, Supervision Consultants
	Nuisance/ inconvenience to the public	• Minimize water supply cut-off periods and/or use of nighttime schedules, as well as announcement of water supply interruptions 2–3 days prior to actual cut-off • Avoid dumping of earth, stones, and solid wastes in water bodies	Pipelines routes	Incorporated in construction contract	Contractor/ NorWD PIU, Supervision Consultants
	Nuisance from noise of construction equipment and vehicles	• All heavy equipment and machineries shall be fitted with noise dampening devices that are in good condition. • Inform workers to minimize their activities to avoid disturbing the nearby communities. Avoid operating noisy equipment during nighttime (22:00 – 06:00) • Vehicle horn signals will be kept at a low volume, if necessary.	Pipelines routes	Incorporated in construction contract	Contractor/ NorWD PIU, Supervision Consultants
	Air pollution due to construction activities	• Water spraying for dust control • Construction materials with potential for significant dust generation shall be covered • Tarpaulin cover for trucks transporting loose construction materials • Avoid smoke belching equipment	Pipelines routes	Incorporated in construction contract	Contractor/ NorWD PIU, Supervision Consultants

Project Activity	Potential Environmental Impact	Proposed Mitigation Measure or Enhancement Measure	Location	Mitigation Cost	Responsibility Implementation/ Supervision
	Pollution due to improper waste management (solid, liquid, hazardous, spoils, and construction debris)	• Prepare a waste management plan as part of the CEMP • Burning of garbage is not allowed • Conduct an awareness program for all workers regarding the prevention and management of spills and proper disposal of used containers. • All domestic wastes will be disposed of in accordance with the construction and operations waste management procedures and applicable laws	Pipelines routes	Incorporated in construction contract	Contractor/ NorWD PIU, Supervision Consultants
	Traffic congestion and hindrance to access	• Traffic diversion schemes and other traffic management plans should be properly coordinated with the LGU and the local office in charge of traffic management, and consulted with the stakeholders. • Prior to implementation of the traffic re-routing plan, the public must be informed in advance.	Pipelines routes	Incorporated in construction contract	Contractor/ NorWD PIU, Supervision Consultants
	Pollution, accident, and health and safety risks to workers	• Provision of sanitary or portable toilets to laborers • Implementing a solid waste management plan • Provision of surface runoffs control such as temporary diversion drains, catch drains, and silt-traps • Provision of personal protective equipment (PPE) to workers and requiring them to use PPE appropriate to their work • Conduct HSE training to workers, including HIV, COVID-19 and STD awareness • Compliance with government guidelines and protocols for COVID-19 • Compliance to DOLE Occupational Health and Safety Standards	Workers camp; construction sites	Incorporated in construction contract	Contractor/ NorWD PIU, Supervision Consultants
	Hazard to public due to construction activities	• Implement road safety plan and safety measures including warning signs to alert people of hazards around the construction sites, barricades, and night lamps for open trenches in pipelaying	Pipelines routes	Incorporated in construction contract	Contractor/ NorWD PIU, Supervision Consultants

Project Activity	Potential Environmental Impact	Proposed Mitigation Measure or Enhancement Measure	Location	Mitigation Cost	Responsibility Implementation/ Supervision
	Increase employment opportunities	• A robust "local first" hiring policy will be designed and be implemented in coordination with local officials and community leaders especially at the barangay and municipal levels. • At least 50% hiring of unskilled labor from local residents will be implemented as per RA 6685. • No preference in terms of gender during the hiring process will be observed. • Adopt a just compensation scheme to avoid future labor and management conflicts.	Pipelines routes	No cost	Contractor/ NorWD PIU, Supervision Consultants
Rehabilitation and closure of construction sites	Improper closure of construction sites	• Removal and proper disposal of all construction wastes and implement surface restoration	Pipelines routes	Incorporated in construction contract	Contractor/ NorWD PIU, Supervision Consultants
OPERATION PHASE					
Water production	Health hazard due to delivery of poor water quality	• Water disinfection using chlorine • Water safety plan implementation • Regular water quality monitoring in compliance with the 2017 Philippine National Standards for Drinking Water (PNSDW)	Pipelines routes	Part of operation & maintenance costs	NorWD/LWUA

Although details of the required mitigating measures are already discussed in the screening for impacts, the following items are discussed further to highlight their importance: (i) tender documents and construction contracts, (ii) contractor's environmental management plan, (iii) construction site management plan, (iv) water safety plan, (v) unanticipated environmental impacts, and (vi) COVID-19 safety guidelines.

Tender Documents and Construction Contracts. Inclusion of provisions addressing the management of environmental impacts and risk during construction in contract documents in the form of a Contractor's Environmental Management Plan (CEMP) guarantees an environmentally responsible procurement. Tender documents and construction contracts shall therefore include environmental management provisions on the following issues: (i) erosion and sediment runoff, (ii) noise and dust, (iii) vehicular traffic, (iv) construction wastes, (v) oil and fuel spillages, (vi) construction camps, and (vii) public safety and convenience. The IEE will be annexed in the bid documents to provide the contractors a comprehensive understanding of environmental management required for the subproject. The project IEE and EMP will be provided to the contractors to provide them the context of environmental management required for the project.

Contractor's EMP (CEMP). The CEMP shall be prepared by the civil works contractor and needs to be approved by NorWD's PIU prior to start of construction. Copies will be provided to LWUA PMU, supervision consultant and ADB to allow suggestions for improvement. This is a refinement of the NorWD subproject's EMP with details on staff, resources, implementation schedules, monitoring procedures and specific measures and procedures on

how the contractor will implement the EMP during construction and allocate a budget. This will be the basis for monitoring the environmental performance of the contractor by the PMU, NorWD PIU, construction supervision consultants, and other monitoring parties. Moreover, the construction supervision consultant will be able to manage the specific items expected from the contractor regarding environmental safeguards. With the CEMP, NorWD can easily verify the associated environmental requirements each time the contractor will request approval for work schedules.

As part of the CEMP, baseline noise level measurements will be done during detailed design phase at strategic locations on the areas with sensitive receptors to establish ambient baseline noise levels. Continuous 24-hr ambient noise sampling will be conducted at the selected sampling locations.

The CEMP shall provide details on specific items related to the environmental aspects during construction. It shall include specifications on requirements for dust control, erosion and sediment control, avoidance of casual standing water, management of solid, liquid and hazardous wastes, workers' camp sanitation, occupational health and safety, pollution from oil, grease, fuel spills, and other materials due to the operation of construction machineries, safety and traffic management, public safety and convenience, air and noise pollution control. It shall also include guidance on the proper design of the construction zone, careful management of stockpiles, vegetation, topsoil, and vehicles and machinery. See **Annex 3** for sample CEMP outline.

Water Safety Plan. Preparation of a water safety plan is advocated by WHO for ensuring the delivery of safe drinking water to the consumers using a comprehensive risk assessment and risk management approach that covers the process of sourcing water supply up to the distribution to consumers. Similarly, NorWD shall manage the environmental risk to its water supply system in a broader scale. A water safety plan shall enable NorWD to (i) prevent contamination of its water sources, (ii) treat the water to reduce or remove contamination that could be present to the extent necessary to meet the water quality targets, and (iii) prevent recontamination during storage, distribution and handling of drinking water. It is an approach that will clearly show the desire of the NorWD in applying best practices in ensuring delivery of potable water to its consumers.

Following the DOH Administrative Order No. 2014-0027 that mandates all drinking-water service providers to develop and implement their Water Safety Plan, NorWD's Water Safety Plan is already prepared. Upon completion of NorWD's Water Supply Improvement Project, the Water Safety Plan must be updated to include the improvements in the system.

Unanticipated Environmental Impacts. In case of occurrence of unanticipated environmental impacts during project implementation, NorWD shall update the EMP and CEMP to include measures to mitigate the unanticipated impacts or if warranted, prepare a supplementary environmental assessment and EMP to assess the potential impacts and outline mitigation measures and resources to address those impacts.

COVID-19 Safety Guidelines. In light of the recent outbreak of COVID-19, measures to prevent the spread of the virus in the workplace shall be put in place to safeguard the health and safety of workers during the construction period. In order to adapt with the new normal, the Philippine Government has issued guidelines to mitigate the spread of the virus, but each sector is also encouraged to develop its own set of guidelines suited to the sector activities. The Department of Public Works and Highways (DPWH) has released its Construction Safety Guidelines for the Implementation of Infrastructure Projects during the COVID-19 Public Health Crisis to ensure the safety of workers under the construction sector. This may be followed for the time being since LWUA has yet to release its COVID-19 safety guidelines

which the contractor must adhere to during the construction period once released. Contractors are required to adopt these guidelines in the workplace. These should be incorporated in the CEMP and resources should be allocated for its implementation. Monitoring of its implementation shall be reported in the SEMRs.

B. Environmental Monitoring

Table 7-2 presents the information on: (i) aspects or parameter to be monitored, (ii) location where monitoring is applicable, (iii) means of monitoring, (iv)frequency of monitoring, (v) responsibility of compliance monitoring, and (vi) cost of monitoring. The PMU shall prepare semi-annual environmental monitoring reports to be submitted to LWUA management detailing the status of mitigating measures implementation.

Table 7-2: Environmental Monitoring Plan

Aspects/ Parameters to be monitored	Location	Means of Monitoring	Frequency	Implementation Responsibility	Compliance Monitoring Responsibility	Monitoring Cost
PRE-CONSTRUCTION PHASE						
Specific provision in tender documents on archeological/ cultural relics	Pipeline trenches, civil works excavations	Verify draft and final documents	Twice – draft and final documents	Design consultants	LWUA PMU	Part of project management in detailed design (minimal cost)
Consultation meetings	Pipelines routes	Verify meetings documentation	After completion of meetings	NorWD, Design consultants	LWUA PMU	Part of project management in detailed design (minimal cost)
Specific provisions in tender documents on nuisance & concerns from the public	Pipelines routes	Verify draft and final documents	Twice – draft and final documents	NorWD, Design consultants	LWUA PMU	Part of project management in detailed design (minimal cost)
Applicable government permits and clearances	Entire project	Check for pemits/clearances or application status	(All government permits should be secured prior to start of construction)	NorWD, Design Consultants, Contractor	LWUA PMU	Part of project cost
CONSTRUCTION PHASE						
Total area to be exposed; runoff flowing into disturbed sites	Pipelines routes	Visual inspection of sites; plans verification	Daily during rainy periods	Contractor	Construction supervision consultants, NorWD PIU	Part of consultant's construction supervision contract; minimal cost to NorWD PIU
Water supply interruptions	Pipelines routes	Work schedules verification	Daily	Contractor	Construction supervision consultants, NorWD PIU	Part of consultant's construction supervision contract; minimal cost to NorWD PIU

Aspects/ Parameters to be monitored	Location	Means of Monitoring	Frequency	Implementation Responsibility	Compliance Monitoring Responsibility	Monitoring Cost
Materials and solid wastes dumped in water bodies	Pipelines routes	Visual inspection of sites	Daily	Contractor	Construction supervision consultants, NorWD PIU	Part of consultant's construction supervision contract; minimal cost to NorWD PIU
Noise levels to comply with IFC-EHS noise guideline values.	Pipelines routes	Use of sound level meter	Daily	Contractor	Construction supervision consultants, NorWD PIU	Part of consultant's construction supervision contract; minimal cost to NorWD PIU
Dust, cover of stockpiles, smoke belching vehicle and equipment	Pipelines routes	Visual inspection of sites	Daily	Contractor	Construction supervision consultants, NorWD PIU	Part of consultant's construction supervision contract; minimal cost to NorWD PIU
Road closure and traffic rerouting; materials stockpiles; road restoration	Pipelines routes	Traffic plans verification	Weekly	Contractor	Construction supervision consultants, NorWD PIU	Part of consultant's construction supervision contract; minimal cost to NorWD PIU
Sanitary toilets, garbage bins, runoff controls	Workers camps	Visual inspection of camps	Once before start of construction and once monthly	Contractor	Construction supervision consultants, NorWD PIU	Part of consultant's construction supervision contract; minimal cost to NorWD PIU
COVID-19 government protocols; symptoms on workers	All project facilities and work areas	Check for compliance with government guidelines on COVID-19	Daily	Contractor	Construction supervision consultants, NorWD PIU	Minimal cost to NorWD PIU
Road safety plan; sign, barricades and night lamps	Pipelines routes	Visual inspection of sites	Daily	Contractor	Construction supervision consultants, NorWD PIU	Part of consultant's construction supervision contract; minimal cost to NorWD PIU
Construction wastes	Pipelines routes	Visual inspection of sites	Once before final stage of demobilization	Contractor	Construction supervision consultants, NorWD PIU	Part of consultant's construction supervision contract; minimal cost to NorWD PIU
Compliance with ECC conditions and other government requirements	Entire project	Check documents	Periodic, as needed	Contractor, NorWD	Construction supervision consultants, PMU	Part of project cost

Aspects/ Parameters to be monitored	Location	Means of Monitoring	Frequency	Implementation Responsibility	Compliance Monitoring Responsibility	Monitoring Cost
Number of local labor employed	Pipelines routes	Verification of contractor's records	Once a month	Contractor	NorWD PIU	No cost
OPERATION PHASE						
E. Coli bacteria; PNSDW physical & chemical parameters	Pipelines	Water sampling and laboratory test	Monthly for bacteria; annual for physical & chemical	NorWD	LWUA	Part of NorWD's operation cost

Note: total of all minimal costs is less than Php 5,000.00

Project Performance Monitoring. Project performance monitoring presents the desired outcomes as measurable events by providing parameters or aspects that can be monitored and verified (**Table 7-3**). For pre-construction phase, the EMP requirements need to be incorporated in construction contracts to achieve an environmentally responsible procurement as a desired outcome. Construction phase desired outcomes include effective management of environmental impacts and reduce risk to public. For the operation phase, NorWD's water supply system must meet the drinking water standards (2017 PNSDW) for physical, chemical, and bacteriological parameters.

Table 7-3: Project Performance Monitoring

Desired Outcomes	Aspects/ Parameters to be monitored	Means of Monitoring	Frequency	Implementation	Compliance Monitoring	Monitoring Cost
PRE-CONSTRUCTION PHASE						
Environmentally responsive detailed design	EMP requirements incorporated in detailed design	Verify detailed design documents; EMP requirements reflected in tender documents	Twice – (i) draft detailed design documents and (ii) prior to approval of final documents	NorWD, Design consultants	LWUA PMU	Minimal cost
Environmentally responsible procurement	EMP requirements incorporated in construction contracts	Verify construction contract documents	Prior to finalization of construction contract documents	NorWD PIU	LWUA PMU	Minimal cost
CONSTRUCTION PHASE						
Effective management of environmental impacts during construction	Number of public complaints on construction activities	Verification of contractor's records; NorWD's coordination with local officials	Once a month	Contractor	Construction supervision consultants, NorWD PIU	Part of consultant's construction supervision contract; minimal cost to NorWD PIU
Reduce risk to public during construction	Number of accidents involving construction activities	Verification of contractor's records; NorWD coordination with local officials	Once a month	Contractor	Construction supervision consultants, NorWD PIU	Part of consultant's construction supervision contract; minimal cost to NorWD PIU

Desired Outcomes	Aspects/ Parameters to be monitored	Means of Monitoring	Frequency	Implementation	Compliance Monitoring	Monitoring Cost
OPERATION PHASE						
Conformance of Water quality to drinking water standards	Required drinking water quality parameters (bacteria count, color, pH, turbidity, dissolved solids, hardness, alkalinity, manganese, iron, fluoride, chloride, sulfates, magnesium, calcium, carbonates, and bicarbonates)	Water sampling and laboratory test	Monthly for bacteria; annual for physical & chemical	NorWD	LWUA	Part of NorWD's operation cost

Note: total of all minimal costs is less than Php 5,000.00

C. Implementation Arrangement

This subsection presents the: (i) institutional set-up, (ii) implementation schedule, (iii) required clearances and permits, and (iv) capability building

Institutional Setup. For this subproject, LWUA will serve as the executing agency, while NorWD will be the implementing agency. LWUA has overall responsibility for project coordination, implementation, and liaison with ADB and other government offices. A Project Management Unit (PMU) to be created by LWUA will be responsible for coordinating the implementation at the national level. PMU shall be established by LWUA prior to the start of construction activities. A PMU staff shall be designated as the Environment Officer for the project. Before the commencement of the subproject, a team of consultants will assist LWUA's PMU and NorWD to ensure smooth implementation and secure required documents. NorWD will be responsible for the procurement of goods, works, and services. During construction and operation phase of the subproject, NorWD will oversee the implementation of the subproject. NorWD shall create a Project Implementation Unit (PIU) for the day-to-day management of the project and will work closely with LWUA's PMU. WDGRC will handle the grievance redress mechanism and promptly address the public's complaints about environmental performance of the subproject.

ADB will assess status of EMP implementation and over-all environmental performance of the Project by reviewing environmental monitoring reports submitted by LWUA and conducting site visits to validate conditions onsite. Corrective actions will be agreed with LWUA, NorWD and the contractor to address deficiencies in EMP implementation or inadequacy of mitigation measures. ADB will disclose on its website semi-annual environmental monitoring reports submitted by LWUA.

Environmental Corrective Action Plan. Should the mitigation measures indicated in the CEMP and EMP are observed to be inadequate during subproject implementation, the construction supervision consultants and PIU shall propose and implement a corrective action plan to address this inadequacy and ensure compliance.

Environmental Monitoring Reports. During the construction period, the contractor shall submit to the PIU a monthly environmental self-monitoring report to be submitted to PIU, construction supervision consultants, and PMU. The PIU together with the construction supervision consultants, shall also conduct at least monthly site inspection to monitor EMP implementation and validate the contractor's environmental monitoring reports. Monthly reports of these monitoring activities shall be submitted to NorWD and the PMU. The PMU shall collate all the monthly data and prepare Semi-Annual Environmental Monitoring Reports (SEMR) which shall be submitted by LWUA to ADB.SEMRs are due on 31 July for the first semester report and on 31 January of the following year for the second semestral report. ADB will publicly disclose the SEMRs on its website.

Implementation Schedule. The NorWD water supply subproject is scheduled to start by last quarter of 2020 and to be completed by at least first quarter of 2022. NorWD shall ensure that construction contract provisions related to the EMP shall be included in the tendering stage.
Clearances and Permits. Under Philippine regulations, NorWD shall apply for an Environmental Compliance Certificate (ECC) from the EMB Region III for the proposed augmentation of the existing water supply system. Securing the ECC from EMB Region III will cost PhP5,055.00.

Capability Building. Capacity building activities for LWUA, the project management unit (PMU) and NorWD on ADB processes such as environmental and social safeguards, gender mainstreaming, procurement, disbursement and financial management will be provided under the WDDSP. Other trainings necessary for an efficient implementation of the subproject will be identified and added in the future.

Environmental Cost. The indicative overall cost for the implementation of the EMP is shown in **Table 7-4**.

Table 7-4: Cost for EMP Implementation

Component	Description	Number/ Frequency	Cost per Unit (Php)	Cost (Php)	Source of Funds
PRE-CONSTRUCTION PHASE					
Clearances and permits	Securing ECC from EMB-RO	1 ECC	5,055/ECC	5,055 for ECC	NorWD expense
Public consultations and information disclosure	Information disclosure and consultations during preconstruction and construction phase, including public awareness campaign through media	As per requirement	Lump sum	21,000 (for 3 Brgys)	NorWD expense
Capacity building	(i) Orientation workshop NorWD officials and staff involved in the project implementation on ADB SPS (2009), applicable laws, rules and	One	Lump sum	720,000 for the 12 WDs included under the WDDSP	Part of the loan package

Component	Description	Number/ Frequency	Cost per Unit (Php)	Cost (Php)	Source of Funds
	regulations on environment;				
Baseline ambient noise level survey (24 hr)	Assessment of air quality and noise level along receptors	To be determined	Contractor's liability (approx. 4,000/ sampling station excluding mobilization and manpower cost)	Depends on the number of designated sampling stations	Covered under construction contract (CEMP)
CONSTRUCTION PHASE					
Noise and dust suppression at work sites	Application of noise and dust suppression measures	As required	Contractor's liability	Not applicable	Covered under construction contract
Traffic management	Safety signboards, temporary diversions, barricades, etc.	Wherever required throughout the project corridor	Contractor's liability	Not applicable	Covered under construction contract
Noise level monitoring	Compliance with the IFC-EHS Guidelines	Everyday along nearest receptors	Contractor's liability	Not applicable	Covered under construction contract
Hazard to workers	Implementation of occupational health and safety measures	Throughout the construction period	Contractor's liability	300,000 annually	Covered under construction contract
Any unanticipated impact due to project implementation	Mitigation of any unanticipated impact arising and defect liability period	Lump sum	Contractor's liability	As per insurance requirement	Covered under construction cost – contractor's insurance
OPERATION PHASE					
Water quality	Monthly sampling of water going into the transmission line and randomly from a tap source	6 Pump Stations/ total of 30 samples	Php 300/ sample	Php 10,000 Samples Annually	NorWD operating expense

8 GRIEVANCE REDRESS MECHANISM

Following discussions during the DDR mission, it was agreed to expand the current consumer feedback measures that are already implemented and are well established into the project GRM. This GRM provides a mechanism to receive and resolve consumer related concerns on water supply, billing, and environmental matters, along with non-consumer complaints related to project implementation. The system however maybe adjusted or modified according to the need specific to the area of implementation considering its geographical and cultural setting as resolved by its Barangay Council.

The NorWD management team were aware of the need to be able to respond to issues in a timely manner and will separate project related grievances from ongoing supply issues for reporting to ADB and LWUA. In addition, it is also the responsibility of NorWD management team to respond to non-consumer entities against the Contractor with regards to project related grievances from ongoing environmental issues for reporting to DENR, LWUA and ADB. Contact information of the GRM will also be included in project information billboards or booklets, if these are required for the project.

A member of the NorWD as well as from the Contractor's side will be appointed to be the focal team for GRM management will liaise to inform the Contractor, DENR, and Barangay administration of procedures in case of any issues. All complaints whether received verbally or in writing will be properly documented.

The Project's grievance redress mechanism shall in no way impede access to the formal legal system or the courts. The decision of the courts is for finality of case resolution. Below are the steps to be followed in filing grievances and the procedures for redress.

Step 1: The complainant provides the background and files the grievance/complaint verbally or in writing to the NorWD. If unwritten, the Secretary in the NorWD Office will record it in the NorWD complaints system noting it as a project grievance. The focal point for NorWD will respond to the complainant within three (3) days to assess whether the issue is project related and environmental issue and aim to resolve the issue and record it within the project grievance register.

Step 2: If no resolution or understanding is reached, the complainant files the grievance/complaint to the PMU within LWUA for it to be resolved within 15 days after filing. The written complaint shall be reproduced in four (4) copies; the original to Executing Agency – Project Management Unit (EA-PMU), two (2) for Water District – Project Implementation Unit (WD-PIU), and one (1) for the file of the complainant.

Step 3a: The Lupon ng Kapayapaan ng barangay (justice system members) whenever possible to resolve the issue at the barangay level. The barangay process may take 15 days or more, including submission of complaint, recording, hearing and resolution.

Step 3b (for environment-related issues): The Barangay Committee on Environment, whenever possible, to resolve the issue at the barangay level. The barangay process may take 15 days or more, including submission of complaint, recording, hearing and resolution.

Step 4: For environmental related issues, if no resolution or understanding is reached and if the grievance/complaint qualifies for submission to DENR's Pollution and Adjudication Board for Assessment at DENR's Regional Office.

Step 5: Again, if no resolution or understanding is reached and if the grievance/complaint qualifies for hearing at the Municipal Trial Court (MTC) or Regional Trial Court (RTC), the complainant may request for assistance of the pro bono lawyer from the Public Attorney's office, through the Water District Grievance Redress Committee (WDGRC). The pro bono lawyer shall assist the complainant in reproducing the formal complaint in five (5) copies to be distributed as follows: the original to the appropriate court, one (1) each for PMU, PIU, WDGRC and for the file of the complainant.

Step 6: The MTC or RTC assesses the merit of the grievance/complaint, schedules the hearing and renders a decision. Appeals can be elevated to the high court. The Supreme Court's decision is final and executory.

Aggrieved parties may also inform the Office of Special Project Facilitators (OSPF) of the ADB of any project-related grievances. APs will be exempted from all administrative and legal fees.

Unresolved grievance can be elevated to the proper courts. The NorWD will maintain a full record of all complaints and grievances received, and the actions taken. NorWD will also ensure grievances are recorded and reported in the Integrated Environmental and Social Safeguards reports that are submitted to ADB every six (6) months during project implementation.

Costs. All costs involved in resolving the complaints (meetings, consultations, communication, and information dissemination) will be borne by NorWD.

Complaints to the Department of Environment and Natural Resources. Complaints about environmental performance of projects issued an Environmental Certificate of Compliance (ECC) can also be brought to the attention of DENR-EMB. The process of handling such complaints is described in the Revised Procedural Manual (2007) for the IRR of PD 1586. The steps that DENR-EMB may follow in handling complaints are: (i) DENR-EMB shall verify if the complaint is actionable under PD.1586, (ii) within 72 hours from receipt of a complaint DENR-EMB will send the proponent a Notice of Alleged Violation (NAV) and requests for an official reply as to why the proponent should not be penalized, (iii) DENR-EMB may conduct field validation, site inspection and verification or other activities to assess or validate the complaint. The proponent is required to respond within seven (7) days. Proponent's failure to respond to the NAV and further notices will force DENR-EMB to take legal actions. DENR may issue a Cease and Desist Order (CDO) to project proponents which shall be effective immediately based on: (i) violations under the PEISS, and (ii) situations that present grave or irreparable damage to the environment. PD 1586 also allows DENR to suspend or cancel the proponent's ECC if the terms and conditions have been violated.

9 CONCLUSION AND RECOMMENDATIONS

NorWD's water supply subproject will benefit the general public by contributing to the long-term improvement in the water supply system of its coverage area and providing safe drinking water to residents and commercial establishments in the municipalities and city. The potential adverse environmental impacts are primarily associated with water pipe-laying, which can be minimized through mitigating measures and environmentally sound engineering and construction practices.

Under the Philippine law, since the subproject is categorized under Category B, securing of ECC may be carried out through online application (which may still be subject to the EMB reginal office). It is also environment category B under ADB SPS requiring the preparation of this IEE Report.

The NorWD is currently on the process of completing all the documentary requirements for the acquisition of the ECC. On-line ECC application will be initiated by the end of June 2020 and ECC is expected to be acquired by the end of July. Construction will not be started until the ECC has been obtained.

With the implementation of the mitigation measures as proposed in the EMP, the subproject is not expected to cause irreversible adverse environment impacts. Also, the water supply subproject can be implemented in an environmentally acceptable manner without the need for further environmental assessment study, except for the conduct of a public consultations for compliance and further input. Should there be any significant change in the project scope, an

updated or a new IEE will be prepared.

The proposed NorWD subproject is hereby recommended for implementation with the following requirements to be strictly followed: (i) Tendering process shall ensure environmentally responsible procurement by requiring the inclusion of EMP provisions in the bidding and construction contract documents; (ii) Contractor's submittal of a CEMP which shall be included in the construction contract; (iii) NorWD's creation of the WDGRC as part of the establishment of the GRM; (iv) LWUA, with its regulatory function, shall ensure that capability building for NorWD shall be pursued; and (v) NorWD shall continue the process of public consultation and information disclosure during detailed design and construction phases.

The IEE and EMP will be updated or a new IEE and EMP will be prepared, should there be significant changes in the project design or the scope of work. The updated or newly prepared documents will be submitted to ADB for review, clearance and public disclosure.

10 REFERENCES

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Municipality of Norzagaray. (2018). *Socioeconomic Profile 2018*. Planning Office, Municipality of Norzagaray, Bulacan.

Philippine Atmospheric, Geophysical and Astronomical Services Administration. (2011). *Climate Change in the Philippines.* Retrieved from https://dilg.gov.ph/PDF_File/reports_resources/DILG-Resources-2012130-2ef223f591.pdf on 02 Sep 19.

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ANNEX 1
ACCOMPLISHED REA

GENERAL
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Rapid Environmental Assessment (REA) Checklist

Instructions:

(i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (SDES), for endorsement by Director, SDES and for approval by the Chief Compliance Officer.

(ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation; and (d) gender checklists.

(iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title:	Water District Development Sector Project Improvement of Water Supply System of Norzagaray Water District
Sector Division:	Engineering

Screening Questions	Yes	No	Remarks
A. Project Siting Is the Project area adjacent to or within any of the following environmentally sensitive areas?			
▪ Cultural heritage site		✓	
▪ Legally protected Area (core zone or buffer zone)		✓	
▪ Wetland		✓	
▪ Mangrove		✓	
▪ Estuarine		✓	
▪ Special area for protecting biodiversity		✓	
B. Potential Environmental Impacts Will the Project cause…			
▪ impairment of historical/cultural areas; disfiguration of landscape or potential loss/damage to physical cultural resources?		✓	
▪ disturbance to precious ecology (e.g. sensitive or protected areas)?		✓	
▪ alteration of surface water hydrology of waterways resulting in increased sediment in streams affected by increased soil erosion at construction site?		✓	

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Page 2 of 3

Screening Questions	Yes	No	Remarks
▪ deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction?	✓		Silt runoff control and waste management plan
▪ increased air pollution due to project construction and operation?	✓		Regular sprinkling of water at the construction area to minimize dust suspension
▪ noise and vibration due to project construction or operation?	✓		Noise suppressors shall be installed to reduce potential noise.
▪ involuntary resettlement of people? (physical displacement and/or economic displacement)		✓	
▪ disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?		✓	
▪ poor sanitation and solid waste disposal in construction camps and work sites, and possible transmission of communicable diseases (such as STI's and HIV/AIDS) from workers to local populations?	✓		Implement waste management plan. Conduct of dissemination activities regarding the construction activities as well as public health
▪ creation of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents?	✓		Conduct of dissemination activities regarding the construction activities as well as public health
▪ social conflicts if workers from other regions or countries are hired?	✓		Prioritize local hiring
▪ large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?	✓		Prioritize local hiring
▪ risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?	✓		Implement occupational health and safety measures
▪ risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during construction and operation?	✓		Dissemination of awareness regarding construction activities
▪ community safety risks due to both accidental and natural causes, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning?	✓		Dissemination of awareness regarding construction activities
▪ generation of solid waste and/or hazardous waste?	✓		Implement waste management plan
▪ use of chemicals?	✓		Emergency Response Plan shall be formulated and implemented. PPE shall be worn by personnel.
▪ generation of wastewater during construction or operation?	✓		Domestic wastewater from the construction worker is expected to be generated. With this, the project contractor will be required to install portable toilets at the construction site.

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A Checklist for Preliminary Climate Risk Screening

Country/Project Title LOAN 3389/GRANT 0477-PHI:
WATER DISTRICT DEVELOPMENT SECTOR PROJECT (WDDSP)
Construction of Norzagaray Water Supply System
Sector: Engineering
Subsector:
Division/Department:

Screening Questions		Score	Remarks[1]
Location and Design of project	Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides?	0	
	Would the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc)?	0	
Materials and Maintenance	Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)?	0	
	Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)?	0	
Performance of project outputs	Would weather/climate conditions, and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time?	0	

Options for answers and corresponding score are provided below:

Response	Score
Not Likely	0
Likely	1
Very Likely	2

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response, will be categorized as high risk project.

Result of Initial Screening (Low, Medium, High): LOW

Other Comments:_____

Prepared by: MICHAEL BERNABE
Designation/Agency: ENGINEERING DIVISION
Date: 03/04/2020
Contact Number: _____

[1] If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

ANNEX 2
SAMPLE GRIEVANCE REDRESS FORM

The_____Project welcomes complaints, suggestions, queries, and comments regarding project implementation. We encourage persons with grievance to provide their name and contact information to enable us to get in touch with you for clarification and feedback.

Should you choose to include your personal details but want that information to remain confidential, please inform us by writing/typing *(CONFIDENTIAL)* above your name. Thank you.

Date		**Place of Registration**			
Contact Information/Personal Details					
Name		**Gender**	* Male * Female	**Age**	
Home Address					
Place					
Phone no.					
E-mail					
Complaint/Suggestion/Comment/Question Please provide the details (who, what, where, and how) of your grievance below: If included as attachment/note/letter, please tick here:					
How do you want us to reach you for feedback or update on your comment/grievance?					

FOR OFFICIAL USE ONLY

Registered by: (Name of Official registering grievance)	
Mode of communication: Note/Lett er E-mail Verbal/Telephonic	
Reviewed by: (Names/Positions of Officials Reviewing Grievance)	
Action Taken:	
Whether Action Taken Disclosed:	Yes No
Means of Disclosure:	

ANNEX 3
SAMPLE CONTRACTOR'S ENVIRONMENTAL MONITORING PLAN (CEMP) OUTLINE

I. Brief Project and Contract Package/Lot Description
Note: include construction activities and map/s

II. Brief Description and Purpose of Contractor's Environmental Management Plan (CEMP)
Note: include applicable laws

III. Associated Project/Lot Facilities and Sensitive Receptors – description and location
Note: include photos

a) Construction and Workers' Camps
b) Material Sources and Storage Areas – quarries, borrow pits, water
c) Workshop and Fabrication Yards
d) Hazardous Materials and Chemical Storage Areas – fuel, oil, bitumen, chemical additives
e) Wastes and Spoils Disposal Areas – construction wastes, domestic wastes, hazardous waste
f) Crushing and Batching Plants – asphalt and concrete
g) Bridges and Bypass Roads
h) Sensitive Receptors – schools, hospitals, religious institutions

IV. Construction Impacts and Mitigation Measures; Institutional Arrangements and Timing for EMP Implementation – refer to the EMP table in the IEE and contract documents as basis and indicate the mitigation measures that will be implemented for the contract package for the following):

a) Soils and Material – topsoil, soil erosion, reclaimed pavement and spoils, slope stability
b) Quarry and Borrow Sites – degradation of borrow sites
c) Water Resources – operation of quarries on river banks, siltation, spills from asphalt plants/trucks, bridge activities
d) Air, Noise and Vibration – emissions, dust, noise from construction vehicles and equipment, crushing, asphalt and cement mixing plants, construction activities
e) Waste and Hazardous Materials – solid wastes, hazardous and chemical wastes, sewage
f) Flora and Fauna
g) Construction Camps, Storage Depots
h) Local Roads – traffic management, access, congestion, road safety
i) Community – safety, disruption, access
j) Workers' Safety, Health and Sanitation – includes HIV/AIDS STD

V. Environmental Baseline Measurements and Sampling – location of sampling sites, methodology, results (if not available yet, to be included in first SEMR for the lot).
Note: include photos

VI. Environmental Monitoring Program (EMoP) – schedule of inspection, parameters to be checked and methodology, checklist for EMP Compliance Monitoring, inspection monitoring form.

VII. Public Consultation, if necessary; Training

VIII. Grievance Redress Mechanism (GRM) (See Annex 2)– detailed procedure for resolving complaints.

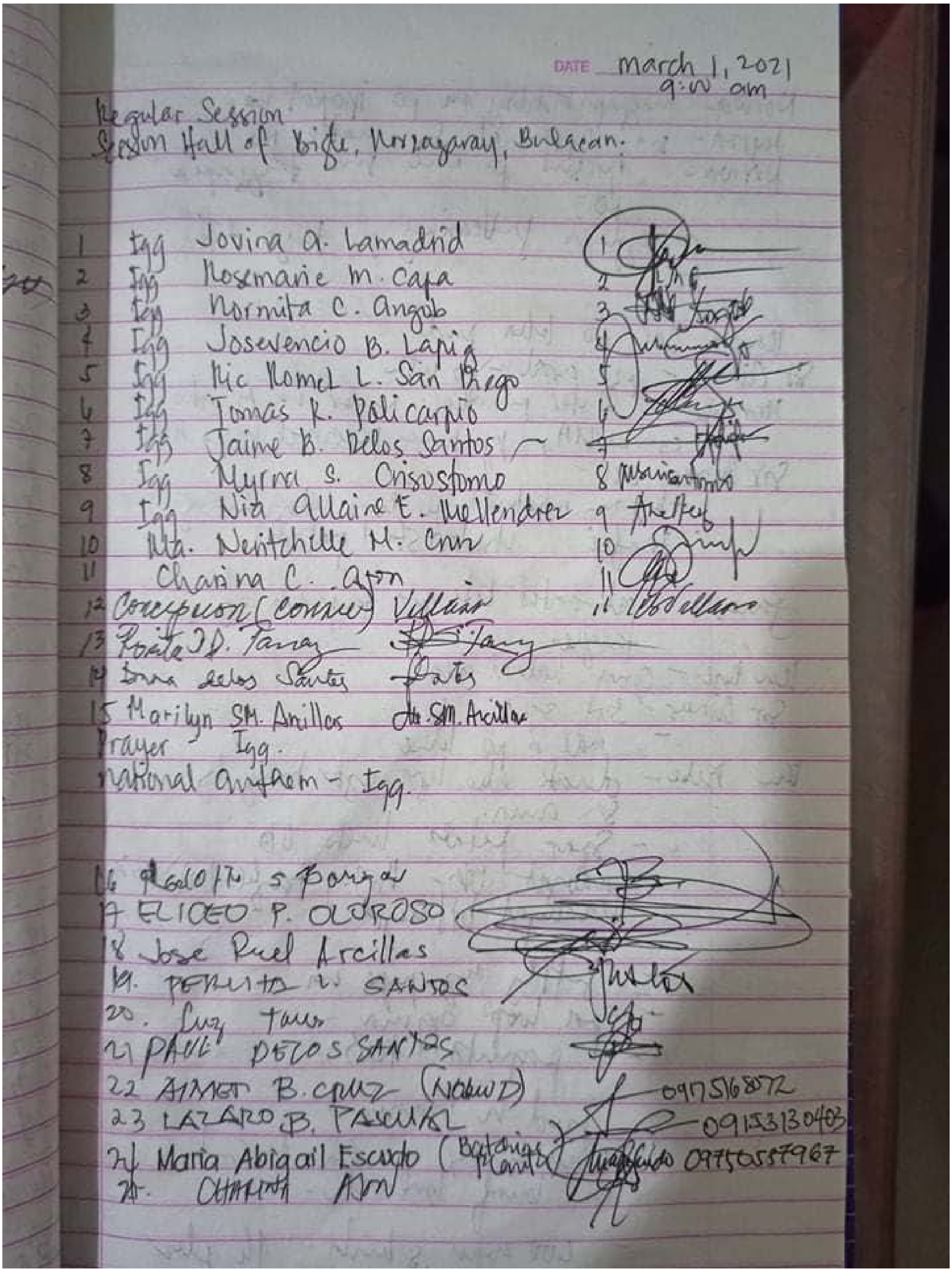
IX. Annexes

a) copies of all relevant permits (batching plants, disposal sites, tree-cutting, quarries, ECCs, etc.)
b) baseline sampling laboratory results (original copies)

Note: The CEMP should be straightforward and concise. It need not be a lengthy document.

ANNEX 4
PUBLIC CONSULTATION PROCEEDINGS

1. NorWD staff consultation with officials of Brgy. Bigte, Norzagaray, Bulacan (March 1, 2021).


DATE March 1, 2021
9:00 am

Regular Session
Session Hall of Brgy, Norzagaray, Bulacan.

1 Igg Jovina A. Lamadrid
2 Igg Rosemarie M. Capa
3 Igg Normita C. Angob
4 Igg Josevencio B. Lapig
5 Igg Ric Romel L. San Diego
6 Igg Tomas R. Policarpio
7 Igg Jaime B. Delos Santos
8 Igg Myrna S. Crisostomo
9 Igg Nia Allaine E. Mellendrez
10 Ma. Neitchelle M. Cruz
11 Charina C. Agon
12 Concepcion (Connie) Villar
13 Rosita D. Tanay
14 Irma delos Santos
15 Marilyn SM. Anillos
Prayer - Igg.
National Anthem - Igg.

16 Rodolfo S. Borja
17 ELICEO P. OLOROSO
18 Jose Ruel Arcillas
19. PERLITA L. SANTOS
20. Luz Tauro
21 PAUL DELOS SANTOS
22 AIMEE B. CRUZ (NAWD) 0917516872
23 LAZARO B. PASCUAL 0915313048
24 Maria Abigail Escudo (Batangas Planter) 09750557967
25. CHARINA AGON

NORZAGARAY WATER DISTRICT
1639 P. DELA MERCED ST., POBLACION, NORZAGARAY, BULACAN
TEL/FAX: (044) 815-3964, E-MAIL: norzagaray_wd@yahoo.com

MINUTES OF THE NORZAGARAY WATER DISTRICT PUBLIC CONSULTATION WITH BRGY. BIGTE OFFICIALS

RE: CONSTRUCTION OF NORZAGARAY WATER SUPPLY IMPROVEMENT PROJECT

VENUE: BRGY. BIGTE HALL, BRGY. BIGTE, NORZAGARAY, BULACAN

DATE & TIME: March 1, 2021 at 9:00 A. M.

ATTENDEES

1. **NORZAGARAY WATER DISTRICT**
2. **BRGY. BIGTE OFFICIALS**

The Session started right after the flag ceremony of Brgy. Bigte at 9:00 a.m. Before the meeting starts, the NorWD's General Manager, Engr. Aimer Cruz introduced himself and acknowledged the warm welcome of Brgy. Bigte officials.

Engr. Aimer Cruz stated that the intention of this meeting is for the future project of Norzagaray Water District, Re: Construction of Norzagaray Water Supply Improvement project which will take place within the jurisdiction of Brgy. Bigte and they are the mainly target for this project which will create an additional network of pipelines to provide water supply in the area. This project is in line with NorWD's continuous efforts to improve the water supply in different parts of Norzagaray.

Engr. Aimer Cruz explained the scope of work for the pipelaying with a total of 2,585 linear meter, compose of 1,680 lm of 300mm diameter uPVC, 780 lm of 250mm diameter uPVC, valves, fittings and accessories; and 125 lm bridge crossing using 400mm diameter steel pipes, demolition and surface restoration, supply, installation, testing and commissioning of submersible pump, valves and its accessories.

He also mentioned that this project's funding source is the Asian Development Bank through loan and this public consultation is one of their requirements that need to be accomplished.

NORZAGARAY WATER DISTRICT
1639 P. DELA MERCED ST., POBLACION, NORZAGARAY, BULACAN
TEL/FAX: (044) 815-3964, E-MAIL: norzagaray_wd@yahoo.com

The Brgy. Bigte officials, especially Hon. Jovina A. Lamadrid, Brgy. Captain with no objection, allowed this project for the improvement of water supply in the area, also their jurisdiction will be the one who will benefit the most from this project. She also mentioned that their area is one of the fastest-growing people in the town especially with the subdivisions/housing that may rise in the area and this project is very timely for them and this project is for the better future for the residents of Norzagaray, Bulacan.

Engr. Aimer Cruz acknowledged the allowing and cooperation of the Brgy. Officials of Brgy. Bigte for this project.

The meeting of Norzagaray Water District with the Brgy. Officials of Brgy. Bigte was put to a close at 10:30 a.m.

Prepared by:

(Sgd.)
Foztin Joy T. Palad
Secretary A

ANNEX 2

Gender Action Plan

GENDER ACTION PLAN

1. **Gender Classification**. The purpose of the Project is to target less resilient water districts (WDs) in cities and municipalities outside Metro Manila including the WDs in San Fernando (La Union) and the City of Koronadal, to fund the extension and rehabilitation of their water supply (e.g., the construction of new deep wells, transmission and distribution pipelines) and sanitation projects, as well as capacity building development and institutional strengthening for the executing agency, Local Water Utilities Administration (LWUA) and WDs. Women will benefit from the Project through affordable tariffs and other pro-poor initiatives, capacity building and representation on WD Boards. The project is classified as effective gender mainstreaming (EGM) in design.

2. **Gender Action Plan (GAP) Purpose and Strategy**. The 2009 socio-economic survey shows that a small portion of households in the target WDs have piped water connections and sanitation facilities (11-18%). Among the poor in these cities, 90% of them don't have water connections despite LWUA's socialized tariff policy. The significant social and economic burden of illness, health care for the family, child care, water fetching, food preparation and other associated domestic responsibilities associated with not having water and sanitation connections, falls primarily on women. Women are positioned to benefit from the project's interventions due to their central role in water, hygiene and sanitation management. At the community level, women's participation in water system operations is low as there are no formal water associations in the pilot service areas in which theycould participate in the operation and maintenance of water and sanitation facilities. The Government's existing framework for gender action is not being maximized by LWUA and the pilot WDs.[1] LWUA and the pilot WDs have designated gender focal points and gender and development (GAD) programs. However, their GAD budgets have not been fully utilized, with limited gender-specific activities such as capacity-building for increased women's participation in technical operational roles. The Project's gender strategy will facilitate women's participation and benefits through GAP implementation (see Table below). These include enhanced hygiene and sanitation awareness and training, connections to proper water supply and sanitation, capacity building, and representation on WD Boards. Pro-poor measures include lifeline tariffs and initiatives for affordable access (e.g. socialized and/or installment schemes for connection fees).

3. **Implementation and Monitoring Arrangements**. The Borrower shall ensure that it complies with all relevant laws and regulations related to gender actions.[2] A responsibility center will be created at LWUA/project management unit (PMU), with the designation of an employee to monitor GAP implementation by LWUA and participating WDs (including preparing 6-monthly progress reports and ensuring that the bidding documents and contracts include relevant provisions for contractors to comply with the measures set forth in the GAP) and to provide implementation support to the conduct of GAP activities, such as training and capacity-building on required competencies of the project implementation units (PIUs) in compliance with those aspects of the GAP applicable to the WD. Similarly, each WD will be set up a responsibility center and a gender focal person responsible for preparing and implementing a gender action plan for the WD in order to ensure the WD's compliance with those aspects of the GAP

[1] Including Republic Act No. 7192 ("Women in Development and Nation-Building Act" passed on February 12, 1992), Executive Order No. 273 ("Approving and Adopting the Philippine Plan for Gender-Responsive Development, 1995 to 2025" passed on September 8, 1995), and Joint Circular No. 2004-1 issued by the Department of Budget and Management (DBM), the National Economic and Development Authority (NEDA) and the National Commission on the Role of Filipino Women which prescribes guidelines and procedures for the formulation and submission of agency annual GAD plans and budgets, and GAD accomplishment reports.

[2] See footnote 1.

applicable to the WD, including the preparation of budgets for, and the implementation, updating and monitoring of, the WD's gender action plan. Other staff members of the WD will be engaged to assist with various activities in the WD's gender action plan.

4. **GAP Budget**. LWUA will allocate a yearly budget for the implementation of the GAP, which will be taken from its GAD budget. In addition to enhancing its own GAD capacity, LWUA will work with participating WDs to ensure that compliance with those aspects of the GAP applicable to them.

Table 11.1 GAP Budget (pesos)

Budget Item	Year 1	Annual Budget Years 2 to 6
Training of LWUA's and WDs' gender focal points on GAP implementation and monitoring	400,000	200,000
Capacity building of LWUA and WDs staff on gender analysis, gender-responsive planning and budgeting	600,000	300,000
Supervision and monitoring of GAP implementation – database creation and maintenance	200,000	200,000
Total	1,200,000	700,000

GAP = Gender Action Plan, LWUA = Local Water Utilities Administration, WD = water district

Table 11.2 Summary of Gender Action Plan

Project Output	Proposed Actions and Targets
Client-Focused	
Output 1: Expansion and improvement of water supply systems; sanitation projects	➢ Information dissemination on new water services targeting poor households in the existing and expansion water service areas. ➢ Promoting affordability to low-income households including ensuring the minimum charge for monthly water consumption should meet LWUA's guidelines for low-income households in the areas served by participating water districts (WDs). ➢ Partnership with barangay health workers/units and non-government organizations (NGOs) for delivery of sanitation information education and communication (IEC) and training. Per subproject, IEC training for 100 barangay health workers, science, public school teachers (50% are female). ➢ Ensuring WDs consult with women and men separately about content, format, and media for IEC messages.
Organization-Focused	
Output 2: Capacity and institutional development for participating WDs and LWUA.	➢ Training to enhance sustainability of operations for WDs (business planning, project implementation, management information system [MIS], non-revenue water [NRW] reduction) (at least 30% of participants are female).[3] ➢ Designation of an employee to coordinate, monitor and report on implementation of GAP activities. ➢ Capacity development of LWUA/WDs in gender analysis, gender-responsive planning, gender budgeting, and GAP compliance. ➢ At least 30% of LWUA's overall staff and management at project management unit are female. [4] ➢ Encouraging the appointment of at least 2 women on the Board of each participating WD, of which one is a representative of a women's organization (e.g. a relevant NGO or national women's group). ➢ Allocation from LWUA's yearly GAD budget to its GAP budget to support project implementation. ➢ Detailed project performance monitoring (including compliance with GAP), reporting, accounting, and auditing systems developed, with collection of sex-disaggregated data, provide 6-monthly reports and feed data into mid-term review and Project Completion Report.

[3] Baselines will be collected for LWUA and each participating WD. If the baseline indicates a higher % of female representation than the 30% target, an appropriate higher target will be incorporated and reported to ADB.

[4] See footnote 3.

ANNEX 3

Due Diligence Report for Resettlement

Social Safeguards Due Diligence Report

July 2020

Philippines: Water District Development Sector Project

NORZAGARAY WATER DISTRICT

Prepared by Norzagaray Water District for the Local Water Utilities Administration and the Asian Development Bank.


ADB

CURRENCY EQUIVALENTS
(as of 20 May 2020)

Currency unit	–	peso (Php)
Php1.00	=	$0.01973
$1.00	=	Php 50.69

ABBREVIATIONS

ADB	–	Asian Development Bank
AH	–	Affected Household
AP	–	Affected Person
DA	–	Department of Agriculture
DMS	–	Detailed Measurement Survey
EA	–	Executing Agency
EMA	–	External Monitoring Agency
GAD	–	Gender and Development
GAP	–	Gender Action Plan
GRC	–	Grievance Redress Committee
GRM	–	Grievance Redress Mechanism
HH	–	Household
IA	–	Implementing Agency
IOL	–	Inventory of Losses
IPP	–	Indigenous Peoples Plan
LGU	–	Local Government Unit
LWUA	–	Local Water and Utilities Administration
m^3	–	Cubic Meter
MDG	–	Millennium Development Goal
NEDA	–	National Economic And Development Authority
NorWD	–	Norzagaray Water District
NRW	–	Non-Revenue Water
PCUP	–	Presidential Commission on the Urban Poor
PIB	–	Public Information Booklet
PIU	–	Project Implementation Unit
PMU	–	Project Management Unit
PPTA	–	Project Preparatory Technical Assistance
OCR	–	Ordinary Capital Resources
RF	–	Resettlement Framework
ROW	–	Right-of-Way
RP	–	Resettlement Plan
SAR	–	Subproject Appraisal Report
SES	–	Socio-Economic Survey
SPS	–	ADB's Safeguard Policy Statement (2009)
UFPF	–	Urban Financing Partnership Facility
WACC	–	Weighted Average Cost of Capital
WD	–	Water District

WDDSP – Water District Development Sector Project

NOTE

In this report, "$" refers to US dollars.

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SOCIAL SAFEGUARDS DUE DILIGENCE REPORT
NORZAGARAY WATER DISTRICT

1. PROJECT BACKGROUND

1 Rapid urbanization and inadequate water supply and sanitation investments have stretched to the limit the capacity of services and facilities in many urban areas outside Metro Manila, and increased water resources pollution. Less than 50% of urban households are estimated to have piped water, with most served by WDs. Various studies report that WDs provide better water service compared to local government unit (LGU)-run water utilities, and attribute this to corporatization (i.e., WDs do not receive subsidies from LGUs) and to access to financing, training and technical assistance from LWUA.

2 The Project will provide to WDs much-needed funds to rehabilitate and expand water facilities, strengthen institutional capacities, and enhance sustainability. According to LWUA, 511 WDs were operational at year-end 2012. Most WD operations are afflicted with low profitability, high nonrevenue water (NRW) levels, and weak institutional and limited technical capacity; over half are relatively small (with <3,000 service connections). The Project will target WDs who rely primarily on LWUA for technical support and financing; these WDs are likely to be in less developed provinces, cities and municipalities.

3 The Resettlement Framework was developed in 2014 and locations of subprojects have been finalized in 2019 requiring further due diligence for social safeguards.

4 The NorWD water supply project is envisioned to expand area of coverage and level of service. Currently water service is only in nine (9) out of 13 barangays in the municipality. The proposed transmission pipelines will be interconnected to bulk supplier designated interconnection points to a transport treated water from the source to the consumers.

5 NorWD in its desire to comply with its mandate to provide sanitation service to its area has adopted a program to construct a septage treatment plant (SpTP). The proposed project aims to comply with the Philippine Clean Water Act of 2004 (RA 9275) to ensure the cleanliness and sustainability of the country's water resources. Local Government Units (LGU) and Water District (WD) are mandated by law to work together and implement sewage and septage management program.

2. SCOPE OF REPORT

6 This Due-Diligence report covers Norzagaray Water District's Water Supply and Sanitation Sub-project. The report will detail the screening of project activities for potential IR and IP impacts.

Table 1 – Scope of Works

Contract Packages	Description
Construction of Norzagaray Water Supply Improvement	Pipelaying of 2,585 linear meters of transmission/distribution lines, unplasticized polyvinyl chloride (uPVC) pipes (Series 8) with diameters ranging from 250 to 300 millimeters (mm), and 300mm diameter steel pipes for bridge crossing. Furnish, install, test and commissioning of 75hP submersible pump set with valves, accessories, controls and its appurtenances
Construction of Septage Treatment Plant	Design and Construction of 10 m^3/day capacity Septage Treatment Plant
Procurement of Vacuum Truck for the Septage Treatment Plant	Supply and delivery of One (1) Unit of 5.0 m^3 Vacuum Truck for the Septage Treatment Plant in Norzagaray, Bulacan.

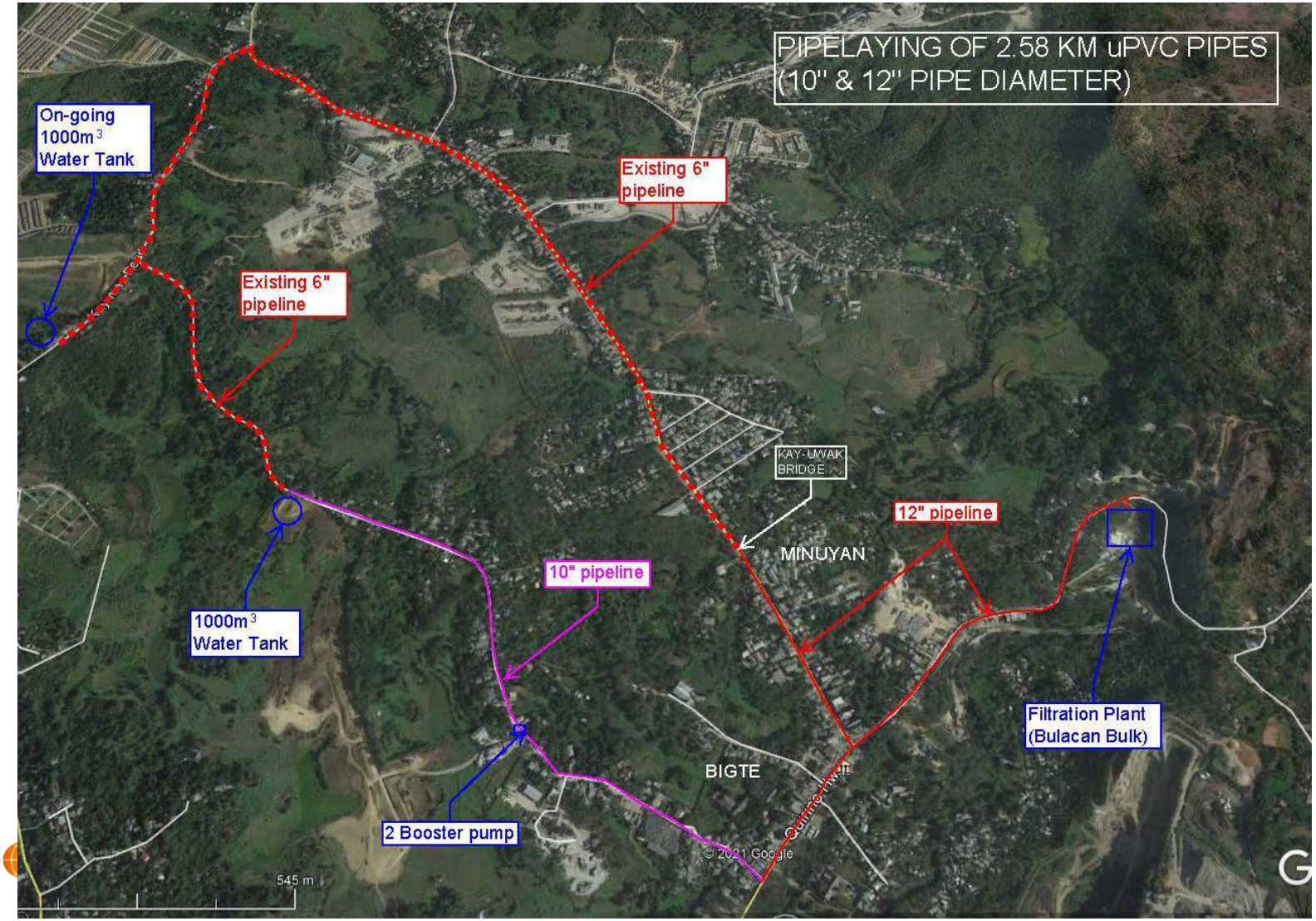

PIPELAYING OF 2.58 KM uPVC PIPES
(10" & 12" PIPE DIAMETER)
On-going
1000m3
Water Tank
Existing 6"
pipeline
Existing 6"
pipeline
KAY-UWAK
BRIDGE
MINUYAN
12" pipeline
10" pipeline
1000m3
Water Tank
Filtration Plant
(Bulacan Bulk)
BIGTE
2 Booster pump
© 2021 Google
545 m

Figure 1 – NorWD Water Supply Recommended Improvements


288000E
288060E
288120E
288180E
288240E
288300E
1647180N
1647120N
1647060N
1647000N
1646940N
N
Brgy.Partida
Proposed SpTP site
ADB
PROJECT AREA
Legend
Proposed SpTP site
Mun Boundary
0 15 30 45 60 m
SANITATION RECOMMENDED IMPROVEMENTS
NORZAGARAY, BULACAN
wci
SMEC
tci

Figure 2 – NorWD Sanitation Recommended Improvements

3. SOCIAL SAFEGUARDS ASSESSMENT

7 This due diligence assessment has been carried out with reference to ADB Social Safeguards Policy Statement (SPS 2009)

8 The assessment has been informed by project plans (e.g. engineering designs), field visits to sub-project sites. Pictures and attendance sheet of barangay officials during consultations can be found **Appendix 3**.

Table 2 – Impact Description

Contract Package	Description on impacts
Construction of Norzagaray Water Supply Improvement	No land acquisition. Temporary disruption during construction works. This will all be in the ROW.
Construction of Septage Treatment Plant	Land owned by NorWD and it is a vacant lot. See **Appendix 4** for the Deed of Absolute Sale.
Procurement of Vacuum Truck for the Septage Treatment Plant	None – equipment provision only

4. CATEGORIZATION

9 Based on the assessment of planned works, all civil works will be conducted within the ROW and within a further limited conflict of interest (COI) to avoid impact. The work will have no impact on primary structures, secondary structures, agricultural land, crops, trees and/or personal/communal assets. As there will be temporary disturbance but no anticipated economic displacement or business disruption a functional GRM is of utmost importance.

10 There is no planned land acquisition as all civil works will take place either within the ROW or within existing facilities already owned by the Water District.

11 The Project is therefore categorized as C for involuntary resettlement impacts as per ADB's Safeguard Policy Statement, 2009 (SPS) and the checklist can be found in Appendix 1.

12 To trigger the IP safeguard policy statement, the proposed sub project will impact (positively or negatively) people who;

1. Self-identify as members of a distinct cultural group which is recognized by others
2. Have a collective attachment to geographically distinct territories
3. Have cultural, economic, social or political institutions that are separate from
4. Have a distinct language.

13 Sociocultural groups therefore need to be both distinct and vulnerable to trigger application of the term Indigenous Peoples in the SPS for ADB-supported projects.

14 This sub-project does not impact on any households, structures or land who meet the above criteria. The sub-project is therefore categorized as C for Indigenous People as per ADB's Safeguard Policy Statement, 2009 (SPS) and the checklist can be found in Appendix 2.

5. MITIGATION MEASURES

15 Proposed mitigation measures to minimize risk of potential impacts are summarized in the table below. This sub-project does not trigger ADB SPS for IR as there is no involuntary land acquisition and any disruption of access will be temporary. Therefore, the mitigation measures shown below will be described within an Environmental Management Plan (EMP).

16 These mitigation measures will also be detailed in the bidding documents and contractor TORs and reported on in the integrated ESMR which will be submitted twice a year. A functional Grievance Redress Mechanism will be integrated into the current customer services feedback mechanism that has already been developed by Norzagaray Water District.

Table 3 – Mitigation Measures

Potential Impacts	Mitigation Measures	Detailed in:
Impact to any existing road or pavement surfaces,	Contractor will restore to the original condition.	EMP, bidding documents and TORs of contractors.
Restricted access to residences and commercial premises due to replacement / installation of pipelines. All works will be within the ROW but there may be traffic disruption.	Avoid disturbances by carrying out works overnight and reducing traffic disruption during the day using metal sheeting.	EMP, bidding documents and TORs of contractors.
	Avoid blocking access to properties alongside the road during any construction activities;	

	Provide steel sheets to reduce access issues	
Unanticipated impacts – Management of construction	GRM to be set up and integrated into current system, single point of entry, contractors to be aware, signboards at construction locations and in Barangay office to inform any affected person of entry point into GRM.	EMP, bidding documents and TORs of contractors.
	Ensure contractor implements agreed measures to reduce impact and temporary disturbance.	
Unanticipated impacts	Any unanticipated resettlement impacts will be subject to mitigation measures as detailed in the entitlement matrix.	EMP

6. CONSULTATION AND PARTICIPATION

17 This section has been updated from the RF as meetings with Water Districts have refined the procedures for community consultation that will ensure successful implementation and are a supplement to those measures already set out in the RF.

18 NorWD will inform the Barangay of the planned construction schedule and ensure that information about expected timelines and road disruption is clearly communicated prior to the start of any civil works.

7. GRIEVANCE REDRESS

19 Following discussions during the DDR mission, it was agreed to integrate the ADB required GRM into the current consumer feedback measures that are already implemented and are well established.

20 The DDR mission observed a publicly displayed customer charter and system to record issues with water supply, billing and complaints.

21 The management team were aware of the need to be able to respond to issues in a timely manner and will separate project related grievances from ongoing supply issues for reporting to ADB and LWUA.

22 A member of the NorWD team will be appointed to be the focal point for GRM management and will liaise and inform Barangay administration of procedures in case of any issues.

23 The Project's grievance redress mechanism shall in no way impede access to the formal legal system or the courts. The decision of the courts is for finality of case resolution. Below are the steps to be followed in filing grievances and the procedures for redress.

Step 1: The complainant provides the background and files the grievance/complaint verbally or in writing to the NorWD. If unwritten, the Secretary in the NorWD Office will record it in the NorWD complaints system noting it as a project grievance. The focal point for NorWD will respond to the complainant within 3 days to assess whether the issue is project related and aim to resolve the issue and record it within the project grievance register.

Step 2: If no resolution or understanding is reached, the complainant files the grievance/complaint to the PMU within LWUA for it to be resolved within 15 days after filing. The written complaint shall be reproduced in four copies; the original to EA-PMU, two for WD-PIU, and one for the file of the complainant.

Step 3: The Lupon ng Kapayapaan ng barangay (justice system members) whenever possible to resolve the issue at the barangay level. The barangay process may take 15 days or more, including submission of complaint, recording, hearing and resolution.

Step 4: Again, if no resolution or understanding is reached and if the grievance/complaint qualifies for hearing at the Municipal Trial Court (MTC) or Regional Trial Court (RTC), the household may request for assistance of the *pro bono* lawyer from the Public Attorney's office, through the NorWD. The *pro bono* lawyer shall assist the household in reproducing the formal complaint in five copies to be distributed as follows: the original to the appropriate court, one each for PMU, PIU, WDRC and for the file of the complainant.

Step 5: The MTC or RTC assesses the merit of the grievance/complaint, schedules the hearing and renders a decision. Appeals can be elevated to the high court. The Supreme Court's decision is final and executory.

Aggrieved parties may also inform the Office of Special Project Facilitators (OSPF) of the ADB of any project-related grievances.

APs will be exempted from all administrative and legal fees.

24 Unresolved grievance can be elevated to the proper courts. The NorWD will maintain a full record of all complaints and grievances received, and the actions taken.

25 NorWD will also ensure grievances are recorded and reported on in the Integrated Environmental and Social Safeguards reports that are submitted to ADB every six (6) months during project implementation

Table 4 – Photos from site visits

Proposed location of Septage Facilities in Sitio Diliman, Brgy. Partida, Norzagaray, Bulacan

Location of the Proposed Tapping point from the bulk supplier and starting point of the 300mm diameter transmission/distribution pipeline

Table 5 - Project Entitlement Matrix

Item	Type of Loss	Application	Entitled Persons	Compensation Policy	Implementation Issues
1a	Permanent loss of land	Agricultural/ residential/ commercial land/vacant plot	APs listed in the survey with proof of ownership/ claim to the land.	Compensation for entire loss of land (i.e., the whole land is affected by the Project, or the residual unaffected portion is no longer viable for continued use and, therefore, the entire land will be acquired by the Project) and partial loss (i.e., only a portion of the land of the AH is acquired by the Project and the residual unaffected portion still viable for continued use or meets the expected yield) is based on the principle of replacement cost which is the method of valuing assets to replace the loss at prevailing market value, plus any transaction costs such as administrative charges, taxes, registration and titling costs. If AH is found to be severely affected (i.e., the loss is equivalent to 10% or more of their total income capacity or they are physically displaced from housing or place of business), the AH will be provided additional assistance as discussed under item 4 (severe impacts) of this entitlement matrix.	Computation of valuation of land must be transparent and explained to the entitled persons If there are grievances in valuation, entitled persons must be informed of the grievance mechanism
1b	Permanent loss of land	Agricultural/ residential/ commercial land/vacant plot	APs without proof of ownership/claim to the land they occupy	Not entitled to payment for land, but will be compensated for non-land assets (structures, crops, trees, etc) at replacement cost. Entitled to cash or in-kind assistance if severely affected.	List of non-land assets to be compensated must be signed off by entitled persons Vulnerable and severely affected persons

Item	Type of Loss	Application	Entitled Persons	Compensation Policy	Implementation Issues
					to be identified during census
1c	Permanent loss of land	Agricultural/ residential/ commercial land/vacant plot	Tenants/ shareholders	Entitled to compensation for non-land assets (structures, crops, trees) at replacement cost. Entitled to cash or in-kind assistance if severely affected.	List of non-land assets to be compensated must be signed off by entitled persons Vulnerable and severely affected persons to be identified during census
2	Permanent full or partial loss of structures or income-generating spaces	Residential/commercial /institutional structures and income-generating spaces	AP owners located at the site during the cut-off date of the survey, regardless of tenure and status (i.e., owners, renters, sharers, caretakers)	Compensation for permanent houses and other structures affected either in full (i.e., entire main structure is affected, or the unaffected portion of the main structure is no longer viable for continued use), or in part (i.e., only a portion of the main structure of the house, house-and- store, or shop is affected and the remaining unaffected portion is still viable for use), will be determined according to replacement value for materials and labor to rebuild similar structures, at prevailing market prices in the locality. In determining replacement costs, depreciation of assets and salvage value of materials will not be taken into account. In determining compensation for movable structures including houses, where the structures can be moved easily, transfer, relocation and repair allowances will be calculated. An assessment of material	List of structures to be compensated must be signed off by entitled persons. Computation of the valuation of affected structures must be explained to entitled persons. If there are grievances in valuation, entitled persons must be informed of the grievance mechanism.

Item	Type of Loss	Application	Entitled Persons	Compensation Policy	Implementation Issues
				replacement will be made, based on the condition of materials, with valuations calculated based on standard replacement and restoration costs. Provision of transition and moving allowance/assistance (cash or in-kind) for APs that opt for voluntary relocation.	
3	Permanent loss of crops and trees	All trees of any age, crops	All APs regardless of tenure status	Cash compensation equivalent to (i) for annual standing crops, prevailing market value of crops; (ii) for perennial crops, prevailing market value given the type, age and productive value; and (iii) for trees, the productive value or the annual production as determined by the municipal agriculturist multiplied by the estimated number of productive years; all at the time of compensation. 60 days' notice to allow owners to harvest any standing crops	List of trees and crops to be compensated must be signed off by entitled persons Computation of the valuation of trees and crops must be explained to entitled persons
4	Severe impacts (more than % of productive income affected) on productive assets	Land-based income, income from trees and crops, income from business	All APs losing 10% or more of their productive income from business and other income- generating assets. regardless of tenure status	Compensation for lost income based on actual impacts as a result of DMS. Appropriate rehabilitation measures and income restoration programs Project assistance for affected households such as job referral and placements and assistance to be trained additional skills for local employment or income-generating ventures. Additional project assistance (cash or in- kind) to poor and vulnerable households will be provided	Severely impacted (more than 10% impacted) households to be identified during census
5	Temporary Loss /	Residential structures,	APs with improvements of	Cash or in-kind compensation for fixed	List of affected structures

Item	Type of Loss	Application	Entitled Persons	Compensation Policy	Implementation Issues
	impact on assets during construction	improvements and other physical assets affected during construction	their residential or business structure (e.g. fences, driveways) and other physical assets on lots to be traversed by transmission pipes	and movable assets such as houses, pavements, fences community facilities, farm structures for animals and farmers at replacement cost. Restoration or replacement of a fixed asset one month after construction of water transmission and distribution lines, sanitation facilities, reservoirs and other water facilities. Compensation for residential structures and community facilities, lost in full or part.	to be signed off by entitled persons. Schedule construction activities to minimize the period of disruption. Computation of the compensation must be explained to entitled persons
6	Temporary loss of income	Income from livelihood, business or employment	APs with businesses or employment disrupted during construction	Compensation for lost income or wages calculated at prevailing and/or average historical rate multiplied by the number of days of disruption	APs and corresponding income losses per day to be identified during census
7	Temporary Loss/impact on access	Roads, pathways and access routes used by APs to conduct economic, social or cultural activities	APs whose access to land or facilities will be affected during construction	Alternative access routes shall be provided to temporarily replace the affected route.	Convincing owners of land to provide temporary access on their land
8	Any unanticipated impacts/losses		APs entitled to compensation as per RF	Any unanticipated impact or loss will be mitigated as per WDDSP RF	Close monitoring of unanticipated impacts during implementation phase

APPENDIX 1
INVOLUNTARY RESETTLEMENT IMPACT CATEGORIZATION

Date: 8 April 2020

A. Project Data

Country/Project No./Project Title	:	**Loan 3389/Grant 0477 – PHI: Water District Development Sector Project Norzagaray Water District Subproject**
Department/ Division	:	SEUW
Processing Stage	:	Active
Modality	:	

[ ] Project Loan [ ] Program Loan [ ] Financial Intermediary [ ] General Corporate Finance
[X] Sector Loan [ ] MFF [ ] Emergency Assistance [X] Grant
[ ] Other financing modalities: Sector development program (linked program loan + project loan)

B. Involuntary Resettlement Category

[**X**] New [ ] Recategorization — Previous Category [ ]

☐ Category A	☐ Category B	☒ Category C	☐ Category FI

C. Comments

The proposed project of the Norzagaray Water District (NorWD) will not entail any involuntary resettlement. There are no adverse impact on structures and the impact on people, which is temporary, may be on access to their residences or places of business/livelihood during construction.

The lot where the septage treatment will be built is already owned by NorWD: 3,317 m² in Sitio Diliman, Brgy. Partida, Norzagaray, Bulacan

D. Approval

Proposed by:		**Reviewed by**:	
Joseph Lalo			
Social Safeguards Consultant CDTA		Social Safeguard Specialist, SEUW	
Date:8/4/2020		Date:	
		Endorsed by:	
Social Development Specialist,		Director,	
Date:		Date:	
Endorsed by:		**Approved by**:	☐ Highly Complex and Sensitive Project
Director		Chief Compliance Officer	
Date:		Date:	

Involuntary Resettlement Impact Categorization Checklist

Probable Involuntary Resettlement Effects	Yes	No	Not Known	Remarks
Involuntary Acquisition of Land				
1. Will there be land acquisition?		**X**		For the Water Supply Project, it does not require any land acquisition as the construction will be in ROW. For the Construction of Septage Treatment Plant, land to be utilized is owned by NorWD.
2. Is the site for land acquisition known?		**N/A**		
3. Is the ownership status and current usage of land to be acquired known?		**N/A**		
4. Will easement be utilized within an existing Right of Way (ROW)?	**X**			All work will be within the ROW of the road.
5. Will there be loss of shelter and residential land due to land acquisition?		**X**		
6. Will there be loss of agricultural and other productive assets due to land acquisition?		**X**		
7. Will there be losses of crops, trees, and fixed assets due to land acquisition?		**X**		
8. Will there be loss of businesses or enterprises due to land acquisition?		**X**		Any disruption is expected to be temporary, EMP contains measures to limit the disruption to traffic and business.
9. Will there be loss of income sources and means of livelihoods due to land acquisition?		**x**		
Involuntary restrictions on land use or on access to legally designated parks and protected areas				
10. Will people lose access to natural resources, communal facilities and services?		**x**		
11. If land use is changed, will it have an adverse impact on social and economic activities?		**x**		
12. Will access to land and resources owned communally or by the state be restricted?		**x**		
Information on Displaced Persons:				
Any estimate of the likely number of persons that will be displaced by the Project? [ ] No [X] Yes If yes, approximately how many? No displacement – economic or physical is anticipated related to project impacts.				
Are any of them poor, female-heads of households, or vulnerable to poverty risks? [**X**] No [ ] Yes				
Are any displaced persons from indigenous or ethnic minority groups? [**X**] No [ ] Yes				

Note: Further information regarding strategies to reduce disruption are contained within the EMP.

APPENDIX 2
INDIGENOUS PEOPLES IMPACT CATEGORIZATION

Date: 8 April 2020

A. Project Data

Country/Project No./Project Title	**Loan 3389/Grant 0477-PHI: Water District Development Sector Project** **Norzagaray Water District Subproject**
Department/ Division	SEUW
Processing Stage	Active

Modality

[ ] Project Loan [ ] Program Loan [ ] Financial Intermediary [ ] General Corporate Finance

[X] Sector Loan [ ] MFF [ ] Emergency Assistance [X] Grant

[ ] Other financing modalities: Sector development program (linked program loan + project loan)

B. Indigenous Peoples Category			
[X] New [ ] Recategorization — Previous Category [ ]			
[ ] Category A	**[ ]** Category B	**[X]** Category C	2. **[ ]** Category FI
C. Project requires the broad community support of affected Indigenous Peoples communities.		**[ ]** Yes	**[X]** No
D. Comments			
The proposed project of the Norzagaray Water District (NorWD) will not impact on any indigenous cultural community/person or encroach on any ancestral domain.			

E. Approval			
Proposed by:		**Reviewed by**:	
Joseph Lalo			
Consultant for CDTA team		Social Safeguard Specialist, SEUW	
Date: 8/4/202		Date:	
		Endorsed by:	
		Director,	
Date:		Date:	
Endorsed by:		**Approved by**:	☐ Highly Complex and Sensitive Project
Director,		Chief Compliance Officer	
Date:		Date:	

Indigenous Peoples Impact Screening Checklist

KEY CONCERNS (Please provide elaborations on the Remarks column)	YES	NO	NOT KNOWN	Remarks
Indigenous Peoples Identification				
1. Are there socio-cultural groups present in or use the project area who may be considered as "tribes" (hill tribes, schedules tribes, tribal peoples), "minorities" (ethnic or national minorities), or "indigenous communities" in the project area?		**X**		There are no IPs or certified ancestral lands in the sub-project area
2. Are there national or local laws or policies as well as anthropological researches/studies that consider these groups present in or using the project area as belonging to "ethnic minorities", scheduled tribes, tribal peoples, national minorities, or cultural communities?	**X**			There is a national law (Republic Act 8371 s. 1997) for protecting IP but it is not applicable in the project area because they are not present there.
3. Do such groups self-identify as being part of a distinct social and cultural group?		**N/A**		
4. Do such groups maintain collective attachments to distinct habitats or ancestral territories and/or to the natural resources in these habitats and territories?		**N/A**		
5. Do such groups maintain cultural, economic, social, and political institutions distinct from the dominant society and culture?		**N/A**		
6. Do such groups speak a distinct language or dialect?		**N/A**		
7. Has such groups been historically, socially and economically marginalized, disempowered, excluded, and/or discriminated against?		**N/A**		
8. Are such groups represented as "Indigenous Peoples" or as "ethnic minorities" or "scheduled tribes" or "tribal populations" in any formal decision-making bodies at the national or local levels?		**N/A**		There are no IPs or certified ancestral lands in the sub-project are.
B. Identification of Potential Impacts				
9. Will the project directly or indirectly benefit or target Indigenous Peoples?		**X**		
10. Will the project directly or indirectly affect Indigenous Peoples' traditional socio-cultural and belief practices? (e.g. child-rearing, health, education, arts, and governance)		**X**		
11. Will the project affect the livelihood systems of Indigenous Peoples? (e.g., food production system, natural resource management, crafts and trade, employment status)		**X**		
12. Will the project be in an area (land or territory) occupied, owned, or used by Indigenous Peoples, and/or claimed as ancestral domain?		**X**		
C. Identification of Special Requirements *Will the project activities include:*				
13. Commercial development of the cultural resources and knowledge of Indigenous Peoples?		**X**		
14. Physical displacement from traditional or customary lands?		**X**		

KEY CONCERNS (Please provide elaborations on the Remarks column)	YES	NO	NOT KNOWN	Remarks
15. Commercial development of natural resources (such as minerals, hydrocarbons, forests, water, hunting or fishing grounds) within customary lands under use that would impact the livelihoods or the cultural, ceremonial, spiritual uses that define the identity and community of Indigenous Peoples?		X		
16. Establishing legal recognition of rights to lands and territories that are traditionally owned or customarily used, occupied or claimed by indigenous peoples?		X		
17. Acquisition of lands that are traditionally owned or customarily used, occupied or claimed by indigenous peoples?		X		

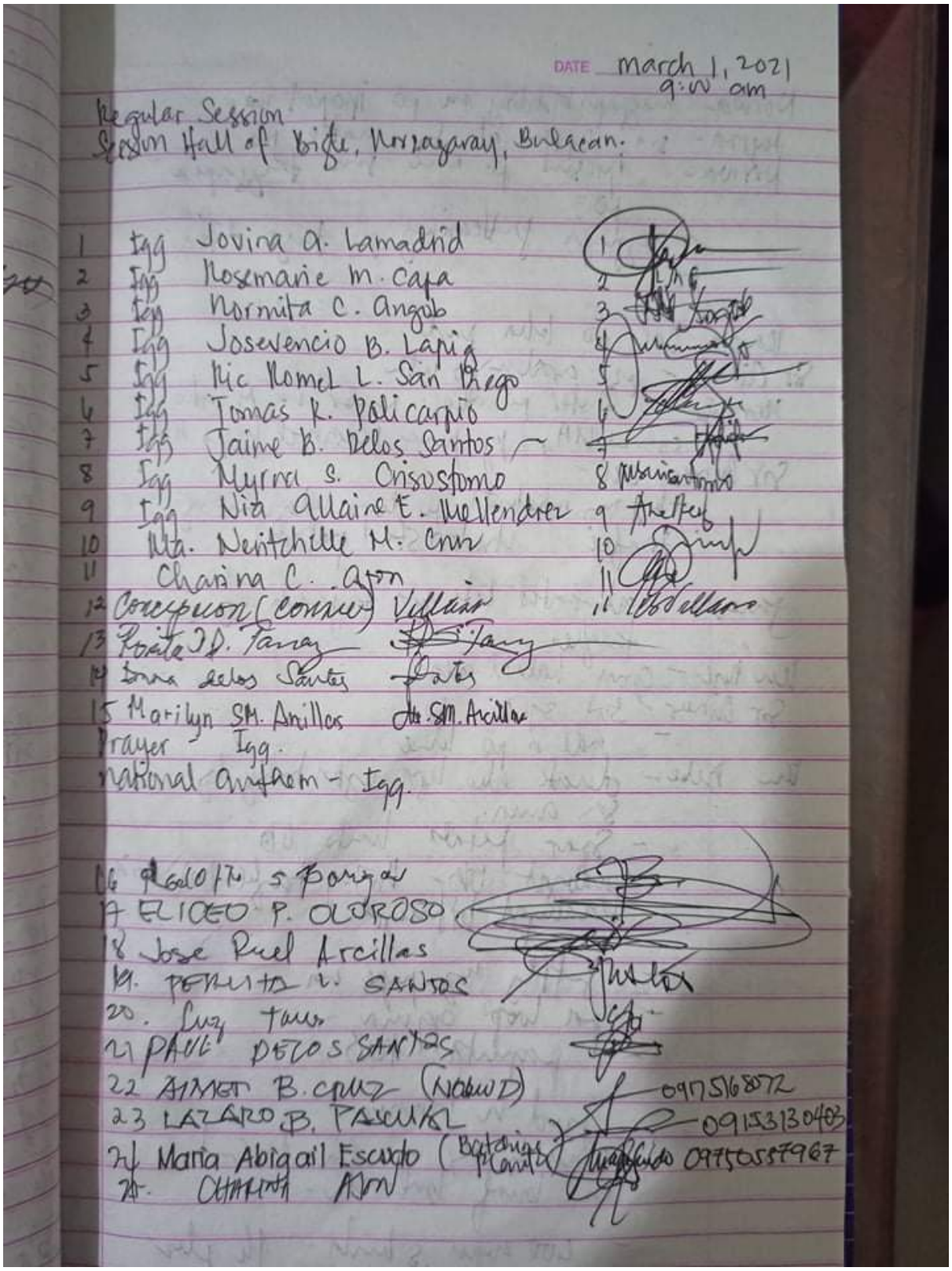
D. Anticipated project impacts on Indigenous Peoples

Project component/ activity/ output	Anticipated positive effect	Anticipated negative effect
This subproject will improve water supply within the service area of Norzagaray Water District where there are no IPs present	None as there are no IPs present	None as there are no IPs present

APPENDIX 3
PUBLIC CONSULTATION PROCEEDINGS

NorWD Public Consultation for Water Supply Project

1. NorWD staff consultation with officials of Brgy. Bigte, Norzagaray, Bulacan (March 1, 2021).



DATE March 1, 2021
9:00 am

Regular Session
Session Hall of Bgy. Norzagaray, Bulacan.

1 Hon Jovina A. Lamadrid
2 Hon Rosemarie M. Capa
3 Hon Normita C. Angob
4 Hon Josevencio B. Lapid
5 Hon Mic Nomel L. San Diego
6 Hon Tomas K. Policarpio
7 Hon Jaime B. Delos Santos
8 Hon Myrna S. Crisostomo
9 Hon Nia Allaine E. Mallendres
10 Hon. Neitchille M. Cruz
11 Charina C. Ayon
12 Concepcion (connie) Villaar
13 Rosita D. Tanay
14 Dona delos Santos
15 Marilyn SM. Arcillas
Prayer Hon.
National Anthem - Hon.

16 Rodolfo S Pangan
17 ELICEO P. OLOROSO
18 Jose Ruel Arcillas
19. PERLITA L. SANTOS
20. Luz Tan.
21 PAUL DELOS SANTOS
22 AIMEE B. CRUZ (NORWD) 09175168072
23 LAZARO B. PASCUAL 09153130408
24 Maria Abigail Escudo (Botanical Garden) 09750557967
25. CHARINA AYON

NORZAGARAY WATER DISTRICT
1639 P. DELA MERCED ST., POBLACION, NORZAGARAY, BULACAN
TEL/FAX: (044) 815-3964, E-MAIL: norzagaray_wd@yahoo.com

MINUTES OF THE NORZAGARAY WATER DISTRICT PUBLIC CONSULTATION WITH BRGY. BIGTE OFFICIALS

RE: CONSTRUCTION OF NORZAGARAY WATER SUPPLY IMPROVEMENT PROJECT

VENUE: BRGY. BIGTE HALL, BRGY. BIGTE, NORZAGARAY, BULACAN

DATE & TIME: March 1, 2021 at 9:00 A. M.

ATTENDEES

1. **NORZAGARAY WATER DISTRICT**
2. **BRGY. BIGTE OFFICIALS**

The Session started right after the flag ceremony of Brgy. Bigte at 9:00 a.m. Before the meeting starts, the NorWD's General Manager, Engr. Aimer Cruz introduced himself and acknowledged the warm welcome of Brgy. Bigte officials.

Engr. Aimer Cruz stated that the intention of this meeting is for the future project of Norzagaray Water District, Re: Construction of Norzagaray Water Supply Improvement project which will take place within the jurisdiction of Brgy. Bigte and they are the mainly target for this project which will create an additional network of pipelines to provide water supply in the area. This project is in line with NorWD's continuous efforts to improve the water supply in different parts of Norzagaray.

Engr. Aimer Cruz explained the scope of work for the pipelaying with a total of 2,585 linear meter, compose of 1,680 lm of 300mm diameter uPVC, 780 lm of 250mm diameter uPVC, valves, fittings and accessories; and 125 lm bridge crossing using 400mm diameter steel pipes, demolition and surface restoration, supply, installation, testing and commissioning of submersible pump, valves and its accessories.

He also mentioned that this project's funding source is the Asian Development Bank through loan and this public consultation is one of their requirements that need to be accomplished.

NORZAGARAY WATER DISTRICT
1639 P. DELA MERCED ST., POBLACION, NORZAGARAY, BULACAN
TEL/FAX: (044) 815-3964, E-MAIL: norzagaray_wd@yahoo.com

The Brgy. Bigte officials, especially Hon. Jovina A. Lamadrid, Brgy. Captain with no objection, allowed this project for the improvement of water supply in the area, also their jurisdiction will be the one who will benefit the most from this project. She also mentioned that their area is one of the fastest-growing people in the town especially with the subdivisions/housing that may rise in the area and this project is very timely for them and this project is for the better future for the residents of Norzagaray, Bulacan.

Engr. Aimer Cruz acknowledged the allowing and cooperation of the Brgy. Officials of Brgy. Bigte for this project.

The meeting of Norzagaray Water District with the Brgy. Officials of Brgy. Bigte was put to a close at 10:30 a.m.

Prepared by:

(Sgd.)
Foztin Joy T. Palad
Secretary A

Appendix 3

NorWD Public Hearing for Septage Management Program

1. BARANGAY PARTIDA

NORZAGARAY WATER DISTRICT

1639 P. Dela Merced St., Poblacion,
Norzagaray, Bulacan
Tel: 044-694-07-99/Telefax: 044-815-39-64

SUBJECT : **Public Hearing for Septage Management Program**
LOCATION : **Brgy. Partida Basketball Court**
DATE: **September 26, 2017**
TIME : **8:00 AM**

ATTENDANCE SHEET

NO.	NAME	ADDRESS	SIGNATURE
1	Jesus S. Reyes Jr	Brgy. Partida Norz. Bul.	
2	Guillermo D.L. San Pedro	Brgy. Partida Norz. Bul	
3	Guillerma S. CRUZ	Brgy. Partida Norz. Bul	
4	Loida C. Cabrera	Brgy. Partida Norz. Bul	
5	JOCELYN H. ACOSTA	076 Hi-WAY, PARTIDA	
6	LYN S. MONTERA	BRGY. partida Norz. Bul.	
7	JOEY S. RAMOS	172 POBLACION PARTIDA, NORZ, BUL.	
8	GLICERIO HERMOGENES	"	
9	PEDRO CORRED	83/ NIÑO VILLE POTRERO NORZ BUL.	
10	REYNALDO DL. SANTOS	272 DILIMAN, PARTIDA NORZ BUL	
11	Bobby F SANTOS	PART BUL	
12	Aniceto Jemenez	275 Diliman PartiDa Norz	
13	Francisco Trijoulee	Lanquinas PARtida Nor	
14	Moeses Rodil	Looban Partida	
15	Norma Dela Cruz	Hi-way Partida Norz	
16	Reynaldo P. Gonzales	279 Diliman. Partida Norzagaray Bul	
17	PAUL C. GASPAR	HI-WAY PARTIDA NORZ.	
18	PAUL PRIAS	"	
19	Cruz, Rachelle anne	Brgy. Pading Matictic Norz. Bul	
20	EMELIE TAGAVILLA	Brgy. Partida, Norz., Bul.	
21	BENIGNO P. CORREA	BGY. PARTIDA, NORZ. BUL.	
22	VIRGILIO NAME JR	BRG PARTIDA, NORZ BUL	
23	PASCUAL, VON B.	" " " "	
24	BERNARDO LEUTERIO T.	BRGY. PARTIDA	
25	Poreciano Sto	Brgy. Partida	
26	Cecille alberto	Pading Bulanyi	
27	FERNIE DE DIOS	Brgy Partida	
28	Edna morcal	Brgy Partida	
29	ROMEO N. LEGASPI	Brgy Partida	
30	AQUILINO P. CORREA	BRGY PARTIDA	

NORZAGARAY WATER DISTRICT
1639 P. Dela Merced St., Poblacion,
Norzagaray, Bulacan
Tel: 044-694-07-99/Telefax: 044-815-39-64

SUBJECT : **Public Hearing for Septage Management Program**
LOCATION : **Brgy. Partida Basketball Court**
DATE: **September 26, 2017**
TIME : **8:00 AM**

ATTENDANCE SHEET

NO.	NAME	ADDRESS	SIGNATURE
1	JOSEPH PADILLO	BRGY PARTIDA	
2	JET CARRILLO	BRGY. PARTIDA	
3	GUILLERMO RUEDA	BRGY. PARTIDA	
4	REYNALDO HERMOGENES	BRGY PARTIDA	
5	Estrelinda Fausto	Partida	
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2. BARANGAY MATICTIC

NORZAGARAY WATER DISTRICT
1639 P. Dela Merced St., Poblacion,
Norzagaray, Bulacan
Tel: 044-694-07-99/Telefax: 044-815-39-64

SUBJECT : Public Hearing for Septage Management Program
LOCATION : In Front of Immaculate Concepcion Church
DATE: January 12, 2018
TIME : 8:00 AM

ATTENDANCE SHEET

NO.	NAME	ADDRESS	SIGNATURE
1	Beverly Socito	River Side	Beverly
2	Marilyn SP. Reyes	River Side Matictic	[illegible]
3	Elisa D. Abong	Riverside Matictic	[illegible]
4	Annabelle I. Martir	River Side Matictic	[illegible]
5	Rona Fernandez	Riverside Matictic	[illegible] Fernandez
6	Placido T. Deocampo	Riverside Matictic	[illegible]
7	Gloria C. Ignacio	Proper Matictic	[illegible]
8	Alona B. San Diego	Proper Matictic	[illegible]
9	Florentina DR. Adamos	Bilad Bilad Matictic	[illegible]
10	KAG. ELADIO C. PALAAD	GULOD, MATICTIC	[illegible]
11	Nenita P. Argumedo	River Side Matictic	N P. Argumedo
12	Delia P Castro	Proper Matictic	[illegible]
13	Marivic R Sierra	Proper	Marivic R Sierra
14	Rona Amor Llena	Proper Matictic	Rona Amor Llena
15	MARISSA C. GERNAR	PROPER MATICTIC	M C Gernar
16	Cheryl Penarredondo	River sidide Matictic	S Penaredondo
17	LEONIZA M. ESMAS	RIVERSide	L. Esmas
18	LAZARO B. PASCUAL	A. CRUZ ST.	[illegible]
19	MARISSA A. BRIMBUELA	BILAD CORAL	[illegible]
20	ONOFRE R. Salvador	BILAD 2X CORAL	[illegible]
21	Remmirose S. Santos	BILAD 2X CORAL	[illegible]
22	MERLY FLORESCA	Bilad 2X coral	[illegible]
23	Francia PESICO	Bilad 2X Coral	[illegible]
24	Eden D. Besana	Bilad 2X coral	Ebesana
25	Diving M. Quiachon	Bilad 2X Coral	Diving Quiachon
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3. BARANGAY POBLACION

NORZAGARAY WATER DISTRICT
Public Hearing on Septage Management Treatment Program (Brgy. POBLACION)
Attendance:
January 15, 2018
10:00 AM
Parking Brgy. Hall (Pob)

Name	Signature
1. Ferdinand Bernabe	[signature]
2. Marilyn R. Bernabe	[signature]
3. Ma. Leilani C. Villafor	[signature]
4. Jenelyn E. Manuel	[signature]
5. RHODORA CASIMIRO	[signature]
6. RHODORA CORREA	[signature]
7. SHERLY DELA PEÑA	[signature]
8. Leoniza Coronado	[signature]
9. Liezel S. Estela	[signature]
10. Erlinda I. Correa	[signature]
11. Rita Piter	[signature]
12. Marita P. Bernardo	[signature]
13. Florante Palad	[signature]
14. FRANCISCO P. PALAD	[signature]
15. RICARDO L. PALAD	[signature]
16. NOEL C. SARMIENTO	[signature]
17. Sheila C. Casimiro	[signature]
18. Marie M. PEREZ	[signature]
19. KAP. ENCIONG ESGUERRA	[signature]
20. REYNALDO P. GENER (KAGAWAD)	[signature]
21. Ricardo Esquivel Jr.	[signature]

22. Antonio B. Bernardo
23. Rodrigo Villanueva
24. [illegible]
25. Marcelina Ramos
26. Rodolfo Bernardo
27. Romeo M. Precioso
28. Emerita L. Legaspi
29. Kag. Edwin Mendoza
30. KGD Greg Tomas
31. Kgd. Imelda B. de Silva
32. VICKY R. BARTOLOME
33. ANSELMO LEGASPI
34. ROMEO A. PASCUAL
35. Sheryl Borial
36. John Carlo Bernardo
37. Julie Lopez
38. RENE AMIEL B. CRUZ
39. Remigio Baluran
40. ROX PASCUAL
41. CEZAR Palad
42. EDWIN STA. MARIA

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43. LAZARO B. PASCUAL – [signature]
44. CRISPIN G PASCUAL – [signature]
45. DAMINADOR V. PEREZ JR – [signature]
46. Hermes Palad – [signature]
47. Adelia E Bernabe – Adelia E. Bernabe
48. Jurinda Bernardo – [signature]
49. JEFFREY R. LALICIA
50. Santy Ramos [signature]
51. NICOLAS MANGANA [signature]

4. BARANGAY TIGBE

NORZAGARAY WATER DISTRICT
1639 P. Dela Merced St. Poblacion,
Norzagaray, Bulacan
Tel: 044-694-07-99/Telefax: 044-815-39-64

SUBJECT : **Public Hearing for Septage Management Program**
LOCATION : **Brgy. Tigbe Hall**
DATE: **January 24, 2018**
TIME : **1:30 PM**

ATTENDANCE SHEET

NO.	NAME	ADDRESS	SIGNATURE
1	Ambrosio Maningas	252 Sulod Tigbe Norzagaray	
2	Lug M. Domingo	312 [illegible] St. Tigbe	
3	Olivia M. Bantog	294 Sulucan I Tigbe	
4	Zaaydener	95 atanacio St. Brg. TIGBE	
5	Maria O. Agar	N. HV. Tigbe	
6	Rodilla G. Gabito	N. HV. Tigbe	
7	MA. LUISA FABIAN	NHV Tigbe	
8	LIZA L. ODEVILLAS	NHV TIGBE	
9	IRENE S. RAGUDO	NHV PHASE 7 TIGBE	
10	Leah P. Soguilon	NHV phase 7	
11	Adin D. Fabian	NHV Phase 5	
12	Aloth A. Moreno	NHV PHASE 4 BHW	
13	ARLENE FABIAN	NHV PHASE 5 BHW	
14	Cynthia A. Cadalin	NHV tigbe BHW	
15	Antonio de Silva	Sulod	
16	[illegible]		
17	Vicente B. Aguilar	Sulod Tigbe	
18	Jaime Sequbieree	Ga Pocal	
19	Fortunato Garcia	Tigbe Sulod Sulucan	
20	Julito H. Filicano	" "	
21	TEODORO E. SARMIENTO	KAY PISCAL TIGBE	
22	FRANCISCO SANTIAGO	KAY PISCAL TIGBE	
23	Silia R. Hernandez	Sulod, Tigbe Sulucan	
24	Josefina Perez	Sulod Tigbe Sulucan I	
25	Juliana E. Bayombon	Kay piskal Tigbe	
26	Sarah P. Aranca	NHV Tigbe	
27	NOEL P. GENER	TIGBE PROPER	
28	EDUARDO D. PANTALEON	"	
29	Charita Mediana		
30	CRIS DS. HERNANDEZ	"	

Appendix 3

NORZAGARAY WATER DISTRICT

1639 P. Dela Merced St., Poblacion,
Norzagaray, Bulacan
Tel: 044-694-07-99/Telefax: 044-815-39-64

SUBJECT :	**Public Hearing for Septage Management Program**
LOCATION :	**Brgy. Tigbe Hall**
DATE:	**January 24, 2018**
TIME :	**1:30 PM**

ATTENDANCE SHEET

NO.	NAME	ADDRESS	SIGNATURE
1	Mila Baltazar	Tigbe	MBaltazar
2	Rosario [illegible] mangahas	tigbe	[illegible]
3	Clemencia P. Cabigting	Tigbe	[illegible]
4	Juana Gonzales	Tigbe	Juana Gonzales
5	Apolonia L. Silva	Tigbi	[illegible]
6	Ternan Castillo	Tigbe	[illegible]
7	Rizaldina Gutierrez	Tigbe	[illegible]
8	Julia DC Bantog	Tigbe	JBantog
9	Salud Isidoro Santos	Tigbe	Salud
10	Teresita B. Mateo	Tigbe	[illegible]
11	Lorenza G Hernandez	Tigbe	[illegible]
12	Enrique P Rosou	Tigbi	
13	Remedios H Sarmiento	Tigbe	RSarmiento
14	Connie Dodd	Tigbe	[illegible]
15	Janet B. Bico	Tigbe	[illegible]
16	Gerarda Abella	Tigbe	G.A.
17	Eugenia J. de Silva	Tigbe	[illegible]
18	Celestina Valenzuela	Tigbe	[illegible] Valenzuela
19	Adelina F. Madrila	Tigbe, Crisville ML	[illegible]
20	ELVIRA C. DELOS SANTOS	TIGBE ML	[illegible]
21	Crisella Ann D. Flores	NAV PH 7 TIGBE (BHW)	[illegible]
22	JOSE SM. GARMAJAM JR	TIGBE	[illegible]
23	PEDRO HERNANDEZ	TIGBE	[illegible]
24	Shaila marie Comia	Kaypiskal Tigbe	[illegible]
25	Jaime Segubiense	Kaypiskal Tigbe	[illegible]
26	Vicente B. Abulado	Holod Tigbe	[illegible]
27	Vicente [illegible]	Holod Tigbe	[illegible]
28	Almont Jerancio	Tigbe	[illegible]
29	HARLEY M. MENDONES	TIGBE	[illegible]
30	Gina Perez	"	[illegible]

Appendix 3

NORZAGARAY WATER DISTRICT
1639 P. Dela Merced St., Poblacion,
Norzagaray, Bulacan
Tel: 044-694-07-99/Telefax: 044-815-39-64

SUBJECT : **Public Hearing for Septage Management Program**
LOCATION : **Brgy. Tigbe Hall**
DATE: **January 24, 2018**
TIME : **1:30 PM**

ATTENDANCE SHEET

NO.	NAME	ADDRESS	SIGNATURE
1	Feymon Garcia	Tigbe Gulod	[signature]
2	Noli Hernandez	Tigbe	[signature]
3	Rogelio M. De Silva	Tigbe Gulod	[signature]
4	Lionel F. De Guzman	Tigbe	[signature]
5	Elizabeth M. Manalo	Tigbe	[signature]
6	Jennifer M. Hernandez	Tigbe	[signature]
7	Fe Dangco	Tigbe	[signature]
8	Glady Rosa Mariano	Tigbe Kay Piskal	[signature]
9	Lydia L. Bataan	NHY Tigbe	[signature]
10	Alvina M. Japano	NHY Tigbe	[signature]
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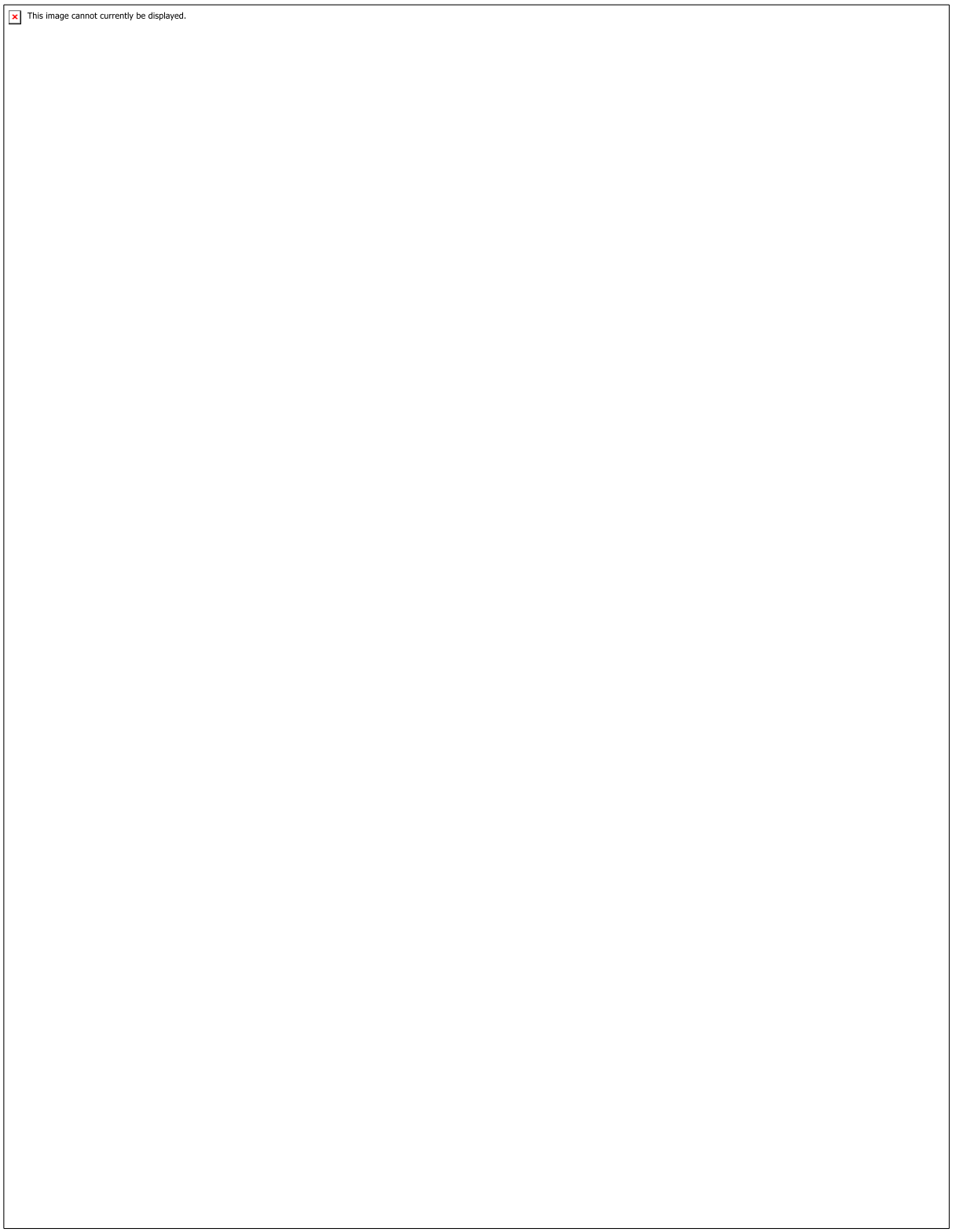
5. BARANGAY FVR



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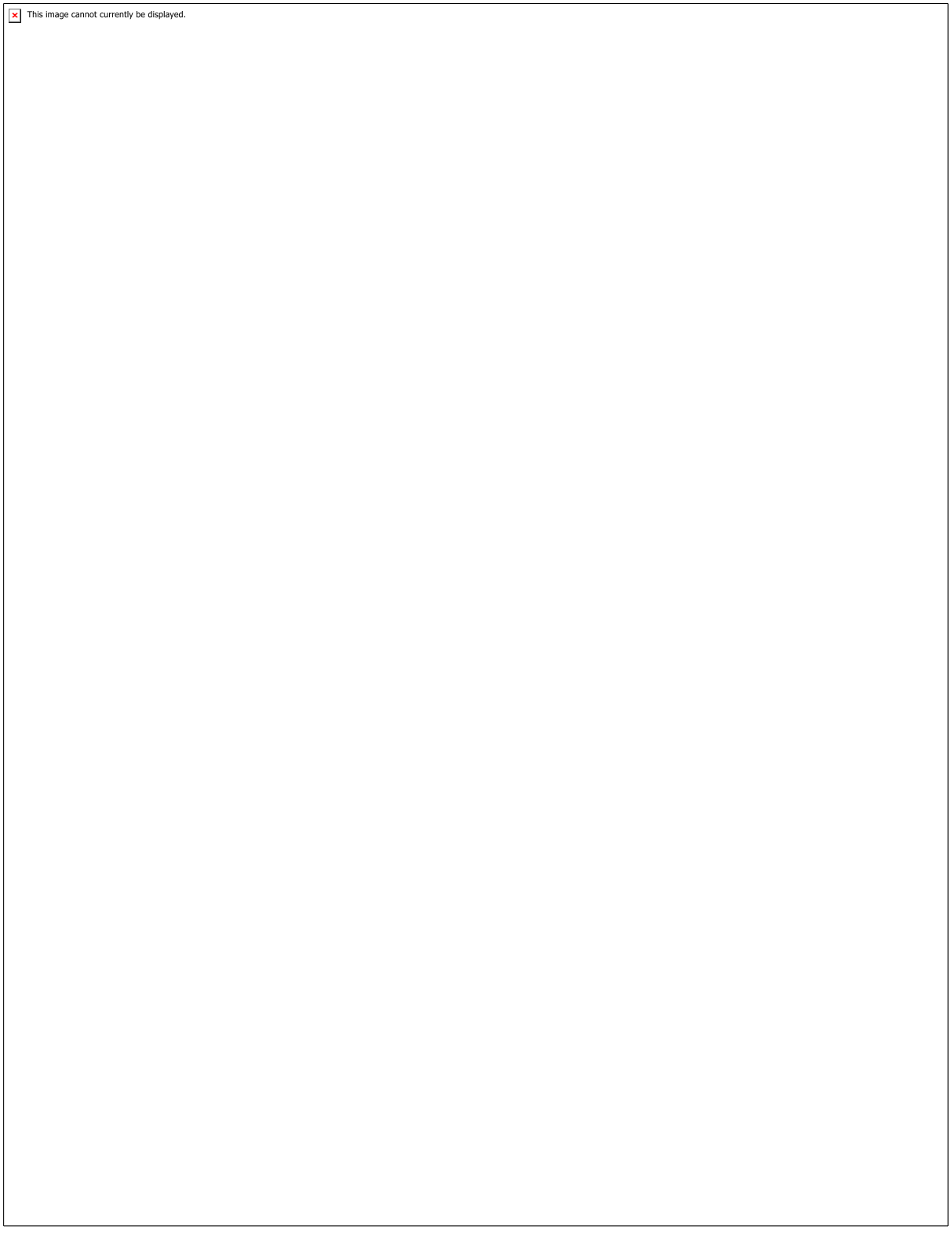

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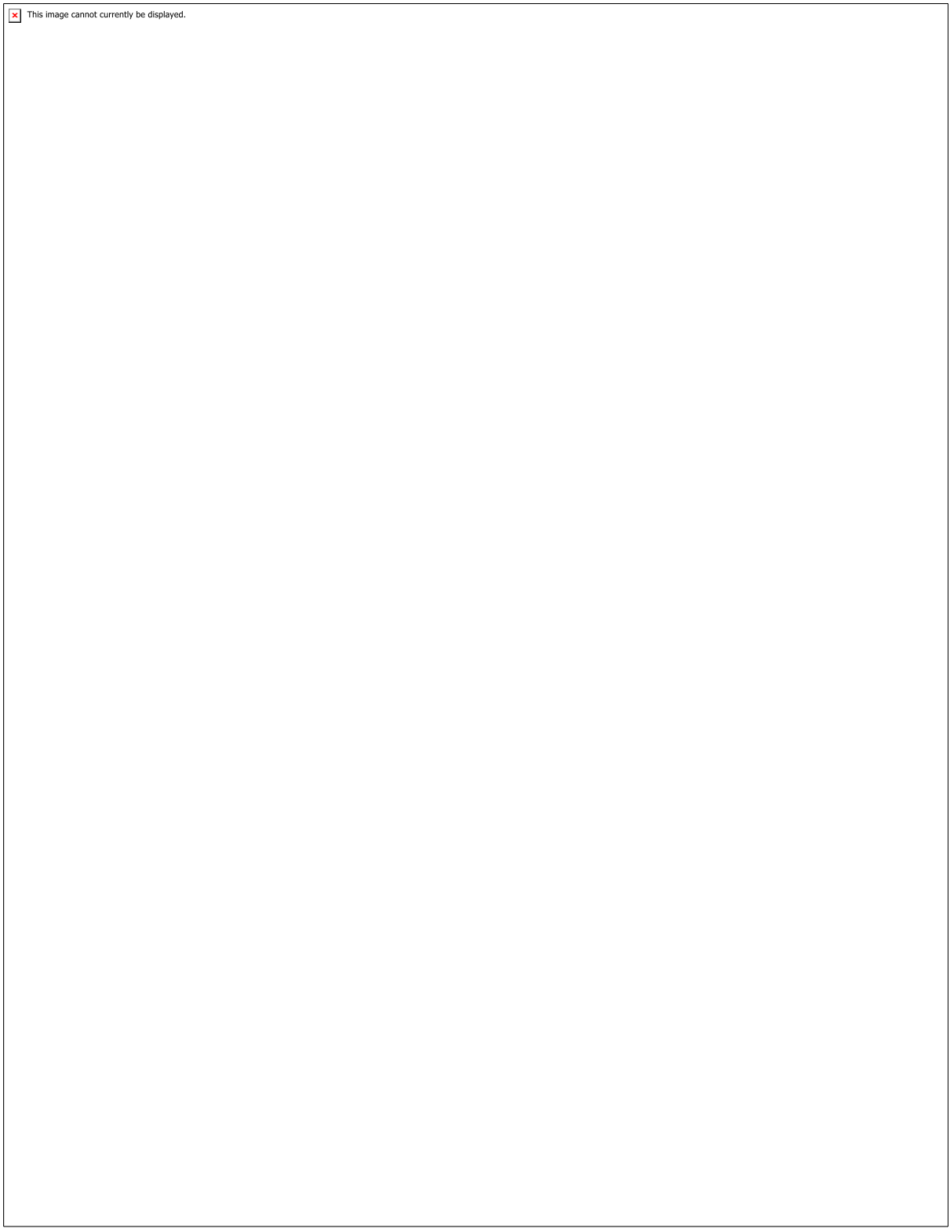

Appendix 3

6. BARANGAY BITUNGOL

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NORZAGARAY WATER DISTRICT

1639 P. Dela Merced St., Poblacion,
Norzagaray, Bulacan
Tel: 044-694-07-99/Telefax: 044-815-39-64

SUBJECT : **Public Hearing for Septage Management Program**
LOCATION : **Brgy. Bitungol Hall**

NORZAGARAY WATER DISTRICT
1639 P. Dela Merced St., Poblacion,
Norzagaray, Bulacan
Tel: 044-694-07-99/Telefax: 044-815-39-64

SUBJECT : **Public Hearing for Septage Management Program**
LOCATION : **Brgy. Bitungol Hall**
DATE: **February 5, 2018**
TIME : **8:00 AM**

ATTENDANCE SHEET

NO.	NAME	ADDRESS	SIGNATURE
1	Mary Ann M. Sta. Maria	Sitio Gulod, Bitungol Nor. Bul.	[signature]
2	Mary Ann M. Cruz	Norzagaray, Bulacan	[signature]
3	Rita R. Pronebo	Norzagaray, Bulacan	[signature]
4	Daisy Laquenta	Bulalo Bitungol Norzbul	[signature]
5	Elizabeth Pulido	Bwao Bitungol	[signature]
6	Corazon P. Tesnado	Bulalo Bitungol Nor. Bul.	[signature]
7	Norma C. Angeles	NHV	[signature]
8	Venus T. Bergabal	NHV	[signature]
9	Dinia T. Tabasa	NHV Bitungol Norz. Bul.	[signature]
10	Lilibeth R. Adu	NHV Bitungol Norz. Bul.	[signature]
11	Wilma A. Nepomuceno	NHV Bitungol Norz. Bul.	[signature]
12	Gina E. Mallari	B35 L12 Norz. Heights Brgy. Bitungol	[signature]
13	Edita C. Banta	B. NHV	[signature]
14	Emelia O. Sagaral	NHV	[signature]
15	Carmelita Agustin	NHV	[signature]
16	Norma G. Gulane	NHV	[signature]
17	Joselyn S. [illegible]	NHV	[signature]
18	Sallie A. Delacruz	NHV	[signature]
19	Rosario Penafiel	NHV	[signature]
20	May R. Pollado	Bitungol	[signature]
21	Nelia Valencia	NHV	[signature]
22	Teofila C. Ramirez	NHV	[signature]
23	Bienvenida C. Ramirez	NHV	[signature]
24	Danilo R. Radar	NHV	[signature]
25	Wilfredo Madlag	NHV	[signature]
26	Bernadine Bertolano	NHV	[signature]
27	Daniel L. Jimenez	NHV	[signature]
28	Marivic A. Abunda	NHV	[signature]
29	Roel R. Melorin	"	[signature]
30	Merlita Dolandang	NorGH	[signature]

NORZAGARAY WATER DISTRICT
1639 P. Dela Merced St., Poblacion,
Norzagaray, Bulacan
Tel: 044-694-07-99/Telefax: 044-815-39-64

SUBJECT : **Public Hearing for Septage Management Program**
LOCATION : **Brgy. Bitungol Hall**
DATE: **February 5, 2018**
TIME : **8:00 AM**

ATTENDANCE SHEET

NO.	NAME	ADDRESS	SIGNATURE
1	Hominga Punzal	M.L.	
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7. BARANGAY MINUYAN

NORZAGARAY WATER DISTRICT
1639 P. Dela Merced St., Poblacion,
Norzagaray, Bulacan
Tel: 044-694-07-99/Telefax: 044-815-39-64

SUBJECT : **Public Hearing for Septage Management Program**
LOCATION : **Brgy. Minuyan Hall**
DATE: **February 14, 2018**
TIME : **10:00 AM**

ATTENDANCE SHEET

NO.	NAME	ADDRESS	SIGNATURE
1	HON. JERRY M. CENAL	BGY. MINUYAN	
2	KON. ROLANDO PASCUAL	BRGY. MINUYAN	
3	Eduardo C. Bautista	" "	
4	CARINA A. VARITANAN	" "	
5	Danilo D.M. Cruz	" "	
6	MARIO D. BERNABE	" "	
7	MARTIN DELA MERCED	" "	
8	RONALDO R. CRUZ	" "	
9	ROGELIO JOEL PEREZ	" "	
10	Jovy Telo	Brgy Minuyan	
11	Mary Rose V. ATONDO	Brgy Desk officers	
12	SALLY R. PALAD	Cashier	
13	ETHEL BARCELO	MINUYACAN, NORZ, BUL	
14	Rosalia V. Rayo	Palorina	
15	Myra C. Salvador	Minuyan	
16	ROBERT D. DELA ROSA	Minuyan	
17	Rhodora Marcial	Minuyan	
18	Celia R. Reyes	Minuyan	
19	Violeta B. Faustino	Minuyan	
20	LOURDES NUÑEZ	MINUYAN	
21	Evangeline L. Funez	Minuyan	
22	EDNA S. UMALI	Minuyan	
23	Josephine A. Rayo	Minuyan	
24	EDMAR M. TOVINO	MINUYAN	
25	Jerry Pelayo	Norz., Bul.	
26	Sheryl Bariuad	Norz. Bul.	
27	LARRY PASCUAL	A. Cruz St. NORZ. BUL.	
28	Joyce Aprovechado	Norz., Bul.	
29	Jaime S. Tello	Minuyan, Norz, Bul.	
30	Felicidad C. Sorrido	Minuyan Norz. Bul.	

Appendix 3

Appendix 3

NORZAGARAY WATER DISTRICT
1639 P. Dela Merced St., Poblacion,
Norzagaray, Bulacan
Tel: 044-694-07-99/Telefax: 044-815-39-64

SUBJECT : **Public Hearing for Septage Management Program**
LOCATION : **Brgy. Minuyan Hall**
DATE: **February 14, 2018**
TIME : **10:00 AM**

ATTENDANCE SHEET

NO.	NAME	ADDRESS	SIGNATURE
1	Marcelina S. Ignacio	829 Sagrada St. Minuyan Norz. Bul.	[signature]
2	Juliana A. Nisperos	Sitio San Jose Minuyan Norz. Bul.	[signature]
3	Camilo A. Caccam	Brgy. Minuyan	[signature]
4	Bernadita B. Richor	Brgy. Minuyan	[signature]
5	Ramil D. Torres	"	[signature]
6	Victor Magaling ahas	V. Manigbas	
7	Francisco Salonga	"	[signature]
8	Catherine Dionisio	Health Center	[signature]
9	[illegible]		[signature]
10	Florencia Bognot	Brgy. Minuyan	[signature]
11	Rhona Bernardo	"	[signature]
12	Emilia Bernardo	"	[signature]
13	Edna Medenilla		[signature]
14	Shiela B. Santos	Brgy. Minuyan, Norz. Bul.	[signature]
15	Jobelle D. Najera	Brgy. Minuyan Norz. Bul.	[signature]
16	Charmaine S. Celestino	—do—	[signature]
17	Darwin C. Policarpio	Brgy. Minuyan	[signature]
18	Norbie Anne C. Perez	Brgy. Minuyan Norz. Bul.	[signature]
19	Marissa C. Maningas	Brgy. Minuyan Norz. Bul.	[signature]
20	Joan U. Santiago	Brgy. Minuyan, Norz. Bul.	[signature]
21	Maria Elena R. Ventura	Minuyan, Norz. Bul.	[signature]
22	Julie Ann Barrera	Minuyan Norz. Bul.	[signature]
23	Jowahar Mercado	Minuyan Norz. Bul.	[signature]
24	Jerem Matthew Corre[illegible]	Minuyan, Norz. Bul.	[signature]
25	Alvin S. Caponpon	Brgy. Minuyan Norz. Bul.	[signature]
26	Ellen Grace D. Viñas	Minuyan, Norzagaray, Bul.	[signature]
27	Grace Joy S. Manuel	Minuyan, Norzagaray Bul.	[signature]
28	Juliana M. Pascual	Minuyan, Norzagaray, Bul.	[signature]
29	Joselyn M. Escalada	Minuyan, Norz. Bul.	[signature]
30	Jellicel E. Racal	Minuyan, Norz. Bul.	[signature]

NORZAGARAY WATER DISTRICT
1639 P. Dela Merced St., Poblacion,
Norzagaray, Bulacan
Tel: 044-694-07-99/Telefax: 044-815-39-64

SUBJECT : **Public Hearing for Septage Management Program**
LOCATION : **Brgy. Minuyan Hall**
DATE: **February 14, 2018**
TIME : **10:00 AM**

ATTENDANCE SHEET

NO.	NAME	ADDRESS	SIGNATURE
1	ARTEMIO O. FILLONE JR.	MINUYAN NORZ. BUL.	
2	ALELIE B. CASIMIRO	MINUYAN NORZ, BUL,	
3	Michelle F. Paiso	Minuyan Norz. Bul.	
4	Shamira A. Palad	Minuyan Norz. Bul.	
5	Mara Hermogenes	Minuyan Norz. Bul.	
6	ERWIN S. SANTIAGO	Minuyan Norz. Bul.	
7	MARVIN S. SALVADOR	Minuyan Norz. Bul.	
8	CJ M. TAND	Minuyan Norz. Bul.	
9	GERRYWIN L. CULLE	Minuyan, Norz. Bul.	
10	Jayson E. Samo	Minuyan, Norz. Bul.	
11	Rose Hewi H. Vivas	Minuyan, Norz. Bul.	
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8. BARANGAY BIGTE

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Appendix 3

NORZAGARAY WATER DISTRICT

1639 P. Dela Merced St., Poblacion,
Norzagaray, Bulacan
Tel: 044-694-07-99/Telefax: 044-815-39-64

SUBJECT : **Public Hearing for Septage Management Program**
LOCATION : **Brgy. Bigte Muti-Purpose Hall**
DATE: **February 20, 2018**
TIME : **02:00 PM**

ATTENDANCE SHEET

NO.	NAME	ADDRESS	SIGNATURE
1	Johnny Llaneza	Bigte	[signature]
2	DIOSCORO MADRID	"	[signature]
3	CHRISTIAN ALCAZAR	"	[signature]
4	ROGER AVILA	Bigti	[signature]
5	Ma. Nona M. Kelam	Bigte	[signature]
6	JONEIL AÑO	BIGTE	[signature]
7	Jeffrey Mascalud	Bgte	[signature]
8	Karin Bareng	Bigte	[signature]
9	Nenitchelle Cruz	Bigte	[signature]
10	Aaniz A. Domingo	Bigte	[signature]
11	Gemma O. Tein	OB. Bigte	[signature]
12	KIM MORENO	Crusher	[signature]
13	MIRIAM C. PAX	crusher	[signature]
14	Jonah NABUS	NABUS	[signature]
15	Marilou H. Delos Santos	Settling	[signature]
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9. BARANGAY SAN MATEO

NORZAGARAY WATER DISTRICT
1639 P. Dela Merced St., Poblacion,
Norzagaray, Bulacan
Tel: 044-694-07-99/Telefax: 044-815-39-64

SUBJECT : **Public Hearing for Septage Management Program**
LOCATION : **Brgy. San Mateo Basketball Court**
DATE: **February 22, 2018**
TIME : **09:00 AM**

ATTENDANCE SHEET

NO.	NAME	ADDRESS	SIGNATURE
1	Milagros delos Santos	Mateo Nor. Bul.	[illegible]
2	SILVINO C CRUZ	SAN MATEO NORZ BUL.	[illegible]
3	JOSE B. CRUZ	San Mateo Norz Bul.	[illegible]
4	Jovito Saguion jr	" " "	[illegible]
5	NESTOR CRUZ	" "	[illegible]
6	ROLLY DE LEON	IPO DAM	[illegible]
7	Rosemarie Agdeppa	San Mateo	RAgdeppa
8	Gregorio Lucas Jr.	Ipo	[illegible]
9	Magdalena d Esteban	San mateo	M Esteban
10	Virginia T Repil		[illegible]
11	Mary Jane C. Santiago	" "	[illegible]
12	Nenza Peñaflorida	" "	[illegible]
13	JOSE T. Reyes	San. Mateo, NORZ. Bul	[illegible]
14	JESSIE NICOLAS	//	[illegible]
15	Ron Wilma Palaglay	San Mateo	[illegible]
16	Nardin Celestino		[illegible]
17	NICANOR SAPLA	— " —	[illegible]
18	Alena Lalhot.	San Mateo Norz. Bul	A. [illegible]
19	Adela Mariano	San Mateo Nor, Bul,	[illegible]
20	[illegible]	[illegible]	[illegible]
21	Fernanda S CANTE		[illegible]
22	Benita [illegible]		[illegible]
23	Rocita Cruz	San Mateo Norz. Bul.	[illegible]
24	KAP DADENG CRUZ	//	[illegible]
25	Ma. Eliza G. Esteban	San Mateo NORZ, Bul	[illegible]
26	IMELDA G. CASTOBAN	San Mateo, N. B.	[illegible]
27	Eduardo F. Gole CRUZ JR	San Mateo Nor. Bul	[illegible]
28	Beth C. Celestino	San Mateo Nor Bul	Celestino
29	Imelda Esteban	San Mateo NOV Bul	L Esteban
30	JESS CELESTINO	SAN MATEO NOR BUL	J Celestino

Appendix 3

NORZAGARAY WATER DISTRICT

1639 P. Dela Merced St., Poblacion,
Norzagaray, Bulacan
Tel: 044-694-07-99/Telefax: 044-815-39-64

SUBJECT : **Public Hearing for Septage Management Program**
LOCATION : **Brgy. San Mateo Basketball Court**
DATE: **February 22, 2018**
TIME : **09:00 AM**

ATTENDANCE SHEET

NO.	NAME	ADDRESS	SIGNATURE
1	INE PASCUAL	SAN MATEO	
2	Boyens Bautista	// Hulo	
3	PEPING C. Reyes	// //	
4	Marites A. Cotrera	"	
5	Edith Erpy	"	
6	Divina M. Basallote	"	
7	Inocencio G. Cudog Jr.	Hulo San Mateo	
8	Gina B. Icaigay	SAMPAGUITA	
9	RODOLFO JOBO	301 Hulo	
10	JAEL EDRIAN	242 CENTRO	
11	IMELDA ESTEBAN	258 CENTRO	
12	Simeona M. Baltazar	Ambaltazar SAN MATEO	
13	Tonina Latumbo	Sapang Sageng	
14	Florida Jose	Hulo San Mateo	
15	MARISA CELISTINO	KALYE NIETE	
16	ZENAIDA YALAN	Hulo [illegible]	
17	Elvira Penilla	San Mateo Nor. Bul.	
18	Emily C. Batongbakal	Sn Mateo Nrz, Bul	
19	Leonida M. Cudog	San Mateo Nor., Bul.	
20	Rufina Santos	IPO Dam San Mateo	
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APPENDIX 4
DEED OF ABSOLUTE SALE

EXTRA-JUDICIAL SETTLEMENT OF INTESTATE ESTATE OF THE DECEASED TERESITA F. ALBERTO WITH ABSOLUTE SALE

KNOW ALL MEN BY THESE PRESENTS:

This EXTRA-JUDICIAL SETTLEMENT made and entered into between:

POLICARPIO ALBERTO, widow, **CYNTHIA A FLORES,** married and **CARLITO F. ALBERTO** married to **CRISELDA D. ALBERTO**, of legal ages, Filipinos and a resident of Km. 37 Pulong Buhangin Sta. Maria, Bulacan;

HEREBY DECLARE AND MANIFEST:

That they are the legitimate and sole heirs of deceased **TERESITA F. ALBERTO,** who died on _____, at _____, without any will;

That said deceased Teresita F. Alberto died intestate without her valid and probated testament and without leaving any debts to any person whatsoever, nor in favor of the Government;

That the said deceased, at the time of her death, had left certain rights and interests over a portion of certain real property located at Partida Norzagaray, Bulacan with an area of THREE THOUSAND THREE HUNDRED SEVENTEEN (3,317) SQUARE METERS, more or less covered by ORIGINAL CERTIFICATE OF TITLE No. P-5958 (M) issued in the name of **TERESITA F. ALBERTO** married to Policarpio Alberto, by the Register of Deeds of Meycauayan, Bulacan, and more particularly described as follows:

Lot No. 12196, Cad-350
(Lot 2011-C Csd-03-003918-D)

Beginning at a point marked "1" of Lot No. 12196, Cad-350, being S. 39-40 W., 2902.44 m. from BLLM No. 1, Cad-350, Norzagaray Cadastre, thence S. 33-41 E., 6.11m. to point 2; S. 14-56 W., 21.99 m. to point 3; N. 86-50 W., 74.20m. to point 4; N. 86-50 W., 77.50m. to point 5; N. 5-00 E., 15.00m. to point 6; N. 11-56 W., 1.66m. to point 7; N. 89-28 E., 77.46m. to point 8; N. 89-29 E., 75.33m. to point 1; point of beginning.

Containing an area of THREE THOUSAND THREE HUNDRED SEVENTEEN (3,317) SQUARE METERS. X x x x x x

That pursuant to Section 1, Rule 74 of the Revised Rules of Court of the Philippines and the parties herein being all of age, they have agreed to divide as they do hereby divide and adjudicate between themselves, the above-described rights and interests of the deceased EDUARDO T. CRUZ.

DEED OF ABSOLUTE SALE

WE, **POLICARPIO ALBERTO, CYNTHIA A FLORES, CARLITO F. ALBERTO** married to **CRISELDA D. ALBERTO,** all represented by CRISELDA D. ALBERTO with Special power of Attorney notarized by Atty. Mario M. Villegas with Doc. No. 327; Page No. 67; Book No. 91; Series of 2017 dated October 13, 2017 at Norzagaray, Bulacan, FOR AND IN CONSIDERATION of the amount of **ONE MILLION NINE HUNDRED THOUSAND (Php 1,900,000.00) PESOS**, Philippine currency, in hand and paid by, **NORZAGARAY WATER DISTRICT,** represented by **ENGR. AIMER B. CRUZ**, General Manager, the receipt of which is hereby **ACKNOWLEDGED** by the **VENDORS/HEIRS** to their satisfaction, do hereby **SELL, TRANSFER** and **CONVEY** to the said **NORZAGARAY WATER DISTRICT,** represented by **ENGR. AIMER B. CRUZ**, all their rights and interests over the afore-described parcel of land in a manner absolute and irrevocable free from any liens and encumbrances.

IN WITNESS WHEREOF, the Vendors/Heirs have hereunto set their hands this 13 JAN 2020 hereat Norzagaray, Bulacan.

criselde alberto
aif: **CRISELDA D. ALBERTO**
POLICARPIO ALBERTO
Vendor/Heir

criselda alberto
aif: **CRISELDA D. ALBERTO**
CYNTHIA A FLORES
Vendor/Heir

Criselda a alberto
aif: **CRISELDA D. ALBERTO**
CARLITO F. ALBERTO
Vendor/Heir

represented by: **ENGR. AIMER B. CRUZ**
NORZAGARAY WATER DISTRICT
Vendee

SIGNED IN THE PRESENCE OF :

LOURDES C PALAD

LAZARO B. PASCUAL

ACKNOWLEDGMENT

REPUBLIC OF THE PHILIPPINES)
PROVINCE OF BULACAN) S.S.

BEFORE ME, Notary Public for and in the Province of Bulacan, personally appeared:

VALID ID

CRISELDA D. ALBERTO	RSP PAWNSHOP ID NO. 029
ENGR. AIMER B. CRUZ	UMID CRN-003-3574-9614-4

the parties with their valid ID's appearing below their signatures which are sufficient proof of their identity, known to me and to me known to be the same persons who executed the foregoing document and acknowledged the same to be of their own free, and voluntary act and deed.

This instrument refers to an Extra-Judicial Settlement of Intestate Estate of the Deceased TERESITA F. ALBERTO with Deed of Absolute Sale consisting of two (2) pages including the page on which this acknowledgement is written, duly signed by the parties and their instrumental witnesses on each and every page hereof.

IN WITNESS HEREOF, I have hereunto affixed my signature and seal this 13 JAN 2020 hereat Norzagaray, Bulacan.

Doc No. 285 ;
Page No. 58 ;
Book No. 64 ;
Series of 2020.

ATTY. MARIO M. VILLEG
Notary Public
My Commission Expires on Dec. 31 020
Commission No. PNC – 79 – M8 – 018
PTR No. 1983915 – 1 / 03 / 19
City of San Jose del Monte, Bulacan
Roll No. 37535
MCLE Comp. No. VI – 007332 – 4 / 14 / 2022

2

ANNEX 4

Construction Guidelines for Project Implementation during the period of Public Health Emergency

Construction Guidelines for Project Implementation during the period of Public Health Emergency

Background

The President declared a state of public health emergency through Presidential Proclamation No. 922 s. 2020 to address the Corona Virus Disease (COVID-19) threat, subsequently placing the whole of Luzon under Enhanced Community Quarantine (ECQ) on 16 March 2020.

The Inter-Agency Task Force for the Management of Emerging Infectious Diseases (IATF), based on its risk assessment recommended the extension of the ECQ in high risk geographic areas in Luzon and the imposition of the ECQ in some high risk areas in Visayas and Mindanao, while proposing a General Community Quarantine (GCQ) in all low risk and moderate risk areas in the country from 1 May 2020 to 15 May 2020.

Different parts of the country are expected to progress through various levels of public health emergency and declared as high, medium, or low risk areas depending on the prevalence of COVID-19 cases and related statistics, thereby placing them under corresponding community quarantine status.

The construction industry which contributes about 4.2 million workers to the country's labor force, in anticipation of the lifting of ECQ, is getting ready to return to work and would like to ensure the safety and welfare of people, most especially those of its employees/workers. Construction industry players would like to focus on preventing the occurrence of and controlling the spread of the virus in the workplace, mindful that a single case of COVID-19 can lead to an interruption, if not total work stoppage.

The global pandemic has affected livelihoods, lifestyles and industries including the construction industry which relies heavily on human resources. Total work stoppage from the time ECQ was declared has had debilitating effects not just on workers who are mostly project based and therefore paid on a daily basis but on contractors as well, majority of whom or 88% are small and medium enterprises (SMEs).

The Philippine Domestic Construction Board (PDCB), an implementing board of the Construction Industry Authority of the Philippines (CIAP), mandated to formulate policies, plans, programs, and strategies for the development of the Philippine construction industry organized a Technical Working Group (TWG) comprised of representatives from contractors of varying sizes and suppliers coming from Luzon, Visayas and Mindanao to draft the proposed protocols for the industry in preparation for resumption of construction work in areas under quarantine. The TWG drafted the "Construction Guidelines for Project Implementation during the period of Public Health Emergency" as a reference for contractors and implementing agencies, to ensure viability of projects and protection from and spread of the corona virus.

The TWG considered four (4) major components of the project cycle, namely; Materials, Manpower, Machinery and Money or the 4Ms of construction in creating the

guidelines. These were developed considering SME contractors which employ the biggest chunk of the industry's labor workforce and large contractors involved in both public and private infrastructure projects as well as vertical construction. The guidelines will give pointers in managing their human resources at this critical time but will likewise give important directions to contractors in managing their business not just for survival but to be able to contribute to the country's economic recovery program.

The TWG is presenting options or courses of actions which contractors may consider depending on applicability to the project's unique characteristics while maintaining minimum requirements based on guidelines by government authorities such as the IATF Omnibus Guidelines for the Implementation of Community Quarantine in the Philippines, Department of Trade and Industry (DTI) and Department of Labor and Employment (DOLE) Interim Guidelines on Workplace Prevention and Control of COVID-19, and DOH Department Memorandum No. 2020-220, Interim Guidelines on the Return-to-Work.

These guidelines are subject to periodic review to better respond to developments and ensure workers health and protection as well as compliance with government regulations.

Purpose

The guidelines will set key principles and minimum requirements that define responsible, healthy and safe operations for construction related operations under COVID-19 and ensure the survival of business as well as the protection of workers.

Scope / Coverage

The guidelines will include prevention, detection, and rapid response measures designed to achieve the principles above while maintaining business continuity across the construction industry.

Policy Content / Guidelines

Materials

I. Deliveries

1. All equipment and material deliveries must be carefully planned and monitored.
2. Transition and delivery zones are identified and limited to select personnel, i.e., receivers and deliverers.
    2.1. Transition personnel are regularly monitored, always provided required Personal Protective Equipment (PPEs) and may be included for optional testing.
    2.2. Social distancing and other protocols by the Department of Health (DOH) should be followed.
3. As much as possible, cargo is unloaded only by the receivers, while the deliverers do not leave their vehicles. If the receivers are not enough to unload the cargo, the deliverers must unload while the receiver has to wait at a secured distance until completed.

4. All cargo should undergo proper disinfection procedures before use. Likewise, involved staff should also be properly disinfected before entering the jobsite.
    4.1. Materials, which are exposed to the sun, such as concrete and gravel, need not be disinfected.

Manpower

I. Awareness and Communication

1. Active communication between the workers, safety officers *(as specified under Section 14 of R.A. 11058 and its Implementing Rules and Regulations (IRR) as specified in DOLE D.O. 198 S. 2018)*, site supervisors, and management is advised in planning and implementing the protocols.
    1.1. All languages and dialects should be accounted for to ensure proper communication.
2. Infographics (may adopt DOH's), signages, and posters on health and safety measures (see Annex A) must be posted at entry points and strategic areas:
    2.1. Daily updates on the latest developments.
    2.2. Self-screening measures.
    2.3. COVID-19 Hotline.
3. As much as possible, all workers should exercise the practices for reducing the risk of transmission, and proper hygiene as identified by the DOH:
    3.1. Social distancing [at least one (1) meter distance from next person].
    3.2. Proper handwashing using anti-bacterial soap (or use alcohol-based hand sanitizer when unavailable).
    3.3. Avoid contact with own eyes, nose, and mouth.
    3.4. Prohibit spitting.
    3.5. Covering of mouth with tissue or arm (if tissue is unavailable) when sneezing or coughing.
    3.6. Use and remove PPE with care.
    3.7. Do not share personal belongings such as phones, pens, PPEs.
    3.8. Avoid physical greetings (e.g. handshakes, hugs).
4. All workers' status on-site and off-site, are properly noted at all times by the safety officers.
    4.1. Fit to work
    4.2. Sick
    4.3. High temperature
    4.4. Other conditions
5. An acceptable level of health evaluation is properly communicated between new hires and management.
6. All workers would need to provide their location or place of residence prior to working. This is to help create a proper algorithm for contact tracing.
    6.1. Additionally, workers coming from COVID-19 hotspots would need to be identified.
7. Quarantined workers should also be kept track of under strict confidentiality and privacy.

II. Clearing for Return to Work

1. Stringent qualification criteria for employees/workers:

1.1. Must be 21 to 59-year-old, without pre-existing health conditions, such as, but not limited to, immunodeficiency, comorbidities, or other health risks, including any person who resides with the aforementioned.
1.2. Employees or consultants who are 60-year-old or above may be part of the workforce for construction projects as may be allowed under General Community Quarantine (GCQ) and ECQ guidelines under Omnibus Guidelines on the Implementation of Community Quarantine in the Philippines dated 15 May 2020 which states that those aged 60 and above may be allowed to work in permitted industries and offices.
1.3. Must have no COVID 19 symptoms.

2. Screening and entry at construction site. Item 4, Section 8 of the Omnibus Guidelines on the Implementation of Community Quarantine in the Philippines, dated 15 May 2020, states that "Compliance with Joint DTI-DOLE Return-to-Work Guidelines and DOH Return-to-Work Guidelines shall be considered sufficient compliance with minimum health standards. In no case shall the testing of all returning workers be construed as a condition precedent for his/her return." The most important screening step is checking all returning workers for symptoms within the last 14 days and excluding anyone who is symptomatic. (Annex B) Contractors have the option to test workers for COVID-19 thru DOH prescribed testing protocols to determine if there is asymptomatic transmission.
   2.1. The Human Resource Department should undertake daily health pre-screening (see Annexes C & D – DOLE Work Resumption Protocol & pre-screening sample form). Returning employees/workers should be made aware of giving accurate information as specified in RA 11332.
   2.2. All returning employees/workers must declare (via SMS) any recent travel history to or residence in an area with a reported case of local transmission of COVID-19 over the 14-days prior to entry.
   2.3. Returning workers that do not show any symptoms will be quarantined for 14 days within the jobsite and will be allowed to work under a zoned or grouped area.
   2.4. Those who have been living/confined in the barracks during ECQ/GCQ period for at least 14 days and with no symptoms, will be allowed to work immediately.
   2.5. Management should have an understanding and plan on how the workers travel to and from the jobsites.
   2.6. A heightened gate entrance screening protocol (see Annex E – Sample Protocol for Screening Employees and Visitors per DTI-DOLE Interim Guidelines) with the use of non-contact thermal scanners on ALL personnel upon entry to construction premises will be implemented. He/She must declare recent possible exposure to confirmed COVID-19 cases, including travel history to or residence in an area with reported local transmission of COVID-19 disease. The individual should also attest that they are not experiencing the following symptoms: (see Annex F – Daily COVID-19 Health Checklist Form)
      2.6.1. Fever
      2.6.2. Cough
      2.6.3. Shortness of breath
      2.6.4. Colds
      2.6.5. Sore throat

2.6.6. Runny nose
2.6.7. Nasal congestion
2.6.8. Muscle pains
2.6.9. Headache
2.6.10. Difficulty of breathing
2.6.11. Diarrhea
2.6.12. Loss of sense of smell
2.6.13. Loss of sense of taste

2.7. Security guard or assigned personnel/ safety engineers on duty will then refer these personnel to the Safety and Health Personnel, who will then conduct the DOH Decision Tool for COVID-19 Assessment.

2.8. Employers shall provide the DOLE through its Regional Office copy furnished DOH, monthly report of illness, diseases and injuries utilizing the DOLE Work Accident/Illness Report Form (WAIR) (see Annex G).

3. Suspected Cases (Possible cases of COVID-19)

3.1. Any individual exhibiting flu-like symptoms should not report to work. Instead, they should do the following:
3.1.1. Self-isolate, alert their safety officers or other applicable authorities.
3.1.2. Contract proper health authorities for additional guidance.

3.2. Employees/workers, who had the COVID-19 virus, should do the following before reporting to work:
3.2.1. Fulfill the adequate time for self-quarantining as recommended by the DOH.
3.2.2. Test negative for COVID-19.
3.2.3. Receive proper medical clearance, before reporting to work.

3.3. In the event of a worker contracting COVID-19 while working, the management should do the following:
3.3.1. Isolate the worker immediately in a separate well-ventilated holding area (or in site isolation room) in the workplace, away from other workers.
3.3.2. Contact local government and health authorities.
3.3.3. Gather records of all people who have worked with the infected worker, who tested positive within the past four weeks.
3.3.4. Gather information on those who have been in location or shared equipment with the person.
3.3.5. Provide COVID-19 testing to all workers, who have been working closely with the infected individual.
3.3.6. Be ready to present the information to the appropriate authorities.
3.3.7. Inform the wider workforce of the situation while protecting the privacy of the individual.
3.3.8. Clean and disinfect all site surfaces and equipment.
3.3.9. Follow any additional directions from local government and health authorities.

3.4. For senior personnel, who are working in multiple jobsites, they are expected to self-quarantine for at least 14 days, if there has been a breach in one of their jobsites.

3.5. The safety officer should have a knowledge on the proximate hospitals or quarantine facilities to ensure that in the event of a COVID-19 incident, workers can be given proper healthcare.

III. Monitoring

1. Health Checks
    1.1. Regular monitoring of personnel's health, especially for COVID-19 symptoms (e.g., mandatory regular no contact temperature check).
    1.2. Day to day monitoring of personnel's health.
2. Workers Hygiene
    2.1. Constant reminder on proper coughing etiquette.
3. Limit number of Work Personnel
    3.1. Limited mobilization of personnel and minimized skeletal staff.

IV. Proper Work Attire

1. All workers must wear the prescribed clothing of the DOLE-OSHC:
    1.1. Shirt with sleeves
    1.2. Pants
    1.3. Closed-toe boots
    1.4. Hard hat
    1.5. High visibility vest
    1.6. Other necessary Personal Protective Equipment (i.e. face masks, gloves, goggles, face shields, etc.) shall be prescribed based on specific characteristics of project.
2. As per the DOH, all workers are expected to wear proper face masks.

V. Social Distancing and Precautionary Measures

1. Social distancing should be observed at the construction site and in the office:
    1.1. All workers should respect social distancing guidelines, as much as possible.
2. Provision for transport compliant with social distancing requirements.
3. Provision of On-/Near-Site accommodations/barracks, where available.
    3.1. Enough space should be provided for every employee/worker staying in the barracks to ensure that social distancing (at least 50% reduction in density of people) are adequately implemented. This can be achieved either by providing additional space/facilities or by having occupants work (and sleep) in shifts.
    3.2. Segregate employees/workers who are coming back to work from those who originally stayed in the barracks during the ECQ period.
    3.3. Barracks should have at least one (1) meter of physical distance from each occupant and/or provision of a physical barrier in between occupants.
    3.4. Should be well ventilated / windows opened to allow fresh air circulation.
4. Provision of dedicated point-to-point shuttle service (residence-workplace-residence and compliant with social distancing).
5. Observe social distancing (e.g., no sharing of workspaces, staggered lunch breaks, use of large conference rooms only) and hygiene measures (e.g., provide hand washing and disinfection stations, mandatory use of face masks) in workplaces, shuttles and accommodations.
    5.1. Split/alternating shifts are encouraged to avoid extensive intermingling.
    5.2. Breaks should be staggered to limit the number of people in proximity with each other.

5.3. Individuals are expected to clean up their own areas after eating with proper disinfectants.
5.4. Limit the number of people operating or occupying freight elevators.
5.5. Designate smoking area:
    5.5.1. Smokers/vapers must use designated area or do so off-site and butts are to be placed in the designated receptacle. Hands must be washed before and after smoking.
    5.5.2. Stand so that smoke or vapor produced is not going into another person's breathing zone.
5.6. Site meetings:
    5.6.1. Only absolutely necessary meeting participants should attend.
    5.6.2. Attendees should be one (1) meter apart from each other.
    5.6.3. Rooms should be well ventilated / windows opened to allow fresh air circulation.
    5.6.4. Hold meetings in open areas where possible.
    5.6.5. Conduct toolbox meetings in wide open spaces to enable workers to keep the required physical distance of at least one (1) meter. (see Annex H).
    5.6.6. Meetings are to be held through teleconferencing or videoconferencing, where possible.

VI. Site Operations / Construction Work Site

1. Access and Movement to/from Construction Site
    1.1. If possible, establish one-way staircases and walkways to minimize workers' contact.
    1.2. Management can look up possible decontamination chambers (e.g. swimming pool grade-chlorine).
    1.3. All people entering and exiting the workplace should be registered, for easier contact tracing in the event of an outbreak.
    1.4. All non-essential workers are prohibited from entering the jobsite.
2. Limiting and Removing internal touch points areas.
3. Compartmentalization
    3.1. If possible, divide the construction site into zones or other methods to keep workers physically separated. This will promote social distancing and will make containment of possible outbreak easier.
        3.1.1. Limit on the number of people per zone is advised.
        3.1.2. Management can consider reducing workforce in the jobsite.
4. Construction Site Cleaning
    4.1. Regular disinfection of workplaces, shuttles, and accommodations.
    4.2. All offices and jobsites should disinfect the following at least twice per day:
        4.2.1. Door handles
        4.2.2. Railings
        4.2.3. Ladders
        4.2.4. Switches
        4.2.5. Controls
        4.2.6. Shared equipment
        4.2.7. Common and eating areas
        4.2.8. Personal workstations

4.3. Hands and common tools/equipment are cleaned or disinfected after each task.
4.4. Awareness on location of commonly used items

5. All offices and jobsites should implement additional cleaning measures of common areas as recommended by the DOH.
6. Management can look up possible decontamination chambers (e.g. chlorine, iodine, betadine, potassium persulfate).
   6.1. Demisting only decontaminates the surface, thus the need for PPEs.
   6.2. Suggested additional sanitary measures to be implemented/installed on site but are not limited to the following:
      6.2.1. Water stations
      6.2.2. Proper handwashing areas and hand washing protocol.
      6.2.3. Alcohol-based hand sanitizer shall be provided in all department areas, entrances, canteens, beside hand punch machines and other facilities.
      6.2.4. Disinfectant wiping products.
      6.2.5. Footwear disinfection treatment units (foot baths) before entering site premises or facilities (staff houses, barracks, canteens/mess halls, site offices and others).
7. Limit and remove internal touch point areas (e.g. coffee machines, water fountains, common pens). If possible, also remove doors/ door handles for jobsites.
8. A proper waste and disposal area must be provided, as well as proper disposal of contaminated products.

VII. Additional Guidelines for Vertical and Horizontal Projects

1. If possible, all construction workers are to be housed in either on-site barracks, or off-site barracks. This would make monitoring of workers' activities easier.
   1.1. All workers must use the same vehicles they came into work in, if returning to the off-site barracks.
   1.2. All vehicles would need to be disinfected, before being ready for use the next day.
2. Management can also look into using the floors of buildings, as barracks, with proper permission of the owners.

Machinery

1. All equipment deliveries must be carefully planned, monitored and managed to avoid the risk of COVID-19 transmission.
2. All delivered equipment must be cleaned and disinfected before use.
3. Assign regular worker to use the equipment, if possible. If sharing cannot be prevented, take precautions and follow the cleaning guide before and after each use.
4. Clean equipment before and after each day's work with a disinfectant, concentrating on points of contact such as handles.
5. If equipment needs to be transferred to other construction sites, the following action must be taken into considerations:
   5.1. Plan, monitor and manage the transfer of equipment.
   5.2. Equipment should be disinfected before transporting.

5.3. Transporting driver must be recorded including the assistant.
5.4. At the delivery site, equipment should be properly endorsed.
5.5. Once the equipment is received at the project site, number 2, 3 and 4 must be done.

Money

Contracting parties need to discuss, before resumption or start of work, contract provisions on: Payments, Variations and Timelines considering the effects of current government health and safety standards that have to be complied with to prevent the spread of the coronavirus pandemic and ensure workers' protection from the contagious disease. Contractors' concern on cash flow, price escalation, time extensions and productivity will need to be established and agreed with project owners. Contractors need to devise project implementation plan aligned with government approved health and safety protocols.

Contractors need to familiarize themselves with Republic Act (R.A.) 11469 or Bayanihan to Heal As One Act; R.A. 11058 and its IRR as specified in DOLE D.O. 198 S. 2018, and DOLE's D.O. 13 and ensure contracts are aligned with these landmark regulations. For projects with signed contracts before the onset of the coronavirus pandemic, contractors need to check on DOLE's guidelines on drafting new contracts so provisions on employment details, i.e. accommodations, meals, etc. can be included as these are expected to be heavily affected by new guidelines on health and safety. Company code of disciplines may likewise need to be reviewed and re-written to consider pandemic guidelines and ensure employees/workers' full support and cooperation.

Pursuant to Section 21 of DOLE D.O. 198, s. 2018, *"The total cost of implementing a OSH program shall be an integral part of the operations cost. It shall be a separate pay item in construction and in all contracting or subcontracting arrangements."* to cover the cost inflected during this Public Health Emergency. These costs include, but are not limited, to testing kits; personal protective equipment; workers' barracks; quarantine facilities; isolation rooms; disinfectants; sanitation equipment and facilities; and other expenses relative to compliance with safety and health standards during construction.

Contractors should conduct periodic audits (frequency to be determined based on a project scale and scope) to verify that the appropriate measures have been implemented and are maintained.

The site supervisors and safety officers are expected to conduct daily audits, and safety reports to management in order to make sure that the appropriate measures are implemented and followed.

Construction companies should expect to deal with heightened safety and health guidelines until such time that the pandemic has fully been eradicated, and:

1. Analyze contract requirements;
2. Comply with contractual notice requirements;
3. Adapt and Adjust schedule;
4. Coordinate and Cooperate with all participants; and

5. Document everything.

Risk Assessment and Response:

1. All contractors would need to guarantee the minimum level of standards to protect the health of the workers engaged in the construction sites.
2. Before any activity is resumed, all hazards, due to the halting of work, must be reviewed and controlled.
    2.1. Workers involved should have proper understanding of the operations and environment condition checking
3. An integrated continuity plan should also be provided in the event of a partial or complete shutdown of jobsite or if jobsite operations are severely limited.
4. All contractors should complete an integrated continuity plan to respond to partial or complete shutdown of construction sites or in the case of a severe limitation of site operations.

The COVID-19 pandemic affects working hours and earnings in all businesses, globally. However, the construction industry is unique with respect to the COVID-19 because construction contracts typically contain provisions about time for performance and fees for failing to perform on time. There is no question that all participants in the construction industry have experienced, and will continue to experience, impacts on their operations because of COVID-19 and experts say the fallout is one more factor poised to affect construction firms. These impacts include, among others, schedule delays, workforce disruptions, equipment and supply chain disruptions, reduced productivity due to on site health and safety measures (e.g., social distancing, staggering of work, enhanced sanitary measures, etc.), permit delays or restrictions on new permits, and financing restrictions or cash flow shortages.

Therefore, it is critical that construction companies be proactive rather than reactive in dealing with the COVID-19 and it is highly recommended that they take the following steps with respect to the coronavirus:

1. Define – identify the company's main vulnerabilities (convene a meeting with senior management and decision-makers to identify potential impacts on the company).
2. Assess – understand if and how the company is prepared to deal with the company's main vulnerabilities (review any existing plans and procedures to ensure they are current and begin preparing business continuity and crisis management plans and procedures aimed at minimizing potential impacts on the company).
3. Implement and Manage – ensure the company's plans and procedures work (work with senior management and decision-makers to establish and embed response and recovery arrangements and confirm senior management and decision-makers understand their roles and support how the plans and procedures will be used).
4. Communicate and Remain Vigilant – ensure the company's teams are informed (assign clear responsibilities for internal and external communications).

This pandemic was not foreseeable and unfortunately, its duration and fallout remain uncertain. What is certain is that the world is transitioning. Being prepared for this will be essential to managing the outcome and minimizing negative impacts.

Monitoring

DTI-CIAP is revitalizing its Joint Administrative Order No. 01, S. 2011 with DOLE, DPWH, DILG and the Professional Regulation Commission (PRC) to strengthen coordination and enhance the implementation of the Construction Guidelines on Project Implementation for the period of Public Health Emergency, DOLE D.O. 13 and R.A. 11058 and its IRR as specified in DOLE D.O. 198 S. 2018, and specifically, enforce strict monitoring of construction activities.

The DOLE shall refer to the Philippine Contractors Accreditation Board (PCAB) its findings, after due process, on any act or omission committed by construction contractors in violation of labor standards, safety rules and regulations and other pertinent policies.

Effectivity

These guidelines shall take effect after approval by the CIAP Board and posting in the official gazette (www.officialgazette.gov.ph) and CIAP website (www.ciap.dti.gov.ph).

References

1. *WHO – Getting your workplace ready for COVID-19, 19 March 2020*
2. *Philippines – Omnibus Guidelines on the Implementation of Community Quarantine in the Philippines as of 15 May 2020*
3. *Philippines – COVID-19 Protocols for Construction Sites Workers Safety and Security Version 3 by Philippine Constructors Association (PCA) as of 25 April 2020*
4. *Australia – Building and Construction Industry: Minimizing the Risk and exposure to COVID-19 as of 9 April 2020*
5. *Canada – COVID-19 – Standardized Protocols for all Canadian Construction Sites Version 4*
6. *New Zealand COVID-19: V&H Construction Protocols Version 2*
7. *New Zealand – COVID-19 Health and Safety Protocols for New Zealand Residential Construction Sites Version 3, 22 April 2020*
8. *DOH – Administrative Order No. 2020-015, "Guidelines on the Risk-Based Public Health Standards for COVID-19 Mitigation"*
9. *DOH Department Memorandum No. 2020-151, Interim Guidelines on Expanded Testing for COVID-19, reiterated under DOH D.M. No. 2020-174*
10. *DOH D.M. No. 2020-0220, s. 2020, Interim Guidelines on the Return-to-Work as of 11 May 2020*
11. *DPWH D.O. 39, S. 2020, Revised Construction Safety Guidelines for the Implementation of Infrastructure Projects during the COVID-19 Public Health Crisis, repealing D.O. No. 35, S. 2020*
12. *DTI - DOLE Interim Guidelines on Workplace Prevention and Control of COVID-19*
13. *DTI and DOLE Webinar on 8 May 2020*
14. *DOLE Labor Advisory No. 18, S. 2020, Guidelines on the Cost of COVID-19 Prevention and Control Measures, 16 May 2020*
15. *DOLE Department Order 13: Guidelines Governing Occupational Safety and Health in the Construction Industry*
16. *R.A.11058, "An Act Strengthening Compliance with Occupational Safety and Health Standards and Providing Penalties for Violations thereof" and its Implementing Rules and Regulations as specified in DOLE D.O. 198 S. 2018*
17. *DOLE-DPWH-DTI-DILG-PRC Joint Administrative Order No. 1, Series of 2011*

18. *EEI Guidelines on the COVID-19 Prevention and Control at the Workplace (Alert level code RED sub-level 2)*
19. *DMCI Work Resumption Protocols as of 22 April 2020*

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