

SFG1787

Environmental and Social Management Framework (ESMF)

Project Name:

Metro Manila Flood Management Project – Phase 1

Prepared by:



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REPUBLIC OF THE PHILIPPINES

ENVIRONMENT AND SOCIAL MANAGEMENT FRAMEWORK

(ESMF)

FOR THE

METRO MANILA FLOOD MANAGEMENT PROJECT

(Phase-1)

Prepared by:
Metro Manila Development Authority (MMDA)

February 5, 2016

FOREWORD

This Environment and Social Management Framework (ESMF) is prepared by the Metro Manila Development Authority for the World Bank-financed Metro Manila Flood Control Project (Phase 1).

This document is a collaboration of the Team set up by the Metro Manila Development Authority, Department of Public Works and Highways, the World Bank Task Team and suggestions from partner agencies including the National Housing Authority, Social Housing Finance Corporation, the Department of Environment and Natural Resources, and selected Metro Manila Local Government Units.

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LIST OF ABBREVIATIONS AND ACRONYMS

BA	–	Barangay Assembly
CNC	–	Certificate of Non-Coverage
DENR	–	Department of Environment and Natural Resources
DP	–	Displaced Persons
DPWH	-	Department of Public works and Highways
DRM	–	Disaster Risk Management
EA	–	Environmental Assessment
ECC	–	Environmental Compliance Certificate
ECP	–	Environmentally Critical Project
ESIA	–	Environmental and Social Impact Assessment
EIAM	–	Environmental Impact Assessment Monitoring
EMB	–	Environmental Management Bureau
ESA	–	Environmental and Social Assessment
ESMF	–	Environmental and Social Management Framework
ESMP	–	Environmental and Social Management Plan
GOP	–	Government of the Philippines
GRM	–	Grievance Redress Mechanism
GRS	–	Grievance Redress System
IEC	–	Information and Education Campaign
LGU	–	Local Government Unit
MMDA	-	Metro Manila Development Authority
MOA	–	Memorandum of Agreement
NGO	–	Non-Government Organization
O&M	–	Operation and Maintenance
PD	–	Project Description
PDO		Project Development Objective
PMO	–	Project Management Office
POW	–	Program of Work
PS		Pumping Station
RAP		Resettlement Action Plan
ROW	–	Right of Way
RPF		Resettlement Policy Framework
SIA	–	Social Impact Assessment
SP	–	Subproject
TOR	–	Terms of Reference
WB	–	World Bank

GLOSSARY

Compensation	Refers to payment in cash or in kind at market value or replacement cost, as relevant, for land acquisition and loss of fixed assets.
Cumulative Impacts	Additive impacts from various sources.
EMB Director	The Director of the DENR-EMB at the Central Office
EMB RD / EMB RO Director	The Director of the DENR-EMB at the Regional Office
Environment	Surrounding air, water (both ground and surface), land, flora, fauna, humans and their interrelations.
Environmental Compliance Certificate	A certificate of Environmental Compliance Commitment to which the Project Proponent may be required to take additional specific actions to conform with Philippine environmental laws and supporting regulations.
Environmental and Social Impact Assessment (ESIA)	A process that: (1) documents the salient baseline environmental and social features of a project's (or subproject's) area of influence, as applicable; (2) identifies and assesses the impacts of the project on the salient environmental and social features in the project's area of influence; and (3) provides mitigation, monitoring, and management measures to address adverse impacts during project construction, operation, and where relevant closure or decommissioning.
Environmental and Social Management Plan (ESMP)	A component of the ESIA which sets out specific plans, including budgets, organizational arrangements and responsibilities for social and environmental impact management over the life of project
Land Acquisition	Refers to the process whereby land and immovable assets of persons or entities are to be taken for project needs.
LGU	Local Government Unit; administrative and political urban bodies which make up the Metro Manila area.
MMFMP	Metro Manila Flood Management Project – Phase 1.

Project-Affected Persons (PAPs)	Refers to people who are physically or economically displaced by a project through land acquisition (permanent or temporary) or by project activities which may preclude or interrupt their economic activities or social well-being.
Project Proponent	Any natural or juridical person intending to implement a project or subproject.
Public Participation	Open, transparent, gender-sensitive, and community-based public involvement in the ESIA and other project processes, which is aimed at ensuring the social acceptability of a project or subproject involving the broad range of stakeholders. Public participation begins at the earliest possible stage of project / subproject design, and continues through implementation to completion and closure.
Rehabilitation	Compensatory and developmental measures implemented in consultation with PAPs to ensure restoration of income streams and compensation at market or replacement costs for assets and land acquired for project purposes.
Relocation	Refers to the physical resettlement of PAPs from land areas needed for project purposes to resettlement sites.
Replacement Cost	Refers to the value determined to be fair compensation for real property based on its productive potential, replacement cost of houses and structures (as reckoned on current fair market price of building materials and labor without depreciation or deductions for salvaged building materials), plus transaction costs, and the market value of residential land, crops, trees and other commodities.
Resettlement Action Plan (RAP)	Refers to all measures taken to ensure displaced persons are assisted to improve their livelihoods and living standard, or at least restore them to pre-displacement levels. World Bank-supported projects require a RAP in compliance with OP 4.12, on Involuntary Resettlement.
Stakeholders	Entities which may be directly or significantly affected by a project or subproject. This includes the project proponent, mandated government agencies, local government units who have jurisdiction, and local

communities, including locally-based NGOs or community groups.

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PART A: INTRODUCTION AND PURPOSE OF THE ESMF

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1. This document presents the Environmental and Social Management Framework (ESMF) for the Metro Manila Flood Management Project Phase 1 (MMFMP), which supports a GOP program to reduce flooding in the greater Metro Manila area.
2. An Environmental and Social Impact Assessment of the project (MMFMP1) was carried out, the results and findings of which were used to draft this ESMF. In addition, a Resettlement Policy Framework (RPF) was also drafted as part of the ESMF. Public consultations, carried out as part of project preparation contributed to the finalization of this document.
3. This ESMF serves to guide development, implementation, and operation of the MMFMP in compliance with the requirements of the World Bank's environmental and social safeguard policies and applicable Government of the Philippines (GOP) laws and regulations. The MMFMP covers the wider and extensive area of Metro Manila; as a result, subprojects will be undertaken in a variety of ecological and social contexts in a number of LGUs, which are the political and quasi-autonomous administrative units which make up Metro Manila. The ESMF presents social and environmental safeguards screening procedures, specific arrangements for management of environmental and social impacts, (both negative and positive,) including monitoring and reporting for the project as a whole and for each pumping station subproject to be undertaken. This ESMF also covers impacts related to activities under Component 2 and 3 of the Project.
4. More specifically, the ESMF serves as a guidance instrument to ensure that environmental and social impacts are identified and assessed, and that appropriate mitigation, management, and monitoring measures are incorporated and applied in implementation. It sets out the institutional and organizational arrangements, procedures, and implementation arrangements for identification, management and monitoring of environmental and social impacts, mitigation and management. It addresses mechanisms for public consultation, participation, and disclosure of project documents as well as for redress of possible grievances and management of project-related issues which may arise during implementation. The conduct of a Cumulative Impact Assessment is also described.

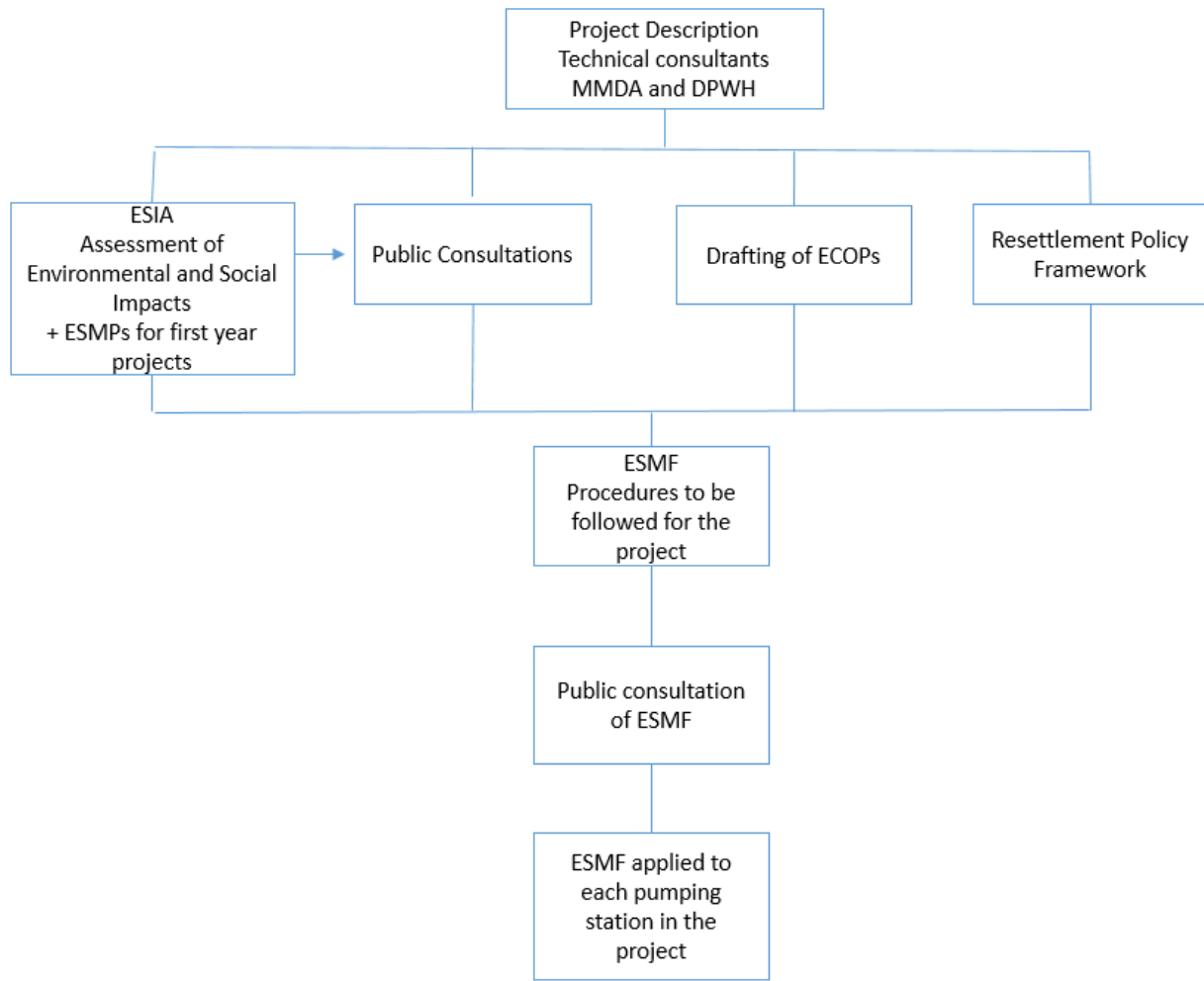


Figure 1: Schematic of the ESMF

5. The document is divided into four parts, which described as follows in Table 1:

Table 1: Organization of the ESMF

Section	Description
Part A: Introduction and purpose of the ESMF	Context, purpose, and structure of the ESMF; a description of the project and its components.
Part B: Safeguards Policy Principles and Objectives	This section reviews the policies of the GOP and WB on environmental and social safeguards; it provides specifics of applicable WB environmental and social safeguard policies.
Part C: Safeguards Procedures	This section provides more detailed guidance on the processing of environmental and social safeguards within the project, including subprojects screening and classification, preparation of safeguards instruments, disclosure and consultation, and grievance redress. It also outlines the approach to the conduct of a Cumulative Impact Assessment.
Part D: Detailed Policy and Processing Resources	This section provides additional detailed references, materials, and tools to assist subproject staff in the selection and application of environmental safeguards instruments. This section includes the Resettlement Policy Framework as guidance on RAP preparation, implementation, and closure.

Project Description

6. The Government of the Philippines, with the technical and financial support from the World Bank, has prepared a Flood Management Master Plan for the Greater Metro Manila Area. The plan, approved by the National Economic and Development Authority (NEDA) Board on September 4, 2012, sets out priority structural and non-structural measures to facilitate sustainable flood management in the Metro Manila area. The total estimated cost for implementation of the Master Plan is on the order of PhP 352 billion (about US\$8 billion) over a 20-25 year period. The Master Plan envisions three separate and distinct components: (1) construction of a dam in the upper catchment of the Pasig-Marikina River; (2) flood protection interventions along the floodplain surrounding Laguna Lake; and (3) in-city works to ameliorate urban drainage capacity through modernization of existing pump stations and the construction of new pump-stations serving flood-prone areas of an expanding city. The first project, entitled Metro Manila Flood Management Project Phase 1, is focused on amelioration of urban drainage.
7. The Phase-1 project will provide metropolitan Manila with more immediate flood relief and can be undertaken as an initial independent activity while still being a key part of a wider strategic plan. It will also support improvements to solid waste management in waterways served by pumping stations. It will necessitate physical resettlement and economic

rehabilitation of PAPs, many of whom are Informal Settler Families (ISFs) residing on sites to be acquired for new pumping station as well as PAPs situated within the technical footprint areas of existing PS rehabilitation subprojects. The chief resettlement-related factor in establishing the technical footprints on associated waterways is the presence of structures which impede the water flow or inhibit access for waterway maintenance which is essential for optimal PS operation.

Development Objective

8. The project's development objective (PDO) is to reduce flood risks to people and property in flood-prone areas of greater metropolitan Manila. The PDO will be achieved through an integrated set of interventions to: modernize existing pumping stations and make improvements to appurtenant infrastructure; switch pumps from diesel to electric power where needed; construct new pumping stations to accommodate urban expansion; increase short-term water retention capacity in the drainage areas; reduce the volume of indiscriminately dumped solid waste into waterways by means of community-based programs where feasible, and support community-driven resettlement and rehabilitation of project-affected people, most of whom are informal settler families (ISFs) now encroaching in or along waterways linked to the project pumping stations to safer in-city locations.

There are four main components to the project as follows:

9. **Component 1: Rehabilitation of Pumping Stations / Construction of New Pumping Stations (US\$355 million, estimated).** Many of the pumping stations managed by MMDA are over 30 years old and no longer operate at full capacity. In 2013 MMDA began rehabilitation work on 12 pumping stations for which government had made available PhP 1.59 billion. MMDA has gained good experience with implementation of this initial program, (which was initiated before the Project Identification Mission of 8 December 2014) and is to be completed during the first half of 2015. The proposed Phase-1 project will implement an accelerated program of rehabilitating and augmenting the capacity of about 38 pumping stations. This component will replace pumps and related equipment with new, more efficient, and higher capacity units. Design and discharge features will be determined through hydrological studies of the drainage areas and the best type of pump will be selected for each given situation. It is envisaged that contractors will be responsible for pump design, custom manufacturing, and installation. Improvements to appurtenant infrastructure such as flood gates, drainage channels, equipment for solid waste removal, and other structures may be necessary. Where needed and feasible, the energy source will be changed from diesel to electricity. This component will also finance cleaning and improvements to waterways and drainage channels serving the pumping stations. In order to meet the needs of an expanding urban area, the MMFMP provides for construction of around 20 new pumping stations in flood-prone areas which are not currently served. (Detailed descriptions of the 5 pump station

rehabilitation / modernization subprojects to be undertaken in the MMFMP's first year are provided in Annex B.)

10. **Component 2 – Minimizing Solid Waste in Waterways (US\$75 million).** This component will enhance the solid waste management systems in participating LGUs in order to reduce the volume of solid waste dumped into waterways, which adversely affects the efficiency and operational sustainability of pumping stations and their related waterways. The component will support interventions within the project areas aimed at improving collection and disposal of solid waste before it enters the drainage system. Informal waste collectors already remove most of the recyclable materials (plastic bottles, metal, etc.) from the waste stream for on-sale to recycling entities. A high percentage of low value non-recyclable solid waste, (which includes Styrofoam and similar packaging materials, plastic bags containing organic and household waste, etc.) finds its way into the waterways. Interventions at the LGU and Barangay levels will augment capacity for collection of such non-recyclable low-value waste. This component will provide additional formal employment for waste-pickers who will collect household waste and bring it to collection points for disposal. Additional improvements will be made at the pumping stations to improve collection, compaction, and disposal of waste collected from the waterways.
11. Pending the results of studies underway, this component may also support MMDA's agenda to apply appropriate technologies, such as "waste-to-energy" to run pump facilities, taking into account the full range of costs and benefits, including externality effects. The impact of water hyacinths is another significant cause of pump breakdowns and stoppages. Interventions at the pumping stations sites will strengthen capacity for removal and disposal of water hyacinth. The project will also finance equipment for harvesting and processing water hyacinth by-products and support community programs that use water hyacinth fiber and its by-products in livelihood activities, (fuel briquettes, compost, etc.) This component will support activities for long term operation and maintenance of the interventions, including possible results-based financing approaches at the Barangay level. Management of solid waste and water hyacinth also provide income for women.
12. A GEF Grant (US\$7.4 million) will assist the Department of Environment and Natural Resources (DENR) in regulating and monitoring the water quality in the Manila Bay catchment area. Improvement in water quality as a result of the activities in the project, especially solid waste management, will be captured through the water quality monitoring systems to be developed under this GEF grant.
13. **Component 3 – Participatory Housing and Resettlement (US\$45 million).** This component provides for in-city or near-city resettlement in reasonable proximity to places of work for project-affected people, (typically ISFs) in MMFMP subprojects. This component is intended to improve living conditions of project-affected people by providing affordable

rehousing options without jeopardizing their access to employment and basic services. US\$34 million worth of Government counterpart funds will support land acquisition and housing construction. IBRD funding of US\$11 million will finance site development, transitional rental support, livelihood assistance and skills training programs as well as technical assistance and capacity-building activities to strengthen the communities and implementing agencies. All activities under this component will comply with procedures and requirements under the World Bank Operational Policy (OP) 4.12 on Involuntary Resettlement. The scale of resettlement under the Project is estimated to be between 1,500-2,500 households.

14. Component **4 - Project Management and Coordination (US\$25 million)**. This component will support the operation of the Project Management Offices (PMOs) to be established by MMDA and DPWH. (MMDA will refurbish existing PS and construct new ones; DPWH will construct new pumping stations north of the Marikina River.) Project Managers will coordinate the overall planning, implementation, and supervision of project activities, central procurement, and management of funds. This component will provide funding for: (i) incremental operating costs, including office rentals and utilities, per diem and other travel expenses for staff, vehicles operation and maintenance, and allowances for short-term contractual staff; (ii) office equipment and materials, (including computers, printers, and communication equipment); (iii) technical and management staff training; (iv) PMO staff training in strategic communications, the formulation and implementation of a communications plan to be headed by a dedicated communication specialist. Citizen engagement will be monitored by the PMO teams; (v) technical and management consultants to support the PMO, MMDA, and LGUs, as needed; and (vi) project monitoring and evaluation (M&E), including carrying out a detailed baseline study, periodic monitoring and a completion assessment study.

Project Area of Influence

15. The project's most obvious areas of influence are defined by activities in areas taken up for engineering works at existing pumping stations or at new pumping station sites. The area of influence physically extends along sections of the waterways served by a given pumping station where encroachments of informal settlers or other physical obstacles inhibit water flow or maintenance activities needed for optimal operation of the pumping stations. Resettlement of people residing in sections of waterways needed for optimal flow and maintenance could extend the area of influence to other sites which may be developed for urban housing of project-displaced people. Subproject areas of influence may also include areas required for disposal of solid waste and dredge material as well as temporary sites needed for equipment parks and materials stockpiles.

16. Social impacts will relate chiefly to land acquisition for the new pumping stations which will necessitate Resettlement Action Plans to address physical and economic displacement of the above-referenced people residing upon or in close proximity to needed sections of waterways serving the pump stations. Resettlement impacts on host communities may also be a factor; however given an in-city approach to resettlement, host community issues are not anticipated to be significant. Avoiding and minimizing economic displacement and enabling affected people to resettle in reasonable proximity to their places of employment is a key criterion in resettlement options as is detailed in the RPF.
17. Anticipated impacts on the environment are localized and generally manageable: this will entail installation of new equipment for existing pump stations for which activities will be within the perimeters of these facilities. Construction of new pumping stations will involve site development and related civil works. Cleaning or dredging of waterway sections linked to pump stations is anticipated where water flow obstructions or access for maintenance purposes is hampered. Other manageable impacts include disposal of construction debris, solid waste, worn-out pumps and equipment, spent fuel, oil and lubricants, dredged silt and spoils. Disposal of dredge material is anticipated to be the more significant environmental impact. Occupational health and safety measures during construction and for staff engaged in operations and maintenance will be needed. Disruptions to local traffic and community safety during construction may be an issue in some pumping station locations.

Environmental and Social Safeguards Issues: Overview

18. MMFMP Phase-1 is classified as a Category “A” project with respect to World Bank OP 4.01, Environmental Assessment. This categorization is based on the significant number of subprojects to be implemented throughout the greater Metro Manila area and the resettlement of people in a complex urban environment. Scoping and subsequent investigations carried out by MMDA and the Task Team indicated that significant social impacts will be associated with resettlement; many, if not most of those residing in waterway areas are informal settlers, who are generally very poor and reliant on income sources in the vicinity of their current locations. Environmental impacts associated with pumping station rehabilitation and new pumping station subprojects are expected to be limited to civil works and related activities which are limited and manageable. The scope and intensity of social and environmental impacts will vary from subproject to subproject; most environmental impacts will occur during construction of subprojects.
19. The full range of cumulative effects for the project will be assessed at a later Project phase; a TOR for cumulative impact assessment follows later in this document.
20. Impacts from land acquisition will be minimized to the best extent possible, chiefly by keeping resettlement confined to the technical footprint areas needed for optimal

performance of the pumping stations. Nevertheless, a total number of households to be resettled is estimated in the range of 1,500 to 2,500 or about 6,000 to 10,000 individuals.

Environmental Safeguards Issues

21. Environmental impacts of the project are associated with dredging of waterways, disposal of solid waste and water hyacinth from the waterways, civil works for new pumping station, rehabilitation of existing pumping stations to be outfitted with new pumps and related equipment, solid waste management facilities under component 2 and works related to development of resettlement sites. Impacts of pumping station rehabilitation works are anticipated to be minor, temporary and localized. Impacts from the dredging activities may be significant depending on the quality of sediment, especially if there is a presence of contaminants. Impact assessment for each subproject will identify appropriate mitigation and management measures. These measures include the application of environmental codes of practice (ECOPs) and other specific measures needed identified in the project Environmental and Social Management Plan (ESMP). Typical ESMPs will set out management and remediation measures to ensure safe disposal of construction debris, solid waste, dredged silt and spoils, disposal of worn-out pumps and equipment, spent fuel, oil and lubricants from the pumping stations. ESMPs will routinely include plans for occupational health and safety during construction and operation of the facilities. ESMPs will also address issues related to localized traffic disruptions and impacts on commerce and related activities in neighboring communities. The ECOPs will include the management of typical impacts related to construction. Environmental Health and Safety practices will also be included in the ECOP including worker safety from noise, injury from moving machine parts and provision of proper sanitation. Exposure to waters contaminated by raw sewage is an occupational risk that needs to be managed through proper EHS practices i.e use of personal protective equipment and provision of showers and handwashing facilities.

Social Safeguards Issues

22. Land acquisition, both permanent and temporary, will be needed for the construction of new pumping stations. Clearing of limited sections of waterways where the flow is hampered by ISF structures will be necessary in some subprojects for optimal functioning and sustainability of both old and new pumping stations. Land acquisition requirements will vary, with larger pumping stations potentially necessitating sites as large as 3 hectares. During the identification and prioritization of potential new sites, MMDA will avoid, to the extent feasible, acquisition of land parcels with multiple owners and encumbrances for new pumping stations. Construction phase social impacts are expected to be limited, however temporary impacts may necessitate mitigation measures, such as those to manage restriction of access to roadside commercial establishments and residential buildings. The resettlement of informal settlements along waterways is unavoidable both for the safety of ISFs from flood risks, which are recurrent and pose significant dangers, as well as for the proper functioning of the pumping stations. The approach to resettlement, as set out in the

Resettlement Policy Framework, will focus on in-city rehousing to facilitate retention of income streams for those displaced persons whose current livelihoods are highly dependent on proximity to places of work.

23. Resettlement and economic rehabilitation of project-affected people is especially challenging in the context of an on-going Philippine government-supported program known as *Oplan Likas*. This PhP 50 bn - five year undertaking, (which began in 2011 and is scheduled to end in December, 2016), resettles ISFs to safer locations away from high risk areas, including waterways, railways, etc. Clearing waterways of ISFs has been a major activity of *Oplan Likas*. Many of the waterways serving existing pumping stations have been cleared of ISFs since 2011. *Oplan Likas* continues to resettle ISFs throughout Metro Manila at an accelerated pace as the program is to conclude in mid-2016. This is a significant legacy issue for the project because a large number of ISFs have been resettled at out-of-city sites, far from their places of employment without adequate provision for restoration of livelihoods. It is thus highly probable that resettlement already undertaken by *Oplan Likas* will be a factor in assessing potential sites for new additional pump stations. This issue is addressed in more detail in the RPF.

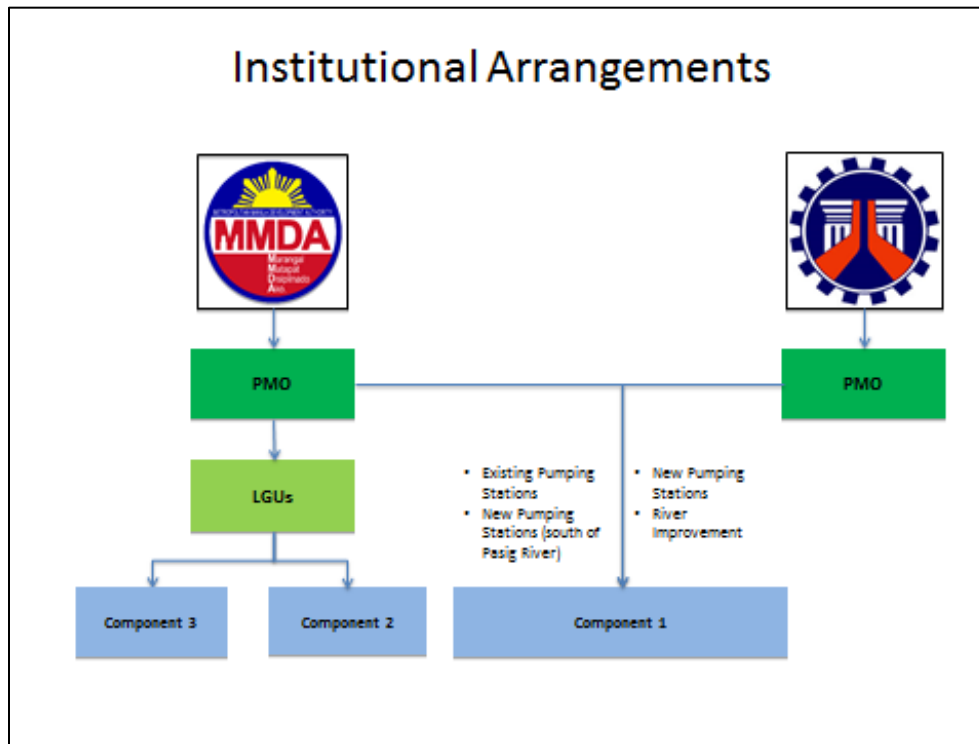
Project Cost and Financing

24. Initial project costs and source of financing are shown in Table 2.

Table 2: Project Costs and Financing

Financing (In USD Million)			
Total Project Cost:	500.00	Total Bank Financing:	300.00
Financing Gap:	0.00		
Financing Source		Amount	
Borrower		192.60	
International Bank for Reconstruction and Development		300.00	
Global Environment Facility (GEF)		7.40	
Total		500.00	

Institutional Arrangements



25. The Metropolitan Manila Development Authority (MMDA,) is one of two designated project implementation agencies for the Phase-1 project. As the lead institution for water management at the greater metropolitan scale, MMDA oversees the regional flood control management mechanism for Metro Manila. MMDA manages and operates some 60 pumping stations and related water management and drainage infrastructure facilities throughout the greater metropolitan area. In addition, Local Government Units of metro Manila operate other pumping stations and related water control infrastructure. LGUs have proposed pumping station upgrades and construction of 3 new pumping stations and related works to augment drainage capacity in flood-prone and underserved areas, which will also be included in the Phase-1 project and implemented by MMDA.
26. The Department of Public Works and Highways (DPWH) is one of the three government departments mandated to undertake planning of infrastructure projects, such as national roads and bridges, flood control, water resources and other public works as well as the design, construction, and maintenance of national roads and bridges, and major flood control systems. DPWH serves as engineering and construction arm of the government ensuring the safety of all infrastructure facilities and securing the highest efficiency and quality in construction.

27. Participating LGUs, (LGUs to benefit from new or rehabilitated pumping stations) will play the lead role in implementing Component 3 (on resettlement). As a condition of subproject inclusion in a given LGU, it is the responsibility of the LGU to identify land or sites for rehousing PAPs in reasonable proximity to income sources. Support can be provided by the National Housing Authority (NHA) and the Social Housing Financing Corporation (SHFC) where mortgage schemes are applicable options for resettlement. Local citizen's organizations and NGOs may also play a role. This aspect is discussed in full detail in the RPF.
28. MMDA will manage refurbishment of existing pumping stations and construction of new pumping stations south of the Pasig River. DPWH will manage construction of new pumping stations north of the Pasig River. Related agencies, the Flood Control and Sewerage Management Office (FCSMO) and Solid Waste Management Office (SWMO) of MMDA as well as their counterparts in DPWH shall be involved in implementation of subprojects. MMDA and DPWH are the two implementing agencies; each will establish a Project Management Office. MMDA and DPWH will engage appropriate staff, supplemented by contractor experts to prepare resettlement and related social impact management plans where land acquisition necessitates physical movement of people or where project activities preclude customary use of resources and disrupt income streams of people in the project's area of influence. MMDA and DPWH will supplement resettlement and related activities with an External Monitoring Agent, who will be contracted to support the PMOs with monitoring of social safeguard compliance.
29. The mandated environmental regulatory agency for environmental compliance is the Department of Environment and Natural Resources (DENR). The DENR is responsible for the review and approval of Environmental Assessments and Environmental Management Plans to be implemented at the subprojects. Upon its approval, DENR issues Environmental Compliance Certificates (ECCs) for subprojects to be implemented as they are taken up.

30. Roles and responsibilities of each agency are as follows in Table 3.

Table 3: ESMF Roles and Responsibilities

Agency	Role and Responsibilities
<i>MMDA and DPWH PMOs</i>	<p data-bbox="456 401 1305 474"><i>Executing agencies with overall responsibility for the MMF Flood Management Program implementation.</i></p> <ul style="list-style-type: none"> <li data-bbox="456 527 1344 600">• Ensure that sufficient funds are made available to properly implement this ESMF and all necessary instruments to be applied. <li data-bbox="456 615 1357 772">• Ensure that all subprojects, regardless of financing source, comply with the provisions of the ESMF and <i>WB environmental and social policies and particularly WB POLICY OP 4.01 and Op 4.12 as embodied in this framework.</i> <li data-bbox="456 787 1349 861">• Ensure that subprojects comply with GOP environmental laws and regulations. <li data-bbox="456 875 1305 949">• Ensure that dedicated PMO staff are engaged to oversee ESMF implementation. <li data-bbox="456 963 1385 1073">• Ensure that necessary resources are allocated to obtain environmental clearances certification under EIS from DENR prior to award of civil works contracts. <li data-bbox="456 1087 1377 1287">• Ensure that the establishment and implementation of an environmental and social grievance redress mechanism, as described in the EIA and this ESMF, to receive and facilitate resolution of affected peoples' concerns, complaints, and grievances about the Project's environmental performance. <li data-bbox="456 1302 1317 1375">• Ensure that a resettlement grievance management mechanism is established and operational as indicated in the RPF. <li data-bbox="456 1390 1365 1499">• Ensure that bidding and contract documents for contractors and sub-contractors include relevant environmental and social requirements of the ESMP and RPF. <li data-bbox="456 1514 1317 1587">• Ensure submission of semi-annual monitoring reports on ESMP implementation to WB and DENR. <li data-bbox="456 1602 1382 1759">• Ensure that adequate funds are made available in a timely way for environmental and social management capacity-building activities of financial institutions, subproject proponents as described in the ESMP, RPF and ESMF.
<i>Contractors</i>	<i>Contractors (and their sub-contractors) engaged to construct or provide related services needed to realize subprojects.</i>

Agency	Role and Responsibilities
	<ul style="list-style-type: none"> • Comply with all contractual obligations to meet GOP regulations and ESMP / RPF conditions as conveyed in subproject works contracts. • Ensure compliance of sub-contractors engaged to provide services under subproject contracts. • Recruit qualified staff to ensure contractor's compliance contract obligations. • Contractors and their sub-contractors, engaged to provide related services should have adequate financial capacity and experience/track record to ensure satisfactory and timely completion of projects.
<i>Local Government Units (LGUs)</i>	<p><i>Governing administrative units in whose jurisdictions subprojects will be implemented.</i></p> <ul style="list-style-type: none"> • Assist MMFMP PMO with subproject(s) selection; verify areas identified for the construction of new pumping stations. • Ensure in-city land sites or other in-city accommodations are secured and available for people to be resettled before final selection of subprojects. • Carry out environmental scoping, assessments and environmental mitigation plans as needed where new sites are taken for resettlement of PAPs. • Engage staff and ensure technical expertise is in place to carry out resettlement-related tasks as stipulated in the RPF. • Ensure timely and effective monitoring and reporting on progress of works, management of grievances and related issues, and compliance with environmental and social policy obligations as set out in the ESMF and RPF. • Assign a focal person to coordinate with the LGU and PMO concerned agencies on the implementation of the project. • Assist in public consultation and participation and disclosure activities.
<i>National Housing Authority and Social Housing Finance Corporation</i>	<p><i>GOP agencies mandated to facilitate resettlement and re-housing solutions for the urban poor.</i></p> <ul style="list-style-type: none"> • Assist LGUs with resettlement-related undertakings as requested by the LGUs. This may include: • Assisting in public consultation and PAP's participation and disclosure activities; • Assistance in planning and implementation of subproject-related

Agency	Role and Responsibilities
	resettlement projects; <ul style="list-style-type: none"> • Ensuring that involuntary resettlement components are compliant with the RPF, ESMF.
<i>Department of Environment and National Resources</i>	<i>Environmental regulatory authority of the GOP.</i> <ul style="list-style-type: none"> • Reviews and approvals of environmental assessment reports and applications for Environmental Compliance Certificates (ECCs) for MMFMP sub-projects. • Issuance of ECCs and permits. • Monitoring of subprojects' environmental performance.

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PART B: REGULATORY REQUIREMENTS, SAFEGUARD POLICY PRINCIPLES AND OBJECTIVES

DRAFT

Review of Applicable GOP Environmental Laws and Regulations

31. The following national laws and regulations provide a framework for environmental management in the Philippines:

- Presidential Decree (PD) No. 1586, 1978 on the Philippine Environmental Impact Statement (EIS) System (PEISS);
- Republic Act No. 9275, 2004 on the Philippine Clean Water Act;
- Republic Act No. 9003, on the National Ecological Solid Waste Management Act.
- Republic Act 7160: Local Government Code which provides for a system of decentralization whereby local government units shall be given more powers, authority, responsibilities, and resources including the delivery of basic services such as solid wastes collection and disposal and flood management in their areas of jurisdiction.
- Republic Act 6969. An Act to Control Toxic Substances and Hazardous and Nuclear Wastes.
- Presidential Proclamation No. 2146, 1981 on Environmentally Critical Projects / Areas.
- Administrative Order No. 42 by the Office of the President 2002, describing categories of projects and areas subject to the EIS System.
- DENR Administrative Order No. 2003-30, the Implementing Rules and Regulations (IRR) for the Philippines EIS System (2003), and its Revised Procedural Manual issued August 2007.
- Memorandum Circular No.: 2010-14 Standardization of Requirements and Enhancement of Public Participation in the Streamlined Implementation of the Philippine EIS System.
- EMB Memorandum Circular 2014-005 Revised Guidelines for Coverage Screening and Standardized Requirements.
- EMB Memorandum Circular 2015-008 Implementation of Online Processing of Environmental Compliance Certificate (ECC) Applications for Category B projects requiring Initial Environmental Examination (IEE) Checklist report forms under the PEISS system.

GOP Laws and Regulations related to land acquisition, resettlement, and social safeguards

32. The key legal and administrative provisions are:

- The Bill of Rights of the Constitution of the Republic of the Philippines states: In Article III, Section 1, “No person shall be deprived of life, liberty, or property without due process of law, nor shall any person be denied the equal protection of the laws.” In Article III, Section 9, “Private property shall not be taken for public use without just compensation.”
- Executive Order 1035 (1985) requires conducting of Feasibility Studies, Public Information campaign, parcel surveys and asset inventory. It also provides for compensation for acquired land at fair market value based on negotiations between owner and appraiser; relocation assistance to tenants, farmers and other occupants; financial assistance to farmers and agricultural tenants equivalent to the average harvest for the last three years but not less than P 15,000/ha; Disturbance compensation to agricultural lessees equivalent to 5 times the average gross harvest during the last 5 years; and compensation for improvement on land acquired under Commonwealth Act (CA) 141.
- CA 141, Public Land Act (1936) institutes classification and means of administration, expropriation and disposition of alienable lands of the public domain.
- Supreme Court Ruling (1987) defines just compensation as fair and full equivalent to the loss sustained to enable affected household to replace affected assets at current market prices.
- Republic Act 6389 provides for disturbance compensation to agricultural leases equivalent to 4 times the average gross harvest in the last 5 years.
- Republic Act 8974 (2000) which facilitates the acquisition of ROW, site or location for National Government Infrastructure Projects and for other Purposes. Implementing Rules and Regulations of RA 8974 was also issued. This mandates the use of replacement value of land and structures (without depreciation).
- Republic Act 7279 (1992) "Urban Development and Housing Act" mandates the provision of a resettlement site, basic services and safeguards for the homeless and underprivileged citizens.
- Republic Act 7160 (1991) "Local Government Code" which allows the LGUs to exercise the power of eminent domain for public use.

Applicable World Bank Safeguard Policies

33. The following environmental and social safeguards apply to the Project:
34. ***Environmental Assessment OP/BP 4.01***: This policy is triggered as MMFMP will undertake a significant and widespread number of pumping station subprojects throughout Metro Manila, of which some will be new facilities. At the subproject level it is realistically anticipated that site-specific but manageable and reversible environmental impacts will be associated with rehabilitation of existing pump stations, the construction of new pumping stations, and cleaning of sections of associated waterways and drainage channels. Subproject civil works will necessitate management measures for collection and disposal of construction debris, solid waste, dredged silt and spoils as well as for the disposal of worn-out pumps and equipment, spent fuel, oil and lubricants. MMFMP will ensure effective measures are put in place for occupational health and safety during construction and operations phases of subprojects. Subproject environmental management provisions also include actions to address disruptions to localized traffic and commerce in areas neighboring subprojects. The solid waste component, which focuses on systemic improvements to collection of solid waste at source, is not anticipated to produce adverse environmental effects and is expected to provide additional formal employment.
35. Environmental impacts are anticipated to be localized and similar in most, if not all instances. Each subproject will be assessed for environmental impacts, which can be managed and mitigated by means of environmental codes of practice (ECOPs) and ESMPs. ECOPs will be based on good practices and will provide guidelines for environmentally sound management of construction-related impacts associated with all components, including any resettlement and rehousing studies and schemes to be supported under Component 3.
36. Site-specific Environmental and Social Management Plans (ESMPs) will be prepared for each subproject as they are brought forward during implementation. ESMPs will also include, as applicable, measures to ensure sound and compliant environmental management of any off-site or ancillary facilities needed for subprojects. Ancillary facilities could include disposal sites for solid waste and dredged materials, new or widened access roads, new or modified electrical transmission or other pipelines needed for the facilities.
37. The initial first year activities will focus on five existing pumping stations where there is a clear need and a hydrologically sound basis for rehabilitation and modernization. Specific environmental management plans have been prepared for these first year subprojects.
38. MMFMP will carry out system-wide studies of the metropolitan drainage areas to ensure that subsequent subprojects for new or existing pumping stations will be optimized. Year one will thus provide for prioritization and finalization of the inclusion list for existing and new candidate pumping stations proposed by MMDA, DPWH, and the LGUs over the life of MMFMP. Scoping and assessments of environmental and land acquisition (resettlement)

impacts will be important factors in subproject selections.

39. **Natural Habitats OP/BP 4.04:** This policy is not anticipated to be triggered. Civil works on existing pumping stations, associated drainage areas and waterways, and related activities will take place in original locations which have been fully converted by human activity in built-up urban areas over many years and are not characterized as natural habitats.
40. **Physical Cultural Resources OP/BP 4.11:** This policy is triggered as a precautionary measure. Impacts on physical cultural resources are highly unlikely if not precluded for rehabilitation works to be carried out on existing sites. The ESMF provides for screening of new pumping station sites and off-site facilities for physical cultural properties.
41. A chance find procedure is given in the ESMF to be applied if objects or structures of cultural importance are discovered during implementation (see Annex F). The chance find procedure suspends construction activities; the site is delineated and secured to prevent any damage or loss of removable objects. The findings are evaluated by the Cultural Properties Division of the National Museum according to the various criteria relevant to cultural heritage, (including the aesthetic, historic, scientific or research, social and economic values.) The decision on how to handle the find is determined by the National Museum. Construction work will resume only after authorization is given by the responsible local authorities. The chance find procedure is included as a standard provision in construction contracts.
42. **Involuntary Resettlement OP/ BP 4.12:** Civil works in the first year will focus on modernizing and capacity up-grading of five existing pump stations, which are fenced and free of encroachment. No land acquisition on or around pumping station sites is anticipated for this initial phase. However, resettlement of ISFs living over and along related waterways serving the pumping stations to be modernized, who have not already been resettled under *Oplan Likas*, will be required.. While no land acquisition will be needed for new pumping stations in the first year's subprojects, some resettlement will be required for people living on encroachments in the waterways.
43. Two of the five first year pumping station rehabilitation subprojects, Paco PS and Vitas PS, will involve resettlement. A RAP has been prepared for about 50 families residing under a bridge and inside the waterway for Vitas PS. At Paco PS, a number of informal settler families were previously moved under the GOP's *Oplan Likas* resettlement program in 2011 – 2012. Due diligence was carried out to assess their current status vis-à-vis the general objectives of OP 4.12; the due diligence report is appended to this ESMF.
44. Most of the new pumping station sites are expected to be in populated urban areas. Land acquisition for new PS sites is anticipated, some of which may be acquired from private lots. To the degree possible, new pumping stations will be located along public roads or waterway easements in order to minimize displacement of people. Nevertheless, based on scoping and reconnaissance carried out by the task team and MMDA, it is reasonable to estimate that as

many as 2,500 ISFs will be resettled from key sections of waterways and to make way for new PS construction.

45. In most of Metro Manila's LGUs, informal settlers (ISF) have built dwellings on waterway easements or inside the waterways themselves. Many informal settlers have lived in such locations for many years and have established livelihoods, mostly in the informal sector, along with social networks in these communities. The GoP has resettled and continues to resettle ISFs to physically safer locations under an on-going government program (*Oplan Likas*), which is set to be completed in mid-2016. The *Oplan Likas* program was undertaken by the GoP as a separate activity, which was driven by citizens' concerns and implemented primarily for social and public safety purposes. The program has resettled an estimated 44,000 ISFs of which some 42,000 ISFs have been re-housed in out-of-city locations. The plan has set a target of resettling some 73,000 ISFs upon completion, the great majority of which will be re-housed at off-city locations, where access to work, social networks, and services is a challenge.
46. Management of the legacy issues from previous resettlement under *Oplan Likas* is discussed in full detail in the appended RPF. In subprojects where there are ISFs to be resettled, the project will implement resettlement at in-city locations to preclude a disconnection or disruption of their income streams and social networks in full compliance with OP 4.12. The RPF sets out OP 4.12-compliant measures to address resettlement under *Oplan Likas* before and after the date of World Bank engagement with the GOP for preparation of the MMFMP.
47. LGUs will ensure that in-city resettlement options are available for PAPs, especially ISFs who are highly dependent on their current locations for access to employment, as a precondition for inclusion of subprojects in MMFMP. LGUs will lead in management of resettlement with technical support, as and if needed, from NHA, SHFC, and community or civil society organizations. Financial and technical support is provided by MMFMP. Organizational arrangements are presented in detail in the RPF.

Gaps between GOP laws and regulations and the World Bank's Safeguard Policies

Environmental Safeguards

48. A comparison of applicable World Bank environmental safeguard policies, (OP 4.01, Environmental Assessment, OP 4.04 Natural Habitats and OP 4.11 Physical Cultural Resources (PCR) with the Philippine environmental laws and regulations shows some substantive gaps in procedure and content. The Philippine system generally espouses international principles on environmental assessment in Philippine EIA laws and regulations (PD 1586, DAO 2003-30 Procedural Manual), which are enforced by the Environmental Management Bureau (EMB) of the DENR. The ESMF serves to bridge these gaps to ensure that a comprehensive assessment of the environmental and social impacts of the subprojects is conducted to ensure conformity with WB environmental safeguard policies.

49. The following issues will be addressed under the MMFMP:

a. **Screening, scoping and submission of environmental information.** The content and extent of the environmental information required in the DENR EIA Procedural Manual for environmental assessment does not include the following:

- Philippine EIA law uses project thresholds to determine coverage and requirements for an EIA; WB OP 4.01 requires screening of potential environment and social impacts to determine the EIA instrument to be prepared to assess and address impacts.
- New access arrangements or changes to an existing road layout, traffic impacts of new access roads or road expansions or extensions are not subject to EIA.
- Cumulative effects are not taken into account, such as the relationship of a project with other existing or planned projects.

The extent of land and ecosystem disturbance: trees to be cut, proposed cut and fill, reclamation of existing terrain such as in construction of river crossings and waterways, is not adequately addressed. This will be addressed through Project ECOPs.

b. **Consultations with relevant agencies, other stakeholders, and the public** for environmentally critical projects: Philippine EIA law requires one public scoping and one public consultation which is the same as the WB requirement for Category B projects. In the case of MMFMP, a Category “A” investment project, a minimum of two public consultation processes will be undertaken; at the initial scoping stage where impacts are identified and at the penultimate draft stage of the ESIA report to gather stakeholder input before findings are finalized.

c. **Impact assessment and adequacy of ESMPs and mitigating measures.** Considering the thresholds set by the Philippine EIA law on the scale of projects and the WB’s categorization of projects requiring an ESMP, MMDA and DPWH will be required to submit an Initial Environmental Examination (IEE) and an Environmental and Social Management Plan (ESMP). This requirement is not applicable where screening determines impacts to be of no significance or very minimal. Under the Philippine EIA law obtaining of an Environmental Compliance Certificate (ECC) including the EIA will take from 15 to 60 days. Environmental Management Plans approved by EMB will be reviewed during the safeguards screening process to ensure compliance with the WB safeguards policies. Any gap in safeguards instruments identified during the screening process in accordance with the ESMP will be complied with by the MMDA and DPWH.

d. **Monitoring and reporting of ESMP implementation.** MMDA and DPWH will monitor the environmental compliance of the subprojects with the help of the LGUs.

MMDA and DPWH PMOs environmental monitoring staff will conduct field visits, audits, reviews and evaluations of the proponents' self-monitoring compliance reports and report the project's overall safeguards performance to the WB on a semi-annual basis.

Social Safeguards (Land Acquisition and Involuntary Resettlement)

50. Gaps were identified between Philippine government policies and laws on entitlements to project-affected persons (PAPs) and the WB's social safeguard policies contained in OP 4.12, Involuntary Resettlement. Measures to fill the gaps were proposed based on the principle that whichever applicable policy is best for the overall welfare of the PAP shall govern and shall be adopted. The comparisons of these policies are described in Table 1.

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Table 4: Comparative Analysis between Philippine policies and laws on entitlements to project-affected persons and the WB’s social safeguard policies¹

KEY ISSUES	PHILIPPINE POLICY	WORLD BANK POLICY	MEASURES TO FILL GAPS
Persons Considered as Project-Affected Persons (PAPs)	PAPs consist of all members of a household who will be adversely affected by the project because their real property shall be acquired for government infrastructure projects	Persons/People impacted by Involuntary taking of land resulting in (i) relocation or loss of shelter; (ii) loss of assets or access to assets; (iii) loss of income sources or means of livelihood, whether or not the affected persons must move to another location.	Everyone who occupies land or structure and those that conduct livelihood activities at cut-off date within the ROW limits shall be identified and properly recorded including their condition in life, and their personal circumstances. Each person so identified shall be considered PAP and shall be classified accordingly to determine eligibility for any compensation or support towards a sustainable living condition.
Loss of Income or Sources of Livelihood	Silent regarding loss of income directly resulting from land acquisition.	Displace persons should be assisted to improve their efforts to improve their livelihoods and living standards or at least to restore them	The project should compensate for lost income and provide rehabilitation measures to improve livelihoods and living conditions of PAPs or at least restore them to pre-project level.
Treatment of Informal Settlers	R.A. 7279 states that eligible homeless and poor informal settlers in urban areas are entitled to resettlement if they are affected by development projects. However, R.A. 7279 limits this to residential informal settlers and is silent on informal structures on public or private land used for commercial purposes.	Sections 15-16 stipulate that informal settlers should be provided resettlement assistance	The project should endeavor to replace lost structures and other assets of informal settlers. Replacement options include rehousing, rental support while waiting for the housing units to become available, transportation costs, and rehabilitation costs to restore lost livelihood. For structures that encroach on public lands and used for purely commercial purposes, compensation will be equivalent to the loss of business income only.

¹ Mostly lifted from the Manila Bus Rapid Transit RPF based on Cebu Bus Rapid Transit Resettlement Action Plan, Department of Transportation and Communications, November 2012.

Taxes and Transaction Costs involved in the Transfer of Real Property	Current practice is to deduct capital gains tax, documentary stamp tax, transfer tax, registration fees and administrative expenses from compensation of affected land and structures	Taxes, administrative fees, and other transaction costs are not to be deducted from the total compensation due the affected person/s	For transactions that are not a willing seller- willing buyer transaction type, the project should cover the cost of taxes, administrative fees, and other transaction costs.
Valuation of Affected Land	Philippine Constitution states that private lands expropriated or taken for the public interest shall be paid just compensation. The Supreme Court defines —just compensation as current market value less the cost of any future benefits the landowner may derive from residual land. In negotiated settlements, government offers compensation based on the schedule of market values of the LGU or BIR zonal valuation before proceeding with expropriation.	Uses replacement cost without deduction of any future benefits the landowner may derive from the residual land	The project should use replacement cost for the valuation of land, which for urban land is defined as — the pre-displacement market value of land of equal size and use, with similar or improved public infrastructure facilities and services and located in the vicinity of the affected land, plus the cost of any registration and transfer taxes.
Treatment of Residential and Business Renters	Fixed improvements introduced by renters on the land or structures automatically belongs	Under OP 4.12 para 16: (i) compensation at full replacement cost for loss of structures/assets other than land; (ii)	Compensation at full replacement cost ² for fixed improvements introduced by the renter will be paid to the renter. Renter will be provided compensation for

² OP 4.12 explanation of replacement cost for houses and other structures: The market cost of the materials to build a replacement structure with an area and quality similar to or better than those of the affected structure, or to repair a partially affected structure, plus the cost of transporting building materials to the construction site, plus the cost of any labor and contractors' fees, plus the cost of any registration and transfer taxes. In determining the replacement cost, depreciation of the asset and the value of salvage materials are not taken into account, nor is the value of benefits to be derived from the project deducted from the valuation of an affected asset. Where domestic law does not meet the standard of compensation at full replacement cost, compensation under domestic law is supplemented by additional measures so as to meet the replacement cost standard. Such additional assistance is distinct from resettlement measures to be provided under other clauses in OP 4.12, para. 6.

	to the land owner, unless there is a specific provision that the owner will compensate the renter for any fixed improvements introduced by the latter. The practice is to ask the landowner to sign a waiver, allowing the renter to be paid compensation for any fixed improvements.	resettlement assistance; and (iii) other assistance, as may be necessary to fulfill OP 4.12 objectives	transfer costs and disturbance compensation ³ for temporary closure of the business establishment while transfer is ongoing. Computed at average daily net income of the business multiply by the number of days for the entire transfer period.
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51. A Resettlement Policy Framework (RPF) has been prepared to address any involuntary land acquisition or land access restrictions resulting in physical or economic displacement of affected people or parties. The RPF sets out the provisions, (including organizational arrangements, consultation and participation of affected people, specifics of entitlements, implementation, monitoring, and closure procedures to ensure that the remedies for physical resettlement and economic rehabilitation of project-affected ISFs are fully compliant with World Bank Operational Policy 4.12.

52. The RPF also serves to meet the requirements of relevant laws and regulations of the Philippines to the extent that they coincide with World Bank OP 4.12 however, ***under the terms of the loan agreement, where substantive differences are found between Philippine laws and regulations and the requirements of OP 4.12, the higher standard will prevail.***

³ Computed at average daily net income of the business multiply by the number of days for the entire transfer period.

PART C: SAFEGUARDS PROCEDURES

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Safeguards preparation and process

53. This section provides guidance on safeguards processing. This guidance serves to ensure that potential impacts and practical mitigation measures are identified early on in the planning and selection process for pumping stations to be rehabilitated and modernized by MMFMP.
54. As sub-projects will be prepared for financing in a continuous manner during the implementation period, screening for potential environmental and social impacts will be conducted and mitigation and management measures will be developed in line with the agreed ESMF and RPF (see Figure 2). The MMFMP process for social and environmental impact screening and subsequent mitigation and management measures will follow the steps outlined below. The World Bank will review the documentation prepared and may undertake site visits in this process to ensure that Bank procedures were followed, prior to MMDA or DPWH requesting financing for a given sub-project.

Step 1: Identification of candidate sub-projects

55. Identification of pumping stations will be done in the first years of implementation of the project. MMDA and DPWH in collaboration with the appropriate LGUs will identify and select the sites for new pumping stations and pumping stations to be rehabilitated and modernized. In addition to hydrological factors, environmental and land acquisition (resettlement) impacts will be a consideration in the selection of subprojects and timing of their implementation.

Step 2: Screening of subprojects

56. An Environmental Code of Practice has been provided which will cover typical construction related impacts related to pumping station rehabilitation. The ECOP will apply to all pumping station sites. Using the ESIA, a screening matrix has been developed based on the impacts assessed for the first five pumping station sub projects. This screening matrix will identify other impacts not covered under the ECOP and impacts related to activities under Components 2 and 3. Using the screening matrix (see Annex A), as part of project implementation, the PMO in coordination with the LGU will screen pumping station subprojects and related works under Component 2 and 3, for additional social and environmental impacts and identify the specific safeguards instruments or plans needed to adequately address those impacts and meet ESMF and RPF requirements. Social and environmental impact evaluation requires specialized technical skills. The MMDA and DPWH PMOs may assign relevant specialists from their agencies as well as qualified specialized consultants to assist them in this task. (MMFMP will provide training on safeguards to the PMOs.) MMDA and DPWH PMOs will submit the results of the screening to WB for clearance.

Step 3: Subproject Preparation and Documentation

57. After the Bank provides its comments, the PMOs will prepare safeguards instruments needed to address identified impacts. All subproject safeguards instruments shall be prepared by the MMDA and DPWH PMOs in collaboration with the relevant LGUs. It is the responsibility of

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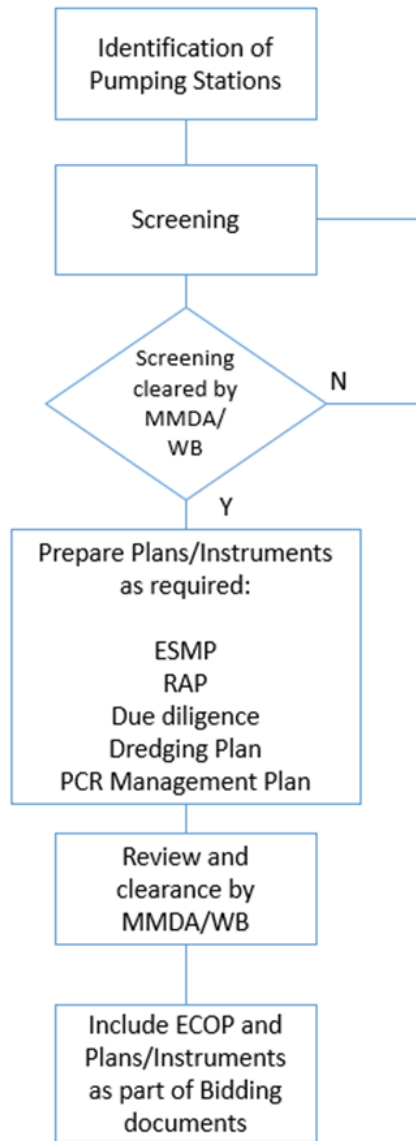


Figure 2: Project Safeguards Process

58. The PMOs to obtain required GOP permits and clearances and ensure LGU cooperation and assistance in securing and implementing resettlement solutions where needed. Liaising with the Environmental Management Bureau (NCR) will be necessary. The PMOs are responsible for the quality and accuracy of the information in the safeguards plans and for the transmission of these documents to EMB-DENR (Environmental Management Bureau-Department of Environment and Natural Resources) and any other relevant GOP agencies.
59. Safeguard documents, including ESIA, ECOPs, ESMPs and RAPs, will be subject to consultation and disclosure in an accessible place, in a timely manner, in a form and language understandable to key stakeholders, prior to the finalization of the documents. Particular attention will be given to ensure project-affected persons have adequate time and ready access to draft documents before consultation takes place.

Step 4: Review and clearance of safeguards documents

60. The World Bank Task Team will review the documents, conduct a due diligence review as needed, and provide feedback (as necessary) to MMDA and DPWH leading to approval and clearance of the safeguard instruments. The social and environmental safeguards documents will be reviewed by the appropriate World Bank Task Team specialist, who will consult with the Regional Safeguards Secretariat as needed.

Step 5: Implementation - Supervision, Monitoring and Evaluation

61. Timely and effective monitoring is fundamental to ensure compliance, timely decision-making, to facilitate adaptive management and effective implementation of mitigating measures, and to adequately inform project evaluation and closure. Implementation of subproject safeguards instruments during project implementation is the responsibility of the PMOs with on-site support from the pumping stations and flood control units of MMDA and DPWH, the subproject LGUs, and communities. Costs associated with the government processes and the cost of monitoring shall be borne by the MMDA and DPWH. Their respective PMOs will employ monitoring teams, (which have been trained in application of the ESMF and RPF) to undertake safeguards compliance monitoring. PMO environmental compliance monitoring reports will be prepared on a monthly basis and reported to the WB on a semi-annual basis.

Preparation of Social Safeguards

62. The objectives, principles, and project-specific requirements of the World Bank Policy on Involuntary Resettlement (OP 4.12) are set out in the Resettlement Policy Framework, which will guide preparation of subproject-specific Resettlement Action Plans (RAPs), due diligence on past resettlement in subprojects, or any related social development action plans, such as those developed to restore or enhance incomes and quality of life for project-affected people.
63. The MMDA and DPWH PMOs are responsible for providing necessary resources for all activities related to resettlement planning and implementation. Where subproject land

acquisition or land access restrictions are unavoidable, MMDA and DPWH PMOs will prepare RAPs following guidance provided in the RPF. Where limited numbers of ISFs are affected, (less than 200 individuals), Abbreviated Resettlement Action Plans (ARAPs) may be prepared. RAP and ARAP cost estimates will make adequate provisions for contingencies. All resettlement-related costs including acquisition of land and fixed assets, compensation, and financial assistance to affected households will be included in the project cost.

64. **Scoping and Identification of new pumping station sites:** MMDA and DPWH PMOs in consultation with the LGUs will scope proposed subproject sites for social impacts. A determination of the technical footprint area will be made which includes the pumping station site (existing or new), encroachments in waterways, potential social impacts on commerce and activities along access roads, any needs for additional electrical or other service lines into the site, etc. Given that the LGUs play a critical instrumental role in facilitation of resettlement, LGU involvement and cooperation is essential; and as noted, LGUs will lead in identification of resettlement sites, either existing or to be developed, which is a condition for inclusion of the pumping station in MMFMP.
65. **Screening of selected subprojects:** Working with the subproject LGU, the PMO will carry out screening based on subsequent field investigations following the scoping of candidate sites. Screening will assess the types and scale of impacts paying particular attention to land acquisition and loss of land or access to land, loss of fixed assets, and loss of access to land-based income streams. The number of persons marginally or severely affected and the types and number of vulnerable groups affected should be assessed to facilitate preparation of plans for physical resettlement and / or income restoration. The PMO-LGU teams will identify and estimate the types, degree, and scale of potential social impacts, primarily those related to land acquisition and the physical or economic displacement of people, both permanent and temporary. Remedies and solutions for identified impacts will be included in the budget and work program.
66. Once inclusion of the subproject is confirmed, the PMO will assist the LGU as needed to identify key stakeholders, including local community groups for their inclusion in initial public consultations. The consultations will: (a) provide information on the project, its benefits and impacts; (b) obtain feedback from the public; and (c) discuss participation and the roles of the community groups, NGOs and other key stakeholders going forward.
67. **Procedures for Land Acquisition:** Land acquisition will be carried through the use of public land to the extent possible, such as existing rights-of-way for waterways, (which will entail resettlement as they are generally encroached by ISFs), or the purchase of land from private individuals. *The specific procedures and conditions guiding land acquisition, valuation and compensation, and measures for resettlement and rehabilitation of project-affected people are specified in full detail in the RPF.*

68. **Review and clearance of social safeguards documents.** The PMOs will submit all social safeguards documents and plans for subprojects to the World Bank Task Team for review and clearance to ensure compliance with the RPF and ESMF. The World Bank may request revisions to these documents in the clearance process before the subproject is approved for implementation. The World Bank will ensure that all safeguard plans, including subproject RAPs, are disclosed at the InfoShop and obtain confirmation from MMDA that local disclosure of the same documents has been made on the PMO website and is available at locations accessible to stakeholders.
69. **Supervision of implementation, monitoring and evaluation.** The PMOs will supervise and monitor social implementation of resettlement and related social impacts at the subproject sites to ensure that they are implemented in accordance with the RPF and ESMF. Monthly safeguard implementation progress reports will be prepared by field staff and provided to the PMOs. The PMOs will submit semi-annual implementation monitoring reports to the World Bank. (The reporting frequency may be adjusted during implementation if needed.) In instances of non-compliance or where unanticipated implementation complexities arise, the PMO will inform and consult with the World Bank Task Team to agree on appropriate measures or remedial actions to be taken based on a time-bound schedule. The PMOs will be required to implement such measures within the agreed time-frame, failing which the WB will take additional measures, which could include suspending further disbursement, until the remedial measures are implemented to the satisfaction of World Bank.
70. Contractor's site access for civil works cannot take place until an appropriate resettlement instrument (RAP / A-RAP) has been reviewed and cleared by the World Bank and implemented to a stage where ISFs and any other project-affected parties have been physically relocated from the land area needed, compensation has been paid, and other entitlements have been given or initiated, (such as where the entitlement involves training or other benefits which extend over time.)
71. The implementation timetable for the resettlement instrument (RAP / A-RAP) will be coordinated with the civil works schedule to ensure efficient implementation. Upon World Bank approval of the resettlement instrument and subsequent movement of subproject-affected people, the PMOs will issue a no objection letter to the contractor / concessionaire to allow construction activities to begin. As noted, entry on to private properties will not take place before project-affected parties have been given entitlements as per the RPF and the applicable resettlement instrument. Where land is acquired through market purchase, site access is given after conclusion of and in compliance with the terms of the sale agreement. In exceptional circumstances where eminent domain must be used, the terms of access are specified in a Writ of Possession given by the law courts. Where the land has already been acquired, subproject construction activities will begin only after MMDA provides a due diligence report which has been reviewed and approved by the Bank.

Public Consultation, Participation, and Disclosure

72. Information disclosure and public consultation are essential features in the preparation and implementation of subprojects. Awareness, input, and participation project-affected people and relevant stakeholders contribute constructively to good planning and implementation. Timely stakeholder input can help manage or minimize adverse impacts and flag otherwise unanticipated impacts or issues to be addressed in land acquisition and environmental mitigation plans.
73. **Public Consultation** In addition to consultations undertaken with key stakeholders during project preparation, further public consultations will be carried out for the MMFMP with relevant stakeholders and government agencies at the Metro Manila level soon after the financing agreement is made between the GOP and the World Bank. These consultations are meant to inform and engage the public regarding the extent of project impacts and proposed mitigation measures. During implementation, as subprojects are brought forward, public consultations will be held with the assistance of relevant LGUs to inform and seek inputs from public and private stakeholders and any other interested parties about the type and duration of works, environmental impacts, and mitigation and management measures set out in the ESMF. The ESMF will be presented and discussed in detail during public consultations. At a minimum, consultations on the ESMF will be undertaken twice: first, at the initial stage where the project is presented to the public, and once again at the penultimate stage when subproject-specific environmental safeguard instruments have been prepared to seek and incorporate input from stakeholders. At the subproject level the PMOs will work with the LGUs to ensure adequate information is available to the public. Importantly, the public will be made aware of contact coordinates and procedures to be used if there are issues or grievances associated with subprojects for which redress or additional information is sought. All environmental safeguards documentation will be made accessible to the public through the PMOs and participating LGU websites as well as on the World Bank InfoShop. The PMOs will keep records of public consultations, noting dates, locations, participants, salient issues raised, and responses to such issues.
74. **Public Consultation and Participation for Social Safeguards.** Public consultation and community participation are fundamental in ensuring a project's acceptability and establishing a constructive relationship between the community and the project. PMOs, with the assistance of the LGUs, will establish information and contact points to assist affected people with the resolution of issues which may arise during implementation and ensure sustained and constructive participation. The PMO social and resettlement team will provide relevant information to the community as early as possible, and will synchronize stakeholder meetings with ESMF consultations. Information provided will include: the purpose, nature scale of the project, social impacts and risks, and the timing and duration of the proposed resettlement and related activities. PMOs will ensure adequate documentation of consultations, needed to track issues or relevant developments and provide updates and feedback to affected people as needed during implementation. People will be informed of contact details and procedures to be used where grievances or other issues arise related to land acquisition, resettlement and entitlements. Consultation and community participation supplemented with information provision will be carried out as a continuous activity

throughout the planning and implementation phases of subproject resettlement.

75. As of December 2015, the MMDA and the WB have held one initial public consultation on 20 February 2015, which was attended by 70 participants from the concerned LGUs namely Taguig, Makati City, Pasay City, Pasig City, Navotas City, San Juan City, Valenzuela City, Caloocan City, Malabon City, Mandaluyong City, Manila City and Muntinlupa City at the MMDA Office at EDSA Corner Orense, Makati City. Further public consultations will be carried out and documented during project preparation and implementation, as noted.
76. **Disclosure:** Environmental and social safeguard documentation to be disclosed initially by the World Bank InfoShop will include the key safeguard documents required for the review and approval of the World Bank Board of Executive Directors. These documents are: the MMFMP ESIA, ESMF, RPF, one RAP prepared in advance of Board presentation for people to be resettled from an obstruction in a section of the waterway serving the Vitas Pumping Station, a Due Diligence Report on people previously moved by the GOP from a waterway serving the Paco Pumping Station, and 3 due diligence reports for subprojects proposed for the first year for which no resettlement was needed. Local disclosure will be initially be facilitated via the MMDA and DPWH websites. Going forward into implementation, PMO website information will be supplemented by public consultations, posters, booklets, and the media. Local disclosure should ensure information reached directly affected communities (including project- related workforce needs, where applicable). Participating LGUs will assist with provision of information on sub-projects at accessible locations.
77. As MMFMP is implemented, subproject-specific documents and plans will be disclosed after review and clearance, as they become available via the PMOs and LGUs. These documents and plans include subproject Environmental Management Plans and all subproject-specific resettlement instruments (RAP / A-RAP) or other social impact mitigation plans to be implemented. These documents are made publicly available at public places accessible to project-affected-groups, NGOs, and other interested stakeholders through the MMDA project website, websites of participating LGUs, and the World Bank InfoShop. Hard copies will be made available at accessible sites. Where necessary, summaries of RAPs particularly the summary of losses and entitlements, will be made available in the form and language understandable to the PAPs. ***Public disclosure of individual names and entitlement to be given to specific individuals affected by land acquisition and resettlement will not be disclosed publically in respect of personal privacy.***

Capacity-building

78. MMDA, DPWH will need training and technical support to enable effective application of World Bank environmental and social safeguards. A detailed institutional capacity assessment for staffing and management of social and environmental safeguards policies will be conducted as a first priority activity upon establishment of the PMOs. Safeguards training will be provided to participating LGUs and contractors as subprojects are confirmed. Training needed for supporting agencies or organizations (government and non-government), such as NHA and SHFC and community housing groups will also be provided with focused training in advance of their active involvement. MMDA and DPWH specialists were given

an initial orientation on World Bank safeguard policies in a one-day safeguards workshop with staff from World Bank Manila office. However, more project-specific training will be needed to facilitate the MMDA, DPWH PMO teams and the LGUs in association with the clarification of roles and responsibilities, monitoring and reporting, as well as staffing capacity and the need for specialized expert consultants.

79. To this end, MMFMP will allocate funds for safeguards training. The World Bank will provide a training course, which will cover:

- An overview of WB Safeguard Policies, scoping, screening, and their application at key project stages.
- Environmental Assessment and preparation of EMPs.
- Land acquisition and resettlement.
- Good practice in public consultation
- Grievance Mechanisms and issues management.

Grievance Redress Mechanism

80. A grievance redress mechanism for the project is necessary for addressing legitimate concerns of affected individuals and groups who raise issues of concern during project implementation. The MMFMP PMOs will establish an information and grievance management or public complaints unit to be managed by the social and environmental PMO teams. The presence of community contact personnel at the subproject level will supplement the capacity of the PMO to address issues which arise early and respond in a timely way. The PMOs will be the first point of entry in responding and resolving project-related grievances from project-affected people or other members of the public. Effective management of grievances is especially important in the context of resettlement, where issues concerning entitlements may arise. The specifics of grievance management in resettlement are detailed in the RPF.

81. The GRM will be fully detailed in the project operational manual with the following principles:

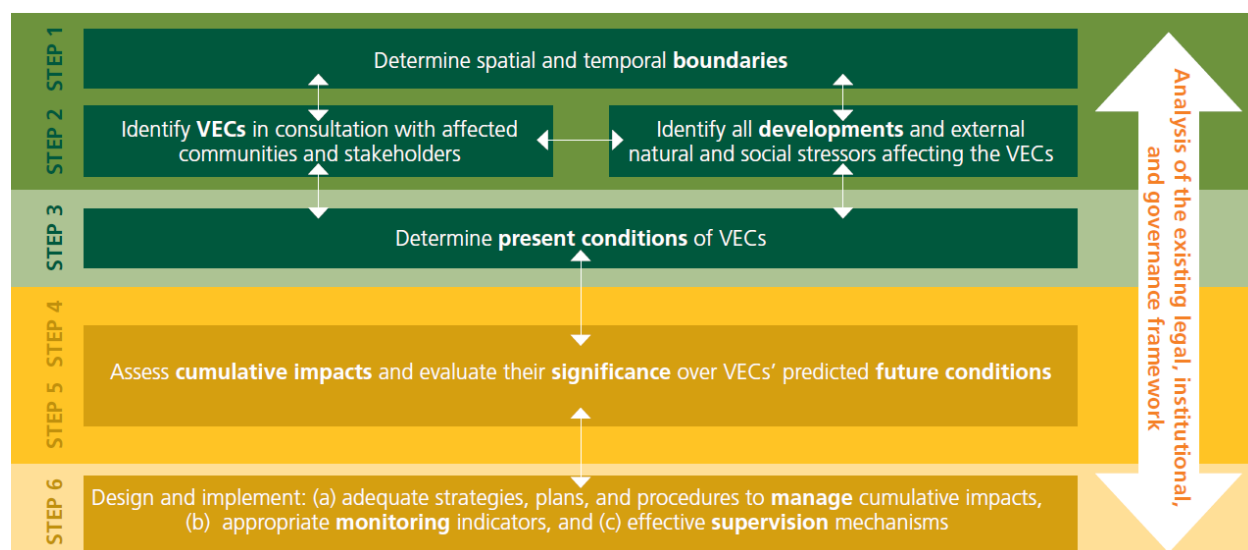
- **Simplicity:** procedures in filing complaints are understandable to users and easy to recall.
- **Accessibility:** filing complaints is easy through means that are commonly used by stakeholders, especially by the project-affected people.
- **Transparency:** information about the system is made widely available to all stakeholders and the general public.
- **Timeliness:** grievances are attended to and resolved in a timely manner.
- **Fairness:** feedback or complaints are validated thoroughly and subjects of complaints are given due process and opportunities for appeal.

- Confidentiality: the identity of complainants remains confidential.

82. To achieve these principles, the GRM will be set up with the following features:

- Multiple Uptake Points: To build trust and confidence in the GRM, complainants will be provided with multiple channels to submit their complaints. These include, among others, postal mail, electronic messages, telephone, SMS, personal delivery/walk-in, or through the mainstream and social media. A project GRM hotline will be established to be managed by the GRM Focal Person at the PMO.
- Timely resolution at the lowest possible level: The project will strive to attend to complaints in a timely manner. To do this, it will designate a GRM contact person at the subproject (pumping station) level. In addressing and resolving complaints, the project will build on existing mechanisms in the community (community leaders, barangay officials, barangay justice system, etc.). It is only when the complaint is not resolved at this level that the complaint goes to the next level of the GRM for resolution.
- System for receiving, sorting, verifying, and tracking. A simple system will be developed for more effective management of complaints to guide the PMO, particularly the Public Complaints Unit, on the steps and arrangements from receiving, sorting, verifying, acting and tracking complaints. These will be detailed out in the operational manual. Complaints will be categorized and actions on the complaints will depend on the complaint category. The project will maintain a database documenting the salient details of complaints, including the dates they were received and when and what actions were taken. These documents will be available to the external monitoring team and the World Bank. The project will monitor complaints and coordinate with the concerned LGUs and relevant government agencies as needed to resolve them adequately and expeditiously. MMDA, DPWH and SHFC will keep the World Bank Task Team informed about significant complaints and the steps taken to resolve them through routine supervision and provide details in progress reports provided to the World Bank. To ensure inclusion and participation of the affected sectors, MMDA, DPWH and SHFC will set up a multi-sectoral advisory body with representatives from the project affected people and CSOs working with the PAPs.
- Publicly disclosed and easily accessible. The complaints / grievance redress arrangements will be publically disclosed so that people are aware of where and how complaints will be managed. The GRM contact person assigned to the subproject will further ensure that people in the subproject's area of influence are aware of grievance management arrangements. Ideally complaints should be written, but if received verbally, the subproject contact person will ensure written documentation is made and that the complaint is dated and recorded.

83. It is also of note that, “Communities and individuals who believe that they are adversely affected by a World Bank (WB) supported project may submit complaints to existing project-level grievance redress mechanisms or the WB’s Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns.
84. Project-affected communities and individuals may submit their complaint to the WB’s independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after these concerns have been brought directly to the World Bank’s attention, and Bank Management has been given an opportunity to respond.
85. For information on how to submit complaints to the World Bank’s corporate Grievance Redress Service (GRS): www.worldbank.org/grs ; for information on how to submit complaints to the World Bank Inspection Panel: www.inspectionpanel.org.
86. ***Gender Development***
87. MMFMP is gender neutral: both women and men are involved in its development and as beneficiaries as far as integrated flood and solid waste management are concerned. To determine actual representation of women in the project’s activities, gender disaggregated attendance sheets shall be used. Minutes of meetings/activities will also be reviewed (randomly) to see if gender issues are discussed and resolved.
88. Baseline surveys needed to design and implement resettlement and income restoration plans for ISFs affected by the project will pay special attention to demographic characteristics and economic survival strategies of informal settlers, including women and children. Income restoration interventions to redress loss of income streams or to improve incomes of ISFs will include specific actions for women and children. Educational and skills enhancement training provided as an entitlement to two members of informal settler families will ensure at least one female family member is given access.
89. Gender-related activities will be addressed under components 2 and 3. Under component 2, among informal waste pickers, many are women (and their children) because they lack alternative livelihood options and may face specific hardships (e.g. as single parents and female heads of household). On the other hand, other jobs in the solid waste sector are typically the domain of men (e.g. more formal jobs as waste collectors, whether through handcarts or municipal garbage trucks). Programs to train and support resettled women with alternative livelihood activities will also be included under component 3. The project will take these gender dimensions fully into consideration when designing specific actions.
90. Cumulative Impact Assessment (CIA). A terms of reference of rapid CIA will be completed as part of Phase 1 and implemented in the 1st second phase of MMFMP. There is a total of 50+ pumping stations in Metro Manila. The CIA will follow the six step process as outlined in the Good Practice Handbook on Cumulative Impact Assessment and Management of the IFC.



91. A terms of reference for the conduct of this CIA is included (Annex D) An initial screening of Valuable Environmental Components (VECs) and an initial inventory of projects planned in Manila for 2010-2021 are presented in Tables 5 and 6. Consultants to be hired under the TOR for the CIA will do a proper analysis of the VECs.

Table 5: Preliminary VECs

Valuable Environmental Components (Potential VECs)		Indicator
1	Community Health	Incidence of Diarrhea in Children
2	Water Quality	Improvement in Dissolved Oxygen Levels
3	Community Safety	Incidence of Floods
4	Standard of Living	May be difficult to measure
5	Aesthetic value of waterways	Metric to be determined

Table 6: Preliminary List of Planned Projects 2010-2021

	Projects
1	Metro Manila Flood Management Phase 1
2	Oplan Likas
3	Manila Wastewater Management Project (MWMP)
4	GoP dredging program (DPWH)
5	Laguna Lakeshore Dike/Expressway
6	ADB Solid Waste Management Project
7	Manila Bay Clean up Initiative (Mandamus Agencies)
8	Wastewater Treatment Facilities (MWSI and MWCI)

92. Institutions that may need to participate in the CIA are the following; MMDA, DPWH, LLDA, LGUs, Water Concessionaires (MWCI and MWSI), DILG and CSOs. The CIA would take about 5 months to complete and will cost approximately USD 200,000. The TOR for the conduct of the CIA, in Annex D, provides a more detailed description of the scope of work required.

ANNEXES

DRAFT

ANNEX A: Screening Matrix

Environmental and Social Safeguards Screening Matrix

Metro Manila Flood Management Project Phase 1

Name of Subproject: _____

Location: _____

This matrix is to be used together with the Environmental Code of Practice (ECOP). The ECOP is intended to cover all the typical and repeating impacts and mitigation measures in the rehabilitation of pumping stations. This screening matrix identifies other impacts not covered by the ECOPs, but may potentially occur in some pumping stations / sites.

When considering the activities and location of a pumping station, fill up the following matrix based on the on site conditions and activities in the proposed pumping station site. Having multiple issues in one site does not necessarily mean that the site is unsuitable (specifically for new pumping stations). They do indicate a real risk of causing undesirable adverse environmental and social effects, and that more substantial environmental and/or social safeguards instruments may be required to adequately avoid, mitigate or manage potential effects.

		If Yes	Comments
1	Will dredging of waterways be done.	Prepare a dredging management plan which includes sampling of dredge material for presence of toxic and hazardous content. Disposal options for the dredge material will depend on the analysis of the sludge. Need to indicate exact site for disposal of dredged material.	Refer to Schedule 3 of RA 6969 for threshold levels of toxic and hazardous content of sludge/dredge material. Based on TCLP test.
2	Will there be expansion of the pumping station structure or installation of new	Consult with WB safeguards staff if an	ECOPS and ESMP will apply. Depending on

	additional structures?	EIA is needed.	the magnitude of the works, an EIA may be required.
2	Will substantial solid waste be generated from the pumping station operations	Ensure that the transport and disposal of the solid waste is compliant with RA 9003.	Includes aquatic weeds (e.g. water hyacinth)
3	Will the pumping station dispose of solid waste in a site other than the following: Navotas Sanitary landfill Montalban Solid Waste Disposal Facility	Conduct a due diligence audit of the disposal site and ensure the following. Only disposal sites with proper design and leachate treatment will be considered.	
4	Will there be dismantling of equipment containing PCBs (e.g. transformers)	Prepare a PCB management plan.	Contact DENR-EMB (Mr. Edwin Navaluna)
5	Will the project affect any Physical Cultural Resources or sites of historical and cultural significance within the impact area?	Prepare a PCR management Plan	
6	Will there be lands to be acquired for this rehabilitation work, temporarily or permanently?	Refer to the RPF	
7	Will there be properties and other assets that will be affected or damaged?	Refer to the RPF	
7	Will there be people that need to resettle to give way to the rehabilitation?	Refer to the RPF. Prepare a RAP.	
8	Will there be economic displacement due to the rehabilitation work?	Refer to the ESMF/RPF	
9	Has there been resettlement of PAPs carried out under a GoP program (e.g. Oplan Likas) in the vicinity of the Pumping station?	Refer to the RPF	

In general these are the criteria for categorization of the project activities:

Category A The activity is likely to have significant adverse environmental and social impacts that are sensitive, diverse, or unprecedented.

- Scope of impacts is large in terms of area; and
- Impacts are difficult to mitigate e.g. (when substantial dredging is required)

Instrument: Full ESIA, ESMP/ECOP

Category B The activity has potential adverse environmental impacts on human populations or environmentally important areas – which are less adverse than those of Category A projects. These impacts are site-specific. Few if any of them are irreversible and in most cases, mitigation measures can be designed more readily than for Category A projects.

- Impacts are manageable to mitigate
- Impacts are generally reversible

Instrument: ESIA or ESMP/ECOP

Category C The activity is likely to have minimal or no adverse environmental impacts. Beyond screening, no further EA action is required for a Category C project.

The proper categorization is left to the judgment of the PMO considering the guidelines above. The final objective of the categorization is to ensure that all social and environmental impacts are avoided, minimized or properly mitigated.

The results of this screening will have to be cleared by the MMDA and the WB Task Team.

The final objective of the screening matrix is to ensure that all social and environmental impacts are avoided, minimized or properly mitigated.

The results of this screening will have to be cleared by the MMDA and the WB Task Team.

ANNEX B: Total Number of Pump Stations

MMDA					
Municipality	Major Pump Station	Minor Pump Station	New Pump Station	Relief Pump Station	Grand Total
Caloocan			1	1	2
Makati	1	2	2		5
Malabon			5	14	19
Mandaluyong			2		2
Manila	14	8	8		30
Muntinlupa			3		3
Pasay	2		2		4
Pasig		1	3		4
Pateros			1		1
Quezon City		2			2
San Juan	2	1	3		6
Taguig	3		1		4
Taytay	1				1
Valenzuela			5		5
Total	23	14	36	15	88

DPWH					
Municipality	Major Pump Station	Minor Pump Station	New Pump Station	Relief Pump Station	Grand Total
Malabon			3	24	27
Manila			1		1
Paranaque			3		3
Quezon City			16		16
San Juan			4		4
Taguig	0				0
Total	0	0	27	24	51

ANNEX C: Cleaning and Dredging works to be carried out in the first five Pumping Stations

TRIPA DE GALLINA PUMPING STATION

TYPE OF DRAINAGE SYSTEM CONNECTED TO THE PUMPING STATION		
	LENGTH	VOLUME TO BE DECLOGGED
A. DRAINAGE LATERALS	191,483.70	38,238.03
B. DRAINAGE MAINS	11,492.00	196,552.50
C. OPEN WATERWAYS	14,837.00	237,358.50

VITAS PUMPING STATION

TYPE OF DRAINAGE SYSTEM CONNECTED TO THE PUMPING STATION		
	LENGTH	VOLUME TO BE DECLOGGED
A. DRAINAGE LATERALS	98,000.00	138,741.64
B. DRAINAGE MAINS	3,257.80	6,985.31
C. OPEN WATERWAYS	10,786.40	237,440.46

PACO PUMPING STATION

TYPE OF DRAINAGE SYSTEM CONNECTED TO THE PUMPING STATION		
	LENGTH	VOLUME TO BE DECLOGGED
A. DRAINAGE LATERALS	98,000.00	21,538.50
B. DRAINAGE MAINS		
C. OPEN WATERWAYS	3,250.00	71,451.00

BALUT PUMPING STATION

TYPE OF DRAINAGE SYSTEM CONNECTED TO THE PUMPING STATION

	LENGTH	VOLUME TO BE DECLOGGED
A. DRAINAGE LATERALS	8,632.60	1,578.50
B. DRAINAGE MAINS	2,005.00	7,825.97
C. OPEN WATERWAYS	3,025.00	43,627.50

***TIPAS-LABASAN PUMPING
STATION***

TYPE OF DRAINAGE SYSTEM CONNECTED TO THE PUMPING STATION

	LENGTH	VOLUME TO BE DECLOGGED
A. DRAINAGE LATERALS	-	-
B. DRAINAGE MAINS	-	-
C. OPEN WATERWAYS	-	-

ANNEX D: Inventory of Pumping stations in the Metro Manila area

Name	Type	Municipality	Location	Drainage Area (ha)	Total Pump Capacity (cms)
Labasan	Major Pump Station	Taguig			9
Taguig	Major Pump Station	Taguig			6
Hagonoy	Major Pump Station	Taguig			6
Roxas	New Pump Station	Quezon City			11
Tatalon	New Pump Station	Quezon City			7.5
Kalusugan	New Pump Station	Quezon City			4.9
Sobrepena	New Pump Station	Quezon City			1.8
Dona Imelda	New Pump Station	Quezon City			2.7
Progreso	New Pump Station	Quezon City			6.3
Damayang Lagi	New Pump Station	Quezon City			193.3
Talayan	New Pump Station	Quezon City			48.6
Mariblo	New Pump Station	Quezon City			40.6
Sta. Cruz	New Pump Station	Quezon City			47
Matalahib	New Pump Station	Quezon City			303.8
Masambong	New Pump Station	Quezon City			60.7
Del Monte	New Pump Station	Quezon City			92.6
Kaingin Bukid	New Pump Station	Quezon City			467.67
Balong Bato	New Pump Station	Quezon City			31.8
Rivera	New Pump Station	Quezon City			7.4
1A PRRP	New Pump Station	San Juan			
2B PRRP	New Pump Station	San Juan			
1C PRRP	New Pump Station	San Juan			
1D PRR	New Pump Station	San Juan			
Estero de Sunog Apog	New Pump Station	Manila			
Redemptorist	New Pump Station	Paranaque			
Seaside	New Pump Station	Paranaque			
Paranaque River	New Pump Station	Paranaque			
Acacia	Relief Pump Station	Malabon	Tinajeros		
Adante	Relief Pump Station	Malabon	Tanong		
Artex	Relief Pump Station	Malabon	Panghulo		
Asinan	Relief Pump Station	Malabon	San Agustin		
Asogue	Relief Pump Station	Malabon	Tugatog		
Balot	Relief Pump Station	Malabon	Hulong Duhat		

Bernadette	Relief Pump Station	Malabon	Hulong Duhat		
Bonifacio-Naval	Relief Pump Station	Malabon	Flores		
Borja	Relief Pump Station	Malabon	Baritan		
Concepcion	Relief Pump Station	Malabon	Rosario Village		
Diserto	Relief Pump Station	Malabon	Tanong		
Dulong Adante	Relief Pump Station	Malabon	Tanong		
Dulong Borromeo	Relief Pump Station	Malabon	Longos		
Dulong Hernandez	Relief Pump Station	Malabon	Catmon		
Estrella	Relief Pump Station	Malabon	Tanong		
Gabriel	Relief Pump Station	Malabon	Hulong Duhat		
Gabriel II	Relief Pump Station	Malabon	Hulong Duhat		
Gervacio	Relief Pump Station	Malabon	Hulong Duhat		
Herrera	Relief Pump Station	Malabon	Ibaba		
Longos	Relief Pump Station	Malabon	Longos		
Magsaysay	Relief Pump Station	Malabon	San Agustin		
Matadero	New Pump Station	Malabon	San Agustin		
Maysilo	Relief Pump Station	Malabon	Maysilo		
Merville-Dampalit	Relief Pump Station	Malabon	Merlville Subd.		
Milagrosa	Relief Pump Station	Malabon	Hulong Duhat		
Muzon	Relief Pump Station	Malabon	Muzon		
Muzon-Dampalit	New Pump Station	Malabon	Muzon		
Niugan Pilapil	Relief Pump Station	Malabon	Niugan		
Niugan Spillway	Relief Pump Station	Malabon	Niugan Spillway		
Remigio	Relief Pump Station	Malabon	Maysilo		
Rivera	Relief Pump Station	Malabon	Tanong		
Roque	Relief Pump Station	Malabon	Tonsuya		
Sacristia	Relief Pump Station	Malabon	San Agustin		
Sanciango	Relief Pump Station	Malabon	Tinajeros		
Santolan 1, 2, & 3	Relief Pump Station	Malabon	Maysilo-Tullahan River		
Sto. Rosario 1&2	New Pump Station	Malabon	Baritan		
Suarez	Relief Pump Station	Malabon	San Agustin		
Talabahan	Relief Pump Station	Malabon	Hulong Duhat		
Tinajeros	Relief Pump Station	Malabon	Tinajeros		

Name	Type	Municipality	Location	Drainage Area (ha)	Total Pump Capacity (cms)
Abucay P.S.	Major Pump Station	Manila		312.00	6.00
Aviles P.S.	Major	Manila			

	Pump Station			356.00	16.45
Balete P.S.	Major Pump Station	Manila		52.00	2.58
Balong-Bato P.S.	Major Pump Station	San Juan		18.72	2.00
Balut P.S.	Major Pump Station	Manila		49.00	2.00
Binondo P.S.	Major Pump Station	Manila		279.00	11.60
Escolta P.S.	Major Pump Station	Manila			1.50
Hagonoy P.S.	Major Pump Station	Taguig		528.00	6.00
Labasan P.S.	Major Pump Station	Taguig		601.00	9.00
Libertad P.S.	Major Pump Station	Pasay		779.00	48.00
Makati P.S.	Major Pump Station	Makati		151.00	7.00
Paco P.S.	Major Pump Station	Manila		182.00	7.59
Pandacan P.S.	Major Pump Station	Manila		180.00	4.40
Quiapo P.S.	Major Pump Station	Manila		225.00	10.85
Salapan P.S.	Major Pump Station	San Juan		18.00	2.00
San Andres P.S.	Major Pump Station	Manila		356.00	19.00
Sta. Clara P.S.	Major Pump	Manila		133.00	5.30

	Station				
Taguig P.S.	Major Pump Station	Taguig		1,423.00	12.00
Tapayan P.S.	Major Pump Station	Taytay		526.00	15.00
Tripa de Galina P.S.	Major Pump Station	Pasay		1,769.00	58.00
Uli-Uli P.S.	Major Pump Station	Manila			6.00
Valencia P.S.	Major Pump Station	Manila		246.00	11.85
Vitas P.S.	Major Pump Station	Manila		578.00	32.00
Ayala Tunnel P.S.	Minor Pump Station	Makati		0.50	3.00
Ayala Tunnel P.S.	Minor Pump Station	Makati		0.50	3.00
San Agustin P.S.	Minor Pump Station	Manila		3.00	1.10
Central Post Office P.S.	Minor Pump Station	Manila		3.50	0.07
Jones Bridge Underpass P.S. (North side)	Minor Pump Station	Manila		1.00	0.07
Arroceros P.S.	Minor Pump Station	Manila		6.00	2.06
Jones Bridge Underpass P.S. (South side)	Minor Pump Station	Manila		1.00	0.10
Luneta Park P.S.	Minor Pump Station	Manila		15.00	0.37
Santibañez P.S.	Minor Pump Station	Manila		10.00	0.35

Libis P.S.	Minor Pump Station	Manila		2.00	0.08
Ilugin P.S.	Minor Pump Station	Pasig		7.50	1.00
Aurora P.S.	Minor Pump Station	Quezon City		1.00	0.59
Tuazon P.S.	Minor Pump Station	Quezon City		1.00	0.59
Rivera P.S.	Minor Pump Station	San Juan		2.80	0.60
Lopez R.P.S.	Relief Pump Station	Caloocan		-	0.11
Acacia R.P.S.	Relief Pump Station	Malabon		-	1.30
Balot R.P.S.	Relief Pump Station	Malabon		-	0.11
Concepcion R.P.S.	Relief Pump Station	Malabon		-	0.60
Herrera R.P.S.	Relief Pump Station	Malabon		-	0.11
Hulong Duhat R.P.S.	Relief Pump Station	Malabon		-	0.11
Magsaysay R.P.S.	Relief Pump Station	Malabon		-	0.11
Muzon R.P.S.	Relief Pump Station	Malabon		-	0.11
N. Vicencio R.P.S.	Relief Pump Station	Malabon		-	0.27
Niugan R.P.S.	Relief Pump Station	Malabon		-	0.11
Rivera R.P.S.	Relief Pump Station	Malabon		-	0.11
Roque R.P.S.	Relief Pump Station	Malabon		-	0.33
Sanciango R.P.S.	Relief Pump Station	Malabon		-	0.27
Santolan R.P.S.	Relief Pump Station	Malabon		-	0.66
Tanza R.P.S.	Relief Pump Station	Malabon		-	0.11
Buhangin Creek	New Pump	Mandaluyong			

	Station			125.00	5.72
Buli creek P.S.	New Pump Station	Pasig		147.00	6.38
Carmona P.S.	New Pump Station	Makati		94.70	4.75
Casili Creek	New Pump Station	Caloocan		90.00	4.59
Cutcut Creek	New Pump Station	Pasay		160.00	12.00
Elysian P.S. (San Miguel)	New Pump Station	Valenzuela		10.00	1.05
Estero de San Antonio de Abad	New Pump Station	Manila		145.00	4.00
Gen. Tino	New Pump Station	Makati		149.00	6.44
Guadalcanal	New Pump Station	Manila		27.00	2.04
Hermosa St. (outfall of Blumentritt interceptor)	New Pump Station	Manila		222.00	8.42
Ilugin River	New Pump Station	Pasig		350.00	11.43
Isla P.S.	New Pump Station	Valenzuela		216.00	8.27
Longos creek P.S.	New Pump Station	Malabon		35.00	2.43
Lower Bicutan P.S.	New Pump Station	Taguig		739.00	18.89
Luneta South	New Pump Station	Manila		30.00	2.19
Magdaong River	New Pump Station	Muntinlupa		800.00	50.00
Marulas P.S.	New Pump Station	Valenzuela		84.70	4.41
Maybunga P.S.	New Pump Station	Pasig		129.00	5.85
Maytunas Creek	New Pump Station	Mandaluyong		294.00	16.00
McArthur Highway	New Pump Station	Valenzuela		18.19	1.57
Merville-Dampalit P.S.	New Pump Station	Malabon		30.00	2.19
Muzon-Kaunlaran P.S.	New Pump Station	Malabon		65.50	3.71
Panghulo-Artex	New Pump Station	Malabon		36.00	2.48
Pasong Diablo River	New Pump	Muntinlupa			

	Station			1,865.00	30.00
Pateros River	New Pump Station	Pateros		198.00	7.80
Pedro Gil	New Pump Station	Manila		96.00	3.00
Progreso P.S.	New Pump Station	San Juan		49.20	3.06
Remedios	New Pump Station	Manila		56.50	3.36
Romualdez	New Pump Station	Manila		40.00	2.50
Salapan (second P.S.)	New Pump Station	San Juan		20.60	1.70
Santolan-Tullahan P.S.	New Pump Station	Valenzuela		326.00	10.90
Sto. Nino Creek	New Pump Station	Pasay		16.27	5.00
Tunasan River	New Pump Station	Muntinlupa		931.00	22.07
Valenzuela	New Pump Station	San Juan		67.00	3.76
Vito Cruz	New Pump Station	Manila		41.80	2.74
Wawang Polo	New Pump Station	Malabon		616.00	16.72

ANNEX E: CIA Terms of Reference for a Rapid Cumulative Impact Assessment of the Metro Manila Flood Management Project

A. Background

1. The Metro Manila Area is located in a low-lying delta, with Manila Bay to the west, Laguna de Bay to the south-east and a system of mountain ranges to the north and north-east that drain flash floods into the Pasig-Marikina River System during typhoon events. Many areas in the Greater Metro Manila Area are low-lying and designated as flood prone, with insufficient protection against frequent inundation as natural drainage is restricted.
2. The Flood Control and Sewerage Management Office of the Metropolitan Manila Development Authority (MMDA) has as its mandate the formulation and implementation of policies, standards, programs, and projects for integrated metro-wide flood control, drainage, and sewerage services in Metro Manila. Presently, MMDA operates 57 pumping stations, scattered throughout Metro Manila, including 23 major stations to discharge drainage water from populated areas into waterways and rivers servicing around 8,000 hectares (about 12.5 percent of the total area of Metro Manila) and a population of over 2.2 million people. In addition, MMDA manages 17 pumping stations which service major traffic underpasses and other public infrastructure and 17 relief pumping stations in flood prone areas such as Navotas and Malabon. Each large pumping station has a qualified mechanical engineer and electrical engineer and an average of 15 staff, including operators and utility staff. An institutional structure is in place with generally capable operational staff. MMDA's capacity to design modernization of and new pumping stations however is weak. MMDA receives the needed funds from central government for the operation and maintenance (O&M) of pumping stations. Many of the pumping stations and appurtenant infrastructure were constructed several decades ago and contain old and inefficient pumps that have lacked adequate maintenance.
3. The Department of Public Works and Highways (DPWH) is mandated to undertake the planning of infrastructure, such as national roads and bridges, flood control, water resources projects, and other public works, and the design, construction, and maintenance of national roads and bridges, and major flood control systems. Historically, DPWH has been responsible for the design and construction of large pumping stations in Metro Manila. On July 9, 2002, a Memorandum of Agreement (MoA) was entered into by DPWH and MMDA to turn over to MMDA all functions and responsibilities for flood control in Metro Manila, including all relevant programs, projects and activities as well as personnel, funds, equipment, facilities, records, assets and liabilities. However, due to the limited design capacity in MMDA, DPWH continues to design and construct pumping stations within Metro Manila. In addition, some Local Government Units (LGU) also construct some small pumping stations.
4. The government, with the technical and financial support of the World Bank, has prepared a Flood Management Master Plan for Metro Manila and Surrounding Areas. The plan, approved by the National Economic and Development Authority (NEDA) Board on September 4, 2012, proposes a set of priority structural and non-structural measures to provide sustainable flood management up to a certain safety level. The total estimated cost for the implementation of the Master Plan is about PhP 352 billion (about US\$8 billion) over a 20-25 year period.
5. The main elements of the Master Plan are:
 - (a) Structural measures to reduce flooding from river systems that run through the city;
 - (b) Structural measures to eliminate long-term flooding in the flood plain of Laguna de Bay;
 - (c) Structural measures to improve urban drainage;

- (d) Non-structural measures such as flood forecasting and early warning systems and community-based flood risk management; and
 - (e) Improved institutional structure to deal with flood management in an integrated manner.
6. In order to improve the overall flood management conditions in the Greater Metro Manila Area, all interventions under elements (a) to (e) have to be implemented. Each element has unique solutions that are not linked and would be implemented independently from each other. Implementation of the master plan has started with 'easy' interventions, such as dredging, river bank protection, and improvements to a small number of pumping stations that will have localized impact. It is important to scale up such activities, which will be done under this proposed project. In parallel feasibility studies and designs of major priority interventions under elements (a) and (b), such as a high flood management dam, river embankments, and water transfer tunnels, have to be prepared that are essential for city wide improvement. Government was provided with US\$10 million TA grant assistance to prepare these necessary studies and designs for major structural interventions. This TA assistance is likely to result in a phase 2 of the implementation of the master plan.
 7. Several agencies are involved in flood management activities, including DPWH, MMDA, LGUs, and PAGASA (weather agency), but there is lack of overall inter-agency coordination and management. The aim of the institutional studies to be financed with trust funds is to determine the best organization that can provide overall leadership, management, and responsibility for flood management, and to bring flood management within the government's proposed integrated water resources management agenda as an integral part of river basin planning.
 8. Under the Metro Manila Flood Management Phase 1, five pumping stations within the Metro Manila area have been identified for implementation in Year 1. A consolidated Environmental and Social Impact Assessment (ESIA) has been prepared for the first five sites. In addition an Environmental and Social Management Framework was prepared to guide the PMO in the implementing safeguards in the succeeding works in the pumping stations after year 1. A Resettlement Policy Framework is also included as a companion document to the ESMF.
 9. As part of the ESMF, a Cumulative Impact Assessment has been programmed to assess cumulative impacts stemming from the project (MMFMP1) in particular and in the Metro Manila area in general. An initial screening has been done to identify potential VECs and an initial inventory of projects in Metro Manila.

B. Objectives

10. Given that the Metro Manila area is going to be the site of numerous interventions in flood management, 50+ pumping stations to be rehabilitated, a potential dam, a potential lakeshore dike, potential new wastewater treatment facilities, there is a need to look at the project contribution environmental and social cumulative impacts. The Metro Manila area is growing with more people moving in to work and to live. Problems of flood management, solid waste disposal, traffic management are becoming untenable. Urban renewal and upgrade of areas in the metropolis is becoming critical. The CIA will help the government to take a more strategic look at these developments and adopt a holistic planning approach. According to Philippines EIA regulations, most of these developments will require an EIA.
11. The CIA will need to be fully understood to be able to lead towards a comprehensive management plan guiding ongoing and future developments in the region.

12. Within this framework, the proposed cumulative impact assessment will:

- (a) Evaluate the contribution of MMFMP (including its associated facilities) towards cumulative impacts on Valuable Environmental Components (VEC);
- (b) Assess the status and condition of each Valued Environmental Component (VEC);
- (c) Assess cumulative impacts of the MMFMP in conjunction with other projects (past, present or future) on the Valued Ecological Components;
- (d) Identify appropriate actions for the MMFMP to address its contribution to cumulative impacts. Identify additional management actions for each VEC.

13. The final conclusions of the CIA should define the following: (i) to what extent the MMFMP will contribute to cumulative impacts; (ii) the mitigation measures that should be implemented by the project; and (iii) the management/mitigation measures that are needed but beyond the scope of the project, including the need for consequent additional assessments that the Government will require to ensure sustainable development of the area and to develop core principles for environmental and social management and provide guidance to respective investors and project developers.

14. Guidance and supporting documentation on the preparation of a rapid cumulative impact assessment is provided by the International Finance Corporation at:

http://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/ifc+sustainability/learning+and+adapting/knowledge+products/publications/publications_handbook_cumulativeimpactsassessment

C. Scope of Work

15. The firm is required by the Government of the Philippines, represented by Metro Manila Development Authority and the Department of Public works and Highways, to assist it to prepare a cumulative impact assessment based on six steps as follows:

- **Step 1:** Identify and propose geographic and temporal boundaries for the CIA based on the screening of potential impacts on key valued ecological components. The geographic context should include administrative boundaries (municipal or city boundaries). Valued ecological components should be selected for the cumulative impact assessment.
- **Step 2:** Identify other projects and activities that could result in cumulative impacts on key VECs within established geographic and temporal boundaries.
- **Step 3:** Assess the status and condition of each VEC.
- **Step 4:** Assess the level of cumulative effects on each VEC.
- **Step 5:** Determine the significance of cumulative effects on each VEC.
- **Step 6:** Provide recommendations as to how cumulative impacts on each VEC can be managed.

D. Main Tasks.

Step 1: Define the scope of the CIA

16. The first step in the CIA is to describe the MMFMP project and its phases that may give rise to cumulative effects. This will include the following:

- Phases and timing of the project;
- Description of the scheme and project area of influence;
- Description of offsite facilities e.g. disposal sites for dredged material;

- Identify environmentally sensitive areas, including protected areas, key stakeholders and affected people.
- Define geographic and temporal boundaries for the CIA based on screening of potential impacts on key environmental components. The geographic context could include administrative boundaries (city or municipal). It is noted that there might be different contexts for each VEC (see below). The definition will also need to include the scale of maps and other tools to present data that will be collected during the study.

17. **Define VECs.** Valued environmental and social components, or VECs, are environmental and social attributes that are subject to cumulative effects. VECs may be: • physical features, habitats, wildlife populations (e.g., biodiversity), • ecosystem services, • natural processes (e.g., water and nutrient cycles, microclimate), • social conditions (e.g., health, economics), or • cultural aspects (e.g., traditional spiritual ceremonies) (IFC, 2013).

18. The ESMF and consolidated ESIA done under Phase 1 of MMFMP has identified the following key issues of impacts associated with the construction, operation, and decommissioning of the Project:

- Impacts on Informal Settlers related to resettlement away from the waterways;
- Impacts due to dredging activity and disposal of dredged materials;
- Impacts due to generation of solid waste from the pumping stations;
- Impacts due to odors;
- Impacts on the livelihood of local communities;
- Visual and aesthetic impacts.

19. The VECs should be defined based on the assessment of impacts on the above impacts and through consultations with stakeholders.

Step 2: Identify other projects and activities within geographic and temporal boundaries of the CIA

20. Past, present and probable future projects and activities should be identified within the defined temporal and spatial framework. It is noted that these projects need not to be limited to flood management related activities or urban renewal activities – they could include wastewater treatment facilities, government dredging programs, housing and resettlement programs, solid waste management and similar. The evaluation of other projects and activities should consider the following:

- Include those projects of known footprint that can be assessed;
- Consider a time frame that extends backwards to a pre-development scenario and forwards as realistically as possible;
- Include projects that are approved, awaiting approval, announced or under design;
- Include projects that impact on selected valued environmental components;
- Include those projects whose environmental and social impacts and contribution to cumulative effects can be reasonably predicted, particularly projects with direct impacts on water resources, community health and safety;
- Discuss pending projects with regulators and incorporate the concerns of affected stakeholders; and
- Prepare a map or schematic of all existing and planned projects the basic information on location, cost, size, project components etc.

Step 3: Assess the status and condition of each valued environmental component (VEC)

21. The existing condition and status of each valued environmental component should be assessed, including trends in its condition over time. The determination of the trend in the status of the VEC may be indicative of the level of concern for cumulative impacts. A negative decline in status of a given VEC may indicate that a threshold may be approached whereby the contribution of each individual project to cumulative impacts could be considered significant (IFC, 2013).
22. The collection and analysis of the status of each VEC and its trend in condition can be difficult. Multiple data sources should be used. The object is to develop a picture of the change in condition of VEC over time in order to assess its sensitivity to cumulative impacts.

Step 4: Assess the Level of Cumulative Impacts on each VEC

23. The next step in the CIA process is to assess the level of cumulative impacts on each VEC. This can use similar methodology to that is employed in EIA, but the difference is that the CIA is focused on assessing the cumulative impact on each valued environmental component from the MMFMP and other projects within a defined spatial and temporal framework. For each VEC, the cumulative effects should consider typical components of an EIA assessment – extent, frequency, duration, magnitude, uncertainty and probability etc. Techniques will need to rely on qualitative data and already available quantitative data; no significant field work for quantitative data collection is envisaged.

Step 5: Determine the significance of cumulative impacts.

24. Once cumulative impacts are determined, their significance must be considered relative to an established threshold limit, an established legal guideline or policy, or a qualitative assessment based on professional opinion and consultation. The local Philippine thresholds/standards on air, water, toxic and hazardous compounds, noise, may be used, if applicable. In any case, the significance of the cumulative impacts must be defensible. The significance of the cumulative impacts and the contribution of the project must be subsequently evaluated by project decision makers. The consultant will need to define the level of “significance” or scale (aligning with legal requirements in the Philippines if applicable) and apply it consistently. The significance should be assessed across past, present and future projects on the trends of each VEC. The significance of the project interventions’ contribution to the cumulative impacts should be defined in one of the following ways:
 - The project has a measurable effect on the VEC;
 - The project acts in conjunction with the effects of past present or future projects and activities; and;
 - The project in conjunction with other projects and activities shifts the resource to an unacceptable level or exceeds a threshold such that the impact is considered significant, in that:
 - The project’s contribution to cumulative effects is responsible for exceeding the threshold and therefore is significant or,
 - The project is contributing with the effects of other projects and activities and the project contribution may or may not be significant, depending on the level of the contribution.

Step 5: Formulate management recommendations for cumulative impacts on each VEC

25. The CIA should reach a conclusion on whether the contribution, if any, to the cumulative impacts on each VEC by the MMFMP is significant or not. An action plan (with time, institutional responsibilities, budget) should be developed based on this conclusion, and clearly define what mitigation measures need to be incorporated into the project Environmental and Social Management Plan, and what mitigation/environmental management measures should be carried out above the project level and carried into the design of phase 2 of MMFMP. The management plan will be in three parts: (i) management plan for additional measures needed to be included in phase 2 of MMFMP; (ii) recommended measures for the future projects in the area; and (iii) measures addressing needs for institutional and legal frameworks and acquisition of knowledge to address data gaps. The recommendations will need to also include proposed adaptive management approaches for impacts that still will have high level of uncertainty or lack sufficient information for an adequate assessment (e.g construction of a hydro dam in the Marikina watershed).
26. Mitigation/environmental management measures that are needed but beyond the scope of the project, will be presented to relevant (government) agencies/entities in the form of a workshop, and finalized based on the views by the agencies. Their endorsement/acknowledgement on the recommendations from the CIA should be sought.

Presentation and Consultation.

27. The consultant will organize and carry out workshops in the Metro Manila area (the specific sites and participants will be agreed upon with MMDA/DPWH) to present the findings of the CIA. To ensure meaningful consultations throughout the course of the CIA, key stakeholders, particularly for defining the Valuable Environmental Components and final results should be clearly documented. The records of public consultations undertaken will form part of the final deliveries by the firm.
28. The expected result of the workshops will be the following: (i) stakeholders will validate environmental, social (including resettlement), health, safety and security priority concerns at the local level; (ii) workshops should also be a way of informing and engaging stakeholders in the immediate vicinity of the project and impacted area subject to this cumulative assessment; (iii) vulnerable stakeholders (informal settlers, women, children, youth and others) should fully participate in the process, not only leaders, groups and NGOs that claim to represent their interests.

E. Outputs

29. Reports under this assignment will be phased along the main 6 steps of the CIA. Each of the reports will be presented for discussion with the client and for comments (including from the World Bank safeguards team) to be able to make updates and changes to each report.
 - Inception report within 2 weeks after contract signing providing details on phases, intermediate outputs and confirming timing.
 - Draft Segment 1 (data) – Metro Manila data and scoping report, including VECs and proposed geographic and temporal boundaries for CIA (within 1.5 month from signing).
 - Draft Segment 2 (scoping of impacts) – Key MMFMP-related contributions to cumulative effects on selected VECs, such as community health, community safety, quality of life, and water quality (within 2.5 months from signing).

- Draft Segment 3 (assessment of impacts) – Assessment of the level of cumulative effects and defining levels of significance of cumulative effects across time lines (within 3 months from signing).
- Draft Final Report including Segment 4 (Recommendations) in the form of a Management Plan (within 3.5 months after signing).
- Final report including all segments ready for public presentation (within 4 months).

30. Based upon the results of the CIA Report, the firm will organize and carry out workshops in Metro Manila (the specific sites and participants will be agreed upon with MMDA/DPWH). The firm will be responsible for materials and presentations (content) during consultations as well as identifying target groups. Project together with MMDA and DPWH will support logistics for the events as appropriate.

F. Duration and Timing

31. The CIA Report should be completed within 4 months of commencement. All reports should be prepared in English. The final presentation workshop should be held within 5 months of commencement of the contract.

G. Institutional Arrangements

32. The consultant shall report to MMDA/DPWH and liaise with other agencies of the government including LLDA, DENR, and local government units. Existing EIAs, EMPs, and plans for development will be provided by relevant agencies with facilitation from MMDA and DPWH.

33. Coordination and contract management will be carried out by MMDA and DPWH Project Management Office.

34. The final output will be subject to acceptance by MMDA/DPWH and World Bank for compliance with the World Bank guidelines for safeguards.

H. Team Qualifications

35. To qualify to carry out the work the firm must be a consortium comprising an international consulting company or non-governmental organization (NGO) and a local NGO or consulting company based in the Philippines (“the consultant”). The firm must have the following qualifications:

- An adequate team of consultants with experience in consulting domestically and internationally on this topic. In particular, the firm should demonstrate experience in undertaking CIAs following an internationally recognized CIA methodology.
- Firms must have sound knowledge and at least five years’ work experience plus experience on at least two similar assignments in a country other than their own, and must have good knowledge of environmental regulations in developed countries.
- The team should comprise the following specialists:
 - A Team Leader who is skilled at leading and managing inter-disciplinary teams, can produce well-written reports on time, and is knowledgeable about strategic environmental assessments and extractive industries. Experience in Philippines is desirable.

- An Infrastructure Specialist with at least ten years of relevant experience in infrastructure policy and public administration. .
- A Flood or Hydraulics/Hydrology Specialist who is knowledgeable in Philippine geography and in flood management technologies and practices
- An Environmental Engineer or Scientist who is knowledgeable about the impacts of flood management/urban renewal related activities. Experience in Philippine environmental issues is desirable. Proven experience in environmental regulatory frameworks and environmental standards is required.
- A Social Development Specialist who is knowledgeable about the direct and indirect social impacts (positive and negative) of flood management-related activities including public health and safety. S/he should have proven experience in resettlement of informal settlers. Experience in the Philippine culture, practices and customs is desirable.
- A Stakeholder Engagement Specialist who can effectively manage stakeholder engagement throughout the preparation process, including the facilitation of public consultation events and other large meetings.

Specific technical inputs on legal, infrastructure development projects and gender should be provided by the team as needed.

I. Fees for Consulting Services

Estimated cost (US\$)
Remuneration: US\$147,000 <ul style="list-style-type: none"> • 3 international experts x 2 months x US\$20,000 = US\$120,000 • 3 local experts x 3 months x US\$3000 = US\$27,000
Reimbursable expenses: US\$53,000
Total estimated cost –US\$200,000

ANNEX F: Environmental Codes of Practice in the Rehabilitation of Pumping Stations

1.1 Intent of ECOPs

These Environmental Codes of Practice (ECOPs) have been prepared to define methods and/or procedures to be followed by consultants, designers and contractors for the avoidance or mitigation of adverse environmental and social impacts that may arise out of the rehabilitation and modernization of pumping stations under the MMFMP1. The definitions of terms used in the ECOP are set out below.

1.2 Definition of Terms

MMDA	Metropolitan Manila Development Authority. The entity that engages the principal consultant to design and/or supervise the rehabilitation/modernization of pumping stations in Metro Manila
Project	Shall include development, new construction, upgrading, rehabilitation, reconstruction and maintenance of pumping stations.
Consultant	The firm or design team engaged by the MMDA to undertake either the investigation, the design or the construction supervision of the project.
Designer	The person, group or groups that undertake the various phases of project preparation and/or construction supervision.
Engineer	A licensed member of the Philippine Regulatory Commission
Contractor	The firm engaged by the MMDA to construct the project or direct the labour team if construction is to be carried out directly by the client.
DENR	Department of Environment and Natural Resources
DPWH	Department of Public Works and Highways
EIA	Means the comprehensive study or detailed environmental impact assessment.
EMB	Environmental Management Bureau

1.3 Objectives of the ECOPS

The objective of these ECOPs are to cover the typical impacts associated with the rehabilitation and modernization of pumping stations in the context of Metro Manila. It will ensure that all people involved in development project planning, design, construction and maintenance are aware of the need for the ECOP, and implement the systems for the prevention or mitigation of adverse environmental and social effects of activities related to rehabilitation of pumping stations. The ECOP shall be followed for the planning, design and construction of all pumping station rehabilitation works. The ECOP will establish guidelines for managing and minimizing potential environmental (including social) impacts of rehabilitation and modernization of pumping stations, by outlining principles and minimum standards which shall be taken into account in the planning, design, and construction phases.

1.4 Implementation

These ECOPs have been introduced in the MMFMP1 Project to simplify the implementation of safeguards in the rehabilitation of pumping stations.

There are three implementation mechanisms for the ECOP:

- 1) Use of the ECOP is specified in the Bidding documents through the Terms of Reference for the design of works. The relevant design directives stated in the ECOP should also be incorporated in the Terms of Reference;
- 2) Use of the ECOP is specified in the specifications for the construction of physical works. The relevant suggested specifications stated in the ECOP should also be incorporated in the specifications.
- 3) Approvals by the MMDA and World Bank are granted with the condition that works proceed under the provisions of the ECOP

1.5 Monitoring

MMDA personnel and the PMO of the project will monitor the implementation of the ECOP through regular supervision of works. The ECOP will also be monitored through normal contract administration procedures.

1.6 Main Environmental and Social Issues typical of Pumping Station Rehabilitation and Modernization

- Dredge material generation
- Solid Waste
- Dust generation
- Air pollution
- Impacts from noise and vibration
- Water pollution
- Drainage and sedimentation
- Management of stockpiles
- Chemical and hazardous wastes
- Traffic management
- Interruption of utility services
- Restoration of affected areas
- Worker and public safety
- Communication with local communities
- Chance finds

1.7 Codes of Practice

ENVIRONMENTAL CODES OF PRACTICE (ECOPs)

ENVIRONMENTAL – SOCIAL ISSUES	MITIGATION MEASURE	Comments
1. Dust generation	<ul style="list-style-type: none"> • The Contractor is responsible for compliance with relevant Philippine legislation with respect to ambient air quality. • The Contractor shall ensure that the generation of dust is minimized and is not perceived as a nuisance by local residents and shall implement a dust control program to maintain a safe working environment and minimize disturbances for surrounding residential areas/dwellings. • The Contractor shall implement dust suppression measures (e.g. use water spraying vehicles) as required and appropriate. • Material loads shall be suitably covered and secured during transportation to prevent the scattering of soil, sand, materials, or dust. • Exposed soil and material stockpiles shall be protected against wind erosion and the location of stockpiles shall take into consideration the prevailing wind directions and locations of sensitive receptors. 	<ul style="list-style-type: none"> • May occur when structures are demolished.
2. Air pollution	<ul style="list-style-type: none"> • All vehicles must comply with Philippine regulations controlling allowable emission limits of exhaust gases. • Vehicles in the Philippines must undergo a regular emissions check. • There should be no burning of waste or materials on site. • Generators must have an air permit from the DENR 	<ul style="list-style-type: none"> • May occur when structures are demolished.
3. Impacts from noise and vibration	<ul style="list-style-type: none"> • The contractor is responsible for compliance with the relevant Philippine legislation with respect to noise and vibration. • When needed, measures to reduce noise to acceptable levels must be implemented and could include silencers, mufflers, acoustically dampened panels or placement of noisy machines in acoustically protected areas. 	<ul style="list-style-type: none"> •

ENVIRONMENTAL – SOCIAL ISSUES	MITIGATION MEASURE	Comments
4. Water pollution	<ul style="list-style-type: none"> • The Contractor must be responsible for compliance with the relevant Philippine legislation relevant to wastewater discharges into watercourses. • Portable or constructed toilets must be provided on site for construction workers. Wastewater from toilets as well as kitchens, showers, sinks, etc. shall be discharged into a tank for removal from the site or discharged into municipal sewerage systems; there should be no direct discharges to any waterbody. • Wastewater over permissible values set by relevant Philippine effluent standards/regulations (DAO 35) must be collected in a tank and removed from site by licensed waste transporter and collector. • At completion of construction works, water collection tanks and septic tanks shall be covered and effectively sealed off. 	<ul style="list-style-type: none"> • Applies specifically to temporary workers quarters.
5. Solid waste	<ul style="list-style-type: none"> • Before construction, a solid waste control procedure (storage, provision of bins, site clean-up schedule, bin clean-out schedule, etc.) must be prepared by Contractors and it must be carefully followed during construction activities. • Before construction, all necessary waste disposal permits or licenses must be obtained. Arrangements with a solid waste transporter should be obtained. • Measures shall be taken to reduce the potential for litter and negligent behavior with regard to the disposal of all refuse. At all places of work, the Contractor shall provide litter bins, containers and refuse collection facilities. • Solid waste may be temporarily stored on site in a designated area recommended by the Construction Supervision Consultant and approved by the MMDA/DPWH PMO's project manager. Waste storage containers shall be covered, tip-proof, weatherproof and scavenger proof. 	<ul style="list-style-type: none"> •

ENVIRONMENTAL – SOCIAL ISSUES	MITIGATION MEASURE	Comments
	<ul style="list-style-type: none"> • No burning, on-site burying or dumping of solid waste shall occur. • Recyclable materials such as wooden plates for trench works, steel, scaffolding material, site holding, packaging material, etc shall be collected and separated on-site from other waste sources for reuse, for use as fill, or for sale. • If not removed off site, solid waste or construction debris shall be disposed of only at sites identified and approved by the Construction Supervision Consultant and included in the solid waste plan. Under no circumstances shall the contractor dispose of any material in watercourses. 	
<p>6. Chemical or hazardous wastes</p>	<ul style="list-style-type: none"> • Chemical waste of any kind shall be disposed of at an approved appropriate landfill site and in accordance with local legislative requirements. The Contractor shall obtain needed disposal certificates. • The removal of asbestos-containing materials or other toxic substances shall be performed and disposed of by specially trained and certified workers. • Used oil and grease shall be removed from site and sold to an approved used oil recycling company. • Used oil, lubricants, cleaning materials, etc. from the maintenance of vehicles and machinery shall be collected in holding tanks and removed from site by a specialized oil recycling company for disposal at an approved hazardous waste site. • Used oil or oil-contaminated materials that could potentially contain PCBs shall be securely stored to avoid any leakage or affecting workers. The Chemicals Section of the Environmental Management Bureau of the DENR, must be contacted for further guidance. • Relevant agencies shall be promptly informed of any accidental spill or 	<ul style="list-style-type: none"> • The decommissioning of equipment/machines may generate toxic / hazardous compounds such as lubricants/ petroleum products, etc...

ENVIRONMENTAL – SOCIAL ISSUES	MITIGATION MEASURE	Comments
	<p>incident.</p> <ul style="list-style-type: none"> • Store chemicals appropriately and with appropriate labeling • Appropriate communication and training programs should be put in place to prepare workers to recognize and respond to workplace chemical hazards <p>Prepare and initiate a remedial action following any spill or incident. In this case, the contractor shall provide a report explaining the reasons for the spill or incident, remedial action taken, consequences/damage from the spill, and proposed corrective actions.</p>	
<p>7. Management of dredge material / sludge</p>	<ul style="list-style-type: none"> • Dredging plan should be established including time schedule, method statement to meet the requirements of traffic safety, public health and environmental sanitation. In order to ensure dredging that is consistent with environmental regulations, key decision makers (MMDA, DPWH, DENR, LGU, etc.) must be involved and concur in each key decision point in the process leading to preparation and implementation of a plan. • Characteristics of sludge/sediment should be determined by sampling and analysis. Sludge that is heavily contaminated would require measures that go beyond the scope of these ECOPs. • Ensure that dredged material management plans incorporate environmental considerations in the identification of short-term and long-term disposal alternatives, consider methods to reduce dredging, and maximize the beneficial use of dredged materials. • Dredging work should be conducted when water flow is high to allow the dredged materials can be separated into the sediment and the supernatant water (i.e., spoil) by settling. • Leachate from dredged materials should not be allowed to enter watercourses without appropriate filtering or treatment. 	<ul style="list-style-type: none"> • As per Schedule 3 of RA 6969, the standard test for toxicity is the Toxicity Characteristic Leaching Potential (TCLP).

ENVIRONMENTAL – SOCIAL ISSUES	MITIGATION MEASURE	Comments
	<ul style="list-style-type: none"> • Collected dredged materials have to be processed, as per Philippine regulations on waste collection, to ensure safe and environmentally secure transportation, storage, treatment and management • Those involved in handling of sludge should be specialized and have previous experience in sludge handling. Guidelines for certification of sludge handling is in DENR’s regulations (RA 6969) on management of hazardous substances • Sanitary landfills site should meet technical requirements, based on level of potential contamination. 	
8. Traffic management	<ul style="list-style-type: none"> • Before construction, carry out consultations with local government and community and with traffic police. • A traffic management plan must be prepared and implemented. • Significant increases in number of vehicle trips must be covered in a construction plan previously approved. Routing, especially of heavy vehicles, needs to take into account sensitive sites such as schools, hospitals, and markets. • Installation of lighting at night must be done if this is necessary to ensure safe traffic circulation. • Place signs around the construction areas to facilitate traffic movement, provide directions to various components of the works, and provide safety advice and warning. • Employing safe traffic control measures, including road/rivers/canal signs and flag persons to warn of dangerous conditions. • Avoid material transportation for construction during rush hour. • Passageways for pedestrians and vehicles within and outside construction areas should be segregated and provide for easy, safe, and appropriate access. Signpost shall be installed appropriately in both water-ways and 	<ul style="list-style-type: none"> • This is applicable to this project when transporting the heavy machinery to replace the existing pump motors.

ENVIRONMENTAL – SOCIAL ISSUES	MITIGATION MEASURE	Comments
	roads where necessary.	
9. Restoration of affected areas	<ul style="list-style-type: none"> • Cleared areas such as disposal areas, site facilities, workers’ camps, stockpiles areas, working platforms and any areas temporarily occupied during construction of the project works shall be restored using landscaping, adequate drainage and revegetation. • Start revegetation at the earliest opportunity. Appropriate local native species of vegetation shall be selected for the planting and restoration of the natural landforms. • Spoil heaps and excavated slopes shall be re-profiled to stable batters, and grassed to prevent erosion; • All affected areas shall be landscaped and any necessary remedial works shall be undertaken without delay, including green-spacing, roads, bridges and other existing works • Trees shall be planted at exposed land and on slopes to prevent or reduce land collapse and keep stability of slopes • Soil contaminated with chemicals or hazardous substances shall be removed and transported and buried in waste disposal areas. • Restore all damaged road and bridges caused by project activities 	<ul style="list-style-type: none"> •

ENVIRONMENTAL – SOCIAL ISSUES	MITIGATION MEASURE	Comments
10. Worker and public Safety	<ul style="list-style-type: none"> • Contractor shall comply with all Philippine regulations and World Bank EHS guidelines regarding worker safety. • Prepare and implement action plan to cope with risk and emergency • Preparation of emergency aid service at construction site • Training workers on occupational safety regulations • Ensure that ear pieces are provided to and used by workers who must use noisy machines, for noise control and workers protection. • During demolition of existing infrastructure, workers and the general public must be protected from falling debris by measures such as chutes, traffic control, and use of restricted access zones. • Install fences, barriers, dangerous warning/prohibition site around the construction area which showing potential danger to public people • The contractor shall provide safety measures as installation of fences, barriers warning signs, lighting system against traffic accidents as well as other risk to people and sensitive areas. • If previous assessments indicate there could be unexploded ordnance (UXO), clearance must be done by qualified personnel and as per detailed plans approved by the Construction Engineer. 	<ul style="list-style-type: none"> • Unexploded ordinances have been unearthed in some areas of Manila dating back to WW2 when Manila was carpet bombed.
11. Communication with local communities	<ul style="list-style-type: none"> • Maintain open communications with the local government and concerned communities; the contractor shall coordinate with local authorities (leaders of baranggays or puroks) for agreed schedules of construction activities at areas nearby sensitive places or at sensitive times (e.g., religious festival days). • Copies of these ECOPs and of other relevant environmental safeguard documents shall be made available to local communities and to workers at the site. • Disseminate project information to affected parties (for example local authority, enterprises and affected households, etc) through community 	<ul style="list-style-type: none"> •

ENVIRONMENTAL – SOCIAL ISSUES	MITIGATION MEASURE	Comments
	<p>meetings before construction commencement;</p> <ul style="list-style-type: none"> • Provide a community relations contact from whom interested parties can receive information on site activities, project status and project implementation results; • Provide all information, especially technical findings, in a language that is understandable to the general public and in a form of useful to interested citizens and elected officials through the preparation of fact sheets and news release, when major findings become available during project phase; • Monitor community concerns and information requirements as the project progresses; • Respond to telephone inquiries and written correspondence in a timely and accurate manner; • Inform local residents about construction and work schedules, interruption of services, traffic detour routes and provisional bus routes, blasting and demolition, as appropriate; • Notification boards shall be erected at all construction sites providing information about the project, as well as contact information about the site managers, environmental staff, health and safety staff, telephone numbers and other contact information so that any affected people can have the channel to voice their concerns and suggestions. 	
<p>12. Chance find procedures</p>	<p>If the Contractor discovers archeological sites, historical sites, remains and objects, including graveyards and/or individual graves during excavation or construction, the Contractor shall:</p> <ul style="list-style-type: none"> • Stop the construction activities in the area of the chance find; 	<ul style="list-style-type: none"> • The National Museum is in charge of chance finds in the Philippines.

ENVIRONMENTAL – SOCIAL ISSUES	MITIGATION MEASURE	Comments
	<ul style="list-style-type: none"> • Delineate the discovered site or area; • Secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be arranged until the responsible local authorities or the National Museum takes over; • Notify the Construction Supervision Consultant who in turn will notify responsible local or national authorities in charge of the Cultural Property (within 24 hours or less); • Relevant local or national authorities would be in charge of protecting and preserving the site before deciding on subsequent appropriate procedures. This would require a preliminary evaluation of the findings to be performed. The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage; those include the aesthetic, historic, scientific or research, social and economic values; • Decisions on how to handle the finding shall be taken by the responsible authorities. This could include changes in the layout (such as when finding an irremovable remain of cultural or archeological importance) conservation, preservation, restoration and salvage; • If the cultural sites and/or relics are of high value and site preservation is recommended by the professionals and required by the cultural relics authority, the Project’s Owner will need to make necessary design changes to accommodate the request and preserve the site; • Decisions concerning the management of the finding shall be communicated in writing to relevant authorities; 	

ENVIRONMENTAL – SOCIAL ISSUES	MITIGATION MEASURE	Comments
	<ul style="list-style-type: none"> • Construction works could resume only after permission is granted from the responsible local authorities concerning safeguard of the heritage. 	

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ANNEX G: Chance Find Procedure

Contracts for civil works involving excavations will incorporate procedures for dealing with situations in which buried Physical Cultural Resources (PCR) are unexpectedly encountered. The final form of these procedures will depend upon the local regulatory environment, including any chance find procedures already incorporated in legislation dealing with antiquities or archeology.

Note: Resource persons from the Cultural Properties Division of the National Museum are the designated officials in-charge of these matters.

Republic Act No. 10066, *An Act Providing for the Protection and Conservation of the National Cultural Heritage, Strengthening the NCCA and its Affiliated Cultural Agencies, and for Other Purposes*, which was signed by HE Gloria Macapagal-Arroyo on March 26, 2010. This procedure is based on the provisions stated in this Act.

1. PCR Definition

Movable or immovable objects, sites, structures or groups of structures having archeological, paleontological, historical, architectural, religious, aesthetic, or other cultural significance.

The following are also specifically defined under the new Act

- (a) **“Built Heritage”** shall refer to architectural and engineering structures, such as but not limited to bridges, government buildings, houses of ancestry, traditional dwellings, quartels, train stations, lighthouses, small ports, educational technological and industrial complexes, and their settings, and landscapes with notable historical and cultural significance;
- (b) **“Cultural Heritage”** shall refer to the totality of cultural property preserved and developed through time and passed on to posterity;
- (c) **“Cultural Property”** shall refer to all products of human creativity by which a people and a nation reveal their identity, including churches, mosques and other places of religious worship, schools and natural history specimens and sites, whether public or privately-owned, movable or immovable, and tangible or intangible;
- (d) **“Important Cultural Property (ICP)”** shall refer to a cultural property having exceptional cultural, artistic, and historical significance to the Philippines, as shall be determined by the National Museum and/or National Historical Institute.
- (e) **“Tangible cultural property”** shall refer to a cultural property with historical, archival, anthropological, archaeological, artistic and architectural value, and with exceptional or traditional production, whether of Philippine origin or not, including antiques and natural history specimens with significant value.
- (f) ***Indigenous properties.*** - The appropriate cultural agency in consultation with the National Commission on Indigenous Peoples shall establish a program and promulgate regulations to assist indigenous people in preserving their particular cultural and historical properties.

2. Ownership

All cultural property found in terrestrial and / or underwater archaeological sites belong to the State. The Commission, upon the recommendation of the appropriate cultural agency, shall provide incentives for persons who discover and report heretofore unknown archaeological sites, in accordance with its rules and regulations implementing the provisions of this Act.

3. Recognition

This is the most difficult aspect to cover. As noted above, in PCR-sensitive areas, the procedure may require the contractor to be accompanied by a specialist. In other cases, the procedures may not specify how the contractor will recognize a PCR, and a clause may be required by the contractor disclaiming liability.

4. Procedure upon Discovery

Suspension of Work

When the presence of any cultural or historical property is discovered, the contractor must immediately report the discovery to the Resident Engineer or Supervisor. The National Museum or the National Historical Institute shall immediately be contacted and informed of the chance find. The contractor will suspend all activities that will affect the site and shall immediately notify the National Museum (see contact details provided below). The local government unit having jurisdiction where the discovery was made shall promptly adopt measures to protect and safeguard the integrity of the cultural property so discovered and within five (5) days from the discovery shall report the same to the appropriate agency. The suspension of these activities shall be lifted only upon the written authority of the National Museum or the National Historical Institute and only after the systematic recovery of the archaeological materials.

After stopping work,

The contractor may not be entitled to claim compensation for work suspension during this period.

The Resident Engineer may be entitled to suspend work and request from the contractor some excavations at the contractor's expense if he thinks that a discovery was made and not reported.

Demarcation of the Discovery Site

With the approval of the Resident Engineer, the contractor is then required to temporarily demarcate, and limit access, to the site.

Non-Suspension of Work

The procedure may empower the Resident Engineer to decide whether the PCR can be removed and for the work to continue, for example in cases where the find is one coin.

Chance Find Report

The contractor should then, at the request of the Resident Engineer, and within a specified time period, make a Chance Find Report, recording the following:

- Date and time of Discovery;
- Location of the Discovery;
- Description of the PCR, with photos if possible;
- Estimated weight and dimensions of the PCR;
- Temporary protection implemented.

The Chance Find Report should be submitted to the Resident Engineer, and other concerned parties as agreed with the cultural authority, and in accordance with national legislation.

The Resident Engineer, or other party as agreed, is required to inform the cultural authority accordingly.

Responsible Authority in the Philippines:

Mr. Angel Bautista
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National Museum of the Philippines
P. Burgos St. Manila
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