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Report No: PAD934

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT

ON AN

AUSTRALIA - WORLD BANK PHILIPPINES DEVELOPMENT TRUST FUND GRANT IN THE AMOUNT OF US$7 MILLION

TO THE

REPUBLIC OF THE PHILIPPINES

FOR

STUDIES FOR SUSTAINABLE FLOOD MANAGEMENT

December 5, 2014

Water Global Practice
World Bank Philippines
East Asia and Pacific Region

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CURRENCY EQUIVALENTS
(Exchange Rate Effective April 1, 2014)

Currency Unit = Philippine Peso (PhP)
PhP44.77 = US$1

FISCAL YEAR
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

AHPPP	Alternative Housing Program and People's Proposal Fund	IP	Indigenous People
BAC	Bids and Awards Committee	ISF	Informal Settler Family
CAS	Country Assistance Strategy	IUFR	Interim Unaudited Financial Report
CCA	Climate Change Act	JICA	Japan International Cooperation Agency
CMP	Community Mortgage Program	LBP	Land Bank of the Philippines
COA	Commission on Audit	LGU	Local Government Unit
CPO	Central Procurement Office	MMDA	Metro Manila Development Authority
CPS	Country Partnership Strategy	NDRRM	National Disaster Risk Reduction and Management
CSO	Civil Society Organization	NEDA	National Economic and Development Authority
DA	Designated Account	NGAS	New Government Accounting System
DENR	Dept. of Environment and Natural Resources	NGO	Non-Governmental Organization
DFAT	Dept. of Foreign Affairs and Trade	NHA	National Housing Authority
DILG	Dept. of Interior and Local Government	NWRMO	National Water Resources Management Office
DOST	Dept. of Science and Technology	PAGASA	Philippine Atmospheric, Geophysical and Astronomical Services Administration
DPWH	Dept. of Public Works and Highways	PDNA	Post Disaster Needs Assessment
DSWD	Dept. of Social Welfare and Development	PHRD	Policy and Human Resources Development
ESIA	Environmental and Social Impact Assessment	PoE	Panel of Experts
ESMP	Environmental and Social Management Plan	RAP	Resettlement Action Plan
ESSD	Environment and Social Safeguards Division	RPF	Resettlement Policy framework
FMS	Financial Management Service	SHFC	Social Housing Finance Corporation
FRM	Flood Risk Management	TA	Technical Assistance
GDP	Gross Domestic Product	TWG	Technical Working Group
GoP	Government of the Philippines	WFP	Work and Financial Plan
HUDCC	Housing and Urban Development Coordination Council		

Regional Vice President:	Axel van Trotsenburg
Country Director:	Motoo Konishi
Senior Global Practice Director:	Junaid Kamal Ahmad
Practice Manager:	Ousmane Dione
Task Team Leader:	Joop Stoutjesdijk

PHILIPPINES
STUDIES FOR SUSTAINABLE FLOOD MANAGEMENT

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PAD DATA SHEET

Philippines

Studies for Sustainable Flood Mgmt. (P145391)

PROJECT APPRAISAL DOCUMENT

EAST ASIA AND PACIFIC

GWADR

Report No.: PAD934

Basic Information		
Project ID P145391	EA Category A - Full Assessment	Team Leader Joop Stoutjesdijk
Lending Instrument Grant	Fragile and/or Capacity Constraints [ ]	
	Financial Intermediaries [ ]	
	Series of Projects [ ]	
Project Implementation Start Date 24-Dec-2014	Project Implementation End Date 31 Dec 2015	
Expected Effectiveness Date 24-Dec-2014	Expected Closing Date 31 Dec 2015	
Joint IFC No		

Practice Manager	Senior Global Practice Director	Country Director	Regional Vice President
Ousmane Dione	Junaid Kamal Ahmad	Motoo Konishi	Axel van Trotsenburg

Borrower: Republic of the Philippines			
Responsible Agency: Department of Public Works and Highways			
Contact:	Mr. Patrick Gatan	Title:	Director, Flood Management
Telephone No.:	304-3000	Email:	webmaster@dpwh.gov.ph

Approval Authority
Approval Authority RVP Decision

Project Financing Data(in USD Million)

[ ]	Loan	[ ]	IDA Grant	[ ]	Guarantee
[ ]	Credit	[X]	Grant	[ ]	Other

Total Project Cost:	7.00	Total Bank Financing:	0.00
Financing Gap:	0.00		

Financing Source	**Amount**
Borrower	0.00
Australia – World Bank Philippines Development Trust Fund	7.00
Total	7.00

Expected Disbursements (in USD Million)

Fiscal Year	2015	2016	0000	0000	0000	0000	0000	0000	0000
Annual	2.00	5.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cumulative	2.00	7.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Proposed Development Objective(s)

The proposed development objective is to prepare priority projects that aim to improve flood management and resilience in the Greater Metro Manila Area.

Components

Component Name	**Cost (USD Millions)**
Component A – Preparation of feasibility and design studies for priority flood management infrastructure.	6.80
Component B – Project management and administration.	0.20

Institutional Data

Practice Area / Cross Cutting Solution Area

Water

Cross Cutting Areas

[ ] Climate Change

[ ] Fragile, Conflict & Violence

[ ] Gender

[ ] Jobs

[ ] Public Private Partnership

Sectors / Climate Change

Sector (Maximum 5 and total % must equal 100)

Major Sector	Sector	%	Adaptation Co-benefits %	Mitigation Co-benefits %

Water, sanitation and flood protection	Flood protection	100		
Total		100		

☑ I certify that there is no Adaptation and Mitigation Climate Change Co-benefits information applicable to this project.

Themes

Theme (Maximum 5 and total % must equal 100)

Major theme	Theme	%
Environment and natural resources management	Water resource management	70
Social protection and risk management	Natural disaster management	30
Total		100

Compliance

Policy

Does the project depart from the CAS in content or in other significant respects?	Yes [ ] No [X]
Does the project require any waivers of Bank policies?	Yes [ ] No [X]
Have these been approved by Bank management?	Yes [ ] No [ ]
Is approval for any policy waiver sought from the Board?	Yes [ ] No [X]
Does the project meet the Regional criteria for readiness for implementation?	Yes [X] No [ ]

Safeguard Policies Triggered by the Project	**Yes**	**No**
Environmental Assessment OP/BP 4.01	**X**	
Natural Habitats OP/BP 4.04	**X**	
Forests OP/BP 4.36	**X**	
Pest Management OP 4.09		**X**
Physical Cultural Resources OP/BP 4.11	**X**	
Indigenous Peoples OP/BP 4.10	**X**	
Involuntary Resettlement OP/BP 4.12	**X**	
Safety of Dams OP/BP 4.37	**X**	
Projects on International Waterways OP/BP 7.50		**X**
Projects in Disputed Areas OP/BP 7.60		**X**

Legal Covenants

Name	**Recurrent**	**Due Date**	**Frequency**

Institutional Arrangements	X		

Description of Covenant

Schedule 2 - Section I.A.1(b): the Recipient shall maintain, throughout the period of Project implementation, a High-Level Steering Committee and a Technical Level Steering Committee, in order to provide overall management and coordination for the Project.

Schedule 2 - Section I.A.2(a): the Recipient shall establish and maintain during the period of implementation of the Project an independent Panel of Experts On Dam Safety, with a composition satisfactory to the World Bank, responsible for advising the Recipient on matters relative to dam safety and other critical aspects of the dam, its appurtenant structures, the catchment area, the area surrounding the reservoir and the downstream area, all in accordance with terms of reference satisfactory to the World Bank.

Schedule 2 - Section I.A.2(b): the Recipient shall establish and maintain during the period of implementation of the Project a Resettlement Panel, with a composition satisfactory to the World Bank, responsible for providing strategic guidance on resettlement and rehousing issues relevant to the Project, in accordance with terms of reference satisfactory to the World Bank.

Conditions

Source Of Fund	Name	Type

Description of Condition: None

Team Composition

Bank Staff

Name	Title	Specialization	Unit
Christopher Casuga Ancheta	Sr Sanitary Engineer	Sr Sanitary Engineer	GWADR
Dominic Reyes Aumentado	Senior Procurement Specialist	Senior Procurement Specialist	GGODR
Aisha Lanette N. De Guzman	Financial Management Specialist	Financial Management Specialist	GGODR
Victoria Florian S. Lazaro	Operations Officer	Operations Officer	GURDR
Peter Leonard	Regional Safeguards Adviser	Regional Safeguards Adviser	OPSOR
Miguel-Santiago da Silva Oliveira	Senior Finance Officer	Senior Finance Officer	CTRLN
Danielle Malek Roosa	Senior Counsel	Senior Counsel	LEGES
Joop Stoutjesdijk	Lead Irrigation Engineer	Team Lead	GWADR

Maya Gabriela Q. Villaluz	Senior Operations Officer	Senior Operations Officer	GENDR
Makiko Watanabe	Social Development Specialist	Social Development Specialist	GURDR
Yan F. Zhang	Sr Urban Economist	Sr Urban Economist	GURDR
Shingira Masanzu	Associate Counsel	Associate Counsel	LEGES

Non Bank Staff

Name	Title	City

Locations

Country	First Administrative Division	Location	Planned	Actual	Comments
Philippines	Metro Manila	National Capital Region		**X**	

I. STRATEGIC CONTEXT

A. Country Context

1. The Philippines' economy grew by 7.2 percent during 2013, outperforming most other economies in the region. The country's strong macro-economic fundamentals, characterized by low and stable inflation, healthy external balances, and strong government finances, shielded the economy from the persistent weaknesses of the global economy.

2. Achieving a pattern of inclusive growth that creates jobs and reduces poverty and vulnerability constitutes already for a long time the main challenge facing the Philippines. The current lack of inclusive growth negatively affects the ability of a large part of the population to deal with a variety of economic, natural disaster, and health shocks, as so dramatically illustrated by the suffering caused by recent disasters, most recently by super-typhoon Yolanda (internationally named Haiyan) in November 2013.

3. Since coming to office in mid-2010, the current administration is seen as strongly committed to inclusive growth. Guided by the principles contained in President Aquino's Social Contract with the Filipino People, the administration is implementing an ambitious reform program. The program is driven by five Cabinet clusters: (i) good governance and anti-corruption; (ii) human development and poverty reduction; (iii) economic development; (iv) security, justice and peace; and (v) climate change adaptation and mitigation. The Philippine Development Plan for 2011-2016 provides clear articulation of the reform program.

4. Typhoons and related flooding are regular events in the Philippines, with an average of 20 typhoons affecting the country per year. There seems to be a trend towards more numerous and more devastating floods in recent years, especially caused by human activities such as deforestation and rapid urbanization, and possibly by climate change. Metro Manila and the adjacent areas of Laguna de Bay and part of Bulacan Province, hereafter called the Greater Metro Manila Area, have not been spared during the past years. Considering that the Greater Metro Manila Area contributes about 35 percent to the economy of the Philippines and is home to around 17 million people, recurrent flooding has a negative impact on millions of people's lives and the economy. This is worsening over time with rapid urbanization and land availability issues, requiring especially informal settler families (ISF) to live in danger zones. On September 26, 2009, one of the most severe tropical storms in history, Ondoy (internationally named Ketsana), affected the Greater Metro Manila Area. It caused substantial damage and losses, equivalent to about 2.7 percent of Gross Domestic Product (GDP). The adverse impacts on the productive sectors were largely due to damaged or lost inventories, raw materials, and crops. In addition, business operations were interrupted by access problems, power and water shortages, damaged machinery, and absent employees, which contributed to an overall reduction in production capacity.

B. Sectoral and Institutional Context

5. Intensive rainfall and flooding are events that are especially severe during the typhoon season from June through October when typically around 80 percent of the annual rainfall falls, which for Metro Manila is about 1,700 mm out of the approximate 2,100 mm average annual

rainfall. The Greater Metro Manila Area is located in a delta, sandwiched by Manila Bay to the west with its storm surge risks, Laguna de Bay to the south-east with annual flooding issues, and closed in to the north and north-east by mountain ranges that drain flash floods into the Pasig-Marikina River System during typhoon events, which are all factors for flooding to be considered. As a result, many areas in the Greater Metro Manila Area are designated as flood prone, with insufficient protection against frequent inundation. This includes areas along the Pasig-Marikina River and its tributaries, as well as many areas bordering Laguna de Bay. Typhoons and tropical storms that affect the Greater Metro Manila Area regularly result in flooding of many low-lying areas, with extensive localized flooding that can last for a long period of time. It is estimated that about 100,000 households, many of whom are ISFs, are living in the flood plains of the rivers and water ways in Metro Manila[1]. These people are affected by floods up to a ten year return period. About 50-60,000 households, also mostly ISFs, are living in the flood plain of Laguna de Bay, many of whom are affected on an annual basis by the lake's water level fluctuation of about 3 meter.

6. Ondoy was a disastrous event that resulted in extensive inundation of urban areas caused by water flows that were well above the capacities of rivers, floodways, and esteros/drains that lack regular maintenance, including dredging of silts and cleaning of solid waste, and have encroachment of their banks. The latter puts people living along these structures at risk during flash flood events. In many areas the flooding after Ondoy receded within days, but other areas remained inundated for months, especially around Laguna de Bay. Tropical storm Ondoy was quickly followed by typhoon Pepeng (international name Parma) that affected the Philippines during October 3-9, 2009, following an irregular path which crossed over Central and Northern Luzon three times. Since Ondoy, there have been typhoons or extreme long-duration rainfall events on an annual basis over the Greater Metro Manila Area.

7. Ondoy was a turning point in government's attention to typhoons and flooding. It was so damaging and lasting that it renewed the focus on improving flood management and making the Greater Metro Manila Area a safer place for its inhabitants by implementing measures that will substantially reduce flood risks. Identified issues included:

- Deforestation in the upper catchment of the Marikina River, resulting in erosion that accumulates in the lower reaches of the river system, which in turn reduces the river carrying capacity;
- Uncontrolled disposal of solid waste in waterways and drains that reduces carrying capacity;
- Failure to maintain carrying capacity for lack of regular river cleaning;
- Reduced absorptive capacity of soil due to rapid urbanization that results in increased flash flood events;
- Under-designed flood management infrastructure resulting in an insufficient level of protection of a large urban area that is a main engine of economic growth for the country;
- Lack of maintenance of existing flood management infrastructure that affects its performance;

[1] A household has on average five members.

- Flawed land use and urban planning, resulting in both legal and illegal settlements in high flood hazard areas. Currently flood management and urban redevelopment proposals do not fit firmly in any comprehensive land use plan of each city, while there are few awareness campaigns and community risk mapping exercises;
- Lack of adequate preparedness, early warning communication, and evacuation of typhoon-affected communities;
- Groundwater extraction causing land subsidence;
- Climate change and sea level rise that over time may exacerbate the problem of flood management and drainage control; and
- Fragmented institutional flood management arrangements.

8. To reduce flood risks, the Government of the Philippines (GoP), especially with financial and technical support of the Japan International Cooperation Agency (JICA), including Overseas Economic Cooperation Fund (OECF) and Japan Bank for International Cooperation (JBIC), made a number of flood management investments during the past decades, including floodways, embankments, and pumping stations. Previous projects by JICA have been implemented sequentially based on the flood prevention master plan for Metro Manila that was prepared in 1990. Of particular notice is the construction of the Mangahan Floodway and the four-phase Pasig-Marikina River Channel Improvement Program, phase III of which has recently started. Although those investments have contributed to a reduction in flood damage in parts of Metro Manila, much more needs to be done to control floods within the Greater Metro Manila Area.

9. The Post Disaster Needs Assessment (PDNA) carried out after Ondoy reviewed the above identified issues in detail and recommended that a comprehensive update of the 1990 master plan be prepared that would propose a detailed flood risk management plan and determine an updated set of priority structural and non-structural measures to provide sustainable flood management up to a certain safety level.

10. The Flood Management Master Plan for the Greater Metro Manila Area (hereafter the Master Plan) has since been prepared by government, with technical and financial assistance of the World Bank through a grant from the Global Facility for Disaster Risk Reduction (GFDRR) that was provided by the Australian Government. The Master Plan was approved by the National Economic and Development Authority (NEDA) Board on September 4, 2012 during a Board meeting chaired by the President of the Philippines, who views flood prevention and control of critical importance. The total estimated cost for the implementation of the Master Plan is about PhP 352 billion (US$7.86 billion) over the next 20-25 years. The Master Plan proposes solutions to reduce flooding from river systems and around Laguna de Bay, and solutions for urban drainage. It also makes proposals for such non-structural measures as flood forecasting and early warning systems and community-based flood risk management. Finally, the Master Plan makes recommendations to improve the institutional structure to deal with flood management in an integrated manner. JICA recently supported a study on advancing the understanding of the estimated water flow distribution, especially in the Pasig-Marikina River Basin, including adding the effect of future climate change. The Department of Public Works and Highways (DPWH), JICA, and the World Bank agreed that outputs of this study will be an input into the design of the phase IV of the Pasig-Marikina River Channel Improvement

Program, but will also benefit the design of other infrastructure required to improve flood management, as identified by the Master Plan.

11. The September 4, 2012 NEDA Board meeting also approved an initial allocation of PhP 5 billion to start the implementation of the Master Plan with some activities that can be implemented quickly and with minimum design, yet by itself will have localized impact on flood management. GoP has indeed started working on several activities, such as dredging and modernization of pumping stations. However, government is also interested that some of the larger and more complicated priority structural and non-structural measures are prepared to a level ready for appraisal/investment by government and/or development partners. It is also seeking more advice on appropriate institutional developments.

12. The National Disaster Risk Reduction and Management Act (NDRRM Act or Republic Act No. 10121) was approved in 2010 to shift focus from emergency response to disaster prevention, reduction, and mitigation. The Act strengthens the mandates of institutions involved in DRRM and expands the use of national and local fiscal resources for ex-ante investments. The Act is supported by a National DRRM Framework, Implementing Rules and Regulations, and a National Action Plan for DRRM. The Action Plan is expected to translate the country's DRRM priorities into programs. Improvements in flood management are an important part of the Action Plan. The Philippine Government has also enacted the Climate Change Act (CCA; Republic Act No. 9729) to complement actions in addressing weather-related hazards which are compounded by climate change.

13. The enactment of the NDRRM Act created the National Disaster Risk Reduction and Management Council, headed by the Secretary of National Defense, and with four vice-chairpersons from agencies focusing on specific dimensions of DRRM. They are the Department of Interior and Local Government (DILG/disaster preparedness); Department of Science and Technology (DOST/disaster prevention and mitigation); Department of Social Welfare and Development (DSWD/disaster response); and the National Economic and Development Authority (NEDA/disaster rehabilitation and recovery). The Council has over 30 members from national and local governments, private sector, and civil society. The mandate of the NDRRM Council includes policy making, coordination, integration, supervision, and monitoring and evaluation. It is also mandated to advise the President of appropriate actions to be taken, including the declaration of a state of national calamity and the utilization of the DRRM Fund (which replaced the National Calamity Fund). The NDRRM Council will also take the lead in coordinating with the Climate Change Commission in ensuring that related efforts on DRRM and CCA are harmonized.

14. The Department of Public Works and Highways is one of the key members of the National DRRM Council. The Department is the main agency of the Philippine Government engaged in the provision of major infrastructure projects. DPWH is mandated to undertake the planning, design, construction, and operation and maintenance of major infrastructure such as roads and bridges, water resources projects, and major flood control systems. During many disasters, DPWH is tapped by the national government to provide immediate response activities, since it has the personnel and equipment that can be deployed to clear disaster-affected areas. DPWH is a major recipient of the Quick Response Fund under the National DRRM Fund to

support the repair, rehabilitation, and reconstruction of partially or totally damaged public infrastructure. In addition, the Secretary of DPWH has been appointed by the President of the Philippines as Water Czar, with the responsibility of leading the preparation and implementation of comprehensive water resources management activities, including the setting up of a National Water Resources Management Office (NWRMO), and flood planning and management activities. In Metro Manila, DPWH is responsible for the construction of major flood infrastructure. After construction, much of this infrastructure is transferred to Metro Manila Development Authority (MMDA) for operation and maintenance (O&M).

15. The devastating impacts left behind by recent tropical storms and typhoons put the spot light on the vulnerability of especially the ISFs in the Greater Metro Manila Area. President Aquino, in response to the call of the urban poor communities and civil society groups[2] in Metro Manila, directed the Department of Interior and Local Government and the Housing and Urban Development Coordinating Council (HUDCC) to lead the efforts in finding more inclusive solutions for shelter provision. A Technical Working Group (TWG) on ISFs was subsequently created in December 2011 to develop a national program for ISFs located in danger zones in Metro Manila. In an unprecedented action, the Government allocated PhP 50 billion for the Alternative Housing Program and People's Proposal (AHPPP) fund for over 104,000 ISFs living in danger zones in Metro Manila. The program aims to extend PhP 10 billion annually for providing decent, adequate, and affordable shelters for about 20,000 ISFs a year for a period of five years from 2011 to 2016.

16. In 2013, a Joint Memorandum Circular setting the guidelines for its operationalization was formulated by the ISF-National Technical Working Group (ISF-NTWG). As of the present date, the same has not yet been signed by all members of the ISF-NTWG. The National Housing Authority (NHA) and the Social Housing Financing Corporation (SHFC) were given access to the AHPPP fund and directed to ensure people's participation in the process by giving due support and credence to people's plans.

17. Finding safe, feasible, inclusive and sustainable housing solutions for affected people would be critical to the success of flood management investments. Therefore, following the President's instruction to clear the waterways of Metro Manila of structures obstructing the proper flow of water, the Government kicked off a resettlement program for 19,440 ISFs living along sections of eight major waterways on August 2, 2013, as part of the Metro Manila Flood Management Master Plan implementation. The eight priority waterways are Pasig River, Tullahan River, San Juan River, Mangahan Floodway, Maricaban Creek, Estero de Tripa de Gallina, Estero de Maypajo, and Estero de Sunog Apog. The relocation efforts, dubbed as Oplan LIKAS (Lumikas para Iwas Kalamidad At Sakit), that tap into the PhP 50 billion AHPPP have progressed slowly. As of end of 2013, there were 4,840 housing units ready for use. Construction of another 4,200 units is underway, complete with electric and water services for the families. Most of the housing units are located off-Metro Manila in Bocaue, San Jose del Monte, Balagtas in Bulacan; Rodriguez and Baras in Rizal; and Trece Martires in Cavite.

2 The urban poor communities and civil society groups have been requesting the President to fulfill his promise of "planning alternative, inclusive urban development where people of varying income levels are integrated in productive, healthy and safe communities".

18. The slow progress with relocating people from danger zones reflects the difficulty in finding available and suitable land for affordable housing and resettlement, particularly in-city. The main constraints relate to: (i) fragmented land administration and management and the lack of a mechanism among land agencies to automatically share land records that adversely affect the efficiency of land transactions; (ii) the difficulty in acquiring land for affordable housing, particularly in Metro Manila, because of competing demand that results in high land prices; and (iii) land use planning policies and regulations that are often outdated and there is no coherent framework or practices concerning land use conversion and disposition of land.

19. The Bank is currently assisting government with a number of activities, including: (i) a land constraints study to provide practical tools/instruments to address land constraints and for interim tenure arrangement for social housing purposes; (ii) subsidy designs study to introduce proposals for subsidies to make housing affordable and to leverage funding and private sector participation (developers and private land lords) in housing production; (iii) livelihoods study to better understand livelihood options and solutions for ISFs; (iv) study on rental voucher schemes; and (v) capacity building for key shelter agencies, including NHA and SHFC.

C. Higher Level Objectives to which the Project Contributes

20. The Philippines Country Partnership Strategy (CPS, Report No. 78286-PH) for FY15-18 is fully aligned with the updated 2011-2016 Philippine Development Plan, which puts high priority on disaster risk reduction and climate change as themes that underlie various sectors. The CPS goals are to promote inclusive growth, reduce poverty and support shared prosperity through five engagement areas: (i) transparent and accountable government; (ii) empowerment of the poor and vulnerable; (iii) rapid, inclusive and sustained economic growth; (iv) climate change, environment, and disaster risk management; and (v) peace, institution building, and social and economic opportunity. This proposed operation is consistent with the engagement area on climate change, environment, and disaster risk management.

21. Implementation of the proposals to be prepared under this project would contribute to the Bank's twin goals of reducing extreme poverty and boosting shared prosperity. Recurrent flooding has the greatest negative impact on the poorest populations who generally live in higher-risk flood prone areas. It restricts people's ability to exit from poverty and inhibits growth. Flooding causes damage to houses and property and it restricts movement out of the flooded area thereby affecting productive capacity. Designing and investing in structural and non-structural flood management activities would reduce the vulnerability of the population to future flood events.

II. PROJECT DEVELOPMENT OBJECTIVES

A. PDO

22. The proposed project development objective is to prepare priority projects that aim to improve flood management and resilience in the Greater Metro Manila Area.

B. Project Beneficiaries

23. The project has no direct beneficiaries as the studies by themselves do not lead to actual change in conditions and benefits. The studies that will be produced from this project will help the government, particularly DPWH and MMDA, in addressing flood management problems in Metro Manila.

C. PDO Level Results Indicators

24. The key result is project proposals for structural measures fully designed that are technically, economically, socially, and environmentally sound and that are ready for appraisal by government and/or international development partners. There may be participation of the private sector in financing part of the developments along Laguna de Bay.

III. PROJECT DESCRIPTION

A. Project Components

25. The Master Plan proposes a large program of priority infrastructure to safely control and manage major flood events in the Greater Metro Manila Area. Among the main large-scale priority interventions that have been identified in the Master Plan are: (i) a high dam in the upper Marikina River catchment area to reduce the peak flows entering the city during typhoon and other extreme rainfall events; (ii) flood protection works in the Marikina River; (iii) Laguna de Bay flood plain development, including land raising or another similar development, to protect the population against high water levels in the lake (as the designed solution will most likely involve land raising, as also proposed in the Master Plan, this is referred to in the rest of the text, although there is still a possibility that a more preferred option is selected at the feasibility stage); and (iv) further development of a comprehensive flood forecasting system and monitoring and early warning system for the Greater Metro Manila Area, with maximum participation of local communities.

26. GoP intends to start the implementation of the Master Plan with substantial investments as soon as possible. It is therefore necessary to prepare some of the large high priority investments, both structural and non-structural, as well as develop improved institutional arrangements for flood management. Such investments will be essential to make substantial improvements to flood management in large parts of the Greater Metro Manila Area.

27. This project will finance two components, the main one related to the development of feasibility and design studies of priority infrastructure that will lead to substantially increased safety of the population during flood events. A small second component relates to project management and administration.

28. *Component A – Preparation of feasibility and design studies for priority flood management infrastructure (US$6.8 million).* Feasibility and design studies will be prepared for: (i) a high dam in the upper Marikina River catchment area; and (ii) land raising of certain sections of the flood plain of Laguna de Bay (in parallel a US$2.73 million Japan Policy and Human Resources Development (PHRD) grant will finance the preparation of the other major interventions mentioned above in paragraph 25. The PHRD will also finance the study for

institutional improvements)[3]. Multi-disciplinary teams of consultants, including expertise in civil engineering, dam engineering, resettlement, hydrology, geology, soil science, economics, social science, environment, urban renewal, etc., will be recruited to prepare detailed feasibility and design studies for the above mentioned proposed interventions. The feasibility studies will review the various options for flood management improvements in the study areas, including a quick assessment of related social and resettlement impacts in terms of magnitude, costs, and risks, to be followed immediately by design studies and preparation of tender documents of the selected options. The design phase will include the technical and engineering studies, economic studies, and social and environmental studies, all in compliance with the relevant World Bank Operational and Safeguard Policies and government requirements, and up to a level ready for appraisal/financing by the government, possibly with the assistance of international organizations such as the World Bank and JICA. It is envisaged that there will be separate studies for the selected priority structural measures identified and separate consulting firms will be hired for these studies. However, one consulting firm/institute will be hired for the social and environmental assessments related to both interventions, including the social surveys that will target the communities that are affected by the potential projects. Social surveys will be conducted with active involvement of the communities themselves. Non-Governmental Organizations (NGO) could be hired to carry out the dialogue with the people that live in the high-risk areas.

29. The social and resettlement (also called 'rehousing' in the Philippines) studies will focus on the 50-60,000 households, often ISFs, that are living in the flood plain of Laguna de Bay and are affected every year by flooding events. It is noted that the project will not just focus on ISFs, but on all people, formal or informal, living in danger zones. The priority investments, when implemented, may cause both temporary and permanent physical and economic displacement of people occupying the flood plains. Most of the affected people would have to move out of the flood plain temporarily to allow land raising to take place. Those people may find permanent accommodation away from the flood plain, but it is envisaged that a number of them will return to live on the raised land in multi-story social housing units. The project will include proposals for livelihood development of the people that have to move from the high-risk areas and provision of basic infrastructure services.

30. There will have to be extensive formal and informal consultations with and training of the affected communities, non-governmental organizations (NGO) and civil society organizations (CSO) that work with the affected communities, Local Government Units (LGU), government agencies, etc. to ensure that the rehousing/resettlement proposals will be understood and acceptable to all parties. DPWH, in close cooperation with other agencies such as DILG and the Bank task team, will develop and implement an information campaign that emphasizes expectations and transparency. An independent Panel of Experts (PoE) will be established to oversee the implementation of the studies and provide guidance, where needed. The Panel will

[3] Government has announced plans to develop an expressway along sections of the shore line of Laguna de Bay through PPP arrangements. This would fit in the overall plan for the development of the flood plain of Laguna de Bay as described in the Master Plan. DPWH management and the Bank team had initial discussions that if this project goes indeed ahead, this project should study how the expressway could be incorporated in possible development of the flood plain land behind the dike through land raising, including development of drainage systems for runoff from higher lands. The studying and development of proposals for the people who currently live in the flood plain would still have to take place as described in this document.

include expertise in social, resettlement, and urban planning and development. Also a PoE on Dams will be established as per Operational Policy (OP) on Dam Safety.

31. *Component B – Project management and administration (US$0.2 million).* Operational expenses for DPWH will be financed to manage the implementation of the grant and monitor the consultants and the outputs of the services. Fixed costs, such as staff costs, will be paid for by DPWH. The government's Commission on Audit (COA) will conduct the annual audit of the grant.

B. Project Financing

32. The estimated cost of the consulting services, non-consulting services, workshops, social surveys, goods, and operational expenses is US$7 million, to be funded by a grant from the Australia - World Bank Philippines Development Trust Fund, which is being administered by the Bank on behalf of Australia's Department of Foreign Affairs and Trade (DFAT). In addition, a supervision budget for the World Bank of US$0.5 million has been requested from DFAT to pay for experienced national and international consultants and Bank staff cost and travel. Close supervision with specialized expertise is needed for these complex studies.

Project Components	Project cost (US$ million)	PH-PTF Financing	% Financing
1. Preparation of feasibility and design studies for priority flood management infrastructure.	6.8	6.8	100
2. Project management and administration.	0.2	0.2	100
Total Costs	**7.0**	**7.0**	**100**
Total Project Costs	7.0	7.0	
Front-End Fees	0.0	0.0	
Total Financing Required	**7.0**	**7.0**	

C. Lessons Learned and Reflected in the Project Design

33. A clear and comprehensive communication strategy and information campaign is very critical from an early stage onwards. Key stakeholders, people living in the high-risk areas, and the population at large need to be continuously informed about the project, its progress, and main actions and decisions taken, as well as being sensitized about the need and importance of disaster risk reduction.

34. Social surveys should always include active participation of the communities that live in the high-risk areas. In fact, to have social surveys in part be conducted by the communities themselves has shown to be very effective for example under the Mumbai Urban Transport Project. It is very different to resettle people as a precondition of a development project then to resettle them to protect their lives and assets. As part of the social and technical surveys and studies, it is important to analyze alternatives to diminish the risks of people living in flood-

prone areas than just to talk about resettlement of those populations. If studies are conducted in a participatory way, resettlement will be a shared conclusion among all stakeholders (including communities) instead of something that could be seen as predetermined by the government.

35. Resettlement is a sensitive activity in many countries, and the Philippines is no exception. To obtain a better understanding of the sensitivity surrounding resettlement issues in the country, it will be important to evaluate past cases of resettlement in order to identify the reasons that led to good or bad results and if there are legacy issues. All resettlement alternatives should be considered and even though options can be prioritized, one should not disregard any of them upfront, despite former failures, as the factors that led to failure could possibly be properly managed. However, off-site resettlement should often be a last option and when it has to be considered it has to be done in a way that includes restoration of livelihood of the people that had to move from the high-risk areas and provision of basic infrastructure services in the relocation site. For example, a post-project survey regarding ten reservoir resettlement programs concluded that resettled individuals place a high priority on the future of their children and consider access to education at the resettlement site of critical importance.

36. It is important to carry out an inventory and evaluation of organizations and practitioners with experience in resettlement issues to identify the best of them to participate in the formulation, implementation, monitoring, and evaluation of any resettlement plan. The active participation of local institutions and experts from civil society and academic institutes is important to promote ownership of the project.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

37. The Department of Public Works and Highways will be the main implementing agency, in close cooperation with other agencies, including MMDA and the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), Department of Environment and Natural Resources (DENR), Laguna Lake Development Authority (LLDA), HUDCC, NHA, SHFC, DILG, ISF-NTWG, DSWD, LGUs, as well as with the NDRRM Council. There has been similar close cooperation during the preparation of the Master Plan, although not with all the above-mentioned agencies. One high-level steering committee and one technical-level steering committee were established for the overall management and coordination of the master plan. These steering committees will continue to operate during the preparation of the studies, with an expanded membership. In addition, technical staff of the Project Management Office (PMO) – Flood Control of DPWH worked closely and effectively with staff of other agencies during the preparation of the Master Plan. This same office will be in charge for the day-to-day management of the project.

38. DPWH has been implementing both Technical Assistance (TA) and lending operations of the Bank and is familiar with the technical and fiduciary and safeguards requirements to implement this grant. It has an Environment and Social Safeguards Division (ESSD) primarily dedicated to the environmental and social impact management of DPWH's different projects. It maintains separate sets of safeguard standards depending on the funding source of the project it implements. Implementation of mitigation activities is usually done by contractors supervised

by DPWH project teams, at times assisted by consultants and monitored and reported by ESSD, where appropriate. The performance of ESSD, based on a recent World Bank thematic review for the Philippines, points to the need of putting in place a capacity building program if it is to be in charge of handling safeguard issues during the future implementation of the designs prepared under this project. ESSD will benefit by strengthening its capacity to manage and coordinate the safeguards principles and procedures especially related to the preparation of the environmental and social assessment studies and for resettlement/rehousing of affected communities living in the flood plain of Laguna de Bay. The consultants preparing the Environment and Social Impact Assessments (ESIA), rehousing studies, and Resettlement Action Plan (RAP) will work closely with ESSD during the preparation of the studies. As needed, ESSD and the consultants will also coordinate closely with the various relevant agencies mentioned above.

39. Several consulting teams will be coordinating closely under the project, particularly the consulting teams working on the dam and the team working on the flood protection works in the Marikina River (funded from the PHRD) as hydrological design parameters will be similar for both studies. This is also true for the technical consultants and the environmental and social consultants that will work together closely to come up with the best technical solutions that are environmentally and socially sound and that can minimize resettlement/rehousing of people.

B. Results Monitoring and Evaluation

40. The outcome of the project are proposals and detailed designs for structural measures that are technically, economically, socially, and environmentally sound and that are ready for appraisal by government and/or international financiers. This outcome will be achieved at the end of the project and can be easily monitored and measured.

41. The project studies will be implemented under close monitoring of the multi-agency steering committees, as well as by the World Bank task team. Other development agencies, including JICA, have agreed to also participate in project support and reviews. Interim results and outputs, e.g. reports and key decisions along the way, will be reviewed and discussed by the committees and the task team.

42. Since there are several partners involved with support to GoP for flood management improvements, including the Australian Government and JICA, and the initiative could attract new ones, it is proposed to establish a donor committee to build a shared vision of the project, to align efforts, and to unify requests. This will also help to reduce the burden on the implementing agencies to respond to multiple requests, reports, and formats of different donors.

C. Sustainability

43. Government's commitment to improving flood management in the Greater Metro Manila Area is high. The Master Plan was approved and implementation has started. This project includes studies only, which will consider sustainability of the infrastructure that will be designed. This will include durable designs that can be operated and maintained as economically and efficiently as possible.

V. KEY RISKS AND MITIGATION MEASURES

A. Risk Ratings Summary Table

Risk Category	Rating
Stakeholder Risk	Moderate
Implementing Agency Risk	
- Capacity	Moderate
- Governance	Moderate
Project Risk	
- Design	Moderate
- Social and Environmental	Substantial
- Program and Donor	Low
- Delivery Monitoring and Sustainability	Low
Overall Implementation Risk	**Moderate**

B. Overall Risk Rating Explanation

44. Very few, if any, people will be affected directly by the proposed dam, but around 50-60,000 households living in the flood plain of Laguna de Bay will be affected by the actual implementation of the project interventions. Resettlement/rehousing studies will therefore be an integral part of the project and even though no people will be resettled under this project it may pose substantial risks, given the sensitivity of resettlement issues in the Philippines. Potential risks, not just for this project but more so for the future implementation of the results of this project, include opposition from urban-poor non-governmental organizations and civil society organizations (CSO); resistance from the potentially affected people and local community associations; opposition/concern on the part of local politicians responding to community mobilization, etc. It is important that resettlement/rehousing studies and the technical studies are developed in close cooperation with local stakeholders and the impacted communities and consider the most optimum resettlement/rehousing scenario. The various technical consulting teams will be required to liaise closely with the environmental and social consultants as part of the services and vice versa. In addition, transparency, communication, consultations, and openness are good strategies to mitigate risks related to resettlement/rehousing. Engaging some of the key civil society leaders and academics not only for the consultations but also to review the work on the studies is envisaged as a good way of both ensuring a strong output but also of preventing reputational risk problems from emerging for the Bank. A strategic communication plan and information campaign will be formulated and implemented already under this project to guide the messaging and engagement with civil society and other sectors, including media, to help manage potential reputational risks. The communication plan will contain stakeholder mapping and appropriate messaging as well as detailed action to deal with key issues that might affect the implementation of the project interventions. There will be much emphasis on consultations with key stakeholders, including civil society. An independent Panel of Experts

will be established to provide advice and guidance during the implementation of the studies and endorse key proposals.

45. The World Bank teams have been providing advice and building capacity for the government on issues related to informal settler families through various technical assistance projects and studies since 2010. The studies will be important inputs to the various project consulting teams. The TAs are supporting (i) HUDCC in developing the National Informal Settlement Upgrading Strategy; (ii) SHFC in scaling-up its successful Community Mortgage Program (CMP) through introducing product innovations, enhancing its business processes, and building capacity of the organization and its stakeholders; (iii) NHA in pursuing safe, inclusive, affordable and sustainable shelter solutions to its target beneficiaries; and (iv) DSWD in preparing a framework plan for private sector participation in the re-development of the Welfareville, among the largest informal settlements in Metro Manila.

46. The Bank also supports studies that aim to provide broader insights and knowledge for cross-cutting issues, including: (i) understanding land and related constraints in the provision of affordable housing in Metro Manila; (ii) development of applicable models for post-occupation management of affordable housing estates; and (iii) design of subsidy schemes for ISF housing, including the potentials for implementing a rental voucher scheme.

VI. APPRAISAL SUMMARY

A. Economic and Financial (if applicable) Analysis

47. An economic and financial analysis has not been carried out for the studies to be financed under this project. The studies, however, will carry out an economic and financial analysis of the proposed structures, including sensitivity to changes in key variables.

B. Technical

48. Qualified technical consultants will carry out the studies and prepare designs that are appropriate to the country's need and conform to relevant national and international standards. There will be emphasis on designing durable structures that require minimum funding for operation and maintenance. One of the major contributories to flood damage has been a lack of maintenance of drainage and other hydraulic infrastructure. The institutional development study will develop proposals for improved O&M for flood control and management. Good practices such as performance-based O&M contracts for drainage infrastructure will be considered. Similarly, the adaptation of designs for easier-to-do and thus less expensive O&M will be considered, including for instance ensuring necessary spaces for machinery access and use.

49. The master plan includes proposals for climate change adaptation and mitigation. As needed, possible climate change factors will be taken into account during the studies. However, it will have to be avoided to design facilities that are needed only several decades in the future. What the studies will do is to aim at adopting structures for which the flood control capacity can be augmented in future with least cost and effort. Examples of this are structures for which the foundation is put in place already now so that expansion can be done easily and design of dam gates that can allow numerous discharge operation patterns.

C. Financial Management

50. There will only be a small number of financial transactions under the project, mostly for payments related to consulting services and workshops and consultation meetings. DPWH has been implementing both TA and lending operations of the Bank and the agency has recently significantly improved its fiduciary functions through its integrity strengthening action plan. Based on the FM assessment of the project carried out in accordance with the "Financial Management Practices in World Bank-Financed Investment Operations", DPWH financial management (FM) systems meet the Bank's requirements provided some recommended mitigating measures are incorporated in the design and implementation of the project (see Annex 3). An annual audit of the grant will be carried out by COA, as per requirements of the grant.

D. Procurement

51. There will only be limited procurement, mainly related to recruitment of three teams of consulting firms, two technical and one social and environment, and a PoE on dams. The procurement arrangements for this project will essentially follow DPWH set-up. The Bids and Awards Committee (BAC) for consultancy with the assistance of Central Procurement Office (CPO) - Consultants Division will carry out the procurement. Technical inputs will come from the Project Management Office for Flood Management and other relevant units of DPWH. A preliminary assessment of the capacity of the relevant units of DPWH to handle the limited number of procurement was conducted. DPWH has been implementing both TA and lending operations financed by the World Bank. Systems are in place to carry out the procurement, however current staff need (re)orientation on the World Bank's Consultants Guidelines as experienced staff have either retired or transferred to other units as a result of the recent rationalization plan. Project procurement risk is moderate.

E. Social (including Safeguards)

52. The social safeguard policies that will apply are OP 4.10 – Indigenous People and OP 4.12 – Involuntary Resettlement.

53. The whole of Metro Manila does not have ancestral domains and/or Indigenous Peoples (IP) communities. However, a study done in early 2000s for another project found that there are IP communities in the upland areas of 8 LGUs of Rizal Province. Initial investigations have shown that no or very few people live in and around the proposed reservoir area of the Marikina Dam. The area is, however, part of the ancestral domain of the indigenous Dumagat-Remontados people. Screening of this will be carried out by the social and environment consultants early on during the implementation of the studies and if the screening confirms their presence in and around the proposed reservoir area, a social assessment to comply with OP 4.10 will be incorporated in the environmental and social impact assessment and either an IP Framework and/or IP Plan will be developed, as needed.

54. There is need for detailed social and resettlement (rehousing) studies as some 50 – 60,000 households, including many ISFs, are living in the flood plain of the Laguna de Bay study area. The priority investments, when implemented, may cause both temporary and permanent physical and economic displacement of people occupying the flood plains. Most of

these people would have to move out of the flood plain temporarily to allow land raising to take place, but it is envisaged that a number of them will return to live on the raised land in multi-story social housing units. Government and the Bank are studying the use of a voucher system to allow the affected population to find alternative rented accommodation during the construction period. The (temporary) resettlement opportunities have to be assessed in close cooperation with the affected people who should be involved in participatory planning processes. There will be extensive formal and informal consultations with the affected communities, NGOs and CSOs that work with the affected communities, Local Government Units, government agencies, etc. to ensure that the rehousing/resettlement proposals will be understood and acceptable to all parties. The Bank task team in close cooperation with DPWH and other agencies will develop and implement an information campaign that emphasizes expectations and transparency.

55. A Resettlement Policy Framework (RPF) and/or Resettlement Action Plans will be prepared. The RPF and/or RAPs will be guided by and include a series of rehousing studies. The RPF and/or RAP will assess various alternatives/options that will have the least impacts on people and factor these in the engineering designs. In addition, impacts to potentially affected persons and planning for mitigation of the same to their housing and livelihood conditions are important aspects of the studies to be made. The outcomes of these studies will influence the decision on the final configuration of the investments, including alignments. A RAP, where needed, will be prepared together with the preparation of the detailed engineering design of the infrastructure.

56. The RPF/RAP studies will provide a sufficiently detailed analysis of the resettlement/rehousing impacts, social impacts, and the institutional aspects in order to be able to provide detailed recommendations on how these should be taken into account during implementation of the results of this project. Particular attention will be given to the key institutions and different government entities involved in resettlement/rehousing. Interventions may include institutional strengthening activities, development of Peoples Plans, and the possible implementation of a rental voucher scheme.

57. An independent Panel of Experts will be established to oversee the implementation of the social and RPF/RAP studies and provide guidance, where needed. The Panel will include expertise in social, resettlement, and urban planning and development.

F. Environment (including Safeguards)

58. Several environmental safeguards policies are triggered, including OP 4.01 – Environmental Assessment, OP 4.04 – Natural Habitats, OP 4.37 - Safety of Dams, OP 4.11 – Physical Cultural Resources, and OP 4.36 – Forests.

59. The project only supports the preparation of feasibility studies and engineering designs of two priority investments that were identified in the Master Plan and environmental and social assessments for these priority investments. Nevertheless, OP 4.01 is triggered since the studies are expected to lead to investments expected to have positive but also potentially adverse environmental and social impacts if not managed adequately.

60. Part of this project is the conduct of environmental and social assessments and resettlement/rehousing studies to precisely assess those impacts and put forward options and mitigation measures that will be considered in the feasibility studies and engineering designs of the priority investments. The environmental and social assessments will be carried out by DPWH with technical assistance and support from qualified consultants to ensure that the Bank and the National Government's environmental and social safeguard policies are being followed and complied with and that the project will follow standards that are sound and acceptable. The environment and social impact assessments (one for the Marikina Dam and one for the Laguna Lakeshore Land Raising investment) will carefully assess the environment and social impacts of the priority investments, including impacts from ancillary facilities as well as cumulative impacts, and lay out detailed plans for mitigation in the Environmental and Social Management Plan (ESMP), and develop a monitoring and reporting program. The ESMP will be properly costed to ensure that the costs get adequately incorporated into the overall investment proposals. The various options in terms of sites, alignments, and resettlement/rehousing will also be analyzed as part of the ESIAs. A Grievance Redress Mechanism will be developed and will be detailed in the ESMP and be presented to the communities during public consultations.

61. The ESIA will identify natural habitats and other ecologically sensitive areas that may be affected by the investments when implemented. The project will not design activities that would significantly convert or degrade critical natural habitats. If the ESIA indicates that a project would significantly convert or degrade non-critical natural habitats, or affect physical cultural resources, the project would include acceptable mitigation measures to be implemented when the investments are financed. Such mitigation measures could include, as appropriate, minimizing habitat loss (e.g. strategic habitat retention and post-development restoration) and establishing and maintaining an ecologically similar protected area, as well as avoidance or preservation of physical cultural resources. The ESIA will confirm the project impacts on forests and forest-dependent communities, particularly in and around the proposed dam site. As needed, the ESMP will include measures to address impacts on forests, forest health, and forest-dependent communities.

62. Since the project will entail the design of a high dam as one of its investments, the OP on Safety of Dams is triggered. The policy requires that experienced and competent professionals design and supervise construction, and that the borrower adopts and implements dam safety measures throughout the project cycle. A Panel of Experts on Dams will be established for the duration of the project.

G. Other Safeguards Policies Triggered

63. None.

Annex 1: Results Framework and Monitoring

PHILIPPINES: STUDIES FOR SUSTAINABLE FLOOD MANAGEMENT

Project Development Objectives

PDO Statement

The proposed project development objective is to prepare priority projects that aim to improve flood management and resilience in the Greater Metro Manila Area.

These results are at	Project Level

Project Development Objective Indicators

Indicator Name	Core	Unit of Measure	Baseline	Cumulative Target Values					Frequency	Data Source/ Methodology	Responsibility for Data Collection
				2014	2015	2016		End Target			
Project proposals for structural measures fully designed that are technically, economically, socially, and environmentally sound and that are ready for appraisal.	☐	Number	0	0	0	2		2	Annually	Progress reports, study reports	DPWH

Intermediate Results Indicators

Indicator Name	Core	Unit of Measure	Baseline	Cumulative Target Values					Frequency	Data Source/ Methodology	Responsibility for Data Collection
				2014	2015	2016		End Target			
Feasibility studies for the proposed interventions completed.	☐	Number	0	0	2			2	Semi-annually	Progress reports	DPWH

Annex 2: Detailed Project Description

PHILIPPINES: STUDIES FOR SUSTAINABLE FLOOD MANAGEMENT

The Master Plan

1. The Master Plan was prepared by government, with DPWH in the lead and with World Bank financial and technical assistance, to establish a 20-25 year road map/vision for sustainable and effective Flood Risk Management (FRM) in the Greater Metro Manila Area. The Master Plan was approved by the NEDA Board on September 4, 2012 during a Board meeting chaired by the President of the Philippines. The total estimated cost for the implementation of the Master Plan is about Peso 352 billion (US$7.86 billion) over the next 20-25 years.

2. The basic concepts for formulating the Master Plan were:

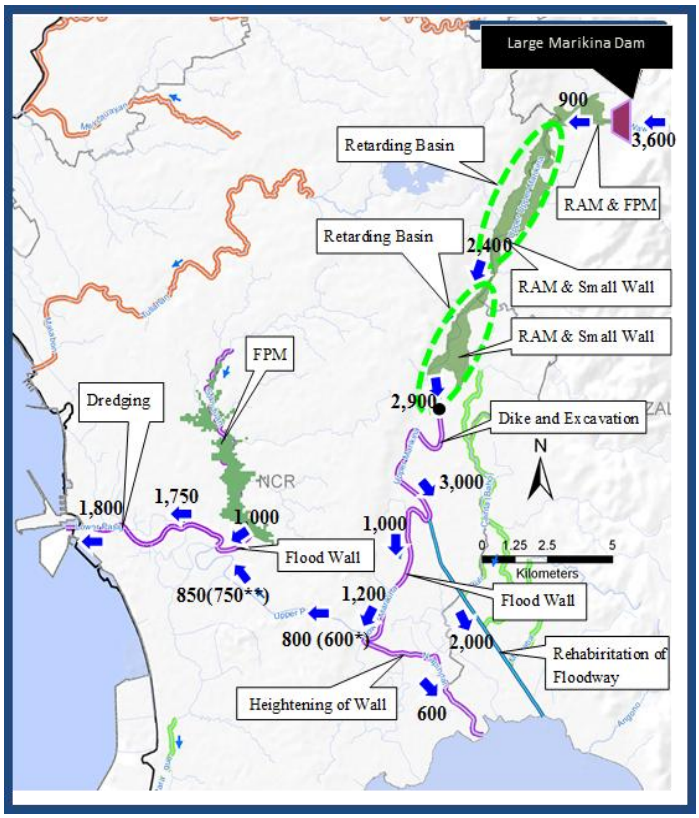
1. Understand recent typhoon events (e.g. Ondoy) and use the information to develop flood hazard maps and mathematical model;
2. Setting target flood safety levels for the rivers, Laguna de Bay, and urban drainage;
3. Focus mainly on mitigation and preparedness;
4. Study various alternative mitigation measures, both structural and non-structural, to be included in the long list of options;
4. Check proposed measures against climate change and adapt, as needed;
5. Propose a short-list of structural and non-structural projects among the long-listed projects that would form the core of the Master Plan to be implemented during the period 2014 up to 2035/40; and
6. Understand the impact on affected population for each option and incorporate on-site developments or nearby resettlement as an integral part of specific project development (almost 160,000 households live in high risk areas).

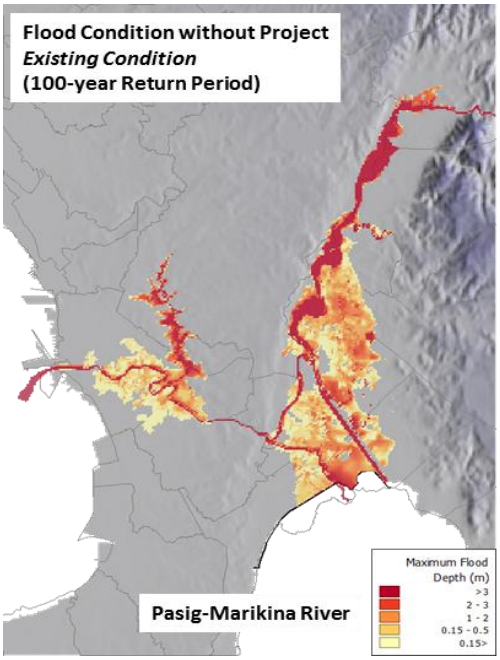
3. The principle direction for the Master Plan development was to propose solutions to reduce flooding from river systems and around Laguna de Bay, and propose improvements in urban drainage. It also makes proposals for such non-structural measures as flood forecasting and early warning systems and community-based flood risk management. Finally, the Master Plan makes recommendations to improve the institutional structure to deal with flood management in an integrated manner. Three distinct different types of structural measures have been developed to improve the safety up to 100 years return period for the river systems and 10 years return period for urban drainage:

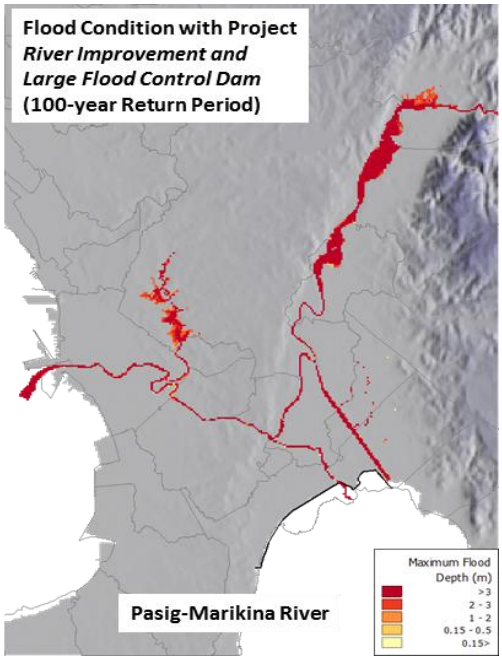
1. Structural measures for the rivers, in particular the Pasig-Marikina River, in combination with land use management/resettlement in high flood risk areas;
2. Structural measures for Laguna de Bay lakeshore area in combination with land use management/resettlement in high flood risk areas; and
3. Improvement of urban drainage systems in combination with better operation and maintenance.

4. The Pasig-Marikina River is the largest river flowing through Metro Manila. It is a main cause of annual flooding that can affect millions of people (see left map in bottom part of the

next illustration). The Master Plan has proposed a range of activities from construction of a large dam to dredging to increase the safety against flooding up to a 100 year event (see top map in illustration). When all proposed interventions are implemented, it is shown in the right map of the bottom part of the illustration that the flooding of populated areas can be reduced to basically zero.





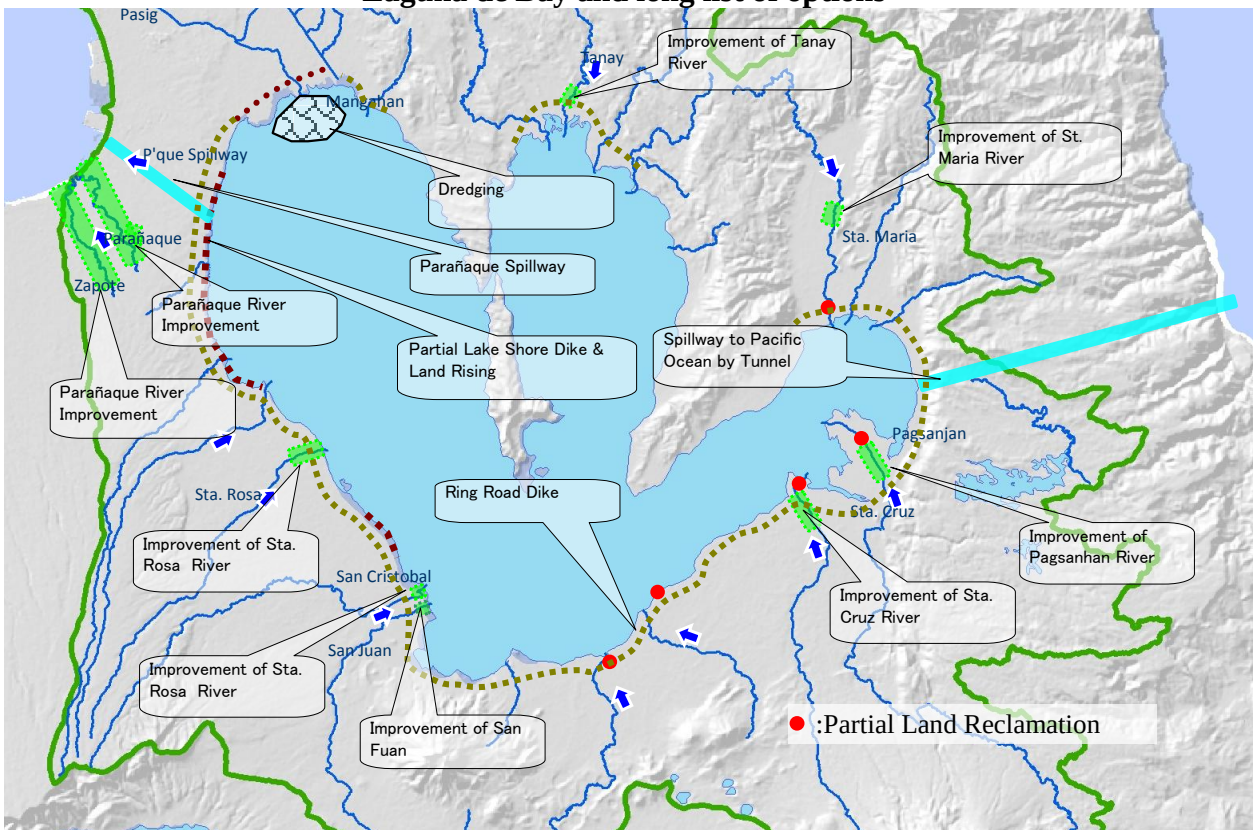


5. Laguna de Bay is the largest lake in the Philippines, located east and south east of Metro Manila between the provinces of Laguna to the south and Rizal to the north. The lake has a surface area of 911-949 km², with an average depth of about 2.8 m. The lake is a multipurpose resource. It is one of the primary sources of freshwater fish in the country, but also serves for aquaculture, recreation, food support for the growing duck industry, and irrigation.

6. In order to reduce the flooding in Makati and Manila along the Pasig River, the peak water flows of the Marikina River are diverted via the Mangahan Floodway to Laguna de Bay, which serves as a temporary reservoir. However, its large catchment area is the main contributor to annual water level fluctuations that affects hundreds of thousands of people living in the flood plain, especially along its western shore. Laguna de Bay's water drains to Manila Bay via the Pasig River, and it can take months before the water recedes completely out of the flood plain.

7. The Master Plan reviewed many possible options to reduce the impact of flooding on the people living in the flood plain (see next illustration). Options include a ring dike around the lake, land raising of the flood plain, and a spillway to either Manila Bay or the Pacific Ocean. The Master Plan proposes flood plain land filling as the preferred solution for certain areas along Laguna de Bay, combined by separate improvements for each of the smaller cities around Laguna de Bay.

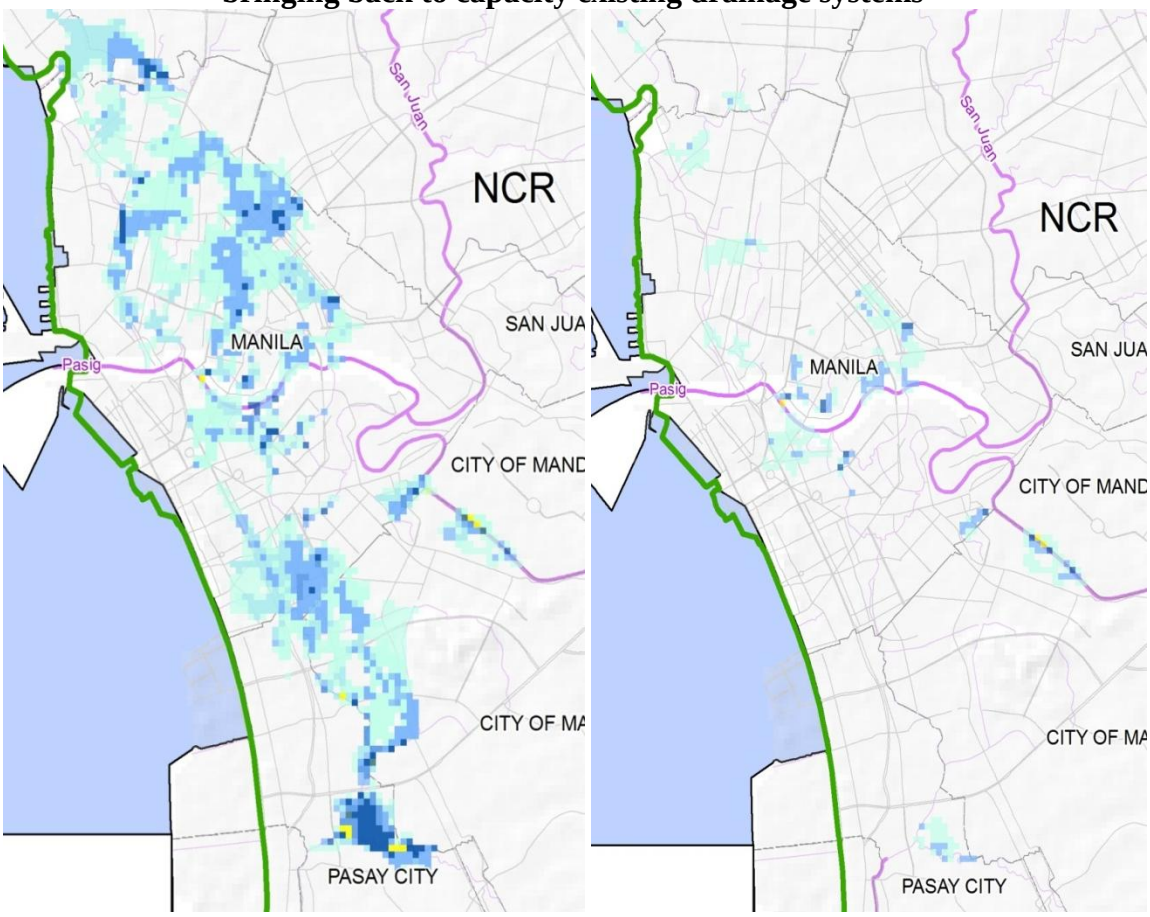
Laguna de Bay and long list of options



8. Flooding of urban areas is a common problem in the Greater Metro Manila Area that affects traffic and causes low depth flooding in many houses and buildings. The Master Plan

identified that the urban drainage infrastructure is mostly in place, but that it does not function well. The main causes relate to the poorly functioning of the drainage infrastructure for lack of maintenance, solid waste obstructions, old pumping stations, and informal settler families obstructing the flow of waterways. As shown in the illustration below, urban drainage could be substantially improved if drainage channels are kept clean and to capacity and pumping stations are modernized and their capacity increased where possible.

Drainage problems before (left) and after (right)
bringing back to capacity existing drainage systems



The Project

9. The proposed project development objective is to prepare priority projects that aim to improve flood management and resilience in the Greater Metro Manila Area.

10. Based on mathematical models linked to flood hazard maps and a detailed assessment of a long list of options, the Master Plan proposes a program of priority infrastructure to safely control and manage major flood events in the Greater Metro Manila Area. Among the key priority interventions that have been identified in the Master Plan are: (i) a high dam in the upper Marikina River catchment area to reduce the peak flows entering the city during typhoon events; (ii) flood protection works in the Marikina River; (iii) land raising of certain sections of the flood plain of Laguna de Bay to protect the population against high water levels in the lake; and (iv)

further development of a comprehensive flood forecasting system and monitoring and early warning system for the Greater Metro Manila Area, with maximum participation of local communities.

11. The Government of the Philippines has started the implementation of the Master Plan with a number of activities such as dredging of waterways and pumping station modernization that will have localized positive impact on the reduction of flood risks. However, as indicated above, substantial investments in large-scale infrastructure will be needed to improve flood management within large sections of the Greater Metro Manila Area. Perennial problems with flooding occur along the Pasig-Marikina River and along the shore of Laguna de Bay that affect millions of people on a regular basis and has a negative impact on the economy. The Master Plan has identified that flood waters should be captured in the upper Marikina basin to reduce the discharge in the Pasig-Marikina River during typhoon and other heavy rainfall events. Similarly, people living along Laguna de Bay should be protected against the annual water level fluctuation of the lake. Both these regular events especially affect the poor, many of whom live in or around the flood plains of the city's river and lake systems.

12. It is important that the large-scale infrastructure is soundly designed from a social, environmental, technical, and economic point of view. This proposed project will finance two components, the main one related to the development of feasibility and design studies of priority infrastructure that will lead to substantially increased safety of the population during flood events. A small second component relates to project management and administration.

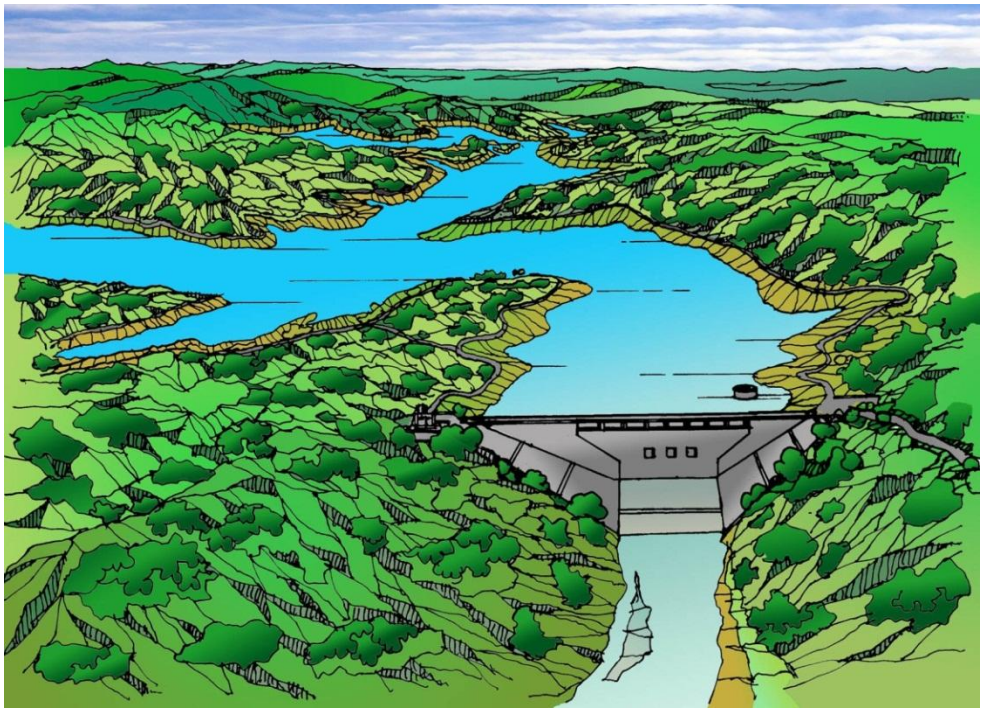
13. *Component A – Preparation of feasibility and design studies for priority flood management infrastructure (US$6.8 million).* Feasibility and design studies, including preparation of tender documents, will be prepared for: (i) a high dam in the upper Marikina River catchment area; and (ii)) land raising of certain sections of the flood plain of Laguna de Bay. Multi-disciplinary teams of consultants, including expertise in civil engineering, dam engineering, resettlement, hydrology, economics, social science, environment, etc., will be recruited to prepare detailed feasibility and design studies for the above mentioned proposed interventions. Separate consulting firms will be hired for the technical studies for the dam and for the Laguna de Bay land raising. One consulting firm/institute will be hired for the social and environmental assessments related to both interventions, including the social surveys that will target the communities that are affected by the potential projects. A Panel of Experts on Dams will be established as per OP on Dam Safety.

14. The Master Plan identified that a dam in the upper Marikina River catchment area would be the best structure to reduce the river flows to Metro Manila during major typhoon activity. However, since the master plan was approved, few other options have been suggested to mitigate floods in the Marikina River and along Laguna de Bay. Alternatives to the high dam include diverting river water through tunnels to another river catchment or a series of small dams. The task team reviewed some of these suggested options and it is believed that the dam is the right structure to reduce the flood risks in Metro Manila, but it is prudent to carry out a rapid review of the feasibility of the various suggested options and determine the best option. The proposed feasibility studies will thus study the various options for flood management improvements in the study areas to be followed immediately by design studies of the selected options. The feasibility

and design work will include the technical and engineering studies, economic studies, and social and environmental studies, all in compliance with the relevant World Bank Operational and Safeguard Policies, and up to a level ready for appraisal/financing by the government, possibly with the assistance of international organizations such as the World Bank and JICA. In this respect, the Bank already has a Metro Manila Flood Management Project in its pipeline, for which the detailed scope has yet to be defined based on the outcomes of this Australian DFAT grant and other donor-funded preparation activities (PHRD will make funds available to finance the preparation of other major interventions).

15. The discharge generated in the upper catchment of the Marikina River system is much higher than the discharge that can be safely conveyed through the river within Metro Manila. The Marikina River has therefore been a major cause of severe flooding within the metropolitan area. The river flow with a 1:100 year return period generated at the location of the possible dam site is about 3,600 cumecs, which is about four times higher than can be conveyed in the Marikina River, considering the additional inflows expected during typhoon events downstream of the potential dam site. In order to reduce flood risks along the Marikina River, it is essential to temporarily store water in the upper catchment so that river flows can be controlled.

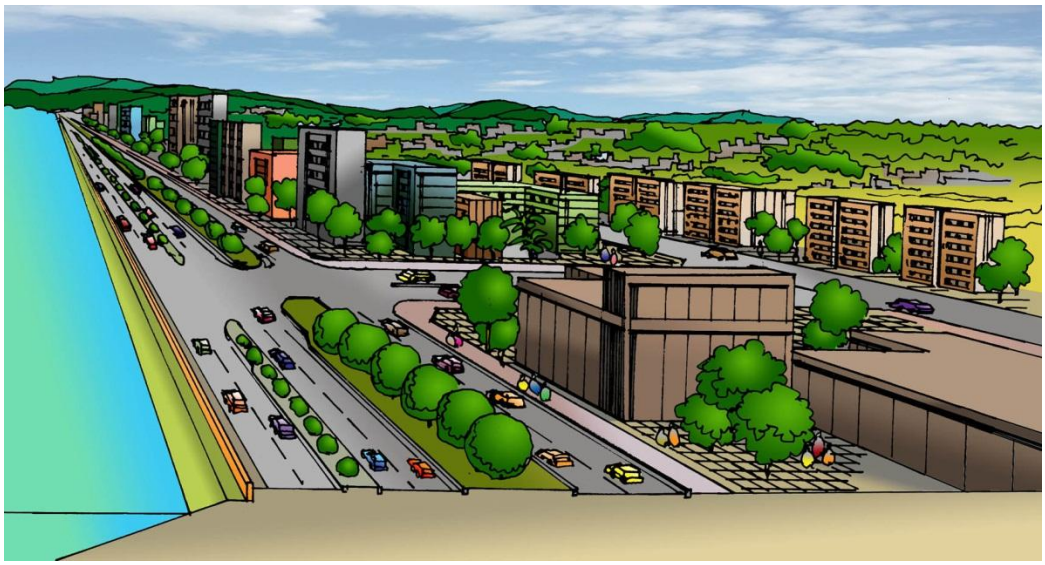
16. The Master Plan proposes a 70 m high gravity concrete dam with large orifice openings (see illustration on the next page). The gross storage capacity of the proposed dam is around 80 million cumecs, which would be sufficient to reduce the peak river flow during a 1 : 100 year event from about 3,600 to 900 cumecs. Although the primary purpose of the proposed dam would be flood management, the Master Plan identified that there are opportunities to utilize some of the reservoir water for much needed water supply purposes for Metro Manila as well. The parameters of the dam and the multi-purpose use of its water would be studied and finalized during the studies under this project. The necessary surveys and geotechnical and other investigations will be part of the studies, followed by the detailed design of the selected option and the preparation of tender documents. The studies are estimated to take 18 months, but efforts will be made to complete the studies earlier.



17. The water level of Laguna de Bay fluctuates on average about 3.5 m on an annual basis. The long-term mean (normal) lake water level is about 12.5 m above mean sea level. The water level is usually the lowest in April/May, with the minimum water level around 10.5 m above mean sea level, while the maximum water level appears usually in October. The maximum recorded water level in the lake has been 14.03 m (in 1972). Typically the rise in water level is quick as the lake has a large catchment area. As there is only one outlet, linking the lake with the Pasig River, it takes several months for the flood waters to recede.

18. About 50-60,000 households live in the flood plain of Laguna de Bay and they are affected on an annual basis by the flood waters in the lake, often for three months or even longer. In order to reduce these annual flooding events, the Master Plan proposes land filling of sections of the flood plain, starting at 12.50 m to a level well above 14 m (see illustration on the next page). This would bring a strip of land of about 200 m wide on average above the highest lake level. This land would be available for infrastructural and housing developments. The studies are estimated to take 18 months, but it is expected that pilot work can be prepared earlier, so that works can start already in 2015.

19. Particular mention is made of the need for very detailed social and resettlement (also called ‘rehousing’ in the Philippines) studies considering the large number of households that live in and around the flood plain of the Laguna de Bay study area. Land filling would be done in sections and people who live in the first few sections would have to move out of the flood plain, at least temporarily, to allow land filling to take place. Government and the Bank are studying the use of a voucher system to allow the affected population to find alternative rented accommodation during the construction period. As relocation could be for up to four years, it is expected that many of the people who are affected may find permanent accommodation outside the immediate project area and will not plan to return to settle again close to the lake. However, others may opt to return to live on the raised land in affordable multi-story housing units.



20. There will have to be extensive formal and informal consultations with the affected communities, non-governmental organizations and civil society organizations that work with the affected communities, local government units, government agencies, etc. to ensure that the rehousing/resettlement proposals will be understood and acceptable to all parties. DPWH and other agencies, with support from the Bank's task team, will develop and implement an information campaign that emphasizes expectations and transparency. Finally, an independent Panel of Experts will be established to oversee the implementation of the studies and provide guidance, where needed. The Panel will include expertise in social, resettlement, and urban development.

21. *Component B – Project management and administration (US$0.2 million).* Operational expenses for DPWH will be financed to manage the implementation of the grant and monitor the consultants and the outputs of the services. The annual audit will be conducted by the Commission on Audit. Fixed costs, such as staff costs, will be paid for by DPWH.

Annex 3: Implementation Arrangements

PHILIPPINES: STUDIES FOR SUSTAINABLE FLOOD MANAGEMENT

Project Institutional and Implementation Arrangements

Project administration mechanisms

1. The Department of Public Works and Highways will be the main implementing agency, in close cooperation with other agencies, including the Metro Manila Development Authority, Philippine Atmospheric, Geophysical and Astronomical Services Administration, Department of Environment and Natural Resources, Housing and Urban Development Coordinating Council, various housing agencies such as National Housing Administration and Social Housing Finance Corporation, Department of Interior and Local Government, Laguna Lake Development Authority, and the ISF-National Technical Working Group, Department of Social Welfare and Development , Local Government Units, as well as with the NDRRM Council. There has been similar close cooperation during the preparation of the Master Plan. One high-level steering committee and one technical-level steering committee were established for this purpose. These steering committees will continue to operate during the preparation of the studies, but with an expanded membership. In addition, technical staff of the Project Management Office – Flood Control of DPWH worked closely and effectively with staff of other agencies during the preparation of the Master Plan. This same office will be responsible for the day-to-day management of the project.

2. DPWH has been implementing both TA and lending operations of the Bank and is familiar with the fiduciary and safeguards requirements to implement this grant.

3. Various consulting teams will be coordinating closely under the project, particularly the consulting team working on the dam and the team working on the flood protection works in the Marikina River (funded from the PHRD) as hydrological design parameters will be similar for both studies. This is also true for the technical consultants and the environmental and social consultants who will work together closely to come up with the best technical solutions that are environmentally and socially sound and that can minimize resettlement/rehousing of people.

Financial Management, Disbursements and Procurement

Financial Management

4. There will only be a small number of financial transactions under the project, mostly for payments related to consulting services and workshops and consultation meetings. DPWH has been implementing both TA and lending operations of the Bank and possesses adequate financial management capacity to implement this project. An annual audit of the grant will be carried out by COA, as per requirements of the grant.

Financial Management Organization and Staffing

5. DPWH has a well-defined organizational structure and the project will use the existing structure for FM. The rationalization plan of DPWH was approved June 18, 2013 and the agency was given sixty days to implement the approved organizational structure. Under this recently approved organizational structure, the FM functions are under the Financial and Management Service (FMS). Prior to the rationalization plan, the Controllership and Financial Management Services (CFMS) of DPWH handled the financial management of various Bank projects. For this project, the FMS will be generally responsible for the following: (i) maintain the books of accounts; (ii) monitor the Designated Account (DA); and (iii) prepare the Project Financial Reports required by the Bank. FMS will be supported by the PMO – Flood Control with the following FM-related activities: (i) initial screening of transactions; (ii) preparation of disbursement vouchers, SOEs and Withdrawal Applications for the DA; and (iii) manage the DA and prepare financial management reports. Given the movement in personnel as a result of the rationalization plan, DPWH should ensure that there will be proper turnover of project files to new FM personnel and that there will be sufficient manpower in FMS and the PMO to support project operations given the new organizational structure.

Budgeting

6. DPWH has a Budget Division responsible for the preparation and monitoring of its budget, including that for this project. The Budget Division has sufficient manpower and procedures necessary to ensure that the budget is realistic and based on the projected needs of the department. Since this grant has a very specific scope, the projected expenses are limited to certain activities in the Central Office. The Work and Financial Plan (WFP) should be finalized prior to disbursement and updated every quarter to include adjustments depending on the progress with the preparation of the studies.

Accounting

7. DPWH conforms to the New Government Accounting System (NGAS) which the Commission on Audit issued as per COA Circular No. 2001-004 dated October 30, 2001 and took effect on January 1, 2002. NGAS follows international public sector accounting standards (IPSAS). The bookkeeping segment of NGAS is computerized and is referred to as electronic NGAS (eNGAS). The Central Office and field offices (regional and district) are using eNGAS for bookkeeping purposes. To ensure proper monitoring of financial transactions, separate books of account will be maintained for the project.

Internal Controls

8. Basic internal controls such as separation of conflicting functions, segregation of bookkeeping functions from custodianship of assets, reconciliation of subsidiary records with the corresponding general ledger control account, and a multilevel system of review and approval of transactions before their execution are required under NGAS.

9. The following are the key Internal Control arrangements for the project:

a. The project will follow the Internal Control applicable in the NGAS. The department shall be asked for its action plans with timetables for accountability issues, should there be any, in the audit reports of the project;
b. Review and approval of transactions will be done by the FMS and Management of DPWH, respectively;
c. Separate books of accounts and subsidiary ledgers shall be used for the project to be maintained by FMS;
d. A Designated Account shall be separately created for the project;
e. Monthly bank reconciliation statements shall be prepared and be submitted no later than the end of the following month;
f. A Work and Financial Plan shall be prepared for the whole duration of the project with details per month for the current year and submitted to the Bank and Project Management; and
g. Any property and inventory acquired under the project shall be required to have a physical inventory taking annually with a report to be submitted to DPWH Management on the results and including reconciliation with recorded accountabilities and the action on the differences.

Funds Flow and Disbursements Arrangements

10. For the project, the funds from the grant proceeds will flow from the World Bank to the Philippine Treasury. After issuance of a Notice of Cash Allotment (NCA) issued by the Department of Budget and Management (DBM), funds will flow to the Designated Account of the project maintained by the department. Payments of eligible expenses shall be made out of the DA (or by direct payment). Contractors, suppliers, and consultants are paid centrally at the Central Office through the DA. These are then liquidated to the Bank together with an application for replenishment of the DA.

11. The primary disbursement method will be Advances. The segregated US$ denominated Designated Account will be maintained at the Central Office of the DPWH with the Land Bank of the Philippines (LBP). The DA ceiling shall initially be fixed at US$700,000. Should the DA ceiling become insufficient for the operations of the project, a request for an increase with justification may be done. Supporting documentation required for documenting eligible expenditures paid from the DA are Statements of Expenditures (SoE) and a "List of payments against contracts that are subject to the World Bank's Prior Review" together with Records. The frequency for reporting eligible expenditures paid from the DA is quarterly. Direct payments will also be allowed. Direct payments will be documented by Records. The minimum application size for Direct Payments will be US$ 140,000 equivalent. There will be no retroactive financing under the project.

12. The Disbursement Deadline Date for the project (final date on which the World Bank will accept applications for withdrawal from the Recipient or documentation on the use of Grant proceeds already advanced by the World Bank) will be four months after the Closing Date specified in the Grant Agreement. This four month "grace period" is granted in order to permit the orderly project completion and closure of the Grant account via the submission of applications and supporting documentation for expenditures incurred on or before the Closing

Date. Expenditures incurred between the Closing Date and the Disbursement Deadline Date are not eligible for disbursement, except as otherwise agreed with the World Bank.

Financial Reporting and Monitoring

13. The Project shall submit a quarterly interim unaudited financial Report (IUFR) to the Bank 45 days after the end of each quarter consisting of the following:

a. Balance Sheet - a statement of resources (assets and liabilities including government contribution) of the project;
b. Statement of Sources and Uses of Funds - a report on the receipt and uses of funds by project components and by expense categories;
c. Physical progress report; and
d. Procurement status.

External Audit

14. The Commission on Audit, being the Supreme Audit Institution (SAI) of the country, will perform the external audit of DPWH's financial statements related to the project. This SAI is an independent office which was given the mandate under the Philippine Constitution to audit all accounts pertaining to government revenues and expenditures, uses of government resources, and to prescribe accounting and auditing rules. The COA's audit is substantially in accordance with the international auditing standards prescribed by the International Organization of Supreme Audit Institution.

15. The external audit arrangements shall be in accordance with the Bank's policies on audits of projects, and based on terms of reference acceptable to the Bank. Audited Financial Statements shall be required to be submitted no later than six months following the end of the fiscal (financial) period for the Recipient, including a Management Letter (Audit Observations Memorandum) which would contain the auditors' comments on the Project's Financial Management including its Internal Controls.

Summary of Financial Covenants

16. Under this project, DPWH shall comply with the following grant covenants throughout the life of the project:

a. The project maintains an adequate financial management system with appropriate books of accounts and in accordance with generally accepted accounting principles;
b. The IUFRs shall be submitted to the Bank on a quarterly basis 45 days after the end of each quarter; and
c. Audited Financial Statements of the project shall be required to be submitted no later than six months following the end of the fiscal (financial) period for the Recipient, including a Management Letter which would contain the COA's comments on the Project's Financial Management including its Internal Controls.

Summary of FM Arrangements

17. Under this project, DPWH shall ensure compliance to the following arrangements:

a. The project will follow the Internal Control applicable in the NGAS. The Agency shall be asked for their action plans with timetables for accountability issues, should there be any, in the audit reports of the project;
b. There will be proper turnover of project files to new FM personnel and that there will be sufficient manpower in FMs and PMO to support project operations given the significant reduction in personnel as a result of the rationalization plan;
c. Review and approval of transactions will be done by the FMS and Management of DPWH, respectively;
d. Separate books of accounts and subsidiary ledgers shall be used for the Project to be maintained by FMS;
e. A Designated Account shall be separately created for the project;
f. Monthly Bank Reconciliation Statements shall be prepared to be submitted no later than the end of the following month;
g. A Work and Financial Plan shall be prepared for the whole term of the project with details per month for the current year and submitted to the Bank and Project Management; and
h. Any property and inventory acquired under the Project shall be required to have a physical inventory taking annually with a report to be submitted to Management on the results and including reconciliation with recorded accountabilities and the action on the differences.

Supervision Plan

18. FM implementation review shall be undertaken at least twice a year during project implementation to ensure that the grant proceeds are used for the purpose it was granted. The scope of the supervision is left to the professional judgment of the FM specialist. It may cover any of the following: (i) review of the continuous maintenance of adequate FM system by DPWH; (ii) review of SOEs/IUFRs, where deemed necessary; (iii) follow up of timeliness of FM reporting and actions taken on issues raised by external auditors; (iv) review of the project's financial reports; (v) follow up of the status of any agreed action; and (vi) review of compliance with the financial covenants. In addition, the FM implementation review should include desk review of the quarterly IUFRs and audited financial statements and management letter submitted to the Bank.

Procurement

19. Procurement of consulting services, goods, and non-consulting services would be carried out by DPWH in accordance with the Bank's "Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers", dated January 2011 and "Guidelines: Procurement of Goods, Works and Non-consulting Services under IBRD Loans and IDA Credits and Grants by World Bank Borrowers" dated January 2011

20. Selection of Consultants. With regard to consulting services financed by the grant, Quality- and Cost-Based Selection (QCBS) would be used as the preferred method. Where QCBS is not suitable, consulting services would be procured using other methods, including Quality-Based Selection (QBS), Selection Based on Consultants' Qualifications (CQS), specifically for contracts estimated to cost less than US$300,000 each, or Individual Consultants depending on their specific nature, value and complexity. Single-Source Selection (SSS) may be used, but only in exceptional circumstances described in paragraphs 3.9 and 5.6 of the Consultant Guidelines. Request for proposal (RFP) documentation shall be prepared using the Bank's up-to-date Standard RFP documents. Short-lists of consultants for services estimated to cost the equivalent of less than US$500,000 per contract may be composed entirely of national consultants in accordance with the provisions of paragraph 2.7 of the Consultant Guidelines.

21. Goods and Non-consulting Services. The procurement of goods will be very limited under the project, but may comprise some equipment to be procured for DPWH to manage the implementation of the project. Such goods would be procured through Shopping. Some investigations to be carried out as part of the dam design, in particular drilling, may be either procured as non-consulting services or direct by the consulting firm responsible for the design of the dam. Non-consulting services may be procured through National Competitive Bidding, Shopping, or Direct Contracting, as agreed in the procurement plan. There will be no works procured under the project.

22. Prior review by Bank. The following contracts would be subject to prior review by the World Bank: (i) each contract estimated to cost the equivalent of US$300,000 or more; and (ii) each contract procured through SSS. Contracts below the prior review threshold shall be subject to World Bank Post Review.

23. Advance Procurement. Prior to grant effectiveness, procurement and contracting may be conducted. Such procurement, including advertising and prior review, should be carried out in accordance with the Bank's Consultant Guidelines.

24. Procurement Plan. The procurement plan for the entire project implementation will be reviewed and approved by the World Bank. The plan will be updated annually, or as required. The plan will be available on DPWH website and the Bank's external website.

Environmental and Social

25. DPWH is familiar with the WB Safeguards Policies. It has an Environment and Social Safeguards Division, primarily dedicated to the environmental and social impact management of DPWH's different projects. It maintains separate sets of safeguard standards depending on the funding source of the project it implements. Implementation of mitigation activities are usually done by contractors supervised by DPWH project teams, at times assisted by consultants and monitored and reported by ESSD, where appropriate. The performance of ESSD, based on a recent World Bank thematic review for the Philippines, points to the need of putting in place a capacity building program if it is to be in charge of handling safeguard issues during the future implementation of the designs prepared under this project. ESSD will benefit by strengthening

its capacity to manage and coordinate the safeguards principles and procedures especially related to the preparation of the environmental and social assessment studies and for resettlement/rehousing of affected communities living in the flood plain of Laguna de Bay. The consultants preparing the Environment and Social Impact Assessment, rehousing studies, and RAP will work very closely with ESSD during the preparation of the studies.

Monitoring and Evaluation

26. The outcome of the project is proposals and detailed designs for structural measures that are technically, economically, socially, and environmentally sound and that are ready for appraisal by government and/or international financiers. This outcome will be achieved at the end of the project and can be easily monitored and measured.

27. The project studies will be implemented under close monitoring of the multi-agency steering committees, as well as by the World Bank task team. Other development agencies, including JICA, have also agreed to participate in project support and reviews. Interim results and outputs, e.g. reports and key decisions along the way, will be reviewed and discussed by the committees and the task team.

Role of Partners

28. The Master Plan was prepared with financial assistance from the World Bank-administered Global Facility for Disaster Risk Reduction (GFDRR) through a grant that was provided by the Australian Government. In addition, already during the preparation of the Master Plan, several partners (notably Australia's DFAT and JICA) were closely involved through participation in workshops and meetings and sharing information and discussing findings and outputs. A similar cooperation is envisaged under the proposed grant to produce a synergistic effect. Finally, DFAT has a large program in the Philippines related to flood management and relevant practices and experiences will be incorporated in the studies to be carried out by the project.

29. The Japanese Government has committed funds for other related studies through a US$2.73 million PHRD fund that is administered by the Bank.

30. Since there are several donors involved, and the initiative could attract new ones, it is proposed to establish a donor committee to build a shared vision of the project, to align efforts, and to unify requests. This will also help to reduce the burden on the implementing agencies to respond to multiple requests, reports, and formats of different donors.

Annex 4: Operational Risk Assessment Framework (ORAF)

Philippines: Studies for Sustainable Flood Mgmt. (P145391)

Stage: Appraisal

Risks

Project Stakeholder Risks							
Stakeholder Risk	Rating	Moderate					
Risk Description: The implementation of the studies will involve a wide range of stakeholders, including national and local government units, private sector, CSOs, NGOs, and communities, with varying institutional capabilities and different vested interests. Especially the resettlement/rehousing studies may pose risks, given the sensitivity of resettlement issues in the Philippines. Potential risks include many diverse views on how to approach the resettlement issues; opposition from CSOs and NGOs; resistance from the potentially affected people and local community associations; and opposition/concern on the part of local politicians responding to community mobilization.	**Risk Management:** Since late 2011, the Bank's task team on flood management has engaged closely and built good relations with various government and private sector agencies, as well as with NGOs and CSOs. As such there is a good foundation for continuation of the work on flood management. It is important that resettlement/rehousing studies are an integral part of the overall studies and that the technical studies consider the most optimum resettlement/rehousing scenario. Transparency, communication, consultations, and openness are good strategies to be followed to mitigate stakeholder risks. Engaging some of the key civil society leaders and academics not only for the consultations but also to review the work on the studies is envisaged as a good way of both ensuring a strong output but also of preventing reputational risk problems from emerging for the Bank. In addition, there will be much emphasis on consultations with key stakeholders, including civil society and communities.					
	Resp: Both	Status: Not Yet Due	Stage: Implementation	Recurrent:	Due Date: 30-Jun-2016	Frequency:
	Resp: Client	Status: Not Yet Due	Stage: Implementation	Recurrent:	Due Date: 30-Jun-2016	Frequency:

Implementing Agency (IA) Risks (including Fiduciary Risks)		
Capacity	Rating	Moderate
Risk Description: Department of Public Works and Highways is the main implementing agency and qualified staffing has been an issue at times	**Risk Management:** DPWH has been implementing both TA and lending operations of the Bank and possesses adequate capacity, both from a technical and human resources point of view, to implement this grant. A qualified team is in place that has worked closely on the preparation of the master plan. This team will

under other projects. The risk is exacerbated by the fact that many agencies and other parties are involved in the studies, which will require good coordination capacity.	also have day-to-day responsibility for the implementation of the proposed studies and will work closely with other agencies and other parties.					
	Resp: Client	Status: Not Yet Due	Stage: Implementation	Recurrent: ☑	Due Date:	Frequency: Semi-annual
Governance	Rating	Moderate				
Risk Description: Possible weak coordination between a wide range of government agencies, LGUs, private sector, NGO and communities, that will be involved in the studies or will have to be consulted, may affect the quality of the studies, due to wide ranging, perhaps conflicting interests. DPWH will have to coordinate closely with several other government agencies, LGUs, CSOs, NGOs, etc. to implement the studies. Coordination does not always come easy, especially if it relates to activities that are very diverse, such as the resettlement/rehousing activities for which DPWH bears no direct responsibility.	**Risk Management:** High-level and technical-level steering committees were established during the preparation of the master plan and they have been effective in coordination. These steering committees are maintained under the proposed studies, with expanded participation. Various Bank task teams are working with agencies that are directly involved in resettlement/rehousing to build knowledge and capacity. This support will continue during the next few years and will ensure that all relevant agencies are adequately involved during the preparation of the studies.					
	Resp: Client	Status: Not Yet Due	Stage: Implementation	Recurrent: ☑	Due Date:	Frequency: Semi-annual
Project Risks						
Design	Rating	Moderate				
Risk Description: The multi-faceted project design requires convergence between involved agencies, which has not always been easy in the Philippines.	**Risk Management:** The highest management in DPWH is closely involved with improving flood management and will be yielding authority to achieve study results that can be implemented and maintained in a sustainable manner and that are acceptable to the affected population.					
	Resp: Client	Status: Not Yet Due	Stage: Implementation	Recurrent: ☑	Due Date:	Frequency: Semi-annual
Social and Environmental	Rating	Substantial				
Risk Description:	**Risk Management:**					

Some 50-60,000 households, often ISFs, are living in the flood plain of Laguna de Bay. Many of these people would have to move out of the flood plain to be safe against perennial flooding and also to allow infrastructure to be built. Government's track-record with resettlement is not very good as emphasis has mainly been on off-site resettlement in places far from Metro Manila. Very detailed studies will have to take place in a consultative process to get this right.	The Master Plan emphasizes that there are opportunities for on-site resettlement that have to be pursued and that these opportunities have to be assessed in close cooperation with the affected people who should be involved in participatory planning processes. On-site and in-city resettlements are also the preferred options of the Technical Working Group, comprising many agencies and other stakeholders, that coordinates the Peso 50 billion shelter assistance program. The Bank task team in close cooperation with DPWH and other agencies will also work on an information campaign that emphasizes expectations and transparency. An independent Panel of Experts will be established to oversee the implementation of the studies and provide guidance, where needed.					
	Resp: Client	Status: Not Yet Due	Stage: Implementation	Recurrent:	Due Date: 30-Jun-2016	Frequency:
Program and Donor	Rating: Low					
Risk Description: A number of donors and even the private sector have shown interest to collaborate on this project and the implementation of the works developed under this project. Some of the conclusions of the project may be inconsistent with priorities established by others.	**Risk Management:** Ensure adequate and continuous consultation and discussion with donors. Already during the preparation of the Master Plan, several partners (notably JICA and Australia's DFAT) were closely involved through participation in workshops and meetings and sharing information and discussing findings and outputs. A similar cooperation is envisaged under the proposed grant to produce a synergistic effect.					
	Resp: Both	Status: Not Yet Due	Stage: Implementation	Recurrent: ☑	Due Date:	Frequency: Semi-annual
Delivery Monitoring and Sustainability	Rating: Low					
Risk Description: Monitoring systems are often poorly developed and implemented. Maintenance of infrastructure is often inadequate to guarantee long-term sustainability.	**Risk Management:** Delivery monitoring for this particular project is relatively simple as the output only comprises studies and no implementation of actual works. Nevertheless close supervision by staff with specialized expertise from both DPWH and the Bank is needed for these complicated studies. The design will aim at technical solutions that are durable with minimum maintenance requirements.					
	Resp: Both	Status: Not Yet Due	Stage: Implementation	Recurrent: ☑	Due Date:	Frequency: Semi-annual

Overall Risk	
Overall Preparation Risk: **Low**	**Overall Implementation Risk:** **Moderate**
Risk Description: This project refers to the implementation of feasibility and design studies. The preparatory work for this has already been completed with the preparation of the flood management master plan for the Greater Metro Manila Area. As such there is no preparation risk and all the risk description and management refers to the implementation stage.	Risk Description: The project is a high priority of the current administration, which is committed to improve the flood management situation in the Greater Metro Manila Area. The implementing agency has much experience working with the Bank and other donors and its current capacity and governance to implement the studies with the assistance of consulting firms is good. Resettlement of affected people may potentially be a substantial risk to the eventual implementation of the Laguna de Bay land raising project that will be designed through this proposed PH-PTF grant. Resettlement issues will receive detailed attention during the studies. Engaging some of the key civil society leaders and academics not only for the consultations but also to review the work on the studies is envisaged as a good way of both ensuring a strong output but also prevent reputational risk problems from emerging for the Bank. There will also be much emphasis on consultations with key stakeholders, including civil society. The Bank team will be reinforced with very senior social development specialists with expertise in resettlement. All these mitigating aspects will minimize the risk that the social issues will affect the final product. It also has to be stressed that the grant relates to studies only and not to implementation of any works. Considering all this leads to an overall moderate risk.

Annex 5: Implementation Support Plan

PHILIPPINES: STUDIES FOR SUSTAINABLE FLOOD MANAGEMENT

Strategy and Approach for Implementation Support

1. The implementation support strategy for the project is based on the nature of activities supported by the project, the capacities of the implementation agencies, and the risks described in the ORAF. The main risks relate to the resettlement issues and to a lesser extent technical and procurement issues. Implementation support will mainly be provided through continuous interaction with DPWH and other involved agencies to provide support and guidance on issues and challenges that may arise during procurement and implementation of the studies.

2. A multi-disciplinary task team will be established, mostly working out of the Manila country office. The core team will comprise an engineer, procurement and contract management specialist, social and environmental specialists, an urban specialist with resettlement experience, and a communication specialist. An international recognized resettlement specialist with experience in large scale urban resettlement will be hired to join the team. Having the core team based in Manila will ensure rapid and effective response to the Client's needs for implementation support. Considering the complexities of the studies, the core team will receive regular support from the regional safeguard's advisor's office and other technical staff in Washington and elsewhere.

3. An independent Panel of Experts, financed by the Bank from trust funds, will be established to oversee the implementation of the social and Resettlement Policy Framework and/or Plans studies and provide guidance, where needed. The Panel will include expertise in social, resettlement, and urban planning and development. The expert panel is expected to review and provide advice on a regular basis during the preparation of the studies. An international panel of experts will also be created on dam safety. That panel of experts will carry out its functions in accordance with the World Bank Operational Policy (OP) 4.37 on Dam Safety. The Panel will be financed under this project.

Implementation Support Plan

4. Regular need-based visits will be carried out by the core task team, supported by other specialists. Estimated inputs from different specialists will be more or less the same during the implementation of the project and are outlined below for the core team.

Time	Focus	Skills Needed	Resource Estimate (staff weeks)
During entire project implementation	Engineering	Lead Engineer (also TTL)	10
	Social Safeguards	Social Development Specialist	6
	Resettlement	Resettlement Specialist	8
	Low-income housing finance	Housing Finance Specialist	3
	Land	Land management Specialist	4

	Legal	Lawyer specialized in working with real estate, low income communities	2
	Urban Renewal	Urban Planner	4
	Environment	Environmental specialist	5
	Financial Management	Financial Management Specialist	2
	Procurement and Contract management	Procurement Specialist	2