



Project Information Document (PID)

Appraisal Stage | Date Prepared/Updated: 15-Feb-2021 | Report No: PIDA28331

**BASIC INFORMATION****A. Basic Project Data**

Country Philippines	Project ID P171419	Project Name Philippines Seismic Risk Reduction and Resilience Project	Parent Project ID (if any)
Region EAST ASIA AND PACIFIC	Estimated Appraisal Date 22-Feb-2021	Estimated Board Date 18-Mar-2021	Practice Area (Lead) Urban, Resilience and Land
Financing Instrument Investment Project Financing	Borrower(s) Republic of the Philippines	Implementing Agency Department of Public Works and Highways	

Proposed Development Objective(s)

The Project Development Objectives are to enhance the: (i) safety and seismic resilience of selected public buildings in Metro Manila, and (ii) capacity of the Department of Public Works and Highways to prepare for and respond to emergencies.

Components

Improving Multi-hazard Resilience of Public Buildings and Facilities
Improving Emergency Preparedness and Response in Public Works
Project Management
Contingent Emergency Response

PROJECT FINANCING DATA (US\$, Millions)**SUMMARY**

Total Project Cost	309.50
Total Financing	309.50
of which IBRD/IDA	300.00
Financing Gap	0.00

DETAILS**World Bank Group Financing**



International Bank for Reconstruction and Development (IBRD)	300.00
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Non-World Bank Group Financing

Counterpart Funding	9.50
Borrower/Recipient	9.50

Environmental and Social Risk Classification

Substantial

Decision

The review did authorize the team to appraise and negotiate

Other Decision (as needed)

B. Introduction and Context

Country Context

- The Philippines is one of the most dynamic economies in Asia, although the COVID-19 pandemic has had a significant impact on growth.** With increasing urbanization, a growing middle-income class, and a large and young population, the Philippines has nearly doubled GDP per capita over the past two decades from US\$1,669 in 2000 to US\$3,338 in 2019¹ (in constant 2010 US\$). Having sustained an average annual growth of 6.4 percent between 2010-2019 from an average of 4.5 percent between 2000-2009, the country is poised to cross the threshold from lower-middle income country (MIC) status to upper-MIC status within the next three years. Poverty incidence declined from 26.3 percent in 2009 to an estimated 23.3 percent in 2015 and 16.6 percent in 2018², mainly due to improved market conditions leading to increased wages of the poor. Despite the gains, income inequality remains high, with the Gini Index above 40 due to the country’s distinctively complex political economy.³ The Philippines continues to face a range of development challenges including the current health risks and economic disruption brought about by the COVID-19 pandemic, and the dual risks from conflict and natural disasters.
- The implementation of strict containment measures to address the COVID-19 pandemic led to an economic contraction of 10.0 percent in the first nine months of 2020,** compared to 5.8 percent growth in the same period in 2019.⁴ For 2020 overall, the economy is projected to contract by 6.9 percent as

¹ https://data.worldbank.org/indicator/NY.GDP.PCAP.KD?end=2019&locations=PH&name_desc=true&start=1960&view=chart

² The latest official poverty estimate released by the Philippine Statistical Authority was for 2018. The survey is conducted every 3 years, and there was no survey conducted in 2012.

³ World Bank. 2019. *Philippines - Country Partnership Framework for the Period July 2019 - December 2023*. Washington, D.C. : World Bank Group. <https://hubs.worldbank.org/docs/imagebank/pages/docprofile.aspx?nodeid=31582978>

⁴ <https://psa.gov.ph/national-accounts>



COVID-19 quarantine measures were relaxed in August⁵. Private consumption is still expected to shrink for the rest of 2020 due to income losses, poor consumer confidence, and slow recovery of economic activities. Despite the government's efforts to mitigate the negative effects of the pandemic on poor and vulnerable households, poverty incidence is estimated to increase by around 1.9 percentage points in 2020.

3. **Notwithstanding the COVID-19 shock, one of the most significant development challenges the country continues to face is its exposure to adverse natural events**, placing the country near the top of global vulnerability rankings. Located at the confluence of the 'Pacific Ring of Fire' and the Pacific Cyclone Belt, at least 60% of the country's total land area is exposed to multiple hazards (frequent earthquakes, floods, tsunami, landslides, volcanic eruptions, cyclones, and annual monsoons). Over the past 50 years, the country experienced more than 15 destructive earthquakes, and four major seismic events of magnitude greater than 6.5 occurred from November-December 2019 alone. The Philippine Institute of Volcanology and Seismology (PHIVOLCS) considers 23 volcanoes to be currently active, and in January 2020 Taal Volcano (70 km south of Manila) entered a period of unrest that then progressed into a magmatic eruption. This affected over 500,000 people and caused approximately PhP3.4 billion in direct damage to infrastructure and agriculture in Region IV-A. The country's high exposure to natural hazards is a principal threat to economic growth and inclusion: at least 74 percent of Filipinos are vulnerable to the impacts of natural hazards, which have killed 70,000 people, caused an estimated US\$23 billion in damages, and adversely affected 120 million since 1990⁶. Located in one of the world's most active seismic regions the Philippines faces high earthquake risks, especially Metro Manila, which accounts for one-third of national GDP. In the absence of mitigating measures to minimize the damage caused by earthquakes, the impact on economic growth and welfare would be massive.
4. **Climate change is exacerbating the impact of weather-related events**, while unplanned urban expansion has aggravated flood risk.⁷ In addition to frequent earthquakes and volcanic eruptions, an average of 20 tropical cyclones (typhoons) enter the Philippine Area of Responsibility every year. The impacts of climate-related events have been increasing and, over the last decade, typhoons making landfall have increased in intensity (wind speed).⁸ In 2013, Typhoon Yolanda (Haiyan), the strongest storm ever recorded at landfall, caused over 6,000 reported fatalities, damaged 1.1 million homes in nine Regions, and resulted in 2.3 million Filipinos falling below the poverty line. Typhoon Rolly (Goni) caused strong wind, flooding, and volcanic mudflow in the Bicol and Calabarzon regions, affecting approximately 1.6 million people and damaging 60 road sections and 7 bridges in November 2020. Of the 2,754 natural hazard events in the Philippines from 2005 to 2015, the most frequent were climate-related,⁹ and included typhoons, floods,

5 <http://pubdocs.worldbank.org/en/831401563917603790/mpo-phl.pdf> (Macro Poverty Outlook for Philippines, September 2020)

6 GFDRR (Global Facility for Disaster Reduction and Recovery), and World Bank. 2016. "Country Profile: Philippines," World Bank, Washington DC, <https://www.gfdr.org/sites/default/files/publication/PHILIPPINES2016.pdf>

7 GFDRR (Global Facility for Disaster Reduction and Recovery), and World Bank. 2016. "Country Profile: Philippines," World Bank, Washington DC, <https://www.gfdr.org/sites/default/files/publication/PHILIPPINES2016.pdf>

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https://www.researchgate.net/publication/294138837_Observed_trends_and_impacts_of_tropical_cyclones_in_the_Philippines

9 World Bank. 2019. *Philippines - Country Partnership Framework for the Period July 2019 - December 2023*. Washington, D.C.: World Bank Group. <https://hubs.worldbank.org/docs/imagebank/pages/docprofile.aspx?nodeid=31582978>



and droughts, with the exposure to such hydro-meteorological hazards projected to intensify under climate change.¹⁰

5. **The Government of the Philippines (GoP) takes a comprehensive, multi-hazard approach to disaster risk reduction and preparedness (including infectious diseases).** This integrated approach is crucial as crises grow increasingly more complex, with natural hazards (e.g. Typhoon Ambo in May 2020) overlapping with unprecedented public health emergency like COVID-19. Presidential Proclamation No. 922 (2020) was issued on March 8, 2020, declaring a State of Public Health Emergency throughout the Philippines. In accordance with the National Disaster Response Plan, the relevant response clusters were activated as part of the Task Groups of the National Task Force (NTF) for COVID-19 (the operational arm of the Inter-Agency Task Force on Emerging Infectious Disease). As of November 04, 2020, there were 3,517 daily confirmed COVID-19 cases per million population (approximately 50% of which were in the National Capital Region), 1.9% fatality rate and 90.1% recovery rate. Should a major natural disaster occur during the pandemic, the compounding impacts would severely undermine the country's preparedness and response measures and can overwhelm the system, which is operating at close to full capacity (including community quarantine, case management (including isolation), and sustained delivery of health services).

Sectoral and Institutional Context

6. **Metro Manila (or the National Capital Region, NCR) is the seat of government and the country's population, economic, and cultural center.** Its population is approximately 12.9 million (2015 census), while Greater Metro Manila's population is estimated at 21 million (NCR, Region III, and Region IV-A). Rapid urbanization has resulted in an extremely dense agglomeration of vulnerable infrastructure, buildings, and housing. Moreover, the Greater Metro Manila Area (GMMA) risk assessment study estimated that a magnitude 7.2 earthquake on the West Valley Fault (a probable maximum scenario, so-called 'The Big One'), would result in an estimated 48,000 fatalities, US\$48 billion in economic losses, with catastrophic impact on government continuity and service provision.¹¹ Metro Manila is highly exposed to earthquake hazards, combined with the vulnerability of buildings and infrastructure, leading to very high risk of loss of life, direct damage, and economic losses.
7. **Metro Manila is transected by numerous earthquake generators, of which the West Valley Fault (WVF) poses the most significant earthquake threat.** The recurrence of large earthquakes on the WVF has previously been estimated at between 400 to 600 years, with considerable uncertainty.¹² The 2004 Metropolitan Manila Earthquake Impact Reduction Study (MMEIRS), implemented by PHIVOLCS and the Metropolitan Manila Development Authority (with the Japan International Cooperation Agency), shows that the West Valley Fault has moved 4 times and generated strong earthquakes within the last 1400 years. The approximate return period of these earthquakes is less than 500 years and no event along the West Valley Fault is known after the 17th century, indicating that the active phase is likely approaching. Based on analyses of historically and instrumentally recorded earthquakes, MMEIRS Model 08 scenario (WVF, Magnitude 7.2) was selected for detailed analysis due to potential to cause severe damage. A key

¹⁰ World Bank, 2020, Climate Change Knowledge Portal Philippines.

¹¹ PHIVOLCS, and Geoscience Australia. 2014. Greater Metro Manila Area Risk Assessment Program.

¹² Nelson, et al., 2000. Multiple large earthquakes in the past 1500 years on a fault in metropolitan Manila, the Philippines. Bull. Seism. Soc. Am. 90, 73–85.



finding of MMEIRS is that the scenario earthquake impact would result in separation of Metro Manila into four quadrants (North, South, East, West), as follows:

- a) North-South: projected to be separated both by building collapse and bridge collapse across the Pasig River;
- b) East: projected damage to road networks due to ground rupture/fault movement, and building collapse; and
- c) West: projected to be isolated by fire and building collapse.

8. **Two important assessments have extensively identified the risks facing the Greater Metro Manila Area and the National Capital Region.** MMEIRS and *Enhancing Risk Analysis Capacities for Flood, Tropical Cyclone, Severe Wind and Earthquake for the Greater Metro Manila Area* (GMMA RAP, conducted in 2014)¹³ estimated that the scenario impacts of 'The Big One' in Metro Manila (NCR) alone are as follows: 31,228 fatalities; approximately 510,000 injuries ranging from slight to life-threatening; approximately 261 million square meters of property damage ranging from slight to complete collapse; 500 fire incidents; and an estimated financial loss of around 2.3 trillion pesos (based on 2013 asset exposures). Considering population and economic growth in the intervening years since the GMMA RAP study, the overall risk can be expected to have increased significantly.
9. **To address the tremendous threat of a potentially catastrophic earthquake in GMMA, the President of the Philippines issued Executive Order No. 52 (EO 52)** on May 8, 2018, creating the Program Management Office for the Earthquake Resilience of the Greater Metro Manila Area (PMO-ERG), reporting to the President through the Chair of the Climate Change Adaptation and Management – Disaster Risk Reduction Cabinet Cluster. EO 52 defines institutional roles and responsibilities within a whole-of-government strategy to strengthen the country's resilience to earthquakes, and to ensure public safety and government continuity. Notably, Section 5 of EO 52 (*Earthquake-resistant infrastructure*) mandates government agencies to take proactive steps to 'guarantee the resilience of public infrastructure (e.g. roads, bridges, buildings, hospitals) in the GMMA'. The PMO-ERG's primary mandate is to steer the operationalization of the 'Two-pronged Strategy Toward an Earthquake-Resilient GMMA',¹⁴ adopted via the Directives of the 20th Cabinet Meeting (December 2017). The PMO-ERG also has the mandate to review and monitor the earthquake resilience plans and investment programs of government agencies, including projects/programs funded by other development partners).
10. **While EO 52 provides a coherent national strategy for seismic risk reduction and resilience, Oplan Metro Yakal Plus (OMYP) -- the Metro Manila Earthquake Contingency Plan – identifies institutional roles, resources, and operational arrangements for emergency preparedness and response.** The OMYP is directly based on the reference scenario described by MMEIRS and GMMA RAP, and outlines the general framework, structures, and systems for the effective integration of multi-agency and multi-sectoral resources to deal with the extreme risk from a potentially catastrophic earthquake in Metro Manila. The OMYP guides the government's response operations, as well as those of the other stakeholders within and outside Metro Manila and institutionalizes a system of earthquake preparedness and response

¹³ PHIVOLCS, and Geoscience Australia. 2014. Greater Metro Manila Area Risk Assessment Program.

¹⁴ The 'Two-pronged strategy' entails: (i) Reducing risks in GMMA, and (ii) Enhancing the resiliency of GMMA. Key Result Areas to which the project directly contributes include: (i) massive retrofitting of public infrastructure, (ii) transport and mobility, and (iii) command, control, and communications.



procedures for different national agencies' units and personnel by defining roles and providing guidelines on actions that will be carried out prior to and immediately after the occurrence of a major earthquake.

11. **Relevance to climate-related disasters.** It is important to highlight that while the activities associated with EO 52 and OMYP (e.g., institutional roles, resources, general framework, structures, and operational arrangements for emergency preparedness and response) are designed to deal with the extreme risk from a major earthquake in Metro Manila, these same capacities and capabilities will also be used to prepare for and respond to climate-related disasters.

C. Proposed Development Objective(s)

Development Objective(s) (From PAD)

The Project Development Objectives are to enhance the: (i) safety and seismic resilience of selected public buildings in Metro Manila, and (ii) capacity of the Department of Public Works and Highways to prepare for and respond to emergencies.

Key Results

The following are proposed as PDO-level indicators:

- (a) Targeted public buildings with reduced vulnerability to seismic and other natural hazards (including climate-related impacts) [number];
- (b) Direct beneficiaries with increased safety from retrofitted buildings [number, disaggregated by gender];
- (c) DPWH well equipped and organized to perform its responsibilities per the requirements of the Metro Manila Earthquake Contingency Plan (Oplan Metro Yakal Plus, OMYP) [Yes/No]; and
- (d) DPWH staff achieve minimum standards in operational readiness for emergency preparedness and response per its mandate under the relevant multi-hazard national response plans [number].

The estimated project beneficiaries are as follows:

- (a) Under Component 1, approximately 425 buildings will be structurally and functionally upgraded, with an estimated 290,000 occupants. This includes teachers, students, doctors, patients, staff, and other users of the buildings.
- (b) Under Component 2, the Emergency Preparedness and Response (EP&R) investment areas will enhance DPWH's capacity and capability to respond to, and support early recovery from, a major seismic event, addressing gaps and needs in DPWH's current capacity and capability to execute its mandate as defined under Oplan Metro Yakal Plus. The core capacities and capabilities needed to organize a response operation and coordinate resources on the ground can also be applied to any type of emergency including typhoons, floods, volcanic eruptions, and pandemics – through a multi-hazard, multi sectoral approach to integrated emergency response and incident management structures and frameworks. Building this capacity will benefit the 12.9 million residents of Metro Manila, and potentially the 21 million residents of Greater Metro Manila (NCR, Region III, and Region IV-A). Direct beneficiaries under Component 2 include approximately 600 DPWH staff who will participate in the capacity building and training activities.



D. Project Description

The proposed project has four components, namely:

Component 1. Improving Multi-hazard Resilience of Public Buildings and Facilities

This component will finance seismic retrofitting and relevant strengthening/upgrades of public buildings to reduce damage from natural hazards (earthquakes and other adverse geophysical and climate-related events). Specifically, it is proposed that this component will invest in maximizing the number of beneficiaries protected from natural hazards, by implementing appropriate, cost-effective structural retrofitting and functional improvements in selected school buildings and health centers. This is proposed to be achieved through two sub-components:

- 1.1 Retrofitting of Public Buildings; and
- 1.2 Feasibility studies, detailed design, and quality assurance.

Sub-component 1.1: Retrofitting of Public Buildings

Approximately 425 priority buildings (based on the Seismic Vulnerability Rating (SVR) framework) are proposed for seismic retrofit and other structural/functional improvements under this project (at a cost of up to 60 percent of the *in situ* reconstruction cost). Eligible buildings have been sorted by SVR to comprise the provisional list of public buildings (schools and health centers) for detailed seismic evaluation, retrofit design, and eventual upgrading. The type of occupancy is factored into the SVR framework (i.e. schools and health centers are prioritized due to their social significance, the vulnerability of the typical building types and occupants, and importance to emergency preparedness (in the case of health centers)).

Climate change impacts and the effects of multiple site-specific hazards will be explicitly considered in the detailed design phase, using the DOST-PHIVOLCS GeoRiskPH platform (in accordance with Presidential Directive Memorandum to Cabinet issued on July 1, 2019) to assess exposure to seismic, climatic/hydro-meteorological, volcanic, and other prevalent hazards. Where appropriate, a multi-hazard intervention approach for the facility/campus (e.g. site drainage to reduce localized flooding) will be developed. In accordance with Philippine building regulations, structural and functional upgrades will ensure overall compliance with relevant design standards currently in force (including for climate-resilient design such as strengthening roofs and windows for typhoon-related wind loads, access for persons with disabilities, COVID-related functional measures, etc.). In compliance with all current national regulations, reference standards, and statutory codes, and as appropriate to improve the service continuity of the facilities, relevant safety improvements (e.g. WASH, fastening of non-structural elements like ceilings, partitions, and equipment that can constitute falling hazards, improvement of ingress and egress, and fire safety measures) may also be included in the upgrades.

Structural upgrades will be in accordance with the most up-to-date seismic (and wind loading) provisions of the National Structural Code of the Philippines (NSCP, 2015). As performance-based design is not currently specified under the NSCP, compliance with the seismic provisions implicitly targets allowing building occupants to safely evacuate the building, thereby significantly reducing fatalities and severe casualties (but not guaranteeing that the building will be usable immediately after an event). In addition, compliance with the seismic provisions is expected to substantially reduce (but not entirely eliminate) the expected damage in the event of the design earthquake, which is within the range of Intensity VIII (associated with 'The Big One' scenario) on the Modified Mercalli Intensity (MMI) scale. The major benefits of retrofitting therefore include (but are not limited to) reduction in building damage and potential casualties.



Sub-component 1.2: Feasibility studies, detailed design, and quality assurance

Consulting services for detailed building-level structural condition assessments, geotechnical and other site investigations, feasibility design studies, detailed engineering designs (incorporating multi-hazard resilience measures as appropriate to site-specific exposures), and design reviews will be financed under this sub-component. Construction quality assurance (including oversight of implementation of retrofit techniques and contractors' environmental and social management plans) will also be financed. As a complement to the 'hard' risk reduction interventions, citizen engagement activities (including consultations and information sessions for disaster risk reduction) will be conducted at each facility to be intervened (financed under Component 3).

Component 2: Improving Emergency Preparedness and Response in Public Works

This component will finance mission-essential equipment for transport and mobility restoration, and communication. It will also finance capacity building activities for the Department of Public Works and Highways to systematically prepare for and respond to emergencies (recurrent annual events as well as low-frequency, high impact disasters), particularly in line with its mandate under the Oplan Metro Yakal Plus (as the lead agency for Engineering, Reconstruction, and Rehabilitation), as well as other national emergency response plans for multiple hazards (including those related to climate and public health). To establish a functional EP&R system in a coherent manner, this component will take a holistic approach to strengthening DPWH's EP&R capacity by addressing gaps in the different components of the system, including equipment, communication and information management, and personnel. This is proposed to be achieved through two sub-components:

- 2.1 Emergency Response Equipment for transport & mobility restoration, and communication; and
- 2.2 Capacity building for emergency preparedness and response in public works.

Activities financed under this component are directly relevant for hydrometeorological/climate-related emergencies, in addition to major seismic events. For example, the investments in equipment under sub-component 2.1 will contribute to DPWH's capacity to respond to, and support the recovery from, events such as typhoons, floods, etc. The equipment for transport and mobility restoration as well as communication will enable DPWH to clear roads, restore thoroughfares, and remove debris (key emergency response activities following typhoons, floods, or precipitation-induced landslides), and to command and control its operational teams on the ground. The core capacity-building activities under sub-component 2.2 (e.g., developing plans, training exercises and drills) can also be applied to climate-related disasters through a multi-hazard approach that incorporates climate change-induced aspects in integrated emergency response and incident management structures, both strategically¹⁵ and operationally¹⁶. Finally, the national multi-hazard emergency response plans that are used as the overarching framework for the investments under this component outline the same integrated systems that would be used for seismic events as well as for climate-related events.

Sub-component 2.1: Emergency Response Equipment for Transport & Mobility Restoration, and Communication

This sub-component will support mission-essential equipment for transport & mobility restoration (which would be staged strategically in and around Metro Manila, in relatively less hazardous locations), as well as critical communication and information management systems, to ensure proper execution of response operations and coordination of DPWH's emergency response teams. Operation and maintenance costs for the equipment will be covered by national government counterpart funding (US\$9.5 million over the project implementation period).

¹⁵ E.g., institutional arrangements, legal framework, and policy

¹⁶ E.g., updating EOC operations, contingency plans, coordination and response protocols, and strengthening of DPWH's continuity of operations



a. Transport and Mobility Restoration

DPWH's improved capacity and capability to restore transport and mobility – thereby providing access to search and rescue teams, emergency response personnel, and equipment -- will ensure communities' rapid access to critical public services (e.g. hospitals/health facilities, evacuation centers, and government facilities). Providing access for firefighting equipment will also be critical to reduce the effects of major conflagrations resulting from the earthquake, as projected by MMEIRS under 'The Big One' scenario.

At present, DPWH has a significant need for reliable, rapidly deployable heavy equipment to meet the operational requirements of the Oplan Metro Yakal Plus in an efficient manner. As part of its Equipment Positioning and Mobilization Contingency Plan, DPWH has established the 'Quick Response Assets' (QRA) comprising: (i) Quick Response Equipment (QRE), (ii) Quick Response Tools (QRT), and (iii) Quick Response Support Teams (QRST) composed of personnel. The QRA would be fundamental to the road restoration/clearing and rescue operations after the occurrence of 'The Big One'.

To address the existing gaps within the fleet and enable DPWH to meet the capacity required by the OMYP to perform road restoration/clearing and debris removal activities, this sub-component will invest in the heavy equipment needed to meet the MMEIRS projections of damaged roads, collapsed bridges across major waterways, and other critical transportation infrastructure. The investments under this sub-component will also contribute to DPWH's capacity to execute its mandate, as member agency of the Logistics Cluster under the National Disaster Response Plan, including for the government's overall COVID-19 response. This would include, among other things: (i) providing mobility services, and (ii) ensuring availability of resources, supplies, and facilities, for all concerned clusters.

b. Emergency Response Communications and Information Management

Improved incident management, response coordination, and implementation of operational plans will be critical to build DPWH's ability to execute its mandate under the different disaster response plans. To allow for rapid deployment of the QRAs and avoid interrupted communication with the different QRSTs during an emergency, appropriate and state-of-the-art communication equipment and information systems are essential. However, DPWH's current means of communication during a disaster is either the commercial cellular system, or email, which requires access to an internet data connection. Cellular or internet-based communications systems, which are unlikely to be functional during a major catastrophe such as 'The Big One', are inappropriate for use by agencies with critical disaster response/emergency management responsibilities. Any degradation of the system due to the impacts of the disaster, power system failure, and even limited cellular service during an emergency would prevent DPWH from communicating and managing their QRAs effectively. The projections of the various preparedness/response plans indicate a major reduction in cellular telephone capabilities; as such, there is a crucial need for mobile emergency communications systems (Emergency Operation Centers, or EOCs) to allow DPWH to: (i) direct and coordinate the actions of its resources on the ground, and (ii) gather information regarding the status of roads, bridges, buildings and other infrastructure, and report that information to the National EOC.

To address these gaps, this sub-component will invest in mobile EOCs, which would provide a platform to direct and coordinate the actions of DPWH resources in the field and gather and transfer critical information to the National EOC. The mobile EOCs, in conjunction with DPWH's ongoing (nationally-funded) radio communications system upgrade, would provide two critical capabilities: (i) the ability to command and control operations from a mobile site, and (ii) the ability to continue uninterrupted field communications with deployed resources. Mobile EOCs are also critical due to the MMEIRS projection of regional separation of Metro Manila into four quadrants and will ensure DPWH's continued capability to direct field resources within and across the quadrants.



Sub-component 2.2: Capacity building for Emergency Preparedness and Response in Public Works

This sub-component will focus on three main activities: (i) developing, updating, and harmonizing plans, policies, and procedures based on a reference scenario (in this case, aligning with ‘The Big One’ scenario underpinning OMYP and other relevant national plans); (ii) organizing, training, and equipping DPWH personnel to implement the plan(s) based on the increase in capability; and (iii) exercising the plan(s) in order to further improve capability.

Particular areas of capacity building would include planning, training, and exercises in: (i) communications and information management, (ii) EOC operations and contingency planning (including for health-related emergencies), and (iii) Debris Management. Training for all stages of response will be included to raise awareness and appropriately prepare response teams to address the specific needs of women and girls in a post-disaster setting. A “Training of Trainers” course will be delivered, along with specialized training to key DPWH personnel who can then deliver similar trainings in the future. Finally, increased participation of female staff in the training and capacity building courses will underpin the achievement of DPWH’s target to increase the percentage of women executing emergency planning and response functions.

Component 3. Project Management

This component will finance specialist technical consultants and administrative support for the Project Implementation Unit (PIU) to effectively manage key functions including planning, coordination, financial management (FM), procurement, environmental and social safeguards implementation, and monitoring throughout the project implementation period. More specifically, this component will enable the PIU to carry out: (i) contract administration, safeguards, fiduciary, training, and monitoring and evaluation, (ii) citizen engagement and communications, including consultations and information sessions for disaster risk reduction at each facility to be intervened under Component 1, and (iii) incremental project operating cost.

Fiduciary and safeguards functions will be carried out by designated DPWH staff, through institutionalized procurement, finance, accounting, and safeguards units that perform these functions for World Bank (and other development partner) funded projects. In addition, DPWH has a robust field supervision system with well-staffed and qualified Regional/District Engineering Offices (ROs/DEOs), which will be responsible for field monitoring of retrofitting works from pre-works to completion/acceptance. These functions will be carried out as an in-kind contribution of DPWH staff time, in accordance with the established institutional structure that is utilized for large-scale civil works projects (including the 2018-2020 retrofitting program).

The component will also invest directly in citizen engagement and social awareness activities to ensure that the physical investments are properly communicated to the direct beneficiaries of the buildings. These activities will focus on organizing: (i) information meetings on the long-term benefits of seismic retrofitting – including management of expectations that the interventions are intended to significantly reduce fatalities and severe casualties, but not completely prevent all damage -- targeting building users, and administrators, and (ii) consultations with building occupants on the scheduling and programming of civil works.

Component 4. Contingent Emergency Response

A Contingent Emergency Response Component (CERC) is an ex ante mechanism available to the Government to gain rapid access to financing to respond to an eligible crisis or emergency. This component will allow for rapid reallocation of uncommitted project funds towards urgent needs in the event of a natural or man-made disaster, crisis, or public health emergency. Such events may include typhoons, floods, earthquakes, volcanic eruptions, droughts, and disease



outbreaks. There is flexibility in establishing the level of evidence needed to activate this component including, but not limited to, issuances such as the declaration of a State of Calamity by the mandated national or subnational authority, or a State of Public Health Emergency. The agreed trigger would enable reallocation of uncommitted project funds to support immediate response and recovery needs from other project components. Disbursements would be made against a positive list of critical goods, civil works, and consulting services required to support the immediate response and recovery needs. The potential CERC-financed activities would: (i) be aligned with the main project activities, (ii) follow the project’s implementation arrangements, and (iii) be based on DPWH’s mandate under the various emergency response and contingency plans.

Legal Operational Policies

	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No

Summary of Assessment of Environmental and Social Risks and Impacts

Environmental and social screening, which is part of the Environment and Social Management Framework (ESMF) process, will be conducted to determine the nature, scale and range of risks and impacts so that using the mitigation hierarchy, the development and implementation of the Environment and Social Management Plans (ESMPs) and Environment Code of Practice (ECOPs) should materially satisfy the ESF standards. The screening and scoping will also inform the prioritization, selection, design and implementation of the buildings/structures for retrofitting. Potential direct impacts of the construction works are expected to be small-scale, short-term, and self-contained within the building, and any indirect impacts are limited inside the building compound. Impacts on land acquisition and involuntary resettlement are not expected as subproject sites and areas for temporary facilities and services will be in government-owned lots. The subproject eligibility criteria also excludes acquisition of private lots, properties, cultural heritage buildings and other assets. Indigenous Peoples as defined in the ESF will not be involved. Labor influx issues are not anticipated as only a small number of workers (10-20 per worksite, per 8 hour shift) are expected to be present on any one site. Gender-based violence (GBV) and child labor risks are low. An ESMF has been prepared and disclosed to screen for and address environment and social risks of the project. The ESMF includes a Stakeholder Engagement Plan and a Labor Management Plan.

The number and typology of buildings to be intervened under the project will be based on the selection criteria and prioritization framework, of which the criticality of various locations and types of facilities, number of occupants, occupancy type, vulnerabilities of existing buildings, additional functional upgrades, environmental, social, community health and safety risks and impacts at the work site, inside and around the building envelope are to be considered. The preliminary estimates of beneficiaries are estimated based on the number of buildings that can be financed using current DPWH cost estimates (approximately 425). DPWH will design, construct, and decommission the structural elements of the buildings in accordance with national legal requirements, Environment, Social, Health, Safety (ESHS) Guidelines and other Good International Industry Practice (GIIP). The highly qualified University of the Philippines – Institute of Civil Engineering, with relevant and recognized experience and track record in earthquake and multi-hazard risk reduction, was engaged during project development to review the project design and menu of retrofit interventions for the eligible buildings. Grievance Redress Mechanisms for: (i) workers, and (ii) other project stakeholders will be set



up as stipulated in the ESMF.

E. Implementation

Institutional and Implementation Arrangements

In accordance with EO 52, Department Order No. 75 (2019) was issued, creating the DPWH Earthquake Resiliency Program Management Office (DPWH ER-PMO) with the following mandates: (i) Ensuring that vulnerability and risk assessment of all critical public buildings and infrastructure are conducted; (ii) Fast-tracking the implementation of urgent interventions to ensure resilient buildings and infrastructure; (iii) Aligning the Department's programs with Oplan Metro Yakal Plus; and (iv) Ensuring that EO 52's Key Result Area on Transport and Mobility is implemented.

The DPWH will be responsible for overall implementation of the project. Under EO 52, the National Inter-Agency Coordination group for the Earthquake Resilience of Greater Metro Manila will serve as the Project Steering Committee to provide policy and strategic oversight. DPWH will build on the 2018-2020 retrofitting activities and the experience implementing retrofitting programs under Memoranda of Agreement (MoA) with DepEd and DOH. Similar MoAs will be executed specifically for this project, defining the responsibilities of the asset owners (DepEd and DOH) and the implementing agency (DPWH). A Technical Working Group comprises representatives from DPWH, DepEd, DOH, the Office of Civil Defense, the Department of Information and Communication Technology, and DOST-PHIVOLCS.

A dedicated PIU is being established under the DPWH ER-PMO, to perform the day-to-day implementation activities including contract management, procurement, financial management, social and environmental safeguards, training, citizen engagement and communications, and monitoring and evaluation. The PIU will be staffed mostly by DPWH civil servants but may engage external specialists, as needed. Following existing operational policies, and based on contract amount, either the DPWH NCR Regional Office or the respective District Engineering Office will be responsible for: field oversight of civil works (from pre-construction to completion and final inspection of the buildings), monitoring of construction supervision contracts, safeguards compliance and reporting implementation progress/issues to the PIU.

Financial Management

The DPWH will have the overall fiduciary responsibility for the project, which will be implemented using the GoP's FM system as the basis for budgeting, accounting and internal controls, and auditing. This means that the FM arrangements would be mainstreamed and, as such, would use the existing FM structure, policies and procedures of the implementing agency as supported by rules and regulations of the oversight agencies such as the Commission on Audit (COA), Department of Budget and Management (DBM), and Department of Finance's Bureau of Treasury. The FM arrangements, particularly for funds flow and financial reporting will be fully documented in the FM section of the Project Operations Manual (POM) to ensure efficient download of funds and sufficient controls on accountability for the usage of funds. The proceeds of the loan will flow to a separate bank account specifically maintained for the project.

The project will maintain separate books of accounts to ensure that any issues with DPWH financial statements will not affect the project accounts. The project will maximize the use of direct payment for large contracts. Resolution of issues on the project financial statements shall be required to be acted upon or resolved within 12 months from the issuance of the audit report for the project. Training on the project's FM requirements will be conducted and monitoring of compliance with FM processes will be a regular part of the review missions.

Interim Financial Reports (IFRs) will be submitted within 45 days after the end of each calendar semester. The audit of the project financial statements will be conducted by the COA. Annual Audited Project Financial Statements together



with a copy of the Management Letter reflecting the auditor's findings and recommendations shall be submitted to the Bank six months after the end of each calendar year.

Procurement

DPWH Central Office will be responsible for project procurement activities, through the Bureau of Maintenance and the existing Bids and Awards Committees (BAC). The existing BACs of the Central Office are now working exclusively on foreign-funded projects, hence there is no need for a special BAC for the project. Appropriate training to the members of the BAC, the Procurement Service and the various Bureaus that will be involved in procurement will be scheduled by the Bank in advance of loan effectiveness.

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APPROVAL

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