Date: 2012/01/06

Environmental and Social Considerations in Detailed Planning Survey

（Technical Cooperation for Development Planning）

1. Full title of the Project

The project for study on improvement of the bridges through large scale earthquakes disaster mitigating measures

2. Type of the study (e.g. Master Plan, Feasibility Study, Detailed Design, etc.)

Strategic Planning and Feasibility Study

3. Categorization and its reason

The Study is classified as a "Category B" due to the following reasons.

1) The project is to improve existing bridges; therefore, its impacts on the natural environment are limited during the construction period.

2) The impacts on the social environment are also considered to be temporary. Some squatters may need to be relocated during the construction period. With proper planning of the relocation, the impact can be mitigated.

4. Agency or institution responsible for the implementation of the project

Department of Public Works and Highways (DPWH)

5. Outline of the Project (objectives, justification, location, proposed activities, and scope of the study)

The outline of the project is as follows:

1. Expected Goals which will be attained after the Project Completion

(1) Goal of the proposed plan

The seismic design guideline, manual which will be proposed through this project will be utilized for bridge design in the Philippines.

The bridge improvement plan which will be proposed through this project will be materialized by DPWH, and/or other donors.

(2)Goal which will be attained by utilizing the proposed plan

Through the bridge improvement to have high durability and safety, the capacity of the Philippines for disaster prevention will be developed.

2. Outputs

(1)Package A:

The Seismic Design Guidelines for Bridges

(2)Package B:

The plan for bridge improvement within Metro Manila

(3)Package C:

The plan for bridge improvement outside Metro Manila

3. Activities

(1)Package A:

1. Collect the earthquake records, soil and geological condition classifications, records of damages on existing bridges.
2. Identify issues and concerns on the current DPWH Seismic Design Standard.
3. Analyze the issues, problems of the present Seismic Design Standard.
4. Propose revision of the seismic design standard and reference material.
5. Conduct seminars about seismic design and related technology for technology transfer.

(2)Package B:

1. Determine the bridges which require retrofitting / replacement to mitigate the seismic disaster.
2. Inspect the bridges conditions including environmental and social conditions around the bridges.
3. Survey the traffic volume on the roads related to the bridges.
4. Prioritize and select the bridges to be retrofitted / replaced.
5. Design basic retrofitting / replacement and estimate the cost for the selected bridges to be retrofitted / replaced.

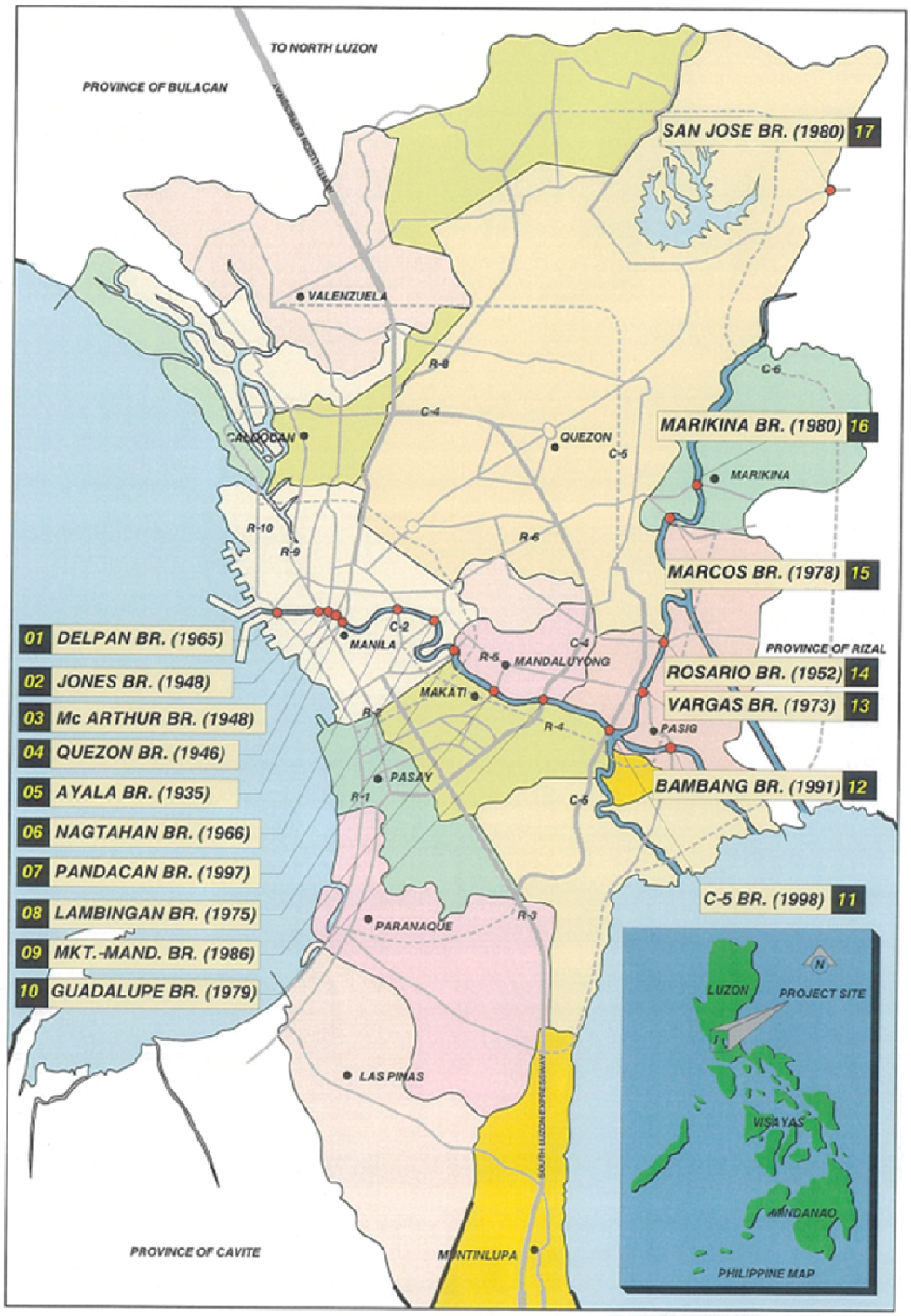
(3)Package C:

1. Determine the bridges which require retrofitting to mitigate the seismic disaster.
2. Inspect the bridges conditions including environmental and social conditions around the bridges.
3. Survey the traffic volume on the roads related to the bridges.
4. Prioritize and select the bridges to be retrofitted.
5. Design basic retrofitting and estimate the cost for the selected bridges to be retrofitted.

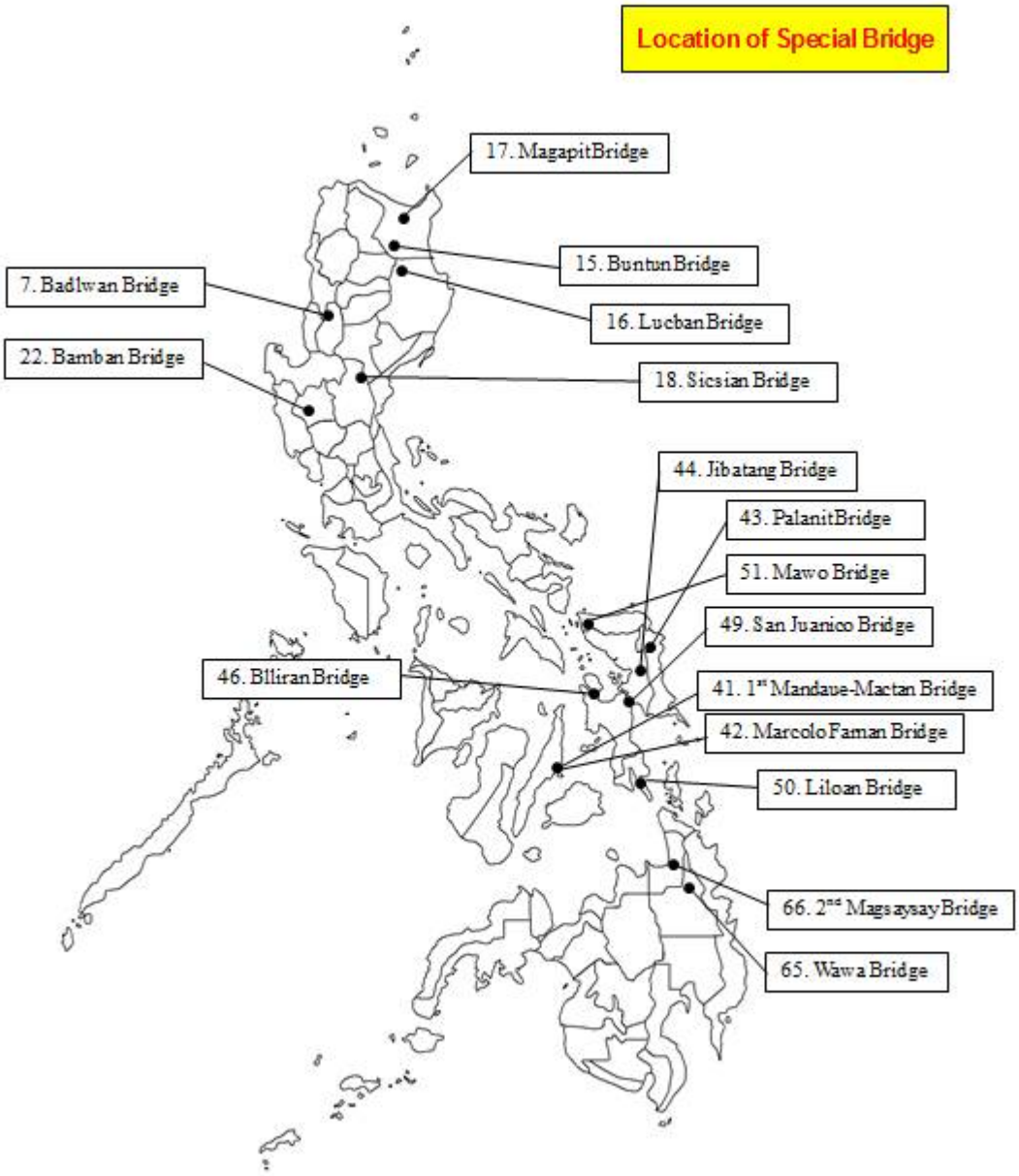
6. Description of the project site (maps, environmental and social condition, current issues, etc.)

The exact bridges to be improved will be selected during the project. The long list of the package B includes bridges along the Pasig-Marikina River (see Map 1). The long list of the package C includes special bridges along arterial roads (see Map 2).

Map 1. Candidate Bridges for the Package B



Map 2. Candidate Bridges for the Package C



7. Legal Framework of Environmental and Social Considerations

(1) Laws, regulations and standards related to environmental and social issues including requirements and procedures of Environmental Impact Assessment (EIA), stakeholder participation, and information disclosure.

Table 2 is a list of laws, regulations and standards related to environmental and social issues in the Philippines.

Table 2 Laws, Regulations and Standards Related to Environmental and Social Issues

Laws, regulation & standards
PD 984 Pollution Control Law(1976)
PD 1151 Environmental Policy (1977)
PD 1152 Environmental Code (1977)
PD 1586 Establishing an Environmental Impact Statement System (1978)
PP2146 Proclaiming Certain Areas and Types of Projects as Environmentally Critical and Within the Scope of the Environmental Impact Statement System Established under PD 1586(1981)
DAO 92-21 Amending the Revised Rules and Regulations Implementing PD 1586 (1992)
DAO 96-37 Revising DAO 92-21, to Further Strengthen the Implementation of the EIS System (1996)
DAO 99-37 Implementing Rules and Regulations for the Operationalization of Environmental Revolving Fund Under PD 1586 (1999)
DAO 2000-05 Revising DAO 94-11, Supplementing DAO 96-37, Series of 1996, and Providing for Programmatic Compliance Procedures within the EIS System (2000)
DAO 2003-30 Implementing Rules and Regulations (IRR) for the Philippine Environmental Impact Statement (EIS) System (2003)
MC 2007-2 Revised Procedural Manual for DAO 2003-30 (2007)
MC2010-14 Standardization of Requirements and Enhancement of Public Participation in Streamlined Implementation of the Philippine EIS System
DAO 92-26 New Guidelines for Pollution Control Officer's Accreditation (1992)
DAO 93-14 Air Quality Guidelines and Standards
RA 8749 Clean Air Act (1999)
DAO 2000-81 Implementing Rules and Regulations for RA 8749
DAO 2000-82 Integrated Air Quality Improvement Framework-Air Quality Control Action Plan
PD 1067 Water Code (1976)
RA 9275 Clean Water Act（2004)
DAO 2005-10 Implementing Rules and Regulations of the Clean Water Act
DAO 98-49 Technical Guidelines for Municipal Solid Waste Disposal

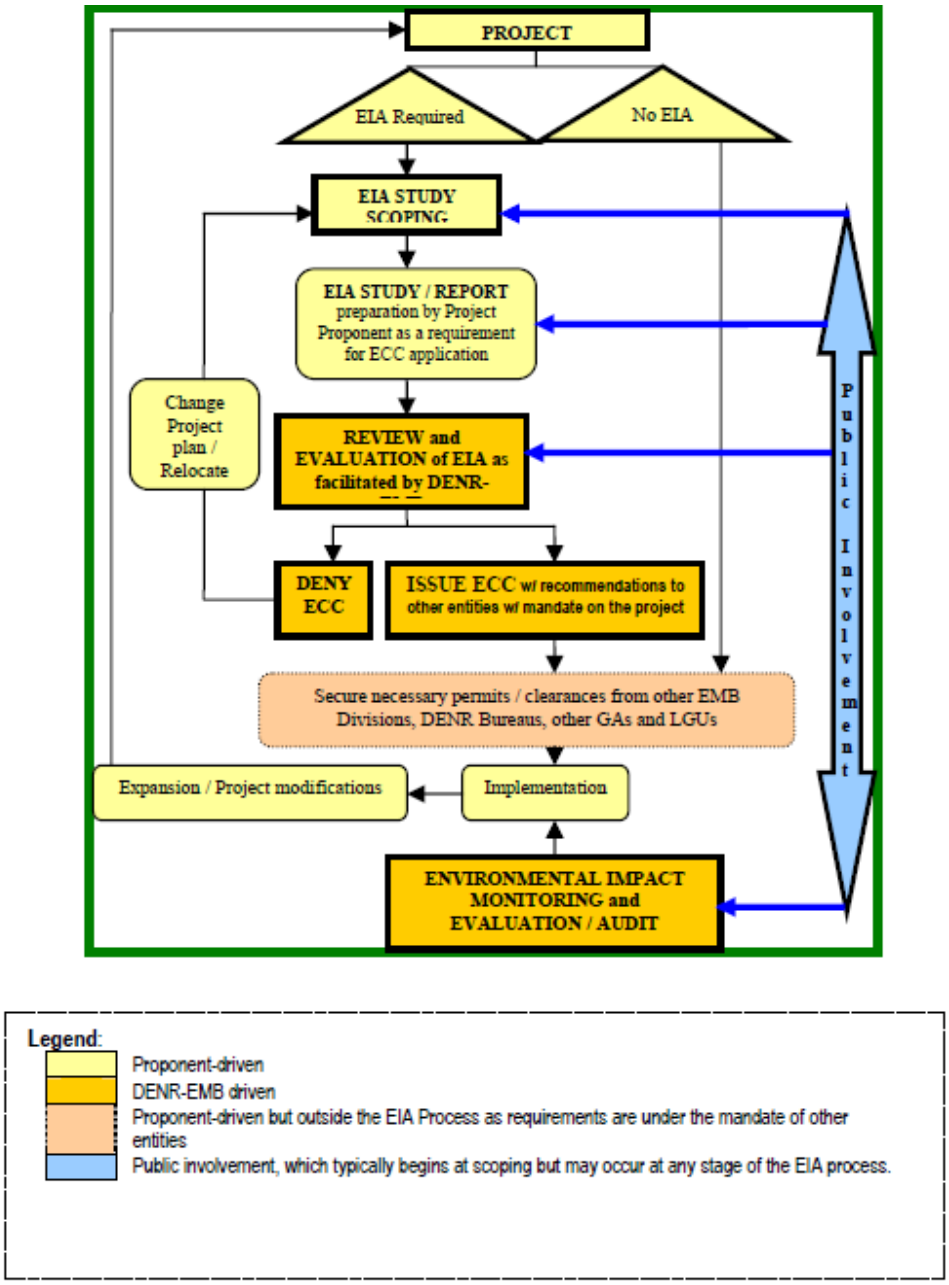
PD 331 Revised Forestry Code (1975)
RA 7586 National Integrated Protected Areas System Act (1992)
DAO-92-25 Implementing Rules and Regulations for RA 7586
PD 1096 National Building Code (1977)
RA 8974 Act to Facilitate the Acquisition of Right of Way (2000)

(PD: Presidential Decree, PP: Presidential Proclamation, RA: Republic Act, DAO: Department Administrative Order, MC: Memorandum Circular)

The EIA system in the Philippines is called "the Environmental Impact Statement System." Under this system, projects are required to obtain either an Environmental Compliance Certificate (ECC) or a Certificate of Non-Coverage (CNC) issued by Environmental Management Bureau (EMB) under the Department of Environment and Natural resources (DENR). The ECC is issued for projects that are categorized as an Environmentally Critical Project (ECP) or/and projects located in Environmentally Critical Areas (ECA). "Co-located Projects," projects comprised of components in different area or with different impacts, also required to secure an ECC. Depending of the group in which projects are categorized, a kind of the EIA report to be submitted is determined.

The detailed process of the EIA system is described in the Revised Procedural Manual for DENR Administrative Order No. 30 Series of 2003 (2007) issued by EMB/DNER. Stakeholder participation and information disclosure are required at the different stages of the EIA procedure, especially for the projects requiring an ECC. The method of stakeholder meetings and disclosure is also described in the manual. Figure 1 is the flowchart of the EIA procedure of the Philippines.

Figure 1 Flowchart of EIA Procedure



(Flowchart extracted from "Revised Procedural Manual for DAO2003-30" issued by EMB)

(2) Relative agencies and institutions

Environmental Social Service Office (ESSO) under DPWH: Provides environmental and social assessment support for foreign and locally funded projects implemented by the Project Proponents of DPWH. The functions includes conducting assessments for environmental, social impact and land acquisition, preparing relevant EIA reports and RAP, and conducting monitoring .

Environmental Management Bureau (EMB) under Department of Environment and Natural Resources (DENR): Responsible for processing and approving environmental impact assessment reports and granting environment certificates.

8. Provisional Scoping (types and magnitudes of possible adverse impacts and mitigation measures)

Provisional scoping was carried out based on possible cases, either retrofitting or replacement, of the bridge improvement works. Impacted items, selected based on the JICA Guidelines for Environmental and Social Considerations, are examined against impact factors that can occur at the different project stages. Each impact is evaluated whether if it is positive or adverse and also examined its possible extents and severities. The results of scoping are as Table 1.

Table 1: The Results of Provisional Scoping

		Item	Total Evaluation	Adverse Impact Factors: Planning Stage: Land acquisition, loss of structure and crops	Adverse Impact Factors: Construction Stage: Operation of vehicles and heavy equipment for construction	Adverse Impact Factors: Construction Stage: Construction activity of bridge	Adverse Impact Factors: Construction Stage: Traffic control	Adverse Impact Factors: Construction Stage: Inflow of construction workers and establishment of construction bases	Positive Impact Factors: Operation Stage: Seismic Improvement of the existing bridges
Social Environment	1	Resettlement	−B	−B	D	D	D	D	D
	2	Living and Livelihood	D	D	D	C	D	D	D
	3	Utilization of land and local resources	D	D	D	D	D	D	D
	4	Social institutions such as social capital and local decision-making institution	D	D	D	D	D	D	D
	5	Existing social infrastructures and services	+A/−B	D	D	−B	−B	D	+A
	6	Poor and indegenous peoples, gender, children's rights	−B	−B	D	D	D	D	D
	7	Equality of benefits and losses	＋A	D	D	D	D	D	+A
	8	Heritage	−B	−B	D	D	D	D	D
	9	Local Conflicts of Interest	D	D	D	D	D	D	D
	10	Water Right/Common	−B	D	D	−B	D	D	D
	11	Social Consensus	D	D	D	D	D	D	D
	12	Public Health	D	D	D	D	D	−B	D
	13	Infectious Diseases(AIDS/HIV)	−B	D	D	D	D	−B	D
	14	Working Environment	−B	D	D	D	D	−B	D
Natural Environment	15	Topography and Geology	D	D	D	D	D	D	D
	16	Land Erosion	D	D	D	D	D	D	D
	17	Ground Water	D	D	D	D	D	D	D
	18	Hydrology	D	D	D	D	D	D	D
	19	Protected Areas	D	D	D	D	D	D	D
	20	Ecosystem	D	D	D	D	D	D	D
	21	Climate	D	D	D	D	D	D	D
	22	Landscape	D	D	D	D	D	D	D
	23	Global Warming	−B	D	−B	D	D	D	D
Pollution	24	Air Quality	−B	D	−B	D	D	D	D
	25	Water Quality	−B	D	D	−B	D	D	D
	26	Soil Contamination	D	D	D	D	D	D	D
	27	Wastes	−B	D	D	−B	D	D	D
	28	Noise and Vibration	−B	D	−B	D	D	D	D
	29	Subsidence	D	D	D	D	D	D	D
	30	Odor	D	D	D	D	D	D	D
	31	Sediment	D	D	D	D	D	D	D
	32	Accident	+A/−B	D	−B	D	D	D	+A

+/−: Positive/Adverse

A: Significant impact is expected. B: Some impact is expected. C: Impact is unknown. D: No impact is expected.

Based on the results of scoping, the possible adverse and unknown impacts are described in the table below. Once the adverse and unknown impacts are analyzed based on the selected bridges, appropriate mitigation measures should be sought out once the exact project bridges are determined.

Table 2: Description of Adverse and Unknown impact

Impacted Item	Evaluation	Impact
Involuntary Resettlement	-B	If squatters are present around and/or under project bridges, they may need to be resettled.
Living and Livelihood	C	Depending on the location of project bridges, techniques used for the works, fishery and other economic activities may be affected.
Existing social infrastructures and services	-B	Due to traffic control during construction period, traffic congestions, difficulty of the access to existing infrastructures and services may occur. Water transportation may be affected during construction.
The poor	-B	Squatters living under and around bridges may be affected.
Heritage	-B	Some old bridges may have historical and cultural value. They will be affected, in case the bridges need to be replaced.
Public Health	-B	If waste and swage of the work area and construction camps are not properly managed, deterioration of public health around project sites may be possible, due to the influx of construction workers.
Infections Disease (e.g. HIV/AID)	-B	Due to the influx of construction workers from the outside of project sites, there may be an increasing risk of spreading infectious diseases.
Working Environment	-B	Without a proper management, labor conditions and safety of workers may not be ensured.
Global Warming	-B	Emission of global warming gas by heavy machinery and vehicles is expected during construction.
Air Pollution	-B	Emission of air pollutants by heavy machinery and vehicles is expected during construction.
Water Pollution	-B	Some water pollution may occur due to construction works.
Waste	-B	Waste will be produced due to the replacement of parts or the entire structure of existing bridges.
Noise and Vibration	-B	Noise and vibration problems may occur during construction.
Accidents	-B	There are risks of accidents during construction.

9. Alternatives to the project activities including 'without project' option.

Since the bridges to be retrofitted or replaced under the project are not yet selected at this stage, alternatives to the project to be speculated and compared is "without project" option only. Comparison and analysis of other alternatives should be considered during selection of the project bridges and methods.

In comparison to the "without project" option, implementing this project is highly beneficial, especially in terms of positive impacts on the social environment. By implementing the project, the bridges will be improved to high durability and safety against large scale earthquakes. In case a large scale earthquake occurs, the transportation networks within and outside of Metro Manila will be maintained, thus economic activities or rescue operations will not be hindered by the damages to bridges.

10. Result of the consultation with recipient government on environmental and social consideration including roles and responsibilities.

ESSO, which is responsible of overseeing environmental and social considerations of DPWH projects, has worked with international donors such as JICA, JBIC, ADB, and WB and is aware that the roles and responsibilities of its own and other governmental agencies on this matter.

11. Terms of Reference for Environmental and Social Considerations

To decide prioritized bridges, an Initial Environmental Examination should be carried out to understand current conditions of the natural and social parameters of the project sites. The following table summarizes the impacted parameters that are presumed during the preliminary scoping and their survey methods.

Parameter	Method
Involuntary Resettlement	In case that squatters are present under or around bridges, a socioeconomic study (e.g. the numbers of Project Affected Persons and Project Affected Households, livelihood, etc.) to prepare a resettlement action plan should be carried out.
Employment and Livelihood	Collect information regarding fishery or other economic activities that may be impacted by the project.
Existing Infrastructures and Services	Collect information regarding the water transportation in the project areas.
Heritage	Confirm if selected bridges are classified as heritage by the country.

12. Other relevant information

None

END