

**Environmental and Social Considerations in Detailed Planning Survey
(Technical Cooperation for Development Planning)**

1. Full Title of the Project

The Project for Master Plan Study on Comprehensive Sewage System Development

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

Master Plan Study

3. Categorization and its reason

The Study is classified as a “Category B” because of the following reasons:

The project is unlikely to cause significant adverse environmental and social impacts referring to the sensitive sectors, characteristics and areas described in “Guidelines for Environmental and Social Considerations, JICA, April 2010”.

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

Metropolitan Cebu Water District (MCWD) shall act as a counterpart and the responsible agency.

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

5-1. Objectives

(1) Goal of the Proposed Plan

The purpose of the Project is that “the sanitary environment and water environment in Metro Cebu is improved by utilizing the Master Plan for Comprehensive Sewage System Development (hereinafter referred to as “the M/P”), the Financing Methods and the Pre-Feasibility Study (hereinafter referred to as “the Pre-F/S”) of prioritized projects”.

(2) Outputs

- a. Basic information necessary for formulating the M/P in Metro Cebu is collected and analyzed.
- b. The M/P including centralized and decentralized wastewater treatment system and septage management system in Metro Cebu is formulated.
- c. Financing methods for sewerage and septage management system development projects are proposed.
- d. The Pre-F/S for prioritized projects in the M/P is conducted.
- e. The capacity of wastewater management of MCWD is enhanced.

5-2. Justification

The Master Plan is expected to contribute to improvement of sanitary environment and water environment in Metro Cebu by utilizing the M/P, the Financing Methods and the Pre-F/S for prioritized projects.

5-3. Activities

- (1) Basic data collection, current status evaluation and analysis
 - f. Natural and socio-economic conditions in Metro Cebu
 - g. Relevant plans in Metro Cebu (such as drainage plan, solid waste management plan, land use plan and environment protection plan)
 - h. Water quality of groundwater, rivers, lakes and coastal water, and sources of pollution load in Metro Cebu
 - i. Laws, regulations, plans and strategies related to wastewater management and septage management
 - j. Organization and institutional structure related to wastewater management and septage management
 - k. Existing facilities related to wastewater management and septage management
 - l. Present conditions and trends of the private sector in decentralized wastewater management and septage management
 - m. Reuse of treated water and utilization and disposal of sludge (sewage sludge and septage)
 - n. Activities to raise public awareness of wastewater management, septage management and water environment conservation
 - o. Public awareness and willingness to pay for wastewater management, septage management and water environment conservation
 - p. Economic and financial analysis of the implementing agency
 - q. Financing methods in the water and wastewater sector
 - r. Issues related to wastewater management and septage management
- (2) Formulation of the M/P
 - a. Setting basic policies, objectives, target area and basic planning parameters (demand forecasts by population and wastewater volume)
 - b. Study on sewage collection and treatment methods (zoning into centralized and decentralized wastewater management area)
 - c. Predictive evaluation of the effect on the improvement of public water bodies through the development of sewerage and septage treatment facilities and formulation of monitoring plan
 - d. Study on the M/P with alternatives
 - e. Formulation of the M/P (long-term plan and medium-term plan), and the implementation plan (3-year action plan).
 - f. Analysis of approximate estimate of project costs
 - g. Study on standards, procedures and promotion of sewer connections
 - h. Study for accepting of industrial wastewater (pre-treatment methods, accepting water quality standard and procedure)
 - i. Study on staged development measures in the centralized wastewater treatment area before the introduction of sewerage system
 - j. Study on the improvement of septage management, and study on the installation and

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

6-1. Location map

Metro Cebu is located at the central eastern area of Cebu island which consists of thirteen (13) Local Government Units (LGUs). The Project's target area for the M/P is within the jurisdiction of eight (8) LGUs in Metro Cebu where MCWD owns the franchise as follows:

Cebu City, Mandaue City, Lapu-Lapu City, Talisay City,
Liloan, Consolacion, Compostela, and Cordova

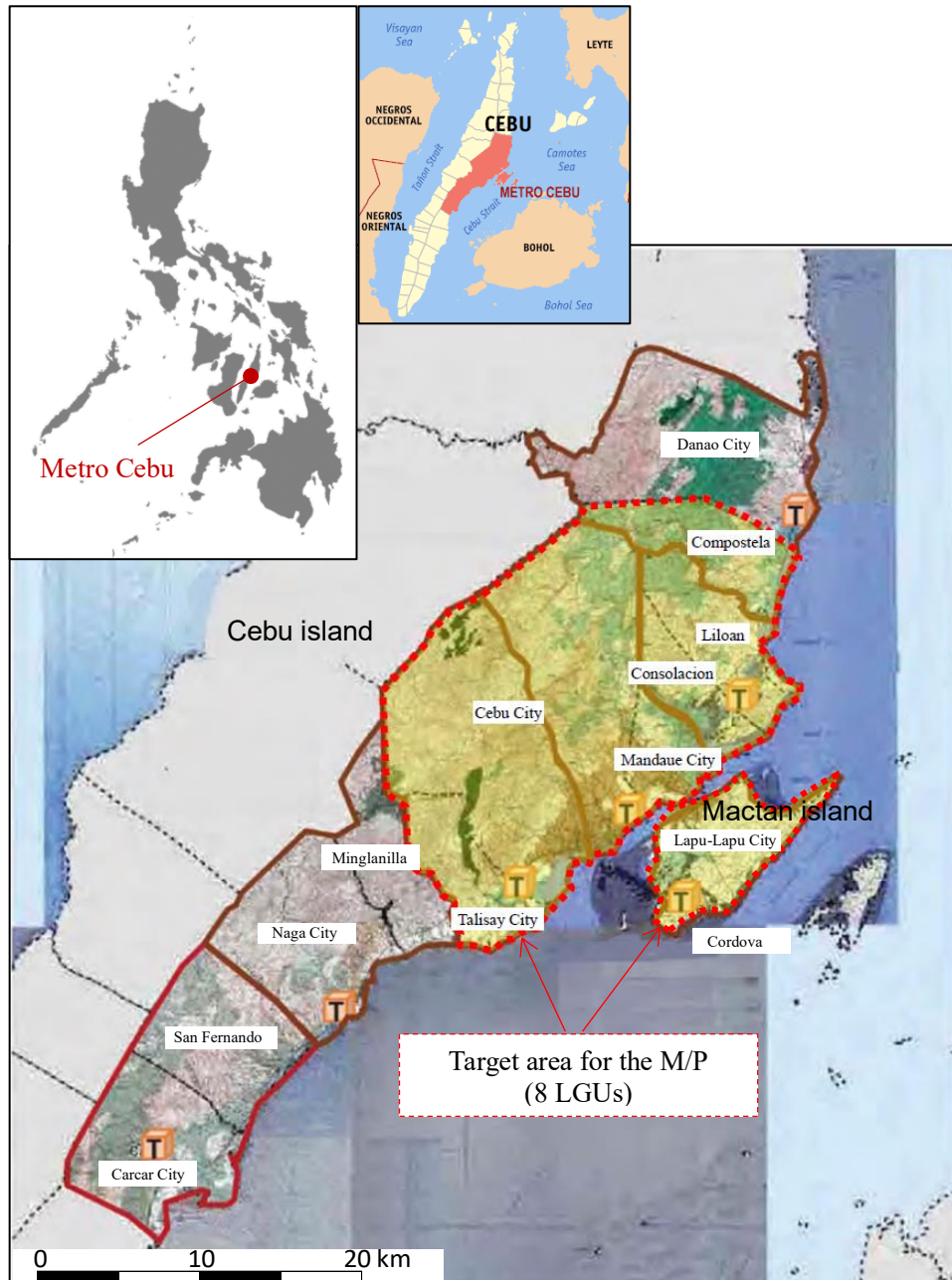
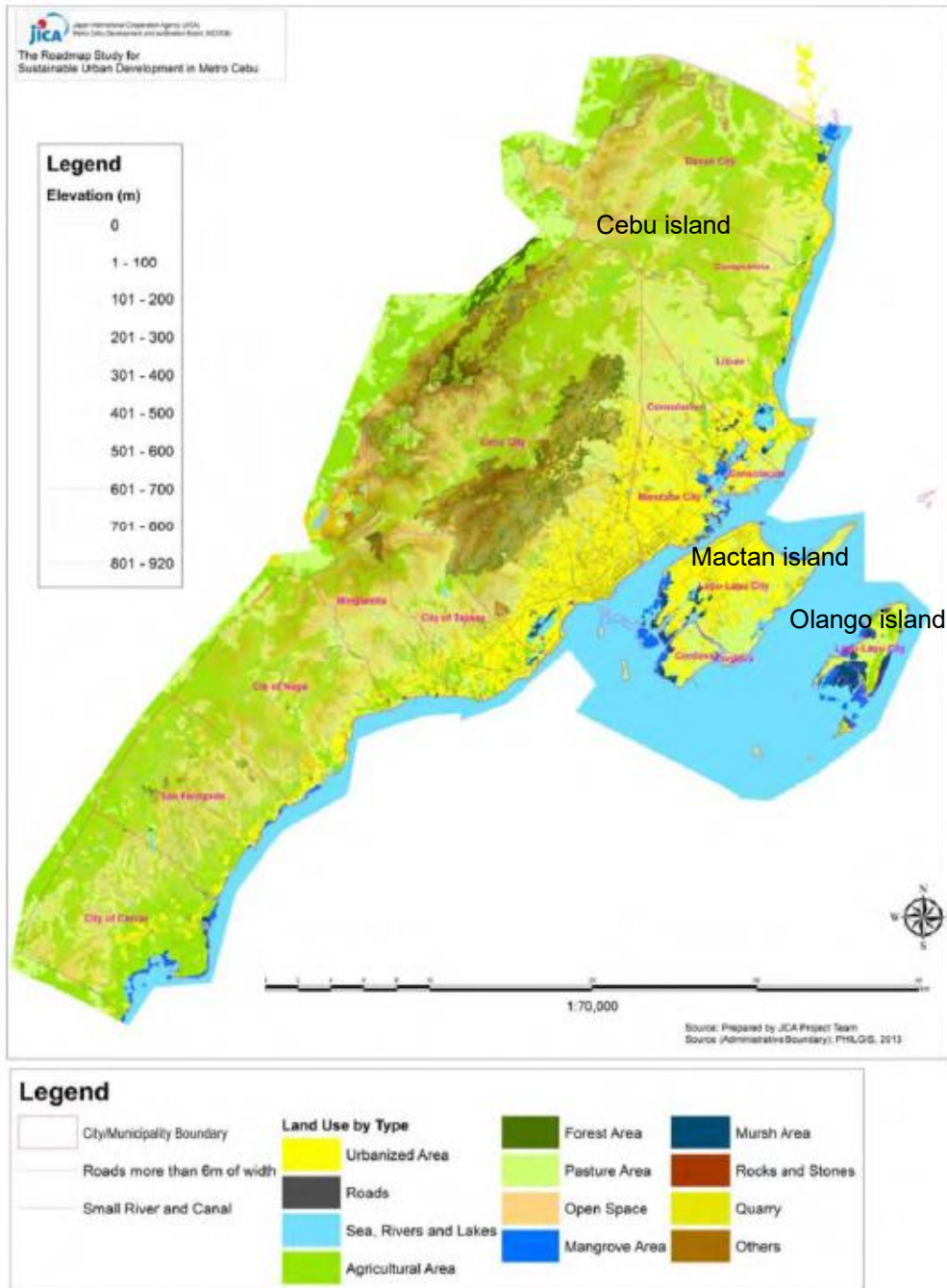


Figure-1 Location of Metro Cebu and the Target Area for the M/P

6-2. Environmental and social conditions

(1) Topography and Land Use

The topography of Metro Cebu is featured by the coastal plain and the mountainous area stretching at the center of the island. The coastal plain and Mactan island is highly urbanized while the mountainous area is preserved as forest or used for agriculture.



Source: The Roadmap Study for Sustainable Urban Development in Metro Cebu, JICA, 2015.

Figure-2 Topography and Land Use of Metro Cebu

(2) Protected areas

National protected areas in the Philippines are designated and regulated based on the Republic Act No.11038 known as “Expanded National Integrated Protected Areas System (ENIPAS) Act of 2018”. There are three protected areas in Metro Cebu: A National Park, a Game Refuge and Bird Sanctuary, and

a Protected Landscape.

Olango Island Wildlife Sanctuary, the Game Refuge and Bird Sanctuary, has been registered also as a Ramsar site under the Ramsar Convention. The island is under the jurisdiction of Lapu-Lapu City, which is feature by an extensive coralline intertidal sandflat.

Olango Island and the surrounding area of Mactan Island are designated as IBA(Important Bird and Biodiversity Area)/KBA(Key Biodiversity Area) by Birdlife International (Figure-3). However, the area between Cebu Island and Mactan Island seems no more functional as a habitat due to industrial use.

Table-1 Protected Areas of Metro Cebu

No.	Name	Location	Legislation	Area (ha)
1	Guadalupe Mabugnao Mainit (National Park)	Carcar, Cebu	RA 6429/June 17, 1972 Proc. 335A/May 30, 1986	57.50
2	Olang Island Wildlife Sanctuary (Game Refuge and Bird Sanctuary)	Sta. Rosa, Lapu-Lapu City	RA 11038/June 22, 2018	1,382.29
3	Central Cebu Protected Landscape (CCPL)	Cities of Cebu, Talisay, Toledo, Danao and Mun. of Minglanilla, Consolacion, Liloan, Compostela and Balamban	RA 9486/June 7, 2007 Proc. 441/August 12, 2003	29,062.00

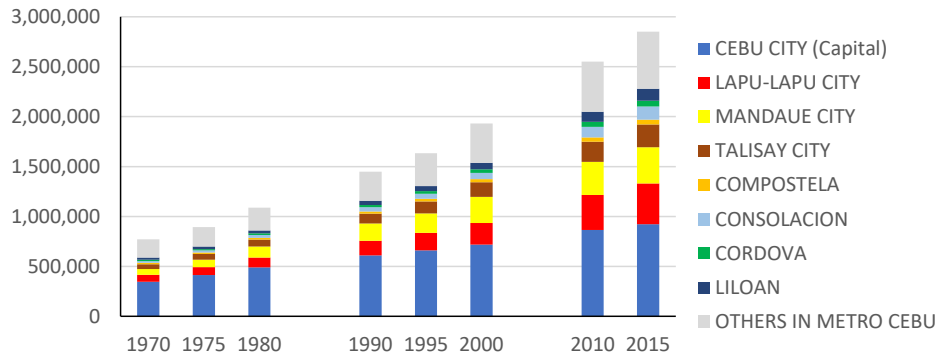


Source: Birdlife International: <http://datazone.birdlife.org/country/philippines/ibas>

Figure-3 Location of IBA/KBA

(3) Population

The population of Metro Cebu is growing rapidly in the last few decades. The population census in 2015 presented that the total population of Metro Cebu reached 2.8 million, more than three times in 1970. The total population of the eight (8) target LGUs shares 80 percent of Metro Cebu, 2.3 million in 2015. Out of the eight (8) LGUs, the population of Cebu City, Lapu-Lapu City, and Mandaue City accounts for more than 70 percent of the eight (8) target LGUs.



Source: Philippine Statistics Authority

Figure-4 Population of the Eight Target LGUs in Metro Cebu

7. Legal Framework of Environmental and Social Considerations

7-1. Laws, regulations and standards related to environmental and social issues including requirements and procedures of Environmental Impact Assessment (EIA), stakeholder participation, and information disclosure

(1) Strategic Environmental Assessment (SEA)

Strategic Environmental Assessment (SEA) has not been legislated in the Philippines although several house bills that contain SEA were filed aiming to amend the EIA system.

The latest house bill is House Bill No.1434, An Act to Establish the Philippine Environmental Assessment System, and for Other Purposes, filed in the 18th Congress in July 2019.

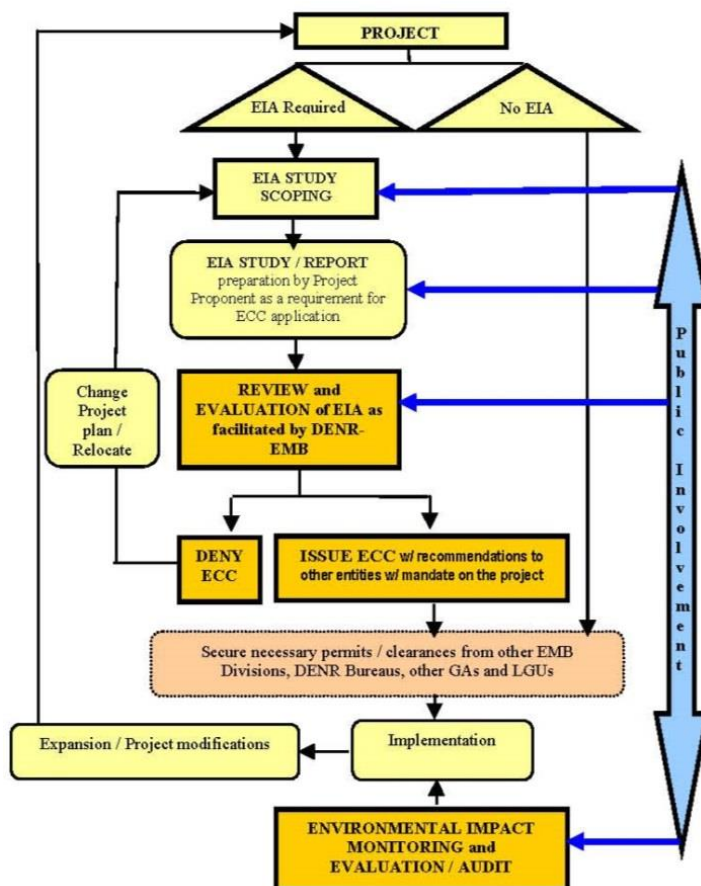
(2) Philippine Environmental Impact Statement System (PEISS)

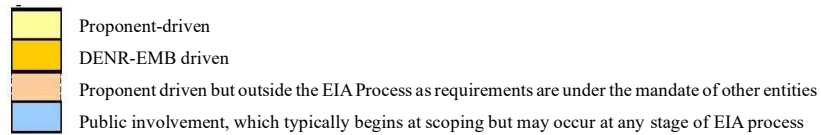
The EIA system in the Philippines is named as Philippine Environmental Impact Statement System (PEISS). Major laws and regulations of PEISS are listed in Table-2. Based on the regulations, an Environmental Compliance Certificate (ECC) needs to be obtained from Department of Environment and Natural Resources (DENR) if the project is classified as Environmentally Critical Project (ECP) or located in Environmentally Critical Area (ECA). As described in the flowchart presented in the procedural manual of PEISS (Figure-5), public involvement is required at the stages of scoping, EIA study, review, evaluation and monitoring.

Table-2 Laws and Regulations Related to Philippine Environmental Impact Statement System (PEISS)

Name	Contents
● Philippine Environmental Policy, Presidential Decree No.1151 (1977)	General policy
● Establishing an Environmental Impact Statement System including other Environmental Management related Measures and for other purposes, Environmental Impact Statement System, Presidential Decree No. 1586 (1978)	Establishment of PEISS
● Proclaiming Certain Areas and Types of Projects as Environmentally Critical and within the scope of the Environmental Impact Statement System established under Presidential Decree No.1586, Presidential Proclamation No. 2146 (1981)	Designation of ECP and ECA
● Declaring the Construction, Development and Operation of a Golf Course as an Environmentally Critical Project Pursuant to Presidential Decree No. 1586, Presidential Proclamation No.803 (1996)	

Name	Contents
<ul style="list-style-type: none"> Rationalizing the Implementation of the PEISS and giving authority in addition to the Secretary of the DENR, to the Director and Regional Directors of the Environmental Management Bureau to Grant or Deny the Issuance of ECC, Administrative Order No.42(2002) 	Authorization for issuing ECC
<ul style="list-style-type: none"> Implementing Rules and Regulations (IRR) for the Philippine Environmental Impact Statement (EIS) System, DENR Administrative Order No.2003-30 (DAO 03-30) Revised Procedural Manual for DENR Administrative Order No.2003-30 (DAO 03-30) (2007) 	Implementation rules of PEISS
<ul style="list-style-type: none"> Standardization of Requirements and Enhancement of Public Participation in the Streamlined Implementation of the Philippine EIS system, DENR Memorandum Circular No.2010-14 	Guidelines for public participation, review period for ECC, contents of EIA report, identification of stakeholders, etc.
<ul style="list-style-type: none"> Revised Guidelines for Coverage Screening and Standardized Requirements, EMB Memorandum Circular No.2014-005 	Screening thresholds of projects for EISS, ECP and ECA
<ul style="list-style-type: none"> Guidelines on Public Participation under the Philippine Environmental Impact Statement (EIS) System, DENR Administration Order No.2017-15 	Guidelines for public participation on EIA study, review and the monitoring
<ul style="list-style-type: none"> Guidelines on the Five (5) Year Validity of Environmental Compliance Certificate (ECC) Pursuant to DENR Administrative Order No.30 Series of 2003, EMB Memorandum Circular No.2020-31 	Procedure for extension of ECC after 5 years of the issuance





Source: Revised Procedural Manual for DENR Administrative Order No.2003-30

Figure-5 Flowchart of PEISS

(3) Land Acquisition and Resettlement

Major laws and regulations related to relocation and resettlement of residents are listed in Table-3.

In accordance with Republic Act No.7279, relocation and resettlement of urban informal settlers are promoted by National Housing Authority (NHA) collaborating with the other relevant agencies providing affordable houses.

For the land acquisition for national and local government infrastructure projects, Republic Act No. 10752 known as “the Right of Way Act” and the Implementing Rules and Regulations are to be applied for the compensation. Department of Public Works and Highways (DPWH) also has issued its own manual for guiding the detailed process of the land acquisition based on the Right of Way Act.

Table-3 Laws and Regulations Related to Land Acquisition and Resettlement

Level	Name	Contents
National	● The Philippine Constitution (1987)	Basic concepts of the rights of the people
	● Urban Development and Housing Act of 1992, Republic Act No.7279 (1992)	Policies for housing development and resettlement in urban areas especially for underprivileged and homeless citizens
	● An Act to facilitate the acquisition of Right-of-Way site or location for national government infrastructure projects, Republic Act No. 10752 (2016) ● Implementing Rules and Regulations of R.A. No. 10752 (2016)	Guidelines of land acquisition and the implementation rules
DPWH	● DPWH Right-of-Way Acquisition Manual (2017)	Procedures of land acquisition and resettlement based on Republic Act No. 10752 and the implementation rules

7-2. Relative agencies and institutions

As the project is master plan study, SEA shall be conducted in the project. Roles and functions of the relative agencies for the SEA are described below:

- Metropolitan Cebu Water District (MCWD): Responsible for implementing the SEA study coordinating with the other relevant agencies.
- Local Government Units (LGUs) of the target area (Cebu City, Mandaue City, Lapu-Lapu City, Talisay City, Liloan, Consolacion, Compostela, and Cordova): Participate in the SEA study and provide inputs.
- Metro Cebu Development Coordinating Board (MCDCCB): Participate in the SEA study and provide inputs.
- Department of Environmental and Natural Resources, Environmental Management Bureau Region VII (DENR-EMB VII): Advise on the SEA in terms of environmental protection and conservation.
- Other agencies related to the plans and projects, National Economic and Development Authority (NEDA), Department of Public Works and Highway (DPWH), Local Water Utilities Administration (LWUA): Cooperate with the SEA study.

8. Provisional Relative agencies and institutions

Provisional scoping was carried out assuming that the M/P contains the following facilities listed in Table-4. The results of the scoping are presented in Table-5.

Table-4 Facilities likely included the M/P

Systems	Facilities
Centralized treatment system	Sewage treatment plant(s), pump station(s), and sewage pipes
Decentralized treatment system	On-site treatment facilities (septic tank and Johkaso)
Septage management system	Sludge treatment facility(ies)

Table-5 Results of Provisional Scoping

Category	No	Impacts	Rating		Description of the Rating
			Pre/ During Constructi on	Operation Phase	
Pollution	1	Air pollution	✓	✓	Construction phase: Construction vehicles and equipment will emit air pollutants and generate dust. Operation phase: Vacuum trucks and dump trucks will emit air pollutants for carrying the septage and sludge.
	2	Water pollution	✓	✓	Construction phase: Turbid water may be generated and discharged to surrounding rivers due to the construction works such as excavation. Operation phase: The sewage system will contribute to improving water quality of the rivers and the coastal waters affected by the contaminated wastewater. On the other hand, discharged water from the sewage treatment plant(s) and the septage treatment facility(ies) may affect the water bodies where the water is discharged.
	3	Waste	✓	✓	Construction phase: Construction waste and surplus soil will be generated by the construction works. Operation phase: Sludge will be generated from the sewage treatment plant(s) and the septage treatment facility(ies).
	4	Soil contamination	✓		Construction phase: Possibility of soil contamination due to the existing site condition needs to be examined. Operation phase: Harmful substances which cause soil contamination will not be generated from the facilities.
	5	Noise and vibration	✓	✓	Construction phase: Construction noise and vibration will be generated. Operation phase: Noise will be generated by operation of the treatment equipment and the pumps, and vehicles carrying the septage and sludge .
	6	Ground subsidence			Activities which cause ground subsidence (such as use of large amount of groundwater) are not expected.
	7	Odor		✓	Construction phase: Activities which generate offensive odor are not expected. Operation phase: Offensive odor will be generated from the sewage and the septage during the collecting, treatment and transporting process.
	8	Sediment quality			Activities which affect sediment quality is not expected.
Natural environment	9	Protected area	✓	✓	Location for installing the facilities needs to be decided not to affect the protected areas.
	10	Ecosystem	✓	✓	In addition to those in the protected areas including IBA/KBA, river and mangrove ecosystems as well as marine ecosystems needs to be considered not to be affected by the construction works and the operation.
	11	Hydrology		✓	Construction phase: Construction activities which affect hydrology are not expected. Operation phase: Water balance in the service area may be altered by collecting water.
	12	Topography and geology	✓		Construction phase: Topography and geology may be affected by constructing treatment facilities and installing sewage pipes depending on the site conditions. Operation phase: Topography and geology will not be changed by the operation.
Social environment	13	Involuntary resettlement	✓		Pre-Construction phase: Land acquisition and house relocation may be required for securing the space for sewage treatment plant(s), septage treatment facility(ies), and pump station(s).

Category	No	Impacts	Rating		Description of the Rating
			Pre/ During Constructi on	Operation Phase	
					Operation phase: Involuntary resettlement is not required by the operation.
	14	The poor	✓	✓	Pre-construction phase: People to be relocated may include underprivileged people. Construction phase: People affected during construction may include underprivileged people. Operation phase: Service fee of the sewage treatment and the cost for proper operation of the on-site treatment facilities may give an economic burden to the people with low income.
	15	Indigenous and ethnic peoples	✓	✓	Existence of indigenous and ethnic minority groups in the target area needs to be examined.
	16	Local economy such as employment and livelihood	✓	✓	Construction phase: Employment opportunities will be generated for the construction works. Operation phase: Employment opportunities will be generated for operating the facilities. On the other hand, existing septage treatment service providers may be affected by shifting to the new treatment system.
	17	Land use and utilization of local resources	✓	✓	Locations for installing the facilities need to be consistent with the existing land use and the land use plan. Tourism areas and fishing grounds are to be considered not to be affected.
	18	Water usage		✓	Construction phase: Large volume of water will not be used for the construction work. Operation phase: Water volume and the source for operating the treatment facilities need to be identified.
	19	Existing social infrastructures and services	✓	✓	Construction phase: Traffic congestion may happen due to the construction vehicles and the construction works; for example, the works for installing pipes along existing roads may disturb the existing traffic. Operation phase: Traffic congestion may be caused by transporting septage and sludge. Increased generation of sludge may burden capacity of the existing landfill site.
	20	Social capital and social organizations such as of decision making organizations		✓	Construction phase: Construction activities which affect social institutions are not expected. Operation phase: Understanding and cooperation of the communities are required for proper use of the facilities, either of centralized or decentralized facilities, including for paying service fee of the sewage treatment and the cost for proper operation of the on-site treatment facilities.
	21	Misdistribution of benefit and damage	✓	✓	Not expected but need to be confirmed with the communities because it depends on the community conditions.
	22	Local conflict of interests	✓	✓	Not expected but need to be confirmed with the communities because it depends on the community conditions.
	23	Cultural heritage	✓	✓	Location of cultural heritage needs to be identified not to be affected by the construction works and the operation.
	24	Landscape	✓	✓	The large facilities may change the surrounding landscape. The site conditions need to be examined.
	25	Gender	✓	✓	Construction phase: Employment opportunities need to be provided equally regardless gender.

Category	No	Impacts	Rating		Description of the Rating
			Pre/ During Constructi on	Operation Phase	
Others					Operation phase: Domestic wastewater and sanitation are closely related to house works usually handled by women; therefore, women's perspectives and inputs will contribute to promoting the community's understanding and cooperation for proper use of the facilities.
	26	Right of children	✓	✓	Construction phase: Child labor needs to be prevented for the construction works. Operation phase: The project is expected to improve children's sanitary conditions.
	27	Infectious diseases such as HIV/AIDS	✓	✓	Construction phase: Infectious diseases may be spread due to inflow of construction workers. Operation phase: Improvement of sanitary condition by the project is expected to contribute to reducing infectious diseases.
	28	Labor environment (including work safety)	✓	✓	Construction phase: Construction work safety and the other work environment needs to be secured properly in accordance with the laws. Operation phase: Work environment for the workers in the treatment facilities and the vehicle drivers for collecting and transporting septage and sludge needs to be secured properly in accordance with the laws.
	29	Accidents	✓	✓	Construction phase: Risks of construction accidents and traffic accidents of the construction vehicles are expected. Operation phase: Risks of traffic accidents of vehicles for collecting and transporting septage and sludge are expected.
	30	Cross boundary impacts and climate change		✓	Construction phase: Construction equipment and vehicles will emit greenhouse gas; however, the volume and the duration are limited and negligible for considering global warming. Operation phase: Operation of treatment plants consume electric power which emit carbon dioxide during the generation process. The septage and sludge also produce greenhouse gas such as carbon dioxide and methane. It is necessary to consider applying possible technologies to reduce those emissions.

A: Significant positive/negative impact is expected.

B+/-: Positive/negative impact is expected to some extent.

C: Extent of positive/negative impact is unknown. (A further examination is needed, and the impact could be clarified as the study progresses)

D: No impact is expected.

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

MCWD agreed to abide by 'JICA Guidelines for Environmental and Social Considerations' to ensure that appropriate considerations will be made for the environmental and social impacts of the Project. This statement of agreement is described in the Record of Discussions (R/D) on this project.

11. Terms of reference for environmental and social considerations

Terms of Reference (TOR) for environmental and social considerations to be conducted in this project are

presented as follows:

- 1) Review of existing development plan, development projects, studies, and public and private investment;
- 2) Analysis to identify environmental and social constrains to the comprehensive sewage system development;
- 3) Confirmation of legal framework and institution of Philippine on environmental and social considerations, and examination of the experiences of SEA study in the Philippines;
 - (1) Laws, regulations and standards related to environmental and social considerations (environmental impact assessment, land acquisition and resettlement, public participation, information disclosure and other);
 - (2) Strategic Environmental Assessment (SEA) study reports conducted in Philippine development projects, and other relevant information;
 - (3) Gaps between the “JICA Guideline for Environmental and Social Considerations (April 2010)” and legal framework of Philippine on environmental and social considerations;
 - (4) Institute of relative agencies responsible for implementation of projects and their roles on environmental and social considerations including EIA and SEA;
- 4) Study of methods for SEA implementation under coordination with the stakeholders;
- 5) Study to identify the subjects of SEA, the comprehensive sewage system developments with alternatives proposed as strategic scenarios, development plans or project prioritization under consideration of developed policy and plans;
- 6) Data collection of the existing environmental and social conditions (land use, natural environment, living area of indigenous people, economic and social condition, etc.) for SEA subject scenarios, plans or project prioritizations with alternatives as the baseline data;
- 7) Scoping (clarify extremely important items on environmental and social impacts and its evaluation methods with indicators and criteria for evaluation)
- 8) Prediction of likely impacts according to the scoping;
- 9) Evaluation of likely impacts of the alternatives including ‘without project’ option and ‘zero’ option through comparative analysis based on 8) with the concept of SEA;
- 10) Examination of the mitigation measures (to be avoid, minimized and compensated) for the selected alternative in 9);
- 11) Examination of the monitoring methods (monitoring items, frequencies and methods) for the selected alternative in 9);
- 12) Support to hold stakeholder meetings (identify the purpose of the meetings, participants, consultation methodologies and agenda, etc.);
- 13) Provisional scoping for prioritized projects (clarify extremely important items on environmental and social impacts and its evaluation methods with indicators and criteria for evaluation); and
- 14) Perform other duties deemed necessary.