

# Environmental Assessment and Review Framework

Project Number: 41076  
September 2009

Philippines: Road Sector Institutional Development  
and Investment Program

## **Environmental Assessment and Review Framework**

### **A. Introduction**

1. The Environmental Assessment and Review Framework (EARF) for the Road Sector Institutional Development and Investment Program (RSIDIP) was prepared to serve as guide for the conduct of environmental assessment and review of RSIDIP subprojects. It is intended for use mainly by the Department of Public Works and Highways - Project Management Office (DPWH-PMO) and Asian Development Bank (ADB)
2. The EARF will be applied to all subprojects financed by RSIDIP. It was developed based on the procedures stipulated in the ADB's Environmental Assessment Guidelines 2003 and Environment Policy (2002) and Administrative Order 2003-30 of the Department of Environment and Natural Resources (DENR).

### **B. Overview of Type of Subprojects to be Assessed**

3. **Annex A** presents the profile of the twenty two (22) subprojects that have been provisionally identified for upgrade. Selection was based on their condition, its potential contribution for economic development and the Government's social equity policy.
4. Due to the fact that the roads that will be selected for upgrading are all existing roads, the most significant adverse effects associated with the location, design and operation of the road have already occurred. The potential environmental impacts of significance will occur during the construction phase. The construction work will typically consist of:
  - Excavation and disposal of unsuitable materials from road substrate, shoulders and cuttings;
  - Placement and compaction of road base;
  - In some cases parts of the road will be widened which will require removal of vegetation directly adjacent to the road;
  - In other parts the roads will be raised to prevent flooding;
  - Existing bridges will either be sealed or replaced; and,
  - The construction of new culverts and extension of existing culverts to improve drainage and reduce erosion damage.
5. Typically, all subprojects will be improved from poor/bad condition of the asphalt or concrete pavement to PCCP/ACP reconstruction and AC overlay with replacement of some bridges. Based on preliminary engineering inventory of the proposed subproject sites, none will have major alignment deviations. Construction materials such as sand, gravel, and quarry/borrow material will be sourced from the surrounding areas and brought to the site.

### **C. Country's Environmental Assessment and Review Procedures**

6. The Government of the Philippines (GOP) requires all projects categorized as environmentally critical (ECPs) or within environmentally critical areas (ECAs) to go through an assessment process referred to as the Environmental Impact Statement (EIS) System. The Philippine EIS system was established in 1978 by virtue of Presidential Decree (PD) 1586. A series of issuances that include a presidential proclamation, administrative orders, and memorandum circulars regulate the operations of the system. Among these, the Department of Environment and Natural Resources (DENR) Administrative Order 30 Series of 2003 (DAO 03-30) contains the Implementing Rules and Regulations of the Philippine EIS System.
7. The country's environmental impact assessment (EIA) process involves five stages: (i) project screening; (ii) EIA study scoping; (iii) conduct of the EIA study and preparation of the EIA report for the application for an environmental compliance certificate (ECC) or certificate

of non-coverage (CNC); (iv) review and evaluation of ECC/CNC applications; and (vi) environmental impact monitoring.

### **1. Project Screening**

8. Project screening allows the Proponent to determine if its proposed project is covered, or not covered, by the Philippine EIS System. If covered, screening will also determine the type of document to be prepared to secure an ECC or CNC, and other requirements such as, which would be the relevant Environmental Management Bureau (EMB) office to deal with, and duration of processing, among others. Proponents refer to Annexes 2-1a and 2-1b of the Revised Procedural Manual for DAO 03-30, August 2007, 2nd Printing. Annex 2-1a is "EIA Coverage & Requirements Screening Checklist". Annex 2-1b is "*Project Grouping Matrix for Determination of EIA Report Types for New Single & Co-located Projects*".

9. Projects that are subject to the country's EIA process and secure an ECC include those that are: (i) technically defined by the EMB-DENR as projects that may pose significant impacts at certain threshold of operations (also known as "environmentally critical projects" or ECPs), regardless of location; (ii) non-ECPs located in "environmentally critical area" or ECA, declared through Presidential Proclamation 2146 or as defined by EMB-DENR, wherein significant impacts are expected for certain types and thresholds of undertakings; and (iii) co-located projects (mix of single projects in contiguous area and optionally applied as one project under one area/zone administrator), e.g., an industrial estate.

10. Projects that are not subject to the country's EIA process, but are subject to secure a CNC, include those that are: (i) non-ECPs located in ECA, declared through Presidential Proclamation 2146 or as defined by EMB-DENR, wherein insignificant/marginal impacts are expected for certain types and thresholds of undertakings; (ii) non-ECPs located in non-ECAs; and (iii) unclassified projects (e.g., acquisition of vehicles and equipment relevant to the PBUSIP eligible sectors/sub-sectors).

### **2. EIA Study Scoping**

11. This activity is Proponent-driven. It is a required activity for Programmatic EIS-and EIS-based projects (or, projects that are required an EIS as document for securing an ECC). During scoping, the DENR-EMB will provide guidance in generating a Terms of Reference for, or scope of, the EIA study, based on consultations with stakeholders. During scoping, the following are achieved: (i) identification of the most significant impacts; (ii) definition of the extent of baseline information necessary to evaluate and mitigate the impacts, and (iii) determining the need for, and scope of, an environmental risk assessment (ERA).

### **3. EIA Study / EIA Report Preparation**

12. This activity is Proponent-driven. Depending on the type of environmental assessment to be undertaken and the capability of the Proponent, this activity may be conducted by the Proponent itself or by a consultant it engages. During EIA report preparation, the participation of stakeholders as resource persons in primary data collection is encouraged. The concerned LGU/s has/have to be consulted and involved particularly in area of social development, IEC and formulation of the environmental monitoring plan.

13. There are six (6) types of EIA reports. The type of report to use will depend on the subproject type, location, magnitude of potential impacts and project threshold. Proponents refer to Annex 2-1b, "*Project Grouping Matrix for Determination of EIA Report Types for New Single & Co-located Projects*", of the Revised Procedural Manual for DAO 03-30, August 2007, 2<sup>nd</sup> Printing. The *Environmental Impact Statement (EIS)* is applicable to ECPs and to project within ECAs that will have significant impacts on the environment. The *Initial Environmental Examination Report (IEE-R)* is similar to the EIS, but with reduced details of

data and depth of assessment and discussion. It is applicable to projects within ECAs that have potentially less significant impacts. The *IEE Checklist (IEE-C)* refers to a simplified / checklist version of an IEE Report, prescribed by the DENR-EMB, to be filled up by a proponent to identify and assess a project's environmental impacts and the mitigation / enhancement measures to address such impacts. This is applicable only to some selected infrastructure and land development projects categorized as non-ECPs in ECAs. The *Project Description Report (PDR)* is applicable to non-ECP in ECAs and non-ECPs in non-ECA projects that are enhancement/mitigation undertakings, to all other Group III subprojects, to Group II subprojects that have potentially benign impacts, and to Group V or unclassified subprojects. The *Programmatic Environmental Impact Statement (PEIS)* is a documentation of comprehensive studies on environmental baseline conditions of a contiguous area. It includes an assessment of the carrying capacity of the area to absorb impacts from co-located projects such as those of an industrial estates or economic zones. The *Programmatic Environmental Performance Report and Management Plan (PEPRMP)* is a documentation of actual cumulative environmental impacts of co-located projects with proposals for expansion. It should also describe the effectiveness of current environmental mitigation measures and plans for performance improvement.

**a. Geohazard Assessment**

14. All subprojects applying for ECC, is required to undergo geohazard identification survey (GIS). This activity is conducted by the Mines and Geosciences Bureau (MGB) of the DENR upon request by the Proponent. The output of a GIS is a geohazard identification report (GIR). For government development and infrastructure projects, the concerned government agency proponent shall enter into a Memorandum of Agreement with the MGB, and shall provide funds necessary for the conduct of geohazard assessment or geological verification. If GIR findings recommend the conduct of geohazard assessment (GA), Proponent LGU may opt to either engage a private geologist or request MGB, while private sector proponent can only engage a private geologist, to undertake this activity. If proponent already has geohazard assessment report (GAR), MGB undertakes review for verification.

**b. ECC/CNC Application**

15. Depending on the subproject grouping and EIA document prepared, ECC/CNC applications may be forwarded to the EMB-DENR Regional Office concerned and/or the EMB Central Office.

**c. Public Participation**

16. Public participation is encouraged in the conduct of any level of EIA and monitoring. For PEIS-/EIS-based ECC applications, public participation is required during scoping, conduct of EIA, review and evaluation and monitoring. Information, education and communication (IEC) forms part of the social preparation process prior to public scoping activity. The IEC identifies the stakeholders and related issues. The identified stakeholders will be invited to the scoping activity. The EIA findings are disclosed in a public hearing for all new ECPs for which public scoping was undertaken and PEIS-based applications.

17. Once ECC/CNC is issued, EMB sends the EIA recommendations to the concerned government agencies and LGUs for consideration in the decision-making on the project issued an ECC/CNC.

**4. Review and Evaluation**

18. This activity is led by the EMB. The Proponent's submitted EIA report shall be reviewed and evaluated by the EMB Office concerned, guided by three general criteria: (i)

environmental considerations are integrated in the project planning; (ii) assessment is technically sound and proposed mitigation measures are effective; and (iii) social acceptability is based on informed public participation. Public disclosure of the EIA findings is mandatory for ECPs and this can be done through public consultation and/or public hearing. Public hearing may be waived when requested by the Proponent in the absence of mounting opposition, or as requested in written form with valid basis.

19. The entire review and evaluation process will take a maximum of 15 working days for CNC applications. For ECC applications, the process will take a maximum of 30 working days for those submitting IEE-C; a maximum of 60 working days for those submitting IEE-R; and a minimum of 60 and a maximum of 120 working days for those submitting EIS. The review and evaluation of the ECC/CNC application culminates with the issuance of a decision document, which may either be an ECC, a CNC or a Denial Letter.

## **5. Environmental Impact Monitoring**

20. Environmental monitoring is mainly compliance monitoring, i.e., compliance with the conditions stipulated in the ECC and compliance with the committed activities set out in the environmental management plan (EMP) that is contained in the EIA document submitted during ECC application.

21. The concerned regional office of EMB is primarily responsible for implementing the Project Environmental Monitoring and Audit Prioritization Scheme (PEMAPS), an internal strategy of EMB for selecting and prioritizing projects to be subject to compliance monitoring. Based on Proponent's response to the Environmental Risk Categorization Questionnaire, the PEMAPS considers four key parameters, namely: (i) potential of the process or technology to cause impacts; (ii) existence and profile of the pathways of impacts; (iii) existence and profile of receptors; and (iv) project environmental performance.

## **D. ADB's Environmental Assessment & Review Requirements**

22. The Environment Policy of the Asian Development Bank (ADB) mandates the consideration of environment in all aspects of ADB's operations and requires all projects proposed for Bank's financing to undergo environmental assessments. The Environment Policy 2002 and Environmental Assessment Guidelines of 2003 outline ADB's environmental assessment procedures and requirements. It requires all projects proposed for Bank's financing to undergo environmental assessments and comply with national and local legislation regarding environmental assessment and permitting procedures.

23. A rapid environmental assessment is initially undertaken to determine the category of each tranche. Categorization is based on the most sensitive subproject. If one project has potential for significant adverse environmental impacts, the project is classified as Category A, which will be required an EIA for appraisal. Category B subprojects will generally be required to prepare IEE and Summary IEE (SIEE) reports, the latter of which highlights the main findings of the IEE. If IEE yields significant environmental impacts, an EIA may be warranted. If an EIA is not necessary, the IEE will serve as the final environmental assessment report. Category C projects will not be required an IEE or EIA. The environmental implications of such projects, however, need to be reviewed and mitigation measures, if any, should be directly integrated into the project design.

24. The conduct of IEE and EIA follows the same general steps, except that IEE: (i) is more limited in scope and content; (ii) is required less public consultation (at least two times of public consultation is required in the conduct of EIA); (iii) has no specific requirement for an environmental management plan (EMP) and for adherence to the 120-day rule of public disclosure of the SIEE. However, if the site of the project being subject to IEE is deemed

environmentally sensitive, an EMP is required; and the SIEE needs public disclosure and circulation to the ADB Board 120 days prior to Board consideration.

25. Public consultation must commence: (i) early on in the project cycle, during project preparation, to consider the views of the consulted groups in the project's design and environmental safeguards; and during project implementation, to identify and help address environmental issues that arise.

26. The ADB prescribed elements of IEE Report include: (i) introduction, stating the purpose of the report, and extent of the IEE study; (ii) project description; (iii) description of the environment; (iv) potential environmental impacts and mitigation measures; (v) institutional requirements and environmental monitoring program; (vi) public information and disclosure; (vii) findings and recommendations; and (viii) conclusions. The outline of EIA Report includes: (i) introduction, stating the purpose of the report, stage of project preparation, extent of the EIA study, and brief outline contents of the report; (ii) project description; (iii) description of the environment; (iv) systematic comparison of feasible alternatives for project site, design/technology and operation; (v) anticipated environmental impacts and mitigation measures; (vi) economic assessment; (vii) environmental management plan; (viii) public involvement and disclosure; and (ix) conclusions.

27. On environmental review, for projects with large number of small subprojects, ADB guidelines has specified that: *"It is important that the environmental assessment review procedures set free limits, project size limits, or other criteria for exemption of small projects from the requirements to submit IEEs to ADB for review and/or clearance. However, setting criteria limits does not exempt the executing agency from complying with the national and local legislation in terms of environmental assessment and permitting procedures"*.

## **E. Specific Procedures to Be Used for RSIDIP**

28. The RSIDIP will be implemented through ADB's multitranche financing facility in three tranches. The first tranche will involve periodic road maintenance of selected national roads and design of the works to be undertaken during the first tranche. The second and third tranches will involve rehabilitation of selected national roads, periodic road maintenance, and design of the works to be undertaken during the subsequent phases. Following ADB guidelines, environmental assessment and review will be required for each tranche prior to loan funds disbursement from the ADB. Environmental assessment and review shall be conducted according to the environmental classification of a tranche.

### **1. Environmental Classification**

29. Each tranche shall be categorized following the ADB guidelines and corresponding environmental assessment reports shall be consistent with ADB's *Environment Policy (2002)* and *Environmental Assessment Guidelines (2003)* and updates thereof. Categorization will be based on the most sensitive among the subprojects proposed for financing under each tranche. There is no substantial deviation on categorization of sub-projects between the Philippine EIS System and the ADB Environmental Policy. The comparative summary of project categories between ADB and GOP with corresponding documentary requirements are as follows:

**Table 1: ADB Correspondence to GOP Environmental Categorization**

Project Category	DENR / GOP	ADB
A	Projects that fall within Proc. No. 2146 categories of Environmentally Critical Projects (ECPs) - requires EIA/EIS; results to ECC after 120 working days of review.	Projects with potential for significant adverse environmental impacts - requires EIA
B	Projects that fall within Proc. No. 2146 categories of Environmentally Critical Areas (ECAs) - requires an IEE or EIA if warranted by IEE findings and project reaches a certain project size/scale; results to ECC after 60 working days of review	Projects with potentially less degree and/or significance of environmental impacts - requires an IEE or EIA if warranted by IEE findings
C	Projects, which directly enhance or mitigate environmental issues – requires a Project Description to determine the appropriate category of the sub-project. Only after review of the PD and upon confirmation that sub-project does not have Category A or B components will the sub-project be processed within 15 working days for issuance of a Certificate of Non-coverage (CNC). If it has Category A or B components, the sub-project is reclassified and required to prepare the corresponding documents, which may either be an IEE or EIS.	Category C of the ADB is Category C and D of the DENR/GOP. These are projects unlikely to have significant environmental impacts. No EIA or IEE is required although environmental implications are still reviewed.
D	Projects with no significant issues. No IEE or EIA or PD is required. However, if Proponent opts to secure a Certificate of Non-Coverage (CNC), a PD needs to be submitted and will be processed in 15 working days.	
FI	-	Projects with credit line through a Financial Intermediary, or with equity investment in a FI

30. If one of the many subprojects proposed for funding under a tranche has potential for significant adverse environmental impacts and is classified as Category A, the entire Tranche will be classified as Category A. While the entire tranche may be Category A, preparation of an EIA is only required for Category A subprojects. Subprojects categorized as B will only require preparation of IEEs. However, summary environmental assessment reports (SEIA/SIEE) covering all subprojects of each Category A or B-sensitive tranches

shall be prepared and disclosed to the public 120 days prior to approval of MFF for first tranche and prior to submission of periodic financing request for subsequent tranches. Environmental assessment requirements for Category A will include: (i) conduct of EIA; (ii) at least two public consultations; (iii) preparation of the EIA report following Appendix 2 of ADB's *Environmental Assessment Guidelines*; (iv) preparation of environmental management plan and budget; (v) preparation of an SEIA (covering all subprojects under the tranche) which is to be circulated to the ADB Board 120 days prior to Board consideration; (vi) public disclosure of the SEIA; and (vii) EIA to be made available to the public upon request.

31. If all subprojects proposed for funding under a tranche are classified as Category B, that is, having some adverse impacts of lesser significance than Category A subprojects, environmental assessment requirements include: (i) conduct of an IEE; (ii) public consultation; (iii) preparation of an IEE report following the outline in Appendix 3 of ADB's *Environmental Assessment Guidelines*; (iv) preparation of an SIEE covering all subprojects under the tranche; and (v) IEE to be made available to the public upon request. If all subprojects proposed for funding under a tranche are Category B; but at least one is deemed environmentally sensitive, the following will be additionally required: (i) SIEE to be circulated to the ADB Board 120 days prior to Board consideration; (ii) public disclosure of the SIEE; and (iii) preparation of an environmental management plan and budget.

## **2. Responsibilities and Authorities**

32. To prepare the follow-up projects and to comply with ADB's Environmental Assessment Guidelines (2003) and ADB's Environment Policy (2002) and any updates thereof, as well as with the Government's relevant environmental laws and regulations, preparation and review of environmental assessment reports shall involve the following:

- (i) Department of Public Works and Highways(DPWH). The DPWH, with the assistance of the Project Management Office (PMO), will take the following responsibilities:
  - a. Accomplish ADB's Rapid Environmental Assessment Checklist for Roads and Highways and submit to ADB for review and environmental categorization.
  - b. Based on the environmental categorization of the projects, prepare the terms of reference to conduct an IEE or EIA.
  - c. Hire an environmental consultant (as a part of design and supervision consultants) to prepare an IEE or EIA Report, including an EMP, and SEIA or SIEE for public disclosure
  - d. Undertake an initial review of the IEE and summary IEE or EIA and SEIA.
  - e. Submit the IEE or EIA and SIEE or SEIA reports together with the results of the review to ADB as part of the approval of project.
  - f. Obtain Government Permits (e.g. environmental clearance), tree-cutting permits and other relevant environmental approvals.
  - g. Ensure that all environmental regulatory clearances including ADB approval are received prior to awarding relevant construction contracts.

- h. Submit to ADB all the required clearances/certificates obtained from the relevant Government Authorities.
  - i. Ensure that the required mitigation measures during construction are included in the bidding document.
  - j. Ensure that contractors have access to the EIA or IEE and EMP report of the project.
  - k. Ensure that an environmental management plan including all proposed mitigation measures and monitoring programs are properly implemented.
  - l. Monitor the implementation of environmental management plan and present results in the environmental monitoring report.
  - m. In case unpredicted environmental impacts occur during project implementation, provide and implement an environmental emergency program.
  - n. In case a project needs to have its alignment changed or its environmental classification reconfirmed, undertake review to determine if a supplementary IEE or EIA study is required. If it is required, prepare the terms of reference for undertaking a supplementary IEE or EIA and hire an environmental consultant to carry out the study.
  - o. Submit the semiannual report on the implementation of the Environmental Management Plan (EMP), including the status of the implementation of the environmental emergency program to the relevant environmental agency and to ADB.
- (ii) Asian Development Bank. ADB will take the following responsibilities:
- a. Review the accomplished Rapid Environmental Assessment Checklist and approve the project's environmental categorization.
  - b. Review and approve the IEE or EIA and SIEE or SEIA reports as a basis for the project's approval.
  - c. Publicly disclose the SEIA and SIEE (for B sensitive projects) via ADB websites
  - d. Monitor the implementation of the EMP and due diligence as part of overall project review mission.

### **3. Environmental Criteria for Subproject Selection**

33. Considering the potential and indirect impacts associated with the construction of subprojects of the Road Sector Improvement Project, the following criteria will be adopted for the selection of the follow-up subprojects:

- (i) The subprojects shall only involve activities that comply with ADB's Environment Policy (2002), Administrative Order 2003-30 of the Department of Environment and Natural Resources (DENR). and other government regulations
- (ii) Subprojects shall not be within or, as much as possible, adjacent to environmentally sensitive areas such as national park, wildlife sanctuary, nature reserve, protected landscapes and nature reserves, other protected

- areas where the proposed development is prohibited, or areas that are non-negotiable for land use conversion.
- (iii) Subprojects shall not be within or, as much as possible, adjacent to cultural heritage and historical sites designated by the Government or by international agencies such as UNESCO.
  - (iv) The proposed use shall be consistent with (if not, compatible with) the land use zone for the site as specified in the Comprehensive Land Use Plan or related Master Plan.

#### **4. Procedures for Environmental Assessment of Individual Subprojects**

##### **a. RSIDIP Environmental Requirements**

34. In order that the environmental assessment requirements of the GOP and the ADB are complied with, the Project shall require proponents to:

- (ii) prepare an environmental assessment report that satisfies both GOP and ADB requirements.
- (iii) secure the appropriate environmental certificate for their subprojects, either an environmental compliance certificate (ECC), a certificate of non-coverage (CNC) including subprojects that fall under the EMB-DENR's grouping of optional CNC requirement.
- (iv) have applied for the appropriate environmental certificate, ECC or CNC, proven by the appropriate official receipt from the DENR, prior to sub-loan approval; and
- (v) have secured the ECC/CNC for the proposed subproject, prior to sub-loan fund release.

##### **b. Procedure for Environmental Assessment**

35. The environmental classification of eligible sub-projects under RSIDIP shall be determined using ADB's Rapid Environmental Assessment (REA) checklist for road and highway projects (**Annex B**) or any updates thereof. Environmental classification shall be reviewed and approved by ADB. Preliminary environmental assessment will be conducted by DPWH to: (i) initially assess the anticipated environmental issues and concerns associated with the proposed subproject and subproject site, applying the environmental criteria for subproject eligibility and using the appropriate ADB REA checklist (which can be enhanced during implementation stage to specifically apply to the different subprojects eligible for funding); and (ii) determine the specific environmental classification of the subproject and environmental assessment requirements.

36. Public consultation/participation shall be required in the conduct of all levels of environmental assessment following ADB requirements.

37. The EMB prescribed outlines/formats for EIA documents are provided as **Annex C** for environmental impact statement (EIS), **Annex D** for initial environmental examination report (IEE-R). The GOP prescribed environmental assessment outlines for IEE (**Table 2**) and EIA (**Table 4**) have been modified and enhanced to ensure compliance with both national and ADB requirements and these shall be followed for RSIDIP subprojects.

**Table 2: Recommended Format for an IEE**

(Per DAO 2003-30 Procedural Manual – modified and enhanced to satisfy ADB requirements)

*NOTE: Should there be any updates on ADB environmental policies and requirements that may require modification or incorporation of additional information, the IEE outline shall be modified accordingly)*

- I. TABLE OF CONTENTS
- II. EXECUTIVE SUMMARY
- III. INTRODUCTION
  - A. Project Background
  - B. IEE Process Documentation
  - C. IEE Methodology
  - D. IEE Team
  - E. IEE Study Schedule
- IV. PROJECT DESCRIPTION
  - A. Project Rationale
  - B. Project Location
  - C. Project Information
  - D. Description of Project Phases
    1. Pre-construction/Operational phase
    2. Construction phase
    3. Operational phase
    4. Abandonment phase
- V. DESCRIPTION OF ENVIRONMENTAL SETTING AND RECEIVING ENVIRONMENT
  - A. Physical Environment
  - B. Biological Environment
  - C. Socio-Cultural, Economic and Political Environment
  - D. Future Environmental Conditions without the Project
- VI. IMPACT ASSESSMENT AND MITIGATION
  - A. Summary Matrix of Predicted Environmental Issues/Impacts and their Level of Significance at Various Stages of Development
  - B. Brief Discussion of Specific Significant Impacts on the Physical and Biological Resources
  - C. Brief Discussion of Significant Socio-economic Effects/Impacts of the Project
- VII. ENVIRONMENTAL MANAGEMENT PLAN
  - A. Summary Matrix of Proposed Mitigation and Enhancement Measures, Estimated Cost and Responsibilities
  - B. Brief Discussion of Mitigation and Enhancement Measures
  - C. Monitoring Plan
  - D. Contingency Plan (if applicable)
  - E. Institutional Responsibilities and Agreements
- VIII. PUBLIC CONSULTATION AND INFORMATION DISCLOSURE
  - A. Process and Methodology Used
  - B. Issues Raised and Comments
- IX. FINDINGS AND RECOMMENDATIONS
- X. CONCLUSIONS
- XI. ATTACHMENTS AND ANNEXES
- XII. BIBLIOGRAPHY/REFERENCES

38. For permitting purposes, the modified and enhanced DENR outline above shall be used to comply with ADB data requirements. However, should there be any updates on ADB environmental policies and requirements that may require modification or incorporation of additional information, the above IEE outline shall be modified accordingly. This approach is consistent with the ADB guidelines that allow the use of the country system on the condition that the ADB requirements in substance/content are met. To guide the proponents of RSIDIP and ensure that this condition is complied, the comparative outlines of GOP and ADB IEE reports are presented below:

**Table 3: DENR IEE Outline vs ADB IEE Outline**

DENR IEE	ADB IEE
Table of Contents	
Executive summary	
<b>1.0 Introduction</b>	<b>1.0 Introduction</b>
1.1 Project Background	1.1 Purpose of the Report
	Identification of the project and project proponent
	brief description of the nature, size and location of the project and of its importance to the country
	any other pertinent background information;
1.2 Process Documentation	
1.3 IEE Methodology	1.2 Extent of the IEE study
1.4 IEE Team	scope of study, magnitude of effort; person
1.5 IEE Study Schedule	or agency performing the study; acknowledgement
<b>2.0 Project Description</b>	<b>2.0 Description of the Project</b>
2.1 Project Rationale	a Type of Project
	b Category of Project
	c Need for Project
2.2 Project Location	d Location (use maps showing general location, specific location and project site
	e Size or magnitude of operation
2.3 Description of Project Phases	f Description of the project, including drawing showing project layout, and project components
- Pre-construction	
- Construction	g Proposed schedule for implementation
- Operational	
- Abandonment	
<b>3.0 Description of Environmental Setting and Receiving Environment</b>	<b>3.0 Description of the Environment</b>
3.1 Physical	3.1 Physical Resources
3.2 Biological	3.2 Ecological Resources
3.3 Socio-Cultural, Economic and Political Environment	3.3 Economic Development
	3.4 Social and Cultural Resources
3.4 Future Environmental Conditions without the project	
<b>4.0 Impact Assessment and Mitigation</b>	<b>4.0 Screening of Potential Environmental Impact and Mitigation Measures</b>
4.1 Summary Matrix of Predicted Environmental Issues/Impacts and their Level of Significance at Various Stages of Development	4.1 Using the checklist of environmental parameters for different sector projects screen out “no significant impacts” from those with significant adverse impact by reviewing each relevant parameter according to the following factors or operational stages
4.2 Brief Discussion of Specific Significant Impacts on the Physical Resources	4.2 Identify environmental problems due to project location, and related to project design, construction, and operations.
4.3 Brief Discussion of Specific Impact on the	Potential environmental enhancement

DENR IEE	ADB IEE
Biological Resources	measures and additional considerations will also be covered.
<p>4.4 Brief Discussion of Significant Socio-economic Effects/Impact of the Project:</p> <p>IP, gender, relationship among population, development and environment for projects with significant impact on population</p>	
<b>5.0 Environmental Management Plan</b>	<b>5.0 Institutional Requirements and Environmental Monitoring Plan</b>
5.1 Summary of Matrix of propose mitigation and enhancement Measures, Estimated Cost and Responsibilities	a State the impacts to be mitigated, and activities to implement the mitigation measures, including how, when, and where they will be implemented.
5.2 Brief Discussion of Mitigation and Enhancement Measures	b The environmental management and monitoring costs should also be described.
5.3 Monitoring Plan	c The environmental monitoring plan will describe the impacts to be monitored, and when and where monitoring activities will be carried out, and who will carry them out.
5.4 Contingency Plan (if applicable)	
5.5 Institutional Responsibilities and Agreements	d Describe Institutional arrangements for implementation.
<b>6.0 Public Consultation and Information Disclosure</b> <i>(added as enhancement)</i>	<b>6.0 Public Consultation and Information Disclosure</b>
	Describe the process undertaken to involve the public in project design and recommended measures for continuing public participation;
	Summarize major comments received from beneficiaries, local officials, community leaders, NGOs, and others, and describe how these comments were addressed;
	List milestones in public involvement such as dates, attendance, and topics of public meetings; list recipients of this document and other project related documents; describe compliance with relevant regulatory requirements for public participation; and
	Summarize other related materials or activities, such as press releases and notifications
	This section will provide summary of information disclosed to date and procedures for future disclosure
<b>7.0 Findings and Recommendation</b> <i>(added for enhancement)</i>	<b>7.0 Findings and Recommendation</b>
	Evaluation of the screening process and

DENR IEE	ADB IEE
	recommendation will be provided whether significant environmental impacts exist needing further detailed study or EIA.
	<ul style="list-style-type: none"> <li>· If there is no need for further study, the IEE itself, which at times may need to be supplemented by a special study in view of limited but significant impacts, becomes the completed environmental assessment for the project and no follow-up EIA will be needed.</li> <li>· If an EIA is needed, then this section will include a brief terms of reference (TOR) for the needed follow-up EIA, including approximate descriptions of work tasks, professional skills required, time required, and estimated costs</li> </ul>
	The Bank's Environment Guidelines provides a guide for preparing the TOR for different projects.
<b>8.0 Conclusions</b> <i>(added for enhancement)</i>	<b>8.0 Conclusions</b>
	This section will discuss the result of the IEE and justification, if any, of the need for additional study or EIA
	If an IEE, or an IEE supplemented by a special study, is sufficient for the project, then the IEE with the recommended institutional and monitoring program becomes the completed EIA.
<b>6.0 Bibliography/References</b>	
<b>7.0 Attachments or Annexes</b>	
List of EIA Preparers with specified field of expertise	
Original Sworn Accountability Statement of Key IEE consultants	Statement of Commitment
Original Sworn Accountability Statement of Proponent	Statement of Accountability
Process Documentation Report	
Maps/photos/plates/diagrams/sketches	
	<b>Attachments/Annexes</b>

39. Notwithstanding the likelihood that none of RSIDIP subprojects will fall under Category A, the modified and enhanced reporting format on Environmental Impact Assessment (EIA) for Category A subprojects under both ADB and DENR systems is recommended as follows:

**Table 4: Recommended Format for an EIA**

(Per DAO 2003-30 Procedural Manual – modified and enhanced to satisfy ADB requirements)

- I. TABLE OF CONTENTS
- II. EXECUTIVE SUMMARY
  - A. Brief Introduction
  - B. Brief Description of Methodology and Profile of EIA Team
  - C. Scope and Limitation of the EIA Study
  - D. Brief Project Description
  - E. Brief Description of Baseline Environmental Conditions
  - F. Matrix of Issues and Impacts Raised During the Scoping and Consultations
  - G. Matrix of Major Impacts, and Mitigation/Enhancement Measures with Summary Discussion
  - H. Matrix of Environmental Management Plan with Summary Discussion
  - I. Matrix of Environmental Monitoring Plan with Summary Discussion
  - J. Proposal of Environmental Guarantee and Monitoring Fund Scheme (when applicable)
  - K. Summary of Process Documentation Report, and
  - L. Summary of Commitments, Agreements (or both) and Proofs of Social Acceptability
- III. INTRODUCTION
  - A. Project Background
  - B. EIA Approach and Methodology
  - C. EIA Process Documentation
  - D. EIA Team
  - E. EIA Study Schedule
- IV. PROJECT DESCRIPTION
  - A. Project Rationale
  - B. Project Alternatives
  - C. Project Location
  - D. Project Information
  - E. Description of Project Phases
    - 1. Pre-construction/operational phase
    - 2. Construction phase
    - 3. Operational phase
    - 4. Abandonment phase
- V. BASELINE ENVIRONMENTAL CONDITIONS
  - A. Physical Environment
    - 1. Geology and geomorphology
      - 1. Hydrology and hydrogeology
      - 2. Pedology and land use
      - 3. Water quality and limnology
      - 4. Meteorology
      - 5. Air and noise quality
      - 6. Oceanography
    - B. Biological Environment
      - 1. Terrestrial flora and fauna
      - 2. Marine biology
    - C. Socio-Cultural, Economic and Political Environment
- VI. FUTURE ENVIRONMENTAL CONDITIONS WITHOUT THE PROJECT
- VII. IMPACT ASSESSMENT AND MITIGATION
  - A. Physical/Chemical Effects
    - 1. Land
    - 2. Water
    - 3. Air
  - B. Biological/Ecological Effects
    - 1. Terrestrial flora and fauna
    - 2. Aquatic flora and fauna
  - C. Aesthetic and Visual Effects
  - D. Socio-Cultural and Economic Effects
    - 1. Population
    - 2. Labor and employment
    - 3. Housing and social services

4. Infrastructure and public utilities
5. Health and education
6. Culture and lifestyle
7. Livelihood and income
8. Archeological/anthropological/historical sites
- E. Mitigation and Enhancement Measures
- F. Residual and Unavoidable Impacts
- VIII. ENVIRONMENTAL RISK ASSESSMENT (WHEN APPLICABLE)
- IX. ENVIRONMENTAL MANAGEMENT PLAN
  - A. Construction/Contractors Environmental Program
  - B. Social Development Program
  - C. Contingency/Emergency Response Plan
  - D. Risk Management Program
  - E. Abandonment Plan (when applicable)
  - F. Environmental Monitoring Plan
- X. PUBLIC CONSULTATION AND INFORMATION DISCLOSURE
  - A. Process and Methodology Used
  - B. Issues Raised and Comments
- XI. FINDINGS AND RECOMMENDATIONS
- XII. ENVIRONMENTAL GUARANTEE AND MONITORING FUND PROPOSAL
- XIII. COMMITMENTS AND AGREEMENTS
- XIV. CONCLUSIONS
- XV. ATTACHMENTS AND ANNEXES
- XVI. BIBLIOGRAPHY/REFERENCES
  - A. List of EIS Preparers with specified field of expertise
  - B. Original Sworn Accountability Statement of Key EIS Consultants
  - C. Original Sworn Accountability Statement of Proponent
  - D. Photos or plates of proposed project site, impact areas and affected areas and communities
  - E. Process Documentation Report
  - F. Scoping Report
  - G. Summary of Proof of Social Preparation Process Conducted

### **c. Environmental Monitoring**

40. Aside from that discussed in Section C on EMB monitoring, subproject monitoring activities during pre-construction, and construction phases shall be carried out by the Environmental and Social Safeguard Office (ESSO) of DPWH and environmental specialists of the project supervision consultant (PSC). ESSO has nine full-time staff at the central level with two to three counterparts, known as 'Regional Environmental Impact Officers' in each 16 regional offices. The PSC shall develop a detailed monitoring and management plan based on the IEEs for RSIDIP subprojects.

41. The DPWH-ESSO shall monitor compliance with the ECC conditions and carry out the implementation of the environmental management and monitoring plan (EMMP) in the pre-construction and construction phases. Environmental and Social Safeguards Office (ESSO) within the DPWH is responsible for preparation and implementation of environmental safeguards of all national projects. Reports, prepared monthly and submitted on or before the 10<sup>th</sup> day of the month following the effective month, to the PMO of the DPWH and ADB shall include: (i) monitoring results; (ii) discussion on the compliance / non-compliance with the ECC and the EMMP; and (iii) conclusions and recommendations. Report shall also feature photographs of environmental monitoring activities and observance of the mitigation measures. Upon completion of construction activities, Proponent shall submit a written statement of closure of environmental monitoring activities to DENR and ADB, *i.e* to indicate conclusion of reporting commitment.

42. If required by EMB, Proponents will submit to the EMB regional office concerned a semi-annual ECC Compliance Monitoring Report (CMR). The CMR shall report performance at four levels, at the minimum: (i) performance against the ECC conditions; (ii) compliance with the EMMP; (iii) effectiveness of the measures on prevention/ mitigation of the actual projects vis-à-vis the predicted impacts used as basis for the EMMP design; and (iv) continued updating of the EMMP for sustained responsiveness to project operations and project impacts. Proponent shall carry on with environmental monitoring during the operations phase of the subproject and, if applicable, with its regular reporting commitment to DENR-EMB.

43. To ensure proper and timely implementation of EMMPs and adherence to the potential environmental covenants that may be stipulated in the Project Loan Agreement (subject to approval by ADB and the executing agencies): (i) executing agencies will submit to ADB semi-annual reports on the implementation of EMMPs; (ii) ADB will carry out annual environmental review missions to review the environmental aspects of RSIDIP subprojects and prepare back-to-office report; and (iii) Project completion report (PCR) and mission will include an analysis of the effectiveness of the EMMP in achieving intended objectives; as well as an assessment of the PCRs environmental reporting for its adequacy, and focus on specific environmental issues as documented in the PCR.

#### **F. Confirmation That Environmental and Review Procedures Conforms to ADB's Environmental and Social Safeguard Policies**

44. The environmental assessment and review procedures to be adopted for RSIDIP will mostly follow those that have been established in the procedural manual of DENR Administrative Order 2003-30 in conjunction with the ADB Environment Policy (2002), and ADB Environmental Assessment Guidelines (2003). The use of these reference documents will ensure substantial compliance to both GOP and ADB environmental requirements especially in terms of assessing potential environmental impacts and the formulation of mitigating measures.

#### **G. Capacity Building**

45. Based on consultations held with ESSO, a capacity building program for ESSO and other implementing agencies has been prepared for RSIDIP. The proposed capacity building program will include (i) update of existing Infrastructure Right-of-Way (IROW) and Social Environmental Management System (SEMS) manuals; (ii) prepare various training modules for environmental impact assessment and monitoring; (iii) strengthening of ESSO by providing environmental monitoring equipment, such as air, noise and water quality kits; and (iv) conduct training programs to DPWH, its regional and district officer, provincial environmental agencies, LGUs, consultants and contractors for strengthening their capacity in implementation of environmental management plans and monitoring. A budget of US\$ 753,060 has been proposed for this capacity building program. Considering the capacity building for the environmental aspects alone, the budget for consulting services will be US\$ 551,595. An outline terms of reference (ToR) is prepared for the capacity building program and is presented in **Annex E**. The primary focus of training is to enable the staff to carry out environmental monitoring, implement the environmental management plans and conduct impact assessments. After participating in such training, the participants will be able to make brief environmental assessments of their respective projects, conduct monitoring of environmental plans, and incorporate environmental features into future project designs, specifications and tender/contract documents.

## H. Staffing Requirements and Budget

46. The estimated costs for the operation of the RSIDIP environmental assessment and review procedure for each subproject are shown in **Table 5**. These include costs for preliminary assessment, conduct of the EIA, and review of ECC/CNC application by EMB. In addition, there will be cost involving the technical assistance that a local environmental specialist will provide as part of the project implementation support under Part 2 of the Project, *Institutional Capacity Development*, which will be funded under a grant. The local environmental specialist is expected to guide the PMOs in the implementation of the RSIDIP environmental assessment and review procedure for an estimated period of 12 man months and cost of about USD 36,000. The DPWH-PMO may opt to engage an individual consultant for the conduct of environmental assessments of Tranches 2 and 3, for a period of 4 months each time, estimated to require a total budget about USD 32,140 as shown in **Table 6**.

**Table 5. Estimated Costs for Environmental Assessment and Review of RSIDIP Subproject**

Activity / Cost Items	Cost in U.S. Dollar	
	Proponent	DENR
<b>Preliminary Assessment</b>		
Remuneration <sup>1</sup>	45	
Site Visit <sup>2</sup>	347	
<b>Sub-Total</b>	<b>392</b>	<b>-</b>
<b>Conduct of Environmental Assessment</b>		
<b>IEE-Report</b>		
IEE individual consultant	6,383	
Baseline data test/analysis	1,064	
Social survey/consultations	1,064	
Geohazard Identification Survey	287	
Report production	43	
ECC application	85	
<b>Sub-Total</b>	<b>8,926</b>	<b>-</b>
<b>EIS</b>		
EIA (team)	10,638	
Baseline data test/analysis	1,064	
Social survey/consultations	2,000	
Geohazard Identification Survey	287	
Report production	64	
ECC application	128	
<b>Sub-Total</b>	<b>14,181</b>	<b>-</b>
<b>Review</b>		
Remuneration		1,277
Site visits / meetings		50
<b>Sub-Total</b>	<b>-</b>	<b>1,327</b>

<sup>1</sup> Remuneration per day of assigned personnel

<sup>2</sup> Cost estimate for plane fare, hotel, car rental, meals for 22 trips of the personnel assigned, overnight only.  
Rate of Peso used= P46 per U.S. Dollar

**Table 6. Estimated Costs for the Environmental Assessments of Tranches 2 and 3**

<b>Activity / Cost Items</b>	<b>Tranche 2 (USD) (11 sites)</b>	<b>Tranche 3 (USD) (11 sites)</b>
Remuneration (Local Consultant, 4 man months)	6,000	6,000
Sites Visit		
Air Tickets – 22 return trip	1,435	1,435
Per Diem – 22 overnight stay	7,175	7,175
Contingency, 10%	1,460	1,4
<b><i>Sub-Total</i></b>	<b>16,070</b>	<b>16,070</b>

Rate of Peso used= P46 per U.S. Dollar

## **ANNEX A**

### **OVERVIEW OF THE TWENTY TWO (22) SUBPROJECTS (AS PRESENTED IN THE PROJECT PROFILE OF THE ECONOMIC UPDATING REPORT)**

#### **ROAD 1: BAGAC - MARIVELES ROAD Province of BATAAN**

The 44.70 km Bagac – Mariveles Road is situated at the southwest side of Bataan along the west coast, which begins at the Municipality of Bagac and traverses the Barangays of Ibis, Pagasa, Saysain, Paysawan, Binuangan, Quinauan, Aglaloma, Biaan, Balon Anito, San Isidro, and terminates at the Municipality of Mariveles.

The project road is envisioned to connect the existing two (2) economically progressive export processing zones in Central Luzon, i.e., the Bataan Export Zone (BEZ) and the Subic Bay Freeport Zone (SBFZ) via a western line.

The road traverses mostly rolling to flat and short stretches of mountainous terrain. Some drainage system is not sufficient causing some portions of the road to be hardly passable particularly during the rainy season. The proposed improvements include PCCP and shoulder improvement on existing PCCP.

Based on the preliminary assessment made, Bagac – Mariveles Road is already existing and minimal environmental and social impact is expected. The RROW of the project has already been acquired.

#### **ROAD 2: BACOLOD CIRCUMFERENTIAL ROAD Province of NEGROS OCCIDENTAL**

The Bacolod Circumferential Road is a 17.78 km national road which is proposed for possible improvement under the ADB-RSIDIP in view of its worsening traffic congestion problem being experienced especially along Bacolod City's business and commercial district.

Jct. Bacolod South Road - Jct. Handumanan Road covers a total length of 2.70 km which starts at Barangay Pahanocoy at the junction of Bacolod South Road up to the intersection leading to Handumanan. The entire section is paved with PCC pavement varying from fair to good condition. The entire section traverses generally a flat terrain. There is no existing bridge structure along this road section.

Jct. Handumanan - Jct. Bacolod-Murcia Road section begins at the point where Jct. Bacolod South Road - Jct. Handumanan Road terminates and ends at Bacolod-Murcia Jct. It has a total length of 3.0 km traversing rolling terrain. There are three (3) RCDG bridges (2-lanes) with an aggregate length of about 44.95 linear meters. These are the Pahanokoy 3, Cabalagnan 2 and Tangub 2 bridges, all in fair condition.

Jct. Bacolod-Marcia - Jct. Bacolod-Granada Road is a 3.6 kilometer road section is a continuing link of Jct. Handumanan - Jct. Bacolod-Murcia Road. The entire section is paved with PCC in bad condition. It traverses on a flat terrain and runs through light to heavy roadside friction.

Three (3) concrete bridges (2-lanes) with a total length of about 130.39 linear meters are along this road section. These are the Magsungay 2(PCDG), Bakya (RCDG) and Lupit 2 (RCDG) Bridges, all in fair to good condition.

Jct. Bacolod -Granada - Jct. Bacolod North Road is the final link of Bacolod Circumferential Road, which covers a total length of 8.48 km. The entire road section is paved with PCC generally in bad condition. This road section traverses flat to rolling terrain. This section terminates at Banago Jct. along the Bacolod South Road.

The PHHC, Rabadilla and Banago bridges have an aggregate length of about 60.20 linear meters exist along this road section. These are RCDG bridges (2-lanes) in fair to good condition.

The proposed improvement for the Bacolod Circumferential Road is ACP Reconstruction. Based on the preliminary assessment made, the road is already existing and minimal environmental and social impact is expected. The RROW of the project has already been acquired.

**ROAD 3: NAVAS – CATICLAN – ANTIQUE/AKLAN PROVINCIAL BDY.  
(CATICLAN – MALAY – ANTIQUE/AKLAN PROVINCIAL BDY)  
Province of AKLAN**

The Caticlan- Antique/Aklan Provincial Boundary Road is a strategic road that forms part of the country's arterial road network and functions as the only inter-provincial linkage between the provinces of Antique and Aklan. The project road traverses the coastal municipalities of Malay, Buruanga and Santander, and its improvement is envisioned to strengthen existing road links in the province of Aklan. The improvement of the project road would provide increased mobility and accessibility to Caticlan, which is the take off point to Boracay Island, a famous tourist destination. The project road is envisaged to complete the Antique – Aklan western road network. The improvement of this link would promote provincial development in tourism, fishing and agriculture.

Caticlan – Malay Road, the horizontal and vertical alignments of the road section are generally good. It runs from flat to rolling terrain. Based on available information drainage facilities along the road section are mostly insufficient and ineffective to accommodate the volume and capacity of flowing water especially during the rainy season because some of the RCPC are fully clogged and silted. The three (3) bridge structures namely: Putol, Napaan and Naba-oy along the road section are generally in good condition.

Malay – Buruanga – Provincial Boundary Road begins in the Municipality of Malay passes the municipalities of Buruanga and Santander and ends at Provincial Boundary of Antique/Aklan The road section has an aggregate length of 19.78 km comprising of about 10.07 km or 51% gravel surface in poor condition while the remaining 9.71 km or 49% is Portland Cement Concrete (PCC) pavement.

The terrain is generally rolling to mountainous with some portions of flat terrain. The horizontal alignments with gradients varying from 5% to 8% as well as the vertical alignment specifically along the mountainous section need to be corrected. Drainage facilities along the road section are mostly clogged and some already buried. These require cleaning and restoration works for the some buried facilities. There are five (5) existing bridge structures along the road section.

Proposed improvements for this road are AC Overlay , ACP Reconstruction and ACP New Construction. Based on the preliminary assessment made, the road is already existing and

minimal environmental and social impact is expected. The RROW of the project has already been acquired.

**ROAD 4: VILLABA -TABANGO-CALUBIAN - J CT. SAMBULAWAN ROAD**  
**Province of SAMAR**

The 67.10 Jct. Sambulawan – Calubian – San isidro – Tabango – Villaba Road is classified as a national road located in the Province of Leyte. It connects the five (5) densely-populated coastal municipalities of Leyte, Calubian, San Isidro, Tabango and Villaba, consisting of 150 barangays with an aggregate total land area of about 73,530 hectares.

Portions of the alignment follow the coastline. Topography ranges from flat to mountainous with gentle curves. Areas that are prone to slope failures are priorities to be regarded as this will hamper flow of activities within the area if this occurred. For erosion control, installation of reinforced concrete pipe culverts are to be placed on strategic points together with the provision of lined ditches. This will facilitate water to drain easily from the road and together with correct crowning.

Temporary bridges are to be replaced with permanent ones. Other proposed improvements are PCCP Reconstruction, PCCP New , AC Overlay and ACP New. Based on the preliminary assessment made, the road is already existing and minimal environmental and social impact is expected. The RROW of the project has already been acquired.

**ROAD 5A: LOAY INTERIOR ROAD (Trinidad – Carmen – Loay Road)**  
**ROAD 5B: JCT. DAT-AN – SIERRA BULLONES – PILAR – CARMEN ROAD**  
**Province of BOHOL**

The proposed project, Road 5A-1 and 5A-2 covers the municipalities of Loay, Bilar, Carmen, Dagohoy, San Miguel, and Trinidad. The immediate influence area for Road 5B-1 covers the municipalities of Carmen, Sierra Bullones, Pilar and Alicia.

Section 5A-1 Trinidad – Jct. Brgy. Buenavista Road traverses a generally flat terrain. The horizontal and vertical alignments of the road meet the minimum requirements of the DPWH Design Standard. There are eight (8) permanent bridges along the road section of which all are in good condition. The bridges have an aggregate length of 201.44 linear meters.

In Section 5A-2: Jct. Brgy. Buenavista – Loay Road, drainage structure is inadequate along the flood prone area. There are eleven (11) permanent bridges along the road section all of which are in good condition. The bridges have an aggregate length of 215.30 linear meters.

Road 5B-1: Jct. Dat-an – Sierra Bullones – Pilar – Carmen Road traverses generally a rolling terrain through the town proper of Sierra Bullones and ends at Alicia town proper. The 31.83 km proposed road has a combination of PCC, AC and gravel road surface in poor condition. The paved road has an existing 1.0 meter shoulder on both sides in fair state. The horizontal and vertical alignments as well as the drainage structures are sub-standard and will require improvement. There are nine (9) permanent bridges along the road section all of which are in good condition. The bridges have an aggregate length of 237.00 linear meters.

Proposed improvements are ACP Reconstruction, ACP New, AC Overlay and Bridge Replacement. Based on the preliminary assessment made, the road is already existing and minimal environmental and social impact is expected. The RROW of the project has already been acquired.

**ROAD 6: WRIGHT – TAFT – BORONGAN - GUIUAN ROAD**

## **Province of EASTERN SAMAR & WESTERN SAMAR**

The proposed road project is generally within the provincial jurisdiction of the province of Eastern Samar which is located in Samar Island while the first section is part of the Western Samar Province.

The proposed implementation of the project will contribute to the regional economic development, improving the living standards of the people in this poverty stricken area and promoting tourism in the influenced areas.

Wright – Taft starts at the Wright – Jct. PJFH Catbalogan – Calbiga road traverse an easterly direction towards the boundary of eastern and western Samar and ends at the Jct. Taft – Dolores – Oras road in the north direction. The road alignment generally follows a rolling to mountainous terrain with a total length of about 63.28 km composed of asphalt and concrete pavement. Some cut and fill sections are damaged by slope failures and landslides apparently due to underground water and ground movement. The cut slopes are almost vertical with very short passing sight distance. There are 21 existing permanent bridges along the road section, which has a total length of 503.05 linear meters.

Taft – Borongan starts at the Jct. Taft – Dolores – Oras roads and runs south along the coast passing through the municipalities of Taft, Sulat, and San Julian and ends in Borongan, the capital of Eastern Samar Province. The road section is approximately 45.24 km paved with asphalt with 80 % in poor/bad condition. It traverses relatively flat to rolling terrain. The vertical and horizontal alignment is within the DPWH standards, except in some stretches along the rolling terrain and bridge approaches wherein there are excessive gradients. There are also few sharp curves along the road section which could be easily corrected. Some sections along the coast are also affected by wave action resulting to flooding and these will require embankment protection. There are 19 existing permanent bridges with a total length of 847.16 linear meters.

Borongan – Jct. Guinapundan is a continuing link of Taft – Borongan which starts in the municipality of Borongan and follows southerly direction close to the coastline passing through the municipalities of Maydolong, Llorente, Hernani and Mac Arthur then ends at Jct. Guinapundan.

The road section has a total length of approximately 80.23 km paved with asphalt of which 78.211 km or 97% is in bad condition, and the remaining 2.18 km or 3% are in good/fair condition. The road traverses generally rolling to mountainous terrain. The horizontal and vertical alignment need to be corrected. There are 19 existing permanent bridges along the section with a total length of 1022.49 linear meters.

Jct. Guinapundan – Guiuan is still a continuing links of Taft – Borongan and Borongan – Jct. Guinapundan which starts at Jct. Guinapundan , passing the municipality of Buenavista, Salcedo and Mercedes and ends at Guiuan. The section traverses generally rolling terrain. The section has a total length of 34.03 km, with asphalt surface in poor/bad condition. The road has three (3) permanent bridges with a total length of 22.70 linear meters.

PCCP Reconstruction and AC Overlay are the proposed improvements for this project. The alignment for the proposed road is already existing. Preliminary assessment reflects that implementation of the project will not have an adverse impact in the environment.

## **ROAD 7: STO. NINO – BULUANG ROAD Province of PALAWAN**

The 73.69 km Sto. Niño – Buluang is a national road located in the Island of Busuanga which is situated in the northern part of Palawan. The proposed road forms part of the Coron – New Busuanga Road, where a tourism development center is planned. The project when implemented will give better and easier access to tourists visiting the area and likewise increase tourism related activities and generate other development impact on the development planned and projects in the island.

Sto. Niño – Baluang Road has a total length of 73.69 km, consisting mostly of gravel and concrete pavement. There are 28 bridge structures that exist along the section, consisting of five (5) permanent bridges with a total length of 266 linear meters and 23 temporary bridges with a total length of 447 linear meters.

PCCP Reconstruction, PCCP New and AC Overlay are the proposed improvements for this road with some bridges to be replaced.

Sto. Niño – Baluang Road is already existing. Based on the preliminary assessment conducted, the project will not cause adverse effect in the environment.

### **ROAD 8: SAN NICOLAS – SAN QUINTIN - UMINGAN ROAD** **Province of Pangasinan**

San Nicolas – San Quintin – Umingan Road is a strategic road which traverses and links Region I and CAR. The proposed project is envisaged to accelerate growth in agriculture and industry by providing a well-planned inter-urban and inter-rural linkages in the form of an efficient network system.

The San Nicolas – San Quintin Road starts at the Junction of Sta. Maria – San Nicolas traversing a southeasterly direction crossing the town of Natividad until it reaches the town of San Quintin. It has a total length of 11.45 kilometers, paved with Asphalt cement and Portland concrete cement. The road generally passes through flat terrain. There are 10 existing permanent bridge structures along the road with a total length of 428.80 linear meters.

The San Quintin – Umingan Road has a total length of 7.41 km paved with Portland cement concrete , 5.78 km of which is in poor to bad condition generally passing through flat terrain. There are seven (7) existing permanent bridge structures along the road section with a total length of 806.95 linear meters.

AC Overlay, ACP Reconstruction and replacement of a bridge along San Quintin-Umingan Road are the proposed improvements in the existing alignment where minimal negative impact on the environment is expected.

### **ROAD 9: BINALBAGAN – ISABELA - GUIHULNGAN ROAD** **Province of NEGROS OCCIDENTAL & NEGROS ORIENTAL**

The Binalbagan – Isabela – Guihulngan Road is located in the Provinces of Negros Occidental and Negros Oriental in Regions VI and VII respectively. The project road is considered as an east-west lateral road that traverses the three (3) municipal towns of Binalbagan and Isabela in Negros Occidental and Guihulngan in Negros Oriental. It has an aggregate length of 68.23 kilometers.

The project road is envisaged to accelerate economic activities among the towns within the project area by cutting short travel time and transport cost. The implementation of the project road would promote provincial and regional development especially in agriculture, trade and tourism.

Binalbagan – Isabela Road starts at the junction along the Bacolod-Kabankalan National Road within the Binalbagan proper until it reaches Isabela proper on the easterly direction. It has an aggregate length of 12.23 kilometers. There are two (2) permanent bridge structures along the road section. The RCDG bridge structure is in good condition with a total length of 17.6 linear meters while the Steel Truss bridge with a total length of 67.6 linear meter needs only maintenance works and is in fair condition.

Isabela – Barangay Ligas Road starts at Isabela Proper and ends at Brgy. Ligas which is still a part of Negros Occidental and has a total length of 15.50 km . The project road generally traverses flat to rolling terrain. There are three (3) permanent bridge structures along the road section with a total length of 200.60 linear meters which are all in good condition.

Barangay Libas – Barangay Magsaysay Road starts at Brgy. Libas, traversing Brgy. Sikatuna, the provincial boundary of Negros Occidental/Negros Oriental then terminates at Brgy. Magsaysay having a total length of 22.70 km. Based on preliminary assessment conducted, it is impassable due to the presence of big outcrop boulders on the surface of the gravel road, however motorcycles “habal-habal” can traverse. The horizontal and vertical alignments of the project road will be checked during the detailed engineering design phase.

Brgy. Magsaysay – Guihulngan Road starts at Brgy. Magsaysay then proceeds towards an easterly direction until it terminates at Guihulngan proper. It has an aggregate length of 17.80 km. The road runs through rolling to mountainous terrain in Brgy. Magsaysay then continuous to a flat terrain upon reaching Guihulngan proper. The proposed improvement in the road sections are combination of PCCP New , PCCP Reconstruction , ACP New, ACP Reconstruction and AC overlay.

Mitigating measures will be incorporated during the detailed design stage which has to be implemented during the pre-construction and construction phases of the project to lessen the negative impacts on the environment.

**ROAD 10: NEGROS CROSS ISLAND LINK (BACOLOD – MURCIA – SAN BENEDICTO – SAN CARLOS CITY ROAD)**  
**Province of NEGROS OCCIDENTAL**

The project is located in Negros Occidental otherwise known as the sugar bowl of the Philippines. It seeks to connect Bacolod City and San Carlos City via cross island route.

Jct. Bacolod South Road – Jct. Bacolod Circumferential Road. This section starts at the intersection with Bacolod South Road just before the airport, passes thru flat terrain and ends at the Jct. Bacolod Circumferential Road. The total length of this section is 3.0 km. It is paved with Portland Cement Concrete in bad condition with a carriageway width of 15.0 m. The horizontal and vertical alignment of the existing road meets the DPWH design guideline and standards.

Jct. Bacolod Circumferential – Jct. Murcia Road

This section starts at Jct. Bacolod Circumferential Road passes mostly to rolling terrain abounding with sugarcane fields and ends at Jct. Murcia. The total length of this section is 10.40 km. It is paved with PCC in bad condition. It has a carriageway width that varies that from 15.0 ~ 6.1 m. The horizontal and vertical alignment of the existing road meets the DPWH design guideline and standards. There is only one (1) existing permanent structure in this section, the Langub steel bridge with a total length of 6.8 linear meters.

Section 10-3: Jct. Murcia – Jct. San Benedicto

This section starts from Jct. Murcia, passes through sugar cane fields in rolling terrain in Brgys. Iglawan and San Miguel then passes thru mountainous terrain, and ends at Jct. San Benedicto.

The total length of this section is 35.80 km. of which 99.5% of the road is paved with Portland Cement Concrete (PCC), and short stretch of which .157 km or .5% is Asphalt Concrete (AC) pavement in good condition. The PCC pavement consists of 2.594 km in good condition, 21.651 km in fair condition and 11.399 km in poor/bad condition. It has a carriageway width that ranges from 13.0 m ~ 6.1 m.

The vertical and horizontal alignments on rolling terrain are quite appropriate for 60 kph design speed. There are ten (10) existing permanent bridge structures with a total length of 444.20 linear meters.

#### Jct. San Benedicto – Jct. Prosperidad – Cabaron Road

This section starts at Jct. San Benedicto, passes thru a mountainous terrain and ends at the Jct. Prosperidad – Cabaron Road. It has a total length of 10.65 km paved with Portland Cement Concrete. It consists of 6.665 km in fair condition and 3.988 km is in poor condition, with a carriageway width of 11.5 ~ 6.1 meters. The horizontal and vertical alignments still need to be corrected. There is only one (1) permanent bridge structure located within the entire section, the Bago Bridge, with a total length of 41 linear meters in good condition.

#### Jct. Prosperidad – Cabaron – Jct. San Carlos City

This section starts at Jct. Prosperidad – Cabaron, passes thru mountainous terrain and then thru flat in the last 3 km of the road until it ends in San Carlos City at the intersection with the coastal road. The existing pavement is PCC with a total length of 21.91 km. It consists of 1.346 km in good condition, 4.632 km in fair state and 15.934 km in poor to bad condition. The vertical and horizontal alignments on rolling terrain are quite appropriate for 60 kph design speed. There is only one (1) permanent bridge structure located within the entire section, the Medina Bridge, with a total length of 52.55 linear meters in good condition.

AC Overlay, ACP Reconstruction and replacement of bridge are the proposed major works to be implemented. Since the same alignment will be improved, minimal environmental impact is expected.

### **Road 11: Bolinao - Bani - Alaminos Road Province of PANGASINAN**

The road consists of two(2) sections, one is from Alaminos to Jct.Bani with a length of 14.6 kilometers while the second one is from Jct. Bani to Bulinao with a length of 26.32 kilometers. About 1.25 and 1.87 kilometers for the first and second section, respectively, are bad and proposed for ACP Reconstruction. There are seven (7) bridges in the project road with a total length of 253.85 linear meters. Two (2) steel bridge structures are proposed for replacement.

The project road is expected to accelerate economic activities to towns within the project area due to less travel time and transport cost. The implementation of the project road would promote provincial and regional development especially in agriculture, trade and tourism.

Bolinao - Bani - Alaminos Road is already existing, hence, effect of the project implementation is considered insignificant.

### **ROAD 12: DUMAGUETE NORTH ROAD (DUMAGUETE CITY – BAIS – PROV'L BDRY.) Province of NEGROS ORIENTAL**

The 149.82 km Dumaguete – Villahermoso Road forms part of Dumaguete North Road that links the provinces of Negros Oriental and Negros Occidental in the Island of Panay. It is classified as a strategic road under the Masterplan Study for Visayas and Mindanao. The proposed project is envisaged to accelerate growth in agriculture and industry by providing a well-planned inter-urban and urban-rural linkage in the form of efficient transport system.

#### Dumaguete City – Bais City

The project road starts in Dumaguete City passes through the towns of Bindoy, Manjuyod and Ayungon and ends in Bais City. The road section is approximately 50.72 km. in total length. The section traverses generally flat terrain. There are 17 permanent bridge structures found along the road section mostly in good condition except for some minor structural deterioration which need only bridge maintenance interventions.

#### Bais City – Vallehermoso – Provincial Bdry. Negros Oriental/Occidental

The project road starts in Bais City passes through the towns of Manjuyod, Bindoy, Ayungon, Jimalulud, La Libertad, Guihulngan, Vallehermoso and ends at the provincial boundary of Negros Oriental and Negros Occidental. The road section traverses generally flat terrain with an approximate length of 99.10 kilometers. There are 44 permanent bridge structures found along the road section all in good condition with a total length of 1,308.80 linear meters.

Proposed improvements for Dumaguete North Road are AC Overlay , ACP Reconstruction and replacement of bridges identified by the Engineers. Similar with the above proposed road projects, the same alignment will be used. Adverse impact on the environment is not expected during the project implementation.

### **ROAD 13: GUIMARAS CIRCUMFERENTIAL ROAD** **Province of GUIMARAS**

The Guimaras Circumferential Road is a national secondary road that commences at the town proper of San Miguel, where the government center is situated, and passes through the towns of Jordan ( the capital town of Guimaras), Buenavista, San Lorenzo, Sibunag and Nueva Valencia. The circumferential road has a total length of 109.82 km.

The proposed project improvement will provide access to the island's idle lands and consequently generate incremental production and spur economic activities and opportunities in the area.

#### San Miguel – Jordan – Buenavista

This road section has a total length of 24.40 km that starts at the town proper of San Miguel passes the town of Jordan and terminates at Buenavista. The project road runs traverse on flat to rolling terrain. The road section is a combination of Asphalt Concrete (AC) pavement and Portland Cement Concrete (PCC) pavement. There are six (6) existing bridge structures along the road section of which five (5) are permanent and one (1) is temporary with a total length of 188.20 linear meters.

#### Buenavista – San Lorenzo – Igawayan Jct.

This road section starts at Buenavista proper and moves a southeasterly direction towards San Lorenzo until reaches the junction at Igawayan. The road section has an aggregate length of 24.70 km with a combination of Asphalt Concrete (AC) pavement, Portland Cement Concrete (PCC) pavement and short stretch of Gravel surface. The horizontal and vertical alignment meets the DPWH design standard criteria. There are three (3) existing permanent bridges along the road section with a total length of 75.73 linear meters.

#### Igawayn – Cabalagnan

This road section starts at the junction of Igawan moving in a southerly direction towards Sebaste, Alegria until it reaches Barangay Cabalagnan. It has a total length of 29.50 km with

a combination of Asphalt Concrete (AC) pavement, Portland Cement Concrete (PCC) pavement and Gravel surface. The project road runs through rolling to mountainous terrain. The horizontal alignment is generally fair while the vertical alignment of the road ranges from 5% to 8%. Some portions of the road are in flood prone areas.

There are four (4) existing bridge structures which consist of three (3) permanent bridges and one (1) temporary bridge with a total length of 118.0 linear meters.

**Cabalagnan – Nueva Valencia – San Miguel**

This road section has a total length of 31.22 km starting from Brgy. Cabalagnan passing through the town of Nueva Valencia until it terminates at San Miguel proper. The road section is a combination of Asphalt Concrete (AC), Portland Cement Concrete (PCC) pavement and gravel surface. The terrain in this section is generally in rolling to mountainous lands. The horizontal alignment is generally fair while the vertical alignment ranges from 5% to 8%. Flooded area had been recorded and are situated between km 80 to 85. There are three (3) existing permanent bridge structures with a total length of 92.0 linear meters.

AC Overlay, ACP Reconstruction, ACP New and replacement of bridges are proposed for this project. Similar with the above proposed road projects, the same alignment will be used. Adverse impact on the environment is not expected during the project implementation. Mitigating measures as designed will be implemented.

## **ROAD 14: ALBAY WEST COAST ROAD**

### **Province of ALBAY**

The Albay West Coast Road is classified as a national secondary road located in the province of Albay. The project road has a total length of 40.68 km linking the coastal barangays of the municipalities of Polangui, Libon, Pio Duran, Oas and City of Ligao. It starts at barangay Pantao in the municipality of Libon, and runs in a southerly direction and ends at the Junction of Ligao – Pio Duran Road section at barangay Caratagan, municipality of Pio Duran.

The proposed improvement of the project road into a standard national road will not only serve as an alternate route to the Pan-Philippine Highway but is likewise envisage to give better access to the barangays traversed as well as to ease the current traffic using the Ligao-Pio Duran – Pantao – Libon Road section going to or coming from Legazpi City or the southern province.

**Brgy. Pantao, Libon – Brgy. Cabarian, Ligao**

The start point of the proposed project road has been taken at the end of the Libon – Marocmoc – Pantao road section with an approximate length of 16 km. The project road starts from Brgy. Pantao in municipality of Libon. The road generally heads south parallel to the coastline, passing through small villages and eight Barangays where it traverses flat, rolling and mountainous terrain and proceeds further until it reaches barangay Cabarian in municipality of Ligao. The road section has an aggregate length of 25.70 km. Along the road section, there are four (4) existing bridge structures with an aggregate length of 90.40 linear meters. Three (3) bridges are still temporary and one (1) structure permanent.

**Brgy. Cabarian, Ligao - Brgy. Caratagan, Pio Duran**

The road section begins at Brgy. Cabaria, in the municipality of Ligao and runs on a north east direction along the coastline passing small villages and barangays where it traverses over rolling, mountainous and flat terrain and proceeds further until it reaches Brgy. Carataga, Municipality of Pio Duran (Jct. Ligao – Pio Duran Road).

The road section has a total length of 14.98 kilometers of which gravel surface is predominant (88% of the road). Only one (1) existing permanent bridge structure is situated along this section with a total length of 42.90 linear meters.

AC Overlay, PCCP New, PCCP Reconstruction and replacement of bridges are proposed for this project. Similar with the above proposed road projects, the same alignment will be used. Adverse impact on the environment is not expected during the project implementation. Mitigating measures as designed will be implemented

### **ROAD 15: STO. ROSARIO – MATAG-OB ROAD** **Province of LEYTE**

The 24.04 km Palompon – Matag-ob Road is located in the province of Leyte. It starts at Brgy. San Isidro in Palompon and ends at Brgy. Sto. Rosario in Matag-ob at the junction of Kananga – Villaba Road.

The project road will provide direct route to the municipality of Palompon as well as provide a shorter route to the municipality of Isabel which at present passes through the Kananga – Merida – Isabel route via Ormoc City. 65.69 km resulting in distance savings of 10.5 km.

Improvement of the project road will spur growth of the economy of both and nearby municipalities, and will facilitate movement of goods and services.

#### **Palompon – Matag-ob Road**

The project road starts at Brgy. San Isidro, Palompon passing through rolling and mountainous terrain up to the town proper in Matag-ob and then traverses flat terrain until it terminates at Barangay Sto. Rosario, Matag-ob.

The project has a total length of 24.04 km paved with Portland Cement Concrete (PCC) and Gravel surface. There are seven (7) existing bridge structures along the road section with a total length of 183.89 l.m. of which five (5) bridge structures are permanent and two (2) bridge structures are temporary.

AC Overlay, PCCP New, PCCP Reconstruction and replacement of bridges are proposed for this project. Similar with the above proposed road projects, the same alignment will be used. Adverse impact on the environment is not expected during the project implementation. Mitigating measures as designed during the detailed design stage will be implemented

### **ROAD 16: CERVANTES – SABANGAN ROAD** **Province of MT. PROVINCE**

The Cervantes - Sabangan road is a continuing link of Suyo Cervantes road and Cervantes – Mankayan - Abatan road. The project road network is classified as a strategic road in the country's arterial road system in Northern Luzon and interlinks two (2) major highways, the Manila North Road (MNR) and the Halsema Highway.

The impact on the development prospects brought about by the improvement of the project road network will definitely be felt not only on the immediate vicinity of the project but on the whole of the Cordillera and Ilocos Provinces.

#### **Cervantes – Sabangan Road**

The Cervantes – Sabangan is the continuing link of Suyo – Cervantes road and starts at the intersection in Cervantes and terminates in Sabangan at the junction Halsema Highway. The

road alignment traverses rolling terrain to mountainous terrain. It has an aggregate length of 35.28 km.

The proposed improvement for this road are: AC Overlay, PCCP New , PCCP Reconstruction and replacement of bridge. Improving the same alignment will not generate adverse impact on the environment. Mitigating measures on the other hand will be incorporated in the design and will be implemented.

### **ROAD 17: MULANAY – SAN FRANCISCO ROAD** **Province of QUEZON**

The Mulanay – San Francisco Road is classified as a national road and is a continuing link of the newly constructed Catanauan – Mulanay – San Narcisco Road implemented with financial assistance under the ADB 6<sup>th</sup> Road Improvement Project.

The improvement of the Mulanay – San Francisco Road is envisaged to provide the interior municipalities of the Peninsula with a year – round access and to complement the other development endeavor.

#### **Mulanay – San Francisco Road**

The project road is classified as a national secondary road. It traverses flat terrain at the beginning of the section in the municipality of Mulanay and short stretch of mountainous area about 200 m, located after 1.7 km from the beginning of the project. It then passes Brgy. Sumagunsong through a flat to rolling terrain as it veers towards the south and finally through a flat section up to the municipality of San Francisco where the road section terminates. It has a total length of 35.65 km. The project road is a combination of Portland Cement Concrete (PCC) pavement and gravel surface. There are 11 existing bridge structures along the section of which 10 are permanent structures and one (1) temporary bridge with a total length of 217.52 m.

AC Overlay, PCCP New and PCCP Reconstruction are the proposed improvement works for this project. Similar with the above proposed road projects, the same alignment will be used . Adverse impact on the environment is not expected during the project implementation. Mitigating measures as designed during the detailed design stage will be implemented.

### **ROAD 18: BAGONG – SILANG - CAPALONGA ROAD** **Province of QUEZON**

The 31.25 km long project road is classified as other roads of strategic importance under the country's arterial road network.

The Bagong Silang – Capalonga Road serves as the main link between the municipalities of Capalonga and Labo and is considered as the major trunkline for the feeder roads which provide access to the interior barangays and sitios within the influence area. Likewise, the project road also provides access to Daang Maharlika Highway. Improvement/upgrading of the project road will provide fast reliable transport system between the two municipalities and other neighboring towns.

The project road begins at Daang Maharlika in Barangay Bagong Silang in the municipality of Labo located on the northwestern side of Camarines Norte. The road passes through the barangays of Bagong Silang II, Tanauan, Magsaysay, Dolores, Alayao, Matague and ends at Talagpucao, Capalonga and traverses a generally mountainous terrain with a total length of 31.25 km. The road is classified as national secondary.

The existing road surface consists of 0.329 km PCC in good condition, 2.693 km in fair condition, and 13.522 in poor to bad condition. The horizontal and vertical alignment generally meets the DPWH design standard. The project road has seven (7) permanent bridge structures, all are in good condition with an aggregate length of 217.52 linear meters.

The proposed improvements for this road are AC Overlay, PCCP New and PCCP Reconstruction. The same alignment will be used. Adverse impact on the environment is not expected during the project implementation. Mitigating measures as designed during the detailed design stage will be implemented.

### **ROAD 19A: MASBATE - MILAGROS ROAD ; 19B: JCT. MILAGROS – BALENO – LAGTA ROAD; 19C: JCT. TAWAD – BALUD ROAD**

The three (3) project roads are in the province of Masbate with an aggregate length of 134.18 km classified as National Secondary roads.

These roads are part of the main national road network of the island. Road 19A (Masbate – Milagros road) serves the cattle ranching operations of the province which basically is most of its total land area. Road 19 B (Jct. Milagros – Baleno – Lagta Road) is the main access road leading to the only municipal fish port in Baleno, Masbate, located before Aroroy which is used for both cargoes and passenger transport. Road 19C (Jct. Tawad – Balud) is the main access road towards Balud Port I located in the main poblacion and Calumpang Ro-Ro Port which has a link to Culasi Port in Roxas, Capiz. The improvement of these road sections will serve the Nautical Highway Roads cum Ports system facilitate the movement of goods and services as well as provide reliable and safe transport system within the province.

#### **Masbate – Milagros Road**

The project road starts at Jct. Masbate to Malinta road and terminates at Jct. Milagros to Balud road.

The 25.21 km Masbate – Milagros road is a combination of Portland Cement Concrete (PCC) pavement and Asphalt Concrete (AC) pavement. The project road has four (4) permanent existing bridge structures. All are in good condition with an aggregate length of 131.00 linear meters.

#### **Jct. Milagros – Baleno - Lagta Road**

The 67.75 km section is a national secondary road. It starts at Jct. Milagros, passes through municipalities of Aroroy and Baleno, then terminates at barangay Lagta.

The project road is a combination of Portland Cement Concrete (PCC) pavement and gravel surface. The project road has 11 permanent existing bridge structures, all are in good condition with an aggregate length of 333.30 linear meters.

#### **Jct. Tawad – Balud Road**

The project road starts at Jct. Tawad traverses gently rolling grassland and ends at Balud. The road has an aggregate length of 41.22 km a combination of Portland Cement Concrete (PCC) pavement and gravel surface. The vertical and horizontal alignment is within the DPWH minimum standard.

For the road sections identified, AC Overlay, ACP Reconstruction, ACP New, PCCP New and PCCP Reconstruction are the proposed combination of road improvements considered. During the implementation phase of this project, minimal negative impact on the environment is expected.

### **ROAD 20: TOLEDO – TABUELAN – SAN REMIGIO ROAD**



negative impact on the environment is expected during the implementation phase of this project.

### **ROAD 21: ILIGAN – BUKIDNOD ROAD (STA. FILOMENA – JCT. TICALAAN SECTION) Province of BUKIDNON**

The 79.548 km project road (Sta. Filomena – Ticalaan Section) plays a vital role in the development projects being undertaken in the area such as the Iligan – Cagayan de Oro Growth Corridor, the Bukidnon Integrated Area Development Programmed (BIADP), the Growth with Equity in Mindanao (GEM), and other government and private-initiative development programs and projects intended for the area.

#### **Sta. Filomena – Rogongon – Km 1581 + 334**

This road section starts at the coastal barangay of Sta. Filomena, at a junction of Iligan – Cagayan – Butuan Road (ICBR) 7 km north of Iligan City. The road climbs at the beginning of the project and extends eastward following an existing road which passes through hills, coconut plantations, agricultural lands and villages associated with the main river valley heading inland. The alignment passes at Brgy. Rogongon before an ascent to an old logging road which leads to a sparsely settled forested area towards the border. The project road ends at the end of existing gravel road at km 1581 + 334 km.

The whole stretch of the segment which form the accessible western part of the project road generally traverses rolling to mostly mountainous terrain.

The project road has an aggregate length of 63.03 km with a combination of PCC pavement and gravel surface. The horizontal and vertical alignment requires correction to meet the DPWH minimum design standard.

There are three (3) spillway, three (3) creeks and three (3) fords with a total length of 207.00 meters.

#### **Rogongon – Km 1581 + 334 - Mamaon Jct.**

This section is hampered by the non existent gap about 4.0 km located between km 1581 + 334 and ends at Mamaon Jct.

#### **Mamaon Jct. – Ticalaan Jct.**

This road section forms the eastern part of the project and is a continuing link of Rogongon – Km 1581 + 334 - Mamaon Jct. It starts in Mamaon Jct. generally traverses a rolling and mountainous terrain and ends at Ticalaan Jct. The existing gravel road passes through largely open lands with some agricultural activity and several barangays. The gravel road has a total length of 12.5 km in poor condition. Roadway width varies from 3.0 ~ 7.0 meters. Major improvement is required on the existing vertical profile and horizontal alignment of the project road.

Proposed improvements for this road are AC Overlay, PCCP New , PCCP Reconstruction and replacement of bridges. With the existing alignment, minimal negative impact on the environment is expected during the implementation phase of this project

### **ROAD 22: BAYAWAN - MABINAY ROAD Province of NEGROS ORIENTAL**

Bayawan – Mabinay Road is a proposed national road that starts from the southern junction of Poblacion Bayawan, Negros Oriental, up to the northern hinterlands of Barangay Paniabonan in the municipality of Mabinay.

The project generally aims to develop the primary and secondary arterial road network of the Island of Negros in order to provide efficient transport infrastructure facilities, expand economic development opportunities and mitigate existing transportation constraints, and support provincial and regional economic stability.

#### Bayawan – Mabinay (Bayawan – Daus - Paniabonan Road)

The Bayawan – Daus – Paniabonan Road starts at the junction of Bayawan proper moving towards a northerly direction traversing the barangays of Kalumboyan, Baisan, Daus until it terminates at Paniabonan in Mabinay. The project road runs through flat terrain from Bayawan proper until it reaches the junction of Barangay Kalumboyan then follows a rolling and mountainous terrain up to Paniabonan in the municipality of Mabinay. It has an aggregate total length of 51.64 km paved with Portland Cement Concrete (PCC) pavement and gravel surface. There are some sections along the mountainous area that requires correction of the horizontal and vertical alignments. There is only one (1) RCDG bridge structure in good condition and two (2) spillway structures along the project road with a total length of 60 meters.

Based on the preliminary assessment made, it is expected that minimal environmental and social impact is expected. The RROW of the project has already been acquired.

Proposed improvements for this road are AC Overlay, ACP Reconstruction, PCCP New and replacement of spillway. With the existing alignment, minimal negative impact on the environment is expected during the implementation phase of this project.

## ANNEX B

### RAPID ENVIRONMENTAL ASSESSMENT (REA)

#### ROAD AND HIGHWAYS

##### Instructions:

- F. This checklist is to be prepared to support the environmental classification of a project. It is to be attached to the environmental categorization form that is to be prepared and submitted to the Chief Compliance Officer of the Regional and Sustainable Development Department
- G. This checklist is to be completed with the assistance of an Environment Specialist in a Regional Department.
- H. This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer to ADB checklists and handbooks on (1) involuntary resettlement, (ii) indigenous peoples planning, (iii) poverty reduction, (iv) participation, and (v) gender and development.
- I. Answer the questions assuming the “without mitigation” case. The purpose is to identify potential impacts. Use the “remarks” section to discuss any anticipated mitigation measures.

Country/Project Title:

Section Division:

Screening Questions	Yes	No	Remarks
A. Project Sitting			
Is the Project area adjacent to or within any of the following environmentally sensitive areas?			
■ Cultural heritage site	<input type="checkbox"/>	<input type="checkbox"/>	
■ Protected Area	<input type="checkbox"/>	<input type="checkbox"/>	
■ Wetland	<input type="checkbox"/>	<input type="checkbox"/>	
■ Mangrove	<input type="checkbox"/>	<input type="checkbox"/>	
■ Eastuarine	<input type="checkbox"/>	<input type="checkbox"/>	
■ Buffer zone of protected area	<input type="checkbox"/>	<input type="checkbox"/>	
■ Special area for protecting biodiversity	<input type="checkbox"/>	<input type="checkbox"/>	
B. Potential Environmental Impacts			
Will the Project cause ...			

Screening Questions	Yes	No	Remarks
<ul style="list-style-type: none"> <li>■ Encroachment on historical/cultural areas; disfiguration of landscape by road embankments, cuts, fills, and quarries?</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> <li>■ Encroachment on precious ecology (e.g. sensitive or protected areas)?</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> <li>■ Alteration of surface water hydrology of waterways crossed by roads, resulting in increased sediment in streams affected by increased soil erosion at construction site?</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> <li>■ Deterioration of surface water quality due to silt runoff and sanitary wastes from worker-based camps and chemicals used in construction?</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> <li>■ Increased local air pollution due to rock crushing, cutting and filling works, and chemicals from asphalt processing?</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> <li>■ Noise and vibration due to blasting and other civil works?</li> <li>■ Dislocation or involuntary resettlement of people</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> <li>■ Other social concerns relating to inconveniences in living conditions in the project areas that may trigger cases of upper respiratory problems and stress?</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> <li>■ Hazardous driving conditions where construction interferes with pre-existing roads?</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> <li>■ Poor sanitation and solid waste disposal in construction camps and work sites, and possible transmission of communicable diseases from workers to local populations?</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> <li>■ Creation of temporary breeding habitats for mosquito vectors of disease?</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> <li>■ Dislocation and compulsory resettlement of people living in right-of-way?</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	

Screening Questions	Yes	No	Remarks
<ul style="list-style-type: none"> <li>■ Accident risks associated with increased vehicular traffic, leading to accidental spills or toxic materials and loss of life?</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> <li>■ Increased noise and air pollution resulting from traffic volume?</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	
<ul style="list-style-type: none"> <li>■ Increased risk of water pollution from oil, grease and fuel spills, and other materials from vehicular using the road?</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	

## **ANNEX C**

### **EIS Outline** (Maximum of 250 pages)

#### **Project Fact Sheet**

#### **Table of Contents**

#### **EXECUTIVE SUMMARY**

- Brief Project Description
- Brief Summary of Project's EIA Process
- Summary of Baseline Characterization
- Summary of Impact Assessment and Environmental Management Plan
- Summary of Environmental Monitoring Plan
- EF and EGF Commitments

#### **1. BASIC PROJECT INFORMATION**

#### **2. DESCRIPTION OF THE PROJECT'S EIA PROCESS**

- 2.1 Terms of Reference of the EIA Study
- 2.2 EIA Team
- 2.3 EIA Study Schedule
- 2.4 EIA Study Area
- 2.5 EIA Methodology
- 2.6 Public Participation

#### **3. PROJECT DESCRIPTION**

- 3.1 Project Location and Area
- 3.2 Project Rationale
- 3.3 Project Alternatives
- 3.4 Project Development Plan, Process/Technology Options and Project Components
- 3.5 Description of Project Phases  
(Activities / Environmental Aspects, Associated Wastes and Built-in Pollution Control Measures)
  - 3.5.1 Pre-construction / Pre-operational Phase
  - 3.5.2 Construction / development Phase
  - 3.5.3 Operational Phase
  - 3.5.4 Abandonment Phase
- 3.6 Manpower Requirements
- 3.7 Project Cost
- 3.8 Project Duration and Schedule

#### **4. BASELINE ENVIRONMENTAL CONDITIONS, IMPACT ASSESSMENT AND MITIGATION**

- 4.1 The Land (Discuss only relevant modules.)
  - 4.1.1 Land Use and Classification
  - 4.1.2 Pedology
  - 4.1.3 Geology and Geomorphology
  - 4.1.4 Terrestrial Biology
- 4.2 The Water (Discuss only relevant modules.)
  - 4.2.1 Hydrology and Hydrogeology
  - 4.2.2 Oceanography
  - 4.2.3 Water Quality
  - 4.2.4 Freshwater Biology

4.2.5 Marine Biology

4.3 The Air (Discuss only relevant modules.)

4.3.1 Meteorology

4.3.2 Air Quality and Noise

4.4 The People

5. **ENVIRONMENTAL RISK ASSESSMENT** (when applicable)

6. **ENVIRONMENTAL MANAGEMENT PLAN**

6.1 Impacts Management Plan

6.2 Social Development Framework

6.3 IEC Framework

6.4 Emergency Response Policy and Generic Guidelines

6.5 Abandonment / Decommissioning / Rehabilitation Policies and Generic Guidelines

6.6 Environmental Monitoring Plan

6.6.1 Self-Monitoring Plan

6.6.2 Multi-sectoral Monitoring Framework

6.6.3 Environmental Guarantee and Monitoring Fund Commitment

6.7 Institutional Plan for EMP Implementation

7. **BIBLIOGRAPHY / REFERENCES**

**ANNEXES**

Annex 1 Scoping Checklist

Annex 2 Original Sworn Accountability Statement of Proponent

Annex 3 Original Sworn Accountability Statement of Key EIS Consultants

Annex 4 Proof of Public Participation

Annex 5 Baseline Study Support Information

Annex 6 Impact Assessment and EMP Support Information

## **ANNEX D**

### **IEE REPORT (IEE-R) OUTLINE** (Maximum of 75pages)

#### **Project Fact Sheet**

#### **Table of Contents**

#### **EXECUTIVE SUMMARY**

- Brief Project Description
- Brief Summary of Project's IEE Process
- Summary of Baseline Characterization
- Summary of Impact Assessment and Environmental Management Plan
- Summary of Environmental Monitoring Plan

#### **1. BASIC PROJECT INFORMATION**

#### **2. DESCRIPTION OF THE PROJECT'S IEE PROCESS**

- 2.1 Terms of Reference of the IEE Study (if scoping was done with EMB)
- 2.2 IEE Team
- 2.3 IEE Study Schedule
- 2.4 IEE Study Area
- 2.5 IEE Methodology

#### **3. PROJECT DESCRIPTION**

- 3.1 Project Location, Area and ECA Category (if applicable)
- 3.2 Project Rationale
- 3.3 Project Development Plan, Process/Technology Options and Project Components
- 3.4 Description of Project Phases  
(Activities / Environmental Aspects, Associated Wastes and Built-in Pollution Control Measures)
  - 3.4.1 Pre-construction / Pre-operational Phase
  - 3.4.2 Construction / Development Phase
  - 3.4.3 Operational Phase
  - 3.4.4 Abandonment Phase
- 3.5 Manpower Requirements
- 3.6 Project Cost
- 3.7 Project Duration and Schedule

#### **4. BASELINE ENVIRONMENTAL CONDITIONS, IMPACT ASSESSMENT AND MITIGATION**

- 4.1 The Land (Discuss only relevant modules.)
  - 4.1.1 Land Use and Classification
  - 4.1.2 Pedology
  - 4.1.3 Geology and Geomorphology
  - 4.1.4 Terrestrial Biology
- 4.2 The Water (Discuss only relevant modules.)
  - 4.2.1 Hydrology and Hydrogeology
  - 4.2.2 Oceanography
  - 4.2.3 Water Quality
  - 4.2.4 Freshwater Biology
  - 4.2.5 Marine Biology
- 4.3 The Air (Discuss only relevant modules.)
  - 4.3.1 Meteorology
  - 4.3.2 Air Quality and Noise

4.4 The People

**5. ENVIRONMENTAL MANAGEMENT PLAN**

5.1 Impacts Management Plan

5.2 Emergency Response Policy and Generic Guidelines

5.3 Environmental Monitoring Plan

5.4 Institutional Plan for EMP Implementation

**6. BIBLIOGRAPHY / REFERENCES**

**ANNEXES**

Annex 1 Scoping Checklist (optional, since Scoping is not required for IEEs)

Annex 2 Original Sworn Accountability Statement of Proponent

Annex 3 Original Sworn Accountability Statement of IEE Preparer

Annex 4 Baseline Study Support Information

## **ANNEX E**

### **OUTLINE TERMS OF REFERENCE FOR CONSULTING SERVICES FOR CAPACITY BUILDING IN ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT AND MANAGEMENT**

#### **A. Background**

1. A capacity building program in environmental and social impact assessment and management has been prepared for 'Road Sector Institutional Development and Investment Program' (RSIDIP) after review of the similar training programs conducted under NRIMP Project. The overall objective of this technical assistance (TA) is to strengthen the DPWH as an institution by enhancing the efficiency and integrity of the social and environmental safeguards. The proposed TA will (a) update environmental and social impact assessment and management procedures, (b) update the existing Infrastructure Right-of-Way (IROW) and Social Environmental Management System (SEMS) manuals, and (c) conduct capacity building programs to improve the capability of 'road staff' at all levels in carrying out impact assessment and management for road projects, 'Road staff' include those in DPWH (including ESSO, IROW and related colleagues), and those in the regions/districts and projects (DPWH, DENR, EMB, LGU, Design and Supervision Consultants, and Contractors). The training programs will be conducted in all 13 regions (CAR, I, III, IV-A, V, VI, VI-A, VII, VIII, IX, X, XII and XIII) covered under RSIDIP's three tranches. This will be done through a program of technical assistance and training over a period of 24 months.

#### **B. Objectives of the Services**

2. The objective of the services are: (a) update the IROW manual and SEMS Manual procedures and to conform with the environmental management system that complies with international standards; (b) review of the capacity building programs carried out under NRIMP project to strengthen ESSO and related colleagues in DPWH and assess further training needs; (c) identify knowledge and skills and areas that need to be strengthened in terms of training for ESSO and Infrastructure Right-of-Way (IROW) Staff on Social Impact Assessment (SIA) and Right-of-Way (ROW) acquisition skills; (d) to develop and deliver training program on environmental and social impact management; (e) to provide and deliver training on environmental monitoring and reporting during implementation; (f) enhance/update software for right-of-way management system (IRMS) developed under NRIMP I; (g) further develop the existing ESSO Webpage for easy access of date and information within the DPWH and sharing of information with other government agencies; and (h) develop the ESSO/IROW core group and form it into a Trainer's Training Unit.

#### **C. Scope of Work**

##### **3. Task 1: Capacity Building of ESSO and IROW**

- The purpose of this task is to strengthen institutional capability of ESSO and IROW staff and developing a core group Trainer's Training unit. This will be done through (a) update of the existing SEMS/IROW policies, procedures, and manuals; (b) further training in EIA, air, and noise modeling software procured under NRIMP; (c) further update/enhancement of IROW Management System developed under NRIMP I; (d) further develop the existing ESSO Webpage for easy access of date and information within the DPWH and sharing of information with other government agencies; and (e)

procurement of air, noise and water quality monitoring equipment to strengthen ESSO's environmental management system.

- The training programs in this task will be carried out as on the job training program to the national ESSO and IROW staff.

4. **Task 2: Training on Environmental and Social Impact Assessment:**

- The purpose of this task is to develop and deliver a training program on environmental and social management to the main stakeholders, in order to achieve environmentally and socially sound road developments through strengthening capabilities in planning, designing and implementing aspects.
- The targeted participants attending the training will be from regional and district DPWH staff (including ESSO and IROW staff), provincial DENR and EMB staff, environmental specialists of LGU, design and supervision consultants procured under RSIDIP, community representatives and other related Institutions.
- The training course will be five days long and the number of participants for each batch/session will not be more than 35 persons). Training program will be carried out in all 13 project regions.

5. **Task 3: Training on Environmental/Social Monitoring and Reporting for Construction Implementation Personnel:**

- This training program will train all the stakeholders involved in the implementation works of RSIDIP.
- For this purpose, 2 days workshop/training will be conducted for the participants from Supervision Consultants, Contractor, regional and district DPWH staff (including ESSO and IROW staff), provincial DENR and EMB staff, environmental specialists of LGU, community representatives other related institutions.
- The number of participants for the workshop/training in each location will be a maximum of 35 persons and the workshops will be conducted in 13 project regions.

6. Based on the above scope of works, the consultant will carry out the following activities:

- Update SEMS/IROW manuals, IROW management system, and ESSO webpage
- Develop core group of Trainer's Training unit and provide on the job training program
- Undertake training need assessment for road development stakeholders including the implementation / construction personnel.
- Prepare a staff training plan and associated materials (modules).
- Conduct two types of training.
- Evaluate the trainings.
- Modify the training modules as necessary.
- Hand over the final training modules to the project manager for use in future training.
- Prepare training reports.

**D. Organization and Staffing**

7. The services are expected to be provided over a 24 month period by a team comprising one environmental specialist/team leader, one social/IROW specialist, one training delivery specialist, one curriculum/material development specialist, one legal advisor

and one IT specialist. These professionals are supported by 3 administrative staff. Details of proposed professionals and their required input are shown in Table 1.

**Table1: Details of Proposed Consultants**

Experts	No	Input (Man Months)
<b>A. Key Professional Staff</b>		
1. Environmental Specialist/Team Leader	1	24
2. Social and IROW Specialist		24
3. Training Delivery Specialist	1	24
4. Curriculum/Material Development Specialist	1	12
5. Legal Advisor	1	10
6. IT Analyst/Specialist	1	12
<b>B. Administrative Staff</b>		
7. Secretary	1	24
8. Computer Operator	1	24
9. Copy machine operator/messenger	1	24

8. Environmental Specialist/Team Leader:
  - The environmental specialist will be the team leader and must have a minimum of 10 years experience in environmental and social management training in relation to road infrastructure projects. The specialist must possess a relevant degree preferably Masters in Civil Engineering or Masters in Environmental Studies.
  - He/she should have extensive capacity building programs and knowledge in training module preparation. The Team Leader will be directly involved with the management and coordination of planning, programming, implementing, and monitoring activities of training organization and be conversant with training management system, delivery methodologies, evaluation techniques and project related training.
  - In general, he/she will hold the overall responsibility for the completion of all tasks as described in these TOR. Responsibilities include the establishment of close cooperation and good working relationship with ESSO Project Officer, the related government agencies, and other organizations that have a relation to the project.
  - The team leader must possess a remarkable proficiency in English, both oral and written, in order to be able to communicate well with the funding agency and to produce quality reports and materials in English.
  
9. Social/IROW Specialist:
  - The social/IROW specialist should have bachelor degree in social sciences and must have at least 5 years of working experience on land and property acquisition. He/she should have detailed knowledge of laws and issues relating land acquisition, compensation and resettlement related to ROW, social and environmental concerns. He/she also must have experience in qualitative and quantitative action-oriented research methods including focus group discussion, data and information in the IROW Application Systems and Parcellary Survey Plan. He/she should have a good communication and reporting skills (include skills in negotiation and conflict management).
  
10. Training Delivery Specialist:

- The Training Delivery Specialist will support the Team Leader in Training Delivery. He/she should have a minimum educational level of graduate degree in social/environmental field with 4 years of related experience in training and some environmental studies or analysis. The specific tasks include, but are not limited to the following: (a) coordinate training delivery system, (b) responsible for implementation of training, (c) responsible for revisions to the modules based on feedback from the implementation of the courses, (d) collecting data and information concerning the training participants, and (e) analyzing and evaluating the training impact.
11. Curriculum/Material Development Specialist
- The Curriculum Specialist/ Material Development Specialist will support the Team Leader in Training Delivery. The Specialist will work on preparing training modules and materials for: Social/Environmental management in General Planning-feasibility study of project and Social/Environmental management in Technical Design-Construction of road project. He/She will have a wide range of knowledge on procedures and processes involved in developing and/or reviewing guidelines and curriculum based on related skill in environmental management system, updating/design training modules and materials. He/She will be a qualified professional with 3 years experience in Curriculum/Material Development. He/She will also have a knowledge and experience in the assessment methods use to evaluate the effectiveness of the proposed training. The Specialist will be fully familiar with the delivery methods employed to conduct various kinds of training courses implemented on competency based.
12. Legal Advisor:
- Legal advisor must have experience in legal research on ROW and knowledge in laws pertaining to ROW, environment and social aspects.
13. IT Specialist:
- IT specialist must have a bachelor degree in engineering in computer/information technology or equivalent with at least 3 years of working experience in software analysis and web page development. He/should have skills in VB, NET, Power Builder, Sybase ASE and other related development tools. He/she should have ability to create functional/technical specifications and user's manual.

#### **E. Supervision**

14. The team will work in association with the PMO, reporting to the project director of the PMO on a day-to-day basis. Overall supervision will be done by the ESSO.

#### **F. Schedule and Outputs**

15. The capacity program proposed in this ToR is a part of the overall Institutional Capacity Building Program developed for ESSO under the RSIDIP Project, which will be implemented in next seven years. This particular program will be implemented in a 2 years period starting from early 2010 and will be continued till end of 2012.

16. The team's outputs will include: (i) an inception report at the end of the first month, (ii) completion of all manuals by 12<sup>th</sup> month; (iii) a draft final report at the end of 18<sup>th</sup> month, containing a description of achievements, details of the training services provided, including all materials, an assessment of their effectiveness in meeting objectives, and recommendations for further training assistance, (iii) and a final report at the end of assignment. Further, a bimonthly report will be submitted by the consultant at the end of each second month until 22<sup>nd</sup> month.

17. In addition, the team will prepare training materials for both training programs. Each training program will consist of about 10 modules including some case studies and worked out examples. The draft training modules should be submitted to the ESSO before conducting training programs for evaluation and final training modules will be presented at the end of assignment.

## G. Budget

18. The Budget of the training program is presented in Table 2. The total budget for consulting services is US\$ 753,060.

**Table 2: Budget for Technical Assistance in Capacity Building**

Item	Unit	Unit Cost, US\$	Quantity	Total Cost, US\$
<b>A. Remuneration and Per Diems</b>				
<i>i Key Professional Staff</i>				
Team Leader and Environmental Specialist	MM	4,000	24	96,000
Social and IROW Specialist	MM	3,000	24	72,000
Training Delivery Specialist	MM	3,000	24	72,000
Curriculum/Material Development Specialist	MM	2,000	12	24,000
Legal Advisor	MM	3,000	10	30,000
IT Analyst/Specialist	MM	2,000	12	24,000
<i>ii Administrative Staff</i>				
Secretary	MM	1,000	24	24,000
Computer Operator	MM	1,000	24	24,000
Copy Machine Operator/Messenger	MM	500	24	12,000
<i>iii Per Diem<sup>1</sup></i>				
	days	50	252	12,600
<b>Sub Total A</b>				<b>390,600</b>
<b>B. Training Costs</b>				
<i>i Air Transport<sup>2</sup></i>				
	RT	150	156	23,400
<i>ii. Local Transport<sup>3</sup></i>				
	Day	100	91	9,100
<i>iii Venue and training expenses</i>				
	Session	26	2500	65,000
<i>iv Trainee Allowance</i>				
	Persons	2,730	50	136,500
<b>Sub Total B</b>				<b>234,000</b>
<b>C. Training Module Preparation and Production</b>				<b>10,000</b>
<b>D. Environmental Equipment (air, noise, water)</b>				<b>50,000</b>
<b>D. Contingency (10% of subtotal, A+B+C+D)</b>				<b>68,460</b>
<b>Grand Total (A+B+C+D)</b>				<b>753,060</b>

<sup>1</sup> 6 specialists@ 7 days of workshop @ 13 regions

<sup>2</sup> Manila to 13 regions for 2 workshops @ 6 specialists

<sup>3</sup> Local transport during workshop period - 7 days of workshop@ 13 regions

Considering the ICB for the environmental aspects alone, the budget for consulting services will be US\$ 551,595 as computed below:

**Table 3: Budget for Capacity Building in Environmental Aspects**

Item	Unit	Unit Cost, US\$	Quantity	Total Cost, US\$
<b>A. Remuneration and Per Diems</b>				
<i>i Key Professional Staff</i>				
Team Leader and Environmental Specialist	MM	4,000	24	96,000
Training Delivery Specialist	MM	3,000	12	36,000
Curriculum/Material Development Specialist	MM	2,000	12	24,000
<i>ii Administrative Staff</i>				
Secretary	MM	1,000	24	24,000
Computer Operator	MM	1,000	24	24,000
Copy Machine Operator/Messenger	MM	500	24	12,000
<i>iii Per Diem</i> <sup>1</sup>	days	50	195	9,750
<b>Sub Total A</b>				<b>225,750</b>
<b>B. Training Costs</b>				
<i>i Air Transport</i> <sup>2</sup>	RT	150	78	11,700
<i>ii. Local Transport</i> <sup>3</sup>	Day	100	65	6,500
<i>iii Venue and training expenses</i>	Session	2,500	26	65,000
<i>iv Trainee Allowance</i>	Persons	50	2730	136,500
<b>Sub Total B</b>				<b>219,700</b>
<b>C. Training Module Preparation and Production</b>	LS			<b>6,000</b>
<b>D. Environmental Equipment (air, noise, water)</b>				<b>50,000</b>
<b>D. Contingency (10% of subtotal, A+B+C+D)</b>	LS	1		<b>50,145</b>
<b>Grand Total (A+B+C+D)</b>				<b>551,595</b>

<sup>1</sup> 3 specialists@ 5 days of workshop @ 13 regions

<sup>2</sup> Manila to 13 regions for 2 workshops @ 3 specialists

<sup>3</sup> Local transport during workshop period - 7 days of workshop@ 13 regions