

**Terms of Reference**  
*Conduct of the Feasibility Study (F/S) of the Mindanao Railway Project*

**1. BACKGROUND/RATIONALE**

**1.1. Contracting Authority**

The General Appropriations Act (GAA) for FY2014 has allocated the amount of PhP400,000,000.00 for the conduct of feasibility studies (F/S) to be administered by the National Economic and Development Authority (NEDA).

For this Terms of Reference (TOR), NEDA shall be the Executing Agency while the Department of Transportation and Communications (DOTC) shall be the Implementing Agency. The proposed Project is consistent with DA's major programs/projects/activities (PPAs).

**1.2. Relevant Country/Sector Context**

The proposed Mindanao Railway Project (MRP) is supportive of the thrust of the Updated 2011-2016 Philippine Development Plan (PDP), specifically under Chapter 10 (Accelerating Infrastructure Development). Said Plan recognizes that the major shortcoming of the transportation sector is the lack of integrated and coordinated transport network. Global assessments of the country's transport infrastructure network indicate that its quality and capacity remain low. The lack of integration between national and local government plans and programs/projects is also a major problem that results in gaps in the transport network, contributing to the low capacity and quality of infrastructure facilities.

**1.3. Current State of the Transport Sector**

Mindanao shares the same constraints in transport infrastructure improvements. To improve physical connectivity within Mindanao, a fast, safe, reliable, efficient, convenient, dependable, environment-friendly and alternative mode of transport will provide the people of Mindanao the benefits of reduced travel time and increased opportunities for economic activities.

The development of MRP has long been planned but never realized. Mindanao is the second largest island group with an area of 106 thousand square kilometers and has a 22 million population with an annual population growth rate of 1.9 percent from 2000 to 2010.

The proposed railway transport service will play a major role towards improvement of Mindanao's intra island accessibility, linkages and seamless multimodal transport networks. The island is strategically located and has potential as a major transshipment point and center of trade in the Brunei Darussalam-Indonesia-Malaysia-Philippines East ASEAN Growth Area (BIMP-EAGA) region.

Enhanced interconnectivity and linkages through passenger and freight railway transport development will further boost tourism, trade and commerce in the island; bring opportunities for the acceleration of local area development; and expansion of local markets for more efficient movement of goods and people to promote productivity and trade competitiveness.

It is deemed to complement/integrate programs/projects that will address the lingering problem on poor quality of roads and incomplete road networks in some parts of Mindanao, e.g., interconnectivity between rail, maritime and aviation transport infrastructure facilities.

#### **1.4. Related Project/Programs and Other Donor Activities**

To assess the viability of implementing the MRP, the following studies were previously undertaken:

- Strategic Railway Development Plan (SRDP);
- Cagayan De Oro-Iligan Corridor (CIC) from Linamon to Jasaan;
- Pre-Feasibility Study for Tagum-Davao-Digos Corridor; and
- Technical Assessment for Iligan-Pagadian City-Zamboanga.

Under this TOR, the F/S must examine and take into consideration the proposed MRP's contribution to the Southeast Asia regional integration process, the Master Plan on ASEAN Connectivity, which includes a proposal for the development of a regional nautical highway that would essentially expand the Philippine Roll on/Roll off (RORO) system. Said Plan, which will serve as the main vehicle of the planned economic integration by 2015, intends to enhance the physical, institutional and people-to-people interconnectivity across Southeast Asia and the BIMP-EAGA region.

## **2. OBJECTIVE AND EXPECTED OUTPUTS**

### **2.1. Overall Objective of the Study**

The Study will be conducted in two (2) phases, namely: **(I) BUSINESS CASE / PRE-F/S** and **(II) FULL-BLOWN F/S**, with the following objectives:

- 2.1.1 The Consulting Firm should develop a Business Case / Pre-F/S to preliminarily assess the viability of implementing the MRP. Should the implementation of the MRP be not viable, the Business Case / Pre-F/S should be able to recommend alternative technologies/modes of transport. If such would be the case, the Consulting Firm will not proceed with Phase II.; and
- 2.1.2 Should the MRP be viable under the Business Case / Pre-F/S and upon favorable review and approval of the NEDA Board Committee on Infrastructure (INFRACOM) of the recommendations therein, the

Consulting Firm should conduct a full-blown, detailed F/S on the potentially viable sections of the MRP.

- 2.1.3 Additionally, a Value Engineering/Value Analysis (VE/VA)<sup>1</sup> should be undertaken with regard to the selection of the best alternative technologies/modes of transport should the MRP be not viable, best possible implementation options/configurations for the project which includes the most appropriate alignment.

## 2.2. Specific Objective/s

### 2.2.1 Phase I – Business Case / Pre F/S

To assess the technical, market demand, economic and financial aspects using realistic forecasts of the MRP based on data from the previous studies and on the conduct of limited transport/traffic surveys to validate the veracity of the secondary data.

### 2.2.2 Phase II – Full-Blown F/S

- 2.2.2.1 To introduce a high capacity mass transit system providing an alternative transport mode that is efficient, safe and environment friendly;
- 2.2.2.2 To determine the most appropriate alignment/configuration for the proposed MRP;
- 2.2.2.3 To determine viable and seamless interconnections through the necessary infrastructure and other public transport terminals along the proposed rail alignment;
- 2.2.2.4 To formulate viable railway operation/services including freight/cargo services;
- 2.2.2.5 To determine railway segment prioritization, project phasing and implementation schemes, if necessary;
- 2.2.2.6 To determine the most viable financing scheme for the Project; and
- 2.2.2.7 To prepare environmental impact assessment for the identified railway alignment.

## 2.3. Expected Outputs of the Study

### 2.3.1 Phase I – Business Case / Pre-F/S

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<sup>1</sup> For reference, the *Value Analysis Handbook for NEDA (2009)* may be downloaded from: <http://www.neda.gov.ph/wp-content/uploads/2014/01/Value-Analysis-Handbook.pdf>.

- 2.3.1.1 Business Case Report / Pre-F/S with recommendations whether or not to proceed with the conduct of the full-blown F/S, including the results of the limited transport/traffic surveys conducted to validate the veracity of the secondary data and other data related thereto.
  - 2.3.1.2 Options analysis, i.e., VE/VA.
  - 2.3.1.3 Should the implementation of the MRP be not viable, the Business Case / Pre-F/S should include recommendations on the best alternative technologies/modes of transport.
- 2.3.2 **Phase II – Full-Blown F/S**
- Full-blown, detailed F/S, including VE/VA.

### **3. SCOPE OF WORKS**

#### **3.1. General Scope of Works**

The scope of work of the Consulting Firm under this TOR shall include, but not necessarily be limited to, the following:

##### **Phase I – Business Case / Pre F/S**

- 3.1.1. Formulate a railway plan for Mindanao taking into consideration an approach that is holistic, integrated and responsive to the needs of the various stakeholders. The process should be well-informed, with feasible outputs based on realistic forecasts taking off from the studies undertaken in 2010;
- 3.1.2. Review and conduct limited transport/traffic surveys to validate the veracity of the secondary data from previous traffic studies. The survey results, and other data related thereto, shall be submitted to NEDA and DOTC as part of the Business Case Report.
- 3.1.3. Utilize available data provided by relevant government agencies. However, the Consulting Firm shall remain solely responsible for the accuracy of the data, findings and recommendations presented in their reports, supervising all field surveys, and investigations or performing such supplementary works as necessary;
- 3.1.4. Conduct of technical, market demand, economic and financial analyses using realistic forecasts of the MRP based on data from previous studies and on the conduct of limited transport/traffic surveys as well as recommend whether or not to proceed with the conduct of the full-blown F/S. Should the implementation of the MRP be not viable, the Study

Team should recommend the best alternative technologies/modes of transport based on options analysis, i.e., VE/VA.

- 3.1.5. Perform the Study in accordance with accepted professional standards, utilizing sound engineering and economic evaluation practices.

**Phase II – Full-Blown F/S**

- 3.1.6. Perform field reconnaissance and assessment of the project area with regard to:
  - 3.1.6.1. The existing condition of the study corridor using maps, aerial photographs, and other engineering techniques for quick and accurate assessment of the vertical and horizontal terrain of the project area;
  - 3.1.6.2. Use of topographic maps in appropriate scales in the study area as well as other relevant data shall be adopted for summarizing the assessment of the existing condition of the highways and proposed railway alignments;
  - 3.1.6.3. Geotechnical condition;
  - 3.1.6.4. Status of the MRP right-of-way (ROW), road utilities/facilities;
  - 3.1.6.5. Locally available data on economic activities;
  - 3.1.6.6. Present transport situation and conditions in land, water and air transport;
  - 3.1.6.7. Station locations and commercial development at major stations along the proposed ROW, in case of alternative alignment, potential site of stations and commercial developments;
- 3.1.7. Conduct transport and traffic surveys (origin-destination and manual traffic counts, preference surveys, road inventory, travel time surveys and other surveys) to arrive at realistic demand forecast;
- 3.1.8. Determine the most appropriate alignment/configuration for the proposed MRP;
- 3.1.9. Determine the viability of extending proposed railway line to nodes which are possible sources of additional ridership as well as determine viable and seamless interconnections through the necessary infrastructure and other public transport terminals along the proposed rail alignment;
- 3.1.10. Determine the viability of urban rail passenger services and formulate viable railway operation/services including freight/cargo services;

- 3.1.11. Determine the most viable financing scheme for the Project as well as assess the risk allocation of the MRP and recommend the need for the type and amount of support from all relevant government agencies, if needed;
- 3.1.12. Assist DOTC and/or NEDA in the discussion at various levels of the Government to: (i) develop consensus for the Government's support and approval of the MRP, and (ii) initiate the relevant processes, if needed, to enhance the implementation phase.

### **3.2. Market and Traffic Analysis (Business Case and F/S)**

In general, the Study shall be based on the present travel patterns for the road transport mode in the study area. Transport and market forces that influence present and future trends shall be determined considering inter-modality, including competition and complementation factors. Specifically, the Consulting Firm shall undertake the following:

- 3.2.1. Provide a comprehensive review and assessment of the existing conditions focusing on the following aspects:
  - 3.2.1.1. Transport System
    - 3.2.1.1.1. Present transport system
    - 3.2.1.1.2. Existing transport facilities
  - 3.2.1.2. Traffic Condition
    - 3.2.1.2.1. Past and present traffic including seasonal trip demand
    - 3.2.1.2.2. Passenger volume, origin and destination, and travel distance
    - 3.2.1.2.3. Rail traffic demand forecast
    - 3.2.1.2.4. Proposed Alignment
    - 3.2.1.2.5. Passenger/freight/cargo forecast
    - 3.2.1.2.6. Traffic and revenue forecast
  - 3.2.1.3. Other works to be completed include:
    - 3.2.1.3.1. Boarding and alighting survey
    - 3.2.1.3.2. Description of railway services
    - 3.2.1.3.3. Demand for and supply of train services
- 3.2.2. Conduct a traffic study to determine diverted and generated passenger traffic;
- 3.2.3. Estimate the frequency of rail service and the type and respective numbers of rolling stock needed after establishing the future traffic estimates on passenger and freight;

### **3.3. Socioeconomic Appraisal (Business Case and F/S)**

The Consultant shall conduct a review and evaluation of the study area in relation to the following aspects:

- 3.3.1. Philippine development plans, focusing on economic and transport segments;
- 3.3.2. Regional development programs and local development plan along the rail corridor;
- 3.3.3. Social impact of the MRP:
  - 3.3.3.1. Estimate number of affected residents/lot owners;
  - 3.3.3.2. Discussion on the social impact to displaced residents/lot owners;
  - 3.3.3.3. Recommendations for mitigation of social impacts;
  - 3.3.3.4. Identified relocation sites, if necessary;
  - 3.3.3.5. Conduct of activities related to social impact and mitigation as required by Government.
- 3.3.4. Discussion on the value of a dependable rail network within the context of the national economy, focusing on the extent to which the project will facilitate the movement of goods and people;
- 3.3.5. Discussion on the extent to which the project will stimulate private investment opportunities;
- 3.3.6. Discussion on the direct benefits to the local population – local expenditures of project funds for labor, materials, food, rent, etc.;
- 3.3.7. Discussion on the increased economic activity directly induced by the project, developmental benefits accruing to traffic-generating sectors and other socio-political benefits; and
- 3.3.8. Definition of the study area:
  - 3.3.8.1. Location and boundary limits
  - 3.3.8.2. Demographic features
  - 3.3.8.3. Industry profile
  - 3.3.8.4. Infrastructure and utilities
  - 3.3.8.5. Economic condition and growth potential

### **3.4. Engineering and Technical Preparation (Business Case and F/S)**

- 3.4.1. Recommend technical aspects of the proposed project, as follows:
  - 3.4.1.1. Planning and design criteria

In general, the standard shall be based on any local compulsory standard and internationally accepted railway standards.

- 3.4.1.2. Evaluation of railway alignment, station location, depot, intermodal connection and other major components of the railway system
- 3.4.1.3. Assessment of technical issues in the project design
  - Type of mass transit system
  - Type of service and service pattern
  - Number of tracks
  - Traction/propulsion system
  - Track gauge
  - Train control and signaling
- 3.4.1.4. Description of equipment and support facilities
  - Rolling stocks and fleet size (for passenger and freight)
  - Signaling and communications system
  - Stations (terminal and intermediate)
  - Depot and maintenance stations
- 3.4.1.5. Operations plan
  - 3.4.1.5.1. Train operations/services for main lines or its sections
- 3.4.1.6. Cost estimates
  - 3.4.1.6.1. Unit cost breakdown
  - 3.4.1.6.2. Component cost breakdown
- 3.4.1.7. Implementation schedule
  - 3.4.1.7.1. Priority segments
  - 3.4.1.7.2. All segments
- 3.4.2. Conduct the necessary field reconnaissance to gather data for the preparation of preliminary design and budgetary cost estimates. These field activities would include physical studies on topography, regional geology, hydrology, route and profile assessment, material source identification, etc;
- 3.4.3. Identify probable locations of the depot and train stations considering that these structures could serve as hubs for future development within a city or town on which these are to be situated;
- 3.4.4. Identify areas for commercial development surrounding the stations;



- 3.4.5. Identify areas for construction of inter-modal facilities:
- 3.4.6. Determine alternate proposed railway alignments based on the findings of the field investigation and studies of the topography of the areas considered;
- 3.4.7. Prepare a detailed alignment map of proposed railway and typical cross-section of structures; and
- 3.4.8. Provide DOTC and NEDA all electronic survey data, traffic analysis, maps and drawings of the study.

### **3.5. Financial Analysis (Business Case and F/S)**

The Consultant shall determine the financial feasibility of the proposed rail project taking into account the cost requirements, financing mechanism and assessment of loan repayment capacity and the following financial information, among others,:

- 3.5.1. Cost Estimates for the Project. Appropriate unit costs shall be provided, i.e., track works cost per kilometer according to vertical alignment (at-grade, elevated, cut and cover, underground tunnel), cost per bridge per lineal meter, rolling stock, cost per station, utilities/facilities cost, etc.;
- 3.5.2. Revenue Sources. Include cargo/freight revenue in addition to passenger fare and non-fare revenues;
- 3.5.3. Operation and Maintenance Costs. Provide the breakdown and details on manpower costs, power costs, materials costs, and other costs;
- 3.5.4. Projected Cash Flow. Compute the Financial Internal Rate of Return (FIRR), the Net Present Value (NPV), and the Weighted Average Cost of Capital (WACC); and
- 3.5.5. Sensitivity Analysis. Summarize the financial runs, assuming that there is an increase in capital cost and/or operating and maintenance cost, and a reduction in forecasted revenue.

### **3.6. Economic Analysis (Business Case and F/S)**

The specific objective of the economic analysis is to determine the net contribution of the proposed rail project to the economy and identify the significant factors that influence the level of economic viability. Thus, the Consultant shall determine, among others, the following:

- 3.6.1. Economic Costs. Compute the itemized economic costs in accordance with the projected construction period, following NEDA's guidelines and classifications, and distinguish the foreign exchange costs from local costs;

- 3.6.2. Economic Benefits. Only direct economic benefits shall be considered for the purpose of evaluating the economic viability of the project. These include benefits for rail and road users, e.g., travel time cost (TTC) savings, vehicle operating cost (VOC) savings, and accident cost savings;
- 3.6.3. Economic Evaluation. Compute the Economic Internal Rate of Return (EIRR) and the NPV discounted at 15% social discount rate (SDR); and
- 3.6.4. Sensitivity Analysis. Ascertain how the economic potential of the project is influenced by fluctuations of some factors such as increase in capital costs and reduction in economic benefits, and determine the effects of such critical factors on the project's profitability.

**3.7. Implementation and Institutional Analysis (Business Case and F/S)**

- 3.7.1. This activity shall consider the organizational framework from project development to project implementation to operation and maintenance stages of the project.
- 3.7.2. The Consulting Firm shall review and update the management and organizational aspects of the proposed MRP, focusing on the following:
  - 3.7.2.1. Project Management and Organization
  - 3.7.2.2. Project Implementation
  - 3.7.2.3. Project Operations and Maintenance

**3.8. Environmental Impact Assessment (F/S only)**

- 3.8.1. Baseline description of the environment, potential impacts, and institutional arrangements;
- 3.8.2. The “with-the-project” and “without-the-project” environmental scenarios;
- 3.8.3. The level and magnitude of impacts that will be generated by the proposed rail project;
- 3.8.4. The recommended measures that will mitigate the negative impact and accelerate the occurrence of the beneficial impacts; and
- 3.8.5. The Consultant shall prepare an Environmental Monitoring Program that will guide the project proponent in monitoring and evaluating the performance of the project during the project implementation and in the subsequent operation of the system.

**4. TIMELINES AND DELIVERABLES**

**4.1. Commencement Date and Period of Implementation:**

The Business Case / Pre-F/S shall be completed within a period of **three (3) months**, commencing from the date of receipt of the Notice to Proceed (NTP).

The Full-Blown F/S shall be completed within a period of **eight (8) months** should the MRP be viable under the Business Case / Pre-F/S and upon favorable review and approval of the NEDA Board Committee on Infrastructure (INFRACOM) of the recommendations therein.

Refer to **Annex A** for an illustration of the indicative implementation timelines for the subject Study.

**4.2. Table of Deliverables**

A detailed Work and Financial Plan (WFP) shall be submitted by the Consulting Firm to DOTC for review (copy furnished NEDA for monitoring purposes and payment processing) within seven (7) working days from the date of commencement as indicated in NTP.

The deliverables as enumerated below shall be submitted by the Consulting Firm in four (4) hard copies to DOTC for review and two (2) hard copies to NEDA for monitoring purposes and payment processing. An electronic/soft copy shall also be submitted to DOTC and NEDA.

<b>Deliverables</b>	<b>Timeline</b>
<i>PHASE I</i>	
Draft Business Case Report	2 months from receipt of NTP
Draft VE/VA Report	2 months from receipt of NTP
Final VE/VA Report	3 months from receipt of NTP
Business Case Report	3 months from receipt of NTP
<i>PHASE II*</i>	
Draft Inception Report	1 month from approval and acceptance of Business Case
Final Inception Report	0.5 months after receiving comments from DOTC
Draft VE/VA Report	3 months from approval of Business Case
Final VE/VA Report	0.5 months after receiving comments from DOTC/NEDA
Monthly Progress Report	Monthly, within seven (7) calendar days from end of agreed month-period
Interim Report	5 months from approval of Business Case
Draft Final Report	6 months from approval of Business Case
Final Report	1 month after receiving evaluation/comments from DOTC but not more than eight (8) months from approval of Business Case

\* Subject to favorable recommendation of the Business Case on the viability of the implementation of the MRP and upon favorable review and approval of the INFRACOM.

DOTC/NEDA shall provide comments on any of the *Draft Reports* within *ten (10) calendar days* from submission.

4.2.1. The *Business Case Report* shall be submitted to INFRACOM for review and approval. Its recommendations shall be the basis on whether or not to proceed with the conduct of F/S.

4.2.2. The *Inception Report* shall be submitted to DOTC for approval, shall include the detailed work program for the scope of work of the study, and a detailed schedule for all work, including field work related to applicable task.

The *Inception Report* shall also include the fulfillment of the study conditions listed in this TOR as well as approaches and methodologies to be utilized in the development of the study.

4.2.3. The *Monthly Progress Reports* shall include updates on the physical and financial accomplishments of each of the activities under the Work and Financial Plan, including the difficulties encountered and measures taken to overcome them.

4.2.4. The *Interim Report* shall include, among others, the status of implementation of the study in relation to the scope of work, as well as preliminary results of the study.

4.2.5. The *Final Report* shall be submitted within 30 days after receipt from DOTC of the evaluation comments on the Draft Report but not more than eight (8) months from the approval of the Business Case. The Final Report will contain the details related to the project, including, among others:

4.2.5.1 Study requirements and activities performed;

4.2.5.2 Project description in terms of rationale, objectives, scope and limitations;

4.2.5.3 Finalized project cost;

4.2.5.4 Project implementation including implementation arrangements, schedule, and contract documents/procurement packages;

4.2.5.5 Project justification including economic and financial analysis, and potential risks; and

4.2.5.6 Results of the VE/VA study.

4.2.6. A “Recommendation for Release of Final Payment” shall be issued by DOTC to NEDA (copy furnished the Consulting Firm for information)

within 14 calendar days upon receipt of the “Business Case” for Phase I and “Final Report” for Phase II and satisfactorily review thereof.

## **5. EXPERTISE REQUIREMENTS AND QUALIFICATIONS**

The Study shall be undertaken by a Consulting Firm composed of the following key experts, whose minimum qualification are stated herein and in **Annex B** of this TOR.

### **5.1. Project Manager/Team Leader**

Project Manager/Team Leader should have at least a Bachelor’s Degree in Civil Engineering or equivalent, with at least eight (8) years of professional experience in providing advisory services in the development of railway infrastructure; as well as Team Leader of at least three (3) projects of similar nature.

The Team Leader must be knowledgeable on VE/VA and have at least three (3) projects of work experience related thereto.

The consultant shall be responsible for the overall coordination of the tasks for the study, approve all activities for the study, review and integrate all inputs of the team, submit all reports, facilitate meetings and stakeholders consultations. Further, the consultant shall provide DOTC all required support until the completion of the study.

### **5.2. Deputy Project Manager**

Deputy Project Manager should have at least a Bachelor’s Degree in Civil Engineering or equivalent, with at least eight (8) years of professional experience in the field of railway planning and development, F/S, costing and design of railway infrastructure projects; as well as Team Leader of at least three (3) projects of similar nature.

Provide assistance to Team Leader in the overall supervision of the various assessment study activities. In the absence of the Team Leader, assume full responsibility including leadership of the Consulting Team. Take the lead in preparing the drafts of the Inception Report, VE/VA Report, Progress Report, Interim Report, Draft Report and Final Report.

### **5.3. Tracks Engineer**

Tracks Engineer should be a licensed Civil Engineer or equivalent, with at least seven (7) years of professional experience in trackworks, i.e., design the permanent way and estimate its cost, estimate operation and maintenance costs, provide maintenance schedule and estimate of maintenance equipment and facilities required, etc.; at least four (4) projects of similar nature.

#### **5.4. Signaling and Communication Engineer**

Signaling and Communication Engineer should be a licensed Electronic and Communication Engineer or equivalent, with at least seven (7) years of professional experience and at least four (4) projects in the field of signaling and communication activities in conjunction with feasibility studies of railway projects.

The consultant shall be responsible for the following: design and estimate cost of signaling and communications equipment, estimate operation and maintenance cost, provide maintenance schedule, etc.

#### **5.5. Rolling Stock Engineer**

Rolling Stock Engineer should be a licensed Mechanical Engineer or equivalent, with at least seven (7) years of professional experience and at least four (4) projects in rolling stock manufacturing, operation and maintenance/repair.

The consultant shall be responsible for the following: design and estimate cost of rolling stock requirement; depot maintenance equipment of rolling stock; estimate operation and maintenance costs, provide maintenance schedule, etc.

#### **5.6. Power Supply Engineer**

Power Supply Engineer should be a licensed Electrical Engineer or equivalent, with at least seven (7) years of professional experience and at least four (4) projects in planning, design and maintenance and repair of power supply substation and overhead catenary.

The consultant shall be responsible for the following: planning, design, maintenance and operation power supply substation and overhead catenary system.

#### **5.7. Automated Fare Collection System (AFCS) Expert**

AFCS Engineer should be a licensed Electrical-Mechanical Engineer or equivalent, with at least seven (7) years of professional experience and at least four (4) projects in planning, design and maintenance of automated fare collection system, etc.

The consultant shall be responsible for the following: system planning and design of automated ticketing and fare collection system.

#### **5.8. Transport Regional Planner**

Transport Regional Planner should have at least a Bachelor's Degree in Land Transport and Regional Planning or equivalent, with at least seven (7) years of professional experience and at least four (4) projects in land transportation/regional planning. Knowledge of transport demand forecasting is a must.

The consultant shall be responsible for the following: Review of previous transport studies, design of traffic counts and surveys, determine baseline transport facilities and traffic, forecast the railway share of future traffic, undertake analysis of alignment options that would include cost comparison demand estimates, recommend the fare structure for the different services and design/promote/administer government plans and policies affecting land use and zoning along the influence area.

#### **5.9. Transport Economic and Financial Analyst**

Transport Economic and Financial Analyst should have at least a Bachelor's Degree in Transport Economics or equivalent, with at least seven (7) years of professional experience and at least four (4) projects in economic and financial modeling of transportation projects.

The consultant shall be responsible for the following: determine the economic cost, quantify economic benefits, undertake economic benefit-economic cost analysis, recommend the best financial model design for the project, determine possible financing sources and terms, undertake benefit-cost analysis of all options, analyze economic and financial sensitivity of the project to possible increase or decrease of cost/revenue.

#### **5.10. Civil Engineer**

Civil Engineer should be a licensed Civil Engineer, with at least seven (7) years of professional experience and at least four (4) projects in civil works (substructure and superstructure, etc) component of a railway transportation projects.

The consultant shall be responsible for the following: planning, design, costing, tender evaluation of civil works (substructure and superstructures/viaduct works, stations, depot, bridges, tunnels, etc.

#### **5.11. Cost Engineer**

Cost Engineer should be a licensed Civil Engineer or equivalent, with at least four (4) years of professional experience and at least four (4) projects in geotechnical investigation of railway projects.

#### **5.12. Geodetic Engineer**

Geodetic Engineer should be a licensed Geodetic Engineer or equivalent, with at least four (4) years of professional experience and at least four (4) projects in the conduct of field survey of large scale railway projects.

The consultant shall assist in the identification of new alignments, alternative alignments, alignment optimization plan and profile, minor deviations from the present alignment including bypasses around urban areas. He shall be in-charge of all geodetic survey works necessary for the completion of the study.

### 5.13. Environmental/Social Assessment Specialist

Environmental/Social Assessment Specialist should have at least a Bachelor's Degree in Environmental Science or equivalent, with at least seven (7) years of professional experience and at least four (4) projects in conducting environmental and social screening/assessment of railway projects and will be familiar with Environmental Management (EMB) environmental guidelines.

The consultant shall be responsible for the following: undertake a preliminary environmental/social assessment and mitigation measures for the project consistent with the government's requirement and estimate the cost of environmental/social mitigation plan and capability of agency to implement the same.

All licensed engineers must submit a photocopy of appropriate and valid Professional Regulation Commission (PRC) license.

## 6. CRITERIA FOR SELECTION

6.1 Prospective Consulting Firms must have at least ten (10) years of experience related to this TOR and will be rated based on the criteria shown in **Annex B** ("Criteria for Shortlisting") and as summarized below:

6.1.1 Applicable Experience of the Firm;

6.1.2 Qualification of Key/Organic Personnel who may be Assigned to the Project; and

6.1.3 Job Capacity.

Note: Related experience/studies include conduct of pre-F/S and/or FS and relevant work. The Key Experts are requested to indicate (1) their role in a specific project; (2) the exact duration (in months and years) that they have worked on the project; and (3) a brief description of the task that they have carried out (e.g., experiences in the conduct of VE/VA).

6.2 The Consulting Firm shall be selected using *the Quality-Cost Based Selection/Evaluation (QCBS/QCBE)* procedure under Republic Act (RA) No. 9184, or the Government Procurement Reform Act (GPRA), and its Revised Implementing Rules and Regulations (IRR) and based on the following criteria:

6.2.1 Technical Proposal : 80%

6.2.2 Financial Proposal : 20%



## **7. SOURCE OF FUNDS**

Funds for the conduct of this F/S updating shall be sourced from the NEDA-administered F/S Fund.

## **8. INSTITUTIONAL SET-UP/RESPONSIBILITIES**

### **8.1. NEDA**

- 8.1.1. Shall be the Executing Agency (i.e., representative of the Government in the Contract Agreement with the consultant);
- 8.1.2. Shall, through its NEDA Bids and Awards Committee (NBAC), be responsible for facilitating the bidding and tendering of the consultancy services in compliance with RA9184 and its Revised IRR with the Implementing Agency as End-User;
- 8.1.3. Shall be responsible for the disbursement of the fund for the conduct of the F/S once the contract becomes executed;
- 8.1.4. Shall be responsible for the preparation and submission of financial reports as required by the Department of Budget and Management (DBM) and other reportorial requirements regarding the F/S Fund administration;
- 8.1.5. Shall evaluate, in coordination with DOTC, all request for payments/billings and determine the acceptability/correctness of the same;
- 8.1.6. Shall have the option to detail at least two (2) counterpart technical personnel to the Project for the purpose of on-the-job capacity building/technology transfer; and
- 8.1.7. Shall provide, upon the request of the Consulting Firm, available information/data and also, if available, copies of previous related studies subject to the execution of the Non-Disclosure Agreement, if necessary.

### **8.2. Implementing Agency / DOTC**

- 8.2.1. Shall be the beneficiary/End-User of the consultancy services;
- 8.2.2. Shall be responsible for contract implementation and management, including ensuring the quality of outputs. Further, DOTC, in coordination with NEDA, shall be responsible for the monitoring and evaluation of the progress of the Study and approval of reports to ensure delivery of outputs as specified in Sections 2, 3 and 4 of this TOR;

- 8.2.3. Shall provide assistance in coordination with other agencies related to the Study;
- 8.2.4. Shall provide, upon the request of the Consulting Firm, available information/data and also, if available, copies of previous related studies subject to the execution of the Non-Disclosure Agreement, if necessary;
- 8.2.5. Shall report to NEDA the physical progress of the Study on a monthly basis;
- 8.2.6. Shall inform NEDA of the acceptability of the deliverables for the purposes of fund release/payment to the consultants;
- 8.2.7. Shall have the option to detail at least two (2) counterpart technical personnel to the Project for the purpose of on-the-job capacity building/technology transfer.

### **8.3. Consulting Firm**

- 8.3.1. Shall be responsible for the conduct of the Study and the timely delivery of results/outputs as indicated under Sections 2, 3 and 4 of this TOR;
- 8.3.2. Shall be responsible for the provision of necessary office space, which shall be within close proximity to NEDA, for their project staff as well as the Government's detailed personnel, including the necessary office equipment (i.e., computer, printers, office supplies, etc.) for the conduct of the Study. All equipment procured for the development of the Project shall be transferred to the Government by the end of the Project;
- 8.3.3. Shall shoulder all expenses required in the conduct of the Study, including travel costs and lodging of detailed Government personnel during field visits, except for their salaries;
- 8.3.4. Shall be responsible for the conduct of the study and the timely delivery of results as indicated under Sections 2, 3 and 4 of this TOR;
- 8.3.5. Shall (a) carry out the services with sound engineering theories and practices to ensure that the final works will provide the most economical and feasible development for the study, (b) accept full responsibility for the consulting services to be performed under this TOR for which the Consulting Firm is liable to DOTC, (c) perform the work in an efficient and diligent manner and shall use its best effort to keep reimbursable cost down to the possible minimum without impairing the quality of services rendered, and (d) comply with, and strictly observe any laws regarding workmen's health and safety, workmen's welfare, compensation for injuries, minimum wage, hours of labor and other labor laws;
- 8.3.6. Shall (a) keep accurate and systematic records and accounts in respect of the services in such form and detail as is customary and sufficient to

establish accurately that the costs and expenditures under this TOR have been duly incurred, and (b) permit the duly authorized representatives of the Government from time to time to inspect its records and accounts as well as to audit the same;

- 8.3.7. Shall not assign nor sub-contract any part of the professional engineering services under this TOR to any person or firm, except with prior written consent of DOTC. The approval by the Government to the assignment of any part of said services or to the engagement of the Consulting Firm of sub-contractors to perform any part of the same shall not relieve the Consulting Firm of any obligations under this TOR;
- 8.3.8. Shall, during or after the conclusion or termination of the study, limit its role under the project to the provision of the services and hereby disqualifies itself and any other contractor, consulting engineer or manufacturer with which it is associated or affiliated, from the provision of goods and services other than the services herein, except as DOTC may otherwise agree.
- 8.3.9. Shall prohibit full-time foreign staff during his assignment under this TOR to engage, directly or indirectly, either in his name, or through the Consulting Firm, in any business or professional activities in the Philippines other than the performance of his duties or assignment under this TOR;
- 8.3.10. Shall not at any time communicate to any person or entity any information disclosed to them for the purpose of this services, nor shall the Consulting Firm make public any information as to the recommendations formulated in the course of or as a result of the services, except with prior consent of DOTC.
- 8.3.11. Shall agree that nothing contained herein shall be construed as establishing or creating between Government and the Consulting firm, the relationship of employer and employee or principal and agent, it being understood that the position of the Consulting Firm and anyone else performing the services is that of an independent contractor;
- 8.3.12. Shall hold the Government free from any and all liabilities, suits, actions, demands, or damages arising from death or injuries to persons or properties, or any loss resulting from or caused by said personnel incident to or in connection with the services under this TOR. The Consulting Firm shall agree to indemnify, protect and defend at its own expense the Government and its agents from and against all actions, claims and liabilities arising out of acts done by the Consulting Firm or its staff in the performance of the services, including the use of, or violation of any copyrighted materials, patented invention, article or appliance; and
- 8.3.13. Shall provide on-the-job capacity building/technology transfer to the Government's personnel detailed to the project.

## 9. MODE OF PROCUREMENT AND APPROVED BUDGET FOR THE CONTRACT (ABC)

- 9.1 The procurement of the consulting services for the F/S updating shall be through competitive public bidding. The ABC for the proposed Study is **THIRTY MILLION AND 00,000 PESOS (PhP30,000,000.00)**, inclusive of all applicable Government taxes and charges, professional fees, and other incidental and administrative costs which shall be paid on a reimbursement basis (e.g., travel expenses, communication expenses, office supplies, office space, and other expenses deemed necessary for the project as certified by the Executing Agency). Attached as **Annex C**, is the breakdown of ABC.
- 9.2 Note that this consulting contract shall be a fixed price contract. Any extension of contract time shall not involve any additional cost to the Government.
- 9.3 All equipment, materials, etc., acquired for the study shall be turned over to NEDA at the conclusion of the Study.

## 10. PAYMENT SCHEME/SCHEDULE

### Phase I – Business Case / Pre-F/S

- 10.1. Billing for reimbursable items and for non-reimbursable items, including professional fees, shall be upon review and acceptance of the results of the Business Case / Pre-F/S.
- 10.2. An advance payment shall be made to cover mobilization costs, but shall not exceed **15 percent of the contract amount for Phase I – Business Case / Pre-F/S**, subject to the posting of an irrevocable standby letter of credit issued by an entity acceptable to NEDA and of an equal amount to the advance payment. The advance payment shall be made only upon the submission to and acceptance by the NEDA of an irrevocable standby letter of credit of an amount equal to the advance payment. ~~The advance payment shall be made only upon the submission to and acceptance by the Procuring Entity of an irrevocable standby letter of credit of equivalent value from a commercial bank, a bank guarantee or a surety bond callable upon demand, issued by a duly licensed surety or insurance company and confirmed by the Procuring Entity.~~
- 10.3. Should the Consulting Firm not proceed with Phase II as specified in Section 2.1.1 above, a demobilization payment not exceeding 10 percent of the total man-month costs indicated in the technical and financial proposals shall be made to the Consulting Firm.

### Phase II – Full-Blown F/S

10.4. Billing for *reimbursable items* may be requested not more than once a month based on the *actual expenses incurred* and supported by *official receipts/documents*, including the monthly progress reports.

In the absence of *official receipts/documents* when claiming for *reimbursable costs*, the Consulting Firm may also be allowed to submit a *certification of actual disbursements made under oath*.

10.5. Billing for *non-reimbursable items, including professional fees*, shall be in accordance with the following delivery schedule and subject to the usual Government accounting and auditing requirements:

Description	Payment ( <u>percentage of total remuneration</u> )
Upon acceptance of the Inception Report	10%
Upon acceptance of the Interim Report	20%
Upon acceptance of the VE/VA Report	20%
Upon acceptance of the Draft Final Report	25%
Upon acceptance of the Final Report	25%

10.6. An advance payment shall be made to cover mobilization costs, but shall not exceed **15 percent of the contract amount for Phase II – Full-Blown F/S**, subject to the posting of an irrevocable standby letter of credit issued by an entity acceptable to NEDA and of an equal amount to the advance payment. The advance payment shall be made only upon the submission to and acceptance by the Procuring Entity NEDA of an irrevocable standby letter of credit of an amount equal to the advance payment of equivalent value from a commercial bank, a bank guarantee or a surety bond callable upon demand, issued by a duly licensed surety or insurance company and confirmed by the Procuring Entity.

The advance payment shall be repaid by the Consulting Firm by deducting from his subsequent billings/payments such sum as agreed upon during contract negotiations until fully liquidated within the duration of the contract.

10.7. Since all of these payments shall be subject to the usual government accounting and auditing requirements, the Consulting Firm is expected to be familiar with the Government Accounting and Auditing Manual (GAMM).

## 11. RETENTION PAYMENT

11.1 A retention payment of ten (10) percent shall be withheld. It shall be based on the total amount due to the Consulting Firm prior to any deduction and shall be retained from every progress payment until 50 percent of the value of Study, as determined by NEDA, is completed. If, after 50 percent completion, the Study is satisfactorily done and on schedule, no additional retention shall be made; otherwise, the ten (10) percent retention shall be imposed.

11.2 The total “retention money” shall be due for release upon approval of the Final Report. The Consulting Firm may, however, request the substitution of the retention money for each progress billing with irrevocable standby letters of credit from a commercial bank, bank guarantees, or surety bonds callable on demand, of amounts equivalent to the retention money substituted for and acceptable to NEDA, provided that the project is on schedule and is satisfactorily undertaken. Otherwise, the ten (10) percent retention shall be made. Said irrevocable standby letters of credit, bank guarantees and/or surety bonds, to be posted in favor of NEDA shall be valid for the duration of the contract.

## **12. LIQUIDATED DAMAGES**

12.1 Where the Consulting Firm refuses or fails to satisfactorily complete the work within the specified contract time, plus any time extension duly granted and is hereby in default under the contract, the Consulting Firm shall pay NEDA for liquidated damages, and not by way of penalty, an amount, as provided in the conditions of contract, equal to at least one tenth (1/10) of one (1) percent of the cost of the unperformed portion of the works for every day of delay. Should the amount of liquidated damages reaches 15 percent of the contract amount, NEDA shall at its own discretion terminate the contract without prejudice to any further action it may take to recover whatever losses incurred due to non-performance of the Consulting Firm.

12.2 To be entitled to such liquidated damages, NEDA does not have to prove that it has incurred actual damages. Such amount shall be deducted from any money due or which may become due the Consulting Firm under the contract and/or collect such liquidated damages from the retention money or other securities posted by the Consulting Firm whichever is convenient to NEDA.



**ANNEX A**

**CONDUCT OF THE F/S OF THE MINDANAO RAILWAY PROJECT**

The Consulting Services shall be undertaken over a period of 11 months as shown below:

EXPECTED OUTPUTS	Months																					
	Phase I			Phase II (from approval and acceptance of Business Case)																		
	1	2	3	1	2	3	4	5	6	7	8											
Work and Financial Plan*																						
Draft Business Case Report																						
Business Case Report																						
Draft Inception Report																						
Final Inception Report																						
Draft VE/VA Report																						
Final VE/VA Report																						
Monthly Progress Reports																						
Interim Report																						
Draft Final Report																						
Final Report																						

\*within seven (7) working days from the commencement as indicated in the NTP



## ANNEX B

### CRITERIA FOR SHORTLISTING

	<b>RATING FACTOR</b>	<b>POINTS/WEIGHT</b>
<b>I</b>	<b>Applicable Experience of the Firm</b> <ul style="list-style-type: none"> <li>▪ Completed consulting services of size, complexity and technical specialty comparable (similar/relevant) to the job under consideration, including quality of performance</li> <li>▪ Other completed consulting services related to the job under consideration</li> <li>▪ Known cases of prior performance, including quality of work conforming to obligations and cost of services</li> </ul>	<b>30</b>
<b>II</b>	<b>Qualification of Key/Organic Personnel who may be Assigned to the Project</b>	<b>50</b>
<b>III</b>	<b>Job Capacity</b> <ul style="list-style-type: none"> <li>▪ Absorptive capacity to do additional works other than those currently being undertaken</li> </ul>	<b>20</b>
	<b>Total</b>	<b>100</b>

*Note: Similar contracts are those for the conduct of pre-F/S or F/S for the same nature/type of project under the same specific sub-sector. Relevant contracts, on the other hand, are those for the conduct of pre-F/S or F/S for projects of a different nature/type but under the same general sector. Detailed engineering, advisory services and/or other kinds of study outside of a pre-F/S or F/S, for the same nature/type of project under the same specific sub-sector, are also considered “relevant”.*

**ANNEX C**

<b>CONDUCT of the FEASIBILITY STUDY (F/S) of the MINDANAO RAILWAY PROJECT</b>	
<b>APPROVED BUDGET for the CONTRACT (ABC) for PHASES I and II</b>	
<b>PARTICULARS</b>	<b>AMOUNT (PhP)</b>
<b>A. RENUMERATION</b>	
Project Manager/Team Leader	
Deputy Project Manager	
Tracks Engineer	
Signaling and Communication Engineer	
Rolling Stock Engineer	
Power Supply Engineer	
Automated Fare Collection System (AFCS) Expert	
Transport Regional Planner	
Transport Economic and Financial Analyst	
Civil Engineer	
Cost Engineer	
Geodetic Engineer	
Environmental/Social Assessment Specialist	
<b>B. REIMBURSABLE EXPENSES</b>	
B-1 Field Per Diems	(room costs, subsistence allowance and other similar field expenses)
B-2 Field Travel Expenses	(airplane fares, vehicle rentals, airport fees and taxi fares)
B-3 Other Cost	(office equipment and furniture, office running cost such as office supplies, sundries/communication, reproduction of documents, meetings, office space and utilities)
B-4 Surveys	
<b>C. CONTINGENCY (5% of B)</b>	
<b>GRAND TOTAL</b>	<b>30,000,000.00</b>