

## Terms of Reference (TOR)

### Firm Consultant

#### Republic of the Marshall Islands Marine Resources Authority

Title:	Design Civil Engineering Consultant
Location:	Marshall Islands Marine Resources Authority
Duration:	Approximately 6 months
Tentative Start Date:	Before end of June, 2022

### I. Background

The Republic of the Marshall Islands in the Western and Central Pacific comprise of twenty-nine (29) low lying coral atolls and five (5) low coral islands. These atolls and islands are scattered over the expanse of the Pacific, with an Exclusive Economic Zone (EEZ) of 2 million square kilometers.

The Government of the Republic of the Marshall Islands (GRMI) with IDA funding from the World Bank (WB) is implementing development activities through Marshall Islands Marine Resources Authority (MIMRA) within the RMI. The first phase of PROP that was implemented through MIMRA has closed last September, 2021 and now the project is transitioning to its second phase. The Pacific Islands Regional Oceanscape Program – Second Phase for Economic Resilience (PROPER) is to strengthen regional collaboration and national capacity for the management and the sustainable development of the oceanic and coastal fisheries sector in the Marshall Islands.

To support the implementation of RMI PROPER, a Project Management Unit (PMU) is already established within RMI MIMRA. The RMI PROPER PMU under MIMRA is responsible for coordinating the implementation of the Project preparation with the RMI Ministry of Natural Resources & Development (RMI NRD). The PMU will also be responsible for preparing and implementing the Project in accordance with guidelines and regulations as well as the annual work plans and budgets which will detail project activities and eligible expenditures.

Pursuant to the above, Marshall Islands Marine Resources Authority is seeking for a qualified Civil Engineering Consultant to conduct an assessment of the physical infrastructure, advise remedial rehabilitation works, produce designs, location/siting recommendations on the MIMRA eight (8) Fish bases, two (2) aquaculture hatcheries and two (2) Fish markets rehabilitation activity within the PROPER project including conduct assessment on decarbonizing and climate improvements for climate-proofing for MIMRA headquarters and operations, supporting achievement of the national target to green government infrastructure. The required tasks will be fulfilled under direct supervision of the Coastal Chief in close coordination with Chief Maintenance and Market Manager.

### Main Objective of the Assignment

The objective of this assignment is two-fold:

- i. The consultant will conduct a comprehensive assessment of the functionality and operational status of the existing infrastructure at the outer islands **and**

- ii. conduct a thorough renewable energy assessment and identify additional climate-proofing opportunities and energy efficiency with renewable energy recommendations for rehabilitating/refurbishing the eight (8) Fish bases, two (2) aquaculture hatcheries and two (2) fish markets .

The main focus will be as per below;

- a. advise on the structural integrity of the existing concrete and timber building
- b. develop the project development design and the design to achieve Client reviews and approval, and to provide a sufficient level of information for the contract bid and award process.
- c. provide design, specifically need for a bioclimatic design, with maximum resource-use efficiency and emission reduction and associated documentation that complies with the Client’s design criteria, design standards as detailed in the design International Building Codebook, construction specification and project budget.

The infrastructure covered within this assignment are located as per the following table.

<b>Atoll</b>	<b>Fish Base / Sub-Base</b>	<b>Aquaculture Hatcheries</b>	<b>Fish Markets</b>
Jaluit	1		
Wotje	1		
Likiep	1		
Maloelap	1		
Aur	1		
Arno	2 Arno Arno Fish Base & Ine Sub-fish base	1	
Namu	1		
Ebeye			1
Majuro		1	1
<b>Total</b>	<b>8</b>	<b>2</b>	<b>2</b>

**Scope of responsibilities:**

- (i) The Consultant is required to provide the following services for this specific contract:
  - a. Structural review/analysis report of each building
  - b. Provide a report detailing the results of the structural review and analysis and provide recommendations to the Client on the structural integrity of the building and its fitness for the proposed refurbishment.

- c. Specific recommendations to improve the structural integrity, including scope, and cost estimates, are required for any proposed remediation work, to be itemized as a provisional sum.
- d. Advise on the roof capacity (and additional strengthening works required, if any) to support solar panels and include a technical room for batteries and power electronics of a renewable energy system. This is to include an indicative cost for the structural works (i.e. not including the actual solar panels, control systems and batteries).
- e. Advise on additional strengthening of the floor structures, floor, roof, walls, windows, etc. for typhoon and other similar risks, including an indicative cost for the works.
- f. Conduct a one day workshop with the Client to agree the scope of works to be included in the ongoing design tasks.
- g. Draft construction work program/schedule.
- h. Architectural and engineering drawings/plans, a technical specification, including bill of quantity with cost estimate which shall be presented to the Client for review and comments.
- i. The Consultant shall submit the final drawings/plans and specification after incorporating the comment of the Client and to be submitted to the Client. The format of deliverables (drawings and documents etc.) is to be compatible with MWIU & PMU systems, document formatting including AutoCAD software.
- j. The Consultant shall submit a draft operations and maintenance manual (O&M Manual) based on the final design for review and completion by the contractor. The O&M Manual is to include ongoing annual maintenance items and estimated costs for a period of 20 years. Consultant to review final O&M Manual.
- k. The Consultant shall submit the final drawings/plans and specification after incorporating the comment of the Client (One original copy and 12 sets documents are to be submitted to the Client). The format of deliverables (drawings and documents etc.) is to be compatible with MWIU & PMU systems, document formatting including AutoCAD software.
- l. The bidding/works contract template that will be used for construction is expected to be the World Bank RFB format for works procurement. The Consultant will also submit the final project cost and the detailed cost estimate. The Consultant must take note that the total budget for the construction is USD 1.5 – 2M including direct and indirect costs. If the total construction cost exceeded the budget, the Consultant through consultation with the Client shall prioritize the items of works to be included in the package for the construction works contract.
- m. Work under this TOR must comply with the Project ESMF and World Bank safeguards policies. The Consultant shall work with the DIDA Safeguards Advisor (Gary Venus; gazaa700@gmail.com) to ensure safeguards issues are screened during the design phase and the appropriate safeguards instrument (such as an Environmental and Social Management Plan) is prepared for the bid documents.
- n. Conduct energy efficiency assessments on the 8 Fish bases/sub-Base sites and 2 aquaculture hatcheries, 2 fish markets with a view to standardizing energy systems. The energy assessment should include:
  - 3.n.1 A detailed description of the power sources including technical description, working state, operation, estimated value and OPEX
  - 3.n.2 A detailed list of existing loads and load curve
  - 3.n.3 Energy saving measures and recommendations

- 3.n.4 A detailed list of planned additional loads for future expansion
  - 3.n.5 The peak power needed considering surge starting currents
  - o. Conduct assessment and provide renewable energy recommendations at the 8 Fish Base/sub-base, 2 aquaculture hatcheries and 2 fish markets with focus on cold storage systems that are compatible with renewable energy
    - 3.o.1 Estimation of the cold storage capacity needed
    - 3.o.2 Design recommendations for cold storage
  - p. Conduct comprehensive assessment and provide recommendations on the installation of renewable energy generation and management systems at the MIMRA headquarters.
  - q. Full detailed design (with drawings and specifications etc.), bill of quantity and cost estimates of remediation to improve the structural integrity, and other agreed works with regard to the above solar energy and typhoon strengthening, to be priced as a provisional sum.
- (ii) It is envisioned that the services would be accomplished by the Consultant through the following activities:
- a. Initial visit to outer islands to:
    - o View / investigate / measure the MIMRA Fish bases buildings located in the following atolls; Jaluit, Wotje, Likiep, Maloelap, Aur, Arno (Arno Fish Base & Ine Sub-fish base), Namu, Majuro and Arno Hatchery and Ebeye and Majuro markets
    - o Consult with client including presenting concept architectural design/layout options for discussion and EOC requirements.
    - o Consult with material suppliers.
    - o Understand Majuro construction capabilities.
  - b. Provide structural review and energy efficiency and renewable energy recommendations before proceeding to detailed design of the refurbishment.
  - c. Present final design and other deliverables etc. on island.
  - d. Be available for design queries etc.

**Reporting Deliverables & Timelines:**

All outputs are to be provided in both their native (editable) formats, and as PDFs. Hard copies only required when specifically noted.

The desired timelines for the design process are as follows:

<b>Deliverables</b>	<b>Timeline</b>
Safety in Design Process used by consultant	Within 4 weeks after Commencement of Services
Work Plan describing proposed methodology and program explaining how the work is proposed to be carried out.	Within 4 weeks after Commencement of Services

<b>Deliverables</b>	<b>Timeline</b>
Delivery of Basis of Design (Levels of Service) for approval following consultation with stakeholders	Within 6 weeks after Commencement of Services
Consultation with the Client and relevant Government Departments to discuss and confirm functional requirements of building	Within 8 weeks after Commencement of Services
Presentation, on island, of concept architectural design & layout options for New Building for discussion.	Within 12 weeks after Commencement of Services
Structural Analysis of existing MIMRA Fish base Building with energy efficiency and renewable energy recommendations as well. Draft Report for Client review and comments, detailing the results of the assessment and analysis and provide recommendations to the Client on the structural integrity of the building and its fitness for any proposed refurbishment and the climate proofing opportunities	Within 16 weeks after Commencement of Services
Development of architectural and engineering drawings/plans, to 25% design stage, including a technical specification, terms of reference (scope of works) and construction cost estimate and draft construction program, construction risk review assessment and draft operations and maintenance manual and presentation to the Client for review and comments.	16 weeks after Commencement of Services
Development of architectural and engineering drawings/plans, to 85% design stage, including a technical specification, terms of reference (scope of works) and construction cost estimate and draft construction program, construction risk review assessment and draft operations and maintenance manual and presentation to the Client for review and comments.	20 weeks after Commencement of Services
Structural Analysis of existing MIMRA Fish base Building. Final Report following incorporation of Client review and comments, detailing the results of the structural review and analysis and provide recommendations to the Client on the structural integrity of the building and its fitness for any proposed refurbishment	24 weeks after Commencement of Services

<b>Deliverables</b>	<b>Timeline</b>
Environmental and Social Impact Assessment (ESIA) Report shall be the report incorporating all comments of the CIU/PIU and World Bank Safeguards teams. This report shall include the Environmental and Social Management Plan, Environmental Monitoring Plan as well as any other plans as per Environmental and Social Management Framework	24 weeks after Commencement of Services
Preparation of architectural and engineering drawings/plans, to 100% Issued for Tender (IFT) design stage including a technical specification, terms of reference (scope of works) and construction cost estimate, construction program, construction risk review assessment and draft operations and maintenance manual, after incorporating comments from the Client at 85% design stage.	24 weeks after Commencement of Services
<p>Submission of the following documents:</p> <p>12 Issued for Tender (IFT) copies of:</p> <p>Architectural and Engineering building plans</p> <p>Technical specification</p> <p>Terms of reference (scope of works)</p> <p>Operation Maintenance Manual</p> <p>Project Cost Estimate with Bill of Quantities.</p> <p>Electronic files of the documents</p>	28 weeks after Commencement of Services or

### **Firm Qualifications and Staff Requirements**

The consulting Firm will be composed of both international and national professionals. Nominated international professionals should be able to provide leadership, oversight and coordination, to assure proper integration and quality of findings and results, to fill capacity gaps, and to bring advanced analytical skills and global experience to the assignment. Local professionals should be able to ensure output relevance and effectiveness in the context of prevailing local conditions, and to ensure sensitivity to social and cultural aspects, as well as to assist with country context aspects. The firm's nominated team leader must have been a permanent employee of the firm for at least two years prior to the bid date.

Selection Criteria for the Firm:

- a. Availability of key relevant professionals within firm or its partner's network. The Consultant firm shall provide a team of suitably qualified and experienced 'key personnel' to undertake the assignment.

- b. Financial resources of the consultant (turnover of last five years)
- c. Experience of the firm in similar tasks/assignments over the last five years (examples of past experience- similar nature, location and/or complexity including cost and duration of the assignment).

Indicative requirements and details of each core individual team member, including the skills, qualifications, experience, and expected inputs are provided below.

**5.1. Indicative Staff Requirements**

Subject to adjustment depending on the number of new sites and efforts required , indicative key staff positions are presented in the table below.

No.	Positions/Designations
1	Team Leader
4	Strcutural/Geotechnical Engineer
2	Hydrologist
3	Hydraulic Structure Engineer
5	Surveyor
6	Draughtsman
7	Any other expertise required