

**CONSULTANCY SERVICES FOR THE PREPARATION OF  
DETAILED PROJECT REPORT AND ENGINEERING DESIGN FOR  
CITY ROAD IMPROVEMENT PROJECTS (CRIP)  
IN PATHANAMTHITTA, MUNNAR, KALPETTA, MANATHAVADY,  
PAYYANNUR & KASARAGOD TOWNS**

**REQUEST FOR PROPOSAL (RFP)**

**APRIL, 2018**



**Kerala Road Fund Board**

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**KERALA ROAD FUND BOARD, OFFICE OF THE CHIEF EXECUTIVE OFFICER,  
THIRUVANANTHAPURAM  
NOTICE INVITING TENDER (NIT)**

## 1. Invitation for Proposal

No. 647/P3/KRFB/2018

**Sub: Consultancy Services for Detailed Project Report and Engineering Design for City Road Improvement Projects in Pathanamthitta, Munnar, Kalpetta, Mananthavadi, Payyanur and Kasaragod towns.**

- 1.1 The Executive Committee of Kerala Road Fund Board has resolved to engage the services of competent and experienced consultants to undertake the assignment of Consultancy Services for preparing Detailed Project Report and Engineering Design for City Road Improvement Projects (CRIP) in Pathanamthitta, Munnar, Kalpetta, Mananthavadi, Payyanur and Kasaragod towns in the state of Kerala. The Chief Executive Officer, KRFB invites proposal from Technical consultants for carrying out Detailed Project Report as per details given in the Terms of Reference. The period of assignment is 9 months.
- 1.2 Interested Agencies/consultant firms having experience in the services envisaged are hereby invited to submit their Technical and Financial Proposal in the prescribed format. The Letter of Invitation (LOI) and Request for Proposal (RFP) including the Terms of Reference (ToR) could be obtained from KRFB from 10<sup>th</sup> April 2018 till 6<sup>th</sup> May 2018, during office hours on payment of non - refundable document fee of Rs. 5000 (Rupees Five Thousand only) in the form of Demand Draft favoring Kerala Road Fund Board and payable at Thiruvananthapuram.
- 1.3 The Document can also be downloaded from the website **www.krfb.org**. In that case, the firm needs to inform KRFB and the fee of Rs. 5000 (Rupees Five Thousand only) towards the document in the form of Demand Draft favoring Kerala Road Fund Board and payable at Thiruvananthapuram must be furnished in a separate envelope while submitting the Proposal

The Consultancy assignment is grouped in 2 packages as follows:

Package I ó DPR for CRIP at Pathanamthitta, Payyanur and Kasargod towns,  
Package II ó DPR for CRIP at Munnar, Kalpetta and Mananthavadi towns.

A Consultant may submit proposals for more than one package, but with separate Project Team for each bid. However, a Consultant is not allowed to bid for a package with more than one team. For the sake of clarity, it is mentioned that one consultant cannot submit two proposals/bids for the same package.

- 1.4 The consultants shall submit proposals either in sole capacity or in JV or in Association. Joint Venture/Association shall not have more than two firms. Any entity which has been barred by the Ministry of Road Transport and Highways (MORTH) or its implementing agencies for the works of Expressways, National Highways, ISC and EI Works and the bar subsists as on the date of application, would not be eligible to submit the bid, either individually or as a member of a Joint Venture.
- 1.5 To obtain first hand information on the assignment and on the local conditions, the consultants are encouraged to pay a visit to the client, local State PWDs and the project site before submitting a proposal and attend a pre-proposal conference. They must fully inform themselves of local and site conditions and take them into account in preparing the proposal.

- 1.6 Financial Proposals will be opened only for the firms found to be eligible and scoring qualifying marks in accordance with ToR. The consultancy services will be awarded to the highest ranking consultant on the basis of Quality and Cost.
- 1.7 Please note that (i) costs of preparing the proposal and of negotiating the contract, including visits to the Client, etc., are not reimbursable as a direct cost of the assignment; and (ii) Client is not bound to accept any of the proposals submitted and reserve the right to reject any or all proposals without assigning any reasons. The proposals must be properly signed as detailed below:
- i. by the proprietor in case of a proprietary firm
  - ii. By the partner holding the Power of Attorney in case of a firm in partnership (A certified copy of the Power of Attorney on a stamp paper of Rs. 100 and duly notarized shall accompany the Proposal).
  - iii. By a duly authorized person holding the Power of Attorney in case of a Limited Company or a corporation (A certified copy of the Power of Attorney on a stamp paper of Rs. 100 and duly notarized shall accompany the proposal).
  - iv. by the authorized representative in case of Joint Venture. In case a Joint Venture/Association of firms, the proposal shall be accompanied by a certified copy of legally binding Memorandum of Understanding (MOU) on a stamp paper of Rs.100, signed by all firms.
- 1.8 A brief description of the assignment and its objectives are given in the enclosed Terms of Reference. You are hereby invited to submit technical and financial proposals for the project in the manner prescribed in the RFP. Only one set of document each of Technical Proposal and Financial Proposal would suffice.
- 1.9 Consultants requiring a clarification of the documents must notify the Client, in writing, by : 20.04.2018 at 1100 hrs. Any request for clarification in writing or by tele-fax/e-mail must be sent to the Client's address indicated in the Data Sheet. The Client will upload replies to pre-bid queries on its website.
- 1.10 This RFP is neither an agreement nor an offer by KRFB to the Applicant or any other person. The purpose of this RFP is to provide interested parties with information that may be useful to them in the formulation of their proposals pursuant to this RFP. This RFP includes statements and assumptions, which reflect various assessments, arrived at by KRFB in relation to the consultancy. Such assessments and statements do not purport to contain all the information that each Applicant may require. The information contained in the Terms of Reference may not be complete, or adequate. Each applicant should therefore, conduct its own investigations about the assignment and the local conditions before submitting the proposal by paying a visit to the client and the project site, and sending written queries to the client.
- 1.11 The following schedule is to be followed for this assignment:
- (i) Start of downloading/ Purchase of bid : 10.04.2018 (11:00 hrs)
  - (ii) Last Date for submission of prebid queries : 20.04.2018 (17:00 hrs)
  - (iii) Pre bid meeting : 21.04.2018 (11:00 hrs).
  - (iv) Deadline for Submission of bids: 10.05.2018 (16:00 hrs).
  - (v) Opening of Technical Proposal: 10.05.2018 (16:30 hrs)
- 1.12 Preparation of Proposal: The proposal must be prepared in two parts viz.,
- Part 1: Technical Proposal  
Part 2: Financial Proposal

1.13 The minimum essential requirement in respect of eligibility has been indicated in the ToR. The proposal found deficient in any respect of these requirements will not be considered for further evaluation.

1.14 Technical Proposal : You are expected to examine all terms and instructions included in the Documents. Failure to provide all requested information will be at your own risk and may result in rejection of your proposal. During preparation of the technical proposal, you must give particular attention to the following:

Total assignment period is as indicated in the enclosed TOR. A manning schedule in respect of requirement of key personnel is also furnished in the TOR which shall be the basis of the financial proposal. You shall make your own assessment of support personnel both technical and administrative to undertake the assignment. Additional support and administrative staff if needed shall be provided for timely completion of the project, within the total estimated cost. It is stressed that the time period for the assignment indicated in the TOR should be strictly adhered to.

1.15 The technical proposal shall be submitted strictly in the Formats given in **Annexures**, and shall comprise of following documents:

- I) Forwarding letter, as given in **Form E1**, for Technical proposal duly signed by the authorized person on behalf of the bidder.
- II) Details of projects for which Technical and Financial Proposals have been submitted by a Consultant with a particular Team.
- III) Firm's references - Relevant Services carried out in the last seven years.
- IV) Site Appreciation: Short appraisal of the site illustrating the current scenario and issues to be addressed.
- V) The composition of the proposed Team, Task Assignment to individual personnel and Detailed Resume of the team member.
- VI) Proposed methodology for the execution of the services illustrated with bar charts of activities, including any change proposed in the methodology of services indicated in the TOR, and procedure for quality assurance.

Bid submissions must be received not later than 16.00hrs, 10<sup>th</sup> May 2018 in the manner specified in the RFP at the address given below:

**Chief Executive Officer**  
**TC 4/1654, Mayoaram, No: 7,**  
**Belhaven Gardens, Kowdiar P.O,**  
**Thiruvananthapuram 695 003**  
**Tel: +91-471-2726080, Fax: +91-471-2726080,**  
**Web: www.krfb.org**

## TERMS OF REFERENCE (TOR)

### Consultancy Services for Detailed Project Report and Engineering Design for City Road Improvement Project at Pathanamthitta, Munnar, Kalpetta, Mananthavadi, Payyanur and Kasaragod towns in the state of Kerala

## 2. Objectives of the Study

2.1 The main objectives of the study are as follows:-

- To conduct traffic and other studies and collect necessary data, analyse the data systematically, identify the critical road network for the town and select priority road corridors covering a total length of about 35 kilometres in each town.
- To carry out detailed surveys of the identified stretches of roads and to prepare detailed design and drawings for improvement to enable effective utilization of these roads.
- To include in the improvement proposals, geometric improvement, road widening, strengthening of road pavement, junction improvements, pedestrian facilities, bus bays, bus shelters and stops, improvement/reconstruction of culverts and bridges, ROB, grade separators, street furniture, road signs and markings, shifting of services, utility corridors, arboriculture and landscaping, etc.
- To prepare technical specifications, BOQ and cost estimates for implementation.

2.2 The Detailed Project Report would inter-alia include detailed highway design, design of pavement and overlay with options for flexible or rigid pavements, design of bridges and cross drainage structures and grade separated structures, design of service roads, quantities of various items, detailed working drawings, detailed cost estimates, economic and financial viability analyses, environmental and social feasibility, and Rate Analysis, BOQ documents required for tendering the project on commercial basis for competitive bidding

## 3. Scope of the Study

3.1 The tasks to be carried out are detailed below:

### 3.1 Selection of Road Corridors

- Task 1 : Collect necessary secondary data and reports.
- Task 2 : Conduct traffic studies, road inventory survey and other studies and collect the necessary data.
- Task 3 : Carry out traffic analysis systematically and carry out traffic forecasting.
- Task 4 : Identify the road network to be developed.
- Task 5 : Select road corridors systematically covering a total length of about 30 kilometres.
- Task 6 : Discuss with KRFB Officials and finalise the road corridors to be taken up for further investigation.

### 3.2 Detailed Project Report Preparation

- Task 7 : Carry out reconnaissance survey of the roads for the general assessment of the existing situation and level of improvements required.
- Task 8 : Carry out topographic surveys and other detailed physical surveys and preparation of digital maps, which show the existing right of way, abutting properties,

- Task 9 : carriageway, drain, road furniture and gradient.
- Task 9 : Carry out other detailed engineering surveys and investigations such as soils and material investigation, pavement investigation, survey of utility services and land use and facilities survey.
- Task 10 : Prepare detailed engineering design covering geometric design with digitization, pavement design, drainage, intersection design, road furniture and appurtenances, details of shifting of utilities, arboriculture and landscaping.
- Task 11 : Prepare cost estimates for implementation of the proposals.
- Task 12 : Carry out Environmental and Socio economic impact assessment.
- Task 13: Carry out economic and financial evaluation of the proposed improvements.
- Task 14 : Prepare technical specifications, Rate Analysis, Cost Estimates and Bill of Quantities.
- Task 15 : Prepare town-wise Project Reports, bid documents and drawings

### 3.3 Standards and Codes of Practices

All activities related to field studies, design and documentation shall be done as per the latest guidelines/ circulars of MoRT&H and relevant publications of the Indian Roads Congress (IRC) and Bureau of Indian Standards (BIS). For aspects not covered by IRC and BIS, international standards practices, may be adopted.

As far as possible, the widening/improvement work to the roads shall be within the existing right of way avoiding land acquisition, except for locations having inadequate width and where provisions of short bypasses, service roads, alignment corrections, improvement of intersections are considered necessary and practicable and cost effective. The Consultant shall furnish land acquisition details as per revenue records/maps for further processing of land acquisition.

## 4. Study Period

The study should be completed within a span of 9 months from the date of issue of Work Order.

## 5. Project Team and Inputs

The consultant shall have the following key personnel in the study team for undertaking the assignment. Experts with appropriate qualification and experience in the following discipline are desirable on the study team. Permanent employees of the consultant to be considered as key personnel in the team should have at least six months of continuous service with the Consultancy firm.

Sl. No.	Expertise	Qualification	Minimum Experience in Relevant Field (Years)
1	Team Leader cum Senior Highway Engineer	<b>Essential :</b> Graduation in Civil Engineering  <b>Desired</b>  Post-graduation in Highway Engineering / Transport Engineering / Traffic Engineering	20 years experience.
2	Traffic Engineer	Post-graduation in Traffic	10



		Engineering / Transport Engineering	
3	Transport Planner	Post-graduation in Transportation engineering	10
4	Pavement Specialist	Post-graduation in Highway Engineering / Soil Mechanics/ Pavement Engineering / Foundation Engineering	10
5	Structural Engineer	Post-graduation in Structural Engineering	10
6	Utility Engineer	Graduation in Civil Engineering	7
7	Quantity Surveyor	Graduation in Civil Engineering	7
8	Hydrologist & Drainage Expert	Graduation in Civil Engineering	7
9	Landscape Architect	Graduation in Civil Engineering	5
10	Environment & Social Expert	Graduation in Civil Engineering	7

The Qualification and Experience requirement of the Key Personnel is detailed out in **Annexure I**.

The minimum man months for the key personnel shall be as follows

Sl. No.	Key Personnel	At site (Man months)	At design office (Man Months)	Total Man Months
1.	Team Leader and Senior Highway Engineer	2	5	7
2.	Traffic Engineer	2	3	5
3.	Transport Planner	2	1	3
4.	Pavement Specialist	1	4	5
5.	Structural Engineer	1	3	4
6.	Utility Engineer	3	3	6
7.	Quantity Surveyor	2	3	5
8.	Hydrologist / Drainage Expert	2	2	4
9.	Landscape Architect	2	1	3
10.	Environment & Social Impact Assessment Expert	1	2	3
11	Senior Survey Engineers ó 2	6	8	14

The consultant shall provide staff pattern and man month inputs based on the assignment of works involved as per the scope of work.

## 6. Deliverables

### 6.1 Selection of Road Corridors

1. Inception Report (3 copies) within 2 weeks of receipt of Work Order.
2. Technical Report on Selection of road corridors (3 copies) within 2 monthson receipt of Work Order.

## 6.2 Detailed Project Report Preparation

1. Draft Detailed Project Report (DPR) ó 3 copies

The draft DPR shall consists of corridor-wise Main Report, Design Report, Materials Report, Engineering Report, Drainage Design Report, Environment Assessment Report including Resettlement Action Plan (RAP), Land Acquisition Plan, Drawings and Package-wise Bid Documents. The fee, if any, for procurement of FMB from revenue department shall be borne by the consultant.

The town-wise Draft DPR Reports and Drawings shall be submitted in a phased manner during the sixth and seventh months of the project.

2. Final Detailed Project Report, Documents and Drawings (6 sets).

The Final town-wise DPR consisting of Main Report, Design Report, Drawing Report, Drainage Report, etc., incorporating all revisions based on the comments from KRFB on the draft report shall be submitted within 9 months on receipt of Work Order.

## 6.3 Summary Report (3 copies)

A summary Report giving the background of the study area, study details, design details, technical details, cost estimates, economic benefits of the project, etc of all the corridors shall be prepared.

## 6.4 Detailed Scope of Services

Detailed Scope of Services for the preparation of DPR for improvement of the selected corridors is given in the clause 11 of this RFP document. The consultants shall carry out the task as per the details given in this document.

## 7. Payment Schedule of Consultation Fee

Payment of consultation fee shall be made according to the following schedule, which is based on the deliverables.

Sl. No.	Submission/Acceptance of	Payment
1	Submission of Inception Report	15%
2	Submission of Technical Report on Selection of road corridors	15%
3	Submission of Draft Detailed Project Report	40%
4	Approval of Final Detailed Project Report and Summary Report.	30%

## 8. Minimum Eligibility Criteria

The minimum eligibility criteria, in terms of Experience & Performance and Annual average turnover is as given below. The sole applicant shall fulfill all the requirements given in the table below.

Sl no	Minimum experience and performance (Technical Capacity)	Annual average turnover (Financial Capacity)
1	A Firm applying for a package should have experience in the preparation of Detailed Project Report and Engineering design of two/four lane road projects, State/District	Annual Turnover of the Consultancy Firm from its operations in India during the

	Highways / Bridges (NH/SH/MDR or Equivalent) with major structures of aggregate length equal to 100 km in the past 7 years	past 3 years should be Rs 10.0 Crores
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In case of JV, lead partner must fulfill the requirements as stated above. Other JV partner (not more than one partner shall be allowed) should complete DPR for at least 40 km aggregate length of NH/ SH/District roads in India during the last 5 years.

**The format of submission of Consultancy Firms's Experience and Performance (Technical Capacity) and Average Annual Turnover (Financial Capacity) is as given in Annexure, Form E2 and Form E3.**

Note:

The weightage given for experience of a firm would depend on the role of the firm in the respective assignments. The firm's experience would get full credit if it was the sole firm in the respective assignment. In case it was a lead firm, it would get 75% weightage; if it was the other partner in a Consortium of two firms/ an associate member it would get 25% weightage for the respective assignment. The above weights are reflected in the following table:

Sl.No.	Status of the firm	Weightage for experience
1	Sole firm	100%
2	Lead partner in a JV	75%
3	Other partner in a JV/ Associate	25%

## 9. Selection Process

The selection of the Consultancy Firm shall be based on QCBS method.

**The evaluation of the proposals shall be carried out in two stages: first the quality (70% Weightage), and then the cost (30% Weightage).** Evaluators of technical proposals shall not have access to the financial proposals until the technical evaluation, including any Bank reviews and no objection, is concluded. Financial proposals shall be opened only thereafter. The evaluation shall be carried out in full conformity with the provisions of the ToR.

### 9.1 Evaluation of the Technical Proposal (Quality)

The following Criteria shall be adopted by KRFB for the evaluation of the Technical Proposals submitted by Consultancy Firm.

1. *Background / Reputation of the Consultancy Firm*
2. *Consultancy Firm's relevant Experience*
3. *Quality of the Methodology and Work Plan Proposed*
4. *Team Composition and Experience of Key Professional Staff proposed*

Bidders meeting the eligibility criteria are required to submit details of the Background / Reputation of the Consultancy Firm, Firm's experience in similar works, Details of Key Resource persons / Professionals with durations proposed to be deployed for the assignment together with their qualification and experience, Approach, Methodology and Work Plan proposed to be followed for carrying out the said assignment etc.

Bidders may be called upon to make a presentation of their proposals, at their own cost, to the Selection Committee, if required. The Selection Committee will carry out the technical evaluation applying the criteria and points rating as listed in the table below:

Sl. No.	Parameter	Maximum Technical Score	Total
1.	Bidder's background and profile in terms of the quantum and nature of consultancy assignment undertaken, overall experience and stature in the sector, presence in the country, region, team strength etc.	5	
2.	Firm's experience as lead consultant in the preparation of DPR for development of NH/SH/District roads in the country in the past five years	20	
3.	Proposed Approach, Methodology and Work Plan for the undertaking the project.	15	
4.	Team Composition and Experience of Key Professionals (CVs).	60	
	<b>Total Technical Score</b>	<b>100</b>	

The Maximum achievable total Technical Score for any bidder would be 100. **A minimum of 75 marks is necessary for qualifying in the Technical Proposal.** The financial proposals of firms scoring less than 75 marks out of 100 marks for their Technical Proposal, would be returned, unopened.

#### 9.1.1 Consultancy Firm's relevant Experience

Bidders should indicate the number of completed projects, including the name of the Client for whom the assignment has been carried out. **Bidder's experience in respect of this criterion should be supported by documentary evidence in the form of certificate from the client, clearly stipulating the services rendered by the Consultant.**

Selection Committee would evaluate the experience of each firm/bidder in respect of eligible projects and assign score on its evaluation. In case the service is rendered for the Concessionaire, experience certificate for the particular assignment shall be enclosed with the submission.

#### 9.1.2 Approach and Methodology

Bidders are required to furnish a detailed write-up on their Conceptual Clarity and Understanding of the project and its objectives.

Bidders are also required to furnish the following:

- Proposed Approach
- Proposed Methodology and
- Work Plan to undertake the assignment.

The Selection Committee would evaluate each item above and assign appropriate score to every bidder based on its evaluation as under.

Sl. No.	Finding of Evaluation	% of points
1.	Not submitted (Failure)	0%
2.	Submission is below the requirement (Inadequate/poor)	30%
3.	Submission meets the requirement (Adequate/Fair)	75%
4.	Submission exceeds the requirement (Good)	90%
5.	Submission far exceeds requirement (Excellent)	100%

### 9.1.3 Team Composition and Experience of Key Personnel/Experts

The Consultancy Firm shall submit the detailed biodata including educational qualification and experience certificate of all the key personnel (as specified in the ToR). The Consultancy Firm shall also submit assurance that all the key personnel will be available for the study. CVs of personnel who work as freelance consultants will not be accepted.

Selection Committee would evaluate each member proposed to be deployed based on their qualifications, experience etc., and assign score for every bidder based on its evaluation as detailed below:-

Sl. No.	Team Members	Marks
1.	Senior Highway Engineer and Team Leader	12
2.	Traffic Engineer	8
3.	Transportation Planner	8
4.	Pavement Specialist	8
5.	Structural Engineer	6
6.	Quantity Surveyor	4
7.	Utility Engineer	4
8.	Hydrologist & Drainage Expert	3
9.	Landscape Architect	2
10.	Environment and Social Expert	2
11.	Senior Survey Engineer - 2	3 (1.5 each)
<b>Total</b>		60

The qualifications and experience of proposed key personnel in their curriculum vitae must be accurate, complete, and signed by an authorized official of the Consultant and the individual proposed. The individuals shall be rated in the following three sub-criteria, as relevant to the task:

- a) **Educational Qualification:** General education and training, length of experience, positions held, time with the consulting firm as staff, experience in developing countries, and so forth;
- b) **Overall Experience for the assignment:** Training, and experience in the specific sector, field, subject, and so forth, relevant to the particular assignment;
- c) **Experience in the region:** Weightage will be given to those who have experience in the region, knowledge of the local language, culture, administrative system, government organization, and so forth.
- d) **Age limit of Key Personnel:** Maximum age limit of key personnel is 65 as on March 2018.

### 9.1.4 Total Technical Score

The total Technical Score of any bidder would be an arithmetic sum of scores obtained by the bidder for each of the parameter indicated above viz. experience, conceptual clarity and approach & methodology and team composition & experience.

## 9.2 Evaluation of Financial Proposal (Cost)

After the evaluation of Technical Proposal (quality) is completed, the KRFB shall notify those consultants whose proposals did not meet the minimum qualifying mark or were considered

nonresponsive to the ToR, indicating that their financial proposals will be returned unopened after completing the selection process. The KRFB shall simultaneously notify the consultants that have secured the minimum qualifying mark, and indicate the date and time set for opening the financial proposals. The opening date shall not be sooner than one week after the notification date. The financial proposals shall be opened publicly in the presence of representatives of the consultant who choose to attend. The name of the consultant, the quality scores, and the proposed prices shall be read aloud and recorded when the financial proposals are opened. The KRFB shall prepare the minutes of the public meeting. The format of submission of the Financial Proposal is as given in **Form F**.

For the purpose of evaluation, cost shall exclude local taxes, but shall include other reimbursable expenses, such as travel, translation, report printing, or secretarial expenses.

The bidder, who quotes the lowest professional fee, will be awarded a financial score of 100 marks and other bidders will be given financial scores that are inversely proportional to their quoted professional fees. **The formula for this will be,  $F = 100 \times (\text{Amount of Professional Fee Quoted by the Lowest Bidder} / \text{Amount Professional Fee Quoted by the Bidder under evaluation})$ .**

KRFB will correct any arithmetical errors in Financial Proposals. While correcting arithmetical errors, in case of discrepancy between amount mentioned in words and figures, the lower among the two shall prevail and only be considered.

### 9.3 Combined Quality and Cost Evaluation

The total score shall be obtained by weighting the quality and cost scores and adding them. The proposed weightings for quality is 70 Points and cost shall be 30 Points. The firm obtaining the highest total score shall be invited for negotiations. If  $T$  is the total marks scored in Technical Proposal, and  $F$  is the marks scored for the Financial Proposal.

**The final weighted score will be:  $0.70 * T + 0.30 * F$ .** The assignment shall be awarded to the bidder scoring the highest final weighted score.

KRFB, however, reserves the right to reject any or all the bids received, without assigning any reasons and any liability to KRFB.

## 10. General Terms and Conditions

### 10.1 Introduction

Consultancy Firms are invited to submit a Financial Proposal and a Technical Proposal in separate sealed covers providing consulting services required for the assignment. The Proposal will form part of the contract entered with the selected consultant. The Consultants can familiarize themselves with project site and local conditions and take them into account in preparing their Proposals. The Consultants shall bear all costs associated with the preparation and submission of their proposals. KRFB/GoK is not bound to accept any or all proposals, and reserves the right to annual the selection process at any time prior to award of contract, without liability to KRFB/GoK.

The Consultants eligible for participating in the project shall be a single entity / firm or as JV/Association. Joint Venture shall not have more than two firms. The Consultant as single firm shall propose team having experts to take care of all aspects of the assignment as described in the Terms of Reference.

In case of Joint venture, one of the firms, which preferably have relatively higher experience, will act as the lead firm representing the Joint Venture. The duties, responsibilities and powers of such lead firm shall be specifically included in the MOU / agreement. It is expected that the lead partner would be authorized to incur liabilities and to receive instructions and payments for and on

behalf of the Joint Venture. For a JV to be eligible for bidding, the experience of lead partner and other partner should be as indicated in data sheet.

In case a Joint Venture/Association of firms, the proposal shall be accompanied by a certified copy of legally binding Memorandum of Understanding (MOU), signed by all firms to the joint venture/Association confirming the following therein:

- a. *Date and place of signing;*
- b. *Purpose of Joint Venture/Association (must include the detail of contract works for which the joint venture has been invited to bid)*
- c. *A clear and definite description of the proposed administrative arrangements for the management and execution of the assignment.*
- d. *Delineation of duties/ responsibilities and scope of work to be undertaken by each firm along with resources committed by each partner of the JV/Association for the proposed services;*
- e. *An undertaking that the firms are jointly and severally liable to the Employer for the performance of the services and,*
- f. *The authorized representative of the joint venture/Association.*

## 10.2 KRFB/Govt. of Kerala's Interest

Consultants shall provide professional, objective, and impartial advice and at all times and hold KRFB, PWD and Govt. of Kerala's interest paramount.

## 10.3 Proposal Validity

The Technical and Financial Proposal to be submitted by the Consultants should be firm and valid for a period of 90 days from the last date of submission of the proposal.

## 10.4 Submission, Receipt and Opening of Proposals

The Original Proposal (Technical Proposal and Financial Proposal) shall contain no interlineations or overwriting, except as necessary to correct errors made by the Consultants themselves. The person who signs the proposal must initial such corrections.

**An authorized representative of the Consultants shall initial all pages of the original Technical and Financial Proposals.** The authorization shall be in the form of a written power of attorney accompanying the Technical Proposal or in any other form demonstrating that the representative has been fully authorized to sign.

**The Technical Proposal shall be placed in a sealed envelope clearly marked "Technical Proposal – Package 1 or Package 2". Similarly, the Financial Proposal shall be placed in a sealed envelope clearly marked "Financial Proposal – Package 1 or Package 2".** The envelopes containing the Technical and Financial Proposals shall be placed into an outer envelope and sealed. This outer envelope shall bear the Name of the Assignment, submission address, etc.

The Proposals must reach Chief Executive Officer, Kerala Road Fund Board, T.C. 4/1654, Mayoaram, No. 7, Belhaven Gardens, Kowdiar P.O., Thiruvananthapuram 695 003, on or before 25 March 2013 at 17.00 hrs (IST) delivered in person or by Registered Post or by Courier. Any proposal received by KRFB after the deadline for submission shall be returned unopened. KRFB shall not be responsible for any postal or courier delay.

### **10.5 Availability of Key Professional Staff/Experts**

KRFB will require assurance that the Key professional staff proposed for the assignment by the Consultant will be available till completion of the assignment. KRFB will not consider substitutions during the contract unless KRFB is convinced and is agreed in writing, to any substitution. Any proposed substitute shall have equivalent or better qualification and experience than the original candidate.

### **10.6 Confidentiality**

The Consultant shall keep all the information pertaining to the assignment CONFIDENTIAL and shall not provide/disclose any information of the assignment to anybody except on specific instructions from KRFB.

### **10.7 Property Rights of Assignment Outputs**

The Consultant shall hand over soft copies of all the deliverables including workable Models with all linkages as developed for the assignment, drawings and all related working & outputs of the assignment generated for executing the assignment as and when requested by KRFB during the course of the assignment and on successful completion of the assignment.

Such deliverables including Models, drawings and related outputs are the Sole Property of KRFB and the Consultant shall treat all these information Confidential and shall not share with anybody else except on specific written instructions by KRFB.

### **10.8 Negotiations**

Prior to the expiration period of proposal validity, the Client will notify the most preferred Consultant in writing by registered letter, cable, telex or facsimile and invite him to negotiate the Contract. Each key personnel of the preferred consultant may be called for interview at the time of negotiation at the cost of consultant.

### **10.9 Award of Contract**

The contract will be awarded following negotiations After negotiations are successfully completed, the contract will be signed in the standard form of contract.

### **10.10 Performance Security**

The successful bidder shall provide within 15 days of the issue of Work Order, an unconditional Bank Guarantee, in the format as given in clause 12 of this RFP document, from ascheduled bank in India for an amount equivalent to 2.5 % of the lump sum contract value, which can be revoked on demand from KRFB, or its authorised representative. The guarantee shall be valid until final payment has been made by KRFB to the consultant or until ninety one (91) days after the completion of the services whichever is later.

### **10.11 Termination**

In case of non-performance, KRFB reserves the right to instruct the Consultant to suspend or terminate any part or all of the Services. Such an instruction shall be issued in writing by the Authority.



## 10.12 Penalty

If the Consultant fails to complete the Services within the time stated in the agreement, or any such extended time thereof as approved by KRFB, then the Consultant shall pay 0.05 % as penalty for delay for every day or part of a day which shall elapse between the Time for Completion and the Completion Date. The maximum Penalty for Delay shall not exceed 10% (Ten percentage) of the Agreement Price as stated in the Memorandum of Agreement. Penalties for delay shall be payable by the sole fact of the delay without the need for any notification or warning or recourse to judicial proceedings and without the need to prove the occurrence of damage or loss, which will be considered existing in all cases, provided always that the Consultant shall not be liable where the delay occurs through no fault of the Consultant, his sub-consultant or agents, which in any event will not infer liability upon KRFB. The payment or deduction of the penalties for delay shall not relieve the Consultant from his obligation to complete the Services or from any other of his obligations and liabilities under the Agreement.

### 10.12.1 Penalty for Delay to Mobilisation

Should the Consultant fail to:

- A. Provide the personnel in accordance with the Agreement within fourteen days (14) days of the Commencement Date; and/or
- B. Provide the personnel in accordance with the Agreement; and/or
- C. Replace the personnel in accordance with the Agreement within twenty eight (28) days of it, then the Consultant shall pay to KRFB an amount equal to the daily rate of the personnel in question for every day or part thereof which shall have elapsed between the end of the periods stated in A to C above and the date which the personnel in question are provided by the Consultant for the Services. The penalties pursuant to this shall be payable by the sole fact of failure to provide personnel without the need for any notification or warning or recourse to judicial proceedings and without the need to prove the occurrence of damage or loss which will be considered existing in all cases.

**10.12.2** In the event Consultant fails to provide or replace the personnel pursuant to Sub-Clause 10.12.1 within a period of twenty eight (28) Days from the date KRFB is entitled to impose the penalties pursuant to Sub-Clause 10.12.1, then KRFB shall be entitled to employ any of the required personnel and all expenses consequent thereon shall be recoverable from the Consultant or KRFB shall have the right, without prejudice to any other remedy to set-off the amount of penalties pursuant to Sub-Clause 10.12.1, from any monies due or which may become due to the Consultant. The payment or deduction of such penalties shall not relieve the Consultant from his obligation to complete the works or from any other of his obligations and liabilities under the Agreement.

**10.12.3** If KRFB incurs any loss or expense as a result of errors or negligence by the Consultant, then the Engineer may take action which may include, but may not be limited to the following:

- A. Deduction of such loss and expense from any payments due;
- B. Termination of the Services of the Consultant;
- C. De-barring of the Consultant or his employees from any present or future projects; and
- D. Recourse to legal action.

The Consultant shall not be relieved of the any liabilities or obligations arising either under the Agreement or the Law by any approval, acceptance, or payment by KRFB.

## 11. Detailed scope of work.

### 11.1 Objective

The major objective of the consultancy services is to carry out detailed study of the road network of the town and identify the roads to be improved and to prepare detailed engineering designs and drawings for improvement to enable effective utilization of these roads. The road improvement proposals would also include junction improvements, improvement/reconstruction of culverts/bridges, if necessary, street furniture, road markings, signages etc. Since the improvement proposals include the existing trafficable road sections, due consideration shall be made in the design to maintain traffic movements during construction. The proposals would also include preparation of technical specification and BOQ and cost estimates for implementation.

The roads shall be redesigned and strengthened as far as possible within the available right of way of proper geometry with a minimum of two lane clear carriageway and with footpaths and pedestrian facilities. Relocation of street light posts and telephone poles/posts, relocation of signboards and location of new signboards, construction of other required street furniture etc. would be given due preference to keep the services through during implementation. Possibilities for roadside planting of trees (arboriculture) shall also be considered. The design shall consider and provide for appropriate parking facilities, bus bays, bus shelters and bus stops.

The facilities available for drainage water from both roadside properties and the roads shall be studied and measures for improvement shall be suggested. The improved roads shall be adequately drained even during monsoons without causing inconvenience to traffic and to the surrounding properties.

The design shall also consider and provide for utility corridors and cross ducts at appropriate intervals for carrying utilities.

The road junctions in the selected roads shall be proposed for improvements to the extent necessary for the main corridors. The required improvements in these road junctions shall be based on the traffic volume, free movements required, bus stops and parking areas existing near the junctions, which need to be relocated. Due consideration shall be made in respect of availability of land.

### 11.2 Scheme for Effective Utilization

The consultants in their reports shall envisage the following works to the existing road structure for the effective utilization of the selected roads:

- a) Shifting of lamp posts, electric posts, telephone posts etc. from the carriageway so that the entire carriageway is available for the movement of vehicles;
- b) Shifting of lamp posts, electric posts, telephone posts, traffic signboards, hoarding, singages etc. from the footpath thus making it available for the movement of pedestrians;
- c) Development of uniform footpath as per accepted design standards;
- d) Utilisation of vacant areas/spots by the side of the road for parking;
- e) Providing proper street lighting along these roads;
- f) Road marking such as Lane marking, Centre line, Pedestrian crossing etc. Street furniture will be provided at suitable locations;
- g) Resurfacing of roads;

- h) Providing bus bays; Construction of transverse ducts and reorganization of existing utilities so as to avoid future road cutting; and
- i) Culverts, bridges, ROB's and grade separators.

### **11.3 Details of the services**

#### **11.3.1 Primary Task**

General Scope of Services shall cover but not limited to the following major tasks:

1. Review of all available reports and published information about the project road and project influence area
2. Traffic studies including traffic surveys and axle load survey, and demand forecasting for next 15 years along with suggestions for capacity augmentation in a phased out manner as per the projected traffic
3. Environmental and social studies and impacts analysis including environmental, rehabilitation and resettlement studies for the project
4. Detailed topographic surveys using Total Station and/ GPS/Lidar
5. Material investigations
6. Embankment soil, Subgrade and sub-soil investigations for road and embankment design;
7. Identification of sources of construction materials
8. Design of road cross-sections, horizontal and vertical alignment and detailed design of structures including preparation of GAD and construction drawings and cross-drainage structures and underpasses/flyovers etc.
9. Identification of junctions requiring improvements and design of the same
10. Design of complete drainage system and disposal point for storm water
11. Contract packages and implementation schedule depending on the outcome of the viability study and the requirements of the client
12. Strip plan indicating the location of all existing utility services (both over and underground) and the scheme for their relocation, trees to be felled and planted
13. Preparation of detailed project report, cost estimate, rate analysis, detailed bill of quantities.
14. Detailed Land Acquisition Plans on revenue maps to undertake the land acquisition along with the strip plan.

#### **11.3.2 Review of Data and Documents**

The Consultants shall collect the available data, reports and information relevant for the Study. The data and documents of major interest shall include, but not be limited, to the following:

- a) Climate
- b) Sub-surface and geo-technical data for bridges on the proposed alignment
- c) Hydraulic data, drawings and details of bridges on the proposed alignment
- d) Survey and evaluation of locally available construction materials
- e) Historical data on classified traffic volume (preferably for 5 years or more) on the road networks
- f) Accident statistics
- g) Type and location of existing utility services (e.g. Fibre Optical Cable, O/H and U/G Electric, Telephone line, Water mains, Sewer, Trees etc.)

#### **11.3.3 Traffic Surveys**

All traffic surveys and studies on the selected roads be conducted in close consultation with the Client. The type of traffic surveys and the number of survey stations shall be suggested by the consultant in the inception report and got approved by client before start of the survey activity. The methodology of

collections and analysis of data, number and location of traffic survey station shall be finalized in consultation with Client.

#### **11.3.3.1 Classified Traffic Volume Count Survey**

- a) The classified volume count survey shall be carried out for 7 days in National Highways and 3 day count for all other roads (continuous, direction-wise) at the selected survey locations. The vehicle classification system as given in relevant IRC code may be followed.
- b) All results shall be presented in tabular and graphical form. The survey data shall be analysed to bring out the hourly and daily variations. The traffic volume count per day shall be averaged to show a weekly Average Daily Traffic (ADT) by vehicle type. The Annual Average Daily Traffic (AADT) shall be worked out by applying seasonal factors.
- c) The consultants shall compile the relevant traffic volume data from secondary sources also. The salient features of traffic volume characteristics shall be brought.

#### **11.3.3.2 Turning Movement Surveys**

The turning movement surveys for estimation of peak hour traffic shall be carried out at the important intersections for the Study. The details regarding composition and directional movement of traffic shall be furnished by the Consultant and approved by the Client.

#### **11.3.3.3 Axle Load Surveys**

- a) Axle load surveys in both directions shall be carried out at suitable location(s) on the selected road stretches on a random sample basis normally for trucks only (both empty and loaded trucks) for 1 normal day (24 hours) at special count stations to be finalized in consultation with Client.
- b) The axle load surveys shall normally be done using axle load pads or other sophisticated instruments. The location(s) of count station(s) and the survey methodology including the data formats and the instrument type to be used shall be finalized before taking up the axle load surveys.
- c) The axle load data should be collected axle configuration-wise. The number of equivalent standard axles per truck shall be calculated on the basis of results obtained. The results of the survey should bring out the VDF for each truck type (axle configuration); if the calculated VDF is found to be below the national average, then national average shall be used.
- d) The consultant shall ascertain from local enquiries about the exceptional live loads that have occurred in the past.

#### **11.3.3.4 Pedestrian Cross Traffic Surveys**

These may be conducted to determine the locations of underpasses for pedestrians to improve the traffic safety.

#### **11.3.3.5 Traffic Demand Estimation**

- a) The consultants shall make traffic demand estimation and establish possible traffic growth rates in respect of all categories of vehicles, taking into account inter-alia the past trends, annual population and real per capita growth rate.
- b) The traffic projections should also bring out the possible impact of implementation of any competing facility in the near future. The demand estimates should also take into account the freight and passenger traffic along the major corridors that may interconnect with the project.

- c) Overall traffic forecast thus made shall form the basis for the design of the cross sectional elements, and other facilities/ancillary works.

### **11.3.4 Engineering Surveys and Investigations**

#### **11.3.4.1 Finalising the Alignment**

- a) The Consultants should make an in-depth study of the topographic maps, satellite imageries of the project area and other available relevant information.
- b) Consultant himself has to arrange the required maps and the information needed by him from the potential sources.
- c) Traffic patterns and preliminary identification of traffic homogenous links.
- d) Inventory of major features including terrain, proposed bridges and structures (type, size and location), proposed intersections (type, cross-road category, location).

#### **11.3.4.2 Topographical Surveys**

- (i) The basic objectives of the topographical survey would be to capture the essential ground features along the alignment.
- (ii) Carrying out of topographic surveys will be one of the most important and crucial field tasks under the project. The detailed field surveys shall be carried out using high precision instruments i.e. GPS Instruments, Total Stations and Auto Levels. It would be obligatory to submit the information obtained from Survey Of India about existing bench marks used as reference stations. The data from the topographic surveys shall be available in (x, y, z) formats for use in a sophisticated digital terrain model (DTM). The Consultants would be fully responsible for any inaccuracy in surveys.
- (iii) The detailed field surveys would essentially include the following activities:
  - a) Topographic Survey along the proposed road: Running a continuous traverse along the proposed road to establish Horizontal control. This shall include fixation of all cardinal points such as horizontal intersection points (HIP $\phi$ ), transit points etc., and properly referencing the same with a pair of reference pillars fixed on either side of the center-line at safe places within the ROW.
  - b) Collection of details for all features such as structures, utilities, existing roads, electric and telephone installations (both O/H as well as underground), huts, buildings, fencing and trees (with girth greater than 0.3 meter) oil and gas lines, etc. falling within the extent of survey.
- (iv) The width of the survey corridor should take into account the layout of the alignment including the extent of embankment and cut slopes and the general ground profile. While carrying out the field surveys, it should be borne in mind that the topographical surveys should cover sufficient width beyond the centerline of the proposed carriageway. Normally the surveys should extend a minimum of 15 m on either side of the center line of the existing road. Wherever larger widening is proposed more width should be surveyed.
  - a) The consultant has to suggest the ROW required for various options as suggested in the objective of the study in line with the terrain and geometric design requirements.
  - b) Where existing roads cross the proposed road, the survey will extend a minimum of 100m either side of the road center line and will be sufficient width to allow improvements, including at grade intersections, grade separators, to be designed.
- (v) The surveyed alignment shall be transferred on to the ground as under:
  - a) Reference Pillar and Bench Mark/reference pillar of size 15 cm  $\times$  15 cm  $\times$  60 cm shall be cast in grade of M 15 concrete with a nail fixed in the center of the top surface and embedded in concrete upto a depth of 45 cm with PCC M 10 (15 cm wide all around). The

balance 15-cm above ground shall be painted yellow. The GPS Bench Mark Pillars at every 2 km will be 30 cm × 30 cm × 60 cm cast in M15 grade concrete having 35 mm dia. 150 mm long GI pipe embedded in the center of top surface. The GPS Bench Marks will also be embedded in ground and painted yellow in a similar way as that for other reference pillars.

- b) Establishing bench marks at site connected to GPS Bench marks at an interval of 250 metres on Bench mark pillar made of RCC as mentioned above with RL and BM No. marked on it with red paint.
- c) Maintenance of the reference pillar will be the responsibility of the consultants till the DPR is accepted.
- d) The consultants shall further review the existing laws on development control rules and if required define suitably a control line beyond which any kind of development activities are restricted thereby ensuring no further encroachment within the ROW.

#### **11.3.4.3 Longitudinal and Cross - Sections**

The topographical surveys for longitudinal and cross-sections shall cover the following:

- a) Longitudinal section levels along final centre line at every 25 m interval, at the locations of curve points, small streams, intersections and at the locations of change in elevation.
- b) Cross sections at every 25 m interval in full extent of survey. Cross sections shall be taken at closer interval at curves.
- c) Longitudinal section for cross roads for length adequate for design and quantity estimation purposes.
- d) Longitudinal and cross sections for major and minor streams as per recommendations contained in IRC Special Publication No. 13 (Guidelines for the Design of Small Bridges and Culverts) and IRC:5-1985 (Standard Specifications & Code of Practice for Road Bridges, Section I - General Features of Design)

#### **11.3.5 Details of Utility Services and Other Physical Features**

- a) The Consultants shall collect details of all important physical features along the alignment and compile a comprehensive utility relocation plan based on important physical features along the entire project corridor. These features affect the project proposals and should normally include buildings and structures, monuments, burial grounds, cremation grounds, places of worship railway lines, stream/river/canal, water mains, sewers, gas/oil pipes, crossings, trees, plantations, utility services such as electric, and telephone lines (O/H & U/G) and poles, optical fiber cables (OFC) etc. The survey would cover the entire proposed RoW of the road on the adequate allowance for possible shifting of centerlines at some of the intersection locations.

#### **11.3.6 Material Investigation**

##### **11.3.6.1 Subgrade Composition**

- a) The consultants shall make trial pits to design the pavement. The test pit interval will be as below
- b) For each test pit, the following information shall be recorded:
  - (i) Test pit reference (Identification number, location)
  - (ii) Subgrade type (textural classification) and condition (dry/wet)

##### **11.3.6.2 Subgrade Characteristics and Strength**

- a) Based on the data derived from the surveys, the project road section should be divided into segments homogenous with respect to terrain, soil etc.
- b) The testing scheme proposed is as given under:

- (i) The test pits for subgrade soil shall be @ 2 km or for each soil type, whichever is more. A minimum of three samples should be tested corresponding to each homogenous segment.
- c) The testing for subgrade soil shall include:
  - (i) In-situ density and moisture content at each test pit
  - (ii) Field CBR using DCP at each test pit
  - (iii) Characterization (grain size and Atterberg limits) at each test pit and
  - (iv) Laboratory moisture-density characteristics (modified AASHTO compaction)
  - (v) Laboratory CBR (unsoak and 4-day soak compacted at three energy levels) and swell.
- d) For problematic soils, the testing shall be more rigorous. The characteristics with regard to permeability and consolidation shall also be determined for these soils. The frequency of sampling and testing of these soils shall be finalized in consultation with the client.

### 11.3.7 Hydraulic and Hydrological Investigations

- a) The hydrological and hydraulic studies shall be carried out in accordance with IRC Special Publication No. 13 (Guidelines for the Design of Small Bridges and Culverts) and IRC: 5-1985 (Standard Specifications & Code of Practice for Road Bridges, Section I General Features of Design). These investigations shall be carried out for all proposed cross-drainage structures along the alignment under the study.
- b) The Consultants shall make a desk study of available data on topography, storm duration, rainfall statistics, top soil characteristics, vegetation cover etc., so as to assess the catchment areas and hydraulic parameters for all proposed drainage provisions. The findings of the desk study would be further supplemented and augmented by a validation of reconnaissance along the area. All important hydrological features shall be noted during the validation of field reconnaissance. The Consultants shall collect information on high flood level (HFL), low water levels (LWL), discharge velocity etc., from available past record, local inquiries and visible signs, if any, on the available structural components and embankments.

### 11.3.8 Geo-technical investigations and Sub-Soil Exploration

- a) The Consultants shall carry out geo-technical investigations and sub-surface explorations for the proposed Bridges/Road over Bridges/Tunnels/Viaducts/ Interchanges etc., along high embankments and any other location as necessary for proper design of the works and conduct all relevant laboratory and field tests on soil and rock samples. The minimum scope of geo-technical investigations for bridge and structures shall be as under:

Sl. No.	Description	Location of Boring
1.	Overall length = 6-30m	One abutment location
2.	Overall length = 30-60m	One abutment location and at least one intermediate location between abutments for structures having more than one span
3.	Overall length > 60m	Each abutment and each pier locations

- b) The deviation(s), if any, by the Consultants from the scheme presented above should be got approved by Client.
- c) Sub-soil investigations will be done as per IRC: 78-2000.
- d) The scheme for the borings locations and depth of boring shall be prepared by the Consultants and submitted Client for approval.
- e) The geo-technical and sub-soil exploration and testing should be carried out through one of the Consultants/Organizations empanelled by the MORTH. The soil testing reports shall be in the format prescribed in relevant IRC Codes.
- f) Bore holes shall also be carried out at locations of high embankments for embankment design. Locations such bore holes shall be finalized in consultation with Client.

### 11.3.9 Sources of Material

- a) The Consultants shall identify sources (including use of fly-ash/slag) quarry sites and borrow areas, undertake field and laboratory testing of the materials to determine their suitability for various components of the work and establish quality and quantity of various construction materials and recommend their use on the basis of techno-economic principles.
- b) It is to be ensured that no material shall be used from the RoW except by way of leveling the ground as required from the construction point of view, or for landscaping and planting of trees etc., or from the cutting of existing ground or obtaining the required formation levels.
- c) Environmental restrictions, if any, and feasibility of availability of these sites to prospective civil works contractors, should be duly taken into account while selecting new quarry locations.
- d) The Consultant shall carryout investigation on material that exists in sizable quantities and reasonably exploitable by civil contractors on industrial scale.

### 11.3.10 Design of Road and Pavements, Bridges and Structures

#### General

- a) The Consultants are to carryout detailed designs and prepare design drawings of pavement for the main carriageway and paved shoulder, medians, verges, cross-roads, bus bays, truck laybys, etc.;
- b) The Consultants are required to carry conceptual design including GAD, type of suitable foundations and structure for bridges, underpasses, via-ducts/subways, tunnels (where required) and ROB/RUBs etc;
  - (i) At-grade and grade-separated intersections and interchanges;
  - (ii) ROB for railway crossings as per the requirement and the standards of Indian Railways;
- c) The Consultants shall further prepare detailed plans as follows:
  - (i) Alignment plans, longitudinal sections and cross-sections@ 25 m intervals;
  - (ii) Designs for road furniture and road safety/traffic control features;
  - (iii) Designs and drawings for tree planting/fencing at locations where necessary;
  - (iv) Traffic amenities (Bus Bays, Truck Laybys, Parking areas etc.)
  - (v) Median separation and other safety features.
  - (vi) Design for relocation of existing utility services.
  - (vii) Locations requiring illumination would be provided with complete design and drawings.

### 11.3.11 Design Standards

- a) The Consultants shall evolve design standards and material specifications for the study primarily based on IRC publications, MORTH Circulars and relevant recommendations of the international standards (American, Australian, British, Canadian, Japanese) for approval by Client.
- b) The Design Standards evolved for the project shall cover all aspects of detailed design including the design of geometric elements, pavement design, bridges and structures, traffic safety and materials.

### 11.3.12 Geometric Design

- a) The design of geometric elements shall take into account the essential requirements of urban road facilities.
- b) The detailed design for geometric elements shall cover, but not be limited to the following major aspects:
  - (i) Horizontal Alignment
  - (ii) Longitudinal Alignment
  - (iii) Cross-Sectional Elements
  - (iv) Junctions, intersections and interchanges
  - (v) Parking areas, rest areas, weighing stations, etc.
- c) The provision of appropriate markings and signs shall be made.



- d) The Consultants shall make detailed analysis of traffic flow and level of service for the proposed road and workout the traffic flow capacity for the project road. The analysis should clearly establish the lane configuration (2-laning, 4-laning, 6-laning etc.) requirements with respect to the different horizon periods.
- e) The Consultant shall also prepare design of grade-separated pedestrian crossings (viaducts) for large cross traffic of pedestrian.
- f) The Consultant shall also prepare details for at-grade junction, which may be adopted as alternative to the grade-separated structures. The geometric design of interchanges shall take into account the site conditions, turning movement characteristics, level of service, overall economy and operational safety.

### **11.3.13 Land Acquisition Plan**

The Land Acquisition Plan shall be prepared for each segment separately. The report shall include detail schedules about acquisition of land holdings and their locations in a strip plan and also the costs as per district authorities and the market rate basis. It should also include plan of compensating afforestation, its land requirement with specific locations and cost involved for undertaking all such activities in this regard. It should also take into consideration leasehold and land to be temporarily acquired for the project. Land acquisition should include space for accommodating utility equipments such as transformer, junction boxes, RMU's etc.

The Consultants shall submit the following:

- a) Details of the Center line of the proposed road along the proposed right-of-way limits to appreciate the requirements of land acquisition;
- b) Detailed schedules for acquisition of additional land and additional properties in consultation with the revenue authorities; and, this shall be attached with a detailed listing of all built structures within the proposed right of way and the valuation associated;
- c) The strip plans and land acquisition plan shall be prepared on the basis of data from environmental/social screening, revenue records and detailed topographic surveys.
- d) The Report accompanying the strip plans should cover the essential aspects as given under:
  - (i) Land Acquisition Plan (LAP) and schedule of ownership thereof and Costs as per Revenue Authorities and also based on realistic rates.
  - (ii) Details of properties, such as building and structures falling within the right of way and cost of acquisition/resettlement/relocation based on actual market rates.
  - (iii) Corridor wise accounting regard to felling of trees of different type and girth and value estimate of such trees based on realistic rates obtainable from concerned District forest office.
  - (iv) The strip plans shall clearly indicate the scheme for widening. The views and suggestions for the concerned authorities should be duly taken into account while working out the widening scheme (left, right or symmetrical).
  - (v) Kilometer-wise strip plans for each segment shall be prepared separately and as suggested the Client.

### **11.3.14 Environmental & Socio – Economic Impact assessment**

#### **11.3.14.1 Environmental Impact**

The Consultants shall study the environmental impact, if any, due to developments of the roads with special reference to whether it would affect any hills, water bodies or the free flow of any natural streams/canals etc. due to development of roads.

#### **11.3.14.2 Socio-Economic Impact assessment**

The consultant shall study the socio-economic impact that can be achieved by the development of the roads selected. They shall collect the details of commercial activities, agriculture, industries, pilgrimcentres, tourist spots, S.C./S.T. colonies etc. along the sides of the roads and evaluate the developments that will accrue to these categories on a long term basis by the upgradation of those roads.

#### **11.3.14.3 Pavement Design**

- a) The detailed design of pavement shall involve:
  - (i) design of pavement for the carriageway;
  - (ii) design of shoulders.
- b) The design of pavement shall primarily be based on IRC publications. However, the Consultants shall use the recommendations given in widely used international practices including AASHTO, NAASRA, RTAC and TRL wherever appropriate on approval by Client
- c) The design of pavement shall be rigorous and shall make use of the latest Indian and International practices. The design option shall be established on life-cycle costing and techno-economic considerations taking design period of 15 years for flexible pavement.
- d) While designing the pavement, specific aspects line terrain and topographic conditions, weather conditions, etc. shall be duly considered and suitably incorporated in design so that pavement is able to perform well for the design traffic and service life. Effects of factors like heavy rainfall, frost action, intensive snow and thermal stresses due to temperature difference in day and night, damage by tracked vehicles during snow clearance operations etc. must also be considered along with traffic intensity, its growth, axle loads and design life.
- e) The shoulders shall be designed as integral part of the pavement for the main carriageway. The design requirements for the carriageway pavement shall, therefore, be applicable for the design of the shoulder pavement. The design of granular shoulder should take into account the drainage considerations besides the structural requirements.
- f) The pavement design task shall also cover working out the maintenance and strengthening requirements and periodically and timing o such treatments.

#### **11.3.14.4 Design of Embankments**

- a) The Consultants shall carry out detailed analysis and design for all embankments of height greater than 6m based on relevant IRF publications.
- b) The design of embankments should include the requirements for protection works and traffic safety features.

#### **11.3.14.5 Design of Bridges and Structures**

- a) The Consultant shall prepare General Arrangement Drawing (GAD) and Alignment Plan showing the salient features of the bridges and structures proposed to be constructed along the road sections covered under the study. These salient features such as alignment, overall length, span arrangement, cross-section, deck level. Sub structure, foundations, bearings, expansion joint, return walls etc. shall be finalized based upon hydraulic and geo-technical studies, cost effectiveness and ease of construction. In respect of span arrangement and type of bridge a few alternatives with cost-benefit implications should be submitted to approve the best alternative.
- b) The location of all at-grade level crossings shall be identified falling across the existing railway lines for providing ROB at these locations. The Consultants shall prepare preliminary GAD for necessary construction.
- c) The Consultant shall clearly define the design criteria to be adopted for various parameters like safe bearing capacity, design load to be adopted, method to be adopted for the design, factor of safety to be assumed etc., for detailed design of various structures.

### **11.3.15 Drainage System**

1. The road drainage system and the integration of the same with proposed cross-drainage system shall be worked out conforming to provisions made in IRF-SP-42(1994) for the entire length of the project road section.
2. In addition to the road side drainage system, the consultants shall design the special drainage provisions for sections with super-elevated carriageways, high embankments and for road segments passing through cuts.
3. The designed drainage system should show locations of turnouts/outfall points with details of outfall structures fitting into natural contours.

### **11.3.16 Traffic Safety Features, Road Furniture and Road Markings**

The Consultants shall design suitable traffic safety features and road furniture including traffic signals, signs, markings, overhead sign boards, crash barriers, delineators etc. The locations of these features shall be given in the reports and also shown in the drawings.

### **11.3.17 Arboriculture and Landscaping**

The Consultants shall work out appropriate plan for planning of trees (specifying type of plantation), horticulture, floriculture on the surplus land of the right-of-way with a view to beautify the highway and making the environment along the highway pleasing. The existing trees/plants shall be retained to the extent possible.

### **11.3.18 Miscellaneous Works**

- a) The Consultant shall make suitable designs and layout for miscellaneous works including bus bays, bus stops, vehicle parking areas, telecommunication facilities etc., wherever appropriate.
- b) The Consultants shall prepare the detailed scheme and lay out plan for the works mentioned in Para above.
- c) The Consultants shall prepare detailed plan for the traffic management and safety during the construction period.

## **11.4 Reports To Be Submitted by the Consultants To The Client**

- a) All reports, documents and drawings are to be submitted to the Client. The analysis of data and the design proposals shall be based on the data derived from the primary surveys and investigations carried out during the period of assignment.
- b) Project Preparation activities will be split into flow stages as brought out below.

Stage 1 :	Inception Report
Stage 2 :	Technical Report on Selection of Road Corridors
Stage 3 :	Draft DPR (Separate report for each Corridor)
Stage 4 :	Final DPR (Separate report for each Corridor)
Stage 5 :	Summary Report

### **11.4.1 Requirement of Reports**

- a) The Consultant shall submit to the client the reports and documents after completion of each stage of work as per the schedule and the number of copies as specified. Further, the reports shall also be submitted in Floppy diskettes/CDs in addition to the hard copies.
- b) The time schedule for various submissions prescribed shall be strictly adhered to. No time over-run in respect of these submissions will normally be permitted.

## 11.4.2 Stage 1

### 11.4.2.1 Inception Report – 3 Copies

The report shall cover the following major aspects:

- a) Project appreciation;
- b) Phase wise planning to carry out study in line with the work programme enclosed in the TOR
- c) The Consultant should submit detailed methodology for all field studies including topographic surveys, traffic surveys, engineering surveys and investigations, design and documentation activities.
- d) The procedures for design and documentation activities should be presented as separate like engineering surveys and investigations, traffic surveys, material geo-technical and sub-soil investigation and design of bridges and structures, environment and drawings and documentation, preparation, checking, approval and filing of calculations, identification and traceability of project documents etc.
- e) Task Assignment and Manning Schedule.
- f) Proforma for data collection;
- g) Design standards and proposed cross-sections;
- h) Key plan and Linear Plan;
- i) Draft design standards

## 11.4.3 Stage2

### 11.4.3.1 Draft Technical Report – 3 copies

The draft Technical Report shall consist of the traffic study conducted, in depth analysis of the traffic data, traffic demand estimation, and selection of road corridors for improvement based on an evolved criteria.

## 11.4.4 Stage3

### 11.4.4.1 Draft Detailed Project Report (DPR) – 3 Copies

- a) The draft DPR submission shall consist of corridor wise Main Report, Design Report, Materials Report, Engineering Report, Drainage Design Report, Environmental Assessment Report including Resettlement Action Plan (RAP), Land Acquisition Plan, Package-wise bid Documents and Drawings.
- b) The Report Volumes shall be submitted as given below.
- c) The Documents and Drawings shall be submitted for each Corridor and shall be in the following format:
  - i. Main Report (Separate for each Corridor): This report will present the project background, social analysis of the project, details of survey and investigations carried out, analysis and interpretation of survey and investigation data, traffic studies and demand forecasts, designs, cost estimation, environmental aspects and conclusions. The report shall include Executive Summary giving brief account of the findings of the study and recommendations. The Report shall also include maps, charts and diagrams showing locations and details of existing features and the essential features of improvement and upgrading. The Environmental Impact Assessment (EIA) Report shall be submitted separately as part of the main report. The basic data obtained from the studies and investigations and input data used for the preliminary design shall be submitted in separate volume as an Appendix to Main Report.
  - ii. Design Report (Separate for each Corridor): This volume shall contain design calculations, supported by computer printout of calculations wherever applicable. The report shall clearly bring out the various features of design standards adopted for the study. The design report will be in two parts. Part-I shall primarily deal with the design of road features and

pavement composition while part-II shall deal with the design of bridges and cross-drainage structures. The sub-soil exploration report including the complete details of boring done, analyses and interpretation of data and the selection of design parameters shall be included as an Appendix to the Design Report.

- iii. Materials Report:* (One separate volume for the whole project): The Materials Report shall contain details concerning the proposed borrow areas and quarries for construction materials and possible sources of water for construction purposes. The report shall include details on locations of borrow areas and quarries shown on maps and charts and also the estimated quantities with mass haul diagram including possible end use with lead involved, the details of sampling and testing carries out and results in the form of important index values possible end use thereof.  
The Material Report shall also include details of sampling, testing and test results obtained in respect physical properties of subgrade soils. The information shall be presented in tabular as well as in graphical representations and schematic diagrams.
- iv. Environmental Assessment Report including Resettlement Action Plan (RAP) for the whole project.*
- v. Socio-Economic Impact of improvements for the whole project*
- vi. Technical Specification (One separate volume for the whole project):* The MORT&Hø Technical Specification for Road and Bridge works shall be followed for this study. However, Technical Specification shall contain the special technical specifications, which are not covered, by MOST specifications for Road and Bridges (latest edition/revision) and also specific quality control norms for the construction of works.
- vii. Rate Analysis (One separate volume for the whole project):* This volume will present the analysis of rates for all items of works. The details of unit rate of materials at source, carriage charges, any other applicable charges, labour rates, and machine charges as considered in arriving at unit rates will be included in this volume.
- viii. Cost Estimates (Corridor wise):* This volume will present the corridor wise cost of each item of work as well as a summary of the total cost.
- ix. Bill for Quantities (Corridor wise):* This volume shall contain the corridor wise detailed Bill of Quantities for all items of works.
- x. Drawings Volume (Corridor wise):* All Drawings forming part of this volume shall be -good-for-constructionø drawings. All plan and profile drawings will be prepared in scale 1:100 (v) and 1: 1000 (H) scale to cover one km in one sheet. In addition this volume will contain -good-for-constructionø drawings for the following:

  - (i) Horizontal Alignment and Longitudinal Profile
  - (ii) Cross-section @ 50m interval along the alignment within ROW.
  - (iii) Typical Cross-sections with details of pavement structure.
  - (iv) Detailed Working Drawings for individual Culverts and Cross-Drainage structures.
  - (v) Detailed Working Drawings for individual Bridges and Structures.
  - (vi) Detailed Drawings for At-grade and Grade-Separated Intersections and Interchanges.
  - (vii) Drawings for Road Sign, Markings
  - (viii) Schematic Diagrams (Linear chart) indicating but be not limited to the following

    - i. Alignment and RoW proposed. Locations of median openings, intersections, interchanges, underpasses, overpasses, bypasses.

- ii. Location of traffic signals, traffic signs, road markings, safety features; and
  - iii. Locations of bus bays, bus stops, etc.
- xi.* Drawings for bus Bays, Parking areas, etc.  
All drawings will be prepared in A2 size sheets. The drawings shall also include details of all BM and reference pillars, HIP and VIP. The co-ordinates of all points should be referenced to a common datum, preferably, GTS referencing system. The drawings shall also include the locations of all traffic safety features including traffic signals, signs, markings, crash barriers delineator and rest areas, bus bays, parking areas etc.
- xii.* The typical cross-section drawings should indicate the scheme for future widening of the carriageway. The proposed cross-sections of road segment passing through urban areas should indicate provisions for pedestrian movements and suitable measures surface and sub-surface drainage and lighting, as required.

#### **11.4.4.2 Strip Plan – 6 Copies**

The Consultants shall submit the following documents:

- (i) Details of the centre line of the proposed road along with the proposed right-of-way limits to appreciate the requirements.
- (ii) The details captured in the land acquisition plan should be such that the concerned authorities could readily initiate the proceedings of acquisition
- (iii) Strip plans showing the position of existing utilities and services indicating clearly the position of their relocation;
- (iv) Separate strip plan showing shifting/relocation of each utility services in consultation with the concerned local authorities;
- (v) The utility relocation plans should clearly show proposed right-of-way and pertinent topographic details including buildings, major trees, fences and other installations such as water-mains, telephone and electricity poles, and suggests relocation of the services along with their crossings the highway at designated locations as required and prepare necessary details for submission to the Service Departments;

The Strip plans shall be prepared on the basis of data from reconnaissance and detailed topographic surveys.

#### **11.4.5 Stage4**

##### **11.4.5.1 Final Detailed Project Report, Documents and Drawings (6 sets)**

The Final corridor wise DPR consisting of Main Report, Design Report, Drainage and Materials Report, incorporating all revisions following receipt of the comments from the Client on the draft shall be submitted as per the schedule.

#### **11.4.6 Stage 5**

##### **11.4.6.1 Summary Report**

A Summary Report giving the background of the study area, study details and results, design details, technical details, cost estimates, etc. of all the corridors shall be prepared.

## 12. Format for Bank Guarantee for Performance Security

### BANK GUARANTEE FOR PERFORMANCE SECURITY

To

The Chief Executive Officer  
Kerala Road Fund Board  
Thiruvananthapuram.

In consideration of Kerala Road Fund Board (KRFB) (hereinafter referred to as the Client), which expression shall, unless repugnant to the context or meaning thereof include its successors, administrators and assigns) having awarded to M/s. \_\_\_\_\_ (Hereinafter referred to as the Consultant) which expression shall repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns), a contract by issue of Client's Contract Agreement No. / Letter of Acceptance No. \_\_\_\_\_ dated \_\_\_\_\_ and the same having been unequivocally accepted by the Consultant, resulting in a Contract valued at Rs. \_\_\_\_\_/- (Rupees \_\_\_\_\_) excluding GST for Consultancy Services for Detailed Project Report for City Road Improvement Projects (CRIP) in \_\_\_\_\_ towns. (Hereinafter called the Contract), and the Consultant having agreed to furnish a Bank Guarantee to the Client as Performance Security as stipulated by the Client in the said contract for performance of the above Contract amounting to Rs. \_\_\_\_\_/- (Rupees \_\_\_\_\_).

We, \_\_\_\_\_, having registered office at \_\_\_\_\_, a body registered/constituted under the \_\_\_\_\_ (hereinafter referred to as the Bank), which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns) do hereby guarantee and undertake to pay the client immediately on demand any or, all money payable by the Consultant to the extent of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_) as aforesaid at any time up to \_\_\_\_\_ without any demur, reservation, contest, recourse or protest and/or without any reference to the consultant. Any such demand made by the client on the bank shall be conclusive and binding notwithstanding any difference between the Client and the Consultant or any dispute pending before any Court, Tribunal, Arbitrator or any other authority. We agree that the Guarantee herein contained shall be irrevocable and shall continue to be enforceable till the Client discharges this guarantee.

The Client shall have the fullest liberty without affecting in any way the liability of the Bank under this Guarantee, from time to time to vary or to extend the time for performance of the contract by the Consultant. The Client shall have the fullest liberty without affecting this guarantee, to postpone from time to time the exercise of any powers vested in them or of any right which they might have against the consultant and to exercise the same at any time in any manner, and either to enforce or to forbear to enforce any covenants, contained or implied, in the Contract between the Client and the Consultant any other course or remedy or security available to the Client. The bank shall not be relieved of its obligations under these presents by any exercise by the Client of its liberty with reference to the matters aforesaid or any of them or by reason of any other act or forbearance or other acts of omission or commission on the part of the Client or any other indulgence shown by the Client or by any other matter or thing whatsoever which under law would but for this provision have the effect of relieving the Bank.

The Bank also agrees that the Client at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against the Consultant and notwithstanding any security or other guarantee that the Client may have in relation to the Consultant's liabilities.

Notwithstanding anything contained herein,

- a) Our liability under this Bank Guarantee is limited to Rs.  (Rupees ) and it shall remain in force up to and including  and shall be extended from time to time for such period as may be desired by M/s , on whose behalf this guarantee has been given.
- b) This Bank Guarantee shall be valid up to .
- c) We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee only and only if you serve upon us a written claim or demand on or before  (date of expiry of Guarantee).

(Signature of the Authorised Official)

(Name & Designation with Bank Stamp)

NOTE:

- (i) The bank guarantee(s) contains the name, designation and code number of the officer(s) signing the guarantee(s).
- (ii) The address, telephone no. and other details of the Head Office of the Bank as well as of issuing branch should be mentioned on the covering letter of issuing Branch.
- (iii) The bank guarantee to be signed by at least two officials (or as per the norms prescribed by the RBI in this regard).



## Qualification and Experience Requirement of Key Personnel

### Team Leader cum Senior Highway Engineer

<b>i)</b>	<b>Educational Qualification</b>	
	Essential	<b>Degree in Civil Engineering</b>
	Desirable	<b>Post Graduation in Highway Engineering/ Transportation Engineering / Traffic Engineering.</b>
<b>ii)</b>	<b>Experience</b>	
	a) Total Professional Experience	Min. 20 years
	b) Experience in Highway projects	Minimum 15 years experience in Road/highway projects.
	c) Experience in similar capacity	As Team Leader /Senior Highway Engineer for major highway/ road projects (2/4/6 lane NH/SH/ Expressways) of minimum aggregate length of 80 km.
<b>iii)</b>	<b>Maximum Age</b>	<b>65 years on the date of submission of Proposal</b>

### Traffic Engineer

<b>i)</b>	<b>Educational Qualification</b>	
	Essential	Graduate in Civil Engineering or equivalent and Post Graduation in Traffic Engineering/ Transport Engineering
<b>ii)</b>	<b>Experience</b>	
	a) Total Professional Experience	Min. 15 years
	b) Experience as Traffic Engineer	Min. 10 years as Traffic Engineer in highway/ road projects.
	c) Experience in similar capacity	Traffic Engineer in highway / road consultancy projects (2/4/6 lane NH/SH/ Expressways) of minimum aggregate length of 50 km.
<b>iii)</b>	<b>Maximum Age</b>	<b>65 years on the date of submission of Proposal</b>

### Transport Planner

<b>i)</b>	<b>Educational Qualification</b>	
	Essential	Post Graduation in Transport Planning
<b>ii)</b>	<b>Experience</b>	
	a) Total Professional Experience	Min. 15 years
	b) Experience as Transport Planner in Road/ Highway Projects	Min. 10 years as Transport Planner in road / highway projects.
	c) Experience in similar capacity	Transport Planner on Road / highway projects (2/4/6 lane NH/SH/Expressways) of minimum aggregate length of 50 km.
<b>iii)</b>	<b>Maximum Age</b>	<b>65 years on the date of submission of Proposal</b>

### Pavement Specialist

<b>i)</b>	<b>Educational Qualification</b>	
	Essential	Post Graduation in Highway Engineering/ Pavement Engineering/ Soil Mechanics/Foundation Engineering
<b>ii)</b>	<b>Experience</b>	
	a) Total Professional Experience	Min. 15 years
	b) Experience as Pavement Specialist in Road / Highway Projects	Min. 10 years as Pavement Specialist on similar projects .
	c) Experience in similar capacity	Pavement Specialist on Road/ highway projects (2/4/6 lane NH/SH/Expressways) of minimum aggregate length of 50 km.
<b>iii)</b>	<b>Maximum Age</b>	<b>65 years on the date of submission of Proposal</b>

### Structural Engineer

<b>i)</b>	<b>Educational Qualification</b>	
	Essential	Post Graduation in Structural Engineering
<b>ii)</b>	<b>Experience</b>	
	a) Total Professional Experience	Min. 15 years

	b) Experience as Structural Engineer in Road/ Highway Projects	Min. 10 years as Structural Engineer on similar projects.
	c) Experience in similar capacity	Structural Engineer on Road / highway projects (2/4/6 lane NH/SH/Expressways) of minimum aggregate length of 50 km.
<b>iii)</b>	<b>Maximum Age</b>	<b>65 years on the date of submission of Proposal</b>

### Utility Engineer

<b>i)</b>	<b>Educational Qualification</b>	
	Essential	Graduation in Civil Engineering
<b>ii)</b>	<b>Experience</b>	
	a) Total Professional Experience	Min. 10 years
	b) Experience as Utility Engineer in Road/ Highway Projects	Min. 7 years as Utility Engineer on similar projects.
	c) Experience in similar capacity	Utility Engineer on Road / highway projects (2/4/6 lane NH/SH/Expressways) of minimum aggregate length of 50 km.
<b>iii)</b>	<b>Maximum Age</b>	<b>65 years on the date of submission of Proposal</b>

### Quantity Surveyor/Documentation Expert

<b>i)</b>	<b>Educational Qualification</b>	
	Essential	Graduate or equivalent in Civil Engineering / Certificate course from Institution of Quantity Surveying
<b>ii)</b>	<b>Experience</b>	
	a) Total Professional Experience	Min. 15 years
	b) Experience in Road / Highway Projects	Min. 7 years in Preparation of Bill of Quantities, Contract documents and documentation for major highway projects involving two/ four laning
	c) Experience in similar capacity	Quantity Surveyor / Documentation Expert in Road /highway projects (NH/SH/Expressways) involving two/four/six laning of minimum aggregate length of 50 km.

<b>iii)</b>	<b>Maximum Age</b>	<b>65 years on the date of submission of Proposal</b>
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### **Hydrologist / Drainage Expert**

<b>i)</b>	<b>Educational Qualification</b>	
	Essential	Graduation in Civil Engineering
<b>ii)</b>	<b>Experience</b>	
	a) Total Professional Experience	Min. 10 years
	b) Experience as Hydrologist / Drainage Expert in Road/ Highway Projects	Min. 7 years as Hydrologist / Drainage Expert on similar projects.
	c) Experience in similar capacity	Hydrologist / Drainage Expert on Road / highway projects (2/4/6 lane NH/SH/Expressways) of minimum aggregate length of 50 km.
<b>iii)</b>	<b>Maximum Age</b>	<b>65 years on the date of submission of Proposal</b>

### **Landscape Architect**

<b>i)</b>	<b>Educational Qualification</b>	
	Essential	Post Graduation in Landscape Architecture
<b>ii)</b>	<b>Experience</b>	
	a) Total Professional Experience	Min. 10 years
	b) Experience as Landscape Architect in Road/ Highway Projects	Min. 5 years as Landscape Architect on similar projects.
	c) Experience in similar capacity	Landscape Architect on Road / highway projects (2/4/6 lane NH/SH/Expressways) of minimum aggregate length of 50 km.
<b>iii)</b>	<b>Maximum Age</b>	<b>65 years on the date of submission of Proposal</b>

### **Environmental & Social Impact Assessment Expert**

<b>i)</b>	<b>Educational Qualification</b>	
	Essential	Graduate in Civil Engineering / Environment Engineering

	<b>Desirable</b>	<b>Post Graduation in Environmental Engineering</b>
<b>ii)</b>	<b>Experience</b>	
	a) Total Professional Experience	Min. 10years
	b) Experience in Road /Highway Projects	Min. 7 years in environment impact assessment of road/ highway projects (2/4/6 laning).
	c) Experience in similar capacity	Environmental Specialist in at least two road/ highway projects (2/4/6 laning) aggregate length of 50 km.
<b>iii)</b>	<b>Maximum Age</b>	<b>65 years on the date of submission of Proposal</b>

### Senior Survey Engineer

<b>i)</b>	<b>Educational Qualification</b>	
	Essential	Graduate or equivalent in Civil Engineering or Diploma in Civil Engg or Diploma in Surveying
	<b>Desirable</b>	<b>Masters in Survey Engineering/ Surveying /Remote Sensing</b>
<b>ii)</b>	<b>Experience</b>	
	a) Total Professional Experience	Min. 15 years
	b) Experience in Road / Highway Projects	Min. 7 years on similar projects in project preparation and construction & thorough understanding of modern computer based methods of surveying.
	c) Experience in similar capacity	As Survey Engineer for projects preparation of Road/ highway project (NH/SH/Expressways) involving 2/4/6- laning of minimum aggregate length of 50 km.
<b>iii)</b>	<b>Maximum Age</b>	<b>65 years on the date of submission of Proposal</b>

Letter of Proposal (On Applicant's letter head)

(Date and Reference)

To, \*\*\*\*\*  
\*\*\*\*\*

Sub: Appointment of Consultant for preparation of Detailed Project Report for í í í í í ...  
Dear Sir,

With reference to your RFP Document dated í í í , I/we i.e M/s-----  
--

----- (Name of Bidder) having examined all relevant documents and understood their contents, hereby submit our Proposal for selection as Consultant. The proposal is unconditional and unqualified.

2. All information provided in the Proposal and in the Appendices is true and correct and all documents accompanying such Proposal are true copies of their respective originals.
3. This statement is made for the express purpose of appointment as the Consultant for the aforesaid Project.
4. I/We shall make available to the Authority any additional information it may deem necessary or require for supplementing or authenticating the Proposal.
5. I/We acknowledge the right of the authority to reject our application without assigning any reason or otherwise and hereby waive our right to challenge the same on any account whatsoever.
6. I/We certify that in the last three years, we or any of our Associates have neither failed to perform on any contract, as evidenced by imposition of a penalty by an arbitral or judicial authority or a judicial pronouncement or arbitration award against the Applicant, nor been expelled from any project or contract by any public authority nor have had any contract terminated by any public authority for breach on our part.
7. I/We understand that you may cancel the Selection Process at any time and that you are neither bound to accept any Proposal that you may receive nor to select the Consultant, without incurring any liability to the Applicants in accordance with Clause 1.7 of the RFP document.
8. I/We declare that we/any member of the consortium, are/is not a Member of any other Consortium applying for Selection as a Consultant.
9. I/We certify that in regard to matters other than security and integrity of the country, we or any of our Associates have not been convicted by a Court of Law or indicted or adverse orders passed by a regulatory authority which would cast a doubt on our ability to undertake the Consultancy for the Project or which relates to a grave offence that outrages the moral sense of the community.

10. I/We further certify that in regard to matters relating to security and integrity of the country, we have not been charge-sheeted by any agency of the Government or convicted by a Court of Law for any offence committed by us or by any of our Associates.
11. I/We further certify that no investigation by a regulatory authority is pending either against us or against our Associates or against our CEO or any of our Directors/Managers/employees.
12. I/We hereby irrevocably waive any right or remedy which we may have at any stage at law or howsoever otherwise arising to challenge or question any decision taken by the Authority [and/ or the Government of India] in connection with the selection of Consultant or in connection with the Selection Process itself in respect of the above mentioned Project.
13. The Bid Security of Rs. \*\*\*\*\* (Rupees \*\*\*\*\* ) in the form of a Bank Guarantee is attached, in accordance with the RFP document.
14. I/We agree and understand that the proposal is subject to the provisions of the RFP document. In no case, shall I/we have any claim or right of whatsoever nature if the Consultancy for the Project is not awarded to me/us or our proposal is not opened or rejected.
15. I/We agree to keep this valid for 120 (One hundred and twenty) days from the Proposal Due Date specified in the RFP.
16. A Power of Attorney in favour of the authorized signatory to sign and submit this Proposal and documents is attached herewith.
17. In the event of my/our firm/consortium being selected as the Consultant, I/we agree to enter into any Agreement in accordance with the form Appendix V of the RFP. We agree not to seek any changes in the aforesaid form and agree to abide by the same.
18. I/We have studied RFP and all other documents carefully and also surveyed the Project site. We understand that except to the extent as expressly set forth in the Agreement, we shall have no claim, right or title arising out of and documents or information provided to us by the Authority or in respect of any matter arising out of or concerning or relating to the Selection Process including the award of Consultancy.
19. The Proof of Eligibility and Technical proposal are being submitted in separate covers in hard copy and they are being submitted online also. Financial Proposal is being submitted online only. This Proof of Eligibility read with Technical Proposal and Financial Proposal shall constitute the Application which shall be binding on us.
20. I/We agree and undertake to abide by all the terms and conditions of the RFP Document. In witness thereof, I/we submit this Proposal under and in accordance with the terms of the RFP Document.

Yours faithfully,

(Signature, name and designation of the authorized signatory)  
(Name and seal of the Applicant/Lead Member)

**FIRM'S REFERENCES****Relevant Services Carried out in the Last Seven Years (2010-11 onwards), which Best Illustrate Qualifications**

The following information should be provided in the format below for each reference assignment for which your firm, either individually as a corporate entity or as one of the major companies within a consortium, was legally contracted by the client:

Assignment Name:		Country:
Location within Country :		Professional Staff Provided by your firm:
Name of Client :		No. of Staff :
Address :		No. of Staff Months :
Start Date (Month / Year)	Completion Date (Month / Year)	Approx. Value of Services : (in INR/current USD) :
Name of JV/Association Firm(s) if any :		No. of Months of Professional Staff provided by Associated Firm(s)
Status of your Company in the Assignment i.e., Sole/Lead Member/Other Member/Associate		
Narrative Description of Project :		
Description of Actual Services Provided by your Company:		

**Signature of Authorized Representative  
(Certificate from Employer regarding experience should be furnished)**



**Financial Capacity of the Applicant**

Name of Applicant:

SL.No	Financial Year Annual	. Revenue (Rs in Crores)
1	2017-2018	
2	2016-2017	
3	2015-2016	

**Certificate from the Statutory Auditor\$**

This is to certify that -----(name of the Applicant) has received the payments shown above against the respective years on account of Consultancy Services.

Name of the audit firm

Seal of the audit firm

Date

(Signature, name and designation of the authorized signatory)

In case the Applicant does not have a statutory auditor, it shall provide the certificate from its chartered accountant that ordinarily audits the annual account of the Applicant.

**Note:**

*Please do not attach any printed Annual Financial Statement.*

**SITE APPRECIATION**

Shall give details of site as per actual site visit and data provided in RFP and collected from site supported by photographs to demonstrate that responsible personnel of the Consultant have actually visited the site and familiarized with the salient details/complexities and scope of services.

**Composition of the Team Personnel and the task****Which would be assigned to each Team Member****I. Technical/Managerial Staff**

S.No.	Name	Position	Task Assignment
<b>1</b>			
<b>2</b>			
<b>3</b>			
<b>4</b>			

**II. Support Staff**

S.No.	Name	Position	Task Assignment
<b>1</b>			
<b>2</b>			
<b>3</b>			
<b>4</b>			

**APPROACH PAPER ON METHODOLOGY PROPOSED FOR PERFORMING THE ASSIGNMENT**

The approach and methodology will be detailed precisely under the following topics.

- 1) Composition of the team
- 2) Methodology for services, surveying, data collection and analysis, preparation of DPR, EIA, Cost Estimation, Preparation of BOQ etc.,
- 3) Quality Assurance system for consultancy assignment

**Format of Curriculum Vitae (CV) For Proposed Key Staff**

1. Proposed Position:

2. Name of Staff:

3. Date of Birth: **(Please furnish proof of age)**

4. Nationality:

5. Educational Qualification:

*(Summarize college/university and other specialized education of staff member, giving names of schools, dates attended and degrees obtained). (Please furnish proof of qualification)*

Contact Address with Phone and mobile numbers:

6. Membership of Professional Societies:

7. Publication:

(List of details of major technical reports/papers published in recognized national and international journals)

8. **Employment Record:**

(Starting with present position, list in reversed order, every employment held. List all positions held by staff member since graduation, giving dates, names of employing organization, title of positions held and location of assignments. For experience ***period of specific assignment must be clearly mentioned***, also give client references, where appropriate).

9. Summary of the CV

(Furnish a summary of the above CV. The information in the summary shall be precise and accurate. The information in the summary will have bearing on the evaluation of the CV).

A) Education:

- i) Field of graduation and year
- ii) Field of post-graduation and year
- iii) Any other specific qualification

B) Experience

i) Total experience in highways: \_\_\_ Yrs.

ii) Responsibilities held: a) \_\_\_ Yrs.  
b) \_\_\_ Yrs.

c) \_\_\_ Yrs.

iii) Relevant experience: \_\_\_ Yrs.

C) Permanent Employment with the firm:

\_\_\_Yrs. If yes, how many years:

If no, what is the employment: Arrangement with the firm?

Certification:

1 *I am willing to work on the project and I will be available for entire duration of the project assignment and I will not engage myself in any other assignment during the currency of this assignment on the project*

2 I, the undersigned, certify that to the best of my knowledge and belief, this bio data correctly describes myself my qualification and my experience.

**Signature of the Candidate -----**

Place-----

Date-----

**Signature of the Authorized Representative of the firm -----**

Place-----

Date-----

Note: Each page of the CV shall be signed in ink by both the staff member and the Authorized representative of the firm. Photocopies will not be considered for evaluation.

### **UNDERTAKING FROM THE PROFESSIONAL**

I, í í í í í í í í . (Name and Address) have not left any assignment with the consultants engaged by MORT&H/ contracting firm (firm to be supervised now) for any continuing works of MORT&H without completing my assignment. I will be available for the entire duration of the current project (namedí í í í ..). If I leave this assignment in the middle of the completion of the work, I may be debarred for an appropriate period to be decided by Chief Engineer PWD (NH). I have also no objection if my services are extended by Chief Engineer PWD (NH) for this work in future.

### **UNDERTAKING FROM CONSULTING FIRM**

The undersigned on behalf of í í í í í í í . (name of consulting firm) certify that Shrií í í í í í í í í (name of the proposed personnel and address) to the best of our knowledge has not left his assignment with any other consulting firm engaged by MORT&H / contracting firm (firm to be supervised now) for the ongoing projects. We understand that if the information about leaving the past assignment with Chief Engineer PWD (NH) without completing his assignment is known to Chief Engineer PWD (NH), Chief Engineer PWD (NH) would be at liberty to remove the personnel from the present assignment and debar him for an appropriate period to be decided by Chief Engineer PWD (NH).

**FINANCIAL PROPOSAL**

FROM:

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TO:

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Sir:

Subject: Consultants Services for

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Regarding Price Proposal

I/We Consultant/consultancy firm herewith enclose Price Proposal for selection of my/our firm/organization as Consultant for

Yours faithfully,

Signature -----

Full Name -----

Designation -----

Address-----

(Authorized Representative)

**The Financial proposal is to be filled strictly as per the format given in RFP.**

## **Format of Financial Proposal**

### **Summary of Cost in Rupees**

<b>No.</b>	<b>Description</b>	<b>Amount (in Rupees) (INR)</b>
I	Remuneration for Key Personnel (inclusive of per diem allowance)	
II	Support Staff (inclusive of per diem allowance)	
III	Transportation	
IV	Duty Travel to Site	
V	Office Rent, if local office is started at project site	
VI	Office Supplies, Utilities and Communication	
VII	Office Furniture and Equipment (for site office - Rental)	
VIII	Reports and Document Printing	
IX	Surveys & Investigations A Topographical Survey B Investigations	
	Total cost net of GST*	
	GST	
	<b>TOTAL COSTS (Including GST)</b>	

\* Total Cost Net of GST shall be considered for financial evaluation

Note: No escalation will be payable during the services

**Insurances shall not be allowed separately. These will be incidental to main items.**

***Rates for all items shall be quoted in figures as well as in words.***