

**National Highways Authority of India  
(Ministry of Road Transport & Highways)  
Government of India**

**Building a Nation, Not Just Roads**



**REQUEST FOR PROPOSAL (RFP)**

**FOR**

**SELECTION OF**

**Technical Consultant For Feasibility Study and Preparation of  
Detailed Project Report for 4 Laning of Thirumangalam to  
Rajapalaym section of NH-744 in the State of Tamil Nadu under  
NHDP Phase-IV**

**July 2016**

## DISCLAIMER

The information contained in this Request for Proposal document (“**RFP**”) or subsequently provided to Applicants, whether verbally or in documentary or any other form by or on behalf of the Authority or any of its employees or advisers, is provided to Applicants on the terms and conditions set out in this RFP and such other terms and conditions subject to which such information is provided.

This RFP is not an agreement and is neither an offer nor invitation by the Authority to the prospective Applicants 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, which reflect various assumptions and assessments arrived at by the Authority in relation to the Consultancy. Such assumptions, assessments and statements do not purport to contain all the information that each Applicant may require. This RFP may not be appropriate for all persons, and it is not possible for the Authority, its employees or advisers to consider the objectives, technical expertise and particular needs of each party who reads or uses this RFP. The assumptions, assessments, statements and information contained in this RFP, may not be complete, accurate, adequate or correct. Each Applicant should, therefore, conduct its own investigations and analysis and should check the accuracy, adequacy, correctness, reliability and completeness of the assumptions, assessments and information contained in this RFP and obtain independent advice from appropriate sources.

Information provided in this RFP to the Applicants is on a wide range of matters, some of which depends upon interpretation of law. The information given is not an exhaustive account of statutory requirements and should not be regarded as a complete or authoritative statement of law. The Authority accepts no responsibility for the accuracy or otherwise for any interpretation or opinion on the law expressed herein.

The Authority, its employees and advisers make no representation or warranty and shall have no liability to any person including any Applicant under any law, statute, rules or regulations or tort, principles of restitution or unjust enrichment or otherwise for any loss, damages, cost or expense which may arise from or be incurred or suffered on account of anything contained in this RFP or otherwise, including the accuracy, adequacy, correctness, reliability or completeness of the RFP and any assessment, assumption, statement or information contained therein or deemed to form part of this RFP or arising in any way in this Selection Process.

The Authority also accepts no liability of any nature whether resulting from negligence or otherwise however caused arising from reliance of any Applicant upon the statements contained in this RFP.

The Authority may in its absolute discretion, but without being under any obligation to do so, update, amend or supplement the information, assessment or assumption contained in this RFP.

The issue of this RFP does not imply that the Authority is bound to select an Applicant or to appoint the Selected Applicant, as the case may be, for the Consultancy and the Authority reserves the right to reject all or any of the Proposals without assigning any reasons whatsoever.

The Applicant shall bear all its costs associated with or relating to the preparation and submission of its Proposal including but not limited to preparation, copying, postage, delivery fees, expenses associated with any demonstrations or presentations which may be required by the Authority or any other costs incurred in connection with or relating to its Proposal. All such costs and expenses will remain with the Applicant and the Authority shall not be liable in any manner whatsoever for the same or for any other costs or other expenses incurred by an Applicant in preparation or submission of the Proposal, regardless of the conduct or outcome of the Selection Process.

## GLOSSARY

<b>Additional Costs</b>	As in Item H of Form-2 of Appendix-II
<b>Agreement</b>	As defined in Schedule-2
<b>Agreement Value</b>	As defined in Clause 6.1.2 of Schedule-2
<b>Applicable Laws</b>	As defined in Schedule-2
<b>Applicant</b>	As defined in Clause 2.1.1
<b>Associate</b>	As defined in Clause 2.3.3
<b>Authorised Representative</b>	As defined in Clause 2.13.3
<b>Authority</b>	As defined in Clause 1.1.1
<b>Bid Security</b>	As defined in Clause 2.20.1
<b>Concession Agreement</b>	As defined in Clause 1.1.2
<b>Concessionaire</b>	As defined in Clause 1.1.2
<b>Conditions of Eligibility</b>	As defined in Clause 2.2.1
<b>Conflict of Interest</b>	As defined in Clause 2.3.1
<b>Consultancy</b>	As defined in Clause 1.2
<b>Consultancy Team</b>	As defined in [Clause 8] of Schedule-1
<b>Consultant</b>	As defined in Clause 1.2
<b>CV</b>	Curriculum Vitae
<b>DBFOT</b>	Design, Build, Finance, Operate and Transfer
<b>Deliverables</b>	As defined in Clause 4 of Schedule-1
<b>Documents</b>	As defined in Clause 2.12
<b>Effective Date</b>	As defined in Clause 2.1 of Schedule-2
<b>Eligible Assignments</b>	As defined in Clause 3.1.4
<b>Expatriate Personnel</b>	As defined in Clause 1.1.1(i) of Schedule-2
<b>Feasibility Report or FR</b>	As specified in [Clause 4(G)] of Schedule-1
<b>Financial Proposal</b>	As defined in Clause 2.15.1
<b>Form of Agreement</b>	Form of Agreement as in Schedule-2
<b>INR, Re, Rs.</b>	Indian Rupee(s)
<b>Inception Report</b>	As specified in [Clause 4(A)] of Schedule-1
<b>Key Date or KD</b>	As defined in [Clause 6.2] of Schedule-1
<b>Key Personnel</b>	As defined in Clause 2.1.4
<b>Lead Member</b>	As defined in Clause 2.1.1
<b>LOA</b>	Letter of Award
<b>Lump Sum Payment</b>	As defined in Clause 11.2 of Schedule-1

<b>Manual</b>	As defined in Clause 1.2 of Schedule-1
<b>MCA</b>	As defined in Clause 1.1.3
<b>Member</b>	As defined in Clause 2.3.3(i)
<b>Official Website</b>	As defined in Clause 1.11.2
<b>Personnel</b>	As defined in Clause 1.1.1(m) of Schedule-2
<b>PPP</b>	Public Private Partnership
<b>Professional Personnel</b>	As defined in Clause 2.14.6
<b>Prohibited Practices</b>	As defined in Clause 4.1
<b>Project</b>	As defined in Clause 1.1.1
<b>Project Manager</b>	As defined in Clause 4.6 of Schedule-2
<b>Proposal</b>	As defined in Clause 1.2
<b>Proposal Due Date or PDD</b>	As defined in Clauses 1.5 and 1.8
<b>Resident Personnel</b>	As defined in Clause 1.1.1(o) of Schedule-2
<b>RFP</b>	As defined in Disclaimer
<b>Selected Applicant</b>	As defined in Clause 1.6
<b>Selection Process</b>	As defined in Clause 1.6
<b>Services</b>	As defined in Clause 1.1.1(q) of Schedule-2
<b>Sole Firm</b>	As defined in Clause 2.1.1
<b>Statement of Expenses</b>	As defined in Note 13, Form-2 of Appendix-II
<b>Statutory Auditor</b>	An Auditor appointed under Applicable Laws
<b>Sub-Consultant</b>	As defined in Clause 1.1.1(r) of Schedule-2
<b>Support Personnel</b>	As defined in Clause 2.14.6
<b>Team Leader</b>	As defined in Clause 2.1.4
<b>Technical Proposal</b>	As defined in Clause 2.14.1
<b>TOR</b>	As defined in Clause 1.1.3
<b>US\$</b>	United States Dollar
<b>WG</b>	As defined in Clause 9.1 of Schedule-1

The words and expressions beginning with capital letters and defined in this document shall, unless repugnant to the context, have the meaning ascribed thereto herein.

## TABLE OF CONTENTS

<b>S. No.</b>	<b>Contents</b>	<b>Page No.</b>
	Disclaimer	
	Glossary	
1	<b>Introduction</b>	
2	<b>Instructions to Applicants</b>	
	A. General	
	B. Documents	
	C. Preparation and Submission of Proposal	
	D. Evaluation Process	
	E. Appointment of Consultant	
3	<b>Criteria for Evaluation</b>	
4	<b>Fraud and corrupt practices</b>	
5	<b>Pre-Proposal Conference</b>	
6	<b>Miscellaneous</b>	
	<b>Schedules</b>	
1	<b>Terms of Reference</b> [Four laning]	
2	<b>Form of Agreement</b>	
	Annex-1: Terms of Reference	
	Annex-2: Deployment of Personnel	
	Annex-3: Estimate of Personnel Costs	
	Annex-4: Approved Sub-Consultant(s)	
	Annex-5: Cost of Services	
	Annex-6: Payment Schedule	
	Annex-7: Bank Guarantee for Performance Security	
3	<b>Guidance Note on Conflict of Interest</b>	
	<b>Appendices</b>	
1	<b>Appendix-I: Technical Proposal</b>	
	Form 1: Letter of Proposal	
	Form 2: Particulars of the Applicant	

Form 3: Statement of Legal Capacity  
Form 4: Power of Attorney  
Form 5: Financial Capacity of Applicant  
Form 6: Particulars of Key Personnel  
Form 7: Proposed Methodology and Work Plan  
Form 8: Experience of Applicant  
Form 9: Experience of Key Personnel  
Form 10: Eligible Assignments of Applicant  
Form 11: Eligible Assignments of Key Personnel  
Form 12: CV of Professional Personnel  
Form 13: Deployment of Personnel  
Form 14: Survey and Field Investigations  
Form 15: Proposal for Sub-Consultant(s)

2 **Appendix-II Financial Proposal**

Form 1: Covering Letter  
Form 2: Financial Proposal  
Form 3: Estimate of Personnel Costs

## 1. INTRODUCTION

### 1.1 Background

- 1.1.1 The National Highways Authority of India, represented by the Chairman (the “**Authority**”) is engaged in the development of national highways and as part of this endeavour, the Authority has decided to RFP for Appointment of Technical Consultant For Feasibility Study and Preparation of Detailed Project Report for 4 Laning of Thirumangalam to Rajapalayam section of NH-744 in the State of Tamil Nadu under NHDP Phase-IV (the “**Project**”) through Engineering, Procurement and Constructions (EPC) basis. The indicative cost of the Project is **Rs. 1140. (Rupees One Thousand One Hundred and Forty Crore)** and approximate length is **76 km**.
- 1.1.2 With a view to inviting bids for the Project, the Authority has decided to conduct a DPR study for determining the technical feasibility and financial viability of the Project. If found technically feasible and financially viable, the Project may be awarded on BOT/EPC basis to a private entity (the “**Concessionaire/Contractor**”) selected through a competitive bidding process. The Project would be implemented in accordance with the terms and conditions stated in the contract agreement to be entered into between the Authority and the Contractor (the “**Concession/Contract Agreement**”).
- 1.1.3 In pursuance of the above, the Authority has decided to carry out the process for selection of a Technical Consultant, for preparing the DPR Report and bid documents. The Technical Consultant shall prepare the DPR in accordance with the Terms of Reference specified at Schedule-1 (the “**TOR**”), develop the revenue model, review the draft Contract Agreement based on Model Contract Agreement for four laning of highways and assist the Authority in the bidding process.

### 1.2 Request for Proposal

The Authority invites Proposals (the “**Proposals**”) for selection of a Technical Consultant (the “**Consultant**”) who shall prepare a Detailed Project Report for development of the Project. The Detailed Project Report shall include traffic and engineering surveys, alignment review, land plans and preliminary design of geometrics, pavement, structures, safety devices, toll plazas, project facilities, Total Project cost, BOQ in conformity with the TOR (collectively the “**Consultancy**”).

The Authority intends to select the Consultant through an open competitive bidding in accordance with the procedure set out herein.

### 1.3 Due diligence by Applicants

Applicants are encouraged to inform themselves fully about the assignment and the local conditions before submitting the Proposal by paying a visit to the Authority and the Project site, sending written queries to the Authority, and attending a Pre-Proposal Conference on the date and time specified in Clause 1.10.

#### **1.4 Sale of RFP Document**

RFP document can be downloaded from e-tender portal of NHAI [www.nhai.org/nhai.eproc.in](http://www.nhai.org/nhai.eproc.in) from 11.07.2016 to 09.08.2016 (upto 17:00 hrs) on payment of a fee of Rs. **5,000 (Rupees Five thousand only)** in the favour of **National Highways Authority of India** through online mode only. Tender may be submitted online following instructions appearing on the screen. The last date of submission of RFP is **10.08.2016 upto 11:00 hrs**.

#### **1.5 Validity of the Proposal**

The Proposal shall be valid for a period of not less than 90 days from the Proposal Due Date (the “PDD”).

#### **1.6 Brief description of the Selection Process**

The Authority has adopted a two stage selection process (collectively the “**Selection Process**”) in evaluating the Proposals comprising technical and financial bids to be submitted in two separate sealed envelopes. In the first stage, a technical evaluation will be carried out as specified in Clause 3.1. Based on this technical evaluation, a list of short-listed applicants shall be prepared as specified in Clause 3.2. In the second stage, a financial evaluation will be carried out as specified in Clause 3.3. “Proposals will finally be ranked according to their combined technical and financial scores as specified in Clause 3.4. The first ranked Applicant shall be selected for negotiation (the “Selected Applicant”) while the second ranked Applicant will be kept in reserve.”

#### **1.7 Currency conversion rate and payment**

1.7.1 For the purposes of technical evaluation of Applicants, Rs. **67 per US\$** shall be considered as the applicable currency conversion rate. In case of any other currency, the same shall first be converted to US\$ as on the date 60 (sixty) days prior to the Proposal Due Date, and the amount so derived in US\$ shall be converted into INR at the aforesaid rate. The conversion rate of such currencies shall be the daily representative exchange rates published by the International Monetary Fund for the relevant date.

1.7.2 All payments to the Consultant shall be made in INR in accordance with the provisions of this RFP. The Consultant may convert INR into

any foreign currency as per Applicable Laws and the exchange risk, if any, shall be borne by the Consultant.

### 1.8 Schedule of Selection Process

The Authority would endeavour to adhere to the following schedule:

	<b>Event Description</b>	<b>Date</b>
1.	Last date for receiving queries/clarifications	26.07.2016
2.	Pre-Proposal Conference	28.07.2016
3.	Authority response to queries	03.08.2016
4.	Proposal Due Date or PDD	10.08.2016
5.	Opening of Proposals	On Proposal Due Date
6.	Letter of Award (LOA)	[Within 15 days of PDD]
7.	Signing of Agreement	Within 10 days of LOA
8.	Validity of Applications	90 days of Proposal Due Date

### 1.9 Pre-Proposal visit to the Site and inspection of data

Prospective applicants may visit the Site and review the available data at any time prior to PDD. For this purpose, they will provide at least two days' notice to the nodal officer specified below:

National Highways Authority of India (NHAI)  
 PD PIU-Madurai  
 Plot No. 3, surya Towers, 2<sup>nd</sup> Floor,  
 1<sup>st</sup> East Street, K.K. Nagar,  
 Madurai-625020 (TN)

### 1.10 Pre-Proposal Conference

The date, time and venue of Pre-Proposal Conference shall be:

**Date:** 28.07.2016

**Time:** 1500 hrs

**Venue:**  
 Office Chamber of

Shri I.S.Rana, General Manager (Tamil Nadu)  
 National Highways Authority of India (NHAI)  
 G-5 & G-6, Sector-10, Dwarka,

New Delhi - 110 075  
Tel: 011 25074100/200 (Extn. 1541);  
Email: israna@nhai.org

## **1.11 Communications**

### 1.11.1

All communications including the submission of Proposal should be addressed to:

Shri I.S.Rana, General Manager (Tamil Nadu)  
National Highways Authority of India (NHAI)  
G-5 & G-6, Sector-10, Dwarka,  
New Delhi - 110 075  
Tel: 011 25074100/200 (Extn. 1541)

**Email: israna@nhai.org,**

1.11.2 The **Official Website** of the Authority is:

**<http://www.nhai.org> and e-tendering website is nhai.eproc.in**

1.11.3 All communications, including the envelopes, should contain the following information, to be marked at the top in bold letters:

**RFP for Appointment of Technical Consultant For Feasibility Study and Preparation of Detailed Project Report for 4 Laning of Thirumangalam to Rajapalayam section of NH-744 in the State of Tamil Nadu under NHDP Phase-IV**

## 2. INSTRUCTIONS TO APPLICANTS

### A. GENERAL

#### 2.1 Scope of Proposal

- 2.1.1 Detailed description of the objectives, scope of services, Deliverables and other requirements relating to this Consultancy are specified in this RFP. In case an applicant firm possesses the requisite experience and capabilities required for undertaking the Consultancy, it may participate in the Selection Process either individually (the “**Sole Firm**”) or as lead member of a consortium of firms (the “**Lead Member**”) in response to this invitation. The term applicant (the “**Applicant**”) means the Sole Firm or the Lead Member, as the case may be. The manner in which the Proposal is required to be submitted, evaluated and accepted is explained in this RFP.
- 2.1.2 Applicants are advised that the selection of Consultant shall be on the basis of an evaluation by the Authority through the Selection Process specified in this RFP. Applicants shall be deemed to have understood and agreed that no explanation or justification for any aspect of the Selection Process will be given and that the Authority’s decisions are without any right of appeal whatsoever.
- 2.1.3 The Applicant shall submit its Proposal in the form and manner specified in this Part-2 of the RFP. The Technical proposal shall be submitted in the form at Appendix-I and the Financial Proposal shall be submitted in the form at Appendix-II. Upon selection, the Applicant shall be required to enter into an agreement with the Authority in the form specified at Schedule-2.
- 2.1.4 The Bidder including individual or any of its Joint Venture Member should, in the last 2 years, have neither failed to perform for the works of Expressways, National Highways, ISC (Inter State Connectivity) & EI (Economic Importance) works, as evidenced by imposition of a penalty by an arbitral or judicial authority or a judicial pronouncement or arbitration award against the Bidder including individual or any of its Joint Venture Member, as the case may be, nor has been expelled or terminated by Ministry of Road Transport & Highways or its implementing agencies for breach by such Bidder including individual or any of its Joint Venture Member
- 2.1.5 Before submitting the proposal the consultant shall mandatorily register and enlist themselves (the firm and all key personnel) on MoRTH portal “INFRACON”( [www.infracon.nic.in](http://www.infracon.nic.in)) and furnish registration details of firm as well as of key personnel in their technical proposal. All the bidders registered on Infracon shall form a Team on Infracon which would be assigned unique Infracon Team ID. Bidders while submitting the proposal shall quote the Infracon Team ID.

### 2.1.4 Key Personnel

The Consultancy Team shall consist of the following key personnel (the “**Key Personnel**”) who shall discharge their respective responsibilities as specified below:

<b>Key Personnel</b>	<b>Responsibilities</b>
<b>Senior Highway Engineer - cum - Team Leader</b> (the “ <b>Team Leader</b> ”)	He will lead, co-ordinate and supervise the multidisciplinary team for preparation of the Detailed Project Report. He shall spend at least 30 (thirty) days at the Project site.
<b>Bridge Engineer/Structure Engineer</b>	He will be responsible for suggesting options for retention of existing bridges or their replacement and provision with design of bridges and other structures. He shall spend at least 30 (thirty) days at the Project site.
<b>Traffic – cum – Safety Expert</b>	He will be responsible for assessment of traffic forecast on the project highway and suggesting broad layout of intersections, interchanges, grade separators and safety devices. He shall spend at least 30 (thirty) days at the Project site.
<b>Surveyor</b>	He will be responsible for quick traverse survey of the alignment and preparing land plans of the project highway. He shall spend at least 90 (ninety) days at the Project site.
<b>Financial Analyst</b>	He will be responsible for financial analysis and modelling of the proposed Project. He shall spend at least 3 (three) days at the Project site.
<b>Environmental Expert</b>	He will be responsible for Environmental Impact Assessment of the Project. He shall spend at least 30 (thirty) days at the Project site.

## 2.2 Conditions of Eligibility of Applicants

2.2.1 Applicants must read carefully the minimum conditions of eligibility (the “**Conditions of Eligibility**”) provided herein. Proposals of only those Applicants who satisfy the Conditions of Eligibility will be considered for evaluation.

2.2.2 To be eligible for evaluation of its Proposal, the Applicant shall fulfil the following:

- (A) **Technical Capacity:** The Applicant shall have, over the past 5 (five) years preceding the PDD, undertaken a minimum of 5 (Five) Eligible Assignments as specified in Clause 3.1.4.
- (B) **Financial Capacity:** The Applicant shall have received a minimum income of [**Rs.22.8 (Twenty Two point eight) Crore or US\$ 11.4 (Eleven point four) million**] per annum from professional fees during each of the 3 (three) financial years preceding the Proposal Due Date.

For the purpose of evaluation, Applicants having comparatively larger revenues from professional fees shall be given added weightage. For the avoidance of doubt, professional fees hereunder refers to fees received by the Applicant for providing advisory or consultancy services to its clients.

Following enhancement factor will be used for the cost of services provided and for turnover from consultancy business to a common base value for works completed in India:

Year of completion of services/turnover	Enhancement factor
Financial Year in which RFP invited	1.00
One year prior to RFP	1.10
Two year prior to RFP	1.21
Three year prior to RFP	1.33

- (C) **Availability of Key Personnel:** The Applicant shall offer and make available all Key Personnel meeting the requirements specified in sub-clause (D) below.
- (D) **Conditions of Eligibility for Key Personnel:** Each of the Key Personnel must fulfil the Conditions of Eligibility specified below:

Key Personnel	Educational Qualification	Length of Professional Experience	Experience on Eligible Assignments
Senior Highway Engineer – cum - Team leader	Graduate in Civil Engineering	20 years	He should have led the DPR preparation teams for two Assignments of highway.
Bridge Engineer	Graduate in Civil Engineering	15 years	He should have worked as a Bridge Engineer for two Eligible Assignments
Traffic - cum - Safety Expert	Post Graduate in Traffic and/ or Transportation Engineering	10 years	He should have worked as a Traffic/ Transportation Engineer/Planner for two Eligible Assignments
Surveyor	Diploma in Surveying or Graduate/Diploma in Civil Engineering	10 years	He should have worked as Surveyor for two Assignments.
Financial Analyst	Post Graduate in Commerce/ Chartered Accountant	10 years	He should have undertaken financial analysis and modelling for two Eligible Assignments
Environmental Expert	Masters/ Bachelor in Environmental Science or equivalent	10 years	He should have led the environmental impact assessment teams or worked as a sole expert for two Eligible Assignments.

- 2.2.3 The Applicant shall enclose with its Proposal, certificate(s) from its Statutory Auditors<sup>§</sup> stating its total revenues from professional fees during each of the past three financial years and the fee received in respect of each of the Eligible Assignments specified in the Proposal. In the event that the Applicant does not have a statutory auditor, it shall provide the requisite certificate(s) from the firm of Chartered Accountants that ordinarily audits the annual accounts of the Applicant.
- 2.2.4 The Applicant should submit a Power of Attorney as per the format at Form-4 of Appendix-I; provided, however, that such Power of Attorney would not be required if the Application is signed by a partner of the Applicant, in case the Applicant is a partnership firm or limited liability partnership.
- 2.2.5 Any entity which has been barred by the Central Government, any State Government, a statutory authority or a public sector undertaking, as the case may be, from participating in any project, and the bar subsists as on the date of Proposal, would not be eligible to submit a Proposal either by itself or through its Associate.
- 2.2.6 An Applicant or its Associate should have, during the last three years, neither failed to perform on any agreement, as evidenced by imposition of a penalty by an arbitral or judicial authority or a judicial pronouncement or arbitration award against the Applicant or its Associate, nor been expelled from any project or agreement nor have had any agreement terminated for breach by such Applicant or its Associate.
- 2.2.7 While submitting a Proposal, the Applicant should attach clearly marked and referenced continuation sheets in the event that the space provided in the specified forms in the Appendices is insufficient. Alternatively, Applicants may format the specified forms making due provision for incorporation of the requested information.

### **2.3 Conflict of Interest**

- 2.3.1 An Applicant shall not have a conflict of interest that may affect the Selection Process or the Consultancy (the “**Conflict of Interest**”). Any Applicant found to have a Conflict of Interest shall be disqualified. In the event of disqualification, the Authority shall forfeit and appropriate the Bid Security as mutually agreed genuine pre-estimated compensation and damages payable to the Authority for, *inter alia*, the time, cost and effort of the Authority including consideration of such Applicant’s Proposal, without prejudice to any other right or remedy that may be available to the Authority hereunder or otherwise.
- 2.3.2 The Authority requires that the Consultant provides professional, objective, and impartial advice and at all times hold the Authority’s

---

<sup>§</sup> No separate annual financial statements should be submitted.

interests paramount, avoid conflicts with other assignments or its own interests, and act without any consideration for future work. The Consultant shall not accept or engage in any assignment that would be in conflict with its prior or current obligations to other clients, or that may place it in a position of not being able to carry out the assignment in the best interests of the Authority.

2.3.3 Some guiding principles for identifying and addressing Conflicts of Interest have been illustrated in the Guidance Note at Schedule-3. Without limiting the generality of the above, an Applicant shall be deemed to have a Conflict of Interest affecting the Selection Process, if:

- (a) the Applicant, its consortium member (the “**Member**”) or Associate (or any constituent thereof) and any other Applicant, its consortium member or Associate (or any constituent thereof) have common controlling shareholders or other ownership interest; provided that this disqualification shall not apply in cases where the direct or indirect shareholding or ownership interest of an Applicant, its Member or Associate (or any shareholder thereof having a shareholding of more than 5% (five per cent) of the paid up and subscribed share capital of such Applicant, Member or Associate, as the case may be) in the other Applicant, its consortium member or Associate is less than 5 per cent of the subscribed and paid up equity share capital thereof; provided further that this disqualification shall not apply to any ownership by a bank, insurance company, pension fund or a public financial institution referred to in section 4A of the Companies Act, 1956. For the purposes of this Clause 2.3.3(a), indirect shareholding held through one or more intermediate persons shall be computed as follows: (aa) where any intermediary is controlled by a person through management control or otherwise, the entire shareholding held by such controlled intermediary in any other person (the “**Subject Person**”) shall be taken into account for computing the shareholding of such controlling person in the Subject Person; and (bb) subject always to sub-clause (aa) above, where a person does not exercise control over an intermediary, which has shareholding in the Subject Person, the computation of indirect shareholding of such person in the Subject Person shall be undertaken on a proportionate basis; provided, however, that no such shareholding shall be reckoned under this sub-clause (bb) if the shareholding of such person in the intermediary is less than 26% (twenty six per cent) of the subscribed and paid up equity shareholding of such intermediary; or
- (b) a constituent of such Applicant is also a constituent of another Applicant; or

- (c) such Applicant or its Associate receives or has received any direct or indirect subsidy or grant from any other Applicant or its Associate; or
- (d) such Applicant has the same legal representative for purposes of this Application as any other Applicant; or
- (e) such Applicant has a relationship with another Applicant, directly or through common third parties, that puts them in a position to have access to each others' information about, or to influence the Application of either or each of the other Applicant; or
- (f) there is a conflict among this and other consulting assignments of the Applicant (including its personnel and Sub-consultant) and any subsidiaries or entities controlled by such Applicant or having common controlling shareholders. The duties of the Consultant will depend on the circumstances of each case. While providing consultancy services to the Authority for this particular assignment, the Consultant shall not take up any assignment that by its nature will result in conflict with the present assignment; or
- (g) a firm which has been engaged by the Authority to provide goods or works or services for a project, and its Associates, will be disqualified from providing consulting services for the same project save and except as provided in Clause 2.3.4; conversely, a firm hired to provide consulting services for the preparation or implementation of a project, and its Members or Associates, will be disqualified from subsequently providing goods or works or services related to the same project; or
- (h) the Applicant, its Member or Associate (or any constituent thereof), and the bidder or Concessionaire, if any, for the Project, its contractor(s) or sub-contractor(s) (or any constituent thereof) have common controlling shareholders or other ownership interest; provided that this disqualification shall not apply in cases where the direct or indirect shareholding or ownership interest of an Applicant, its Member or Associate (or any shareholder thereof having a shareholding of more than 5% (five per cent) of the paid up and subscribed share capital of such Applicant, Member or Associate, as the case may be,) in the bidder or Concessionaire, if any, or its contractor(s) or sub-contractor(s) is less than 5% (five per cent) of the paid up and subscribed share capital of such Concessionaire or its contractor(s) or sub-contractor(s); provided further that this disqualification shall not apply to ownership by a bank, insurance company, pension fund or a Public Financial Institution referred to in section 4A of the Companies Act, 1956. For the purposes of this sub-clause (h),

indirect shareholding shall be computed in accordance with the provisions of sub-clause (a) above.

For purposes of this RFP, Associate means, in relation to the Applicant, a person who controls, is controlled by, or is under the common control with such Applicant (the “Associate”). As used in this definition, the expression “control” means, with respect to a person which is a company or corporation, the ownership, directly or indirectly, of more than 50% (fifty per cent) of the voting shares of such person, and with respect to a person which is not a company or corporation, the power to direct the management and policies of such person by operation of law or by contract.

- 2.3.4 An Applicant eventually appointed to provide Consultancy for this Project, and its Associates, shall be disqualified from subsequently providing goods or works or services related to the construction and operation of the same Project and any breach of this obligation shall be construed as Conflict of Interest; provided that the restriction herein shall not apply after a period of 5 (five) years from the completion of this assignment or to consulting assignments granted by banks/ lenders at any time; provided further that this restriction shall not apply to consultancy/ advisory services performed for the Authority in continuation of this Consultancy or to any subsequent consultancy/ advisory services performed for the Authority in accordance with the rules of the Authority. For the avoidance of doubt, an entity affiliated with the Consultant shall include a partner in the Consultant’s firm or a person who holds more than 5% (five per cent) of the subscribed and paid up share capital of the Consultant, as the case may be, and any Associate thereof.

## **2.4 Number of Proposals**

No Applicant or its Associate shall submit more than one Application for the Consultancy. An Applicant applying individually or as an Associate shall not be entitled to submit another application either individually or as a member of any consortium, as the case may be.

## **2.5 Cost of Proposal**

The Applicants shall be responsible for all of the costs associated with the preparation of their Proposals and their participation in the Selection Process including subsequent negotiation, visits to the Authority, Project site etc. The Authority will not be responsible or in any way liable for such costs, regardless of the conduct or outcome of the Selection Process.

## **2.6 Site visit and verification of information**

Applicants are encouraged to submit their respective Proposals after visiting the Project site and ascertaining for themselves the site conditions, traffic, location, surroundings, climate, access to the site,

availability of drawings and other data with the Authority, Applicable Laws and regulations or any other matter considered relevant by them. Visits shall be organised for the benefit of prospective Applicants on dates, time and venue as specified in Clause 1.9.

## **2.7 Acknowledgement by Applicant**

2.7.1 It shall be deemed that by submitting the Proposal, the Applicant has:

- (a) made a complete and careful examination of the RFP;
- (b) received all relevant information requested from the Authority;
- (c) acknowledged and accepted the risk of inadequacy, error or mistake in the information provided in the RFP or furnished by or on behalf of the Authority or relating to any of the matters referred to in Clause 2.6 above;
- (d) satisfied itself about all matters, things and information, including matters referred to in Clause 2.6 herein above, necessary and required for submitting an informed Application and performance of all of its obligations thereunder;
- (e) acknowledged that it does not have a Conflict of Interest; and
- (f) agreed to be bound by the undertaking provided by it under and in terms hereof.

2.7.2 The Authority shall not be liable for any omission, mistake or error on the part of the Applicant in respect of any of the above or on account of any matter or thing arising out of or concerning or relating to RFP or the Selection Process, including any error or mistake therein or in any information or data given by the Authority.

## **2.8 Right to reject any or all Proposals**

2.8.1 Notwithstanding anything contained in this RFP, the Authority reserves the right to accept or reject any Proposal and to annul the Selection Process and reject all Proposals, at any time without any liability or any obligation for such acceptance, rejection or annulment, and without assigning any reasons thereof.

2.8.2 Without prejudice to the generality of Clause 2.8.1, the Authority reserves the right to reject any Proposal if:

- (a) at any time, a material misrepresentation is made or discovered, or
- (b) the Applicant does not provide, within the time specified by the Authority, the supplemental information sought by the Authority for evaluation of the Proposal.

Misrepresentation/ improper response by the Applicant may lead to the disqualification of the Applicant. If the Applicant is the Lead Member of a consortium, then the entire consortium may be disqualified / rejected. If such disqualification / rejection occurs after the Proposals have been opened and the highest ranking Applicant gets disqualified / rejected, then the Authority reserves the right to consider the next best Applicant, or take any other measure as may be deemed fit in the sole discretion of the Authority, including annulment of the Selection Process.

## **B. DOCUMENTS**

### **2.9 Contents of the RFP**

2.9.1 This RFP comprises the Disclaimer set forth hereinabove, the contents as listed below and will additionally include any Addendum / Amendment issued in accordance with Clause 2.11:

#### **Request for Proposal**

- 1 Introduction
- 2 Instructions to Applicants
- 3 Criteria for Evaluation
- 4 Fraud and corrupt practices
- 5 Pre-Proposal Conference
- 6 Miscellaneous

#### **Schedules**

- 1 **Terms of Reference**
- 2 **Form of Agreement**
  - Annex-1: Terms of Reference
  - Annex-2: Deployment of Personnel
  - Annex-3: Estimate of Personnel Costs
  - Annex-4: Approved Sub-Consultant(s)
  - Annex-5: Cost of Services
  - Annex-6: Payment Schedule
  - Annex-7: Bank Guarantee for Performance Security
- 3 **Guidance Note on Conflict of Interest**

#### **Appendices**

#### **Appendix-I: Technical Proposal**

- Form 1: Letter of Proposal
- Form 2: Particulars of the Applicant
- Form 3: Statement of Legal Capacity
- Form 4: Power of Attorney
- Form 5: Financial Capacity of Applicant
- Form 6: Particulars of Key Personnel
- Form 7: Proposed Methodology and Work Plan
- Form 8: Abstract of Eligible Assignments of Applicant
- Form 9: Abstract of Eligible Assignments of Key Personnel
- Form 10: Eligible Assignments of Applicant
- Form 11: Eligible Assignments of Key Personnel
- Form 12: CV of Key Personnel
- Form 13: Deployment of Personnel
- Form 14: Survey and Field Investigations
- Form 15: Proposal for Sub-Consultant(s)

**Appendix–II: Financial Proposal**

- Form 1: Covering Letter
- Form 2: Financial Proposal
- Form 3: Estimate of Personnel Costs

**2.10 Clarifications**

2.10.1 Applicants requiring any clarification on the RFP may send their queries to the Authority in writing before the date mentioned in the Schedule of Selection Process at Clause 1.8. The envelopes shall clearly bear the following identification:

“Queries/Request for Additional Information concerning RFP for Technical Consultant For Feasibility Study and Preparation of Detailed Project Report for 4 Laning of Thirumangalam to Rajapalayam section of NH-744 in the State of Tamil Nadu under NHDP Phase-IV

The Authority shall endeavour to respond to the queries within the period specified therein but not later than 7 (seven) days prior to the Proposal Due Date. The responses will be sent by fax or e-mail. The Authority will post the reply to all such queries on the Official Website and copies thereof will also be circulated to all Applicants who have purchased the RFP document without identifying the source of queries.

2.10.2 The Authority reserves the right not to respond to any questions or provide any clarifications, in its sole discretion, and nothing in this Clause 2.10 shall be construed as obliging the Authority to respond to any question or to provide any clarification.

## **2.11 Amendment of RFP**

2.11.1 At any time prior to the deadline for submission of Proposal, the Authority may, for any reason, whether at its own initiative or in response to clarifications requested by an Applicant, modify the RFP document by the issuance of Addendum/ Amendment and posting it on the Official Website and by conveying the same to the prospective Applicants (who have purchased the RFP document) by fax or e-mail.

2.11.2 All such amendments will be notified in writing through fax or e-mail to all Applicants who have purchased the RFP document. The amendments will also be posted on the Official Website along with the revised RFP containing the amendments and will be binding on all Applicants.

2.11.3 In order to afford the Applicants a reasonable time for taking an amendment into account, or for any other reason, the Authority may, in its sole discretion, extend the Proposal Due Date<sup>§</sup>.

## **C. PREPARATION AND SUBMISSION OF PROPOSAL**

### **2.12 Language**

The Proposal with all accompanying documents (the “**Documents**”) and all communications in relation to or concerning the Selection Process shall be in English language and strictly on the forms provided in this RFP. No supporting document or printed literature shall be submitted with the Proposal unless specifically asked for and in case any of these Documents is in another language, it must be accompanied by an accurate translation of the relevant passages in English, in which case, for all purposes of interpretation of the Proposal, the translation in English shall prevail.

### **2.13 Format and signing of Proposal**

2.13.1 The Applicant shall provide all the information sought under this RFP. The Authority would evaluate only those Proposals that are received in the specified forms and complete in all respects.

2.13.2 The Applicant shall prepare one original set of the Proposal (together with originals/ copies of Documents required to be submitted along

---

<sup>§</sup> While extending the Proposal Due Date on account of an addendum, the Authority shall have due regard for the time required by bidders to address the amendments specified therein. In the case of significant amendments, at least 15 (fifteen) days shall be provided between the date of amendment and the Proposal Due Date, and in the case of minor amendments, at least 7 (seven) days shall be provided.

therewith pursuant to this RFP) and clearly marked “ORIGINAL”. Kindly see e-Tendering website nhai.eproc.in.

2.13.3 The Proposal shall be typed or written in indelible ink and signed by the authorised signatory of the Applicant who shall initial each page, in Blu ink. In case of printed and published Documents, only the cover shall be initialled. All the alterations, omissions, additions, or any other amendments made to the Proposal shall be initialled by the person(s) signing the Proposal. The Proposals must be properly signed by the authorised representative (the “**Authorised Representative**”) as detailed below:

- (a) by the proprietor, in case of a proprietary firm; or
- (b) by a partner, in case of a partnership firm and/or a limited liability partnership; or
- (c) by a duly authorised person holding the Power of Attorney, in case of a Limited Company or a corporation; or
- (d) by the authorised representative of the Lead Member, in case of consortium.

A copy of the Power of Attorney certified under the hands of a partner or director of the Applicant and notarised by a notary public in the form specified in Appendix-I (Form-4) shall accompany the Proposal.

2.13.4 Applicants should note the Proposal Due Date, as specified in Clause 1.8, for submission of Proposals. Except as specifically provided in this RFP, no supplementary material will be entertained by the Authority, and that evaluation will be carried out only on the basis of Documents received by the closing time of Proposal Due Date as specified in Clause 2.17.1. Applicants will ordinarily not be asked to provide additional material information or documents subsequent to the date of submission, and unsolicited material if submitted will be summarily rejected. For the avoidance of doubt, the Authority reserves the right to seek clarifications under and in accordance with the provisions of Clause 2.23.

## **2.14 Technical Proposal**

2.14.1 Applicants shall submit the technical proposal in the formats at Appendix-I (the “**Technical Proposal**”).

2.14.2 While submitting the Technical Proposal, the Applicant shall, in particular, ensure that:

- (a) The Bid Security is provided;
- (b) all forms are submitted in the prescribed formats and signed by the prescribed signatories;

- (c) Power of Attorney, if applicable, is executed as per Applicable Laws;
- (d) CVs of all Professional Personnel have been included;
- (e) Key Personnel have been proposed only if they meet the Conditions of Eligibility laid down at Clause 2.2.2 (D) of the RFP;
- (f) no alternative proposal for any Key Personnel is being made and only one CV for each position has been furnished;
- (g) the CVs have been recently signed and dated in Blue ink by the respective Personnel and countersigned by the Applicant. Photocopy or unsigned / countersigned CVs shall be rejected;
- (h) the CVs shall contain an undertaking from the respective Key Personnel about his/her availability for the duration specified in the RFP;
- (i) Professional Personnel proposed have good working knowledge of English language;
- (j) Key Personnel would be available for the period indicated in the TOR;
- (k) no Key Personnel should have attained the age of 65 (sixty five) years at the time of submitting the proposal; and
- (l) the proposal is responsive in terms of Clause 2.21.3.

2.14.3 Failure to comply with the requirements spelt out in this Clause 2.14 shall make the Proposal liable to be rejected.

2.14.4 If an individual Key Personnel makes a false averment regarding his qualification, experience or other particulars, or his commitment regarding availability for the Project is not fulfilled at any stage after signing of the Agreement, he shall be liable to be debarred for any future assignment of the Authority for a period of 5 (five) years. The award of this Consultancy to the Applicant may also be liable to cancellation in such an event.

2.14.5 The Technical Proposal shall not include any financial information relating to the Financial Proposal.

2.14.6 The proposed team shall be composed of experts and specialists (the “**Professional Personnel**”) in their respective areas of expertise and managerial/support staff (the “**Support Personnel**”) such that the Consultant should be able to complete the Consultancy within the specified time schedule. The Key Personnel specified in Clause 2.1.4 shall be included in the proposed team of Professional Personnel. Other competent and experienced Professional Personnel in the

relevant areas of expertise must be added as required for successful completion of this Consultancy. The CV of each such Professional Personnel, if any, should also be submitted in the format at Form-12 of Appendix-I.

- 2.14.7 An Applicant may, if it considers necessary, propose suitable Sub-Consultants in specific areas of expertise. Credentials of such Sub-Consultants should be submitted in Form-15 of Appendix-I. A Sub-Consultant, however, shall not be a substitute for any Key Personnel.
- 2.14.8 The Authority reserves the right to verify all statements, information and documents, submitted by the Applicant in response to the RFP. Any such verification or the lack of such verification by the Authority to undertake such verification shall not relieve the Applicant of its obligations or liabilities hereunder nor will it affect any rights of the Authority thereunder.
- 2.14.9 In case it is found during the evaluation or at any time before signing of the Agreement or after its execution and during the period of subsistence thereof, that one or more of the eligibility conditions have not been met by the Applicant or the Applicant has made material misrepresentation or has given any materially incorrect or false information, the Applicant shall be disqualified forthwith if not yet appointed as the Consultant either by issue of the LOA or entering into of the Agreement, and if the Selected Applicant has already been issued the LOA or has entered into the Agreement, as the case may be, the same shall, notwithstanding anything to the contrary contained therein or in this RFP, be liable to be terminated, by a communication in writing by the Authority without the Authority being liable in any manner whatsoever to the Applicant or Consultant, as the case may be.

In such an event, the Authority shall forfeit and appropriate the Bid Security as mutually agreed pre-estimated compensation and damages payable to the Authority for, *inter alia*, time, cost and effort of the Authority, without prejudice to any other right or remedy that may be available to the Authority.

- 2.14.10 In case CV of a person is turned out to be fake/incorrect/inflated during the assignment, the consultancy firms shall have to refund the salary and perks drawn in respect of the person apart from other consequences

## **2.15 Financial Proposal**

- 2.15.1 Applicants shall submit the financial proposal in the formats at Appendix-II (the “**Financial Proposal**”) **only on e-Tendering website nhai.eproc.in** clearly indicating the total cost of the Consultancy (Item [G] of Form-2 of Appendix-II) in both figures and words, in Indian Rupees, and signed by the Applicant’s Authorised

Representative. In the event of any difference between figures and words, the amount indicated in words shall prevail. In the event of a difference between the arithmetic total and the total shown in the Financial Proposal, the lower of the two shall prevail.

2.15.2 While submitting the Financial Proposal, the Applicant shall ensure the following:

- (i) All the costs associated with the assignment shall be included in the Financial Proposal. These shall normally cover remuneration for all the Personnel (Expatriate and Resident, in the field, office etc), accommodation, air fare, equipment, printing of documents, surveys, geo-technical investigations etc. The total amount indicated in the Financial Proposal shall be without any condition attached or subject to any assumption, and shall be final and binding. In case any assumption or condition is indicated in the Financial Proposal, it shall be considered non-responsive and liable to be rejected.
- (ii) The Financial Proposal shall take into account all expenses and tax liabilities. For the avoidance of doubt, it is clarified that all taxes shall be deemed to be included in the costs shown under different items of the Financial Proposal. Further, all payments shall be subject to deduction of taxes at source as per Applicable Laws.
- (iii) Costs (including break down of costs) shall be expressed in INR.

## **2.16 Submission of Proposal**

2.16.1 The Applicants shall submit the Proposal in hard bound form with all pages numbered serially and by giving an index of submissions. Each page of the submission shall be initialled by the Authorised Representative of the Applicant as per the terms of the RFP. In case the proposal is submitted on the document down loaded from Official Website, the Applicant shall be responsible for its accuracy and correctness as per the version uploaded by the Authority and shall ensure that there are no changes caused in the content of the downloaded document. In case of any discrepancy between the downloaded or photocopied version of the RFP and the original RFP issued by the Authority, the latter shall prevail.

2.16.2 The Technical Proposal will be sealed in an outer envelope which will bear the address of the Authority, RFP Notice number, Consultancy name as indicated at Clauses 1.11.1 and 1.11.3 and the name and address of the Applicant. It shall bear on top, the following:

“Do not open, except in presence of the Authorised Person of the Authority”

If the envelope is not sealed and marked as instructed above, the Authority assumes no responsibility for the misplacement or premature opening of the contents of the Proposal submitted and consequent losses, if any, suffered by the Applicant.

2.16.3 The aforesaid outer envelope clearly marked ‘**Technical Proposal**’. The envelope marked “Technical Proposal” shall contain:

- (i) Application in the prescribed format (Form-1 of Appendix-I) along with Forms 2 to 15 of Appendix-I and supporting documents; and
- (ii) Bid security as specified in Clause 2.20.1

**Financial proposal in the prescribed format (Forms 1, 2 & 3 of Appendix-II) has to be filled on e-Tendering website only.**

2.16.4 The Technical Proposal shall be typed or written in indelible ink and signed by the Authorised Representative of the Applicant. All pages of the original Technical Proposal initialled by the person or persons signing the Proposal before uploading on e-tendering website.

2.16.5 The completed Technical Proposal must be delivered on or before the specified time on Proposal Due Date and uploaded on e-tendering website. Proposals submitted by fax, telex, telegram or e-mail shall not be entertained.

2.16.6 The Proposal shall be made in the Forms specified in this RFP. Any attachment to such Forms must be provided on separate sheets of paper and only information that is directly relevant should be provided. This may include photocopies of the relevant pages of printed documents. No separate documents like printed annual statements, company brochures, copy of contracts etc. will be entertained.

2.16.7 The rates quoted shall be firm throughout the period of performance of the assignment upto and including acceptance of the DPR Report by the Authority and discharge of all obligations of the Consultant under the Agreement.

## **2.17 Proposal Due Date**

2.17.1 Proposal should be submitted at or before 1100 hrs on the Proposal Due Date specified at Clause 1.8 at the address provided in Clause 1.11 in the manner and form as detailed in this RFP. A receipt thereof should be obtained from the person specified therein.

- 2.17.2 The Authority may, in its sole discretion, extend the Proposal Due Date by issuing an Addendum in accordance with Clause 2.11 uniformly for all Applicants.

## **2.18 Late Proposals**

Proposals received by the Authority after the specified time on Proposal Due Date shall not be eligible for consideration and shall be summarily rejected.

## **2.19 Modification/ substitution/ withdrawal of Proposals**

- 2.19.1 The Applicant may modify, substitute, or withdraw its Proposal after submission, provided that written notice of the modification, substitution, or withdrawal is received by the Authority prior to Proposal Due Date. No Proposal shall be modified, substituted, or withdrawn by the Applicant on or after the Proposal Due Date.
- 2.19.2 The modification, substitution, or withdrawal notice shall be prepared, sealed, marked, and delivered in accordance with Clause 2.16, with the envelopes being additionally marked “MODIFICATION”, “SUBSTITUTION” or “WITHDRAWAL”, as appropriate.
- 2.19.3 Any alteration / modification in the Proposal or additional information or material supplied subsequent to the Proposal Due Date, unless the same has been expressly sought for by the Authority, shall be disregarded.

## **2.20 Bid Security**

- 2.20.1 The Applicant shall furnish as part of its Proposal, a bid security of Rs.2, 00,000/- (Rs. Two Lac only) in the form of a Demand Draft issued by one of the Nationalised/ Scheduled Banks in India in favour of the National Highways Authority of India payable at New Delhi (the “**Bid Security**”), returnable not later than 30 (thirty) days from PDD except in case of the two highest ranked Applicants as required in Clause 2.24.1.. The Selected Applicant’s Bid Security shall be returned, upon the Applicant signing the Agreement and completing the Deliverables assigned to it for the first 2 (two) months of the Consultancy in accordance with the provisions thereof.

Bid Security would be returned to all bidders except preferred and next preferred bidder within a week of opening of their financial bids. Further, earnest money deposit of next preferred bidder would be returned within a week of issue of LOA

- 2.20.2 Any Bid not accompanied by the Bid Security shall be rejected by the Authority as non-responsive.
- 2.20.3 The Authority shall not be liable to pay any interest on the Bid Security and the same shall be interest free.

2.20.4 The Applicant, by submitting its Application pursuant to this RFP, shall be deemed to have acknowledged that without prejudice to the Authority's any other right or remedy hereunder or in law or otherwise, the Bid Security shall be forfeited and appropriated by the Authority as the mutually agreed pre-estimated compensation and damage payable to the Authority for, *inter alia*, the time, cost and effort of the Authority in regard to the RFP including the consideration and evaluation of the Proposal under the following conditions:

- (a) If an Applicant submits a non-responsive Proposal;
- (b) If an Applicant engages in any of the Prohibited Practices specified in Section 4 of this RFP;
- (c) If an Applicant withdraws its Proposal during the period of its validity as specified in this RFP and as extended by the Applicant from time to time;
- (d) In the case of the Selected Applicant, if the Applicant fails to reconfirm its commitments during negotiations as required vide Clause 2.24.1;
- (e) In the case of a Selected Applicant, if the Applicant fails to sign the Agreement or commence the assignment as specified in Clauses 2.28 and 2.29 respectively; or
- (f) If the Applicant is found to have a Conflict of Interest as specified in Clause 2.3.

## **D. EVALUATION PROCESS**

### **2.21 Evaluation of Proposals**

2.21.1 The Authority shall open the Proposals at 1130 hours on the Proposal Due Date, at the place specified in Clause 1.11.1 and in the presence of the Applicants who choose to attend. The envelopes marked "Technical Proposal" shall be opened first. The envelopes marked "Financial Proposal" shall be kept sealed for opening at a later date.

2.21.2 Proposals for which a notice of withdrawal has been submitted in accordance with Clause 2.19 shall not be opened.

2.21.3 Prior to evaluation of Proposals, the Authority will determine whether each Proposal is responsive to the requirements of the RFP. The Authority may, in its sole discretion, reject any Proposal that is not responsive hereunder. A Proposal shall be considered responsive only if:

- (a) the Technical Proposal is received in the form specified at Appendix-I;

- (b) it is received by the Proposal Due Date including any extension thereof pursuant to Clause 2.17;
- (c) it is accompanied by the Bid Security as specified in Clause 2.20.1.
- (d) it is signed, sealed, bound together in hard cover and marked as stipulated in Clauses 2.13 and 2.16;
- (e) it is accompanied by the Power of Attorney as specified in Clause 2.2.4;
- (f) it contains all the information (complete in all respects) as requested in the RFP;
- (g) it does not contain any condition or qualification; and
- (h) it is not non-responsive in terms hereof.

2.21.4 The Authority reserves the right to reject any Proposal which is non-responsive and no request for alteration, modification, substitution or withdrawal shall be entertained by the Authority in respect of such Proposals.

2.21.5 The Authority shall subsequently examine and evaluate Proposals in accordance with the Selection Process specified at Clause 1.6 and the criteria set out in Section 3 of this RFP.

The consultants shall carry out self-evaluation based on the evaluation criteria. While submitting the self-evaluation along with technical proposal, consultants shall make references (page no) of the documents in their proposal which have been relied upon in their self-evaluation for qualification and experience. The technical proposals received without self-evaluation may be rejected by the authority.

Result of Technical Evaluation shall be made available on the website giving opportunity to the bidders to respond within 7 days in case they have any objection

2.21.6 After the technical evaluation, **the Authority shall prepare a list of pre-qualified and shortlisted Applicants in terms of Clause 3.2 for opening of their Financial Proposals.** A date, time and venue will be notified to all Applicants for announcing the result of evaluation and opening of Financial Proposals. Before opening of the Financial Proposals, the list of pre-qualified and shortlisted Applicants along with their Technical Score will be read out. The opening of Financial Proposals shall be done in presence of respective representatives of Applicants who choose to be present. The Authority will not entertain any query or clarification from Applicants who fail to qualify at any stage of the Selection Process. The financial evaluation and final

ranking of the Proposals shall be carried out in terms of Clauses 3.3 and 3.4.

2.21.7 Applicants are advised that Selection shall be entirely at the discretion of the Authority. Applicants shall be deemed to have understood and agreed that the Authority shall not be required to provide any explanation or justification in respect of any aspect of the Selection Process or Selection.

2.21.8 Any information contained in the Proposal shall not in any way be construed as binding on the Authority, its agents, successors or assigns, but shall be binding against the Applicant if the Consultancy is subsequently awarded to it.

## **2.22 Confidentiality**

Information relating to the examination, clarification, evaluation, and recommendation for the selection of Applicants shall not be disclosed to any person who is not officially concerned with the process or is not a retained professional adviser advising the Authority in relation to matters arising out of, or concerning the Selection Process. The Authority shall treat all information, submitted as part of the Proposal, in confidence and shall require all those who have access to such material to treat the same in confidence. The Authority may not divulge any such information unless it is directed to do so by any statutory entity that has the power under law to require its disclosure or is to enforce or assert any right or privilege of the statutory entity and/or the Authority or as may be required by law or in connection with any legal process.

## **2.23 Clarifications**

2.23.1 To facilitate evaluation of Proposals, the Authority may, at its sole discretion, seek clarifications from any Applicant regarding its Proposal. Such clarification(s) shall be provided within the time specified by the Authority for this purpose. Any request for clarification(s) and all clarification(s) in response thereto shall be in writing.

2.23.2 If an Applicant does not provide clarifications sought under Clause 2.23.1 above within the specified time, its Proposal shall be liable to be rejected. In case the Proposal is not rejected, the Authority may proceed to evaluate the Proposal by construing the particulars requiring clarification to the best of its understanding, and the Applicant shall be barred from subsequently questioning such interpretation of the Authority.

## **E. APPOINTMENT OF CONSULTANT**

### **2.24 Negotiations**

- 2.24.1 The Selected Applicant may, if necessary, be invited for negotiations. The negotiations shall generally not be for reducing the price of the Proposal, but will be for re-confirming the obligations of the Consultant under this RFP. Issues such as deployment of Key Personnel, understanding of the RFP, methodology and quality of the work plan shall be discussed during negotiations. A Key Personnel who did not score 70% marks as required under Clause 3.1.2 shall be replaced by the Applicant with a better candidate to the satisfaction of the Authority. In case the Selected Applicant fails to reconfirm its commitment, the Authority reserves the right to designate the next ranked Applicant as the Selected Applicant and invite it for negotiations.
- 2.24.2 The Authority will examine the CVs of all other Professional Personnel and those not found suitable shall be replaced by the Applicant to the satisfaction of the Authority.
- 2.24.3 The Authority will examine the credentials of all Sub-Consultants proposed for this Consultancy and those not found suitable shall be replaced by the Applicant to the satisfaction of the Authority.

## **2.25 Substitution of Key Personnel**

- 2.25.1 The Authority will not normally consider any request of the Selected Applicant for substitution of Key Personnel as the ranking of the Applicant is based on the evaluation of Key Personnel and any change therein may upset the ranking. Substitution will, however, be permitted if the Key Personnel is not available for reasons of any incapacity or due to health, subject to equally or better qualified and experienced personnel being provided to the satisfaction of the Authority.
- 2.25.2 The Authority expects all the Key Personnel to be available during implementation of the Agreement. The Authority will not consider substitution of Key Personnel except for reasons of any incapacity or due to health. Such substitution shall ordinarily be limited to one Key Personnel subject to equally or better qualified and experienced personnel being provided to the satisfaction of the Authority. As a condition to such substitution, a sum equal to 20% (twenty per cent) of the remuneration specified for the original Key Personnel shall be deducted from the payments due to the Consultant. In the case of a second substitution hereunder, such deduction shall be 50% (fifty per cent) of the remuneration specified for the original Key Personnel. Any further substitution may lead to disqualification of the Applicant or termination of the Agreement.
- 2.25.3 Substitution of the Team Leader will not normally be considered and may lead to disqualification of the Applicant or termination of the Agreement.

## **2.26 Indemnity**

The Consultant shall, subject to the provisions of the Agreement, indemnify the Authority for an amount not exceeding 3 (three) times the value of the Agreement for any direct loss or damage that is caused due to any deficiency in services.

#### **2.27 Award of Consultancy**

After selection, a Letter of Award (the “**LOA**”) shall be issued, in duplicate, by the Authority to the Selected Applicant and the Selected Applicant shall, within 7 (seven) days of the receipt of the LOA, sign and return the duplicate copy of the LOA in acknowledgement thereof. In the event the duplicate copy of the LOA duly signed by the Selected Applicant is not received by the stipulated date, the Authority may, unless it consents to extension of time for submission thereof, appropriate the Bid Security of such Applicant as mutually agreed genuine pre-estimated loss and damage suffered by the Authority on account of failure of the Selected Applicant to acknowledge the LOA, and the next highest ranking Applicant may be considered.

#### **2.28 Execution of Agreement**

After acknowledgement of the LOA as aforesaid by the Selected Applicant, it shall execute the Agreement within the period prescribed in Clause 1.8. The Selected Applicant shall not be entitled to seek any deviation in the Agreement.

#### **2.29 Commencement of assignment**

The Consultant shall commence the Services at the Project site within 7 (seven) days of the date of the Agreement or such other date as may be mutually agreed. If the Consultant fails to either sign the Agreement as specified in Clause 2.28 or commence the assignment as specified herein, the Authority may invite the second ranked Applicant for negotiations. In such an event, the Bid Security of the first ranked Applicant shall be forfeited and appropriated in accordance with the provisions of Clause 2.20.4.

#### **2.30 Proprietary data**

Subject to the provisions of Clause 2.22, all documents and other information provided by the Authority or submitted by an Applicant to the Authority shall remain or become the property of the Authority. Applicants and the Consultant, as the case may be, are to treat all information as strictly confidential. The Authority will not return any Proposal or any information related thereto. All information collected, analysed, processed or in whatever manner provided by the Consultant to the Authority in relation to the Consultancy shall be the property of the Authority.



### 3. CRITERIA FOR EVALUATION

#### 3.1 Evaluation of Technical Proposals

- 3.1.1 In the first stage, the Technical Proposal will be evaluated on the basis of Applicant's experience, its understanding of TOR, proposed methodology and Work Plan, and the experience of Key Personnel. Only those Applicants whose Technical Proposals get a score of 70 marks or more out of 100 shall qualify for further consideration, and shall be ranked from highest to the lowest on the basis of their technical score ( $S_T$ ).
- 3.1.2 Evaluation will be based on the CVs on "INFRACON" Portal. Each Key Personnel must score a minimum of 70% marks except as provided herein. A Proposal shall be rejected if the Team Leader scores less than 70% marks or any two of the remaining Key Personnel score less than 70% marks. In case the Selected Applicant has one Key Personnel, other than the Team Leader, who scores less than 70% marks, he would have to be replaced during negotiations, with a better candidate who, in the opinion of the Authority, would score 70% or above.
- 3.1.3 The scoring criteria to be used for evaluation shall be as follows.

Item Code	Parameter	Maximum Marks	Criteria
1.	<b>Relevant Experience of the Applicant</b>	<b>25</b>	30% of the maximum marks shall be awarded for the number of Eligible Assignments undertaken by the Applicant firm. The remaining 70% shall be awarded for: (i) the comparative size and quality of Eligible Assignments; (ii) other similar work in the infrastructure sectors; and (iii) overall turnover, experience and capacity of the firm.
2.	<b>Proposed Methodology and Work Plan</b>	<b>5</b>	Evaluation will be based on the quality of submissions.
3.	<b>Relevant Experience of the Key Personnel</b>	<b>70</b>	30% of the maximum marks for each Key Personnel shall be awarded for the number of Eligible Assignments the

respective Key Personnel has worked on. The remaining 70% shall be awarded for: (i) the comparative size and quality of Eligible Assignments; and (ii) other similar work in infrastructure sectors.

3(a)	Senior Highway Engineer - cum - Team Leader	20
3(d)	Bridge Engineer	12.5
3(e)	Traffic – cum - Safety Expert	12.5
3(f)	Surveyor	10
3(g)	Financial Analyst	10
3(h)	Environmental Expert	5
	<b>Grand Total</b>	<b>100</b>

While awarding marks for the number of Eligible Projects, the Applicant or Key Personnel, as the case may be, that has undertaken the highest number of Eligible Assignments shall be entitled to the maximum score for the respective category and all other competing Applicants or respective Key Personnel, as the case may be, shall be entitled to a proportionate score. No score will be awarded to an Applicant/ Key Personnel for fulfilling the eligibility criteria of a minimum number of Eligible Assignments and only projects exceeding the eligibility criteria shall qualify for scoring. For the avoidance of doubt and by way of illustration, if the minimum number of Eligible Projects for meeting the eligibility criteria is 3 (three), then an equivalent number will be ignored for each Applicant/Key Personnel and only the balance remaining will be considered for awarding scores relating to the number of Eligible Assignments on a proportionate basis. However, for assigning scores in respect of the size and quality of Eligible Assignments, all Eligible Assignments of the Applicant/Key Personnel shall be considered.

#### 3.1.4 Eligible Assignments

For the purposes of determining Conditions of Eligibility and for evaluating the Proposals under this RFP, advisory/ consultancy assignments in respect of preparation of feasibility report and/or detailed project report including engineering surveys and social and environmental impact assessment, for the following projects shall be deemed as eligible assignments (the “**Eligible Assignments**”):

- (i) Four- laning of a national / state highway having an estimated capital cost (excluding land) of at least Rs.456 (Four Hundred and Fifty Six) crore in case of a project in India, and US\$228 (Two Hundred and Twenty Eight) million for projects elsewhere; or
- (ii) any project involving construction of a national/state highway and having an estimated capital cost (excluding land) of at least Rs.1140 (One Thousand One

Hundred and Forty) Crore in case of a project in India, and US\$ 570 (Five Hundred and Seventy ) million for projects elsewhere.

Provided that the Applicant firm claiming credit for an Eligible Assignment shall have, prior to PDD, received professional fees of at least Rs.1.14 (One Point One Four) Crore for such assignment, and where credit is being claimed by a Key Personnel, she/he should have completed the relevant assignment prior to PDD.

Provided further that if the Applicant firm is taking credit for an Eligible Assignment which was undertaken for a private sector entity, such assignment shall have been completed prior to PDD and the Applicant shall have received professional fees of at least Rs. 2.28 (Two Point Two Eight) crore.

Following enhancement factor will be used for the cost of services provided and for the turnover from consultancy business to a common base value for works completed in India:

<b>Year of completion of services / turnover</b>	<b>Enhancement factor</b>
Financial year in which RFP invited	1.00
One year prior to RFP	1.10
Two year prior to RFP	1.21
Three year prior to RFP	1.33
Four year prior to RFP	1.46
Five year prior to RFP	1.61
Six year prior to RFP	1.77
Seven year prior to RFP	1.95

Applicant should indicate actual figures of costs and amount for the works executed by them without accounting for the above mentioned factors.

In case the financial figures and values of services provided are in foreign currency, the above enhancement factors will not be applied. Instead, current market exchange rate (State Bank of India BC Selling rate as on last date of submission of the bid) will be applied for the purpose of conversion of amount in foreign currency into Indian Rupees.

### **3.2 Short-listing of Applicants**

Of the Applicants ranked as aforesaid, not more than five shall be pre-qualified and short-listed for financial evaluation in the second stage. However, if the number of such pre-qualified Applicants is less than two, the Authority may, in its sole discretion, pre-qualify the Applicant(s) whose technical score is less than 70 points even if such Applicant(s) do(es) not qualify in terms of Clause 3.1.2; provided that in such an event, the total number of pre-qualified and short-listed Applicants shall not exceed two.

### **3.3 Evaluation of Financial Proposal**

- 3.3.1 In the second stage, the financial evaluation will be carried out as per this Clause 3.3.
- 3.3.2 For financial evaluation, the total cost indicated in the Financial Proposal, excluding Additional Costs, will be considered. Additional Costs shall include items specified as such in Form-2 of Appendix-II.
- 3.3.3 The Authority will determine whether the Financial Proposals are complete, unqualified and unconditional. The cost indicated in the Financial Proposal shall be deemed as final and reflecting the total cost of services. Omissions, if any, in costing any item shall not entitle the firm to be compensated and the liability to fulfil its obligations as per the TOR within the total quoted price shall be that of the Consultant. The lowest Financial Proposal (FM) will be given a financial score (SF) of 100 points. The financial scores of other proposals will be computed as follows:

$$SF = 100 \times FM/F$$

(F = amount of Financial Proposal)

### **3.4 Combined and final evaluation**

- 3.4.1 Proposals will finally be ranked according to their combined technical (ST) and financial (SF) scores as follows:**

$$S = ST \times Tw + SF \times Fw$$

**Where S is the combined score, and Tw and Fw are weights assigned to Technical Proposal and Financial Proposal that shall be 0.80 and 0.20 respectively .**

- 3.4.2 The Selected Applicant shall be the first ranked Applicant (having the highest combined score). The second ranked Applicant shall be kept in reserve and may be invited for negotiations in case the first ranked Applicant withdraws, or fails to comply with the requirements specified in Clauses 2.24, 2.28 and 2.29, as the case may be.**

#### 4. FRAUD AND CORRUPT PRACTICES

- 4.1 The Applicants and their respective officers, employees, agents and advisers shall observe the highest standard of ethics during the Selection Process. Notwithstanding anything to the contrary contained in this RFP, the Authority shall reject a Proposal without being liable in any manner whatsoever to the Applicant, if it determines that the Applicant has, directly or indirectly or through an agent, engaged in corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the “**Prohibited Practices**”) in the Selection Process. In such an event, the Authority shall, without prejudice to its any other rights or remedies, forfeit and appropriate the Bid Security or Performance Security, as the case may be, as mutually agreed genuine pre-estimated compensation and damages payable to the Authority for, *inter alia*, time, cost and effort of the Authority, in regard to the RFP, including consideration and evaluation of such Applicant’s Proposal.
- 4.2 Without prejudice to the rights of the Authority under Clause 4.1 hereinabove and the rights and remedies which the Authority may have under the LOA or the Agreement, if an Applicant or Consultant, as the case may be, is found by the Authority to have directly or indirectly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice during the Selection Process, or after the issue of the LOA or the execution of the Agreement, such Applicant or Consultant shall not be eligible to participate in any tender or RFP issued by the Authority during a period of 2 (two) years from the date such Applicant or Consultant, as the case may be, is found by the Authority to have directly or through an agent, engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice, as the case may be.
- 4.3 For the purposes of this Section, the following terms shall have the meaning hereinafter respectively assigned to them:
- (a) “**corrupt practice**” means (i) the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of any person connected with the Selection Process (for avoidance of doubt, offering of employment to or employing or engaging in any manner whatsoever, directly or indirectly, any official of the Authority who is or has been associated in any manner, directly or indirectly with the Selection Process or the LOA or has dealt with matters concerning the Agreement or arising therefrom, before or after the execution thereof, at any time prior to the expiry of one year from the date such official resigns or retires from or otherwise ceases to be in the service of the Authority, shall be deemed to constitute influencing the

actions of a person connected with the Selection Process); or (ii) save as provided herein, engaging in any manner whatsoever, whether during the Selection Process or after the issue of the LOA or after the execution of the Agreement, as the case may be, any person in respect of any matter relating to the Project or the LOA or the Agreement, who at any time has been or is a legal, financial or technical consultant/ adviser of the Authority in relation to any matter concerning the Project;

- (b) “**fraudulent practice**” means a misrepresentation or omission of facts or disclosure of incomplete facts, in order to influence the Selection Process;
- (c) “**coercive practice**” means impairing or harming or threatening to impair or harm, directly or indirectly, any persons or property to influence any person’s participation or action in the Selection Process;
- (d) “**undesirable practice**” means (i) establishing contact with any person connected with or employed or engaged by the Authority with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Selection Process; or (ii) having a Conflict of Interest; and
- (e) “**restrictive practice**” means forming a cartel or arriving at any understanding or arrangement among Applicants with the objective of restricting or manipulating a full and fair competition in the Selection Process.

## **5. PRE-PROPOSAL CONFERENCE**

- 5.1 Pre-Proposal Conference of the Applicants shall be convened at the designated date, time and place. Only those Applicants, who have purchased the RFP document or downloaded the same from the Official Website for the Authority, shall be allowed to participate in the Pre-Proposal Conference. A maximum of two representatives of each Applicant shall be allowed to participate on production of an authority letter from the Applicant.
- 5.2 During the course of Pre-Proposal Conference, the Applicants will be free to seek clarifications and make suggestions for consideration of the Authority. The Authority shall endeavour to provide clarifications and such further information as it may, in its sole discretion, consider appropriate for facilitating a fair, transparent and competitive Selection Process.

## 6. MISCELLANEOUS

- 6.1 The Selection Process shall be governed by, and construed in accordance with, the laws of India and the Courts at New Delhi shall have exclusive jurisdiction over all disputes arising under, pursuant to and/or in connection with the Selection Process.
- 6.2 The Authority, in its sole discretion and without incurring any obligation or liability, reserves the right, at any time, to:
- (a) suspend and/or cancel the Selection Process and/or amend and/or supplement the Selection Process or modify the dates or other terms and conditions relating thereto;
  - (b) consult with any Applicant in order to receive clarification or further information;
  - (c) retain any information and/or evidence submitted to the Authority by, on behalf of and/or in relation to any Applicant; and/or
  - (d) independently verify, disqualify, reject and/or accept any and all submissions or other information and/or evidence submitted by or on behalf of any Applicant.
- 6.3 It shall be deemed that by submitting the Proposal, the Applicant agrees and releases the Authority, its employees, agents and advisers, irrevocably, unconditionally, fully and finally from any and all liability for claims, losses, damages, costs, expenses or liabilities in any way related to or arising from the exercise of any rights and/or performance of any obligations hereunder, pursuant hereto and/or in connection herewith and waives any and all rights and/or claims it may have in this respect, whether actual or contingent, whether present or future.
- 6.4 All documents and other information supplied by the Authority or submitted by an Applicant shall remain or become, as the case may be, the property of the Authority. The Authority will not return any submissions made hereunder. Applicants are required to treat all such documents and information as strictly confidential.
- 6.5 The Authority reserves the right to make inquiries with any of the clients listed by the Applicants in their previous experience record.

## **SCHEDULES**

**SCHEDULE-1**  
*(See Clause 1.1.3)*

**RFP FOR APPOINTMENT OF TECHNICAL CONSULTANT FOR FEASIBILITY  
STUDY AND PREPARATION OF DETAILED PROJECT REPORT FOR 4 LANING  
OF THIRUMANGALAM TO RAJAPALAYAM SECTION OF NH-744 IN THE  
STATE OF TAMIL NADU UNDER NHDP PHASE-IV**

**Terms of Reference (TOR)**

for

**TECHNICAL CONSULTANT**

## CONTENTS

Page no.

- 1. General**
- 2. Objective**
- 3. Scope of Services**
  - 3.1 Scope of Services
  - 3.2 Traffic surveys and demand assessment
  - 3.3 Engineering surveys and investigations
  - 3.4 Proposal for Sections passing through urban areas
  - 3.5 ROBs/ RUBs
  - 3.6 Protective works in hill sections, retaining walls, breast walls, etc
  - 3.7 Road signs, safety devices
  - 3.8 Toll Plazas
  - 3.9 Truck laybys
  - 3.10 Bus bays and bus shelters
  - 3.11 Social impact assessment
  - 3.12 Environment impact assessment
  - 3.13 Preliminary designs
  - 3.14 Project cost
  - 3.15 Financial analysis and bid process
- 4. Deliverables**
  - A. Inception Report
  - B. Report on Alignment and First Traffic Survey
  - C. Land Plan Schedules
  - D. Utility Relocation Plans
  - E. Reports on Environment and Social Impact Assessment
  - F. Report on Indicative GAD of Structures
  - G. Feasibility Report
  - H. Schedules of Contract Agreement
  - I. Financial analysis
  - J. Assistance during bid process
- 5. Specific requirements for the Project Highway**
- 6. Time and Payment Schedule**
- 7. Meetings**
- 8. Consultancy Team**

- 9. Reporting**
- 10. Data and software to be made available by the Authority**
- 11. Completion of Services**

#### **ATTACHMENTS**

Attachment A: Topographic Survey  
Attachment B: Indicative List of Drawings for Schedule-H of the  
Contract Agreement

#### **PROFORMA**

Proforma-1: Road Inventory  
Proforma-2: Inventory And Condition Survey for Culverts  
Proforma-3: Inventory of Structures  
Proforma-4: Road Condition Survey  
Proforma-5: Bridge Condition Survey

## Terms of Reference (TOR)

### 1. GENERAL

- 1.1 The Authority seeks the services of qualified firms for preparation of Detailed Project report for RFP for Appointment of Technical Consultant For Feasibility Study and Preparation of Detailed Project Report for 4 Laning of Thirumangalam to Rajapalayam section of NH-744 in the State of Tamil Nadu under NHDP Phase-IV. **The Feasibility Study and DPR shall also include study for an option of Six-Laning in the second phase of concession** The Project Highway is approximately **76** km long. The Terms of Reference (the “TOR”) for this assignment are specified below.
- 1.2 The Consultant shall be guided in its assignment by the Model Agreement for Engineering, Procurement and Constructions (EPC)/BOT and the Manual of Specifications and Standards for Four/Six laning of highways through Engineering, Procurement and Constructions (EPC)/BOT published by MoRT&H (the “**Manual**”).
- 1.3 The Consultant shall be responsible for preparing the Schedules A, B, C, D, H and I of the Contract Agreement and for bringing out any special feature or requirement of the Project Highway referred to in the Contract Agreement or the Manual. The details and particulars to be specified in the Schedules shall be duly addressed and incorporated therein, in accordance with the provisions of the Manual (Refer to Appendix I of the Manual).
- 1.4 The Consultant shall assist the Authority and its Financial Consultant and the Legal Adviser by furnishing clarifications as required for the financial appraisal and legal scrutiny of the Project Highway and Bid Documents.
- 1.5 The Consultant shall also participate in the pre-bid conference with the Bidders of the Project Highway and assist the Authority in clarifying the technical aspects arising from the Bid Documents including the Feasibility and DPR Report.

## 2. OBJECTIVE

The main objective of the consultancy service is to establish the technical, economical, and financial viability of the project and prepare Detailed Project Report for Rehabilitation and upgradation of existing road to 4/6 lane with paved shoulders configuration/four lane.

- 2.2 The viability of the project shall be established taking into account the requirements regarding rehabilitation, upgrading and improvement based on highway design, pavement design, provision of service roads wherever necessary, type of intersections, rehabilitation and widening of existing and/or construction of new bridges and structures, road safety features, quantities of various items of works and cost estimates and economic analysis.
- 2.3 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, social and environmental action plans as appropriate and documents required for tendering the project on commercial basis for international / local competitive bidding.
- 2.4 The DPR consultant should ensure detailed project preparation incorporating aspects of value engineering, quality audit and safety audit requirement in design and implementation.
- 2.5 **The consultant should, along with Feasibility Report, clearly bring out through financial analysis the preferred mode of implementation on which the Civil Works for the stretches are to be taken up.**
- 2.6 The objective of this consultancy is to prepare Detailed Project Report of the Project Highway for the purpose of firming up the Authority's requirements in respect of development and construction of the Project Highway and Project Facilities and enabling the prospective bidders to assess the Authority's requirements in a clear and predictable manner with a view to ensuring:
  - (i) enhanced safety and level of service for the road users;
  - (ii) superior operation and maintenance enabling enhanced operational efficiency of the Project Highway;
  - (iii) minimal adverse impact on the local population and road users due to road construction;
  - (iv) minimal adverse impact on environment;
  - (v) minimal additional acquisition of land; and

- (vi) phased development of the Project Highway for improving its financial viability consistent with the need to minimise frequent inconvenience to traffic that may be caused if additional works are undertaken within a period of seven years from the commencement of construction of the Project Highway.

### 3. SCOPE OF SERVICES

- 3.1 As far as possible, the widening/improvement work to 4 lane with paved shoulder shall be within the existing right of way minimizing the 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. However bypasses proposals should also be considered, wherever in urban areas, improvement to 4 lanes of the existing road is not possible. The Consultant shall furnish land acquisition details as per revenue records/maps for further processing.
- 3.2 The Consultant shall study the possible locations and design of toll plaza. Wayside Amenities required on tolled highway shall also be planned. The local and slow traffic may need segregation from the main traffic and provision of service roads and fencing may be considered, wherever necessary to improve efficiency and safety.
- 3.3 The general scope of services is given in the sections that follow. However, the entire scope of services would, inter-alia, include the items mentioned in the Letter of Invitation and the TOR. The Consultant will also make suitable proposals for widening/improvement of the existing road to 4 lanes with paved shoulder etc. and strengthening of the carriageways, as required at the appropriate time to maintain the level of service over the design period.
- 3.4 All ready to implement 'good for construction' drawings shall be prepared.
- 3.5 Environmental Impact Assessment, Environmental Management Plan and Rehabilitation and Resettlement Studies shall be carried out by the Consultant meeting the requirements of the Government of India and lending agencies like ADB/ World Bank/ JBIC etc.
- 3.6 *Wherever required, consultant will liaise with concerned authorities and arrange all clarifications. Approval of all drawings including GAD and detail engineering drawings will be got done by the consultant from the Railways. However, if Railways require proof checking of the drawings prepared by the consultants, the same will be got done by NHAI and payment to the proof consultant shall be made by NHAI directly. Consultant will also obtain 'NO Objection Certificate' from Ministry of Environment and Forest and also incorporate the estimates for shifting of utilities of all types involved from concerned local authorities in the DPR. Consultant is also required to prepare all Land Acquisition papers (i.e. all necessary schedules as per L.A. act) for acquisition of land either under NH Act or State Act.*
- 3.7 The consultant shall prepare and submit the cost estimate and Bid Documents at Draft DPR stage [Stage 4, Refer para 10.3].
- 3.8 Consultant shall obtain all types of necessary clearances required for implementation of the project on the ground from the concerned agencies. The client shall provide the necessary supporting letters and any official fees as per the demand note issued by such concerned agencies from whom the clearances

are being sought to enable implementation. In case Consultant does not obtain all the necessary clearances up to the completion of the assignment, deduction up to 5% amount will be made from the final payment. The amount thus deducted will be released after all necessary clearances have been obtained.

#### 4. General

##### 4.1 Primary Tasks

General Scope of Services shall cover but be not limited to the following major tasks (additional requirements for Feasibility Studies and preparation of Detailed Project Report for Bridges and Highway are given in **Supplement I** and **II** respectively):

- i. *review of all available reports and published information about the project road and the project influence area;*
- ii. *Environmental and social impact assessment, including such as related to cultural properties, natural habitats, involuntary resettlement etc.*
- ii(a). ***Public consultation, including consultation with Communities located along the road, NGOs working in the area, other stakeholders and relevant Govt. depts at all the different stages of assignment (such as inception stage, feasibility stage, preliminary design stage and once final designs are concretized).***
- iii. *detailed reconnaissance;*
- iv. *identification of possible improvements in the existing alignment and bypassing congested locations with alternatives, evaluation of different alternatives comparison on techno-economic and other considerations and recommendations regarding most appropriate option;*
- v. *traffic studies including traffic surveys and Axle load survey and demand forecasting for next thirty years;*
- vi. *inventory and condition surveys for road;*
- vii. *inventory and condition surveys for bridges, cross-drainage structures and drainage provisions;*
- viii. *detailed topographic surveys using Mobile LIDAR Technology equipped with minimum engineering grade system or any other equivalent technology having output accuracy more than (i) specified in IRC:SP:19; (ii) Total Stations and (iii) GPS/DGPSix.;*
- ix. *pavement investigations;*
- x. *sub-grade characteristics and strength: investigation of required sub-grade and sub-soil characteristics and strength for road and embankment design and sub soil investigation;*
- xi. *identification of sources of construction materials;*
- xii. ***detailed design of road, its x-sections, horizontal and vertical alignment and design of embankment of height more than 6m and also in poor soil conditions and where density consideration require, even lesser height embankment. Detailed design of structures preparation of GAD and construction drawings and cross-drainage structures and underpasses etc.***

- xiii. *identification of the type and the design of intersections;*
- xiv. *design of complete drainage system and disposal point for storm water*
- xv. *value analysis / value engineering and project costing;*
- xvi. *economic and financial analyses;*
- xvii. *contract packaging and implementation schedule.*
- xviii *strip plan indicating the scheme for carriageway widening, location of all existing utility services (both over- and underground) and the scheme for their relocation, trees to be felled and planted and land acquisition requirements including schedule for LA: reports documents and drawings arrangement of estimates for cutting of trees and shifting of utilities from the concerned department;*
- xix **to find out financial viability of project for implementation and suggest the preferred mode on which the project is to be taken up.**
- xx. *preparation of detailed project report, cost estimate, approved for construction drawings, rate analysis, detailed bill of quantities, bid documents for execution of civil works through budgeting resources.*
- xxi. *Design of toll plaza and identification of their numbers and location and office cum residential complex including working drawings*
- xxii. *Design of weighing stations, parking areas and rest areas*
- xxiii. *Any other user oriented facility enroute toll facility.*
- xxiv. *Tie-in of on-going/sanctioned works of MORT&H/ NHAI/other agencies.*
- xxv. *Preparation of social plans for the project affected people as per policy of the lending agencies/ Govt. of India R & R Policy.*

- 4.2 While carrying out the field studies, investigations and design, the development plans being implemented or proposed for future implementation by the local bodies, should be taken into account. Such aspect should be clearly brought out in the reports and drawings.
- 4.3 The consultant shall study the possible locations and design of toll plaza, wayside amenities required and arboriculture along the highway shall also be planned.
- 4.4 The local and slow traffic may need segregation from the main traffic and provision of service roads and physical barrier including fencing may be considered, wherever necessary to improve efficiency and safety.

#### **4.5 Standards and Codes of Practices**

- 1. All activities related to field studies, design and documentation shall be done as per the latest guidelines/ circulars of MoSRT&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 standard practices, such as, British and American Standards may be adopted. The Consultants, upon award of the Contract, may finalise this in consultation with NHAI and reflect the same in the inception report.
- 2. All notations, abbreviations and symbols used in the reports, documents and drawings shall be as per IRC:71-1977.

#### **4.6 Quality Assurance Plan (QAP)**

- 1. The Consultants should have detailed Quality Assurance Plan (QAP) for all field studies including topographic surveys, traffic surveys, engineering

surveys and investigations, design and documentation activities. The quality assurance plans/procedures for different field studies, engineering surveys and investigation, design and documentation activities should be presented as separate sections like engineering surveys and investigations, traffic surveys, material geo-technical and sub-soil investigations, road and pavement investigations, investigation and design of bridges & structures, environment and R&R assessment, economic & financial analysis, drawings and documentation, preparation, checking, approval and filing of calculations, identification and tractability of project documents etc. Further, additional information as per format shall be furnished regarding the details of personal who shall be responsible for carrying out/preparing and checking/verifying various activities forming part of feasibility study and project preparation, since inception to the completion of work. The detailed Draft QAP Document must be discussed and finalised with the concerned NHAI officers immediately upon the award of the Contract and submitted as part of the inception report.

2. It is imperative that the QAP is approved by NHAI before the Consultants start the field work.

#### **4.7 Review of Data and Documents**

1. The Consultants shall collect the available data and information relevant for the Study. The data and documents of major interest shall include, but not be limited to, the following:
  - i. *Climate;*
  - ii. *road inventory*
  - iii. *road condition, year of original construction, year and type of major maintenance/rehabilitation works;*
  - iv. *condition of bridges and cross-drainage structures;*
  - v. *sub-surface and geo-technical data for existing bridges;*
  - vi. *hydraulic data, drawings and details of existing bridges;*
  - vii. *detailed of sanctioned / on-going works on the stretch sanctioned by MoSRT&H/other agencies for Tie-in purposes*
  - viii. *survey and evaluation of locally available construction materials;*
  - ix. *historical data on classified traffic volume (preferably for 5 years or more);*
  - x. *origin-destination and commodity movement characteristics; if available;*
  - xi. *speed and delay characteristics; if available;*
  - xii. *commodity-wise traffic volume; if available;*
  - xiii. *accident statistics; and,*
  - xiv. *vehicle loading behaviour (axle load spectrum), if available.*
  - xv. *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.)*
  - xvi. *Environmental setting and social baseline of the project.*

#### **4.8. Social Analysis**

The social analysis study shall be carried out in accordance with the NHAI/World Bank/ADB Guidelines. The social analysis report will, among other things, provide a socio-economic profile of the project area and address in particular, indigenous people, communicable disease particularly HIV/AIDS poverty alleviation, gender, local population, industry, agriculture, employment, health, education, health, child labour, land acquisition and resettlement .

#### 4.9 Traffic Surveys

All traffic surveys and studies will be completed in feasibility studies.

##### 4.9.1 Number and Location of Survey Stations

1. The type of traffic surveys and the minimum number of survey stations shall normally be as under, unless otherwise specifically mentioned.

Sl.NR.	Description	Number of Survey Stations per 100 km
1.	Classified Traffic Volume Count	3
2.	Origin-Destination and Commodity Movement Characteristics	Minimum 2
3.	Axle Loading Characteristics	2
4.	Intersection Volume Count	All Major Intersection
5.	Speed-Delay Characteristics	Project Road Section
6.	Pedestrian/animal cross traffic count	All major inhabitations along the highway

2. The number of survey locations indicated in the table above are indicative only. The Consultants shall, immediately upon award of the work, submit to NHAI proposals regarding the total number as well as the locations of the traffic survey stations as put of inception report. Suitable maps and charts should accompany the proposals clearly indicating the rationale for selecting the location of survey stations.
3. The methodology of collection and analysis of data, number and location of traffic survey stations shall be finalised in consultation with NHAI.

#### 4.9.2. Classified Traffic Volume Count Survey

- The classified traffic volume count surveys shall be carried out for 7 days (continuous, direction-wise) at the selected survey stations. The vehicle classification system as given in relevant IRC code may be followed. However, the following generalised classification system is suggested in view of the requirements of traffic demand estimates and economic analysis:

Motorised Traffic		Non-Motorised Traffic	
2-Wheeler		Bi-Cycle	
3-Wheeler		Cycle-Rickshaw	
Passenger Car		Animal Drawn Vehicle (ADV)	
Utility Vehicle (Jeep, Van etc.)		Hand Cart	
		Other Non-Motorised Vehicle	
Bus	Mini Bus Standard Bus		
LCV	LCV-Passenger LCV-Freight		
Truck	MCV : 2-Axle Rigid Chassis		
	HCV : 3-Axle Rigid Chassis		
	MAV		Semi Articulated
			Articulated

- 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.
- The consultants shall compile the relevant traffic volume data from secondary sources also. The salient features of traffic volume characteristics shall be brought out and variations if any, from the traffic census carried out by the State PWD shall be suitably explained.

#### 4.9.3. Origin-Destination and Commodity Movements Surveys

- The Consultants shall carry out 1-day (24 hour, both directions) O-D and Commodity Movement Surveys at locations finalised in consultation with NHAI. These will be essentially required around congested towns to delineate through traffic. The road side interviews shall be on random sample basis and cover all four-wheeled vehicles. The locations of the O-D survey and Commodity Movement surveys shall normally be same as for the classified traffic count stations.
- The location of origin and destination zones shall be determined in relation to each individual station and the possibility of traffic diversion to the Project Road from/to other road routes including bypasses.
- The trip matrices shall be worked out for each vehicle type information on weight for trucks should be summed up by commodity type and the results tabulated, giving total weight and average weight per truck for the various commodity types. The sample size for each vehicle type shall be indicated on the table and also in the graphical representations.

4. The data derived from surveys shall also be analysed to bring out the lead and load characteristics and desire line diagrams. The data analysis should also bring out the requirement for the construction of bypasses.
5. The distribution of lead and load obtained from the surveys should be compared with those derived from the axle load studies.
6. The commodity movement data should be duly taken into consideration while making the traffic demand estimates.

#### **4.9.4. Turning Movement Surveys**

1. The turning movement surveys for estimation of peak hour traffic for the design of major and minor intersections shall be carried out for the Study. The details regarding composition and directional movement of traffic shall be furnished by the Consultant.
2. The methodology for the surveys shall be as per IRC: SP: 41-1994. The details including location and duration of surveys shall be finalized in consultation with NHAI officials. The proposal in response to this TOR shall clearly indicate the number of locations that the Consultants wish to conduct turning movement surveys and the rationale for the same.
3. The data derived from the survey should be analysed to identify requirements of suitable remedial measures, such as construction of underpasses, fly-overs, interchanges, grade-separated intersections along the project road alignment. Intersections with high traffic volume requiring special treatments either presently or in future shall be identified.

#### **4.9.5. Axle Load Surveys**

1. Axle load surveys in both directions shall be carried out at suitable location(s) in the project road stretch on a random sample basis normally for trucks only (both empty and loaded trucks) for 2 normal days - (24 hours) at special count stations to be finalised in consultation with NHAI. However, a few buses may be weighed in order to get an idea about their loading behaviour. While selecting the location(s) of axle load survey station(s), the locations of existing bridges with load restrictions, if any, should be taken into account and such sites should be avoided.
2. 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 finalised before taking up the axle load surveys.
3. 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. Furthermore, the data from axle load surveys should be analysed to bring out the Gross Vehicle Weight (GVW) and Single Axle Load (SAL) Distributions by truck type (axle configuration).
4. The Consultant shall ascertain from local enquiries about the exceptional

**4.9.6. Speed-Delay Surveys**

The Consultants shall carry out appropriate field studies such as moving car survey to determine running speed and journey speed. The data should be analysed to identify sections with typical traffic flow problems and congestion. The objective of the survey would be to recommend suitable measures for segregation of local traffic, smooth flow of through traffic and traffic safety. These measures would include the provision of bypasses, under-passes, fly-overs, interchanges, grade-separated intersections and service roads.

loads that have used the highway in the past in order to assess the suitability of existing bridges to carry such loads.

**4.9.7 Pedestrian / animal cross traffic surveys:**

These may be conducted to determine if provision of viaduct for pedestrians/animals is necessary to improve the traffic safety.

**4.9.8 Truck Terminal Surveys**

The data derived from the O-D, speed-delay, other surveys and also supplementary surveys should be analysed to assess requirements for present and future development of truck terminals at suitable locations enroute.

**4.10. Traffic Demand Estimates**

1. The consultants shall make traffic demand estimates and establish possible traffic growth rates in respect of all categories of vehicles, taking into account the past trends, annual population and real per capita growth rate, elasticity of transport demand in relation to income and estimated annual production increase. The other aspects including socio-economic development plans and the land use patterns of the region having impact on the traffic growth, the projections of vehicle manufacturing industry in the country, development plans for the other modes of transport, O-D and commodity movement behaviour should also be taken into account while working out the traffic demand estimates.
2. The values of elasticity of transport demand shall be based on the prevailing practices in the country. The Consultants shall give complete background including references for selecting the value of transport demand elasticity.
3. It is envisaged that the 2-laning of the project road sections covered under this TOR would be completed and opened to traffic after 3 years. The traffic demand estimates shall be done for a further period of 30 years from completion of two lane. The demand estimates shall be done assuming three scenarios, namely, optimistic, pessimistic and most likely traffic growth. The growth factors shall be worked out for five-yearly intervals.
4. Traffic projections should be based on sound and proven forecasting techniques. In case traffic demand estimated is to be made on the basis of

a model, the application of the model in the similar situation with the validation of the results should be established. 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. Impact of toll charges on the traffic estimates should be estimated.

5. The methodology for traffic demand estimates described in the preceding paragraphs is for normal traffic only. In addition to the estimates for normal traffic, the Consultants shall also work out the estimates for generated, induced and diverted traffic.
6. The traffic forecasts shall also be made for both diverted and generated traffic.
7. Overall traffic forecast thus made shall form the basis for the design of each pavement type and other facilities/ancillary works.

#### 4.11. Engineering Surveys and Investigations

##### 4.11.1. Reconnaissance and Alignment

1. The Consultants should make an in-depth study of the available land width (ROW) topographic maps, satellite imageries and air photographs of the project area and other available relevant information collected by them concerning the existing alignment. Consultant himself has to arrange the required maps and the information needed by him from the potential sources. Consultant should make efforts for minimizing land acquisition. Mobile LIDAR technology or any other equivalent technology shall be used for timely and more survey accuracy
2. The detailed ground reconnaissance may be taken up immediately after the study of maps and other data. The primary tasks to be accomplished during the reconnaissance surveys include;

<i>i.</i>	<i>topographical features of the area;</i>
<i>ii.</i>	<i>typical physical features along the existing alignment within and outside ROW i.e. land use pattern;</i>
<i>iii.</i>	<i>possible alignment alternatives, vis-a-vis, scheme for the construction of additional lanes parallel to the existing road;</i>
<i>iv.</i>	<i>realignment requirements including the provision of bypasses, ROB's / Flyovers and via-duct for pedestrian crossings with possible alignment alternatives;</i>
<i>v.</i>	<i>preliminary identification of improvement requirements including treatments and measures needed for the cross-roads;</i>
<i>vi.</i>	<i>traffic pattern and preliminary identification of traffic homogenous links;</i>
<i>vi</i> <i>i.</i>	<i>sections through congested areas;</i>
<i>vi</i> <i>ii.</i>	<i>inventory of major aspects including land width, terrain, pavement type, carriageway type, bridges and</i>

	<i>structures (type, size and location), intersections (type, cross-road category, location) urban areas (location, extent), geologically sensitive areas, environmental features:</i>
<i>ix.</i>	<i>critical areas requiring detailed investigations; and,</i>
<i>x.</i>	<i>requirements for carrying out supplementary investigations.</i>
<i>xi.</i>	<i>soil (textural classifications) and drainage conditions</i>
<i>xi</i> <i>i.</i>	<i>type and extent of existing utility services along the alignment(within ROW).</i>

3. The data derived from the reconnaissance surveys are normally utilised for planning and programming the detailed surveys and investigations. All field studies including the traffic surveys should be taken up on the basis of information derived from the reconnaissance surveys.
4. The data and information obtained from the reconnaissance surveys should be documented. The data analysis and the recommendations concerning alignment and the field studies should be included in the Inception Report. The data obtained from the reconnaissance surveys should form the core of the database which would be supplemented and augmented using the data obtained from detailed field studies and investigations.
5. The data obtained from the reconnaissance surveys should be compiled in the tabular as well as graphical (chart) form indicating the major physical features and the proposed widening scheme for NHAI's comments. The data and the charts should also accompany the rationale for the selection of traffic survey stations.

#### **4.11.2. Topographic Surveys**

1. The basic objective of the topographic survey would be to capture the essential ground features along the alignment in order to consider improvements and for working out improvements, rehabilitation and upgrading costs. The detailed topographic surveys should normally be taken up after the completion of reconnaissance surveys.
2. The 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. mobile LIDAR technology with engineering grade or any other equivalent technology. The data from the topographic surveys shall be available in (x, y, z) format for use in a sophisticated digital terrain model (DTM). The Consultants would be fully responsible for any inaccuracy in surveys. Availability of total stations may be ensured at certain intervals so that accuracy of the survey data of the LIDAR technology or any other equivalent technology may be authenticated if required.
3. The detailed field surveys would essentially include the following activities:
  - i. Topographic Surveys along the Existing Right of Way (ROW): Running a continuous open Traverse along the existing road and realignments, wherever required, and fixation of all cardinal points such as horizontal intersection points (HIP's), centre points and transit points etc.*

- and properly referencing the same with a pair of reference pillars fixed on either side of the centre-line at safe places within the ROW.*
- ii. *Collection of details for all features such as structures (bridges, culverts etc.) 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 metre) oil and gas lines etc. falling within the extent of survey.*
4. The width of survey corridor will generally be as given under:
- i. *The width of the survey corridor should taken into account the layout of the existing alignment including the extent of embankment and cut slopes and the general ground profile. While carrying out the field surveys, the widening scheme (i.e. right, left or symmetrical to the centre line of the existing carriageway) should be taken into consideration so that the topographic surveys cover sufficient width beyond the centre line of the proposed divided carriageway. Normally the surveys should extend a minimum of 30 m beyond either side of the centre line of the proposed divided carriageway or land boundary whichever is more.*
  - ii. *In case the reconnaissance survey reveals the need for bypassing the congested locations, the traverse lines would be run along the possible alignments in order to identify and select the most suitable alignment for the bypass. The detailed topographic surveys should be carried out along the bypass alignment approved by NHAI. At locations where grade separated intersections could be the obvious choice, the survey area will be suitably increased. Field notes of the survey should be maintained which would also provide information about traffic, soil, drainage etc.*
  - iii. *The width of the surveyed corridor will be widened appropriately where developments and / or encroachments have resulted in a requirement for adjustment in the alignment, or where it is felt that the existing alignment can be improved upon through minor adjustments.*
  - iv. *Where existing roads cross the alignments, the survey will extend a minimum of 100 m either side of the road centre line and will be of sufficient width to allow improvements, including at grade intersection to be designed.*

5. The surveyed alignment shall be transferred on to the ground as under:
  - i. *Reference Pillar and Bench Mark / Reference pillar of size 15 cm X 15 cm X 45 cm shall be cast in RCC of grade M 15 with a nail fixed in the centre of the top surface. The reference pillar shall be embedded in concrete upto a depth of 30 cm with CC M10 (5 cm wide all around). The balance 15 cm above ground shall be painted yellow. The spacing shall be 250m apart, incase Bench Mark Pillar coincides with Reference Pillar, only one of the two need be provided.*
  - ii. *Establishing Bench marks at site connected to GTS Bench marks at a 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.*
  - iii. *Apart from reference pillars and bench marks pillars ROW boundary stones of same size as mentioned in Para 5 (i) above on both sides shall be provided along the project highway alignment at spacing of 100m centre to centre. The centre line marking of the alignment will also be carried out.*

#### **4.11.2.1 Longitudinal and Cross-Sections**

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

- i. *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.*
- ii. *Cross sections at every 50 m interval in full extent of survey covering sufficient number of spot levels on existing carriageway and adjacent ground for profile correction course and earth work calculations. Cross sections shall be taken at closer interval at curves.*
- iii. *Longitudinal section for cross roads for length adequate for design and quantity estimation purposes.*
- iv. *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:5-1998 (“Standard Specifications & Code of Practice for Road Bridges, Section 1 - General Features of Design”).*

*At feasibility study stage cross sections at 200m interval may be taken.*

#### **4.11.2.2 Details of utility Services and Other Physical Features**

1. The Consultants shall collect details of all important physical features along the alignment. 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 fibre cables (OFC) etc. The survey would cover the entire right-of-way of the road on the adequate allowance for possible shifting of the central lines at some of the intersections locations.
2. The information collected during reconnaissance and field surveys shall be shown on a strip plan so that the proposed improvements can be appreciated and the extent of land acquisition with L.A schedule, utility removals of each type etc. assessed and suitable actions can be initiated. Separate strip plan for each of the services involved shall be prepared for submission to the concerned agency.

#### **4.11.3. Road and Pavement Investigations**

The Consultants shall carry out detailed field studies in respect of road and pavement. The data collected through road inventory and pavement investigations should be sufficient to meet the input requirements of HDM-IV.

##### **4.11.3.1 Road Inventory Surveys**

1. Detailed road inventory surveys shall be carried out to collect details of all existing road and pavement features along the existing road sections. The inventory data shall include but not limited to the following:
  - i. *terrain (flat, rolling, mountainous);*
  - ii. *land-use (agricultural, commercial, forest, residential etc) @ every kilometer;*
  - iii. *carriageway width, surfacing type @ every 500m and every change of feature whichever is earlier;*
  - iv. *shoulder surfacing type and width @ every 500m and every change of feature whichever is earlier;*
  - v. *sub-grade / local soil type (textural classification) @ every 500m and every change of feature whichever is earlier;*
  - vi. *horizontal curve; vertical curve*
  - vii. *road intersection type and details, at every occurrence;*
  - viii. *retaining structures and details, at every occurrence;*
  - ix. *location of water bodies (lakes and reservoirs), at every occurrence; and,*
  - x. *height of embankment or depth of cut @ every 200m and every change of feature whichever is earlier.*
  - xi. *land width i.e ROW.*
  - xii. *culverts, bridges and other structures (type, size, span arrangement and location)*
  - xiii. *Roadside arboriculture*
  - xiv. *Existing utility services on either side within ROW.*
  - xv. *General drainage conditions*
  - xvi. *Design speed of existing road*
2. The data should be collected in sufficient detail. The data should be compiled and presented in tabular as well as graphical form. The inventory data would be stored in computer files using simple utility packages, such as EXCEL.

#### 4.11.3.2 Pavement Investigation

##### 1. Pavement Composition

- i. *The data concerning the pavement composition may be already available with the PWD. However, the consultants shall make trial pits to ascertain the pavement composition. The test pit interval will be as per Para 4 below.*
- ii. *For each test pit, the following information shall be recorded:*
  - *test pit reference (Identification number, location):*
  - *pavement composition (material type and thickness); and*
  - *subgrade type (textural classification) and condition (dry, wet)*

##### 2. Road and Pavement Condition Surveys

- i. *Detailed field studies shall be carried out to collect road and pavement surface conditions. The data should generally cover:*
  - *pavement condition (surface distress type and extent);*
  - *shoulder condition;*
  - *embankment condition; and*
  - *drainage condition*

##### **Pavement**

*%<sub>00</sub> cracking (narrow and wide cracking), % of pavement area affected;*

*%<sub>00</sub> ravelling, % of pavement area affected;*

*%<sub>00</sub> potholing, % of pavement area affected;*

*%<sub>00</sub> edge break, length (m); and,*

*%<sub>00</sub> rut depth, mm*

##### **Shoulder**

*%<sub>00</sub> Paved: Same as for pavement*

*%<sub>00</sub> Unpaved: material loss, rut depth and corrugation,*

*%<sub>00</sub> Edge drop, mm.*

##### **Embankment**

*%<sub>00</sub> general condition; and*

*%<sub>00</sub> extent of slope erosion*

- ii. *The objective of the road and pavement condition surveys shall be to identify defects and sections with similar characteristics. All defects shall be systematically referenced, recorded and quantified for the purpose of determining the mode of rehabilitation.*
- iii. *The pavement condition surveys shall be carried out using visual means. Supplemented by actual measurements and in accordance with the widely accepted methodology (AASHTO, IRC, OECD, TRL and World Bank Publications) adapted to meet the study requirements. The measurement of rut depth would be made using standard straight edges.*
- iv. *The shoulder and embankment conditions shall be evaluated by visual means and the existence of distress modes (cuts, erosion marks, failure, drops) and extent (none, moderate, frequent and very frequent) of such distress manifestations would be recorded.*
- v. *For sections with severe distresses, additional investigations as appropriate shall be carried out to determine the cause of such distresses.*
- vi. *Middle 200 m could be considered as representative sample for each one km. of road and in case all other things are considered similar.*

#### **Drainage**

- ‰ *General condition*
- ‰ *Connectivity of drainage turnouts into the natural topography*
- ‰ *Condition in cut sections*
- ‰ *Condition at high embankments*

The data obtained from the condition surveys should be analysed and the road segments of more or less equal performance may be identified using the criteria given in IRC: 81-1997.

### **3. Pavement Roughness**

- i. *The roughness surveys shall be carried out using Bump Integrator or similar instrument. The methodology for the surveys shall be as per the widely used standard practices. The calibration of the instrument shall be done as per the procedure given in the World Bank's Technical Publications and duly got authenticated by established laboratory/institution acceptable to the client..*
- ii. *The surveys shall be carried out along the outer wheel paths. The surveys shall cover a minimum of two runs along the wheel paths for each directions.*
- iii. *The results of the survey shall be expressed in terms of BI and IRI and shall be presented in tabular and graphical forms. The processed data shall be analysed using the cumulative difference*

*approach to identify road segments homogenous with respect to surface roughness.*

**4. Pavement Structural Strength**

- i. The Consultants shall carry out structural strength surveys for existing two-lane pavements using Benkelman Beam Deflection technique in accordance with the CGRA procedure given in IRC:81-1997 (“Guidelines for Strengthening of Flexible Road Pavements Using Benkelman Beam Deflection Technique”).*
- ii. It is suggested that the deflection surveys may be carried out as per the scheme given below:  
 $\%_{00}$  mainline testing; and,  
 $\%_{00}$  control section testing.*
- iii. The deflection tests for the mainline shall be carried out at every 500 m along the road sections covered under the study. The control section testing shall involve carrying out deflection testing for each 100 m long homogenous road segment along the road sections. The selection of homogenous segment shall be based on the data derived from pavement condition surveys. The total length of such homogenous segments shall not be less than 100 m per kilometre. The deflection measurements for the control section testing should be at an interval of not more than 10 m.*
- iv. Test pits shall be dug at every 500 m and also along each homogeneous road segment to obtain pavement composition details (pavement course, material type and thickness) so as to be able to study if a correlation exists between deflection and composition. If so, the relationship may be used while working out the overlay thickness for the existing pavement.*
- v. Benkelman Beam Deflection surveys may not be carried out for severely distressed sections of the road warranting reconstruction. The Consultants, immediately upon the award of the contract, shall submit to NHAI the scheme describing the testing schedule including the interval. The testing scheme shall be supported by data from detailed reconnaissance surveys.*
- vi. In case, the Consultants wish to use any acceptable method(s) other than Benkelman Beam deflection technique for the evaluation of pavement strength, details of such methods or innovative features for deflection testing using Benkelman Beam technique along with the methodology for data analysis, interpretation and the use of such data for pavement overlay design purposes using IRC or any other widely used practices, such as AASHTO guidelines, should be got approved by NHAI. The sources of such methods should be properly referenced.*

**4.11.3.3 Subgrade Characteristics and Strength**

1. Based on the data derived from condition (surface condition, roughness) and structural strength surveys, the project road section should be divided into segments homogenous with respect to pavement condition and strength. The delineation of segments homogenous with respect to roughness and strength should be done using the cumulative difference approach (AASHTO, 1993).
2. The data on soil classification and mechanical characteristics for soils along the existing alignments may already be available with the PWD. The testing scheme is, therefore, proposed as given under:
  - i. *For the widening (2- Laning) of existing road within the ROW, the Consultants shall test at least three sub-grade soil samples for each homogenous road segment or three samples for each soil type encountered, whichever is more.*
  - ii. *For the roads along new alignments, the test pits for subgrade soil shall be @5 km or for each soil type, whichever is more. A minimum of three samples should be tested corresponding to each homogenous segment.*
3. 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. *characterisation (grain size and Atterberg limits) at each test pit and,*
  - iv. *laboratory moisture-density characteristics (modified AASHTO compaction);*
  - v. *laboratory CBR (unsoaked and 4-day soak compacted at three energy levels) and swell.*
4. 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 finalised in consultation with the NHAI officers after the problematic soil types are identified along the road sections.
5. The laboratory for testing of material should be got approved from NHAI before start of work.

#### **4.11.4 Investigations for Bridges and Structure**

##### **4.11.4.1 Inventory of Bridges, Culverts and Structures**

The Consultants shall make an inventory of all the structures (bridges, viaducts, ROBs, culverts, etc.) along the road under the project. The inventory for the bridges, viaducts and ROBs shall include the parameters required as per the guidelines of IRC-SP:35-1990. The inventory of culverts shall be presented in a tabular form covering relevant physical and hydraulic parameters.

##### **4.11.4.2 Hydraulic and Hydrological Investigations**

1. 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:5-1998 (“Standard Specifications & Code of Practice for Road Bridges, Section I General Feature of Design”). These

investigations shall be carried out for all existing drainage structures along the road sections under the study.

2. The Consultants shall make a desk study of available data on topography (topographic maps, stereoscopic aerial photography), storm duration, rainfall statistics, top soil characteristics, vegetation cover etc. so as to assess the catchment areas and hydraulic parameters for all existing and proposed drainage provisions. The findings of the desk study would be further supplemented and augmented by a reconnaissance along the area. All important hydrological features shall be noted during this field reconnaissance.
3. The Consultants shall collect information on high flood level (HFL), low water levels (LWL), discharge velocity etc. from available past records, local inquiries and visible signs, if any, on the structural components and embankments. Local inquiries shall also be made with regard to the road sections getting overtopped during heavy rains.

#### **4.11.4.3 Condition Surveys for Bridges, Culverts and Structures**

1. The Consultants shall thoroughly inspect the existing structures and shall prepare a report about their condition including all the parameters given in the Inspection pro-forma of IRC-SP; 35-1990. The condition and structural assessment survey of the bridges / culverts / structures shall be carried out by senior experts of the Consultants.
2. For the bridges identified to be in a distressed condition based upon the visual condition survey, supplementary testing shall be carried out as per IRC-SP:35 and IRC-SP:40. Selection of tests may be made based on the specific requirement of the structure.
3. The assessment of the load carrying capacity or rating of existing bridges shall be carried out under one or more of the following scenarios:
  - i. *when the design live load is less than that of the statutory commercial vehicle plying or likely to ply on bridge;*
  - ii. *if during the condition assessment survey and supplementary testing the bridge is found to indicate distress of serious nature leading to doubt about structural and / or functional adequacy, and*
  - iii. *design live load is not known nor are the records and drawings available.*
4. The evaluation of the load carrying capacity of the bridge shall be carried out as per IRC-SP:37 (“Guidelines for Evaluation of Load Carrying Capacity of Bridges”). The analytical and correlation method shall be used for the evaluation of the load carrying capacity as far as possible. When it is not possible to determine the load carrying capacity of the bridge using analytical and correlation method, the same shall be carried out using load testing. The consultant has to exhaust all other methods of evaluation of strength of bridges before recommending to take up load testing of bridges. Road closure for testing if unavoidable shall be arranged by NHAI for limited duration say 12 hrs. or so.
5. Consultant shall carryout necessary surveys and investigations to establish the remaining service life of each retainable bridge or structure with and without the proposed strengthening and rehabilitation according to acceptable international practice in this regard.

#### 4.11.4.4 Geo-technical Investigations and Sub-Soil Exploration

- The Consultants shall carry out geo-technical investigations and sub-surface explorations for the proposed Bridges / Road over bridges/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:

S.N.	Description	Location of Boring
1	Over all length = 6 – 30 m	One abutment location
2	Over all length = 30 – 60 m	One abutment location and at least one intermediate location between abutments for structures having more than one span.
3	Over all length >60 m	Each abutment and each pier locations.

- The deviation(s), if any, by the Consultants from the scheme presented above should be got approved by NHAI.
- However, where a study of geo-technical reports and information available from adjacent crossings over the same waterway (existing highway and railway bridges) indicates that subsurface variability is such that boring at the suggested spacing will be insufficient to adequately define the conditions for design purposes, the Consultants shall review and finalise the bore hole locations in consultation with the NHAI officers.
- Sub-soil investigations will be done as per IRC 78-2000.
- The scheme for the borings locations and the depth of boring shall be prepared by the Consultants and submitted to NHAI for approval. These may be finalised in consultation with NHAI.
- The sub-soil exploration and testing should be carried out through the Geo- technical Consultants who have done Geo-technical investigation work in similar project. In case of outsourcing Geo-Technical Investigation, the firm selected by the Consultant for this purpose should also be got approved from NHAI before start of such works. The soil testing reports shall be in the format prescribed in relevant IRC Codes.
- For the road pavement, bore holes at each major change in pavement condition  
or  
in deflection readings or at 2 km intervals whichever is less shall be carried out to a depth of at least 2 m below embankment base or to rock level and are to be fully logged. Appropriate tests to be carried out on samples collected from these bore holes to determine the suitability of various materials for use in widening of embankments or in parts of new pavement structure.

#### 4.11.5. Material Investigations

- 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. The Consultants shall prepare mass haul diagram for haulage purposes giving quarry charts indicating the location of selected borrow areas, quarries and the respective estimated quantities.

2. It is to be ensured that no material shall be used from the right-of-way except by way of levelling 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 for obtaining the required formation levels.
3. 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.
4. The Consultants shall make suitable recommendations regarding making good the borrow and quarry areas after the exploitation of materials for construction of works.
5. The Material Investigation aspect shall include preparation and testing of bituminous mixes for various layers and concrete mixes of different design mix grades using suitable materials (binders, aggregates, sand filler etc.) as identified during Material Investigation to conform to latest MoSRT&H specification.

#### **4.12 Detailed Design of Road and Pavements, Bridges and Structures**

##### **4.12.1. General**

1. The Consultants are to carryout detailed designs and prepare working drawings for the following:
  - i. *high speed highway with divided carriageway configuration complete in all respects with service roads at appropriate locations;*
  - ii. *design of pavement for the additional lanes and overlay for the existing road, paved shoulders, medians, verges;*
  - iii. *bridges, viaduct/subways and structures including ROBs etc.;*
  - iv. *at-grade and grade-separated intersections, interchanges (if required);*
  - v. *ROB for railway crossings as per the requirement and the standards of the Indian Railways; and,*
  - vi. *prepare alignment plans, longitudinal sections and cross-sections @ 50m intervals;*
  - vii. *designs for road furniture and road safety/traffic control features;*
  - viii. *designs and drawings for service road/under passes/overpass / cattle passes tree planting/fencing at locations where necessary / required*
  - ix.. *toll plazas and office-cum-residential complex for PIU (one for each civil contract package)*
  - x *short bypasses at congested locations*
  - xi. *drainage design showing location of turnouts, out falling structures, separate drawings sheet for each 5 km. stretch.*
  - xii. *bridges and structures rehabilitation plan with design and drawings*
  - xiii. *traffic amenities (Parking Areas, Weighing Station and Rest Areas, etc.).*

Innovative type of structures with minimum joints, aesthetically, pleasing and appropriate to the topography of the region shall be designed wherever feasible.

#### 4.12.2. Design Standards

1. The Consultants shall evolve Design Standards and material specifications for the Study primarily based on IRC publications, MoSRT&H Circulars and relevant recommendations of the international standards (American, Australian, British, Canadian, Japanese) for approval by NHAI.
2. 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.

#### 4.12.3. Geometric Design

1. The design of geometric elements shall, therefore, take into account the essential requirements of such facilities.
2. Based on the data collected from reconnaissance and topographic surveys, the sections with geometric deficiencies, if any, should be identified and suitable measures for improvement should be suggested for implementation.
3. The data on accident statistics should be compiled and reported showing accident type and frequency so that black spots are identified along the project road section. The possible causes (such as poor geometric features, pavement condition etc.) of accidents should be investigated into and suitable cost-effective remedial measures suggested for implementation.
4. The detailed design for geometric elements shall cover, but not be limited to the following major aspects:
  - i. *horizontal alignment;*
  - ii. *longitudinal profile;*
  - iii. *cross-sectional elements, including refuge lane (50m) at every 2kms.*
  - iv. *junctions, intersections and interchanges;*
  - v. *bypasses; and,*
  - vi. *service roads as and when require i.e built up area..*
5. The alignment design shall be verified for available sight distances as per the standard norms. The provision of appropriate markings and signs shall be made wherever the existing site conditions do not permit the adherence to the sight distance requirements as per the standard norms.
6. The consultants shall make detailed analysis of traffic flow and level of service for the existing road and workout the traffic flow capacity for the improved project road. The analysis should clearly establish the widening (2-laning) requirements with respect to the different horizon periods taking into account special problems such as road segments with isolated steep gradients.
7. In the case of closely spaced cross roads the Consultant shall examine different options such as, providing grade separated structure for some of them with a view to reduce number of at-grade crossings, services roads connecting the cross-roads and closing access from some of the intersections and prepare and furnish appropriate proposals for this purpose keeping in view the cost of improvement, impact on traffic movement and accessibility to cross roads. The detailed drawings and cost estimate should include the provisions for realignments of the existing cross roads to allow such arrangements.

8. The Consultant shall also prepare design of grade separated pedestrian crossings (viaducts) for large cross traffic of pedestrians and / or animals.
9. The Consultant shall also prepare details for at-grade junctions, 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.
10. The Consultants shall prepare design and other details in respect of the parallel service roads in urbanized locations and other locations to cater to the local traffic, their effect of the viability of the project on commercial basis if service roads are constructed as part of the project and the implications of not providing the service roads.
11. The consultant shall prepare complete road and pavement design including drainage for new bypass option identified around congested town enroute.

#### 4.12.4. Pavement Design

1. The detailed design of pavement shall involve:
  - i. *strengthening of existing 2-lane road pavement and design of the new pavement if any, if the findings of the traffic studies and life-cycle costing analysis confirm the requirement for widening of the road beyond 2lane undivided carriageway standard;;*
  - ii. *pavement design for bypasses; and,*
  - iii. *design of shoulders.*
2. The design of pavement shall primarily be based on IRC publications.
3. The design of pavement shall be rigorous and shall make use of the latest Indian and International practices. **The design alternatives shall include both rigid and flexible design options. The most appropriate design, option shall be established on life-cycle costing and techno-economic consideration.**
4. For the design of pavement, each set of design input shall be decided on the basis
 

of rigorous testing and evaluation of its suitability and relevance in respect of in-service performance of the pavement. The design methodology shall accompany the design proposals and shall clearly bring out the basic assumptions, values of the various design inputs, rationale behind the selection of the design inputs and the criteria for checking and control during the implementation of works. In other words, the design of pavement structure should take due account of the type, characteristics of materials used in the respective courses., variability of their properties and also the reliability of traffic predictions. Furthermore, the methodology adopted for the design of pavement shall be complete with flow charts indicating the various steps in the design process, their interaction with one another and the input parameter required at each step.
5. For the design of overlays for the existing 2-lane pavement, the strengthening requirement shall duly take into account the strength of the existing pavement vis-à-vis the remaining life. The overlay thickness requirements shall be worked out for each road segment homogenous with respect to condition, strength and sub-grade characteristics. The rehabilitation provisions should also include the provision of regulating layer. For existing

- pavement with acceptable levels of cracking, provision of a crack inhibiting layer should also be included.
6. Latest techniques of pavement strengthening like provision of geo-synthetics and cold/hot pavement recycling should be duly considered by the consultant for achieving economy.
  7. The paved 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 shoulder pavements. The design of granular shoulder should take into account the drainage considerations besides the structural requirements.
  8. The pavement design task shall also cover working out the maintenance and strengthening requirements and periodicity and timing of such treatments.

#### 4.12.5. Design of Embankments

1. The embankments design should provide for maximum utilization of locally available materials consistent with economy. Use of fly ash wherever available with in economical leads must be considered. In accordance with Government instructions, **use of flyash within 100 km from Thermal Power Stations is mandatory.**
2. The Consultants shall carry out detailed analysis and design for all embankments of height greater than 6 m based on relevant IRC publications.
3. *The design of embankments should include the requirements for protection works and traffic safety features.*

#### 4.12.6. Design of Bridges and Structures

1. The Consultant shall prepare General Arrangement Drawing (GAD) and Alignment Plan showing the salient features of the bridges and structures proposed to be constructed / reconstructed along the road sections covered under the Study. These salient features such as alignment, overall length, span arrangement, cross section, deck level, founding level, type of bridge components (superstructure, substructure, foundations, bearings, expansion joint, return walls etc.) shall be finalized based upon hydraulic and geo-technical studies, cost effectiveness and ease of construction. The GAD shall be supplemented by Preliminary designs. In respect of span arrangement and type of bridge a few alternatives with cost-benefit implications should be submitted to enable NHAI to approve the best alternative.
2. The location of all at-grade level crossings shall be identified falling across the existing level crossings for providing ROB at these locations. The Consultants shall prepare preliminary GAD for necessary construction separately to the Client. The Consultant shall pursue the Indian Railways Authorities or/and any statutory authority of State/Central Government for approval of the GAD from concerned Authorities.
3. Subsequent to the approval of the GAD and Alignment Plan by NHAI and Railways, the Consultant shall prepare detailed design as per IRC and Railways guidelines and working drawings for all components of the bridges and structures. The Consultant shall furnish the design and working drawings for suitable protection works and/or river training works wherever required.

4. Dismantling/ reconstruction of existing structures shall be avoided as far as possible except where considered essential in view of their poor structural conditions/ inadequacy of the provisions etc. The existing structures having inadequate carriageway width shall be widened / reconstructed in part or fully as per the latest MoSRT&H guidelines. The Consultant shall furnish the detailed design and working drawings for carrying out the above improvements.
5. The existing structures having inadequate carriageway width shall be widened/ reconstructed in part or fully as per the latest MoSRT&H guidelines. The Consultant shall furnish the detailed design and working drawings for carrying out the above improvements.
6. Suitable repair / rehabilitation measures shall be suggested in respect of the existing structures as per IRC-SP:40 along with their specifications, drawings and cost estimate in the form of a report. The rehabilitation or reconstruction of the structures shall be suggested based on broad guidelines for rehabilitation and strengthening of existing bridges contained in IRC-SP:35 and IRC-SP:40.
7. Subsequent to the approval of the GAD and the alignment plan by NHA, detailed design shall also be carried out for the proposed underpasses, overpasses and interchanges.
8. The Consultants shall also carry out the design and make suitable recommendations for protection works for bridges and drainage structures.
9. In case land available is not adequate for embankment slope, suitable design for RCC retaining wall shall be furnished. However, RES wall may also be considered depending upon techno-economic suitability to be approved by NHA.

#### **4.12.7. Drainage System**

1. The requirement of roadside drainage system and the integration of the same with proposed cross-drainage system shall be worked out for the entire length of the project road section.
2. In addition to the roadside 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. The drainage provisions shall also be worked out for road segments passing through urban areas.
3. The designed drainage system should show locations of turnouts/outfall points with details of outfall structures fitting into natural contours. A separate drawing sheet covering every 5 km. stretch of road shall be prepared.

#### **4.12.8. 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.

#### **4.12.9. Arboriculture and Landscaping**

The Consultants shall work out appropriate plan for planting 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.

**4.12.10. Toll Plaza**

1. The Consultants shall identify the possible toll plaza location(s) based on the data and information derived from the traffic studies and a study of the existing physical features including the availability of land. The location of the plaza should keep in view that the project road is to be developed as a partially access controlled highway facility and it is required to collect toll on rational basis from as much of the vehicular traffic as possible consistent with economy of collection and operations. The location of the toll plaza should be finalised in consultation with NHAI.
2. The Consultants shall design the toll plaza layout based on the consideration of traffic segregation, acceptable queue length and the average waiting time for the vehicle during the analysis period. The variations of traffic is to be considered in the estimation of the inflow rate. The Consultants shall clearly bring out the comparison of the available systems and describe the operational characteristics including the advantages of the recommended toll collection system for NHAI's acceptance.
3. The design of pavement for the toll plaza shall take into account the layout features and the various stresses induced by the acceleration, deceleration, braking of vehicles and the effect of possible oil spillage from stationary vehicles.
4. The setting up, operation and administration costs for the proposed toll collection system shall be worked out by the Consultants.

**4.12.11. Weighing Station, Parking Areas and Rest Areas**

The consultant shall select suitable sites for weighing stations, parking areas and rest areas and prepare suitable separate designs in this regard. The common facilities like petrol pump, first-aid medical facilities, police office, restaurant, vehicle parking etc. should be included in the general layout for planning. For petrol pump, the guidelines issued by OISD of Ministry of Petroleum shall be followed. The facilities should be planned to be at approximately 50 km interval. Atleast each facility (1 no.) is foreseen to be provided for this project stretch. Weighing stations can be located near toll plazas so that overloaded vehicles can be easily identified and suitably penalized / unloaded before being allowed to proceed further. The type of weighing system suitable for the project shall be brought out in the report giving merits of each type of the state-of-the art and basis of recommendations for the chosen system.

**4.12.12. Office-cum-Residential Complex for PIU**

The consultant shall select suitable site for providing office-cum residential complex for the Project Implementing Unit (PIU) of NHAI for each civil package. The consultant is required to carryout planning exercise giving general lay-out of the PIU complex for each package, after ascertaining availability of land from local competent authority. These complexes should be designed in such a manner that after execution of road improvement works, these could serve as maintenance station with Guest house facilities.

#### 4.12.13 Miscellaneous Works

1. The Consultants shall make suitable designs and layout for miscellaneous works including rest areas, bus bays, vehicle parking areas, telecommunication facilities etc. wherever appropriate.
2. The Consultants shall prepare the detailed scheme and lay out plan for the works mentioned in Para 1.
3. The Consultants shall prepare detailed plan for the traffic management and safety during the construction period.

#### 4.13 Environment and Social Impact Assessment

The consultant shall under take the detailed environmental and social impact assessment in accordance with the standard set by the Government of India for projects proposed to be funded by NHAI. In respect of projects proposed to be funded by ADB loan assistance, Environmental Assessment Requirements, Environmental Guidelines for selected infrastructure projects, 1993 of Asian Development Bank shall be followed. Similarly, for projects proposed to be funded by World Bank loan assistance, World Bank Guidelines shall be followed.

##### 4.13.1 Environmental Impact Assessment

Environment impact assessment or initial environment examination be carried out in accordance with ADB's Environmental Assessment Requirements of ADB 1998 guidelines for selected infrastructure projects 1993 as amended from time to time / World Bank Guidelines / Government of India Guidelines, as applicable

1. The consultant should carry out the preliminary environmental screening to assess the direct and induced impacts due to the project.
2. The consultant shall ensure to document baseline conditions relevant to the project with the objective to establish the benchmarks.
3. The consultant shall assess the potential significant impacts and identify the Mitigation measures to address these impacts adequately.
4. The consultant shall do the analysis of alternatives incorporating environmental concerns. This should include with and without scenario and modification incorporated in the proposed project due to environment considerations.
5. The consultant shall give special attention to the environmental enhancement measures in the project for the following:
  - (a) Cultural property enhancement along the highways
  - (b) Bus bays and bus shelters including a review of their location, (c) Highway side landscape and enhancement of the road junctions, (d) Enhancement of highway side water bodies, and
  - (e) Redevelopment of the borrow areas located on public land.
6. The consultant shall prepare the bill-of-quantities (BOQ) and technical specifications for all items of work in such a way that these may be readily integrated to the construction contracts.

7. The consultant shall establish a suitable monitoring network with regard to air, water and noise pollution. The consultant will also provide additional inputs in the areas of performance indicators and monitoring mechanisms for environmental components during construction and operational phase of the project.
8. The consultant shall provide the cost of mitigation measures and ensure that environmental related staffing, training and institutional requirements are budgeted in project cost.
9. The consultant shall prepare the application forms and obtain forestry and environmental clearances from the respective authorities including the SPCBs and the MOEF on behalf of NHAI. The consultants will make presentation, if required, in defending the project to the MOEF Infrastructure Committee.
10. The consultant shall identify and plan for plantation of the suitable trees along the existing highway in accordance with IRC guidelines.
11. The consultant shall assist in providing appropriate input in preparation of relevant environment and social sections of BPIP.

#### 4.13.2 Social Assessment

- 1 The consultant would conduct base line socio-economic and census survey to assess the impacts on the people, properties and loss of livelihood. The socio- economic survey will establish the benchmark for monitoring of R&R activities.  
A social assessment is conducted for the entire project to identify mechanisms to improve project designs to meet the needs of different stakeholders. A summary of stakeholders discussions, issue raised and how the project design was developed to meet stakeholders need would be prepared.
- 2 The consultant shall prepare Land Acquisition Plan and assist NHAI in acquisition of land under various Acts.

- 4.13.2.3 The consultant would prepare Resettlement and Rehabilitation Plan - assess feasibility and effectiveness of income restoration strategies and suitability and availability to relocation sites. The resettlement plan which accounts for land acquisition and resettlement impacts would be based on a 25% socio-economic survey and 100 % census survey of project affected people which provides the complete assessment of the number of affected households and persons, including common property resources. All untitled occupants are recorded at the initial stages and identify cards will be issued to ensure there is no further influx of people into the project area. All consultants with affected persons (to include list of participants) should be fully documented and records made available to NHAI.
- Assessment on the impact of the project on the poor and vulnerable groups along the project road corridor.
  - Based on the identified impacts, developing entitlement matrix for the project affected people.
  - Assessment on social issues such as indigenous people, gender, HIV/AIDS, labours including child labour.
  - Implementation budgets, sources and timing of funding and schedule of tasks.

- Responsibility of tasks, institutional arrangements and personnel for delivering entitlement and plans to build institutional capacity.
- Internal and external Monitoring plans, key monitoring indicators and grievance redress mechanism.
- Incorporating any other suggestions of the ADB/ World Bank and the NHAI, till the acceptance of the reports by the ADB/ World Bank/ NHAI, as applicable.

#### 4.13.3 Reporting Requirements of EIA

The consultant would prepare the stand-alone reports as per the requirement of the ADB/ World Bank / NHAI, as applicable, with contents as per the following:

- Executive Summary
- Description of the Project
- Environmental setting of the project.
- Identification and categorization of the potential impacts (during pre-construction, construction and operation periods).
- Analysis of alternatives (this would include correlation amongst the finally selected alternative alignment/routing and designs with the avoidance and environmental management solutions).
- The public consultation process.
- Policy, legal and administrative framework. This would include mechanisms at the states and national level for operational policies. This would also include a description of the organizational and implementation mechanism recommended for this project.
- Typical plan or specific designs for all additional environmental items as described in the scope of work.
- Incorporating any other as per the suggestions of the ADB/ World Bank / NHAI, till the acceptance of the reports by the ADB/ World Bank / NHAI, as applicable.
- EMP Reports for Each Contract Package based on uniform methodology and processes. The consultant will also ensure that the EMP has all the elements for it to be a legal document. The EMP reports would include the following:
  - ❖ Brief description of the project, purpose of the EMP, commitments on incorporating environmental considerations in the design, construction and operations phases of the project and institutional arrangements for implementing the EMP.
  - ❖ A detailed EMP for construction and operational phases with recourse to the mitigation measures for all adverse impacts.
  - ❖ Detailed plans for highway-side tree plantation (as part of the compensatory afforestation component).
  - ❖ Environmental enhancement measures would be incorporated. Enhancement measures would include items described in the scope of work and shall be complete with plans, designs, BOQ and technical specifications.
  - ❖ Environmental monitoring plans during and after construction including scaling and measurement techniques for the performance indicators selected for monitoring.
  - ❖ The EMP should be amendable to be included in the contract documents for the works.

- ❖ Incorporating any other as per the suggestions of the ADB/ World Bank and the NHAI, till the acceptance of the reports by the ADB/ World Bank / NHAI, as applicable.

#### **4.13.4 Reporting requirements of RAP**

Analysis on the resettlement plan be conducted based on ADBs Hand Book on Resettlement, A Guide to Good practice 1998 as amended time to time/ World Bank Guidelines / Government of India Guidelines, as applicable.

- Executive Summary
- Description of Project
- Objectives of the project.
- The need for Resettlement in the Project and evaluation of measures to minimize resettlement.
- Description and results of public consultation and plans for continued participation of PAPs.
- Definition of PAPs and the eligibility criteria.
- Census and survey results-number affected, how are they affected and what impacts will they experience.
- Legal and entitlement policy framework-support principles for different categories of impact.
- Arrangements for monitoring and evaluation (internal and external)
- Implementation schedule for resettlement which is linked to the civil works contract
- A matrix of scheduled activities linked to land acquisition procedures to indicate clearly what steps and actions will be taken at different stages and the time frame
- The payment of compensation and resettlement during the acquisition process
- An itemized budget (replacement value for all assets) and unit costs for different assets.

#### **5. Estimation of Quantities and Project Costs**

1. The Consultants shall prepare detailed estimates for quantities (considering designs and mass haul diagram) and project cost for the entire project (civil packages wise), including the cost of environmental and social safeguards proposed based on MoSRT&H's Standard Data Book and market rate for the inputs. The estimation of quantities shall be based on detailed design of various components of the projects. The estimation of quantities and costs would have to be worked out separately for each civil work Package as defined in this TOR.
2. The Consultants shall make detailed analysis for computing the unit rates for the different items of works. The unit rate analysis shall duly take into account the various inputs and their basic rates, suggested location of plants and respective lead distances for mechanized construction. The unit rate for each item of works shall be worked out in terms of manpower, machinery and materials.
3. The project cost estimates so prepared for NHAI/ADB/WB projects are to be checked against rates for similar on-going works in India under NHAI/ World Bank and ADB financed road sector projects.

#### **6. Viability and Financing Options**

1. The Project Road should be divided into the traffic homogenous links based on the findings of the traffic studies. The homogenous links of the Project

Road should be further subdivided into sections based on physical features of road and pavement, sub-grade and drainage characteristics etc. The economic and commercial analysis shall be carried out separately for each traffic homogenous link as well as for the Project Road.

2. The values of input parameters and the rationale for their selection for the economic and commercial analyses shall be clearly brought out and got approved by NHAI.
3. For models to be used for the economic and the commercial analyses, the calibration methodology and the basic parameters adapted to the local conditions shall be clearly brought out and got approved by NHAI.
4. The economic and commercial analyses should bring out the priority of the different homogenous links in terms of project implementation.

### 6.1. Economic Analysis

1. The Consultants shall carry out economic analysis for the project. The analysis should be for each of the sections covered under this TOR. The benefit and cost streams should be worked out for the project using HDM-IV or other internationally recognized life-cycle costing model.
2. The economic analysis shall cover but be not limited to be following aspects:
  - i. *assess the capacity of existing roads and the effects of capacity constraints on vehicle operating costs (VOC);*
  - ii. *calculate VOCs for the existing road situation and those for the project;*
  - iii. *quantify all economic benefits, including those from reduced congestion, travel distance, road maintenance cost savings and reduced incidence of road accidents; and,*
  - iv. *estimate the economic internal rate of return (EIRR) for the project over a 30- year period. In calculating the EIRRs, identify the tradable and non-tradable components of projects costs and the border price value of the tradable components.*
  - v. *Saving in time value.*
3. Economic Internal Rate of Return (EIRR) and Net Present Value (NPV), “with” and “without time and accident savings” should be worked out based on these cost-benefit stream. Furthermore, sensitivity of EIRR and NPV worked out for the different scenarios as given under:
 

<i>Scenario - I</i>	<i>Base Costs and Base Benefits</i>
<i>Scenario - II</i>	<i>Base Costs plus 15% and Base Benefits</i>
<i>Scenario - III</i>	<i>Base Costs and Base Benefits minus 15%</i>
<i>Scenario - IV</i>	<i>Base Costs plus 15% and Base Benefits minus 15%</i>

The sensitivity scenarios given above are only indicative. The Consultants shall

select the sensitivity scenarios taking into account possible construction delays, construction costs overrun, traffic volume, revenue shortfalls, operating costs, exchange rate variations, convertibility of foreign exchange, interest

rate volatility, non-compliance or default by contractors, political risks and force majeure.

4. The economic analysis shall take into account all on-going and future road and transport infrastructure projects and future development plans in the project area.

## **6.2. Financial Analysis**

1. The Consultant shall study the financial viability of the project under a commercial format and under different user fee scenarios and funding options. The Consultants shall submit and finalize in consultation with the NHAI officers the format for the analysis and the primary parameters and scenarios that should be taken into account while carrying out the commercial analysis. The financial model so developed shall be the property of NHAI.
2. The Financial analysis for the project should cover financial internal rate of return, projected income statements, balance sheets and fund flow statements and should bring out all relevant assumptions. The sensitivity analysis should be carried out for a number of probabilistic scenarios.
3. The financial analysis should cover identification, assessment, and mitigating measures for all risks associated with the project. The analysis shall cover, but be not limited to, risks related to construction delays, construction costs overrun, traffic volume, revenue shortfalls, operating costs, exchange rate variations, convertibility of foreign exchange, interest rate volatility, non-compliance or default by contractors, political risks and force majeure.
4. Deleted.
5. **The Consultant should give clear cut recommendation the preferred mode of implementation to take up the Civil Work for the stretch under consideration**

## **7. Time period for the service**

1. Time period envisaged for the study of each of the projects is indicated in **Annexure-I to LOI**. The final reports, drawings and documentation shall be completed within this time schedule.
2. NHAI shall arrange to give approval on all sketches, drawings, reports and recommendations and other matters and proposals submitted for decision by the Consultant in such reasonable time so as not to delay or disrupt the performance of the Consultant's services.
3. Along with feasibility report, the consultant should give cost estimate and tender documents on the preferred mode of implementation.

## **8. Project Team and Project Office of the Consultant**

1. The Consultants shall be required to form a multi-disciplinary team for this assignment. The consultants Team shall be manned by adequate number of experts with relevant experience in the execution of similar detailed design assignments.
2. List of suggested key personnel to be fielded by the consultant with appropriate man-month of each consultancy services is given in Enclosure I as per clients assessment.

3. A Manning Schedule for key personnel mentioned above is enclosed as **Enclosure I** along with broad job- description and qualification as **Enclosure II**. **The information furnished in Enclosures I & II are to assist the Consultants to understand the client's perception about these requirements and shall be taken by the Consultants for the purpose of Financial Proposal and deployment schedule etc. in technical proposal to be submitted by them.** Any deviation proposed may be recorded in the comments on TOR. All the key personnel mentioned will be evaluated at the time of evaluation of technical proposal. Consultants are advised in their own interest to frame the technical proposal in an objective manner as far as possible so that these could be properly assessed in respect of points to be given as part of evaluation criteria as mentioned in Data sheet. The bio-data of the key personnel should be signed on every sheet by the personnel concerned and the last sheet of each bio-data should also be signed by the authorised signatory of the Consultants.
4. The Consultants shall establish an office at the project site manned by senior personnel during the course of the surveys and investigations. All the project related office work shall be carried out by the consultant in their site office unless there are special reasons for carrying out part of the office work elsewhere for which prior approval of NHAI shall be obtained. The address of the site office including the personnel manning it including their Telephone and FAX numbers will be intimated by the Consultant to NHAI before commencement of the services.
5. The Consultant shall maintain an Attendance Register to be signed by each individual key personnel at site as well as at Head Office. The Consultant shall furnish certificate that all the key personnel as envisaged in the Contract Agreement have been actually deployed in the Projects at the time of submission of their bills to the NHAI from time to time.

## **9. Reports to be submitted by the Consultant to NHAI**

- 9.1 All reports, documents and drawings are to be submitted separately for each of the traffic homogenous link of the Project Road. 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. The sources of data and model relationships used in the reports shall be indicated with complete details for easy reference.
- 9.2 Project preparation activities will be split into four stages as brought out below.
 

Preliminary design work should commence without waiting for feasibility study to be completed.

  - Stage 1: Inception Report**
  - Stage 2: Feasibility Report**
  - Stage 3: Preliminary Project Report (PPR)**
  - Stage 4: Detailed Project Report (DPR)**
- 9.3 Time schedule in respect of all such stages has been indicated in the next para. Consultant shall be required to complete, to the satisfaction of the client, all the different stages of study within the time frame indicated in the schedule of submission in para 10 pertaining to Reports and Documents for becoming eligible for payment for any part of the next stage.

## 10 Reports and Documents to be submitted by the Consultant to NHAI

1. The Consultant shall submit to the client the reports and documents in bound volumes (and not spiral binding form) after completion of each stage of work as per the schedule and in the number of copies as given in Enclosure III. Further, the reports shall also be submitted in CD's in addition to the hard copies as mentioned in Enclosure-III. Consultant shall submit all other reports mentioned specifically in the preceding paras of the TOR.
2. The time schedule for various submissions prescribed at s.l.no.1 above shall be strictly adhered to. No time-over-run in respect of these submissions will normally be permitted. Consultant is advised to go through the entire terms of reference carefully and plan his work method in such a manner that various activities followed by respective submissions as brought out at Sl.No.1 above are completed as stipulated. Consultant is, therefore, advised to deploy sufficient number of supporting personnel, both technical and administrative, to undertake the project preparation activities in each construction package (Section) simultaneously. As far as possible, the proposal should include complete information such as number of such persons, name, position, period of engagement, remuneration rate etc. The Consultant is also advised to start necessary survey works from the beginning so as to gain time in respect of various other activities in that stage.

### **STAGE 1**

#### **10.1**

#### **Quality Assurance Plan (QAP) Document**

1. Immediately upon the award, the Consultants shall submit four copies of the QAP document covering all aspects of field studies, investigations design and economic financial analysis. The quality assurance plans/procedures for different field studies, engineering surveys and investigation, design and documentation activities should be presented as separate sections like engineering surveys and investigations, traffic surveys, material geo-technical and sub-soil investigations, road and pavement investigations, investigation and design of bridges & structures, environment and R&R assessment, economic & financial analysis, drawings and documentation; preparation, checking, approval and filing of calculations, identification and tracability of project documents etc. Further, additional information as per format shall be furnished regarding the details of personal who shall be responsible for carrying out/preparing and checking/verifying various activities forming part of feasibility study and project preparation, since inception to the completion of work. The field and design activities shall start after the QAP is approved by NHAI.
2. The data formats proposed by the Consultants for use in field studies and investigations shall be submitted within 14 days after the commencement of services and got approved by NHAI.

#### **10.2 Inception Report (IR)**

1. The report shall cover the following major aspects:
  - i. *Project appreciation;*
  - ii. *Detailed methodology to meet the requirements of the TOR finalised in consultation with the NHAI officers; including scheduling of various sub-activities to be carried out for completion of various stages of the work; stating out clearly their*

*approach & methodology for project preparation after due inspection of the entire project stretch and collection/ collation of necessary information;*

- iii. *Task Assignment and Manning Schedule;*
  - iv. *Work programme;*
  - v. *Proforma for data collection;*
  - vi. *Design standards and proposed cross-sections;*
  - vii. *Key plan and Linear Plan;*
  - viii. *Development plans being implemented and / or proposed for implementation in the near future by the local bodies and the possible impact of such development plans on the overall scheme for field work and design for the study;*
  - ix. *Quality Assurance Plan (QAP) finalised in consultation with NHAI;*
  - x. *Draft design standards; and*
2. The requirements, if any, for the construction of bypasses should be identified on the basis of data derived from reconnaissance and traffic studies. The available alignment options should be worked out on the basis of available maps. The most appropriate alignment option for bypasses should be identified on the basis of site conditions and techno-economic considerations. Inception Report should include the details regarding these aspects concerning the construction of bypasses for approval by NHAI.

## **STAGE 2:**

### **10.3 Feasibility Report**

1. The Consultant shall commence the Feasibility Study of the project in accordance with the accepted IR and the report shall contain the following:
  - *Executive summary*
  - *Overview of NHAI's organization and activities, NHDP program, and project financing and cost recovery mechanisms*
  - *Project description including possible alternative alignments/bypasses and technical/engineering alternatives*
  - *Methodology adopted for the feasibility study*
  - *Socioeconomic profile of the project areas*
  - *Indicative design standards, methodologies and specifications*
  - *Traffic surveys and analysis*
  - *Environmental screening and preliminary environmental assessment*
  - *Initial social assessment and preliminary land acquisition/resettlement plan*
  - *Nomination of Competent Authority by the Concerned Authority and Draft 3(a) Notification*
2. Deleted
3. The basic data obtained from the field studies and investigations shall be submitted in a separate volume as an Appendix to Feasibility Report.

4. The Final Feasibility Study Report incorporating comments, revisions and modifications suggested by NHAI shall be submitted within 15 days of receipt of comments from NHAI on draft feasibility study report.
5. The consultant should give clear cut recommendation of the preferred mode of implementation to take up the civil work for the stretches under consideration. If the project is recommended to be taken under BOT (Toll) / , BOT (Annuity) mode BOT(Toll) and BOT(Annuity) Bid documents including Technical Schedules ( to RFP) has to be prepared and submitted to NHAI. In this case ,the consultant shall prepare the draft PPPAC note and submit the same to NHAI. If the work is recommended to be taken up under Govt. of India finding the bid documents have to be accordingly framed and submitted to NHAI.

#### **10.4 Strip Plan and Clearances**

1. The Consultants shall submit the following documents:
  - i. *Details of the centre line of the proposed widened NH along with the existing and proposed right-of-way limits to appreciate the requirements of land acquisition;*
  - ii. *The information concerning the area including ownership of land to be acquired for the implementation of the project shall be collected from the revenue and other concerned authorities and presented along with the strip plans;*
  - iii. *Strip plans showing the position of existing utilities and services indicating clearly the position of their relocation;*
  - iv. *Details for various clearances such as environment and forest clearances;*
  - v. *Separate strip plan showing shifting / relocation of each utility services in consultation with the concerned local authorities;*
  - vi. *The utility relocation plans should clearly show existing right-of-way and pertinent topographic details including buildings, major trees, fences and other installations such as water-mains, telephone, telegraph and electricity poles, and suggest 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;*
  - vii. *Detail schedules for acquisition of additional land and additional properties in consultation with the revenue authorities; and*
  - viii. *Land Acquisition Plan.*
2. The strip plans and land acquisition plan shall be prepared on the basis of data from reconnaissance and detailed topographic surveys.
3. The Report accompanying the strip plans should cover the essential aspects as given under:
  - i. *Kilometre-wise 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 buildings and structures falling within the right-of-way and costs of acquisition based on realistic rates.*
  - iii. *Kilometre-wise Utility Relocation Plan (URP) and costs for relocation per civil construction package as per concerned authorities.*
  - iv. *Kilometre-wise account in 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.*
4. The strip plans shall clearly indicate the scheme for widening. The views and suggestions of the concerned State PWDs should be duly taken into account while working out the widening scheme (left, right or symmetrical). The widening scheme shall be finalised in consultation with NHAI.
  5. Kilometre-wise Strip Plans for each section (Package) shall be prepared separately for each concerned agency and suggested by NHAI.

### **STAGE: 3**

#### **10.5**

#### **Land Acquisition Report**

1. The Land acquisition report shall be prepared and submitted for each section (package) separately. The report shall include detail schedules about acquisition of land holdings as per revenue records and their locations in a strip plan and also the costs as per district authorities. Details shall be submitted in land acquisition proforma to be supplied by NHAI. The land acquisition report along with 3 (A) notification duly authenticated by the Competent Authority shall be submitted in both Hind and English languages.
2. The land acquisition report should be prepared in consultation with affected persons, non-governmental organisations and concerned government agencies and should cover land acquisition and resettlement plan and costs of resettlement and rehabilitation of such affected persons. It should also include plan of compensating afforestation, its land requirement with specific locations and cost involved for undertaking all activities in this regard.

#### **10.**

#### **6**

- 1 *The Draft PPR shall be prepared separately for each construction package and shall contain the following:*

#### ***Volume – I: Preliminary Design Report***

- *Executive summary*
- *Project description*
- *Summary of EIA/IEE and Action Plan*
- *Summary of Resettlement Plan*
- *Updated cost estimates*
- *Updated economic and financial analyses*
- *Conclusions and recommendations*

#### ***Volume – II: Design Report***

- *Road and bridge inventory*

- *Summary of survey and investigations data*
- *Proposed design basis, standards and specifications*
- *Proposed pavement design and preliminary bridge designs*

**Volume – III: Drawings**

- *Location map*
- *Layout plans*
- *Typical cross sections showing pavement details*
- *Drawings for cross-drainage and other structures*
- *Road junction designs*
- *Indicative land acquisition plans*

**Volume – IV: Environment Impact Assessment or Initial Environmental Examination and Environment Management Plan**

**Volume – V: Resettlement Plan and Resettlement Action Plan**

2. The basic data obtained from the field studies and investigations and input data used for the preliminary design shall be submitted in a separate volume as an Appendix to PPR.
3. The Final PPR incorporating comments, revisions and modifications suggested by NHAI shall be submitted within 15 days of the receipt of comments of NHAI on the Draft PPR.

**STAGE: 4**

**10.7 Draft Detailed Project Report (DPR)**

1. The draft DPR Submission shall consist of construction package-wise Main Report, Design Report, Materials Report, Engineering Report, Drainage Design Report, Economic and Financial Analysis Report, Environmental Assessment Report including Resettlement Action Plan (RAP), Package-wise bid Documents and Drawings.
2. The Report volumes shall be submitted as tabulated in para 10 above.
3. The Documents and Drawings shall be submitted for each section (Package) and shall be in the following format:

**Reports**

**Volume-I**

*Main Report: This report will present the project background, social analysis of the project, details of surveys and investigations carried out, analysis and interpretation of survey and investigation data, traffic studies and demand forecasts, designs, cost estimation, environmental aspects, economic and commercial analyses and conclusions. The report shall include Executive Summary giving brief accounts 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 for each contract package shall be submitted separately as a part of the main report.*

*The basic data obtained from the field studies and investigations and input data used for the preliminary design shall be submitted in a separate volume as an Appendix to Main Report.*

**Volume - II Design Report:** *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.*

*The detailed design for all features should be carried out as per the requirements of the Design Standards for the project. However, there may be situations wherein it has not been possible to strictly adhere to the design standards due to the existing site conditions, restrictions and other considerations. The report should clearly bring out the details of these aspect and the standards adopted.*

**Volume - III Materials Report:** *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 leads involved, the details of sampling and testing carried out and results in the form of important index values with possible end use thereof.*

*The materials 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. The Report shall present soil profiles along the alignment.*

*The material Report should also clearly indicate the locations of areas with problematic soils. Recommendations concerning the improvement of such soils for use in the proposed construction works, such as stabilisation (cement, lime, mechanical) should be included in the Report.*

**Volume - IV Environmental Assessment Report including Environmental Management Plan (EMP) & Resettlement Action Plan (RAP):** *The Report shall be prepared conforming to the Guidelines of the*

*Government of India, State Government and World Bank / ADB as appropriate for each construction package section.*

**Volume - V Drawing Volume :** *All drawings forming part of this volume shall be 'good for construction' drawings. All plan and profile drawings will be prepared in scale 1:250V and 1"=2500H scale to cover one km in one sheet. In addition this volume will contain 'good for construction' drawings for the following:*

- a. *Horizontal Alignment and Longitudinal Profile.*
- b. *Cross-section @ 50m interval along the alignment within ROW*
- c. *Typical Cross-Sections with details of pavement structure.*
- d. *Detailed Working Drawings for individual Culverts and Cross-Drainage Structures.*
- e. *Detailed Working Drawings for individual Bridges and Structures.*
- f. *Detailed Drawings for Improvement of At-Grade and Grade-Separated Intersections and Interchanges.*
- g. *Drawings for Road Sign, Markings, Toll Plazas, office-cum-residential complex for PIU, and other Facilities.*
- h. *Schematic Diagrams (linear chart) indicating but be not limited to be following:*
  - *Widening scheme;*
  - *Locations of median openings, intersections, interchanges, underpasses, overpasses, bypasses;*
  - *Locations of service roads;*
  - *location of traffic signals, traffic signs, road markings, safety features; and,*
  - *locations of toll plaza, parking areas, weighing stations, bus bays, rest areas, if any.*
  - *Recommendation for preferred mode of implementation.*
  - *Suggested methods of procurement and packaging.*
  - *Cost estimates and tender documents on preferred mode of implementation.*
  - *Economic and financial analysis*
  - *Conclusions and recommendations*
- i. *Drawings for toll plaza, Bus Bays, Parking areas, Rest areas, weighing stations etc. All drawings will be prepared in A2 size sheets. The format for plan, cross-section and profile drawings shall be finalised in consultation with the concerned NHA officers. 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 delineators and rest areas, bus bays, parking areas etc.*

- j *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 the provisions for pedestrian movements and suitable measures for surface and sub-surface drainage and lighting, as required.*

**Volume-VI Project Clearances** – *All the necessary(project related) clearances (such as from MOEF, Railways in respect of ROB/ RUBs, Irrigation Deptt. and any other concerned agencies) shall be obtained by the consultant and submitted to NHAI so that project implementation can straight away proceed without any hold up.*

**Volume-VII** In view of para 1 above the consultant has to submit the following documents in six sets :

- i. Technical Specifications: The MORT&H's Technical Specifications for Road and Bridge works shall be followed for this study. However, Volume - IV: Technical Specifications shall contain the special technical specifications which are not covered by MOST Specifications for Roads and Bridges (latest edition / revision) and also specific quality control norms for the construction of works.
- ii. Rate Analysis: 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, machine charges as considered in arriving at unit rates will be included in this volume.
- iii. Cost Estimates: This volume will present the contract package wise cost of each item of work as well as a summary of total cost.
- iv. Bill of Quantities: This volume shall contain the package-wise detailed Bill of Quantities for all items of works
- v. Civil Work Contract Agreement: A civil works contract agreement shall be submitted.as to submit the following documents in six sets :
  - i. **Technical Specifications:** *The MORT&H's Technical Specifications for Road and Bridge works shall be followed for this study. However, Volume - IV: Technical Specifications shall contain the special technical specifications which are not covered by MOST Specifications for Roads and Bridges (latest edition / revision) and also specific quality control norms for the construction of works.*
  - ii. **Rate Analysis:** *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, machine*

*charges as considered in arriving at unit rates will be included in this volume.*

- iii. **Cost Estimates** : This volume will present the contract package wise cost of each item of work as well as a summary of total cost.
- iv. **Bill of Quantities** : This volume shall contain the package-wise detailed Bill of Quantities for all items of works
- v. **Civil Work Contract Agreement**: A civil works contract agreement shall be submitted.

#### **10.8. Final Detailed Project Report, Documents and Drawings (6 Sets)**

The Final package-wise DPR consisting of Main Report, Design Report, Drainage Design Report and Materials Report, incorporating all revisions deemed relevant following receipt of the comments from NHAI on the draft DPR shall be submitted as per the schedule given in Enclosure-III.

#### **11. Interaction with NHAI**

1. During entire period of services, the Consultant shall interact continuously with NHAI and provide any clarification as regards methods being followed and carry out modification as suggested by NHAI. A programme of various activities shall be provided to NHAI and prior intimation shall be given to NHAI regarding start of key activities such as boring, survey etc. so that inspections of NHAI officials could be arranged in time.
2. The NHAI officers and other Government officers may visit the site at any time, individually or collectively to acquaint themselves with the field investigation and survey works.
3. The consultant shall be required to send 3 copies of concise monthly Progress Report by the 5<sup>th</sup> day of the following month to the designated officer at his Head Quarter so that progress could be monitored by the NHAI. These reports will indicate the dates of induction and de-induction of various key personnel and the activities performed by them. Frequent meetings with the consultant at site office or in Delhi are foreseen during the currency of project preparation.
4. All equipment, software and books etc. required for satisfactory services for this project shall be obtained by the Consultant at their own cost and shall be their property.

#### **12. Payment Schedule**

1. The Consultant will be paid consultancy fee as a percentage of the contract value as per the schedule given below:

<b>S. No.</b>	<b>Description</b>	<b>Payment</b>
1	On submission of Inception Report	10%
2	On Submission of draft feasibility report including strip plan and utility relocation plan.	20%
3	On Submission of draft preliminary project report and land acquisition report	10%

4	On Submission of Draft Detailed Project Report and Bidding Documents	20%
5	On approval of Final Detailed Project Report and Bidding Documents	20%
6	On submission of required project clearances from the concerned agencies	20%
	<b>Total</b>	100%
<p><i>Note: Consultants have to provide a certificate that all the key personnel as envisaged in the Contract Agreement have been actually deployed in the projects. They have to furnish the certificate at the time of submission of their bills to NHAI from time to time.</i></p>		

After completion of services the final contract amount shall be worked out on the basis of inputs and services actually carried out and the payment shall be adjusted accordingly.

### 1 Data and Software

3. 1. The CD's containing all basic as well as the processed data from all field studies and investigations, report, appendices, annexure, documents and drawings shall be submitted to NHAI at the time of the submission of the Final Report. The data can be classified as follows:
  - i. **Engineering Investigations and Traffic Studies** : Road Inventory, Condition, Roughness, Test Pit (Pavement composition), Benkelman Beam Deflection, Material Investigation including test results for subgrade soils, Traffic Studies (traffic surveys), axle load surveys, Sub-soil Exploration, Drainage Inventory, Inventory data for bridge and culverts indicating rehabilitation, new construction requirement etc. in MS EXCEL or any other format which could be imported to widely used utility packages.
  - ii. **Topographic Surveys and Drawings** : All topographic data would be supplied in (x, y, z) format along with complete reference so that the data could be imported into any standard highway design software. The drawing files would be submitted in dxf or dwg format.
  - iii. **Rate Analysis** : The Consultant shall submit the rate analysis for various works items including the data developed on computer in this relation so that it could be used by the Authority later for the purpose of updating the cost of the project.
  - iv. **Economic and Financial Analysis;**
2. **Software:** The Consultant shall also hand-over to NHAI CD's containing any general software including the financial model which has been specifically developed for the project.
3. The CD's should be properly indexed and a catalogue giving

contents of all CD's and print-outs of the contents (data from field studies topographic data and drawings) should be handed over to NHAI at the time of submission of the Final Report.

## SUPPLEMENT I

### ADDITIONAL POINTS TO BE CONSIDERED FOR BRIDGES IN ADDITION TO POINTS COVERED IN MAIN TOR

For bridge packages, the main objective of the consultancy services is to establish the aesthetic, technical, economical and financial viability of the Project and prepare Detailed Project Reports for construction of 4 - lane bridge along with approach roads, at least about 2 km. length on each side of the bridge.

Siting of bridges, feasibility studies and project preparation shall be primarily carried out in accordance with IRC : 5 and IRC Manual for Project Preparation of bridges and other Codes and Specification and in consultation with respective Irrigation / Waterways Authorities.

**For bridges requiring model study, the same shall be got done at a recognised Institution. The consultant will be responsible for identifying the Institution, supplying requisite data and coordinating the model study. The amount to be paid to the Institution shall be borne by the Employer.**

S.No.	Clause No. of	<i>Additional points</i>
1.	4.1	<p>Primary Tasks The scope of services shall also cover the following :</p> <ul style="list-style-type: none"> <li>i. Inventory and condition surveys for existing river bank training/ protection works.</li> <li>ii. Detailed Design of approach roads (extending at least up to approximately 2 km an each side of the bridge).</li> <li>iii. Detailed Design of Bridge, cross drainage structures, underpasses &amp; other structures as required.</li> <li>iv. Preparation of GAD, construction drawings etc.</li> <li>v. Strip plan for bridge and approach road.</li> <li>vi. Design discharge and scour depth</li> </ul>
2.	4.7	<p>Review of Data and Documents The data and documents of major interest shall also include the following:</p> <ul style="list-style-type: none"> <li>a) <b>Existing geological maps, catchment area maps, contour plans etc. for the project area</b></li> <li>b) Hydrological data, catchment area characteristics, river/channel characteristics, flood flow data and seismological data etc.</li> <li>c) Condition of existing river bank / protection works, if any.</li> <li>d) Sub surface and geotechnical data for existing near by bridges.</li> <li>e) Detailed drawings of nearby existing bridges.</li> </ul>

3.	4.11.1	<p>Reconnaissance and Alignment</p> <p>a) The consultant should make an in depth study of available geological maps, catchment area maps, contour plans, flood flow data and seismological data.</p> <p>b) The primary tasks to be accomplished during the reconnaissance surveys also include:</p> <p>i. Typical physical features along the approach roads</p> <p>ii. Possible bridge locations, land acquisition problems, nature of crossings, likely length of approaches and bridge, firmness of banks, suitability of alignment of approach roads</p>
4.	4.11.2	<p>Topographic surveys</p> <p>a) The detailed field surveys would essentially include the topographic surveys along the proposed location of bridge and alignment of approach road.</p> <p>b) The detailed topographic surveys should be carried out along the approach roads alignment and location of bridge approved by NHAI.</p>
5.	4.11.2.1	<p>Longitudinal and Cross sections</p> <p>The topographic surveys for longitudinal and cross sections shall cover the following:</p> <p>Cross section of the channel at the site of proposed crossing and few cross sections at suitable distance both upstream and downstream, bed level upto top of banks and ground levels to a sufficient distance beyond the edges of channel, nature of existing surface soil in bed, banks &amp; approaches, longitudinal section of channel showing site of bridge etc.</p>
6.	4.11.4.2	<p>Hydraulic and Hydrological Investigations</p> <p>a) The consultant shall also collect information on observed maximum depth of scour.</p> <p><b>b) History of hydraulic functioning of existing bridge, if any, under flood situation, general direction of river course through structure, afflux, extent and magnitude of flood, effect of backwater, if any, aggradations/degradation of bed, evidence of scour etc. shall be used to augment the available hydrological data. The presence of flood control/irrigation structures, if affecting the hydraulic characteristics like causing obliquity, concentration of flow, scour, silting of bed, change in flow levels, bed levels etc. shall be studied and considered in design of bridges. The details of any future planned work that may affect the river hydraulics shall be studied and considered.</b></p>

7.	4.11.4.4	<p>Geotechnical Investigations and Sub soil Exploration</p> <p>Investigation shall be carried out to determine the nature and properties of existing soil in bed, banks and approaches with trial pits and bore hole sections showing the levels, nature and properties of various strata to a sufficient depth below the level suitable for foundations, safe intensity of pressure on the foundation soil, proneness of site to artesian conditions, seismic disturbance and other engineering properties of soil etc.</p>
8.	4.12.1	<p><b>General</b></p> <p>The consultants are also to carry out detailed designs and prepare working drawings for the followings ;</p> <p>a) Design of pavement for approach road b) Design of river bank protection / training works</p>
9.	4.12.6	<p>Design of Bridges and Structures</p> <p>The data collected and investigation results shall be analysed to determine the following :</p> <ol style="list-style-type: none"> <li>i. HFL</li> <li>ii. LWL</li> <li>iii. LBL</li> <li>iv. Erodibility of bed/scour level</li> <li>v. Design discharge</li> <li>vi. Linear waterway and effective linear waterway</li> <li>vii. Likely foundation depth</li> <li>viii. Safe bearing capacity</li> <li>ix. Engineering properties of sub soil</li> <li>x. Artesian conditions</li> <li>xi. Settlement characteristics</li> <li>xii. Vertical clearance</li> <li>xiii. Horizontal clearance</li> <li>xiv. Free board for approach road</li> <li>xv. Severity of environment with reference to corrosion</li> <li>xvi. Data pertaining to seismic and wind load</li> <li>xvii. Requirement of model study etc.</li> </ol>

**SUPPLEMENT-II**  
**ADDITIONAL REQUIREMENT FOR SAFETY AUDIT**

**Checklists**

The use of checklists is highly recommended as they provide a useful “aide memoire” for the audit team to check that no important safety aspects are being overlooked. They also give to the project manager and the design engineer a sense of understanding of the place of safety audit in the design process. The following lists have been drawn up based on the experience of undertaking systematic safety audit procedures overseas. This experience indicates that extensive lists of technical details has encouraged their use as “tick” sheets without sufficient thought being given to the processes behind the actions. Accordingly, the checklists provide guidelines on the principal issues that need to be examined during the course of the safety audits.

**Stage F-During Feasibility Study**

1. The audit team should review the proposed design from a road safety perspective and check the following aspects

CONTENTS	ITEMS
Aspects to be checked	A. Safety and operational implications of proposed alignment and junction strategy with particular references to expected road users and vehicle types likely to use the road. B. Width options considered for various sections. C. Departures from standards and action taken. D. Provision of pedestrians, cyclists and intermediate transport E. Safety implications of the scheme beyond its physical limits i.e. how the scheme fits into its environs and road hierarchy
A1 : General	¾ Departures from standards ¾ Cross-sectional variation ¾ Drainage ¾ Climatic conditions ¾ Landscaping ¾ Services apparatus ¾ Lay-byes ¾ Footpaths ¾ Pedestrian crossings ¾ Access (minimize number of private accesses) ¾ Emergency vehicles ¾ Public Transport ¾ Future widening ¾ Staging of contracts ¾ Adjacent development
A2 : Local Alignment	¾ Visibility ¾ New/Existing road interface ¾ Safety Aids on steep hills.
A3 : Junctions	¾ Minimise potential conflicts ¾ Layout ¾ Visibility
A4 : Non-Motorised road users Provision	¾ Adjacent land ¾ Pedestrians ¾ Cyclists ¾ Non-motorised vehicles
A5 : Signs and Lighting	¾ Lighting ¾ Signs/Markings
A6 : Construction and Operation	¾ Buildability ¾ Operational ¾ Network Management

**Stage 1 – Completion of Preliminary Design**

1. The audit team should review the proposed design from a road safety perspective and check the following aspects	
CONTENTS	ITEMS
Aspects to be checked	<p>A. Safety and operational implications of proposed alignment and junction strategy with particular references to expected road users and vehicle types likely to use the road.</p> <p>B. Width options considered for various sections.</p> <p>C. Departures from standards and action taken.</p> <p>D. Provision of pedestrians, cyclists and intermediate transport</p> <p>E. Safety implications of the scheme beyond its physical limits i.e. how the scheme fits into its environs and road hierarchy</p>
B1 : General	<p><math>\frac{3}{4}</math> Departures from standards</p> <p><math>\frac{3}{4}</math> Cross-sectional variation</p> <p><math>\frac{3}{4}</math> Drainage</p> <p><math>\frac{3}{4}</math> Climatic conditions</p> <p><math>\frac{3}{4}</math> Landscaping</p> <p><math>\frac{3}{4}</math> Services apparatus</p> <p><math>\frac{3}{4}</math> Lay-byes</p> <p><math>\frac{3}{4}</math> Footpaths</p> <p><math>\frac{3}{4}</math> Pedestrian crossings</p> <p><math>\frac{3}{4}</math> Access (minimize number of private accesses)</p> <p><math>\frac{3}{4}</math> Emergency vehicles</p> <p><math>\frac{3}{4}</math> Public Transport</p> <p><math>\frac{3}{4}</math> Future widening</p> <p><math>\frac{3}{4}</math> Staging of contracts</p> <p><math>\frac{3}{4}</math> Adjacent development</p>
B2 : Local Alignment	<p><math>\frac{3}{4}</math> Visibility</p> <p><math>\frac{3}{4}</math> New/Existing road interface</p> <p><math>\frac{3}{4}</math> Safety Aids on steep hills.</p>
B3 : Junctions	<p><math>\frac{3}{4}</math> Minimise potential conflicts</p> <p><math>\frac{3}{4}</math> Layout</p> <p><math>\frac{3}{4}</math> Visibility</p>
B4 : Non-Motorised road users Provision	<p><math>\frac{3}{4}</math> Adjacent land</p> <p><math>\frac{3}{4}</math> Pedestrians</p> <p><math>\frac{3}{4}</math> Cyclists</p> <p><math>\frac{3}{4}</math> Non-motorised vehicles</p>
B5 : Signs and Lighting	<p><math>\frac{3}{4}</math> Lighting</p> <p><math>\frac{3}{4}</math> Signs/Markings</p>
B6 : Construction and Operation	<p><math>\frac{3}{4}</math> Buildability</p> <p><math>\frac{3}{4}</math> Operational</p> <p><math>\frac{3}{4}</math> Network Management</p>

**Stage 2 – Completion of Detailed Design**

<p>1. The audit team should satisfy itself that all issues raised at Stage 1 have been resolved. Items may require further consideration where significant design changes have occurred.</p> <p>2. If a scheme has not been subject to a stage 1 audit, the items listed in Checklists B1 to B6 should be considered together with the items listed below.</p>	
CONTENTS	ITEMS
Aspects to be checked	<p>A. Any design changes since Stage 1.</p> <p>B. The detailed design from a road safety viewpoint, including the road safety implications of future maintenance (speed limits; road signs and markings; visibility; maintenance of street lighting and central reserves).</p>
C1 : General	<ul style="list-style-type: none"> <li>¾ Departures from standards</li> <li>¾ Drainage</li> <li>¾ Climatic conditions</li> <li>¾ Landscaping</li> <li>¾ Services apparatus</li> <li>¾ Lay-byes</li> <li>¾ Access</li> <li>¾ Skid-resistance</li> <li>¾ Agriculture</li> <li>¾ Safety Fences</li> <li>¾ Adjacent development</li> </ul>
C2 : Local Alignment	<ul style="list-style-type: none"> <li>¾ Visibility</li> <li>¾ New/Existing road interface</li> </ul>
C3 : Junctions	<ul style="list-style-type: none"> <li>¾ Layout</li> <li>¾ Visibility</li> <li>¾ Signing</li> <li>¾ Lighting</li> <li>¾ Road Markings</li> <li>¾ T,X,Y-junctions</li> <li>¾ All roundabouts</li> <li>¾ Traffic signals</li> </ul>
C4 : Non-Motorised road users Provision	<ul style="list-style-type: none"> <li>¾ Adjacent land</li> <li>¾ Pedestrians</li> <li>¾ Cyclists</li> <li>¾ Non-motorised vehicles</li> </ul>
C5 : Signs and Lighting	<ul style="list-style-type: none"> <li>¾ Advanced direction signs</li> <li>¾ Local traffic signs</li> <li>¾ Variable message signs</li> <li>¾ Other traffic signs</li> <li>¾ Lighting</li> </ul>
C6 : Construction and Operation	<ul style="list-style-type: none"> <li>¾ Buildability</li> <li>¾ Operational</li> <li>¾ Network Management</li> </ul>

## Enclosure-I

SI. No	Key Personnel	Total Project Assignment (Six months)		
		At site (mm)	At design Office (mm)	Total Time Period (mm)
1	Sr. Highway Engineer-cum-Team Leader	1	5	6
2	Bridge	1	4	5
3	Traffic-Engineer-cum-Safety Expert	1	1	2
4	Surveyor	3	3	6
5	Financial Analyst	0.1	0.9	1
6	Environmental Specialist	1	3	4
	<b>Total</b>	<b>7.1</b>	<b>16.9</b>	<b>24</b>

Note: Consultants have to provide a certificate that all the key personnel as envisaged in the Contract Agreement have been actually deployed in the projects. They have to furnish the certificate at the time of submission of their bills to NHAI from time to time.

**Enclosure-II****Qualification and Experience Requirement of Key Personnel****Senior Highway Engineer-cum-Team Leader**

<b>i)</b>	<b>Educational Qualification</b>	
	Essential	Graduate in Civil Engineering
	Desirable	Post Graduate in Highway Engineering
<b>ii)</b>	<b>Essential Experience</b>	
	a) Total Professional Experience	Min. 20 years
	b) Experience in Highway projects	Min. 15 years in Planning, project preparation and design of <b>Highway Projects</b> , including 2/4 laning / expressways.
	c) Experience in similar capacity	At least 2 projects of Four laning of major highway projects (NH/SH/ Expressways) of length of minimum 50 km
<b>iii)</b>	<b>Age Limit</b>	<b>65 years on the date of submission of proposal</b>

## Enclosure-II(contd.)

**QUALIFICATION AND EXPERIENCE REQUIREMENT OF KEY PERSONNEL*****Bridge Engineer***

<b>i)</b>	<b>Educational Qualification</b>	
	a) Essential	Graduate in Civil Engineering
	Desirable	Post Graduate in Structural Engineering
<b>ii)</b>	<b>Essential Experience</b>	
	a) Total Professional Experience	Minimum 15 years
	b) Experience in Bridge projects	Min. 10 years in project preparation and design of bridge projects.
	c) Experience in Similar Capacity	Bridge Engineer in highway design consultancy projects (NH/SH/ Expressways) involving design of minimum two <b>major bridges</b> (length more than 200 m )
<b>iii)</b>	<b>Age Limit</b>	<b>65years on the date of submission of proposal</b>

**Enclosure-II(contd.)****QUALIFICATION AND EXPERIENCE REQUIREMENT OF KEY PERSONNEL*****Traffic Engineer-cum-safety Expert***

<b>i)</b>	<b>Educational Qualification</b>	
	a) Essential	Graduate in Civil Engineering & PG in Traffic & Transport Engineering
	Desirable	Post Graduate in Traffic/Transportation/Planning Engineering
<b>ii)</b>	<b>Essential Experience</b>	
	a) Total Professional Experience	Min. 10 years
	b) Experience in Highway projects	Min. 5 years on similar projects.
	c) Experience in Similar Capacity	Traffic Engineer in highway Projects (NH/SH/Expressways) involving 4 laning of length of minimum 50 km for at least 2 projects
<b>iii)</b>	<b>Age Limit</b>	<b>65 years on the date of submission of proposal</b>

**Enclosure-II(contd.)****QUALIFICATION AND EXPERIENCE REQUIREMENT OF KEY PERSONNEL**  
*Surveyor*

<b>i)</b>	<b>Educational Qualification</b>	
	Essential	Graduate in Civil Engineering or Diploma in Civil Engg or Diploma in Surveying
	Desirable	Post Graduate with specialization in advance Surveying
<b>ii)</b>	<b>Essential Experience</b>	
	a) Total Professional Experience	Min.10 years
	b) Experience in Highway projects	Min. 5 years on similar projects in project preparation and construction & thorough understanding of modern computer based methods of surveying
	c) Experience in Similar Capacity	Survey Engineer for projects preparation of at least two highway project (NH/SH/Expressways) involving 4- laning of length of minimum 50 km
<b>iii)</b>	<b>Age Limit</b>	<b>65 years on the date of submission of proposal</b>

**Enclosure-II (contd.)****QUALIFICATION AND EXPERIENCE REQUIREMENT OF KEY PERSONNEL***Financial Analyst*

<b>i)</b>	<b>Educational Qualification</b>	
	Essential	Post Graduate in Commerce/Chartered Accountant
	-----	-----
<b>ii)</b>	<b>Essential Experience</b>	
	a) Total Professional Experience	Min. 10 years
	b) Experience in Financial Modelling	Min. 5 years on Financial Modelling in infrastructure projects
	c) Experience in Similar Capacity	Financial Analyst or equivalent in Highway project (NH/SH/Expressways) involving 4 laning of length of minimum 50 km. The personnel should be involved in preparation of Financial Models for at least 2 Highway Projects.
<b>iii)</b>	<b>Age Limit</b>	<b>65 years on the date of submission of proposal</b>

**Enclosure-II(contd.)****QUALIFICATION AND EXPERIENCE REQUIREMENT OF KEY PERSONNEL*****Environmental Specialist***

<b>i)</b>	<b>Educational Qualification</b>	
	a) Essential	Graduate in Civil Engineering or Graduate in Environmental Engineering
	Desirable	Post Graduate in Environmental Sciences
<b>ii)</b>	<b>Essential Experience</b>	
	a) Total Professional Experience	<b>Min. 10 years</b>
	b) Experience in Highway Projects	Min. 5 years in environment impact assessment of infrastructure projects
	c) Experience in Similar Capacity	Environmental Specialist in at least two highway projects of minimum length of 50 km
<b>iii)</b>	<b>Age Limit</b>	<b>65 years on the date of submission of proposal</b>

**Enclosure-III Schedule for Submission of Reports and Documents**  
**Submission Time w.e.f Date of Commencement of Consultancy Services**

Stage No.	Activity	No. of copies	Time Period for assignment from date of commencement
			<b>6 Months</b>
<b>1</b>	<b>Monthly Reports</b>	<b>3</b>	
2	<b>Inception Report</b> ( i ) Inception Report including QAP Document	3	0.50
3	<b>F.S. REPORT</b> i) Draft Feasibility Report including Environmental and Social impact screening Reports ii) Strip Plan iii) Final Feasibility Report <b>(within 10 days of receiving comments of NHAI on draft feasibility report)</b>	6	1.50 2.00
4	<b>P.P. REPORT</b> i) Draft PPR including details and drawings for repair/rehabilitation of existing bridges & draft environmental impact assessment reports, RAP and L. A. Reports & Plans ii) Final PPR including details and drawings for repair/rehabilitation of existing bridges & final environmental impact assessment reports & RAP <b>(Final PPR within 10 days of receiving comments of NHAI on draft PPR)</b>	4 6	3.5 4.0
5	<b>D.P. REPORT</b> i) Draft DPR (including drawings and draft bidding (ICB) documents) EMP, RAP ii) Final DPR (including drawings and draft bidding (ICB) documents) EMP, RAP	4 6	5.0 5.5
6	<b>Project clearances</b> from concerned agencies e.g. from Wild life Clearance (For investigation and for final project) , Forest Clearance, Environmental Clearance from MOEF; Rly for approval of GAD and detail engineering drawing of ROB/RUB; Irrigation Dept., Revenue Authorities for LA etc.	Original letters from the concerned agencies and 5 photocopies of each.	6.0

***Attachment A to the TOR***

**Topographic Survey**

1. The field surveys would be sufficiently detailed to meet the following objectives:
  - (i) Finalising the alignment and location of new carriageway including location of new bridges and other grade separated structures.
  - (ii) Preliminary layout of intersections and grade separators.
  - (iii) Preparation of Land Plans for acquisition of additional land where necessary.
  - (iv) Plans for shifting and relocation of utilities.
2. The detailed field surveys shall be carried out using high precision instruments i.e. mobile LIDAR technology with engineering grade or any other equivalent technology and would cover the following activities:
  - (i) Running a continuous open traverse along the existing road and realignments, wherever required to improve geometrics.
  - (ii) Collection of details for all features such as structures (bridges, culverts, etc.) utilities, existing roads, electric and telephone installations (both O/H as well as underground), huts, buildings, fencing, trees, oil and gas lines, etc. falling within the extent of survey.
3. The width of survey corridor shall be as under:
  - (i) The topographic surveys shall cover sufficient width beyond the centre line of the proposed divided carriageway, considering likely placing of new carriageway and height of the embankment. The width of the survey corridor shall take into account the existing land width, realignments, service roads, if any, layout of intersections, extent of embankment and cut slopes and the general ground profile.
  - (ii) In case need for bypassing the congested locations is felt and the feasibility study for the bypass is included in the TOR, preliminary survey would be carried out along the possible alignments in order to identify and select the most suitable alignment for the bypass. The final alignment shall be got approved by the Authority. Further surveys shall be carried out along the final alignment.
  - (iii) Where existing roads cross the alignment, the survey shall extend to a minimum of 100 m on either side of the road centre line and shall be for sufficient width to allow improvements, including at grade intersection.

4. The important features of the survey conducted and the reference points taken in consideration like GPS bench mark, temporary and permanent bench marks, etc. shall be listed in appropriate formats.

***Attachment B to the TOR***

**Indicative List of Drawings for Schedule-H of the Contract Agreement**

1. Drawings of horizontal alignment, vertical profile and cross-sections.
2. Drawings of cross drainage works.
3. Drawings of major intersections, interchanges, grade separators, underpasses and ROBs/RUBs.
4. Drawings of toll plaza layout, toll collection systems and roadway approaching and exiting toll plaza.
5. Drawings of Traffic Control Centre (if envisaged) and HTMS.
6. Drawings of bus-bays and bus shelters with furniture and drainage system.
7. Drawings of truck lay byes with furniture and drainage system.
8. Drawings of road furniture items including traffic signs, pavement markings, safety barriers, etc.
9. Drawings of traffic diversion plans and traffic control measures in construction zones.
10. Drawings of road drainage measures.
11. Drawings of typical details for slope protection measures.
12. Drawings of landscaping and horticulture.
13. Drawings of pedestrian and cattle crossings.
14. Drawings of street lighting.
15. General arrangement of Base camp and Administrative Block.

**Proforma -1**  
**ROAD INVENTORY**

Date of Survey :

Section: km \_\_\_\_\_ to km \_\_\_\_\_

Chainage	Type of Terrain	Land Use @	Right of Way (m)	Roadway Width (m)	Carriageway		Shoulder		Average height of Embankment or depth of cutting (m)	Road side drain		Service Roads, if any	Remarks
					Type #	Width (m)	Type #	Width (m)		Exists (F/NF)*	Does not exist**		
1	2	3	4	5	6	7	8	9	10	11	12	13	14
km ____ to km ____													

@ Land use, indicate built-up, agriculture, barren, industrial, forest etc.

# For type of carriageway/shoulder, indicate CC/BT/Metalled/Gravel/Earth

\* F= Functional; NF = Non-functional

\*\* If side drain does not exist, put a X mark.

Remarks: Indicate history of submergence or any other information of significance.

Indicate sections in built up area, sections requiring raising.

**Proforma -2****INVENTORY AND CONDITION SURVEY FOR CULVERTS**

Date of Survey :

Section: km \_\_\_\_\_ to km \_\_\_\_\_

S.No.	Location (chainage)	Type of structure (RCC Box/ Slab/Pipe/ Masonry Arch)	Length (m)	Span arrangement		Width of culvert		Height above Bed level		Condition Assessment*			
				Number of Spans	Width of span (m)	Total (m)	Carriageway (m)	u/s side (m)	d/s side (m)	Box, slab, pipe, arch	Head wall	Wing wall	Return wall
1	2	3	4	5	6	7	8	9	10	11	12	13	14

Condition Assessment		Whether waterway adequate (Yes/No)	Remarks
Parapet/ Handrail	Recommendation on widening / reconstruction etc		
15	16	17	18

\* Distressed requiring reconstruction

\* Not distressed, only widening required

\* No widening or reconstruction required

Remarks: Indicate presence of protection works, scour etc. A detailed note should be furnished separately for each culvert proposed for reconstruction, and/or addition of span (waterway).

**Proforma -3****INVENTORY OF STRUCTURES  
(Bridges and other Structures)**

Date of Survey :

Section: km \_\_\_\_\_ to km \_\_\_\_\_

Location (Chainage)	Year of Construction	Type of Structure			Type of Bearing	Type of Expansion Joint	Type of Wearing Coat	Whether High level Yes/No	Length (m)*	Span or viaduct arrangement		Average vertical clearance** (m)	Width of carriageway between kerbs (m)
		Super structure	Sub structure	Foundation						Number of Spans	Length of span (m)		
1	2	3	4	5	6	7	8	9	10	11	12	13	14

Width of Footpath (m)	Whether water way adequate (Yes/No)	High flood level (HFL)	Low Water Level (LWL)	Design Discharge (cumecs)	Maximum Design velocity (m/sec)	Protection work		Remarks
						Bed	Approaches	
15	16	17	18	19	20	21	22	23

\* face to face of dirt wall

\*\* Below bottom of girder/soffit

Remarks : Indicate any other feature considered important

**Proforma - 4  
ROAD CONDITION SURVEY**

Date of Survey :

Section: km \_\_\_\_\_ to km \_\_\_\_\_

Chainage	Visual condition of pavement (Good/Fair/ Poor)	Visual condition of shoulders (Good/Fair/ Poor)	Visual condition of roadside drains (Good/Fair/ Poor)	Visual condition of side slopes and embankment (Good/Fair/ Poor)	Length affected with shoulder drop more than 50 mm		Remarks
					LHS (m)	RHS (m)	
1	2	3	4	5	6	7	8
km 0.000 to km 1.000 km 1.000 to km 2.000 ..... .....							

- Notes: (1) Information will be given in block of one km each, i.e. from km 0.000 to 1.000 km, 1.000 to 2.000, etc.  
 (2) Shoulder drop will be counted when it is more than 50 mm in depth.

**Proforma - 5**  
**BRIDGE CONDITION SURVEY**  
**(Bridges and other Structures)**

Date of Survey :

Section: km \_\_\_\_\_ to km \_\_\_\_\_

Location (chainage)	Type of structure	Flooding history	Condition of											Remarks*	
			Bearings	Expansion joints	Wearing coat	Parapets/ Railings/crash barriers	Foundations	Abutments	Piers	Super Structure	Approach slabs	Guide bunds	Other protective works		Other items (specify)
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

- Indicate whether the structure requires widening, reconstruction, repairs and/or rehabilitation, addition of span (waterway)
- A detailed report should be furnished for each structure proposed for reconstruction and /or addition of span (increase in length).

**SCHEDULE-2**  
*(See Clause 2.1.3)*

**AGREEMENT**

**FOR**

**Appointment of Technical Consultant for Feasibility Study and Preparation of Detailed Project Report for 4 Laning of Thirumangalam to Rajapalayam section of NH-744 in the State of Tamil Nadu under NHDP Phase-IV**

<b>CONTENTS</b>		<b>Page no.</b>
<b>1. General</b>		
1.1	Definitions and Interpretation	
1.2	Relation between the Parties	
1.3	Rights and Obligations	
1.4	Governing law and jurisdiction	
1.5	Language	
1.6	Table of contents and headings	
1.7	Notices	
1.8	Location	
1.9	Authority of Member-in-Charge	
1.10	Authorised representatives	
1.11	Taxes and duties	
<b>2. Commencement, Completion and Termination of Agreement</b>		
2.1	Effectiveness of Agreement	
2.2	Commencement of Services	
2.3	Termination of Agreement for failure to commence Services	
2.4	Expiration of Agreement	
2.5	Entire Agreement	
2.6	Modification of Agreement	
2.7	Force Majeure	
2.8	Suspension of Agreement	
2.9	Termination of Agreement	
<b>3. Obligations of the Consultant</b>		
3.1	General	
3.2	Conflict of Interest	
3.3	Confidentiality	
3.4	Liability of the Consultant	

- 3.5 Insurance to be taken out by the Consultant
- 3.6 Accounting, inspection and auditing
- 3.7 Consultant's actions requiring the Authority's prior approval
- 3.8 Reporting obligations
- 3.9 Documents prepared by the Consultant to be the property of the Authority
- 3.10 Equipment and materials furnished by the Authority
- 3.11 Providing access to the Project Office and Personnel
- 3.12 Accuracy of Documents

**4. Consultant's Personnel and Sub-Consultant**

- 4.1 General
- 4.2 Deployment of Personnel
- 4.3 Approval of Personnel
- 4.4 Substitution of Key Personnel
- 4.5 Working hours, overtime, leave etc.
- 4.6 Resident Team Leader and Project Manager
- 4.7 Sub-Consultants

**5. Obligations of the Authority**

- 5.1 Assistance in clearances etc.
- 5.2 Access to land and property
- 5.3 Change in Applicable Law
- 5.4 Payment

**6. Payment to the Consultant**

- 6.1 Cost estimates and Agreement Value
- 6.2 Currency of payment
- 6.3 Mode of billing and payment

**7. Liquidated damages and penalties**

- 7.1 Performance Security
- 7.2 Liquidated Damages
- 7.3 Penalty for deficiency in Services

**8. Fairness and Good Faith**

- 8.1 Good Faith
- 8.2 Operation of the Agreement

**9. Settlement of Disputes**

- 9.1 Amicable settlement
- 9.2 Dispute resolution
- 9.3 Conciliation
- 9.4 Arbitration

**ANNEXES**

- Annex 1: Terms of Reference
- Annex 2: Deployment of Personnel
- Annex 3: Estimate of Personnel Costs
- Annex 4: Approved Sub-Consultant(s)
- Annex 5: Cost of Services
- Annex 6: Payment Schedule
- Annex 7: Bank Guarantee for Performance Security

## AGREEMENT

Appointment of Technical Consultant For Feasibility Study and Preparation of Detailed Project Report for 4 Laning of Thirumangalam to Rajapalayam section of NH-744 in the State of Tamil Nadu under NHDP Phase-IV

AGREEMENT No. \_\_\_\_\_

This AGREEMENT (hereinafter called the “**Agreement**”) is made on the \_\_\_\_\_ day of the month of \_\_\_\_\_ 2\*\*\*, between, on the one hand, the [President of India acting through \*\*\*\*\*] (hereinafter called the “**Authority**” which expression shall include their respective successors and permitted assigns, unless the context otherwise requires) and, on the other hand, \_\_\_\_\_ (hereinafter called the “**Consultant**” which expression shall include their respective successors and permitted assigns).

### WHEREAS

- (A) The Authority vide its Request for Proposal for Feasibility Report and Preparation of (hereinafter called the “**Consultancy**”) for [Four laning of \*\*\*\*\* highway] (hereinafter called the “**Project**”);
- (B) the Consultant submitted its proposals for the aforesaid work, whereby the Consultant represented to the Authority that it had the required professional skills, and in the said proposals the Consultant also agreed to provide the Services to the Authority on the terms and conditions as set forth in the RFP and this Agreement; and
- (C) the Authority, on acceptance of the aforesaid proposals of the Consultant, awarded the Consultancy to the Consultant vide its Letter of Award dated \_\_\_\_\_ (the “**LOA**”); and
- (D) in pursuance of the LOA, the parties have agreed to enter into this Agreement.

NOW, THEREFORE, the parties hereto hereby agree as follows:

### 1. GENERAL

#### 1.1 Definitions and Interpretation

1.1.1 The words and expressions beginning with capital letters and defined in this Agreement shall, unless the context otherwise requires, have the meaning hereinafter respectively assigned to them:

- (a) “**Additional Costs**” shall have the meaning set forth in Clause 6.1.2;
- (b) “**Agreement**” means this Agreement, together with all the Annexes;

- (c) “**Agreement Value**” shall have the meaning set forth in Clause 6.1.2;
- (d) “**Applicable Laws**” means the laws and any other instruments having the force of law in India as they may be issued and in force from time to time;
- (e) “**Confidential Information**” shall have the meaning set forth in Clause 3.3;
- (f) “**Conflict of Interest**” shall have the meaning set forth in Clause 3.2 read with the provisions of RFP;
- (g) “**Dispute**” shall have the meaning set forth in Clause 9.2.1;
- (h) “**Effective Date**” means the date on which this Agreement comes into force and effect pursuant to Clause 2.1;
- (i) “**Expatriate Personnel**” means such persons who at the time of being so hired had their domicile outside India;
- (j) “**Government**” means the [Government of \*\*\*\*\*];
- (k) “**INR, Re. or Rs.**” means Indian Rupees;
- (l) “**Member**”, in case the Consultant consists of a joint venture or consortium of more than one entity, means any of these entities, and “**Members**” means all of these entities;
- (m) “**Party**” means the Authority or the Consultant, as the case may be, and Parties means both of them;
- (n) “**Personnel**” means persons hired by the Consultant or by any Sub-Consultant as employees and assigned to the performance of the Services or any part thereof;
- (o) “**Resident Personnel**” means such persons who at the time of being so hired had their domicile inside India;
- (p) “**RFP**” means the Request for Proposal document in response to which the Consultant’s proposal for providing Services was accepted;
- (q) “**Services**” means the work to be performed by the Consultant pursuant to this Agreement, as described in the Terms of Reference hereto;
- (r) “**Sub-Consultant**” means any entity to which the Consultant subcontracts any part of the Services in accordance with the provisions of Clause 4.7; and
- (s) “**Third Party**” means any person or entity other than the Government, the Authority, the Consultant or a Sub-Consultant.

All terms and words not defined herein shall, unless the context otherwise requires, have the meaning assigned to them in the RFP.

1.1.2 The following documents along with all addenda issued thereto shall be deemed to form and be read and construed as integral parts of this Agreement and in case of any contradiction between or among them the priority in which a document would prevail over another would be as laid down below beginning from the highest priority to the lowest priority:

- (a) Agreement;
- (b) Annexes of Agreement;
- (c) RFP; and
- (d) Letter of Award.

## **1.2 Relation between the Parties**

Nothing contained herein shall be construed as establishing a relation of master and servant or of agent and principal as between the Authority and the Consultant. The Consultant shall, subject to this Agreement, have complete charge of Personnel performing the Services and shall be fully responsible for the Services performed by them or on their behalf hereunder.

## **1.3 Rights and obligations**

The mutual rights and obligations of the Authority and the Consultant shall be as set forth in the Agreement, in particular:

- (a) the Consultant shall carry out the Services in accordance with the provisions of the Agreement; and
- (b) the Authority shall make payments to the Consultant in accordance with the provisions of the Agreement.

## **1.4 Governing law and jurisdiction**

This Agreement shall be construed and interpreted in accordance with and governed by the laws of India, and the courts at \*\*\*\*\* shall have exclusive jurisdiction over matters arising out of or relating to this Agreement.

## **1.5 Language**

All notices required to be given by one Party to the other Party and all other communications, documentation and proceedings which are in any way relevant to this Agreement shall be in writing and in English language.

## **1.6 Table of contents and headings**

The table of contents, headings or sub-headings in this Agreement are for convenience of reference only and shall not be used in, and shall not affect, the construction or interpretation of this Agreement.

## **1.7 Notices**

Any notice or other communication to be given by any Party to the other Party under or in connection with the matters contemplated by this Agreement shall be in writing and shall:

- (a) in the case of the Consultant, be given by facsimile or e-mail and by letter delivered by hand to the address given and marked for attention of the Consultant's Representative set out below in Clause 1.10 or to such other person as the Consultant may from time to time designate by notice to the Authority; provided that notices or other communications to be given to an address outside \*\*\*\*\* may, if they are subsequently confirmed by sending a copy thereof by registered acknowledgement due, air mail or by courier, be sent by facsimile or e-mail to the number as the Consultant may from time to time specify by notice to the Authority;
- (b) in the case of the Authority, be given by facsimile or e-mail and by letter delivered by hand and be addressed to the Authority with a copy delivered to the Authority Representative set out below in Clause 1.10 or to such other person as the Authority may from time to time designate by notice to the Consultant; provided that if the Consultant does not have an office in [New Delhi] it may send such notice by facsimile or e-mail and by registered acknowledgement due, air mail or by courier; and
- (c) any notice or communication by a Party to the other Party, given in accordance herewith, shall be deemed to have been delivered when in the normal course of post it ought to have been delivered and in all other cases, it shall be deemed to have been delivered on the actual date and time of delivery; provided that in the case of facsimile or e-mail, it shall be deemed to have been delivered on the working days following the date of its delivery.

## **1.8 Location**

The Services shall be performed at the site of the Project in accordance with the provisions of RFP and at such locations as are incidental thereto, including the offices of the Consultant.

## **1.9 Authority of Member-in-charge**

In case the Consultant consists of a consortium of more than one entity, the Parties agree that the Lead Member shall act on behalf of the Members in exercising all the Consultant's rights and obligations towards the Authority under this Agreement, including without limitation the receiving of instructions and payments from the Authority.

## **1.10 Authorised Representatives**

1.10.1 Any action required or permitted to be taken, and any document required or permitted to be executed, under this Agreement by the Authority or the

Consultant, as the case may be, may be taken or executed by the officials specified in this Clause 1.10.

1.10.2 The Authority may, from time to time, designate one of its officials as the Authority Representative. Unless otherwise notified, the Authority Representative shall be:

\*\*\*\*\*  
\*\*\*\*\*  
\*\*\*\*\*  
\*\*\*\*\*

Tel: \*\*\*\*\* Fax: \*\*\*\*\* E-mail: \*\*\*\*\*

1.10.3 The Consultant may designate one of its employees as Consultant’s Representative. Unless otherwise notified, the Consultant’s Representative shall be:

-----  
-----

Tel: -----  
Mobile: -----  
Fax: -----  
Email: -----

**1.11 Taxes and duties**

Unless otherwise specified in the Agreement, the Consultant shall pay all such taxes, duties, fees and other impositions as may be levied under the Applicable Laws and the Authority shall perform such duties in regard to the deduction of such taxes as may be lawfully imposed on it.

**2. COMMENCEMENT, COMPLETION AND TERMINATION OF AGREEMENT**

**2.1 Effectiveness of Agreement**

This Agreement shall come into force and effect on the date of this Agreement (the “Effective Date”).

**2.2 Commencement of Services**

The Consultant shall commence the Services within a period of 7 (seven) days from the Effective Date, unless otherwise agreed by the Parties.

**2.3 Termination of Agreement for failure to commence Services**

If the Consultant does not commence the Services within the period specified in Clause 2.2 above, the Authority may, by not less than 2 (two) weeks' notice to the Consultant, declare this Agreement to be null and void, and in the event of such a declaration, the Bid Security of the Consultant shall stand forfeited.

## **2.4 Expiration of Agreement**

Unless terminated earlier pursuant to Clauses 2.3 or 2.9 hereof, this Agreement shall, unless extended by the Parties by mutual consent, expire upon the earlier of (i) expiry of a period of 90 (ninety) days after the delivery of the final deliverable to the Authority; and (ii) the expiry of [1 (one) year] from the Effective Date. Upon Termination, the Authority shall make payments of all amounts due to the Consultant hereunder.

## **2.5 Entire Agreement**

2.5.1 This Agreement and the Annexes together constitute a complete and exclusive statement of the terms of the agreement between the Parties on the subject hereof, and no amendment or modification hereto shall be valid and effective unless such modification or amendment is agreed to in writing by the Parties and duly executed by persons especially empowered in this behalf by the respective Parties. All prior written or oral understandings, offers or other communications of every kind pertaining to this Agreement are abrogated and withdrawn; provided, however, that the obligations of the Consultant arising out of the provisions of the RFP shall continue to subsist and shall be deemed to form part of this Agreement.

2.5.2 Without prejudice to the generality of the provisions of Clause 2.5.1, on matters not covered by this Agreement, the provisions of RFP shall apply.

## **2.6 Modification of Agreement**

Modification of the terms and conditions of this Agreement, including any modification of the scope of the Services, may only be made by written agreement between the Parties. Pursuant to Clauses 4.2.3 and 6.1.3 hereof, however, each Party shall give due consideration to any proposals for modification made by the other Party.

## **2.7 Force Majeure**

### **2.7.1 Definition**

(a) For the purposes of this Agreement, “**Force Majeure**” means an event which is beyond the reasonable control of a Party, and which makes a Party's performance of its obligations hereunder impossible or so impractical as reasonably to be considered impossible in the circumstances, and includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood or other adverse weather conditions, strikes, lockouts or other industrial action (except where such strikes, lockouts or other industrial action are within the

power of the Party invoking Force Majeure to prevent), confiscation or any other action by government agencies.

- (b) Force Majeure shall not include (i) any event which is caused by the negligence or intentional action of a Party or such Party's Sub-Consultant or agents or employees, nor (ii) any event which a diligent Party could reasonably have been expected to both (A) take into account at the time of the conclusion of this Agreement, and (B) avoid or overcome in the carrying out of its obligations hereunder.
- (c) Force Majeure shall not include insufficiency of funds or failure to make any payment required hereunder.

#### 2.7.2 No breach of Agreement

The failure of a Party to fulfil any of its obligations hereunder shall not be considered to be a breach of, or default under, this Agreement insofar as such inability arises from an event of Force Majeure, provided that the Party affected by such an event has taken all reasonable precautions, due care and reasonable alternative measures, all with the objective of carrying out the terms and conditions of this Agreement.

#### 2.7.3 Measures to be taken

- (a) A Party affected by an event of Force Majeure shall take all reasonable measures to remove such Party's inability to fulfil its obligations hereunder with a minimum of delay.
- (b) A Party affected by an event of Force Majeure shall notify the other Party of such event as soon as possible, and in any event not later than 14 (fourteen) days following the occurrence of such event, providing evidence of the nature and cause of such event, and shall similarly give notice of the restoration of normal conditions as soon as possible.
- (c) The Parties shall take all reasonable measures to minimise the consequences of any event of Force Majeure.

#### 2.7.4 Extension of time

Any period within which a Party shall, pursuant to this Agreement, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure.

#### 2.7.5 Payments

During the period of its inability to perform the Services as a result of an event of Force Majeure, the Consultant shall be entitled to be reimbursed for additional costs reasonably and necessarily incurred by it during such period

for the purposes of the Services and in reactivating the Services after the end of such period.

#### 2.7.6 Consultation

Not later than 30 (thirty) days after the Consultant has, as the result of an event of Force Majeure, become unable to perform a material portion of the Services, the Parties shall consult with each other with a view to agreeing on appropriate measures to be taken in the circumstances.

### 2.8 Suspension of Agreement

The Authority may, by written notice of suspension to the Consultant, suspend all payments to the Consultant hereunder if the Consultant shall be in breach of this Agreement or shall fail to perform any of its obligations under this Agreement, including the carrying out of the Services; provided that such notice of suspension (i) shall specify the nature of the breach or failure, and (ii) shall provide an opportunity to the Consultant to remedy such breach or failure within a period not exceeding 30 (thirty) days after receipt by the Consultant of such notice of suspension.

### 2.9 Termination of Agreement

#### 2.9.1 By the Authority

The Authority may, by not less than 30 (thirty) days' written notice of termination to the Consultant, such notice to be given after the occurrence of any of the events specified in this Clause 2.9.1, terminate this Agreement if:

- (a) the Consultant fails to remedy any breach hereof or any failure in the performance of its obligations hereunder, as specified in a notice of suspension pursuant to Clause 2.8 hereinabove, within 30 (thirty) days of receipt of such notice of suspension or within such further period as the Authority may have subsequently granted in writing;
- (b) the Consultant becomes insolvent or bankrupt or enters into any agreement with its creditors for relief of debt or take advantage of any law for the benefit of debtors or goes into liquidation or receivership whether compulsory or voluntary;
- (c) the Consultant fails to comply with any final decision reached as a result of arbitration proceedings pursuant to Clause 9 hereof;
- (d) the Consultant submits to the Authority a statement which has a material effect on the rights, obligations or interests of the Authority and which the Consultant knows to be false;
- (e) any document, information, data or statement submitted by the Consultant in its Proposals, based on which the Consultant was considered eligible or successful, is found to be false, incorrect or misleading;

- (f) as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than 60 (sixty) days; or
- (g) the Authority, in its sole discretion and for any reason whatsoever, decides to terminate this Agreement.

#### 2.9.2 By the Consultant

The Consultant may, by not less than 30 (thirty) days' written notice to the Authority, such notice to be given after the occurrence of any of the events specified in this Clause 2.9.2, terminate this Agreement if:

- (a) the Authority fails to pay any money due to the Consultant pursuant to this Agreement and not subject to dispute pursuant to Clause 9 hereof within 45 (forty five) days after receiving written notice from the Consultant that such payment is overdue;
- (b) the Authority is in material breach of its obligations pursuant to this Agreement and has not remedied the same within 45 (forty five) days (or such longer period as the Consultant may have subsequently granted in writing) following the receipt by the Authority of the Consultant's notice specifying such breach;
- (c) as the result of Force Majeure, the Consultant is unable to perform a material portion of the Services for a period of not less than 60 (sixty) days; or
- (d) the Authority fails to comply with any final decision reached as a result of arbitration pursuant to Clause 9 hereof.

#### 2.9.3 Cessation of rights and obligations

Upon termination of this Agreement pursuant to Clauses 2.3 or 2.9 hereof, or upon expiration of this Agreement pursuant to Clause 2.4 hereof, all rights and obligations of the Parties hereunder shall cease, except (i) such rights and obligations as may have accrued on the date of termination or expiration, or which expressly survive such Termination; (ii) the obligation of confidentiality set forth in Clause 3.3 hereof; (iii) the Consultant's obligation to permit inspection, copying and auditing of such of its accounts and records set forth in Clause 3.6, as relate to the Consultant's Services provided under this Agreement; and (iv) any right or remedy which a Party may have under this Agreement or the Applicable Law.

#### 2.9.4 Cessation of Services

Upon termination of this Agreement by notice of either Party to the other pursuant to Clauses 2.9.1 or 2.9.2 hereof, the Consultant shall, immediately

upon dispatch or receipt of such notice, take all necessary steps to bring the Services to a close in a prompt and orderly manner and shall make every reasonable effort to keep expenditures for this purpose to a minimum. With respect to documents prepared by the Consultant and equipment and materials furnished by the Authority, the Consultant shall proceed as provided respectively by Clauses 3.9 or 3.10 hereof.

#### 2.9.5 Payment upon Termination

Upon termination of this Agreement pursuant to Clauses 2.9.1 or 2.9.2 hereof, the Authority shall make the following payments to the Consultant (after offsetting against these payments any amount that may be due from the Consultant to the Authority):

- (i) remuneration pursuant to Clause 6 hereof for Services satisfactorily performed prior to the date of termination;
- (ii) reimbursable expenditures pursuant to Clause 6 hereof for expenditures actually incurred prior to the date of termination; and
- (iii) except in the case of termination pursuant to sub-clauses (a) through (e) of Clause 2.9.1 hereof, reimbursement of any reasonable cost incidental to the prompt and orderly termination of the Agreement including the cost of the return travel of the Consultant's personnel.

#### 2.9.6 Disputes about Events of Termination

If either Party disputes whether an event specified in Clause 2.9.1 or in Clause 2.9.2 hereof has occurred, such Party may, within 30 (thirty) days after receipt of notice of termination from the other Party, refer the matter to arbitration pursuant to Clause 9 hereof, and this Agreement shall not be terminated on account of such event except in accordance with the terms of any resulting arbitral award.

### **3. OBLIGATIONS OF THE CONSULTANT**

#### **3.1 General**

##### 3.1.1 Standards of Performance

The Consultant shall perform the Services and carry out its obligations hereunder with all due diligence, efficiency and economy, in accordance with generally accepted professional techniques and practices, and shall observe sound management practices, and employ appropriate advanced technology and safe and effective equipment, machinery, materials and methods. The Consultant shall always act, in respect of any matter relating to this Agreement or to the Services, as a faithful adviser to the Authority, and shall at all times support and safeguard the Authority's legitimate interests in any dealings with Sub-Consultants or Third Parties.

##### 3.1.2 Terms of Reference

The scope of services to be performed by the Consultant is specified in the Terms of Reference (the “**TOR**”) at Annex-1 of this Agreement. The Consultant shall provide the Deliverables specified therein in conformity with the time schedule stated therein.

### 3.1.3 Applicable Laws

The Consultant shall perform the Services in accordance with the Applicable Laws and shall take all practicable steps to ensure that any Sub-Consultant, as well as the Personnel and agents of the Consultant and any Sub-Consultant, comply with the Applicable Laws.

## 3.2 Conflict of Interest

3.2.1 The Consultant shall not have a Conflict of Interest and any breach hereof shall constitute a breach of the Agreement.

3.2.2 Consultant and Affiliates not to be otherwise interested in the Project

The Consultant agrees that, during the term of this Agreement and after its termination, the Consultant or any Associate thereof and any entity affiliated with the Consultant, as well as any Sub-Consultant and any entity affiliated with such Sub-Consultant, shall be disqualified from providing goods, works, services, loans or equity for any project resulting from or closely related to the Services and any breach of this obligation shall amount to a Conflict of Interest; provided that the restriction herein shall not apply after a period of five years from the completion of this assignment or to consulting assignments granted by banks/ lenders at any time; provided further that this restriction shall not apply to consultancy/ advisory services provided to the Authority in continuation of this Consultancy or to any subsequent consultancy/ advisory services provided to the Authority in accordance with the rules of the Authority. For the avoidance of doubt, an entity affiliated with the Consultant shall include a partner in the Consultant’s firm or a person who holds more than 5% (five per cent) of the subscribed and paid up share capital of the Consultant, as the case may be, and any Associate thereof.

3.2.3 Prohibition of conflicting activities

Neither the Consultant nor its Sub-Consultant nor the Personnel of either of them shall engage, either directly or indirectly, in any of the following activities:

- (a) during the term of this Agreement, any business or professional activities which would conflict with the activities assigned to them under this Agreement;
- (b) after the termination of this Agreement, such other activities as may be specified in the Agreement; or
- (c) at any time, such other activities as have been specified in the RFP as Conflict of Interest.

3.2.4 Consultant not to benefit from commissions, discounts, etc.

The remuneration of the Consultant pursuant to Clause 6 hereof shall constitute the Consultant's sole remuneration in connection with this Agreement or the Services and the Consultant shall not accept for its own benefit any trade commission, discount or similar payment in connection with activities pursuant to this Agreement or to the Services or in the discharge of its obligations hereunder, and the Consultant shall use its best efforts to ensure that any Sub-Consultant, as well as the Personnel and agents of either of them, similarly shall not receive any such additional remuneration.

3.2.5 The Consultant and its Personnel shall observe the highest standards of ethics and shall not have engaged in and shall not hereafter engage in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice (collectively the "**Prohibited Practices**"). Notwithstanding anything to the contrary contained in this Agreement, the Authority shall be entitled to terminate this Agreement forthwith by a communication in writing to the Consultant, without being liable in any manner whatsoever to the Consultant, if it determines that the Consultant has, directly or indirectly or through an agent, engaged in any Prohibited Practices in the Selection Process or before or after entering into of this Agreement. In such an event, the Authority shall forfeit and appropriate the performance security, if any, as mutually agreed genuine pre-estimated compensation and damages payable to the Authority towards, *inter alia*, the time, cost and effort of the Authority, without prejudice to the Authority's any other rights or remedy hereunder or in law.

3.2.6 Without prejudice to the rights of the Authority under Clause 3.2.5 above and the other rights and remedies which the Authority may have under this Agreement, if the Consultant is found by the Authority to have directly or indirectly or through an agent, engaged or indulged in any Prohibited Practices, during the Selection Process or before or after the execution of this Agreement, the Consultant shall not be eligible to participate in any tender or RFP issued during a period of 2 (two) years from the date the Consultant is found by the Authority to have directly or indirectly or through an agent, engaged or indulged in any Prohibited Practices.

3.2.7 For the purposes of Clauses 3.2.5 and 3.2.6, the following terms shall have the meaning hereinafter respectively assigned to them:

- (a) "**corrupt practice**" means the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence the actions of any person connected with the Selection Process (for removal of doubt, offering of employment or employing or engaging in any manner whatsoever, directly or indirectly, any official of the Authority who is or has been associated in any manner, directly or indirectly with Selection Process or LOA or dealing with matters concerning the Agreement before or after the execution thereof, at any time prior to the expiry of one year from the date such official resigns or retires from or otherwise ceases to be in the service of the

Authority, shall be deemed to constitute influencing the actions of a person connected with the Selection Process); or (ii) engaging in any manner whatsoever, whether during the Selection Process or after the issue of LOA or after the execution of the Agreement, as the case may be, any person in respect of any matter relating to the Project or the LOA or the Agreement, who at any time has been or is a legal, financial or technical adviser the Authority in relation to any matter concerning the Project;

- (b) “**fraudulent practice**” means a misrepresentation or omission of facts or suppression of facts or disclosure of incomplete facts, in order to influence the Selection Process;
- (c) “**coercive practice**” means impairing or harming, or threatening to impair or harm, directly or indirectly, any person or property to influence any person’s participation or action in the Selection Process or the exercise of its rights or performance of its obligations by the Authority under this Agreement;
- (d) “**undesirable practice**” means (i) establishing contact with any person connected with or employed or engaged by the Authority with the objective of canvassing, lobbying or in any manner influencing or attempting to influence the Selection Process; or (ii) having a Conflict of Interest; and
- (e) “**restrictive practice**” means forming a cartel or arriving at any understanding or arrangement among Applicants with the objective of restricting or manipulating a full and fair competition in the Selection Process.

### 3.3 Confidentiality

The Consultant, its Sub-Consultants and the Personnel of either of them shall not, either during the term or within two years after the expiration or termination of this Agreement disclose any proprietary information, including information relating to reports, data, drawings, design software or other material, whether written or oral, in electronic or magnetic format, and the contents thereof; and any reports, digests or summaries created or derived from any of the foregoing that is provided by the Authority to the Consultant, its Sub-Consultants and the Personnel; any information provided by or relating to the Authority, its technology, technical processes, business affairs or finances or any information relating to the Authority’s employees, officers or other professionals or suppliers, customers, or contractors of the Authority; and any other information which the Consultant is under an obligation to keep confidential in relation to the Project, the Services or this Agreement (“**Confidential Information**”), without the prior written consent of the Authority.

Notwithstanding the aforesaid, the Consultant, its Sub-Consultants and the Personnel of either of them may disclose Confidential Information to the extent that such Confidential Information:

- (i) was in the public domain prior to its delivery to the Consultant, its Sub-Consultants and the Personnel of either of them or becomes a part of the public knowledge from a source other than the Consultant, its Sub-Consultants and the Personnel of either of them;
- (ii) was obtained from a third party with no known duty to maintain its confidentiality;
- (iii) is required to be disclosed by Applicable Laws or judicial or administrative or arbitral process or by any governmental instrumentalities, provided that for any such disclosure, the Consultant, its Sub-Consultants and the Personnel of either of them shall give the Authority, prompt written notice, and use reasonable efforts to ensure that such disclosure is accorded confidential treatment; and
- (iv) is provided to the professional advisers, agents, auditors or representatives of the Consultant or its Sub-Consultants or Personnel of either of them, as is reasonable under the circumstances; provided, however, that the Consultant or its Sub-Consultants or Personnel of either of them, as the case may be, shall require their professional advisers, agents, auditors or its representatives, to undertake in writing to keep such Confidential Information, confidential and shall use its best efforts to ensure compliance with such undertaking.

### **3.4 Liability of the Consultant**

- 3.4.1 The Consultant's liability under this Agreement shall be determined by the Applicable Laws and the provisions hereof.
- 3.4.2 The Consultant shall, subject to the limitation specified in Clause 3.4.3, be liable to the Authority for any direct loss or damage accrued or likely to accrue due to deficiency in Services rendered by it.
- 3.4.3 The Parties hereto agree that in case of negligence or wilful misconduct on the part of the Consultant or on the part of any person or firm acting on behalf of the Consultant in carrying out the Services, the Consultant, with respect to damage caused to the Authority's property, shall not be liable to the Authority:
  - (i) for any indirect or consequential loss or damage; and
  - (ii) for any direct loss or damage that exceeds (a) the Agreement Value set forth in Clause 6.1.2 of this Agreement, or (b) the proceeds the Consultant may be entitled to receive from any insurance maintained by the Consultant to cover such a liability in accordance with Clause 3.5.2, whichever of (a) or (b) is higher.
- 3.4.4 This limitation of liability specified in Clause 3.4.3 shall not affect the Consultant's liability, if any, for damage to Third Parties caused by the Consultant or any person or firm acting on behalf of the Consultant in

carrying out the Services subject, however, to a limit equal to 3 (three) times the Agreement Value.

### **3.5 Insurance to be taken out by the Consultant**

- 3.5.1 (a) The Consultant shall, for the duration of this Agreement, take out and maintain, and shall cause any Sub-Consultant to take out and maintain, at its (or the Sub-Consultant's, as the case may be) own cost, but on terms and conditions approved by the Authority, insurance against the risks, and for the coverages, as specified in the Agreement and in accordance with good industry practice.
- (b) Within 15 (fifteen) days of receiving any insurance policy certificate in respect of insurances required to be obtained and maintained under this clause, the Consultant shall furnish to the Authority, copies of such policy certificates, copies of the insurance policies and evidence that the insurance premia have been paid in respect of such insurance. No insurance shall be cancelled, modified or allowed to expire or lapse during the term of this Agreement.
- (c) If the Consultant fails to effect and keep in force the aforesaid insurances for which it is responsible pursuant hereto, the Authority shall, apart from having other recourse available under this Agreement, have the option, without prejudice to the obligations of the Consultant, to take out the aforesaid insurance, to keep in force any such insurances, and pay such premia and recover the costs thereof from the Consultant, and the Consultant shall be liable to pay such amounts on demand by the Authority.
- (d) Except in case of Third Party liabilities, the insurance policies so procured shall mention the Authority as the beneficiary of the Consultant and the Consultant shall procure an undertaking from the insurance company to this effect; provided that in the event the Consultant has a general insurance policy that covers the risks specified in this Agreement and the amount of insurance cover is equivalent to 3 (three) times the cover required hereunder, such insurance policy may not mention the Authority as the sole beneficiary of the Consultant or require an undertaking to that effect.
- 3.5.2 The Parties agree that the risks and coverages shall include but not be limited to the following:
- (a) Third Party liability insurance as required under Applicable Laws, with a minimum coverage of Rs. 9.60 (Nine point six) crore;
- (b) employer's liability and workers' compensation insurance in respect of the Personnel of the Consultant and of any Sub-Consultant, in accordance with Applicable Laws; and
- (c) professional liability insurance for an amount no less than the Agreement Value.

The indemnity limit in terms of “Any One Accident” (AOA) and “Aggregate limit on the policy period” (AOP) should not be less than the amount stated in Clause 6.1.2 of the Agreement. In case of consortium, the policy should be in the name of Lead Member and not in the name of individual Members of the consortium.

### **3.6 Accounting, inspection and auditing**

The Consultant shall:

- (a) keep accurate and systematic accounts and records in respect of the Services provided under this Agreement, in accordance with internationally accepted accounting principles and in such form and detail as will clearly identify all relevant time charges and cost, and the basis thereof (including the basis of the Consultant’s costs and charges); and
- (b) permit the Authority or its designated representative periodically, and up to one year from the expiration or termination of this Agreement, to inspect the same and make copies thereof as well as to have them audited by auditors appointed by the Authority.

### **3.7 Consultant’s actions requiring the Authority's prior approval**

The Consultant shall obtain the Authority's prior approval in writing before taking any of the following actions:

- (a) appointing such members of the Professional Personnel as are not listed in Annex–2.
- (b) entering into a subcontract for the performance of any part of the Services, it being understood (i) that the selection of the Sub-Consultant and the terms and conditions of the subcontract shall have been approved in writing by the Authority prior to the execution of the subcontract, and (ii) that the Consultant shall remain fully liable for the performance of the Services by the Sub-Consultant and its Personnel pursuant to this Agreement; or
- (c) any other action that is specified in this Agreement.

### **3.8 Reporting obligations**

The Consultant shall submit to the Authority the reports and documents specified in the Agreement, in the form, in the numbers and within the time periods set forth therein.

### **3.9 Documents prepared by the Consultant to be property of the Authority**

- 3.9.1 All plans, drawings, specifications, designs, reports and other documents (collectively referred to as “**Consultancy Documents**”) prepared by the

Consultant (or by the Sub-Consultants or any Third Party) in performing the Services shall become and remain the property of the Authority, and all intellectual property rights in such Consultancy Documents shall vest with the Authority. Any Consultancy Document, of which the ownership or the intellectual property rights do not vest with the Authority under law, shall automatically stand assigned to the Authority as and when such Consultancy Document is created and the Consultant agrees to execute all papers and to perform such other acts as the Authority may deem necessary to secure its rights herein assigned by the Consultant.

- 3.9.2 The Consultant shall, not later than termination or expiration of this Agreement, deliver all Consultancy Documents to the Authority, together with a detailed inventory thereof. The Consultant may retain a copy of such Consultancy Documents. The Consultant, its Sub-Consultants or a Third Party shall not use these Consultancy Documents for purposes unrelated to this Agreement without the prior written approval of the Authority.
- 3.9.3 The Consultant shall hold the Authority harmless and indemnified for any losses, claims, damages, expenses (including all legal expenses), awards, penalties or injuries (collectively referred to as 'claims') which may arise from or due to any unauthorised use of such Consultancy Documents, or due to any breach or failure on part of the Consultant or its Sub-Consultants or a Third Party to perform any of its duties or obligations in relation to securing the aforementioned rights of the Authority.

### **3.10 Equipment and materials furnished by the Authority**

Equipment and materials made available to the Consultant by the Authority shall be the property of the Authority and shall be marked accordingly. Upon termination or expiration of this Agreement, the Consultant shall furnish forthwith to the Authority, an inventory of such equipment and materials and shall dispose of such equipment and materials in accordance with the instructions of the Authority. While in possession of such equipment and materials, the Consultant shall, unless otherwise instructed by the Authority in writing, insure them in an amount equal to their full replacement value.

### **3.11 Providing access to Project Office and Personnel**

The Consultant shall ensure that the Authority, and officials of the Authority having authority from the Authority, are provided unrestricted access to the Project Office and to all Personnel during office hours. The Authority's official, who has been authorised by the Authority in this behalf, shall have the right to inspect the Services in progress, interact with Personnel of the Consultant and verify the records relating to the Services for his satisfaction.

### **3.12. Accuracy of Documents**

The Consultant shall be responsible for accuracy of the data collected by it directly or procured from other agencies/authorities, the designs, drawings, estimates and all other details prepared by it as part of these services.

Subject to the provisions of Clause 3.4, it shall indemnify the Authority against any inaccuracy in its work which might surface during implementation of the Project, if such inaccuracy is the result of any negligence or inadequate due diligence on part of the Consultant or arises out of its failure to conform to good industry practice. The Consultant shall also be responsible for promptly correcting, at its own cost and risk, the drawings including any re-survey / investigations.

#### **4. CONSULTANT'S PERSONNEL AND SUB-CONSULTANTS**

##### **4.1 General**

The Consultant shall employ and provide such qualified and experienced Personnel as may be required to carry out the Services.

##### **4.2 Deployment of Personnel**

4.2.1 The designations, names and the estimated periods of engagement in carrying out the Services by each of the Consultant's Personnel are described in Annex-2 of this Agreement. The estimate of Personnel costs and manday rates are specified in Annex-3 of this Agreement.

4.2.2 Adjustments with respect to the estimated periods of engagement of Personnel set forth in the aforementioned Annex-3 may be made by the Consultant by written notice to the Authority, provided that: (i) such adjustments shall not alter the originally estimated period of engagement of any individual by more than 20% (twenty per cent) or one week, whichever is greater, and (ii) the aggregate of such adjustments shall not cause payments under the Agreement to exceed the Agreement Value set forth in Clause 6.1.2 of this Agreement. Any other adjustments shall only be made with the written approval of the Authority.

4.2.3 If additional work is required beyond the scope of the Services specified in the Terms of Reference, the estimated periods of engagement of Personnel, set forth in the Annexes of the Agreement may be increased by agreement in writing between the Authority and the Consultant, provided that any such increase shall not, except as otherwise agreed, cause payments under this Agreement to exceed the Agreement Value set forth in Clause 6.1.2.

##### **4.3 Approval of Personnel**

4.3.1 The Professional Personnel listed in Annex-2 of the Agreement are hereby approved by the Authority. No other Professional Personnel shall be engaged without prior approval of the Authority.

4.3.2 If the Consultant hereafter proposes to engage any person as Professional Personnel, it shall submit to the Authority its proposal along with a CV of such person in the form provided at Appendix-I (Form-12) of the RFP. The Authority may approve or reject such proposal within 14 (fourteen) days of receipt thereof. In case the proposal is rejected, the Consultant may propose an alternative person for the Authority's consideration. In the event the Authority does not reject a proposal within 14 (fourteen) days of the date of

receipt thereof under this Clause 4.3, it shall be deemed to have been approved by the Authority.

#### **4.4 Substitution of Key Personnel**

The Authority expects all the Key Personnel specified in the Proposal to be available during implementation of the Agreement. The Authority will not consider any substitution of Key Personnel except under compelling circumstances beyond the control of the Consultant and the concerned Key Personnel. Such substitution shall be limited to not more than two Key Personnel subject to equally or better qualified and experienced personnel being provided to the satisfaction of the Authority. Without prejudice to the foregoing, substitution of one Key Personnel shall be permitted subject to reduction of remuneration equal to 20% (twenty per cent) of the total remuneration specified for the Key Personnel who is proposed to be substituted. In case of a second substitution, such reduction shall be equal to 50% (fifty per cent) of the total remuneration specified for the Key Personnel who is proposed to be substituted.

#### **4.5 Working hours, overtime, leave, etc.**

The Personnel shall not be entitled to be paid for overtime nor to take paid sick leave or vacation leave except as specified in the Agreement, and the Consultant's remuneration shall be deemed to cover these items. All leave to be allowed to the Personnel is excluded from the mandays of service set forth in Annex-2. Any taking of leave by any Personnel for a period exceeding 7 (seven) days shall be subject to the prior approval of the Authority, and the Consultant shall ensure that any absence on leave will not delay the progress and quality of the Services.

#### **4.6 Resident Team Leader and Project Manager**

The person designated as the Team Leader of the Consultant's Personnel shall be responsible for the coordinated, timely and efficient functioning of the Personnel. In addition, the Consultant shall designate a suitable person as Project Manager (the "**Project Manager**") who shall be responsible for day to day performance of the Services.

#### **4.7 Sub-Consultants**

Sub-Consultants listed in Annex-4 of this Agreement are hereby approved by the Authority. The Consultant may, with prior written approval of the Authority, engage additional Sub-Consultants or substitute an existing Sub-Consultant. The hiring of Personnel by the Sub-Consultants shall be subject to the same conditions as applicable to Personnel of the Consultant under this Clause 4.

## **5. OBLIGATIONS OF THE AUTHORITY**

### **5.1 Assistance in clearances etc.**

Unless otherwise specified in the Agreement, the Authority shall make best efforts to ensure that the Government shall:

- (a) provide the Consultant, its Sub-Consultants and Personnel with work permits and such other documents as may be necessary to enable the Consultant, its Sub-Consultants or Personnel to perform the Services;
- (b) facilitate prompt clearance through customs of any property required for the Services; and
- (c) issue to officials, agents and representatives of the Government all such instructions as may be necessary or appropriate for the prompt and effective implementation of the Services.

### **5.2 Access to land and property**

The Authority warrants that the Consultant shall have, free of charge, unimpeded access to the site of the project in respect of which access is required for the performance of Services; provided that if such access shall not be made available to the Consultant as and when so required, the Parties shall agree on (i) the time extension, as may be appropriate, for the performance of Services, and (ii) the additional payments, if any, to be made to the Consultant as a result thereof pursuant to Clause 6.1.3.

### **5.3 Change in Applicable Law**

If, after the date of this Agreement, there is any change in the Applicable Laws with respect to taxes and duties which increases or decreases the cost or reimbursable expenses incurred by the Consultant in performing the Services, by an amount exceeding 2% (two per cent) of the Agreement Value specified in Clause 6.1.2, then the remuneration and reimbursable expenses otherwise payable to the Consultant under this Agreement shall be increased or decreased accordingly by agreement between the Parties hereto, and corresponding adjustments shall be made to the aforesaid Agreement Value.

### **5.4 Payment**

In consideration of the Services performed by the Consultant under this Agreement, the Authority shall make to the Consultant such payments and in such manner as is provided in Clause 6 of this Agreement.

## **6. PAYMENT TO THE CONSULTANT**

### **6.1 Cost estimates and Agreement Value**

- 6.1.1 An abstract of the cost of the Services payable to the Consultant is set forth in Annex-5 of the Agreement.
- 6.1.2 Except as may be otherwise agreed under Clause 2.6 and subject to Clause 6.1.3, the payments under this Agreement shall not exceed the agreement value specified herein (the “**Agreement Value**”). The Parties agree that the Agreement Value is Rs. .... (Rupees. ....), which does not include the Additional Costs specified in Annex-5 (the “**Additional Costs**”).
- 6.1.3 Notwithstanding anything to the contrary contained in Clause 6.1.2, if pursuant to the provisions of Clauses 2.6 and 2.7, the Parties agree that additional payments shall be made to the Consultant in order to cover any additional expenditures not envisaged in the cost estimates referred to in Clause 6.1.1 above, the Agreement Value set forth in Clause 6.1.2 above shall be increased by the amount or amounts, as the case may be, of any such additional payments.

### **6.2 Currency of payment**

All payments shall be made in Indian Rupees. The Consultant shall be free to convert Rupees into any foreign currency as per Applicable Laws.

### **6.3 Mode of billing and payment**

Billing and payments in respect of the Services shall be made as follows:-

- (a) A Mobilisation Advance for an amount upto 10% (ten per cent) of the Agreement Value shall be paid to the Consultant on request and against a Bank Guarantee from a Scheduled Bank in India in an amount equal to such advance, such Bank Guarantee to remain effective until the advance payment has been fully set off as provided herein. The advance outstanding shall attract simple interest @ 10% (ten per cent) per annum and shall be adjusted in four equal instalments from the first four stage payments due and payable to the Consultant, and the accrued interest shall be recovered from the fifth instalment due and payable thereafter.
- (b) The Consultant shall be paid for its services as per the Payment Schedule at Annex-6 of this Agreement, subject to the Consultant fulfilling the following conditions:
- (i) No payment shall be due for the next stage till the Consultant completes, to the satisfaction of the Authority, the work pertaining to the preceding stage.
- (ii) The Authority shall pay to the Consultant, only the undisputed amount.

- (c) The Authority shall cause the payment due to the Consultant to be made within 30 (thirty) days after the receipt by the Authority of duly completed bills with necessary particulars (the “**Due Date**”). Interest at the rate of 10% (ten per cent) per annum shall become payable as from the Due Date on any amount due by, but not paid on or before, such Due Date.
- (d) The final payment under this Clause shall be made only after the final report and a final statement, identified as such, shall have been submitted by the Consultant and approved as satisfactory by the Authority. The Services shall be deemed completed and finally accepted by the Authority and the final deliverable shall be deemed approved by the Authority as satisfactory upon expiry of 90 (ninety) days after receipt of the final deliverable by the Authority unless the Authority, within such 90 (ninety) day period, gives written notice to the Consultant specifying in detail, the deficiencies in the Services. The Consultant shall thereupon promptly make any necessary corrections and/or additions, and upon completion of such corrections or additions, the foregoing process shall be repeated. The Authority shall make the final payment upon acceptance or deemed acceptance of the final deliverable by the Authority.
- (e) Any amount which the Authority has paid or caused to be paid in excess of the amounts actually payable in accordance with the provisions of this Agreement shall be reimbursed by the Consultant to the Authority within 30 (thirty) days after receipt by the Consultant of notice thereof. Any such claim by the Authority for reimbursement must be made within 1 (one) year after receipt by the Authority of a final report in accordance with Clause 6.3 (d). Any delay by the Consultant in reimbursement by the due date shall attract simple interest @ 10% (ten per cent) per annum.
- (f) 10% (ten per cent) of the Agreement Value has been earmarked as Final Payment to be made to the Consultant upon execution of the Contract Agreement. In the event the Contract Agreement does not get executed within 1 (one) year of the Effective Date the Final Payment shall not become due to the Consultant, save and except the costs incurred for meeting its reimbursable expenses during the period after expiry of 18 (eighteen) weeks from the Effective Date, including travel costs and personnel costs, at the agreed rates.
- (g) All payments under this Agreement shall be made to the account of the Consultant as may be notified to the Authority by the Consultant.

## **7. LIQUIDATED DAMAGES AND PENALTIES**

### **7.1 Performance Security**

7.1.1 The Authority shall retain by way of performance security (the “**Performance Security**”), 5% (five per cent) of all the amounts due and payable to the Consultant, to be appropriated against breach of this Agreement or for recovery of liquidated damages as specified in Clause 7.2 herein. The balance remaining out of the Performance Security shall be returned to the Consultant at the end of 3 (three) months after the expiration of this Agreement pursuant to Clause 2.4 hereof.

7.1.2 The Consultant may, in lieu of retention of the amounts as referred to in Clause 7.1.1 above, furnish a Bank Guarantee substantially in the form specified at Annex-7 of this Agreement.

## **7.2 Liquidated Damages**

### **7.2.1 Liquidated Damages for error/variation**

In case any error or variation is detected in the reports submitted by the Consultant and such error or variation is the result of negligence or lack of due diligence on the part of the Consultant, the consequential damages thereof shall be quantified by the Authority in a reasonable manner and recovered from the Consultant by way of deemed liquidated damages, subject to a maximum of 50% (fifty per cent) of the Agreement Value.

### **7.2.2 Liquidated Damages for delay**

In case of delay in completion of Services, liquidated damages not exceeding an amount equal to 0.2% (zero point two per cent) of the Agreement Value per day, subject to a maximum of 10% (ten per cent) of the Agreement Value will be imposed and shall be recovered by appropriation from the Performance Security or otherwise. However, in case of delay due to reasons beyond the control of the Consultant, suitable extension of time shall be granted.

### **7.2.3 Encashment and appropriation of Performance Security**

The Authority shall have the right to invoke and appropriate the proceeds of the Performance Security, in whole or in part, without notice to the Consultant in the event of breach of this Agreement or for recovery of liquidated damages specified in this Clause 7.2.

## **7.3 Penalty for deficiency in Services**

In addition to the liquidated damages not amounting to penalty, as specified in Clause 7.2, warning may be issued to the Consultant for minor deficiencies on its part. In the case of significant deficiencies in Services causing adverse effect on the Project or on the reputation of the Authority, other penal action including debarring for a specified period may also be initiated as per policy of the Authority.

## **8. FAIRNESS AND GOOD FAITH**

### **8.1 Good Faith**

The Parties undertake to act in good faith with respect to each other's rights under this Agreement and to adopt all reasonable measures to ensure the realisation of the objectives of this Agreement.

## **8.2 Operation of the Agreement**

The Parties recognise that it is impractical in this Agreement to provide for every contingency which may arise during the life of the Agreement, and the Parties hereby agree that it is their intention that this Agreement shall operate fairly as between them, and without detriment to the interest of either of them, and that, if during the term of this Agreement either Party believes that this Agreement is operating unfairly, the Parties will use their best efforts to agree on such action as may be necessary to remove the cause or causes of such unfairness, but failure to agree on any action pursuant to this Clause shall not give rise to a dispute subject to arbitration in accordance with Clause 9 hereof.

## **9. SETTLEMENT OF DISPUTES**

### **9.1 Amicable settlement**

The Parties shall use their best efforts to settle amicably all disputes arising out of or in connection with this Agreement or the interpretation thereof.

### **9.2 Dispute resolution**

9.2.1 Any dispute, difference or controversy of whatever nature howsoever arising under or out of or in relation to this Agreement (including its interpretation) between the Parties, and so notified in writing by either Party to the other Party (the "Dispute") shall, in the first instance, be attempted to be resolved amicably in accordance with the conciliation procedure set forth in Clause 9.3.

9.2.2 The Parties agree to use their best efforts for resolving all Disputes arising under or in respect of this Agreement promptly, equitably and in good faith, and further agree to provide each other with reasonable access during normal business hours to all non-privileged records, information and data pertaining to any Dispute.

### **9.3 Conciliation**

In the event of any Dispute between the Parties, either Party may call upon [Secretary, \*\*\*\*\* Department] and the Chairman of the Board of Directors of the Consultant or a substitute thereof for amicable settlement, and upon such reference, the said persons shall meet no later than 10 (ten) days from the date of reference to discuss and attempt to amicably resolve the Dispute. If such meeting does not take place within the 10 (ten) day period or the Dispute is not amicably settled within 15 (fifteen) days of the meeting or the Dispute is not resolved as evidenced by the signing of written terms of settlement within 30 (thirty) days of the notice in writing referred to in Clause 9.2.1 or such longer period as may be mutually agreed by the Parties,

either Party may refer the Dispute to arbitration in accordance with the provisions of Clause 9.4.

#### 9.4 Arbitration

- 9.4.1 Any Dispute which is not resolved amicably by conciliation, as provided in Clause 9.3, shall be finally decided by reference to arbitration by an Arbitral Tribunal appointed in accordance with Clause 9.4.2. Such arbitration shall be held in accordance with the Rules of Arbitration of the International Centre for Alternative Dispute Resolution, New Delhi (the “**Rules**”), or such other rules as may be mutually agreed by the Parties, and shall be subject to the provisions of the Arbitration and Conciliation Act, 1996. The venue of such arbitration shall be \*\*\*\*\* and the language of arbitration proceedings shall be English.
- 9.4.2 There shall be {an Arbitral Tribunal of three arbitrators, of whom each Party shall select one, and the third arbitrator shall be appointed by the two arbitrators so selected, and in the event of disagreement between the two arbitrators, the appointment} {a sole arbitrator<sup>§§</sup> whose appointment} shall be made in accordance with the Rules.
- 9.4.3 The arbitrators shall make a reasoned award (the “**Award**”). Any Award made in any arbitration held pursuant to this Clause 9 shall be final and binding on the Parties as from the date it is made, and the Consultant and the Authority agree and undertake to carry out such Award without delay.
- 9.4.4 The Consultant and the Authority agree that an Award may be enforced against the Consultant and/or the Authority, as the case may be, and their respective assets wherever situated.
- 9.4.5 This Agreement and the rights and obligations of the Parties shall remain in full force and effect, pending the Award in any arbitration proceedings hereunder.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be signed in their respective names as of the day and year first above written.

SIGNED, SEALED AND DELIVERED

For and on behalf of  
Consultant:

(Signature)  
(Name)  
(Designation)  
(Address)

SIGNED, SEALED AND DELIVERED

For and on behalf of  
[Authority]

(Signature)  
(Name)  
(Designation)  
(Address)

§ In case the Agreement Value specified in Clause 6.1.2 of this Agreement does not exceed Rs. 1 (one) crore, a sole arbitrator shall be appointed. In case the Agreement Value specified in Clause 6.1.2 of this Agreement is more than Rs. 1 (one) crore, a Board shall be appointed. Depending upon the Agreement Value, one of the two curly parentheses shall be deleted from Clause 9.4.2.

In the presence of:

(Fax No.)	(Fax No.)
1.	2.

## Annex-1

### **Terms of Reference**

*(Refer Clause 3.1.2)*

(Reproduce Schedule-1 of RFP)

Annex-2

**Deployment of Personnel**

*(Refer Clause 4.2)*

(Reproduce as per Form-13 of Appendix-I)

Annex-3

**Estimate of Personnel Costs**

*(Refer Clause 4.2)*

(Reproduce as per Form-3 of Appendix-II)

Annex-4

**Approved Sub-Consultant(s)**

*(Refer Clause 4.7.1)*

(Reproduce as per Form-15 of Appendix-I)

Annex-5

**Cost of Services**

*(Refer Clause 6.1)*

(Reproduce as per Form-2 of Appendix-II)

## Annex-6

**Payment Schedule***(Refer Clause 6.3)*

<b>S. No.</b>	<b>Description</b>	<b>Payment</b>
1	On submission of Inception Report	10%
2	On Submission of draft feasibility report including strip plan and utility relocation plan.	20%
3	On Submission of draft preliminary project report and land acquisition report	10%
4	On Submission of Draft Detailed Project Report and Bidding Documents	20%
5	On approval of Final Detailed Project Report and Bidding Documents	20%
6	On submission of required project clearances from the concerned agencies	20%
<b>Total</b>		100%
Payment of bore holes will be made on the basis of actual numbers of bore holes as per the requirement of site/code.		

## Notes:

1. *The above payments shall be made to the Consultant provided that the payments to be made at any time shall not exceed the amount certified by the Consultant in its Statement of Expenses.*

2. *All Reports shall first be submitted as draft reports for comments of the Authority. The Authority shall provide its comments no later than 3 (three) weeks from the date of receiving a draft report and in case no comments are provided within such 3 (three) weeks, the Consultant shall finalise its report. Provided, however, that the Authority may take upto 4 (four) weeks in providing its comments on the Draft Feasibility Report.*

3. *Feasibility Report shall be completed in 18 (eighteen) weeks excluding the time taken by the Authority in providing its comments on the Draft Feasibility Report. The Consultant may take 1 (one) week for submitting its Final Feasibility Report after receipt of comments from the Authority.*

4. *Final payment of 10% (ten per cent) shall be released upon completion of Services in their entirety, including submission of the Environmental Impact Assessment Report.*

5. *Mobilisation Advance upto 10% (ten per cent) of the total Agreement Value shall be paid on request against Bank Guarantee of a Scheduled Bank. This shall attract 10% (ten per cent) simple interest per annum and shall be adjusted against the first 4 (four) bills in four equal instalments and the accrued interest will be recovered from the 5<sup>th</sup> (fifth) bill.*

## Annex- 7

**Bank Guarantee for Performance Security***(Refer Clause 7.1.2)*

To

[The President of India /Governor of \*\*\*\*\*  
 acting through  
 \*\*\*\*\*  
 \*\*\*\*\*  
 \*\*\*\*\*]

In consideration of \*\*\*\*\* acting on behalf of the [President of India/Governor of \*\*\*\*\*] (hereinafter referred as the “**Authority**”, which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators and assigns) having awarded to M/s ....., having its office at ..... (hereinafter referred as the “**Consultant**” which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns), vide the Authority’s Agreement no. .... dated ..... valued at Rs. .... (Rupees .....), (hereinafter referred to as the “**Agreement**”) Consultancy Services for [Four laning of \*\*\*\*\* highway], and the Consultant having agreed to furnish a Bank Guarantee amounting to Rs. .... (Rupees ..... ) to the Authority for performance of the said Agreement.

We, ..... (hereinafter referred to as the “**Bank**”) at the request of the Consultant do hereby undertake to pay to the Authority an amount not exceeding Rs. .... (Rupees ..... ) against any loss or damage caused to or suffered or would be caused to or suffered by the Authority by reason of any breach by the said Consultant of any of the terms or conditions contained in the said Agreement.

2. We, ..... (indicate the name of the Bank) do hereby undertake to pay the amounts due and payable under this Guarantee without any demur, merely on a demand from the Authority stating that the amount/claimed is due by way of loss or damage caused to or would be caused to or suffered by the Authority by reason of breach by the said Consultant of any of the terms or conditions contained in the said Agreement or by reason of the Consultant’s failure to perform the said Agreement. Any such demand made on the bank shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. However, our liability under this Guarantee shall be restricted to an amount not exceeding Rs. .... (Rupees .....).

3. We, ..... (indicate the name of the Bank) do hereby undertake to pay to the Authority any money so demanded notwithstanding any dispute or disputes raised by the Consultant in any suit or proceeding pending before any court or tribunal relating thereto, our liability under this present being absolute and unequivocal. The payment so made by us under this bond shall be a valid discharge

of our liability for payment thereunder and the Consultant shall have no claim against us for making such payment.

4. We, ..... (indicate the name of Bank) further agree that the Guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Agreement and that it shall continue to be enforceable till all the dues of the Authority under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till the Authority certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said Consultant and accordingly discharges this Guarantee. Unless a demand or claim under this Guarantee is made on us in writing on or before a period of one year from the date of this Guarantee, we shall be discharged from all liability under this Guarantee thereafter.

5. We, ..... (indicate the name of Bank) further agree with the Authority that the Authority shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Agreement or to extend time of performance by the said Consultant from time to time or to postpone for any time or from time to time any of the powers exercisable by the Authority against the said Consultant and to forbear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Consultant or for any forbearance, act or omission on the part of the Authority or any indulgence by the Authority to the said Consultant or any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have the effect of so relieving us.

6. This Guarantee will not be discharged due to the change in the constitution of the Bank or the Consultant(s).

7. We, ..... (indicate the name of Bank) lastly undertake not to revoke this Guarantee during its currency except with the previous consent of the Authority in writing.

8. For the avoidance of doubt, the Bank's liability under this Guarantee shall be restricted to Rs. \*\*\* crore (Rupees \*\*\*\*\* crore) only. The Bank shall be liable to pay the said amount or any part thereof only if the Authority serves a written claim on the Bank in accordance with paragraph 2 hereof, on or before [\*\*\* (indicate date falling 180 days after the date of this Guarantee)].

For .....

Name of Bank:

Seal of the Bank:

Dated, the ..... day of ....., 20\*\*

(Signature, name and designation of the authorised signatory)

NOTES:

- (i) The Bank Guarantee should contain the name, designation and code number of the officer(s) signing the Guarantee.
- (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.

**SCHEDULE-3**  
(See Clause 2.3.3)

**Guidance Note on Conflict of Interest**

1. This Note further explains and illustrates the provisions of Clause 2.3 of the RFP and shall be read together therewith in dealing with specific cases.
2. Consultants should be deemed to be in a conflict of interest situation if it can be reasonably concluded that their position in a business or their personal interest could improperly influence their judgment in the exercise of their duties. The process for selection of consultants should avoid both actual and perceived conflict of interest.
3. Conflict of interest may arise between the Authority and a consultant or between consultants and present or future concessionaries/ contractors. Some of the situations that would involve conflict of interest are identified below:
  - (a) Authority and consultants:
    - (i) Potential consultant should not be privy to information from the Authority which is not available to others;
    - (ii) potential consultant should not have defined the project when earlier working for the Authority;
    - (iii) potential consultant should not have recently worked for the Authority overseeing the project.
  - (b) Consultants and concessionaires/contractors:
    - (i) No consultant should have an ownership interest or a continuing business interest or an on-going relationship with a potential concessionaire/ contractor save and except relationships restricted to project-specific and short-term assignments; or
    - (ii) no consultant should be involved in owning or operating entities resulting from the project; or
    - (iii) no consultant should bid for works arising from the project.

The participation of companies that may be involved as investors or consumers and officials of the Authority who have current or recent connections to the companies involved, therefore, needs to be avoided.
4. The normal way to identify conflicts of interest is through self-declaration by consultants. Where a conflict exists, which has not been

declared, competing companies are likely to bring this to the notice of the Authority. All conflicts must be declared as and when the consultants become aware of them.

5. Another approach towards avoiding a conflict of interest is through the use of “Chinese walls” to avoid the flow of commercially sensitive information from one part of the consultant’s company to another. This could help overcome the problem of availability of limited numbers of experts for the project. However, in reality effective operation of “Chinese walls” may be a difficult proposition. As a general rule, larger companies will be more capable of adopting Chinese walls approach than smaller companies. Although, “Chinese walls” have been relatively common for many years, they are an increasingly discredited means of avoiding conflicts of interest and should be considered with caution. As a rule, “Chinese walls” should be considered as unacceptable and may be accepted only in exceptional cases upon full disclosure by a consultant coupled with provision of safeguards to the satisfaction of the Authority.
6. Another way to avoid conflicts of interest is through the appropriate grouping of tasks. For example, conflicts may arise if consultants drawing up the terms of reference or the proposed documentation are also eligible for the consequent assignment or project.
7. Another form of conflict of interest called “scope–creep” arises when consultants advocate either an unnecessary broadening of the terms of reference or make recommendations which are not in the best interests of the Authority but which will generate further work for the consultants. Some forms of contractual arrangements are more likely to lead to scope-creep. For example, lump-sum contracts provide fewer incentives for this, while time and material contracts provide built in incentives for consultants to extend the length of their assignment.
8. Every project contains potential conflicts of interest. Consultants should not only avoid any conflict of interest, they should report any present/potential conflict of interest to the Authority at the earliest. Officials of the Authority involved in development of a project shall be responsible for identifying and resolving any conflicts of interest. It should be ensured that safeguards are in place to preserve fair and open competition and measures should be taken to eliminate any conflict of interest arising at any stage in the process.

# APPENDICES

APPENDIX-I  
(See Clause 2.1.3)

**TECHNICAL PROPOSAL**

Form-1

**Letter of Proposal**  
(On Applicant's letter head)

(Date and Reference)

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

Sub: Appointment of Consultant for preparation of Feasibility Report cum Preliminary Design and Detailed Project Report

Dear Sir,

With reference to your RFP Document dated ....., I/we, having examined all relevant documents and understood their contents, hereby submit our Proposal for selection as Consultant for [Four laning of \*\*\*\*\* highway]. 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 declare that:
  - (a) I/We have examined and have no reservations to the RFP Documents, including any Addendum issued by the Authority;

- (b) I/We do not have any conflict of interest in accordance with Clause 2.3 of the RFP Document;
  - (c) I/We have not directly or indirectly or through an agent engaged or indulged in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice, as defined in Clause 4.3 of the RFP document, in respect of any tender or request for proposal issued by or any agreement entered into with the Authority or any other public sector enterprise or any government, Central or State; and
  - (d) I/We hereby certify that we have taken steps to ensure that in conformity with the provisions of Section 4 of the RFP, no person acting for us or on our behalf will engage in any corrupt practice, fraudulent practice, coercive practice, undesirable practice or restrictive practice.
8. 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 2.8 of the RFP document.
  9. I/We declare that we/any member of the consortium, are/is not a Member of a/any other Consortium applying for Selection as a Consultant.
  10. 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.
  11. 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.
  12. 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.
  13. 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.
  14. The Bid Security of Rs. \*\*\*\*\* (Rupees \*\*\*\*\* ) in the form of a Demand Draft is attached, in accordance with the RFP document.

15. 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.
16. I/We agree to keep this offer valid for 90 (ninety) days from the Proposal Due Date specified in the RFP.
17. A Power of Attorney in favour of the authorised signatory to sign and submit this Proposal and documents is attached herewith in Form-4.
18. In the event of my/our firm/ consortium being selected as the Consultant, I/we agree to enter into an Agreement in accordance with the form at Schedule-2 of the RFP. We agree not to seek any changes in the aforesaid form and agree to abide by the same.
19. 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 any 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.
20. The Financial Proposal is being submitted in a separate cover. This Technical Proposal read with the Financial Proposal shall constitute the Application which shall be binding on us.
21. 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 authorised signatory)  
(Name and seal of the Applicant / Lead Member)

APPENDIX-I  
Form-2

**Particulars of the Applicant**

1.1	Title of Consultancy: Preparation of Feasibility Report cum Preliminary Design and Detailed Project Report
1.2	Title of Project: <b>[Four laning of ***** highway]</b>
1.3	State whether applying as Sole Firm or Lead Member of a consortium: Sole Firm or Lead Member of a consortium
1.4	State the following: Name of Company or Firm: Legal status (e.g. incorporated private company, unincorporated business, partnership etc.): Country of incorporation: Registered address:  Year of Incorporation: Year of commencement of business: Principal place of business: Brief description of the Company including details of its main lines of business Name, designation, address and phone numbers of authorised signatory of the Applicant: Name: Designation: Company: Address: Phone No.: Fax No.       : E-mail address:
1.5	If the Applicant is Lead Member of a consortium, state the following for each of the other Member Firms:

	<p>(i) Name of Firm:</p> <p>(ii) Legal Status and country of incorporation</p> <p>(iii) Registered address and principal place of business.</p>
1.6	<p>For the Applicant, (in case of a consortium, for each Member), state the following information:</p> <p>(i) In case of non Indian Firm, does the Firm have business presence in India?</p> <p style="text-align: right;">Yes/No</p> <p>If so, provide the office address(es) in India.</p> <p>(ii) Has the Applicant or any of the Members in case of a consortium been penalized by any organization for poor quality of work or breach of contract in the last five years?</p> <p style="text-align: right;">Yes/No</p> <p>(iii) Has the Applicant/ Member ever failed to complete any work awarded to it by any public authority/ entity in last five years?</p> <p style="text-align: right;">Yes/No</p> <p>(iv) Has the Applicant or any member of the consortium been blacklisted by any Government department/Public Sector Undertaking in the last five years?</p> <p style="text-align: right;">Yes/No</p> <p>(v) Has the Applicant or any of the Members, in case of a consortium, suffered bankruptcy/insolvency in the last five years?</p> <p style="text-align: right;">Yes/No</p> <p><b>Note: If answer to any of the questions at (ii) to (v) is yes, the Applicant is not eligible for this consultancy assignment.</b></p>
1.7	<p>Does the Applicant's firm/company (or any member of the consortium) combine functions as a consultant or adviser along with the functions as a contractor and/or a manufacturer?</p> <p style="text-align: right;">Yes/No</p> <p>If yes, does the Applicant (and other Member of the Applicant's consortium) agree to limit the Applicant's role only to that of a consultant/ adviser to the Authority and to disqualify themselves, their Associates/ affiliates, subsidiaries and/or parent organization subsequently from work on this Project in any other capacity?</p> <p style="text-align: right;">Yes/No</p>
1.8	<p>Does the Applicant intend to borrow or hire temporarily, personnel from contractors, manufacturers or suppliers for performance of the Consulting Services?</p>

	Yes/No
	If yes, does the Applicant agree that it will only be acceptable as Consultant, if those contractors, manufacturers and suppliers disqualify themselves from subsequent execution of work on this Project (including tendering relating to any goods or services for any other part of the Project) other than that of the Consultant?
	Yes/No
	If yes, have any undertakings been obtained (and annexed) from such contractors, manufacturers, etc. that they agree to disqualify themselves from subsequent execution of work on this Project and they agree to limit their role to that of consultant/ adviser for the Authority only?
	Yes/No
	(Signature, name and designation of the authorised signatory)
	For and on behalf of .....

APPENDIX-I

Form-3

**Statement of Legal Capacity**

*(To be forwarded on the letter head of the Applicant)*

Ref. Date:

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

Dear Sir,

Sub: RFP for Consultant: [**Four laning of \*\*\*\*\*highway**]

I/We hereby confirm that we, the Applicant (along with other members in case of consortium, constitution of which has been described in the Proposal\*), satisfy the terms and conditions laid down in the RFP document.

I/We have agreed that ..... (insert Applicant's name) will act as the Lead Member of our consortium.

I/We have agreed that ..... (insert individual's name) will act as our Authorised Representative/ will act as the Authorised Representative of the consortium on our behalf and has been duly authorized to submit our Proposal. Further, the authorised signatory is vested with requisite powers to furnish such proposal and all other documents, information or communication and authenticate the same.

Yours faithfully,

(Signature, name and designation of the authorised signatory)  
For and on behalf of .....

*\*Please strike out whichever is not applicable*

APPENDIX-I

Form-4

**Power of Attorney**

Know all men by these presents, we, ..... (name of Firm and address of the registered office) do hereby constitute, nominate, appoint and authorise Mr / Ms..... son/daughter/wife and presently residing at ....., who is presently employed with us and holding the position of ..... as our true and lawful attorney (hereinafter referred to as the “**Authorised Representative**”) to do in our name and on our behalf, all such acts, deeds and things as are necessary or required in connection with or incidental to submission of our Proposal for and selection as the Consultant for Feasibility Report and Preparation of Detailed Project Report for **[Four laning of \*\*\*\*\* highway]**, proposed to be developed by the \*\*\*\*\* (the “**Authority**”) including but not limited to signing and submission of all applications, proposals and other documents and writings, participating in pre-bid and other conferences and providing information/ responses to the Authority, representing us in all matters before the Authority, signing and execution of all contracts and undertakings consequent to acceptance of our proposal and generally dealing with the Authority in all matters in connection with or relating to or arising out of our Proposal for the said Project and/or upon award thereof to us till the entering into of the Agreement with the Authority.

AND, we do hereby agree to ratify and confirm all acts, deeds and things lawfully done or caused to be done by our said Authorised Representative pursuant to and in exercise of the powers conferred by this Power of Attorney and that all acts, deeds and things done by our said Authorised Representative in exercise of the powers hereby conferred shall and shall always be deemed to have been done by us.

IN WITNESS WHEREOF WE, ..... THE ABOVE NAMED PRINCIPAL HAVE EXECUTED THIS POWER OF ATTORNEY ON THIS ..... DAY OF ....., 20\*\*

For .....

(Signature, name, designation and address)

Witnesses:

- 1.
- 2.

Notarised

Accepted

.....  
(Signature, name, designation and address of the Attorney)

Notes:

*The mode of execution of the Power of Attorney should be in accordance with the procedure, if any, laid down by the applicable law and the charter documents of the executant(s) and when it is so required the same should be under common seal affixed in accordance with the required procedure. The Power of Attorney should be executed on a non-judicial stamp paper of Rs. 100 (hundred) and duly notarised by a notary public.*

*Wherever required, the Applicant should submit for verification the extract of the charter documents and other documents such as a resolution/power of attorney in favour of the person executing this Power of Attorney for the delegation of power hereunder on behalf of the Applicant.*

*For a Power of Attorney executed and issued overseas, the document will also have to be legalised by the Indian Embassy and notarised in the jurisdiction where the Power of Attorney is being issued. However, Applicants from countries that have signed the Hague Legislation Convention 1961 need not get their Power of Attorney legalised by the Indian Embassy if it carries a conforming Appostille certificate.*

## APPENDIX-I

Form-5**Financial Capacity of the Applicant**

(Refer Clause 2.2.2 (B))

<b>S. No.</b>	<b>Financial Year</b>	<b>Annual Revenue (Rs./US \$ in million)</b>
1.		
2.		
3.		

**Certificate from the Statutory Auditor<sup>§</sup>**

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

Name of the audit firm:

Seal of the audit firm

Date:

(Signature, name and designation of the authorised signatory)

<sup>§</sup> In case the Applicant does not have a statutory auditor, it shall provide the certificate from its chartered accountant that ordinarily audits the annual accounts of the Applicant.

**Note:**

Please do not attach any printed Annual Financial Statement.



APPENDIX-I

Form-6

**Particulars of Key Personnel**

S. No.	Designation of Key Personnel	Name	Educational Qualification	Length of Professional Experience	Present Employment		No. of Eligible Assignments <sup>#</sup>
					Name of Firm	Employed Since	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.	Senior Highway Engineer – cum - Team Leader						
2.	Bridge Engineer						
3.	Traffic – cum - Safety Expert						
4.	Surveyor						
5.	Financial Analyst						
6.	Environmental Expert						

<sup>#</sup>Refer Form 9 of Appendix I Experience of Key Personnel



APPENDIX-I

Form-7

**Proposed Methodology and Work Plan**

The proposed methodology and work plan shall be described as follows:

1. Understanding of TOR (not more than two pages)

The Applicant shall clearly state its understanding of the TOR and also highlight its important aspects. The Applicant may supplement various requirements of the TOR and also make precise suggestions if it considers this would bring more clarity and assist in achieving the Objectives laid down in the TOR.

2. Methodology and Work Plan (not more than three pages)

The Applicant will submit its methodology for carrying out this assignment, outlining its approach toward achieving the Objectives laid down in the TOR. The Applicant will submit a brief write up on its proposed team and organisation of personnel explaining how different areas of expertise needed for this assignment have been fully covered by its proposal. In case the Applicant is a consortium, it should specify how the expertise of each firm is proposed to be utilised for this assignment. The Applicant should specify the sequence and locations of important activities, and provide a quality assurance plan for carrying out the Consultancy Services.

**Note:** Marks will be deducted for writing lengthy and out of context responses.

APPENDIX-I  
Form-8

**Abstract of Eligible Assignments of the Applicant<sup>#</sup>**  
(Refer Clause 3.1)

S.No	Name of Project	Name of Client	Estimated capital cost of Project (in Rs. crore/ US\$ million)	Payment <sup>##</sup> of professional fees received by the Applicant (in Rs. crore)
(1)	(2)	(3)	(4)	(5)
1				
2				
3				
4				

# The Applicant should provide details of only those projects that have been undertaken by it under its own name.

## Exchange rate should be taken as **Rs. [67]** per US \$ for conversion to Rupees.

\* The names and chronology of Eligible Projects included here should conform to the project-wise details submitted in Form-10 of Appendix-I.

**Certificate from the Statutory Auditor<sup>§</sup>**

This is to certify that the information contained in Column 5 above is correct as per the accounts of the Applicant and/ or the clients.

Name of the audit firm:

Seal of the audit firm

Date:

(Signature, name and designation of the authorised signatory)

<sup>§</sup> In case the Applicant does not have a statutory auditor, it shall provide the certificate from its chartered accountant that ordinarily audits the annual accounts of the Applicant.

**Note:** The Applicant may attach separate sheets to provide brief particulars of other relevant experience of the Applicant.

APPENDIX-I  
Form-9

**Abstract of Eligible Assignments of Key Personnel<sup>@</sup>**  
(Refer Clause 3.1)

Name of Key Personnel:

Designation:

S.No	Name of Project*	Name of Client	Estimated capital cost of project (in Rs. cr./ US\$ million)	Name of firm for which the Key Personnel worked	Designation of the Key Personnel on the assignment	Date of completion of the assignment	Mandays spent
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

<sup>@</sup> Use separate Form for each Key Personnel.

\* The names and chronology of projects included here should conform to the project-wise details submitted in Form-11 of Appendix-I.

**Note:** The Applicant may attach separate sheets to provide brief particulars of other relevant experience of the Key Personnel.



APPENDIX-I  
Form-10

**Eligible Assignments of Applicant**  
(Refer Clause 3.1.4)

Name of Applicant:	
Name of the Project:	
Length in km or other particulars	
Description of services performed by the Applicant firm:	
Name of client and Address: (Indicate whether public or private entity)	
Name, telephone no. and fax no. of client's representative:	
Estimated capital cost of Project (in Rs crore or US\$ million):	
Payment received by the Applicant (in Rs. crore):	
Start date and finish date of the services (month/ year):	
Brief description of the Project:	

**Notes:**

1. Use separate sheet for each Eligible Project.
2. The Applicant may attach separate sheets to provide brief particulars of other relevant experience of the Applicant.
3. Exchange rate should be taken as **Rs. [67] per US \$** for conversion to Rupees.

APPENDIX-I  
Form-11

**Eligible Assignments of Key Personnel**  
(Refer Clause 3.1.4)

Name of Key Personnel:	
Designation of Key Personnel:	
Name of the Project:	
Length in km or other particulars	
Name of Consulting Firm where employed:	
Description of services performed by the Key Personnel (including designation):	
Name of client and Address: (indicate whether public or private)	
Name, telephone no. and fax no. of client's representative:	
Estimated capital cost of the Project (in Rs crore or US\$ million):	
Start date and finish date of the services (month/ year):	
Brief description of the Project:	
It is certified that the aforesaid information is true and correct to the best of my knowledge and belief.	
(Signature and name of Key Personnel)	

**Notes:**

1. Use separate sheet for each Eligible Project.
2. The Applicant may attach separate sheets to provide brief particulars of other relevant experience of the Key Personnel.
3. Exchange rate should be taken as **Rs. [67] per US \$** for conversion to Indian Rupees.

APPENDIX-I

Form-12

**Curriculum Vitae (CV) of Key Personnel**

1. Proposed Position:
2. Name of Personnel:
3. Date of Birth:
4. Nationality:
5. Educational Qualifications:
6. Employment Record:  
(Starting with present position, list in reverse order every employment held.)
7. List of projects on which the Personnel has worked

Name	of	Description	of
project	responsibilities		

8. Details of the current assignment and the time duration for which services are required for the current assignment.

Certification:

- 1 I am willing to work on the Project and I will be available for entire duration of the Project assignment as required.
- 2 I, the undersigned, certify that to the best of my knowledge and belief, this CV correctly describes me, my qualifications and my experience.

(Signature and name of the Key Personnel)

Place.....

(Signature and name of the authorised signatory of the Applicant)

**Notes:**

1. Use separate form for each Key Personnel

2. The names and chronology of assignments included here should conform to the project-wise details submitted in Form-8 of Appendix-I.
3. Each page of the CV shall be signed in ink and dated by both the Personnel concerned and by the Authorised Representative of the Applicant firm along with the seal of the firm. Photocopies will not be considered for evaluation.

APPENDIX-I  
Form-13  
**Deployment of Personnel**

S.No.	Designation	Name	Man-Days (MD)		Week Numbers																			
			At Project site	Away from Project site (specify)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1.																								
2.																								
3.																								
4.																								
5.																								
6.																								
7.																								
8.																								
9.																								
10.																								
11.																								
<b>Total Mandays</b>																								



APPENDIX-I

Form-14

**Survey and Field Investigations**

Item of Work/ Activity	To be carried out/ prepared by		Week																		
	Name	Designation.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19



## APPENDIX-I

Form-15**Proposal for Sub-Consultant(s)**

1. Details of the Firm				
Firm's Name, Address and Telephone				
Name and Telephone No. of the Contact Person				
Fields of Expertise				
No. of Years in business in the above Fields				
2. Services that are proposed to be sub contracted:				
3. Person who will lead the Sub- Consultant Name: Designation: Telephone No: Email:				
4. Details of Firm's previous experience				
Name of Work	Name, address and telephone no. of Client	Total Value of Services Performed	Duration of Services	Date of Completion of Services
1.				
2.				
3.				

(Signature and name of the authorised signatory)

**Note:**

1. The Proposal for Sub-Consultant(s) shall be accompanied by the details specified in Forms 12 and 13 of Appendix –I.
2. Use separate form for each Sub-Consultant

APPENDIX-II

**FINANCIAL PROPOSAL**

Form-1

**Covering Letter**

(On Applicant's letter head)

(Date and Reference)

To,

\*\*\*\*\*

\*\*\*\*\*

\*\*\*\*\*

Dear Sir,

Subject: Appointment of Consultant for Preparation of Feasibility Report cum Preliminary Design and Detailed Project Report for [**Four laning of \*\*\*\*\* highway**]

I/We, \_\_\_\_\_ (Applicant's name) herewith enclose the Financial Proposal for selection of my/our firm as Consultant for above.

I/We agree that this offer shall remain valid for a period of 90 (ninety) days from the Proposal Due Date or such further period as may be mutually agreed upon.

Yours faithfully,

(Signature, name and designation of the authorised signatory)

Note: The Financial Proposal is to be submitted strictly as per forms given in the RFP.

APPENDIX-II  
(See Clause 2.1.3)

Form-2

**Financial Proposal**

Item No.	Description	Amount (Rs.)
<b>A.</b>	<b>RESIDENT PERSONNEL AND LOCAL COSTS</b>	
I	Remuneration for Resident Professional Personnel (inclusive of all personal allowances)	
II	Remuneration for Resident Support Personnel (inclusive of all personal allowances)	
III	Office Rent	
IV	Office Consumables like stationery, communication etc.	
V	Office Furniture and Equipment (Rental)	
VI	Reports and Document Printing	
VII	Surveys & Investigations	
VIII	Miscellaneous Expenses	
	<b>Sub-total Resident Personnel and Local Costs (A):</b>	
<b>B.</b>	<b>EXPATRIATE PERSONNEL</b>	
I	Remuneration for Expatriate Personnel (inclusive of all personal allowances)	
	<b>Subtotal Expatriate Personnel (B):</b>	
	<b>Total of Personnel and Local Costs (A+B):</b>	
<b>C.</b>	<b>POST REPORT CONSULTATIONS</b>	
	2 man days each of:	
I	Senior Highway Engineer –cum-Team Leader	
II	Bridge Engineer	
III	Traffic - cum-Safety Expert	
IV	Surveyor	
V	Financial Analyst	
VI	Environmental Expert	
	<b>Subtotal Post Report Consultations (C):</b>	
<b>D</b>	<b>SUBTOTAL OF A+B+C</b>	
<b>E</b>	<b>OVERHEAD EXPENSES @ _____ % of (D)</b>	

<b>F</b>	<b>SERVICE TAX</b>	
<b>G</b>	<b>TOTAL (including taxes) (D+E+F) (in Rs.)</b> In Indian Rupees in figures in words _____	
<b>H</b>	<b>ADDITIONAL COSTS (not included in evaluation)</b>	
<b>I</b>	Domestic travel from firm's office to the Project Office (restricted to three return economy class air fares for each Personnel)	
<b>II</b>	International travel from firm's office to the Project Office (restricted to two return full fare economy class air fares for each Expatriate Personnel)	
<b>III</b>	Return journeys from Project Office to Authority's office to attend meetings held by the Authority (provide indicative amount for three return fares)	
	<b>Total of Additional Costs (H)</b>	
<b>I</b>	<b>TOTAL COST OF THE CONSULTANCY (G+H)</b> In Indian Rupees in Figures In Words _____	

**Note:**

1. The financial evaluation shall be based on the above Financial Proposal, excluding Additional Costs. The total in Item G shall, therefore, be the amount for purposes of evaluation. Additional Costs in Item H shall not be reckoned for purposes of financial evaluation.
2. Estimate of Costs for Item A I, A II and B I shall be as per Form-3.
3. Miscellaneous Expenses in Item A VIII shall not exceed 15% (fifteen per cent) of the total amount in Item D.
4. Domestic Air Fare in Item H I shall not be payable to the Consultant's Personnel who are normally stationed in \*\*\*\*\*.
5. All costs shall be reimbursed on production of a Statement of Expenses, duly certified by the Authorised Representative. However, no details of expenditures would be sought for overhead expenses, which will be reimbursed in proportion to the total expenses under Item D.
6. The reimbursement of expenses shall be limited to the amounts indicated above.
7. Savings of upto 20% (twenty per cent) under any head of expenditure specified in the summary of Financial Proposal may be reappropriated by

the Consultant and added to any other head of expenditure, subject to a ceiling of 10% (ten per cent) in respect of the recipient head of expenditure. Upon Notification of such reappropriation to the Authority, the Financial Proposal shall be deemed to be amended, and payment shall be made accordingly.

8. No escalation on any account will be payable on the above amounts.
9. All other charges not shown here and all insurance premia are considered included in the man day rate/ overhead/ miscellaneous expenses.
10. The Authority may require the Key Personnel to visit the Project/ the Authority's offices for further consultations after their Report has been accepted. The cost (remuneration including personal allowances) of 2 (two) man days of each Key Personnel is included in the Financial Proposal. The Authority may require upto 12 (twelve) extra days of consultation with any or all Key Personnel on payment of additional charges. For any increase as compared to the aforesaid 2 (two) days, payment shall be computed solely on the basis of relevant man day rates specified in the financial proposal. In all cases, return full fare economy class airfare shall be reimbursed in addition, as per actuals.
11. The Authority may require Professional Personnel to visit the Project/the Authority's offices for further consultations or undertake desk work after the report has been accepted. The additional costs on this account shall be paid to the Consultant as per agreed man day rates and economy return airfare as per actuals shall also be reimbursed. However, the total number of additional mandays requisitioned hereunder shall not exceed 120 (one hundred and twenty).
12. All payments shall be made in Indian Rupees and shall be subject to applicable Indian laws withholding taxes if any.
13. For the purposes hereof "**Statement of Expenses**" means a statement of the expenses incurred on each of the heads indicated in the Financial Proposal; provided that in relation to expenses on Personnel, the Statement of Expenses shall be accompanied by the particulars of Personnel and the mandays spent on the Consultancy.
14. Lump Sum Payment shall be made only upon execution of the Contract Agreement with the Contractor selected through the Bid Process. No Lump Sum Payment shall be due or payable if the Contract Agreement is not executed within one year from the Effective Date; provided, however, that personnel and travel costs already incurred or due shall be payable.



## APPENDIX-II

Form-3**Estimate of Personnel Costs**

<b>ID No.</b>	<b>Position</b>	<b>Name</b>	<b>Manday Rate (Rs.)</b>	<b>Total Man Days</b>	<b>Amount (Rs.)</b>
<b>A I. Remuneration for Resident Professional Personnel (including all personal allowances)</b>					
Total					
<b>A II. Remuneration for Resident Support Personnel (including all personal allowances)</b>					
Total					
<b>B I. Remuneration for Expatriate Personnel (including all personal allowances)</b>					
Total:					

## APPENDIX- III

**LIST OF BID-SPECIFIC CLAUSES<sup>§</sup>****A. Clauses and appendices with non-numerical footnotes**

1. Clause 2.2.3: Conditions of Eligibility of Applicants
2. Clause 2.11.3: Amendment of RFP
3. Schedule 1: Terms of Reference (TOR) for technical consultant:
  - (i) Clause 6.2: Time and Payment Schedule
  - (ii) Proforma-1, Road Inventory,
  - (iii) Proforma-2, Inventory and Condition Survey for Culverts
  - (iv) Proforma-3, Inventory of Structures (Bridges and other Structures)
  - (v) Proforma-5, Bridge Condition Survey
4. Schedule 2: Form of Agreement: Clause 9.4.2: Arbitration
5. Form-5, Appendix-I: Financial Capacity of the Applicant
6. Form-8, Appendix-I: Abstract of Eligible Assignments of the Applicant
7. Form-9, Appendix-I: Abstract of Eligible Assignments of Key Personnel
8. Illustrative Schedule-2: TOR for Feasibility Report: Two-lane highways
  - (i) Proforma-1, Road Inventory,
  - (ii) Proforma-2, Inventory and Condition Survey for Culverts
  - (iii) Proforma-3, Inventory of Structures (Bridges and other Structures)
  - (iv) Proforma-5, Bridge Condition Survey
9. Illustrative Schedule-3: TOR for Feasibility Report: Accommodation: Table below Para 6.2
10. Appendix III: List of Bid-specific clauses

**B. Clauses and appendices with curly brackets**

1. Schedule 2: Form of Agreement: Clause 9.4.2: Arbitration

**C. Clauses and appendices with blank spaces**

1. Schedule 1: Terms of Reference: Proforma 4, Road Condition Survey
2. Schedule 2: Form of Agreement: Clause 1.10.3 and 6.1.2
3. Annex-7, Schedule 2: Bank Guarantee for Performance Security
4. Form-1, Appendix-I: Letter of Proposal
5. Form-2, Appendix-I: Particulars of the Applicant: Signature
6. Form-3, Appendix-I: Statement of Legal Capacity

---

<sup>§</sup> This Appendix-III contains a list of clauses and appendices that would need to be suitably modified for reflecting applicant-specific provisions. This Appendix-III may, therefore, be included in the RFP document to be issued to prospective Applicants. The blank spaces in Appendices may be filled up by the Applicant and the footnotes may be deleted when it submits its proposal.

7. Form-4, Appendix-I: Power of Attorney
8. Form-5, Appendix-I: Financial Capacity of the Applicant
9. Form-12, Appendix-I: Curriculum Vitae (CV) of Key Personnel
10. Appendix-II: Financial Proposal: Item E
11. Illustrative Schedule-2: TOR for Feasibility Report: Two-lane highways: Proforma 4, Road Condition Survey

## APPENDIX-IV

**LIST OF PROJECT-SPECIFIC CLAUSES****A. Clauses and appendices with serially numbered footnotes**

1. Clause 1.1: Background (Footnote No. 1)
2. Clause 1.1.1: Background (Footnote No. 2)
3. Clause 1.1.3: Background (Footnote No. 3)
4. Clause 2.1.4: Key Personnel (Footnote No. 4)
5. Clause 2.2.2 (B): Conditions of Eligibility of Applicants (Financial Capacity) (Footnote No. 5 and 6)
6. Clause 2.2.2 (D): Conditions of Eligibility of Applicants (Conditions of Eligibility for Key Personnel: (Footnote No. 7)
7. Clause 2.20.1: Bid Security (Footnote No. 8)
8. Clause 3.1.1: Evaluation of Technical Proposals (Footnote No. 9)
9. Clause 3.1.3: Evaluation of Technical Proposals, Item No. 1 (Footnote No. 10)
10. Clause 3.1.3: Evaluation of Technical Proposals, Item No. 3 (Footnote No. 11)
11. Clause 3.1.4: Eligible Assignments: (Footnote No. 12 through 16)
12. Clause 3.4.1: Combined and Final Evaluation (Footnote No. 17)
13. Schedule 1: Terms of Reference (TOR) for technical consultant:
  - (i) Cover page (Footnote No. 18)
  - (ii) Clause 3.4: Proposal for Sections passing through urban areas (Footnote No. 19), and
  - (iii) Clause 5 (ae): Specific requirements for the Project Highway (Footnote No. 20)
14. Schedule 2: Form of Agreement:
  - (i) Clause 3.5.2 (a): Insurance to be taken out by the Consultant (Footnote No. 21)
  - (ii) Annex 6: Payment Schedule (Footnote No. 22 and 23)
15. Illustrative Schedule-2: TOR for Feasibility Report: Two-lane highways: Para 3.4 (Footnote No. 24)
16. Illustrative Schedule-2: TOR for Feasibility Report: Two-lane highways: Para 5(af) (Footnote No. 25)
17. Appendix IV: List of Project-specific clauses (Footnote No. 26)

**B. Clauses and appendices with square parenthesis**

1. Index: Schedule I TOR Four Laning
2. Glossary: Consultancy Team, Feasibility Report or FR, Inception Report, Key Date or KD,
3. Clause 1.1.1: Background
4. Clause 1.2: Request for Proposal
5. Clause 1.7.1: Currency conversion rate and payment
6. Clause 1.8: Schedule of Selection Process
7. Clause 1.11.2: Communications

8. Clause 2.1.4: Key Personnel
9. Clause 2.2.2 (A): Technical Capacity
10. Clause 2.2.2 (B): Financial Capacity
11. Clause 2.2.2 (D): Conditions of Eligibility for Key Personnel:
12. Clause 2.15.1: Financial Proposal
13. Clause 2.20.1: Bid Security
14. Clause 3.1.3: Evaluation of Technical Proposals
15. Clause 3.1.4: Eligible Assignments
16. Schedule 1: Terms of Reference: Clause 3.4, 7, 8.1, 8.2, 11.1
17. Schedule 2: Form of Agreement: Recitals, Clause 1.1.1(j), 1.7 (b), 2.4, 3.5.2 (a), 9.3 and Signature page
18. Annex 7, Schedule 2: Bank Guarantee for Performance Security
19. Form-1, Appendix-I: Letter of Proposal
20. Form-2, Appendix-I: Particulars of the Applicant: Signature
21. Form-3, Appendix-I: Statement of Legal Capacity
22. Form-4, Appendix-I: Power of Attorney
23. Form-8, Appendix-I: Abstract of Eligible Assignments of the Applicant
24. Form-10, Appendix-I: Eligible Assignments of Applicant
25. Form-11, Appendix-I: Eligible Assignments of Key Personnel
26. Form-1, Appendix-II: Financial Proposal, Covering Letter
27. Illustrative Schedule-1: Items to be included in the Terms of Reference
28. Illustrative Schedule-2: TOR for Feasibility Report: Two-lane highways: Para 3.4, 7 and 8, 11
29. Illustrative Schedule-3: TOR for Feasibility Report: Accommodation: Para 1.1, 2, 3, 4.3.3, 4.5.3, 4.5.6, 4.5.14, 4.5.16, 4.5.17, 4.6.1, 4.8, 5, 6.1, 6.2, 6.3, 7.1, 7.2 and 7.4

### **C. Clauses and appendices with asterisk**

1. Clause 1.1.3: Background
2. Clause 1.4: Sale of RFP Document
3. Clause 1.9: Pre-Proposal visit to the Site and inspection of data
4. Clause 1.10: Pre-Proposal Conference
5. Clause 1.11: Communications
6. Clause 2.20.1: Bid Security
7. Clause 6.1: Miscellaneous
8. Schedule 1: Consultancy for a Feasibility Report for Four Laning of \*\*\*\*  
Highway:
  - (i) Cover Page
  - (ii) Clause 1.1
  - (iii) Proforma-1: Road Inventory
  - (iv) Proforma-2: Inventory and Condition Survey for Culverts
  - (v) Proforma-3: Inventory of Structures (Bridges and other Structures)
9. Schedule 2: Form of Agreement: Recital, Clause 1.1.1(j), 1.4, 1.7, 1.10.2, 9.3

11. Annex 7, Schedule 2: Form of Agreement, Bank Guarantee for Performance Security
12. Form-1, Appendix-I: Letter of Proposal
13. Form-2, Appendix-I: Particulars of the Applicant: Signature
14. Form-3, Appendix-I: Statement of Legal Capacity
15. Form-4, Appendix-I: Power of Attorney
16. Form-1, Appendix-II: Financial Proposal, Covering Letter
17. Illustrative Schedule-2: TOR for Feasibility Report: Two-lane highways: Para 1.1, Proforma 1-Road Inventory and Proforma 3-Inventory of structures