



Tamil Nadu Road Development Company Ltd.

**TAMIL NADU ROAD DEVELOPMENT COMPANY LTD  
(TNRDC)**

**Consultancy Services for the Preparation of Detailed  
Project Report for the Construction of Elevated Road from  
Taramani to Siruseri under Phase-I and from Siruseri to  
Mahabalipuram under Phase-II, for a length of 45 Km,  
along OMR, Chennai, Tamil Nadu**

**REQUEST FOR PROPOSAL (RFP)**

**May, 2014**



Tamil Nadu Road Development Company Ltd.

**Tamil Nadu Road Development Company Ltd.  
No.171, II Floor, Tamil Nadu Maritime Board Building,  
South Kesavaperumal Puram,  
Pasumpon Muthuramalingam Road,  
(Near Greenways Road MRTS Station),  
Raja Annamalai Puram, Chennai 600 028  
Phone: 91-44-2495 2800 / 3800,  
Fax: 91-44-2493 3800  
Email : [tenders@tnrdc.com](mailto:tenders@tnrdc.com)  
Web : [www.tnrdc.com](http://www.tnrdc.com)**

## CONTENTS

S. No.	CONTENTS	PAGE No.
1	Schedule of Bidding Process	3
2	Disclaimer	4
3	SECTION 1 : Information to Consultants	5 - 9
4	SECTION 2: Letter of invitation to Consultants	10 - 27
5	SECTION 3 : Format for submission of firms credentials	28 - 30
6	SECTION 4 : Format for submission of Technical proposal	31 - 49
7	SECTION 5 : Format for submission of Financial proposal	50 - 58
8	SECTION 6 : Terms of Reference	59 - 117
9	SECTION 7 : Draft form of Contract	118 - 168

**‘Consultancy Services for the Preparation of Detailed Project Report for the Construction of Elevated Road from Taramani to Siruseri under Phase-I and from Siruseri to Mahabalipuram under Phase-II, for a length of 45 Km, along OMR, Chennai, Tamil Nadu’**

**SCHEDULE OF BIDDING PROCESS**

S. NO.	EVENT DESCRIPTION	DATE
1	ISSUE OF RFP TO APPLICANTS	20 <sup>th</sup> MAY, 2014
2	LAST DATE OF RECEIVING QUERIES, IN CASE THE QUERIES TO BE ANSWERED IN PRE-BID	02 <sup>nd</sup> JUNE, 2014
3	PRE-BID CONFERENCE	11 <sup>th</sup> JUNE, 2014
4	LAST DATE OF PURCHASE OF RFP	19 <sup>th</sup> JUNE, 2014
5	LAST DATE FOR SUBMISSION OF PROPOSALS	15:00 HRS, 25 <sup>th</sup> JUNE, 2014
6	DATE FOR OPENING OF TECHNICAL PROPOSALS	15:30 HRS, 25 <sup>th</sup> JUNE, 2014
7	DATE FOR OPENING OF FINANCIAL PROPOSALS	DATE WILL BE INTIMATED TO THE TECHNICALLY QUALIFIED BIDDERS

TNRDC would endeavor to adhere to the dates indicated above. However, it reserves the right to effect changes to the above dates, if the need arise. Such change would be uploaded in website ([www.tnrdc.com](http://www.tnrdc.com))

## **DISCLAIMER**

This Request for Proposal (RFP) is issued by Tamil Nadu Road Development Company Ltd (TNRDC). TNRDC would be the signatory for all legal documents.

The RFP is not a prospectus or offer or invitation to the public in relation to the sale of shares, debentures or securities, nor shall this RFP or any part of it form the basis of or be relied upon in any way in connection with, any contract relating to any shares, debentures or securities.

Whilst the information in this RFP has been prepared in good faith, it is not and does not purport to be comprehensive or to have been independently verified. Neither TNRDC, nor any of its officers or employees, nor any of their advisers nor consultants accept any liability or responsibility for the accuracy, reasonableness or completeness of, or for any errors, omissions or misstatements, negligent or otherwise, relating to the proposed road Project, or make any representation or warranty, express or implied, with respect to the information contained in this RFP or on which this RFP is based or with respect to any written or oral information made or to be made available to any of the recipients or their professional advisers and, so far as permitted by law and except in the case of fraudulent misrepresentation by the party concerned, any liability therefore is hereby expressly disclaimed.

The information contained in this RFP is selective and is subject to updating, expansion, revision and amendment. It does not, and does not purport to, contain all the information that a recipient may require. Neither TNRDC nor any of its officers, employees nor any of its advisors nor consultants undertake to provide any recipient with access to any additional information or to update the information in this RFP or to correct any inaccuracies therein which may become apparent. Each recipient must conduct its own analysis of the information contained in this RFP or to correct any inaccuracies therein and is advised to carry out its own investigation into the proposed road Project, the legislative and regulatory regime which applies thereto and all matters pertinent to the proposed Project and to seek its own professional advice on the legal, financial, regulatory and taxation consequences of entering into any agreement or arrangement relating to the proposed Project.

This RFP includes certain statements, estimates, projections, targets and forecasts with respect to the road Project. Such statements estimates, projections, targets and forecasts reflect various assumptions made by the management, officers and employees of TNRDC, which assumptions (and the base information on which they are made) may or may not prove to be correct. No representation or warranty is given as to the reasonableness of forecasts or the assumptions on which they may be based and nothing in this RFP is, or should be relied on as, a promise, representation or warranty.

## REQUEST FOR PROPOSAL (RFP)

### SECTION 1

#### INFORMATION TO CONSULTANTS

**Sub.: Consultancy services for the Preparation of Detailed Project Report for the Construction of Elevated Road from Taramani to Siruseri under Phase-I and from Siruseri to Mahabalipuram under Phase-II, for a length of 45Km, along OMR, Chennai, TamilNadu**

**GENERAL:-**

Tamil Nadu Road Development Company Limited, (TNRDC) invites proposals from individual firms or firms in joint venture with other firms for engaging Consultants on the basis of Competitive Bidding for 'Consultancy services for the preparation of Detailed Project Report (DPR) for Construction of Elevated Road from Taramani to Siruseri under Phase-I and from Siruseri to Mahabalipuram under Phase-II, for a length of 45Km, along OMR, Chennai, in the State of Tamil Nadu, India'.

**TABLE 1: Elevated Road from Taramani to Mahabalipuram in 2 Phases**

S. No	Location	Project Stretch	Completion Period
1	Old Mahabalipuram Road (OMR), Chennai, Tamil Nadu, India	Construction of Elevated Road from Taramani to Siruseri under Phase-I and from Siruseri to Mahabalipuram under Phase-II, for a length of 45Km, along OMR, Chennai, Tamil Nadu, India	<b>Phase-I : 06 Months</b> <b>Phase-II : 12 Months</b> <b>Total : 18 Months</b>

1. The proposal shall be submitted in English Language and all correspondence would be in the same language.
2. The existing OMR, popularly known as Rajiv Gandhi Salai (IT Corridor) from Madhya Kailash Junction to Siruseri is maintained as a Toll road by ITEL, a wholly owned company of TNRDC. The 2nd phase from Siruseri to Mahabalipuram, is an existing 2 lane road and the DPR for formation of dual 3 lane, with service road and footpath was completed however not included for Elevated Road Corridor for through traffic, as Phase II section for the DPR.
3. The current traffic census indicates, OMR as one of the dense traffic flow corridor in Chennai. Due to ever growing traffic and many junctions along OMR, travelling time is affected and leads to inordinate delay and more vehicles get piled up. Due to this several public representations were made to the Chief Minister's special cell, requesting for relief. On expert opinion, construction of elevated road system for a signal free uninterrupted traffic could be possible. Hence this RFP.
4. There are several high raise buildings housing, IT Companies, Institutions, shopping malls, Refreshment malls, industrial companies which receives huge daily passengers commutation to the city Centre etc, are being developed along OMR and it is still expected to increase in future. Due to which, there is heavy traffic flow along Old Mahabalipuram Road, which needs to be sorted out.

5. Since, further widening of the existing OMR road would not be possible, and to reduce the heavy traffic congestion in OMR, it is proposed to construct a state of art elevated road system on the road section from Taramani to Siruseri under Phase-I and from Siruseri to Mahabalipuram under Phase-II, for a total length of 45Km. The elevated road shall have provision to accommodate by space and design for future monorail/metro rail. In the Phase II section of the corridor the alignment shall traverse bypassing urban clusters at two locations . They are 1) at Kelambakkam the bye-pass starting at Padur km 32/400 and ending beyond Kelambakkam at km 35/700 and 2) at Tiruporur the bye-pass starting at Kalavakkam km 39/800 and ending beyond Tiruporur at km 45/200 (refer project corridor Phase I **FIG 1** and Phase II **FIG 2**)
6. Hence, TNRDC intends to appoint a Consultant to prepare a Detailed Project Report (DPR), for the construction of elevated road from Taramani to Siruseri under Phase-I and from Siruseri to Mahabalipuram under Phase-II, for a length of 45Km, along OMR, in Chennai, Tamil Nadu.
7. The interested Consultancy firms or with any JV partners may obtain the RFP from the office address given below from **20<sup>th</sup> May, 2014 to 19<sup>th</sup> June, 2014** on all working days between **10:00 hours and 17:00 hours IST** by payment of a non-refundable Demand Draft amounting to **INR 50,000/- (Rupees Fifty Thousand Only)** drawn in favour of “**M/s Tamil Nadu Road Development Company Limited**” payable at any scheduled bank in **Chennai**. The RFP document is also available on TNRDC’s website **www.tnrdc.com**. The Consultant who downloads the RFP document from the website will also be required to pay the non- refundable fee of **INR 50,000/- (Rupees Fifty Thousand Only)** at the time of the submission of the proposal. The proposal should be submitted by consultancy firm in two parts, in two separate envelopes and put together in one single outer envelope. The two parts of the proposal are **Part 1: Technical Proposal and Part 2: Financial Proposal**. Stage-1 of the Evaluation shall consider the evaluation of the Technical Proposal (i.e. Part 1). The firms scoring the qualifying mark (minimum 70 marks) as mentioned in the RFP shall be considered for further evaluation. The financial proposal of those firms, who had scored qualifying marks in the Technical proposal only, would be opened. The firm would be ranked on the basis of lowest amount quoted by them in Appendix C-1. The firm quoting the lowest amount will be invited by TNRDC for negotiation.
8. Any bid not accompanied by the RFP Document cost, RFP Document and EMD shall be rejected as non-responsive Tender.
9. The total time period for the assignment stated for both the phases for this DPR Consultancy is **18 months**.
10. TNRDC will not accept any bid/proposal submitted through post/courier. Further, it shall not be responsible for any delay in receiving the Proposal and reserves the right to accept/reject any or all applications without assigning any reason thereof.
11. The two parts of the Proposal (Technical proposal and Financial proposal) must be submitted in a hard bound form (hard bound implies binding between two covers through stitching or otherwise whereby it may not be possible to replace any paper without disturbing

the documents (**Spiral bound form, loose form, etc. will not be accepted**) with all pages numbered serially, along with an index of submission. All figures quoted in the Financial Proposal should be covered with a transparent adhesive tape. In the event, any of the instructions mentioned herein have not been adhered to, TNRDC may reject the Proposal.

12. RFP submission must be received not later than **15:00 hrs on 25<sup>th</sup> June, 2014**, in the manner specified in the RFP document at the address given below:-

**Chief General Manager  
Tamil Nadu Road Development Company Ltd.,  
No.171, II Floor, Tamil Nadu Maritime Board Building,  
South Kesavaperumal Puram,  
Pasumpon Muthuramalingam Road,  
(Near Greenways Road MRTS Station),  
Raja Annamalai Puram, Chennai 600 028  
Phone: 91-44-2495 2800 / 3800,  
Fax: 91-44-2493 3800  
Email : [tenders@tnrdc.com](mailto:tenders@tnrdc.com)**

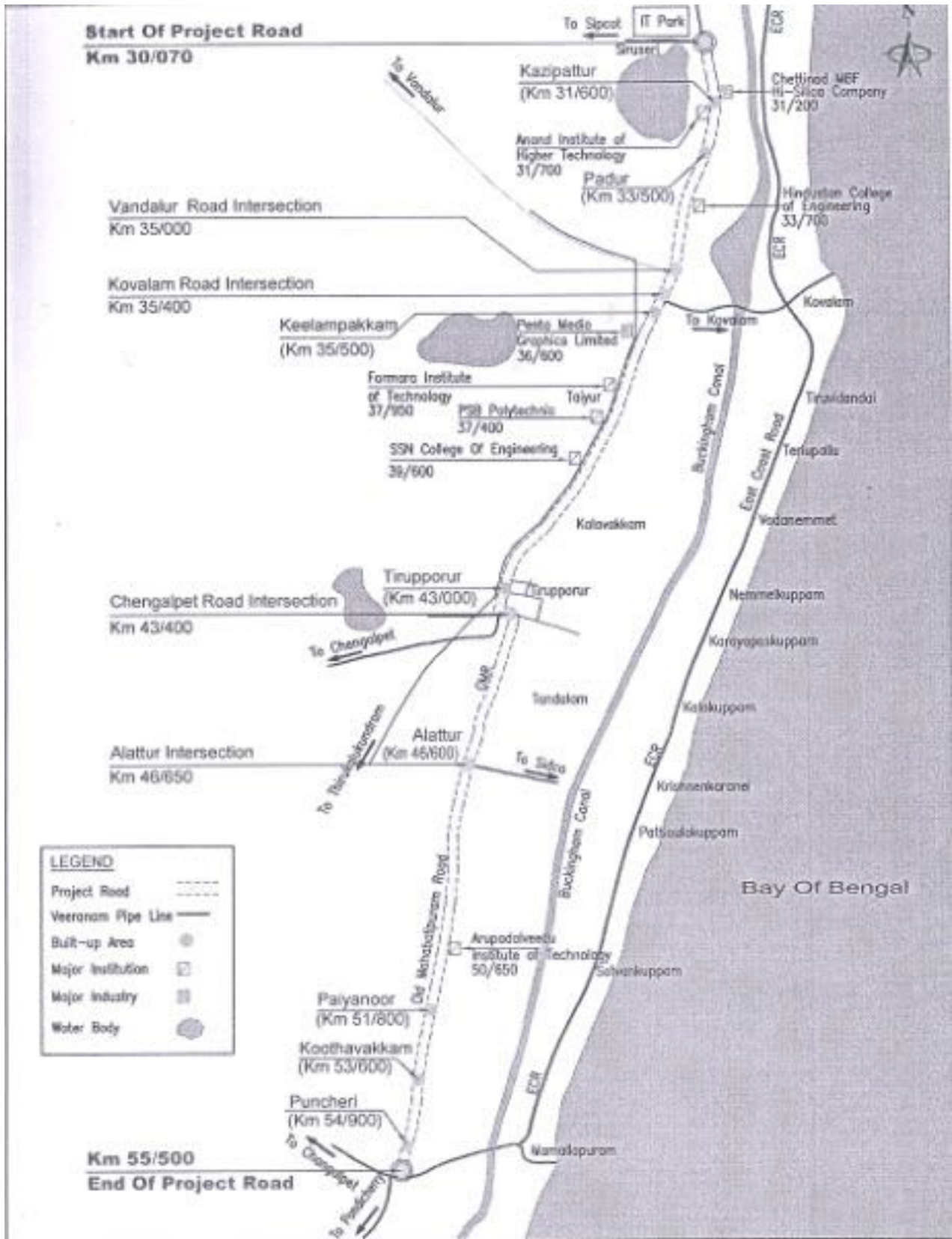
13. Throughout this RFP Document, the term 'Employer', 'Client', 'TNRDC' and their derivatives are synonymous and shall carry same meaning, unless otherwise specified.
14. Throughout this RFP Document, the term 'Consultant/s' and their derivatives are synonymous and shall carry same meaning, unless otherwise specified.

**Chief General Manager  
Tamil Nadu Road Development Company Ltd  
Chennai – 600 028**





FIGURE 2.



## SECTION 2

### LETTER OF INVITATION TO CONSULTANTS

#### **1. INTRODUCTION**

- 1.1 TNRDC invites proposal for **“Consultancy services for the preparation of Detailed Project Report for the Construction of Elevated Road from Taramani to Siruseri under Phase-I and from Siruseri to Mahabalipuram under Pahse-II, for a length of 45km, along OMR, Chennai, Tamil Nadu”** from individual firms or firms in joint venture with other firms with Design provisions for future to accommodate Monorail/Metrorail system. This proposal could form the basis for future negotiations and ultimately a contract between the selected firm and TNRDC.
- 1.2 A brief description of the assignment and its objectives are given in the Terms of Reference (TOR) in Section 6 of this document.
- 1.3 The assignment shall be implemented as per the Terms and Conditions stipulated in the RFP and related documents.
- 1.4 To obtain first hand information on the assignment and on the local conditions, Bidders are encouraged to visit the project site before submitting a proposal and attend a Pre Bid Meeting as specified in the data sheet. The bidder or his official representative is invited to attend a Pre Bid meeting which will take place at the Employer's address on the date specified in the Data Sheet and the minutes of the meeting will be conveyed to the bidders and will be uploaded in web portal. The minutes of the Pre Bid Meeting/any addendum also forms part of this RFP Document. The Consultant must inform themselves of site conditions and take them into account in preparing the proposal.
- 1.5 Please note that, (i) the costs of preparing the proposal and negotiating for the contract, including a visit to site, are not reimbursable as a direct cost of assignment and (ii) TNRDC is not bound to accept any of the proposals received by it and reserves the right to annul the selection process at any time prior to contract award, without thereby incurring any liability to the Consultants.
- 1.6 Consultant has an obligation to disclose any situation of actual or potential conflict of interest that impacts their capacity to serve the best interest of, which may reasonably be perceived as having this effect. Failure to disclose said situations may lead to the disqualification of the Consultant or the termination of its Contract.
- 1.7 Deleted
- 1.8 It is TNRDC's policy that the consultants observe the highest standard of ethics during the selection and execution of such contracts. In pursuance of this policy, :
- a. Defines, for the purpose of this paragraph, the terms set forth below as follows:
    - (i) “corrupt practice” means the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence the action of a public official in the selection process or in contract execution;
    - (ii) “fraudulent practice” means a misrepresentation or omission of facts in order to influence a selection process or the execution of a contract;

- (iii) “collusive practices” means a scheme or arrangement between two or more consultants with or without the knowledge of the Client, designed to establish prices at artificial, noncompetitive levels;
  - (iv) “coercive practices” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in a procurement process, or affect the execution of a contract.
- b. Will reject a proposal for award, if it determines that the Consultant recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive or coercive practices in competing for the contract in question;
  - c. Will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a contract if at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing a contract; and
  - d. Will have the right to require that, a provision be included requiring consultants to permit to inspect their accounts and records relating to the performance of the contract and to have them audited by authorized representatives of TNRDC.
- 1.9 Consultants, their Sub-Consultants, and their associates shall not be under a declaration of ineligibility for corrupt and fraudulent practices. Furthermore, the Consultants shall be aware of the provisions on fraud and corruption stated in the specific clauses in the General Conditions of Contract.
- 1.10 Consultants shall furnish information on commissions and gratuities, if any, paid or to be paid to agents relating to this proposal and during execution of the assignment if the Consultant is awarded the Contract, in the Financial Proposal.
- 1.11 The Data Sheet indicates how long Consultants’ Proposal must remain valid after the submission date. During this period, Consultants shall maintain the availability of Professional staff nominated in the Proposal. TNRDC will make its best effort to complete negotiations within this period. Should the need arise; however, TNRDC may request Consultants to extend the validity period of their proposals. Consultants who agree to such extension shall confirm that they maintain the availability of the Professional staff nominated in the Proposal, or in their confirmation of extension of validity of the Proposal, Consultants could submit new staff in replacement, which would be considered in the final evaluation for contract award. Consultants who do not agree have the right to refuse to extend the validity of their Proposals, without forfeiture of EMD.

## **2. CLARIFICATIONS AND AMENDMENT OF RFP DOCUMENTS**

- 2.1 The interested Bidders may request a clarification of any of the RFP documents up to the number of days indicated in the Data Sheet before the Proposal submission date. Any request for clarification must be sent in writing by paper mail, facsimile, or electronic mail to the Client’s address indicated in the Data Sheet. TNRDC will respond by paper mail, facsimile, or electronic mail to such requests and will send copies of the response (including an explanation of the query

but without identifying the source of inquiry) to all interested Bidders who intend to submit proposals and the same will also be uploaded in our website [www.tnrdc.com](http://www.tnrdc.com).

- 2.2 At any time before the submission of Proposals, TNRDC may for any reason, whether at its own initiative or in response to a clarification requested by a Consulting firm, modify the RFP documents by amendment. Any amendment shall be issued in writing through addendum and shall form part of this RFP document. Addendum may be sent by mail, facsimile or electronic mail to interested Bidders or/and will also be hosted on TNRDC's website which will be binding on them. It is the bidders (those who download from the website) responsibility to keep track of the website specified in the NIT for any addendum. The addendum of the bidding document will not be notified in the newspaper. Prospective bidders shall acknowledge receipt of each addendum by mail, facsimile or electronic mail to TNRDC. TNRDC may at its discretion extend the deadline for the submission of Proposals.

### 3. **PREPARATION OF PROPOSAL**

- 3.1 Bidders are requested to submit their proposal in Two Parts using, (but not limited to) the formats enclosed herewith (refer section 3, 4 and 5) in 2 separate envelopes and put together in one single outer envelope. The two parts shall be:

**Part 1: Technical Proposal and  
Part 2: Financial Proposal**

The proposal shall be written in the English language as specified in the Data Sheet. The Bidder shall submit only one **ORIGINAL** proposal only and shall be submitted only by the Managing Director/ Head of the eligible consultancy firm. The Managing Director/Head of the eligible consultancy firm shall sign Appendix B-1 (Technical proposal submission form) and Appendix C-1 (Financial proposal submission form) or Authorised Representative holding proper Power of Attorney may also sign the proposal and as a minimal requirement and the rest of the pages of the Technical and Financial Proposal may be signed either by the Managing Director/Head of the eligible consultancy firm OR by an authorized representative holding proper Power of Attorney. The original Power of Attorney shall be executed by Managing Director/ Head of firm duly notarized and submitted with the proposal. In case of JV, the signatory to the bid proposal shall be in the similar way by the lead partner only. In case of JV, a MoU (executed specifically for this project) indicating the input and role of each partner shall be submitted with the proposal. In subsequent stages, any relevant submission by authorized representative shall be accepted.

- 3.1.1 **In case the Bidder is a Joint Venture**, the Partners of the Joint Venture shall furnish a Power of Attorney as per the format given in the **Appendix-B-9** designating one of the Partners, as per the Memorandum of Understanding (MoU), as their Lead Partner (Lead Partner is one of the Joint Venture Partner, who shall satisfy technical criteria as detailed in Appendix to Data Sheet i.e., under (A) Relevant Experience for the firm for the Assignment & (C) Qualification and Competence of key staff for the assignment.

The authorized representative of the Partners of the Joint Venture other than the Lead Partner shall duly sign the Power of Attorney and the Lead Partner shall sign the same by way of acceptance. The Power of Attorney shall be furnished on a non-judicial stamp paper of Rs.100/- duly attested by notary public.

Proposal submitted by a Joint Venture should comply with the following additional requirements:

- (i) Number of Partners in a Joint Venture would be limited to 2 (two);
- (ii) Wherever required, the Proposal should contain the information required for each Partner of the Joint Venture;
- (iii) One of the Joint Venture Partners should have applied for and obtained the RFP document from TNRDC on having paid the non refundable fee of **Rs.50,000/- (Rupees Fifty Thousand Only)** to TNRDC as specified in the RFP document; or submit a Demand Draft for **Rs.50,000/- (Rupees Fifty Thousand Only)** at the time of submission of the RFP, in case the documents are downloaded from website.
- (iv) An individual Partner applying as a sole Bidder cannot at the same time be Partner of any Joint Venture applying for this Project. Further, a Partner of a particular Joint Venture cannot be Partner of any other Joint Venture applying for this Project. Any Partner who submits or participates in more than one Bid for this Project will be disqualified and will also lead to disqualification of the Joint Venture /s of which it is a Partner;
- (v) Partners of the Joint Venture shall nominate one Partner as the Lead Partner. The nomination(s) shall be supported by a Power of Attorney by all the Partners as per the format given in the Appendix-B-9.

**3.1.1** Partners of the Joint Venture shall submit a Memorandum of Understanding (MoU) for the purpose of submitting the Proposal, as per the format given in the Appendix-B-10. The Memorandum of Understanding (MoU) shall be furnished on a non-judicial stamp paper of Rs. 100/- duly attested by notary public.

The MoU shall, inter alia:

- (i) Communicate the willingness of the Joint Venture to subsequently carry out all the responsibilities as Consultant in terms of the Contract Agreement, in case the Joint Venture is awarded to take up the Consultancy Services.
- (ii) Clearly state that Partner of the Joint Venture shall be liable jointly and severally for the services of the Project in accordance with the terms of the Contract Agreement.
- (iii) Should be accompanied by the Board Resolutions (in case of corporate member) and/or undertakings (in case of individual member) of the Joint Venture Partners, giving authority/undertaking to enter into a MoU with other Partners for undertaking the Project



and, if successful, to participate and undertake the Project and in case of corporate members nominating and authorising an authorised representative of the Partner to sign and enter into the MoU and execute Powers of Attorney for the Project. The format for the Board Resolutions / Undertaking that must be submitted as per the format given in the Appendix-B-11.

- (iv) Should be accompanied by a certified true copy of the Memorandum and Articles of Association (in case of corporate members), notarised copy of the Registered Partnership Deed (in case of partnership firms) and Sales tax registration number/PAN/TAN/Service Tax Registration Number (in case of proprietorship firms and individuals)
- (v) A copy of the MoU duly notarised, should be submitted along with the Proposal. The MoU entered into among the Partners of the Joint Venture should be specific to this Project and should contain the above requirements failing which the Application shall be rejected as non-responsive. The MoU should be governed by the laws, rules and regulations of India and should be subject to jurisdiction of Chennai Courts only.

3.1.4 Any entity which has been debarred, blacklisted by NHAI, TNRDC, TNRSP, the Government of Tamil Nadu, or any other State Government and their agencies and Central Government or their agencies and where the bar subsists as on the Proposal Due Date (PDD) would not be eligible to submit the Proposal, either individually or as Partner of a Joint Venture.

### **3.1.5 Litigation History**

- a) The bidder as on date should not have been debarred from taking up any civil construction works and shall not be under a declaration of ineligibility for corrupt and fraudulent practices by the Government of India, Government of Tamil Nadu or any other agency. The bidder should provide accurate information about any litigation or arbitration resulting from contracts completed or ongoing under its execution over the last three years. A consistent history of litigations/awards against the bidder will result in rejection of the bid. Suppression of any information or material in this regard would be construed as a fundamental breach and TNRDC reserves its right to take appropriate action including cancellation of the bid, forfeiting of bid security etc., as may be deemed fit by TNRDC at any time without requiring giving any notice to the applicant in this regard.
- b) Suppression of any information or material by the bidder regarding the Debarment, details of Litigation history, blacklisting of the bidder, misrepresentation or omission of any other material fact in order to influence a selection process would be construed as a fundamental breach and will lead to the disqualification of the Bidder or the termination of its Contract without any further notice.

3.1.6 The Proposal shall be signed by the duly authorized signatory of the Lead Partner in the acceptable format and shall be legally binding on all the Partners of the Joint Venture.

3.1.7 All witnesses and sureties shall be persons of status and probity and their full names, addresses and telephone numbers/mobile numbers shall be stated below their signatures. All signatures in the Proposal documents shall be dated.

### 3.1.8 **Change in Composition of the Bidder in the case of Joint Venture**

**In case a Bidder is a Joint Venture, change in the composition of the Joint Venture will not be permitted by TNRDC.**

### 3.1.9 **Proposal Preparation Cost**

The Bidder shall be responsible for all costs associated with the preparation of its Proposal including site visits and its participation in the bidding process. TNRDC will not be responsible nor in any way liable for such costs, regardless of the conduct or outcome of the bidding process.

### 3.1.10 **Earnest Money Deposit (EMD)**

The proposals duly filled in the required format must reach the Corporate Office of TNRDC , 171, II Floor, Tamil Nadu Maritime Board Building, South Kesavaperumalpuram, Pasumpon Muthuramalingam Road, (Near Greenways Road MRTS Station), Raja Annamalaipuram, Chennai – 600 028 on or before **15:00 hrs on 25<sup>th</sup> June, 2014** along with EMD/ Bid Security for an amount of **Rs 5,00,000/- (Rupees Five Lakhs Only)** in any one of the following forms:-

(i) Form of Demand Draft drawn in favour of M/s Tamil Nadu Road Development Company Ltd.(TNRDC)

(or)

(ii) Bank Guarantee from any Nationalised Indian Bank / Scheduled Bank as per the format given in the Bid document (Appendix B – 8).

The Bank Guarantees issued as surety for the bid shall be valid for (60) Sixty days beyond the validity of the bid of 180 days. The Earnest Money Deposit (EMD) should be enclosed along with Technical Proposal cover. Any bid not accompanied by the acceptable EMD shall be rejected by TNRDC as non- responsive Tender.

## **Part 1: Technical Proposal**

The bidder is expected to examine all terms and conditions included in the documents. Failure to act or to provide all requested information will be at his will and own discretion and may result in rejection of his proposal.

During preparation of the Technical proposal the bidder may give particular attention to the following:

- i. The estimated man-months for the assignment which shall be the minimum as stated in the Terms of Reference are indicative and are only information. The proposal shall however

be evaluated on the number of professional staff months estimated by the Bidder.

- ii. For the purpose of interpretation, any ambiguity between Technical & Financial Bid, the details given in the later shall prevail and binding upon for arriving decision. The interested Bidders should prefer to field as many of their permanent staff as possible and marks shall be given in this regard. The permanent staff would be considered those already employed with the firm prior to the month during which this Tender Notice is issued. Please enclose evidence (e.g: Pay roll, Auditor's Certificate) in this regard.
- iii. No alternative to key professional staff may be proposed and only one Curriculum Vitae (CV) shall be submitted for each position, and in the event of failure, both the CVs would be rejected.
- iv. A good working knowledge of the language specified in the data sheet is essential for key professional staff on this assignment. Reports must be in the language (s) specified in the data sheet.
- v. Higher weightage would be given to the Employees of the firm proposed for this assignment with relevant experience.
- vi. The staff proposed to be engaged for a period 3 Months and above should not be engaged for any other assignment. If this violation is detected, the concerned Staff will be disqualified and remuneration of such persons will be withheld.

3.4 Technical Proposal must provide the following information, using but not limited to the formats attached in the Section 3 & 4.

- (i) A brief description of the firm's organization and an outline of recent experience of the Consultants and in the case of joint venture, for each partner, on assignments of a similar nature (covering 4/6 Lane Highway Project in the preparation DPR with the provision of Major Bridges, ESIA etc.). The information which shall be provided on each assignment should indicate, inters- alia, the profiles of the staff provided, duration, contract amount and firm's involvement.
- (ii) Any comments or suggestions on the TOR and a description of the methodology (work plan) which the firm proposes to execute the services, illustrated with bar charts of Activities.
- (iii) The composition of the proposed staff team, the tasks which shall be assigned to each and their timing;
- (iv) CVs signed not earlier than a month time, in blue ink on each page by both the proposed professional staff and the Managing Director/Head of the bidding firms or the authorized representative. Key information should include years with the firm and degree of responsibility held in various assignments. As far as possible, all the CVs which are to be evaluated should be completed in all respects including signing by the concerned individual key personnel.
- (v) Estimates of the total time effort (person x months) to be provided for the services,



supported by bar chart diagrams showing the time proposed (person x months) for each Professional staff and sub professional staff.

(vi) EMD as per the details given in Para. No. 3.1.10 of Section 2 of RFP Document.

(vii) Any additional information shall be included and provided.

(viii) The Bidder should satisfy the minimum qualification criteria under each category in addition to the minimum qualifying marks for every particular category.

3.5 The technical proposal must not include any financial information.

## **Part 2: Financial Proposal**

3.6 Financial Proposal must be prepared using the formats attached in Section 5 and should not contain any technical information.

3.7 The Financial Proposal should clearly mention the Total Cost including overheads, fees, profit, all taxes duties and levies (except Service Tax).

3.8 Consultants shall express the price of their services in Indian Rupees (INR) only

3.9 The Client may require consultants to state the portion of their price representing local cost in the Indian currency if so indicated in the Data Sheet.

3.10 Service tax as applicable shall be reimbursed to the consultant, upon production of documentary proof of remittance.

## **4. SUBMISSION, RECEIPT AND OPENING OF PROPOSALS**

4.1 The 'ORIGINAL' proposal shall be prepared in indelible ink. It shall contain no inter- lineation or overwriting, except as necessary to correct errors made by the firm itself. Any such corrections must be initialed by the person or persons who sign(s) the Proposals.

4.2 All pages of the 'ORIGINAL' Proposal shall be signed by the eligible authority as specified in Para 3.1 of LOI given above.

4.3 Consultant must submit one 'ORIGINAL' proposal only. The financial proposal shall be sealed separately and duly marked on the envelope containing it showing the name of the project, the envelope must be clearly marked.

### **"DO NOT OPEN, EXCEPT IN PRESENCE OF THE TENDER SCRUTINY COMMITTEE"**

4.4 This outer envelope shall include two separate envelopes, each clearly marked as **"Part 1: Technical Proposal"** or **"Part 2: Financial Proposal"**.

4.5 The proposal must be submitted in a hard bound form (hard bound implies binding between two covers through stitching or otherwise whereby it may not be possible to replace any paper

without disturbing the document - spiral bound form, loose form, etc. will not be accepted) with all pages numbered serially, along with an index of submissions. All figures quoted in the financial proposal should be covered with a transparent adhesive tape.

- 4.6 The completed proposal must be delivered on or before the time and date stated in the data sheet.

## **5. PROPOSAL EVALUATION**

- 5.1 A two -stage procedure shall be adopted in evaluating the proposals:

### **Technical Proposal**

- 5.2 The Tender Scrutiny Committee appointed by TNRDC shall carry out its evaluation applying the evaluation criteria and point system specified in the data sheet. Each responsive proposal shall be attributed a technical score (St.) The technical proposal should score at least 70 Marks to be considered responsive for Financial evaluation. In addition to the minimum qualifying marks, the bidder should satisfy all the minimum qualification criteria under each category.

### **Financial Proposal**

- 5.3 After the evaluation of Technical Proposals is completed. TNRDC may notify those Consultants whose proposals were not considered as per conditions of RFP indicating that their Financial Proposal will be returned “unopened” along with the EMD and shall simultaneously notify the finally selected Consultants indicating the date and time set for opening of the Financial Proposals.
- 5.4 The Financial Proposals shall be opened in the presence of the Consultant’s representatives who choose to be present. The name of the Consultant and the proposed prices shall be read aloud and recorded when the Financial Proposals are opened. TNRDC shall prepare minutes of the Financial Proposal Opening proceedings. TNRDC shall not have any obligation to demonstrate to anybody on the Technical Evaluation process carried out.
- 5.5 The Tender Scrutiny Committee will determine whether the submitted Financial Proposals are complete i.e. whether they have included cost of all items of the corresponding proposals; if not, then the cost towards such missing items will be considered as NIL, but the Consultant shall, however, be required to carry out such obligations without any additional compensation. In case under such circumstances, if Client feels that the work cannot be carried out within the overall cost as per the submitted financial proposal, such proposals shall be considered Non Responsive.

- 5.6 Deleted

## **6 NEGOTIATIONS**

- 6.1 Prior to the expiration period of validity of proposal, TNRDC shall notify the successful firm who submitted the lowest bid in writing by registered letter or facsimile and may either issue LOA or may invite it to negotiate the contract price. In case two or more firms evaluated to be the lowest, the firm achieving the highest Technical score shall be invited first for negotiations.

- 6.2 Negotiations shall commence with a discussion of lowest bidder, the proposed methodology (work plan), staffing and any suggestions they may have made to improve the ToR. Agreement must then be reached on the final ToR, the staffing and bar charts, which shall indicate activities, staff, periods in the field and in the office, staff months, logistics and reporting. Special attention shall be paid to optimize the required outputs from the firm within the available budget and to define clearly the inputs required from the Employer to ensure satisfactory implementation of the assignment.
- 6.3 It is the responsibility of the Consultant, before starting financial negotiations, to contact the local tax authorities to determine the local tax amount to be paid by the Consultant under the Contract. The financial negotiations will include a clarification (if any) of the firm's tax liability in the Client's country, and the manner in which it will be reflected in the Contract; and will reflect the agreed technical modifications in the cost of the services. However, the amount quoted by the bidder excluding the local tax amount will only be considered for evaluation.
- 6.4 Changes agreed upon shall then be reflected in the financial proposal, using quoted unit rates.
- 6.5 Having selected a firm, among other things, on the basis of an evaluation of proposed key professional staff, TNRDC expects to negotiate, a contract on the basis of the staff named in the proposal and, prior to contract negotiations, will require assurance that this staff shall be actually available. TNRDC shall not consider substitutions during contract negotiations except in cases of unexpected delays in the starting date or incapacity of key professional staff for reasons of health.
- 6.6 Deleted

## **7 AWARD OF CONTRACT**

- 7.1 After completion of negotiations with the consultants, the Client shall award the Contract to the selected Consultant.
- 7.2 Within (7) Seven days from the date of receipt of the LOA, the successful bidder shall accept the LOA and return with the confirmation of the same to TNRDC.
- 7.3 After acceptance of LOA, the successful firm shall furnish performance security for a value of 2 . 50% of the contract value within 07 Days of issue of LOA.
- 7.4 The successful bidder shall execute the Consultancy Agreement within (15) Fifteen Days of acceptance of LOA.
- 7.5 Commencement of Assignment: The firm shall begin carrying out the services from the date to be intimated by TNRDC

**DATA SHEET**  
**(As Mentioned in Invitation to Consultants)**

**Sub clause No. in Invitation to Consultants**

- 1.4 Pre-Bid Conference shall be held at: Corporate Office on **11<sup>th</sup> June, 2014 at 15:00 hrs.**
- 1.11 The proposal shall be valid for 180 days after the last date of submission.
- 3.2 Bidders wanting to have their queries answered in Pre-Bid Conference should send their queries minimum 7 Days prior to Pre-Bid Conference as specified in the schedule of bidding process. The address for requesting clarification is:

**Chief General Manager**  
**Tamil Nadu Road Development Company Ltd.,**  
**No.171, II Floor, Tamil Nadu Maritime Board Building,**  
**South Kesavaperumal Puram, Pasumpon Muthuramalingam Road,**  
**(Near Greenways Road MRTS Station),**  
**Raja Annamalai Puram, Chennai 600 028**  
**Phone: 91-44-2495 2800 / 3800,**  
**Fax: 91-44-2493 3800**  
**Email : [tenders@tnrdc.com](mailto:tenders@tnrdc.com)**  
**Web site: [www.tnrdc.com](http://www.tnrdc.com)**

Only those parties who have purchased the RFP document shall be allowed to participate in the Pre-Bid conference. Applicants who have downloaded the RFP document from TNRDC's website ([www.tnrdc.com](http://www.tnrdc.com)) should submit a non-refundable Demand Draft for **Rs.50,000/- (Rupees Fifty Thousand Only)** drawn in favour of **M/s. Tamil Nadu Road Development Company Ltd**, payable at any scheduled bank in **Chennai**, towards the cost of RFP document, through their representative attending the conference. A maximum of 2 representatives of each bidder shall be allowed to participate on production of authorization letter from bidder.

It is the bidder's responsibility (For those who download the bid Document from the website) to keep track of the website specified in the NIT for Response to Pre Bid Queries and/or any addendum. The Response to Pre Bid Queries and/or any Addendum shall form part of this Bid document. The purpose of the meeting will be to clarify issues and to answer questions on any matter regarding the work that may be raised on or before the date of pre-bid meeting.

- 3.7 TNRDC shall reimburse only service tax. Consultant has to assess all other taxes and should inbuilt them in their financial proposal. These taxes (other than service tax) should not be provided separately. Consultants are requested to consult their Tax Consultants for details.
- 3.8 The Consultants shall have to state the cost in INR only.

- 4.6 The time and date of submission: **15:00 hrs on 25<sup>th</sup> June, 2014**. The Technical Bid will be opened on the same day at 15:30 hrs, at TNRDC's Corporate Office.
- 5.2 The Bidder should satisfy the Minimum Qualification criteria under each category in addition to the minimum qualifying marks for every particular category, specified in the Appendix to Data Sheet. The total points assigned to Technical Evaluation criteria are enclosed as Appendix to this Data Sheet:

<b>S.No</b>	<b>Description</b>	<b>Marks</b>
<b>A</b>	<b>Relevant experience for the assignment</b>	<b>20</b>
<b>B</b>	<b>The quality of methodology and work plan proposed</b>	<b>10</b>
<b>C</b>	<b>Qualifications and competence of the key staff for the assignment</b>	<b>70</b>
	<b>Total</b>	<b>100</b>

<b>Appendix to Data Sheet</b>					
<b><u>(A) Relevant Experience of the firm for the assignment</u></b>					
<b>S No</b>	<b>Description of Item</b>	<b>Score</b>		<b>Minimum Qualifying Marks</b>	<b>Remarks</b>
1	Year of Establishment of the Firm	15 years and above	2	1	If the bidder is a JV only credentials of lead parties shall be considered
		10 years and above	1.5		
		5 years and above	1		
		<b>Max Marks</b>	<b>2</b>		
2	Experience in consultancy services of Elevated Road & Major Bridge Projects	15 years and above	2	1	If JV lead parties should have experience in minimum 2 projects
		10 years and above	1.5		
		5 years and above	1		
		<b>Max Marks</b>	<b>2</b>		
3	Average Annual Turn over (Last 3 years) from Consultancy Business	More than 05 Crores	3	1.5	If JV lead partner shall have minimum average annual turn over (last 3 years) from consultancy business of Rs.1 Crore against this criteria.
		03 to 05 Crores	2		
		01 to 03 Crores	1.5		
		<b>Max Marks</b>	<b>3</b>		

4	Experience as Design / DPR Consultant in Elevated road ( 2 (or) 4 Laning) with minimum 20 Km length during last 10 Financial years starting from FY2003 - 2004	6 or more Projects	10	7	In case of JV the lead partner should have executed minimum of 2 projects under this criteria
		5 Projects	9		
		4 Projects	8		
		3 Projects	7		
		<b>Max Marks</b>	<b>10</b>		
5	Experience related to Major Structures in DPR / Design Review (Major Structures are those having length of more than 500 meter)	More than or equal to 4 Projects	3	1.5	In case of JV the lead partner should have executed minimum of 2 projects under this criteria
		3 Projects	2		
		2 Projects	1.5		
		<b>Max Marks</b>	<b>3</b>		

**(B) The Quality of Methodology and Work Plan proposed**

S. No	Description of Item	Score	Minimum Qualifying	Remarks	
1	Quality of Approach and Methodology	Understanding of the project, issues and proposed approach to solve them	2	1	
		Approach for investigation, surveys, design reviews and authentication of drawings	2	1	
		Proposed plan for Elevated road, utility shifting method based on cost effective approach	2	1	
		<b>Max Marks</b>	<b>6</b>	<b>3</b>	
2	Comments and Suggestion on ToR	<b>Max Marks</b>	<b>2</b>	1	

3	Work Programme		2	1	
---	----------------	--	---	---	--

<b>(C) Qualification and Competence of the key Staff for the assignment</b>					
<b>S. No</b>	<b>Description of Item</b>	<b>Score</b>		<b>Minimum Qualifying Marks</b>	<b>Remarks</b>
1	Team Leader Cum Senior Bridge Design Engineer	a) Educational Qualification:-		15.5 (In addition to minimum qualifying mark of 15.5, the Candidate should be Post Graduate in Civil Engineering Should have minimum experience of 15 years and shall have minimum Experience in 2 Projects In DPR preparation or 4 projects in execution of Major Highway Projects	
		Post-Graduation in Structural Engineering	4		
		Bachelor in Civil Engineering	3.5		
		b) Professional Experience in Project Preparation and Construction Supervision / Execution:-			
		More than 20 years	5		
		More than 15 years	4		
		c)Involved in the preparation of DPR in similar capacity for Two/Four laning Elevated road Projects or Major Bridge Projects of value more than Rs.200 crores or length of elevated road greater than 20 Km.			
		More than or equal to 2 Projects	8		
		More than or equal to 4 Projects	9		
		More than or equal to 8 Projects	10		
		Additional mark in the case of permanent employee of the firm, satisfying the criteria under Para No.3.3 (v) of Section - 2	1		
		<b>Max Marks</b>	<b>20</b>		
2	Senior Highway Engineer	a) Educational Qualification:-		7.5	
		Post - Graduation in Highways/Transportation Engineering	4		
		Bachelor in Civil Engineering	3.5		
		b) Professional Experience in 4/6 lane highway projects designing for length more than 200 Km.			
		More than 20 years	3		
		More than 15 years	2		



		c) Involvement in Design of elevated road of 20K m length and above.	2		
		Additional mark in the case of permanent employee of the firm, satisfying the criteria under Para No.3.3 (v) of Section - 2	1		
		<b>Max Marks</b>	<b>10</b>		
3	Survey Engineer	a) Educational Qualification:-		5.0  (In addition to Minimum qualifying mark of 5.0, the Candidate should be Graduate in Civil Engineering and should have minimum experience of 10 years (or) Diploma in Civil /Survey Engineering and should have minimum experience of 15 years)	
		Graduation in Civil Engineering	3		
		Diploma in Civil Engineering	2.5		
		b) Experience in Survey works in Four laning / Six laning Highway road or Major Bridge Projects or elevated road			
		10 years and above	3		
		5 years and above	2.5		
		Additional mark in the case of permanent employee of the firm, satisfying the criteria under Para No.3.3 (v) of Section - 2	1		
		<b>Max Marks</b>	<b>7</b>		
4	Senior Pavement Specialist	a) Educational Qualification:-		8	
		Post-Graduation / specialization in Pavement design	4		
		Mere Graduation in Civil Engineering	3.5		
		b) Professional experience as Pavement design in major Highway Projects and major bridge projects / 2 or 4 laning of elevated road			
		More than or equal to 15 Years	5		
		More than or equal to 10 Years	4.5		

		Additional mark in the case of permanent employee of the firm, satisfying the criteria under Para No.3.3 (v) of Section – 2	1		
		<b>Max Marks</b>	<b>10</b>		

5	Quantity Survey Engineer cum Documentation Expert	a) Educational Qualification:-		5 (In addition to minimum qualifying mark of 5, the candidate should be a Graduate in Civil Engineering and should have minimum experience of 10 years (or) Diploma in Civil Engineering and should have minimum experience of 15 years)	
		Graduation in Civil Engineering	3		
		Diploma in Civil Engineering	2.5		
		b) Professional experience in similar capacity in 1 Elevated road project or 2 major bridge projects.			
		More than or equal to 10 Years	3		
		More than or equal to 5 Years	2.5		
		Additional mark in the case of permanent employee of the firm, satisfying the criteria under Para No.3.3 (v) of Section - 2	1		
		<b>Max Marks</b>	<b>7</b>		
6	Bridge Engineer	a) Educational Qualification:-		8.0	
		Post-Graduation in Structural Engineering	4		
		Mere Graduation in Civil Engineering	3.5		
		b) Professional experience in similar capacity in 1 Elevated Road or 2 Major Bridge Project			
		More than or equal to 10 Years	5		
		More than or equal to 5 Years	4.5		

		Additional mark in the case of permanent employee of the firm, satisfying the criteria under Para No.3.3 (v) of Section - 2	1		
		<b>Max Marks</b>	<b>10</b>		

7	Material cum Geo – Technical Engineer	a)Educational Qualification		4	
		Graduation in Civil Engineering	2		
		b) Professional experience in Environmental & Social Impact Assessment for Highways & Bridge Projects			
		More than or equal to 10 years	1.5		
		More than or equal to 5 years	1		
		c) Experience in Environmental & Social impact assessment of Roads in coastal zone			
		More than or equal to 2 projects	1.5		
		At least 1 project	1		
		Additional mark in the case of permanent employee of the firm, satisfying the criteria under para No 3.3 (v) of section 2	1		
		<b>Max Marks</b>	<b>6</b>		

S.No	Description	Marks
1	<b>Maximum Marks</b>	<b>100</b>
2	<b>Minimum Marks for getting Technically qualified</b>	<b>70</b>

7.5 Commencement of Assignment: The firm shall begin carrying out the services from the date to be intimated by TNRDC

**SECTION 3  
 FORMATS FOR SUBMISSION OF FIRMS CREDENTIALS**

The proposal should contain the following information in enclosed format attached at **Appendix A.**

Year of Establishment of Firm  
 Average annual turnover (last three financial years) from Consultancy Services.

S.No.	Particulars	2013-2014	2012-2013	2011-2012
I	Annual turnover from Consulting Services			

**APPENDIX A**

The following information related to the firm should be provided in the proposal.

1. Name of the work: **“Consultancy Services for the preparation of DPR for Construction of Elevated road from Taramani to Siruseri under Phase-I and Siruseri to Mahabalipuram under Phase-II along OMR, for a length of 45 Km, with the future provision for monorail/metro rail incorporated in the design”**
- i. Year of establishment of firm \*

Consultant	Year of Establishment	Country	Type of Organization			
			Individual	Partnership	Corporation	Other
Individual / Lead Partner (of <b>Joint Venture</b> )						

**NOTE:-** Year of Establishment of Lead Partner of Joint Venture shall be considered.

\*Copy of Certificate of incorporation shall be submitted.

- ii. Office/Business Address/Telephone nos./Cable Address.
- iii. Narrative description of firm (Not more than 2 sheets)
- iv. Name of two(2) principals who may be contacted with title and telephone number/fax number.
- v. Experience in Consultancy Services of Road & Bridge Projects. : .....years
- vi. Financial Statement of the last three years. \*\*

S.No.	Particulars	2013-2014	2012-2013	2011-2012
I	Annual turnover from Consulting business			
II	Total Assets			
III	Current Assets			

\*\*a) The amount shall be stated in INR.

b) Audited balance Sheet/ Auditor Certificate of last 3 years ( 2013-2014, 2012-2013 & 2011-2012) shall be submitted as evidence of Annual Turnover.

vii Experience as Design/DPR Consultant in elevated road (2/4 laning) with minimum 20 Km length during last 10 years

S. No	Projects Name / Year	Type of Services Rendered	Description of major elevated road Highway Projects including Length of Project (kms)	Client (with complete address contact person, telephone Nos. and Fax Nos.)	Fee in INR (Applicant's share in case of Joint Venture)	Approx. cost of major elevated road highway Project	Period
1	2	3		4	5	6	7

vii. Experience in DPR preparation of (4/6 Laning) Elevated road Projects (Minimum 20 Km length) or Major Highway Projects during last 10 years \* \* \*

S. No	Projects Name / Year	Type of Services Rendered	Length of Project (kms)	Client (with complete address contact person, telephone Nos. and Fax Nos.)	Fee in INR (Applicant's share in case of Joint Venture)	Period
1	2	3	4	5	6	7

\*\*\* a) Only those projects, to be included in the table which are Elevated road or Highways Projects

executed beyond 500m and for which clients certificates from the concerned authorities are enclosed with the proposal. Agreement copy with necessary certificate issued by Statutory Auditor will also be accepted.

- b) The details of bridges having length more than **500m** in the listed projects are to be specifically mentioned.
- c) In case the firm is claiming experience for a project which is completed as Joint Venture, 75% credit shall be considered if it was Lead Partner and 50% experience shall be considered if it is Joint Venture minor partner."

**SECTION 4**

**FORMAT FOR SUBMISSION OF TECHNICAL PROPOSAL**

<b>Appendix B-1</b>	Technical proposal submission form
<b>Appendix B-2</b>	Firm's comments and suggestions on the Terms of Reference
<b>Appendix B-3</b>	Approach paper on methodology and work plan for performing the assignment.
<b>Appendix B-4</b>	Composition of the Team and Task(s) of each Team Partner
<b>Appendix B-5</b>	Format for Curriculum vitae of proposed Professional staff.
<b>Appendix B-6</b>	Time schedule for deployment of Professional staff
<b>Appendix B-7</b>	Activity (works) schedule.
<b>Appendix B-8</b>	Format for Bid Security
<b>Appendix B-9</b>	Format for Power of attorney for Lead Partner of JV
<b>Appendix B-10</b>	Format for MoU
<b>Appendix B-11</b>	Format for Board Resolutions for Companies Format for Under Taking For Individual Partners

**APPENDIX B-1**

**TECHNICAL PROPOSAL SUBMISSION FORM**

FROM (Name of Firm)

-----  
-----  
-----  
-----  
-----  
-----

To:

**Chief General Manager**  
**Tamil Nadu Road Development Company Ltd.,**  
No.171, II Floor, Tamil Nadu Maritime Board  
Building, South Kesavaperumal Puram,  
Pasumpon Muthuramalingam Road, (Near  
Greenways Road MRTS Station),  
Raja Annamalai Puram, Chennai 600 028  
Phone: 91-44-2495 2800 / 3800,  
Fax: 91-44-2493 3800  
Email : [tenders@tnrdc.com](mailto:tenders@tnrdc.com)

Sir,

**Subject:** Submission of Technical and Financial Proposal for “**Consultancy services for the Preparation of Detailed Project Report (DPR) for Construction of Elevated Road from Taramani to Siruseri under Phase-I and from Siruseri to Mahabalipuram under Phase-II, for a length of 45Km along OMR, in Chennai, Tamil Nadu**”.

We, the undersigned, offer to provide the consulting services for the above in accordance with your Request for Proposal dated (Date), We are hereby submitting our Proposal, which includes the Technical Proposal and Financial Proposal sealed in two separate envelope for the above mentioned work.

If negotiations are held during the period of validity of the Proposal i.e. before (Date), we undertake to negotiate on the basis of the proposed staff. Our Proposal is binding upon us and subject to the modifications resulting from contract negotiations.

We understand you are not bound to accept any Proposal you receive

We remain,

Yours sincerely,

Managing Director/Head of the firm  
Name of the firm  
Address



**APPENDIX B-2 :**

**COMMENTS AND SUGGESTIONS OF CONSULTANTS ON THE TERMS OF REFERENCE**

(Not more than one page):

- 1.
- 2.
- 3.
- 4.
- ....

On the services and facilities to be provided by the Employer (not more than one page)

- 1.
- 2.
- 3.
- 4.
- ....

**APPENDIX B-3:**

**APPROACH PAPER ON METHODOLOGY AND WORK PLAN FOR PERFORMING THE  
ASSIGNMENT**

(Not more than six pages)

**APPENDIX B-4:**

**COMPOSITION OF THE TEAM PERSONNEL, AND TASK(S) OF EACH TEAM MEMBER**

**1. Key Personnel**

<b>Sl. No.</b>	<b>Name</b>	<b>Position</b>	<b>Task</b>
1			
2			
3			
4			
5			
6			
7			

**APPENDIX B-5:**

**FORMAT OF CURRICULUM VITAE (CV) FOR PROPOSED  
PROFESSIONAL STAFF**

Proposed Position : .....

Photograph

Name of Firm : .....

Name of Staff : .....

Profession : .....

Date of Birth :

Years with Firm/Entity: ..... Nationality: .....

Membership of Professional Societies: .....

Detailed Task Assigned : .....

**Key Qualifications :**

[Give an outline of staff member's experience and training most pertinent to tasks on assignment. Describe degree of responsibility held by staff member on relevant previous assignments and give dates and locations. Use about half a page.]

---

**Education:**

[Summarize college/university and other specialized education of staff member, giving their names, dates attended, and degrees obtained. Use about one quarter of a page.]

---

**Note:-**

- a) Personnel is to affix his recent photograph on first page of CV.
- b) Complete address and phone number of the Personnel is to be provided.
- c) Document for proof of age is to be enclosed.
- d) Document for proof of qualification is to be enclosed.
- e) Age of the personnel shall not be more than 65 years.
- f) Age of the personnel shall not be more than 65 years.

**Employment Record:**

[Starting with present position, list in reverse order every employment held. List all positions held by staff member since graduation, giving dates, name of employing organisations, titles of positions held, and locations of assignments. For experience in last ten years, also give types of activities performed and client references, where appropriate. Use about three- quarters of a page.]

**Languages:**

[For English language indicate proficiency : excellent, good, fair, or poor; in speaking, reading, and writing]

---

**Certification by the Candidate**

I, the undersigned, (Name and Address) certify that I have not left any assignment with the consultants engaged by TNRDC/GOTN for any continuing work of TNRDC / GOTN without completing my assignment. I will be available for the entire duration of the current project (Consultancy Services for the preparation of Detailed Project Report (DPR) for Construction of Elevated Road from Taramani to Siruseri under Phase-I and from Siruseri to Mahabalipuram under Phase-II, for a length of 45Km along OMR, in Chennai, Tamil Nadu) if I leave this assignment in the middle of the completion of the work, TNRDC would be at liberty to debar me from taking any assignment in any of the TNRDC works for an appropriate period of time to be decided by TNRDC . I have no objection if my services are extended by TNRDC for this work in future.

.....

Date : .....  
(Day/Month/Year)

**Certification by the firm**

The undersigned on behalf of -----( name of consulting firm) certify that Shri ----- (name of the proposed personnel and address) to the best of our knowledge has not left his assignment with any other consulting firm engaged by TNRDC /GOTN for the ongoing projects. We understand that if the information about leaving the past assignment is known to TNRDC, TNRDC would be at liberty to remove the personnel from the present assignment and debar him for an appropriate period to be decided by TNRDC.

.....

Date : .....  
(Day/Month/Year)

**[Signature of staff member or authorized representative of the Firm]**

**APPENDIX B-6:**

**TIME SCHEDULE FOR PROFESSIONAL PERSONNEL**

**A. Manning Schedule**

Sl. No	Name	Position	Weekwise Program (in form of Bar Chart) [1 <sup>st</sup> , 2 <sup>nd</sup> , etc. are weeks from the start of assignment]													Number of weeks
			1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup> and subsequent weeks		
1																Subtotal (1)
2																Subtotal (2)
3																Subtotal (3)
4																Subtotal (4)
-																-
-																-

**APPENDIX B-7:**

**ACTIVITY (WORKS) SCHEDULE**

**A. Activity Schedule**

Sl. No.	Item of Activity (Works)	Weekwise Program (in form of Bar Chart) [1 <sup>st</sup> , 2 <sup>nd</sup> , etc. are weeks from the start of assignment]											
		1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	6 <sup>th</sup>	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>
1	..... .....												
2	..... .....												
3	..... .....												
4	..... .....												
-	..... .....												
-	..... .....												

**B. Completion and submission of Reports**

S.No	Reports	Duration		No of sets to be submitted
		Phase – I	Phase II	
1	Inception Report	01 month from the date of commencement of services	02 months from the date of commencement of services	05
2	Preliminary Report	01 month from the date of commencement of services	02 months from the date of commencement of services	05
3	Draft DPR	02 months from the date of commencement of services	03 months from the date of commencement of services	05
4	Final DPR	02 months from the date of commencement of services	05 months from the date of commencement of services	10

**APPENDIX B- 8:**

**FORMAT FOR BID SECURITY**

**(To be issued by a Bank, as defined in this RFP)**

To

**Chief General Manager**

Tamil Nadu Road Development Company Ltd.,  
No.171, II Floor, Tamil Nadu Maritime Board Building,  
South Kesavaperumal Puram, Pasumpon Muthuramalingam Road,  
(Near Greenways Road MRTS Station),  
Raja Annamalai Puram, Chennai 600 028  
Phone: 91-44-2495 2800 / 3800,  
Fax: 91-44-2493 3800  
Email : [tenders@tnrdc.com](mailto:tenders@tnrdc.com)

1. In consideration of Tamil Nadu Road Development Company Ltd (hereinafter called "TNRDC" which expression shall include any entity which TNRDC may designate for the purpose) having agreed, inter alia, to consider the bid of [\*\*\*\*\*] (hereinafter referred to the "Bidder" which expression shall include their respective successors and assigns) which will be furnished in accordance with the terms of the Request for Proposals for the **"Consultancy services for the Preparation of Detailed Project Report (DPR) for Construction of Elevated Road from Taramani to Siruseri under Phase-I and from Siruseri to Mahabalipuram under Phase-II, for a length of 45Km along OMR, in Chennai, Tamil Nadu"** (hereinafter called the "RFP") in lieu of the Bidder being required to make a cash deposit, we [\*\*\*\*\*] [name of the Bank and address of the issuing branch], hereinafter called the "Bank" which expression shall include our successors and assigns, as to bind ourselves our successors and assigns do at the instance of the Bidder hereby unconditionally and irrevocably undertake to pay as primary obligor and not as surety only to TNRDC without any demur protest or demand and without any proof or condition the sum of **Rs.5,00,000/- (Rupees Five Lakhs Only)**
2. We, the Bank, do hereby unconditionally and irrevocably undertake to pay forthwith the amounts due and payable under this Guarantee without demur and on first demand and without any delay merely on a written demand from TNRDC or under the hand of any of the employee of TNRDC or any other person or entity duly authorised by TNRDC in this regard, stating that the amount claimed is due by reason of the occurrence of any of the events referred to in the RFP. Any such demand made on the Bank by TNRDC under the hand of any of the employee of TNRDC or any other person or entity duly authorised by TNRDC in this regard stating that the amount claimed is due by reason of the occurrence of any of the events referred to in the RFP. Any such demand on the bank by TNRDC under the hand of the employee of TNRDC or any other person or entity duly authorized by TNRDC in this regard shall be conclusive



as regards the amount due and payable by the Bank under this Guarantee. However, the Bank's liability under 'this Guarantee shall be restricted to an amount not exceeding **Rs.5,00,000/- (Rupees Five Lakhs Only)**. This Guarantee will remain in force for the period specified in paragraph 4 below and unless a demand or claim in writing is made by TNRDC on the Bank under this Guarantee, not later than **6 (six) months** from the date of expiry of this Guarantee, all rights of TNRDC under this Guarantee shall be forfeited and the Bank shall be relieved from its liabilities hereunder.

3. We, the Bank unconditionally undertake to pay to TNRDC any money so demanded under this Guarantee notwithstanding any dispute or disputes raised by the Bidder or any other party including in any suit or proceeding pending before any court or tribunal relating thereto or any instructions or purported instructions by the Bidder or any other party to the Bank not to pay or for any cause to withhold or defer payment to TNRDC under this Guarantee. The Bank's liability under this Guarantee is irrevocable, unconditional, absolute and unequivocal. The payment so made by the Bank under this Guarantee shall be a valid discharge of the bank's liability for payment hereunder and the Bidder shall have no claim against the Bank for making such payment.
4. We, the Bank further agree that the Guarantee herein contained shall remain in full force and effect upto and until 17:00 hours on the date which falls Sixty **(60)** days beyond the Proposal Validity period (180 days after the last date of submission) i.e. ....(hereinafter called "the End Date"). Unless a demand or claim under this Guarantee is made on the Bank by TNRDC or under the hand of any of the employee of TNRDC or any other person or entity duly authorised by TNRDC in this regard, in writing on or before the said End Date, the Bank shall be discharged from all liability under this Guarantee thereafter.
5. We, the Bank further agree with TNRDC, that TNRDC shall have the fullest liberty without the Bank's consent and without affecting in any manner the Bank's obligation hereunder to vary any of the terms and conditions of the RFP or to extend or postpone the time of performance by the Bidder or any other party from time to time or postpone for any time or from time any of the powers exercisable by TNRDC against the Bidder or any of them and to enforce or to forbear from enforcing any of the terms and conditions relating to the RFP and the Bank shall not be relieved from its liability by reason or any forbearance act or omission on the part of TNRDC, or any indulgence given by TNRDC to the Bidder or any other party or by any such matter or thing whatsoever which under the law relating to securities would, but for this provision, have the effect of so relieving the Bank.
6. To give full effect to the obligations herein contained, TNRDC shall be entitled to act against the Bank as primary obligor in respect of all claims subject of this Guarantee and it shall not be necessary for TNRDC to proceed against the Bidder or any other party before proceeding against the Bank under this Guarantee and the Guarantee herein contained shall be enforceable against the bank as principal obligor.
7. This Guarantee will not be discharged or affected in any way by the liquidation or winding up or dissolution or change of constitution or insolvency of any individual member of the Bidder or

any other party or any change in the legal constitution or insolvency of the Bidder or any other party or any change in the legal constitution of the Bank or TNRDC.

8. We, the bank lastly undertake not to revoke this Guarantee during its currency.
9. Notwithstanding anything contained herein.
  - a) Our liability under the Bank Guarantee shall not exceed Rs ...../- (Rupees .....Only)
  - b) The Bank Guarantee shall be valid upto [date] 20   .
  - c) Unless a demand in writing is made upon us on or before \_\_\_\_\_, [date] or any other extended date, all our liability under this guarantee shall cease.

IN WITNESS WHEREOF THE BANK HAS SET ITS HANDS HERETO ON THE DAY, MONTH AND YEAR MENTIONED HEREUNDER.

Signed and Delivered

On behalf of .....(Bank name)

(Signature)

(Date)

by the hand of Mr ..... (name of  
authorized signatory)

**Designation**

Note:

- a) Address of the controlling office of the issuing branch with phone number and fax number to be provided.
- b) Authenticated copy of Letter of Authority authorizing the signatory of this guarantee to execute the same to be enclosed herewith).

**APPENDIX B-9**

**FORMAT FOR POWER OF ATTORNEY FOR LEAD PARTNER OF JOINT VENTURE**

**POWER OF ATTORNEY**

**(On Non – judicial stamp paper of Rs 100 duly attested by notary public)**

Whereas **M/s Tamil Nadu Road Development Company Ltd. (TNRDC)** has invited proposals from the interested Bidders for rendering “**Consultancy services for the Preparation of Detailed Project Report (DPR) for Construction of Elevated Road from Taramani to Siruseri under Phase-I and from Siruseri to Mahabalipuram under Phase-II, for a length of 45Km along OMR, in Chennai, Tamil Nadu**” for a specified period. (Not less than 18 Months)

Whereas, M/s \_\_\_\_\_ and M/s \_\_\_\_\_ (the respective names of the Partners along with address of their registered offices) have formed a Joint Venture and are interested in bidding for the Consultancy Services Contract in accordance with the terms and conditions of the Request for Proposal (RFP), and other connected documents in respect of the Project, and

Whereas, it is necessary under the RFP for the Partners of the Joint Venture to designate one of them as the Lead Partner with all necessary power and authority to do for and on behalf of the Joint Venture, all acts, deeds and things as may be necessary in connection with the Joint Venture's bid for the Project.

**NOW THIS POWER OF ATTORNEY WITNESSETH THAT:**

We, M/s \_\_\_\_\_ (the respective name of the Partner, other than the Lead Partner, along with address of their registered offices) do hereby designate the other Partner of the Joint Venture, M/s \_\_\_\_\_ (name of the Lead Partner, along with address of the registered office), as the Lead Partner of the Joint Venture, to do on behalf of the Joint Venture, all or any of the acts, deed or things necessary or incidental to the Joint Venture's bid for the Project, including submission of Proposal, participating in pre-proposal conference, responding to queries, submission of information / documents and generally to represent the Joint Venture in all its dealings with TNRDC any other Government Agency or any person, in connection with Project until culmination of the process of bidding, execution of Consultancy Agreement and thereafter till the completion of Contract with TNRDC.

We hereby agree to ratify all acts, deeds and things lawfully done by the Lead Partner our said attorney pursuant to this Power of Attorney and agree that all acts, deeds and things done by our aforesaid attorney shall and shall always be deemed to have been done by the Joint Venture.

Dated this \_\_\_\_\_ day of \_\_\_\_\_ 201\_\_.  
[Executant(s)]

(To be signed by the other Partner in the Joint Venture other than the Lead Partner)

.....Contd

Accepted

Dated this \_\_\_\_\_ day of \_\_\_\_\_ 201\_\_

(To be signed by the Lead Partner)

Witness:

1. \_\_\_\_\_

2. \_\_\_\_\_

Note:-

- 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.
- Also wherever required, the executant(s) should submit for verification the extracts of the charter documents and documents such as resolutions/ Powers of attorney in favour of the persons executing this Power of attorney for the designation of power hereunder on behalf of the Bidder.

**APPENDIX B-10:**

**FORMAT FOR MEMORANDUM OF UNDERSTANDING (MoU)  
(On Non-Judicial stamp paper of Rs.100 duly attested by notary public)**

This Memorandum of Understanding (MoU) entered into this \_\_\_\_\_ day of \_\_\_\_ 201\_\_  
\_\_\_\_\_ at \_\_\_\_\_ Among \_\_\_\_\_ (Party of the First Part) hereinafter  
referred as “\_\_\_\_\_”) and having office at \_\_\_\_\_ (Party of the Second Part) and having  
office at \_\_\_\_\_.

The parties are individually referred to as Party and collectively as Parties.

WHEREAS Tamil Nadu Road Development Company Ltd. (TNRDC) has invited proposals from interested parties for “**Consultancy services for the Preparation of Detailed Project Report (DPR) for Construction of Elevated Road from Taramani to Siruseri under Phase-I and from Siruseri to Mahabalipuram under Phase-II, for a length of 45Km along OMR, in Chennai, Tamil Nadu**” for a period of 18 months.

AND WHEREAS the parties have discussed and mutually agreed for formation of a Joint Venture for bidding for the said project and have reached an understanding on the following points with respect to the Parties rights and obligations towards each other and their working relationship.

IT IS HEREBY AS MUTUAL UNDERSTANDING OF THE PARTIES AGREED AND DECLARED AS FOLLOWS:

- (1) That the Parties hereby form a Joint Venture for bidding for the project;
- (2) Joint Venture hereby state that the party of the First Part, M/s \_\_\_\_\_ is nominated as the ‘Lead Partner’ of this Joint Venture;
- (3) Lead Partner, M/s \_\_\_\_\_ is hereby authorized to exercise all the obligations related to this Bidding which includes, but not limited to, submit the Bid, involve in the evaluation, negotiate, accept and execute the Agreement, in case the Bid is accepted;
- (4) Lead Partner, M/s \_\_\_\_\_ and the other Partner, M/s \_\_\_\_\_ are hereby jointly declared that this is only a Sole Joint Venture in which the either parties applying for this project; and other than this proposal, the either parties are not a Partner of any other Joint Venture applying for this project;
- (5) That M/s \_\_\_\_\_ who is the Lead Partner of the Joint Venture, commits to hold a Minimum credentials, which is specified in the RFP Document as Technical Criteria for qualification for Lead Partner, during the entire Currency of the Consultancy Agreement;
- (6) Whereas, that Partner other than Lead Partner M/s \_\_\_\_\_, commits to hold a Minimum credentials, which is specified in the RFP Document as Technical Criteria for qualification for other Partner, during the entire Currency of the Consultancy Agreement;

(7) That the roles and the responsibilities of each party at each stage of the Bidding & execution shall be as follows:-

(i) Bidding Stage

(a) For Lead Partner

.....  
.....  
.....

(b) For other than Lead Partner

.....  
.....  
.....

(ii) During Execution Stage

(a) For Lead Partner

.....  
.....  
.....

(b) For other than Lead Partner

.....  
.....  
.....  
.....

(8) That the parties shall be jointly and severally liable for the Consultancy Services in accordance with the terms of the RFP Document;

(9) That the Parties of firm that they shall render the Services in good faith and shall take all necessary steps to see the Project through expeditiously. They shall not negotiate with any other party for this project;

(10) That this MoU shall be governed in accordance with the laws of India and Courts in Chennai shall have exclusive jurisdiction to adjudicate disputes arising from the terms herein;

In witness where of the Parties of firm that the information provided is accurate and true and have caused this MoU to be duly executed on the date and year above mentioned.

\_\_\_\_\_  
(Party on the first Part)

\_\_\_\_\_  
(Party on the Second Part)

Witness:

1. \_\_\_\_\_

2. \_\_\_\_\_

**APPENDIX B-11:**

**FORMAT FOR BOARD RESOLUTION FOR COMPANIES**

**Format for Lead Partner**

**“RESOLVED THAT** approval of the Board be and is hereby granted to the Company to join the Joint Venture with \_\_\_\_\_, (name and address of the Partner other than Lead Partner) for joint submission of bids to TNRDC for **“Consultancy services for the Preparation of Detailed Project Report (DPR) for Construction of Elevated Road from Taramani to Siruseri under Phase-I and from Siruseri to Mahabalipuram under Phase-II, for a length of 45Km along OMR, in Chennai, Tamil Nadu”**.

**“RESOLVED FURTHER THAT** the “draft” Memorandum of Understanding (“MoU) to be entered into with the Joint Venture partners (a copy whereof duly initialled by the Chairman is tabled in the meeting) be and is hereby approved.”

**“RESOLVED FURTHER THAT** Mr. \_\_\_\_\_(name), \_\_\_\_\_(designation) be and is hereby authorised to enter into a MoU, on behalf of the company, with the Joint Venture Partners, to accept the Power of Attorney granted by the other Partners of the Joint Venture to act for and on behalf of the Joint Venture and to sign the bidding documents on behalf of the Joint Venture for submission of the bidding documents .”

**“RESOLVED FURTHER THAT** a Power of Attorney be granted in favour of Mr. \_\_\_\_\_ to exercise signing powers on behalf of the Company as Lead Partner of the Joint Venture and to do all such acts and things as may be necessary in connection with the bidding process.”

**Format for other Partner**

**“RESOLVED THAT** approval of the Board be and is hereby granted to the Company to join the Joint Venture with \_\_\_\_\_ (name and address of the Lead Partner) for joint submission of bids to TNRDC for **“Consultancy services for the Preparation of Detailed Project Report (DPR) for Construction of Elevated Road from Taramani to Siruseri under Phase-I and from Siruseri to Mahabalipuram under Phase-II, for a length of 45Km along OMR, in Chennai, Tamil Nadu”**.

**“RESOLVED FURTHER THAT** the “draft” Memorandum of Understanding (MoU) to be entered into with the Joint Venture partners (a copy whereof duly initialled by the Chairman is tabled in the meeting) be and is hereby approved.”

**“RESOLVED FURTHER THAT** Mr. \_\_\_\_\_ (name), \_\_\_\_\_ (designation) be and is hereby authorised to enter into a MoU with the Joint Venture Partners and execute a Power of Attorney in favour of \_\_\_\_\_ to act as the Lead Partner”



## FORMAT FOR UNDERTAKING OF INDIVIDUAL PARTNERS

**On the Letter head of the Individual (In case the Partner is not a Company or where the Bidder is not a Company)**

### Format for Lead Partner

I/We \_\_\_\_\_ hereby agree to join the Joint Venture with \_\_\_\_\_ (name and address of the Partner other than Lead Partner) for joint submission of bids to TNRDC for **“Consultancy services for the Preparation of Detailed Project Report (DPR) for Construction of Elevated Road from Taramani to Siruseri under Phase-I and from Siruseri to Mahabalipuram under Phase-II, for a length of 45Km along OMR, in Chennai, Tamil Nadu”**

I /We also approve the Memorandum of Understanding (MoU) to be entered into with the Joint Venture partners.

I/We also authorise Mr. \_\_\_\_\_ (name), \_\_\_\_\_ (designation) to enter into a MoU with the Joint Venture Partner, to accept the Power of Attorney granted by the other Partner of the Joint Venture to act for and on behalf of the Joint Venture and to sign the bidding documents on behalf of the Joint Venture for submission of the bidding documents.

### Format for Partners

I/We \_\_\_\_\_ hereby agree to join the Joint Venture with \_\_\_\_\_ (name and address of the Lead Joint Venture Partner) for joint submission of bids to TNRDC for **“Consultancy services for the Preparation of Detailed Project Report (DPR) for Construction of Elevated Road from Taramani to Siruseri under Phase-I and from Siruseri to Mahabalipuram under Phase-II, for a length of 45Km along OMR, in Chennai, Tamil Nadu”** (location of project)”

I /We also approve the Memorandum of Understanding (MoU) to be entered into with the Joint Venture partners

I/We also authorise Mr. \_\_\_\_\_ (name), \_\_\_\_\_ (designation) to enter into a MoU with the Joint Venture Partner, and execute a Power of Attorney in favour of \_\_\_\_\_ to act as the Lead Partner

*Each applicant will have to attach its Board Resolution/ Undertaking as the case may be, approving the participation in the Joint Venture, bidding for the Project and authorizing a company official to sign the bidding documents / Power of Attorney to the Lead Partner.*

## **SECTION 5: FORMAT FOR SUBMISSION OF FINANCIAL PROPOSAL**

**Appendix C-1** Financial proposal submission form

**Appendix C-2** Summary of costs

**Appendix C-3** Breakdown of local currency costs

**APPENDIX C-1:**

**FINANCIAL PROPOSAL SUBMISSION FORM**

From:

-----  
 -----  
 -----  
 -----  
 -----  
 -----

To:

Chief General Manager  
 Tamil Nadu Road Development Company Ltd.,  
 No.171, II Floor, Tamil Nadu Maritime Board  
 Building, South Kesavaperumal Puram,  
 Pasumpon Muthuramalingam Road, (Near  
 Greenways Road MRTS Station),  
 Raja Annamalai Puram, Chennai 600 028  
 Phone: 91-44-2495 2800 / 3800

**Sub:** Consultancy services for the Preparation of Detailed Project Report for Construction of Elevated Road from Taramani to Siruseri under Phase-I and from Siruseri to Mahabalipuram under Phase-II, for a length of 45Km along OMR, in Chennai, Tamil Nadu-Reg.

We, the undersigned, offer to provide Consultancy Services for the above Project in accordance with your Request for Proposal dated [Date]. Our attached financial proposal is for a sum of **Rs** [Amount in words and figures]. Our financial proposal is inclusive of all applicable taxes except applicable Service Tax, which will be reimbursed by you on production of proof of payment by us.

Our financial proposal shall be binding upon us subject to the modifications, if any resulting from any contract negotiations, up to the expiration of the validity period of the proposal, i.e., [Date].

We undertake that, in competing for (and, if the award is made to us, in executing) the above contract, we will strictly observe the laws against fraud and corruption in force in India namely "Prevention of Corruption Act 1988".

Commission and gratuities, if any, paid or to be paid by us to agents relating to this proposal and contract execution, if we are awarded the contract, are listed below:

Name and Address of Agents	Amount	Purpose of Commission or Gratuity
.....	.....	
.....		
.....	.....	

We understand and hereby confirm that you are not bound to accept any proposal you receive for the above.

We remain,  
 Yours sincerely,  
 Managing Director/Head of the firm  
 Name of the firm  
 Address

**APPENDIX C-2: Financial Proposal**

**SUMMARY OF COSTS**

<b>No.</b>	<b>Description</b>	<b>Amount in Rs</b>
I	Remuneration for Professional Staff	
II	Remuneration for Sub Professional Staff	
III	Remuneration for Support Staff	
IV	Transportation	
V	Office Rent	
VI	Office Supplies, Utilities and Communication	
VII	Office Furniture and Equipment	
VIII	Reports and Document Printing	
IX	<b>Provision for Investigations and Engineering Surveys</b>	
	<b>Sub Total</b>	
	<b>Service Tax @ :</b>	
	<b>Grand Total</b>	

Note: Payments will be made as per stipulations of the Conditions of Contract.

**APPENDIX C-3:  
 BREAKDOWN OF COSTS**

**I. Remuneration for Professional Staff**

No	Position	Name	Rate	No. of man-months	Amount
1	Team Leader cum Senior Bridge Design Engineer			18	
2	Senior Highway Engineer			12	
3	Bridge Engineer			12	
4	Senior Pavement Specialist			06	
5	Material Engineer cum Geo-technical Engineer			06	
6	Quantity Survey Engineer cum Documentation Expert			10	
7	Survey Engineer			06	
<b>Total</b>					

**Note :** All necessary inputs of manpower such as field technical staff, office staff other than the above as deemed necessary shall be provided by consultants within the quoted price to ensure that the entire work is completed in accordance with the TOR within stipulated time frame.

**II. Remuneration for Sub Professional Staff**

No	Position	Name	Staff Months	Billing Rate (Rs)	Amount (Rs)
1	CAD Engineer		06		
2	Environmental Engineer		06		
3	Transportation Planner		03		

4	Transport Economist		01		
<b>Total :</b>					

### **III Support Staff**

No	Position	Name	Staff Months	Billing Rate (Rs)	Amount (Rs)
1	Accountant ( 1 no)		18		
2	Cashier (1 no)		18		
3	Steno ( 1 no)		18		
4	Computer Operator ( 1 no)		18		
5	Guard ( 2 no )		2 x 18 = 36		
6	Office Boy (1 no)		18		
<b>Total :</b>					

### **IV. Transportation (Fixed rate on rental basis)**

The vehicles provided by the Consultants shall include the cost for rental, drivers, repairs, insurance, etc. an indicative distance run by each vehicle per month is 3000 km, but it may vary, for which no extra payment will be made.

No	Description of Vehicles	Qty. (No. of vehicle – month)	Rate / Vehicle – Month	Amount (Rs)
1	Innova / Scorpio or equivalent for Key Personnel	2*18 = 36		
<b>Total :</b>				

**V. Office Rent (Fixed Costs) – Minimum 200 sqm area of office shall be rented.**

The rent cost includes electricity and water charges, maintenance, cleaning, repairs, etc. complete.

No of Months	Rate / Month	Amount (Rs)
18		

**VI. Office Supplies, Utilities and Communication (Fixed Costs)**

S.No	Item	Months	Monthly Rate (Rs)	Amount in Rs.
1	Office supplies	18		
2	Drafting Supplies	18		
3	Computer Running Costs	18		
4	Domestic and International Communication	18		

**VII. Office Furniture and Equipment (Rental)**

(Brand new Furniture and Equipment shall be mandatory at the time of commencement of services)

No	Description	Unit	Qty	Rate / Month/ unit (Rs.)	Period in Months	Amount (Rs.)
	<b>Office Furniture (Rental/Hire)</b>					
1	Executive Table (Godrej make, model No. T-108 or equivalent)	each	1		18	
2	Executive Chairs (Godrej make, model No. PCH-701 or equivalent)	each	2		18	
3	Tables (Godrej make, model No. T-104 Or equivalent)	each	5		18	
4	Ordinary Chairs Type-1 (Godrej make, model No T-CHR –6 or equivalent)	each	4		18	
5	Steel Almirah 1980mm x 915mm x 485mm (Godrej make, model No. 1 Storewell plain or equivalent)	each	1		18	
6	Steel Almirah 1270mm x 765mm x 440mm	each	1		18	

	(Godrej make, model minor plain or equivalent)					
7	Steel Cash Chest of size 1.5' x 1.5' (450 mm x 450 mm) (approx.) (Godrej make, or equivalent)	each	1		18	
8	Drawer filling cabinet with visa file suspension system (Godrej make, or equivalent)	each	1		18	
9	Visitors chairs/Conference room chairs (Godrej make, model No. DCH7004 or Equivalent)	each	4		18	
10	Tables for computers with 3 drawers, key board/mouse pull out trays size 1664mm x 900 (Godrej make. Or Equivalent as per Engineer's design)	each	2		18	
11	Printer desks (Godrej make or equivalent)	each	2		18	
12	Side tables (Godrej make or equivalent)	each	2		18	
	<b>Office Equipment (Rental/Hire with Consumables)</b>					
1	Telephone with PABX facilities (2 external lines & 10 internal lines)	each	2		18	
2	Photocopier	each	1		18	
3	Fax	each	1		18	
4	Air-Conditioner (1.5 Ton)	each	2		18	
5	Computer PC (state of the art)	each	2		18	
6	Laser Jet Printers	each	1		18	
7	Ink Jet Printers	each	1		18	
8	Binding Machine	each	1		18	
<b>Total</b>						

### VIII Reports and Document Printing

No	Description	No of Reports	No. of Copies per Report	Total Nos. of copies	Rate per Copy (Rs)	Amount (Rs)
1	Monthly reports (Design and Construction)	06	4	24		



2	Quarterly Reports	02	4	8		
					Total (Rs)	

**IX. A. Provision for Investigations and Engineering Surveys  
 Taramani to Siruseri (Phase-I)**

No	Description	Unit	Quantity *	Rate (Rs)	Amount (Rs)
1	Topographic Survey	Km	25		
2	Reconnaissance, Elevated Road and Bridge Inventory	Km	25		
3	BBD for Pavement Evaluation	Km	20		
4	Sub grade/soil Investigation	Nos.	20		
5	Traffic Surveys	Nos	3		
6	Sub-Soil Investigations	LS			
7	Utility Mapping	Kms	25		
8	Material Survey	LS			
9	Identification of lands with survey numbers in each village and area	Kms	25		
<b>Total A</b>					

**B. Improvement to Junctions – 7 nos**

No	Description	Unit	Quantity *	Rate	Amount
1	Surveys & Investigation	LS	25km		
<b>Total B</b>					

\* Adequacy of Investigations and Engineering Surveys shall be assessed by the Consultants

**C. Siruseri to Mahabalipuram – Phase - II**

No	Description	Unit	Quantity *	Rate (Rs)	Amount (Rs)
1	Topographic Survey	Km	25		
2	Reconnaissance, Elevated Road and Bridge Inventory	Km	25		
3	BBD for Pavement Evaluation	Km	25		
4	Sub grade/soil Investigation	Nos.	25		
5	Traffic Surveys	Nos	3		
6	Sub-Soil Investigations	LS			
7	Utility Mapping	Kms	25		
8	Material Survey	LS			
9	Identification of lands with survey numbers in each village and area	Kms	25		
<b>Total C</b>					

**D. Improvement to Junctions – 7 nos**

No	Description	Unit	Quantity *	Rate	Amount
1	Surveys & Investigation	LS	25km		
<b>Total B</b>					

\* Adequacy of Investigations and Engineering Surveys shall be assessed by the Consultants

## **SECTION 6:**

### **TERMS OF REFERENCE (TOR)**

#### **1. Project Conception**

The Old Mahabalipuram Road (OMR), popularly known as Rajiv Gandhi Salai (IT Corridor) from Madhya Kailash Junction to Siruseri, which is a toll road, is experiencing traffic congestion due to enormous growth in employment at IT Companies and other commercial and major institutional development that has taken place along the Corridor. This has resulted in considerable increase in travel time for the road users. There are not only heavy traffic congestions along the Corridor but also most of the intersections have reached either saturation or exceeded saturation limit. Consequently the present Level of Service is lower than what Toll Road could provide. Also the huge residential area development coupled with Special Economic Zone is sprawling beyond Taramani. These on-going and contemplated developments are likely to have huge impact on traffic flow along the OMR. Furthermore, limited availability of Right of Way along the OMR restricts highway capacity expansion through road widening unless considerable land is acquired, which is prohibitively not only expensive but also time consuming. Therefore elevated highway corridor that will have provision for future multi-modal transport such as monorail and or Metro is conceived to be the right solution to ease out the traffic problems of OMR, which in turn is expected to contribute to the growth of Tamil Nadu economy at large.

In response to Public representation, The Honorable Chief Minister of Tamil Nadu has announced, under Rule 110, for the construction of elevated highway corridor from Taramani to Siruseri under Phase-I and from Siruseri to Mahabalipuram under Phase-II, for a total length of 45Km, along OMR.

The Government of Tamil Nadu has entrusted TNRDC to undertake this proposed development of elevated highway corridor. TNRDC in turn is now seeking technical assistance from a reputed, well qualified and experienced Consultancy firm with proven expertise to implement this prestigious project in time bound manner.

#### **2. Objectives**

The overall objective of the Consultancy assignment is to assist TNRDC to implement the project, which is aimed to alleviate congestion and provide unhindered travel along the OMR that will contribute to savings in travel time, vehicle operating cost, improve road safety and minimize carbon emissions resulting in overall economic growth of Tamil Nadu.

The specific objective, however, is to prepare Detailed Project Report that will demonstrate the bankable feasibility of the project from traffic, technical, economic, social, environmental and financial angles leading to preparation of detailed engineering design, tender documentation and project procurement plan. Also the assignment is expected to provide the required technical services to TNRDC in project implementation and contract execution during construction of the elevated highway corridor.

### **3. Stages of Consultancy Assignment**

The consultancy assignment is designed in **Four Stages**:

- Stage I:** Feasibility Study
- Stage-II:** Detailed Project Report
- Stage-III:** Detailed Engineering Design and Tender Documentation
- Stage-IV:** Project Implementation Advisory Services

### **4. Scope of services:**

The broad scope of work encompasses the following:

**Stage-I: Feasibility Study**

The aim of the feasibility study is to prepare a bankable report relating to technical, economic, social, environmental and financial appraisal of the proposed development of elevated highway corridor between Taramani and Mahabalipuram. The feasibility study should evaluate if there is any need to propose alternate alignment with clear justifications, particularly in light of the existing bridge and toll plaza. While studying the alignment, the Consultant should examine the Master Plan and Comprehensive Transport Plan prepared by the Chennai Metropolitan Development Authority in order to integrate the alignment with future transport network development. In this regard, special attention shall be given to the possibility of developing monorail and or metro along the Corridor. Another aspect that requires special consideration is to propose multi-level grade separators at intersections where multi-modal development will have impact on the traffic flow along the Corridor, keeping in view the adjacent land use. At the feasibility stage traffic and transport planning shall assume significance. Therefore, all required traffic and travel surveys shall be carried out to establish the base year traffic flow characteristics. Based on the flow pattern and socio-economic conditions, future traffic demand shall be estimated by using appropriate transport demand models. Similarly, various engineering surveys will have to be conducted to generate all required design values for engineering design. It may be noted that the detailing of engineering design should be sufficient enough to arrive at block cost estimate of the project to the extent of 10% variation in accuracy. The environmental impact assessment should be conducted in such a way that TNRDC could obtain EIA clearance from the respective organisations of the State and National Governments. Using VOC sub-model of HDM-IV economic evaluation should be carried out. The financial analysis should not only establish the financial feasibility but also the most optimal funding mechanism. While evaluating the economic and financial feasibility, the impact of competing corridor of ECR should be kept in view as there is a proposal to widen the road from 2-lane to 4-lane in future, which might reduce the through traffic potential of the proposed elevated highway up to Mahabalipuram.

- Stage-II: **Detailed Project Report**  
The DPR will contain results of all the surveys envisaged and corresponding changes to the design, cost and consequent revision to the feasibility assessment in a conclusive manner. Thus DPR is a comprehensive document in all respect based on which the next stage of detailed engineering design and tender documentation shall be carried out. The DPR should address the proposed development of monorail and or metro in a comprehensive manner illustrating the prevalent configure elsewhere in the World so that a decision could be taken on how to integrate these multi-modal developments in the elevated highway corridor design. More specifically merits and demerits of different multi-modal integration in relation to various options should be prepared. Furthermore, DPR will also contain project implementation mechanism, time schedules and proposed tendering procedure under project procurement plan, which shall also include proposals for contract packages. Whilst the feasibility focuses on the feasibility of the project, DPR shall be comprehensive and conclusive in all respect.
- Stage-III: **Detailed Engineering Design and Tender Documentation**  
On approval of the DPR, the Consultant will conduct detailed engineering design of all aspects of the project as per relevant design code of practice as applicable in India and adopt international design standards if necessary. Although the design should cater to the requirement of elevated corridor, the possible expansion for accommodating monorail and or metro should be kept in view. In this regard, the Consultant should prepare a specific proposal of design standards well in advance for the review of TNRDC. The detailed engineering drawings will be prepared for all geometric, both horizontal and vertical of the elevated highway. The detailing of all geometric and structural drawings including drainage and utilities shall be prepared as “Good-For-Construction (GFC)”. It should be noted that proposals for drainage and utility shall be integrated with the existing facilities and if necessary should make appropriate recommendations for capacity augmentation.
- The tender documents should follow FIDIC conditions of contract in order to adopt international tendering. For each of the contract packages identified, detailed Bill of Quantities along with appropriate schedules shall be prepared with cost estimate at prevalent market prices.
- Stage-IV: **Project Implementation Advisory Services**  
The Consultant shall prepare draft NIT, RFQ and contract evaluating procedure with clear matrices showing evaluation criteria for selection of a successful contractor for each package. In addition, the Consultant should provide technical services for obtaining mandatory approvals/clearances from respective Government organisations for implementing the project. The Consultant should provide any clarifications sought on technical matters up to award of contract. If desired, the Consultant should also participate in all the meetings along

with representatives/ TNRDC officials to render technical advisory services.

The detailed stages of assignment are elaborated further in detail for accomplishing the above stages tasks that are detailed below:

#### 4.1 Primary Tasks

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

Review of all available reports and published information about the project road and the project influence area;

- (i) Environmental and social impact assessment, including such as related to cultural properties, natural habitats, involuntary resettlement etc.
- a) Public consultation, including consultation with Communities located along the road, NGOs working in the area, other stake-holders and relevant Govt. departments 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;**  
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;
- iv traffic studies including traffic surveys and Axle load survey and demand forecasting for next thirty years;
- v. inventory and condition surveys for road;
- vi. inventory and condition surveys for bridges, cross-drainage structures and drainage provisions;
- vii. detailed topographic surveys using Total Stations and GPS;
- vii. pavement investigations;
- ix. 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;
- x. identification of sources of construction materials;
- xi. detailed design of road, its x-sections, horizontal and vertical alignment and design of embankment of height more than 6m and also in poor granular soil conditions and where density consideration require, even lesser height embankment. Detailed design of Elevated Road Structure preparation of GAD and construction drawings and cross-drainage structures including rehabilitation of existing bridge at Karapakkam and underpasses etc.

- xii. identification of the type and the design of intersections;
  - xii. design of complete drainage system and disposal point for storm water
  - xiv. value analysis / value engineering and project costing;
  - xv. economic and financial analyses;
  - xvi. contract packaging and implementation schedule.
  - xvii 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;
  - xviii financial viability of project and financing options for funding the project cost.
  - xix 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
  - xx Design of toll plaza and identification of their numbers and location and office cum residential complex including working drawings
  - xxi. Design of weighing stations, parking areas and rest areas.
  - xxii. Any other user oriented facility enroute toll facility.
  - xxiii. Tie-in of on-going/sanctioned works of State Highways/other agencies.
- 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 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 MORTH 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 TNRDC 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.

**4.5 Not Used**

#### **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 TNRDC 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 TNRDC 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. details of sanctioned / on-going works on the stretch sanctioned by TNRDC, TN State Highways/ 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.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.)

Environmental setting and social baseline of the project.



#### 4.8. Social Analysis

The social analysis study shall be carried out in accordance with the Tamil Nadu State Highways/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.

S.No.	Description	Number of Survey Stations per 100 km
1.	Classified Traffic Volume Count	3
2.	Origin-Destination and Commodity Movement Characteristics	Minimum of 2 per 200 km.
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 TNRDC 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 TNRDC.

##### 4.9.2. Classified Traffic Volume Count Survey

1. 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	

2. 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.
3. 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

1. The Consultants shall carry out 1-day (24 hour, both directions) O-D and Commodity Movement Surveys at locations finalised in consultation with TNRDC. 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.
2. 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.
3. 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 finalised in consultation with TNRDC 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 TNRDC. 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.
3. 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.
4. 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).

5. The Consultant shall ascertain from local enquiries about the exceptional live loads that have used the highway in the past in order to assess the suitability of existing bridges to carry such loads.

#### **4.9.6. Speed-Delay Surveys**

Speed studies are not envisaged for the project. However, 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.

#### **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.

#### **4.9.8.1 IT Companies Omni Bus 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 IT Companies Omni Bus terminals at suitable locations en-route.

#### **4.9.9. Toll Rate Surveys**

1. The consultants shall carry out Stated Preference surveys along the project road route to estimate the acceptable user fee levels for the different vehicle categories. The questionnaire to be used to record the response by trained staff should be properly structured so as to avoid ambiguities. The scenarios in the questionnaire should represent the current speed, vehicle operating costs (VOC) and travel time levels and the probable effect on them due to traffic growth for both “do-minimum” (i.e. no improvement and widening) and “with project” (i.e. improvement and widening implemented) cases. The findings of these surveys shall be compared with the user fees being collected for the on-going projects in the country. As the sample sizes for these surveys are generally low as compared to other interviews, the sample should be selected judiciously.
2. In case a model is proposed to be used for the analysis of toll rates, the details of model calibration along with the appreciation of the statistical data and their relevance shall be clearly established.
3. The detailed toll analysis should take into account traffic diversion rates and willingness/ability to pay. The analysis should bring out an appropriate toll structure and the mechanisms for toll increases.
4. The analysis should be carried out with the user fee levels linked to

various benefits to the users. The proposed methodology for data collection and analysis should be finalised in consultation with TNRDC.

#### **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 4-laning of the project road sections covered under this TOR would be completed and opened to traffic in 2005. The traffic demand estimates shall be done for the period, 2001-2030. 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.
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. topographical features of the area;
    - ii. typical physical features along the existing alignment within and outside ROW i.e. land use pattern;
    - iii. possible alignment alternatives, vis-a-vis, scheme for the construction of additional lanes parallel to the existing road;
    - iv. realignment requirements including the provision of bypasses, Interchanges / Flyovers and via-duct for pedestrian crossings with possible alignment alternatives;
    - v. preliminary identification of improvement requirements including treatments and measures needed for the cross-roads;
    - vi. traffic pattern and preliminary identification of traffic homogenous links;
    - vii. sections through congested areas;
    - viii. inventory of major aspects including land width, terrain, pavement type, carriageway type, bridges and structures (type, size and location), intersections (type, cross-road category, location) urban areas (location, extent), geologically sensitive areas, environmental features:
      - ix. critical areas requiring detailed investigations; and,
      - x. requirements for carrying out supplementary investigations.
      - xi. soil (textural classifications) and drainage conditions
      - xii. type and extent of existing utility services along the alignment (within ROW).
  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 TNRDC'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. Total stations. 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 responsive for any inaccuracy in surveys.
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 take 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 TNRDC. 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, in case 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.

#### 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,
  - ix. height of embankment or depth of cut @ every 200m and every change of feature whichever is earlier.
  - x. land width i.e. ROW
  - xi. culverts, bridges and other structures (type, size, span arrangement and location)
  - xii. Roadside arboriculture
  - xiii. Existing utility services on either side within ROW.
  - xiv. General drainage conditions  
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 MS-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**

cracking (narrow and wide cracking), % of pavement area affected;

ravelling, % of pavement area affected;

potholing, % of pavement area affected;

edge break, length (m); and,

rut depth, mm

###### **Shoulder**

Paved: Same as for pavement

Upaved: material loss, rut depth and corrugation,

Edge drop, mm.

###### **Embankment**

general condition; and

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 200m could be considered as representative sample for each one km. of road and incase 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:

mainline testing; and,  
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 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 TNRDC 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 TNRDC. 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 TNRDC. The testing scheme is, therefore, proposed as given under:
  - i. For the widening (4- or 6- 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 (un-soak and 4-day soaked 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 TNRDC officers after the problematic soil types are identified along the road sections.

#### 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, culverts, etc.) along the road under the project. The inventory for the bridges, viaducts 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 less than 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 taking up load testing of bridges. Road closure with one way traffic on the other carriageway of the road for testing if unavoidable shall be arranged by TNRDC 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

1. The Consultants shall carry out geo-technical investigations and sub-surface explorations for the proposed 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.	<i>Over all length = 30 – 60 m</i>	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.

2. The deviation(s), if any, by the Consultants from the scheme presented above should be got approved by TNRDC.
3. 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 TNRDC officers.
4. Sub-soil investigations will be done as per IRC 78-2000.
5. The scheme for the borings locations and the depth of boring shall be prepared by the Consultants and submitted to TNRDC for approval. These may be finalised in consultation with TNRDC.
6. **The sub-soil exploration and testing should be carried out through the Geo-technical Consultants empanelled by the MORT&H.** The soil testing reports shall be in the format prescribed in relevant IRC Codes.
7. 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

1. 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 MORT&H specification.

#### **4.12 Detailed Design of Road and Pavements, Bridges, 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. *Elevated Road Structure, with provision for multi modal transport system like metro rail / mono rail , multi-level grade separator, viaduct /subways and structures including bridges etc.;*
  - iv. *at-grade and grade-separated intersections, interchanges (if required);*
  - 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-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.).*
  - xiv. *Median separation and other safety features*
2. The new improved elevated highway with side roads shall be a partially access controlled highway and the design should be prepared accordingly.
3. In the Phase II section wherever feasible within the constraints of the available land, symmetrical widening of the existing carriageway shall be avoided and the required widening shall be achieved by adding an independent additional two-lane formation and carriageway alongside of the existing one.



#### 4.12.2. Design Standards

1. The Consultants shall evolve Design Standards and material specifications for the Study primarily based on IRC publications, MORTH Circulars and relevant recommendations of the international standards (American, Australian, British, Canadian, and Japanese) for approval by TNRDC.
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 project is to be developed as a partially access controlled highway facility with appropriate measures to provide access to all having access at the present. 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. *Elevated Road structure*
  - vi. *bypasses; and,*
  - vii. *service roads.*
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.
7. In the case of closely spaced cross roads the Consultant shall examine different options such as, providing multi-level grade separated structure for some of them with a view to reduce number of at-grade crossings, and at grade elevated 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 bye-pass option identified around congested town en-route.  
The consultant shall evolve suitable proposals for improving the curved stretches and junctions. The details of which are furnished in **Enclosure C**. The road runs in aggressive marine environment hence CRZ regulations shall be taken in to consideration.
  12. **Specific emphasis on the Elevated Road Design**  
The design for the elevated road structure shall reflect the significance and importance of this project and hence shall include an aesthetic architecturally pleasing structure. This shall have future monorail/metro rail provisions in the design, suitable lane type has to suggested, with central median(if needed), access and exit ramps to service road wherever required, draining arrangements including accommodating man holes, provision for electric cable duct, lighting arrangements, crash barrier at the ends. Requirement of footpaths, rotaries /exit and entry ramps at junctions shall also be examined. Actual width of each element should be based on traffic volume and other functional requirements. The following are to be given:
    - i. Overall length of the Elevated Road
    - ii. Width of Elevated Road Carriageway
    - iii. Type of foundation
    - iv. Type of superstructure (RCC/Pre-stressed/Pre-cast/ Cast-in-situ)
    - v. Span arrangement (simply supported/ continuous) Obligatory Span
    - vi. Straight/Curved

- vii. Brief Description of cross section.
- viii. Any other architectural details like shape of piers etc.

#### 4.12.4. Pavement Design

1. The detailed design of pavement shall involve:
  - i. *strengthening of existing 2/3-lane road pavement and design of the new pavement for the additional lane(s), if the findings of the traffic studies and life-cycle costing analysis confirm the requirement for widening of the road beyond 4/6-lane divided carriageway standard;*
  - ii. *design of new pavement for the additional carriageway;*
  - iii. *pavement design for bypasses; and,*
  - iv. *design of shoulders.*
  - v. *design of wearing course for the elevated road structure*
2. The design of pavement shall primarily be based on IRC publications. However, the Consultants shall use the recommendations given in widely used international practices including AASHTO, NAASRA, RTAC and TRL wherever appropriate on approval by TNRDC.
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 geosynthetics 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 fly ash within 50kms 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 TNRDC 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. All existing ROBs required to be widened to 4-lane standard shall also be identified. The Consultants shall prepare preliminary GAD for necessary construction, reconstruction or widening 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 TNRDC 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 MORT&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 MORT&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 TNRDC, 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 TNRDC.

**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 TNRDC.
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 variation 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 TNRDC's acceptance.

3. The design of pavement for the toll plaza shall take into account the lay out 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 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 TNRDC. In respect of projects proposed to be funded by Institutional 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 mitigated 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 TNRDC. 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.

#### **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 stakeholder's 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 TNRDC in acquisition of land under various Acts.
- 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 provide 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 TNRDC.

- 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 Institutions and the TNRDC, till the acceptance of the reports by the Institutions / TNRDC, 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 / TNRDC, 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 Institutions the acceptance of the reports by the TNRDC, 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 Institutions and the TNRDC, till the acceptance of the reports by the Institutions, 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 MORT&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 TNRDC 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 TNRDC.
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 TNRDC.
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.

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 this 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 Consultants 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 finalise in consultation with the TNRDC 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 TNRDC.
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.

## 7. Time period for the service

1. Time period envisaged for the study of each of the projects is indicated in Section 1 Information to Consultants as 18 months. The final reports, drawings and documentation shall be completed within this time schedule. Phase-I and Phase-II should be submitted separately. **It is mandatory that all details for final DPR for phase-I has to be submitted by the end of 6<sup>th</sup> month from the date of commencement of services in all respects and that of Phase-II by the end of 18<sup>th</sup> month.**
2. TNRDC 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.

## 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 B as per client's assessment.
3. A List for key personnel mentioned above is enclosed as Enclosure A along with broad job- description and qualification as Enclosure B. The information furnished in Enclosures A & B 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. The age of the Key Personnel should not be more than 65 years on the date of

submission of proposal. The key personnel shall also certify at the end of their bio-data proforma that they have not left any of the TNRDC / Government of Tamil Nadu works without completing of their assignment and have not accepted any other offer at the time of signing of the bio-data and as such shall be available to work with the Consultant, if the Project is awarded. In case the key personnel leave the assignment without approval of TNRDC, TNRDC would be at liberty to take any appropriate action against that key personnel including debarment.

5. 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 TNRDC 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 TNRDC before commencement of the services.

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

- 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 phases as brought out below. Preliminary design work should commence without waiting for feasibility study to be completed.

**Stage 1: Inception Report**

**Stage 2: Preliminary Report**

**Stage 3: Draft Detailed Project Report (DDPR)**

**Stage 4: Final Detailed Project Report (FDPR)**

- 9.3 Time schedule in respect of all such Stage 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 TNRDC**

1. The Consultant shall submit to the client the reports and documents 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 floppy diskettes / 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 SI.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 traceability 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 TNRDC.
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 TNRDC.

#### **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 TNRDC 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 TNRDC;*
  - x. Draft design standards; and*

3. 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 TNRDC.

## **STAGE 2:**

### **10.3**

#### **Preliminary Report**

1. The Consultant shall commence the Preliminary report of the project in accordance with the accepted IR and the report shall contain the following:
  - *Executive summary*
  - *Overview of TNRDC's organization and activities, 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*
  - *Cost estimates*
  - *Economic and financial analysis*
  - *Conclusions and recommendations*
2. The basic data obtained from the field studies and investigations shall be submitted in a separate volume as an Appendix.
3. The Final preliminary Report incorporating comments, revisions and modifications suggested by TNRDC shall be submitted within 01 month



for phase-I from the commence date and 02 months from the commencement date.

#### 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 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 Highways Department 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 TNRDC.
6. Kilometre-wise Strip Plans for each section (Package) shall be prepared separately for each concerned agency and suggested by TNRDC.

#### 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 TNRDC. The land acquisition report 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.

### **STAGE: 3**

#### **10.6 Draft Detailed Project Report- DDP**

1. The Draft DPR 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*
- *Suggested methods of procurement and packaging*
- *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*
- *Proposed Elevated Road Structure design*

*Volume – III: Drawings*

- *Location map*
- *Layout plans*
- *Typical cross sections showing pavement details*
- *Drawings of the Elevated Road Structure*
- *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 TNRDC shall be submitted within 15 days of the receipt of comments of TNRDC on the Draft PPR.

**STAGE: 4**

**10.7 Final Detailed Project Report (FDPR)**

1. The final 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**

- i. **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 financial analyses, recommendations 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.*
- ii. **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, Elevated Road Structure 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.*
- iii. **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.

- iv. **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. —
- v. **Volume - V, 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.
- vi. **Volume - VI, 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, and machine charges as considered in arriving at unit rates will be included in this volume.
- vii. **Volume - VII, Cost Estimates :** This volume will present the contract package wise cost of each item of work as well as a summary of total cost.
- viii. **Volume - VIII, Bill of Quantities :** This volume shall contain the package-wise detailed Bill of Quantities for all items of works.
- ix. **Volume - IX, 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. This shall include detailed working drawings for the rehabilitation of existing bridge at Karapakkam and underpasses etc.
  - e. Detailed Working Drawings for Elevated Road Structure for the entire reach of 45 km showing GAD and construction drawings including all details of span wise details such as obligatory spans height of piers drainage arrangements at junctions, provisions of rail (mono/metro) bays etc.
  - 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 plazas, parking areas, weighing stations, bus bays, rest areas, if any.*
- i. *Drawings for toll plazas, 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 TNRDC 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.*
- x. **Volume - X, 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 TNRDC on the final DPR shall be submitted as per the schedule given in Enclosure-III.

**11 Project Implementation Advisory Services**

**Bid Documentation & Process Management**

**BID DOCUMENTS**

1. PRE-QUALIFICATION DOCUMENTS
2. Advertisement of pre-qualification
3. Pre-qualification/expression of interest documents
4. Evaluation report on the RFQ applications with recommendations

**TENDER-DOCUMENTS – CONSTRUCTION PACKAGES**

5. Instructions to bidders including bid evaluation criteria;
6. Technical and Performance specifications
7. Tender including drawings

8. Conditions and Contract; and
9. Agreement and Schedules ( Bill of quantities based on detailed engineering)

**PRE-BID CONFERENCE**

1. Minutes/Assessment of operational, technical and risk issues with recommendations;
2. Addendum/corrigendum to the bid documents for issue the bidders.

**POST BID CONSTRUCTION CONTRACT AWARD**

3. Advisory on Evaluation of technical bids with recommendations for award of construction packages.
4. Assist TNRDC in technical matters relating to detailed engineering review meetings up to project construction kick-off meeting with contractor.

**12. Interaction with TNRDC**

1. During entire period of services, the Consultant shall interact continuously with TNRDC and provide any clarification as regards methods being followed and carry out modification as suggested by TNRDC. A programme of various activities shall be provided to TNRDC and prior intimation shall be given to TNRDC regarding start of key activities such as boring, survey etc. so that inspections of TNRDC officials could be arranged in time.
2. Power Point presentations at least on 5 (five) occasions will have to made to various Officers of TNRDC/GOVT etc. The cost of making such presentation shall also be included in the proposal. The cost of making additional presentation over and the stipulated presentation will be paid on mutually agreed terms.
3. The TNRDC 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. Consultant shall be present on such occasion. No extra fee is payable.
4. 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 TNRDC. 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. Apart from monthly Progress Report in the acceptable format, for efficient project monitoring, one Lap Top and one PC computer of state-of-the art of desirable configuration with one Laser printer and one photocopier shall be provided by the Consultant to TNRDC in the beginning of services.
5. 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. Officials of TNRDC and other Government officials may visit the site during the preparation of DPR. Consultant shall be present on such occasion. No extra fee is payable.

**13. Payment Schedule**

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

S.No.	Description	Payment
1	On furnishing Inception Report	10%
2	On furnishing Preliminary Report	20%
3	On furnishing Draft Detailed Project Report	20%
4	On furnishing Final Detailed Project Report	30%
5	On approval of Final Detailed Project Report	20%
<b>Total</b>		<b>100%</b>

*\*The total Project cost to be limited to maximum of 33% for Phase-I and maximum of 67% for Phase-II respectively*

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.

**14. Data and Software**

1. The floppy diskettes/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 TNRDC 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 TNRDC floppies/CD's containing any general software including the financial model which has been specifically developed for the project.
  3. The floppy diskettes/CD's should be properly indexed and a catalogue giving contents of all floppies/CD's and print-outs of the contents (data from field studies topographic data and drawings) should be handed over to TNRDC at the time of submission of the Final Report.

## 15 PERFORMANCE SECURITY

The successful consulting firm shall have to submit a Bank Guarantee (BG) for an amount of 2.5% of the Contract Value within 07 days of issue of LOA. The BG shall be valid for a period of 24 months i.e. up to 06 months beyond the expiry of the Contract of 18 months. The BG shall be in the format specified in Appendix I of draft contract form and furnished from any scheduled Commercial Bank.

## 16 OTHER TERMS AND CONDITIONS

- The consultant shall maintain high standard of quality and accuracy in the work.
- The consultant shall submit a detailed work plan for the assignment.
- The consultant shall be responsible for accuracy of data collected, designs, drawings, estimates and all other details prepared by the firm as part of the services.

## 17 OTHER TERMS AND CONDITIONS

The above work should be taken up under two packages as detailed under

**Package-I:-** The work should be from Taramani to Siruseri and the Detailed Project Report should be submitted for approval to TNRDC adhering to the submitted required as per clause 9.2. The period of work will be 6 months.

**Package-II:-** The work should be from Siruseri to Mahabalipuram and the Detailed Project Report should be submitted for approval to TNRDC adhering to the submittals required as per clause 9.2. The period of work will be 12 months.



## SUPPLEMENT II

### 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, economic 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 recognized 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 TOR	Additional points
1.	4.1	<p><b>Primary Tasks</b></p> <p>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><b>Review of Data and Documents</b></p> <p>The data and documents of major interest shall also include the following:</p> <ul style="list-style-type: none"> <li>a) Existing geological maps, catchment area maps, contour plans etc. for the project area</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 nearby bridges.</li> <li>e) Detailed drawings of nearby existing bridges.</li> </ul>
3.	4.11.1	<p><b>Reconnaissance and Alignment</b></p> <ul style="list-style-type: none"> <li>a) The consultant should make an in depth study of available geological maps, catchment area maps, contour plans, flood flow data and seismological data.</li> </ul>

		<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><b>Topographic surveys</b></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 TNRDC.</p>
5.	4.11.2.1	<p><b>Longitudinal and Cross sections</b></p> <p>The topographic surveys for longitudinal and cross sections shall cover the following:                  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><b>Hydraulic and Hydrological Investigations</b></p> <p>a) The consultant shall also collect information on observed maximum depth of scour.</p> <p>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, aggradation/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.</p>
7.	4.11.4.4	<p><b>Geotechnical Investigations and Sub soil Exploration</b></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	<b>General</b> The consultants are also to carry out detailed designs and prepare working drawings for the followings ; a) Design of pavement for approach road b) Design of river bank protection / training works
9.	4.12.6	<b>Design of Bridges and Structures</b> The data collected and investigation results shall be analysed to determine the following : i. HFL ii. LWL iii. LBL iv. Erodibility of bed/scour level v. Design discharge vi. Linear waterway and effective linear waterway vii. Likely foundation depth viii. Safe bearing capacity ix. Engineering properties of sub soil x. Artesian conditions xi. Settlement characteristics xii. Vertical clearance xiii. Horizontal clearance xiv. Free board for approach road xv. Severity of environment with reference to corrosion xvi. Data pertaining to seismic and wind load xvii. Requirement of model study etc.

**SUPPLEMENT-III**  
**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 1-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	<ul style="list-style-type: none"> <li>➤ Departures from standards</li> <li>➤ Cross-sectional variation</li> <li>➤ Drainage</li> <li>➤ Climatic conditions</li> <li>➤ Landscaping</li> <li>➤ Services apparatus</li> <li>➤ Lay-byes</li> <li>➤ Footpaths</li> <li>➤ Pedestrian crossings</li> <li>➤ Access (minimize number of private accesses)</li> <li>➤ Emergency vehicles</li> <li>➤ Public Transport</li> <li>➤ Future widening</li> <li>➤ Staging of contracts</li> <li>➤ Adjacent development</li> </ul>
A2 : Local Alignment	<ul style="list-style-type: none"> <li>➤ Visibility</li> <li>➤ New/Existing road interface</li> <li>➤ Safety Aids on steep hills.</li> </ul>
A3 : Junctions	<ul style="list-style-type: none"> <li>➤ Minimise potential conflicts</li> <li>➤ Layout</li> <li>➤ Visibility</li> </ul>
A4 : Non-Motorised road users	<ul style="list-style-type: none"> <li>➤ Adjacent land</li> </ul>

Provision	<ul style="list-style-type: none"> <li>➤ Pedestrians</li> <li>➤ Cyclists</li> <li>➤ Non-motorised vehicles</li> </ul>
A5 : Signs and Lighting	<ul style="list-style-type: none"> <li>➤ Lighting</li> <li>➤ Signs/Markings</li> </ul>
A6 : Construction and Operation	<ul style="list-style-type: none"> <li>➤ Buildability</li> <li>➤ Operational</li> <li>➤ Network Management</li> </ul>

### 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	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
B1 : General	<ul style="list-style-type: none"> <li>➤ Departures from standards</li> <li>➤ Cross-sectional variation</li> <li>➤ Drainage</li> <li>➤ Climatic conditions</li> <li>➤ Landscaping</li> <li>➤ Services apparatus</li> <li>➤ Lay-byes</li> <li>➤ Footpaths</li> <li>➤ Pedestrian crossings</li> <li>➤ Access (minimize number of private accesses)</li> <li>➤ Emergency vehicles</li> <li>➤ Public Transport</li> <li>➤ Future widening</li> <li>➤ Staging of contracts</li> <li>➤ Adjacent development</li> </ul>
B2 : Local Alignment	<ul style="list-style-type: none"> <li>➤ Visibility</li> <li>➤ New/Existing road interface</li> <li>➤ Safety Aids on steep hills.</li> </ul>
B3 : Junctions	<ul style="list-style-type: none"> <li>➤ Minimise potential conflicts</li> <li>➤ Layout</li> <li>➤ Visibility</li> </ul>
B4 : Non-Motorised road users Provision	<ul style="list-style-type: none"> <li>➤ Adjacent land</li> <li>➤ Pedestrians</li> </ul>

	<ul style="list-style-type: none"> <li>➤ Cyclists</li> <li>➤ Non-motorised vehicles</li> </ul>
B5 : Signs and Lighting	<ul style="list-style-type: none"> <li>➤ Lighting</li> <li>➤ Signs/Markings</li> </ul>
B6 : Construction and Operation	<ul style="list-style-type: none"> <li>➤ Buildability</li> <li>➤ Operational</li> <li>➤ Network Management</li> </ul>

### Stage 2 – Completion of Detailed Design

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.
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.

CONTENTS	ITEMS
Aspects to be checked	A. Any design changes since Stage 1. 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).
C1 : General	<ul style="list-style-type: none"> <li>➤ Departures from standards</li> <li>➤ Drainage</li> <li>➤ Climatic conditions</li> <li>➤ Landscaping</li> <li>➤ Services apparatus</li> <li>➤ Lay-byes</li> <li>➤ Access</li> <li>➤ Skid-resistance</li> <li>➤ Agriculture</li> <li>➤ Safety Fences</li> <li>➤ Adjacent development</li> </ul>
C2 : Local Alignment	<ul style="list-style-type: none"> <li>➤ Visibility</li> <li>➤ New/Existing road interface</li> </ul>
C3 : Junctions	<ul style="list-style-type: none"> <li>➤ Layout</li> <li>➤ Visibility</li> <li>➤ Signing</li> <li>➤ Lighting</li> <li>➤ Road Markings</li> <li>➤ T,X,Y-junctions</li> <li>➤ All roundabouts</li> <li>➤ Traffic signals</li> </ul>
C4 : Non-Motorised road users Provision	<ul style="list-style-type: none"> <li>➤ Adjacent land</li> <li>➤ Pedestrians</li> <li>➤ Cyclists</li> <li>➤ Non-motorised vehicles</li> </ul>
C5 : Signs and Lighting	<ul style="list-style-type: none"> <li>➤ Advanced direction signs</li> </ul>

	<ul style="list-style-type: none"><li>➤ Local traffic signs</li><li>➤ Variable message signs</li><li>➤ Other traffic signs</li><li>➤ Lighting</li></ul>
C6 : Construction and Operation	<ul style="list-style-type: none"><li>➤ Buildability</li><li>➤ Operational</li><li>➤ Network Management</li></ul>

**Enclosure-A**

**MANMONTH INPUT FOR PROFESSIONAL STAFF**

<b>S. No</b>	<b>Position</b>	<b>Proposed Man-Month</b>
1	Team Leader cum Senior Bridge Design Engineer	18
2	Senior Highway Engineer	12
3	Bridge Engineer	12
4	Senior Pavement Specialist	06
5	Material Engineer cum Geo-technical Engineer	06
6	Survey Engineer	06

**Note:** All necessary inputs of manpower such as field technical staff, office staff other than the above as deemed necessary shall be provided by consultants within the quoted price to ensure that the entire work is completed in accordance with the TOR within stipulated time frame.

**MANMONTH INPUT FOR SUB PROFESSIONAL STAFF**

<b>No</b>	<b>Position</b>	<b>Proposed Man-Month</b>
1	CAD Engineer	06
2	Environmental Engineer	06
3	Transportation Planner	03
4	Transport Economist	01



## **Enclosure B**

### **MINIMUM QUALIFICATION OF KEY PERSONNEL**

#### **TEAM LEADER CUM SENIOR BRIDGE DESIGN ENGINEER**

This is the senior most position and the expert engaged as the team leader shall be responsible for reviewing the entire Project preparation. He shall check all the Designs being prepared by team as per specification and standards, and continuously interact with TNRDC. He shall undertake Project site visits and shall guide, supervise, coordinate and monitor the work of other experts in his team. The candidate should have a proven record of designing, supervising, organizing and managing of project preparation. This position requires a Senior Bridge Design Engineer who shall be a Graduate in Civil Engineering preferably with higher qualifications and specialization in Structural Engineering. He should have a minimum of 15 years experience in DPR preparation. He should have experience in at least two Project of DPR Preparation of Elevated Road of more than 20Km costing more than Rs. 200 Crores or Major Bridges costing more than Rs. 200 Crore. He should have handled at least 4 projects in detailed engineering work for rehabilitation and/or upgrading of major highway or expressway involving a major structure/bridge. The candidate should have a thorough understanding and experience with international 'best practices', and of modern bridge construction technology.

Note: Definition of Team Leader includes Project Manager/Resident Engineer/ or any equivalent position and shall have experience in minimum 4 projects.

#### **SENIOR HIGHWAY ENGINEER**

The Senior Highway Engineer shall be responsible for preparation of the design alignment geometry of the existing road and in bye-passes, elevated road, junctions, curves, toll plazas and any other structure to be constructed in the Project highway. His expertise shall include LS and CS with particular reference to the Highway design. He should be a Graduate in Civil Engineering from a recognized University and specialization in Highways / Transportation Engineering. He should have a minimum of 20 years experience in 4 / 6 lane Highway projects Design out of which a minimum of 15 years' experience in urban road designs with elevated road configurations, or major highway projects is required. He should have involved in design of elevated road of 20Km length and above.

#### **SENIOR PAVEMENT SPECIALIST**

To ensure life cycle cost effectiveness and viable design of pavement, the position requires a specialist Pavement Engineer with thorough knowledge and understanding of international 'best practices' in the field of Design, Construction and maintenance of Flexible/rigid type of pavements. He shall be well versed with latest codes stipulations and specifications. The candidate should be a graduate in Civil Engineering preferably with higher qualification and specialization in Pavement Design. He should have a minimum of 10 years of

professional experience of pavement design in major highway projects, in similar capacity for 2/4 laning of elevated road or major highway projects. The candidate should have involved in at least 2 major highways or urban elevated road projects.

### **BRIDGE ENGINEER**

The Bridge Engineer shall be responsible for the design and review of elevated road designs and drawings. He shall be familiar and knowledgeable in using structural design with computer software. Should be a graduate in Civil Engineering from a recognized University (higher qualifications will be preferable). Bridge Engineer should have a minimum of 05 years' experience. He should have handled at least 2 major bridge projects or one elevated road project. He should have exposure of computer software programs for design of bridges or elevated road highways.

### **MATERIAL CUM GEO-TECHNICAL ENGINEER**

The candidate should be Graduate in Civil Engineering with at least 10 years' experience in the field of Materials Testing Laboratory Mix designs of Concrete and Asphalt mixes. He shall also be able to conduct soil exploration for structure foundations and for high embankments; out of which 5 years should be for highway or bridge projects. He should have involved in at least One elevated road or major bridge project or 6/4 laning major highway projects.

### **QUANTITY SURVEY ENGINEER CUM DOCUMENTATION EXPERT**

The Candidate should be Graduate in Civil Engineering with preferable specialization with minimum 10 years' experience in Quantity Survey assignments in similar nature of projects or Diploma in Civil Engineering with minimum 15 years experience. He should have through knowledge on Rate Analysis, Quantification and Project estimation of Highway Projects. He shall have the experience of preparation of Project Documentation Reports preparations, Bidding Documents for Construction Contracts etc.

### **SURVEY ENGINEER**

The candidate shall be a Graduate with at least 10 years' experience in the field of surveying out of which 5 years should be for highway or bridge projects or Diploma in Civil Engineering with 15 years experience. He should have involved in at least One elevated road or major bridge project or 6/4 laning major highway projects.

### **SUB PROFESSIONAL STAFF**

#### **TRANSPORTATION PLANNER**

The candidate should be Graduate in Civil Engineering preferably with post- graduation qualification in transportation planning with at least 10 years' experience in the field out of which 3 years should be for major urban multi modal planning projects. He should have involved in at least One elevated road or major bridge project or 6/4 laning major highway projects. He shall

review and check the traffic analysis, projection, and assignment exercises of the existing traffic. He shall also review type and locations of traffic control (e.g. signal) and safety measures, design of intersections and interchanges, toll plaza layout, toll collection method and use facilities. The candidate should have enough knowledge on road safety aspects.

#### **TRANSPORTATION ECONOMIST**

The candidate should be Graduate in Civil Engineering / Post Graduate in Traffic & Transportation Engineering with at least 10 years experience in the field out of which 3 years should be for major urban multi modal planning projects. He should have involved in at least One elevated road or major bridge project or 6/4 laning major highway projects.

#### **ENVIRONMENTAL SPECIALIST**

The candidate should be a Graduate in Civil Engineering or Graduate in Environmental Engineering. He shall have a minimum of 05 years' experience in the preparation of ESIA reports in similar nature of projects. He should have experience of having at least one Road Project which traverses along coastal zone.

#### **CAD ENGINEER**

The candidate should be Graduate in Civil Engineering with preferably higher qualification in Highway / Traffic Engineering. He shall be versatile in highway design in using software viz, mxRoads, InRoads, StaadPro, and other Project Management software etc., and have at least 7 years' experience in the design projects. He should have involved in at least One elevated road or major bridge project or 6/4 laning major highway projects.

**Enclosure C**

**Details of Curved stretches and Junctions to be improved ....(Please fill these details)**

S. No	Location of :	
	Curved stretch	Road junction
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

**Enclosure-D**  
**Schedule for Submission of Reports and Documents**

**Submission Time w.e.f Date of Commencement of Consultancy Services  
 (in months)**

Stage No.	Activity	No. of copies	Time Period for assignment Package-I	Time Period for assignment Package-II
			06 Months	12 Months
1	<b>Monthly Reports</b>	<b>3 per month</b>		
2	<b>Inception Report</b> (i) Inception Report including QAP Document	3	01 month from the date of commencement of services	02 months from the date of commencement of services
3	<b>Preliminary Report</b> i) Draft preliminary Report including Environmental and Social impact screening Reports ii) Final preliminary Report <b>(within 15 days of receiving comments of TNRDC on draft preliminary report)</b> iii) Strip Plan with L. A. Reports & Plans	6	01 month from the date of commencement of services	02 months from the date of commencement of services
4	<b>Draft D.P. REPORT</b> i) Draft DPR (including drawings and draft bidding (ICB) documents) EMP, RAP ii) Final Draft DPR (including drawings and final draft bidding (ICB) documents) EMP, RAP	6	02 months from the date of commencement of services	03 months from the date of commencement of services
5	<b>Final D.P. REPORT</b> i) Draft Final DPR (including drawings and draft bidding (ICB) documents) EMP, RAP ii) Final DPR (including drawings and final bidding (ICB) documents) EMP, RAP	6	02 months from the date of commencement of services	05 months from the date of commencement of services

*Reports are to be submitted in one set in CDs along with number of Hard copies as mentioned above.*

**SECTION 7**

**DRAFT FORM OF CONTRACT FOR CONSULTANCY SERVICES FOR THE PREPARATION OF DETAILED PROJECT REPORT FOR CONSTRUCTION OF ELEVATED ROAD FROM TARAMANI TO SIRUSERI UNDER PHASE-I AND FROM SIRUSERI TO MAHABALIPURAM UNDER PHASE-II, FOR A LENGTH OF 45KM, ALONG OMR, IN CHENNAI, TAMILNADU**

Between

(TAMIL NADU ROAD DEVELOPMENT COMPANY LTD)

And

-----  
(Name of Consultant)

Dated:

## CONTENTS

### I. FORM OF CONTRACT

### II GENERAL CONDITIONS OF CONTRACT

#### 1. **General Provisions**

- Definitions
- Relation between the Parties
- Law Governing the Contract
- Language
- Headings
- Notices
- Location
- Deleted
- Authorized Representatives
- Taxes and Duties

#### 2. **Commencement, Completion, Modification, and Termination of Contract**

- Effectiveness of Contract
- Termination of Contract for Failure to Become Effective
- Commencement of Services
- Expiration of Contract

##### 2.4.1 Extension of Time

- Entire Agreement
- Modification
- Force Majeure
  - Definition
- No Breach of Contract
- Measures to be taken
  - Extension of Time
- Payments
- Consultation

Suspension

Termination

- By the Client

By the Consultants  
Cessation of Rights and Obligations  
Cessation of Services  
  
Payment upon Termination  
Disputes about Events of Termination

### **3. Obligations of the Consultants**

#### **General**

Standard of Performance  
Law Governing Services

#### **Conflict of Interests**

Consultants not to Benefit from Commissions, Discounts, etc.  
Procurement Rules of Funding Agencies  
Consultants and Affiliates Not to Engage in certain Activities  
Prohibition of Conflicting Activities  
Confidentiality  
Liability of the Consultants  
Insurance to be Taken out by the Consultants  
Accounting, Inspection and Auditing  
Consultant's Actions requiring Client's prior Approval  
Reporting Obligations  
Documents prepared by the Consultants To Be the Property of the Client  
Deleted

### **4. Consultants' Personnel and Sub-consultants and or Associates**

General  
Description of Personnel  
Approval of Personnel  
Deleted  
Removal and /or Replacement of Personnel  
Deleted

### **5. Obligations of the Client**

Deleted  
Access to Land



Change in the Applicable Law  
Services, Facilities and Property of the Client  
Payment  
Counterpart Personnel

**6. Payments to the Consultants**

Cost Estimates, Ceiling Amount  
Deleted  
Currency of Payment  
Mode of Billing and Payment

**7. Fairness and Good Faith**

Good Faith  
Operation of the Contract

**8. Settlement of Disputes**

Amicable Settlement  
Dispute Settlement

**9. Liquidated Damages**

**10. Variation**

**III SPECIAL CONDITIONS OF CONTRACT**

**IV APPENDICES**

<b>Appendix A</b>	<b>:</b>	<b>Description of the Services</b>
<b>Appendix B</b>	<b>:</b>	<b>Reporting Requirements</b>
<b>Appendix C</b>	<b>:</b>	<b>Key Personnel and Sub-consultants</b>
<b>Appendix D</b>	<b>:</b>	<b>Deleted</b>
<b>Appendix E</b>	<b>:</b>	<b>Hours of work for key personnel</b>
<b>Appendix F</b>	<b>:</b>	<b>Duties of the Client</b>
<b>Appendix G</b>	<b>:</b>	<b>Deleted</b>
<b>Appendix H</b>	<b>:</b>	<b>Cost Estimates</b>

<b>Appendix I</b>	<b>:</b>	<b>Form of Performance Bank Guarantee</b>
<b>Appendix J</b>	<b>:</b>	<b>Deleted</b>
<b>Appendix K</b>	<b>:</b>	<b>Letter of invitation</b>
<b>Appendix L</b>	<b>:</b>	<b>Letter of Award</b>
<b>Appendix M</b>	<b>:</b>	<b>Minutes of pre-bid meeting/Addendum</b>

## 1. FORM OF CONTRACT

This CONTRACT (hereinafter called the "Contract") is made the \_\_\_\_\_ day of the \_\_\_ Month of \_\_\_\_, 20\_\_\_\_\_, between, on the one hand (Hereinafter Called the "Client) and, on the other hand \_\_\_\_\_, (hereinafter called the "Consultants").

**Note:** If the consultant consists of more than 1 entity, " ..... (hereinafter called the 'employer') and on the other hand a JV consisting of the following entities each of which will be jointly and severally liable to the client for all the consultants , obligations under this contract namely ..... and ..... (hereinafter called 'consultants'

WHEREAS

(a) the Client has requested the Consultants to provide certain consulting services as defined in the General Conditions of Contract attached to this Contract (hereinafter called the "Services");

(b) the Consultants, having represented to the Client that they have the required professional skills, and personnel and technical resources, have agreed to provide the Services on the terms and conditions set forth in this Contract;

NOW THEREFORE the parties hereto hereby agree as follows:

1. The following documents attached hereto shall be deemed to form an integral part of this Contract:

(a) The General Conditions of Contract (hereinafter called "GC")'

(b) The Special Conditions of Contract (hereinafter called "SC");

(c) The following Appendices:

[Note: If any of these Appendices are not used, the words "Not Used" should be inserted below next to the title of the Appendix on the sheet attached hereto carrying the title of that Appendix].

**Appendix A** : **Description of the Services**

**Appendix B** : **Reporting Requirements**

**Appendix C** : **Key Personnel and Sub-consultants**

**Appendix D** : **Not Used**

- Appendix E : Hours of work for Key Personnel**
- Appendix F : Duties of the Client**
- Appendix G : Not Used**
- Appendix H : Cost Estimates**
- Appendix I : Form of Performance Bank Guarantee**
- Appendix J : Not Used**
- Appendix K : Letter of invitation**
- Appendix L : Letter of Award**
- Appendix-M : Minutes of pre-Bid Meeting/Addendum**

2. The mutual rights and obligations of the Client and the Consultants shall be as set forth in the Contract; in particular
- (a) The Consultants shall carry out the Services in accordance with the provisions of the Contract; and
  - (b) The Client shall make payments to the Consultants in accordance with the Provisions of the Contract.

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

\_\_\_\_\_  
FOR AND ON BEHALF OF  
[NAME OF THE CLIENT]

By  
(Authorized Representative)

\_\_\_\_\_  
FOR AND ON BEHALF OF  
[NAME OF THE CONSULTANTS]

By  
(Authorized Representative)

Witness:- 1.....

2.....

## **GENERAL CONDITIONS OF CONTRACT**

### **1. General Provisions**

#### **Definitions:-**

Unless the context otherwise requires, the following terms whenever used in this Contract have the following meanings:

- (a) "Applicable Law" means the laws and any other instruments having the force of law in India [or in such other country as may be specified in the Special Conditions of Contract (SC)], as they may be issued and in force from time to time.
- (b) "Contract" means the Contract signed by the Parties, to which these General Conditions of Contract are attached, together with all the documents listed in Clause No 1 of Draft form of Contract which shall form part of signed Contract;
- (c) "Effective Date" means the date on which this Contract comes into force and effect pursuant to Clause GC 2.1;
- (d) 'Deleted';
- (e) 'GC' means these General Conditions of Contract;
- (f) "Government" means the Government of Tamil Nadu
- (g) 'Local currency' means the Indian Rupees (INR)
- (h) "Consultant" wherever mentioned in this Contract Agreement means the "DPR Consultant" and includes any sub-consultants or Associates engaged by the primary consultant.
- (i) 'Partner' in case the consultant is a Joint Venture, consisting of more than one entity, means any of these entities and 'Partners' means all of three entities.
- (j) "Party" means the Client or the Consultants, as the case may be, and Parties means both of them;
- (k) "Personnel" means persons hired by the Consultants or by any Sub-Consultants and or Associates as Employees and assigned to the performance of the Services or any part thereof;

- (m) "Services" means the work to be performed by the Consultants pursuant to this contract, as described in Appendix A hereto. The scope of work will be strictly as given in various Clauses in TOR. The approach and methodology to be adopted by the Consultant for carrying out the assignment as DPR Consultant may be modified depending on the site requirements and work programme after mutual discussions with , the work plan as indicated by the Consultant may be modified according to the site requirements.
- (n) Deleted
- (o) "Third Party" means any person or entity other than the Government, the Client, the Consultants or a Sub-consultant.
- (p) "Contractor" means the Consortium / Company which entered Contract Agreement with TNRDC to implement a Project envisaging Construction of elevated road from Taramani to Siruseri under Phase-I and from Siruseri to Mahabalipuram under Phase – II in OMR, Chennai, TN.
- (q) "Agreement" means the agreement signed by the parties hereto for Consultancy Services for Construction of elevated road from Taramani to Siruseri under Phase-I and from Siruseri to Mahabalipuram under Phase – II in OMR, Chennai, TN.

## **1.2 Relation between the Parties**

Nothing contained herein shall be construed as establishing a relation of master and servant or of principal and agent as between the Client and the Consultants. The Consultants, subject to this Contract, have complete charge of Personnel and Sub-consultants, if any, performing the Services and shall be fully responsible for the Services performed by them or on their behalf hereunder.

## **1.3 Law Governing Contract**

This Contract, its meaning and interpretation, and the relation between the Parties shall be governed by the Applicable Law.

## **1.4 Language**

This Contract has been executed in the language specified in the SC, which shall be the binding and controlling language for all matters relating to the meaning or interpretation of this Contract.

### **1.5 Headings**

The headings shall not limit, alter or affect the meaning of this Contract.

### **1.6 Notices**

1.6.1 Any notice, request or consent required or permitted to be given or made pursuant to this Contract shall be in writing. Any such notice, request or consent shall be deemed to have been given or made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent by registered mail, telegram or facsimile to such Party at the address specified in the SC.

1.6.2 Notice will be deemed to be effective as specified in the SC.

1.6.3 A Party may change its address for notice hereunder by giving the other Party notice of such change pursuant to the provisions listed in the SC with respect to Clause GC 1.6.2.

### **1.7 Location**

The Services shall be performed at such locations as are specified in Appendix A hereto and, where the location of a particular task is not so specified, at such locations whether in India or elsewhere, as the Client may approve.

1.8 Deleted

### **1.9 Authorized Representatives**

Any action required or permitted to be taken, and any document required or permitted to be executed, under this Contract by the Client or the Consultants may be taken or executed by the officials specified in the SC.

### **1.10 Taxes and Duties**

Unless otherwise specified in the SC, the Consultants, Sub-Consultants and Personnel shall pay such taxes, duties, fees and other impositions as may be levied under the Applicable Law.

## **2. Commencement, Completion, Modification and Termination of Contract**

### **2.1 Effectiveness of Contract**

This Contract shall come into force and effect on the date (the "Effective Date") of the Client's notice to the Consultants instructing the Consultants to begin carrying out the

Services.

## **2.2 Deleted**

## **2.3 Commencement of Services**

The Consultants shall begin carrying out the Services when asked to do so by TNRDC .

## **2.4 Expiration of Contract**

Unless terminated earlier pursuant to Clause GC 2.9 hereof, this Contract shall expire when services have been completed and all payments have been made at the end of such time period after the Effective Date as shall be specified in the SC.

### **2.4.1 Extension of Time (EoT)**

- a) Consultancy Services is required for 18 Months duration,
- b) The selected Consultant shall be expected to have firm control on 'Scheduled Date' and should explore all the possibilities and shall make all endeavors to achieve the concerned milestones of the contractor well within the target period.
- c) However, there may be the case of delay in activities, and in such case, the appropriate Extension of Time (EoT) may be considered by TNRDC in respect of Consultancy Services.

## **2.5 Entire Agreement**

This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.

## **2.6 Modification**

Modification of the terms and conditions of this Contract, including any modification of the scope of the Services, may only be made by written agreement between the Parties as the case may be, pursuant to Clause GC 7.2 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 Contract, "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-consultants 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 execution of this Contract 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 Contract**

The failure of a Party to fulfill any of its obligations hereunder shall not be considered to be a breach of, or default under, this Contract 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 Contract.

#### **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 fulfill 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 fourteen (14) 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 minimize the consequences of any event of Force Majeure.

#### **2.7.4 Extension of Time**

Any period within which a Party shall, pursuant to this Contract, 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. However the total cumulative period which can be extended because of Force Majeure, in a single incident or multiple incidents shall not be more than 60 days.

#### **2.7.5 Payments**

During the period of their inability to perform the Services as a result of an event of Force Majeure, the Consultants shall be entitled to be reimbursed for additional costs as determined to be reasonable by **TNRDC** and necessarily incurred by them 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 thirty (30) days after the Consultants, as the result of an event of Force Majeure, have 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**

The Client may, by written notice of suspension to the Consultants, suspend all payments to the Consultants hereunder if the Consultants fail to perform any of their obligations under this Contract, including the carrying out of the Services, provided that such notice of suspension (i) shall specify the nature of the failure, and (ii) shall request the Consultants to remedy such failure within a period not exceeding thirty (30) days after receipt by the Consultants of such notice of suspension.

#### **2.9 Termination**

##### **2.9.1 By the Client**

The Client may, by not less than thirty (30) days' written notice of termination to the Consultant (except in the event listed in paragraph (f) below, for which there shall be a written notice of not less than sixty (60) days), such notice to be given after the occurrence of any of the events specified in paragraphs (a) through (h) of this Clause GC 2.9.1, terminate this Contract.

(a) If the Consultants fail to remedy a failure in the performance of their obligations

- hereunder, as specified in a notice of suspension pursuant to Clause GC 2.8 hereinabove, within thirty (30) days of receipt of such notice of suspension or within such further period as the Client may have subsequently approved in writing;
- (b) If the Consultants become (or, if the Consultants consist of more than one entity, if any of their Partners becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary;
  - (c) If the Consultants fail to comply with any final decision reached as a result of Dispute settlement pursuant to Clause GC 8 hereof;
  - (d) If the Consultants submit to the Client a statement which has a material effect on the rights, obligations or interests of the Client and which the Consultants know to be false;
  - (e) If, as the result of Force Majeure, the Consultants are unable to perform a material portion of the Services for a period of not less than sixty (60) days; or
  - (f) If the Client, in its sole discretion and for any reason whatsoever, decides to terminate this Contract.
  - (g) If the consultant, in the judgment of the Client has engaged in corrupt or fraudulent practices in competing for or in executing the Contract. For the purpose of this clause:  
  
"corrupt practice" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the selection process or in contract execution.  
  
"Fraudulent Practice" means a misrepresentation of facts in order to influence a selection process or the execution of a contract to the detriment of the Client, and includes collusive practice among consultants (prior to or after submission of proposals) designed to establish prices at artificial non-competitive levels and to deprive the Client of the benefits of free and open competition.
  - (h) Deleted

### **2.9.2 By the Consultants**

The Consultants may, by not less than Sixty (60) days' written notice to the Client, such notice to be given after the occurrence of any of the events specified in paragraphs (a)

through (d) of this Clause GC 2.9.2 terminate this Contract:

- (i) If the Client fails to pay any money due to the Consultants pursuant to this Contract and not subject to dispute pursuant to Clause 8 hereof within Sixty (60) days after receiving written notice from the Consultants that such payment is overdue;
- (j) If the Client is in material breach of its obligations pursuant to this Contract and has not remedied the same within Sixty (60) days (or such longer period as the Consultants may have subsequently approved in writing) following the receipt by the Client of the Consultants' notice specifying such breach;
- (k) If, as the result of Force Majeure, the Consultants are unable to perform a material portion of the Services for a period of not less than sixty (60) days; or
- (l) If the Client fails to comply with any final decision reached as a result of settlement of Disputes pursuant to Clause GC 8 hereof.

### **2.9.3 Cessation of Rights and Obligations**

Upon termination of this Contract pursuant to Clauses GC 2.2 or GC 2.9 hereof, or upon expiration of this Contract pursuant to Clause GC 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;
- (ii) The obligation of confidentiality set forth in Clause GC 3.3 hereof;
- (iii) The Consultants' obligation to permit inspection, copying and auditing of their accounts and records set forth in Clause GC 3.6 (ii) hereof; and
- (iv) Any right which a Party may have under the Applicable Law

### **2.9.4 Cessation of Services**

Upon termination of this Contract by notice of either Party to the other pursuant to Clauses GC 2.9.1 or GC 2.9.2 hereof, the Consultants 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 Consultants and equipment and materials furnished by the Client, the Consultants shall proceed as provided, respectively, by Clauses GC 3.9 or GC 3.10 hereof.

### **2.9.5 Payment upon Termination**

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

- (i) Based on pro-rata basis with respect to the Design stage
- (ii) In any period of time, if the contract gets terminated due to the fault of the consultant, Liquidated Damage of 2.5% of the contract value will be imposed.

### **2.9.6. Disputes about Events of Termination**

If either Party disputes whether an event specified in paragraphs (a) through (e) of Clause GC 2.9.1 or in Clause GC 2.9.2 hereof has occurred, such Party may, within forty-five (45) days after receipt of notice of termination from the other Party, refer the matter to amicable settlement or to appropriate Civil court/s in Chennai, pursuant to Clause GC 8 hereof.

## **3. Obligation of the Consultants**

### **General**

#### **3.1.1. Standard of Performance**

The Consultants shall perform the Services and carry out their 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 Consultants shall always act, in respect of any matter relating to this Contract or to the Services, as faithful advisers to the , and shall at all times support and safeguard the Client's legitimate interests in any dealings with Sub-consultants or Third Parties.

#### **3.1.2 Law Governing Services**

The Consultants shall perform the Services in accordance with the Applicable Law and shall take all practicable steps to ensure that any Sub- consultants and or Associates, as well as the Personnel of the Consultants and any Sub- consultants and or Associates, comply with the Applicable Law. TNRDC shall advise the Consultant in writing of relevant local customs and the Consultant shall, after such notifications, respect such customs.

### **3.2 Conflict of Interests**

#### **3.2.1 Consultants Not to Benefit from Commissions, Discounts, etc.**

The Remuneration of the Consultants pursuant to Clause GC 6 hereof shall constitute the Consultants' sole remuneration in connection with this Contract or the Services and, subject to Clause GC 3.2.2 hereof, the Consultants shall not accept for their own benefit any trade commission, discount or similar payment in connection with activities pursuant to this Contract or to the Services or in the discharge of their obligations hereunder, and the Consultants shall use their best efforts to ensure that any Sub-consultants and or Associates, as well as the Personnel and agents of either of them, similarly shall not receive any such additional remuneration.

3.2.2 If the Consultants, as part of the Services, have the responsibility of advising the Client on the procurement of goods, works or services, the Consultants shall comply with any applicable procurement guidelines of and or Associates Bank or of the Association, as the case may be, and other funding agencies and shall at all times exercise such responsibility in the best interest of the Client. Any discounts or commissions obtained by the Consultants in the exercise of such procurement responsibility shall be for the account of the Client.

#### **3.2.3 Consultants and Affiliates not to engage in Certain Activities**

The Consultants agree that, during the term of this Contract and after its termination, the Consultants and any entity affiliated with the Consultants, as well as any Sub-consultant and or Associates and any entity affiliated with such Sub-consultant and or Associates, shall be disqualified from providing goods, works or services (other than the Services and any continuation thereof) for any project resulting from or closely related to the Services. .

#### **3.2.4 Prohibition of Conflicting Activities**

The Consultants shall not engage, and shall cause their Personnel as well as their Sub-consultants and or Associates and their Personnel not to engage, either directly or indirectly, in any of the following activities:

- (a) During the term of this Contract, any business or professional activities in India which would conflict with the activities assigned to them under this Contract; and
- (b) After the termination of this Contract, such other activities as may be specified by client.

### **3.3 Confidentiality**

The Consultants, their Sub-consultants and the Personnel of either of them shall not, either during the term or within two (2) years after the expiration of this Contract, disclose any proprietary or confidential information relating to the Project, the Services, this Contract or the Client's business or operations without the prior written consent of the Client.

### **3.4 Liability of the Consultants**

Subject to additional provisions, if any, set forth in the SC, the Consultants' liability under this Contract shall be as provided by the Applicable Law.

### **3.5 Insurance to be Taken Out by the Consultants**

The Consultants (i) shall take out and maintain, and shall cause any Sub-consultants to take out and maintain, at their own cost ( or the Sub-consultants', as the case may be) but on terms and conditions approved by the Client, insurance against the risks, and for the coverages, as shall be specified in the SC, and (ii) at the Client's request, shall provide evidence to the Client showing that such insurance has been taken out and maintained and that the current premiums therefore have been paid.

### **3.6 Accounting, Inspection and Auditing**

The Consultants (i) shall keep accurate and systematic accounts and records in respect of the Services, hereunder, 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 bases thereof (including such bases as may be specifically referred to in the SC); (ii) shall permit the Client or its designated representative periodically, and up to one year from the expiration or termination of this Contract, to inspect the same and make copies thereof as well as to have them audited by auditors appointed by the Client; and (iii) shall permit the client to inspect the Consultant's accounts and records relating to the performance of the Consultant and to have them audited by auditors appointed by the client.

### **3.7 Consultants' Actions Requiring Client's Prior Approval**

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

- (a) Appointing such members of the Personnel as are listed in Appendix C ("Consultant's Sub-consultant's Key Personnel") merely by title but not by name;
- (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 Client prior to the execution of

the subcontract, and (ii) that the Consultants shall remain fully liable for the performance of the Services by the Sub-consultant and its Personnel pursuant to this Contract; and

(c) Any other action that may be specified in the SC

(d) any other action that may be specified in Contract Agreement with the Consultant

### **3.8 Reporting Obligations**

The Consultants shall submit to the Client the reports and documents specified in Appendix B hereto, in the form, in the numbers and within the time periods set forth in the said Appendix.

### **3.9 Documents Prepared by the Consultants to be the Property of the Client**

All plans, drawings, specifications, designs, reports, other documents and software prepared by the Consultants for the Client under this Contract shall become and remain the property of the Client. The Consultants shall, not later than upon termination or expiration of this Contract, deliver all such documents to the Client, together with a detailed inventory thereof. The Consultants may retain a copy of such documents and software. Restrictions about the future use of these documents and software, if any, shall be specified in the SC.

3.10 Deleted

## **4. Consultants' Personnel and Sub-consultants and or Associates**

### **General**

The Consultants shall employ and provide such qualified and experienced Personnel and Sub-consultants as are required to carry out the Services.

### **4.2 Description of Personnel**

(a) The titles, agreed job descriptions, minimum qualification and estimated periods of engagement in the carrying out of the Services of each of the Consultants' Key Personnel are described in Appendix C. If any of the Key Personnel has already been approved by the clients his/her name is listed as well.

(b) If required to comply with the provisions of Clause GCC 3.1.1 hereof, adjustments with respect to the estimated periods of engagement of Key Personnel set forth in Appendix C may be made by the Consultants by written notice to the Client, provided (i) that such adjustments shall not alter the originally estimated period of engagement of any individual by more than 10% or one week, whichever is larger, and (ii) that the aggregate of such adjustments shall not cause payments under this Contract to exceed the ceilings set forth in Clause GC 6.1(b) of this Contract. Any other such adjustments shall only be made



with the Client's written approval.

- (c) If additional work is required beyond the scope of the Services specified in Appendix A, the estimated periods of engagement of Key Personnel set forth in Appendix C may be increased by agreement in writing between the Client and the Consultants, provided that any such increase shall not, except as otherwise agreed, cause payments under this Contract to exceed the ceilings set forth in Clause GC 6.1 (b) of this Contract.

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

The Key Personnel i.e. Professional Staff and Sub-consultants listed by title as well as by name in Appendix C are hereby approved by the Client. In respect of other Key Personnel which the Consultants propose to use in the carrying out of the Services, the Consultants shall submit to the client for review and approval a copy of their biographical data and (in the case of Key personnel to be used within the country of the Government) a copy of a satisfactory medical certificate in the form attached hereto as Appendix D. If the Client does not object in writing (stating the reasons for the objection) within thirty (30) calendar days from the date of receipt of such biographical data and (if applicable) such certificate, such Key Personnel shall be deemed to have been approved by the Client.

4.4 Deleted

#### **4.5 Removal and/or Replacement of Personnel**

- a) Except as the Client may otherwise agree, no changes shall be made in the Key Personnel. If, for any reason beyond the reasonable control of the Consultants, it becomes necessary to replace any of the Personnel, the Consultants shall forthwith provide as a replacement a person of equivalent or better qualifications and experience acceptable to the client.
- b) If the Client (i) finds that any of the Personnel has committed serious misconduct or has been charged with having committed a criminal action, or (ii) has reasonable cause to be dissatisfied with the performance of any of the Personnel, then the Consultants shall, at the Client's written request specifying the grounds therefore, forthwith provide as a replacement a person with qualifications and experience acceptable to the Client.
- c) Any of the Personnel provided as a replacement under clauses (a) and (b) above, the rate of remuneration applicable to such person ,
- (i) The remuneration to be paid to any of the Key Personnel provided as a replacement shall be 95% of the remuneration which would have been payable to the Key Personnel replaced for the reason other than death/extreme medical ground.
- (ii) For total replacement upto 33% of key personnel, remuneration shall be reduced by 5%

(iii) For total replacement upto between 33% to 50%, remuneration shall be reduced by 10% and

(iv) For total replacement beyond 50% of the total of key personnel, the client may initiate action for termination/debarment of such consultants for future projects of .

d) Penalty equivalent to 10% of monthly billing rate of an expert per month will be recovered for non-deployment of the expert as per the agreed programme.

e) Any unauthorized leave or absence of any staff shall attract the penalty on pro-rata basis with respect to the man month rate.

4.6 Deleted

## 5. **Obligations of the Client**

5.1 Deleted

### 5.2 **Access to Land**

The Client warrants that the Consultants shall have, free of charge, unimpeded access to all land in the Government's country in respect of which access is required for the performance of the Services. The Client will be responsible for any damage to such land or any property thereon resulting from such access and will indemnify the Consultants and each of the Personnel in respect of liability for any such damage, unless such damage is caused by the default or negligence of the Consultants or any Sub-consultant or the Personnel of either of them.

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

If, after the date of this Contract, there is any change in the Applicable Law with respect to taxes and duties which increases or decreases the cost or reimbursable expenses incurred by the Consultants in performing the Services, then the remuneration and reimbursable expenses otherwise payable to the Consultants under this Contract shall not be increased or decreased, except applicable Service Tax, which will be reimbursed by the Client on production of proof of payment by the Consultant

### 5.4 **Services, Facilities and Property of the Client**

The Client shall make available to the Consultants and the Personnel, for the purposes of the services and free of any charge, the services, facilities and property described in Appendix F at the times and in the manner specified in said Appendix F, provided that if such services, facilities and property shall not be made available to the Consultants as and when so specified, the Parties shall agree on (i) any time extension that it may be appropriate to grant to the Consultants for the performance of the Services, (ii) the manner in which the Consultants shall procure any such services, facilities and property from other sources, and

(iii) the additional payments, if any, to be made to the Consultants as a result thereof pursuant to Clause GC 6.1(c) hereinafter.

**5.5 Payment**

In consideration of the Services performed by the Consultants under this Contract, the Consultants shall raise invoice for their remuneration, costs, expenses etc. as per the schedule of payment at the specific stage of the Contract as detailed under and the payment will be released, not later than 60 (sixty) days from the date of receipt of the invoice as per the schedule below

<b>S.No.</b>	<b>Description</b>	<b>Payment</b>
1	On furnishing Inception Report	10%
2	On furnishing Preliminary Report	20%
3	On furnishing Draft Detailed Project Report	20%
4	On furnishing Final Detailed Project Report	30%
5	On approval of Final Detailed Project Report	20%
<b>Total</b>		<b>100%</b>

*\*The total Project cost to be limited to maximum of 33% for Phase-I and maximum of 67% for Phase-II respectively*

The payments to the Consultants by Client will be made as provided in GC 6 of this Contract.

5.6 Deleted

**6. Payments to the Consultants**

6.1 Deleted

6.2 Deleted

**6.3 Currency of Payment**

- (a) Payments shall be made in Indian Rupees
- (b) Deleted

#### **6.4 Mode of Billing and Payment**

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

- (a) Deleted
- (b) As soon as practicable and not later than fifteen (15 days) after the end of each calendar month during the period of services, the Consultants shall submit to TNRDC for payment based on the actual personnel deployed in the work, the payment will be released within 15 days from the date of receipt of the bill after verification.
- (c) Deleted
- (d) Deleted
- (e) All payments under this Contract shall be made to the account of the Consultants specified in the SC.

#### **7. Fairness and Good Faith**

##### **Good Faith**

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

#### **7.2 Operation of the Contract**

The Parties recognize that it is impractical in this Contract to provide for every contingency which may arise during the life of the Contract, and the Parties hereby agree that it is their intention that this Contract shall operate fairly as between them, and without detriment to the interest of either of them, and that, if during the term of this Contract either Party believes that this Contract 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 no failure to agree on any action pursuant to this Clause shall give rise to a settlement of disputes in accordance with Clause GC 8 hereof.

#### **8. Settlement of Disputes**

##### **8.1 Amicable Settlement**

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

## **8.2 Dispute Settlement**

Any dispute or disputes between the Parties as to matter arising pursuant to this Contract which cannot be settled amicably within thirty (30) days after receipt by one Party of the other Party's request for such amicable settlement, such dispute/s shall only be referred to or filed before the appropriate civil court/s in Chennai for adjudication. No other courts, or persons or bodies will have any jurisdiction over such dispute/s.

9. Deleted

10. Deleted

### III. SPECIAL CONDITIONS OF CONTRACT

#### GC Clause

#### A. **Amendments of, and Supplements to, Clauses in the General Conditions of Contract**

1.1(a) Deleted

1.4 The language is: English

The addresses are:

Client: **Tamil Nadu Road Development Company Ltd.,  
No.171, II Floor, Tamil Nadu Maritime Board Building,  
South Kesavaperumal Puram,  
Pasumpon Muthuramalingam Road, (Near Greenways Road MRTS Station),  
Raja Annamalai Puram, Chennai 600 028  
Phone: 91-44-2495 2800 / 3800, Fax: 91-44-2493 3800  
Email : [tenders@tnrdc.com](mailto:tenders@tnrdc.com)**

Attention:

Cable address: \_\_\_\_\_

Telex: Fax:

Consultants: Attention:

Cable address: \_\_\_\_\_

Telex: \_\_\_\_\_

Facsimile: \_\_\_\_\_

[Note: Fill in the Blanks]

Notice will be deemed to be effective as follows:

(a) in the case of personal delivery or registered mail, on delivery;

- (b) in the case of telexes, 24 hours following confirmed transmission;
- (c) in the case of telegrams, 24 hours following confirmed transmission; and
- (d) in the case of facsimiles, 24 hours following confirmed transmission.

1.8 1.8 Authorised Partner of Joint Venture:-

*(Note: If the Consultants consist of a Joint Venture of more than one entity, the name of the entity whose address is specified in SC 1.6.1 should be inserted here. If the Consultants consist of one entity, this Clause 1.8 should be deleted from the SC)*

1.9 The Authorised Representative are:

For the Client: The Managing Director/ Chief General Manager

For the Consultants: \_\_\_\_\_  
\_\_\_\_\_

1.10 The Consultants, Sub-consultants and the Personnel shall pay the taxes, duties, fees, levies and other impositions levied under the existing, amended or enacted laws during life of this contract and the client shall perform such duties in regard to the deduction of such tax as may be lawfully imposed.

2.1 Deleted

2.2 Deleted

2.3 Deleted

2.4 The time period shall be 18 months

**3.4 Limitation of the Consultants' Liability towards the Client**

(a) Except in case of gross negligence or willful misconduct on the part of the Consultants or on the part of any person or firm acting on behalf of the Consultants in carrying out the Services, the Consultants, with respect to damage caused by the Consultants to the Client's property, shall not be liable to the Client:

- i) for any indirect or consequential loss or damage; and

- i) Consultant will maintain at its expenses; Professional Liability Insurance including coverage for errors and omissions caused by Consultant's negligence in the performance of its duties under this agreement, (A) For the amount not exceeding total payments for Professional Fees and Reimbursable Expenditures made or expected to be made to the Consultants hereunder OR (B) the proceeds, the Consultants may be entitled to receive from any insurance maintained by (A) the Consultants to cover such a liability, whichever of (A) or (B) is higher.
- ii) The policy should be issued only from an Insurance Company operating in India.
- iv) The policy must clearly indicate the limit of indemnity in terms of "Any One Accident (AOA) and "Aggregate limit on the policy period" (AOP) and in no case should be for an amount less than stated in the contract.
- V) If the Consultant enters into an agreement with Client in a Joint Venture or 'in the policy must be procured and provided to Client by the Joint Venture /in association entity association', and not by the individual partners of the Joint Venture /association.
- VI) The contract may include a provision whereby the Consultant does not cancel the policy midterm without the consent of TNRDC. The insurance company may provide an undertaking in this regard.
- (b) This limitation of liability shall not affect the Consultants' liability, if any, for damage to Third Parties caused by the Consultants or any person or firm acting on behalf of the Consultants in carrying out the Services.
- (c) Professional Liability Insurance may be accepted for initially one year which shall be extended annually for total period, for five years.

### **3.5 The risks and the coverage shall be as follows**

- a) Third Party motor vehicle liability insurance as required under Motor Vehicles Act, 1988 in respect of motor vehicles operated in India by the Consultants or their Personnel or any Sub-consultants or their Personnel for the period of Consultancy.
- b) Third Party liability insurance with a minimum coverage, of **Rs 1.0 million** for the period of consultancy.
- c) Professional liability insurance as per 3.4 (a) (ii) of SC of the consultancy, with a minimum coverage equal to estimated remuneration and reimbursable.
- d) Employer's liability and workers' compensation insurance in respect of the Personnel of the Consultants and of any Sub-consultant, in accordance with the relevant provisions of the Applicable Law, as well as, with respect to such Personnel,



any such life, health, accident, travel or other insurance as may be appropriate;  
and

- (e) Insurance against loss of or damage to (i) equipment purchased in whole or in part with funds provided under this Contract, (ii) the Consultants' property used in the performance of the Services, and (iii) any documents prepared by the Consultants in the performance of the Services.

3.7 (c) The other actions are

"(i) taking any action under a civil works contract designating the Consultants as "Design Consultant", for which action, pursuant to such civil works contract, the written approval of the Client as "Employer" is required".

3.9 The Consultants shall not use these documents for purposes unrelated to this Contract without the prior written approval of the Client.

4.6 Deleted

6.1(b) The ceiling in currency is:

6.2 (a) "Payments for remuneration made in accordance with Clause GC 6.2(a) in local currency shall be adjusted as follows :  
Notwithstanding any other provisions in the agreement in this regard, this provision will prevail and over ride any other provision to the contrary in this agreement.

6.2 (b) (i) (1) It is understood (i) that the remuneration rates shall cover (A) such salaries and allowances as the Consultants shall have agreed to pay to the Personnel as well as factors for social charges and overhead, and (B) the cost of backstopping by home office staff not included in the Personnel listed in Appendix C, and (C) the Consultants' fee; (ii) that bonuses or other means of profit-sharing shall not be allowed as an element of overhead, and (iii) that any rates specified for persons not yet appointed shall be provisional and shall be subject to downward revision only, with the written approval of the Client, once the applicable salaries and allowances are known.

Remuneration for periods of less than one month shall be calculated on an hourly basis for actual time spent in the Consultant's home office and directly attributable to the Services (one hour being equivalent to 1/240th of a month) and on a calendar-day basis for time spent away from home office (one day being equivalent to 1/30th of a month).

6.2 (b) (ii) The rates for local Personnel are set forth in Appendix H.

6.3 (a) Deleted

6.3 (b) (i) Remuneration for local Personnel shall be paid in local currency.

6.3 (b) (ii) Deleted

6.3 (b) (iii) The reimbursable expenditures in local currency shall be the following:

- (1) the cost of equipment, materials and supplies to be procured locally in India as specified in Appendix H;
- (2) the local currency cost of any subcontract required for the Services and approved in writing by the Client;
- (3) any such additional payments in local currency for properly procured items as the Parties may have agreed upon pursuant to the provisions of Clause GC 6.1(c); and
- (4) the cost of such further items as may be required by the Consultants for the purpose of the Services, as agreed in writing by the Client.

6.4 (a) The accounts are: -

For local currency : \_\_\_\_\_

Account Number : \_\_\_\_\_

Type of Account : \_\_\_\_\_

Name of the Bank : \_\_\_\_\_

Address of the Bank : \_\_\_\_\_

(b) Deleted

6.4(a) Deleted

(c) The interest rate is 6% per annum

6.4(e) The account is : \_\_\_\_\_

[Note: Insert account number, type of account and name and address of the Bank]

8.2 Disputes shall be settled by arbitration in accordance with the following provisions:

**8.2.1 Selection of Arbitrators**

Each dispute submitted by a Party to arbitration shall be heard by a sole arbitrator or an arbitration panel composed of three arbitrators, in accordance with the following provisions:

Where the Parties agree that the dispute concerns a technical matter, they may agree to appoint a sole arbitrator or, failing agreement on the identity of such sole arbitrator or within thirty (30) days after receipt by the other Party of the proposal of a name for such an appointment by the Party who initiated the proceedings, either Party may apply to the President, Indian Roads Congress, New Delhi, for a list of not fewer than five nominees and, on receipt of such list, the Parties shall alternately strike names there from, and the last remaining nominee on the list shall be the sole arbitrator for the matter in dispute. If the last remaining nominee has not been determined in this manner within sixty (60) days of the date of the list, the President, Indian Roads Congress, New Delhi, shall appoint, upon the request of either Party and from such list or otherwise, a sole arbitrator for the matter in dispute.

Where the Parties do not agree that the dispute concerns a technical matter, the Client and the Consultants shall each appoint one arbitrator, and these two arbitrators shall jointly appoint a third arbitrator, who shall chair the arbitration panel. If the arbitrators named by the Parties do not succeed in appointing a third arbitrator within thirty (30) days after the latter of the two arbitrators named by the Parties has been appointed, the third arbitrator shall, at the request of either Party, be appointed by Secretary, the Indian Council of Arbitration, New Delhi.

If, in a dispute subject to Clause SC 8.2.1 (b), one Party fails to appoint its arbitrator within thirty (30) days after the other Party has appointed its arbitrator, the Party which has named an arbitrator may apply to the Secretary, Indian Council of Arbitration, New Delhi, to appoint a sole arbitrator for the matter in dispute, and the arbitrator appointed pursuant to such application shall be the sole arbitrator for that dispute.

### **8.2.2 Rules of Procedure**

Arbitration proceedings shall be conducted in accordance with procedures of the Arbitration and Conciliation Act 1996, (Central Act 26 of 1996) of India.

### **8.2.3 Substitute Arbitrators**

If for any reason an arbitrator is unable to perform his function, a substitute shall be appointed in the same manner as the original arbitrator.

### **8.2.4 Qualifications of Arbitrators**

The sole arbitrator or the third arbitrator appointed pursuant to Clause 8.2.1 hereof shall be a Nationally recognised legal or technical expert with extensive experience in relation to the matter in dispute.

### **8.2.5 Payment to Arbitrator**

- (a) TNRDC has decided that the maximum amount payable per arbitrator in arbitration case shall be as under:

S. No.	Particulars	Maximum amount payable per Arbitrator/ per case
1	Arbitrator fee	Rs. 8,000/- per day subject to a maximum 2 lacs Or Rs 1.5 lacs (lump sum) subject to publishing the award within 12 months.
2	Reading Charges	Rs 6,000/-
3	Secretarial Assistance	Rs 5,000/-
4	Incidental charges (telephone, fax, postage etc.)	Rs 6,000/-
5	Charges for publishing/declaration of the Award	Maximum of Rs.10,000/-
6	Other expenses (actuals against bills subject to the prescribed ceiling) Travelling Expenses  Lodging and Boarding	Maximum ceiling Economy class (by air), First class AC (by train) and AC car (by road) 1. Rs10,000/- per day (in metro cities) 2. Rs 5,000/- per day (in other cities) 3. Rs 2,000/- per day, if any Arbitrator makes their own arrangements.
7	Local Travel	Rs.1,000/- per day
8	Extra charges for days other than hearing / meeting days (maximum for 2 days)	Rs 2,500/- per day

(b) In exceptional cases such as involving major legal implications/wider ramifications/higher financial stakes etc., a special fee structure could be fixed in consultation with the contractor/consultants and with the specific approval of TNRDC before appointment of the Arbitrator.

#### 8.2.6 Miscellaneous

In any arbitration proceeding hereunder:

- (a) proceedings shall, unless otherwise agreed by the Parties, be held in Chennai.
- (b) The English language shall be the official language for all purposes; and
- (c) The decision of the sole arbitrator or of a majority of the arbitrators (or of the third arbitrator if there is no such majority) shall be final and binding and shall be enforceable in any court of competent jurisdiction, and the Parties hereby waive any objections to or claims of immunity in respect of such enforcement.

#### **IV. APPENDICES**

##### **Appendix A: Description of the Services**

*[Give detailed descriptions of the Services to be provided; dates for completion of various tasks, place of performance for different tasks; specific tasks to be approved by Client, etc.]*

**Details as per TOR**

### Appendix B: Reporting Requirements

*[List format, frequency, contents of reports and number of copies; persons to receive them; dates of submission, etc. If no reports are to be submitted, state here "Not applicable".]*

S.No	Reports	Duration		No of sets to be submitted
		Phase – I	Phase II	
1	Inception Report	01 month from the date of commencement of services	02 months from the date of commencement of services	05
2	Preliminary Report	01 month from the date of commencement of services	02 months from the date of commencement of services	05
3	Draft DPR	02 months from the date of commencement of services	03 months from the date of commencement of services	05
4	Final DPR	02 months from the date of commencement of services	05 months from the date of commencement of services	10

Note : Phase-I and Phase-II reports should be submitted separately (ie separate booklets). The above said 5 sets mean 5 copies for phase-I and 5 copies for Phase-II.

### **Appendix C: Key Personnel and Sub-consultants**

[List under: *C.1 Titles [and names, if already available], detailed job descriptions and minimum qualifications. experience of Personnel to be assigned to work and staff- months for each.*

*Deleted*

*Deleted*

*List of approved Sub-consultants [if already available]; same information with respect to their Personnel as in C-1 through C-4)*

**Appendix D**

**-Not Applicable-**



***Appendix E Hours of Work for Key Personnel***

The Consultants Key personnel and all other Professional / Sub Professional / Support Staff / Sub-Consultancy personnel shall work 6 days (Mondays through Saturday) every week and observe the Gazetted Holidays of Government of Tamil Nadu as Holidays. The Consultant shall work as per the work program of the Consultant. In this context incase the work plan of the Consultant needs suitable modifications, the same shall be carried out and submitted to the client for consideration. The Consultants hours of work normally shall match with that of Contractor's activities on the site. No extra remuneration shall be claimed or paid for extra hours of work required in the interest of Project completion.

### **Appendix F: Duties of the Client**

1. Access to the quality control laboratory for performing various types of tests, which will be provided by the Consultant including the testing personnel.
2. To provide Contractor's RFP, Bid submission, Contract Agreement, Data and information for field surveys and investigations
3. To ensure availability of the Detailed Work plan and Programme for Design and Construction of Project Highways from Contractor.
4. To ensure availability of the Quality Assurance Plan and Quality Control Procedures from the Consultant.
5. To provide relevant reports and necessary data as per the reporting obligation of Contractor under the Contract Agreement.

**Appendix G:**

**-Not Applicable-**

**Appendix H: Cost Estimates**  
**SUMMARY OF COSTS**

No.	Description	Amount in Rs
I	Remuneration for Professional Staff	
II	Remuneration for Sub Professional Staff	
III	Remuneration for Support Staff	
IV	Transportation	
V	Office Rent	
VI	Office Supplies, Utilities and Communication	
VII	Office Furniture and Equipment	
VIII	Reports and Document Printing	
IX	<b>Provision for Investigations and Engineering Surveys</b>	
	<b>Sub Total</b>	
	<b>Service Tax @ :</b>	
	<b>Grand Total</b>	

Note: Payments will be made as per stipulations of the Conditions of Contract.

**I. Remuneration for Professional Staff**

No	Position	Name	Rate	No. of man- months	Amount
1	Team Leader cum Senior Bridge Design Engineer			18	
2	Senior Highway Engineer			12	

3	Bridge Engineer			12	
4	Senior Pavement Specialist			06	
5	Material Engineer cum Geo-technical Engineer			06	
6	Quantity Survey Engineer cum Documentation Expert			10	
7	Survey Engineer			06	
				<b>Total</b>	

**II Remuneration for Sub Professional Staff**

No	Position	Name	Staff Months	Billing Rate (Rs)	Amount (Rs)
1	CAD Engineer		06		
2	Environmental Engineer		06		
3	Transportation Planner		03		

**III Support Staff**

No	Position	Name	Staff Months	Billing Rate (Rs)	Amount (Rs)
1	Accountant ( 1 no)		18		
2	Cashier (1 no)		18		
3	Steno ( 1 no)		18		
4	Computer Operator ( 1 no)		18		

5	Guard ( 2 no )		2 x 18 = 36		
6	Office Boy (1 no)		18		
Total :					

**Note :** All necessary inputs of manpower such as field technical staff, office staff other than the above as deemed necessary shall be provided by consultants within the quoted price to ensure that the entire work is completed in accordance with the TOR within stipulated time frame.

1. Team Leader cum Senior Bridge Design Engineer
2. Senior Highway Engineer
3. Bridge Engineer
4. Senior Pavement Specialist
5. Transportation Planner
6. Transport Economist
7. Material Engineer cum Geo-Technical Engineer
8. Environmental Engineer
9. Survey Engineer
10. Quantity Survey Engineer cum Documentation Expert
11. CAD Engineer

#### IV. Transportation (Fixed rate on rental basis)

The vehicles provided by the Consultants shall include the cost for rental, drivers, repairs, insurance, etc. an indicative distance run by each vehicle per month is 3000 km, but it may vary, for which no extra payment will be made.

No	Description of Vehicles	Qty. (No. of vehicle – month)	Rate / Vehicle – Month	Amount (Rs)
1	Innova / Scorpio or equivalent for Key Personnel	2*18 = 36		
Total :				

**V. Office Rent (Fixed Costs) – Minimum 200 sqm area of office shall be rented.**

The rent cost includes electricity and water charges, maintenance, cleaning, repairs, etc. complete.

No of Months	Rate / Month	Amount (Rs)
18		

**VI. Office Supplies, Utilities and Communication (Fixed Costs)**

S.No	Item	Months	Monthly Rate (Rs)	Amount in Rs.
1	Office supplies	18		
2	Drafting Supplies	18		
3	Computer Running Costs	18		
4	Domestic and International Communication	18		

**VII. Office Furniture and Equipment (Rental)**

(Brand new Furniture and Equipment shall be mandatory at the time of commencement of services)

No	Description	Unit	Qty	Rate / Month/ unit (Rs.)	Period in Months	Amount (Rs.)
	<b>Office Furniture (Rental/Hire)</b>					
1	Executive Table (Godrej make, model No. T-108 or equivalent)	each	1		18	
2	Executive Chairs (Godrej make, model No. PCH-701 or equivalent)	each	2		18	
3	Tables (Godrej make, model No. T-104 Or equivalent)	each	5		18	
4	Ordinary Chairs Type-1 (Godrej make, model No T-CHR –6 or equivalent)	each	4		18	
5	Steel Almirah 1980mm x 915mm x 485mm (Godrej make, model No. 1 Storewell plain or equivalent)	each	1		18	
6	Steel Almirah 1270mm x 765mm x 440mm	each	1		18	

	(Godrej make, model minor plain or equivalent)					
7	Steel Cash Chest of size 1.5' x 1.5' (450 mm x 450 mm) (approx.) (Godrej make, or equivalent)	each	1		18	
8	Drawer filling cabinet with visa file suspension system (Godrej make, or equivalent)	each	1		18	
9	Visitors chairs/Conference room chairs (Godrej make, model No. DCH7004 or Equivalent)	each	4		18	
10	Tables for computers with 3 drawers, key board/mouse pull out trays size 1664mm x 900 (Godrej make. Or Equivalent as per Engineer's design)	each	2		18	
11	Printer desks (Godrej make or equivalent)	each	2		18	
12	Side tables (Godrej make or equivalent)	each	2		18	
	<b>Office Equipment (Rental/Hire with Consumables)</b>					
1	Telephone with PABX facilities (2 external lines & 10 internal lines)	each	2		18	
2	Photocopier	each	1		18	
3	Fax	each	1		18	
4	Air-Conditioner (1.5 Ton)	each	2		18	
5	Computer PC (state of the art)	each	2		18	
6	Laser Jet Printers	each	1		18	
7	Ink Jet Printers	each	1		18	
8	Binding Machine	each	1		18	
<b>Total</b>						

### VIII Reports and Document Printing

No	Description	No of Reports	No. of Copies per Report	Total Nos. of copies	Rate per Copy (Rs)	Amount (Rs)
1	Monthly reports (Design and Construction)	06	4	24		



**IX. A. Provision for Investigations and Engineering Surveys  
 Taramani to Siruseri (Phase-I)**

No	Description	Unit	Quantity *	Rate (Rs)	Amount (Rs)
1	Topographic Survey	Km	25		
2	Reconnaissance, Elevated Road and Bridge Inventory	Km	25		
3	BBD for Pavement Evaluation	Km	20		
4	Sub grade/soil Investigation	Nos.	20		
5	Traffic Surveys	Nos	3		
6	Sub-Soil Investigations	LS			
7	Utility Mapping	Kms	25		
8	Material Survey	LS			
9	Identification of lands with survey numbers in each village and area	Kms	25		
<b>Total A</b>					

**B. Improvement to Junctions – 7 nos**

No	Description	Unit	Quantity *	Rate	Amount
1	Surveys & Investigation	LS	25km		
<b>Total B</b>					

\* Adequacy of Investigations and Engineering Surveys shall be assessed by the Consultants

**C. Siruseri to Mahabalipuram – Phase - II**

No	Description	Unit	Quantity *	Rate (Rs)	Amount (Rs)
1	Topographic Survey	Km	25		
2	Reconnaissance, Elevated Road and Bridge Inventory	Km	25		
3	BBD for Pavement Evaluation	Km	25		
4	Sub grade/soil Investigation	Nos.	25		
5	Traffic Surveys	Nos	3		
6	Sub-Soil Investigations	LS			
7	Utility Mapping	Kms	25		
8	Material Survey	LS			
9	Identification of lands with survey numbers in each village and area	Kms	25		
<b>Total C</b>					

**D. Improvement to Junctions – 7 nos**

No	Description	Unit	Quantity *	Rate	Amount
1	Surveys & Investigation	LS	25km		
<b>Total B</b>					

\* Adequacy of Investigations and Engineering Surveys shall be assessed by the Consultants

**Appendix I: FORM FOR PERFORMANCE SECURITY**

(Clause-16 of ToR)

To

**Tamil Nadu Road Development Company Ltd.,  
No.171, II Floor, Tamil Nadu Maritime Board Building, South Kesavaperumal Puram,  
Pasumpon Muthuramalingam Road, (Near Greenways Road MRTS Station),  
Raja Annamalai Puram, Chennai 600 028  
Phone: 91-44-2495 2800 / 3800, Fax: 91-44-2493 3800  
Email : [tenders@tnrdc.com](mailto:tenders@tnrdc.com)**

WHEREAS:

.....(hereinafter called the "Bidder ") had submitted the proposal for  
" **Consultancy services for the Preparation of Detailed Project Report for Construction of  
elevated road from Taramani to Siruseri under Phase-I and from Siruseri to Mahabalipuram under  
Phase-II, for a length of 45Km along OMR, in Chennai, Tamil Nadu**"

- A. **Tamil Nadu Road Development Company Ltd., represented by its \_\_\_\_\_ having its office at 171, 2<sup>nd</sup> Floor, Tamil Nadu Maritime Board Building, South Kesavaperumal Puram, Pasumpon Muthuramalingam Road (Greenways Road), Raja Annamalai Puram, Chennai – 600 028** (hereinafter referred to as "TNRDC") and TNRDC will, inter alia, finalize the bid process and accordingly select the successful Bidder.
- B. Based on the above, the bid submitted by the \*\*\*\*\* [Bidder] OR \*\*\*\*\* [Joint Venture] [hereinafter called Consultant] has been accepted by **M/s Tamil Nadu Road Development Company Ltd.,** and a Letter of Award (LOA) was issued by vide its communication no. \*\*\*\*\* dated \*\*\*\*\* to the \*\*\*\*\* [Bidder] OR \*\*\*\*\* [Joint Venture] requiring, inter alia, the execution of Contract Agreement within thirty [30] days of acceptance of LOA.
- C. As provided in Request for Proposal (RFP) the Consultant has to furnish a Performance Security to TNRDC for Rs.....(In Rupees.....Only) (the "Guarantee Amount") as security for due and faithful performance of its obligations, under and in accordance with the RFP and/or LOA during the Assignment Period (as defined in the Contract Agreement).
- D. We, \*\*\*\*\* through our Branch at \*\*\*\*\* (the "Bank") have agreed to furnish this Bank Guarantee by way of Performance Security.

NOW, THEREFORE, the Bank hereby, unconditionally and irrevocably, guarantees and affirms as follows:

- 1. The Bank hereby unconditionally and irrevocably guarantees the due and faithful performance of the Consultants obligations during the Consultancy Period, under and in accordance with the

Contract, and agrees and undertakes to pay to TNRDC , upon its mere first written demand, and without any demur, reservation, recourse, contest or protest, and without any reference to the Consultant, such sum or sums up to an aggregate sum of the Guarantee Amount as may be claimed by TNRDC and without TNRDC being required to prove or to show grounds or reasons for its demand and/or for the sum specified therein.

2. A letter from TNRDC or under the hand of any of the employee of TNRDC or any other person or entity duly authorised by TNRDC in this regard, that the Consultant has committed default in the due and faithful performance of all or any of its obligations under and in accordance with the RFP and/or LOA and/or Contract shall be conclusive, final and binding on the Bank. The Bank further agrees that TNRDC shall be the sole judge as to whether the Consultant is in default in due and faithful performance of its obligations during the Assignment Period under the Contract and its decision that the Consultant is in default shall be final, and binding on the Bank, notwithstanding any differences between TNRDC and the Consultant, or any dispute between them pending before any court, tribunal, arbitrators or any other authority or body, or by the discharge of the Consultant for any reason whatsoever.
3. We, the Bank unconditionally undertake to pay to TNRDC any money so demanded under this Guarantee notwithstanding any dispute or disputes raised by the Bidder or any other party including in any suit or proceeding pending before any court or tribunal relating thereto or any instructions or purported instructions by the Bidder or any other party to the Bank not to pay or for any cause to withhold or defer payment to TNRDC under this Guarantee. The Bank's liability under this Guarantee is irrevocable, unconditional, absolute and unequivocal. The payment so made by the Bank under this Guarantee shall be a valid discharge of the bank's liability for payment hereunder and the Bidder shall have no claim against the Bank for making such payment.
4. In order to give effect to this Guarantee, TNRDC shall be entitled to act as if the Bank were the principal debtor and any change in the constitution of the Consultant and/or the Bank, whether by their absorption with any other body or corporation or otherwise, shall not in any way or manner affect the liability or obligation of the Bank under this Guarantee.
5. It shall not be necessary, and the Bank hereby waives any necessity, for TNRDC to proceed against the Consultant before presenting to the Bank its demand under this Guarantee.
6. TNRDC shall have the liberty, without affecting in any manner the liability of the Bank under this Guarantee, to vary at any time, the terms and conditions of the Contract or to extend the time or period for the compliance with, fulfillment and/ or performance of all or any of the obligations of the Consultant contained in the Contract or to postpone for any time, and from time to time, any of the rights and powers exercisable by TNRDC against the Consultant and either to enforce or forbear from enforcing any of the terms and conditions contained in the Contract and/or the

securities available to TNRDC and the Bank shall not be released from its liability and obligation under these presents by any exercise by TNRDC of the liberty with reference to the matters aforesaid or by reason of time being given to the Consultant or any other forbearance, indulgence, act or omission on the part of TNRDC or of any other matter or thing whatsoever which under any law relating to sureties and guarantors would but for this provision have the effect of releasing the Bank from its liability and obligation under this Guarantee and the Bank hereby waives all of its rights under any such law.

7. This Guarantee is in addition to and not in substitution of any other guarantee or security now or which may hereafter be held by TNRDC in respect of or relating to the Contract or for the fulfillment, compliance and/or performance of all or any of the obligations of the Consultant under the Contract.
8. Notwithstanding anything contained hereinbefore, the liability of the Bank under this Guarantee is restricted to the Guarantee Amount and this Guarantee will remain in force for the period specified in paragraph 9 below and unless a demand or claim in writing is made by TNRDC, on the Bank under this Guarantee, not later than 6 (six) months from the date of expiry of this Guarantee or referred as End Date herein below, all rights of TNRDC under this Guarantee shall be forfeited and the Bank shall be relieved from its liabilities hereunder.
9. We, the Bank further agree that the Guarantee herein contained shall remain in full force and effect up to..... the date which falls Twenty four (24) Months from the date this Bank Guarantee, (hereinafter called "the End Date"). Unless a demand or claim under this Guarantee is made on the Bank by TNRDC or under the hand of any of the employee of TNRDC or any other person or entity duly authorised by TNRDC in this regard, in writing on or before the said End Date, the Bank shall be discharged from all liability under this Guarantee thereafter.
10. Any notice by way of request, demand or otherwise hereunder may be sent by post addressed to the Bank at its above referred Branch, which shall be deemed to have been duly authorised to receive such notice and to effect payment thereof forthwith, and if sent by post it shall be deemed to have been given at the time when it ought to have been delivered in due course of post and in proving such notice, when given by post, it shall be sufficient to prove that the envelope containing the notice was posted and a certificate signed by an officer of T N R D C that the envelope was so posted shall be conclusive.
11. We, the bank lastly undertake not to revoke this Guarantee during its currency.
12. Notwithstanding anything contained herein.
  - a) Our liability under the Bank Guarantee shall not exceed Rs.....(In Rupees .....Only)
  - b) The Bank Guarantee shall be valid upto [date], 20\_.
  - c) Unless a demand in writing is made upon us on or before \_\_\_\_\_, [date] or any

other extended date, all our liability under this guarantee shall cease.

IN WITNESS WHEREOF THE BANK HAS SET ITS HANDS HERETO ON THE DAY, MONTH AND YEAR MENTIONED HEREUNDER.

Signed and Delivered

On behalf of .....(Bank name)

(Signature)

(Date)

by the hand of Mr ..... (name of  
authorized signatory)

### **Designation**

Note:

- a) Address of the controlling office of the issuing branch with phone number and fax number to be provided.
- b) Authenticated copy of Letter of Authority authorizing the signatory of this guarantee to execute the same to be enclosed herewith.

**Appendix J:**

**-Not Applicable-**

## **Appendix K**

### **Letter of invitation**



## **Appendix L**

### **Letter of Award**

## **Appendix M**

### **Minutes of pre-bid meeting**