REQUEST FOR PROPOSAL (RFP)

for

CONSULTANCY ASSIGNMENTS

Firms

Lump sum - *QCBS*

(Price included as a Selection Factor)

Appointment of Consultant for Consulting Services for preparation of Feasibility Report and Detailed Project Report (DPR) for construction of Bridges across Puzhal surplus canal at Amullavoyal, Manali and Bridge across Puzhal surplus canal at vadaperumpakkam, Manali for Greater Chennai Corporation – Package - 2

PROJECT DEVELOPMENT GRANT FUND
NO. 19, T.P. SCHEME ROAD,
RAJA ANNAMALAIPURAM,
CHENNAI – 600 028

LETTER OF INVITATION

Dear Sirs,

Subject: Appointment of Consultant for providing Consulting Services for preparation of Feasibility Report and Detailed Project Report (DPR) for construction of Bridges across Puzhal surplus canal at Amullavoyal, Manali and Bridge across Puzhal surplus canal at Vadaperumpakkam, Manali for Greater Chennai Corporation – Package - 2- reg.

1. You are hereby invited to submit Pre qualification, technical and financial proposals for Consulting Services for preparation of Feasibility Report and Detailed Project Report (DPR) for construction of Bridges across Puzhal surplus canal at Amullavoyal, Manali and Bridge across Puzhal surplus canal at Vadaperumpakkam, Manali for Greater Chennai Corporation to be taken up by the Project Development Grant Fund (PDGF), managed by Tamil Nadu Urban Infrastructure Financial Service Limited (TNUIFSL), which could form the basis for future negotiations and ultimately a contract between your firm and The Managing Director, TNUIFSL, Chennai – 600 028.

2. The purpose of this assignment is for Consulting Services for preparation of Feasibility Report and Detailed Project Report (DPR) for construction of Bridges across Puzhal surplus canal at Amullavoyal, Manali and Bridge across Puzhal surplus canal at vadaperumpakkam, manali for Greater Chennai Corporation as mentioned in the Terms of Reference (ToR).

2.1 Client means PDGF managed by TNUIFSL.

3. A firm will be selected under Quality and Cost Base Selection (QCBS) procedures described in this RFP and in accordance with the procurement guidelines of the TAMIL NADU TRANSPARENCY IN TENDERS ACT, 1998 and RULES 2000as amended from time to time.

4. The following documents are enclosed to enable you to submit your proposal:

(a) Terms of reference (TOR) (Annexure 1);
(b) Pre-qualification Criteria (Annexure 2);
(c) Supplementary information for firm, including a suggested format of curriculum vitae of key personnel (Annexure 3);
(d) A Sample draft Agreement of Contract for this assignment to be carried out by the Firm. (Annexure 4); and
(e) Bank Guarantee (Annexure 5);

5. A pre-proposal conference open to all prospective firms will be held on **15.03.2017 @ 15.30** hrs in the **TNUIFSL, No. 19, T.P. Scheme Road, RajaAnnmalaiPuram, Chennai – 600 028**. The prospective firms will have an opportunity to obtain clarification regarding the scope of the work, terms of reference, contract conditions and any other pertinent information.

The Clarification/Amendments if any in the Pre – Proposal Conference will be published only in the Government Web site www.tenders.tn.gov.in, and www.tnuifsl.com

The Managing Director or its representative
TNUIFSL
No. 19, T.P. Scheme Road, RajaAnnamalaiPuram, Chennai – 600 028
Phone / Fax No: 24643103/4/5/7 Fax: 24613106 Email : pandiands@tnuifsl.com, vijay@tnuifsl.com,
Please ensure that advance intimation regarding your visit is sent to enable them to make appropriate arrangements.

6. The Submission of Proposals:

6.1 The proposals addressed to Managing Director, TNUIFSL shall be submitted in three parts, viz., Pre-qualification, Technical and financial and should follow the form given in the "Supplementary Information for Firms."

6.2. The “Pre-qualification”, “Technical" and "Financial" proposals must be submitted in three separate sealed envelopes (with respective marking in bold letters) following the formats/schedules given in the Pre-qualification for firms (Annexure-2), supplementary information for firms (Annexure-3). The first envelope marked “Pre-qualification criteria” in one separate cover, viz., Cover-1 must be sealed with sealing wax and initialed twice across the seal. This cover should contain the Earnest Money Deposit (EMD) of **Rs. 25,000/-** in the form of Demand Draft to be taken in the name of “**Project Development Grant Fund**” Chennai – 600 028. The EMD of unsuccessful firms will be returned within 45 days of the date of completion of selection / tender process.

6.3 The second envelope, viz., Cover-2 marked "Technical proposal for the captioned project" must also be sealed and initiated twice across the seal and should contain information required in Annexure 3 viz., supplementary information for firms.

6.4 The first and second envelopes should not contain any cost information whatsoever. The third envelope viz., Cover-3 marked 'Financial Proposal for the captioned project"' must also be sealed and initiated twice across the seal and should contain the detailed price offer for the firms services.

You will provide detailed breakdown of costs and fees in the format prescribed in Form 6:

The sealed envelopes Cover 1, Cover 2 and Cover3 should again be placed in a separate sealed in one cover, which shall be clearly marked with the name of the assignment and received in the office of the **Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL), No. 19, T.P. Scheme Road, Raja AnnmalaiPuram, Chennai – 600 028**, up to 15.00 hours on **03.04.2017**.

If the cover of proposals is not marked with the name of the assignment indicating the bid submission date and time, the cover will not be opened and returned to the firm unopened treating as “Not Qualified”.

6.5 **Opening of proposal**

The proposals (first envelope (cover 1) containing pre-qualification criteria only) will be opened by the Managing Director, TNUIFSL or his authorized representative in its office at **15.30** hours on **03.04.2017**. It may please be noted that the second envelope containing the technical proposal will not be opened until pre-qualification criteria is evaluated, and detailed price offer will not be opened until technical evaluation has been completed and the result approved and notified to all firms.

7. **Evaluation**

7.1 A three-stage procedure will be adopted in evaluating the proposals:

i) a pre qualification of firms will be verified, which will be carried out prior to opening of technical proposal (as per Annexure 2)

ii) a technical evaluation of the pre-qualified firms, which will be carried out prior to opening any financial proposal;

iii) a financial evaluation

7.2 **Pre-qualification**

Firms who have the following qualifications may submit the proposal along with necessary proof –

(i) Consultants who have completed at least Five Bridges / RUB / ROB assignments in urban areas in last 5 years. ***(Assignment along with client certificate only be considered for evaluation)***

(ii) Average annual turnover of Rs. 15.00 crores from consultancies. **Audited financials shall be submitted as proof in the last three financial years.**

(iii) Covers without **EMD** will be treated as non responsive and will be disqualified.

It should be noted that "assignment along with client certificate will only be considered for evaluation".

Only proposals of firms determined to be qualified will be considered for technical and financial evaluation. The technical and price envelopes of others will not be considered and returned unopened after completing the selection process.

7.3 *Technical Proposal*

The evaluation committee appointed by the Client will carry out its evaluation of qualified firms' technical proposal applying the evaluation criteria and point system specified below. Each responsive proposal will be attributed a technical score (St).

(i) the quality of the methodology proposed (25 points); and
[Note to Consultant: The Client will assess whether the proposed methodology is clear, responds to the TORs, work plan is realistic and implementable; overall team composition is balanced and has an appropriate skills mix; and the work plan has right input of Experts]

(ii) the qualifications of key staff proposed for the assignment (75 points).

S. No	Key Professionals	Marks
1	Team Leader / Bridge Engineer	25
2	Highway & Traffic Engineer	20
3	Geo technical Engineer	10
4	Quantity Surveyor / Contract Management Specialist	10
5	Environmental Specialist	10
	Total	**75**

Curriculum vitae of senior personnel in each discipline for assessing the qualifications and experience of the personnel proposed to be deployed for the studies should be included with the proposal (in the format of the sample curriculum vitae). These personnel will be rated in accordance with:

(i) General qualifications - (30 points)
(ii) Adequacy for the project (suitability to perform the duties for this assignment. These include education and training, length of experience on fields similar to those required as per terms of reference, type of positions held, time spent with the firm etc) - (70 points)

Quality and competence of the consulting service shall be considered as the paramount requirement. Technical proposals scoring not less than 75% of the total points will only be considered for financial evaluation. The price envelopes of others will not be considered and returned unopened after completing the selection process. The client shall notify the consultants, results of the technical evaluation and invite those who have secured the minimum qualifying mark for opening of the financial proposals indicating the date and time.

The Team Leader proposed shall be full time for this assignment only

7.4 *Financial Proposal*

7.4.1 Opening:
The financial proposal shall be opened in the presence of the firms' representatives who choose to attend. The name of the firm, the quality scores and the proposed prices shall be read out and recorded. The client shall prepare minutes of bid opening.

7.4.2 Evaluation:
The evaluation committee will determine if the financial proposals are complete in accordance with ToR. The quoted price shall be corrected for arithmetical errors in accordance with Tender Transparency Rule 2000 and as amended there on.

The lowest financial proposal (Fm) will be given a financial score (Sf) of 100 points. The financial scores of all the proposals will be computed as follows: Sf = 100 x Fm/F (F - amount of financial proposal).

Proposals will finally be ranked according to their combined technical (St) and financial (Sf) scores using a weight of 75% for technical proposal and 25% for financial proposal.

S = St x 0.75 + Sf x 0.25

The Firm securing the highest score will be invited for negotiations.

8. ***Negotiations***

8.1 Negotiations normally take a day. The aim is to reach agreement on all points, and initial a draft contract by the conclusion of Negotiations.

8.2 Negotiations will commence with a discussion of your technical proposal, the proposed methodology (work plan), costing, staffing and any suggestions you may have made to improve the TORs. Agreement must then be reached on the final TORs, the staffing and staff months, logistics and reporting.

8.3 Changes agreed upon will then be reflected in the draft contract, using proposed unit rates **(after negotiation of the unit rates, including the man month rates, tax liability and all cost, etc).**

8.4 The negotiations will be concluded with a review of the draft form of Contract. The Client and the Firms will finalize the contract to conclude negotiations.

8.5 The Contract will be awarded after successful negotiations, with the selected Firm as per the Tamil Nadu Transparency in Tenders Act 1998 and Rules 2000 and as amended there on.

9. Fraud and Corrupt Practices

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

10. Please note that the TNUIFSL are not bound to select any of the firms submitting proposals. Further, as quality is the principal selection criterion, the TNUIFSL does not bind itself in any way to select the firm offering the lowest price.

11. The selected firm shall not disclose any information / data to others without the written permission of the TNUIFSL.

12. You are requested to hold your proposal valid for 90 days from the date of submission without changing the personnel proposed for the assignment and your proposed price. The TNUIFSL will make its best efforts to select a firm within this period.

13. Please note that the cost of preparing a proposal and of negotiating a contract including visits to TNUIFSL, if any is not reimbursable as a direct cost of the assignment.

14. Assuming that the contract can be satisfactorily concluded in April 2017, you will be expected to take-up / commence with the assignment in April 2017.

15. The successful bidder will be invited for signing agreement. The bidder is requested to furnish a performance security at the rate of 5% of the finalized agreement value in the form of Irrevocable Bank Guarantee from any one of the Nationalized Bank in India taken in favour of the PDGF, Chennai valid for a period of 12 months or till the successful completion of the assignment and subject to extensions without any financial implications. The same will be released on successful completion of all the works satisfactorily. The validity of performance security will be extended according to the extension of contract period as per the agreement executed.

16. The Earnest Money Deposit of the successful Tenderer will be discharged when the Tenderer furnishes the required Performance Security and signs the Agreement

17. The Earnest Money Deposit may be forfeited

- If the bidder withdraws the tender after Tender opening during the period of validity of the tender.
- If the bidder withdraws the Tender after the issue of letter of acceptance of his Tender.
- In the case of a successful bidder, if the bidder fails within the specified time limit to:
  - furnish the required performance security or
  - sign the Agreement
  - accept the Letter of Intent
- if the bidder has furnished incorrect information on qualification and experience.

18. The fees shall be quoted in Indian Rupees only. Please note that the remuneration which you receive from the contract will be subject to normal tax liability in India. Kindly contact the concerned tax authorities for further information in this regard if required.

19. Please note that mobilization advance will not be given to the Firm.

20. It is estimated that about 18 man-months of services will be required for the study and generally you should base your financial proposal on this figure. However, you should feel free to submit the proposal on the basis of man-months considered necessary by you to undertake the assignment.

21. Joint venture not allowed.

21. All documents relating to the Bid and all communications in connection with the Bid shall be in English language. All the pages should be serially numbered and signed by the Firms.

22. Any dispute arising out of the Contract, which cannot be amicably settled between the parties, shall be referred to adjudication/arbitration in accordance with the Arbitration & Conciliation Act 1996. The place of arbitration shall be at Chennai.

23. PDGF reserves the right to postpone / cancel this RFP at any point of time without assigning any reason, whatsoever.

24. Please note that conditional bids ***are liable for rejection***.

25. Test of responsiveness:

i. Pre qualification Proposal along with EMD – Cover – 1
(Signed and sealed copy of the RFP, Pre-proposal Minutes of the Meeting, Addendums issued, etc., shall be submitted as part of Cover 1, without any financials)

ii. Technical Proposal – Cover – 2

iii. Financial Proposal – Cover – 3

iv. All the pages of above proposals (addendums / corrigendum issued, if any) shall be duly sealed and signed by the bidders authorized representative.

Note: **The proposals shall be submitted in the Office of Tamil Nadu Infrastructure Financial Services Limited, (TNUIFSL), No. 19, T.P. Scheme Road, RajaAnnamalai Puram, Chennai – 600 028.**

Yours faithfully,

Sd/-
Managing Director
TNUIFSL

Enclosures:

1. Terms of Reference.
2. Supplementary Information to Firms.
3. Draft contract under which service will be performed.

Annexure - 1

TERMS OF REFERENCE FOR PREPARATION OF FEASIBILITY REPORT AND DETAILED PROJECT REPORT (DPR) FOR CONSTRUCTION OF BRIDGES ACROSS PUZHAL SURPLUS CANAL AT AMULLAVOYAL, MANALI AND BRIDGE ACROSS PUZHAL SURPLUS CANAL AT VADAPERUMPAKKAM, MANALI FOR GREATER CHENNAI CORPORATION

I. Background:

Chennai is one of the 4 Metropolises in India and it is the largest Metropolis in South India. The total extent of the city is about 426 sq.km. Total number of vehicles in the city has quadrupled in the last 10 years. The situation poses a very tough challenge and warrants immediate intervention in the traffic management. So, it is essential to improve the existing traffic infrastructure facilities to facilitate free flow of traffic in all possible directions with a view to provide sustainable traffic management system for future requirements at salient highly congested road corridors. The Greater Chennai Corporation has identified the locations for preparation of Feasibility Report and Detailed Projects Reports in order to decongest and to construct new bridges. Greater Chennai Corporation identified the following two locations:

a) Bridge across Puzhal surplus canal at Amullavoyal, Manali and
b) Bridge across Puzhal surplus canal at Vadaperumpakkam, Manali

In this regard Greater Chennai Corporation has requested to appoint a consultant for preparation of a Feasibility Report and Detailed Project Report (DPR) for construction of bridges at above locations under the Project Development Grant Fund managed by Tamil Nadu Urban Infrastructure Financial Services Limited (TNUIFSL).

2. Objectives:

1. Preparation of Feasibility Reports, Detailed Project Report (DPRs) and Bid documents for crossing the Adyar river by construction of bridges river at two locations for providing traffic and pedestrian movement.

2. To conduct a comprehensive study of both the locations for preparation of Feasibility Reports and DPRs with necessary field surveys, investigations, traffic survey, etc., as per IRC/Morth Guidelines so that the projects will be bankable and ready for execution.

3. To analyze the feasibility of construction of bridges with a view to decongest the traffic in the notified locations and prepare separate detailed project reports for each of the location with designs, drawings, bill of quantities, cost estimates, working drawings, specification, etc., so that a comprehensive proposal is framed for the proposed bridges with various solutions and ancillary works catering to future traffic needs.

3. Scope of Work:

The scope of work covers but not limited **to** the following:

I. Phase 1 - Feasibility Study:

1. To conduct necessary traffic studies, pedestrian surveys, geotechnical investigations, topo surveys, hydraulic surveys, social, environmental surveys, regulatory requirements, connecting roads, legal issues, etc., as required in order to establish the Feasibility of the Project from various perspectives like Technical, Financial, Economic, Social, Environmental, hydraulics of the river, bankability of the project with various options / alternatives / connectivity with block cost estimates with the latest techniques available in the market.
2. To study and suggest the combined feasibility of constructing the two bridges based on the technical and financial requirement, utility of the proposed facility simultaneously with a Phasing Plan and Implementation Plan
3. To prepare necessary 2D and 3D views for the various options suggested

II. Phase 2 - Detailed Project Report:

(1) To conduct necessary traffic studies, pedestrian studies to determine the present and projected traffic flow patterns in various directions in and near the identified locations and determine the flow expected in the identified locations and conduct surveys in accordance with IRC and MORTH guidelines and specifications.

(2) To obtain the hydraulic details of the river in the preferred location from WRO., PWD such as cross sections, HFL, maximum depth of scour etc and to ascertain the hydraulic particulars through required field studies in the stretches of the river crossings to arrive the required details for ascertaining the feasibility and the design onwards

(3) To obtain the data regarding functioning of existing bridges on the stream in the vicinity of proposed bridge location (Road~ bridge, Railway bridge etc.). Data collected should include hydraulic data, geometric data and structural data etc., required for the present study and should be used to augment the available hydrologic data.

(4) To study the techno-economic feasibility of construction of roads and bridges including necessary pedestrian facilities in the identified corridor and also identify any social and R&R and environmental issues in the project.

(5) To study Environmental and Social impacts arising as per ESMF guidelines. The detailed steps are provided in Enclosure – I & II for guidance.

(6) To identify the existing underground utilities and suggest measures for rerouting the same.

(7) To prepare the feasibility report based on the surveys and studies conducted

(8) To decide the geometric of the proposed traffic facilities and then design its structural elements as per relevant IRC / MORTH with detailed design, estimates and drawings including economic analysis.

(9) To prepare detailed project report with designs, drawings and detailed estimates.

(10) To prepare bid documents and tender schedules, specifications, etc.,

4. Tasks to be performed by the consultants

The outline of tasks to be performed by the consultants in various locations is as follows;

S. No	Locations	Tasks to be performed
1	Bridge across Puzhal surplus canal at Amullavoyal, Manali	Preparation of Feasibility Report and Detailed Project Report (DPR) including tenderable bid document
2	Bridge across Puzhal surplus canal at Vadaperumpakkam, Manali	

The consultants shall be required to perform the following tasks.

i. Conduct Turning movement, O/D surveys and Carry out detailed traffic volume studies in the required junctions and its neighborhood for each one of the proposed locations in order to justify the necessity of proposal. Devise suitable layouts of the proposed Bridges. Proposals are to be compared in terms of delay in seconds/PCU at intersections along the route and adjoining intersections, variation in travel distance / travel for all possible movements along and across the route, pedestrian movements, safety aspects etc. Justification of the proposals to be demonstrated with the aid of appropriate simulation tool.

ii. All the surveys, investigations, hydraulic study, carrying out detailed design of traffic/pedestrian infrastructure facilities shall be as per IRC/ MORTH and other relevant IRC/I.S codes/MORTH Guidelines with latest revisions.

iii. Conduct necessary pedestrian surveys as per IRC / MORTH

iv. Obtain the required hydraulic particulars of the river required for the study from the concerned officials of PWD, Tamil Nadu

v. Conduct necessary field surveys to ascertain the hydraulic details of the river at the preferred locations

vi. Carry out site evaluation analysis based on borehole data and conduct necessary soil tests, topographic and level survey of the site with LS and CS as required for the design of the bridges.

vii. Identify land requirement if it is essential and suggest plan for land acquisition / alienation. (The proposal should as far as possible have no land acquisition)

viii. Identify the other development projects proposed / being implemented by different agencies / departments in the study area and shall take care in the study and integrate the same if necessary.

ix. Prepare the draft feasibility based on the surveys, geo physical investigations, hydraulic details and techno economic studies.

x. Conduct stake holders consultation to receive the views and comments for the conceptual designs prepared

xi. Prepare the final feasibility report based on the suggestions received from stake holders

xii. Prepare General Arrangement Drawing (GAD) and Alignment Plan showing the salient features of the Road and Bridges and structures proposed to be constructed.

xiii. Subsequently prepare detailed design as per IRC and working drawings for all components of the bridges and structures

xiv. Design the components of the bridge such that the existing hydraulic conditions of the river should not be affected at any condition of its flow and considering the maximum HFL occurred in the river during the past flood events

xv. Design the bridge such that the bottom of deck slab should be at least 1m above the maximum flood level occurred as per the hydraulic details available.

xvi. Design the structural elements of the Bridges using reputed and appropriate software for modeling and analysis taking into accounts the specifications as per relevant codes of practice.

xvii. Bridges are to be aesthetically designed conducive to the adjacent land uses and traffic arrangement for future and conforming to urban transportation structural requirements to be developed with detailed cost estimates as required.

xviii. To study, analyse and suggest the various construction methodologies, techniques and materials that can be used in order to minimize the cost, time of construction and other inconveniences caused

xix. To carry out survey of utility services and design appropriate arrangements for carrying these safely and aesthetically through the bridge and approaches

xx. Prepare and submit architectural drawings such as plan, cross-section and elevation for each component of the proposed Bridges with adequate drainage facilities as required.

xxi. The design should be such that there is maximum utilization of the existing carriageway and provide necessary access to the existing service road appropriately.

xxii. The design should be such that the bridge deck should accommodate foot path, lighting arrangements and other utility services etc., as per standard norms.

xxiii. Study R&R and environmental issues if any and prepare Environmental & Social Impact Assessment based on the ESMF guidelines of TNUIFSL.

xxiv. The consultants to suggest traffic circulation plan, during and after construction with various options as part of the study in consultation with various other departments.

xxv. Design shall take into consideration to minimise impact on the adjacent land uses through technological advancements in road surface, noise mitigation measures, etc

xxvi. To suggest suitable road signs, marking and other measures to ensure safety of vehicles and other road users.

xxvii. To study the safety standards required during emergency in order to make fire tenders, ambulances, other emergency services for easy approach to the surrounding area as per standards.

xxviii. To identify various pedestrian traffic generators and conduct necessary surveys for pedestrian and cyclists facilities.

xxix. To prepare suitable traffic diversion plan during execution.

xxx. To prepare cost estimates with detailed design and working drawings for the Bridges

xxxi. To carry out economic analysis of the project.

xxxii. To prepare a simulation model for various scenarios for the entire corridor and for the impact / influencing areas

xxxiii. To prepare the draft DPR and draft Bid documents with necessary packaging, phasing based on the above, on as required basis.

xxxiv. On approval of Draft DPR, Submission of Final DPR covering all the aspects of the TOR Bid documents, Implementation schedule and procurement plan

xxxv. To co-ordinate with local body and concerned agencies for getting necessary approvals etc.

xxxvi. The consultants have to conduct stakeholders' consultation. The consultant has to make necessary coordination, invitations, follow-ups, etc., as required for making the stakeholders consultation a success. **Publication / Notice in newspapers only will be issued by GCC**. All other expenses, arrangements, logistics has to be done by the consultants at their own cost.

5. The Consultants' responsibility would include:

5.1. Data

The details given in the technical conditions and specifications taken in conjunction with the study, is only a reasonable preliminary basis. The nature of the overall contract is such that after the proposal, the consultant shall be wholly responsible for all the details of the proposal, such as the physical and site conditions, the execution methodology etc. All data utilized in preparation of the proposal shall be presented indicating the sources of the data and also the basis of assumptions, if any. The consultant shall be responsible for all the data, designs and drawings given by them.

5.2. Survey and Analysis

The consultant shall conduct his own studies and prepare estimates based on schedule of rates specified by Government and updated to reflect actual market conditions wherever necessary. The Tamil Nadu Urban Infrastructure Financial Services Limited as well as GCC shall not be responsible (except as to risks specifically accepted under the conditions of contract) for the validity of the project details, designs and BOQ and rates proposed in the estimates.

5.3 Project site survey

GCC shall indicate the Project sites and their measurements. The consultant shall be responsible for its verification.

5.4. Soil Investigation and Tests

Soil tests as per relevant IRC Standards have to be done by consultants to arrive at design parameters for the formation and safe bearing capacity. At locations proposed for important installations at least one bore hole for every such installation, should be made to determine the SPT N values at depth specified in the relevant codes. Soil samples taken from boreholes should be visually classified, index properties determined and presented in the final report. These boreholes should be normally taken to a depth whose 'N' value is greater than 100 plus a further 3-m depth (to account for any drastic fall in 'N' value below these strata). The surface flow in the river and subsurface water at each borehole be sampled and a chemical analysis carried out, to recommend appropriate cement/admixture for use in concrete foundations. The scouring depth of the river at the reaches of the study should be taken care of in deciding the foundation. Bore hole investigation for bridge should be carried out at each pier/abutment foundation as per IRC/MORTH guidelines.

Recommendations of a geo-technical expert should be furnished in the soil report and should cover aspects like appropriate soil stabilization measures if required, bearing capacity of the founding strata etc.

Necessary hydraulics details and investigations shall be done by the consultant at his own risk and cost as per the relevant IS/IRC requirements, latest revisions, if any

5.5 Instrumentation

All necessary instrumentation to carry out the study shall be arranged and operated by the consultants at their own cost.

5.6 Project Designs

For the given purpose and functional use of the respective projects, proper design has to be developed. The consultants have freedom to choose the type of sub structure and superstructure provided they are justifiable, economically viable and codal specifications are met. The drawings and designs shall include a general arrangement drawing and detailed drawings of all components in size A1 or A0 as required by the client. The level of detailing shall be such as to enable check of conformance with code provisions, including detailed construction drawings and bar bending schedules. The design principles should account for economy of scale in cost and time.

5.7 Estimation of Quantities.

Based on the surveys and designs evolved by the consultants, within the framework and the requirements of the project, the consultants have to prepare detailed items and quantity schedules and subsequently work out the cost estimates.

5.8 Bidding services - Preparation of bid documents

II. Detailed Description of services - Detailed Project Report

1. General

1) The consultant should establish the technical, economical, environmental and social viability of the project and prepare Detailed Project Report and Bid document. (DPR) as per World Bank / GoTN Procedures & Guidelines for international / local competitive bidding.

2) The consultant should study the traffic flow pattern on the roads and at the junctions / intersections of the roads, hydraulic data of the Adyar river at the preferred locations and the constraints and prospects of the locations so as to conceptualize appropriate grade separated junctions / intersections (combined or isolated) proposals. As far as possible the structural configuration should account for entry-exit movements in a junction and the through traffic shall be uninterrupted.

3) The consultant should confirm that the structural components of the bridge are designed such that the existing hydraulic conditions of the river such as flow, velocity etc., will not be affected at any condition of its flow with relevant to IRC SP 054(2001) and other relevant IRC.

4) The detailed project report should inter-alia include detailed engineering survey , alignment and GAD finalization, , sub-soil investigation, detailed design for the grade separators, arrangement for disposal of rain water, cross-drainage works, design of junction improvements, design of service roads, diversion roads if required, shifting and relocating the existing facilities wherever necessary, lighting ,safety installation, warning signs, quantities of various items involved, detailed working drawings, plans showing existing utilities and their proposed shifting, detailed cost estimates for all the interventions proposed, economic viability analysis, environmental and social impact assessments shall be as per the Environment and Social Framework (ESF) guidelines of TNUIFSL.

5) The consultant should conceptualize project without any L.A. If it is inevitable the consultant should prepare all land acquisition papers ie. all necessary documents, for acquisition of land and should prepare structural valuation for the structures involved in the land acquisition process as per ESF guidelines of TNUIFSL. Also the consultant shall prepare a LPS (Land Planning Schedule).

6) Environmental sensitive components along the project corridor shall be identified, and the alternative proposals shall be reviewed to finalise the option with minimum impact on environment as per ESF guidelines of TNUIFSL.

7) Wherever required the consultant should liaise / interact with concerned authorities and also to obtain necessary details, to arrange for all clarifications to get approval of all drawings / reports. Also to incorporate the estimate for shifting of service utilities (EB, Waterline, Drainage line etc.,) of all types involved from the concerned department.

8) Consultant should obtain all types of necessary clearance required for implementation of the project from the concerned agencies. The client will provide necessary supporting letters and will arrange to make advance payments / fees as per the demand note issued by such concerned service agencies for shifting of service and utilities to enable implementation.

9) Consultant should prepare a detailed Traffic management plan for the project roads during the construction period as well as on completion of the Bridges.

10) Consultant should prepare Strip plans indicating the scheme, details of the river showing LS, CS, bed level, MFL etc for the required stretches of the project location of all existing utility services (both over- and underground) and the scheme for their relocation, trees to be felled and proposed for planting, land acquisition requirements

11) Rearrangement of existing lighting in the proposed location, lighting the Grade Separators and also the road under the bridges, such that there are no dark spots / inadequate lighting in the RoW of the road

12) While carrying out the field studies, investigations and design, the development plans being implemented or proposed for future implementation by the local bodies/other departments should be taken into account. Such aspect should be clearly brought out in the reports and drawings.

2. Review of Data and Documents

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

(i) Hydraulic details of Adyar river at the preferred locations
(ii) Proposals if any for improvements to the river hydraulics in the future
(iii) Condition of bridges and cross-drainage structures in the study area;
(iv) Sub-surface and geo-technical data for existing bridges nearby;
(v) Hydraulic data, drawings and details of existing bridges;
(vi) Details of appropriate integration of sanctioned / on-going works/ future projects on the stretch sanctioned / proposed by other agencies;
(vii) Data on accident/road crash.
(viii) Review of all available plans, designs, reports and published information about the project and the project influence area;
(ix) Inventory and condition surveys for road, bridges, cross-drainage structures and drainage provisions within the project area.

3. Engineering Surveys and Investigations

3.1. Reconnaissance and Alignment

1. The consultant should make an in-depth study of the available land width (ROW) topographic maps, hydraulic particulars of the river and other available relevant information collected by them concerning the existing alignment. Consultant should arrange the required maps and the information needed by it from the potential sources. Consultant should make efforts for minimizing the land acquisition.
2. The detailed ground reconnaissance survey should be taken up immediately after the study of maps and other data. The primary tasks to be accomplished during the reconnaissance surveys include but not limited to the following.

i Topographical features of the river and the adjoining area
ii. Typical physical features along the existing alignment within and outside ROW i.e. Land use pattern;
iii. Possible alignment alternatives;
iv. Realignment requirements;
v. Preliminary identification of improvement requirements including
treatments and measures needed for the cross-roads;
vi. Traffic pattern and preliminary identification of traffic homogeneous 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
(1) Type and extent of existing utility services along the alignment (within ROW).

1. The data derived from the reconnaissance surveys should be utilized 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.

2. 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 should be supplemented and augmented using the data obtained from detailed field studies and investigations.

3.2. Topographic and field Surveys:

a. The consultant should carry out topographic surveys under the project. The detailed field surveys should be carried out using high precision instruments i.e. Total stations. The data from the topographic surveys should be available in (x, y, z) format for use in a sophisticated digital terrain model (DTM). The consultant should be fully responsive for any inaccuracy in surveys.

b. The detailed field surveys should essentially include the following activities

i. Topographic surveys along the cross sections of the river, character and shape of the river bank, the slope, height, and composition of the banks; and pertinent dimensions of any natural dikes, existing Right Of Way (ROW): Running a continuous open Traverse along the river, existing road and realignments, wherever required, and fixation of all cardinal points such as horizontal intersection points, 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 hydraulic details of the river, structures (bridges, culverts etc.) available nearby, existing roads, electric and telephone installations (both Over head as well as underground), huts, buildings, fencing and trees (with girth greater than 0.3 meter) oil and gas lines water bodies, adjacent land uses like commercial, residential, educational, hospitals, etc. falling within the extent of survey

c. The width of survey for river and roads should be as given under

i. The width of the survey roads should take into account the layout of the existing alignment. The surveys should extend to sufficient width so as to accommodate final proposal beyond either side of the centre line of the proposal or land boundary whichever is more.

ii. The width of the surveyed roads should 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.

iii Where existing roads cross the alignments, the survey should extend a minimum of 200 m on either side of the centre-line and should be of sufficient width to allow improvements.

iv. The number of river cross-sections should be such as to yield sufficient data for design of water way, proposed structure and the approach embankment. At least one cross-section should be taken along the proposed alignment of the bridge for each alternative site. The location of cross-sections shall be indicated on the site map. The number of cross sections studied should conform to the provision of relevant clauses of IRC:5.

v The approved alignment/ boundaries should be transferred on to the ground as under:

Bench Mark / Reference pillar of size 15 cm x 15 cm x 45 cm should be cast in RCC of grade M 15 with a nail fixed in the centre of the top surface. The reference pillar should be embedded in concrete up to a depth of 30 cm with CC M10 (5 cm wide all around). The balance 15 cm above ground shall be painted in yellow. The spacing for reference pillar should be at every 50 m interval (or) as per requirement which ever is less, in case Bench Mark Pillar coincides with Reference Pillar, only one of the above two needs to be provided.

d. The topographic surveys for longitudinal and cross-sections should cover the following:

i. Longitudinal section levels along final centre line at every 10 m interval (or) as per requirement which ever is less.

ii.Cross sections at every 10 m interval or as per requirement which ever is less in full extent of survey covering sufficient number of spot levels on existing carriageway and adjacent ground. Cross sections shall be taken at closer interval at curves.

e. The Consultants should 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, severs, 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 should 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.

f. The information collected during reconnaissance and field surveys should 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.

g. Detailed field studies should be carried out to collect road and pavement surface conditions, Service roads and junction points. The data should generally cover:

Pavement condition (surface distress type and extent);

a. Shoulder condition;
b. Embankment condition; and
c. Drainage condition.
d. General condition
e. Connectivity of drainage turnouts into the natural topography
f. Condition in cut sections
g. Condition at high embankments

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

h. A site plan clearly exhibiting the constraints and prospects required for planning each of the grade separators, the curves if any on the road alignment existing in and around the project area should be prepared (to a scale of 1 in 1000 for Horizontal and 1 in 100 for vertical and 1 in 500 for junction improvements) and suggestions on the feasibility of improving the road alignment as part of the project.

8. Suitable alignment feasible for the grade separators (i.e. along or across, combined or isolated) in a general way should be selected after considering various alternatives and assumptions on the length of the approach roads, etc.,

j. The alignment should take into account all control points and should be shortest and most economical compatible with requirements of gradient and curvature.

k. Every effort should be$_e$ taken to remove the internal deficiencies with respect to plan and profile, road side drainage provisions, as well as area drainage consideration, safety features etc.,

l. The Environmental & Social Management Framework (ESMF) as per TNUIFSL should be adhered to.

m. Identification of possible improvements in the existing alignment and bypassing congested locations with alternatives, evaluation of different alternatives comparison on techno-economic and other relevant considerations and recommendations regarding most appropriate option should be reported by the consultant.

n. The design shall be in such a way to provide adequate connectivity to critical areas nearby, connecting roads, etc.

3.3 Traffic Surveys

Number and Location of Survey Stations

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

S. No	Description	Number of Survey Stations
1.	Classified Volume count	At all mid block sections along the roads
2	Intersection / junction Volume Count	At all intersections / junctions
3	Origin-Destination surveys	Comprehensive enough to cover all roads likely to be affected by the proposed scheme.

S. No	Description	Number of Survey Stations
4	Speed-Delay characteristics	Project sections
5	Pedestrian/animal cross traffic count	All intersections, junctions and important nodal points
6	Cyclists	All intersections, junctions and important nodal points

Traffic should be predicted for the future horizon year for which the grade separator is to be designed. The desirable forecast period is 20 years. The traffic growth should be assessed on the basis of observed trend of traffic in the recent past / the growth rate adopted for the sub-projects of the on-going projects in Chennai.

3.4 Classified Traffic Volume Count Survey

The classified traffic volume count surveys should be carried out for 7 days, 24 hours (continuous, direction-wise) at the selected survey stations. The vehicle classification system as given in IRC **–9** should be followed.

1. All the results should be presented in tabular and graphical form. The survey data should be analyzed to bring out the hourly and daily variations. The traffic volume count per day should be averaged to show a weekly Average Daily Traffic (ADT) by vehicle type. The Annual Average Daily Traffic (AADT) should be worked out by applying seasonal factors.

2. The consultants should compile the relevant traffic volume data from secondary sources also. The salient features of traffic volume characteristics should be brought out and variations if any, from the traffic census carried out by other agencies should be suitably explained.

3. Traffic count should be taken in detail so as to clearly define the flow pattern of traffic on the project area. And also the consultant should schematically represent the present and future traffic scenario.

3.5 Origin- Destination surveys

1. The origin and destination data should be comprehensive enough to cover all roads likely to be affected by the proposed scheme. The points at which the data is collected should be carefully chosen on the road net work such that it should be possible to derive the volume of traffic likely to use the facility under consideration
2. The methodology for the surveys should be as per IRC: 102-1998 and other relevant codes. The details including location and duration of surveys should be finalised in consultation with GCC and TNUIFSL. The proposal in response should clearly indicate the number of locations that the consultants wish to conduct origin-destination surveys and the rationale for the same.
3. The data derived from the survey should be analysed to identify requirements of suitable remedial measures.

3.6 Turning Movement Surveys

(a) The information on directional movement of traffic in peak hours should be collected by conducting traffic counts for 4 hours each, in the morning and in the evening peak hours (unless there exist extended peak hours) at all the intersections along the roads and the junctions existing near by which may have impact on the proposal. The details regarding composition and directional movement of traffic should be furnished by the consultant.

(b) The methodology for the surveys should be as per IRC: SP: 41-1994 and other relevant codes. The details including location and duration of surveys should be finalised in consultation with GCC and TNUIFSL. The proposal in response should clearly indicate the number of locations that the consultants wish to conduct turning movement surveys and the rationale for the same.

(c) The data derived from the survey should be analysed to identify requirements of suitable remedial measures.

3.7 Pedestrian / animal cross traffic surveys:

(a) The consultant should identify the various pedestrian traffic generators such as schools shopping centers hospitals bus stops etc, and should conduct Special pedestrian surveys to find out the existing movements patterns of pedestrians in the project roads and to propose necessary pedestrian facilities, to facilitate their movements by the provisions of appropriate pedestrian crossings. The consultant should schematically represent the present and future Pedestrian movement scenario.

(b) The consultants should propose necessary pedestrian facilities, to facilitate Pedestrian movements by providing appropriate pedestrian crossings based on the Pedestrian studies in the roads.

3.8. Geo - Technical Investigations and Sub-Soil Exploration

The consultant should carry out geo-technical investigations and sub-surface explorations for the proposed Grade separators, bridges and conduct all relevant laboratory and field tests on soil and rock samples. The minimum scope of geo-technical investigations for bridge and structures should be as under:

1. However, where a study of geo-technical reports and information available from adjacent 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 consultant should review and finalize the bore-hole locations in consultation with the TNUIFSL.
2. **Sub-soil investigations should be done as per IRC 78-2000.**

3. The scheme for the boring locations and the depth of boring should be prepared by the consultant and submitted to Chennai Corporation for approval. These should be finalized in consultation with Chennai Corporation.
4. The bore hole investigation should be properly carried over at each pier/abutment locations where proposed.

5. The sub-soil exploration and testing should be carried out through the Geo-technical Consultants certified by the MORT&H. The soil testing reports shall be in the format prescribed in relevant IRC Codes.

6. Sub grade Characteristics and Strength:

1. The testing for sub grade soil should include:

i. In-situ density and moisture content at each test pit.
ii. Field CBR using DCP at each test pit
iii. Characterization (grain size and Atterberg limits) at each test pit;
iv. Laboratory moisture-density characteristics (modified AASHTO compaction);
v. Laboratory CBR (unsoak and 4-day soak compacted at three energy levels) and swell.

2. For problematic soils, the testing shall be more rigorous. The characteristics with regard to permeability and consolidation shall also be determined for these soils. The frequency of sampling and testing of these soils shall be finalized in consultation with the Chennai Corporation after the problematic soil types are identified along the alignment.

3. Public consultation.

1. Public consultation, including consultation with communities located along the road, NGOs working in the area, other stake-holders and relevant Government Departments at all the various stages of assignment should be done by Consultant (such as inception stage, preliminary design stage and once final designs are concertized).
2. All the consultation process with various stakeholders should be minuted and recorded and the same should be made available to the project authorities or authorized representatives as and when required.
3. The outcome of the public consultations and exploring the suggestions on various design options shall be included in the report.
4. Wherever possible or relevant, consultant shall explore the possibility of incorporating the suggestions of the stakeholders in the design.

4. Detailed Design of Road and Pavements, Bridges, Structures

4.1. Design Standards

4.1.1. The consultant shall evolve design standards and material specifications for the Study primarily based on field survey in alignment with IRC publications, MORT&H Circulars and relevant recommendations of the international standards (American, Australian, British, Canadian, Japanese).

4.1.2. 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.

4.1.3. Seismic forces in the appropriate zone shall be taken into account for the design of structures as per IRC6-2000.

4.2. Standards and Codes of Practices

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

4.2.2. All notations, abbreviations and symbols used in the reports, documents and drawings should be as per IRC: 71-1977 and other relevant IRC.

4.3. Design of Bridges and Structures

4.3.1. The consultant should prepare General Arrangement Drawing (GAD) and Alignment Plan showing the salient features of the Grade separators and structures proposed to be constructed. These salient features such as alignment, overall length of Bridge, starting chainage and ending chainage shall be mentioned. Cross- section, deck level, founding level, type of bridge components for service bridges (superstructure, substructure, foundations, bearings, expansion joint, Retaining wall, return walls etc.) should be finalized based upon hydraulic and geo-technical studies, cost effectiveness and ease of construction so as to maintain traffic flow smoothly. The GAD shall be supplemented by Preliminary designs.

4.3.2. Subsequently the Consultant should prepare detailed design as per IRC and working drawings for all components of the bridges and structures.

4.3.3. The consultant should perform detailed design for each of the component of the grade separators, approaches, embankments, junctions etc., and prepare alignment plans, longitudinal sections and cross sections.

4.4. Drainage System

The requirement of drainage/ roadside drainage system and the integration of the same with the existing or proposed cross-drainage system should be worked out for the entire length of the project.

4.5. Traffic Safety Features, Road Furniture and Road Markings

4.5.1 The consultant should design suitable traffic safety features and road furniture including traffic signals, signs, markings, overhead sign boards, crash barriers, and delineators etc., considering the specified IRC Codes and in consultation with the Traffic Police. The locations of these features shall be given in the reports and also shown in the drawings.

4.5.2 Adequate Safety measures for vehicular traffic and pedestrians have to be designed for execution phase

5 Environment and Social Impact Assessment

5.1 Environmental Impact Assessment

a. The Project Area and Setting

Description of the project area and salient features such as geographic location, climate, rainfall, soil profile, wind direction, land use, population, traffic system, has to be provided by the consultant.

b. The Project Objectives and Need

Objectives of this assignment are to:

1. Establish the environmental baseline in the study area;
2. Identify and assess the adverse environmental impacts; and provide requisite measures to address these impacts;
3. Identify the opportunities for environmental enhancements in the project area and provide requisite guidance/plans in this regard;
4. Wherever relevant integrate the measures (mitigation and enhancement related) in the project planning and design; and
5. Develop appropriate management plans and codes of practices for implementing, monitoring and reporting of the environmental mitigation and enhancement measures suggested.
6. To capture the land acquisition, resettlement and rehabilitation requirements for the project and develop an implementable resettlement plan/social management plan.

- ❖ The EIA shall be carried out in line with the Government of India (GoI)'s regulations (EIA Notification), the EA guidelines and TNIFSL- ESMF.
- ❖ The EA comprises: Environmental Screening, Project EA and the Environmental Management Plans (EMPs). The EA shall be carried out in a consultative manner through "Stakeholder Consultations", at

various stages, with the affected communities, NGOs, selected government agencies and other stakeholders.

- ❖ The RAP/RIP and SMP are to be prepared in line with the guidelines of Environmental and Social Framework.

c. Scope of Work

The following are the tasks to be performed by the consultants while conducting Environmental and Social Assessment for the Grade Separator / ROB including nature, scale and magnitude of impacts that the project is likely to cause on environment.

a. Task 1 Description of Project

A succinct description of the proposed project shall be provided covering: (a) analysis of the existing traffic system (b) description of each of the proposed components, activities and sub-activities (c) sites involved for the project components including the ownership details etc. The task shall also bring out the rational, the need for the proposed project and list out the various benefits of project implementation. As part of this activity, the consultant shall provide necessary maps to scale.

b. Task 2 Review of Earlier Studies

The consultants shall review various earlier studies such as feasibility and detailed project reports, etc., of the project and understand the project and various aspects associated with the same. This shall provide a base to formulate the surveys necessary for the project and assessing impacts of the same.

c. Task 3 Legislative and Regulatory Considerations

A review of the legal and regulatory provisions applicable for the project shall be carried out in this task. The objective of the review is to bring out the legal and policy issues to be addressed in the project at various stages of project development such as design, execution and operation. Also the consultants should review, the environmental laws such as EP Act, Water Act, Air Act, as well as the applicable operational policies / directives. Besides the consultants shall also provide a complete list of regulatory formalities required for the project and various clearances required from different regulatory agencies.

d. Task 4 Preparation of Environmental and Social Profile

d. Environmental Profile:

An environmental profile of the project influence area shall be prepared, based on appropriate primary & secondary surveys and field investigations. The objective of this profile is to establish existing environmental conditions of the project area, in terms of air, water (surface & ground), noise, soil and other environmental parameters, which should form the basis for prediction of impacts due to proposed project activities. As part of this, the environmentally sensitive land uses (protected natural areas, areas of ecological value, sensitive receptors like schools, hospitals etc.) would also be identified and plotted on a map to scale.

The extent and duration of surveys shall be judiciously decided by the consultant as per requirements of the environmental regulations applicable in India and guidelines of international funding agencies. The profile prepared shall be adequate enough to predict impacts of the project and shall cater to the requirements of obtaining necessary environmental clearances from the authorities.

The profile shall essentially include all physical, ecological and socio-economic components of the project environment and bring out the salient and sensitive features of the same. Important aspects such as reserve forests, national parks, major water bodies, structures of archaeological / historic importance, and other environmental resources (if any) shall be identified and salient features of the same shall be presented.

e. Social profile:

A social profile of the project influence area shall be prepared, based on appropriate primary & secondary surveys and field investigations. The objective of this profile is to establish the land requirements for the project, ownership details, current land use.

The profile prepared shall be adequate enough to predict impacts of the project and shall cater to the requirements of

obtaining necessary permissions from the authorities, or to carry out acquisition, as may be necessary.

e. Task 5 Determination of Potential Impacts

f. Environmental Impacts:
Based on the environmental profile of the project area prepared above and the proposed project activities discussed under task 1, the consultants shall carry out environmental screening to determine the nature of impacts and level of Environmental Assessment to be carried out.

a) In case of low or insignificant level of environmental impacts, where an EMP will suffice, the consultant shall review the recent versions of generic EMPs available with TNUIFSL and carry out necessary changes to suit the project requirements.

b) As part of screening, if medium to high impacts, requiring a detailed EA and stand alone EMP is required, the consultant shall carry out detailed impact analysis. The consultant shall predict environmental impacts of the project components, activities and sub-activities on various environmental attributes (bio, geo and physical) through appropriate analytical tools and techniques such as modelling techniques, over lays, etc. Significant or insignificant, permanent or temporary, reversible or irreversible, negative or positive impacts shall be categorised separately and presented for each phase of project development.

All identified impacts shall be summarised in an easily understandable format and the magnitude and significance of each impact shall be explained in detail.

'No Project' scenario shall be analysed and impacts shall be analysed for each scenario. Based on the above analysis the best alternative that causes minimum or no impact shall be recommended for implementation.

g. Social Impacts:
Based on the social profile the consultants shall carry out social screening to identify the nature of impact and project affected persons (PAPs) and shall prepare a social management plan /R&R plan as required in line with the ESF.

f. Task 6 Stakeholder Consultations
The consultants shall carry out consultations with PAPs, NGOs, forest department officials (if applicable), selected Government Agencies and other stakeholders to (a) collect baseline information, (b) obtain a better understanding of the potential impacts and (c) appreciate the perspectives/concerns of the stakeholders, and (d) secure their active involvement during subsequent stages of the project as appropriate.

Consultations shall be preceded by a systematic stakeholder analysis, which would (a) identify the individual or stakeholder groups relevant to the project and to environmental issues, (b) include expert opinion and inputs, (c) determine the nature and scope of consultation with each type of stakeholders, and (d) determine the tools to be used in contacting and consulting each type of stakeholders. A systematic consultation plan with attendant schedules will be prepared for subsequent stages of project preparation as well as implementation and operation, as required. Where community consensus is required in respect of proposed mitigation measures for impacts on community assets including water bodies, places of worships etc., specific plan for modification/relocation etc have to be disclosed and consensus obtained.

g. Task 7 Development of an Environmental and Social Management Plans
The consultants using outputs of the above tasks shall develop an implementable Environmental Management Plan (EMP) and Resettlement Implementation plan (RIP) / Social Management Plan (SMP) for the project. Development of an EMP and SMP are detailed under Sections 4.0.

5.2 Screening and Assessment:

1. 1. Screening

The consultant shall carry a preliminary analysis to assess the nature, scale and magnitude of the impacts that the project is likely to cause on environment and social aspects. Screening shall be undertaken to identify the environmental and social hot spots in the sites identified for locating the project and determine the level of analysis required for the assessment.. In case of significant environmental and social impacts encountered (may be applicable to the entire project/specific project interventions/specific locations), the consultants shall explore

possible alternatives to the project and/or project components in a consultative manner. The deliverable at this stage will be Environmental Screening Report and Social Screening report.

The screening exercise shall be supported through secondary and primary information collection and, stakeholder consultations on existing environment scenario. As part of the screening the consultants shall:

1.1 Identify sensitive locations in the project area including regionally or nationally recognized environmental resources and sensitive manmade land uses like hospitals, schools, etc and expected impacts thereof

1.2 Identify the current land use of the project site, any additional land requirement, ownership of the land, number of persons/families affected, extent of impact, presence of structure & type of structures, common property resources requiring relocation, procedural requirements, etc

1.3 Establish baseline environmental quality with regard to air, water and noise at sensitive receptors.

1. List and map common property resources such as trees, forests, large water bodies; major physical cultural /religious properties, etc. and severance and or impacts thereof
2. Identify Human settlement, physical infrastructure and project activities that would result in severance.
3. Determine the need for a stand alone EMP/EA and SMP/RIP.

2. Detail Assessment Report

a. Environmental Assessment Report:

1. Existing Environment and Baseline Conditions: Baseline assessment shall be carried out based on the outcome of Environmental Screening carried out for the project. The baseline conditions shall be established through detailed primary level field surveys. At this stage the consultants shall prepare detailed maps showing candidate sites for environmental improvements.

The specific tasks under this include:

2. Data Collection: Data shall be collected on relevant physical, biological and socio-economic conditions to establish the current environmental status of the project area and related project components. The data collection should be undertaken to arrive at meaningful information that will facilitate assessment of impacts and preparing management plan. Broadly, the following form of the data categories shall be covered (the consultant is also encouraged to use professional judgement and local knowledge in defining other data requirements):

1. The current land uses at the proposed project site and project components and the study area using maps plotted to appropriate scale, covering: water bodies viz., lakes/ponds/rivers and their uses, forests and its classification, ecologically sensitive areas (sanctuaries, national parks, wildlife roads, identified areas of nesting, mangroves and / or of interest of migratory birds, etc.), prominent land marks, sensitive receptors, community severance, village settlements, agricultural lands, pasture and barren lands, various categories of CRZ areas if any, etc.

2. Physical - Geology, topography, soils, climate and meteorology (with emphasis on critical season considering water bodies and air quality), ambient air quality, surface and groundwater hydrology, existing sources of air emissions, existing traffic system.

3. Biological and Ecological assessment covering water bodies, fauna & flora, ecologically sensitive areas (perceived as well as officially listed).

4. Based on the outcome of screening report, the consultants shall carry out additional air and noise quality monitoring, which in future may depict the base line conditions for EMP monitoring and shall be identified as an output of the current environmental status of the project sites

3. Impact Prediction: The Consultant shall identify positive and negative impacts likely to result from the proposed project, interpreting “environmental” throughout the EA to include socio-economic impacts as well as impacts on the natural environment. All the project activities during pre-construction, construction and operation phases shall be considered to assess the impacts. The impact assessment shall necessarily cover “no action” alternative in the analysis. The consultants shall regularly interact with technical and social team of the project to share the findings

of the impact assessment. The assessment of environmental impacts shall necessarily cover (but not limited to) the following:

i. Impact on air quality and noise during the operation phase of the project.
ii. Impacts on the water bodies
iii. Impacts on topography and surface drainage due the proposed project activities in the project area,
iv. Community and cultural severance, identified through consultations
v. Expected impacts on the land use patterns at and around the proposed project facilities/components
vi. Impact on ecologically sensitive features including spawning areas in creeks/estuarine areas, etc.
vii. Impact on Socio-economic aspects of the projects area
viii. The noise and air quality related impacts during construction period on sensitive receptors shall be assessed
ix. Any impacts that are irreversible and/or cannot be avoided or mitigated should be identified

4. Environmental Management Plan

The EMP should suggest ways / options for mitigating identified negative impacts of the project including necessary preventive measures. Where required, EMP shall include community consensus for the mitigation measures proposed. The EMP shall identify the means / agency responsible for implementation of the same and recommend suitable monitoring mechanism for the EMP. The EMP shall be in the form of contract covenants and shall provide detailed cost estimates converted in to BOQ items where ever necessary and applicable for implementation of the same. The consultant shall also recommend an appropriate institutional mechanism as per the requirements of EMP.

The above referred activity shall be applicable for Generic EMPs as well as specific EMPs developed as an outcome of detailed EAs

The consultant shall prepare a detailed EMP covering the measures to mitigate and/or minimize the negative impacts, including the implementation arrangement and a monitoring plan for the same with site specific requirements. EMP shall cover the following details:

(a) Mitigatory measures: For each of the significant negative impact the consultant should recommend measures to eliminate and or mitigate the impact. In case any impact is non-mitigable, the cost of damage shall be estimated. The cost (capital and recurring) of all the mitigation measures and the responsible parties for implementation should be clearly identified and shall be translated in to BOQ items. Wherever possible the measures should be drafted as contract clauses, which can be incorporated in construction/operational, phase agreements The mitigatory measures should necessarily contain conceptual designs wherever necessary. The consultants should also specify neighbourhood committees to supervise effective implementation of the proposed mitigatory measures.

(b) Landscape plan: Wherever necessary, the Landscaping plan should be prepared considering the project area as a whole and shall meet project specific requirements. Considering the nature of the project area, the EA should provide a conceptual landscape plan for all the project components while considering the special environmental and social needs.

(c) Budget Estimates: The EMP budget estimates shall be prepared for each of the project component and the shall be integrated with the overall project cost estimates and the relevant costs shall be included in the BOQ provisions

(d) Monitoring Plan: The Consultant should specify the types of monitoring needed for potential environmental impacts during construction and operation. As in the case of the mitigation plan, requirements should be specific as to what is to be monitored, how and by whom along with reporting formats and recommendations if any Cost estimates are necessary and where monitoring reports are to be prepared, the recipient responsible for review and any corrective action should be identified. The monitoring plan should be supplemented with a detailed schedule of implementation of EMP measures.

(e) Institutional Arrangement to Manage Environment Impacts Effectively: The consultants shall identify institutional/organizational needs to implement the recommendations of the project EA and to propose steps to strengthen or expand, if required. This may extend to new agency functions, inter-sectoral arrangements, management procedures and training, staffing, operation and maintenance, training and budgeting.

B. Social Assessment Report:

1. Magnitude of social impacts due to loss of land, structures, income, livelihood etc shall be assessed.

2. Significant findings of census and social economic survey of PAPs along with a detailed account of proposed mitigation measures using the ESF guidelines based on the type and extent of impact from the project.
3. The report shall include extensive information on the following:

- number of PAPs, information on type of ownership,
- structures if any to be lost, extent of impact/damage,
- compensation requirement based on the impact,
- resettlement proposal
- alternative site for relocation, and impact on host community if any
- Schedule of implementation

Details of available RoW for approaching the bridge – alight and landing portions.;
4. Budget estimates for implementing the RIP/SMP shall be brought out in the report.
5. Monitoring Plan: Consultant shall provide the monitoring plan for the implementation of RIP/SMP.
1. Institutional arrangements with resettlement implementation plan and monitoring shall be provided where required.

C. Public Disclosure

a) The consultants are to provide support and assistance to the Client in meeting the disclosure requirements, which at the minimum shall meet the funding agency's policy.

b) The consultants will prepare a plan for in-country disclosure, specifying the timing and locations; translate the key documents, such as the report summary in local language with mitigation/management measures proposed; draft the newspaper announcements for disclosure; and help the client to place all the assessment reports in the client's website.

c) The consultants shall prepare a non-technical assessment summary report for public disclosure.

d) The consultant shall take a baseline videography and photography of the site on both the sides for 100m or for the entire alignment of the proposed bridges.

6. Estimation of Quantities and Project Costs

The consultant should prepare detailed estimates for quantities and project cost for the entire project, including the cost of environmental and social safeguards proposed based on MORT&H's Standard Data Book, schedule of rates and market rate with supporting quotations for the inputs. The estimation of quantities shall be based on detailed design of various components of the projects.

7. Economic Analysis

1. The consultant should carry out economic analysis based on the benefits calculated for the entire project area.

2. The economic analysis should 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 benefits on travel time,

iv. Estimate the economic internal rate of return (EIRR) for the project over a 15-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.

3. Economic Internal Rate of Return (EIRR) and Net Present Value (NPV),"with" and "without time and accident savings" should be worked out based on these cost-benefit streams. Furthermore, sensitivity of EIRR and NPV worked out for the different scenarios.

8 REPORTING REQUIREMENTS

Phase I:

S. No	Reports	Content of reports	Time line
1	Inception report	The report shall cover the following major aspects: **i.** Detailed methodology to meet the requirements of the TOR finalised in consultation with the Review Committee; 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; ii) Task Assignment and Manning Schedule; iii) Work programme; iv) Proforma for data collection; iv Available data in any of the department shall be collected and work shall be proceeded further; v) Key plan and Linear Plan; vi) 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;	15 days from the date of Letter of Intent
2	Traffic surveys & Field Investigations	As per the details in TOR	30 days from the approval of Inception Report
3	Draft Feasibility Report	Based on Surveys, geo technical investigations and Techno-economic study	15 days from the approval of Traffic Survey Report
4	Public stake holder consultation	As per the details in TOR	10 days from the approval of draft Feasibility Report
5	Final Feasibility Report	Based on the Techno-economic study & Public consultation	20 days from the date of Public Stakeholders meeting

Phase II:

S. No	Reports	Content of reports	Time line
6	General Alignment Plan, Geo-technical Investigations and Sub-Soil Exploration*	i) The consultant shall submit proposals regarding the total number, as well as the locations along with suitable maps and charts clearly indicating the rationale for selecting the locations and get it approved from above committee. ii) Submission of alignment and GAD iii) Detailed survey reports of Baseline data, summary of data collected a/w E&S Screening Report iv) The consultant shall submit proposals regarding the total number, as well as the locations of bores along with suitable maps and charts clearly indicating the rationale for selecting the locations and get it approved from Corporation	30 days from the approval of Final Feasibility Report
7	Detailed design &	i)Submission of Detailed Bridge Design of Foundation	

S. No	Reports	Content of reports	Time line
	drawing and Land plan schedule	Sub-structure, and Superstructure. ii)Submission of Detailed Design, Pavement Design of Service Road, Approach road, Junction Improvements and Other C.D. works. iii)Submission of Computer Printouts and Preparation of all Drawings through CAD. iv) Initial Environmental and Social screening reports. v)Land Plan Schedule with details of Project affected People including cost estimates for land acquisition and resettlement and rehabilitation prepared as per ESMF.	30 days from the approval of Geo-technical investigation report.
8	Draft DPR	i) Submission of Detailed Estimate for Bridge work and all allied works in this Project along with Technical Specification Report. ii) Submission of Bill of Quantity and Cost of estimate covering all the works related to this Project. iii) Submission of Environmental Impact Assessment and Environment Management Plan iv) Social Impact Assessment and Social Management Plan and Resettlement Action Plan, if applicable. v) Submission of Draft DPR and Draft Bid Documents with necessary packaging.	30 days from the date of approval of Detailed drawings and designs
9	Final DPR	Submission of Final DPR covering all the aspects of the TOR on approval of Draft DPR, Bid documents, Implementation schedule and procurement plan.	30 days from the date of approval of Draft DPR

* The consultants should prepare a non-technical EA Summary Report for public disclosure.

9. KEY PERSONNEL AND SUB-CONSULTANTS

The estimated number of key professional staff months required for the assignment is

S. No	Job description	Qualification	Minimum Experience
1	Team Leader / Bridge Engineer	Masters in Bridge / Structural engineering	15 years experience in design of bridges in urban areas
2	Highway & Traffic Engineer	Masters in traffic / transportation / urban engineering	10 years of experience in urban traffic planning with 5 years experience in similar projects.
3	Geo technical Engineer	Masters in Geo-technical or Soil Mechanics	10 years experience in design of foundation structures for roads and bridges with 5 years experience in similar projects.
4	Quantity Surveyor / Contract Management Engineer	Graduate in civil engineering	10 years experience in Highway related projects as 'Quantity Surveyor with 5 years experience in similar projects.
5	Environmental Specialist	Masters in Environmental engineering	8 years experience in relevant field

The above team shall have experts, specialists, support staff such as Civil Engineers, Structural Engineers, Architects, Urban Planners, Social Development Specialist, Geotechnical, Financial, specialist, surveyors, etc., to ensure that the objectives of the project are safeguarded. Full time members shall not be associated in any other on-going project.

10 Schedule of payments:

S. No	Tasks	Payment	Payment
	Phase I	Location 1	Location 2
1	Submission and approval of Inception Report	5%	5%
2	Submission and approval of Traffic Surveys Report and conceptual design.	5 %	5 %
3	Submission and approval of Draft Feasibility Report	10%	10%
4	Submission of Public Stakeholders consultation meeting Report	5%	5%
5	Submission and approval of Final Feasibility Report	10%	10%
	Phase II		
6	Submission and approval of General Alignment Plan, Geo-technical Investigations and Sub-Soil Exploration Report *	10%	10%
7	Submission and approval of Detailed design and drawings Report	15%	15%
8	Submission and approval of Draft Detailed Project Report with draft bid document	20%	20%
9	Submission and approval of Final Detailed Project Report (Hard bound copy) with final bid document	20%	20%

The consultant would be required to submit 10 copies of each of the reports besides providing a soft copy of all reports, workings, Auto CAD drawings, etc., Wherever possible duplex mode shall be used for submission of reports.

All the designs, data and editable version of the reports shall be submitted in the soft copies. The Final Report (Approved version) shall be submitted in hard bound 12 copies with soft copy (both Editable & non editable and all drawings, etc) in Pen Drive. The report layout and arrangement of chapters shall be shared with the client to prior to submission of the reports.

11. Composition of Review Committee:

(i) Representatives from Greater Chennai Corporation
(ii) Representatives from CMDA
(iii) Representatives from Chennai Traffic Police
(iv) Representatives from Metropolitan Transport Corporation
(v) Representatives from Highways Department
(vi) Representatives from Public Works Department
(vii) Representatives from TNUIFSL
(viii) Any other Experts (will be nominated)

12. Procedure for review of reports.

The review committee will review the reports and the progress of the work. The consultants follow up actions on the decision / suggestion works will be reviewed in the next meeting. The comments or views on the various reports shall be given to the consultant within a reasonable time.

Enclosure – I

Guidelines for preparation of Environmental Assessment Report as per ESMF, TNSUDP

1.0 Brief Introduction

A brief introduction to the project shall be provided in this section

.A brief description of the project area / city and salient features of the city shall be presented in this section, such as geographic location, climate, rainfall, soil profile, wind direction, existing drainage system, need for the proposed project etc.

2.0 The Project Objectives and Need

A brief profile of the status of existing infrastructure in the project city with respect to the proposed project, service levels, problems & issues and salient features of the proposed project shall be discussed in this section along with the environmental implications of the proposed project by covering the following objectives.

3. Establish the environmental baseline in the study area
4. identify and assess the adverse environmental impacts; and provide requisite measures to address these impacts
5. identify the opportunities for environmental enhancements in the project area and provide requisite guidance/plans in this regard
6. Identify and assess the climate change related aspects of the project
7. Wherever relevant integrate the measures (mitigation and enhancement related) in the project planning and design;
8. Develop appropriate management plans and codes of practices for implementing, monitoring and reporting of the environmental mitigation and enhancement measures suggested.

The EA shall be carried out in line with the Government of India (GoI)'s regulations (EIA Notification), and to suit ESMF.

The EA shall comprise filling the screening format, Environmental screening, Project EA, and the Environmental Management Plans (EMPs) & Mitigation measures. The EA shall be carried out in a consultative manner through "Stakeholder Consultations", at various stages, with the affected communities, NGOs, selected government agencies and other stakeholders.

3.0 Scope of Work

The following are the tasks to be performed by the consultants while conducting Environmental Assessment for the project including nature, scale and magnitude of impacts that the project is likely to cause on environment.

Task 1 Description of Project

A succinct description of the proposed project shall be provided covering: (a) status analysis of the existing infrastructure (b) description of each of the proposed components, activities and sub-activities. The task shall also bring out the rational, the need for the proposed project and list out the various benefits of project implementation. As part of this activity, the consultant shall provide necessary maps to scale

Task 2 Review of Earlier Studies

The consultants shall review various earlier studies such as feasibility and detailed project reports, etc., of the project and understand the project and various aspects associated with the same. This shall provide a base to formulate the environmental surveys necessary for the project and assessing impacts of the same.

Task 3 Legislative and Regulatory Considerations

A review of the legal and regulatory provisions applicable for the project shall be carried out in this task and provide relevance of the law or regulations to the sub-project. The objective of the review is to bring out the legal and policy issues to be addressed in the project at various stages of project development such as planning, design, execution and operation. In addition to the environmental laws such as EP Act, Water Act, Air Act, SWM rules, EIA notifications etc., the consultants shall review applicable operational policies / directives of the EFA.

The review shall thus provide a complete list of regulatory formalities required for the project and various clearances required from different regulatory agencies including State Pollution Control Board.

Task 4 Preparation of Environmental Profile

An environmental profile of the project influence area shall be prepared, based on appropriate primary & secondary surveys and field investigations. The objective of this profile is to establish existing environmental conditions of the project area, in terms of air, water, noise, soil and other environmental parameters, which should form the basis for prediction of impacts due to proposed project activities. As part of this, the environmentally sensitive land uses (protected natural areas, areas of ecological value, sensitive receptors like schools, hospitals etc) would also be identified and plotted on a map to scale.

The extent and duration (atleast one season for rapid assessment and the three seasons for full detailed assessment) of surveys shall be judiciously decided by the consultant as per requirements of the environmental regulations applicable in India and guidelines of international funding agencies. The profile prepared shall be adequate enough to predict impacts of the project and shall cater to the requirements of obtaining necessary environmental clearances from the authorities.

The profile shall essentially include all physical, ecological and socio-economic components of the project environment and bring out the salient and sensitive features of the same. Important aspects such as reserve forests, national parks, major water bodies, structures of archaeological / historic importance, and other environmental resources (if any) shall be identified and salient features of the same shall be presented.

In addition to the basic environmental profile, quality of water supplied by the present water supply system, potential points of cross contamination and health profile of the project area population shall also be brought out in detail through appropriate sampling surveys and field investigations.

Detailed activities to be carried out under environmental assessment is given under section 4.0.

Task 5 Determination of Potential Impacts

Based on the environmental profile of the project area prepared above and the proposed project activities discussed under Activity 1, the consultants shall carry out environmental screening to determine the nature of impacts and level of Environmental Assessment to be carried out (Section 5.0 provide the details to be carried out).

13) In case of low or insignificant level of impacts, where an EMP will suffice, the consultant shall review the recent versions of generic EMPs available with TNUIFSL and carry out necessary changes to suit the project requirements.

14) As part of screening, if medium to high impacts, requiring a detailed EA and standalone EMP, the consultant shall carry out detailed impact analysis. The consultant shall predict environmental impacts of the project components, activities and sub-activities on various environmental attributes (bio, geo and physical) through appropriate analytical tools and techniques such as modelling techniques, over lays, etc. Significant or insignificant, permanent or temporary, reversible or irreversible, negative or positive impacts shall be categorised separately and presented for each phase of project development.

15) Based on the outcome of the screening, if subsequent relevance to climate change is envisaged in the project implementation or during operation, then the consultants shall collect relevant information and appraise the climate change impact. The consultants shall identify adaptation needs of the project, review for greenhouse gas reduction potential and identify necessary measures for implementation.

All identified impacts shall be summarised in an easily understandable format and the magnitude and significance of each impact shall be explained in detail.

An analysis of various project alternatives, including the ‘Project’ and ‘No Project’ scenario shall be brought out and impacts shall be analysed for each scenario. Based on the above analysis the best alternative that causes minimum or no impact shall be recommended for implementation.

Task 6 Stakeholder Consultations

The consultants shall carry out consultations with Experts, NGOs, Forest Department (if applicable) and other selected Government Agencies and other stakeholders to (a) collect baseline information, (b) obtain a better understanding of the potential impacts (c) appreciate the perspectives/concerns of the stakeholders, and (d) secure their active involvement during subsequent stages of the project as appropriate. For E1 projectsatleast two consultations shall be conducted, one after screening and the second with the draft final EA / EMP.

Consultations shall be preceded by a systematic stakeholder analysis, which would (a) identify the individual or stakeholder groups relevant to the project and to environmental issues, (b) include expert opinion and inputs, (c) determine the nature and scope of consultation with each type of stakeholders, and (d) determine the tools to be used in contacting and consulting each type of stakeholders. A systematic consultation plan with attendant schedules will be prepared for subsequent stages of project preparation as well as implementation and operation, as required. Where community consensus is required in respect of proposed mitigation measures for impacts on community assets including water bodies, places of worships etc., specific plan for modification/relocation etc have to be disclosed and consensus obtained.

Task 7 Development of an Environmental Management Plan / Determination of Mitigation measures

The consultants using outputs of the above tasks shall develop an implementable Environmental Management Plan (EMP) for the project. Development of an Environmental Management Plan is detailed under Section 5.0 below

4.0 Environmental Screening and EA activities to be carried out in detailed

4.1 Environment Screening

- Environmental screening shall be undertaken to identify the environmental hot spots along the project corridors, project relevance to climate change and determine the level of environmental analysis required for the EA. The consultant shall carry out a preliminary analysis to assess the nature, scale and magnitude of the impacts that the project is likely to cause on environment. In case of significant environmental impacts encountered (may be applicable to the entire project/specific project interventions/specific locations), The consultants shall explore possible alternatives to the project and/or project components in a consultative manner. The deliverable at this stage will be Environmental Screening Report.
- The screening exercise shall be supported through secondary and primary information collection and, stakeholder consultations on existing environment scenario. As part of the screening exercise the consultants shall:
    (a) Identify sensitive locations in the project area including regionally or nationally recognized environmental resources and sensitive manmade land uses like hospitals, schools, etc
    (b) Establish baseline environmental quality with regard to air, water and noise at sensitive receptors.
    (c) List and map common property resources such as roadside trees; forests, large water bodies; and major physical cultural properties, etc.
    (d) Identify Human settlement, physical infrastructure and project activities that would result in severance.
- The consultants shall also appraise the project in terms of substantial greenhouse gas reduction potential and substantial need of adaptation to possible climate change.

4.2 Project EA

(ii) Existing Environment and Baseline Conditions: Baseline assessment shall be carried out based on the outcome of Environmental Screening carried out for the project. The baseline conditions shall be established through detailed primary level field surveys. At this stage the consultants shall prepare detailed maps showing candidate sites for environmental improvements. The specific tasks under this include the following:

(iii) Data Collection: Data shall be collected on relevant physical, biological and socio-economic conditions to establish the current environmental status of the project area. The data collection should be undertaken to arrive at meaningful information that will facilitate assessment of impacts and preparing management plan. Broadly, the following form of the data categories shall be covered (the consultant is also encouraged to use professional judgement and local knowledge in defining other data requirements):

The current land uses at the proposed project site and the study area using maps plotted to appropriate scale, covering lakes/ponds and their uses, forests and its classification, ecologically sensitive areas (sanctuaries, national parks, wildlife corridors, identified areas of nesting, mangroves and / or of interest of migratory birds, etc.), prominent land marks, sensitive receptors, community severance, village settlements, agricultural lands, pasture and barren lands, various categories of CRZ areas if any, etc.

Physical - Geology, topography, soils, climate and meteorology (with emphasis on critical season considering water bodies and air quality), ambient air quality, surface and groundwater hydrology, existing sources of air emissions, existing water quality status of water bodies of importance.

(iv) Biological and Ecological assessment covering water bodies, fauna & flora, ecologically sensitive areas (perceived as well as officially listed).

(v) Based on the outcome of screening report, the consultants shall carry out additional air and noise quality monitoring, which in future may depict the base line conditions for EMP monitoring.

Critical areas of environmental importance shall be identified as an output of the current environmental status of the project sites

5. *Impact Prediction:* The Consultant shall identify positive and negative impacts likely to result from the proposed project, interpreting "environmental" throughout the EA to include socio-economic impacts as well as impacts on the natural environment. All the project activities during pre-construction, construction and operation phases shall be considered to assess the impacts. The impact assessment shall necessarily cover "no action" alternative in the analysis. The consultants shall regularly interact with technical and social team of the project to share the findings of the impact assessment. The assessment of environmental impacts shall necessarily cover (but not limited to) the following:

(a) Impacts on the water bodies (including, but not limited to the impacts on water source proposed to be developed for the project in case of a water supply scheme)
(b) Impacts on topography and surface drainage due the proposed project activities in the project area,
(c) Community and cultural severance, identified through consultations
(d) Expected impacts on the land use patterns at and around the proposed project facilities/components
(e) Impact on ecologically sensitive features including spawning areas in creeks/estuarine areas, etc.
(f) Detailed assessment of impacts on receiving water bodies (including source of water bodies and down stream impacts on riparian rights)
(g) Assess the change of stream course due to diversion channels to construction intake structures and its impact on downstream users
(h) Impact on Socio-economic aspects of the projects area
(i) The noise and air quality related impacts during construction period on sensitive receptors shall be assessed
(j) Impact on Trees, public utilities and other community structures, cross overs, etc to be assessed.
(k) Any impacts that are irreversible and/or cannot be avoided or mitigated should be identified
(l) The consideration of the aspects in terms of **climate change adaptation** (Climate Proofing) should ensure that the desired developmental impacts of the strategy or measure are not endangered despite the forecasted effects of climate change. Furthermore the assessment should analyse whether the capacity for adaptation can be further increased in the framework of the strategy or measure. In this regard the expected climate changes and their consequences for the strategy or measure will be analysed. This includes both direct effects (e.g. more frequent flooding or drying out of water sources) and indirect effects of climate change. The analysis will also examine the longer targeted period of impacts beyond the formal period of the strategy or measure. On this basis, options will be developed and implemented to increase the capacity of the project to adapt.
(m) The assessment and consideration of the potential for **greenhouse gasreduction** (Emission Saving) to avoid substantial greenhouse gas emissions. First, the expected development of greenhouse gases in the project area/sector will be assessed, followed by review of the planned strategy or measures for their contribution to greenhouse gas emissions and if there are potentials for reducing greenhouse gas emissions. On this basis, options to contribute to greenhouse gas reduction shall be developed, and if applicable taking into consideration the developmental impacts.

5.0 **Environmental Management Plan**

The EMP should suggest ways / options for mitigating negative impacts of the project, the preventive measures necessary. Where required, EMP shall include community consensus for the mitigation measures proposed. The EMP shall identify the means / agency responsible for implementation of the same and recommend suitable monitoring mechanism for the EMP. The EMP shall be in the form of contract covenants and shall provide detailed cost estimates converted into BOQ items wherever necessary and applicable for implementation of the same. The consultant shall also recommend an appropriate institutional mechanism as per the requirements of EMP.

The above referred activity shall be applicable for Generic EMPs as well as specific EMPs developed as an outcome of detailed EAs

The consultant shall prepare a detailed EMP covering the measures to mitigate and/or minimize the negative impacts, including the implementation arrangement and a monitoring plan for the same with site specific requirements. EMP shall cover the following details:

16) Management/Mitigatory / Enhancement measures:
    - (i) For each of the significant negative impact, the consultant should recommend measures to eliminate or mitigate the impact. In case any impact is non-mitigable, the cost of damage shall be estimated and adequate compensatory measures shall be recommended.
    - (ii) Consultants shall recommend enhancement measures for incorporation in the design for attaining energy efficiency, reuse of treated water, control of water leakage, energy generation etc.
    - (iii) The cost (capital and recurring) of all the mitigation measures and the responsible parties for implementation should be clearly identified and shall be translated in to BOQ items. Wherever possible the measures should be drafted as contract clauses, which can be incorporated in construction/operational phase agreements
    - (iv) The mitigatory measures should necessarily contain conceptual designs wherever necessary. The consultants should also specify neighbourhood committees to supervise effective implementation of the proposed mitigatory measures.
17) Landscape plan: Wherever necessary, the Landscaping plan should be prepared considering the project area as a whole and shall meet project specific requirements. Considering the nature of the project area, the EA should provide a conceptual landscape plan for all the project components while considering the special environmental and social needs.
18) Budget Estimates: The EMP budget estimates shall be prepared for each of the project component and the shall be integrated with the overall project cost estimates and the relevant costs shall be included in the BOQ provisions
19) Monitoring Plan: The Consultant should specify the types of monitoring needed for potential environmental impacts during construction and operation. As in the case of the mitigation plan, requirements should be specific as to what is to be monitored, how and by whom along with reporting formats and recommendations if any Cost estimates are necessary and where monitoring reports are to be prepared, the recipient responsible for review and any corrective action should be identified. The monitoring plan should be supplemented with a detailed schedule of implementation of EMP measures.
20) Institutional Arrangement to Manage Environment Impacts Effectively: The consultants shall identify institutional/organizational needs to implement the recommendations of the project EA and to propose steps to strengthen or expand, if required. This may extend to new agency functions, inter-sectoral arrangements, management procedures and training, staffing, operation and maintenance, training and budgeting.

6.0 Public Disclosure

The consultants are to provide support and assistance to the Client in meeting the disclosure requirements, which at the minimum shall meet the EFA's policy on public disclosure. The consultants will prepare a plan for in-country disclosure, specifying the timing and locations; translate the key documents, such as the EA Summary in local language; draft the newspaper announcements for disclosure; and help the client to place all the EA reports in the client's website.

The consultants shall prepare an Executive Summary of the draft EA Report in both English and Tamil for public disclosure. In addition, for E1 projects, the consultants shall provide for the initial consultation a summary of the proposed project's objectives, description, and potential impacts; a summary of the EA's conclusions for consultation after the draft EA report is prepared.

7.0 Inputs to be provided by the Client

The client shall make available all relevant documents, reports in connection to the project area/study area and facilitate procurement of data to the consultants.

Enclosure – II

Social Impact Assessment

The purpose of the proposed Social Impact Assessment is:

- Determine key social issues associated with the proposed sub-project;
- Identify potential adverse social impacts associated with the proposed project and recommend measures to mitigate impacts;
- Carry out an analysis of the vulnerable communities associated with the project, identify their concerns with regard to social aspects (including inclusion), and recommend measures to mainstream these into project design;
- Determine the applicability of Involuntary and or Indigenous Peoples Policies for the identified impacts and carry out additional surveys, consultation to prepare mitigation plans in accordance with the provisions of ESMF, if required.

1.0 Methodology:

The consultant should devise appropriate methodology to carry out the various tasks towards realizing the above objectives. SIA should also include a census and socio-economic survey of Project affected households and the results will provide basis for preparation of Resettlement Action Plan in order to mitigate adverse impacts and enhance development outcomes of the project. The strategy for socio-economic survey should be drawn up based on findings of the above SIA exercises carried out through quick reconnaissance surveys, public consultations, and stakeholder analysis. (The indicative list of information to be gathered is provided as ##).

2.0 Stakeholders:

Identify the various groups who have an interest or a stake in the project. Stakeholders are those who are likely to be affected by a project, as well as those that may influence the project's outcomes. In addition to the beneficiaries of the project and other groups directly affected by it, stakeholders may include organized groups from the public and private sectors as well as civil society who have an interest in the project. Based on the findings of the stakeholder analysis, the Consultant will undertake a comprehensive consultation and participation process in the project area. This will include specific consultation with intended project beneficiaries and likely affected social groups on the proposed project objectives, components and implementation arrangements.

Participation: Examine opportunities and conditions for participation by stakeholders – particularly the excluded groups and women – in the project (e.g. implementation and/or monitoring; influencing decision-making; holding public institutions accountable for the services they are bound to provide; access to project benefits and opportunities; etc.).

3.0 Preparation of RAP, if needed.

Based on the outcome of SIA, additional surveys and consultations need to be carried out to prepare Resettlement Action Plan, if needed and should be prepared in line with the process described in paras 26-29 of ESMF. If private land acquisition is involved, then the applicable process under RTFCTLARR Act, 2013 should also be followed as required in the state. The respective ULB/ implementing agency need to approve the final report and need to disclose in their websites.

4.0 Outputs:

The final outputs includes (i) social Impact Assessment; and (ii) Resettlement Action Plan, if needed. If Tribal persons are affected the required consultations and documentation needs to be discussed with the World Bank. All the draft reports will be reviewed by TNUIFSL/ Bank and the comments need to be incorporated.

5.0 Indicative Data Requirements for Census and Baseline Socio-Economic Surveys:

Socio-economic survey is meant to convert information gathered during initial consultative SIA exercises into measurable data, required for providing R&R assistance for different categories of PAPs, and for monitoring changes in people's conditions beyond the project period. The Socio-economic survey should provide information including but not limited to the following. The information gathered during the census and socio-economic surveys will form the basis for designing the Social Management and Tribal Development Plans.

- Social status of the affected families/persons: Caste/ tribe/gender category of families
- Economic status of the affected families/persons: source of livelihood, monthly incomes; number of bread earners in family and types of incomes, land ownership, household assets, ineptness, etc.
- Residential families: nature and quantity of likely loss-homestead area, residential structure, agricultural land, cattle shed; types of RR assistance preferred

- Commercial Units: nature of land and structure affected, title, business type, legal status of business, monthly incomes; number of employees;
- List of landless wage labourers, employees working in formal or informal sector who may have been adversely affected due to the project with data on nature of occupation, education and skill level, social category, age, and income.
- Common properties affected (grazing fields, community land, cultural properties, ponds, schools, community centres, dispensaries, emergency shelters; community forests; etc.)
- List of vulnerable persons/families: (poor, SC/ST, women headed, aged/infirm, physically or mentally challenged) with socio-economic profile;
- Other key information: travel time to work place; access to basic services; health status; participation in development schemes of the government; level of mainstream linkage;
- Any other information considered important in the local context.
- The outcome of the census and baseline survey should be in the form of a report and include but not limited to:(1) lists of PAPs according to their socio-economic and impact category (residential-legal and squatters; commercial-legal and squatter category; and encroachers-residential and commercial); (2) aggregated data on mean/ average household incomes, access to basic services, social and economic categories affected; common properties; and other details. (3) R&R impacts showing impacted lands and structures (type, quantity) across specific sections in line with the finalized alignment maps.

Annexure - 2

PRE - QUALIFICATION CRITERIA FOR FIRMS

I. Brief description of organization

II. Outline of recent experience of assignments:

- ame of the assignment
- ame of the project
- ame of the owner or sponsoring authority
- brief description of assignment

III. Cost of assignment (Fees)

IV. Attach Client certificate for completion of project

1. Date of commencement
2. Date of completion
3. Client certificate attached Yes / No

V. Annual Turnover of the firm

S. N	Financial Year	Amount in Rs.
1	2013-14	
2	2014-15	
3	2015-16	
	Average	

Balance Sheet and P&L A/c statement for the three financial years (2013-14, 2014-15 & 2015-16) duly certified by a Chartered Accountant shall be attached.

VI. Contact Person / Details:

Name :

Phone No:

email id :

Mob No :

Annexure - 3

SUPPLEMENTARY INFORMATION FOR FIRMS

Proposals

(1) Proposals should include the following information:

(a) Technical Proposal

Any comments or suggestions of the consultant on the Terms of Reference (TOR).

(ii) A description of the manner in which consultants would plan to execute the work. Work plan time schedule in Form F-3 and approach or methodology proposed for carrying out the required work.

(iii) The composition of the team of personnel which the consultant would propose to provide and the tasks which would be assigned to each team member in Form F-4.

(iv) Curriculum Vitae of the individual key staff members to be assigned to the work and of the team leader who would be responsible for supervision of the team. The curriculum vitae should follow the attached Format (F-5) duly signed by the concerned personnel.

(v) The consultant's comments, if any, on the data, services and facilities to be provided by the client indicated in the Terms of Reference (TOR).

(b) Financial Proposals

proposals should include the Schedule of Price Bid in Form No.F-6 with cost break-up in Form 6a. for the work program indicated in Form F-7.

(2) **Two copies of proposals should be submitted to TNUIFSL (With Soft copy in Pen drive) TNUIFSL, T.P. Scheme Road, Raja Annamalai Puram, Chennai – 600 028**

(3) Contract Negotiations

The aim of the negotiation is to reach an agreement on all points with the firm and initial a draft contract by the conclusion of negotiations. Negotiations commence with a discussion of Firm's proposal, costing **(after negotiation of the unit rates, including the man month rates, tax liability and all cost, etc)**, the proposed work plan, staffing and any suggestions you may have made to improve the Terms of Reference. Agreement will then be reached on the final Terms of Reference, the staffing plan and the bar chart, which will indicate personnel, periods in the field and office, man-months, and reporting schedule. Based on these, adjustments necessary will be discussed and agreed. The Contract will be awarded after successful negotiations, with the selected Firm. If negotiations fail, the Client will invite the Firms having obtained the second highest score to Contract negotiations and so on.

(4) Contracts with Team Members. Firms are advised against making firm financial arrangements with prospective team members prior to negotiations.

(5) Nomination of Experts

Having selected a firm partly on the basis of an evaluation of personnel presented in the firm's proposal, TNUIFSL will negotiate a contract on the basis of the experts named in the proposal and, prior to contract negotiations, will require guarantees that these experts shall, in fact, be made available. As the expected

date of mobilization is given in the letter inviting proposals, TNUIFSL will not consider substitution after contract negotiations, except in cases of unexpected delays on the starting date or incapacity of an expert for reasons of health, or leaving the firm. The desire of a firm to use an expert on another project shall not be accepted for substitution of personnel.

(6) Terms of Payment

The mode of payments to be made in consideration of the work to be performed by the firm as per Terms of Reference

Note: All payments shall be made on submission of pre-receipted bills by the firms in duplicate for respective stages.

(7) Review of reports

A review committee consisting of review committee members mentioned in ToR will review all reports of firms and suggest any modifications/changes considered necessary within 15 days of receipt. The decision / suggestion carried out will be reviewed in the next meeting.

FORM F-1

From

———

———

———

———

To

The Managing Director

TNUIFSL

RajaAnnamalaiPuram, Chennai 600 028

Sir:

Consulting services for————of — — — — Regarding

I/We ———————————— firm/firms firm/organization herewith enclose Prequalification, Technical and Financial Proposal for selection of my/our firm as firm for — — — — — —.

We underscore the importance of a free, fair and competitive procurement process that precludes fraudulent use. In this respect we have neither offered nor granted, directly or indirectly, any inadmissible advantages to any public servants or other persons in connection with our bid, nor will we offer or grant any such incentives or conditions in the present procurement process, or in the event that we are awarded the contract, in the subsequent execution of the contract.

We also underscore the importance of adhering to minimum social standards ("Core Labour Standards") in the implementation of the project. We undertake to comply with the Core Labour Standards ratified by the country of India.

We will inform our staff about their respective obligations and about their obligation to fulfill this declaration of undertaking and to obey the laws of the country of India.

Yours faithfully,

Signature: ——————

Full name ——————

and address: ——————

(Authorized Representative)

FORM F-2

ASSIGNMENTS OF SIMILAR NATURE SUCCESSFULLY COMPLETED DURING LAST 5 YEARS

1. Brief Description of the Firm:

2. Outline of recent experience on assignments of similar nature:

S.No.	Name of assignment	Name of project	Owner or sponsoring authority	Cost of assignment	Date of commencement	Date of completion	Was assignment satisfactorily completed
1	2	3	4	5	6	7	8

Please attach relevant documents as proof (such as award letter, completion certificate etc.)

FORM F-3

WORK PLAN TIME SCHEDULE

A. Field Investigation

Sl. No.	Item	Month-wise Program											
		1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th

B. Compilation and submission of reports

1. ….....Report } As indicated under TOR
2. .
3. .
4. .
5. ….....Report

C. A short note on the line of approach and methodology outlining various steps for performing the study.

D. Supervision and Quality Control Measures

FORM NO.F-4

Composition of the Team Personnel and the task which would be assigned to each Team Member

1. Key / Technical / Managerial Staff

S. No.	Name	Position	Task assignment

2. Support Staff

S. No.	Name	Position	Task assignment

FORM F-5

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

Proposed Position: _____

Name of Firm: _____

Name of Staff: _____

Profession: _____

Date of Birth: _____

Years with Firm/Entity: _____ Nationality: _____

Membership in Professional Societies: _____

_____

Detailed Tasks 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 names of schools, dates attended, and degrees obtained. Use about one quarter of a page.*]

_____

Employment Record:

[*Starting with present position, list in reverse order every employment held. List all positions held by staff member since graduation, giving dates, names of employing organizations, 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 two pages.*]

_____

Languages:

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

Certification:

I, the undersigned, certify that to the best of my knowledge and belief, these data correctly describe me, my qualifications, and my experience.

_____ Date: _____
[Signature of staff member and authorized representative of the Firm] ***Day/Month/Year***

Full name of staff member:_____
Full name of the authorized representative:_____

FORM NO.F-6

SCHEDULE OF PRICE BID

Items		Amount	
		In figures	In words
1.	Fees		— — — —
2.	Service Tax @ …… % (if any)		— — — —
3.	Total		— — — —
	(Rupees in Words …….)		

Signature
Seal of Firm
(Authorized representative)

FORM NO.F-6 - a
Cost Estimate of Services

Remuneration of Staff

Staff	Name	Daily (Monthly) Rate (in currency)	Working Days (Months)	Total Cost (in currency)
a) Team Leader			_____	
b) "			_____	
c) "			_____	
			Sub-Total (Staff)	_____

Out-of-Pocket Expenses:

a) Per Diem:	Room	Subsistence Cost	Total	Days	
			____ _____		_____
b) Air fare:					_____
c) Lump Sum Miscellaneous Expenses:					_____
			Sub-Total (Out-of-Pocket)		_____
Contingency Charges:					_____
TOTAL COST ESTIMATE					_____

FORM F-7

WORK PROGRAM AND TIME SCHEDULE

Name	Position	1	2	3	4	5	6	7	8	9	10	11	12	Number of months

Total

Reports Due/Activities and Duration

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

Field Full Time _____ Part Time _____
Reports Due _____
Activities Duration _____

Annexure - 4

Consulting Services

Draft agreement of Contract for this Assignments Carried out by Firms / firm

To be executed in Rs. 100/- Stamp Paper

Subject: (Name of Assignment)

(Name of Firm) ……..
PAN :
Service Tax Registration No:

This AGREEMENT ("Agreement") is executed at Chennai on this __ day of ……2017 by and between PDGF, managed by TNUIFSL ('Client') (hereinafter will be referred as PDGF) having their office at No. 19, T.P. Scheme Road, Raja AnnamalaiPuram, Chennai – 600 028, and M/s. ……..., ('Firm') (hereinafter will be referred as Firms) having their Office located at ……..

1. Set out below are the terms and conditions under which (Name of Firm) has agreed to carry out for (Name of Client) the above-mentioned assignment specified in the attached Terms of Reference.

2. For administrative purposes (Name of responsible staff of Client) has been assigned to administer the assignment and to provide [Name of Firm] with all relevant information needed to carry out the assignment. The services will be required in (Name of Project) for about _____ days/months, during the period from _____ to _____ .

3. The (Name of Client) may find it necessary to postpone or cancel the assignment and/or shorten or extend its duration. In such case, every effort will be made to give you, as early as possible, notice of any changes. In the event of termination, the (Name of Firms) shall be paid for the services rendered for carrying out the assignment to the date of termination, and the [Name of Firm] will provide the (Name of Client) with any reports or parts thereof, or any other information and documentation gathered under this Contract prior to the date of termination.

4. The services to be performed, the estimated time to be spent, and the reports to be submitted will be in accordance with the attached Description of Services.

5. This Contract, its meaning and interpretation and the relation between the parties shall be governed by the laws of Union of India

6. This Contract will become effective upon confirmation of this letter on behalf of (Name of Firm) and will terminate on _____, or such other date as mutually agreed between the (Name of Client) and the (Name of Firms).

7. Payments for the services will not exceed a total amount of Rs. _____.

   The (Name of Client) will pay (Name of Firm), within 45 days of receipt of invoice after approval of the report, which is as follows:

Amount	**Currency**
As per TOR	

The above remuneration includes all the costs related to carrying out the services, including overhead and any taxes imposed on [Name of Firms.]

9. The [Name of Firms] will be responsible for appropriate insurance coverage. In this regard, the [Name of Firms] shall maintain workers compensation, employment liability insurance for their staff on the assignment. The Firms shall also maintain comprehensive general liability insurance, including contractual liability coverage adequate to cover the indemnity of obligation against all damages, costs, and charges and expenses for injury to any person or damage to any property arising out of, or in connection with, the services which result from the fault of the [Name of Firms] or its staff. The [Name of Firms] shall provide the (Name of Client) with certification thereof upon request. The risks and the coverage shall be as follows:

   (a) Third Party liability insurance with a minimum coverage of Value of assignment [cost of assignment quoted by the firm];
   (b) Professional liability insurance, with a minimum coverage of Value of assignment [cost of assignment quoted by the firm];
   (c) employer's liability and workers' compensation insurance in respect of the Personnel of the Firm and of any Sub-Firms, 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;

9. The [Name of Firms] shall indemnify and hold harmless the (Name of Client) against any and all claims, demands, and/or judgments of any nature brought against the (Name of Client) arising out of the services by the [Name of Firms] under this Contract. The obligation under this paragraph shall survive the termination of this Contract.

10. The Firm agrees that, during the term of this Contract and after its termination, the Firm and any entity affiliated with the Firm, 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.

11. The Firm shall furnish a Bank Guarantee amounting to 5% of the negotiated firm's value inclusive of all taxes, duties, levies in the form specified at the end of the RFP, within 21 days from the date of issue of LoI. The format is enclosed in Annexure-5.

12. The Client shall have the right to invoke and appropriate the proceeds of the Performance Security, in whole or in part, without notice to the Firm in the event of breach of the work assigned in the ToR or the finalized Agreement.

13. All final reports, plans, specifications, analysis and other documents or software submitted by the [Name of Firms] in the performance of the Services shall become and remain the property of the Client. The Firms may retain a copy of such documents but shall not use them for purposes unrelated to this Contract without the prior written approval of the Client.

14. The Firm undertake to carry out the assignment in accordance with the highest standard of professional and ethical competence and integrity, having due regard to the nature and purpose of the assignment, and to ensure that the staff assigned to perform the services under this Contract, will conduct themselves in a manner consistent herewith.

15. The Firm will not assign this Contract or sub-contract or any portion of it without the Client's prior written Consent.

16. The [Name of Firms] shall pay the taxes, duties fee, levies and other impositions levied under the Applicable law and the Client shall perform such duties, in regard to the deduction of such tax, as may be lawfully imposed.

17. The [Name of Firms] also agree that all knowledge and information not within the public domain which may be acquired during the carrying out of this Contract, shall be, for all time and for all purpose, regarded as strictly confidential and held in confidence, and shall not be directly or indirectly disclosed to any person whatsoever, except with the (Name of Client) written permission.

18. Any dispute arising out of the Contract, which cannot be amicably settled between the parties, shall be referred to Adjudication / arbitration in accordance with the Arbitration & Conciliation Act 1996. The place of arbitration shall be at Chennai.

Place:
Date: ..... (Signature of Authorized Representative
..... on behalf of Firm)
.....
..... (Signature & Name of the Client's Representative)

Annexure - 5

Bank Guarantee for Performance Security

To
Project Development Grant Fund (PDGF)
No.19, T.P. Scheme Road
Raja Annamalaipuram
Chennai – 600 028

In consideration of Project Development Grant Fund (PDGF) acting on behalf of the Government of Tamil Nadu (hereinafter referred as the "Client", which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators and assigns) having awarded to M/s …….., having its office at …….. (hereinafter referred as the "Consultant" which expression shall, unless repugnant to the context or meaning thereof, include its successors, administrators, executors and assigns), vide the Client's Letter of Intent no. ……. dated …….. and the agreement to be executed for Rs. …….. (Rupees ……..), (hereinafter referred to as the "Agreement") Consulting Services for preparation of Detailed Project Report (DPR) for construction of Sky Walk with Escalators from Mambalam Railway station to T.Nagar Bus Terminus and Fort Railway Station to Parrys Corner for Chennai Corporation and the Consultant having agreed to furnish a Bank Guarantee amounting to Rs. …….. (Rupees ……..) to the Client for performance of the said Agreement. We, …….. (hereinafter referred to as the "Bank") at the request of the Consultant do hereby undertake to pay to the Client an amount not exceeding Rs. …… (Rupees …….) against any loss or damage caused to or suffered or would be caused to or suffered by the Client by reason of any breach by the said Consultant of any of the terms or conditions contained in the said Agreement. We, …….. (indicate the name of the Bank) do hereby undertake to pay the amounts due and payable under this Guarantee without any demur, merely on a demand from the Client stating that the amount/claimed is due by way of loss or damage caused to or would be caused to or suffered by the Client by reason of breach by the said Consultant of any of the terms or conditions contained in the said Agreement or by reason of the Consultant's failure to perform the said Agreement. Any such demand made on the bank shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. However, our liability under this Guarantee shall be restricted to an amount not exceeding Rs. …….. (Rupees ……..).

We, …….. (indicate the name of Bank) undertake to pay to the Client any money so demanded notwithstanding any dispute or disputes raised by the Consultant in any suit or proceeding pending before any court or tribunal relating thereto, our liability under this present being absolute and unequivocal. The payment so made by us under this bond shall be a valid discharge of our liability for payment thereunder and the Consultant shall have no claim against us for making such payment.

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

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

This Guarantee will not be discharged due to the change in the constitution of the Bank or the Consultant(s). We, …….. (indicate the name of Bank) lastly undertake not to revoke this Guarantee during its currency except with the previous consent of the Client in writing.

For the avoidance of doubt, the Bank's liability under this Guarantee shall be restricted to Rs. *** * (Rupees *****) only. The Bank shall be liable to pay the said amount or any part thereof only if the Client serves a written claim on the Bank in accordance with paragraph 2 hereof, on or before [*** (indicate date falling 90 days after the date of this Guarantee)].

For .....
Name of Bank:
Seal of the Bank:
Dated, the ……. day of ……., 2017

LIST OF ANNEXES