

Government of Nepal
Ministry of Physical Planning and Works

Department of Roads
Maintenance Branch

Chakupat, Lalitpur

Request for Proposal

for

Consulting Services

for

Detailed Feasibility Study of Tunnel Roads

- (a) Kulekhani-Bhimphedi Tunnel
- (b) Sitapaila-Dharke Road Tunnel
- (c) Pokhara-Syangja Road Tunnel,
- (d) Thankot- Chitlang Road Tunnel,
- (e) Malekhu-Lothar Road Tunnel

Contract No. : 01/2073/074

Consultant's Name and address:

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Section 1. Letter of Invitation

Date :-2074-02-9

To,

M/s Iteco/Homeland/North Star JV

M/s Geoce-Total Management JV

M/s Fulbright Consultancy

M/s Silt/Tech Studio Geocom JV

M/s Sitara Sanima Hydro JV

M/s Shah Consultant

Subject: Request for Proposal

The Department of Roads, Maintenance Branch, invites proposals to provide the following consulting service:

Detailed Feasibility Study of Tunnel Roads

- (a) Kulekhani-Bhimphedi Tunnel
- (b) Sitapaila-Dharke Road Tunnel
- (c) Pokhara-Syangja Road Tunnel,
- (d) Thankot- Chitlang Road Tunnel,
- (e) Malekhu-Lothar Road Tunnel

The RFP documents will be provided in digital form; hence you are requested to contact the DOR, Maintenance Branch with a blank CD or portable storage device. The BOQ is attached herewith.

A consultant will be selected under the procedures described in this RFP. The deadline for the submission of the proposal is 30 days from the date of dispatch of this invitation.

Deputy Director General

Section 2. Information to Consultants

- 1. Introduction**
- 1.1 The Client named in the Data Sheet will select a consultant among those listed in the Letter of Invitation, in accordance with the method of selection specified in the Data Sheet.
 - 1.2 The consultants are invited to submit a Technical Proposal and a Financial Proposal, for services as specified in the Data Sheet. The proposal will be the basis for contract negotiations and ultimately for a signed contract with the selected consultant.
 - 1.3 The consultants must familiarize themselves with local conditions and take them into account in preparing their proposals. To obtain first hand information on the assignment and on the local conditions, consultants are encouraged to visit the Client before submitting a proposal and are advised to attend a pre-proposal conference if one is specified in the Data Sheet.
 - 1.4 The Client will provide the inputs specified in the Data Sheet, assist the consultant in obtaining licences and permits needed to carry out the services, and make available relevant project data and reports.
 - 1.5 Please note that (i) the costs of preparing the proposal and of negotiating the contract, including a visit to the Client, are not reimbursable as a direct cost of the assignment; and (ii) the Client is not bound to accept any of the proposals submitted.
 - 1.6 GoN (or Donor Agency) policy requires that consultants provide professional, objective, and impartial advice and at all times hold the Client's interests paramount, without any consideration for future work, and strictly avoid conflicts with other assignments or their own corporate interests. Consultants shall not be hired for any assignment that would be in conflict with their prior or current obligations to other clients, or that may place them in a position of not being able to carry out the assignment in the best interest of the Client.
 - 1.7.1 Without limitation on the generality of this rule, consultants shall not be hired under the circumstances set forth below:
 - a. A consultant, which has been engaged by the Client to provide goods or works for a project, and any of their affiliates, shall be disqualified from providing consulting services for the same project. Conversely, consultants hired to provide consulting services for the preparation or implementation of a project, and any of their affiliates, shall be disqualified from subsequently providing goods or works or services related to the initial assignment (other than a continuation of the consultant's earlier consulting services) for the same project.
 - b. Consultants or any of their affiliates shall not be hired for any assignment which, by its nature, may be in conflict with another assignment of the consultants.
 - 1.7.2 Any previous or ongoing participation in relation to the assignment by the consultant, its professional staff or affiliates or associates under a contract with the GoN may result in rejection of the proposal. Consultants should clarify their

situation in that respect with the Client before preparing the proposal.

- 1.8 It is the GoN's policy to require its implementing agencies, as well as consultants under GoN (or Donor Agency) financed contracts, to observe the highest standard of ethics during the selection and execution of such contracts. In pursuance of this policy, the GoN:
- a. defines, for the purposes of this provision, the terms set forth below as follows:
 - i. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value to influence the action of a public official in the selection process or in contract execution; and
 - ii. "fraudulent practice" means a misrepresentation of facts in order to influence a selection process or the execution of a contract to the detriment of the Client, and includes collusive practices among consultants (prior to or after submission of proposals) designed to establish prices at artificial, non-competitive levels and to deprive the borrower of the benefits of free and open competition.
 - b. will reject a proposal for award if it determines that the consultant recommended for award has engaged in corrupt or fraudulent activities in competing for the contract in question;
 - c. will cancel the consultant's contract if it at any time determines that corrupt or fraudulent practices were engaged in by representatives of the consultant or the Client during the selection process or the execution of that contract;
 - d. will debar a consultant for a stated period of time, to be awarded a contract if it at any time determines that the consultant has engaged in corrupt or fraudulent practices in competing for, or in executing, a contract; and
 - e. will have the right to require that, a provision be included requiring consultants to permit the Client inspect their accounts and records relating to the performance of the contract and to have them audited by auditors appointed by the Client.
- 1.9 Consultants shall not be under a debarment for corrupt and fraudulent practices issued by GoN accordance with the above sub para. 1.8 (d).
- 1.10 Consultants shall be aware of the provisions on fraud and corruption stated in the Standard Contract under the clauses indicated in the Data Sheet.

2. Clarification and Amendment of RFP Documents

- 2.1 Consultants may request a clarification of any of the RFP documents up to the number of days indicated in the Data Sheet before the proposal submission date. Any request for clarification must be sent in writing by paper mail, cable, telex, facsimile, or electronic mail to the Client's address indicated in the Data Sheet. The Client will respond by cable, telex, facsimile, or electronic mail to such requests and will send written copies of the response (including an explanation of the query but without identifying the source of inquiry) to all invited consultants who intend to submit proposals.

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- 2.2 At any time before the submission of proposals, the Client may, for any reason, whether at its own initiative or in response to a clarification requested by an invited consultant, amend the RFP. Any amendment shall be issued in writing through addenda. Addenda shall be sent by mail, cable, telex, facsimile, or electronic mail to all invited consultants and will be binding on them. The Client may at its discretion extend the deadline for the submission of proposals.
- 3. Preparation of Proposal**
- Technical Proposal**
- 3.1 Consultants are requested to submit a proposal Sub - Clause 1.2 written in the language(s) specified in the Data Sheet.
- 3.2 In preparing the Technical Proposal (TP), consultants are expected to examine the documents constituting this RFP in detail. Material deficiencies in providing the information requested may result in rejection of a proposal.
- 3.3 While preparing the Technical Proposal, consultants must give particular attention to the following:
- i. If a consultant considers that it does not have all the expertise for the assignment, it may obtain a full range of expertise by associating with individual consultant(s) and/or other consultants or entities in a joint venture or sub-consultancy, as appropriate. Consultants may associate with the other consultants invited for this assignment only with approval of the Client as indicated in the Data Sheet. Consultants must obtain the approval of the Client to enter into a joint venture with consultants not invited for this assignment.
 - ii. For assignments on a staff-time basis, the estimated number of professional staff-months is given in the Data Sheet. The proposal shall, however, be based on the number of professional staff-months estimated by the consultant. For fixed-budget-based assignments, the available budget is given in the Data Sheet, and the Financial Proposal shall not exceed this budget.
 - iii. It is desirable that the majority of the key professional staff proposed be permanent employees of the consultant or have an extended and stable working relationship with it.
 - iv. Proposed professional staff must, at a minimum, have the experience indicated in the Data Sheet, preferably working under conditions similar to those prevailing in Nepal.
 - v. Alternative professional staff shall not be proposed, and only one curriculum vitae (CV) may be submitted for each position.
 - vi. Reports to be issued by the consultants as part of this assignment must be in the language(s) as specified in the Data Sheet.
- 3.4 The Technical Proposal shall provide the following information using the attached Standard Forms (Section 3):
- i. A brief description of the consultant's organization and an outline of recent experience on assignments (Section 3B) of a similar nature. For each assignment, the outline should indicate, *inter alia*, the client, location and duration

of the assignment, contract amount, and consultant's involvement.

- ii. Any comments or suggestions on the Terms of Reference and on the data, a list of services, and facilities to be provided by the Client (Section 3C).
- iii. A description of the methodology and work plan for performing the assignment (Section 3D).
- iv. The list of the proposed staff team by specialty, the tasks that would be assigned to each staff team member, and their timing (Section 3E).
- v. CVs recently signed by the proposed professional staff and the authorised representative submitting the proposal (Section 3F). Key information should include number of years working for the consultant/entity and degree of responsibility held in various assignments during the last ten (10) years.
- vi. Estimates of the total staff input (professional and support staff; staff time) needed to carry out the assignment, supported by bar chart diagrams showing the time proposed for each professional staff team member (Sections 3E and 3G).
- vii. A detailed description of the proposed methodology, staffing, and monitoring of training, if the Data Sheet specifies training as a major component of the assignment.
- viii. Any additional information requested in the Data Sheet.

3.5 The Technical Proposal shall not include any financial information.

Financial Proposal

3.6 In preparing the Financial Proposal (FP), consultants are expected to take into account the requirements and conditions outlined in the RFP documents. The Financial Proposal should follow Standard Forms (Section 4). It lists all costs associated with the assignment, including (a) remuneration for staff (, in the field and at headquarters), and (b) reimbursable expenses such as subsistence (per diem, housing), transportation (mobilization and demobilization), services and equipment (vehicles, office equipment, furniture, and supplies), office rent, insurance, printing of documents, communication(Telephone, Fax etc.) surveys, and training, if it is a major component of the assignment. If appropriate, these costs should be broken down by activity.

3.7 The Financial Proposal should include all duties, taxes and other levies , and other charges imposed under the applicable law payable by the Consultant under the Contract or for any other cause.

3.8 Consultants shall express the price of their services in Nepalese Rupees.

3.9 The Data Sheet indicates the required validity period of the proposals. During this period, the consultant is expected to keep available the professional staff proposed for the assignment. The Client will make its best effort to complete negotiations within this period. If the Client wishes to extend the validity period of the proposals, the consultants who do not agree have

the right not to extend the validity of their proposals.

4. Submission, Receipt, and Opening of Proposals

- 4.1 The original proposal (TP and FP) shall be prepared in indelible ink. It shall contain no interlineations or overwriting, except as necessary to correct errors made by the consultant itself. Any such corrections must be initialed by the persons or person who sign(s) the proposals.
- 4.2 An authorized representative of the Consultants shall initial all pages of the original Technical and Financial Proposals. The authorization shall be in the form of a written power of attorney accompanying the Proposal.
- 4.3 For each proposal, the consultants shall prepare the number of copies indicated in the Data Sheet. Each Technical Proposal and Financial Proposal shall be marked "**ORIGINAL**" or "**COPY**" as appropriate. If there are any discrepancies between the original and the copies of the proposal, the original governs.
- 4.4 The original and all copies of the Technical Proposal shall be placed in a sealed envelope clearly marked "**Technical Proposal**," and the original and all copies of the Financial Proposal in a sealed envelope clearly marked "**FINANCIAL PROPOSAL**" and warning: "**DO NOT OPEN WITH THE TECHNICAL PROPOSAL.**" Both envelopes shall be placed into an outer envelope and sealed. This outer envelope shall bear the submission address and other information indicated in the Data Sheet and be clearly marked, "**DO NOT OPEN, EXCEPT IN PRESENCE OF THE EVALUATION COMMITTEE.**"
- 4.5 The completed Technical and Financial Proposals must be delivered at the submission address on or before the time and date stated in the Data Sheet. Any proposal received after the closing time for submission of proposals shall be returned unopened.
- 4.6 After the deadline for submission of proposals, the Technical Proposal shall be opened immediately by the evaluation committee. The Financial Proposal shall remain sealed and deposited with the Client's Procurement Unit until all submitted proposals are opened publicly.

5. Proposal Evaluation

General

- 5.1 From the time the bids are opened to the time the contract is awarded, if any consultant wishes to contact the Client on any matter related to its proposal, it should do so in writing at the address indicated in the Data Sheet. Any effort by the consultant to influence the Client in the Client's proposal evaluation, proposal comparison or contract award decisions may result in the rejection of the consultant's proposal.
- 5.2 Evaluators of Technical Proposals shall have no access to the Financial Proposals until the technical evaluation, is concluded.

Evaluation of Technical Proposals (QCBS,QBS,FBS, LCBS))

- 5.3 The evaluation committee, appointed by the Client as a whole, and each of its members individually, evaluates the proposals on the basis of their responsiveness to the Terms of Reference, applying the evaluation criteria and point system specified in the Data Sheet. The evaluation committee shall compute the score obtained by each proposal by taking the average of the scores

given by each member to the particular proposal. Each responsive proposal will be given a technical score (St). A proposal shall be rejected at this stage if it does not respond to important aspects of the Terms of Reference or if it fails to achieve the minimum technical score indicated in the Data Sheet.

5.4 In the case of Quality-Based Selection, the highest ranked consultant is invited to negotiate its proposal and the contract on the basis of the Technical Proposal and the Financial Proposal submitted in accordance with the instructions given in para. 1.2 and the Data Sheet.

Public Opening and Evaluation of Financial Proposals (CBS Only)

5.5. The Financial Proposals shall be opened publicly in the presence of the consultants' representatives who choose to attend. The name of the consultant and the proposed prices shall be read aloud and recorded. The Client shall prepare minutes of the public opening.

Public Opening and Evaluation of Financial Proposals (QCBS, FBS, LCBS)

5.6 After the evaluation of quality is completed, the Client shall notify those consultants whose proposals did not meet the minimum qualifying mark or were considered non-responsive to the RFP and Terms of Reference, indicating that their Financial Proposals will be returned unopened after completing the selection process. The Client shall simultaneously notify the consultants that have secured the minimum qualifying mark, indicating the date and time set for opening the Financial Proposals. The opening date shall be 7 after the notification date. The notification may be sent by registered letter, cable, telex, facsimile, or electronic mail.

5.7 The Financial Proposals shall be opened publicly in the presence of the consultants' representatives who choose to attend. The name of the consultant, the technical scores, and the proposed prices shall be read aloud and recorded when the Financial Proposals are opened. The Client shall prepare minutes of the public opening.

5.8 The evaluation committee will determine whether the Financial Proposals are complete (i.e., whether they have costed all items of the corresponding Technical Proposals; if not, the Client will cost them and add their cost to the initial price), correct any computational errors.

5.9 In case of Fixed Budget Selection (FBS), the consultant's Financial Proposals with cost more than the specified fixed budget ceiling by the Client in Data Sheet shall be rejected.

5.10 In case of Least Cost Based Selection (LCBS), the consultant's proposal which has scored the minimum pass mark in the Technical proposal and is of the least cost in the financial proposal shall be invited for negotiation.

5.11 In case of QCBS and FBS with financial proposal within specified fixed budget ceiling, the lowest Financial Proposal (Fm) will be given a financial score (Sf) of 100 points. The financial scores (Sf) of the other Financial Proposals will be computed as indicated in the Data Sheet. Proposals will be ranked according to their combined technical (St) and financial (Sf) scores using the weights (T = the weight given to the Technical Proposal; P = the weight given to the Financial Proposal; T + P = 1) indicated in the Data Sheet: $S = St \times T\% + Sf \times P\%$. The consultant

achieving the highest combined technical and financial score will be invited for negotiations.

6. Negotiations

- 6.1 Negotiations will be held at the address indicated in the Data Sheet. The aim is to reach agreement on all points and sign a contract.
- 6.2 Negotiations will include a discussion of the Technical Proposal, the proposed methodology (work plan), staffing and any suggestions made by the consultant to improve the Terms of Reference. The Client and consultant will then work out final Terms of Reference, staffing, and bar charts indicating activities, staff, periods in the field and in the home office, staff-months, logistics, and reporting. The agreed work plan and final Terms of Reference will then be incorporated in the "Description of Services" and form part of the contract. Special attention will be paid to getting the most the consultant can offer within the available budget and to clearly defining the inputs required from the Client to ensure satisfactory implementation of the assignment.
- 6.3 Unless there are exceptional reasons, the financial negotiations will involve neither the remuneration rates for staff (no breakdown of fees) nor other proposed unit rates in the cases of QCBS methods. For QBS, the consultant should provide the information on remuneration rates described in the Appendix to this information.
- 6.4 Having selected the consultant on the basis of, among other things, an evaluation of proposed key professional staff, the Client expects to negotiate a contract on the basis of the experts named in the proposal. Before contract negotiations, the Client will require assurances that the experts will be actually available. The Client will not consider substitutions during contract negotiations unless both parties agree that undue delay in the selection process makes such substitution unavoidable or that such changes are critical to meet the objectives of the assignment. If substitution is considered then the proposed alternative candidate shall be evaluated as per the original criteria. The qualification and experience of the substitute candidate shall equal to or higher than the originally proposed candidate. If this is not the case and if it is established that key staff were offered in the proposal without confirming their availability, the consultant may be disqualified.
- 6.5 The negotiations will conclude with a review of the draft form of the contract. . If negotiations fail, the Client will invite the consultant whose proposal received the second highest score to negotiate a Contract.

7. Award of Contract

- 7.1 Pursuant to Sub-Clause 6.5, the consultant, with whom agreement is reached following negotiation, shall be selected for approval of his proposal and the Client shall notify it's intention to accept the proposal to the selected consultant and other short-listed consultants within 7 days of selection of the winning proposal.
- 7.2 Any consultant, who has submitted a proposal and is not satisfied with the procurement process or Client's decision provided as per Sub - Clause 7.1 and believes that the Client has committed an error or breach of duty which has or will result in loss to him then the consultant may give an application for

review of the decision to the Client with reference to the error or breach of duty committed by the Client. The review application should be given within 7 days of receipt of information regarding the issue of letter by the Client notifying its intention to accept the winning proposal pursuant to Sub Clause 7.1.

- 7.3 If the review application is not received by the Client pursuant to Sub-Clause 7.2 then the proposal of the Consultant, selected as per Sub-Clause 7.1 shall be accepted and the successful consultant shall be notified to come for signing the Agreement within 15 days.
- 7.4 If the Consultant fails to sign an agreement pursuant to Sub-Clause 7.3 then the Client will invite the consultant whose proposal received the next highest score to negotiate a contract.
- 7.5 If a review application is received by the Client pursuant to Clause 7.1 then the Client will clarify and respond within 5 days of receiving such application
- 7.6 If the applicant is not satisfied with the decision given by the procuring entity and/ or the decision is not given by the Procuring Entity Chief within 5 days then the applicant can file a complaint to the Review committee within 7 days.
- 7.7 The Client shall return the unopened Financial Proposals of those consultants who did not pass the technical evaluation.
- 7.8 The consultant is expected to commence the assignment on the date and at the location specified in the Data Sheet.

8. Confidentiality

- 8.1 Information relating to evaluation of proposals and recommendations concerning awards shall not be disclosed to the consultants who submitted the proposals or to other persons not officially concerned with the process, until the letter of intention to accept the proposal is not issued to the selected consultant pursuant to Sub- Clause 7.1.

9. Conduct of Consultants

- 9.1 The Consultant shall be responsible to fulfill his obligations as per the requirement of the Contract Agreement, RFP documents and GoN's Public Procurement Act and Regulations.
- 9.2 The consultant shall not carry out or cause to carryout the following acts with an intention to influence the implementation of the procurement process or the procurement agreement :
- a. give or propose improper inducement directly or indirectly,
 - b. distortion or misrepresentation of facts
 - c. engaging or being involved in corrupt or fraudulent practice
 - d. interference in participation of other prospective bidders.
 - e. coercion or threatening directly or indirectly to impair or harm, any party or the property of the party involved in the procurement proceedings,
 - f. collusive practice among consultants before or after submission of proposals for distribution of works among consultants or fixing artificial/uncompetitive proposal price with an intention to deprive the Client the benefit of open competitive proposal price.
 - g. contacting the Client with an intention to influence the Client with regards to the proposals or interference of any kind in

examination and evaluation of the proposals during the period after opening of proposals up to the notification of award of contract

10. Blacklisting Consultant

10.1 Without prejudice to any other rights of the Employer under this Contract , the Public Procurement Monitoring Office may blacklist a Consultant for his conduct up to three years on the following grounds and seriousness of the act committed by the consultant:

- a) if it is proved that the bidder committed acts pursuant to the Information to Consultants clause 9.2,
- b) if the bidder fails to sign an agreement pursuant to Information to Consultants clause 7.3,
- c) if it is proved later that the bidder/contractor has committed substantial defect in implementation of the contract or has not substantially fulfilled his obligations under the contract or the completed work is not of the specified quality as per the contract
- d) if convicted by a court of law in a criminal offence which disqualifies the consultant from participating in the contract.
- e) if it is proved that the contract agreement signed by the consultant was based on false or misrepresentation of consultant's qualification information,
- f) other acts mentioned in the Data Sheet or SCC

10.2 A Consultant declared blacklisted and ineligible by the Non-Public procurement Office and or concerned Donor Agency in case of donor funded project shall be ineligible to bid for a contract during the period of time determined by the GON and or the concerned donor agency.

Information to Consultants

DATA SHEET

Clause Reference

1.1	<p>The name of the Client is:</p> <p>Government of Nepal Ministry of Physical Planning and Works Department of Roads Maintenance Branch</p> <p>The method of selection is: Quality- and Cost-Based Selection (QCBS)</p>
1.2	<p>The name, objectives, and description of the assignment are:</p> <p>Name : Detailed Feasibility Study of Road Tunnel as given in the BOQ</p> <p>Objectives: As per TOR</p> <p>Description: As per TOR</p>
1.3	<p>A pre-proposal conference will be held on 25th Jestha, 2074 at 1:00 p.m. at the Maintenance Branch.</p> <p>The name(s), address(es), and telephone numbers of the Client's official(s) are:</p> <p>Name: Sujan Khanal</p> <p>Address : Unit Chief, Government of Nepal</p> <p>Ministry of Physical Planning and Works</p> <p>Department of Roads</p> <p>Maintenance Branch</p> <p>e-mail:</p>
1.4	<p>The Client will provide the following inputs: NA</p>
1.10	<p>The clauses on fraud and corruption in the Contract are: NA</p>
2.1	<p>Clarifications may be requested 7 days before the submission date</p> <p>The address for requesting clarifications is: Government of Nepal Ministry of Physical Planning and Works Department of Roads Maintenance Branch</p>
3.1	<p>Proposals should be submitted in the following language(s): English/Nepali</p>

3.3	(i) Short listed consultants/entity may not associate with other short listed consultants: (ii) The estimated number of professional staff-months required for the assignment is: NA (iv) The minimum required experience of proposed professional staff is: As indicated in the TOR (vi) Reports that are part of the assignment must be written in the following language(s): English																													
3.4	(vii) Training is a specific component of this assignment: No (viii) Additional information in the Technical Proposal includes: See TOR																													
3.9	Proposals must remain valid for 90 days after the submission date.																													
4.3	Consultants must submit an original and no additional copies of each proposal:																													
4.4	The proposal submission address: Same as in 2.1 Information on the outer envelope should also include : Contract ID. : 1-2073/74																													
4.5	Proposals must be submitted no later than: as per letter of invitation																													
5.1	The address to send information to the Client is : Same as in 2.1																													
5.3	<p>The number of points to be given under each of the evaluation criteria are:</p> <table border="1"> <thead> <tr> <th>S.N.</th> <th>Particulars</th> <th>Maximum points</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Specific Experience of the Consultant</td> <td>25</td> </tr> <tr> <td>2</td> <td>Key personnel</td> <td>40</td> </tr> <tr> <td>3</td> <td>Methodology and work plan</td> <td>25</td> </tr> <tr> <td>4</td> <td>Technology Transfer</td> <td>10</td> </tr> <tr> <td></td> <td style="text-align: right;">Total</td> <td>100</td> </tr> </tbody> </table> <p>Minimum Marks Required :- 70</p> <p>EXPERIENCE OF THE FIRM & RESOURCES OF THE CONSULTANT</p> <p>Maximum marks 25.0</p> <p>No marks shall be given for the experience of the firm if the completion certificate is not attached. Projects completed within the last ten fiscal years only will be evaluated.</p> <p>Marks for EXPERIENCE IN SIMILAR JOBS Feasibility study/detailed engineering survey and design of road tunnels</p> <table border="1"> <thead> <tr> <th>Marks Distribution</th> </tr> </thead> <tbody> <tr> <td>Road Tunnel works Max. 4 Nos:</td> </tr> <tr> <td>Other infrastructure Tunnel works Max. 4 Nos:</td> </tr> <tr> <td>Minimum marks required = 12 marks</td> </tr> </tbody> </table> <p>KEY PERSONNEL Maximum marks 40.0</p> <table border="1"> <tbody> <tr> <td>a) Senior Highway Engineer:</td> </tr> <tr> <td>b) Geo-Tech Engineer</td> </tr> <tr> <td>c) Tunnel Engineer</td> </tr> <tr> <td>d) Engineering Geologist</td> </tr> <tr> <td>e) Structural Engineer</td> </tr> <tr> <td>f) Civil Engineer</td> </tr> <tr> <td>g) Engineering Hydrologist</td> </tr> </tbody> </table> <p>Minimum marks required = 25 marks</p>	S.N.	Particulars	Maximum points	1	Specific Experience of the Consultant	25	2	Key personnel	40	3	Methodology and work plan	25	4	Technology Transfer	10		Total	100	Marks Distribution	Road Tunnel works Max. 4 Nos:	Other infrastructure Tunnel works Max. 4 Nos:	Minimum marks required = 12 marks	a) Senior Highway Engineer:	b) Geo-Tech Engineer	c) Tunnel Engineer	d) Engineering Geologist	e) Structural Engineer	f) Civil Engineer	g) Engineering Hydrologist
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	<p>METHODOLOGY AND WORK PLAN</p> <table border="1" data-bbox="363 365 1437 913"> <tr> <td>Description</td> </tr> <tr> <td>Understanding the objective of TOR:-</td> </tr> <tr> <td>i. Comments or suggestions on TOR and services. :-</td> </tr> <tr> <td>ii. Description and review any relevant documents.</td> </tr> <tr> <td>Methodology:-</td> </tr> <tr> <td>i. Detailed step by step description of the methods to be adopted for tunnel alignment survey, soil investigation, environmental survey and other relevant data collection from the macro structural point of view.</td> </tr> <tr> <td>ii. Clear and good presentation as per the supplied formats.</td> </tr> <tr> <td>Work Plan/Schedule:-</td> </tr> <tr> <td>i. Description of analysis steps or flowchart of the analysis process.</td> </tr> <tr> <td>ii. Clear work schedule with description:-</td> </tr> <tr> <td>iii. Manning schedule:-</td> </tr> <tr> <td>iv. If any of the key personnel has visited the site and has attached a photograph and/or described the site; OR If any of the key personnel has worked in the nearby location during the last five years.</td> </tr> </table> <p>Minimum Marks Required:-15</p> <p>TECHNOLOGY TRANSFER</p> <table border="1" data-bbox="363 1010 1437 1171"> <tr> <td>Description</td> </tr> <tr> <td>Technology Transfer/Training:-</td> </tr> <tr> <td>i. The idea of sharing know-how of the works, highlights on dissemination of knowledge and the training proposed by the consultant.:-</td> </tr> <tr> <td>ii. Clear and good presentation:-</td> </tr> </table>	Description	Understanding the objective of TOR:-	i. Comments or suggestions on TOR and services. :-	ii. Description and review any relevant documents.	Methodology:-	i. Detailed step by step description of the methods to be adopted for tunnel alignment survey, soil investigation, environmental survey and other relevant data collection from the macro structural point of view.	ii. Clear and good presentation as per the supplied formats.	Work Plan/Schedule:-	i. Description of analysis steps or flowchart of the analysis process.	ii. Clear work schedule with description:-	iii. Manning schedule:-	iv. If any of the key personnel has visited the site and has attached a photograph and/or described the site; OR If any of the key personnel has worked in the nearby location during the last five years.	Description	Technology Transfer/Training:-	i. The idea of sharing know-how of the works, highlights on dissemination of knowledge and the training proposed by the consultant.:-	ii. Clear and good presentation:-
Description																	
Understanding the objective of TOR:-																	
i. Comments or suggestions on TOR and services. :-																	
ii. Description and review any relevant documents.																	
Methodology:-																	
i. Detailed step by step description of the methods to be adopted for tunnel alignment survey, soil investigation, environmental survey and other relevant data collection from the macro structural point of view.																	
ii. Clear and good presentation as per the supplied formats.																	
Work Plan/Schedule:-																	
i. Description of analysis steps or flowchart of the analysis process.																	
ii. Clear work schedule with description:-																	
iii. Manning schedule:-																	
iv. If any of the key personnel has visited the site and has attached a photograph and/or described the site; OR If any of the key personnel has worked in the nearby location during the last five years.																	
Description																	
Technology Transfer/Training:-																	
i. The idea of sharing know-how of the works, highlights on dissemination of knowledge and the training proposed by the consultant.:-																	
ii. Clear and good presentation:-																	
5.9	The fixed Budget Ceiling for the assignment is : NA																
5.11	<p>The formula for determining the financial scores is the following: $S_f = 100 \times F_m/F$, in which <i>S_f</i> is the financial score, <i>F_m</i> is the lowest price and <i>F</i> the price of the proposal under consideration, The weights given to the technical and Financial Proposals are: T (Technical Proposal) = 0.8 P (Financial Proposal) = 0.2</p>																
6.1	The address for negotiations is: Same as in 2.1																
7.8	The assignment is expected to commence on or before 7 days from the date of signing of the contract																

Section 3. Technical Proposal - Standard Forms

- 3A. Technical Proposal submission form.
- 3B. Consultant's references.
- 3C. Comments and suggestions of consultants on the Terms of Reference and on data, services, and facilities to be provided by the Client.
- 3D. Description of the methodology and work plan for performing the assignment.
- 3E. Team composition and task assignments.
- 3F. Format of curriculum vitae (CV) for proposed professional staff.
- 3G. Time schedule for professional personnel.
- 3H. Activity (work) schedule.
- 3I. Transfer of Technology and Training

3A. TECHNICAL PROPOSAL SUBMISSION FORM

[Location, Date]

To: [Name and address of Client]

Ladies/Gentlemen:

We, the undersigned, offer to provide the consulting services for [Title of consulting services] in accordance with your Request for Proposal dated [Date] and our Proposal. We are hereby submitting our Proposal, which includes this Technical Proposal, and a Financial Proposal sealed under a separate envelope.

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

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

We remain,

Yours sincerely,

Authorized Signature:

Name and Title of Signatory:

Name of Consultant:

Address:

3B. CONSULTANT'S REFERENCES

Relevant Services Carried Out in the Last Ten Years That Best Illustrate Qualifications

Using the format below, provide information on each assignment for which your Consultant/entity, either individually as a corporate entity or as one of the major companies within an association, was legally contracted.

Consultant's Name:	
Assignment name:	
Location:	
Name of Client:	
Address:	
Start Date (Month/Year):	Completion Date (Month/Year):
Approx. Value of Services [in Nepali Rupees]:	
Names of <i>Key Technical Staff</i> (Project Director/Coordinator, Team Leader) involved: 1. 2. 3. 4. etc.	
Description of Services Provided:	

Notes:

1. Please provide the documentary evidence (e.g. completion certificate) clearly showing the name of the job/service, value of service and completion date. **Any information without such evidence shall not be entertained.**
2. Please **DO NOT** provide information on other projects which are not relevant to the proposed job.

3C. COMMENTS AND SUGGESTIONS OF CONSULTANTS ON THE TERMS OF REFERENCE AND ON DATA, SERVICES, AND FACILITIES TO BE PROVIDED BY THE CLIENT

Please study the Terms of Reference thoroughly and provide your views, findings, comments and suggestions on the Terms of Reference:

- 1.
- 2.
- 3.
- 4.
- 5.

On the data, services, and facilities to be provided by the Client:

- 1.
- 2.
- 3.
- 4.
- 5.

3D. DESCRIPTION OF THE METHODOLOGY AND WORK PLAN FOR PERFORMING THE ASSIGNMENT

a) Description of activities and output of tasks

b) Task Schedule

c) Schedule of Resources

d) Innovativeness

3E. TEAM COMPOSITION AND TASK ASSIGNMENTS

1. Technical/Managerial Staff

Name	Position	Task
------	----------	------

2. Support Staff

Name	Position	Task
------	----------	------

3F. FORMAT OF CURRICULUM VITAE (CV) FOR PROPOSED PROFESSIONAL STAFF

Proposed Position:
Name of Consultant:
Name of Staff:
Profession:
Date of Birth:
Years with Consultant/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 consultant] Day/Month/Year

Full name of staff member: _____

Full name of authorized representative: _____

The Consultant shall have to submit the CV of professionals with signature and authorized representative of the consultant. The Signature must be in Blue Ink. If signature is scan and colour print, or signed in ink other than Blue Ink shall cause rejection of the Proposal.

3G. TIME SCHEDULE FOR PROFESSIONAL PERSONNEL

3H. ACTIVITY (WORK) SCHEDULE (SAMPLE) .

A. Field Investigation and Study Items

	<i>[1st, 2nd, etc. are months from the start of assignment.]</i>												
	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th	
Activity (Work)													

B. Completion and Submission of Reports

Reports	Date
1. Inception Report	
2. Interim Progress Report (a) First Status Report (b) Second Status Report	
3. Draft Report	
4. Final Report	

3I. TRANSFER OF TECHNOLOGY AND TRAINING

Please provide your commitment, method and plan/schedule of Transfer of Technology and Training.

Section 4. Financial Proposal - Standard Forms

- 4A. Financial Proposal submission form.
- 4B. Bill of Quantity

4A. FINANCIAL PROPOSAL SUBMISSION FORM

[Location, Date]

To: [Name and address of Client]

Ladies/Gentlemen:

We, the undersigned, offer to provide the consulting services for [Title of consulting services] in accordance with your Request for Proposal dated [Date] and our Proposal (Technical and Financial Proposals). Our attached Financial Proposal is for the sum of [Amount in words and figures]. This amount is inclusive of the local taxes except Value Added Tax(VAT), which we have estimated at [Amount(s) in words and figures].

Our Financial Proposal shall be binding upon us subject to the modifications resulting from Contract negotiations, up to expiration of the validity period of the Proposal, i.e., [Date].

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

We remain,

Yours sincerely,

Authorized Signature:

Name and Title of Signatory:

Name of Consultant:

Address:

4B. BOQ : BILL OF QUANTITIES :

Government of Nepal
Ministry of Physical Planning and Works

Department of Roads

**Maintenance Branch
Chakupat, Lalitpur**

Contract No. -1-2073/74**Bill of Quantity for Detailed Feasibility Study of Road Tunnel**

- (a) Kulekhani-Bhimphedi Tunnel
- (b) Sitapaila-Dharke Road Tunnel
- (c) Pokhara-Syangja Road Tunnel,
- (d) Thankot- Chitlang Road Tunnel,
- (e) Malekhu-Lothar Road Tunnel

Subject to change any of above road

S. N.	Description	Unit	Quantity	Rate	Rate in Inwords	Amount* (NRs)
1	Feasibility Study (Desk study, Field works, Design) as per TOR for 5 tunnel roads	Km	15			
2	Subsurface Investigations including 2D Electrical Resistivity Survey 3-5KM Length, 50-500m depth and Report Preparation (6 copies for each) as per TOR for 5 tunnel roads	Set	5			
2.1	Stationary, Equipments, Transportation and Report Preparation (6 copies for each) as per TOR for 5 tunnel roads	Set	5			
Sub-total						
VAT (13 %)						
Total Amount						

*Note: In amount column **total amount** for each job should be quoted.

Total Amount in words :-

.....

Name of the Consultant:-

.....

Authorised Signature:-

Seal:-

SECTION 5: TERMS OF REFERENCE

TERMS OF REFERENCE

for Feasibility Study of Tunnel Roads

1. *Introduction*

(a) Kulekhani-Bhimphedi Tunnel

The section of the Kathmandu-Kulekhani-Hetauda is around 80 km and it takes almost 3 hr to travel this distance. When the Road from Hetauda-Bhimphedi was constructed the thought for opening a tunnel road from Kulekhani-Bhimphedi was floated but it was not considered so far. If the tunnel is constructed it may shorten the length by about 14/15 kms and reduce the travelling time and operating cost. Due to rugged terrain and difficult geomorphology the widening of the road is not easy and has not been considered. The tremendous growth in VPD has been causing very strenuous for smooth plying of vehicles and maintenance of the road.

(b) Sitapaila-Dharke Road Tunnel

The section of the Kathmandu-Pokhara Highway is around 200 km and it takes almost 7 hr to travel this distance. When the Prithivi Rajmarga (Naubise-Pokhara) was upgraded and rehabilitated in 1990, the thought for opening a tunnel road from Naubise-Thankot was floated but it was not considered so far. Now the traffic flow from this highway is so busy that there is always traffic hindrance. To resolve this problem an alternative route is opened as Sitapaila-Dharke Road which is shorter than Kalanki-Dharke section of the Highway. If the tunnel is constructed it may shorten the length by about 7-8 kms and reduce the travelling time and operating cost. Due to rugged terrain and difficult geomorphology the widening of the road is not easy and has not been considered. The tremendous growth in VPD has been causing very strenuous for smooth plying of vehicles and maintenance of the road.

(c) Pokhara-Syangja Road Tunnel

The section of the Pokhara-Syangja-Butawal is around 80 km and it takes almost 6 hr to travel this distance. To cater the growing traffic of Pokhara Syangja road tunnel road may be the solution. If the tunnel is constructed it may shorten the length and reduce the travelling time and operating cost. Due to rugged terrain and difficult geomorphology the widening of the road is not easy and has not been considered. The tremendous growth in VPD has been causing very strenuous for smooth plying of vehicles and maintenance of the road.

(d) Thankot- Chitlang Road Tunnel,

The Kathmandu valley is surrounded by hills all around and the difference of altitude of the mainland and the hills is more than 700m. The motorable roads entering from outside valley have to ascend and descend before they reach Kathmandu or vice versa. The same condition applies to the vehicles plying from nearby Makwanpur District from where the Chandragiri Ridge has to be crossed. The place Thankot which is in the west of Kathmandu valley can be linked through a tunnel in the other side of the valley and a place called Chitlang. The length of the tunnel may come around 4-5 km .

(e) Malekhu-Lothar Road Tunnel

The section of the Kathmandu-Pokhara Highway is around 200 km and it takes almost 7 hr to travel this distance. When the Prithivi Rajmarga (Naubise-Pokhara) was upgraded and rehabilitated in 1990, the thought for opening a tunnel road from Naubise-Thankot was floated but it was not considered so far. Also there is a link road to link the Prithivi Highway to East-West Highway from Mugling to Narayanghat which is 36 Kms Long. Now the traffic flow for these highways is so busy that there is always traffic hindrance. To resolve this problem there is another possibility to link them from Malekhu to Lothar via Road Tunnel. If the tunnel is constructed it may shorten the length by about 20/22 kms and reduce the travelling time and operating cost. Due to rugged terrain and difficult geomorphology the widening of the road is not easy and has not been considered. The tremendous growth in VPD has been causing very strenuous for smooth plying of vehicles and maintenance of the road.

In order to plan and design a road Tunnel, the consultant shall carry out various types of investigative techniques to obtain a broad spectrum of pertinent topographic, geologic, subsurface, geo-hydrological, and structure information and data. The required investigations may considerably be different depending upon the subsurface conditions and proposed tunneling methods. Therefore, the Consultant shall use an appropriate means and methods to obtain necessary characteristics and properties as basis for planning, design and construction of the tunnel and related underground facilities, to identify the potential construction risks, and to establish realistic cost estimate and schedule. The extent of the investigation shall be consistent with the project scope (i.e., location, size, and budget), the project objectives (i.e., risk tolerance, long-term performance), and the project constraints (i.e., geometry, constructability, third-party impacts, safety aesthetics, and environmental impact).

The Consultant shall have a common understanding of the geotechnical basis for design, and that they are aware of the inevitable risk of not being able to completely define existing subsurface conditions or to fully predict ground behavior during construction.

2. Objectives

The objective of the proposed consulting service is to carry out the followings:

- Feasibility study of the proposed Tunnel Road including technical, economical and financial viability and
- Soil investigation (2D Electrical Resistivity Survey) and detailed interpretation and preliminary design of tunnel road

3. Scope of works

The proposed investigation for planning and design of the road tunnel shall include the following components:

- Existing Information Collection and Study
- Surveys and Site Reconnaissance
- Geologic Mapping
- Soil investigation (2D Electrical Resistivity Survey)
- Environmental Studies
- Seismicity
- Preliminary design and drawings
- Economic analysis
- Reporting

3.1 Existing Information Collection and Study

The Consultant shall collect and review of available information to develop an overall understanding of the site conditions and constraints. Existing data can help identify existing conditions and features that may impact the design and construction of the proposed tunnel, and can guide in planning the scope and details of the subsurface investigation program to address these issues.

Published topographical, hydrological, geological, geotechnical, environmental, zoning, and other information shall be collected, organized and evaluated. Historical seismic records shall be collected and used to assess earthquake hazards. Records of landslides caused by earthquakes shall be collected which can be useful to avoid locating tunnel portals and shafts at these potentially unstable areas.

Topographic maps and aerial photographs shall be used to identify the terrain and geologic features (i.e., faults, drainage channels, sinkholes, etc.). Aerial photographs taken on different dates may reveal the site history in terms of earthwork, erosion and scouring, past construction, etc. The Consultant is advised to use all such information.

3.2 Surveys and Site Reconnaissance

The reconnaissance shall cover the immediate project vicinity, as well as a larger regional area so that regional geologic, hydrologic and seismic influences can be accounted for. A preliminary horizontal and vertical control survey shall be carried out to obtain general site data for route selection and for design. This survey shall be expanded from existing records and monuments that are based on the same horizontal and vertical datum that will be used for final design of the structures. Additional temporary monuments and benchmarks shall be established, as needed, to support field investigations, mapping, and environmental studies.

a. Topographic Survey:

Detailed topographic maps, plans and profiles shall be developed to establish primary control for detail design based on a high order horizontal and vertical control field survey. A tunnel centerline developed during design shall be composed of tangent, circular, and transition spiral sections that approximate the complex theoretical tunnel centerline. The principal survey techniques include:

- Global Positioning System (GPS)
- Electronic Distance Measuring (EDM) with Total Stations.
- Laser Scanning

b. Hydrographical Surveys

Hydrographic surveys shall comprise the preliminary identification of ground water levels , ground water reserves and source of existing springs along the tunnel alignment.

c. Identification of Underground Structures and Other Obstacles

The underground structures may exist that may impact the alignment and profile of the proposed road tunnel, and will dictate the need for structure protection measures during construction. These existing underground structures may include existing or abandoned structure foundations, underground quarry sites, soil treatment areas, and soil or rock anchors that were used for temporary or permanent support of earth retaining structures. Initial surveys for the project shall therefore include a survey of existing and past structures. In addition, historical maps and records shall be reviewed to assess the potential for buried abandoned structures.

3.3 Geologic Mapping

After collecting and reviewing existing geologic maps, aerial photos, references, and the results of a preliminary site reconnaissance, surface geologic mapping of available rock outcrops shall be performed by an experienced engineering geologist to obtain detailed, site-specific information on rock quality and structure. Geologic mapping collects local, detailed geologic data systematically, and is used to characterize and document the condition of rock mass or outcrop for rock mass classification such as:

- Discontinuity type
- Discontinuity orientation
- Discontinuity infilling
- Discontinuity spacing
- Discontinuity persistence
- Weathering

In addition, the following surface features shall also be observed and documented during the geologic mapping program:

- Slides, new or old, particularly in proposed portal and shaft areas
- Faults
- Rock weathering
- Sinkholes and karstic terrain
- Stress relief cracks

-
- Presence of talus or boulders
 - Thickness of Bedding Rock (By Engineering Geological study)

3.4 Subsurface Investigations (2D Electrical Resistivity Survey)

Unlike conventional electrical profiling in which only the lateral variation in the electrical resistivity is measured, the 2D electrical resistivity profiling is capable of showing both lateral and vertical variation in electrical resistivity. In this method, by increasing the distance between current and potential electrodes one can get information from deeper part of the sub-surface and by shifting both current and potential electrodes along a profile it is possible to record lateral changes in electrical resistivity. It shall be capable of detecting boundaries between unconsolidated material and rock and identifying weathered rock from fresh rock and contact between rocks of different lithology and different rock mass quality. A total of 3-5km (approx.) survey shall be carried out along the tunnel alignment.

The 2D electrical profiling shall be conducted by using any of the standard configurations that may be varied according to the depth requirement. The planned depth of investigation is between 50- 500m depending upon the type of the structure to be considered.

Data processing shall be done in two stages: electrical imaging and polygon modeling. Suitable computer software shall be used in each stage.

Geological interpretation shall be given to the electrical resistivity values obtained during polygon modeling. Final interpretation shall be presented in the form of geo-electric section showing both bed-rock overburden boundary and zones of different rock mass quality.

3.5 Environmental and social issues

Although tunnels are generally considered environmentally-friendly structures, certain short-term environmental impacts during construction are unavoidable. Long-term impacts from the tunnel itself, and from portals, vent shafts and approaches on local communities, historic sites, wetlands, and other aesthetically, environmentally, and ecologically sensitive areas must be identified and investigated thoroughly during the project planning and feasibility stages, and appropriately addressed in environmental studies and design. Early investigation and resolution of environmental issues is an essential objective for any underground project since unanticipated conditions discovered later during design or construction could potentially jeopardize the project.

The specific environmental data needed for a particular underground project very much depend on the geologic and geographic environment and the functional requirement of the underground facility. Some common issues can be stated, however, and are identified below in the form of a checklist:

- Existing infrastructure, and obstacles underground and above
- Surface structures within area of influence
- Land ownership and uses (public and private)
- Ecosystem habitat impacts
- Contaminated ground or groundwater
- Long-term impacts to groundwater levels, aquifers and water quality
- Control of runoff and erosion during construction
- Naturally gassy ground, or groundwater with deleterious chemistry
- Access constraints for potential work sites and transport routes
- Sites for muck transport and disposal
- Noise and vibrations from construction operations, and from future traffic at approaches to the completed tunnel
- Air quality during construction, and at portals, vent shafts and approaches of the completed tunnel
- Maintenance of vehicular traffic and transit lines during construction
- Maintenance of utilities and other existing facilities during construction
- Access to residential and commercial properties

-
- Pest control during construction
 - Long-term community impacts
 - Long-term traffic impacts
 - Temporary and permanent easements
 - Tunnel fire life safety and security
 - Legal and environmental constraints, enumerated in environmental statements or reports, or elsewhere

3.6 Seismicity

The release of energy from earthquakes sends seismic acceleration waves traveling through the ground. Such transient dynamic loading instantaneously increases the shear stresses in the ground and decreases the volume of voids within the material which leads to an increase in the pressure of fluids (water) in pores and fractures. Thus, shear forces increase and the frictional forces that resist them decrease. Other factors also can affect the response of the ground during earthquakes.

- Distance of the seismic source from the project site.
- Magnitude of the seismic accelerations.
- Earthquake duration.
- Subsurface profile.
- Dynamic characteristics and strengths of the materials affected.

In addition to the distance of the seismic source to the project site, and the design (anticipated) time history, duration and magnitude of the bedrock earthquake, the subsurface soil profile can have a profound effect on earthquake ground motions including the intensity, frequency content, and duration of earthquake shaking.

The ground accelerations associated with seismic events can induce significant inertial forces that may lead to instability and permanent deformations (both vertically and laterally) of tunnels and portal slopes. In addition, during strong earthquake shaking, saturated cohesionless soils may experience a sudden loss of strength and stiffness, sometime resulting in loss of bearing capacity, large permanent lateral displacements, landslides, and/or seismic settlement of the ground. Liquefaction beneath and in the vicinity of a portal slope can have severe consequences since global instability in forms of excessive lateral displacement or lateral spreading failure may occur as a result. The Consultant shall consider all these issues in the preliminary design and analysis of the Tunnel section.

3.7 Preliminary design and drawings

The preliminary survey and design of tunnel road consists of the following activities:

- Topographic survey of proposed road corridor including road inventory survey of existing structures
- Prepare report on property acquisition plan
- Survey of services to be relocated including irrigation canal
- Hydrological Survey
- Geotechnical Survey and investigation works
- Material Availability survey
- Preliminary design of Tunnel Road
- Design of other Structures required
- Quantity Estimation
- Cost Estimation
- Preparation of drawings

3.8 Economic analysis

The Consultant is required to carry out alternative alignment analysis and conduct an economic analysis for the proposed Tunnel road. It shall also carry out the financial viability of the tunnel road project and recommend the investment modality.

4. Working Team

The working team for the field and office works in general shall consist of the following key personnel together with the supporting manpower:

S.N.	Experts	Input In days for Road Tunnel up to 3 km
1	Team Leader/Sr. Highway Engineer	10
2	Civil engineer with experience in Tunnel design and construction	12
3	Engineering Geologist/Geotechnical Engineer	10
4	Tunnel design/Structure Design Engineer	7
5	Environmental/Environmental Engineer	7
6	Traffic/Road Safety Engineer	2
7	Hydrologist	2
8	Electro/Mechanical Engineer	2
9	Socio-economist	3
10	Senior Surveyor	5
	Sub-Total	60 Days
	Total for about 15 Kms for one Team	60*5=300 Days

All the above experts shall have at least 10 years professional experience.

5. Consultant's Reporting Obligation & Time Frame

With the scope of this consultancy service, the consultant has to prepare and submit the following reports:

5.1 Inception Report

The Inception Report shall be prepared within 2 weeks of signing the contract agreement for the consulting services. The inception report shall in no case limit the original scope. Its purpose is to incorporate the additional services offered by the consultant in its technical proposal and to elaborate the study schedule and methodology. The report has to be submitted in 3 copies.

The inception report shall be presented through suitable overhead media to a group of about 15 representatives of the clients, line ministries, NGO, Media, Other consultants and various stakeholders.

5.2 Field Report

The field report shall be submitted within 4 months of signing the contract agreement for the consulting services. It shall contain all the outcomes of field works. The report has to be submitted in 3 copies.

5.3 Draft Final Report

The draft final report shall fully cover the entire requirement as stated in the TOR. Draft final report shall be submitted within 8 months of signing the contract agreement for consulting services. The report has to be submitted in 3 copies. The report shall be presented to a group of about 15 representatives as in the case of the inception reports. A CD of the report and the presentation materials shall be provided to each of the participant so that comments could be received at a later stage.

5.4 Final Report

The Final Report shall be submitted after incorporating the comments from the Client and the Stakeholders. The report shall be delivered in 6 hard and soft copies (in A3 size) at the client's office. The Volume of Final Report will be same as Draft Final report.

The Final Report all complete shall be submitted within 10 month of signing the contract agreement for the consulting services. Draft and final reports shall consist of the following volumes.

1. Detail Feasibility Study Report

- a) Main Report including alternative /economic analysis
- b) Preliminary Design Report
- c) Drawings
- d) Rate analysis, Quantity , Cost Estimate and Economic Analysis

2. Environment study Report

- o Environmental issues
- o Socio-economic Issues

6. Data and Assistance to be provided by the Client

On requests, the Consultants will be given access to any relevant information, including project information. Assistance may be available from DOR Offices and DOR Projects for data required for carrying out survey. DOR will also provide assistance to the consultants in maintaining coordination with other government offices.

7. Method of Payment

Method of Payment as follows:

- a) The client shall pay 10% of the contract amount after submission of the **Inception Report**
- b) The client shall pay 30% of the contract amount after submission of the **Field Report**.
- c) The client shall pay 40% of the contract amount after submission of the **Draft Final Report**.
- d) The client shall pay remaining of the contract amount after submission of the **Final Report**.

SECTION 6: STANDARD FORM OF CONTRACT MEMORANDUM OF AGREEMENT

(To be filled up after the Contract is awarded)

THIS AGREEMENT, made on the (Date).....between Government of Nepal, Department of Roads, Planning and Design Branch, Planning Monitoring and Evaluation Unit (herein after called as "the Department" or "the DOR") of the one part and the Consulting Firm or JV (herein after called as "the Firm" or "the Consultants") the other part.

WHEREAS, the Department is desirous that certain Professional Engineering Services should be performed viz. **Detailed Feasibility Study of Tunnel Road** the following road(s) and has accepted a proposal by the firm for the performance of such services for the total amount of NRs....., excluding VAT.
In words NRs.

Contract No.	Name of the road

The whole services comprised in the Agreement shall be completed and Draft Report submitted before (Date).....and shall perform the services in conformity in all respects with the provisions of the Agreement.

Now this Agreement witness as follows

1. In this Agreement words and expressions shall have the same meaning as are respectively assigned to them in the Condition of Engagement hereinafter, referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.:
 - (a) The said proposal
 - (b) Conditions of Contract
 - (c) Terms of Reference
 - (d) Bill of Quantities
 - (e) Memorandum of Agreement
 - (f) Special provisions (if any)
 - (g) Appendices (if any)
 - (h) Checklists (if any)
 - (i) Addenda (if any) to the documents (a) through (h)
 - (j) Instructions to consultant (if any)
3. The Firm shall commence the Services from the date of signing of the Agreement and the services shall be completed on or before (Date).....
4. In consideration of the payments to be made by the Department to the Firm as hereinafter mentioned, the Firm hereby covenants with the Department to perform the services in conformity in all respects with the provisions of the Agreement.
5. The Department hereby convents to pay the Firm in consideration of the performance of the services and amount at the manner prescribed by the Agreement.

IN WITNESS : whereas the parties here have made and executed this Agreement as of the day, month and year first above written.

On behalf of the Department

On behalf of the Firm

Witness

Witness

1 -----

1 -----

2 -----

2 -----