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Government of Nepal
Ministry of Physical Infrastructure and Transport
Department of Roads
Planning and Monitoring Branch
Planning Monitoring and Evaluation Unit
Patandhoka, Lalitpur

Notice No: 03-PMEU/076/77

Date of publication: 2076-07-08 BS (2019-10-25 AD)

EXPRESSION OF INTEREST FOR CONSULTING SERVICES

1. The Government of Nepal, Department of Roads, Planning and Monitoring Branch, PMEU, invites Expressions of Interest (EOI) for the purpose of short listing of the qualified, eligible and experienced domestic consulting firms for the **Detail Engineering Survey, Detailed Design and Report Preparation (DPR) of Roads** under contract number **PMEU/33701123/076/77/DPR:22-31.**The Standard EOI forms and EOI Evaluation Criteria for each work can be downloaded from the website: www.dor.gov.np or www.bolpatra.gov.np/egp. The budget for this purpose has been allocated by the Government of Nepal (GON) for the fiscal year 2076/077.
2. Experienced, eligible and willing Consulting Firms are invited to submit their EOI, either single or in joint venture with other firms. The firm/JV shall submit separate EOI for each package through PPMO's EGP system, www.bolpatra.gov.np/egp on or before **17:00, 2076-07-22 BS (2019-11-08 AD)**. Hard copy shall not be entertained during submission of EOI. Submitted EOIs shall be opened on **11:00, 2076-07-24 BS (2019-11-10 AD)** at PMEU, DoR, Patandhoka, Lalitpur.
3. Consulting Firms can form a Joint Venture (JV) with maximum 3 no. of firms. The EOI documents must clearly mention the name of the leading firm with financial liabilities. Authorized power of attorney shall be submitted along with EOI document.
4. Minimum score to pass the EOI is 60% of full marks. Top Six Short listed consultants will be invited to submit their Technical and Financial Proposal as per the Request for Proposal (RFP), to be provided to them at the later stage. PMEU, DoR reserves the right to shortlist any or all of the Firms without assigning any reasons whatsoever. Further information or clarification can be obtained from PMEU, DoR during office hours.
5. The submitted EOI document shall include adequate information as per the evaluation criteria/EOI forms to demonstrate their qualification in the best manner.

Unit Chief

Government of Nepal
Ministry of Physical Infrastructure and Transport
Department of Roads
Planning and Monitoring Branch
Planning Monitoring and Evaluation Unit [PMEU]
Patandhoka, Lalitpur

EOI ELIGIBILITY AND QUALIFICATION CRITERIA

Detailed Engineering Survey, Detailed Design and Report Preparation (DPR) of Roads for Estimated Cost above 20 Lakhs

SECTION 1: Eligibility Criteria:

S.N.	Eligibility Criteria	Compliance	Status
1	Corporate Registration	Yes/No	Pass/Fail
2	Tax Clearance / Tax Return Submission / Letter of Time Extension for Tax Return Submission [upto FY 075/76]	Yes/No	Pass/Fail
3	VAT / PAN Registration	Yes/No	Pass/Fail
4	EOI Form 1: Letter of Application	Yes/No	Pass/Fail
5	EOI Form 2: Applicants Information Form or related documents	Yes/No	Pass/Fail
6	EOI Form 3: Experience (3(A) and 3(B)) or related General, Specific work experience certificates	Yes/No	Pass/Fail
7	EOI Form 4: Capacity or Tax clearance certificates	Yes/No	Pass/Fail
8	EOI Form 5: Qualification of Key Experts or related CV documents	Yes/No	Pass/Fail
9	Year of Standing min. 5 year (At least one firm in case of JV)	Yes/No	Pass/Fail
10	JV Agreement in case of Firms in JV	Yes/No	Pass/Fail
11	Power of attorney	Yes/No	Pass/Fail
12	Adherence to code of Ethics and Anti-Corruption Policy	Yes/No	Pass/Fail

Notes on Eligibility Criteria:

1. As per the provision made on clause 96(1) and clause 98 of Income Tax Act-2058, if the date of publication of notice lies within the first three months of running fiscal year, consulting firm can submit their tax clearance certificate upto the second preceding fiscal year. Submission of letter of time extension for tax return submission is not mandatory for this duration. However, if the date of publication of notice is after first three months of running fiscal year, consulting firm shall submit their tax clearance certificate upto preceding fiscal year or tax clearance certificate upto second preceding fiscal year and letter of time extension for tax return submission.

2. Consulting Firms can form Joint Venture (JV) with maximum number of 3 (three) single entity firms. The submitted EOI document must clearly mention the name of the leading firm with financial liabilities.
3. The firm/JV shall have to submit separate EOI for separate packages.
4. In case of a firm which is already declared blacklisted and ineligible by the GoN shall not be eligible.
5. In case, a corruption case is being filed to Court against the firm or any partner of JV, such firm or JV shall be excluded from the evaluation, if public entity receives instruction from GoN.
6. The same firm shall not be allowed to submit EOI individually and in JV for same packages. *("Example 1: EOI submitted by Firm A and that submitted by Firm A JV with Firm B" - Not Allowed) ("Example 2: EOI submitted by Firm A JV with Firm B and that submitted by Firm B JV with Firm C" - Not Allowed).*

SECTION 2: Qualification Criteria

Description of Criteria	Marks out of 100	Minimum Marks to be obtained under each criteria
2.1 Capacity of the Firm	**15**	**9**
i) Financial Capacity of Firm	10	
ii) Office Infrastructure / Equipment	5	
2.2 Experience of the Firm	**50**	**30**
i) General Experience of the Firm	10	
ii) Specific Experience of the Firm	40	
2.3 Qualification of the Firm	**35**	**21**
i) Resource Personnel	35	

Details of Qualification Criteria:

2.1 Capacity of the Firm …… …... [Maximum: 15 Marks]

i. Financial Capacity of Firm ……..…… [Maximum 10 Marks]

Average Annual Turnover of best 3 year of last 7 (Seven) Fiscal Years	Marks	Remarks
<NRs. 0.1A	1	A = Estimated Amount excluding VAT and Contingency
> or =NRs. 1.5A	10	
For Value in between, points will be awarded in prorate basis.		

Notes on Financial Capacity of Firm:

1. Average Annual Turnover of firm/JV shall be average of annual turnover of best 3 (three) fiscal years out of last 7 (seven) fiscal years.

2. The firm and/or JV shall have to submit notary public attested tax clearance certificate of each fiscal year, supposed to be evaluated for EOI evaluation. Submission of audit report or any other tables shall not be considered for EOI evaluation. Notary public signature shall be verified, if required.
3. In case of JV business, the firm and/or JV shall have to submit notary public attested tax clearance certificate of each fiscal year along with the JV agreement of that business, supposed to be counted for EOI evaluation.
4. In case of JV, average annual turnover of the JV shall be evaluated considering % of financial liability as stated in the JV agreement for the EOI. If the JV agreement is submitted without mentioning the % of financial liability, the marks for financial capacity shall be evaluated to zero.
5. For the evaluation of financial capacity, inflation adjustment shall be done using overall wholesale price index (WPI computed at the end of last fiscal year) published by Nepal Rastra Bank.

ii. Office Infrastructure / Equipment …… [Maximum 5 Marks]

Equipment/Facilities	Maximum Marks	Marks Allocation	Remarks
1) Total Station / Theodolite / EDM	3	1 mark for each	Must submit ownership evidence or lease agreement with notary public attested.
2) Differential GPS	2	1 mark for each	

2.2 Experience of the Firm …….... [Maximum: 50 Marks]

i. General Experience …… [Maximum 10 Marks]

Description of General Work Experience	Marks Allocation
Completion of civil engineering related service with contract amount greater than NRs. 5 Lakhs excluding VAT. No point is awarded if the contract amount is not mentioned in certificate.	**1.0** marks for each job

ii. Specific Experience ……..…… [Maximum 40 Marks]

Work Experience	Marks Allocation
Completion of "**Detailed Engineering Survey and Design**" or "**Preparation of DPR**" or "**Construction Survey, Design and Supervision**" of a Road. (Road Length equal to or more than 30 Km).	**1.5** marks for each job

Notes on Experience of the Firm:

1. The firm shall have to submit notary public attested experience certificates. No marks shall be given for the experience of the firm if the certificate of completion is not attached. If the firm has completed more than one job in a single package, each job shall be considered.

2. The services for Government of Nepal (GoN) organizations (fully or partially owned) shall only be considered as firm's experiences during evaluation of EOI. The specific experience by the firm as JV partners shall be considered and evaluated as firm's experience and any specific experiences by the firm as "in association with" shall not be considered during evaluation.
3. Any sublated service for Government of Nepal (GoN) organizations (fully or partially owned) by a firm from another private firm shall not be evaluated as firm experience for the EOI.
4. Any service experience older than 7 years (counted from the last date of submission of EOI) shall not be evaluated as firm/JV experience for the EOI.
5. Each experience certificate shall clearly indicate the description of service, service amount (including / excluding VAT), date of commencement and date of completion of service.
6. Provide highlight on specific services provided by the consultant as required by the EOI assignment.

2.3 Resources of Firm …….……..…….. [Maximum 35 Marks]

Professional Key Personnel	Maximum Marks	Minimum experience after Bachelor Degree	Education required	Marks for Specific Job Experience
Team Leader: Highway / Transportation Engineer)	10	8	M.Sc. in Highway / Transportation Engineering or equivalent	1 mark for each job
Geologist / Engineering Geologist / Geotechnical Engineer	8	5	M.Sc. in Geology / Geotechnical Engineering or equivalent	1 mark for each job
Hydrologist	6	5	M.Sc. in Water Resource / Hydrology / Hydraulics Engineering or equivalent	1 mark for each job
(Environmentalist / Forestry Specialist / Ecologist)	4	5	Master's degree in Environmental Science / Engineering or equivalent	1 mark for each job
Socio-Economist	4	5	Master's degree in Economics / Sociology or equivalent	1 mark for each job
Civil Engineer	3	4	B.E. in Civil Engineering or equivalent	1 mark for each job
***Total*=**	**35**			

Notes on Resource Personnel:

1. The proposed key personnel shall declare himself / herself that he / she is not involved full time in any civil engineering projects such as "Feasibility Study" or "Engineering / Construction Survey" or "Design" or "Construction Supervision" or "Preparation of DPR". In case of part time involvement of

proposed key personnel, he / she shall provide adequate clarification and declaration regarding his / her part time involvement in any other abovementioned projects does not affect the scheduling and execution of this consulting service if this consulting service is awarded to the firm hiring that proposed key personnel. Any marks allocated to the proposed key personnel shall not be awarded if he/she does not submit declaration (with clarification if needed) regarding abovementioned content through separate letter with signature of the proposed key personnel. Furthermore, in case of any written complaints registered at DoR by any other consulting firm/JV, regarding the submission of fraudulent declaration, with supporting documents and proofs, the proposed key personnel shall not be considered in the evaluation process.

2. The year of experience of professional key expert, after bachelor degree, shall be counted from the date of registration at Nepal Engineering Council (NEC). In case of non-engineering professional key expert, that shall be counted from the passed date as mentioned in educational qualification certificate(transcript).
3. CV of each professional key personnel shall be submitted with signature of professional key personnel and authorized representative of the firm/JV.
4. Proposed professional key personnel shall not be repeated by the same firm/JV and/or another firm/JV. In case of repetition of professional key personnel, PMEU, DoR shall ask, via letter/email, the person for his / her physical presence within three days to declare him/herself to the firm/JV whom he/she shall want to be associated.
5. CV of personnel shall clearly mention his/her e-mail address and mobile number.
6. The firm/JV shall have to submit the NEC registration certificate for engineer professionals (except Environmentalist / Forestry Specialist / Ecologist, Geologist, Economist / Sociologist)
7. The firm/JV shall have to submit any certificate as evidence of proposed key personnel's education (degree) as required above with his / her notarized academic certificate.
8. Minimum road length with the specific job shall be greater than or equal to 30 Km for Team Leader (DPR) and greater than or equal to 5 Km for other personnel.
9. The work experience for all key personnel shall be mentioned in following format:

Name of Project	**Road Length**	**Name of Client**	**Start Date-Completion Date**	**Name of Firm involved in as (Single/JV)**
Scope of Project				
Professional involved as (Position held)				
Description of Duties				

ANNEX-I: ROAD SECTIONS UNDER EACH PACKAGES OF NOTICE NO.: 01-PMEU/076/77

Name of Consulting Service: Detailed Engineering Survey, Detailed Design and Preparation of Report (DPR)

S. N.	Name of Road/Project	District	Length (Km)	Package Length (Km)
PMEU/33701123/076/77/DPR-22	Tadi-Labdhu-Samundratar-Golphubhanjhyang-Patibhanjhyang Road, Nuwakot	Nuwakot	60	90
	Kolphutar-Duipipal-Jhyangli Road, Nuwakot	Nuwakot	30	
PMEU/33701123/076/77/DPR-23	Satdobato-Thulogaun-Haku-Gatlang Road, Rasuwa	Rasuwa	35	77
	Bi.Na.Pa.-8, Biguwa Kedari-Phirket-Baanspani-Majuwa-Manebhanjhyang Road, Nuwakot	Nuwakot	25	
	Gujre-Chhahare Road, Nuwakot	Nuwakot	17	
PMEU/33701123/076/77/DPR-24	Gothijiula-Dhyambudhu-Kalakanda-Khamale-Baratu-Shreekot Road, Mugu	Mugu	30	70
	Boldhik-Jhugela-Sukadhik-Ratapani-Nigalibot-Rara Gamgadi Road, Mugu	Mugu	30	
	Talcha-Rara Road Section of Gamgadhi-Talcha-Rara Tourist Road, Mugu	Mugu	10	
PMEU/33701123/076/77/DPR-25	Bimalnagar-Mauwatar-Thatipokhari-Dudhpokhari Road, Gorkha	Gorkha	65	105
	Palungtar-Harmi-Chhoprak-Gaankhu-Shreenathkot-Jaubari-4, Muchowk-Simjung-Ghyalchok Road, Gorkha	Gorkha	40	
PMEU/33701123/076/77/DPR-26	Chandranigahapur-Gaur Road, Rauthahat	Rautahat	50	105
	Lalgadh-B.P. Marg-Tulasi-Bahunmara-Ranibas Road, Dhanusha	Dhanusha	15	
	Samari Pul Dhanding Bazar Dumrikuna Road (Basudev Marg), Makawanpur	Makawanpur	15	

S. N.	Name of Road/Project	District	Length (Km)	Package Length (Km)
	Ghorghas-Nimchaur-Thalahighat-Akraharghat Road, Dhanusha	Dhanusha	15	
	Jaitapur-Kalaiya Road (Sahid Mukhlal Marg), Bara	Bara	10	
PMEU/33701123/076/77/DPR-27	Ghumti-Chisapani-Chitre Bhanjhyang-Bhimad Road, Syangja	Kaski	25	96
	Mirdi-Bhimad-Rato Pahara-Darsing Road, Syangja	Syangja	23	
	Madan Aashrit Park-Bhalam-Yarlechaur-Kahukholachowk-Aarwa Road, Kaski	Kaski	10	
	Sisuwa-Deurali-Phedi Road, Kaski	Kaski	10	
	Kumari Pokhari Gowane Gaira Pokhara Bhuwanpani Lamdanda Ninnichaur Lipsi Simghat Road, Gulmi	Gulmi	10	
	Gulmi Madane-6 Nuwar Jhulkebot Pyuthan Juredhunga Road, Gulmi	Gulmi	10	
	Gulmi-Chatrakot Ga.Pa. Hunga-Chorkate-Satyawati Ga.Pa.-7 Road, Gulmi	Gulmi	8	
PMEU/33701123/076/77/DPR-28	Sundarbazar-Khatri-Thati-Hadetar-Kunchabhanjhyang-Jitabeshi Road, Lamjung	Lamjung	25	130
	Barangkhola-Bhangeri Road, Rainas Na. Pa.-1, Lamjung	Lamjung	20	
	Damauli-Buldikhola-Shiwalaya-Wyas Marg Road, Tanahun	Tanahun	20	
	Damauli-Chhabdi Road, Tanahun	Tanahun	20	
	Gairiduredada-Daregauda-Kaphalswora-Naruwal Road, Lamjung	Lamjung	18	

S. N.	Name of Road/Project	District	Length (Km)	Package Length (Km)
	Jugepani-Barbot-Milanchowk-Chyananpata Road, Lamjung	Lamjung	15	
	Satbishe-Dhadkharka Road, Rainas Na. Pa.-4, Lamjung	Lamjung	12	
PMEU/33701123/076/77/DPR-29	Taplejung Sadarmukam (Machhapokhari)-Hirewa-Dobhan-Khokling-Phungphunge Jharana-Papung-Olangchungola Road, Ch. 15+000(Tamor River) to Ch 105 Km, Taplejung	Taplejung	90	90
PMEU/33701123/076/77/DPR-30	Sukepokhari-Chhatedhunga-Bhadaure-Ewa-Hyaku-Chowkpur-Dhungesaghu Road, Taplejung	Taplejung	65	105
	Limbani Pul-Dobhan-Thiwa-Olangchungola Road, Ch. 40+000 to Ch. 80+000 Km, Taplejung	Taplejung	40	
PMEU/33701123/076/77/DPR-31	Phediguth-Koshat-Mandredobhan-Okhaldhunga Section of Sanghutar-Okhaldhunga-Kuivir Road, Okhaldhunga	Okhaldhunga	60	88
	Sinam-Yambhudin Section of Limbuni Pul-Kanchanjunga Base Camp Road (Kablei Corridor) (Ch. 28+000 to 56+000 Km), Taplejung	Taplejung	28	

ANNEX: II & III

FORMAT OF DECLARATION LETTERS

- Consulting firm shall submit the declaration letter in the format as specified in Annex-II
- Each Professional Key Expert shall submit the declaration letter in the format as specified in Annex-III

Annex-II

LETTER HEAD OF CONSULTING FIRM/JV

Date: YYYY-MM-DD

To,
Planning, Monitoring and Evaluation Unit
Planning and Monitoring Branch
Department of Roads
Patandhoka, Lalitpur

Subject: Regarding Self Declaration

Respected Sir / Madam,

In accordance to the Provision made on Rule 65(ka) of Public Procurement Rule-2064 (including 8th amendment), it is declared that our firm neither has been blacklisted nor any corruption cases hav been filed in the court. Also, it is declared that out firm is not involved in any fraudulent practices till date.

…[Signature of the Authorized Representative]…

Name of Authorized Representative:

Designation:

Address:

Contact Number:

Name of the Consulting Firm:

Official Seal:

Date (YYYY-MM-DD):

Annex-III

Date: YYYY-MM-DD

To,

Planning, Monitoring and Evaluation Unit

Planning and Monitoring Branch

Department of Roads

Patandhoka, Lalitpur,

Subject: Regarding Self Declaration

Respected Sir / Madam,

I, ……(Name of the Proposed Professional Expert)…… declare myself as stated below:

1) I am not engaged full time at present in any civil engineering projects such as “Feasibility Study” or “Engineering / Construction Survey” or “Design” or “Construction Supervision” or “Preparation of DPR”.
2) I am currently engaged (part time) in the following civil engineering projects:
    i. Name of engaged project-1……
    ii. Name of engaged project-2……
    iii. Name of engaged project-3……
3) I also declare myself that my part time involvement in abovementioned projects shall not affect the scheduling and execution of this consulting service if this consulting service is awarded. I also hereby attach the detail of the manning schedule for execution of this service along with the projects as mentioned in 2.
4) I confirm that I will be available to carry out the assignment for which my CV has been submitted in accordance with the implementation arrangements and schedule set out in the Proposal.
5) I declare that Corruption Case is not filed against me.
6) I hereby agree that above stated details are true to my knowledge, I understand that any willful misstatement described herein may lead to my disqualification or dismissal, if engaged.

…[Signature of the Expert]…

Name of Key Expert:

NEC Regd. No. (In case of Engineering Professional):

Address:

Contact (Mobile) Number:

Email:

Date (YYYY-MM-DD):

Name of the Consulting Firm:

TERMS OF REFERENCE

1. Background

The Department of Roads, Planning and Monitoring Branch, Planning Monitoring and Evaluation Unit, Lalitpur (herein after referred as "the Unit" or as "the Office"), intends to utilize services of engineering well experienced consulting firms, in the fields of survey and design of roads, bridge, river training works, environment aspects etc. for providing engineering consulting services, for **detailed engineering survey, detailed design and report preparation (DPR) of proposed roads**.

Name of road: **As per Annex-I List of Road Sections**

Province and District: **As per Annex-I List of Road Sections**

Existing road head to be connected to: **As per Annex-I List of Road Sections**

Proposed Class of Road: **Feeder** Road (Minimum) Two lane Standard,

In case of National Highway, proposed class of road shall be **National Highway (NH Standard)**

2. Objectives of the work

The main objectives of the consulting services are:

i. to perform detail feasibility study
ii. to perform alignment detailed survey and design
iii. to perform socio-economic and traffic study
iv. to suggest option of upgrading and design accordingly
v. to prepare detailed report of the stated road(s) based on sound techno-economical approach.
vi. to develop project implementation plan
vii. to develop the land use pattern

3. Scope of work

The firm shall carry out the necessary field works along the alignment. The firm shall be responsible for accuracy, interpretation, analysis of all data received and for the conclusion and recommendations in their report. The scope of work to be carried out by the firm shall include but may not be limited to the following:

Phase A

3.1 Desk Study

A desk study shall be carried out by collecting all the data from political & geological map, hazard map, road network map, map of earthquake zoning, land use map, aerial photo and information relevant to survey and design of the road and reviewing for planning of field survey and investigation works. After the desk study, the firm shall submit the inception report.

3.2 Preliminary Site Visit

The firm shall perform preliminary site visit by a walk-over survey to get information about:

- Existing Road Condition (if any)
- Tentative road length as new road section

3.3 Socio-economic studies of influence area with maps and sketches

Demographic picture:

a. Influenced population/economic activity of influenced population
b. Structure of population
c. Nature of migration and outside influx etc.

Land use pattern:

a. Wild life sanctuary
b. Forest
c. Production in influenced area and surplus in influenced area
d. Settlement pattern etc.

Trade, Industry and Commerce (existing & planned):

a. Local produces and other resources

b. Export and import
c. Major industries and cottage industries
d. Market development
e. Tourism potential etc.
f. Major development works (hydro power project, irrigation project, other governmental/no-governmental development programs etc.)

Health (existing & planned):

a. Hospital
b. Health post
c. Ayurvedic clinic etc.

Education (existing & planned):

a. Primary schools
b. Secondary schools
c. High schools
d. Colleges/institutions etc.
e. Universities

Transport and communications network (existing & planned):

a. Trail network and trail bridges
b. Airport, STOL strips, helipad etc.
c. Water transport
d. Rope-ways
e. Road network
f. Telecommunication, postal service & other communication networks etc.

Administrative facilities:

a. Government offices
b. Co-operation offices
c. Banks etc.
d. Police station

3.4 Traffic Study

To determine the type and volume of future traffic for the proposed roads, the firm shall analyze all existing statistical data affecting traffic within influence area. The firm shall carry out traffic counts and origin/destination surveys or any other surveys as necessary to determine the nature of traffic and the present volume of goods, animal and pedestrian movements (motorized as well as non-motorized traffic) within the influence area. Traffic data shall be co-related to the influenced population (or economically active population) and production (surplus or deficit in agriculture/industry etc.)

Threshold traffic value for construction and upgrading of the road, for the reduction of total transport cost, judgment shall be applied considering all possible method.

In broad terms, the firm shall also identify, describe and quantify existing and probable future traffic generating sources, based on the probable future development of the influence area on relevant factors, such as;

a. Population growth and changes in population distribution.
b. Regional economic growth.
c. Development of agriculture, forestry, mineral and other resources.

Anticipated domestic trade in agriculture and non-agriculture commodities. A second traffic forecast shall be made assuming that an appropriate accelerated development program within the zone of influence is undertaken by the Government.

Traffic study should include the detail study of normal, diverted and generated traffic.

3.5 Feasibility Study of New Road Section

The preliminary engineering design shall establish the technical feasibility and initial cost estimate of viable alternatives. The following guidelines apply:

a. Plans of each alternative may be expanded to show all the key components and their connections with one another.

b. Typical cross-sections and details may be developed to demonstrate the technical feasibility of the project component and to enable a quick estimate of quantities.
c. Key engineering calculations shall be carried out to prove technical feasibility.
d. Any deviations from standards shall be identified. The implications and effects shall be discussed and agreed with stakeholders while comparing alternatives.
e. The preliminary engineering design shall be in sufficient detail to permit costs to be estimated +/- 25%.
f. The preliminary engineering shall identify sources, suitability and costs of materials for construction. As a minimum it shall include a survey of materials sources in the project vicinity.

Preliminary cost estimates shall be prepared based on the following:

a. The quantities of the civil works shall be computed on the basis of the schematic plan, profiles and typical sections following standard methods of measurement.
b. The rate analysis for civil engineering items shall follow the norms and market prices of construction materials, labor and equipment hiring rates.
c. The rate analysis for civil engineering items may be verified using the mean rates from contracts in the last 5 years as much possible.
d. The costs shall be broken down into local and foreign currency components, direct cost, overheads, taxes, physical and price contingencies.

The cost components shall be:

Construction

Each alternative alignment shall be included in the cost estimate. If necessary, the cost of a road system which will be necessary to connect existing population concentrations and develop the economic potential of the region, preliminary cost estimate may be based on typical construction cost of road, highway and bridge etc. recently constructed by the Department of Roads but shall take into account recent increases in the cost of construction, materials and labor prevalent in the districts. Cost estimate for stage construction shall be considered possibility starting with a low-cost solution with initially a dry season road. Estimate of the local and foreign cost components, if applicable shall also be made.

Maintenance

The cost of maintenance of road for design period shall also be considered. The Firm shall have to analyze and suggest the sources of income and the possibilities in which funds for the maintenance could be mobilized viz.: from local levels, toll taxes, vehicle registration fees or fines and transport equipment and spare parts taxes or through Road Board.

Road user cost

Cost of vehicle operating cost, accident cost etc. shall be included in existing & proposed conditions. Vehicle operating cost of the proposed road shall be mentioned in terms of roughness verses required pavement cost, which is dominating cost of vehicle operation.

Comparison

Comparison shall be made between different alignments taking into consideration of construction, maintenance, road user costs and other costs into consideration. While recommending the most feasible alignment in terms of construction cost, comparison shall be made with the operating cost as well as to determine the period during which the extra construction cost will be compensated. The ranking of alternatives shall be as recommendations given in manual of mountain risk engineering (MRE).

The following guidelines shall be applied:

i) The life of the proposed works, and the residual value at the end of the life, shall be determined.
ii) The economic and financial analyses shall compare the benefits and costs of the project alternatives (the “with project” case) over the project life against projected conditions if no project were implemented (the “without project” case). Careful analysis is needed to define both cases.
iii) For economic analysis, nominal costs and benefits shall be converted to an economic basis by removing taxes and duties and applying shadow prices where appropriate.
iv) The construction cost, O&M cost, safety cost etc. shall be calculated over the construction and operating life of the project to generate the cost stream.
v) Benefits shall be calculated over the operating life of the project to generate the benefit stream.
vi) Both cost and benefit streams shall be discounted and converted into present values using the discount rate specified by GoN.

vii) The economic indicators normally used to evaluate and compare alternatives shall be economic internal rate of return (EIRR), benefit-cost ratio (B/C), net present value (NPV) and incremental NPV.

viii) Where there shall be uncertainty on cost and benefit streams, sensitivity analyses shall be carried out for 25% increase in construction costs, 100% increase in maintenance cost, 20% reduction in user costs, 30% reduction in growth of benefits

Economic and Financial Analysis

The following guidelines shall be applied:

i) The life of the proposed works, and the residual value at the end of the life, shall be determined.

ii) The economic and financial analyses shall compare the benefits and costs of the project alternatives (the "with project" case) over the project life against projected conditions if no project were implemented (the "without project" case). Careful analysis is needed to define both cases.

iii) For economic analysis, nominal costs and benefits shall be converted to an economic basis by removing taxes and duties and applying shadow prices where appropriate.

iv) The construction cost, O&M cost, safety cost etc. shall be calculated over the construction and operating life of the project to generate the cost stream.

v) Benefits shall be calculated over the operating life of the project to generate the benefit stream.

vi) Both cost and benefit streams shall be discounted and converted into present values using the discount rate specified by GoN.

vii) The economic indicators normally used to evaluate and compare alternatives shall be economic internal rate of return (EIRR), benefit-cost ratio (B/C), net present value (NPV) and incremental NPV.

3.6 Report submission of Phase A

The consultant shall have to submit a report covering socio-economic study, traffic study and feasibility study along with KMZ file of the Road. After necessary correction and suggestions issued by the Unit, the firm shall start phase B.

Phase B

3.7 Detailed Engineering Study

The consultant shall coordinate with the respective Road Division/Project offices prior to commencement of Detail survey. In addition, after completion of the detail survey, the consultant shall request the respective Road Division/Project offices for certification regarding completion of survey works.

3.7.1 Topography Survey

The detailed Topographic survey of road corridor covering a width of 25m on either side of centerline will be carried out. The density of survey points will be at least 1 point per 25 square meters. Topographic map in 1:1000 should contain details of Survey control points. Settlement with starting and end points, Landslide/Slope instabilities, natural stream and structures.

For existing & new road section, the firm shall perform the task as below, but may not be limited to the following:

i) Fixing of road alignment by setting out intersection point (IP) and intermediates points.

ii) Establishment of Bench Marks (BM): - BM should be established at spacing shouldn't be greater than 500 m interval along the road alignment with RCC pillar post of size 15cm*15cm*50cm with M20 or equivalent concrete, nails embedded flushed with top surface and 5cm above the natural ground level. All the reference point and control point should be established on the permanent structure.

iii) Cross Section shall be taken at LS 15-25 m interval depending upon the terrain and 2.5m interval across the alignment, minimum 25 m both side from the centreline.

iv) Topographical survey of road in minimum 25m wide strip on either side of the centre line.

v) During construction layout, if BM coordinates, reference point and D-card details are deviate from design, the consultant must be liable to layout these details.

3.7.2 Engineering Study and Inventory Survey

Road Inventory Survey

i) Sub grade Condition Survey (Visual Survey)
ii) Existing structure Survey
iii) Side drains requirements Survey (L-drain, catch drain, intercepting drain etc.)
iv) Cross drainage requirements Survey (Culverts, bridge, aqueducts etc.)
v) Retaining and protection work requirements Survey (retaining wall, breast wall, drops, cascade, benching etc.)
vi) Land use Survey
vii) The locations of settlements off the road structures electric poles, streams, and water taps within the area of the plan.

Construction Materials Survey

i) Identification of potential sources (minimum 2 quarry sites)
ii) Investigation of existing road materials on sites.
iii) The firm shall perform the 2 set of Los Angles Abrasion Test and Impact value test (in authorised lab) of the potential quarry material proposed for sub-base, base and chips.

Geological and Geotechnical Survey

i) General geology of the region, project area and the proposed road corridor shall be described and a geological map of the area be presented along with identification of major features, pertinent to the project.
ii) Nature, type and structure and surface soil of the area need to be clearly identified and further required investigations listed.
iii) Whenever applicable, slope stability analyses of the representative site need to be carried out and the finding and recommendation be given
iv) The location of debris flow and other possible obstruction to the road alignment.
v) For existing road section, the firm shall perform DCP test of existing subgrade at 500m interval and conformity CBR should be conducted in laboratory.

Hydrological and Meteorological Studies

i) All relevant meteorological (Rainfall and Temperature) data and recommendation shall be presented.
ii) Study of the river and river system: The river system of the area shall be described in the report. Preferably a river system map of the catchment's area and beyond (whenever applicable) shall be produced.
iii) At least one cross-section of river at each crossing shall be produced. In the cross section all bed and bank characteristics shall be mentioned.
iv) Assessment of flood pattern and preliminary estimation of discharges shall be carried out. Similarly, expected HFL shall be fixed as far as applicable
v) Information necessary for the design of the side drain and protection works as well as preliminary design of cross drainage structure shall be produced.

Land Use Survey

i. All relevant land use data shall be presented as below in Draft Report:

S. N.	Project Component	Land Use Area (ha)					
		Forest	**Cultivated**	**Settlement**	**Barren**	**Others**	**Total**
1	Right of Way (RoW) 25m either side from centreline						
2.	**Permanent land Requirement**						
2.1	Formation Width (f meter)						
2.2	Existing Road Width (e meter)						
2.3	New Upgrading Width ((f-e) meter)						
3.	**Temporary Land Requirement**						
3.1	Site Camps						
3.2	Stockpiling Sites						
3.3	Spoil Disposals						
.	. . . .	. . . .	. . . .	. . . .	. . . .	. . . .	
.	. .	. .	. .	. .	. .	. .	
	Total						

3.7.3 Design and Drawings

The design standard to be adopted for the detailed design shall be "Nepal Road Standard (2070) "& based on traffic volume and possible network importance but for minimum two-lane standard. The design standard shall be finalized in close coordination with the Unit.

Design of Road

i) Calculate and plot the reduced ground level of longitudinal and cross section.

ii) Design the most economical road profile by balancing the volume of cut and fill to the nearest. (mass haul diagram)

iii) Design Horizontal and Vertical Curves.

iv) Design of grade and geometry of existing road that needed to be improved

v) Design of sub-base for earthen road section based on DCP value.

vi) Appropriate Design of Pavement layer as per site condition, availability of material and equipment using minimum three standard methods and recommendation can be done for any other special condition if required.

vii) Design of appropriate road side structures and facilities

viii) Design of road safety facilities and structures.

ix) Design of the retaining structure (retaining wall, breast wall, Rcc wall etc. according to site condition)

x) Design of drainage (side drain, drop, cascade etc.) and minor cross-drainage structure (Hume pipe culvert, slab culvert etc.)

Engineering Drawings Details

The firm will prepare the following plans and working drawings on suitable reports material using the format and title sheets as required by the engineer in charge.

i) Locality map (sometimes called a “key map”) showing the location of the works in relation to the region/district/municipality/VDC commonly at a scale of 1:2,500,000.

ii) Site plan (sometimes called "index map") showing the project and its immediate neighborhood including the important physical features such as hills, rivers, tracks, etc. It may be to a scale of 1:50,000. The locality map and site plan are commonly drawn on a single sheet.

iii) Map showing complete alignment with Kilometre, names of area, land use, village, VDC, municipalities, name of natural drainage etc.

iv) Location Map showing linkage of the road with surrounding road network.

v) Map showing survey and design status of the complete road, intersection points, Benchmarks and other references points.

vi) Plan with Topographical Map, Profile (Longitudinal Section) and Cross- Section in the following Scale.

   a. Plan - 1:1000
   b. Horizontal Profile 1:1000
   c. Vertical Profile - 1:200
   d. Cross Section - 1: 200

vii) Plans and profile of the road shall contain contour along with details of geometry viz. horizontal alignment with coordinates of IP, deflection angle, IP to IP distances, Chainage of IP, curve data etc. names of VDC or municipalities, forest, land use pattern, cross drainage structure, retaining and protection structure required or as directed by Engineer in charge.

viii) Standard charts of mentioned cross drainage structures, retaining/Brest wall and protection works, side drain, typical cross section of the road according to types of soil, passing zone (if provided), hairpin bend (If provided)

ix) D-card, Topo-Map (all coloured), legend of drawings, KMZ files etc. directed by Engineer in charge.

3.7.4 Preparation of Engineering Cost Estimate

i) The quantities of the civil works shall be computed on the basis of the detailed plan, design profiles and cross-sections following the standard methods of measurement.

ii) The rate analysis for the civil engineering items will be made following the unified norms and market prices of construction materials, labor and equipment hiring rates.

iii) The cost shall also incorporate the cost for implementation of Environmental Mitigation Measures.

iv) The rates for civil engineering items shall be verified with the mean rates of prevailing contract prices of the last 5 years in the sector and geographical region.

v) The costs will be broken down into local and foreign currency components. It will also be further broken down into direct cost, taxes, physical and price contingencies.

vi) The work may require a range of skills and expertise that a single contractor may not have.

vii) The firm and implementing agency shall consider all practical combinations of contract packages and decide the preferred combination based on their expert judgment and consideration of supervision and administration costs.

3.7.5 Bill of Quantities (BOQ)

Each item shall be clearly described and corresponding clauses of the standard and special specifications shall be referenced to allow the contractor to easily find the corresponding specification. The BOQ may be broken down into different types of works and shall clearly provide for VAT and contingencies.

3.7.6 Preparation of the Programme

The programme shall include the duration of activities and critical milestones on the following activities:

i) Pre-construction activities of the implementing agency

ii) Consultancy services
iii) Construction of works.

For each construction package, detailed work schedules shall be developed which shall include the durations and milestones for the following activities.

Depending on the number of work packages, there may exist a number of parallel activities to be undertaken simultaneously and hence a critical path network may be developed which will include the following aspects:

i) Definition of tasks/activities and their types
ii) Estimated duration of each of the task/activity
iii) Definition of task dependency relations
iv) Assignment of lead and lags on such dependencies
v) Built in slack
vi) Identification of critical and near-critical paths.

The critical path network shall be drawn indicating all the tasks along with their durations and floats and highlighting the critical path.

3.7.7 Development of Project Objectives and Scope

The development of the project objectives shall be based on the sector policies of GoN requirements. Usually a single principal objective shall be stated with a number of specific sub-objectives. A logical framework approach shall be used to develop the goals and objectives for the project. While developing the objectives of the project, it is useful to refer to ex-post evaluation reports of similar projects in order to benefit from the lessons learned and recommendations coming out of earlier projects. The policy statement of the NPC states that "all proposals for all new development projects funded by foreign donor agencies and all central level development projects funded by GoN shall include a logical framework from the beginning of fiscal year 2000/2001". An example of the proposed logical framework is presented below:

Project Title			
Narrative Summary	Indicators (OVI)	Means of Verification (MOV)	Key Assumptions
Goal:			
Purpose:			
Outputs:			
Activities:			
Inputs:			

The key elements of the logical framework approach are briefly discussed below:

Goal: The ultimate goal or rationale of the project to which the specific project will contribute. The goal may be sectoral or area specific.

Purpose: The immediate objectives of the project. It is recommended that each project component shall have only one primary objective.

Outputs: The specific result to be produced by each project component i.e. the project "deliverables".

Activities: The activities that have to be undertaken by the project in order to produce the outputs.

Inputs: The resources needed to implement activities. The inputs of a project are people, budget, materials and information.

Objectively Verifiable Indicators (OVI): A set of criteria presented in terms of quantity, quality, time and cost which will indicate in concrete terms that the expected results are achieved. The indicators shall be presented in measurable terms stating baseline and target values as well as the time frame for their achievement.

Means of Verification (MOV): The monitoring mechanism in a project such as specific reports and site visits by the Project Manager, donor or other monitoring agencies.

Key Assumptions: External conditions that could affect the progress or success of the project and which are outside of the control of the project. If these conditions change, they may adversely affect the delivery of project objectives. They shall be considered as the risk associated with the project and shall be evaluated separately.

3.7.8 Submission of Detailed Report

The firm shall submit draft report covering the entire task performed in details. The minimum volume of the report shall be:

i) Volume 1: Main Report
ii) Volume 2: Drawing

All the photograph of BM, IP references, specific features shall be clearly mentioned in the report.

The Firms shall present the report, prior to the submission of the final report. They shall review the issues raised during the presentation while finalizing the report and make necessary amendments/corrections if needed. The date and venue of the presentation shall be determined by mutual agreement between the PMEU and the firms. Maximum 10 no. of DoR personnel shall attain the presentation. The cost of such presentation shall be borne by the firms.

3.7.9 Coordination for Construction Survey:

The consultant shall coordinate along with necessary technical support with respective Division/Project office during implementation of the works.

4. Report Obligations

The firm shall submit the following reports in English.

(a) One copy of monthly progress report;
(b) Two copies of Inception report;
(c) Two copies of Phase A Report;
(d) Two copies of draft report; (min. 1 copy colour report).
(e) Five copies of final report with original photos, maps and D-Card all coloured.

5. Working team

The working team for field and office works shall necessarily consist of the following Key Professional Personnel together with adequate supporting manpower.

1. Highway / Transport Engineer
2. Geologist / Engineering Geologist / Geotechnical Engineer
3. Hydrologist
4. Transport Economist / Sociologist
5. Environmentalist / Environmental Engineer
6. Civil Engineer

6. Modes of Payment

Payment up to 20% of the amount of component “B” of BoQ (Detail Engineering Survey, Design and Report Preparation (DPR)) shall be done after submission and approval of Inception Report.

Payment up to 40% of the amount of component “B” of BoQ (Detail Engineering Survey, Design and Report Preparation (DPR)) shall be done after submission and approval of Phase A Report.

Payment up to 80% of the amount of component “B” of BoQ (Detail Engineering Survey, Design and Report Preparation (DPR)) shall be done after submission of Draft Report.

Payment up to 100% of the amount of component “B” of BoQ (Detail Engineering Survey, Design and Report Preparation (DPR)) shall be done after submission and acceptance of Final Report by DoR and returning all the documents, maps and reports, if borrowed from the DoR.

Note: In case of Payment of Professional Liability Insurance (PLI), Payment of 50% of the amount of component “A” (General Works) shall be done after submission and acceptance of PLI by DoR and remaining payment 50% of the amount of component “A” shall be done after completion of whole works (DPR) as mentioned in contract document