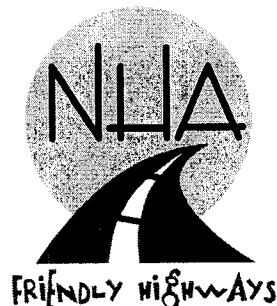


EOI Document

For

Consultancy for Independent Monitoring
of
Environmental parameters
NHIP & Earthquake Damage Roads

JUNE 2009



NATIONAL HIGHWAY AUTHORITY

(Procurement & Contract Administration Section)
28-Mauve Area, Sector G-9/I, Islamabad (Pakistan)
Phone # 92-51-8351727, Fax # 92-51-9260419

Subject: Consultancy for Independent Monitoring of Environmental Parameters – NHIP & Earthquake Damaged Roads (EDR).

The firm is required to submit data mentioned in EOI published in newspaper regarding subject project alongwith necessary information required in this EOI Document in order to carryout evaluation for shortlisting of firms. Following forms and information are attached herewith, please.

- a. Form A-1: Summary List of Projects Handled by the Firm (General & Relevant).
- b. Form A-2: Format of Short CV of Principal Staff.
- c. Annex-I: Evaluation Criteria for Shortlisting of Consultants.
- d. Annex-II: Terms of Reference alongwith Environmental Monitoring Plan (EDR & NHIP).

FORMAT OF SHORT CV OF PRINCIPAL STAFF

1. **Name**
2. **Professional Experience**
3. **Date of Birth**
4. **Years with the firm**
5. **Nature of experience in this firm and others**
6. **Membership of professional Societies**
7. **Education**
8. **Other Training**
9. **Knowledge of Languages**
10. **Key Qualifications (Maximum $\frac{3}{4}$ of Page)**

**EVALUATION CRITERIA FOR SHORTLISTING OF
CONSULTANTS**

Evaluation will be carried out based on documentation included in the firm's submission for short listing.

The following scoring system will be applied:

- A. Relevant Experience
- B. General Experience
- C. Testing Facilities
- D. Skilled Staff
- E. Understanding of ToR
- F. Work Performance

A. Relevant Experience (30 points)

Experience in Sampling of Environmental Parameters like air, noise and water. Three similar/relevant projects substantially completed with in last 10 years with a consultancy cost of Rs. 5 million

Maximum Points of each project is fixed as 10

Number of Project completed	Points
1	10 Points
2	20 Points
3 or more	30 Points

B. General Experience (10 points)

Five projects substantially completed with in last 10 years of general nature as Monitoring / Supervision Consultant to judge capacity of the firm.
(Project with Consultancy Cost \geq Rs 5 Million.)

Maximum Points of each Project is fixed as 02

Number of Project completed	Points
1	2 Points
2	4 Points
3	6 Points
4	8 points
5 or more	10 points

C. Testing Facilities (20 Points)

Adequately equipped Integral Laboratory in order to meet all Environmental parameters as mentioned in TOR attached at Annex-II (Detail to be provided by the firm).

D. Skilled Staff (30 Points)

Details of senior permanent staff of Lead and Associates/JV firms with relevant experience. (01- 03 points/person with allocation PHD =03, M.E/M.Sc(Environment) = 02 and B.E/B.Sc (Civil / Chemical / Environment / any relevant) = 01.

Qualification	Relevant Experience	No. of People	Points
PHD	2 years	01	03
M.E/M.Sc(Environment)	3 years	06	12
B.E/B.Sc(Civil / Chemical / Environment / any relevant)	4 years	15	15
Total Points			30

- *If a firm possesses Personnel with higher qualification (e.g. PhDs) more than that specified above, then these can be adjusted in basic qualification category (e.g. B.E) if its seats are not filled completely.*

E. Past Performance (05 Points)

Performance Certificates issued by the clients.

F. Understanding of ToR (05 Points)

Method Statement to be provided by the firm.

SUB TOTAL – A..... (Max30 marks)

SUB TOTAL – B..... (Max 10 marks)

SUB TOTAL – C..... (Max 20 marks)

SUB TOTAL – D..... (Max 30 marks)

SUB TOTAL –E.....(Max 05 marks)

SUB TOTAL –F.....(Max 05 marks)

TOTAL A + B + C+D+E+F..... (Max 100 marks)

Annex-II

TERMS OF REFERENCE (TORS) - CONSULTANCY FOR INDEPENDENT MONITORING OF ENVIRONMENTAL PARAMETERS - NHIP & EARTHQUAKE DAMAGED ROADS

1. The independent environmental monitoring consultant will be engaged by NHA to ensure *effects monitoring*- to establish baseline values for environmental parameters such as air quality, water quality, noise level and soil quality monitoring during the execution of the construction and operation of the NHIP and earthquake-damaged roads.
2. The environmental issues associated with the project includes: managing the procurement of borrow material, soil erosion and land sliding; appropriately locating temporary construction camps, site offices, workshops, asphalt plants and waste disposal sites and managing dust, noise and other environmental impacts of operating these facilities; traffic management and safety during construction/operation; avoiding obstruction to highway drainage system during construction; enhancing and maintaining tree plantation along the entire length of the three project corridor, particularly on slopes for their stabilization. Noise generated by vehicular traffic is likely to affect sensitive receptors located along the roadsides. Therefore, the environmental management and monitoring along the project reaches assume special significance.
3. The environmental management and monitoring is aimed to achieve the following objectives:
 - a. Address the adverse environmental impacts of the project and enhance the project benefits.
 - b. Introduce standards of good environmental practices for highway construction and operations.
4. NHA through consultants have carried out Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) of the NHIP Contracts (Phase I & Phase II) and three earthquake damaged roads. The EIA and EMP were approved by the World Bank and concerned Environmental Protection Agencies (NWFP and Azad Jammu Kashmir). The EMP contains the environmental mitigation measures and define framework for monitoring along the project. The EMP also defines the responsibilities of the project proponent, supervision consultant, contractors and other key stakeholders, define supervision and

monitoring mechanisms and parameters. An international consultant –SMEC Intl. for construction supervision and construction administration assists NHA in supervising the construction contractors and ensuring that all contractual obligations are met. However, NHA has to engage a reputable firm/ laboratory for independent monitoring of environmental parameters to ensure that the EMP is effectively implemented and to document the status of the environmental parameters at periodic interval for NHIP & EDR projects.

5. The Environmental Monitoring Plan specifies parameters to be monitored and the frequency, locations and applicable standards of monitoring regime. The scope of monitoring will cover location and management of project facilities and measures environmental parameters to include dust and noise and water quality. Monitoring team will operate along N-5 and EDR projects to verify the efficacy and ensure the transparency of the environmental compliance process carried out by the NHA. Specifically the following environmental parameters will be monitored at the locations to be identified during the construction (e.g. location of asphalt plant, construction camps, active construction sites etc):

- a. Ambient air quality
- b. Asphalt plant emission (smoke dust etc)
- c. Ambient noise levels
- d. Water quality
- e. Soil quality

6. Geographic detail of two independent Contracts for NHIP & EDR rehabilitation and resurfacing Contracts is as under:

NHIP

Contract No.	Section	Length (KM)	Phase
1	Hyderabad- Hala (Rehb)	48	Operation
10	Karachi Hyderabad Super Highway (Rehb)	48	Operation
2A	Hala-Chanesar Bridge (Rehb)	40	Operation
2B	Chanesar Bridge-Moro (Rehb)	38	Operation
7	Mian Channu- Sahiwal	72	Operation
12	Gujran wala- Kharian (Resurf)	106	Operation
14	Nowshera –Peshawar (Resurf)	35	Operation
3	Moro-Ranipur (Rehab)	89	Construction
5	Ubaro-Sheikh Wahan (Rehb)	53	Construction
8	Lahore-Gujranwala (Rehb)	50	Construction
9	Turnol-Chablat (Rehb)	57	Construction
11B	Mian-Channu-Sahiwal Okara (Resurf)	72	Construction
13	Kharian- Rawalpindi (Resurf)	60	Construction

EARTHQUAKE DAMAGED ROADS

Contract No.	Section	Length (KM)	Phase
15	Batagram-Thakot section	25	Construction
16	Bisian-Balakot-Mahandri Section	65	Construction
17	Muzzafarabad-Chakoti Section	58.5	Construction

7. The firm will be responsible for collection and testing of samples from all construction sites and reporting their findings. The environmental monitoring plan contained in the EMP is attached for reference (**Appendix-A & Appendix-B**).
8. The consultants/firm will mobilize immediately on signing of contract. The service provider as a first step will refine the attached Environmental Management Plan based on the construction schedule for each contract and prepare four months forward looking monitoring plan. The monitoring plan will be updated based on four months construction schedule in coordination with

Employer and Supervisory Consultants. The initial plan and monthly updated plan will be forwarded to GM (NHIP), Environment Specialist NHIP and Supervision Consultant.

9. The test results for environmental parameters will be carried out at the frequency and interval agreed between the employer and the Service Provider in the updated EMP. The service provider will forward a quarterly report (for each sample) to GM (NHIP), Environment Specialist (NHIP) and Supervision Consultant. The report will include an interpretation based on the collected data and recommend mitigation measures to be taken by the Contractor, if any, to overcome the problem. NHA shall forward quarterly reports to the World Bank, and concerned EPAs
10. The Consultant services shall be procured through the method of selection based on Consultant's Qualifications. An item rate contract for two years duration will be concluded.
11. The Contract will be upto June 2010 and will be extendable if required by NHA.
12. NHA will assist the Consultants e.g. use of site offices during field visits, location of contractors' facilities and construction sites etc.

CONSULTANT'S REPORTING OBLIGATIONS

Completion and Submission of Reports

Reports	Date	Contents
Environmental Management Plan (5 hard copies)	Within one month of starting the work	The service provider as a first step will refine the attached Environmental; Management Plan (EMP) based on the construction schedule for each contract and prepares a three months forward-looking monitoring plan. The monitoring plan will be updated based on three months construction schedule in coordination with Employer and Supervisory Consultant. The initial plan and the monthly updated plan will be forwarded to GM (NHIP), Environment Specialist (NHIP) and Supervision Consultant.
Updated EMP (5 hard copies)	As early as possible	This is to be agreed between the employer and the service provider regarding test results to be carried out in the field including the frequency and the interval agreed for various contracts and section.
Quarterly report (5 hard copies)	Quarterly	This shall be provided for each sample carried out on quarterly basis with a copy to GM (NHIP), Environment Specialist (NHIP) and the Supervisory Consultant. The report will include an interpretation based on the collected data and recommend mitigation measures to be taken by the Contractor, if any, to overcome the problem. NHA will forward quarterly report to the World Bank and EPAS.
Final Report (5 hard copies)	On completion of the assignment	The report will provide overview of the entire assignment with comments and recommendations including lessons learnt for such future assignment.

Appendix-A to Annex-I

Environmental Monitoring Plan -EDR (To be implemented through hired consultants, over all responsibility of NHA)

<i>Project Stage</i>	<i>Parameters</i>	<i>Details</i>	<i>Standards to be Applied</i>	<i>Location</i>	<i>Frequency</i>	<i>Duration</i>
Air Quality						
Construction	PM ₁₀ , HC	40 m from the hot mix plant in downwind Direction	USEPA NAAQS WHO Air Quality Guidelines	Wherever the Contractor decides to locate the hot-mix Plant	Once every four months during construction period	one full working day
	PM ₁₀ , SO ₂ , NO _x , CO	15 m from edge of the pavement downwind	USEPA NAAQS WHO Air Quality Guidelines	Stretch of highway where construction is in progress	Two every four months during construction period	one full working day
Operation	PM ₁₀ , SO ₂ , NO _x , CO	15 m from the edge of the pavement downwind Background concentration Near a residential area at a sensitive location e.g., a hospital or school.	USEPA NAAQS WHO Air Quality Guidelines	Three selected Locations on C-15, C-16 & C-17	One samples on quarter basis	one full working day

<i>Project Stage</i>	<i>Parameters</i>	<i>Details</i>	<i>Standards to be Applied</i>	<i>Location</i>	<i>Frequency</i>	<i>Duration</i>
Water Quality						
Construction (Potable water)	Physical (odor, turbidity, colour, taste) Chemical (TDS, Hardness, Sodium, Chloride, Sulphate, Fluoride) Bacteriological (Faecal coliform, Total Coliform and E.Coliform)	Camp site and asphalt plant	WHO Drinking Water Quality Guidelines	One selected location on each camp site and asphalt site	Quarterly basis	As required
Construction (River Water)	Common ions, TSS, TDS, Turbidity, DO,BOD, COD, etc.	Surface water resources	WHO Drinking Water Quality Guidelines	One selected location on selected reach where construction in progress	Quarterly basis	As required
Operation	Pb, total coliforms, and faecal coliforms	Community groundwater source near the edge of the RoW	WHO Drinking Water Quality Guidelines	Two selected Locations on C-15, C-16 & C17.	Once a year in the summer, just before monsoon season up to three years	
Noise Levels						
Construction	Noise levels on dB(A) scale	7 m from the equipment whose noise level is to be determined	Pakistan EPA NEQS (Noise), 1997	At equipment yard and road construction site	Quarterly basis	Readings taken at 15 s intervals over 15 min. every hour, and then averaged
	Noise levels on dB(A) scale	15 m from the edge of the pavement	WHO Noise Guidelines	Two selected location where construction is in progress	Once every four months during construction phase	24 hours, readings taken at 15 s intervals over 15 min. every hour, and then averaged or over one full working day.