

HIMACHAL PRADESH STATE ROADS PROJECT

**Independent Review Consultant (IRC) Report
on
Environmental Assessment of Roads Under Phase I
in the Proposed Himachal Pradesh State Roads Project**

March 2007

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Appendix I - Terms of Reference of Independent Review Consultant

LIST OF ABBREVIATIONS

GOI	–	Government of India
GOHP	–	State Government of Himachal Pradesh
SOS	–	Strategic Options Study
PWD	–	Himachal Pradesh Public Works Department
SH	–	State Highways
MDR	–	Major Districts Roads
SRP	–	Himachal Pradesh State Roads Project
HPRIDC	–	Himachal Pradesh Road and Other Infrastructure Development Corporation Ltd.
MOEF	–	Ministry of Environment & Forests, Government of India
DC	–	Design Consultant
TC	–	Tunnel Consultant
OP	–	Operational Policies of the World Bank
EIA	–	Environmental Impact Assessment
EA	–	Environmental Assessment
IRC	–	Independent Review Consultant
EMP	–	Environmental Management Plan
BOQ	–	Bill of Quantities
TOR	–	Terms of Reference

1. INTRODUCTION

The Government of India (GOI) has requested the assistance of the World Bank for the improvement of State Highways and Major District Roads in the State of Himachal Pradesh under the Himachal Pradesh State Roads Project (SRP). A Strategic Options Study (SOS) undertaken in 2005 by the Himachal Pradesh Public Works Department (PWD) had identified about 1,675 km of State Highways (SH) and Major District Roads (MDR) that may be suitable for improvement, out of which about 800 km are to be prioritised for implementation under the SRP in two phases (phase I and II).

The proposed improvement works under SRP (phase I and II) consist mainly widening to two-lane from the existing, intermediate-lane or single-lane width, raising the formation level where necessary, upgrading/improvement of road geometrics, pavement strengthening and improving cross drainage structures. The road stretches through urban areas may require upgrading to a two-lane cross section, and/or provision for drains, sidewalks and parking areas wherever required. In some cases, new alignments (by-passes) and/or re-alignments may also be required. The SRP also comprises examining the feasibility of about 9,000 metres of tunnels and detailed design for about 3800 metres of tunnels, including the associated approach roads in Shimla and elsewhere in the State.

The Government of Himachal Pradesh (GOHP) has assigned the HP Road and Other Infrastructure Development Corporation Ltd. (HPRIDC) as the implementing agency of the SRP. The HPRIDC has engaged Louis Berger Group (LBG), USA as 'Design Consultant (DC)' to undertake feasibility study of 1,675 km of roads and detailed design of the first phase of upgrading works of about 410 km. The HPRIDC also has separately engaged a consortium of GE Consult-RITES- SECON as 'Tunnel Consultant (TC)' to undertake feasibility study of 9,000 metres and design of 3800 metres of tunnels including the associated approach roads in Shimla and elsewhere in the State.

2. NEED FOR INDEPENDENT REVIEW OF ENVIRONMENTAL SCREENING AND ENVIRONMENTAL ASSESSMENT (EA)

The HPSRP has been classified as "Category A" as per the OP 4.01 of the World Bank. In a Category A Bank Report, the Project Implementation Agency (in present case HPRIDC) is required to carryout an environmental assessment (EA) through consultants, who are independent of Design Consultants (DC) to meet the requirements of the Bank's policy (OP) 4.01 on environmental assessment and safeguard requirements.

The HPRIDC has therefore appointed an Independent Review Consultant (IRC) to undertake an independent review of the outputs of the environment assessment of the SRP carried out by the DC and TC. The scope of services of DC and TC includes environment screening and environmental assessment (EA) of the SRP and is designed to comply:

- The legislative/regulatory requirements of GOI/GOHP covering various policies, directives and guidelines;
- Requirements of applicable World Bank's Operational Policies (OP) (i.e. Environment Assessment (OP 4.01), Natural Habitats (OP 4.04), Forestry (OP 4.36)).

3. SCOPE OF WORK OF INDEPENDENT REVIEW CONSULTANT (IRC)

The Scope of Work of IRC can be divided into the following four stages.

- I Review the process and outputs from environmental screening of about 1,675 km of state roads subject to techno-economic feasibility, identify weaknesses and recommend improvements;
- II Review the process and outputs from environmental analysis and preparation of management plans on about 410 km of state roads subject to detailed design, identify weaknesses and recommend improvements;
- III Review the process and outputs from environmental screening analysis of 9,000 m of road tunnels including the associated approaches subject to feasibility, identify weaknesses and recommend improvements; and
- IV Review the process and outputs from environmental analysis and preparation of management plans on about 3800 km of tunnels subject to detailed design, identify weaknesses and recommend improvements.

This report provides the outputs of the IRC for the stage II above. The IRC review report for stage I has already been submitted to HPRIDC. The IRC review report for Stages III and IV will be submitted separately. The detailed Terms of Reference (TOR) of the IRC for all four stages are given in **Appendix I**.

4.0 IRC REVIEW COMMENTS ON ENVIRONMENTAL ASSESSMENT PROCESS / REPORTS AND PLANS

4.1 Scope of Work

The Scope of Work of IRC for Stage II - Review of Environmental Assessment of roads under detail design comprises the following tasks

- Field visit to all roads slated for detailed design, which shall include identified sensitive locations and proposed resettlement sites
- Participation in at least 2 public consultations so as to be aware of all environmental issues pertinent to the particular roads under review
- Holding at random discussions with a representative sample of relevant stakeholders to verify the consultative process adopted by the DC
- Review of the draft Environmental Assessment report prepared by the DC, in particular with respect to the following aspects:
 - methodology/approach adopted in undertaking the EA;

- assessment of potential direct and induced impacts, both during construction and operation;
- the proposed remedial (prevention, mitigation and compensation) measures and whether these are commensurate to the nature, scale and potential of the project impacts (including temporary impacts on land and people during construction);
- quality, coverage and feed back mechanism of public consultation process;
- identification of regulatory and legislative requirements;
- proposed enhancement measures;
- proposed monitoring mechanisms (with performance indicators wherever possible) for both construction and operation stages;
- the capacity assessment of the implementing agency and other stakeholders and associated proposed training and capacity building plans;
- budgeting for all aspects of environmental management implementation; and
- Sufficiency of the proposed institutional arrangements.
- review of draft Environmental Management Plans prepared by the DC in particular with respect to the following aspects:
 - structure and content of the EMP as a whole;
 - inclusion of all the remedial/mitigation measures identified in the EA with particulars such as the stage in which they are applicable (design construction and operation phase), the sections/locations of the road corridor to which they are applicable and contract clause reference;
 - inclusion of all the enhancement measures identified in the EA with particulars of the sections/locations of the road corridor to which they are applicable and contract clause reference;
 - management plans including those for construction debris and waste disposal, traffic management, tree plantation, slope stabilization, camp site restoration etc.;
 - inclusion of all GOI/GOHP legislative requirements in terms of conditions and requirements;
 - the monitoring mechanisms/plan for environmental components; and
 - Incorporation of environmental mitigation and enhancement measures as appropriate in the draft works bidding documents, including the rate analysis, drawings, designs, BOQ and technical specifications.
- Preparation of a Review Report covering the above listed activities including recommendations if any required

- Review of the final environmental assessment report of the DC to verify compliance of all review comments/recommendations of IRC including deficiencies raised by IRC and to a satisfactory level.

4.2 Field Visits to Roads Slated for Detail Design under Phase I of SRP

The roads, which are slated for detail design under phase I of State Road Project, are given in **Exhibit 1**. The 412.18km of roads for detailed design have been prioritised through a detailed techno-economic feasibility studies and environmental screening process of 43 corridors with a cumulative length of 1675km of road spread across the State. The list of 1675 km of roads spread over 43 corridors is given in **Exhibit 2**. The location of the 43 corridors across the State is given in **Exhibit 3**.

Exhibit 1 List of Roads Slated for Detail Design/EA under Phase of SRP			
SI No	Roads Slated for Detail Design	Road Length (km)	Existing Carriageway Width(m)
Phase I Batch 1 Roads			
1	Mehatpur-Una-Amb	44.2	7.0
2	Una-Aghar-Narsar-Jahu-Bhamla-Mandi	126.27	5.5/3.5
3	Theog-Kotkhai-Hatkoti-Rohroo	80.73	5.5/3.5
Phase I Batch 2 Roads			
4	Ghumarwin-Sarkaghat-Jogindernagar(except NH section)	82.98	3.5
5	Kumarhatti-Sarahan-	78.0	5.5/3.5
	Total	412.18	

As per the TOR for IRC all the roads slated for detailed design were to be visited for a detailed assessment of the site conditions including the sensitive locations as identified in the EA report. Accordingly, field visits were undertaken during end December 2007 and early January 2008. During the field visits, IRC was accompanied by a junior engineer of HPRIDC. The major observations recorded during the field visits to the sample roads are described hereunder.

Corridor No	Exhibit 2 - List of Corridors under Environmental Screening	Length (Km)
1	Mehatpur Una Mubarikpur Daulatpur H.P. boundary Road (Section Una to Amb)	32.2
2	Una Aghar Barsar Jahu Bhambla Mandi-upto Ner Chowk road*	126
3	Gaggal Chetru Dharamshala Mcleodganj (Section Gaggal to Dharamshala)	12.515
4	Shimla Kunihar Ramshehar Nalagarh Ghanoli (from Nalagarh to HP Boundary)	11.3
5	Mehatpur-Una	12
6	Kumarhatti-Sarahan-Nahan (Dosarka)	78
7	Jogindernagar Sarkaghat Ghumarwin Road (except NH 70 section)	82.98
8	Lal Dhank Paonta Rajban Hatkoti (Section LalDhank to Shillai except NH)	74.94
9	Hamirpur Sujanpur Tihra Thural Maranda	58.99
10	Dharamshal Dadh Palampur Holta Chadihar Sandhol (Section Dharamshala to Palampur)	33
11	Dadh Malan	4
12	Swarghat Naina Devi Bhakra (Section Kanchimore to Bhakra)	37
13	Kaloha Pragpur Daliara Dadasibba Sansarpur (Section Kaloha to Nehranpukhar)	11.2
14	Damtal Kandrori Indora Khatiar	52
15	Mubarikpur Dehra Ranital Kotla road (Section Dehra to Ranital and Ranital to Kotla)	20
16	Ranital Kotla road (Section Dehra to Ranital and Ranital to Kotla)	39
17	Bamta Kandrouer	6.6
18	Bharwain Chintpurni Kandrori Damtal (Section Bharwain to Sansarpur Terrace)	32.56
19	Shallaghat Arki Kunihar Barotiwala	80.4
20	Markanda (Khajurna) bridge Suketi park Kala Amb Trilokpur	15.13
21	Kala Amb Trilokpur	6.37
22	Panjera Bharatgarh	4.66
23	Panjera Dehni	9
24	Shimla Tattapani Mandi (Section Dhalli to Tatapani)	46
25	Chail chowk Gohar Pandoh (Section Dadour to Gohar)	20.32
26	Barsar Deothsidh (Section Barsar to Shahtalia)	11.3
27	Jawalamukhi Dehra Jawali Raja-ka-Talab (Section Dehra to Raja-ka-Talab)	75.14
28	Theog Kothkhai Hatkoti Rohroo	80.37
29	Rohroo Chirgaon Sandhasu	27
30	Kufri Chail Kandaghat	57
31	Mandi Kataula Bajaura	51
32	Sanij Chopal Nerwa Shallu (Section Sanij to Chopal).	47
33	Bhawarna Lambagaon Jaisinghpur	26.645
34	Nurpur Lahru Tunnhatti	42.19
35	Shahpur Sihunta Chowari Jot Chamba Bharmour (Section Draman to Chowari)	53.4
36	Banikhet Dalhousie Khajjar (Section Banikhet to Dalhousie)	6.205
37	Sainj Anni Banjar Aut (Section Sainj to Jalori and Aut to Banjar)	72
38	Chailla Sainj Neripul Yashwantnagar Ochghat Kumarhatti	86.32
39	Kullu Nagar Manali (Left Bank)	39.37
40	Ghatasni Bhubhu Jot Kullu	66.57
41	Approach to proposed Lathiani bridge	4
42	Swarghat Bilaspur via Jagatkhana(New alignment)	20.375
43	Dharampur Kasauli	10.5

Findings of Field Visits to Mehatpur-Una-Amb and Una-Barsar-Jahu -Nerchowk roads

- The field visits to the roads were undertaken during December 2006 and January 2007 for familiarisation of environment setting of project corridors. During the field visits, IRC was accompanied by a junior engineer of HPRIDC. The major observations recorded during the field visits are described hereunder
- During the field visits, it was ascertained that realignments have been proposed at Bhota and also at other locations. However, the exhibits 5.16A and 5.16B of EA report does not indicate any such realignment proposals considered at Bhota or elsewhere. The exhibit(s) needs to be corrected to show realignments wherever proposed
- As per the assessment at field, the alignment of the project road between Bhota and Bani actually passes through Karer PF and other forest areas such as Dhar-Jajal-Jakh and Ghansui other than those already indicated in exhibit 5.16A and 5.16B. Hence, the exhibit needs to be corrected to reflect the ground situation indicating all the forest areas in which the road is passing through.
- During the field investigations, it was observed that the proposed realignment of curve and bridge near Km 64/2 could be avoided and the existing alignment itself can be improved for up-gradation /widening in order to avoid formation of a large oxbow and also the associated tree felling due to the proposed realignment of curve and bridge at this location
- The proposed plantation indicated in Exhibit 9.5 of EA report, at least some of them does not suit to the local climate and hence require reconsideration. The suggested plantation should be made suitable to the stretches for which they are proposed, since plantation(s) which are suitable near Una region may not necessarily be suitable near Nerchowk and vice versa.
- The mud holes along road sides near Mehatpur and Una are also habited by common pigeons, sparrows other than the mynas as reported in EIA report. The mud holes serving as nests are mostly observed at stretches where the tree cover is not there or tree cover is not available perennially. The formation of mud holes would not have probably occurred if there had there been perennial tree cover available along such road stretches. Also, at several other locations along the project road, it has been observed that slippages have occurred to road side mud hills, on which these nest sites have been made by the birds. The slippage might have occurred due to natural erosion process or human activity.



Demarcated Boundaries seen along Una-Barsar-Jahu -Nerchowk



Exhibit 9 Demarcated forest boundaries and proposed ROW (see yellow CC pillars) for Up gradation as seen along Una-Barsar-Jahu -Nerchowk



Mudholes serving as nests for local birds along Una-Barsar-Jahu -Nerchowk



**Exhibit 10 Slipped embankments which were earlier serving as nests for local birds
along Una-Barsar-Jahu -Nerchowk**



**Exhibit 11 Road side trees posing a hazard to road users along Una-Barsar-Jahu
-Nerchowk**

Findings of field visit to Theog- Kotkhai-Rohru road

- The field visits to the roads were undertaken during end December 2006 and early January 2007 for familiarisation of environment setting of project corridors. During the field visits, IRC was accompanied by a junior engineer of HPRIDC. The major observations recorded during the field visits are described hereunder
- The realignment proposals particularly in stretches passing through the forest areas, particularly in Kharapathar stretch can be largely avoided in order to reduce the extent of forest area to be diverted for project roads. Also, such realignment proposals within forest areas will create an ox bow, which is not desirable and should preferably be avoided. If these proposals are scrutinised by regulatory agencies, the proposals may be rejected.
- If such realignment proposals within the forest areas are unavoidable for engineering reasons, then the EA should include a plan for complete redevelopment of oxbow land, so that this may get merged back into forest area over years.
- The proposal for a bridge and its approach near Hatkhoti is in close proximity to ancient temples, located on either side of the road. The temples are in ruins at present. Also, almost at the same location, there is a proposal for the construction of a dam by the State Government. It is therefore important to consult the Archaeology Department as well as the concerned authorities of Dam project and then finalise alignment proposals for bridge and its approach.

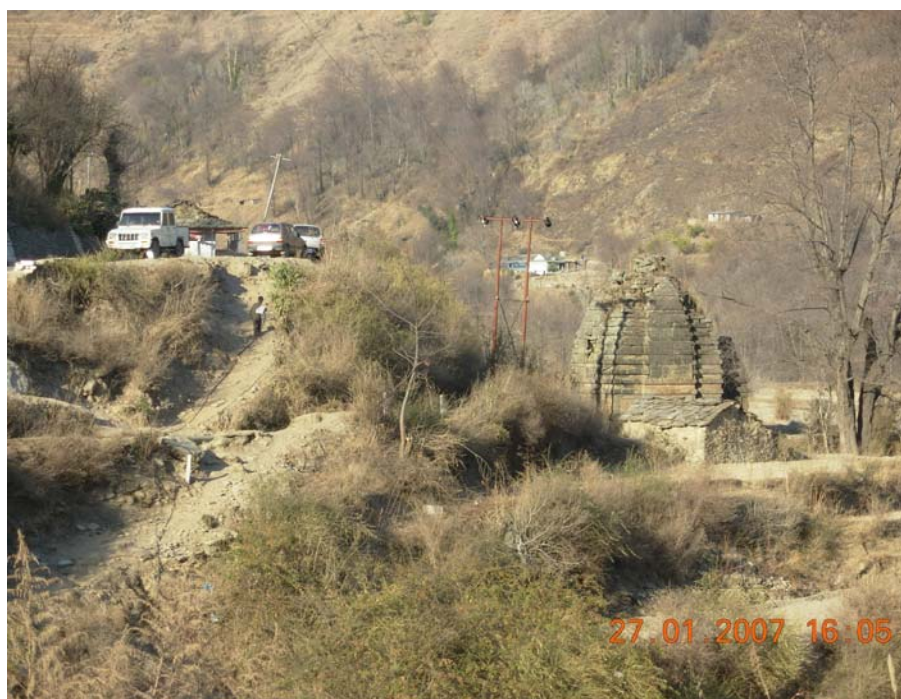


Exhibit 12 Ancient Temples in ruins near Hatkhoti on Theog-Kotkhai-Rohru Corridor

Quality and Coverage of Public Consultation Inputs

- The public consultations with the stake holders have been adequately documented in the EA report and cover all categories of stakeholders. The consultations carried out by the DC have been verified during the field visits of IRC. The stakeholders were able to quickly recollect the earlier consultations carried out by DC.

Participation of IRC in Public Consultations

- During the independent environmental assessment review, IRC could not participate in the public consultations conducted by DC for Phase I roads namely Mehatpur-Una-Amb, Una-Aghar-Barsar-Jahu-Nerchowk and Theog-Kotkhai-Hatkoti-Rohru as the public consultations had been already completed by DC. However, IRC will participate in the public consultations for Phase II roads namely Ghumarwin-Sarkaghat-Jogindernagar and Kumarhatti-Sarahan-Nahan (Dosarka) which are scheduled in sometime in March 2007.

Review of Environmental Assessment report

- The methodology and approach adopted in conducting the EA process generally follows the most widely adopted procedure for similar projects in other states of India.
- The methodology and approach comprises assessment of baseline environmental conditions through secondary data, generation of primary data through actual field investigations wherever there is a data gap or additional field data is required, analysis of the alternatives, assessment of impacts, identification of mitigation measures, framing of EMP including institutional frame work for implementation monitoring, estimation of costs for implementing EMP among others
- Overall, the EA report presents an appreciable quantum of data from secondary sources as well as primary data collected through field investigations. However, the report slips while assessing and quantifying the impacts
- The EA report in its present form needs significant improvement in quantification of impacts. Most of the impacts assessed or identified are qualitative in nature. For instance, the EA report does not quantify the extent of forest area required to be diverted for project activities. It is essential to quantify the forest area along with details of flora and fauna within such areas as a part of the EA analysis
- For road up-gradation projects, the impacts are largely confined to a corridor adjacent to the ROW say 15m to 20m away from the ROW, which bears the maximum impacts and can be termed as a direct impact corridor. Beyond this

corridor, the scale of the impacts diminishes rapidly for most parameters. Hence, the EA report should consider say a 20m wide strip on either side of road (cumulative width of 40m excluding the ROW) as a direct impact corridor for assessment of direct impacts. The corridor beyond this 20m and up to 10km can be treated as a general impact corridor or the project influence area for assessing the induced impacts. The section on impacts present report mentions about this 20m width on either side of road as Impact Corridor under section 2.5 but it has NOT been mentioned or considered in the EA analysis subsequently in the report

- It is suggested that the assessed impacts could be described in the following manner for better clarity on the type, quantum of impacts and suggested mitigation plan/measures
 - Identification of likely impacts due to project actions on various environmental attributes within the direct impact corridor
 - Quantification of impacts along with suggested mitigation plan/measures
 - Whether the impacts are triggering any regulatory framework and if yes, how the issue is being addressed. This needs to be summarised along with cost implications as applicable
 - Similarly the impacts due to project actions on various environmental attributes within the general impact corridor or project influence area (PIA) should also be documented assessed, quantified and summarised along with appropriate mitigation plan/measures along with associated cost implications
 - The assessment of impacts should cover for pre-construction, construction and post-construction phases of the project roads
- The EA report mentions at several places that roads are passing through sensitive areas but the basis on which these areas has been categorised as 'sensitive' is not furnished in the report. In case, the areas have been categorised as sensitive on the basis of any ecological investigations (floral and faunal assessment studies), the findings of such investigations in terms of species diversity, richness, density etc shall be furnished in the EA report to qualify the statement. Merely stating that roads are passing through sensitive areas might not correctly reflect the ground situation
- The EA report does not provide any information on biodiversity or wildlife hotspots along project roads. In case, no such hotspots occur, then it should be clearly mentioned in the EA report. If hot spots have been recorded, then report should furnish the detailed information on such hotspots, impacts on hotspots due to road construction along with associated mitigation measures and cost implications thereof.
- The EA report lists the past and the presently applicable environmental regulations. However, **applicability and relevance** of the present regulations (Ministry of Environment and Forests(MOEF), Government of India notification dated 14th

September 2006) *vis-a vis* the project roads considered under the EA should be assessed and furnished in the EA report

- If the current MOEF notification is applicable to the project roads, the EA report has to be restructured as per Appendix III and IIIA of the EIA notification dated 14th September 2006, prior to seeking the environmental clearances.
- The MOEF notification dated 14th September 2006 recognises a distance of 10km as a criteria to determine a specific project to be placed under either Category A or B. At present the EA report uses 7 km as PIA, which does not confirm to current EIA regulations.
- The estimated costs for mitigating the impacts are not given in the EA report. Even, if EMP and costs are given in a separate volume, the generic structure of the EIA report as per EIA notification of GOI includes the EMP as an integral part of the EIA report and hence it should be included. For facilitating better implementation, EMP can still be produced as a separate volume of contract documents as per WB requirements.

Review of Environmental Management Plan (EMP)

- The EMP is well documented with appreciable data base, however it need updation with the mitigation plans as may be required / suggested in the bio-diversity impact assessment report and bio-engineering considerations
- The details of the tree plantation program are to be included in the EMP. Although, this will be implemented through the forest department, the broad guidelines / criteria for tree plantation program are to be included in the EMP
- The EMP is intended to be an action plan for the agencies responsible for implementation and supervision. Hence it is suggested the summary of the EMP shall be presented in a tabulated form indicating the project actions, likely impacts, likely locations, suggested mitigation measures, responsibility for implementation & supervision and reference document/specifications for undertaking mitigation measures and costs involved. It should be clarified that whether the costs deemed to be part of standard conditions of contract or will be paid separately as per bill of quantities.
- The EMP lists out several environmental parameters to be monitored during the implementation and operation stages through an external agency. It is suggested that all such monitoring shall be carried out by an independent agency approved by the State Pollution Control Board
- The EMP has suggested an elaborate institutional mechanism for implementation and monitoring mechanism of EMP during implementation stage. it is suggested that the roles and responsibilities of the officers are required to be elaborated for clarity.
- The EMP mentions that the environmental monitoring during the construction phase will be carried out by an independent reviewer (last para of Section 6 – EMP). The

requirement of such independent review may not be warranted given the elaborate institutional mechanism already suggested in the EMP.

- The EMP includes several typical drawings in Appendix 21 for environmental enhancement. Some of these drawings are not relevant and needs significant revision. The suggestions of IRC in this regard have been physically explained to the environmental specialist of DC for consideration and incorporation in the final EMP.

5.0 TASKS AHEAD FOR IRC

IRC will review the final EA and EMP after updation of all the IRC review comments by the DC and verify the compliance of all the issues and deficiencies raised during the review process.

APPENDIX I

**TERMS OF REFERENCE
FOR
INDEPENDENT REVIEW CONSULTANT**

Himachal Pradesh Road and Other Infrastructure Development Corporation Ltd.

Present Address: HPPWD US Club, Shimla-171001, HP, INDIA

Fax: 91-0177-265-4968

Tel: 91-0177-280-8118

Email: hp-shi-wb@pmsgsy.nic.in

Dear Sir:

Mr. Hari Prakash
Director,
Deccan Consulting Engineers Pvt. Ltd,
B-98/5A, Third Floor,
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Delhi-110092
deccan@bol.net.in; dcedel@bol.net.in

***Independent Review of
Environmental Screening and Environmental Assessment
for Phase 1 Upgrading Roads in the
Proposed Himachal Pradesh State Roads Project***

1. You are hereby invited to submit technical and financial proposals for consultancy services required for the Independent Review of Environmental Screening and Environmental Assessment for Phase 1 Upgrading Roads in the Proposed Himachal Pradesh State Roads Project which could form the basis for future negotiations and ultimately a contract between you and Himachal Pradesh Road and Other Infrastructure Development Corporation Ltd.
2. The purpose of this assignment is to:
 - (i) Review the process and outputs from environmental screening of about 1670 km of state roads subject to techno-economic feasibility, identify weaknesses and recommend improvements;
 - (ii) Review the process and outputs from environmental analysis and preparation of management plans on about 410 km of state roads subject to detailed design, identify weaknesses and recommend improvements; and
 - (iii) Review the process and outputs from environmental screening analysis on up to 9,000 m of road tunnels plus associated approaches subject to feasibility, identify weaknesses and recommend improvements; and
 - (iv) Review the process and outputs from environmental analysis and preparation of management plans on about 3800 km of state roads subject to detailed design, identify weaknesses and recommend improvements.
3. The following documents are enclosed to enable you to submit your proposal:
 - (a) Terms of reference (TOR) (Annexure 1);
 - (b) Supplementary information for consultants, including a suggested format of curriculum vitae (Annexure 2); and
 - (c) A sample format of the contract for consultants services under which the service will be performed (Annexure 3).

4. The client has applied for a loan from the International Bank for Reconstruction and Development (IBRD) in various currencies toward the cost of the proposed Himachal Pradesh State Roads Project, and intends to apply a portion of this loan to eligible payments under this Contract. Payments by IBRD will be made only at the request of client and upon approval by IBRD, and will be subject, in all respects, to the terms and conditions of the Loan Agreement. The Loan Agreement prohibits a withdrawal from the Loan Account for the purpose of any payment to persons or entities, or for any import of goods, if such payment or import, to the knowledge of the Bank, is prohibited by a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations. No party other than the client shall derive any rights from the Loan Agreement or have any claim to proceeds.

5. **The Submission of Proposals:** The proposals shall be submitted in two parts, viz., Technical and Financial and should follow the form given in the "Supplementary Information for Consultants."

The proposals will be received in the Project Director (State Roads Project), Himachal Pradesh Road and Other Infrastructure Development Corporation Ltd.(HPRIDC) Present office address: HPPWD, US Club, Shimla-171001, HP, INDIA up to 12.00 hours on **8th June, 2006**.

6. **Deciding Award of Contract**

Quality and competence of the consulting service shall be considered as the paramount requirement.

Negotiations will be held with you only if the technical proposal is acceptable. You must be prepared to furnish the detailed cost break-up and other clarifications to the proposals submitted by you, as may be required to adjudge the reasonableness of your price proposals. If the negotiation with you is successful, the award will be made to you. If negotiations fail, and if it is concluded that a contract with reasonable terms cannot be concluded with you, the process of selection of Consultant, issue of letter of invitation etc. will be repeated till an agreed contract is concluded.

7. Please note that the Himachal Pradesh Road and Other Infrastructure Development Corporation Ltd. is not bound to select any of the Consultant submitting proposals.

8. It is estimated that about five man-months of services, over a ten month period, will be required for the assignment and generally you should base your financial proposal on this figure. However, you should feel free to submit your proposal on the basis on man-months considered necessary by you to undertake the assignment.

9. You are requested to hold your proposal valid for 90 days from the date of submission during which period you will maintain without change, your proposed price. The Himachal Pradesh Road and Other Infrastructure Development Corporation Ltd. will make its best efforts to finalize the agreement within this period.

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

11. Assuming that the contract can be satisfactorily concluded in June/July 2006 you will be expected to take-up/commence with the assignment in July/August 2006.

12. We wish to remind you that any manufacturing or construction firm with which you might be associated with, will not be eligible to participate in bidding for any goods or works resulting from or associated with the project of which this consulting assignment forms a part.

13. **Tax Liability**

Please note that the remuneration which you receive from this contract will be subject to the normal tax liability in India. Kindly contact the concerned tax authorities for further information in this regard, if required.

14. We would appreciate if you inform us by Email/Facsimile:

- (a) Your acknowledgment of the receipt of this letter of invitation; and
- (b) Whether or not you will be submitting the proposal.

Yours faithfully,

Himachal Pradesh Road and Other Infrastructure
Development Corporation Ltd.
Present Address: HPPWD US Club, Shimla-171001, HP, INDIA

Enclosures:

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

TERMS OF REFERENCE

1. Introduction

1.1 The Government of India (GOI) has requested the assistance of the World Bank for the improvement of State Highways and Major District Roads in the State of Himachal Pradesh. A Strategic Options Study (SOS) undertaken in 2005 by the Himachal Pradesh Public Works Department (PWD) has identified about 1,675 km of State Highways (SH) and Major District Roads (MDR) that may be suitable for improvement from which about 800 km is to be prioritized under the project. The major criteria used for selection in SOS were traffic volume, restricted carriageway width, pavement conditions, economic activity in the influence area of the road, volume of commercial traffic and interconnectivity of the roads.

1.2 The proposed improvement works will consist mainly widening to two-lane/intermediate-lane from the existing, intermediate-lane or single-lane width, raising the formation level where necessary, upgrading/improvement of road geometrics, pavement strengthening and improving cross drainage structures. Road stretches crossing urban areas may also require upgrading to a two-lane cross section, and/or provision for drains, sidewalks and parking where required. In some cases, new alignments (by-passes) and/or re-alignments may also be required. Six tunnels are also being proposed.

1.3 The Government of Himachal Pradesh (GOHP) is intending to implement the project through the HP Road and Other Infrastructure Development Corporation Ltd. (HPRIDC) and the establishment and infrastructure of HPPWD shall be utilized by the HPRIDC for implementation at the field level. The HPRIDC engaged in December 2005 as a consultant, hereafter the Project Coordinating Consultant (“PCC”), to undertake feasibility for the whole project on about 1,670 km of roads and detailed design of the first phase of upgrading works of about 410 km. The description of this PCC service includes environmental screening of about 1,670 km of roads and environmental assessment/management plans for about 410 km of roads. The HPRIDC is separately hiring another consultant, hereafter the “tunnel consultant”, to undertake feasibility and design of up to 9,000 metres of tunnels plus associated approach roads in Shimla and elsewhere in the State. The tunnel consultant is expected to start work in July 2006.

1.4 The Environment Assessment (EA) process being carried out by the PCC and tunnel consultant is designed to meet:

- (i) the legislative requirements of GOI/GOHP covering various policies, directives and guidelines; and
- (ii) the requirements of applicable World Bank’s Operational Policies (OP) (i.e. Environment Assessment (OP 4.01), Natural Habitats (OP 4.04), Forestry (OP 4.36)).

1.5 OP4.01 requires that for projects with significant impacts, so called “Category A projects”, separate consultants are to be commissioned to prepare the technical designs and EA. However, in this case, while a single PCC and tunnel consultant is undertaking both tasks for their respective proposed works, an independent specialist will review the environmental aspects. This will meet the spirit and intention of the OP while allowing the HPRIDC to benefit from the potential improved integration made possible by having a single firm undertake both technical and environmental work.

1.6 The HPRIDC now wish to commission a consultant, hereafter the “Consultant”, to undertake an independent review of the process and outputs of the environment assessment as described in the following terms of reference.

2. Objectives of the Assignment

2.1 The objectives of the assignment are for the Consultant to:

- (i) review the process and outputs from environmental screening of about 1,670 km of state roads subject to techno-economic feasibility, identify weaknesses and recommend improvements;

- (ii) review the process and outputs from environmental analysis and preparation of management plans on about 410 km of state roads subject to detailed design, identify weaknesses and recommend improvements;
- (iii) Review the process and outputs from environmental screening analysis on up to 9,000 m of road tunnels plus associated approaches subject to feasibility, identify weaknesses and recommend improvements; and
- (iv) Review the process and outputs from environmental analysis and preparation of management plans on about 3800 km of state roads subject to detailed design, identify weaknesses and recommend improvements.

3. Scope of Work

3.1 The Consultant shall undertake the following tasks, tasks two and three after completing task one. The Consultant is encouraged to propose reasonable modifications in his technical proposal. After undertaking a preliminary site visit and reviewing all available documentation, the Consultant shall detail in an inception report the methodology he proposes to adopt for undertaking the work.

Task 1 Review of Screening Process and Report for 1,670 km of Roads

3.2 The Consultant shall travel along at least 300 km of the roads slated for feasibility, undertake site visits at identified sensitive locations and shall participate in at least 2 public consultations so as to familiarize himself with the environmental issues pertinent to the project. The Consultant will at random hold discussions with a representative sample of relevant stakeholders to verify the consultative process adopted by the PCC.

3.3 The Consultant shall review the draft Screening Report prepared by the PCC covering about 1,670 km of roads, in particular with respect to the following aspects:

- analysis of corridor alternatives, analysis of alignment alternatives as well as other major decisions;
- justification for the final choice of road corridors and alignments;
- quality and coverage of public consultation inputs;
- identification of GOI/GOHP legislative and regulatory requirements;
- quality and coverage of baseline data obtained including the balance between primary and secondary sources

3.4 On the basis of the review in para 3.2-3.3, the Consultant will (i) identify weaknesses in the process and documentation; and (ii) recommend improvements/remedial measures to the PCC's screening process and draft screening report to bring them to a satisfactory level.

3.5 The Consultant shall prepare a Review Report covering his analysis and recommendations from para 3.2 to 3.4. He shall review the final screening report of the PCC to verify compliance with any issues and deficiencies raised.

Task 2 Reviews of Environmental Assessment Process and Reports/Plans for 410 km of Roads

3.6 The Consultant shall travel along all roads slated for detailed design, undertake detailed site visits to identified sensitive locations, including any proposed resettlement sites, and shall participate in at least 2 public consultations so as to be aware of all environmental issues pertinent to the particular roads under review. The Consultant will at random hold discussions with a representative sample of relevant stakeholders to verify the consultative process adopted by the PCC.

3.7 The Consultant shall review the draft Environmental Assessment report prepared by the PCC covering about 410 km of roads, in particular with respect to the following aspects:

- methodology/approach adopted in undertaking the EA;

- assessment of potential direct and induced impacts, both during construction and operation;
- the proposed remedial (prevention, mitigation and compensation) measures and whether these are commensurate to the nature, scale and potential of the project impacts (including temporary impacts on land and people during construction);
- quality, coverage and feed back mechanism of public consultation process;
- proposed resettlement site plans;
- identification of regulatory and legislative requirements;
- proposed enhancement measures;
- proposed monitoring mechanisms (with performance indicators wherever possible) for both construction and operation stages;
- the capacity assessment of the implementing agency and other stakeholders and associated proposed training and capacity building plans;
- budgeting for all aspects of environmental management implementation; and
- sufficiency of the proposed institutional arrangements.

3.8 The Consultant shall review the draft Environmental Management Plans prepared by the PCC covering about 410 km of roads, in particular with respect to the following aspects:

- structure and content of the EMP as a whole;
- inclusion of all the remedial/mitigation measures identified in the EA with particulars such as the stage in which they are applicable (design construction and operational), the sections/locations of the road corridor to which they are applicable and contract clause reference;
- inclusion of all the enhancement measures identified in the EA with particulars of the sections/locations of the road corridor to which they are applicable and contract clause reference;
- management plans including those for construction debris and waste disposal, traffic management, tree plantation, slope stabilization, camp site restoration etc.;
- inclusion of all GOI/GOHP legislative requirements in terms of conditions and requirements;
- the monitoring mechanisms/plan for environmental components; and
- incorporation of environmental mitigation and enhancement measures as appropriate in the draft works bidding documents, including the rate analysis, drawings, designs, BOQ and technical specifications.

3.9 On the basis of the review in para 3.6-3.8, the Consultant will (i) identify weaknesses in the process and documentation and (ii) recommend improvements/remedial measures to the PCC's EA process and draft EA/EMP reports to bring them to a satisfactory level.

3.10 The Consultant shall prepare a Review Report covering his analysis and recommendations from para 3.6 to 3.9. He shall review the final EA/EMP report of the PCC to verify compliance with any issues and deficiencies raised.

Task 3 Review of Environmental Assessment Process and Reports/Plans for up to 9,000 m of tunnels and EA/EMP for up to 3800 m

3.11 The Consultant shall undertake site visits to all proposed tunnels (both portal ends) and shall participate in at least two public consultations so as to be aware of all environmental issues pertinent to the particular tunnels under review. The Consultant will at random hold discussions with a representative sample of relevant stakeholders to verify the consultative process adopted by the tunnel consultant.

3.12 The Consultant shall then undertake the same tasks 3.3–3.5 and 3.7 -3.9 for these proposed tunnels and prepare a Review Report covering his analysis and recommendations. He shall review the final EA/EMP reports of the tunnel consultant to verify compliance with the issues and deficiencies raised.

4. Outputs

4.1 The Consultant shall deliver the following outputs to a format to be agreed with the HPRIDC.

Output	Timeframe	No. of copies	Remarks
Inception Report Draft Final	4 weeks from start 2 weeks after comments received from client	5 5	Clause 3.1
Report on Review of EA Screening for 1,670 km of roads Final	2 weeks after receipt of draft PCC screening report	5	Clause 3.5
Report on Review of EA/EMP for 410 km of roads Final.	2 weeks after receipt of draft PCC EA/EMP	5	Clause 3.10
Report on Review of EA Screening for 9,000 m of tunnels Final	2 weeks after receipt of EA/EMP from tunnel consultant	5	Clause 3.11
Report on Review of EA/EMP for 3800 km of roads Final.	2 weeks after receipt of EA/EMP from tunnel consultant	5	Clause 3.12

6. Review by HPRIDC of Consultants Outputs

6.1 A review committee consisting of following officers of the HPRIDC will review all reports of Consultants and suggest any modifications/changes considered necessary within 15 days of receipt.

- | | |
|----------------------------------------------------|-------------|
| 1. Principal Secretary (PW) to the GoHP/MD, HPRIDC | Chairperson |
| 2. Engineer-in-Chief, HPPWD | Member |
| 3. Project Director (SRP), HPRIDC | Member |

7. Inputs by the Consultant

7.1 It is expected that the work will require about five man months of inputs over a ten-month contract period. The Consultant is free to employ resources in his technical proposal as he sees best fit to meet the scope of work.

8. Data and Facilities from the HPRIDC

8.1 The HPRIDC will provide all ready and available information as requested by the Consultant, including the description of services for the PCC and tunnel consultant and all their reports and supporting documents. The HPRIDC will ensure timely flow of information and documents from the

PCC and tunnel consultant to the consultant for this service. The HPRIDC will also help in organizing the meetings between the two consultants and other departments or staff as required during the project preparation process.

8.2 The HPRIDC will designate an officer to act as the main liaison officer and participate as possible in the study.

8.3 The HPRIDC will otherwise provide no logistical support to the Consultant. The Consultant must therefore make adequate provision for travel, workspace and accommodation in his financial proposal.



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DCE/HP/2007-03/9

9th March 2007

To

Project Director (SRP)

HPRIDC Ltd.

Chief Engineer-cum-Project Director,

State Roads Project,

Palika Bhawan, Talland

Shimla-171002.

**Sub.: Independent Review Consultant (IRC) Report on Environmental Assessment of Roads Under Phase I in the Proposed Himachal Pradesh State Roads Project
Submission of REVIEW REPORT**

Sir,

I am pleased to furnish herewith 3 copies of the Review Report for your kind perusal and consideration.

The Review Report includes my review comments on the Environmental Screening for 1675kms and and Environmental Assessment (EA) Report for Phase I Batch I roads.

Looking forward for your response on the subject.

Thanking you,

Yours truly,

HARI PRAKASH

Independent Review Consultant