HIMACHAL PRADESH STATE ROADS PROJECT

Independent Review Consultant (IRC) Report
on
Environmental Screening of 1675 kms Roads Under Techno-
Economic Feasibility in the Proposed Himachal Pradesh State
Roads Project

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Appendix I - Terms of Reference of Independent Review Consultant
## LIST OF ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>GOI</td>
<td>Government of India</td>
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<tr>
<td>GOHP</td>
<td>State Government of Himachal Pradesh</td>
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<tr>
<td>SOS</td>
<td>Strategic Options Study</td>
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<tr>
<td>PWD</td>
<td>Himachal Pradesh Public Works Department</td>
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<tr>
<td>SH</td>
<td>State Highways</td>
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<tr>
<td>MDR</td>
<td>Major Districts Roads</td>
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<td>SRP</td>
<td>Himachal Pradesh State Roads Project</td>
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<tr>
<td>HPRIDC</td>
<td>Himachal Pradesh Road and Other Infrastructure Development Corporation Ltd.</td>
</tr>
<tr>
<td>MOEF</td>
<td>Ministry of Environment &amp; Forests, Government of India</td>
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<tr>
<td>DC</td>
<td>Design Consultant</td>
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<tr>
<td>TC</td>
<td>Tunnel Consultant</td>
</tr>
<tr>
<td>OP</td>
<td>Operational Policies of the World Bank</td>
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<tr>
<td>EIA</td>
<td>Environmental Impact Assessment</td>
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<tr>
<td>EA</td>
<td>Environmental Assessment</td>
</tr>
<tr>
<td>IRC</td>
<td>Independent Review Consultant</td>
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<tr>
<td>EMP</td>
<td>Environmental Management Plan</td>
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<tr>
<td>BOQ</td>
<td>Bill of Quantities</td>
</tr>
<tr>
<td>TOR</td>
<td>Terms of Reference</td>
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</table>
1.0 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.

2.0 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 environmental screening process and 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).

3.0 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 I. The IRC review report for Stages II, 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 SCREENING PROCESS AND SCREENING REPORT - STAGE I

4.1 Scope of Work

The Scope of Work of IRC under Stage I - Review of Environmental Screening Process and Screening Report comprises the following tasks

• Selection of 300km out of 1675km of roads under screening for filed visits for familiarization of the environmental issues pertinent to the project
• Holding at random discussions with a representative sample of relevant stakeholders to verify the consultative process adopted by the DC
• Participation in at least 2 public consultations with the stakeholders (to be organised by DC) to verify the consultative process adopted by the PCC.
• Review the draft Environmental Screening Report prepared by the DC covering about 1,675 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;
The approach & methodology adopted by IRC for Stage I - Review of Environmental Screening Process and Screening Report is given hereunder:

4.2 Mobilisation & start up meeting with HPRIDC / DC
After mobilisation, IRC had a meeting with HPRIDC and the Design Consultant’s (DC) team for understanding and familiarisation of the overall project objectives, priorities, programs along with the extent of environmental investigation / studies that have been completed so far.

4.3 Criteria for selection of sample roads for field visit
The criteria for selection of 300km out of 1675km of roads under screening process for field visits considered by IRC comprised the following.

- Spread of the screening roads across the region/state
- Terrain, altitude and similar other factors
- Proximity to forest areas / wild life sanctuaries/ National Parks and any other / sensitive issues of the region
- Sensitivity level of the roads as per environmental screening report

The list of 1675 km of roads in 43 corridors under the environmental screening process is given in Exhibit 1.
## Exhibit 1 - List of Corridors under Environmental Screening

<table>
<thead>
<tr>
<th>Corridor No</th>
<th>Description</th>
<th>Length (Km)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mehatpur Una Mubarikpur Daulatpur H.P. boundary Road (Section Una to Amb)</td>
<td>32.2</td>
</tr>
<tr>
<td>2</td>
<td>Una Aghar Barsar Jahu Bhambla Mandi-upto Ner Chowk road*</td>
<td>126</td>
</tr>
<tr>
<td>3</td>
<td>Gaggal Chehru Dharamshala MLeodganj (Section Gaggal to Dharamshala)</td>
<td>12.515</td>
</tr>
<tr>
<td>4</td>
<td>Shimla Kunihar Ramshehar Nalagarh Ghanoli (from Nalagarh to HP Boundary)</td>
<td>11.3</td>
</tr>
<tr>
<td>5</td>
<td>Mehatpur Una</td>
<td>12</td>
</tr>
<tr>
<td>6</td>
<td>Kumarhatti-Sarahan-Nahan (Dosarka)</td>
<td>78</td>
</tr>
<tr>
<td>7</td>
<td>Jogindernagar Sarkaghat Ghumarwin Road (except NH 70 section)</td>
<td>82.98</td>
</tr>
<tr>
<td>8</td>
<td>Lal Dhank Paonta Rajban Halkoti (Section LalDhank to Shillai except NH)</td>
<td>74.94</td>
</tr>
<tr>
<td>9</td>
<td>Hamirpur Sujanpur Thira Thural Maranda</td>
<td>58.99</td>
</tr>
<tr>
<td>10</td>
<td>Dharamshat Dhad Palampur Holta Chadhar Sandhol (Section Dharamshala to Palampur)</td>
<td>33</td>
</tr>
<tr>
<td>11</td>
<td>Dhad Malan</td>
<td>4</td>
</tr>
<tr>
<td>12</td>
<td>Swarghat Naina Devi Bhakra (Section Kanchimore to Bhakra)</td>
<td>37</td>
</tr>
<tr>
<td>13</td>
<td>Kaloha Pragpur Daliali Dadasibba Sansarpur (Section Kaloha to Nehranpukhar)</td>
<td>11.2</td>
</tr>
<tr>
<td>14</td>
<td>Damlal Kandori Indora Khatiar</td>
<td>52</td>
</tr>
<tr>
<td>15</td>
<td>Mubarikpur Dehra Ranital Kotla road (Section Dehra to Ranital and Ranital to Kotla)</td>
<td>20</td>
</tr>
<tr>
<td>16</td>
<td>Ranital Kotla road (Section Dehra to Ranital and Ranital to Kotla)</td>
<td>39</td>
</tr>
<tr>
<td>17</td>
<td>Bamba Kandour</td>
<td>6.6</td>
</tr>
<tr>
<td>18</td>
<td>Bharwain Chintpurni Kandori Damlal (Section Bharwain to Sansarpur Terrace)</td>
<td>32.56</td>
</tr>
<tr>
<td>19</td>
<td>Shallaghat Arki Kunihar Barotiwalana</td>
<td>80.4</td>
</tr>
<tr>
<td>20</td>
<td>Markanda (Khajorna) bridge Suketi park Kala Amb Trilokpur</td>
<td>15.13</td>
</tr>
<tr>
<td>21</td>
<td>Kala Amb Trilokpur</td>
<td>6.37</td>
</tr>
<tr>
<td>22</td>
<td>Panjera Bharatgar</td>
<td>4.66</td>
</tr>
<tr>
<td>23</td>
<td>Panjera Dehni</td>
<td>9</td>
</tr>
<tr>
<td>24</td>
<td>Shimla Tattapani Mandi (Section Dhalli to Tatapani)</td>
<td>46</td>
</tr>
<tr>
<td>25</td>
<td>Chal chowk Gohar Pando (Section Dadour to Gohar)</td>
<td>20.32</td>
</tr>
<tr>
<td>26</td>
<td>Barsar Deothsidh (Section Barsar to Shaliatta)</td>
<td>11.3</td>
</tr>
<tr>
<td>27</td>
<td>Jawalumuki Dehra Jawali Raja-ka-Talab (Section Dehra to Raja-ka-Talab)</td>
<td>75.14</td>
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<tr>
<td>28</td>
<td>Theog Kothkhai Hatkoti Rohroo</td>
<td>80.37</td>
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<td>29</td>
<td>Rohroo Chiraon Sandhasu</td>
<td>27</td>
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<tr>
<td>30</td>
<td>Kufri Chali Kandaghath</td>
<td>57</td>
</tr>
<tr>
<td>31</td>
<td>Mandi Kataula Bajaera</td>
<td>51</td>
</tr>
<tr>
<td>32</td>
<td>Sanj Chopal Nerwa Shullu (Section Sanj to Chopal)</td>
<td>47</td>
</tr>
<tr>
<td>33</td>
<td>Bhawarna Lambagaon Jaisinghpur</td>
<td>26.645</td>
</tr>
<tr>
<td>34</td>
<td>Nurrpur Lahru Tunnahatti</td>
<td>42.19</td>
</tr>
<tr>
<td>35</td>
<td>Shapur Shunta Chowari Jot Chamba Bhamour (Section Draman to Chowari)</td>
<td>53.4</td>
</tr>
<tr>
<td>36</td>
<td>Banikhet Dalhouse Khajiar (Section Banikhet to Dalhouse)</td>
<td>6.205</td>
</tr>
<tr>
<td>37</td>
<td>Sanj Anni Banjar Aut (Section Sanj to Jatori and Aut to Banjar)</td>
<td>72</td>
</tr>
<tr>
<td>38</td>
<td>Chaila Sanj Nirupi Yashwantnagar Ochhghat Kumburhatti</td>
<td>86.32</td>
</tr>
<tr>
<td>39</td>
<td>Kullu Nagar Manali (Left Bank)</td>
<td>39.37</td>
</tr>
<tr>
<td>40</td>
<td>Ghutsumi Bhuinu Jot Kullu</td>
<td>66.57</td>
</tr>
<tr>
<td>41</td>
<td>Approach to proposed Lathiani bridge</td>
<td>4</td>
</tr>
<tr>
<td>42</td>
<td>Swarghat Bilaspur via Jagatkhana(New alignment)</td>
<td>20.375</td>
</tr>
<tr>
<td>43</td>
<td>Dharampur Kausuli</td>
<td>10.5</td>
</tr>
</tbody>
</table>

**Spread of the Screening Roads:** The sample roads were selected to represent the geographical spread of all the 1675 km of the roads under screening within the State. The 1675 km of roads under screening is largely in the southern and western part of the state. The location and spread of the 1675 km of roads in 43 corridors across the State is given in Exhibit 2.
Terrain, altitude and rainfall: The 1675km of roads under screening process is spread over areas, which are between 300m to 4500m above the mean sea level (MSL). Since, the altitude has a crucial role in determining the environment setting of the region, the sample roads for field visit were selected to represent the entire range of the altitude among the 1675km of roads under screening process. Similarly the rainfall, which ranges between 1000mm and 2600mm across the geographical spread of the 1675 km of the roads, was also considered in selection of roads for field visits.

Proximity to sensitive areas/sanctuaries/notified protected areas: The published secondary data from various Governmental agencies of Himachal Pradesh and Government of India were consulted to ascertain the proximity of the screening roads to the sensitive areas/ sanctuaries/notified protected areas of the state. Based on this assessment, the roads which were proximate (less than 10km) to any of the sensitive areas/wildlife sanctuaries/notified protected areas were considered in selection of roads for field visits.

Sensitivity category of roads as per environmental screening process: The sensitivity category/level of the roads indicated in the environmental screening process was given due consideration in selection of roads for field visits. The screening process carried out by DC has categorised the 1675km of roads in 43 corridors into very high, high, medium and low categories based on a detailed assessment of the secondary as well as primary data generated through field visits. Hence, the sensitive categories assigned to each of the 43 corridors was given due consideration while selecting the sample roads for field visits.

Based on the combination of all the above mentioned criteria, 8 corridors were selected for field visit and are expected to represent the different environment setting across the geographical spread of the 1675km of roads under screening. The list of roads selected for field visits along with the criteria considered for their selection is given in Exhibit 3.

4.4 Field visits for familiarisation of environment setting of project corridors
The field visits to the selected sample 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 to the sample roads are described hereunder.
The Kufri-Chail-Kandaghat corridor actually passes through Chail Wildlife Sanctuary for about 20km out of 57km. The alignment of the corridor and the Chail Wildlife Sanctuary limit is illustrated in Exhibit 4.

The screening report, on the contrary mentions that Chail Wildlife Sanctuary is within 7km of this corridor.

The Kufri-Chail-Kandaghat corridor particularly the stretch passing through the sanctuary can not be taken up for any kind of up-gradation work as per the present standing directives of the Supreme Court of India.

The corridor other than the stretch passing through sanctuary has tree cover which might require to be felled, if corridor is taken up for up-gradation.

No other major environmental issue was recorded.
Findings of Field Visits to Chailla- Sainj-Neripul-Yeswanthnagar-Ochhghat-Kumarhatti (Corridor number 38/length 86 km)

- The Chailla-Sainj-Neripul-Yeswanthnagar-Ochhghat –Kumarhatti corridor does not pass through any protected area, wildlife sanctuary, national parks. Neither any of these protected or sensitive areas are within 10km on either side of the corridor
- The corridor has significant erosion, slope stability issues which are to be addressed, if corridor is taken up for up-gradation
- The erosion and debris disposal issues of the corridor is shown in Exhibit 5
- The water courses along the corridor need to be protected from construction activities and disposal of debris generated from corridor up-gradation
- The corridor has very little or almost negligible trees which are to be felled, if corridor is taken up for up-gradation.
- No other major environmental issues were recorded

Exhibit 5 : Erosion & Slope Stability and Debris Disposal Issues along Chailla-Sainj-Neripul-Yeswanthnagar Corridor
Exhibit 5 (contd): Erosion & Slope Stability and debris disposal Issues along Chailla-Sainj-Neripul-Yeswanthnagar corridor
Exhibit 5 (contd): Erosion & Slope Stability and debris disposal Issues along Chailla-Sainj-Neripul-Yeswanthnagar corridor- seen debris slipping into watercourse below
Disposal of debris into water course (local practice) needs to be prevented during upgradation works

Exhibit 5 (contd): Erosion of slopes is persistent all along Chailla-Sainj-Neripul-Yeswanthnagar corridor
Findings of field visits to Dehra-Raja Ka Talab (corridor number 27/length 75 km)

- The Dehra-Raja Ka Talab corridor skirts through the periphery of Pong Lake Bird Sanctuary, a declared Ramsar Site for about 12 km out of 75 km of corridor between Dehra to Haripur.
- The boundary limits of Pong Lake Bird Sanctuary is determined by a contour of 1450 ft above MSL and the stretch between Dehra and Bongta of Dehra-Raja Ka Talab corridor skirts between 1410 and 1450 ft contours, i.e. within the declared bird sanctuary. The alignment of the corridor skirting along the boundary of sanctuary is shown in Exhibit 6.
- Understandably, the State Government has submitted a proposal to Government of India to revise the sanctuary limit to 1410 ft above MSL, which would clearly put the Dehra – Raja Ka Talab out of the sanctuary limits. However, the mater is pending with Government of India and therefore 1450 ft above MSL is the sanctuary limit as on date. The 1450 ft, 1410 ft contours and the corridor between Dehra and Bongta skirting within sanctuary limits is shown in Exhibit 6.
- The screening report, on the contrary mentions that Pong Lake Bird Sanctuary, a declared Ramsar Site is within 7 km from the corridor.
- This corridor can not be taken up for any kind of up-gradation work as per the standing directives of the Supreme Court of India.
- The corridor has a 800 year old ancient temple adjacent to the ROW (beyond sanctuary limits), which might need detailed assessment for specific protection measures of structure, if any required incase up-gradation work is taken up along this corridor. The ancient temple is not a declared protected monument. The location of temple and its proximity to existing ROW is shown in Exhibit 7.
- The water courses along the corridor need to be protected from construction activities and disposal of debris generated from corridor up-gradation.
- No other major environmental issue was recorded along this corridor.
Exhibit 6 Dehra-Raja- ka Talab corridor, between Dehra and Bongta skirting within periphery of Pong Lake Bird Sanctuary (Ramsar Site)

Exhibit 7: 800 year old ancient temple adjacent to ROW of Dehra Raja Ka Talab Corridor, near Haripur
Findings of field visits to Laldhank- Shillai (Corridor Number 8/Length 75 km)

- The Laldhank- Shillai corridor does not pass through any protected area, wildlife sanctuary or national park.
- The corridor has significant erosion, slope stability issues which are to be addressed, if corridor is taken up for up-gradation.
- There is a significant mining activity along this corridor, which has triggered the erosion and slope stability problems on a very large scale.
- The water courses along the corridor need to be protected from disposal of debris generated from corridor up-gradation and also from the debris generated from the mining activities. The erosion and debris disposal issues of the corridor is shown in Exhibit 8.
- The corridor has very little or negligible trees which might require to be felled, if corridor is taken up for up-gradation.
- Air quality and water pollution are the other major environmental issues, which are mainly due to the mining activities already existing along the corridor.
- No other major environmental issue was recorded along this corridor.

Exhibit 8: Mining activities which has triggered slope stability issues - seen along Ladhank-Shillai Corridor
Exhibit 8 (contd): Mining activities and uncontrolled debris seen along Ladhank-Shillai Corridor
Exhibit 8 (contd): Mining activities at uphill and uncontrolled debris seen reaching to water courses at bottom - seen along Ladhank-Shillai Corridor
Exhibit 8 (contd): Construction of a road uphill triggering erosion leading to choking of water course by debris – seen along Laldhank-Shillai Corridor
Water Pollution caused by mining activities along Laldhank-Shillai Corridor- seen here is coloured water flowing in a natural stream

Exhibit 8 (contd) : Deterioration of existing pavement condition as well as air pollution caused due to movement of vehicles associated with mining activities
Exhibit 8 (contd) : Deterioration of existing pavement condition as well as air pollution caused due to movement of vehicles associated with mining activities
Exhibit 8 (contd) : Bad construction practices seen along Laldhank-Shillai Corridor-
disposal of debris into valley side reaching to water course down below
4.5 **Consultations with Stake Holders along Corridors**

In accordance with the Terms of Reference, IRC held discussions with a sample of stakeholders to verify the consultative process adopted by DC. A minimum of two locations on each of the sample corridors selected for filed visits were chosen at random to consult the stakeholders in order to verify the consultative process adopted by DC. To begin with the verification of previous consultations, stake holders were briefed about the corridor up-gradation proposals and the various investigations that have been initiated including the earlier consultative process with stakeholders and the associated importance of their views and opinions and the present independent verification process being carried out at present.

In almost all corridors, the stake holders were quick to recollect the consultations earlier carried out by the DC. The only exception being the Kufri-Chail- Kandaghat, where at a sample location, the stakeholders led by their local elected representative (pradhan)Smt Rakesh Chauhan informed that they are not aware about any corridor up gradation proposals and they have not been consulted on the subject. However, they seem to be satisfied with the verification process being carried out by IRC. Some exhibits showing the verification process carried out by IRC is given in Exhibit 9.

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**Exhibit 9: Verification of Stakeholder Consultations along Kufri-Chail-Kandaghat Corridor -seen above is elected representative (Pradhan) Smt Rakesh Chauhan and a local prominent person**
Exhibit 9 (contd) : Verification of stakeholder Consultation along Chailla-Sainj-Neripul-Yeswanthnagar Corridor -Seen above is Pradhan of Sainj and a local prominent person

4.6 Participation of IRC in Public Consultations with Stake Holders along Corridors
In accordance with the Terms of Reference, IRC was required to participate in at least 2 public consultations with the stakeholders to verify the consultative process adopted and such consultations meeting were to be organised by DC. This activity could not be undertaken since all the public consultations with stakeholders along screening corridors had already been completed by DC by the time IRC was mobilised for the Independent Review work.

4.7 Review of Environmental Screening Process and Report
The environmental screening process and the report was reviewed by IRC for the following in accordance with the Terms of Reference

- analysis of corridor alternatives, analysis of alignment alternatives & other major decisions
- justification for the final choice of road corridors and alignments
- quality and coverage of public consultation inputs
- independent verification of the public consultations earlier carried out by DC
- identification of GOI/GOHP legislative and regulatory requirements
- quality and coverage of baseline data and balance between primary and secondary sources
- weaknesses in the process and documentation;
recommendation of improvements/remedial measures to the environmental screening process

preparation of a Review Report covering the above listed activities including recommendations if any required

review of the final screening report of the DC to verify compliance of all review comments/recommendations of IRC including deficiencies raised by IRC.

The review comments on the environmental screening process and its documentation with respect to the above are given hereunder

Screening Process and Justification for the Final Choice of Road Corridors

- As a first step, the screening process has complied the corridor specific secondary data as well as the primary data and tabulated them into i) bio-environment, ii) socio-economic, air and noise environment and iii) physical environment groups.
- The secondary data has been sourced from published data of the State Government, while the primary data has been generated through corridor specific field investigations.
- The secondary data relates to a 14km wide strip along the corridor (7km wide on either side of the corridor), whereas primary data relates to a direct impact area along the corridor. The extent of the direct impact area considered for data collection is not explicitly mentioned in the screening report.
- Weightage has been assigned to bio-environment attributes, physical environment attributes and socio-environment attributes. The bio-environment has been assigned the highest weightage of 60 points, followed by 20 points for physical and 20 points for socio-economic environment groups on a 100 point basis. Further, each of these major groups have been divided into several sub-groups and the allocated weightage has been redistributed to cover all the relevant environmental parameters under the respective group.
- The assigned parameter wise weightage have been applied to each of the corridor specific environmental attributes and a weightage assessment matrix has been computed enabling to rank the corridors quantitatively based on the cumulative weightage.
- In order to rank the corridors on a qualitative basis also, the computed weightages have been further converted into low, medium, high and very high categories by assigning score limit for each of the categories.
- Thus the ranking of the corridors on both qualitative as well as qualitative basis aids in evaluation corridor alternatives from environmental sensitivity point of view.
In summary, the environmental screening process comprising ranking of the corridors (both qualitative and quantitative) largely follows an analytical approach for prioritising the alternatives corridors based on environmental considerations.

### Major Decisions of Environmental Screening

- The weightage assignment of 60 points to bio-environment, 20 points to physical environment and 20 points to socio-environment attributes can be considered as a major decision. The assignment of weightage is often a subjective process and debatable as there is no widely accepted method for assigning weightage on a rational basis.
- Secondly, the weightage points have been assigned to both up-gradation roads, which are along existing alignments as well as to roads which are on new alignment (corridor no 34, 38 and 39) on the same platform. Therefore the screening system in its present form, does not differentiate between up-gradation and new roads despite the fact that up-gradation roads along existing alignment will have much lesser magnitude of impacts as compared to construction of roads on new alignments.
- Procedurally the screening process should have considered this and introduced a de-rating factor to account for the existing alignment while assigning the weightage to roads under screening. The roads, which are on new alignment should have been assigned the weightage without any de-rating factor.
- It is not clear from the screening process and the documentation how up-gradation roads, which are along existing alignments and roads which are on new alignment has been treated while assigning the weightage.

### Analysis of Alternative Alignments

- The screening process does not provide information on the analysis of the alternative alignments in respect of each of the corridors during the screening process.
- Based on the information available in the screening report, it can be concluded that analysis of alternative alignments has not been considered as a part of environmental screening.

### Quality and Coverage of Public Consultation Inputs

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

### Participation of IRC in Public Consultations

- During the independent environmental assessment review, IRC could not participate in the public consultations conducted by DC, as all such consultations had been already completed by DC, prior to the mobilisation of the IRC.

### Quality and Coverage of Baseline Data and Balance between Primary & Secondary Sources

- The extent of the area on either side of the corridor, which has been considered for baseline data collection needs to be explicitly mentioned in the report.
- The environmental screening at present considers a 14km strip (7km on each side of corridor) for assessment of baseline environmental conditions. The present environmental regulations, stipulate a limit of 10km on each side of corridor to determine the proximity of the corridor to sensitive areas and accordingly categorise the project (Category A or B) for according clearances. Hence, it is desirable that the screening process should consider the same stipulation of the distance as criteria in the screening report. Accordingly, the present data needs to be updated to include a 10km wide strip on either side of the corridor.
- The methodology of baseline data collection and compilation needs to be improved as many crucial data relating to corridors recorded during IRC’s field visits were found to be missing or not appropriately considered in the base line data compiled by the DC (refer section 4.3 for details collected during field visits by IRC). Although the environmental screening process follows an analytical approach, the accurate compilation of the base line data (primary as well as secondary) is a crucial input which determines the output of the screening process.
- The database used in the screening process has a good balance between the secondary as well as primary data.

### Weaknesses in the Process and Documentation

- In its present form, the screening process does not seem to differentiate between up-gradation and new roads. The up-gradation roads will have lesser magnitude impacts as compared to construction of roads on new alignments. The screening process should therefore consider this factor and allow for de-rating of weightage assignment for roads under up-gradation, while screening the up-gradation roads.
as well as roads which are on new alignment. For instance, corridor no 34, 38 and 39 is a new alignment as compared to other corridors, which are under upgradation and it is not clear from the screening process how this has been treated.

- During the assignment of weightage for forest areas/national parks/wetlands, only the length of the corridor and distance of the forest areas/national parks/wetlands from the corridor has been considered. Rather than the distance alone, the weightage assignment should also account for the extent or quantum of forest areas/national parks/wetlands in assigning weightage and subsequent screening process.

- Considering the fact that the proposed roads already exist for many decades, assessment of the present conditions along selected roads, the weightage assignment of 60 points to bio-environment, 20 points to physical environment and 20 points to socio-environment attributes need revision. For instance, erosion, slope stability are major issues of the region and therefore the assignment of 20 points to physical environment need upwards revision. Similarly the proposed roads are under in existence for many decades and therefore the bio-environment along the corridors are already exposed to varied interventions, considering this, weightage assignment of 60 points to bio-environment need downward revision. Since the social issues and associated impacts arising due to the project are being addressed exclusively, assigning 20 weightage points to need drastic downward revision. The suggested weightage points by IRC are between 45 points to bio-environment, 45 points to physical environment and 10 points to socio-environment.

- The documentation of the screening report, particularly the tables is not reader friendly and makes the reader to move back and forth too frequently for cross referencing the corridor names and lengths. It is suggested that all the tables which describes the environment or has weight assignment or summary of environment screening shall be revised to contain the corridor names, corridor number and length (as a minimum content) apart from any other data that needs to be presented.
Identification of GOI/GOHP Legislative and Regulatory Requirements

- The screening report has identified the relevant legislative and regulatory requirements of both Himachal State and Government of India, including the latest notification of the Ministry of Environment and Forests (MOEF) dated 14th September.
- The applicability/relevance of these including the latest regulations of Ministry of Environment and Forests (MOEF), Government of India notification dated 14th September 2006) vis-a-vis the project roads considered under the environmental screening and environmental assessment has not been assessed and furnished in the report.

5.0 TASKS AHEAD FOR IRC

IRC will review the final Environmental Screening Report after incorporation of review comments of IRC in the screening report by the DC and verify the compliance of all the comments, issues and deficiencies raised during the independent environmental screening review process.
<table>
<thead>
<tr>
<th>Corridor No.</th>
<th>Corridor Name</th>
<th>Length(km)</th>
<th>Geographical Spread</th>
<th>Altitude (above MSL)</th>
<th>Sensitivity assessed from Secondary Data</th>
<th>Environmental Sensitivity as per Screening Report</th>
<th>Other Features/Factors</th>
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<td>Kufri-Chail-Kandaghat</td>
<td>50</td>
<td>Southern Part of State/Project Spread Area</td>
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<td>Proximate to Chail Wild Life Sanctuary</td>
<td>Medium Very High Very High Very High</td>
<td>1. Rainfall- 1000-1400mm 2. Tree Felling is significant 3. Not Prone to erosion/landslips and no major slope stability issues 4. Tourist movement corridor</td>
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<td>Jwalamukhi-Dehra-Jawali Raja ka Talab</td>
<td>75</td>
<td>Central Part of State/Project Spread Area</td>
<td>300-600</td>
<td>Proximate to Pong Lake Bird Sanctuary(Ramsar Site)</td>
<td>Very High Very High Medium Very High</td>
<td>1. Rainfall- 1000-1400mm 2. Highly seismic risk zone but not prone to erosion/landslips 3. Proximate to rivers/streams 4. Proximate to 800 year old ancient temple</td>
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<td>60</td>
<td>Central Part of State/Project Spread Area</td>
<td>300-600</td>
<td>Proximate to Pong Lake Bird Sanctuary(Ramsar Site)</td>
<td>Very High Very High Very High Very High</td>
<td>1. Rainfall- 1000-1400mm 2. Highly seismic risk zone but not prone to erosion/landslips 3. Proximate to rivers/streams 4. Proximate to 800 year old ancient temple</td>
</tr>
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<td>Corridor No.</td>
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<td>Altitude (above MSL)</td>
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<td>Environmental Sensitivity as per Screening Report</td>
<td>Other Features/Factors</td>
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<td>Lakhank-Paota Rajban Hatkoti</td>
<td>75</td>
<td>Southern most part of State/Project Spread Area</td>
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<td>Not Proximate to any wildlife Sanctuary/protected areas</td>
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<td>Gaggal-Chetru Dharmshala Mcleodganj</td>
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<td>600-1350</td>
<td>Not Proximate to any wildlife Sanctuary/protected areas</td>
<td>High</td>
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</tr>
</tbody>
</table>
APPENDIX I

TERMS OF REFERENCE FOR INDEPENDENT REVIEW CONSULTANT
Dear Sir:

Mr. Hari Prakash
Director,
Deccan Consulting Engineers Pvt. Ltd,
B-98/5A, Third Floor,
Behind BALCO Market, Joshi Colony, I.P. Extension,
Delhi-110092
decan@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.
Annexure - 1

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 state roads subject to techno-economic feasibility, identify weaknesses and recommend improvements.

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;
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;

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

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 feedback 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.

<table>
<thead>
<tr>
<th>Output</th>
<th>Timeframe</th>
<th>No. of copies</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inception Report</td>
<td>Draft</td>
<td>4 weeks from start</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Final</td>
<td>2 weeks after comments received from client</td>
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</tr>
<tr>
<td>Report on Review of EA Screening for 1,670 km of roads</td>
<td>Final</td>
<td>2 weeks after receipt of draft PCC screening report</td>
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<tr>
<td>Report on Review of EA/EMP for 410 km of roads</td>
<td>Final</td>
<td>2 weeks after receipt of draft PCC EA/EMP</td>
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<tr>
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<td>Final</td>
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<td>Report on Review of EA/EMP for 3800 km of roads</td>
<td>Final</td>
<td>2 weeks after receipt of EA/EMP from tunnel consultant</td>
<td>5</td>
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</tbody>
</table>

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.
To
Project Director (SRP)
HPRIDC Ltd.
Chief Engineer-cum-Project Director,
State Roads Project,
Palika Bhawan, Talland
Shimla-171002.

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 1675 kms 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