Initial Environmental Examination

Project Number: 40648-034
August 2015

IND: Infrastructure Development Investment Program for Tourism - Tranche 3

Submitted by

Project Management Unit, Tourism Development Board, Shimla

Asian Development Bank

09/07 BRB/VV/GM.

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Unforgettable Himachal

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No. IDIPT-HP/3223-IND/IEE/2015-1254 **Dated: 06.07.2015.**

Project Director

To

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ASIAN DEVELOPMENT BANK
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Kind Attn: Mr. Leonardus Boenawan Sondjaja (ADB).

Subject: **Submission of Revised IEE for Restoration of Shimla Mall Road Extension & Jwalaji under Tranche-3.**

Ref No.: **(i) IDIPT-HP/2676/Tranche-3/2014-2905 dated 26.09.2014.**
(ii) IDIPT-HP/ 2676- IND/ IEE- Tranche 3/2014-3744 dated 05.12.2014

Madam,

This is with reference to the above referred letters vide which the Initial Environmental Examination (IEE) for Restoration of Shimla Mall Road Extension (package No. HPTDB/16/2) and Upgrading the Historic Urban Precincts and creating a Heritage Circuit, Jwalaji Town Kangra (Package No. HPTDB/13/1) as per SAR & DPR was submitted to your office.

Now, please find enclosed the revised IEE for the said projects as per the revised DPR for your approval please.

Yours Sincerely,

Project Director,
IDIPT-H.P.

Encl: As Above.

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Initial Environmental Examination

Project Number: 40648

July2015

IND: Infrastructure Development Investment Program for Tourism (Tranche 3) State of Himachal Pradesh– Upgrading the Historic Urban Precincts and Creating a Heritage Circuit, Jwalaji Town, Kangra (Package No. HPTDB/13/1)

Prepared by the Himachal Pradesh Tourism Development Board for the Asian Development Bank

CURRENCY EQUIVALENTS
(As of 7 October 2014)

Currency unit	–	Indian rupee/s (Re/Rs)
Re1.00	=	$0.0163
$1.00	=	Rs61.326

ABBREVIATIONS

ADB	–	Asian Development Bank
BPL	–	Below Poverty Line
DSC	–	Design & Supervision Consultants
EA	–	Executing Agency
EAC	–	Expert Appraisal Committee
EARF	–	Environmental Assessment Review Framework
EIA	–	Environmental Impact Assessment
EMP	–	Environmental Management Plan
GoI	–	Government of India
GoHP	–	Government of Himachal Pradesh
HPPCB	–	Himachal Pradesh Pollution Control Board
IDIPT	–	Infrastructure Development Investment Program for Tourism
IEE	–	Initial environmental examination
MC	–	Municipal Corporation
MLD	–	Million Litres per day
MOEF	–	Ministry of Environment and Forests
MSL	–	Mean Sea Level
NGO	–	Non-Governmental Organization
O&M	–	Operations & Management
PFR	–	Periodic Financing Request
PIU	–	Project Implementation Unit
PM	–	Particulate Matter
PMC	–	Project Management Consultants
PMU	–	Project Management Unit
REA	–	Rapid Environmental Assessment
SEAC	–	State Expert Appraisal Committee
SPM	–	Suspended Particulate Matter
SPS	–	Safeguards Policy Statement
TCP	–	Town & Country Planning
TDS	–	Total Dissolved Solids
TSS	–	Total Suspended Solids

NOTES

In this report, "$" refers to US dollars.

This initial environmental examination is a document of the borrower. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or staff, and may be preliminary in nature.

In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, the Asian Development Bank does not intend to make any judgments as to the legal or other status of any territory or area.

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EXECTUVE SUMMARY

1. **Background.** Infrastructure Development Investment Program for Tourism (IDIPT) will develop and improve basic urban infrastructure and services in the four participating states of Himachal Pradesh, Punjab, Uttarakhand and Tamil Nadu to support the tourism sector as a key driver for economic growth. It will focus on: (i) strengthening connectivity to and among key tourist destinations; (ii) improving basic urban infrastructure and services, such as water supply, road and public transport, solid waste management and environmental improvement, at existing and emerging tourist destinations to ensure urban amenities and safety for the visitors, and protect nature and culture-based attractions. Physical infrastructure investments will be accompanied by: (iii) capacity building programs for concerned sector agencies and local communities for better management of the tourist destinations and for more active participation in the tourism-related economic activities, respectively.

2. Himachal Pradesh proposed 15 subprojects under Tranche 3. Jwalaji town subproject Package HPTDB/13/1 is one of the subprojects to support tourist clusters inclusive of management-plan/master-plan based investments (IDIPT Output 1) and support improvement of basic tourist facilities and amenities in tourist attractions by constructing toilets, drinking water facilities, solid waste management, drainage, parking, street lighting, street furniture, and signage (IDIPT Output 3).

3. **Executing and implementing agencies.** The executing agency is the Department of Tourism, Government of Himachal Pradesh. The implementing agency is Himachal Pradesh Tourism Development Board. Project Management Unit (PMU) is set up at Shimla to coordinate the overall execution. Project Management Consultant (PMC) at Shimla provides assistance to PMU in execution. Project Implementation Unit (PIUs) is set up in Shimla, Kangra and Kullu being supported by respective Design Supervision Consultant (DSC) teams. The asset owner is the Jwalaji Temple Trust.

4. **Categorization.** Jwalaji town subproject Package HPTDB/13/1 is classified as Environmental Category B as per the SPS as no significant impacts are envisioned. Accordingly this Initial Environmental Examination (IEE) has been prepared and assesses the environmental impacts and provides mitigation and monitoring measures to ensure no significant impacts as a result of the subproject.

4. **Subproject Scope.** The major scope of this subproject Package No. HPTDB/13/1as per DPR are:

(i) Community Hall.
(ii) Multipurpose Parking.
(iii) Tourist Reception Centre.
(iv) Improvement of Gates, Paths.
(v) Restoration of ponds.
(vi) Improvement of roads.
(vii) Illumination.
(viii) Provision of street furniture
(ix) Improvement & additional provision of toilet facilities.
(x) Drinking water facilities
(xi) Rest sheds/ pause points where required.
(xii) Landscaping area as to provide pleasant repose.
(xiii) Provision of directional, informative and instructive signages.

5. **Description of the Environment.** The subproject location (in the south western part of the state) is in the relatively lower altitude district of Himachal Pradesh, and includes alluvial plains and *Shivalik* hills. The alluvial plains, mostly in the Southern fringe of the state are gently sloping, having been formed by deposits of the rivers flowing in to the Ganga plains, with an average elevation of 500m. *Shivalik* hills occur in a wider zone in the southern and

western part of the State, extending from the *Yamuna* River to the *Chakki* River. These low to medium hills are with a maximum elevation of 1500m. Longitudinal valleys known as dune valleys; have formed between the *Shivalik* hills. These hills have been cut across by a number of rivers originating further upstream, e.g. the *Ravi, Beas* and *Sutlej*. Landslides, landslips, mudflows and flash floods affect this geomorphic zone in the rainy season. The entire region lies in seismic zone V according to the Seismic Zoning Atlas of India.

6. **Environmental Management.** An environmental management plan (EMP) is included as part of this IEE, which includes (i) mitigation measures for environmental impacts during implementation; (ii) an environmental monitoring program, and the responsible entities for mitigating, monitoring, and reporting; (iii) public consultation and information disclosure; and (iv) a grievance redress mechanism. A number of impacts and their significance have already been reduced by amending the designs. The EMP will be included in civil work bidding and contract documents.

7. Locations and siting of the proposed infrastructures were considered to further reduce impacts. The concepts considered in design of the subproject are (i) design, material and scale will be compatible to the local architectural, physical, cultural and landscaping elements; (ii) preference will be given to the use of local material and labour as best as possible; (iii) for conservation, local construction material available in the nearby region as best as possible suiting to those in existence; (iv) all painting (interior and exterior) will be with environment-friendly low volatile organic compounds paints; (v) for retaining wall repair works, random rubble masonry will be used, with locally available stone to be laid in cement mortar by local skilled labour; (vi) earth backfill, if any will be done from the site excavated material; and (vii) ensuring all planning and design interventions and decisions are made in consultation with local communities and reflecting inputs from public consultation and disclosure for site selection.

8. During the construction phase, impacts mainly arise from the need to dispose of moderate quantities of waste soil; and from the disturbance of residents, businesses, and traffic. These are common impacts of construction in urban areas, and there are well developed methods for their mitigation. Measures such as conducting work in lean season and minimizing inconvenience by best construction methods will be employed. In the operational phase, all facilities and infrastructure will operate with routine maintenance, which should not affect the environment. Facilities will need to be repaired from time to time, but environmental impacts will be much less than those of the construction period as the work will be infrequent, affecting small areas only.

9. Mitigation measures have been developed to reduce all negative impacts to acceptable levels. Mitigation will be assured by a program of environmental monitoring to be conducted during construction. The environmental monitoring program will ensure that all measures are implemented, and will determine whether the environment is protected as intended. It will include observations on- and off-site, document checks, and interviews with workers and beneficiaries. Any requirements for corrective action will be reported to the ADB.

10. The stakeholders were involved in developing the IEE through discussions on-site and public consultation, after which views expressed were incorporated into the IEE and in the planning and development of the subproject. The IEE will be made available at public locations in the town and will be disclosed to a wider audience via the ADB and Himachal Pradesh Department of Tourism websites. The consultation process will be continued and expanded during project implementation to ensure that stakeholders are fully engaged in the project and have the opportunity to participate in its development and implementation.

11. The citizens of Jwalaji town (Kangra District) area will be the major beneficiaries of the project. The most noticeable net environmental benefits to the population of the town will be

positive and large as the proposed subproject will improve access to reliable and adequate tourism facilities.

12. **Consultation, Disclosure and Grievance Redress.** Public consultations were done in the preparation of the project and IEE. On-going consultations will occur throughout the project implementation period. A grievance redress mechanism is described within the IEE to ensure any public grievances are addressed quickly.

13. **Monitoring and Reporting.** The PMU, PIU, PMC and DSC will be responsible for environmental monitoring. The PIU with support from the DSC will submit monthly, quarterly and semi-annualmonitoring reports to the PMU. The PMU will consolidate the semi-annualreports in assistance of PMC and will send it to ADB. ADB will post the environmental monitoring reports on its website.

14. **Conclusions and Recommendations.** Therefore the proposed subproject is unlikely to cause significant adverse impacts. The potential impacts that are associated with design, construction and operation can be mitigated to standard levels without difficulty through proper engineering design and the incorporation or application of recommended mitigation measures and procedures. Based on the findings of the IEE, there are no significant impacts and the classification of the subproject as Category "B" is confirmed. No further special study or detailed environmental impact assessment (EIA) needs to be undertaken to comply with ADB SPS, 2009 or Government of India EIA Notification, 2006.

I. INTRODUCTION

1. Infrastructure Development Investment Program for Tourism (IDIPT) will develop and improve basic urban infrastructure and services in the four participating states of Himachal Pradesh, Punjab, Uttarakhand and Tamil Nadu to support the tourism sector as a key driver for economic growth.[1] It will focus on: (i) strengthening connectivity to and among key tourist destinations; (ii) improving basic urban infrastructure and services, such as water supply, road and public transport, solid waste management and environmental improvement, at existing and emerging tourist destinations to ensure urban amenities and safety for the visitors, and protect nature and culture-based attractions. Physical infrastructure investments will be accompanied by: (iii) capacity building programs for concerned sector agencies and local communities for better management of the tourist destinations and for more active participation in the tourism-related economic activities, respectively..

2. Himachal Pradesh proposed 15 subprojects under Tranche 3. Jwalaji town subproject Package HPTDB/13/1 is one of the subprojects to support tourist clusters inclusive of management-plan/master-plan based investments (IDIPT Output 1) and support improvement of basic tourist facilities and amenities in tourist attractions by constructing toilets, drinking water facilities, solid waste management, drainage, parking, street lighting, street furniture, and signage (IDIPT Output 3).

3. Executing and implementing agencies. The executing agency is the Department of Tourism, Government of Himachal Pradesh. The implementing agency is Himachal Pradesh Tourism Development Board. Project Management Unit (PMU) is set up at Shimla to coordinate the overall execution. Project Management Consultant (PMC) at Shimla provides assistance to PMU in execution. Three Project Implementation Unit (PIUs) are set up in Shimla, Kangra and Kullu (under process) being supported by respective Design Supervision Consultant (DSC) teams. The asset owner is the Jwalaji Temple Trust. A team of technical, administrative and financial officials, including safeguards specialists, is being provided at the PMU to implement, manage and monitor project implementation activities. The PIUs are staffed by qualified and experienced officers and responsible for the day-to-day activities of subproject implementation in the field, and will be under the direct administrative control of the PMU. Consultant teams are responsible for subproject planning and management and assuring technical quality of design and construction; and designing the infrastructure and supervising construction; and safeguards preparation.

4. Proposed subproject. The major scope of this subproject as per DPR - Package No. HPTDB/13/1 are:

(i) Conservation of Heritage Structures and Restoration & Rejuvenation of Historic Precincts

(a) Rejuvenation of the area around the main shrine (Jwalamukhi Temple)
(b) Restoration of Devi Talab and its precinct, which includes old Samadhi structures
(c) Restoration of the Ashthbhuja Temple complex, including restoration proposal for the Ashthbhuja Kund, conservation of the old temple structure and redesigning the complete complex.
(d) Restoration of Maujgiri Pond – Cleaning and structural restoration and restoration of the

[1] The five outputs of IDIPT are: **Output 1:** Enhanced quality of natural and cultural attractions; **Output 2:** Greater participation by local communities in tourism-related economic and livelihood activities; **Output 3:** Improved basic urban infrastructure and incidental services at tourist destinations and gateways; **Output 4:** Improved connectivity to tourist attractions; and **Output 5:** Strengthened capacity of sector agencies and local communities for planning, development, management and marketing of tourist destinations and attractions and promoting private sector participation and small businesses.

inlets and out lets to the pond.

(ii) Creating Heritage Walks/Pedestrian walks in the identified streets/roads that are rich in built heritage

(a) Creating a heritage circuit starting from the old heritage structure (proposed as highway TRC) opposite the PWD Rest house to the main Jwalaji Shrine via Gate No. 5.

(b) The Government owned heritage structure near Gate No.5, which is presently abandoned, will be used as Highway Tourist Reception Centre after its restoration. This route will be developed as a heritage walk which will include surface treatment, improvement of existing public facilities and provision of appropriate signage and street lighting (for ensuring safety for women and children during night hours).]

(iii) Upgrading the Historic Urban precincts & major access roads to the historic core by providing public facilities like proper street lighting

(a) Provision of **Multilevel Parking** on the site opposite Hotel Jwalaji (Hotel of the Tourism Department) which is owned by the Jwalaji Temple trust. It will include resting areas for the drivers, toilets& bathing facilities and a landscaped area at the main entrance.

(b). Designing a **Tourist Reception Centre** on a site along the Gate No.1 road to the shrine. This structure will contain an information centre, toilets, waiting halls, cafeteria, counters and souvenir counters etc.

(c)**Road improvement** in terms of surface improvement, street furniture, stabilizing retaining walls and street lighting (for ensuring safety for women and children during night hours) to the roads leading to the main shrine from the five gates, including redesign & harmonizing the five gates and redesigning the heritage canopy suiting the heritage typology on the path leading to the main shrine from Gate No. 1 to shelter the tourists/pilgrims from heat and rain.

(d). **Developing wayside amenities** along the highway and highlighting the entries to the town which will include proper signage &street lighting (for ensuring safety for women and children during night hours) along the entire road. Wayside amenities are being proposed alongside 1.00km radius from Jwalaji temple at the national highway on the Municipal Council land. They include basic **public amenities like toilets** (separately for women and men), drinking water etc. It is proposed on the Government owned land.

(e)**Provision of electronic advertisement boards**/ digital billboards for additional revenue generation to recover project costs.

(f) **Community hall** along the main path to the temple. It includes waiting area, counters, reception room, Langar hall, kitchen, multipurpose hall, toilets, drinking water facilities etc.

5. Categorization. An environmental assessment using ADB's Rapid Environmental Assessment (REA) checklist for urban development **(Annexure 1)** was conducted. Results of the assessment as per subproject appraisal report (SAR) and preliminary design show Package No. HPTDB/13/1 is unlikely to cause significant adverse impacts. Thus it is classified as Environmental Category B as per ADB SPS as no significant impacts are envisioned.

6. Purpose of the IEE. This report gives an account of the initial environmental examination (IEE) of subproject Package No. HPTDB/13/1 as per DPR. It has been prepared in accordance with ADB SPS's requirements for environment Category B projects and provides measures to (i) ensure the environmental sustainability of subproject Package No. HPTDB/13/1; (ii) integrate environmental considerations into the project preparation process; and (iii) provide for environmental management during project implementation.

II. DESCRIPTION OF THE SUBPROJECT

A. Existing Condition and Need of the Subproject

7. The Jwalamukhi Temple in Jwalaji, Himachal Pradesh is one amongst 51 *Shakti Peeths* in the country and considered extremely sacred as per the Hindu mythology. It is situated about 30 km to the south of Kangra valley in the lap of Shivalik range and is dedicated to Goddess Jwalamukhi, the deity of flaming mouth. The history of Jwalamukhi Temple reveals that the great Mughal emperor Akbar visited and tried to douse the flame of the temple. However, when he was unsuccessful, he willing submitted to the power of the goddess. He offered a gold *chhatri* (umbrella) for the goddess which is said to have turned into copper when he turned around to have a look at it before leaving.

8. Maharaja Ranjit Singh paid a visit to the temple in the year 1809. His son, Kharak Singh gifted a pair of silver plated folding doors to the temple while Ranjit Singh himself gave the gilt roof. Moreover, in the princely era, the work of the temple was managed by the Raja of Nadaun. He himself appointed the temple priest. After independence, many changes took place. The pujaris are now appointed and paid by the government. A part of the money from the collection of the temple is being used to improve the facilities for the visiting pilgrims.

9. The significance of the temple is that there is no idol in the temple contrary to the usual worship practice in other temples. Inside the Jwalamukhi Temple there is a rectangular pit of 3 feet depth with a pathway all around and at the center, there is a hollowed rock over a primary fissure of flame which is believed as the mouth of Mahakali, Goddess of Jwalamukhi.

10. Location. Jwalaji is situated on the state highway which connects Dharamshala and Shimla. This town also has good access and is well connected through different means of transport. Jwalamukhi is located at 31.88°N 76.32°E. It has an average elevation of 610 m (2,001 feet). It is situated about 30 km to the south of Kangra valley in the lap of Shivalik range and is dedicated to Goddess Jwalamukhi, the deity of flaming mouth. The site is connected to other pilgrimage places such as Chintpurni, Brajeshwari and many other locations by road. Index map of proposed sites are shown in **Figure-1** below.

Figure 1: Index map of proposed sites at Jwalaji town, Kangra

GOOGLE IMAGE OF THE SITE (JAWALA JI TEMPLE)

11. Existing Conditions. Jwalaji is one of the most important pilgrimage shrines of north India. Thousands of pilgrims come here every day. The area around the main temple has grown rapidly but the planning of the area and the basic facilities haven't been planned to take the load of the incoming tourists and pilgrims. Hence the outcome is congested areas with lots of pedestrian and vehicular traffic. The temple is just alongside the state highway, thus the traffic generated causes inconvenience to both the local residents as well as to the visitors.

12. The vehicles parking available is not meeting the requirements and acute shortage of parking. Added to this the toilet facilities are also inadequate to meet the needs. The road furniture's and signages to help the tourists are insufficient. The surface drainage system leading to temple and surrounding are not properly planned, including the retaining walls along the nala surrounding area of the temple is in a dilapidated condition. The road leading to the temple is in a deteriorated state requiring resurfacing.

B. Proposed Subproject

13. The major scope of this subproject as per Detailed Project Report (DPR). - Package No. HPTDB/13/1 are

(i) **Conservation of Heritage Structures and Restoration & Rejuvenation of Historic Precincts**

(a) Rejuvenation of the area around the main shrine (Jwalamukhi Temple)
(b) Restoration of Devi Talab and its precinct, which includes old Samadhi structures
(c) Restoration of the Ashthbhuja Temple complex, including restoration proposal for the Ashthbhuja Kund, conservation of the old temple structure and redesigning the complete complex.
(d) Restoration of Maujgiri Pond – Cleaning and structural restoration and restoration of the inlets and out lets to the pond.

(ii) **Creating Heritage Walks/Pedestrian walks in the identified streets/roads that are rich in built heritage**

(a) Creating a heritage circuit starting from the old heritage structure (proposed as highway TRC) opposite the PWD Rest house to the main Jwalaji Shrine via Gate No. 5.
(b) The Government owned heritage structure near Gate No.5, which is presently

abandoned, will be used as Highway Tourist Reception Centre after its restoration. This route will be developed as a heritage walk which will include surface treatment, improvement of existing public facilities and provision of appropriate signage and street lighting (for ensuring safety for women and children during night hours).

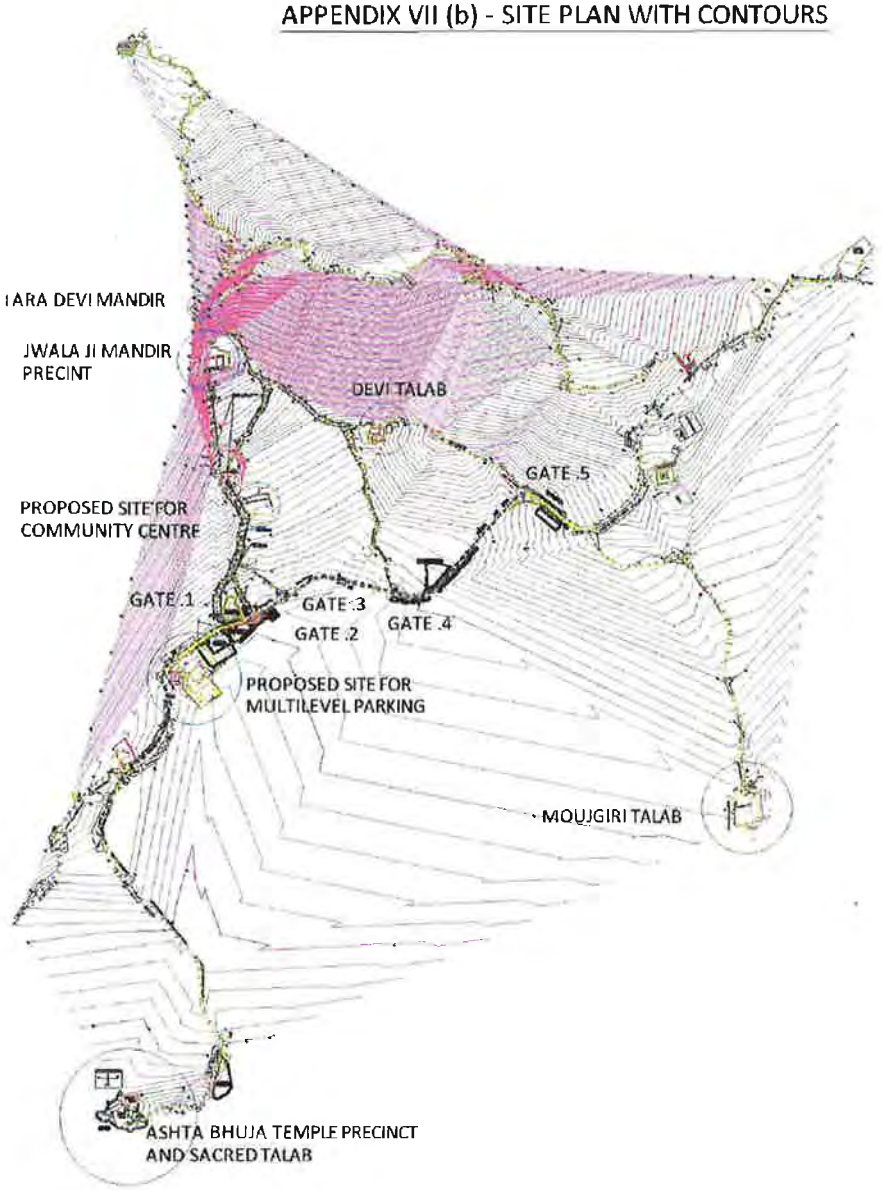
(iii) Upgrading the Historic Urban precincts & major access roads to the historic core by providing public facilities like proper street lighting

(a) Provision of **Multilevel Parking** on the site opposite Hotel Jwalaji (Hotel of the Tourism Department) which is owned by the Jwalaji Temple trust. It will include resting areas for the drivers, toilets & bathing facilities and a landscaped area at the main entrance.
(b). Designing a **Tourist Reception Centre** on a site along the Gate No.1 road to the shrine. This structure will contain an information centre, toilets, waiting halls, cafeteria, counters and souvenir counters etc.
(c) **Road improvement** in terms of surface improvement, street furniture, stabilizing retaining walls and street lighting (for ensuring safety for women and children during night hours) to the roads leading to the main shrine from the five gates, including redesign & harmonizing the five gates and redesigning the heritage canopy suiting the heritage typology on the path leading to the main shrine from Gate No. 1 to shelter the tourists/pilgrims from heat and rain.
(d). **Developing wayside amenities** along the highway and highlighting the entries to the town which will include proper signage &street lighting (for ensuring safety for women and children during night hours) along the entire road. Wayside amenities are being proposed alongside 1.00km radius from Jwalaji temple at the national highway on the Municipal Council land. They include basic **public amenities like toilets** (separately for women and men), drinking water etc. It is proposed on the Government owned land.
(e) **Provision of electronic advertisement boards**/ digital billboards for additional revenue generation to recover project costs.
(f) **Community hall** along the main path to the temple. It includes waiting area, counters, reception room, Langar hall, kitchen, multipurpose hall, toilets, drinking water facilities etc.

14. Site plan + site location plan for the proposed sub project area is shown in **Figure 2.Annexure 2** shows photo illustration of the project site.

Figure 2: Proposed site plan for Jwalaji Town, Kangra

APPENDIX VII (b) - SITE PLAN WITH CONTOURS



15. The sites are located in Jwalaji urban area or in its immediate surroundings which were converted into urban use for many years ago, and there is no natural habitat left at these sites. The sites are not within or adjacent to any protected area. All sites for subproject (Package No. HPTDB/13/1) are owned by Jwalaji Temple Trust, whereas some of the ponds are privately owned, which are voluntarily agree for the proposed works, thus no land acquisition is required. No Objection Certificates (NOCs) are already issued by Jwalaji Temple Trust and relevant asset holders.

16. The design, material and scale will be compatible to the local architectural, physical, cultural and landscaping elements. Preference will also be given to the use of local material and labour as best as possible. For the conservation, local construction material available in the nearby region as best as possible suiting to those in existence. All painting (interior and exterior) will be with environment-friendly low volatile organic compound paints.

17. For retaining wall repair works, random rubble masonry will be used, with locally

available stone to be laid in cement mortar by local skilled labour. The earth backfill, if any will be done from the site excavated material. Stone aggregate and sand are available within 40 km radius from sites. Also formwork and skilled labour is locally available. For brick wall construction, bricks are also available within 50 km radius from the proposed site/region.

18. Water supply during construction will be provided by Himachal Pradesh Irrigation and Public Health (IPH) Department from their existing system or will be transported through mobile water tankers, if required. Solid waste generated at sites will be disposed at designated areas.

C. Project Cost and Implementation Schedule

19. Detailed estimated cost of the proposed project is approx. Rs. 32.85 crore.

20. Design of the subproject has been done by the Design and Supervision Consultant (DSC) team and DPR has been prepared. Good for construction drawing are being prepared and will be released to contractor as and when require. It is estimated that construction period will cover 24months.

21. The final detailed implementation schedule will be provided in the updated IEE once the detailed design phase is completed.

III. POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

A. ADB Policy

22. ADB requires the consideration of environmental issues in all aspects of ADB's operations, and the requirements for environmental assessment are described in ADB SPS, 2009. This states that ADB requires environmental assessment of all project loans, program loans, sector loans, sector development program loans, and loans involving financial intermediaries, and private sector loans.

23. Screening and Categorization. The nature of the environmental assessment required for a project depends on the significance of its environmental impacts, which are related to the type and location of the project, the sensitivity, scale, nature and magnitude of its potential impacts, and the availability of cost-effective mitigation measures. Projects are screened for their expected environmental impact and are assigned to one of the following four categories:

- **Category A.** Projects could have significant adverse environmental impacts. An EIA is required to address significant impacts.
- **Category B.** Projects could have some adverse environmental impacts, but of lesser degree or significance than those in category A. An IEE is required to determine whether significant environmental impacts warranting an EIA are likely. If an EIA is not needed, the IEE is regarded as the final environmental assessment report.
- **Category C.** Projects are unlikely to have adverse environmental impacts. No EIA or IEE is required, although environmental implications are reviewed.
- **Category FI.** Projects involve a credit line through a financial intermediary or an equity investment in a financial intermediary. The financial intermediary must apply an environmental management system, unless all Projects will result in insignificant impacts.

24. Environmental Management Plan. An EMP which addresses the potential impacts and risks identified by the environmental assessment shall be prepared. The level of detail and complexity of the EMP and the priority of the identified measures and actions will be commensurate with the Project's impact and risks.

25. Public Disclosure. The IEE has beenput in an accessible places (e.g., local government offices, libraries, community cum tourist reception centres, etc.), and has been displaced and shared with the concerned stakeholders. a summary translated into Hindi for the project affected people and other stakeholders will be also displayed. The following safeguard documents will be put up in ADB,s website so that the affected people, other stakeholders, and the general public can provide meaningful inputs into the project design and implementation:

- For environmental category A projects, a draft EIA report at least 120 days before Board consideration;
- Final or updated EIA and/or IEE upon receipt; and
- Environmental monitoring reports submitted by the Project Management Unit (PMU) during project implementation upon receipt.

B. National and State Laws

26. Implementation of the subproject will be governed by the national and State of Himachal Pradesh environmental acts, rules, regulations, and standards. These regulations impose restrictions on activities to minimize/mitigate likely impacts on the environment. It is the responsibility of the project executing and implementing agencies to ensure subprojects are consistent with the legal framework, whether national, state or municipal/local. Compliance is required in all stages of the subproject including design, construction, and operation and maintenance.

27. The realm of environmental regulations and mandatory requirements for the proposed sub-project is shown in **Table 1**. The Environmental Impact Assessment (EIA) notification, 2006 by the Ministry of Environment and Forests (MoEF, GoI) specifies the mandatory environmental clearance requirements. Accordingly, projects and activities are broadly categorized in two categories[2] - Category A and Category B, based on the spatial extent of potential impacts and potential impacts on human health and; natural and man-made resources

Table 1: Environmental Regulatory Compliance

Sub-Project	Applicability of Acts/Guidelines	Compliance Criteria
Upgrading the Historic Urban Precincts and Creating a Heritage Circuit, Jwalaji	The Environment Protection Act, 1986 - under EIA notification, 2006 (and its subsequent amendments in 2009) provides for categorization of projects into category A and B, based on extent of impacts.	The sub-project is not covered in the ambit of the EIA notification as they are not covered either under Category A or Category B of the notification. As a result, the categorization, and the subsequent environmental assessment

[2] All projects or activities included as Category 'A' in the Schedule, including expansion and modernization of existing projects or activities and change in product mix, will require prior environmental clearance from the Central Government in the Ministry of Environment and Forests (MoEF) on the recommendations of an Expert Appraisal Committee (EAC) to be constituted by the Central Government for the purposes of this notification; All projects or activities included as Category 'B' in the Schedule, including expansion and modernization of existing projects or activities as specified in sub paragraph (ii) of paragraph 2, or change in product mix as specified in sub paragraph (iii) of paragraph 2, but excluding those which fulfil the General Conditions (GC) stipulated in the Schedule, *will* require prior environmental clearance from the State/Union territory Environment Impact Assessment Authority (SEIAA). The SEIAA shall base its decision on the recommendations of a State or Union territory level Expert Appraisal Committee (SEAC) as to be constituted for in this notification. In addition, General Condition (GC) of the notification specifies that any project or activity specified in Category 'B' will be treated as Category A, if located in whole or in part within 10 km from the boundary of: (i) Protected Areas notified under the Wild Life Protection) Act, 1972, (ii) Critically Polluted areas as notified by the Central Pollution Control Board from time to time, (iii) Notified Eco-sensitive areas, (iv) inter-State boundaries and international boundaries.

Sub-Project	Applicability of Acts/Guidelines	Compliance Criteria
Town		and clearance requirements, either from the State government or the GoI is not triggered.
	ADB's Safeguard Policy Statement 2009	Categorization of sub-project components into A, B or C and developing required level of environmental assessment for each component. Categorized as B and IEE prepared
	The Wildlife Conservation Act, 1972, amended in 2003 and 2006, provides for protection and management of Protected Areas.	No Wildlife Sanctuary exists within 10 km vicinity of the temple. However, NOC from Temple Trust shall be required.
	The Forest Conservation Act, 1980 and its subsequent amendments necessitate obtaining clearance from the MoEF for diversion of forest land for non-forest purposes.	The project does not evolve any land diversion, therefore, no clearance required. However, nearby forest area not declared as protected area; tourists freely visit in and around areas as such but the existing ponds along the identified roads are considered for restoration for three out of five. Temple surroundings are steep hilly which have an associated eco-system value that plays a vital role in its unique natural heritage NOC from state forest department shall be required.
	Water (Prevention and control of pollution) Act, 1974 and; Air (prevention and control of pollution) Act, 1981	Consent for Establishment (CFE) and Consent for Operation (CFO) from the HP PCB for setting up of diesel generators (if any) to be obtained by the Contractor, prior to commencement of construction works at site.
	The Noise Pollution (regulation and Control) Rules, 2000	The subproject shall put measures for abatement of noise including noise emanating from vehicular movements, blowing of horns, bursting of sound emitting firecrackers, use of loud speakers or public address system and sound producing instruments and ensure that the existing noise levels do not exceed the ambient air quality standards specified under these rules.
	The Ancient Monuments and Archaeological Sites and Remains Act, 1958, and the rules, 1959 provide guidance for carrying out activities, including conservation, construction and reuse in and around the protected monuments. The Himachal Pradesh Ancient and Historical Monuments and Archaeological Sites and Remains Act, 1976;	No clearance required from ASI.
	Himachal Pradesh Ground Water (Regulation and Control of Development and Management) Act, 2005	No ground water shall be used while construction, therefore, not applicable.

Sub-Project	Applicability of Acts/Guidelines	Compliance Criteria
	Himachal Pradesh Policy on Ecotourism	Shall be adopted.
	Himachal Pradesh Participatory Forest Management Regulations, 2001	NOC from state forest department shall be obtained when required.
	The Himachal Pradesh Non-biodegradable Garbage (Control) Act, 1995	Shall be adopted.
	The Himachal Pradesh Town and Country Planning Act, 1977	Not applicable as the site falls under Municipal Council Jwalaji.

28. The proposed subproject does not require statutory clearances from MoEF. All NOCs, CFEs and other clearances will be obtained prior to award of contract.

IV. DESCRIPTION OF THE ENVIRONMENT

A. Physical Environment

29. Climate. The climate of the region is sub-tropical. Summer season extends from March to mid of July and the monsoon is from mid-July to mid-September. The winter is mild and starts from mid-December till mid-March. The maximum temperature goes up to 38°C, whereas the minimum temperature recorded is 3.5°C in winter. The annual average rainfall during the last five years is 1207 mm. Kangra district has extreme topographical variation ranging to altitude 400 m in parts like Milawan while area of Bara Bhangal is at the altitude of 5500 m above MSL. The average altitude at Kangra town is 750m above MSL and 690 m in particular at the site.

30. Geology and Soil. The area forms a part of the Indo-*Ganga* alluvium. The Upper *Shivalik* and the Quaternary deposits constitute the main geological formations of the area. The Upper *Shivalik* is comprised of conglomerate beds, friable sandstone, silt stone and clay bed. Stray pebbles of limestone and sand stone are also present. Sand stone is soft and friable. Lumps of clay and pellets are also met within the sandstone. The sand stone contains a large portion of mica flakes and concretions of clay susceptible to weathering.

31. The soil found in the districts of Kangra and Una is generally brown, alluvial and grey brown Podzolic. The soil is light textured with neutral pH and good fertility status.

32. Land Use. Total geographical area is 5, 739 sq km, Forest area is 12367 sq km, Cultivable land is 1175 sqkm and Unusable area is 2197 sq km. In the absence of a master plan and unregulated commercial growth adjoining main roads, ad hoc haphazard buildings are mushrooming in almost all neighbouring villages and towns:

33. Water bodies. Valley areas in Kangra, Una and Hamirpur districts depend largely upon groundwater. Open wells, tube wells, infiltration galleries, and wells are modes of exploitation of groundwater. Traditional sources of water, such as springs, ponds, and ditches also supplement water requirements in rural areas.A number of hot springs exist in Kangra district.

34. The subproject Package HPTDB/13/1 sitesare not within or adjacent to any water bodies.

35. There is no water quality monitoring stations in Jwalaji. The quality of the rivers is expected to be good as there are no industrial sources of pollution, domestic wastewaters do not flow to the rivers, water levels and flows of the rivers are ranging from constant to turbulent.

36. Ambient Air and Noise Quality. There are no air quality and noise level monitoring stations in Jwalaji. The main source of air pollution and increased noise are vehicles as Jwalaji is along national highways. Ambient air quality and noise levels in the subproject Package No. HPTDB/13/1sites are expected to be within Himachal Pradesh State Pollution Control Board standards .As per EMP, (i) air and noise quality monitoring will be done in silence zones[3] before construction and during implementation phases; (ii) during construction, vehicles and equipment will be kept in good working conditions to ensure no air

[3]Himachal Pradesh State Pollution Control Board and/or District Magistrate designate/s "silence zones" to preserve serenity of the town. Noise level at these silence zones shall not exceed noise level standards as per norms

pollution; and (iii) no construction activities during peak tourists days, among other measures for abatement of air pollution and noise.

B. Ecological Environment

37. Flora and fauna. Subproject Package HPTDB/13/1components are located in Jwalaji urban area or in its immediate surroundings, which were converted into urban use for years ago, and there is no natural habitat left at these sites. Animals and plants in the subproject sites are those commonly found in urban and built-up areas. Main tree species of the area are Acacia, Jamun, Sisoo, Mango, Mulberry, Ficus, Kachnar, Amla, Prunus, AdatodaVesica, Mangifera, Dodonea, Woodfordia, Ziziphus, Maurraya, Euphorbia and grasses Saccharum, Cymbopogan, Eulopsis etc. and several subtropical climbers are also found in these forests. No endangered/protected species of either flora or fauna are found in the sites or its immediate surroundings.

38. Protected areas. There are no protected areas (forests, wildlife sanctuaries, wetlands, mangroves, or estuaries) in or near the subproject sites. There is no wildlife sanctuary within the distance of 10 km radius of the subproject sites.

C. Socio Cultural and Economic Environment

39. Demographic Profile. Jwalaji town is located in Kangra District. Population of Kangra District is 1,507, 223 as of 2011 census. Urban population is 5.73% of the total in the district. Tribal population is 0.1%. Sex ratio is 1013 males per 1000 females. Population density is 263 persons per square kilometre. Literacy rate in the district is 86.49% out of which female literacy is 80.62%.

40. Economy and Agriculture. The district is predominantly agrarian and around eighty percent of its population depends on agriculture and allied activities for their livelihood. Tea cultivation has also been experimented insome parts of the district but has not played any significant role in the economy. There are a numberof historical temples and tourist places in the district contributing to the growth of tourism industry.Adventure sport activities are carried out by Mountaineering Institute and Allied Sports to boost the tourism sector.

41. Industry. Tourism and agriculture are the mainstays of the district economy. Agriculture is the major activity of local people in the Jwalaji. Apart from agriculture business from tourism activities is the main source of income of the Jwalaji town. There are no major industries in Jwalaji town.

42. Physical Infrastructure and Services. Department for Irrigation and Public Health (IPH) is responsible for water supply and sanitation. In the absence of an underground sewerage system in the district, there is a dependence on septic tanks. Local bodies in the districts are responsible for solid waste management. Many of the pilgrim temples and historic sites in the district are in elevated locations with good natural drainage. Key issues pertaining to the drainage in the cultural destinations include the choking of drains by deposited solids apart from improper drainage induced landslides during the monsoon. Himachal Pradesh Public Works Department (HPPWD) is responsible for construction and maintenance of roads by Himachal Pradesh Transport.

V. ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

43. The assessment of environmental impacts for the proposed interventions under this package has been carried out during the preparation of the SCR and summary appraisal report. An environmental assessment as per preliminary design using ADB's Rapid Environmental Assessment (REA) checklist for urban development (**Annex 1**) was

conducted. The following are categories of impacts assessed:

- **Location impacts.** Impacts associated with site selection, including impacts on environment and resettlement or livelihood related impacts on communities
- **Design impacts.** Impacts arising from project design, including the technology used, scale of operations etc.
- **Construction impacts.** Impacts resulting from construction activities including site clearance, earthworks, civil works, etc.
- **O&M impacts.** Impacts associated with the operation and maintenance of the infrastructure built in the project.

44. Land Acquisition and Resettlement Impacts. Most of the sites for subproject (Package No. HPTDB/13/1) are owned by Jwalaji Temple Trust, whereas some of the ponds are privately owned, who have voluntarily agreed for the proposed works, thus no land acquisition is required. NOCs are already obtained from Jwalaji Temple Trust and relevant asset holders (attached as **Annex 3**).The sites are located in Jwalaji urban area or in its immediate surroundings which were converted into urban use for many years ago, and there is no natural habitat left at these sites. It will also not require diversion of forest land.

45. Design considerations to avoid environmental impacts. The following are design considerations to avoid environmental impacts:

- Incorporation of adequate drainage provisions
- Design, material and scale will be compatible to the local architectural, physical, cultural and landscaping elements
- Preference will be given to the use of local material and labour as best as possible; (iii) for conservation, local construction material available in the nearby region as best as possible suiting to those in existence.
- All painting (interior and exterior) will be with environment-friendly low volatile organic compounds paints
- For any retaining wall repair works, random rubble masonry will be used, with locally available stone to be laid in cement mortar by local skilled labour
- Earth backfill, if any will be done from the site excavated material
- Ensuring all planning and design interventions and decisions are made in consultation with local communities and reflecting inputs from public consultation and disclosure for site selection.

46. The results of interventions are unobtrusive and will be integral part of the ambience of the site. The physical components have been proposed with minimalist design treatment emphasising use of local materials (wood, stone, etc.) as defined in the management plan of the area.

A. Assessment of Environmental Impacts

47. Determination of Area of Influence. The primary impact areas are (i) sites for subproject Package No. HPTDB/13/1 components; (ii) main routes/intersections which will be traversed by construction vehicles; and (ii) quarries and borrow pits as sources of construction materials. The secondary impact areas are: (i) entire town area outside of the delineated primary impact area; and (ii) entire Jwalajitown in terms of over-all environmental and tourism improvement.

48. In the case of this subproject Package No. HPTDB/13/1 the components will involve straight forward construction and operation, and impacts will be mainly localized, short in duration and expected only during construction period. During the construction phase, impacts mainly arise from the need to dispose of moderate quantities of waste soil; and from the disturbance of residents, businesses, and traffic. These are common impacts of

construction in urban areas, and there are well developed methods for their mitigation. Measures such as conducting work in lean season and minimizing inconvenience by best construction methods will be employed. In the operational phase, all facilities and infrastructure will operate with routine maintenance, which should not affect the environment. Facilities will need to be repaired from time to time, but environmental impacts will be much less than those of the construction period as the work will be infrequent, affecting small areas only.

B. Pre-construction Impacts and Mitigation Measures

49. Consents, permits, clearances, no objection certificates (NOC), etc. All the consents, permits, clearances and NOCs shall be obtained during detailed design and before start of works. Failure to obtain necessary consents, permits, NOCs, etc. can result to design revisions and/or stoppage of works.

50. Mitigation measures. The following will be conducted during detailed design phase:

- Obtain all necessary consents, permits, clearance, NOCs, etc. prior to start of civil works.
- Acknowledge in writing and provide report on compliance all obtained consents, permits, clearance, NOCs, etc.
- Include in detailed design drawings and documents all conditions and provisions if necessary

51. Erosion control. Most of the impacts will occur due to excavation and earth movements during construction phase. Prior to commencement of civil works, the contractor will be required to:

- Consult a certified geologist, apart from the archaeologist, to look into soil stability. This will enable contractor to employ effective soil stabilization and erosion control measures to sustain restorative measures under the subproject
- Develop an erosion control and re-vegetation plan to minimize soil loss and reduce sedimentation to protect water quality.
- Minimize the potential for erosion by balancing cuts and fills to the extent feasible.
- Identify and avoid areas with unstable slopes and local factors that can cause slope instability (groundwater conditions, precipitation, seismic activity, slope angles, and geologic structure).
- Minimize the amount of land disturbed as much as possible. Use existing roads, disturbed areas, and borrow pits and quarries when possible. Minimize vegetation removal. Stage construction to limit the exposed area at any one time.

52. Utilities. Interruption of services (water supply, electric supply, telecommunication, toilets, bathing areas, etc.) will be scheduled and intermittently related to localized construction activities. To mitigate impacts, PIU/DSC will:

- Identify and include locations and operators of these utilities in the detailed design documents to prevent unnecessary disruption of services during the construction phase.
- Require contractors to prepare a contingency plan to include actions to be done in case of unintentional interruption of services.
- Require contractor to obtain from the PIU and/or DSC the list of affected utilities and operators;

- If relocations are necessary, contractor along with PIU will coordinate with the providers to relocate the utility.
- Require contractor to specify condition of general housekeeping (storage of construction implements, stockpiles, wastes, chemicals) in order to ensure compliance with environmental laws and provide reference for monitoring purposes.

53. Social and Cultural Resources. There is a risk that any work involving ground disturbance can uncover and damage archaeological and historical remains. Although no such sites have been identified. For this subproject, excavation will occur in and around existing sites, RoWs and specified government land so no risk is foreseen to these structures. Nevertheless, the PIU/DSC will:

- Consult Archaeological Survey of India and/or State Department of Archaeology to obtain an expert assessment of the archaeological potential of the site.
- Consider alternatives if the site is found to be of medium or high risk.
- Include state and local archaeological, cultural and historical authorities, and interest groups in consultation forums as project stakeholders so that their expertise can be made available.
- Develop a protocol for use by the construction contractors in conducting any excavation work, to ensure that any chance finds are recognized and measures are taken to ensure they are protected and conserved.

54. Sites for construction work camps and areas for stockpile, storage and disposal. As the proposed sites are within town area having dense habitations and busy roads, it is not possible to establish construction camps near the sites. Site should be sufficient away from the main habitations. The contractor will be required to meet the following criteria for these sites:

- Will not promote instability and result in destruction of property, vegetation, irrigation, and drinking water supply systems, etc.
- Residential areas will not be considered so as to protect the human environment (i.e., to curb accident risks, health risks due to air and water pollution and dust, and noise, and to prevent social conflicts, shortages of amenities, and crime).
- Disposal will not be allowed near sensitive areas which will inconvenience the community.
- The construction camp, storage of fuel and lubricants should be avoided at the river bank. Any construction camp site will be finalized in consultation with DSC and PIU.

55. Sources of construction materials. Significant amounts of gravel, sand, and cement will be required for this subproject. Extraction of materials can disrupt natural land contours and vegetation resulting in accelerated erosion, disturbance in natural drainage patterns, ponding and water logging, and water pollution. The contractor will be required to:

- Use quarry sites and sources permitted by government.
- Verify suitability of all material sources and obtain approval from PIU/DSC.
- If additional quarries are required after construction has started, obtain written approval from PIU/DSC.
- Submit to PIU/DSC on a monthly basis documentation of sources of materials.

56. It will be the construction contractor's responsibility to verify the suitability of all

material sources and to submit NOCs/approvals of the quarry sites and obtain the approval of PIU/DSC. If additional quarries are required after construction is started, then the contractor should obtain written approval of PIU.

57. Access. Hauling of construction materials and operation of equipment on-site can cause traffic problems and conflicts in ROWs. Construction traffic will access most work areas from the existing roads therefore potential impacts will be of short-duration, localized and can be mitigated. The contractor will need to adopt the following mitigation measures:

- Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites.
- Schedule transport and hauling activities during non-peak hours.
- Locate entry and exit points in areas where there is low potential for traffic congestion.
- Keep the site free from all unnecessary obstructions.
- Drive vehicles in a considerate manner.
- Coordinate with the Traffic Police Department for temporary road diversions and for provision of traffic aids if transportation activities cannot be avoided during peak hours.
- Notify affected sensitive receptors by providing sign boards with information about the nature and duration of construction works and contact numbers for concerns/complaints.
- Provide free access to households and businesses/shops along the ROWs during the construction phase.

58. Summary of pre-construction activities is presented in **Table 2.** The responsibilities, monitoring program and costs are provided in detailed in the EMP. The contractor is required to update the information during detailed design phase. Sample waste/spoils management plan, traffic management plan, etc. are attached as **Annexes 4&5.** Site-specific plans will be developed as per detailed design.

Table 2: Summary of Pre-Construction Mitigation Measures

Parameters	Mitigation Measures
Consents, permits, clearances, no objection certificate (NOC), etc.	• Obtain all necessary consents, permits, clearance, NOCs, etc. prior to start of civil works. • Acknowledge in writing and provide report on compliance all obtained consents, permits, clearance, NOCs, etc. • Include in detailed design drawings and documents all conditions and provisions if necessary
Erosion control	• Consult a certified geologist, apart from the hydrologist, to look into soil stability. This will enable contractor to employ effective soil stabilization and erosion control measures to sustain restorative measures under the subproject • Develop an erosion control and re-vegetation plan to minimize soil loss and reduce sedimentation to protect water quality. • Minimize the potential for erosion by balancing cuts and fills to the extent feasible. • Identify and avoid areas with unstable slopes and local factors that can cause slope instability (groundwater conditions, precipitation, seismic activity, slope angles, and geologic structure). • Minimize the amount of land disturbed as much as possible. Use existing roads, disturbed areas, and borrow pits and quarries when possible. Minimize vegetation removal. Stage construction to limit the exposed area at any one time.
Utilities	• Identify and include locations and operators of these utilities in the detailed design documents to prevent unnecessary disruption of services during the

Parameters	Mitigation Measures
	construction phase. • Require contractors to prepare a contingency plan to include actions to be done in case of unintentional interruption of services. • Obtain from the PIU and/or DSC the list of affected utilities and operators; • Prepare a contingency plan to include actions to be done in case of unintentional interruption of services. • If relocations are necessary, contractor will coordinate with the providers to relocate the utility. • Require contractor to specify condition of general housekeeping (storage of construction implements, stockpiles, wastes, chemicals) in order to ensure compliance with environmental laws and provide reference for monitoring purposes.
Social and Cultural Resources	• Consult Archaeological Survey of India or State Department of Archaeology to obtain an expert assessment of the archaeological potential of the site. • Consider alternatives if the site is found to be of medium or high risk. • Include state and local archaeological, cultural and historical authorities, and interest groups in consultation forums as project stakeholders so that their expertise can be made available. • Develop a protocol for use by the construction contractors in conducting any excavation work, to ensure that any chance finds are recognized and measures are taken to ensure they are protected and conserved.
Sites for construction work camps, areas for stockpile, storage and disposal	• Will not promote instability and result in destruction of property, vegetation, irrigation, and drinking water supply systems, etc. • Residential areas will not be considered so as to protect the human environment (i.e., to curb accident risks, health risks due to air and water pollution and dust, and noise, and to prevent social conflicts, shortages of amenities, and crime). • Disposal will not be allowed near sensitive areas which will inconvenience the community. • The construction camp, storage of fuel and lubricants should be avoided at the river bank. The construction camp site for intake well should be finalized in consultation with DSC and PIU.
Sources of construction materials	• Use quarry sites and sources permitted by government. • Verify suitability of all material sources and obtain approval from PIU/DSC. • If additional quarries are required after construction has started, obtain written approval from PIU/DSC. • Submit to DSC on a monthly basis documentation of sources of materials.
Access	• Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites. • Schedule transport and hauling activities during non-peak hours. • Locate entry and exit points in areas where there is low potential for traffic congestion. • Keep the site free from all unnecessary obstructions. • Drive vehicles in a considerate manner. • Coordinate with the Traffic Police Department for temporary road diversions and for provision of traffic aids if transportation activities cannot be avoided during peak hours. • Notify affected sensitive receptors by providing sign boards with information about the nature and duration of construction works and contact numbers for concerns/complaints. • Provide free access to households and businesses/shops along ROWs during the construction phase.

C. Anticipated Construction Impacts and Mitigation Measures

59. Construction Schedule and Method. As per preliminary design, construction

activities will cover 24months. The exact implementation schedule will be updated during detailed design phase and will be reflected in this IEE.

60. The infrastructures will be constructed manually according to design specifications. Excavations and trenches, if required, will be dug by small backhoe diggers supplemented by manual digging where necessary. Excavated soil will be placed nearby. Demolished materials will be reused to the maximum extent possible. Materials will be brought to site by trucks and will be stored on unused areas within unused areas at sites and nearby vacant areas. Any excavated road will be reinstated. The working hours will be 8 hours daily, the total duration of each stage depends on the soil condition and other local features. Night works may be considered in commercial areas and high day-time traffic.

61. Some of the proposed project sites are located within main city area and narrow roads, therefore sufficient space for a staging area, construction equipment, and stockpiling of materials may not be available. Contractor should bring the construction materials only in required amount which could be used within same day and left over materials should be removed from the site. Also the contractor will need to remove all construction and demolition wastes on a daily basis.

62. Although construction of these project components involves quite simple techniques of civil work, the invasive nature of excavation and the subproject sites in built-up areas where there are a variety of human activities, will result to impacts to the environment and sensitive receptors such as residents, businesses, and the community in general. These anticipated impacts are short-term, site-specific and within relatively small areas.

63. Erosion Hazards. The sites are in the built up area of the town therefore risk of erosion is low, limited during construction activities and not expected to have any negative impact on the drainage and hydrology of the area. Runoff will produce a highly variable discharge in terms of volume and quality, and in most instances will have no discernible environmental impact. The contractor will be required to:

- Save topsoil removed during excavation and use to reclaim disturbed areas, as soon as it is possible to do so.
- Use dust abatement such as water spraying to minimize windblown erosion.
- Provide temporary stabilization of disturbed/excavated areas that are not actively under construction.
- Apply erosion controls (e.g., silt traps) along the drainage leading to the water bodies.
- Maintain vegetative cover within road ROWs to prevent erosion and periodically monitor ROWs to assess erosion.
- Clean and maintain catch basins, drainage ditches, and culverts regularly.
- Conduct routine site inspections to assess the effectiveness of and the maintenance requirements for erosion and sediment control systems.

64. Impacts on Water Quality. Excavated materials may end up in drainages and water bodies adjacent to the subproject sites, particularly during monsoon season. Other risks of water pollution may be caused by: (i) poorly managed construction sediments, wastes and hazardous substances; and (ii) poor sanitation practices of construction workers. The contractor will be required to:

- Schedule civil works during non-monsoon season, to the maximum extent possible.
- Ensure drainages and water bodies within the construction zones are kept free of obstructions.

- Keep loose soil material and stockpiles out of drains, flow-lines and watercourses.
- Avoid stockpiling of excavated and construction materials (sand, gravel, cement, etc.) unless covered by tarpaulins or plastic sheets.
- Re-use/utilize, to maximum extent possible, excavated materials.
- Dispose any residuals at identified disposal site (PIU/DSC will identify approved sites).
- Dispose waste oil and lubricants generated as per provisions of Hazardous Waste (Management and Handling) Rules, 1989.
- Develop a spill prevention and containment plan, educate workers about the plan, and have the necessary materials on site prior to and during construction.
- Refuel equipment within the designated refuelling containment area away from drainages, nallahs, or any water body.
- Inspect all vehicles daily for fluid leaks before leaving the vehicle staging area, and repair any leaks before the vehicle resumes operation.

65. Impacts on Air Quality. There is potential for increased dust particularly during summer/dry season due to stockpiling of excavated materials. Emissions from vehicles transporting workers, construction materials and debris/materials to be disposed may cause increased in air pollutants within the construction zone. These are inherent impacts which are site-specific, low magnitude, short in duration and can be easily mitigated. The contractor will be required to:

- Conduct regular water spraying on earth piles, trenches and sand piles.
- Conduct regular visual inspection along alignments and construction zones to ensure no excessive dust emissions.
- Spreading crushed gravel over backfilled surfaces if re-surfacing of disturbed ROWs cannot be done immediately.
- Maintain construction vehicles and obtain "pollution under control" certificate from HPSPCB.
- Obtain CFE and CFO for hot mix plants, crushers, diesel generators, etc., if to be used in the project.

66. Noise and Vibration Impacts. Noise and vibration-emitting construction activities include earthworks, rock crushing, concrete mixing, movement and operation of construction vehicles and equipment, and loading and unloading of coarse aggregates. The significance of noise and vibration impacts will be high in areas where noise-sensitive institutions such as health care and educational facilities are situated. These impacts will be temporary, short-term, intermittent, and expected to be in the range of 80 to 100 dB(A) as per **Table 3**(typical noise levels of principal construction equipment).

Table 3: Typical Noise Levels of Principal Construction Equipment

CLEARING		STRUCTURE CONSTRUCTION	
Bulldozer	80	Crane	75-77
Front end loader	72-84	Welding generator	71-82
Jack hammer	81-98	Concrete mixer	74-88
Crane with ball	75-87	Concrete pump	81-84
		Concrete vibrator	76
EXCAVATION & EARTH MOVING		Air compressor	74-87
Bulldozer	80	Pneumatic tools	81-98
Backhoe	72-93	Bulldozer	80
Front end loader	72-84	Cement and dump trucks	83-94
Dump truck	83-94	Front end loader	72-84
Jack hammer	81-98	Dump truck	83-94

Scraper	80-93	Paver	86-88
GRADING AND COMPACTING		LANDSCAPING AND CLEAN-UP	
Grader	80-93	Bulldozer	80
Roller	73-75	Backhoe	72-93
		Truck	83-94
PAVING		Front end loader	72-84
Paver	86-88	Dump truck	83-94
Truck	83-94	Paver	86-88
Tamper	74-77	Dump truck	83-94

Source: U.S. Environmental Protection Agency. Noise from Construction Equipment and Operations. Building Equipment and Home Appliances.NJID. 300.1. December 31. 1971

67. The contractor will be required to:

- Limit construction activities in temple complexes and other important sites to daytime only.
- Plan activities in consultation with the PIU/DSC so that activities with the greatest potential to generate noise are conducted during periods of the day which will result in least disturbance.
- Minimize noise from construction equipment by using vehicle silencers and fitting jackhammers with noise-reducing mufflers.
- Avoid loud random noise from sirens, air compression, etc.
- Require drivers that horns not be used unless it is necessary to warn other road users or animals of the vehicle's approach.
- If specific noise complaints are received during construction, the contractor may be required to implement one or more of the following noise mitigation measures, as directed by the project manager:
  a) Locate stationary construction equipment as far from nearby noise-sensitive properties as possible.
  b) Shut off idling equipment.
  c) Reschedule construction operations to avoid periods of noise annoyance identified in the complaint.
  d) Notify nearby residents whenever extremely noisy work will be occurring.
- Follow Noise Pollution (Regulation and Control) Rules, day time ambient noise levels should not exceed 65 dB(A) in commercial areas, 55 dB(A) in residential areas, and 50 dB(A) in silence zone.[4]
- Ensure vehicles comply with Government of India noise limits for vehicles. The test method to be followed shall be IS: 3028-1998.

68. Impacts on Flora and Fauna. As per preliminary design, tree-cutting is not required. This will be reassessed during detailed design phase. There are no protected areas in the direct and indirect impact zones and no diverse ecological biodiversity as vegetation and animals found in the construction zones are common in built up/urban areas. The contractor will be required to:

- Conduct site induction and environmental awareness.
- Limit activities within the work area.

[4] Day time shall mean from 6.00 am to 10.00 pm. Silence zone is an area comprising not less than 100 meters around hospitals, educational institutions, courts, religious places or any other area which is declared as such by HPSPCB. Mixed categories of areas may be declared as one of the above mentioned categories by HPSPCB.

- Replant trees in the area using minimum ratio of 2 new trees for every 1 tree cut, if any. Replacement species must be approved by District Forest Department.

69. Impacts on Physical Cultural Resources. There may be inconvenience to tourists, residents, businesses, and other road users due to construction activities in the temple complexes and slower flow of traffic in areas with narrow roads. This potential impact is site-specific, short-term and can be mitigated. The contractor will be required to:

- Ensure no damage to structures/properties near construction zone.
- Provide walkways and metal sheets where required to maintain access of people and vehicles.
- Provide sign boards to inform nature and duration of construction works and contact numbers for concerns/complaints.
- Increase the workforce in front of critical areas such as institutions, place of worship, business establishment, hospitals, and schools;
- Implement good housekeeping. Remove wastes immediately. Prohibit stockpiling of materials that may obstruct/slow down pedestrians and/or vehicle movement.
- Ensure workers will not use nearby/adjacent areas as toilet facility.
- Coordinate with DSC for transportation routes and schedule. Schedule transport and hauling activities during non-peak hours. Communicate road detours via visible boards, advertising, pamphlets, etc.
- Ensure heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites.
- Provide instructions on event of chance finds for archaeological and/or ethno-botanical resources. Works must be stopped immediately until such time chance finds are cleared by experts.

70. Impact due to Waste Generation. Demolished structures will be reused to the maximum extent possible. Construction activities will produce excess excavated soils, excess construction materials, and solid wastes (such as removed concrete, wood, trees and plants, packaging materials, empty containers, oils, lubricants, and other similar items). These impacts are negative but short-term and reversible by mitigation measures. The contractor will need to adopt the following mitigation measures:

- Prepare and implement a waste management plan. Manage solid waste according to the following hierarchy: reuse, recycling and disposal. Include in waste management plan designated/approved disposal areas.
- Coordinate with Local Municipal Authorities for beneficial uses of excavated soils/silts/sediments or immediately dispose to designated areas.
- Recover used oil and lubricants and reuse; or remove from the sites.
- Avoid stockpiling and remove immediately all excavated soils, excess construction materials, and solid waste (removed concrete, wood, trees and plants, packaging materials, empty containers, oils, lubricants, and other similar items).
- Prohibit disposal of any material or wastes (including human waste) into drainage, nallah, or watercourse.

71. Impacts on Occupational Health and Safety. Residential accommodation for workers is not proposed. Workers need to be mindful of occupational hazards which can arise from construction works in high-traffic and busy areas. Exposure to work-related chemical, physical, biological and social hazard is typically intermittent and of short duration, but is likely to reoccur. Potential impacts are negative and long-term but reversible by mitigation measures. Overall, the contractor should comply with IFC EHS Guidelines on

Occupational Health and Safety (this can be downloaded from http://www1.ifc.org/wps/wcm/connect/9aef2880488559a983acd36a6515bb18/2%2BOccupational%2BHealth%2Band%2BSafety.pdf?MOD=AJPERES). The contractor will be required to:

- Disallow worker exposure to noise level greater than 85 dBA for a duration of more than 8 hours per day without hearing protection. The use of hearing protection shall be enforced actively.
- Develop comprehensive site-specific health and safety (H&S) plan. The overall objective is to provide guidance to contractors on establishing a management strategy and applying practices that are intended to eliminate, or reduce, fatalities, injuries and illnesses for workers performing activities and tasks associated with the project.
- Include in H&S plan measures such as: (i) type of hazards during excavation works; (ii) corresponding personal protective equipment for each identified hazard; (iii) H&S training for all site personnel; (iv) procedures to be followed for all site activities; and (v) documentation of work-related accidents.
- Provide H&S orientation training to all new workers to ensure that they are apprised of the rules of work at the site, personal protective protection, and preventing injury to fellow workers.
- Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site as well as at construction camps.
- Provide medical insurance coverage for workers.
- Secure construction zone from unauthorized intrusion and accident risks.
- Provide supplies of potable drinking water.
- Provide clean eating areas where workers are not exposed to hazardous or noxious substances.
- Provide visitor orientation if visitors to the site can gain access to areas where hazardous conditions or substances may be present. Ensure also that visitor/s do not enter hazard areas unescorted.
- Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas.
- Ensure moving equipment is outfitted with audible back-up alarms.
- Mark and provide sign boards in the construction zone, and areas for storage and disposal. Signage shall be in accordance with international standards and be well known to, and easily understood by workers, visitors, and the general public as appropriate.

72. Impacts on Socio-Economic Activities. Manpower will be required during the 24months construction phase. This can help generate contractual employment and increase in local revenue. Thus potential impact is positive and long-term. As per preliminary design, land acquisition and closure of roads are not required. However, construction activities may impede access of residents and customers to shops. The potential impacts are negative and moderate but short-term and temporary. The contractor will need to adopt the following mitigation measures:

- Leave space for access between mounds of soil.
- Provide walkways and metal sheets where required to maintain access to shops/businesses along trenches.
- Consult businesses and temple authorities regarding operating hours and factoring this in to work schedules.
- Provide sign boards for pedestrians to inform nature and duration of construction works and contact numbers for concerns/complaints.
- Employ at least 50% of the labour force, or to the maximum extent, local persons within the 2-km immediate area if manpower is available.

73. Summary of Mitigation Measures during Construction. Table 4provides summary of mitigation measures to be considered by the contractor during construction phase. The detailed mitigation measures, environmental monitoring and reporting requirements, emergency response procedures, related implementation arrangements, capacity development and training measures, implementation schedule, cost estimates, and performance indicators are provided in the EMP .

Table 4: Summary of Mitigation Measures during Construction Phase

Potential Impact	Mitigation Measures
Erosion hazards	• Save topsoil removed during excavation and use to reclaim disturbed areas, as soon as it is possible to do so. • Use dust abatement such as water spraying to minimize windblown erosion. • Provide temporary stabilization of disturbed/excavated areas that are not actively under construction. • Apply erosion controls (e.g., silt traps) along the drainage leading to the water bodies. • Maintain vegetative cover within road ROWs to prevent erosion and periodically monitor ROWs to assess erosion. • Clean and maintain catch basins, drainage ditches, and culverts regularly. • Conduct routine site inspections to assess the effectiveness of and the maintenance requirements for erosion and sediment control systems.
Impacts on water quality	• Schedule civil works during non-monsoon season, to the maximum extent possible. • Ensure drainages and water bodies within the construction zones are kept free of obstructions. • Keep loose soil material and stockpiles out of drains, flow-lines and watercourses. • Avoid stockpiling of excavated and construction materials (sand, gravel, cement, etc.) unless covered by tarpaulins or plastic sheets. • Re-use/utilize, to maximum extent possible, excavated materials. • Dispose any residuals at identified disposal site (PIU/DSC will identify approved sites). • Dispose waste oil and lubricants generated as per provisions of Hazardous Waste (Management and Handling) Rules, 1989. • Develop a spill prevention and containment plan, educate workers about the plan, and have the necessary materials on site prior to and during construction. • Refuel equipment within the designated refueling containment area away from drainages, nallahs, or any water body. • Inspect all vehicles daily for fluid leaks before leaving the vehicle staging area, and repair any leaks before the vehicle resumes operation.
Impacts on air quality	• Conduct regular water spraying on earth piles, trenches and sand piles. • Conduct regular visual inspection along alignments and construction zones to ensure no excessive dust emissions. • Spreading crushed gravel over backfilled surfaces if re-surfacing of disturbed ROWs cannot be done immediately. • Maintain construction vehicles and obtain "pollution under control" certificate from HPSPCB. • Obtain CFE and CFO for hot mix plants, crushers, diesel generators, etc., if to be used in the project.
Noise and vibrations impacts	• Limit construction activities in temple complexes and other important sites to daytime only. • Plan activities in consultation with the PIU/DSC so that activities with the greatest potential to generate noise are conducted during periods of the day which will result in least disturbance. • Minimize noise from construction equipment by using vehicle silencers and

Potential Impact	Mitigation Measures
	fitting jackhammers with noise-reducing mufflers. • Avoid loud random noise from sirens, air compression, etc. • Require drivers that horns not be used unless it is necessary to warn other road users or animals of the vehicle's approach. • If specific noise complaints are received during construction, the contractor may be required to implement one or more of the following noise mitigation measures, as directed by the project manager: (i) locate stationary construction equipment as far from nearby noise-sensitive properties as possible; (ii) shut off idling equipment; (iii) reschedule construction operations to avoid periods of noise annoyance identified in the complaint; and/or (iv) notify nearby residents whenever extremely noisy work will be occurring. • Follow Noise Pollution (Regulation and Control) Rules, day time ambient noise levels should not exceed 65 dB(A) in commercial areas, 55 dB(A) in residential areas, and 50 dB(A) in silence zone.[5] • Ensure vehicles comply with Government of India noise limits for vehicles. The test method to be followed shall be IS:3028-1998.
Impacts on flora and fauna	• Conduct site induction and environmental awareness. • Limit activities within the work area. • Replant trees in the area using minimum ratio of 2 new trees for every 1 tree cut, if any. Replacement species must be approved by District Forest Department.
Impacts on physical resources	• Ensure no damage to structures/properties near construction zone. • Provide walkways and metal sheets where required to maintain access of people and vehicles. • Provide sign boards to inform nature and duration of construction works and contact numbers for concerns/complaints. • Increase the workforce in front of critical areas such as institutions, place of worship, business establishment, hospitals, and schools; • Implement good housekeeping. Remove wastes immediately. Prohibit stockpiling of materials that may obstruct/slow down pedestrians and/or vehicle movement. • Ensure workers will not use nearby/adjacent areas as toilet facility. • Coordinate with PIU/DSC for transportation routes and schedule. Schedule transport and hauling activities during non-peak hours. Communicate road detours via visible boards, advertising, pamphlets, etc. • Ensure heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites. • Provide instructions on event of chance finds for archaeological and/or ethno-botanical resources. Works must be stopped immediately until such time chance finds are cleared by experts.
Impacts on waste generation	• Prepare and implement a waste management plan. Manage solid waste according to the following hierarchy: reuse, recycling and disposal. Include in waste management plan designated/approved disposal areas. • Coordinate with Town Municipal Authorities for beneficial uses of excavated soils/silts/sediments or immediately dispose to designated areas. • Recover used oil and lubricants and reuse; or remove from the sites. • Avoid stockpiling and remove immediately all excavated soils, excess construction materials, and solid waste (removed concrete, wood, trees and plants, packaging materials, empty containers, oils, lubricants, and other similar items). • Prohibit disposal of any material or wastes (including human waste) into drainage, *nallah*, or watercourse.

[5] Day time shall mean from 6.00 am to 10.00 pm. Silence zone is an area comprising not less than 100 meters around hospitals, educational institutions, courts, religious places or any other area which is declared as such by HPPCB. Mixed categories of areas may be declared as one of the above mentioned categories by HPPCB.

Potential Impact	Mitigation Measures
Impacts on occupational health and safety	• Comply with IFC EHS Guidelines on Occupational Health and Safety • Disallow worker exposure to noise level greater than 85 dBA for a duration of more than 8 hours per day without hearing protection. The use of hearing protection shall be enforced actively. • Develop comprehensive site-specific health and safety (H&S) plan. The overall objective is to provide guidance to contractors on establishing a management strategy and applying practices that are intended to eliminate, or reduce, fatalities, injuries and illnesses for workers performing activities and tasks associated with the project. • Include in H&S plan measures such as: (i) type of hazards during excavation works; (ii) corresponding personal protective equipment for each identified hazard; (iii) H&S training for all site personnel; (iv) procedures to be followed for all site activities; and (v) documentation of work-related accidents. • Provide H&S orientation training to all new workers to ensure that they are apprised of the rules of work at the site, personal protective protection, and preventing injury to fellow workers. • Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site as well as at construction camps. • Provide medical insurance coverage for workers. • Secure construction zone from unauthorized intrusion and accident risks. • Provide supplies of potable drinking water. • Provide clean eating areas where workers are not exposed to hazardous or noxious substances. • Provide visitor orientation if visitors to the site can gain access to areas where hazardous conditions or substances may be present. Ensure also that visitor/s do not enter hazard areas unescorted. • Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas. • Ensure moving equipment is outfitted with audible back-up alarms. • Mark and provide sign boards in the construction zone, and areas for storage and disposal. Signage shall be in accordance with international standards and be well known to, and easily understood by workers, visitors, and the general public as appropriate.
Impacts on socio-economic activities	• Leave space for access between mounds of soil. • Provide walkways and metal sheets where required to maintain access to shops/businesses along trenches. • Consult businesses and institutions regarding operating hours and factoring this in to work schedules. • Provide sign boards for pedestrians to inform nature and duration of construction works and contact numbers for concerns/complaints. • Employ at least 50% of the labour force, or to the maximum extent, local persons within the 2-km immediate area if manpower is available. • "Mobility Plan" has to be chalked out in consultation with the District Administration prior to start of work.

74. The construction related impacts due to proposed subproject Package No. HPTDB/13/1 components are generic to construction activities, and are typical of small-scale construction projects. The potential impacts that are associated with construction activities can be mitigated to standard levels without difficulty through incorporation or application of the recommended mitigation measures and procedures.

D. Post-Construction Impacts and Mitigation Measures

75. Site clean-up is necessary after construction activities. The contractor will be required to:

- Backfill any excavation and trenches, preferably with excess excavation material generated during the construction phase.
- Use removed topsoil to reclaim disturbed areas.
- Re-establish the original grade and drainage pattern to the extent practicable.
- Stabilize all areas of disturbed vegetation using weed-free native shrubs, grasses, and trees.
- Restore access roads, staging areas, and temporary work areas.
- Restore roadside vegetation.
- Remove all tools, equipment, barricades, signs, surplus materials, debris, and rubbish. Demolish buildings/structures not required for O&M. Dispose in designated disposal sites.
- Monitor success of re-vegetation and tree re-planting. Replace all plants determined to be in an unhealthy condition.
- Request in writing from PIU/DSC that construction zones have been restored.

E. Anticipated Operations and Maintenance (O&M) Impacts and Mitigation Measures

76. Impacts on environmental conditions associated with the O&M of the subproject Package No. HPTDB/13/1 components pertain to impacts related to increased tourists in the areas resulting to increased vehicular movement along the roads, increased demands for services, and increased solid waste generation. These impacts can be mitigated by:

- Increased vehicular movement along the roads - speed restrictions, provision of appropriate road signage and well located rest points for pedestrians shall minimize impacts on safety of the people.
- Increase demands for services – addressed through the subproject design
- Increase solid waste generation – Municipal Councilto put in place solid waste management programs.

F. Cumulative Impact Assessment

77. The cumulative impact assessment examined the interaction between the subproject's residual effects (i.e., those effects that remain after mitigation measures have been applied) and those associated with other past, existing, and reasonably foreseeable future projects or activities. The interaction of residual effects associated with multiple projects and/or activities can result in cumulative impacts, both positive and negative. The project's potential cumulative effects were considered with respect to valued components in environmental and socioeconomic categories, in four areas:

(i) of any potential residual project effects that may occur incrementally over time;
(ii) consideration of other known relevant projects or activities within the specified study area boundaries, even if not directly related to the project;
(iii) potential overlapping impacts that may occur due to other developments, even if not directly related to the proposed subproject; and
(iv) future developments that are reasonably foreseeable and sufficiently certain to proceed.

78. The project has identified the valued components as air quality, acoustic environment, socioeconomic and socio-community components, and human health and safety. There are no foreseeable projects that will overlap with the subproject. The spatial boundary of the subproject is the subproject component sites and the temporal boundary can be considered as the whole Jwalaji town.

79. It has been recommended that infrastructures be (i) designed to the current best practice standard and notified Government of Himachal Pradesh codes and management plans; (ii) built that the floods do not damage them; (iii) road drains are to be kept free from

wastes and siltation; and (iv) toilet facilities kept clean and desludged regularly. No negative cumulative impact and the potential long-term environmental impacts are positive; including mainstreaming climate risk reduction into infrastructure development ensures subprojects infrastructure are less vulnerable to floods, landslides and impacts of other extreme weather events.

80. Air quality. Emissions of common air contaminants and fugitive dust may be elevated in proximity to active work sites during construction and O&M phases, these impacts will be short-term and localized to the immediate of the sites. Greenhouse gas (GHG) emissions may increase as a result of the subproject activities (i.e., vehicle and equipment operation, concrete production, disposal of excavated material, land-filling of residual wastes). Given the subproject's relatively minor contribution to common air contaminants and GHG emissions during construction, the overall significance rating of both these potential residual and cumulative effects is considered to be negligible.

81. Acoustic environment. Noise levels during construction and O&M activities in immediate proximity of work sites are expected to increase. The duration of exposure will be relatively brief and imperceptible. The exposure represents a temporary, localized, adverse residual effect of low significance for affected receptors. While building damage due to ground vibrations is unlikely, there may be annoyance to spatially located receptors during construction and O&M activities. The overall significance rating of potential residual and cumulative effects is considered to be negligible.

82. Socioeconomic and socio-community. Concerns on existing provisions for community, business owners and tenants in shops along roads to be resurfaced under the subproject will occur spatially during construction and O&M activities. Existing conditions within the subproject sites and immediate surroundings will be improved once the activities are completed. Since the subproject will be improvement of existing infrastructures, it will not conflict with existing or planned land use. However, following improvement in infrastructures and services, added residential developments, commercial, and business facilities and increased densities are expected to develop and enhance Jwalaji town. This can be considered a long-term cumulative benefit of the subproject.

83. Given the scale of the project it is likely that local people will obtain at least temporary socio-economic benefits, by gaining employment in the construction workforce, and thus raising their levels of income. These benefits can bring wider social gains if they are directed at vulnerable[6] groups.

84. Community and workers health and safety. No adverse residual effects to human health will occur as a result of construction or O&M activities, and mitigation measures are in place to ensure public and worker safety, and will be closely monitored. While exposure to elevated noise levels, fugitive dust and common air pollutants will occur in proximity to work sites, due to their short-term and localized nature, these effects are expected to be minor and insignificant with no measurable effects on human health.

85. Therefore the project will benefit the general public by contributing to the long-term improvement of municipal services and community livability in Jwalaji town.

VI. INFORMATION DISCLOSURE, CONSULTATION AND PARTICIPATION

[6]Vulnerable groups as those without legal title to land and other assets; households headed by single earner females, the elderly or disabled; indigenous peoples (based on ADB OM); and households with incomes that are below the poverty line.

A. ADB Disclosure Policy

86. Public consultation was undertaken as per ADB SPS requirements. All the five principles of information dissemination, information solicitation, integration, coordination and engagement into dialogue were incorporated during the task. A framework of different environmental impacts likely from the project was prepared based on opinions of all those consulted, especially at the micro level, by setting up dialogues with the local people and fishermen from whom information on site facts and prevailing conditions were collected.

87. As per ADB safeguard requirement, public consultation is to be carried out before and after impact identification. Public consultation was therefore carried out twice, once at the time of start of work with the key stakeholders particularly with wild life authorities and NGOs, and secondly to discuss mitigating measures and get concurrence of stakeholders.

B. Process for Consultation followed

88. During project preparation (June to August 2014), consultations have been held with the HP Department of Tourism, tourists of Jwalaji, Officers of Temple Trust, HP and State District administration, District Municipal Administration, local community representatives, various Self-Help-Groups/ Mahila Mandal etc., tourism officers, and tourist guides/photographers regarding issues pertaining to the selection of subprojects and identification of key issues including addressing the current gaps in provision of basic services and improvement of tourist infrastructure. While preparing the DPR the consultations were done with the concerned Departments and other stakeholders. Records of the consultations are provided in **Annex-6**.

C. Plan for continued public participation

89. To ensure continued public participation, stakeholder engagement at main stages of work during the project design and implementation is proposed. A grievance redress cell has been set up within the PIU/DSC at field office and PMU, Shimla office. To ensure an effective disclosure of the project proposal to the stakeholders and the community living in the vicinity of the sub-project location, information regarding grievance redress mechanism shall be published in local newspapers. This information is also made available on Himachal Tourism website.

90. The public consultation and disclosure program with all interested and affected partied will remain a continuous process throughout the project implementation, and shall include the following:

(i) **Consultations during construction phase:** (a) public meetings with affected communities to discuss and plan work programs and allow issues to be raised and addressed once construction has started; and (b) smaller-scale meetings to discuss and plan construction work with individual communities to reduce disturbance and other impacts, and to provide a mechanism through which stakeholders can participate in project monitoring and evaluation.

(ii) **Project disclosure:** (a) public information campaigns (via newspaper, flyers, and media) to explain the project to the wider city population and prepare them for disruptions they may experience once construction is underway; (b) public disclosure meetings at key project stages to inform the public of progress and future plans, and to provide copies of summary documents in local language; (c) formal disclosure of completed project reports by making copies available at convenient locations in the study areas, and informing the public of their availability; and (d) providing a mechanism through which comments can be made.

91. The EA will submit to ADB the following documents for disclosure on ADB's website: (i) the final IEE; (ii) a new or updated IEE and corrective action plan prepared during project

implementation, if any; and (iii) the semi-annual environmental monitoring reports.

92. For the benefit of the community, relevant information in the IEE (Executive Summary) will be translated in Hindi and made available at: (i) Office of the PMU; and, (ii) Office of the District Commissioner, Kangra District and Office of Jwalaji Temple Trust. These copies will be made available free of cost to any person seeking information on the same. Hard copies of the IEE will be available in the PMU/PIU as well as the district library at Kangra and Shimla, and accessible to citizens as a means to disclose the document and at the same time creating wider public awareness. On demand, the person seeking information can obtain a hard copy of the complete IEE document at the cost of photocopy from the office of the PMU/PIU, on a written request and payment for the same to the Project Director. Electronic version of the IEE will be placed in the official website of the Tourism Department and the website of ADB after approval of the documents by Government and ADB. The PMU will issue notification on the disclosure mechanism in local newspapers, ahead of the initiation of implementation of the project, providing information on the project, as well as the start date and expected completion dates etc. The notice will be issued by the PMU in local newspapers one month ahead of the implementation works.

VII. GRIEVANCE REDRESS MECHANISM

93. The affected person/aggrieved party can give their grievance verbally or in written to the local grievances committee. Grievances of affected person will first be brought to the attention of the PIU who can resolve the issue at site level. If the matter is not solved within 7 days period by the PIU, it will be brought to the Grievance Redress Committee constituted for the purpose in PIU. This GRC shall discuss the issue in its monthly meeting and resolve the issues within one month of time after receiving the grievance. If the matter is not resolved by GRC at PIU level within stipulated time, it shall be referred to GRC at PMU level by Executive Engineer of PIU.

94. GRC at PMU shall discuss the issue and try to resolve it and inform the PIU accordingly. If the matter is not resolved by the GRC at PMU level within one month of time, the aggrieved person/party can bring the matter to The Court of Law. The PIU shall keep records of all grievances received including contact details of complainant, date of receiving the complaint, nature of grievance, agreed corrective actions and the date these were affected and final outcome. The grievance redress process is shown below.

A. Composition and functions of GRC

95. Local Grievance Committee (LGC). In this LGC has worked with NGO, SHG, Line Agency, representative of Gram Panchayat, Special invitee.

96. Grievance Redress Committee (GRC) at PIU. In each PIU there shall be one GRC, which will include Project Manager (PIU), District Tourist Officer of Department of Tourism of Govt. of Himachal Pradesh, Community Development Officer of PIU, nominated representative of District Magistrate and nominated representative committee shall be headed by Project Manager (PIU). The committee will meet at least once in every month. Agenda of meeting shall be circulated to all the members and affected persons/aggrieved party along with venue, date and time; informed in written at least 7 days in advance of meeting. The matters shall remain with GRC at PIU level for one month and if grievance is not resolved within this time period, the matter shall be referred to GRC at PMU.

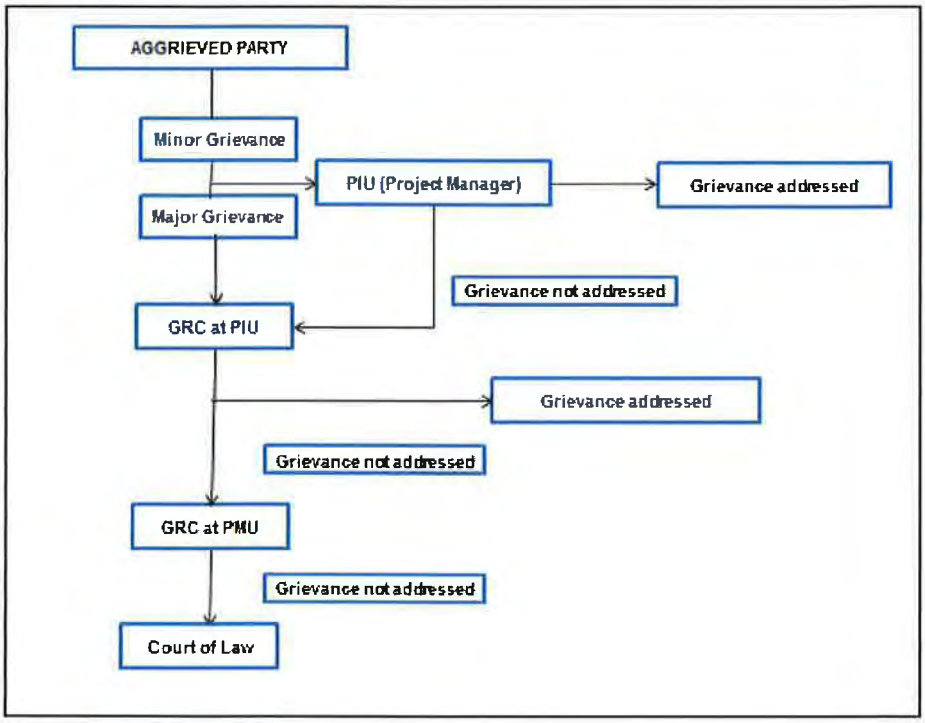
97. GRC within Environmental and Social Management Cell (ESMC) at PMU. There shall be one GRC in PMU. The matters not resolved by the GRC at PIU level within one month shall come under GRC at PMU. GRC at PMU will include Community Development Expert of PMU, Safeguard Specialist of PMU and Additional Project Director (APD) of PMU.

The Committee shall be headed by APD of PMU. This committee shall look the matters, which are referred to and not resolved by GRC at PIU level. If the matter is not resolved by the GRC at PMU level within one month of time, the aggrieved person/party can bring the matter to The Executive Committee/State Level Empowered Committee (SLEC).Sample Grievance Redress Form is attached as **Annexure-7.**

98. Approach to GRC. Affected person/aggrieved party can approach to GRC for redress of his/their grievances through any of the following modes:

- Web based: A separate corner will be developed at the program website so that public / community/ affected person can register their complaint in the online column.
- Telecom based: A toll free no. Will be issued by the PMU/ PIU so that general public can register their complaint through telephone / mobile phone to the PIU/PMU office.

Figure 3: Grievance Redress Mechanism in IDIPT, Himachal Pradesh



Note: LGC -NGO, SHG, Line Agency, Representative of Gram Panchayat, Special invitee GRC – PM, CDO, Engineer, DFO, DTO, SDM GRC in Environment and Social Management Cell (ESMC) –PMU (APD, SS, CDS, FS), PMC (EE, CDE)

VIII. ENVIRONMENTAL MANAGEMENT PLAN

99. The purpose of the environmental management plan (EMP) is to ensure that the activities are undertaken in a responsible, non-detrimental manner with the objectives of: (i) providing a proactive, feasible, and practical working tool to enable the measurement and monitoring of environmental performance on-site; (ii) guiding and controlling the implementation of findings and recommendations of the environmental assessment conducted for the project; (iii) detailing specific actions deemed necessary to assist in mitigating the environmental impact of the project; and (iv) ensuring that safety recommendations are complied with (Table 8).

100. A copy of the EMP must be kept on work sites at all times. This EMP will be included in the bid documents and will be further reviewed and updated during implementation. The EMP will be made binding on all contractors operating on the site and will be included in the contractual clauses. Non-compliance with, or any deviation from, the conditions set out in this document constitutes a failure in compliance.

101. The contractor will be required to (i) establish an operational system for managing environmental impacts (ii) carry out all of the monitoring and mitigation measures set forth in the EMP; and (iii) implement any corrective or preventative actions set out in safeguards monitoring reports that PMU and PIU will prepare from time to time to monitor implementation of this IEE and EMP. The contractor shall allocate a budget for compliance with these EMP measures, requirements and actions.

A. Responsibilities for EMP Implementation

102. The following agencies will be responsible for EMP Implementation:

- Department of Tourist, Government of Himachal Pradesh is the executing agency responsible for overall management, coordination, and execution of all activities funded under the loan. Himachal Pradesh Tourism Development Board is the implementing agency responsible for coordinating procurement and construction of the project.
- Project Management Unit (PMU) is set up at Shimla to coordinate the overall execution. Project Management Consultant (PMC) at Shimla provides assistance to PMU in execution, including procurement and assures technical quality of design and construction.
- A Project Implementation Unit (PIU) is established in Dhaliyara, Kangrafor subprojects in Kangra District. This PIU will look into progress and coordination of day to day construction works with the assistance of DSC, who will prepare the detailed project report (DPR) of the subproject and will carry out construction supervision during project implementation. Their responsibility will also include updating this IEE based on detailed design and EMP implementation supervision;
- The contractor will be responsible for execution of all construction works. The contractor will work under the guidance of the PIU Dhaliyara, Kangraand DSC. The EMP mitigation measures relevant to construction phase will also be implemented by the contractor.

103. The contractor's conformity with contract procedures and specifications during construction will be carefully monitored by the PIU. Safeguard Specialists are deputed in PMU, PMC and DSC, who will monitor the environmental performance of contractors. Terms of References of Safeguards Specialists are given in boxes below.

Box 1: Terms of Reference of Safeguards Specialist – PMU
• A working knowledge of India's national environmental policies and ADB SPS to reconcile parallelism and compliance between the two policy frameworks. • Review the IEE document and ensure adequacy under Safeguard Policy Statement, 2009 and identify any areas for improvement. • Ensure that the project design and specification adequately reflect the IEE, co-ordinate the obtaining of requisite environmental clearances for the project • Monitor construction activities to ensure that identified and appropriate control measures are effective and in compliance with the IEE and advise PIU for compliance with statutory requirements. • Develop training programme for the PMU/PIUs staff, the contractors and others involved in the project implementation, in collaboration with the Environmental Specialist of the PMC and DSC • Review and approve the Contractor's Implementation Plan for the environmental measures, as per IEE. • Liaise with the Contractors and Consultants on the implementation of the Environmental management measures proposed in the IEE • Liaise with the various Government agencies on environmental and other regulatory matters • Continuously interact with the NGOs and Community groups to be involved in the project • Establish dialogue with the affected communities and ensure that the environmental concerns and suggestions are incorporated and implemented in the project. • Review the environmental performance of the project through an assessment of the periodic environmental monitoring reports submitted by the DSC; provide a summary of the same to the Project Director, and initiate necessary follow-up actions • Provide support and assistance to the Government Agencies and the Asian Development Bank to supervise the implementation of the IEE during the construction as well as operation stage of the project • Document the good practices in the project on incorporation and integration of environmental issues into engineering design and on implementing measures in the construction, and dissemination of the same

Box 2: Terms of Reference of Safeguards Specialist (Environment) of DSC
• A working knowledge of India's national environmental policies and ADB SPS to reconcile parallelism and compliance between the two policy frameworks. • Review the IEE document and ensure adequacy under ADB SPS, 2009. • Interact on a regular basis with the sector specialists of the DSC and integrate environmentally sound practices into the detailed design of project components. • Advise PMU/PIU for compliance with statutory clearances. • Work out the site specific mitigation measures for components as required and integrate the same into contractual provisions. • Develop, organise and deliver environmental training programmes and workshops for the staff of the PIU and Contractors and in accordance to the Capacity Building Programme as specified in the IEE. • Preparation of Activity Plans as identified in IEE (these include Site Management Plans, Waste Management Plans, Sludge Management and Disposal Plans, Occupational Safety Plans etc). • Supervise the implementation of the Environmental provisions by the Contractors. • Review and approve site specific environmental enhancement/mitigation designs worked out by the Contractor. Hold regular consultation meetings with the Environmental specialist of the PMU • Review the Contractors' Environmental Implementation Plans to ensure compliance with the IEE. • Develop good practice construction guidelines to assist the contractors in implementing the provisions of IEE. • Prepare and submit regular environmental monitoring and implementation progress reports. • Assist Environmental Specialist of the PMU to prepare good practice dissemination notes based on the experience gained from site supervision.

Box 3: Terms of Reference of Safeguards Specialist (Environment) of PMC
Support and Advice the PMU and Consultants team in- • A working knowledge of India's national environmental policies and ADB SPS to reconcile parallelism and compliance between the two policy frameworks. • Best Environmental Practices for responding to environmental issues involved with implementation of the projects on a sustainable basis • Assistance and advice on institutional strengthening and capacity building at the PMU and PIU levels in regards to environmental practices. • Ensure that baseline surveys, environmental monitoring plans and programs, initial environmental examinations (IEE) as may be required are carried out. • Preparation of ADB procedure compliant environmental safeguard actions including impact assessment if any during the design stage • Management plan and mitigation measures • Oversight of implementation of environmental standards and safeguards as part of project implementation • Participate in preparation of Master Plan for additional sites and contribute to the environmental safeguards to the plan and sub components • Preparation of performance monitoring reports

104. Responsibility for updating IEE during detailed design.DSC will update this IEE during detailed design and submit to PMU for final review before submission to ADB. PMC will assist PMU and coordinate with DSC.

105. Responsibility for monitoring. During construction, DSC's Environmental Specialist and the designated representative engineer of the PIU will monitor the contractor's environmental performance on day to day basis while PMC expert will randomly monitor the performance for corrective measures if required. During the operation phase, monitoring will be the responsibility of the Town Municipal Authority.

106. Responsibility for reporting.PIU in coordination with DSC will submit monthly quarterly and semi-annual monitoring report to PMU. On the basis of these reports PMUwill

submit to ADB semi-annual reports on implementation of the EMP and will permit ADB to field environmental review missions which will review in detail the environmental aspects of the project. Any major accidents having serious environmental consequences will be reported immediately. PMC environmental expert will help in preparing quarterly, semi-annual and annual progress reports. The sample environmental monitoring template is attached as Annexure-8.

B. EMP Tables

107. Table 5to Table 7show the potential adverse environmental impacts, proposed mitigation measures, responsible parties, and cost of implementation. This EMP will be included in the bid documents and will be further reviewed and updated during implementation.

Table 5: Pre-Construction EMP Table

Parameters	Mitigation Measures	Parameter/ Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring	Source of Funds to Implement Mitigation Measures
Consents, permits, clearances, no objection certificate (NOC), etc.	• Obtain all necessary consents, permits, clearance, NOCs, etc. prior to start of civil works.	Consents, permits, clearance, NOCs, etc.	PMU	EA to be reported to ADB in environmental monitoring report (EMR)	check CFEs, permits, clearance, prior to start of civil works	PMU
	• Acknowledge in writing and provide report on compliance of all obtained consents, permits, clearance, NOCs, etc.	Records and communications	PMU	EA to be reported to ADB in EMR	Acknowledge upon receipt Send report as specified in CFE, permits, etc.	PMU
	• Include in detailed design drawings and documents all conditions and provisions if necessary	Detailed design documents and drawings	Contractor	PMU and PMC PIU and DSC	Upon submission by contractor	PMU
Establishment of baseline environmental conditions prior to start of civil works	• Conduct documentation of location of components, areas for construction zone (camps, staging, storage, stockpiling, etc.) and surroundings (within direct impact zones). Include photos and GPS coordinates	Records	PMU	PIU and DSC	to be included in updated IEE report	PMU
Erosion control	• Consult a certified geologist, apart from the hydrologist, to look into soil stability. This will enable contractor to employ effective soil stabilization and erosion control measures to sustain restorative measures under the subproject • Develop an erosion control and re-vegetation plan to minimize soil loss and	Erosion control and re-vegetation plan covering construction phase	Contractor	PIU and DSC	to be included in updated IEE report	Contractor

Parameters	Mitigation Measures	Parameter/ Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring	Source of Funds to Implement Mitigation Measures
	reduce sedimentation to protect water quality. • Minimize the potential for erosion by balancing cuts and fills to the extent feasible. • Identify and avoid areas with unstable slopes and local factors that can cause slope instability (groundwater conditions, precipitation, seismic activity, slope angles, and geologic structure). • Minimize the amount of land disturbed as much as possible. Use existing roads, disturbed areas, and borrow pits and quarries when possible. Minimize vegetation removal. Stage construction to limit the exposed area at any one time. Minimize the amount of land disturbed as much as possible. Use existing roads, disturbed areas, and borrow pits and quarries when possible. Minimize vegetation removal. Stage construction to limit the exposed area at any one time.					
Utilities	• Identify and include locations and operators of these utilities in the detailed design documents	List and maps showing utilities to be shifted	- DSC to prepare preliminary list and maps of utilities to be shifted - During detailed design	PIU and DSC	to be included in updated IEE report	DSC – preliminary design stage Contractor – detailed

Parameters	Mitigation Measures	Parameter/ Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring	Source of Funds to Implement Mitigation Measures
	to prevent unnecessary disruption of services during the construction phase. • Require contractors to prepare a contingency plan to include actions to be done in case of unintentional interruption of services. • Obtain from the PIU and/or DSC the list of affected utilities and operators; • If relocations are necessary, contractor will coordinate with the providers to relocate the utility. • Require contractor to specify condition of general housekeeping (storage of construction implements, stockpiles, wastes, chemicals) in order to ensure compliance with environmental laws and provide reference for monitoring purposes.	Contingency plan for services disruption	phase, contractor to (i) prepare list and operators of utilities to be shifted; (ii) contingency plan			design stage
Social and Cultural Resources	• Consult Archaeological Survey of India (ASI) or Himachal Pradesh State Archaeology Department to obtain an expert assessment of the archaeological potential of the site.	Chance find protocol	- PMC to consult ASI or Himachal Pradesh State Archaeology Department - PMC to develop protocol for chance finds	PMU	to be included in updated IEE report	PMU

Parameters	Mitigation Measures	Parameter/ Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring	Source of Funds to Implement Mitigation Measures
	• Consider alternatives if the site is found to be of medium or high risk. • Include state and local archaeological, cultural and historical authorities, and interest groups in consultation forums as project stakeholders so that their expertise can be made available. • Develop a protocol for use by the construction contractors in conducting any excavation work, to ensure that any chance finds are recognized and measures are taken to ensure they are protected and conserved.					
Sites for construction work camps, areas for stockpile, storage and disposal	• Will not promote instability and result in destruction of property, vegetation, irrigation, and drinking water supply systems, etc. • Residential areas will not be considered so as to protect the human environment (i.e., to curb accident risks, health risks due to air and water pollution and dust, and noise, and to prevent social conflicts, shortages of amenities, and crime). • Disposal will not be allowed near sensitive areas which will	List of pre-approved sites for construction work camps, areas for stockpile, storage and disposal Waste management plan	- DSC to prepare list of potential sites -DSC to inspect sites proposed by contractor if not included in pre-approved sites	PIU/DSC	Monthly	DSC

Parameters	Mitigation Measures	Parameter/ Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring	Source of Funds to Implement Mitigation Measures
	inconvenience the community. • The construction camp, storage of fuel and lubricants should be avoided at the river bank. The construction camp site for intake well should be finalized in consultation with DSC and PIU.					
Sources of construction materials	• Use quarry sites and sources permitted by government. • Verify suitability of all material sources and obtain approval from PIU. • If additional quarries are required after construction has started, obtain written approval from PIU. • Submit to DSC on a monthly basis documentation of sources of materials.	Permits issued to quarries/sources of materials	Contractor PMC and DSC to verify sources (including permits) if additional is requested by contractor	PMU/PIU	Upon submission by contractor, monthly	PMC and DSC
Access	• Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites. • Schedule transport and hauling activities during non-peak hours. • Locate entry and exit points in areas where there is low potential for traffic congestion. • Keep the site free from all	Traffic management plan	C			

Parameters	Mitigation Measures	Parameter/ Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring	Source of Funds to Implement Mitigation Measures
	unnecessary obstructions. • Drive vehicles in a considerate manner. • Coordinate with the Traffic Police Department for temporary road diversions and for provision of traffic aids if transportation activities cannot be avoided during peak hours. • Notify affected sensitive receptors by providing sign boards with information about the nature and duration of construction works and contact numbers for concerns/complaints. • Provide free access to households along the alignments of raw and clear water transmission routes during the construction phase.					
Occupational health and safety	• Comply with IFC EHS Guidelines on Occupational Health and Safety • Develop comprehensive site-specific health and safety (H&S) plan. The overall objective is to provide guidance to contractors on establishing a management strategy and applying practices	Health and safety (H&S) plan	Contractor	PIU and DSC	Continuous during construction	Contractor

Parameters	Mitigation Measures	Parameter/ Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring	Source of Funds to Implement Mitigation Measures
	that are intended to eliminate, or reduce, fatalities, injuries and illnesses for workers performing activities and tasks associated with the project. • Include in H&S plan measures such as: (i) type of hazards in the intake wells site; (ii) corresponding personal protective equipment for each identified hazard; (iii) H&S training for all site personnel; (iv) procedures to be followed for all site activities; and (v) documentation of work-related accidents. • Provide medical insurance coverage for workers.					
Public consultations	• Continue information dissemination, consultations, and involvement/participation of stakeholders during project implementation.	-Disclosure records - Consultations	PMC and DSC	PMU and PMC	-During updating of IEE Report -During preparation of site- and activity-specific plans as per EMP - Prior to start of construction -During construction	PMU/PMC/DSC

Table 6: EMP Table during Construction Phase

Potential Impact	Mitigation Measures	Parameter / Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of Monitoring	Source of Funds
Erosion hazards	• Save topsoil removed during excavation and use to reclaim disturbed areas, as soon as it is possible to do so. • Use dust abatement such as water spraying to minimize windblown erosion. • Provide temporary stabilization of disturbed/excavated areas that are not actively under construction. • Apply erosion controls (e.g., silt traps) along the drainage leading to the water bodies. • Maintain vegetative cover within road ROWs to prevent erosion and periodically monitor ROWs to assess erosion. • Clean and maintain catch basins, drainage ditches, and culverts regularly. • Conduct routine site inspections to assess the effectiveness of and the maintenance requirements for	Erosion control and re-vegetation plan	Contractor	PIU and DSC PIU to submit EMP monitoring report to PMU	- daily visual inspection by contractor supervisor and/or environment specialist - weekly visual inspection by DSC (more frequent during monsoon season and if corrective action is required) - random inspection by PMU, PIU, PMC and/or DSC	Contractor

Potential Impact	Mitigation Measures	Parameter / Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of Monitoring	Source of Funds
	erosion and sediment control systems.					
Impacts on water quality	• Schedule construction activities during non-monsoon season, to the maximum extent possible.	Work schedule	Contractor	PIU and DSC PIU to submit EMP monitoring report to PMU	- daily inspection by contractor supervisor and/or environment specialist - weekly visual inspection by DSC (more frequent during monsoon season and if corrective action is required) - random inspection by PMU, PIU, PMC and/or DSC	
	• Ensure drainages and water bodies within the construction zones are kept free of obstructions.	Visual inspection				
	• Keep loose soil material and stockpiles out of drains and flow-lines.	Visual inspection				
	• Avoid stockpiling of excavated and construction materials (sand, gravel, cement, etc.) unless covered by tarpaulins or plastic sheets.	Visual inspection				
	• Re-use/utilize, to maximum extent possible, excavated materials.	condition in waste management plan				
	• Dispose any residuals at identified disposal site (PIU/DSC will identify approved sites).	condition in waste management plan				
	• Dispose waste oil and lubricants generated as per provisions of Hazardous Waste (Management and Handling) Rules, 1989.	condition in waste management plan				

Potential Impact	Mitigation Measures	Parameter / Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of Monitoring	Source of Funds
	• Refuel equipment within the designated refueling containment area away from drainages, nallahs, or water body.	condition in list of pre-approved sites for construction work camps, areas for stockpile, storage and disposal				
	• Inspect all vehicles daily for fluid leaks before leaving the vehicle staging area, and repair any leaks before the vehicle resumes operation.	Vehicle inspection report				
Impacts on air quality	• Conduct regular water spraying on stockpiles.	- Visual inspection - No complaints from sensitive receptors - Records	Contractor	PIU and DSC	- daily inspection by contractor supervisor and/or environment specialist - weekly visual inspection by DSC (more frequent during dry season and if corrective action is required) - random inspection by PMU, PIU, PMC and/or DSC	Contractor
	• Conduct regular visual inspection in the construction zones to ensure no excessive dust emissions.	Visual inspection				
	• Maintain construction vehicles and obtain "pollution under control" certificate from Himachal Pradesh SPCB.	PUC certificates				
	• Obtain CFE and CFO for hot mix plants, crushers, diesel generators, etc., if to be used in the project.	CTE and CTO				
Noise and vibrations impacts	• Limit construction activities in temple complexes and other	Work schedule	Contractor	PIU and DSC	- daily inspection by contractor supervisor	Contractors

Potential Impact	Mitigation Measures	Parameter / Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of Monitoring	Source of Funds
	important areas to daytime only. • Plan activities in consultation with PIU/DSC so that activities with the greatest potential to generate noise are conducted during periods of the day which will result in least disturbance.				and/or environment specialist - weekly visual inspection by DSC (more frequent during noise-generating activities and if corrective action is required) - random inspection by PMU, PIU, PMC and/or DSC	
	• Minimize noise from construction equipment by using vehicle silencers and fitting jackhammers with noise-reducing mufflers.	Report on ambient noise level monitoring within direct impact zones				
	• Avoid loud random noise from sirens, air compression, etc.	zero incidence				
	• Require drivers that horns not be used unless it is necessary to warn other road users or animals of the vehicle's approach.	feedback from receptors within direct and direct impact zone				
	• If specific noise complaints are received during construction, the contractor may be required to implement one or more of the following noise mitigation measures, as directed by the project manager:	-Complaints addressed satisfactory - GRM records				

Potential Impact	Mitigation Measures	Parameter / Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of Monitoring	Source of Funds
	• Locate stationary construction equipment as far from nearby noise-sensitive properties, such as the hospital, as possible. • Shut off idling equipment. • Reschedule construction operations to avoid periods of noise annoyance identified in the complaint. • Notify nearby residents whenever extremely noisy work will be occurring.					
Impacts on flora and fauna	• Conduct site induction and environmental awareness.	Records	Contractor	PIU and DSC	- daily inspection by contractor supervisor and/or environment specialist - weekly visual inspection by DSC (more frequent if corrective action is required) - random inspection by PMU, PIU, PMC and/or DSC	Contractor
	• Limit activities within the work area.	Barricades along excavation works				
	• Replant trees in the area using minimum ratio of 2 new trees for every 1 tree cut. Replacement species must be approved by District Forest Department.	Number and species approved by District Forest Department				
Impacts on physical and cultural resources	• Ensure no damage to structures/properties adjacent to construction zone.	- Visual inspection - any impact should be addressed by project resettlement plan	Contractor In coordination with PIU and DSC for any structures within proposed site and construction zone	PIU and DSC	- daily inspection by contractor supervisor and/or environment specialist - weekly visual inspection by DSC (more frequent if corrective action is	Contractor
	• Provide sign boards to inform nature and	- no complaints received				

Potential Impact	Mitigation Measures	Parameter / Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of Monitoring	Source of Funds
	duration of construction works and contact numbers for concerns/complaints.	-photo-documentation			required) - random inspection by PMU, PIU, PMC and/or DSC	
	• Increase the workforce near the school and other sensitive receptors.	- Records of workers deployment - Work schedule				
	• Implement good housekeeping. Remove wastes immediately.	- Visual inspection - No stockpiled/ stored wastes				
	• Ensure workers will not use nearby/adjacent areas as toilet facility.	- No complaints received - Sanitation facilities for use of workers				
	• Coordinate with PIU/DSC for transportation routes and schedule. Schedule transport and hauling activities during non-peak hours. Communicate road detours via visible boards, advertising, pamphlets, etc. • Ensure heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites.	- Approved routes in traffic management plan				
	• Provide instructions on event of chance finds for archaeological and/or ethno-botanical resources. Works must be stopped	-condition in chance find protocol				

Potential Impact	Mitigation Measures	Parameter / Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of Monitoring	Source of Funds
	immediately until such time chance finds are cleared by experts.					
Impact due to waste generation	• Prepare and implement a waste management plan. Manage solid waste according to the following hierarchy: reuse, recycling and disposal. Include in waste management plan designated/approved disposal areas. • Coordinate with PIU/DSC for beneficial uses of excavated soils or immediately disposal to designated areas. • Recover used oil and lubricants and reuse; or remove from the site. • Avoid stockpiling and remove immediately all excavated soils, excess construction materials, and solid waste (removed concrete, wood, trees and plants, packaging materials, empty containers, oils, lubricants, and other similar items). • Prohibit disposal of any material or wastes (including human waste) into drainage, nallah, or watercourse.	condition in waste management plan	Contractor	PIU and DSC	- daily inspection by contractor supervisor and/or environment specialist - weekly visual inspection by DSC (more frequent if corrective action is required) - random inspection by PMU, PIU, PMC and/or DSC	Contractor

Potential Impact	Mitigation Measures	Parameter / Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of Monitoring	Source of Funds
Impacts on occupational health and safety	• Comply with IFC EHS Guidelines on Occupational Health and Safety	- Visual inspection - Records	Contractor	PIU and DSC	• - daily inspection by contractor supervisor and/or environment specialist • - weekly visual inspection by DSC (more frequent if corrective action is required) • - random inspection by PMU, PIU, PMC and/or DSC	Contractor
	• Disallow worker exposure to noise level greater than 85 dBA for duration of more than 8 hours per day without hearing protection. The use of hearing protection shall be enforced actively.	- Visual inspection - Work schedule - Noise level monitoring in work area				
	• Provide H&S orientation training to all new workers to ensure that they are apprised of the rules of work at the site, personal protective protection, and preventing injury to fellow workers.	- Records - Condition in H&S plan				
	• Ensure that qualified first-aid can be provided at all times. Equipped first-aid stations shall be easily accessible throughout the site as well as at construction camps.	- Visible first aid equipment and medical supplies - Condition in H&S plan				
	• Provide medical insurance coverage for workers.	Records				
	• Secure construction zone from unauthorized intrusion and accident risks.	- Area secured - Trenches barricaded				

Potential Impact	Mitigation Measures	Parameter / Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of Monitoring	Source of Funds
	• Provide supplies of potable drinking water.	- Supply of water				
	• Provide clean eating areas where workers are not exposed to hazardous or noxious substances.	- Workers area				
	• Provide visitor orientation if visitors to the site can gain access to areas where hazardous conditions or substances may be present. Ensure also that visitor/s do not enter hazard areas unescorted.	- Records - Condition in H&S plan				
	• Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas.	- Visual inspection - Condition in H&S plan				
	• Ensure moving equipment is outfitted with audible back-up alarms.	- Construction vehicles - Condition in H&S plan				
	• Mark and provide sign boards in the construction zone, and areas for storage and disposal. Signage shall be in accordance with international standards and be well known to, and easily understood by workers, visitors.	- Visible and understandable sign boards in construction zone - H&S plan includes appropriate signs for each hazard present				

Potential Impact	Mitigation Measures	Parameter / Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of Monitoring	Source of Funds
	and the general public as appropriate.					
Impacts on socio-economic activities	• Provide sign boards for pedestrians to inform nature and duration of construction works and contact numbers for concerns/complaints.	Visible and understandable sign boards in construction zone	Contractor	PIU and DSC	- daily inspection by contractor supervisor and/or environment specialist - weekly visual inspection by DSC (more frequent if corrective action is required) - random inspection by PMU, -PIU, PMC and/or DSC	Contractor
	• Employ at least 50% of the labor force, or to the maximum extent, local persons within the 2-km immediate area if manpower is available.	Employment records				

Table 7: EMP Table during Post-Construction Phase

Potential Impact	Mitigation Measures	Parameter/ Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of Monitoring	Source of Funds
Solid waste (debris, excavated soils, etc.)	• Backfill any excavation and trenches, preferably with excess excavation material generated during the construction phase. • Use removed topsoil to reclaim disturbed areas. • Re-establish the original grade and drainage pattern to the extent practicable. • Stabilize all areas of disturbed vegetation using weed-free native	Pre-existing condition Construction zone has been restored	Contractor	PIU and DSC PIU to submit EMP monitoring report to PMU	- visual inspection by contractor supervisor and/or environment specialist	Contractor

Potential Impact	Mitigation Measures	Parameter/ Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of Monitoring	Source of Funds
	shrubs, grasses, and trees. • Restore access roads, staging areas, and temporary work areas. • Restore roadside vegetation, if removed • Remove all tools, equipment, barricades, signs, surplus materials, debris, and rubbish. Demolish buildings/structures not required for O&M. Dispose in designated disposal sites. • Monitor success of re-vegetation and tree re-planting. Replace all plants determined to be in an unhealthy condition. • Request in writing from PIU/DSC that construction zones have been restored.					

C. Summary of Site and Activity-Specific Plans as per EMP

108. **Table 8** summarizes site and activity-specific plans to be prepared as per EMP tables.

Table8: Site and Activity-Specific Plans/Programs as per EMP

To be Prepared During	Specific Plan/Program	Purpose	Responsible for Preparation	Responsible for Implementation
Detailed Design Phase	Environmental monitoring program as per detailed design	Indicate sampling locations, methodology and parameters	PMC/DSC	Contractor
Detailed Design Phase	Erosion control and re-vegetation plan	Mitigate impacts due to erosion	PMC/DSC	Contractor
Detailed Design Phase	List and maps showing utilities to be shifted	Utilities shifting	DSC during preliminary stage Contractor as per detailed design	Contractor
Detailed Design Phase	Contingency plan	Mitigate impacts due to interruption of services during utilities shifting	Contractor	Contractor
Detailed Design Phase	Chance find protocol	Address archaeological or historical finds	PMC/DSC	Contractor
Detailed Design Phase	List of pre-approved sites	Location/s for work camps, areas for stockpile, storage and disposal.	PIU and DSC	Contractor
Detailed Design Phase	Waste management plan	Mitigate impacts due to waste generation	Contractor	Contractor
Detailed Design Phase	Traffic management plan	Mitigate impacts due to transport of materials and pipe laying works	Contractor	Contractor
Detailed Design Phase	H&S plan	Occupational health and safety	Contractor	Contractor
Detailed Design Phase	Spill prevention and containment plan	Mitigate impacts of accidental spills of oil, lubricants, fuels, concrete, and other hazardous materials	Contractor	Contractor

D. Environmental Monitoring Program

109. Through integration of mitigation measures in project design, impacts are mostly insignificant, temporary in nature and can be properly avoided or mitigated by following proposed mitigation measures given in the EMP of this IEE report.

110. **Table 9**provides the indicative environmental monitoring program which includes relevant environmental parameters, with a description of the sampling stations, frequency of monitoring, applicable standards, and responsibility. This will be updated during detailed design to ensure EMP and monitoring program is commensurate to the impacts of the subproject.

Table 9: Indicative Environmental Monitoring Program

Potential Impact	Parameter to be monitored	Proposed Locations	Method of Monitoring	Frequency of monitoring	Indicator of Compliance	Cost	Source of Funds
1. Detailed Design Phase							
Consents, permits, clearances, no objection certificate (NOC), etc.	- Consents, permits, clearance, NOCs, etc. - Records and communications - Detailed design documents and drawings	n/a	Visual inspection	check CFEs, permits, clearance, Acknowledge upon receipt Send report as specified in CFE, permits, etc.	Obtained prior to start of civil works Conditions of consents, permits, clearance, NOCs, etc incorporated in detailed design	already covered under PMU and PIU	PMU
Establishment of baseline environmental conditions prior to start of civil works and monitoring during-construction & post-construction time	Ambient air quality – RSPM, SO_2, NO_2	Two locations proposed as under: 1. Jwalaji Temple complex 2. Parking area opposite to Hotel Jwalaji, HPTDC	Collection of air samples (continuously 24 hours)	Thrice, 1. Prior to start of civil works , 2. During construction 3. Post construction (Pre-monsoon or Post-monsoon)	baseline data included in updated IEE report	4,000 per sample	PMU
	Noise levels – day time	Four locations proposed as under: 1. One at silence zone (Temple complex), 2.One at construction site (proposed Tourist Reception Centre near Temple Complex), 3. One at road towards temple) 4. Parking area	Use of noise meters (once)	Thrice, 1. Prior to start of civil works , 2. During construction 3. Post construction (Pre-monsoon or Post-monsoon)	baseline data included in updated IEE report	10,000 per sample	PMU
Erosion control	Erosion control and re-vegetation plan covering	n/a	Checking of erosion control	Upon finalization of detailed	included in updated IEE report	already covered under PMU and	Contractor

Potential Impact	Parameter to be monitored	Proposed Locations	Method of Monitoring	Frequency of monitoring	Indicator of Compliance	Cost	Source of Funds
	construction phase		and re-vegetation plan	design	provided to contractor	PIU	
Utilities	List and maps showing utilities to be shifted Contingency plan for services disruption	n/a	Checking of list and maps showing utilities to be shifted Checking of contingency plan for services disruption	Upon finalization of detailed design	included in updated IEE report provided to contractor	already covered under PMU/PIU and PMC/DSC	DSC – preliminary design stage Contractor – detailed design stage
Social and Cultural Resources	Chance find protocol	n/a	Checking of chance find protocol	Upon finalization of detailed design	included in updated IEE report copy and orientation provided to contractor	already covered under PMU/PIU and PMC/DSC	PMU
Sites for construction work camps, areas for stockpile, storage and disposal	List of pre-approved sites for construction work camps, areas for stockpile, storage and disposal	sites for construction work camps, areas for stockpile, storage and disposal	Visual inspection	Upon approval of site/s	included in updated IEE report information provided to contractor		DSC
	Waste management plan	n/a	Checking of waste management plan	Upon finalization of detailed design	included in updated IEE report provided to contractor	already covered under PMU/PIU and PMC/DSC	
Sources of construction materials	Permits issued to quarries/sources of materials	n/a	Checking of permits	Upon submission by contractor	contractor's submission	already covered under PMU/PIU and PMC/DSC	PMC and DSC
Access	Traffic management plan	n/a	Checking of traffic management plan as per detailed design (alignment, routes, etc)	Prior to start of civil works	contractor's submission	contractor's cost	Contractor
Occupational health and safety	Health and safety (H&S) plan	n/a	Checking of H&S plan	Prior to start of civil works	contractor's submission	contractor's cost	Contractor
Public consultations	- Disclosure records - Consultations	- locations of affected persons - locations of stakeholders	Documentation of (minutes of consultations, date/s,	- During updating of IEE Report - During preparation of	included in updated IEE	already covered under PMU/PIU and PMC/DSC	PMU/PMC/DSC

Potential Impact	Parameter to be monitored	Proposed Locations	Method of Monitoring	Frequency of monitoring	Indicator of Compliance	Cost	Source of Funds
			location/s, issue/s raised, photographs, etc.)	site- and activity-specific plans as per EMP - Prior to start of construction - During construction			
2. Construction Phase							
Erosion hazards	Erosion control and re-vegetation plan	- Construction zone - storage areas	Visual inspection	- daily visual inspection by contractor supervisor and/or environment specialist - weekly visual inspection by DSC (more frequent during monsoon season and if corrective action is required) - random inspection by PMU, PIU, PMC and/or DSC	- no erosion - erosion control in place - measures in erosion control and re-vegetation plan implemented	Contractor's cost	Contractor
Impacts on water quality	- Any construction related materials - visible seepage of paints, oils, silts, etc. from storage areas - complaints related to water quality	Adjacent bodies of water including drainages, canals/nallahs, etc.	Visual inspection	- daily visual inspection by contractor supervisor and/or environment specialist - weekly visual inspection by DSC (more frequent during monsoon season and if corrective action is required) - random	- no visible change in pre-construction quality of adjacent bodies of water including drainages, canals/nallahs, etc. - no disposal and/or seepage to adjacent bodies of water including drainages, canals/nallahs, etc.	Contractor's cost	Contractor

Potential Impact	Parameter to be monitored	Proposed Locations	Method of Monitoring	Frequency of monitoring	Indicator of Compliance	Cost	Source of Funds
				inspection by PMU, PIU, PMC and/or DSC			
Impacts on air quality	- water spraying on stockpiles - excessive dust emissions - vehicles "pollution under control" certificate from Himachal Pradesh SPCB - CFE and CFO for hot mix plants, crushers, diesel generators, etc., if to be used in the project - complaints related to air quality	- Construction zone - Sensitive receptors site/s	Visual inspection	- daily visual inspection by contractor supervisor and/or environment specialist - weekly visual inspection by DSC (more frequent during monsoon season and if corrective action is required) - random inspection by PMU, PIU, PMC and/or DSC	- no excessive dust emissions - no complaints from sensitive receptors - Valid pollution under control certificate/s. CFE, and/or CFO	Contractor's cost	Contractor
Noise and vibrations impacts	- work schedule (limit to day time only in temple complexes and other important areas) - activities with the greatest potential to generate noise (conducted during periods of the day which will result in least disturbance) - vehicle silencers and noise-reducing mufflers - complaints related to noise and vibrations	- Construction zone - Sensitive receptors site/s - silence zone/s	Visual inspection	- daily visual inspection by contractor supervisor and/or environment specialist - weekly visual inspection by DSC (more frequent during monsoon season and if corrective action is required) - random inspection by PMU, PIU, PMC and/or DSC	- no complaints from sensitive receptors	Contractor's cost	Contractor
Impacts on flora and fauna	- site induction and environmental	- construction zone	Visual inspection	- daily visual inspection by	- all contractor's employees have	Contractor's cost	Contractor

Potential Impact	Parameter to be monitored	Proposed Locations	Method of Monitoring	Frequency of monitoring	Indicator of Compliance	Cost	Source of Funds
	awareness - number of trees cut - number of trees replanted - survival rate of trees planted	- sites approved by Forest Department for replanting, if any		contractor supervisor and/or environment specialist - weekly visual inspection by DSC (more frequent during monsoon season and if corrective action is required) - random inspection by PMU, PIU, PMC and/or DSC	undertaken site induction and environmental awareness prior to mobilization - approved trees to be cut - approved tree species for replantation		
Impacts on physical and cultural resources	- damage to structures/properties adjacent to construction zone - sign boards to inform nature and duration of construction works and contact numbers for concerns/complaints - number of workforce near the school/s and other sensitive receptor/s - housekeeping practices, wastes around construction zones - toilet facilities for workers - transportation routes and schedule - chance find procedure	- construction zone	Visual monitoring	- daily visual inspection by contractor supervisor and/or environment specialist - weekly visual inspection by DSC (more frequent during monsoon season and if corrective action is required) - random inspection by PMU, PIU, PMC and/or DSC	- no damage to structures/properties adjacent to construction zone - sign boards understandable by local people - sufficient number of workforce near the school/s and other sensitive receptor/s - wastes managed according to waste management plan - clean and usable toilet facilities for workers - transportation routes and schedule followed - no complaints from sensitive receptors - chance find procedures followed, as necessary	Contractor's cost	Contractor
Impact due to waste generation	- provisions of the waste management plan	- construction zone	Visual monitoring	- daily visual inspection by	- wastes managed according to waste	Contractor's cost	Contractor

Potential Impact	Parameter to be monitored	Proposed Locations	Method of Monitoring	Frequency of monitoring	Indicator of Compliance	Cost	Source of Funds
	- quantity of excavated soils - quantity of used oil and lubricants - excess construction materials, and solid waste (removed concrete, wood, trees and plants, packaging materials, empty containers, oils, lubricants, and other similar items)			contractor supervisor and/or environment specialist - weekly visual inspection by DSC (more frequent during monsoon season and if corrective action is required) - random inspection by PMU, PIU, PMC and/or DSC	management plan - no complaints from sensitive receptors		
Impacts on occupational health and safety	- IFC EHS Guidelines on Occupational Health and Safety - noise level and duration of exposure - PPEs, high visibility vests, hearing protection, etc. - conduct of H&S orientation training - qualified first aider and equipped first aid stations - medical insurance coverage for workers - security in construction zone - potable drinking water supply - clean eating areas - conduct of visitor orientation - audible back-up alarms for vehicles - sign boards in the	- construction zone	- visual monitoring - checking of records	- daily visual inspection by contractor supervisor and/or environment specialist - weekly visual inspection by DSC (more frequent during monsoon season and if corrective action is required) - random inspection by PMU, PIU, PMC and/or DSC	- conditions in H&S plan - all workers oriented on H&S plan - use of PPEs, etc at all times - max of 80 dBA and 8 hours exposure - visible first aid equipment and medical supplies - areas secured - trenches barricaded - adequate potable drinking water - clean eating areas away from hazardous or noxious substances - visible and understandable sign boards in construction zone	Contractor's cost	Contractor

Potential Impact	Parameter to be monitored	Proposed Locations	Method of Monitoring	Frequency of monitoring	Indicator of Compliance	Cost	Source of Funds
	construction zone - site accident records						
Impacts on socio-economic activities	- % of locals in labor force - complaints/ grievances	- construction zone	checking of records	- random inspection by PMU, PIU, PMC and/or DSC - during complaints/ grievance redressal	- least 50% of the labor force, or to the maximum extent, local persons within the 2-km immediate area if manpower is available - complaints/grievance addressed as per GRM	Contractor's cost	Contractor
3. Post-construction Phase							
Solid waste (debris, excavated soils, etc.)	- disturbed areas	- construction zone	visual inspection	upon completion of civil works prior to turn over to asset owner	- backfilled any excavation and trenches - reclaimed disturbed areas. - Re-established original grade and drainage pattern to the extent practicable. - stabilized all areas of disturbed vegetation using weed-free native shrubs, grasses, and trees - restored access roads, staging areas, and temporary work areas. - restored roadside vegetation, if removed - removed all tools, equipment, barricades, signs, surplus materials, debris, and rubbish. - demolished buildings/structures not required for O&M. - disposed in designated disposal sites. - success of re-vegetation and tree re-planting. Replaced all	Contractor's cost	Contractor

Potential Impact	Parameter to be monitored	Proposed Locations	Method of Monitoring	Frequency of monitoring	Indicator of Compliance	Cost	Source of Funds
					plants determined to be in an unhealthy condition. - documentation from PIU/DSC that construction zones have been restored.		

E. Capacity Building

111. The Environmental Specialist of the DSC will provide the basic training required for environmental awareness followed by specific aspects of infrastructure improvement Projects along with Environmental implications for projects. Specific modules customized for the available skill set will be devised after assessing the capabilities of the members of the Training Programme and the requirements of the project. The entire training will cover basic principles of environmental assessment and management; mitigation plans and programmes, implementation techniques, monitoring methods and tools. The proposed training program along with the frequency of sessions is presented in **Table 10** below. This training program is intended for the entire destination and is not just specific to this package.

Table 10: Training Modules for Environmental Management (Common for Entire Project)

Program	Description	Participants	Form of Training	Duration/ Location	Training Conducting Agency
A. Pre-Construction Stage					
Sensitization Workshop	Introduction to Environment: Basic Concept of environment Environmental Regulations and Statutory requirements as per Govt. of India and ADB	Tourism / Forest / Roads / Culture Department Officials, Project Director (PD) and Environmental Specialist (ES) of the PMU/PIU	Workshop	½ Working Day	Environmental Specialist of the PMC and DSC
B. Construction Stage					
Training Session-1	Roles and Responsibilities of officials / contractors / consultants towards protection of environment Implementation Arrangements	Engineers and staff of line depts. of Govt of Himachal Pradesh, and PMU/PIU (including the ES)	Lecture / Interactive Sessions	½ Working Day	Safeguards Specialist of the PMC and DSC
Training session-2	Monitoring and Reporting System	Engineers and staff of implementing agencies and PMU/ PIU (including ES)	Lecture / Interactive Sessions	½ Working Day	Safeguards Specialist of the PMC and DSC

F. EMP Implementation Cost

112. As part of good engineering practices in the project, there have been several measures as safety, signage, dust suppression, procurement of personal protective equipment, provision of drains, etc. and the costs for which will be included in the design costs of specific subprojects. Therefore, these items of costs have not been included in the IEE budget. Only those items not covered under budgets for construction are considered in the IEE budget.

113. This is a small construction project and it is not expected to cause much significant air, water and noise pollution. The main EMP cost will arise from monitoring of environmental parameters (air, water and noise) and training.

114. The costs of water sprinkling for dust suppression and providing personal protective

equipment's to construction workers shall borne by contractor as part of conditions of contract. In addition the sources of funds for Mitigation measures during construction stage including monitoring during construction stage are also to be borne by the contractor. These are deemed to be included as part of the contract price amount quoted by the contractor for the works. The costs of components for monitoring in operation stage and the capacity building costs are to be funded by the PMU. The EMP cost is given in the **Table 11** below.

Table 11: Indicative EMP Budget

S.N.	Particulars	Stages	Unit	Total number	Rate (INR)	Cost (INR)	Source of fund
A. Monitoring Measures							
1.	Air quality monitoring-24 hourly (RSPM, SO_2, NO_2) (Two Locations)	Prior to start of civil work	Per sample	6	4,000	24,000	PMU
		During-Construction					
		Post-Construction					
2.	Noise Levels -Day time by noise meter (Four Locations)	Prior to start of civil work	Per sample	12	10,000	1,20,000	PMU
		During-Construction					
		Post-Construction					
	Transportation & sampling cost will be given by HPPCB			Three times	L S	36,000	PMU
Sub- Total (A)						**1,80,000**	
Remark: Unit Rate is based on rate list provided by HPPCB and transportation & sampling charges will be given by them prior to start work							
B.	**Capacity Building – Training cost**						
1	Sensitization Workshop	Pre-Construction	L.S			1,50,000	PMU
2	Training Session I	Construction	L.S			1,50,000	PMU
3	Training Session II	Construction	L.S			1,50,000	PMU
Sub -Total (B)						**4,50,000**	
Total (A+B) INR						**6,30,000**	

IX. FINDINGS AND RECOMMENDATIONS

115. The proposed components as part of the package are in line with the sub-project selection criteria for the program. The subproject conforms to all GoI and ADB regulations, policies, and standards including all necessary government permits and clearances

116. The specific management measures laid down in the IEE will effectively address any adverse environmental impacts due to the sub-project. The effective implementation of the measures proposed will be ensured through the building up of capacity towards environmental management within the PMU supplemented with the technical expertise of a Safeguards Specialist as part of the DSC Consultants. Further, the environmental monitoring plans provide adequate opportunity towards course correction to address any residual impacts during construction or operation stages.

X. CONCLUSIONS

117. The IEE carried out for the sub-project show that the proposed sub-components will

result in net environmental benefits, and that any adverse environmental impact can be addressed through proper location, planning and design of the proposed sub-project; control of construction activity and mitigation measures. The EMP provides for mitigation of all identified impacts and the Contract clauses for the environmental provisions will be part of the civil works contracts. Further, the proposed designs have been consulted with the stakeholders and no significant issues requiring redress in terms of environmental safeguards are known to exist at present.

118. Based on the findings of the IEE, there are no significant impacts and the classification of the subproject as Category "B" is confirmed. No further special study or detailed environmental impact assessment (EIA) needs to be undertaken to comply with ADB SPS (2009).

Annexure 1: Rapid Environmental Assessment (REA) Checklist

Instructions:
(i) The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (RSES) for endorsement by the Director, RSES and for approval by the Chief Compliance Officer.
(ii) This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB's (a) checklists on involuntary resettlement and Indigenous Peoples; (b) poverty reduction handbook; (c) staff guide to consultation and participation and (d) gender checklists.
(iii) Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Subproject: Upgrading the Historic Urban Precincts and Creating a Heritage Circuit, Jwalaji Town, Kangra.
Country/ProjectTitle: India/Infrastructure development Investment program (IDIPT-Himachal Pradesh)
Sector Division: Urban Development.

Screening Questions	Yes	No	Remarks
A. Project Siting Is the project area...			
▪ Densely populated?	✓		The project locations comprise the town centre and its vicinity which is the hub of business, education, entertainment and tourist activity. No negative impacts are envisaged as infrastructure will on existing buildings and facilities, and compatible with the existing activities taking place at these sites. Minimal disruption is likely during construction. Measures like best activity scheduling, traffic management etc will be employed to minimize the impact to acceptable levels.
▪ Heavy with development activities?		✓	Subproject sites are tourist destinations
▪ Adjacent to or within any environmentally sensitive areas?			
• Cultural heritage site	✓		Tranche 3 will support conservation of heritage structures (temples and sacred ponds) in Jawalaji. All tourist attractions are of strategic importance and supported under state's road map and tourism master plan.
• Protected Area		✓	
• Wetland		✓	
• Mangrove		✓	
• Estuarine		✓	
• Buffer zone of protected area		✓	
• Special area for protecting biodiversity		✓	
• Bay		✓	
B. Potential Environmental Impacts Will the Project cause...			
▪ Impacts on the sustainability of associated sanitation and solid waste disposal systems and their interactions with other urban services.		✓	Not anticipated.
▪ Deterioration of surrounding environmental conditions due to rapid urban population growth, commercial and industrial activity, and increased waste generation to the point that both manmade and natural systems are overloaded and the capacities to manage these systems are overwhelmed?		✓	Not anticipated.

Screening Questions	Yes	No	Remarks
▪ Degradation of land and ecosystems (e.g. loss of wetlands and wild lands, coastal zones, watersheds and forests)?		✓	Not anticipated.
▪ Dislocation or involuntary resettlement of people?		✓	Not anticipated. Land acquisition and resettlement are not required for the subprojects. RF to guide any resettlement related issues.
▪ Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable group?		✓	Not anticipated.
▪ Degradation of cultural property, and loss of cultural heritage and tourism revenues?		✓	Not anticipated.
▪ Occupation of low-lying lands, floodplains and steep hillsides by squatters and low-income groups, and their exposure to increased health hazards and risks due to pollutive industries?		✓	Not anticipated.
▪ Water resource problems (e.g. depletion/ degradation of available water supply, deterioration for surface and ground water quality , and pollution of receiving waters?		✓	Not anticipated.
▪ Air pollution due to urban emissions?		✓	Not anticipated.
▪ Risks and vulnerabilities related to occupational health and safety due to physical, chemical and biological hazards during project construction and operation?		✓	Not anticipated.
▪ road blocking and temporary flooding due to land excavation during rainy season?		✓	Not anticipated.
▪ Noise and dust from construction activities?	✓		Anticipated during construction phase. However, impacts are temporary and short in duration. The EMP includes measures to mitigate impacts.
▪ Traffic disturbances due to construction material transport and wastes?	✓		Anticipated during construction phase. However, impacts are temporary and short in duration. The EMP includes measures to mitigate impacts.
▪ Temporary silt runoff due to construction?		✓	Not anticipated.
▪ Hazards to public health due to ambient, household and occupational pollution, thermal inversion, and smog formation?		✓	Not anticipated.
▪ Water depletion and/or degradation?		✓	Not anticipated.
▪ Overpaying of ground water, leading to land subsidence, lowered ground water table, and salinization?		✓	Not anticipated.
▪ Contamination of surface and ground waters due to improper waste disposal?		✓	Not anticipated.
▪ Pollution of receiving waters resulting in amenity losses, fisheries and marine resource depletion, and health problems?		✓	Not anticipated.
▪ Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?		✓	Improved management systems through capacity building and institutional development will ensure reduced burden on services and infrastructure.
▪ Social conflicts if workers from other regions or countries are hired?		✓	Priority in employment will be given to local residents.
▪ Risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during operation and construction?		✓	Not applicable. Construction will not involve use of explosives and chemicals. Excavations/trenching will be done manually. Chemicals will not be used during O&M.
▪ Community safety risks due to both accidental and natural hazards, especially where the structural elements or components of the project are accessible to members of the affected community or where their failure	✓		Operational area will be clearly demarcated and access will be controlled. Only worker and project concerned members will be allowed to visit the operational sites.

Screening Questions	Yes	No	Remarks
could result in injury to the community throughout project construction, operation and decommissioning?			

PRELIMINARY CLIMATE RISK SCREENING CHECKLIST FOR SAMPLE SUBPROJECT TOWNS

Screening Questions		Score	Remarks[7]
Location and Design of project	Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides?	0	Investments in the Jwalaji towns will not likely be affected by climate change and extreme weather events due to the siting/location of the subprojects. No investments will be sited in flood plains etc.
	Will the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc)?	0	not applicable
Materials and Maintenance	Will weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity, and hydro-meteorological parameters) affect the selection of project inputs over the life of project outputs (e.g. construction material)?	0	Works involving conservation and restoration will use local materials similar to the existing structures.
	Will weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)?	0	Maintenance will not likely be affected by climate change and extreme weather events.
Performance of project outputs	Will weather/climate conditions and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time?	0	Not likely to be affected by climate change and extreme weather events.

Options for answers and corresponding score are provided below:

[7] If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

Response	Score
Not Likely	0
Likely	1
Very Likely	2

Responses when added that provide a score of 0 will be considered low risk project. If adding all responses will result to a score of 1-4 and that no score of 2 was given to any single response, the project will be assigned a medium risk category. A total score of 5 or more (which include providing a score of 1 in all responses) or a 2 in any single response will be categorized as high risk project.

Result of Initial Screening (Low, Medium, High): Low

Other Comments: None

Annexure 2: Photo Illustration

Roads leading to the temple:

Roads leading to the temple:

Site for Multilevel Parking

Site for Multilevel Parking

Site For Community Centre Cum Tourist Reception Centre

Site For Community Centre Cum Tourist Reception Centre

Devi Talab

Maujgiri Talab

Abandoned structure to be part of proposed TRC.

Annexure 3: Sample Outline of Spoil Management Plan (SMP)

1.0 Purpose and application:

SMP is to describe how the project will manage the spoil generated and reuse related to design and construction works. This is an integral part of EMP. The objective of SMP is to reuse of spoil from works in accordance with the spoil management hierarchy outlined in this document.

2.0 Objectives of SMP:

The objectives of SMP are:

- To minimize spoil generation where possible
- Maximize beneficial reuse of spoil from construction works in accordance with spoil management hierarchy
- Mange onsite spoil handling to minimize environmental impacts on resident and other receivers
- Minimize any further site contamination of land, water, soil
- Manage the transportation of spoil with consideration of traffic impacts and transport related emissions

3.0 Structure of SMP:

Section 1: Introduction of SMP
Section 2: Legal and other requirements
Section 3: Roles and responsibilities
Section 4: Identification and assessment of spoil aspects and impacts
Section 5: Spoil volumes, characteristics and minimization
Section 6: Spoil reuses opportunities, identification and assessment
Section 7: On site spoil management approach
Section 8: Spoil transportation methodology
Section 9: Monitoring, Reporting, Review, and Improvements

4.0 Aspects and Potential Impacts

The key aspects of potential impacts in relation to SMP are listed in table below

Aspects	Potential Impacts
Air Quality	Potential for high winds generating airborne dust from the stock piles
Sedimentation	Potential for sediment laden site runoff from spoil stockpiles and potential for spillage of spoil from truck on roads
Surface and Groundwater	Contamination of water (surface and ground water)
Noise	Associated with spoil handling and haulage and storage
Traffic	Impacts associated with spoil haulage
Land Use	Potential for spoil to be transported to a receivable site that doesn't have permission for storage/disposal
Design specifications	Limitations on opportunities to minimize spoil generation
Sustainability	Limited sites for storage, reuse opportunities

5.0 Spoil volumes, characteristics and minimization

5.1 Spoil volume calculations: Estimate the volumes of spoils produced from each of the construction sites.

5.2 Characterization of spoil: Based on the type of spoil; characterization is done (sand stone, mud mix materials, reusable materials

5.3 Adopt Spoil Reduce, Reuse Opportunities

An overview of the assessment methodology to be used is mentioned below.

- Consideration of likely spoil characteristics
- Identification of possible reuse sites
- Screening of possible reuse opportunities

5.4 Identification of possible safe disposal sites for spoil: Those spoils which can't be reuse shall be properly disposed in designated areas, such disposal areas should be identified in project locations. Such disposal areas should be safe from environmental aspects and there should be any legal and resettlement related issues. Such areas need to be identified and prior cliental approval should be obtained to use it as spoil disposal area. The local administration must be consulted and if required permission should be obtained from them.

5.5 Storage and stock piling

5.6 Transportation and haulage route

6.0 Based on the above, the contractor will prepare a SMP as an integral part of EMP and submit it to the PIU/DSC for their review and approval.

Annexure 4: Sample Traffic Management Plan (TMP)

A. Principles

1. One of the prime objectives of this TMP is to ensure the safety of all the road users along the work zone, and to address the following issues:

(i) the safety of pedestrians, bicyclists, and motorists travelling through the construction zone;
(ii) protection of work crews from hazards associated with moving traffic;
(iii) mitigation of the adverse impact on road capacity and delays to the road users;
(iv) maintenance of access to adjoining properties
(v) Avoid hazards in
(vi) Addressing issues that may delay the project.

B. Operating Policies for TMP

2. The following principles will help promote safe and efficient movement for all road users (motorists, bicyclists, and pedestrians, including persons with disabilities) through and around work zones while reasonably protecting workers and equipment.

(i) Make traffic safety and temporary traffic control an integral and high-priority element of every project from planning through design, construction, and maintenance.
(ii) Inhibit traffic movement as little as possible.
(iii) Provide clear and positive guidance to drivers, bicyclists, and pedestrians as they approach and travel through the temporary traffic control zone.
(iv) Inspect traffic control elements routinely, both day and night, and make modifications when necessary.
(v) Pay increased attention to roadside safety in the vicinity of temporary traffic control zones.
(vi) Train all persons that select, place, and maintain temporary traffic control devices.
(vii) Keep the public well informed.
(viii) Make appropriate accommodation for abutting property owners, residents, businesses, emergency services, railroads, commercial vehicles, and transit operations.

C. Analyze the impact due to street closure, if required

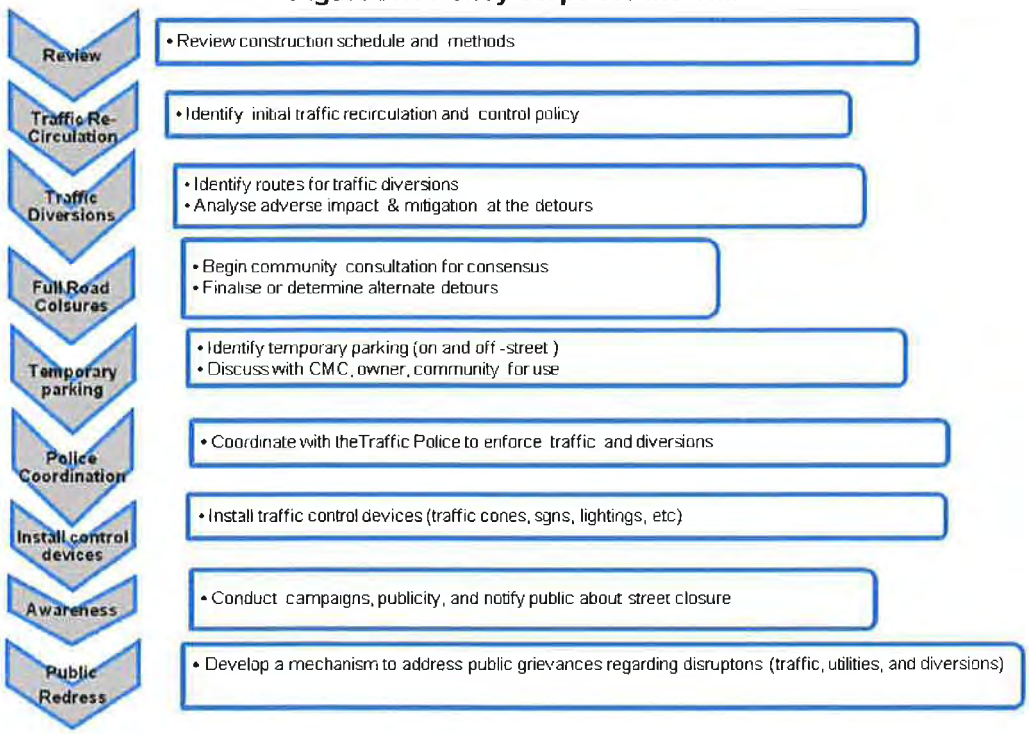
3. Apart from the capacity analysis, a final decision to close a particular street and divert the traffic should involve the following steps:

(i) approval from the PIU, local administration to use the local streets as detours;
(ii) consultation with businesses, community members, traffic police, PWD, etc, regarding the mitigation measures necessary at the detours where the road is diverted during the construction;
(iii) determining of the maximum number of days allowed for road closure, and incorporation of such provisions into the contract documents;
(iv) determining if additional traffic control or temporary improvements are needed along the detour route;
(v) considering how access will be provided to the worksite;
(vi) contacting emergency service, school officials, and transit authorities to determine if there are impacts to their operations; and
(vii) developing a notification program to the public so that the closure is not a surprise. As part of this program, the public should be advised of alternate routes that commuters can take or will have to take as result of the traffic diversion.

4. If full road-closure of certain streets within the area is not feasible due to inadequate capacity of the Detour Street or public opposition, the full closure can be restricted to

weekends with the construction commencing on Saturday night and ending on Monday morning prior to the morning peak period.

Figure A1: Policy Steps for the TMP



D. Public awareness and notifications

5. As per discussions in the previous sections, there will be travel delays during the constructions, as is the case with most construction projects, albeit on a reduced scale if utilities and traffic management are properly coordinated. There are additional grounds for travel delays in the area, as most of the streets lack sufficient capacity to accommodate additional traffic from diverted traffic as a result of street closures to accommodate the works.

6. The awareness campaign and the prior notification for the public will be a continuous activity which the project will carry out to compensate for the above delays and minimize public claims as result of these problems. These activities will take place sufficiently in advance of the time when the roadblocks or traffic diversions take place at the particular streets. The reason for this is to allow sufficient time for the public and residents to understand the changes to their travel plans. The project will notify the public about the roadblocks and traffic diversion through public notices, ward level meetings and city level meeting with the elected representatives.

7. The PIU will also conduct an awareness campaign to educate the public about the following issues:

(i) traffic control devices in place at the work zones (signs, traffic cones, barriers, etc.);
(ii) defensive driving behaviour along the work zones; and
(iii) reduced speeds enforced at the work zones and traffic diversions.

8. It may be necessary to conduct the awareness programs/campaigns on road safety during construction.

9. The campaign will cater to all types of target groups i.e. children, adults, and drivers. Therefore, these campaigns will be conducted in schools and community centers. In addition, the project will publish a brochure for public information. These brochures will be widely circulated around the area and will also be available at the PIU, and the contractor's site office. The text of the brochure should be concise to be effective, with a lot of graphics. It will serve the following purpose:

(i) explain why the brochure was prepared, along with a brief description of the project;
(ii) advise the public to expect the unexpected;
(iii) educate the public about the various traffic control devices and safety measures adopted at the work zones;
(iv) educate the public about the safe road user behaviour to emulate at the work zones;
(v) tell the public how to stay informed or where to inquire about road safety issues at the work zones (name, telephone, mobile number of the contact person; and
(vi) indicate the office hours of relevant offices.

E. Vehicle Maintenance and Safety

10. A vehicle maintenance and safety program shall be implemented by the construction contractor. The contractor should ensure that all the vehicles are in proper running condition and it comply with roadworthy and meet certification standards of GOI. All vehicles to be used at STWSSP shall be in perfect condition meeting pollution standards of GOI. The vehicle operator requires a pre state of shift checklist. Additional safety precautions will include the requirement for:

- Driver will follow the special code of conduct and road safety rules of Government of India.
- Drivers to ensure that all loads are covered and secured drivers to ensure operation equipment can't leak materials hauled
- Vehicles will be cleaned and maintained in designed places.

F. Install traffic control devices at the work zones and traffic diversion routes

10. The purpose of installing traffic control devices at the work zones is to delineate these areas to warn, inform, and direct the road users about a hazard ahead, and to protect them as well as the workers. As proper delineation is a key to achieve the above objective, it is important to install good traffic signs at the work zones. The following traffic control devices are used in work zones:

- Signs
- Pavement Markings
- Channelizing Devices
- Arrow Panels
- Warning Lights

11. Procedures for installing traffic control devices at any work zone vary, depending on road configuration, location of the work, construction activity, duration, traffic speed and volume, and pedestrian traffic. Work will take place along major roads, and the minor internal roads. As such, the traffic volume and road geometry vary. The main roads carry

considerable traffic; internal roads in the new city areas are wide but in old city roads very narrow and carry considerable traffic. However, regardless of where the construction takes place, all the work zones should be cordoned off, and traffic shifted away at least with traffic cones, barricades, and temporary signs (temporary "STOP" and "GO").

12. The work zone should take into consideration the space required for a buffer zone between the workers and the traffic (lateral and longitudinal) and the transition space required for delineation, as applicable. For the works, a 30 cm clearance between the traffic and the temporary STOP and GO signs should be provided. In addition, at least 60 cm is necessary to install the temporary traffic signs and cones.

13. Traffic police should regulate traffic away from the work zone and enforce the traffic diversion result from full street closure in certain areas during construction. Flaggers/ personnel should be equipped with reflective jackets at all times and have traffic control batons (preferably the LED type) for regulating the traffic during night time.

14 In addition to the delineation devices, all the construction workers should wear fluorescent safety vests and helmets in order to be visible to the motorists at all times. There should be provision for lighting beacons and street lighting for night constructions.

15. The PIU and contractor will coordinate with the local administration and traffic police regarding the traffic signs, detour, and any other matters related to traffic. The contractor will prepare the traffic management plan in detail and submit it along with the EMP for the final approval.

Annexure 5: Public Consultations

1. **SITE: PROPOSED PARKING /PUBLIC AMENITIES AT THE MAIN ENTRANCE GATE OF JWALAJI TEMPLE**
Date: 26th May2014

Objective: This exercise was undertaken to access the acceptance of our proposed scope of work by the Mandir Committee/vendors/permanent shop owners/visitors. The outcome of this consultation would enable us to modify and finalize the SCR and help us in the preparation of the relevant documents for SAR/DDR/DPR and other round of consultations during the various phases of Project implementation.
Procedure: An informal FGD/Individual interviews were done with various stakeholders at that site.
Mandir Trust Members: Various members /Head Priest Mr. Devyanshu are all in favour of the project. This land has just been transferred to the Mandir Trust from the MC recently and they are ready to provide the NOC and give their full support in the implementation of the project.

Vendors/Visitors The parking facility and public amenities provided in a systematic manner would facilitate the visitors and ease the traffic influx to the temple. There are about 30 shops in that area.21 are in the Vendor category (Were with MC before transfer) 9 are unauthorized. Apart from this there are about 8 permanent shops and till the transfer they were paying Rs 750/ month to MC. These shops are not going to be removed and will remain as it is. Their business will certainly slacken during the construction stage but they are still in favour of the project.

The 21 vendor category shopkeepers will have to be provided some temporary place nearby during the construction stage and then allotted the small units built at site. They are ready to pay a reasonable rent amount. The Mandir trust has some vacant land nearby and will relocate these vendors during the construction phase. The unauthorized vendors have to be amicably counselled to vacate and the Trust members have assured to do it soon.

Photos of Public Consultation

2. **SITE: COMMUNITY CENTRE-CUM-TOURIST RECEPTION CENTRE& SHOPS. MAIN APPROACH ROAD TO JWALAJI TEMPLE.**
Date: 26th May2014

Objective: This exercise was undertaken to access the acceptance of our proposed scope of work by the local community/visitors. The outcome of this consultation would enable us to modify and finalize the SCR and help us in the preparation of the relevant

docs for SAR/DDR/DPR and other round of consultations during the various phases of Project implementation.

Procedure: An informal FGD/Individual interviews were done with various stakeholders at that site.

Mandir trust members: Various members /Head Priest Mr.Devyanshu are all in favour of the project. It is the Trust land on which the project is proposed and they are ready to provide the NOC and give their full support in the implementation of the project. The Community Centre-cum-Tourist Reception Centre along with good public amenities/ shops will provide a good resting site for the visitors specially the elderly/differently abled etc.

Shop keeper/Visitors/Vendors: 3 shops will have to be closed down permanently during the Construction stage and partly demolished. They will be provided proper shops in lieu in the project. The owners are ready to close down business but there are 8-10 workers also whose livelihood depends on these shops. Thus some temporary rehab/survival income strategy has to be worked out for them and construction needs to be planned such that there shops be demolished only when required at the project stage and construction completed during the stipulated period of time.

The visitors were happy with the proposal and desired ample public amenities in the community centre-cum-Tourist Reception Centre and suggested if lockers be provided where they may deposit there items safely and do not have to carry upstairs.

Wheel chairs with attendants and ramp for the differently abled in the Mandirdarshan area was much required. The Langar hall could have better sitting and distributing facilities. Fly catchers need to be installed.

The vendors were in agreement that the broken signages need to be done and may be at the same alignment and similar manner. The coverage above done aesthetically instead of the present style was more than welcome by one and all. Small sitting points wherever possible was voiced unanimously.

Consultation with one of the shop owner

Consultation with Head Priest of Jwalaji Temple Mr. Devyanshu.

3. **SITE: PROPOSED PARKING /TOILETS ETC OPPOSITE JWALAJI HOTEL (Himachal PradeshTDC)**
Date: 26th May2014

Objective: This exercise was undertaken to access the acceptance of our proposed scope of work by the local community/visitors. The outcome of this consultation would enable us to modify and finalize the SCR and help us in the preparation of the relevant docs for SAR/DDR/DPR and other round of consultations during the various phases of Project implementation.
Procedure: An informal FGD/Individual interviews were done with various stakeholders at that site.

Mandir trust members: Various members /Head Priest Mr. Devyanshu are all in favour of the project. It is the Trust land on which the project is proposed and they are ready to provide the NOC and give their full support in the implementation of the project.

Vendors/Visitors: Alongside one end of the road. They are paying Rs 10/day to MC and if small units are made alongside the inside wall alignment of the proposed Parking area they have the paying capacity and will be more than willing to shift in these permanent units. These shops (eateries) would be able to provide hygienic food to the public. Numerous buses /taxis/tempo's stop at this juncture and the proposed drinking water and toilet facilities would be a boon for the visitors specially women. At present the visitors just go and defecate/urinate in the abandoned site. This is making this area very unhygienic and a breeding ground for various disease causing organisms. The shifting of shops inside would at least widen this busy road by almost 4-5 ft thus decongesting traffic flow to the Jwalaji temple. The parking provision at this site would ease the load opposite the bus stand and lower congestion/accident rate.

Additional toilet facility at the end of the road over the Nallah would facilitate the visitors and the Nallah would be covered adding to the beauty of the area and prevent spurt of diseases.

Photos of Public consultation with the Street Vendors near NH-88

Annexure 6: Sample Grievance Redress Form

(To be available in Local Language and English)

The _____Project welcomes complaints, suggestions, queries and comments regarding project implementation. We encourage persons with grievance to provide their name and contact information to enable us to get in touch with you for clarification and feedback. Should you choose to include your personal details but want that information to remain confidential, please inform us by writing/typing *(CONFIDENTIAL)* above your name. Thank you.

Date		**Place of registration**			
Contact Information/Personal Details					
Name		**Gender**	* Male * Female	**Age**	
Home Address					
Place					
Phone no.					
E-mail					
Complaint/Suggestion/Comment/Question Please provide the details (who, what, where and how) of your grievance below: If included as attachment/note/letter, please tick here:					
How do you want us to reach you for feedback or update on your comment/grievance?					

FOR OFFICIAL USE ONLY

Registered by: (Name of Official registering grievance)	
Mode of communication: Note/Letter E-mail Verbal/Telephonic	
Reviewed by: (Names/Positions of Official(s) reviewing grievance)	
Action Taken:	
Whether Action Taken Disclosed:	Yes No
Means of Disclosure:	

Annexure 7: Sample Semi-Annual Environmental Monitoring Report Template

This template must be included as an Annex in the EIA/IEE that will be prepared for the project. It can be adapted to the specific project as necessary.

INTRODUCTION

- Overall project description and objectives
- Description of sub-projects
- Environmental category of the sub-projects
- Details of site personnel and/or consultants responsible for environmental monitoring
- Overall project and sub-project progress and status

No.	Sub-Project Name	Status of Sub-Project				List of Works	Progress of Works
		Design	Pre-Constructio n	Constructio n	Operational		
		☐	☐	☐	☐		
		☐	☐	☐	☐		
		☐	☐	☐	☐		

COMPLIANCE STATUS WITH NATIONAL/STATE/LOCAL STATUTORY ENVIRONMENTAL REQUIREMENTS

No.	Sub-Project Name	Statutory Environmental Requirements	Status of Compliance	Action Required

COMPLIANCE STATUS WITH ENVIRONMENTAL LOAN COVENANTS

No. (List schedule and paragraph number of Loan Agreement)	Covenant	Status of Compliance	Action Required

COMPLIANCE STATUS WITH THE ENVIRONMENTAL MANAGEMENT AND MONITORING PLAN

- Provide the monitoring results as per the parameters outlined in the EMP. Append supporting documents where applicable, including Environmental Site Inspection Reports.
- There should be Reporting on the following items which can be incorporated in the checklist of routine Environmental Site Inspection Report followed with a summary in the semi-annual Report send to ADB. Visual assessment and review of relevant site documentation during routine site inspection needs to note and record the following:
  - What are the dust suppression techniques followed for site and if any dust

was noted to escape the site boundaries;

- If muddy water was escaping site boundaries or muddy tracks were seen on adjacent roads;
- adequacy of type of erosion and sediment control measures installed on site, condition of erosion and sediment control measures including if these were intact following heavy rain;
- Are their designated areas for concrete works, and refuelling;
- Are their spill kits on site and if there are site procedure for handling emergencies;
- Is there any chemical stored on site and what is the storage condition?
- Is there any dewatering activities if yes, where is the water being discharged;
- How are the stockpiles being managed;
- How is solid and liquid waste being handled on site;
- Review of the complaint management system;
- Checking if there are any activities being under taken out of working hours and how that is being managed.

Overall Compliance with CEMP/EMP

No.	Sub-Project Name	EMP/CEMP Part of Contract Documents (Y/N)	CEMP/EMP Being Implemented (Y/N)	Status of Implementation (Excellent/ Satisfactory/ Partially Satisfactory/ Below Satisfactory)	Action Proposed & Additional Measures Required

APPROACH AND METHODOLOGY FOR ENVIRONMENTAL MONITORING OF THE PROJECT

- Brief description on the approach and methodology used for environmental monitoring of each sub-project

MONITORING OF ENVIRONMENTAL IMPACTS ON PROJECT SURROUNDINGS (AMBIENT AIR, WATER QUALITY AND NOISE LEVELS)

- Brief discussion on the basis for monitoring
- Indicate type and location of environmental parameters to be monitored
- Indicate the method of monitoring and equipment to be used
- Provide monitoring results and an analysis of results in relation to baseline data and statutory requirements

As a minimum the results should be presented as per the tables below.

Air Quality Results

Site No.	Date of Testing	Site Location	Parameters (Government Standards)		
			PM10 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)

Site No.	Date of Testing	Site Location	Parameters (Monitoring Results)		
			PM10 (µg/m3)	SO2 (µg/m3)	NO2 (µg/m3)

Water Quality Results

Site	Date of	Site Location	Parameters (Government Standards)

			pH	Conductivity (µS/cm)	BOD (mg/L)	TSS (mg/L	TN (mg/L)	TP (mg/L)

Site No.	Date of Sampling	Site Location	Parameters (Government Standards)					
			pH	Conductivity (µS/cm)	BOD (mg/L)	TSS (mg/L	TN (mg/L)	TP (mg/L)

Noise Quality Results

Site No.	Date of Testing	Site Location	LA_{eq} (dBA) (Government Standard)	
			Day Time	Night Time

Site No.	Date of Testing	Site Location	LA_{eq} (dBA) (Government Standard)	
			Day Time	Night Time

SUMMARY OF KEY ISSUES AND REMEDIAL ACTIONS

- Summary of follow up time-bound actions to be taken within a set timeframe

Annexes

- Photos
- Summary of consultations
- Copies of environmental clearances and permits
- Sample of environmental site inspection Report
- Other

Annexure 9: SAMPLE ENVIRONMENTAL SITE INSPECTION REPORT

Project Name
Contract Number

NAME: _____ DATE: _____
TITLE: _____ DMA: _____
LOCATION: _____ GROUP:

WEATHER CONDITION:

INITIAL SITE CONDITION:

CONCLUDING SITE CONDITION:

Satisfactory _____ Unsatisfactory_____ Incident_____ Resolved _____ Unresolved _____

INCIDENT:
Nature of incident:

Intervention Steps:

Incident Issues

Resolution

Project Activity Stage	Survey	
	Design	
	Implementation	
	Pre-Commissioning	
	Guarantee Period	

Inspection

Emissions	Waste Minimization
Air Quality	Reuse and Recycling
Noise pollution	Dust and Litter Control
Hazardous Substances	Trees and Vegetation

Site Restored to Original Condition Yes No

Signature

Sign off

Name Name
Position Position

Annexure 10: No Objection Certificate

NOC of Municipal Council for Construction of Tourist Reception Centreand Other Works in their Land.

No Objection Certificate

This office has no objection for the consruction in Khasra No. 1512/1, 1512/2, 1513, 1514,1515, 1509/2, 1510 and 1511, Mahal Jawalamukhi Manza Jawalamukhi Distt. Kangra (H.P) of three story Community Hall alonwith Parking, Toilets and Kitchen in Ground Floor and Hall with 6 rooms along with Toilets in First Floor and open Hall with stage in 2nd Floor by the HP. Tourism Department with the Financial assistance from ADB. With the Condition that building of community Hall after its completion will be handed over to the Municipal Council Jawalamukhi for maintenance.

Executive Officer,
Municipal Council, Jawalamukhi,
Distt Kangra (H.P

NOC for Ponds

अनापत्ती प्रमाण पत्र

मैं बेसाखी गिर मालिक देवी तलाब व जौडू तलाब व खाली जगह इस का अगर सरकार सौन्दरयकरण करती है तो हमें कोई आपत्ति नहीं है।

Basakhi Gir

अनापत्ती प्रमाण पत्र

मैं बेसाखी गिर दशनामी जूना अखाड़ा की खाली जगह जो कि मंदिर श्री ज्वालामुखी और मंदिर श्री तारा देवी के बीच में है। इस का अगर सरकार सौन्दरयकरण करती है तो हम कोई भी आपत्ति नहीं है।

Basakhi Gir

ENGLISH TRANSLATION OF ABOVE MENTIONED NOC

I, Basakhi Gir Malik, have no objection if the beautification work is done by the Govt. on the Devi Talab, Jauru Ka Talab and on the vacant land.

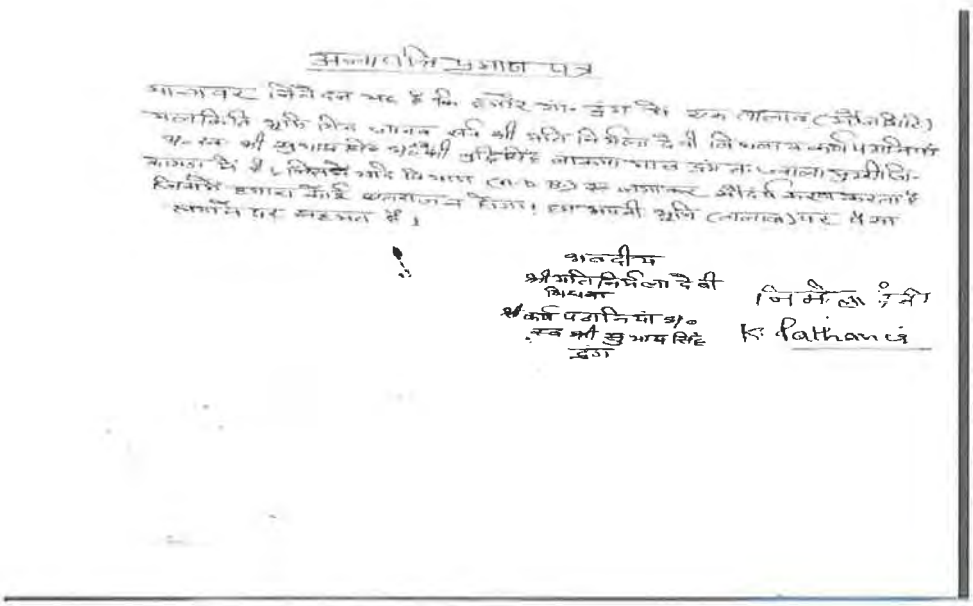
Sd/-
Basakhi Gir

ENGLISH TRANSLATION OF ABOVE MENTIONED NOC

I, Basakhi Gir, have no objection if the beautification work is done by the Govt. on the vacant land of Dashnami Juna Akhara which lies in between the Jwalamukhi Temple and Tara Devi temple.

Sd/-
Basakhi Gir

NOC for Maujgiri Pond



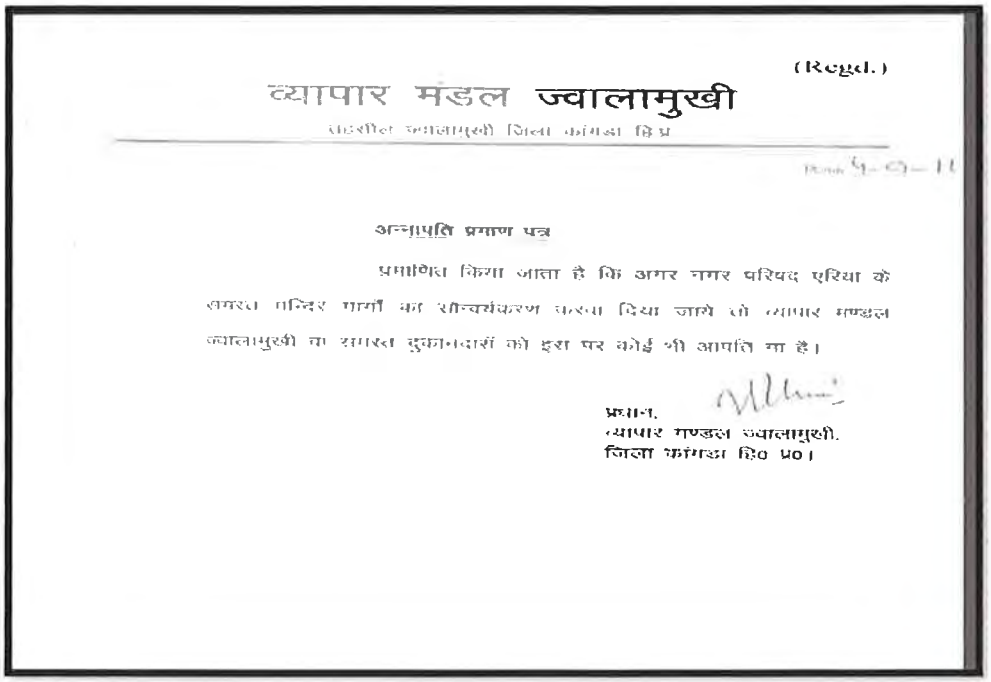
ENGLISH TRANSLATION OF ABOVE MENTIONED NOC

Respected Sir, It is requested that in our village Dharang, Tehsil Jwalamukhi, Distt. Kangra there is a pond (Maujgiri Pond) on the land owned by Smt. Nirmala Devi and Sh. Karan Pathania, S/o Late Sh. Subhash Singh S/o Late Sh. Budhi Singh, Village Dharand, Jwalamukhi. We have no objection if the pond is beautified by the Deptt. with the A.D.B. funds. We give our consent to spent money by the Deptt. on the said land (pond).

Sd/-
Smt. Nirmala Devi

Sd/-
Sh. Karan Pathania,
S/o Late Sh. Subhash Singh,
Dharang.

NOC from VyaparMandal (Trade Organisation), Kangra



(Regd.)

व्यापार मंडल ज्वालामुखी

तहसील ज्वालामुखी जिला कांगड़ा हि.प्र.

अनापत्ति प्रमाण पत्र

प्रमाणित किया जाता है कि अगर नगर परिषद एरिया के समस्त मन्दिर मार्गों का सौन्दर्यकरण करना दिया जाये तो व्यापार मण्डल ज्वालामुखी का समस्त दुकानदारों को इस पर कोई भी आपत्ति ना है।

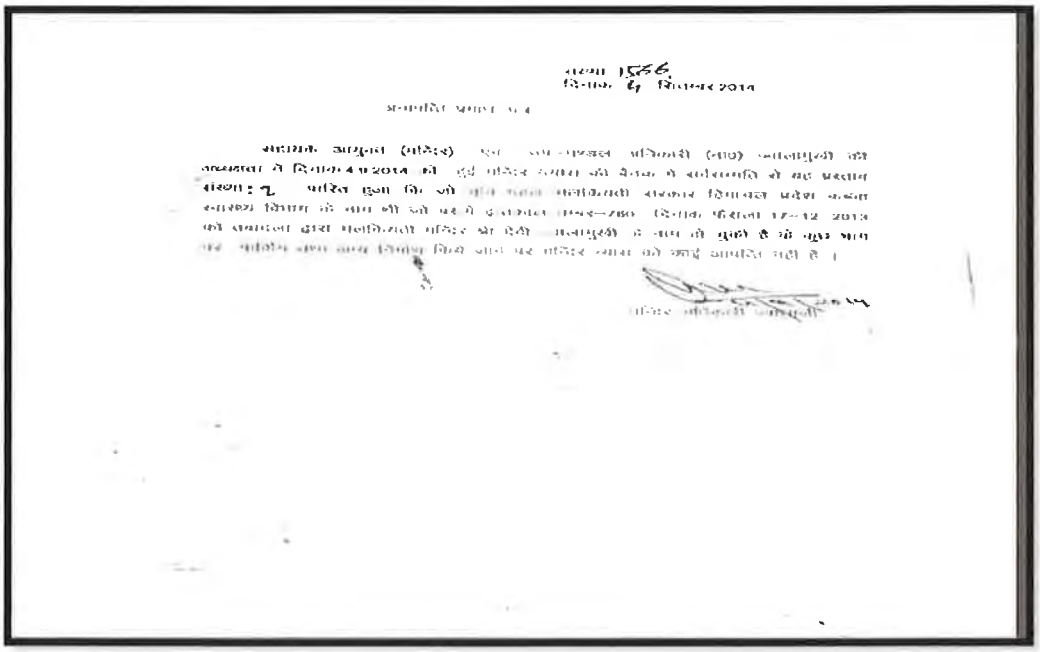
प्रधान,
व्यापार मण्डल ज्वालामुखी,
जिला कांगड़ा हि0 प्र0।

ENGLISH TRANSLATION OF ABOVE MENTIONED NOC

It is to certify that the Beopar Mandal, Jwalamukhi and all Shopkeepers have no objection if the benutification of all the pathways of the temples under the jurisdiction of Nagar Parishad is underraken.

Sd/-
Pradhan,
Beopar Mandal, Jwalamukhi,
Distt. Kangra, H.P.

NOC from Temple Trust, Jwalaji



ENGLISH TRANSLATION OF ABOVE MENTIONED NOC

A resolution No. 1 has been passed in the meeting of the Temple Trust held on 4th September, 2014 under the chairmanship of Assistant Commissioner, Temple-cum- Sub Divisional Officer (Civil) that the Temple Trust has no objection if the parking is constructed on the Govt. land which was earlier in the possession of Health Deptt. and has been transferred in the name of the Temple Trust, Jwalamukhi vide mutation no. 760 dated 17th Dec, 2013 and the income generated from the said parking will be of the Temple Trust.

Sd/-
Temple Officer, Jwalamukhi.

MoU

MOU for Operation &Maintenance

(Between HPTDB and Assets Owner)

I, Devi Ram, (name), agree to undertake the operation and maintenance for the assets which will be constructed, renovated, restored and etc. by the HPTDBunder Tranche 3 of the IDIPT program together with other assets currently maintained by us. All works under Tranche 3 including but not limited to landscape works, pathways, railings, toilets, car parking and etc. will be maintained by us, with our own funds generated from operations or received from various sources.

Our annual total receipts are Rs...../..... (Optional).

I have no objection for any work being taken up by HPTDB under Tranche 3 of the IDIPT program within the boundary premises and pathway, access to the premises from main road and etc. I assure you that the operation and maintenance of the assets will be done by us from our own resources.

The Name of Project- Upgrading the Historic Urban Precincts Creating a Heritage Circuit Jwalaji Town.

Designation of the (Asset Owner)