

Initial Environmental Examination

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India: Sustainable and Inclusive Tourism Development
Project in Himachal Pradesh

Conservation and Restoration of Naggar Castle District-
Kullu, Himachal Pradesh, Package No. SITDP-HP_W03

Prepared by Himachal Pradesh Tourism Development Board (HPTDB), Government of Himachal Pradesh
for the Asian Development Bank.

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CURRENCY EQUIVALENTS

(As of 5th July 2024)

Currency Unit – Indian rupee (₹)

₹ 1.00 – \$ 0.012

\$ 1.00 = ₹ 83.49

ABBREVIATIONS

ADB	—	Asian Development Bank
BEE	—	Bureau of Energy Efficiency
BIS	—	Bureau of Indian Standards
BMPTC	—	Building Materials & Technology Promotion Council
BoCW	—	Building and Other Construction Works
BOD	—	Biological Oxygen Demand
CPCB	—	Central Pollution Control Board
CPHEEO	—	Central Public Health and Environmental Engineering Organization
CTE	—	Consent to Establish
CTO	—	Consent to Operate
DDMA	—	District Disaster Management Authority
DO	—	Dissolved Oxygen
DPF	—	Demarcated Protected Forest
DPR	—	Detailed Project Report
EA	—	Executing Agency
EAC	—	Expert Appraisal Committee
EARF	—	Environmental Assessment Review Framework
ECBC	—	Energy Conservation Building Code
EHS	—	Environmental Health & Safety
EIA	—	Environmental Impact Assessment
EMP	—	Environmental Management Plan
ESZ	—	Eco-sensitive Zone
GEC	—	Ground Water Estimation Committee
GoI	—	Government of India
GoHP	—	Government of Himachal Pradesh
HFL	—	High Flood Level
HMV	—	Heavy Motor Vehicle
HPPCB	—	Himachal Pradesh Pollution Control Board
HPTDB	—	Himachal Pradesh Tourism Development Board
HPTDC	—	Himachal Pradesh Tourism Development Corporation
IEE	—	Initial environmental examination
IFC	—	International Finance Corporation
ILO	—	International Labour Organization
IPH	—	Irrigation and Public Health Department
IUCN	—	International Union for Conservation of Nature and Natural Resources
JSV	—	Jal Shakti Vibhag
KLD	—	Kilo Litre Per Day
LED	—	Light Emitting Diode
LMV	—	Light Motor Vehicle
MBBR	—	Moving Bed Biofilm Reactor

MDR	—	Major District Roads
MoEFCC	—	Ministry of Environment, Forest & Climate Change of India
MSL	—	Mean Sea Level
NAC	—	Notified Area Committee
NEP	—	National Environment Policy
NGO	—	Non-Governmental Organization
O&M	—	Operations & Maintenance
PIU	—	Project Implementation Unit
PM	—	Particulate Matter
PMDSC	—	Project Management & Design Supervision Consultants
PMU	—	Project Management Unit
PUC	—	Pollution Under Control
REA	—	Rapid Environmental Assessment
RCC	—	Reinforced Cement Concrete
RHT	—	Rain Harvesting Tank
RTO	—	Regional Transport Officer
SEAC	—	State Expert Appraisal Committee
SEIAA	—	State Environment Impact Assessment Authority
SITDP	—	Sustainable and Inclusive Tourism Development Project
SPM	—	Suspended Particulate Matter
SPS	—	Safeguards Policy Statement
TCP	—	Town & Country Planning
TDS	—	Total Dissolved Solids
ToR	—	Terms of Reference
TSS	—	Total Suspended Solids
WHO	—	World Health Organization

WEIGHTS AND MEASURES

dB (A)	– ‘A’ Weighted decibel
ha	– hectare
HP	– Horse Power
kld	– Kilo litre per day
km	– kilometer
km ²	– square kilometer
lpcd	– liter per capita per day
µg	– microgram
Sqm	– square meter (m ²)
cum	– cubic meter (m ³)
mg/l	– milligram per liter
MW	– megawatt
kVA	– kilo volt ampere
Tr	– Ton of weight

NOTE

In this report, "\$" refers to United States dollars.

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EXECUTIVE SUMMARY

The Sustainable and Inclusive Tourism Development Project (SITDP) will support the integration of urban and tourism development of targeted tourism zones and selected urban local bodies in Himachal Pradesh, increasing economic competitiveness and growth, thereby contributing to state-wide poverty reduction. The proposed Project will cover the districts of Hamirpur, Kangra, Kullu, Mandi, and Shimla as distinct sustainable destinations, help implement Himachal Pradesh Tourism Policy 2019, and identify future investment opportunities. The Project is aligned with the following impact: Himachal Pradesh established as a leading sustainable tourism destination for inclusive economic growth.¹ The project outcome is inclusive and sustainable tourism promoted in five districts of Himachal Pradesh. The interventions will be at three levels: (i) tourist amenities at specific tourist sites spread across the districts beyond the main urban centers, thereby generating direct local employment and livelihoods, especially for women; (ii) district-level projects that integrate the proposed and past projects through improved connectivity, stronger industry ecosystems, community initiatives, and improved public sector destination management capacity; and (iii) state-level initiatives to enhance institutional capacity, improve sector governance and gender-responsive sector management.

Location: The project Conservation and Restoration of Naggar Castle is proposed, at Naggar District- Kullu, Himachal Pradesh. The coordinates of the project site are 32°6'43.57"N latitude and 77°9'52.49"E longitude. The average altitude of the proposed project site is about 1763 m above mean sea level.

Executing and implementing agencies. The executing agency is the Department of Tourism and Civil Aviation, Himachal Pradesh. The implementing agency is Himachal Pradesh Tourism Development Board (HPTDB). Project Management Unit (PMU) is setup at Shimla to coordinate the overall execution. Project Management and Design Supervision Consultant (PMDSC) at Shimla provides assistance to PMU in execution. Project Implementation Unit (PIU) will be established in Kullu, which is supported by Project Management & Design Supervision Consultant (PMDSC) Shimla. 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 project implementation in the field, and will be under the direct administrative control of the PMU. Consultant teams are responsible for project planning and management and assuring technical quality of design and construction; supervising construction activities; and preparation and updating safeguard reports.

Screening and Categorization. An environmental assessment using ADB's Rapid Environmental Assessment (REA) checklist for urban development was conducted. Results of the assessment as per DPR and preliminary design of project is unlikely to cause any significant adverse impacts. Anticipated impacts are site-specific and reversible. Thus, it is classified as Environmental Category 'B' as per ADB's SPS 2009 and this IEE is prepared accordingly. As per the Government of India Environment Impact Assessment (EIA) Notification, 2006, this project does not require environmental clearance.

Project Scope. Hotel Naggar Castle, located in Naggar, Himachal Pradesh, is a historic property managed by the Himachal Pradesh Tourism Development Corporation (HPTDC). The castle has a rich history dating back to the 15th century. Naggar Castle was built by Raja Sidh Singh of Kullu around 1460 AD and served as the residence of the rulers of Kullu for centuries. In 1978, the Himachal Pradesh government took over the property and converted it into a heritage hotel under the management of HPTDC. The conversion was done with a

¹ Government of Himachal Pradesh, Department of Tourism and Civil Aviation. 2019. [Himachal Pradesh Tourism Policy, 2019](#). Shimla.

focus on preserving the castle's historical and architectural integrity while providing modern amenities to guests. The scope of the project under SITDP is Conservation and Restoration of Naggar Castle including illumination of structures, conversion of idle space available in the existing (Naggar Castle) building into wellness facilities and a parking at the adjoining land parcel including toilet block.

Description of the Environment. The climate of Naggar is similar to the Kullu town. Naggar is cold and temperate with a significant amount of rainfall during the year. The summers here are pleasant while there is plenty of snowfall in the winters. Naggar features a subtropical highland climate (Cfb) with warm summers, relatively cold winters and a high diurnal temperature variation. The temperatures range from 5°C to 30°C over the year with the hottest day crossing 30°C and the coldest day going below 1°C. The average total annual precipitation is around 1200 mm. The average Relative Humidity of Naggar is 65% although it vary from 50% during summer (March) to 70% during the Monsoon (August). Project site has hilly topography. Windrose of Kullu shows that dominant wind blows from the NE much of the time. Naggar has complex and variable topography with valleys, forested hillsides and streams. The texture of soil ranges from sandy loam to clay loam and the colour of the soil also vary from brown to dark brown. The project area falls in Very High Damage Risk Zone (MSK IX or More) *i.e.* Zone V. The overall vulnerability of the State on the basis of the matrix clearly suggests that the district falls in very high vulnerable risk. Springs are the other main sources for the irrigation and water supply schemes. In Kullu valley, ground water occurs under water-table to semi-confined conditions. Phreatic aquifers are tapped mainly by open wells and form the major source of domestic and irrigation water supply in the valley. The overall quality of ground water is potable and safe for drinking purpose except hot water springs.

There is no protected area (Wildlife Sanctuaries, National Parks, Tiger/ Elephant Reserves, Conservation reserves, etc.) within the project site. No Project component falls within any protected area. No wetland is located near the project site. A temple exists within the proposed site, and two more temples are located outside the project site boundary, each with its own marked boundary. Since the project focuses on conserving and restoring Naggar Castle, no interventions are planned for these temples. Gauri Shankar Temple protected under ASI is about 205 m in the South direction from Naggar Castle. Beas River is at an aerial distance of about 1.4 km from the proposed project site.

Potential Environmental impacts and mitigation measures. In this draft IEE, the associated environmental impacts and proposed mitigation measures are covered based on location, design, construction and operation stages of the project. Potential negative impacts have been identified in relation to pre-construction, construction and operation stages of the improved infrastructure, but no permanent environmental impacts were identified as being due to either the project design or location. Mitigation measures have been developed to reduce all negative impacts to acceptable levels. Environmental impacts due to the project design or location have already been addressed during site planning and in the project design. A conditional Heritage assessment study conducted as part of IEE reviewed the heritage importance of proposed site, assessed the impact of the proposed measures, and provided recommendations to ensure that the improvements are appropriate. Measures have been included in the detailed designs. All selected works will conserve the historic built fabric and no new type of material or change in design is proposed in the project. The repair restoration works mainly involve the use of wood and natural stone. The Gauri Shankar Temple, protected under ASI, is approximately 205 m in the North west direction from the site and hence permission from ASI shall be needed for working in the regulated zone. However, since the site is an existing property of HPTDC located in the heart of Naggar, possibility of uncovering any remains during construction and renovation works is not envisaged. Permission from ASI shall be taken and works will be conducted in consultation with the ASI. Workforce shall be oriented on the Chance Find protocol.

Potential impacts during construction are temporary and are common impacts of construction and there are well developed methods to mitigate the same. Construction activities will be confined to the selected sites and the interference with the general public and visitors is minimal. In these works, the temporary negative impacts arise mainly from construction dust and noise, hauling of construction material, waste and equipment on local road (traffic, dust, safety etc.), occupational health and safety of aspects of workers as per the site conditions. During the construction phase, impacts mainly arise from the storage, transportation and handling of construction materials and construction equipment. 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. Additional required quantity of soil will be procured from authorized source compliant with the environmental regulations of India. In the operational phase, all facilities and infrastructure will operate with routine maintenance, which should not affect the environment. Strict waste management practices shall be followed to ensure proper disposal of wastes. 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 in frequent, affecting small areas only. During the construction phase, impact also arise from the invasive nature of work at site and along the roads. However as most of the individual elements are relatively small and involve straight forward construction. The potential environmental impacts (i) will be mainly localized, temporary and not greatly significant; (ii) will not cause direct impact on flora and fauna (iii) are common impacts of construction, and there are well developed method for their mitigation that are suggested in the EMP. In due consideration of site located on undulated terrain, adequate measures of silt fencing, erosion protection will be adhered for excavation during rains, and cuts, fills and sloped surfaces will be properly stabilized to avoid erosion. Site clearance will be strictly confined to actual work area, no clearance of top soil or vegetation will be done outside the site. Temporary containment drains, silt fence will be used to contain silt laden runoff from site. During excavation (parking site), waste will be properly disposed off as per norms of waste management at designated site and suitable measures shall be taken to avoid any impacts to the water quality of local drains and river.

Environmental Management Plan. An Environmental Management Plan (EMP) has been developed to provide mitigation measures to reduce all negative impacts to accessible levels, along with the delegation of responsibility to appropriate agency. Various design related measures are already included in the project design. During construction, the EMP includes mitigation measures such as (i) proper planning and scheduling of construction works to considering peak tourist season and monsoons, (ii) measures to avoid impacts on structures (iii) barricading, dust suppression and noise abatement measures; (iii) traffic management measures for work along the road and for hauling activities; (iv) ensure access will not be impacted during the material hauling activities and access will be given to local public without disturbing their movement and (v) finding beneficial use of excavated materials to extent possible to reduce the disposal quantity (vi) spill and sediment control measures to avoid water and soil pollution, etc. EMP will guide the environmentally sound construction of the project. EMP includes a monitoring program to measure the effectiveness of EMP implementation measures and include observation on and off-site document checks and interview with workers and beneficiaries. The EMP will be included in civil work bidding and contract documents and implementation shall be binding on the contractors.

The contractor will be required to submit to PIU for review and approval, a site environmental management plan (SEMP) including (i) proposed sites/ locations for construction work camps, storage areas, hauling roads, lay down areas, disposal areas for solid and hazardous wastes; (ii) specific mitigation measures following the approved EMP; and (iii) monitoring program as per EMP. No works are allowed to commence prior to approval of SEMP. A copy of the EMP/ approved SEMP will be kept on site during the construction period at all times

Information Disclosure, Consultation and Participation. 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 project. During the preparation of IEE consultations were held with 25 stakeholders including 12 males and 13 females. The consultations aimed to gather insights and opinions on various topics related to proposed project development. The executive summary of IEE report in local language (Hindi) will be made available at public locations in the town and site. The IEE report will also be disclosed to a wider audience via the ADB and the DOTCA websites. The consultation process will continue during project implementation.

Tourists, business persons and citizens of Naggar and Kullu town will be the major beneficiaries of the project. The project is primarily designed to improve tourist related infrastructure facilities, basic amenities for enhanced tourism experience to increase their volume and retention. The project is primarily designed to restore the heritage structure and its beautification which will ultimately improve the heritage and aesthetic value of these places and will enhance experience of citizens and tourists. The benefits arising from this project include (i) restoration of heritage structures, (ii) improved facility for tourists, (iii) provide recreational avenues in the city and (iv) to restore and beautify the tourist attractions in the city to strengthen its economy from tourism sector. Implementation of project will also help in long term sustainable management of this heritage property.

Grievance Redress Mechanism. A project-specific Grievance Redress Mechanism (GRM) will be established to receive, record and redress project related grievances in a time bound and effective manner. Details of GRM is included in this IEE.

Monitoring and Reporting. The PMU, PIU, PMDSC and contractor are responsible for environmental monitoring. Contractor to submit monthly monitoring reports on environmental management to PIU and PMDSC. These reports shall be consolidated by PMDSC including its own observations on quarterly basis. Then Environment Specialist of PMDSC submits quarterly and Semiannual Environmental Monitoring report to PMU. On the basis of said report, PMU will submit semi-annual reports on implementation of the EMP to ADB and facilitates ADB to field environmental review missions. ADB will post the environmental monitoring reports on its website. Any major accidents having serious environmental consequences will be reported immediately. PMDSC environmental expert helps PMU in review of quarterly and annual progress reports including environmental closure report.

Total estimated cost for implementation of EMP is INR 6, 04,000/-.

Conclusion and Recommendations. The proposed project is unlikely to cause significant adverse impacts, and 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 project as Category "B" is confirmed. The project is not covered by the GoI EIA Notification, 2006. However, to conform with government guidelines all necessary permission and NOCs (such as from TCP, HPSPCB, ASI, JSV, etc.) will required from the concerned departments prior to start of construction.

The Executing Agency shall ensure that EMP is included in Bill of Quantity (BOQ) and forms part of bid document and civil works contract. The changes and amendments would be implemented only after the updated IEE report is cleared by ADB. The revised IEE shall supersede the earlier version of IEE and shall be contractually applicable to the contractor.

I. INTRODUCTION

A. Background

1. The Sustainable and Inclusive Tourism Development Project (SITDP) will support the integration of urban and tourism development of targeted tourism zones and selected urban local bodies in Himachal Pradesh, increasing economic competitiveness and growth, thereby contributing to state-wide poverty reduction. The proposed Project will cover the districts of Hamirpur, Kangra, Kullu, Mandi, and Shimla as distinct sustainable destinations, help implement Himachal Pradesh Tourism Policy 2019, and identify future investment opportunities. The Project is aligned with the following impact: Himachal Pradesh established as a leading sustainable tourism destination for inclusive economic growth.² The project outcome is inclusive and sustainable tourism promoted in five districts of Himachal Pradesh. The interventions will be at three levels: (i) tourist amenities at specific tourist sites spread across the districts beyond the main urban centers, thereby generating direct local employment and livelihoods, especially for women; (ii) district-level projects that integrate the proposed and past projects through improved connectivity, stronger industry ecosystems, community initiatives, and improved public sector destination management capacity; and (iii) state-level initiatives to enhance institutional capacity, improve sector governance and gender-responsive sector management. The expected outputs are summarized below:

2. **Output 1:** Tourism sites and facilities conserved and improved with integrated adaptation measures. To improve the condition of key tourist attractions across the state, the project will enhance the condition of amenities at key landmarks and sites, focusing on heritage and accessibility. It will expand and develop cultural centers in Kangnidhar (Mandi) and Deotisdh (Hamirpur) to (i) promote their heritage and historical significance; (ii) restore the historic Naggar Castle (Kullu), adhering to conservation principles; (iii) enhance public open spaces for improved recreational benefits and develop leisure facilities in Palampur and Nagrota Bagwan (Kangra); and (iv) upgrade/construct way-side amenities^[1], such as Dhundi, Naduan, Kunha, in Kullu, Hamirpur, and Kangra districts, respectively. The project will incorporate green solutions and universal access, ensuring accessibility for all, especially for the elderly, women, children, and people with disabilities (EWCD).

3. **Output 2:** Green, climate-resilient and sustainable tourism facilities developed. The project will focus on the promotion of green and sustainable tourism facilities to diversify offerings and boost the local economy. The project will develop: (i) five wellness centres at Nagrota Bagwan (Kangra), Manali and Kullu town (Kullu), Nadaun (Hamirpur) and Banoti (Shimla); (ii) tourist recreation facilities at Dharamshala (Kangra), Manali (Kullu) and Shimla town (Shimla); (iii) adventure sports centre with health centre at Nadaun (Hamirpur); and (iv) water park complex at Nadaun (Hamirpur); and associated infrastructure (like equipment, jetties, etc.) in all five districts. Other initiatives for product diversification include: (i) facilities for events and conventions center for meetings, incentives, conferences, and exhibitions tourism at Dharamshala and Nagrota Bagwan (Kangra); (ii) green mobility (EV-based) hop-on hop-off bus services connecting key places of interest at all five districts with priority entry/sitting preferences for women and people with special needs to ensure safe and accessible public transport facilities; (iii) mountain terrain biking trails and services in all five districts with active engagement of women and youth; and (iv) clean energy (roof top solar) installed on buildings, resulting in reduction of greenhouse gas emissions.

4. **Output 3:** Institutional capacity, community engagement and private sector participation across tourism value-chain enhanced. To complement the infrastructure

² Government of Himachal Pradesh, Department of Tourism and Civil Aviation. 2019. [Himachal Pradesh Tourism Policy, 2019](#). Shimla.

investments, the project will support key initiatives aimed at improving the enabling environment and government's capacity for sustainable tourism service delivery. It will (i) improve the operational capacity of HPTDB through process enhancements, data driven governance, benefit monitoring, improving financial management and preparation of long-term business plans; creation of a GESI cell, and training and upskilling of HPTDB's staff; (ii) strengthen district tourism councils with adequate representation women's representation to serve as destination management organizations, with capacity to prepare strategic and spatial destination development perspective plans, and instituting IT-enabled systems for operator registration, accreditation and certification; (iii) establish the Himachal Pradesh Conventions Bureau to promote MICE tourism; (iv) engage with the HPTDB to develop a tourism brand strategy and marketing plan, and develop and launch a portfolio of curated tourism products across the five districts; (iv) strengthen the tourism industry ecosystem and host communities through human resource development planning that includes certified training and skills development for micro, small and medium enterprises (MSMEs), including women-led enterprises; (v) mainstreaming community-based tourism and developing skilled community members in tourism services delivery with focus on promoting women-led CBT through additional support to reduce care workload; (vi) establish business linkage trust fund for women to establish/improve business; (vii) establish public-private partnerships framework and contracts to enable sustainable O&M; (viii) strengthen the Centre of Excellence for Hospitality and Tourism (CoEHT), making it a hub for training and skill development and certification; and (xi) provide training to MSMEs to adopt digital tools in tourism service provision.

5. **Proposed Project:** Conservation and Restoration of Naggar Castle district Kullu is proposed under Sustainable and Inclusive Tourism Development project in Himachal Pradesh.

B. Purpose and Scope of the IEE

6. As per ADB's Safeguard Policy Statement, 2009, ADB requires the consideration of environmental issues in all aspects of the Bank's operations. Using rapid environmental assessment (REA) checklist (Annexure 1), the project is unlikely to cause significant adverse impacts and classified under Category B as per ADB SPS requirements. This IEE has been conducted to examine the likely impacts from the proposed interventions and accordingly mitigation, management and monitoring measures have been developed. The document also presents the Environmental Management Plan for inclusion of the measures into the tender documents for bidding by the contractor.

7. **Extent of IEE.** The IEE is prepared based on detailed design prescribed within detailed project report (DPR), field reconnaissance survey, secondary sources of information and stakeholder consultation. Assessment is carried out for all components of environment covering ecology, air, soil, water, noise and socio-economic aspects. Stakeholder consultation was an integral part of the IEE. This IEE will be further updated during implementation if there are any changes in project scope, design or sites and updates will supersede the earlier version.

C. Report Structure

8. **IEE Content.** The report contains the following sections:

Executive Summary:

- (i) Introduction;
- (ii) Description of the project;
- (iii) Analysis of Alternatives
- (iv) Policy, Legal and Administrative Framework;
- (v) Description of the Environment

- (vi) Anticipated Environmental impacts and Mitigation Measures;
- (vii) Consultation, Participation & Information Disclosure,
- (viii) Grievance Redress Mechanism
- (ix) Environmental Management Plan and
- (x) Conclusion & Recommendations

II. DESCRIPTION OF THE PROJECT

A. Project Location

9. The project Conservation and Restoration of Naggar Castle is located about 23Km from Kullu town. The coordinates of the project site are 32°6'43.57"N latitude and 77°9'52.49"E longitude. The town is sandwiched between two very prominent ranges of Himalayas, the Dhauladhar Ranges and the Pir Panjal Ranges. Naggar is accessible through NH-21, SH-4 and other district roads. Major cities connected through roads are Shimla, Dharamshala, Palampur, Mandi, etc. The average elevation of Naggar village is about 1800mtrs from the sea level where as the average elevation of the proposed-project site is about 1763mtrs from the sea level. There is an Airport in Bhuntar, Distt Kullu at a distance of about 31Km from Naggar. The nearest railway station to Naggar is Joginder Nagar Railway Station at a distance of about 148Km, offering a narrow-gauge line connectivity to Pathankot. In view of roads, Naggar can be reached from New Delhi National Highway NH-1 up to Ambala and from NH-22 to Chandigarh and from thereby National Highway (NH-21) that passes through Bilaspur, Sundernagar and Mandi. The road distance from Chandigarh to Naggar is about 275km and the distance from Delhi to Kullu is approx. 535km.

Figure 1: Location Map of the Project site at Naggar, Distt. Kullu, H.P.

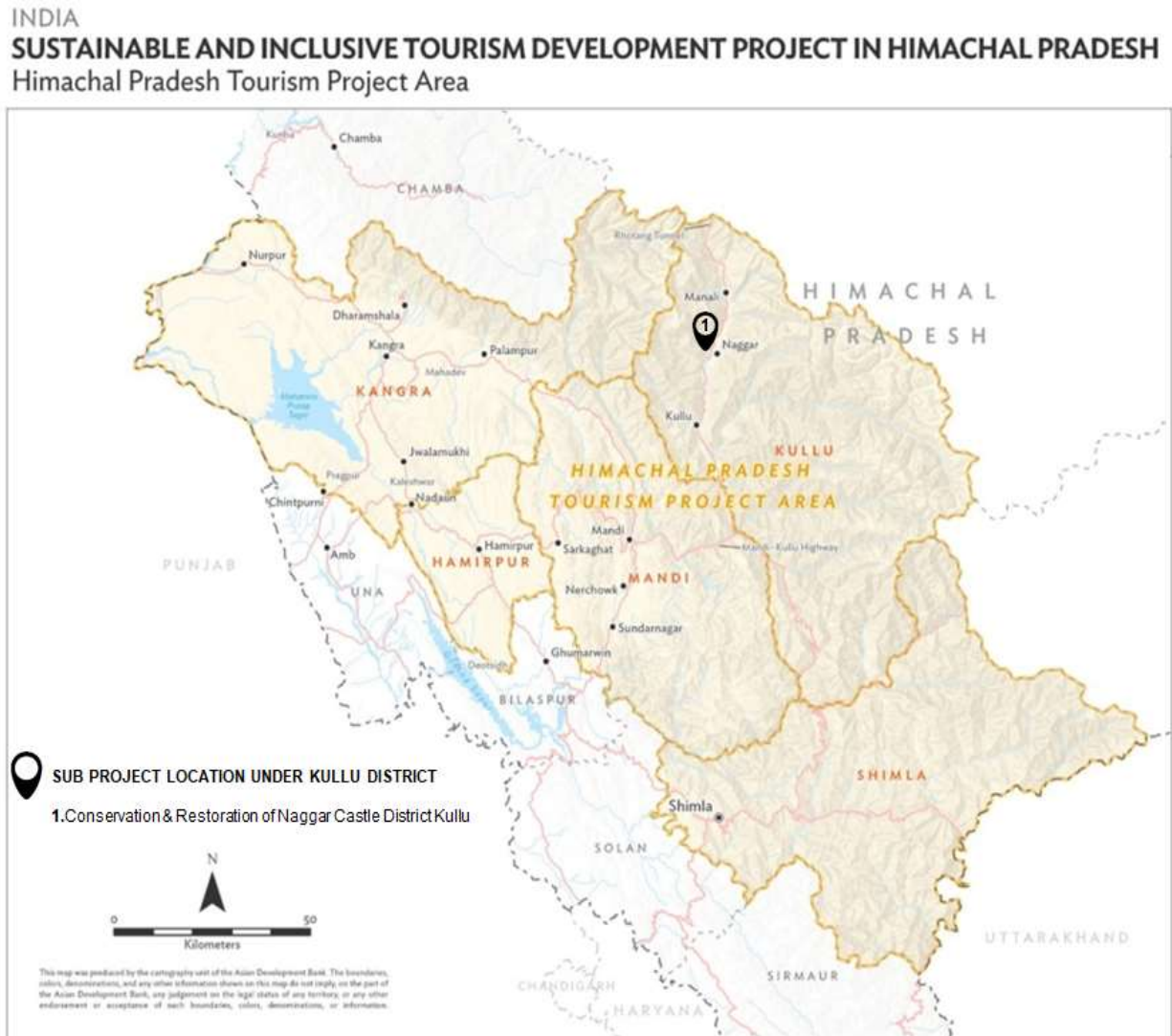
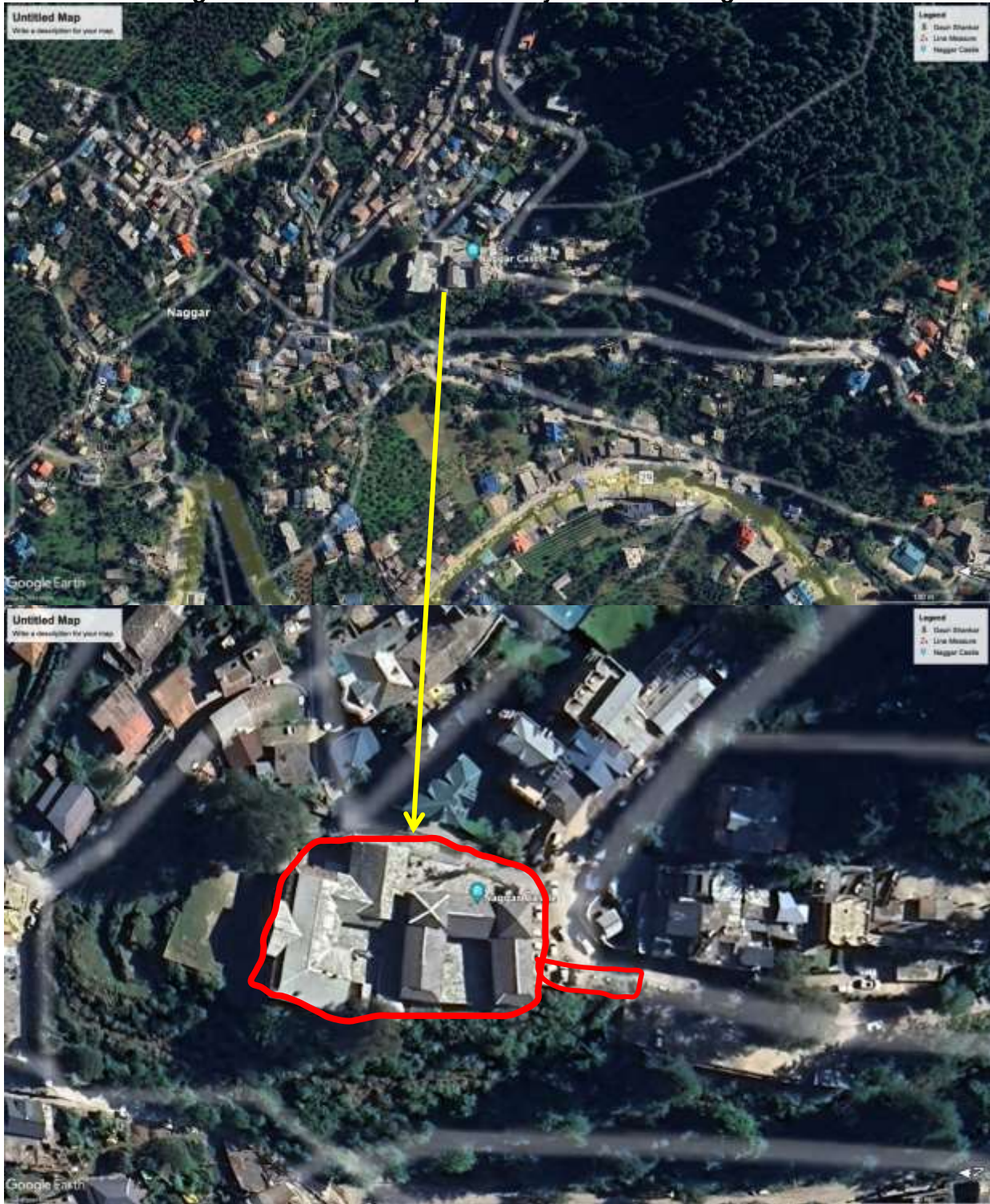


Figure 2: Location Map of the Project site on Google Earth



Proposed site area marked in red colour

B. Need of the Project

10. Hotel Naggar Castle, located in Naggar, Himachal Pradesh, is a historic property managed by the Himachal Pradesh Tourism Development Corporation (HPTDC). The castle has a rich history dating back to the 15th century. Naggar Castle was built by Raja Sidh Singh of Kullu around 1460 AD. The castle served as the residence of the rulers of Kullu for centuries. It offers panoramic views of the Kullu Valley and is surrounded by lush green hills, making it a strategic and picturesque location. In 1978, the Himachal Pradesh government

took over the property and converted it into a heritage hotel under the management of HPTDC. The conversion was done with a focus on preserving the castle's historical and architectural integrity while providing modern amenities to guests. Naggar Castle is a historic and architectural gem with significant cultural, historical, and aesthetic value. Naggar Castle is an architectural marvel, constructed with a mix of stone and wood in a distinctive medieval style. Unfortunately, this once-majestic structure is now in a state of disrepair. The castle's wooden beams are rotting, flooring getting deteriorated, the stone walls are getting cracks and the intricate carvings are fading due to neglect and harsh weather conditions. Additionally, the lack of proper maintenance has led to vegetation overgrowth, further damaging the structure. Urgent conservation and restoration efforts are required to preserve this invaluable heritage site. These efforts should include conservation, restoration of damaged woodwork and stone and other protective works. The conservation and restoration of this historic property and addition of wellness component will increase the value and facilities in the state. The Naggar Castle is a heritage property which offers panoramic views of the Kullu Valley and is surrounded by lush green hills, making it a strategic location for wellness Centre. Spa, Wellness Centers and Yoga retreats bode well with a scenic and calmative settings. The natural settings of this property provide a stable platform for building health and wellness tourism. In this backdrop, Conservation and Restoration of Naggar Castle has been identified as a potential project for the growth of sustainable tourism in the area. The HP Tourism Policy aims to promote tourism diversification through theme-based tourism packages that will help achieve the goal of Establishing Himachal Pradesh tourism as an international brand in niche tourism. One of the identified action points is to develop tourism activities and products on 10 themes – Eco, Agro, Health and Wellness, Heritage and Culture, Adventure, Lake, Snow, Film, Pilgrimage and MICE. As a part of this strategy of promoting thematic tourism products/ experiences to cater to the national and international market segment this project has been conceptualized under the Sustainable and Inclusive Tourism Development Project in Himachal Pradesh.

C. Proposed Project Components

11. The scope of the project as per Detailed Project Report is Conservation and Restoration of Naggar Castle and addition of wellness facilities like Massage rooms, Steam & Sauna, yoga & meditation area and construction of a parking block including toilets block. Proposed project components are listed in Table 1.

Table 1: Proposed Project Components

<p>Conservation and Restoration of Naggar Castle, Distt Kullu</p>	<p>A. Civil Works Renovation of Naggar Castle Addition of wellness facilities Parking including Toilet Block Guard Hut Wooden gate Septic Tank</p> <p>B. Goods & Equipment</p> <p>C. Electrical & Mechanical work Internal Electrical Works Fire Alarm System EPABX System P.A. System Surveillance System (CCTV) Fire Fighting System Dry Type Rubber Mats and Exhaust Pipe Ornamental Poles Fire Fighting System Wi-Fi Devices Façade Lighting Automatic Digital Tyre Inflator EV Charging Station Signage Trunking System Solar Panel System (15KW)</p>
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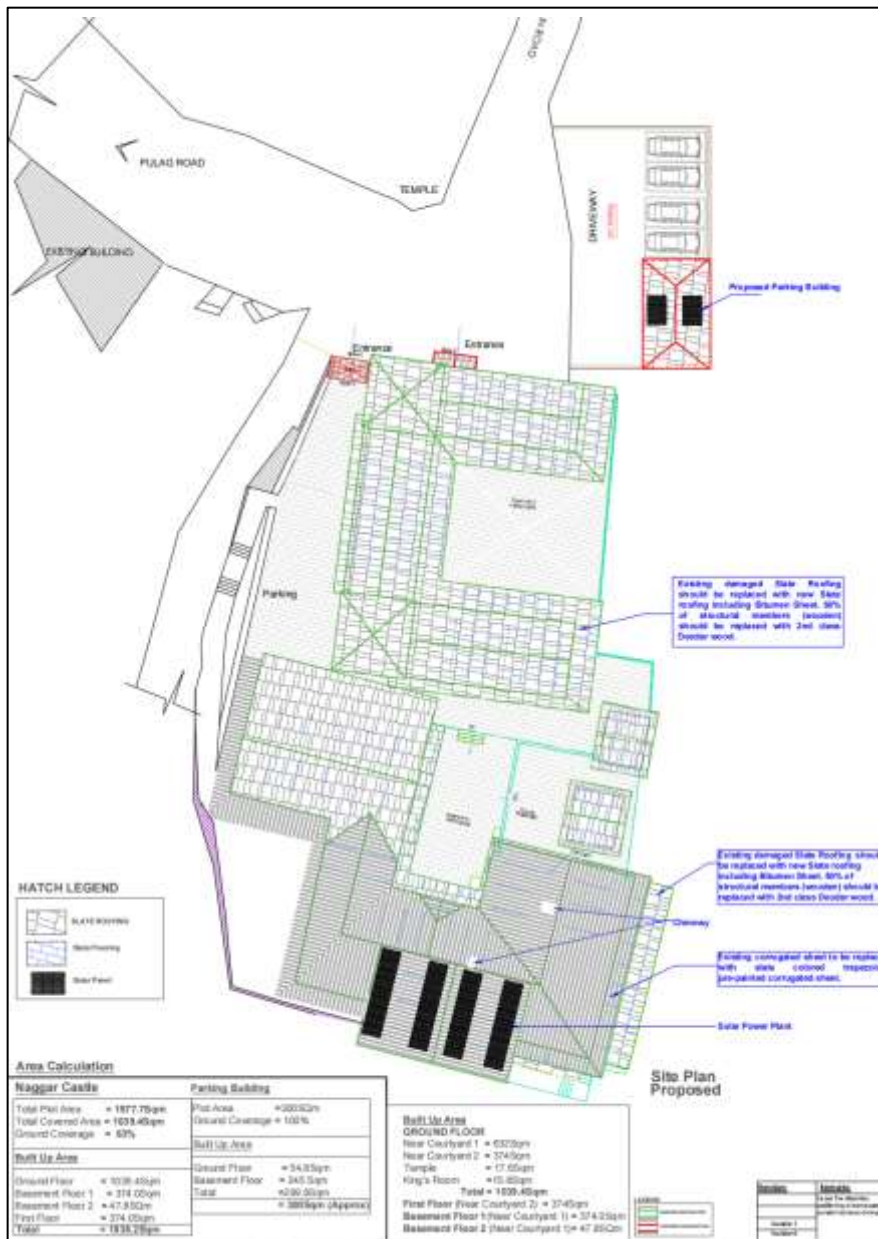
12. Estimated cost of the project is approx. Rs. 11.57 Crore.
13. The total and built area of the project is given in Table 2.

Table 2: Proposed Project Area Statement

Project	Total Site Area (in Sqm)	Built up Area of proposed Parking (in Sqm)	Total Built Up Area including Proposed Parking (in Sqm)
Conservation and Restoration of Naggar Castle	2200	300	2500

14. Site Plan of the project site is given in **Figure 3** and site photographs are provided in **Figure 4**.

Figure 3: Site Plan of proposed project site



(Source: Detailed Project Report)

Figure 4: Photographs of Project Site at Naggar Castle



Main Block



Side face of main restaurant building







Entrance courtyard and Reception Area



Naggar Castle Entrance Gate



	
<p style="text-align: center;">Main Hotel Block</p>	<p style="text-align: center;">Main Courtyard and Existing Temple within the project site</p>
	
<p style="text-align: center;">Side view</p>	<p style="text-align: center;">View of Kullu Valley from Naggar Castle</p>

15. Technical design of the project Conservation and Restoration of Naggar Castle is based on the National Building code of India, relevant Indian standards and Local Byelaws. The design considerations also include Code of practice for earthquake resistant design and construction of buildings. The physical infrastructure facilities such as water supply, sewerage, storm drainage, solid waste management, power requirements etc., are based on relevant standards and guidelines of CPHEEO. Latest BIS standard, Indian Electricity rules and requirements of the Electricity Supply Authority concerned shall be followed to design the electrical system. The proposed components and activities looked at the area in a holistic manner, linking infrastructure and services provision with heritage conservation. With proper alignment of parking, waste bins, standard signage and the rehabilitation the Castle is expected to become more organized and preserved for long. The design and material will be compatible to the local architectural, physical, cultural and landscaping elements. For the conservation of natural resources, 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.

D. Construction material

16. The proposed construction material for the project Conservation and Restoration of Naggar Castle is given in Table 3.

Table 3: Proposed Construction Material

Proposed Construction Material			
Sr. No.	Description of Material	Tentative Qty.	Unit
1	Cement	210	Tr
2	Tor Steel and Structural Steel	84	Tr
3	Deodar and Sal Wood	391	Cum
4	Brick	53	Cum
5	Stone (for soling and filing)	557	Sqm
5	Local Stone for Flooring	2998	Sqm
6	Wood block Flooring	1729	Sqm
7	Flooring and Wall Tiles	2258	Sqm
8	Slate roofing	109	Sqm
9	Melamine Polish	9084	Sqm

(Source: Detailed Project Report)

17. **Source of Constructional Material.** Required construction material will be procured from the authorized dealers located nearer to the project site. Stone/ aggregates will be procured from the existing sites which are operating in the vicinity of the proposed project site. Material shall be procured from licensed agencies and dealers. Given the small magnitude of the project, there is no requirement for opening new sites for extraction of materials. However, if new site are required to be opened for extraction of materials, necessary licenses or approvals shall be obtained from concerned agencies. For employment generation in the area, preference will be given to local people during construction work.

18. **Water Requirement and Sourcing.** There is a water supply already connected to the existing hotel. But there will be a requirement of approx. 2364 KL of water during construction period. Approx. 294 KL water will be required for construction and curing purpose. Approx. 555 KL water will be required for water sprinkling for dust suppression, approx. 43 KL water required for Drinking purpose and approx. 1471 KL water will be required for domestic purposes during construction purpose. Water supply during construction work will be provided by local authority-IPH-Jal Shakti Vibhag, Naggar or will be purchased through mobile water tankers by contractor.

19. **Quantity of Construction & Demolition Waste:** No demolition of structures is proposed under the project of conservation and restoration of Naggar Castle. Waste generation will be from the development of parking facility. It will include earthwork from excavation work of site development & foundation of structures, coarse & fine aggregates used in RCC/ PCC work, wood work, stone work, steel work, brick work. It will be reused in filling around foundation of structure work (required to raise the plinth level above ground

level), embankment, waste material from RCC and PCC work will be utilized under pathway & floors, sub-base of road filling under floor, retaining structures etc. The estimated quantity of construction waste from the project site and their possible reuse is given in the Table 4

Table 4: Estimated Construction Waste Generation and Utilization

Sr.no.	Description of Items	Qty of Constructional Material	Unit	Approx Qty of Waste generated	Methodology of utilization of waste
1	Earth work in Excavation of site development and foundations of structures	4570	Cum	4570	i.) Approx. 40 % excavated material from excavation will be used in filling work around foundation of structures. ii.) Approx. 60% excavated material will be used in filling work required to raise the plinth level above Ground level and in landscaping area for leveling work.
2	Coarse and fine sand aggregates	225	Cum	11	The waste material may be dry or Mixed obtained from RCC and PCC Work will be utilized under Path way, Under floors etc.
3	Wood work	391	Cum	12	The scrap quantity will be handed over to local Vendors.
4	Steel work	84	Mt	3	The scrap quantity will be handed over to local Vendors.
5	Brick work	53	Ton	3	The Bricks bats will be utilized in sub base of road/ filling work behind retaining structures.

20. **Solid waste generation and management during operation phase.** Solid waste generated at site will be disposed at designated area in coordination with the ULB Kullu. About 6 kg/day solid waste will be generated during construction and approx. 20kg/day of solid waste will be generated during operation phase. No liquid waste will be generated by the project, waste water generated from labour camp will be disposed in septic tank *via* soak pit. Detail is given in the Table 5.

Table 5: Expected Solid Waste Generation during construction

S. No	Description of Item	Unit	Factor	Estimated % of waste generated kg/ Capita/ Day	Total Manpower at site (Nos) per day	Qty of Waste Generated/ day	Disposal of waste
1	Residential	Kg	0.30-0.60	0.3	20	6.0	Waste bin provided at different places for dry and wet waste of adequate capacity during construction. Biodegradable waste will be disposed properly and dry waste will send to concerned agency.

(Source: Detailed Project Report)

21. **Water requirement during Operation phase.** During the Operation phase water will be required for domestic purposes. Water will be sourced from water tankers and IPH/JSV existing supply. Details of water balance during operational phase is given in the Table 6.

Table 6: Water Balance during Operation

Sr No	Description of item	Qty in KL	Frequency		Source
1	Water Budget	18	Per day	A	IPH-JSV Deptt/water tankers
2	Fire Tank	50	One Time	B	IPH-JSV Deptt/water tankers
3	Total water Budget	68			
4	Domestic Use Fresh Water	18	Per day	C	
5	losses, Floor Washing 5% of A	1.8	Per day		
6	Sewage Generation 80% of C	14		Septic Tank of 100 Users	
7	Excess water or disposal	0			

(Source: Detailed Project Report)

22. **Details of Septic Tank.** A septic tank of adequate capacity already exists and functional at proposed site. Since no scope for addition of new rooms is proposed, the same septic tank will be used after the conservation and restoration works of Naggar castle. Regular maintenance of septic tank, including frequent pumping and inspections shall be done to ensure the system operates efficiently without overloading or clogging, safeguarding the surrounding environment and groundwater quality. Septic tank will be provided for the proposed toilet block at Parking site.

23. **Energy Efficiency Measures.** The detailed designs for the project components shall comply with ECBC guidelines. Design shall ensure that environmental sustainability principles including energy efficiency, resource recycling, waste minimization, etc. are complied. Design includes determination of interior lighting power allowance (W) as per ECBC. Usage of recyclable materials like fly ash blocks, building orientation to maximize natural light, minimize heat ingress and cost for air conditioning, installation of BEE certified equipment, use of energy efficient lights (LED), Occupancy sensors/ Control devices in common areas like Lobby, Toilets, Staircase etc. Exterior lighting control: Lighting of all exterior applications shall be controlled by a photo sensor or astronomical time switch. Solar panel system (15KW) shall be used for interior and exterior lighting. Solar lights shall be used for common areas. The project Conservation and Restoration of Naggar Castle is designed with utmost consideration to energy efficiency. Gravity flow systems have been adopted.

24. **Power Requirement.** During construction phase, temporary electrical connection shall be taken by the contractor from Himachal Pradesh State Electricity Board (HPSEB). DG set will be used as standby during power cuts. During the operation phase, permanent electrical connection shall be taken by the contractor from Himachal Pradesh State Electricity Board (HPSEB) and DG set which will be used as standby during power cuts. The total power requirement during operation phase is 100 KW. Details of required electrical supply during operational phase is given in the Table-7.

Table 7: Proposed Power/Energy Consumption and demand

Sr. No.	Description	Tentative Qty	Unit	
1	Electrical	Connected Load	100	KW
		Avg. Demand	70	KW
2	Est. Annual Energy Consumption	277,200	KWhr/yr	
3	Rooftop Solar PV in DPR	15	KW	
5	Energy generation from Solar	43800	KWH	

(Source: Detailed Project Report)

25. **Water Efficiency Measures.** Installation of water efficient technology such as low-flow showers and toilets. Regular inspection and prompt repairs shall be done to ensure the system operates efficiently.

26. **Sustainable Tourism Practices.** Sustainable tourism aims to mainstream sustainability in tourism and ensure a more resilient, inclusive, resource efficient tourism while safeguarding natural and cultural resources. It entails optimal use of environmental resources and helps to conserve natural resources and biodiversity. During operation phase, all the tourist related activities shall be planned and implemented in consultation with HPTDB. Resource efficiency in the project shall be achieved by implementing resource management practices such as water conservation (reusing and recycling of water where possible; Improving infrastructure and maintenance (e.g. reducing leakages), encouraging installation of water efficient technology such as low-flow showers and toilets., waste management and energy efficiency to ensure the sustainability of local resources during implementation &

operation of project.

27. **Safety of Tourists.** Increase in the number of tourists to the proposed tourist destinations also increase issues of their safety and vulnerability to disasters. The safety features include:

- Emergency procedures to include paramedics and ambulance at the project sites.
- Increased vehicular movement along the in the internal roads around project sites – speed restrictions, vehicle entry restrictions, provision of appropriate road signage, pedestrians' safety etc., shall minimize impacts on safety of the tourist/ visitors.
- First Aid should always made available at site.
- Requisite self-illuminated signage boards (e.g. Exit/ Toilet etc.) with maintenance free battery backup shall be proposed to provide for guidance purpose in general areas, as per regulation.

28. **Fire Safety**

- Fire alarms shall be installed at strategic locations. And shall be kept in a functioning state.
- Emergency fire response plan shall be prepared. Ensure that there a fire assemble point. All emergency numbers (Police, Fire Brigade, etc.) must be readily available and displayed.
- Ensure that adequate firefighting equipment is provided and such equipment is regularly serviced and maintained. Employees should be trained on firefighting methods and techniques. (Signage: Provide adequate fire hazard signs such as 'No Smoking' and 'Exit Direction' signs. Such signs should be clearly displayed).

E. Type of Contract & Project Implementation Schedule

29. The type of contract will be an item rate contract in which the contractor would carry out the work as per drawings and specifications. Bill of quantities (BOQ) including tentative EMP items are prepared where the quantities of items to be executed are precisely worked out and the contractor must quote a unit price against each item of work. The overall project schedule will be about 18 months out of which the total construction time will be 18 months. Commissioning and handing over process shall be after completion of construction. Detailed project report (DPR) has been prepared and approved.

III. Analysis of Alternatives

30. In this chapter analysis of alternatives has been carried out for 'with' and 'without' project scenario, location selection, and project implementation scheduling and materials usage in the detailed design of the Conservation and Restoration of Naggar Castle and facilities.

31. Conservation and Restoration of Naggar Castle is a brownfield project. The project comprises of Conservation and Restoration of Naggar Castle and Parking area. The project site for Naggar Castle is in the heart of Naggar village and is located about 23km from Kullu main market. Environmental management measures such as provision of storm water drains, solar PV system, etc. are considered as part of the initiatives. Nevertheless, alternative methods technologies and designs were compared against technical, economic, social and environmental criteria for the project components in order to maximize environmental benefits and to minimize impacts. Analysis of alternatives comprised (i) consideration of "no project scenario" and (ii) alternative designs for various project components and O&M procedures for the safe collection, transport, treatment and disposal of solid waste and sewage.

A. Without Project Scenario

32. From the year 2014-15 to 2021-22, the tourist footfall at District Kullu 3423931 and 2880219. Due to pandemic COVID-19, there was a sharp decline in tourist footfalls in the years 2020 and 2021. However, with the reduction in number of active cases of COVID -19, tourist footfalls to the destination saw recovery to previous levels by the year 2022-23. Kullu is a well-known tourist destination in Himachal Pradesh. Hence given the increase in number of tourist arrivals, the "no project" or "do nothing" alternative is not an option.

33. With the projected increase in tourist footfall, it is necessary to improve facilities at the various tourist locations and ensure their operation with proper waste management system, water conservation to the possible extent. Compared to the Without Project alternatives, the With project alternatives will contribute towards improved accessibility and environmental conditions at the site leading to improved tourism experience, which will ultimately increase tourist footfalls and revenue generation for the State.

B. Conservation and Restoration of Naggar Castle Location Alternatives

34. Since it is a brownfield project, no location alternatives were considered. However, a new parking facility is proposed adjacent to the Naggar Castle. The considerations for the Parking site were availability of encumbrance free government land, good connectivity with the main road and the hotel, technical considerations like slope, topography etc., and site with less ecological impacts like tree cutting. Himachal Pradesh being a hilly state with more than 68% of forest area, it is almost inevitable to avoid forest and protected areas. However, the project planning has considered this as a key consideration and avoided any project citing near any protected / Eco sensitive areas. Preserving Naggar Castle ensures that future generations can marvel at its splendor and immerse themselves in its tales of yore. Moreover, restoration efforts would enhance the overall tourism appeal, offering visitors a chance to delve into the region's history while enjoying its scenic beauty. Based on the above considerations, the proposed site was selected.

C. Design alternatives

35. Engineering solution selected are appropriate option in terms of cost, durability, climate resilience, environmental impacts and O&M capacities of project owners. To minimize environmental footprint the design alternatives presented in the Table-8 have been considered for the project.

Table 8: Design alternative considered in each component of project

Design element	Design alternative 1	Design alternative 2	Selected alternatives	Advantage of Considered Design
Parking area	Cement paver blocks and Mild-Steel structure	Use of asphalt/ concrete	Cement paver block on sand bed and Mild Steel structure	<ul style="list-style-type: none"> • Paver block can be used in any weather conditions • Cost effective, not many skilled labours required • The impact of emission from the hot mix plants can be avoided in case of block usage • Paver block do not need special maintenance as compared to concrete or asphalt surfaces. • Paver blocks are very durable and if they are adequately interlocked. They can easily last for about 20 years. • Paver blocks can withstand hefty vehicular load as well • Paver block is slip resistant and skid resistant. • Mild steel is a fundamental material in the construction industry, appreciated for its balance of strength, ductility, and cost-effectiveness • Mild Steel construction is often considered time-saving.
Flooring material (external area)	Paver blocks/Modern Tiles	Natural anti skid Stone	Natural anti skid Stone	<ul style="list-style-type: none"> • Natural anti skid Stone flooring is preferred as it provides natural protection from slippery and maintains the heritage aesthetics of the place.
Roofing material	Pre-painted sheets	Slate roofing	Slate roofing	<ul style="list-style-type: none"> • Slates are environmental friendly with high fire resistance and

Design element	Design alternative 1	Design alternative 2	Selected alternatives	Advantage of Considered Design
				durability and to maintain the natural element and local architecture slate roofing is preferred.
Internal and external lighting system	LED based lights	CFL based lights	LED based lights	<ul style="list-style-type: none"> LED based lights are energy efficient and more durable.
Solar Lights	Solar energy based lights	Conventional/ traditional lights	Solar energy based lights	<ul style="list-style-type: none"> Solar lights offer many advantages over traditional lights, including energy efficiency, low maintenance, easy installation, cost-effectiveness, versatility, environmental friendliness, and safety.
Solid waste management	Land filling/ open disposal in and around the site	Composting	Bio-composter	<ul style="list-style-type: none"> The use of composting unit will help manage the organic waste well and avoid littering of waste.
Tree cutting & landscaping measures	No impacts	No effects in Conservation and Restoration of Naggar Castle site.	No effects	<ul style="list-style-type: none"> No tree cutting will be required. Proposed landscaping measures such as planting trees, shrubs and grasses will enhance aesthetic of the site.

(Source: Detailed Project Report)

D. Material Usage and Sustainability considerations

36. In terms of design, for the Conservation and Restoration works of the Naggar Castle natural materials will be selected similar to the ones used. It involves the lime Surkhi plasterwork manually, ornamental/heritage work, Slate work roofing work and Stone Flooring materials. For the parking area (steel bars, cement and bricks) will be appropriately selected (as per approved design specification) considering that the area is within the seismic zone V classification. There will be no use of asbestos containing sheets or pipes. To reduce the carbon foot prints usage of solar power for lighting of interior and open areas has been planned besides energy efficient lighting and appliances.

E. Conclusion

37. The analysis of alternatives identified that for conservation and restoration of the heritage property and economic development of the area, wellness facilities and implementation of the project is essential for the region and the State in general. While there are no alternative location options for the identified tourism assets, design alternatives

considered under the project addresses the issues of environmental impacts associated with the project. Apart from these alternatives' approaches, there are several mitigation measures taken as part of the impact assessment and management measures for addressing the issues during construction and operation phases.

38. The project site is found environmentally viable based on screening checklist (REA) and no adverse impacts anticipated except some minor impacts which will be mitigated by adopted proposed mitigation measures during construction as given in Chapter-Anticipated Impact and Mitigation Measures and Environmental Management Plan (EMP).

IV. POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

A. ADB Policy

39. ADB SPS Requires that during the design, construction, and operation of the project necessary compliance to all applicable laws and international conventions / treaties along with pollution prevention and control technologies and practices consistent with international good practice, are ensured.

40. ADB uses a classification system to reflect the significance of a project's potential environmental impacts. A project's category is determined by the category of its most environmentally sensitive component, including direct, indirect, cumulative, and induced impacts in the project's area of influence. Each proposed project is scrutinized as to its type, location, scale, and sensitivity and the magnitude of its potential environmental impacts. Projects are assigned to one of the following four categories:

- **Category A.** A proposed project is classified as category A if it is likely to have significant adverse environmental impacts that are irreversible, diverse, or unprecedented. These impacts may affect an area larger than the sites or facilities subject to physical works. An EIA is required to address significant impacts.
- **Category B.** A proposed project is classified as category B if its potential adverse environmental impacts are less adverse than those of category A projects. These impacts are site-specific, few if any of them are irreversible, and in most cases mitigation measures can be designed more readily than for category A projects. An initial environmental examination is required.
- **Category C.** A proposed project is classified as category C if it is likely to have minimal or no adverse environmental impacts. No EIA or IEE is required, although environmental implications are reviewed.
- **Category FI.** A proposed project is classified as category FI if it involves investment of ADB funds to or through a 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.

41. The environmental impacts of the Conservation and Restoration of Naggar Castle project have been identified and assessed as part of the planning and design process. An environmental assessment using ADB's REA checklist for (see **Annexure 1**) was conducted, and results of the assessment show that the project is unlikely to cause significant adverse impacts. Thus, this IEE has been prepared in accordance with ADB SPS's requirements for environment category B projects.

42. **Environmental Management Plan.** An EMP which addresses the potential impacts and risks identified by the environmental assessment is 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.

43. **Environmental Audit of Existing Facilities.** ADB SPS, 2009 requires an environmental audit, if a project involves facilities and/or business activities that already exist or are under construction, including an on-site assessment to identify past or present concerns related to impacts on the environment. The objective of this compliance audit is to determine whether actions were in accordance with ADB's safeguard principles and requirements for borrowers/clients, and to identify and plan appropriate measures to address outstanding compliance issues.

44. **Public Disclosure.** The IEE will be put in an accessible place (e.g. local government offices, libraries, community centers etc.) and a summary translated into Hindi for other stakeholders. 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.

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

45. **Consultation and Participation.** ADB SPS, 2009 requires borrower to conduct meaningful consultation¹ with affected people and other concerned stakeholders, including civil society, and facilitate their informed participation. The consultation process and its results are to be documented and reflected in the environmental assessment report.

46. **Grievance Redress Mechanism.** ADB SPS, 2009 require borrowers to establish a mechanism to receive and facilitate resolution of affected people's concerns, complaints, and grievances about the project's performance. The grievance mechanism shall be scaled to the risks and adverse impacts of the project.

47. **Monitoring and Reporting.** Borrower shall monitor, measure and document the implementation progress of the EMP. If necessary, the borrower shall identify the necessary corrective actions, and reflect them in a corrective action plan. Borrower shall prepare and submit to ADB semi-annual environmental monitoring reports that describe progress with implementation of the EMP and compliance issues and corrective actions, if any. For projects likely to have significant adverse environmental impacts during operation, reporting will continue at the minimum on an annual basis until ADB issues a project completion report.

48. **Unanticipated Environmental Impacts.** Where unanticipated environmental impacts become apparent during project implementation, ADB SPS, 2009 requires the borrower to update the environmental assessment and EMP or prepare a new environmental assessment and EMP to assess the potential impacts, evaluate the alternatives, and outline mitigation measures and resources to address those impacts.

49. **Occupational Health and Safety.** ADB SPS, 2009 requires the borrower² to ensure that workers³ are provided with a safe and healthy working environment, taking into account risks inherent to the sector and specific classes of hazards in the project work areas, including physical, chemical, biological, and radiological hazards. Borrower shall take steps to prevent accidents, injury, and disease arising from, associated with, or occurring during the course of work, including: (i) identifying and minimizing, so far as reasonably practicable, the causes of potential hazards to workers; (ii) providing preventive and protective measures, including modification, substitution, or elimination of hazardous conditions or substances; (iii) providing appropriate equipment to minimize risks and requiring and enforcing its use; (iv) training workers and providing them with appropriate incentives to use and comply with health and safety procedures and protective equipment; (v) documenting and reporting occupational accidents, diseases, and incidents; and (vi) having emergency prevention, preparedness, and response arrangements in place.

50. **Community Health and Safety.** ADB SPS, 2009 requires the borrower to identify and assess risks to, and potential impacts on, the safety of affected communities during the design, construction, operation, and decommissioning of the project, and shall establish preventive measures and plans to address them in a manner commensurate with the identified risks and impacts.

51. **Physical Cultural Resources.** Borrower is responsible for siting and designing the project to avoid significant damage to physical cultural resources. ADB SPS, 2009 requires that such resources likely to be affected by the project are identified, and qualified and experienced experts assess the project's potential impacts on these resources using field-based surveys as an integral part of the environmental assessment process. When the proposed location of a project component is in areas where physical cultural resources are expected to be found as determined during the environmental assessment process, chance finds procedures shall be included in the EMP.

B. National and State Laws

52. The implementation of the projects will be governed by Government of India and State of Himachal Pradesh and other applicable environmental acts, rules, regulations, and standards. These regulations impose restrictions on the activities to minimize or mitigate likely impacts on the environment. It is the responsibility of the project executing and implementing agencies to ensure projects are consistent with the legal framework, whether applicable international, national, state or municipal or local. Key standards include those related to drinking water quality, air quality, effluent discharge, and protected areas. Compliance is required in all stages of the projects including design, construction, and operation and maintenance.

53. **Environmental assessment.** The Government of India EIA Notification of 2006 (replacing the EIA Notification of 1994) sets out the requirement for environmental assessment in India. This states that environmental clearance is required for specified activities/projects, and this must be obtained before any construction work or land preparation (except land acquisition) may commence. Projects are categorized as A or B depending on the scale of the project and the nature of its impacts.

54. **Category A** projects requires environmental clearance from the central Ministry of Environment, Forest and Climate Change (MoEFCC). The proponent is required to provide preliminary details of the project in the prescribed manner with all requisite details, after which an Expert Appraisal Committee (EAC) of the MoEFCC prepares comprehensive terms of reference (TOR) for the EIA study. On completion of the study and review of the report by the EAC, MoEFCC considers the recommendation of the EAC and provides the environmental clearance if appropriate.

55. **Category B** projects require environmental clearance from the State Environment Impact Assessment Authority (SEIAA). The State level EAC categorizes the project as either B1 (requiring EIA study) or B2 (no EIA study) and prepares TOR for B1 projects within 60 days. On completion of the study and review of the report by the EAC, the SEIAA issues the environmental clearance based on the EAC recommendation. The Notification also provides that any project or activity classified as category B will be treated as category A, if it is located in whole or in part within 10 km from the boundary of protected areas, notified areas or inter-state or international boundaries.

56. None of the components of this project falls under the ambit of the EIA Notification 2006, and therefore EIA Study or environmental clearance is not required for the project.

C. Environmental Regulatory Compliance

57. **Applicable environmental regulations.** Besides EIA Notification 2006, there are various other acts, rules, policies and regulations currently in force in India that deal with environmental issues that could apply to infrastructure development. The specific regulatory compliance requirements of the project are shown in Table 9.

Table 9: Summary of Applicable Regulations

Project	Applicability of Acts/ Guidelines	Compliance criteria
Conservation and Restoration of Naggar Castle Distt Kullu, H.P.	NEP is a comprehensive guiding document in India for all environmental conservation programs and legislation by Central, State and Local Government. The dominant theme of this policy is to promote betterment of livelihoods without compromising or degrading the environmental resources. The policy also advocates collaboration method of different stakeholders to harness potential resources and strengthen environmental management.	SITDP should adhere to NEP principle of “enhancing and conservation of environmental resources and abatement of pollution”.
	Environment Protection Act, 1986 To protect and improve overall environment	Applicable
	The Forest Conservation Act, 1980 and its subsequent amendments necessitate obtaining clearance from the MoEFCC for diversion of forest land for non-forest purposes. For tree felling, NOC will be required	Not Applicable
	Water (Prevention and Control of Pollution) Act, 1974 and; Air (Prevention and Control of Pollution) Act, 1981	Consent to Establish (CTE) & Consent to Operate (CTO) from the HPPCB for Tourism unit/ Hotel. CTE and CTO for setting up of diesel generators (if any), hot mix plant, wet mix plant, crusher plant (if exclusively for this project) to be obtained by the Contractor, prior to commencement of construction works at site. If contractor purchases the construction materials (e.g., sand, stone, and gravel) from third party, they must ensure that materials are coming from quarry sites/ stone crushers with valid environmental permits as applicable.
	The Noise Pollution (Regulation and Control) Rules, 2000.	The project shall put measures for abatement of noise including noise emanating from vehicular movements, blowing of horns, and sound producing instruments and ensure that the existing noise levels do not exceed the ambient air quality standards specified under these rules. DG set should be provided with acoustic enclosure.
	Ancient Monuments and Archaeological Sites and Remains Act, 1958 and Ancient Monuments and Archaeological Sites and Remains (Amendment and Validation) Act, 2010.	The Act designates areas within 100 meters (m) of the “protected monument/area” as “prohibited area” and beyond that up to 200 m as “regulated area” respectively. No “construction” is permitted in the “prohibited area” and any construction activity in the “regulated area” requires prior permission of the Archaeological Survey of India (ASI). Gauri Shankar temple is about 205 m from the site. Construction/ renovation

Project	Applicability of Acts/ Guidelines	Compliance criteria
		activity requires permission from the ASI.
	Hazardous Waste (Management and Handling) Rules, 1989 & amended on 2016	Hazardous wastes like oil and lubricants generated shall be disposed off as per provisions of Hazardous Waste Rules.
	Himachal Pradesh Ground Water (Regulation and Control of Development and Management) Act, 2005; Himachal Pradesh Ground Water (Regulation and Control of Development and Management) Rules, 2006;	Not Applicable
	The Himachal Pradesh non-biodegradable garbage (control) Act, 1995;	Applicable
	The Himachal Pradesh Town and Country Planning Act, 1977;	Applicable NOC from TCP department is required
	<p>The BOCW Act 1996; Employer shall-</p> <ul style="list-style-type: none"> • Provide and maintain, at suitable point, sufficient quantity of wholesome drinking water, such point shall be at least 6 meters away from any washing areas, urinals or toilets • Provide sufficient urinals and latrines at convenient place, easily accessible by workers • Provide free of charge, temporary living accommodations near to work sites with separate cooking place, bathing and lavatory facilities and restore the site as pre conditions after completing the constructionworks • Provide crèche with proper accommodation, ventilation, lighting, cleanliness and sanitation if more than fifty female workers are engaged • Provide first aid facilities in all construction sites • For safety of workers employer shall provide- • Safe access to site and work place • Safety in demolition works • Safety in use of explosives • Safety in operation of transporting equipment's and appoint competent person to drive or operate such vehicles and equipment's • Safety in lifting appliance, hoist and lifting gears • Adequate and suitable lighting to every work place and approach • Prevention of inhalation of dust, smoke, fumes, gases during 	Applicable Contractors are required to follow all the provisions of BOCW Act.

Project	Applicability of Acts/ Guidelines	Compliance criteria
	construction works and provide adequate ventilation in work place and confined space <ul style="list-style-type: none"> • Safety in material handling and stacking/un stacking • Safeguarding the machinery with fly-wheel of moving parts • Safe handling and use of plants operated by compressed air • Fire safety • Limit of weight to be lifted by workers individually • Safety in electric wires, apparatus, tools and equipment's • Provide safety net, safety sheet, • safety belts while working at height 	
	<p>Motor Vehicles Act, 1988 No person will be allowed to drive a motor vehicle unless he holds an valid driving license issued to him authorizing him to drive the vehicle</p>	Applicable Valid and appropriate (LMV/HMV) driving license of operators and drivers is required to operate or drive vehicle and equipment at construction site
	<p>The Petroleum Rules 2002 All due precautions will be taken at all times to prevent escape of petroleum into any drain, sewer, and harbor, river or watercourse or over any public road or railway line.</p>	Do not allow any escape of diesel, lubricants in to drain or any nearby water course
	<p>Gas Cylinder Rules 2004 These rules deal with Filling, possession, import and transport of cylinders, Safety relief devices, Marking on cylinders, Markings on valve, Identification colours, Labelling of cylinders, Restriction on delivery or dispatch of cylinders, repairing of cylinders, Prohibition of employment of children and intoxicated persons, Prohibition of smoking, fires, lights and dangerous substances, General precautions, Special precautions against accidents, Competent person to be incharge of operations, Handling and use, Restrictions on filling, Loading, unloading and transport of cylinders, Storage of cylinders, ownership and record keeping etc.</p>	All the safety in storage, transportation, handling, usage, maintenance, repairing of gas cylinders and other precautions should be taken and record should be kept maintained.
	<p>Solid Waste Management Rules, 2016 As per this Act following provisions are made-</p> <p>Responsibility of Solid Waste Generator</p> <p>i. Segregate and store the waste generated in three separate streams namely bio-degradable, non-biodegradable and domestic</p>	Applicable Contractor to follow all the rules during construction works

Project	Applicability of Acts/ Guidelines	Compliance criteria
	<ul style="list-style-type: none"> ii. hazardous wastes in suitable bins and handover segregated wastes to authorized waste pickers or waste collectors as per the direction or notification by the local authorities from time to time; iii. Store separately construction and demolition waste, as and when generated, in his own premises and shall dispose of as per the Construction and Demolition Waste Management Rules, 2016; and iv. No waste generator shall throw, burn or burry the solid waste generated by him, on streets, open public spaces outside his premises or in the drain or water bodies. 	
	<p>Construction and Demolition (C&D) Waste Management Rules, 2016 Following rules are applicable on contractor during construction works-</p> <ul style="list-style-type: none"> i. segregate construction and demolition waste and deposit at collection center or handover it to the authorized processing facilities ii. Shall ensure that there is no littering or deposition so as to prevent obstruction to the traffic or the public or drains. iii. Large generators (who generate more than 20 tons or more in one day or 300 tons per project in a month) shall submit waste management plan and get appropriate approvals from the local authority before starting construction or demolition or remodeling work iv. Large generators shall have environment management plan to address the likely environmental issues from construction, demolition, storage, transportation process and disposal / reuse of C & D Waste. v. Large generators shall segregate the waste into four streams such as concrete, soil, steel, wood and plastics, bricks and mortar, large generators shall pay relevant charges for collection, transportation, processing and disposal as notified by the concerned authorities; 	<p>Applicable Contractor to follow all the rules during construction works</p>
	<p>Labor Laws The contractor shall not make employment decisions based upon personal characteristics unrelated to job requirements. The contractor shall base</p>	<p>Applicable Labour laws including amendments issued from time to time applicable to establishments engaged in construction of civil works. (Details is given in Annexure-9)</p>

Project	Applicability of Acts/ Guidelines	Compliance criteria
	<p>the employment relationship upon equal opportunity and fair treatment, and shall not discriminate with respect to aspects of the employment relationship, including recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment or retirement, and discipline. The contractor shall provide equal wages and benefits to men and women for work of equal value or type.</p> <p>Contract Labour (Regulation and Abolition) Act, 1970</p> <p>The Act provides for certain welfare measures to be provided by the Contractor to contract labor and in case the Contractor fails to provide, the same are required to be provided by the Principal Employer by Law. The principal employer is required to take Certificate of Registration and the Contractor is required to take a License from the designated Officer. The Act is applicable to the establishments or Contractor of principal employer if they employ 20 or more contract labor.</p> <p>Workmen Compensation Act, 1923</p> <p>The Act provides for compensation in case of injury by accident arising out of and during the course of employment.</p>	
	<p>Inter-State Migrant Workmen's (Regulation of Employment and Conditions of Service) Act, 1979</p> <p>The Act is applicable to an establishment which employs 5 or more inter-state migrant workmen through an intermediary (who has recruited workmen in one state for employment in the establishment situated in another state). The inter-state migrant workmen, in an establishment to which this Act becomes applicable, are required to be provided certain facilities such as housing, medical aid, traveling expenses from home up to the establishment and back, etc.</p>	Applicable
	<p>Right to Equality,</p> <p>Right to Equality ensures equal rights for all the citizens. The Right to Equality prohibits inequality on the basis of caste, religion, place of birth, race, or gender. It also ensures equality of opportunity in matters of public employment and prevents the State from discriminating against anyone in matters of employment on the grounds only of religion, race, caste, sex, descent, place of birth, place of residence or any of them.</p>	Applicable

Project	Applicability of Acts/ Guidelines	Compliance criteria
	<p>The Sexual Harassment of Women at workplace (Prevention, Prohibition and Redressal) Act, 2013 Whereas sexual harassment results in violation of the fundamental rights of a women to equality under article 14 and 15 of the Constitution of India and her right to life and to live with dignity under article 21 of the Constitution and right to practice any profession or to carry on any occupation, trade or business which includes a right to safe environment free from sexual harassment.</p>	Applicable
	<p>Child Labor (Prohibition and Regulation) Act, 1986 The Act prohibits employment of children below 14 years of age in certain occupations and processes and provides for regulation of employment of children in all other occupations and processes. Employment of child labor is prohibited in Building and Construction Industry.</p>	Applicable
	<p>Minimum Wages Act, 1948 The employer is supposed to pay not less than the Minimum Wages fixed by appropriate Government as per provisions of the Act if the employment is a scheduled employment. Construction of Buildings, Roads, Runways are scheduled employment</p>	Applicable
	<p>Payment of Wages Act, 1936 It lays down as to by what date the wages are to be paid, when it will be paid and what deductions can be made from the wages of the workers.</p>	Applicable
	<p>Equal Remuneration Act and Rules, 1976 The Act provides for payment of equal wages for work of equal nature to Male and Female workers and not for making discrimination against Female employees in the matters of transfers, training and promotions etc.</p>	Applicable

D. Compliance to Regulatory Requirements

58. The proposed project does not require Statutory Clearances from MoEFCC. The project requires to obtain required consents and permissions from competent authorities. All no objection certificates (NOC), CTE, CTO and other clearances will be obtained during pre-construction stage. Other permission will be required during construction period and will be taken by Contractor such as Utility Shifting i.e. water supply, electric cables, poles, telephone lines etc. and road cutting, excavation, clearing of vegetation, construction waste disposal sites from concerned regulatory agencies like Urban local body (Nagar Panchayat/Municipal Council), HPSPCB, HPSEB, Traffic department, Town and country planning department etc.

as required time to time. Sourcing/ procurement of construction material from authorized/ approved agencies/ vendors/ quarries will be taken by contractor.

59. The specific requirements are mentioned as under for which the contractor should comply with before initiating the construction works are presented in following Table-10.

Table 10: NOCs to be taken by Contractor during pre-construction and construction phases

S.No.	Activity	Statutes under which clearance is required	Implementation
1	Land for project activity/ approval of building plan	Allotment and approval for specific use NOC under the Himachal Pradesh Town and Country Planning Act, 1977	PIU/ PMU
2	Establishment/ Installation & operation of Tourism unit/ Hotel	Consent to establish under Air Act, 1981 and Water Act, 1974	PIU/PMU
3	Establishment of Construction camp/s	Allotment and approval for specific use	Contractor
4	NOC for disposal of excess earth at all the sites	Construction & Demolition Waste Management Rules, 2016	Contractor
5	Tree Cutting, if required	State forest department	PIU
6	Hot mix plants, Crushers, Batching plants and DG Set at site	Consent to establish and consent to operate under Air Act, 1981 from HPPCB	Contractor
7	Storage, handling and transport of hazardous materials	Hazardous Wastes (Management and Handling) Rules. 2016 Manufacturing, Storage and Import of Hazardous Chemicals Rules, 1989 from HPPCB	Contractor
8	New Sand mining, quarries and borrow areas	Environmental clearance under EIA Notification 2006	Contractor/ Third Party
9	Use of vehicles and equipment	Pollution under control certificate (PUC) form RTO	Contractor
10	NOC for installation of bore wells	Notification from Ministry of Jal Shakti Vibhag (Department of Water Resources, River Development and Ganga Rejuvenation), Central ground water authority on 20 th September 2020.	PIU/ PMU
11	Permission for use of water for construction & operation purposes	From Nagar Panchayat/ Jal Shakti Vibhag (JSV)/ Irrigation and Public Health (IPH) Department- Water Resource Department	Contractor
12	Utility Shifting	Himachal Pradesh State Electricity Board Limited	Contractor/ PIU

60. PMU will be overall responsible for supervision in getting all clearance and provide details to ADB through semi-annual report. PMU will ensure availability of all necessary regulatory clearances and approvals prior to commencement of works. Respective PIUs, with support of project consultants and contractors, are responsible for obtaining the clearances/ permits and ensuring conditions/ specifications/ provisions incorporated in the project design, cost and implantation. The PIUs shall report to PMU the status of compliance to clearances/ permits as part of the regular progress reporting.

V. DESCRIPTION OF THE ENVIRONMENT

61. This section presents a brief description of the existing environment around the Conservation and Restoration of Naggar Castle including its physical resources, ecological resources, socio-economic development, and social and cultural resources. Broad aspects on various environmental parameters such as geography, climate and meteorology, physiographic, geology, seismology, ecology, socio-cultural and economic development parameters that are likely to be affected by the proposed project are presented. Secondary information was collected from the official websites and reports of relevant government agencies like the Forest Department, Archaeological Survey of India (ASI), Himachal Pradesh State Pollution Control Board, Central Ground Water Board for relevant information on forest cover, location of ASI sites, surface and ground water, etc. and meteorological data from web sources.

A. Physical Environment

1. Location, Area and Connectivity.

62. The project Conservation and Restoration of Naggar Castle is located about 23 Kms from Kullu town. The coordinates of the project site are 32°6'43.57"N latitude and 77°9'52.49"E longitude. Kullu district is one of the 12 districts in Himachal Pradesh. It is located on the banks of the Beas River in the Kullu Valley.

Naggar in Kullu valley is a broad open valley formed by the Beas River between Manali and Larji. This valley is known for its temples and its hills covered with pine and deodar forest and sprawling apple orchards. The course of the Beas River, originating from Beas Kund presents a succession of hillside settlements studded amongst forests of deodar that tower above pine trees on the lower rocky ridges. Together with the river Beas running through the valley, the town of Naggar offers truly magnificent views. Kullu Valley is sandwiched between the Pir Panjal, Lower Himalayan and Great Himalayan Ranges, located in Northern India, 497 km away from the capital of India. Naggar can be reached from Delhi by national highway NH 1 up to Chandigarh and from there by national highway NH21 that passes through Bilaspur, Sundernagar and Mandi towns. The road distance from Chandigarh to Naggar is about 275 km; the total distance from Delhi to Naggar is about 535 km.

The nearest airport (IATA code KUU) is at Bhuntar town (also known as Kullu-Manali airport.) situated on NH21 about 33 km south of Naggar.

There is no railhead available close to Naggar. The nearest narrow gauge railhead is at Joginder Nagar (133 km). The nearest broad gauge rail heads are at Una 233 km away and Kiratpur Sahib 251 km.

2. Topography, Soils and Geology

63. **Topography.** The existing project site of Naggar Castle is relatively flat and the adjoining proposed site for parking block is relatively hilly. The proposed project site is located about 1763m altitude above mean sea level.

Geology. The terrain of the district is mostly hilly and undulating. The rock types found in the district are phyllite, slate, quartzite limestone, schists and granites and have been classified on the basis of their physical characters, mode and period of formation. These are named either on rock types or after local names where these were first studied. These groups are central gneiss, Kullu formation, Banjar formation and tourmaline granites. Central gneiss presumably the oldest rocks made over 1,500 million years comprised various types of gneissic rocks within layers of quartzite, granites and pegmatites. The large formation contains thick layers of grey dolomite and pink limestone besides slate phyl-lite and quartzite. The tourmaline granites are inferred to occur as intrusive and are the probable source of high radioactivity in the area where many hot water springs have occurred in this area.

64. **Soil.** The soil in general is brown and varies in texture from loamy sand to clay loam. This type of sandy loam soil with coarse texture which enhances the nutrients and fluid movements that is very good for plant growth and agriculture. The soil at the site consists of mixture of Sand, Silt and some gravel.

65. **Drainage.** The river Beas and its tributaries mainly drain more than 80% of the district. This river originates in the Pir-Panjal range near Rohtang, at an elevation of about 4000m and is joined by number of tributaries viz. Parvati, Hurla, Sainj etc. All the tributaries are perennial in nature. The Beas River flow towards south-southwest direction under steep gradient up to Larji and thereafter, it becomes gentler. Besides Beas, Sutlej River forms a border between Shimla and Kullu district and flows in south easterly direction. Both the rivers are flowing in their youth stages as indicated by 'V' shaped river profile and deeper river channels. Kullu district is drained by one major river; the river Beas and in addition to this river there are three other secondary rivers namely; River Parvati which drains central part of the Kullu district, River Sainj which drains the central southern part of the district and River Tirthan which drains the southern part of the district. Drainage map is given in Fig. 5.

Figure 5: Drainage Map of District-Kullu, Himachal Pradesh



(Source: SURVEY DOCUMENT KULLU 2016)

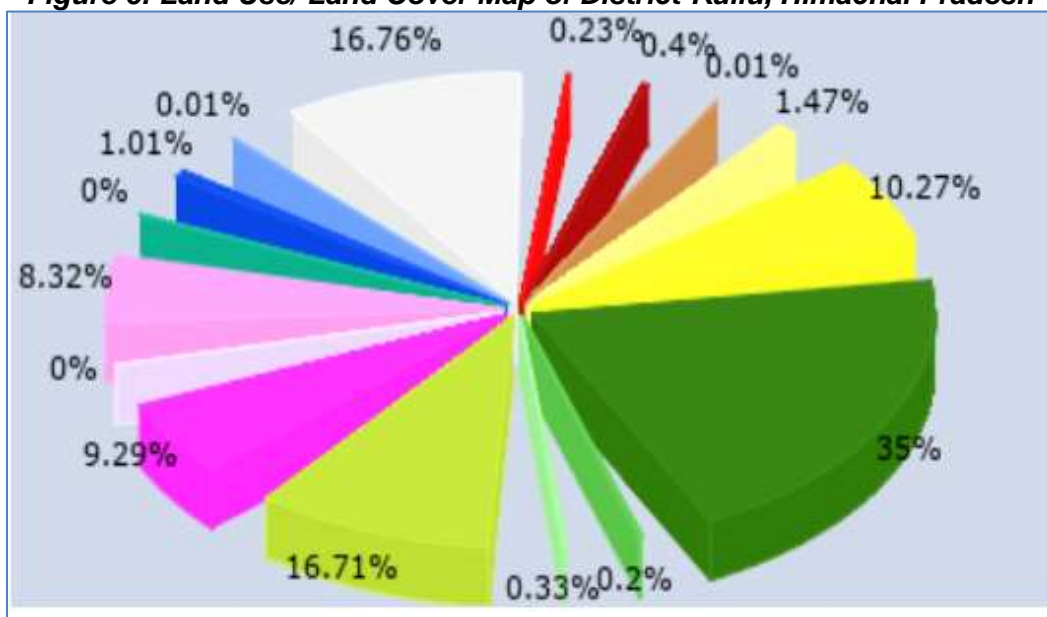
66. **Land Use/ Land Cover.** LULC information (2015-16) for Kullu district is provided in table and map. Total geographical area is 5503 Sq.km. Major land use of the district is under Forest, Evergreen/ Semi-evergreen (35%) followed by Snow & Glacier (16.76%), Grass/ Grazing (16.71%), Agriculture, Plantation (10.27%), Barren/ unculturable/ wastelands, scrub land (9.29%), Barren/ unculturable/ wastelands/ barren rocky (8.32%) & other (3.65%). Details of the land use pattern of the district is provided below Table 11 and Figure 6. The land use around the site comprises forest and private constructions.

Table 11: Land Use/ Land Cover of District Kullu, Himachal Pradesh

LULC Class	Area (Sq.Km)	LULC Class	Area (Sq.Km)
Builtup,Urban	12.39	Builtup,Rural	22.08
Builtup,Mining	0.31	Agriculture,Crop land	80.74
Agriculture,Plantation	565.39	Forest,Evergreen/ Semi evergreen	1925.78
Forest,Deciduous	10.87	Forest,Scrub Forest	18.32
Grass/Grazing	919.28	Barren/unculturable/ Wastelands, Scrub land	511.4
Barren/unculturable/ Wastelands, Sandy area	0.07	Barren/unculturable/ Wastelands, Barren rocky	458.01
Wetlands/Water Bodies, Inland Wetland	0.09	Wetlands/Water Bodies, River/Stream/canals	55.49
Wetlands/Water Bodies, Reservoir/Lakes/Ponds	0.55	Snow and Glacier	922.24

(Source: nrsc.gov.in)

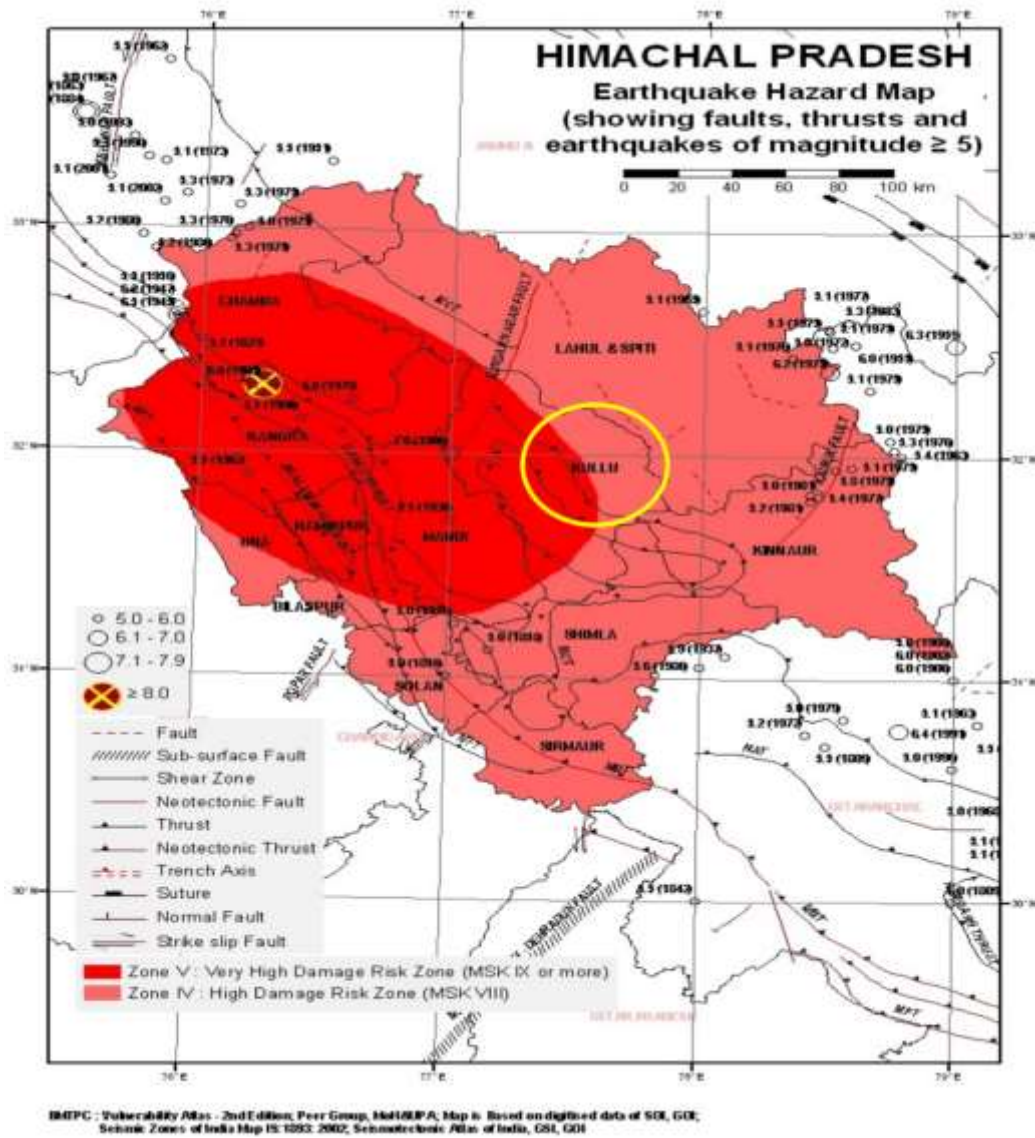
Figure 6: Land Use/ Land Cover Map of District-Kullu, Himachal Pradesh



3. Seismology.

67. From seismic point of view, the state of Himachal Pradesh which forms a part of NW Himalayas is very sensitive. During the last century the state has been shaken by a number of micro as well as macro earthquakes. As per the earthquake hazard map of state, the areas falling in districts Chamba, Kangra, Mandi, Kullu, Hamirpur, Bilaspur are very sensitive as they fall in Very High Damage Risk Zone (MSK IX or More) i.e., Zone-V, whereas the rest of the areas falls in High Damage Risk Zone (MSK VIII). The project area falls in Very High Damage Risk Zone (MSK IX or More) i.e. Zone V. Earthquake hazard map of the State is provided at Figure-7.

Figure 6: Earthquake Hazard Map of the State of Himachal Pradesh



(Kullu district marked in yellow)

68. **Landslides Hazard.** Another form of the natural hazards in the state is the occurrences of landslides. The hills and mountains of Himachal Pradesh are liable to suffer landslides during monsoons and also in high intensity earthquakes. The vulnerability of the geologically young and not so stable steep slopes in various Himalayan ranges, has been increasing at a rapid rate in the recent decade due to inappropriate human activity like deforestation, road cutting, terracing and changes in agriculture crops requiring more intense watering etc. The hills and mountains of Himachal Pradesh are liable to suffer landslides during monsoons and also in high intensity earthquakes. Landslides Hazard Risk map & table of landslide prone areas of the State of Himachal Pradesh is provided in Figure-8 & Table 12. Major part of the Kullu district is prone to High risk of landslides.

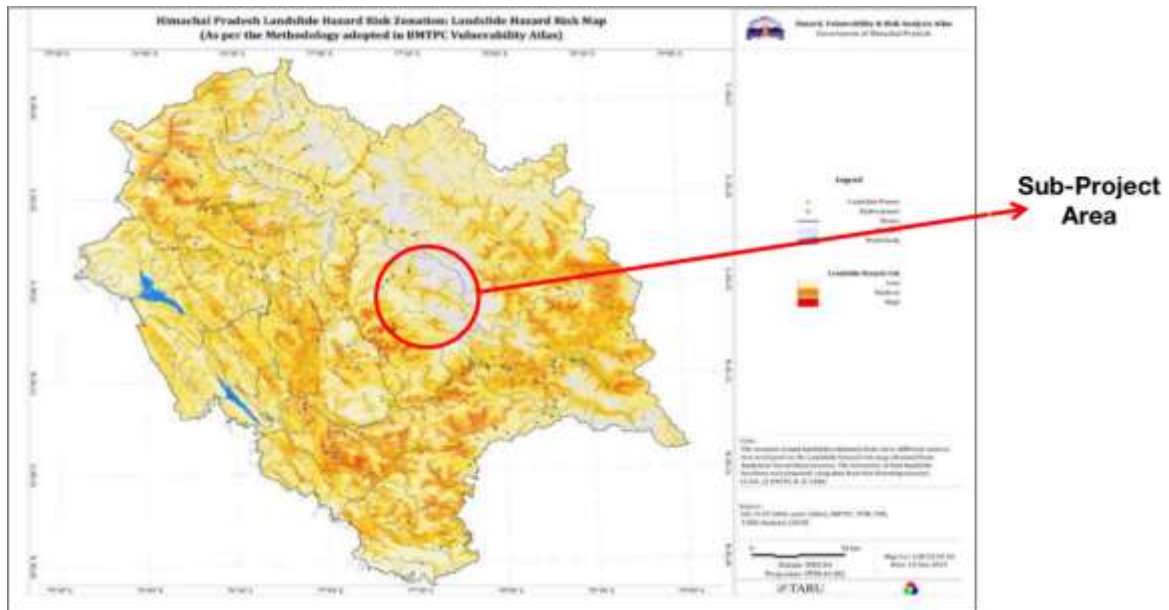
Table 12: Landslide Prone Areas of Himachal Pradesh

District	Severe to very High	High	Moderate to Low	Unlikely	Total Area
Bilaspur	216	842	83	1	1142
Chamba	2120	3829	351	70	6370
Hamirpur	0	851	204	45	1100
Kangra	123	3698	1233	557	5611
Kinnaur	868	4956	498	0	6322
Kullu	1820	3512	65	3	5401
Lahaul & Spiti	127	11637	1825	2	13591
Mandi	968	1978	826	98	3870
Shimla	893	3345	767	14	5019
Sirmaur	95	1805	614	228	2742
Solan	556	1118	157	79	1910
Una	2	678	517	311	1508

Source: BMTPC, Landslide Hazard Zonation Atlas of India.

(Area in square kilometer)

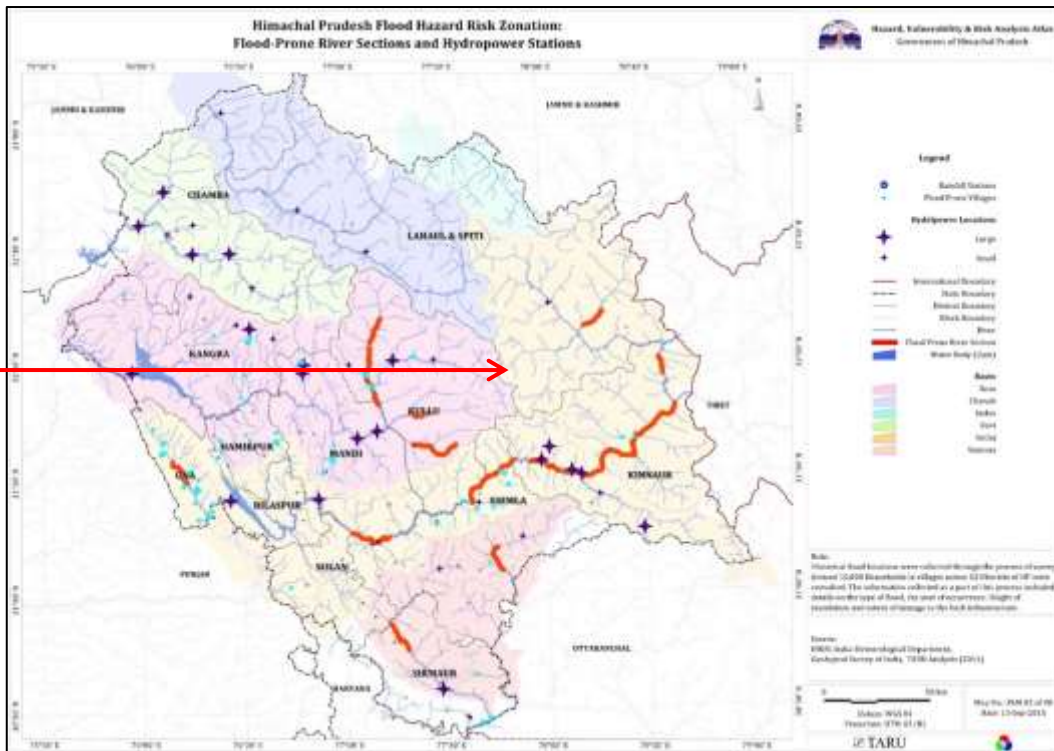
Figure 7: Landslides Hazard Risk Map of the State of Himachal Pradesh



69. **Flood Hazard.** Floods are another form of natural disaster which the state experiences every year. Flood Hazards risk map of the State of Himachal Pradesh is provided in Figure-9. The project site is safe from any flood risk.

Figure 8: Flood Hazard Risk Map of the State of Himachal Pradesh

Project Area



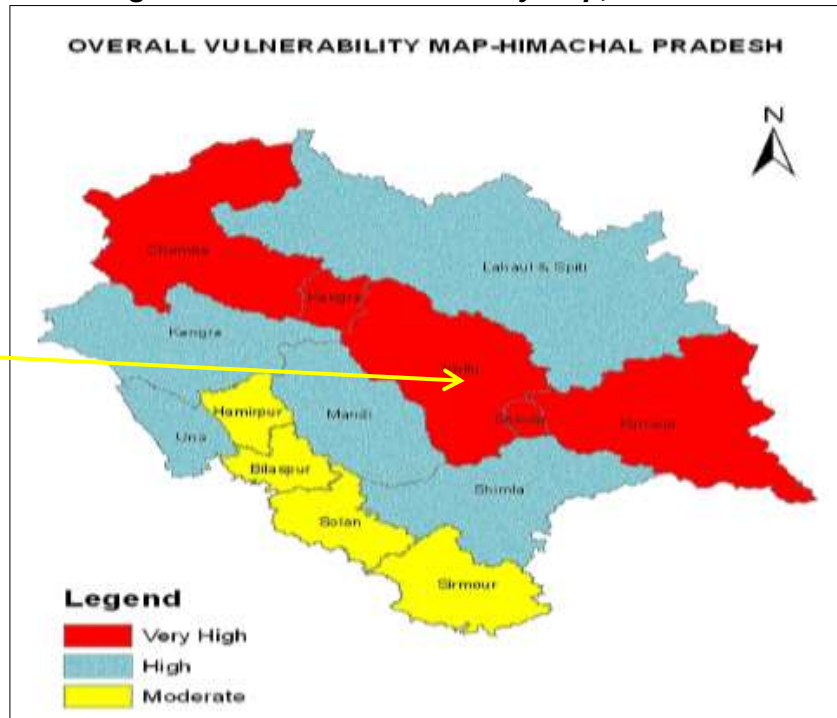
70. **Overall Hazard Vulnerability.** The overall vulnerability of the state on the basis of the matrix suggests that the district Kullu falls in very high vulnerable risk with low vulnerability for earthquake, low risk for other hazards including Landslides and Floods, and moderate risk for Avalanche, etc. Hazard vulnerability status & map of the State of Himachal Pradesh is given in below Figure 10 & 11, respectively.

Figure 9: Hazard Vulnerability of H.P.

HAZARD VULNERABILITY OF HIMACHAL PRADESH							
DISTRICTS	E.Q	LANDSLIDE	FLOODS	AVALANCHE	INDUSTRY	CONST. TYPE & DENSITY	OVERALL VULNERABILITY
Kangra	VII	M	L	--	M	VII	II
Chamba	II	II	II	M	M	II	VII
Hamirpur	VII	L	L	--	--	II	M
Mandi	VII	M	M	--	M	II	II
Kullu	II	II	II	M	II	II	VII
Bilaspur	II	M	L	--	M	VII	M
Una	M	L	II	--	II	M	II
Sirmour	M	M	L	--	II	M	M
Solan	L	L	L	--	II	M	M
Kinnaur	II	II	II	VII	II	M	VII
L&Spiti	L	M	L	VII	--	M	II
Shimla	L	M	L	--	II	M	II

Source: Current Status of Vulnerability (hpsdma.nic.in)

Figure 10: Overall Vulnerability Map, H.P.



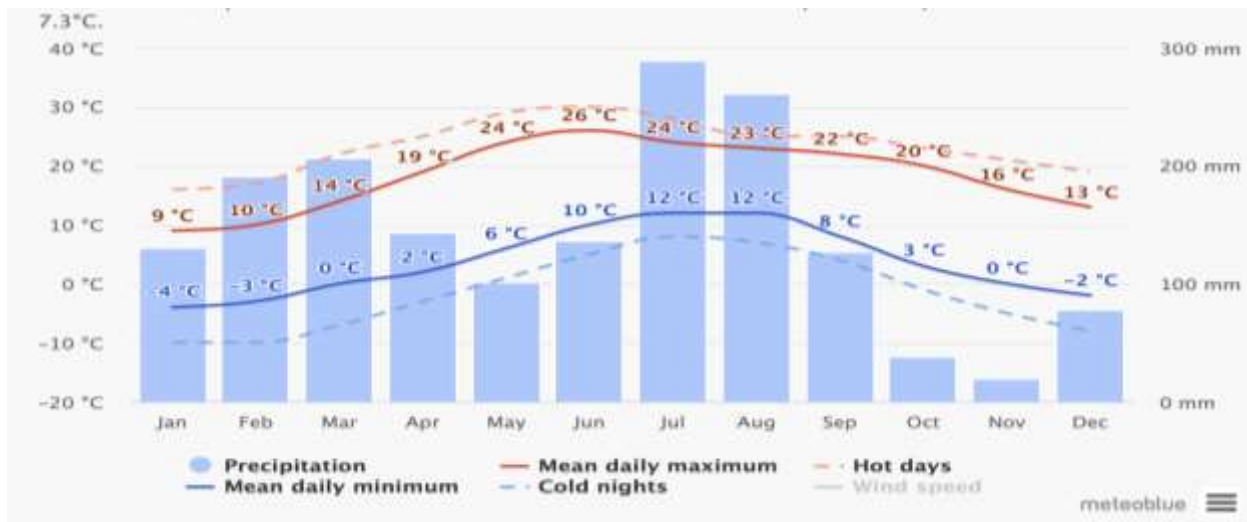
Source: Current Status of Vulnerability (hpsdma.nic.in)

4. Climatic Conditions.

71. **Climate.** The proposed project site is about 23 km from Kullu Town. The climate of Naggar is similar to Kullu which is cold and temperate with a significant amount of rainfall during the year. The summers here are pleasant while there is plenty of snowfall in the winters. Kullu features a subtropical highland climate (Cfb) with warm summers, relatively cold winters and a high diurnal temperature variation. The temperatures range from -4°C to 30°C over the year with the hottest day crossing 30°C and the coldest day going below -2°C. The average temperature during summer is between 20°C to 30°C and between 1°C to 15°C in the winter.

72. **Rainfall.** Monthly precipitation varies between 20 mm in November and 290 mm in July. On average, some 120 mm of precipitation is received during winter and spring months, increasing to some 160 mm in summer as the monsoon approaches. The average total annual precipitation is 1200 mm. Average temperature and precipitation is given in Fig. 12.

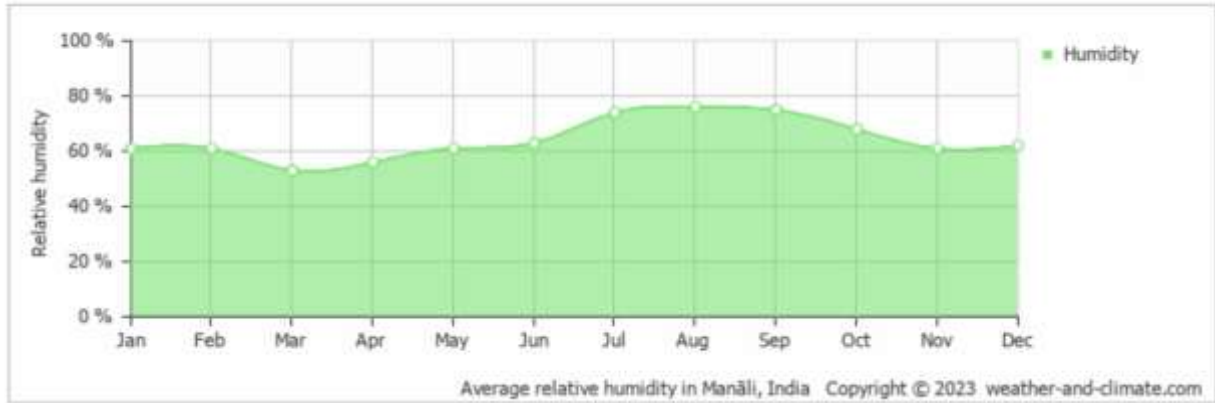
Figure 11: Average Temperature and Precipitation of Kullu



Source: https://www.meteoblue.com/en/weather/week/kullu_india_1265709

73. **Relative Humidity.** The average Relative Humidity of Kullu is 60% although it vary from 53% during summer (March) to 70% during the Monsoon (August). The most humid month of the year is August. Relative humidity of the Kullu is given in Figure 13.

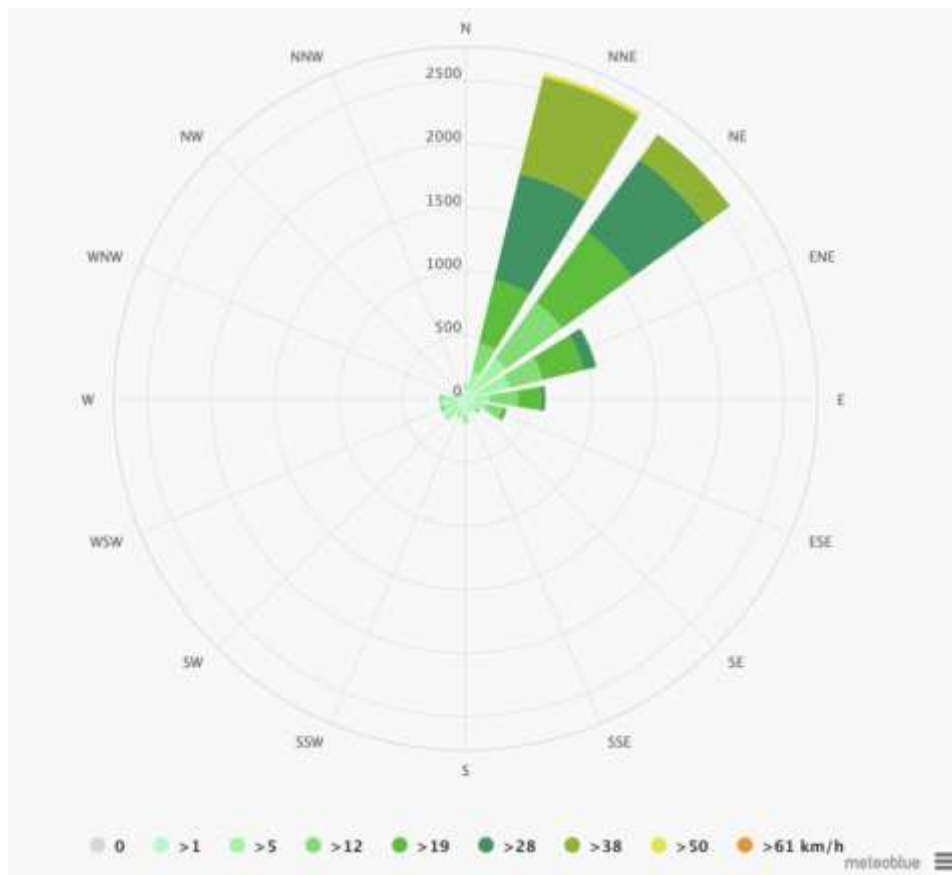
Figure 12: Monthly Relative Humidity Data of Kullu



Source: https://www.meteoblue.com/en/weather/week/kullu_india_1265709

74. **Wind Speed & Wind Direction.** Windrose of Kullu shows that dominant wind blows from the SW much of the time. The emissions during the construction and operation will travel towards South direction. Wind Rose of Kullu is given in Figure 14.

Figure 13: Wind Rose of Kullu



Source: https://www.meteoblue.com/en/weather/week/Kullu_india_1263967

5. Surface Water

75. Kullu district is drained by one major river; the River Beas and in addition to this river there are three other secondary rivers namely; River Parvati which drains central part of the Kullu district, River Sainj which drains the central southern part of the district and River Tirthan which drains the southern part of the district. Beas River is flowing through Kullu Town. Beas River is 1.37 km from the project site. Google map showing the river with respect to the proposed project site in figure-15. Water quality of river Beas U/S and D/S of Kullu, monitored by CPCB is given in Table 13.

Figure 14: Surface water resources (river) near the project site in Naggar

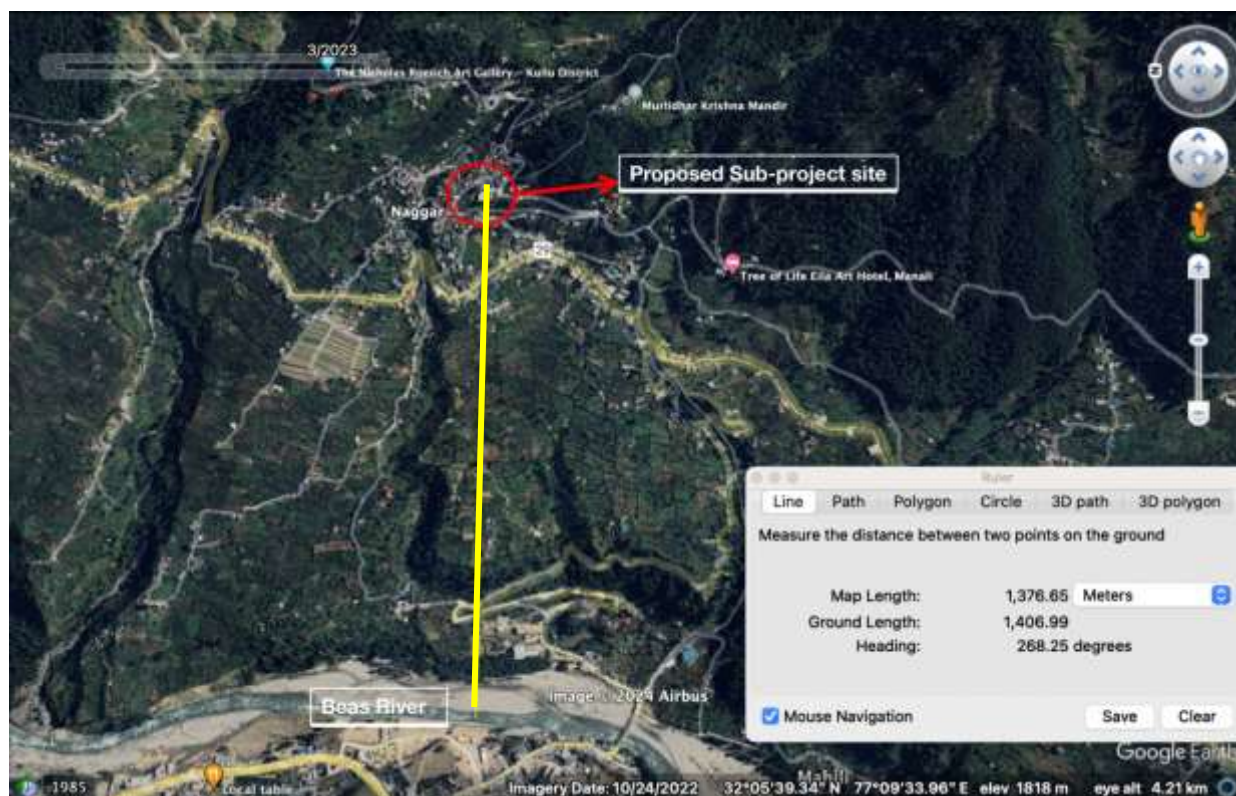


Table 13: Surface Water Quality of River Beas U/S and D/S Kullu

Parameter	River Beas U/S Kullu		River Beas D/S Kullu		CPCB Water Quality Criteria for A to C Classes for Surface Water
	Min	Max			
pH	7.3	8.1	7.2	7.9	6.5-8.5
Temperature (Deg. 0C)	6.0	16.0	5.0	15.0	Not Specified
Nitrate, mg/l, Max.	0.32	1.22	0.32	1.82	Not Specified
Biochemical Oxygen Demand, mg/l	1.0	1.0	1.0	1.0	<3
DO, mg/l	5.8	9.1	7.6	8.8	4-6
Conductivity(umho/Cm)	67	127	78	145	Not Specified
Fecal Coliform (MPN/ 100 ml)	70	140	94	540	<2500 MPN/ 100 ml
Total Coliform (MPN/ 100 ml)	350	920	430	1600	Not Specified

Source: Water Quality Data Of Rivers Monitored Under National Water Quality Monitoring Programme (NWMP),

CPCB, 2021

76. **Ground water & its Quality.** Ground water resources and irrigation potential for Kullu valley of the district has not been computed as per the GEC-97 methodology due to hilly terrain and localized aquifers. Snow fall in the higher reaches and rain fall in the lower areas, recharge the ground water. Springs are the other main sources for the irrigation and water supply schemes.

77. The ground water sources in the Kullu district including Naggar are Beas River, dug wells, hand pumps, and tube wells. The population of the district is widely distributed and their water demands are fulfilled to larger extent, from the traditional water sources like springs, percolation well/ infiltration galleries, step-wells and streams, by piped water supplies. Depth to water level varies from 1.62m to 31.45 m below ground level. Major potential areas for the ground water development are the valley fill deposits, occurring along Beas River between Kullu and Manali. Rainfall infiltration is the principal source of ground water recharge to the aquifer system in the district. Inflow seepages from khads/ rivers also contribute to the ground water resources/ reserves. Based on the Ground water Information Booklet, the water quality data for the project region is given in Table 14. The water quality is within the permissible limit of safe drinking water set by Bureau of Indian Standard (BIS). Water quality monitoring will be conducted by the contractors prior to the start of construction works.

Table 13: Ground Water Quality in Project Area

Parameter	pH	EC µS/cm at 25°C	HCO3	Cl	F	Ca	Mg	Na	K	Total Hardness as CaCO3
Range (Spring/Dug wells) Minimum	7.69	34	21	3.5	0.10	6	0.75	0.4	0.1	18
Range (Spring/Dug wells) Maximum	8.65	1040	350	202	0.79	156	34	134	48	530

Source: Ground Water Information Booklet Kullu District Himachal Pradesh, 2013

78. **Ambient Air Environment.** Project site is located in Naggar characterized mainly by rural areas and forests in its immediate surroundings. Sources of air pollution in the project area are mainly vehicular emission, which in general is low except peak tourist seasons. There are no pollution sources like industrial activities etc. near the project sites.

79. In view of ambient air quality, no data of ambient air quality is available for the nearby monitoring location of HPSPCB to project site. Baseline monitoring will be done by the contractor before commencement of works.

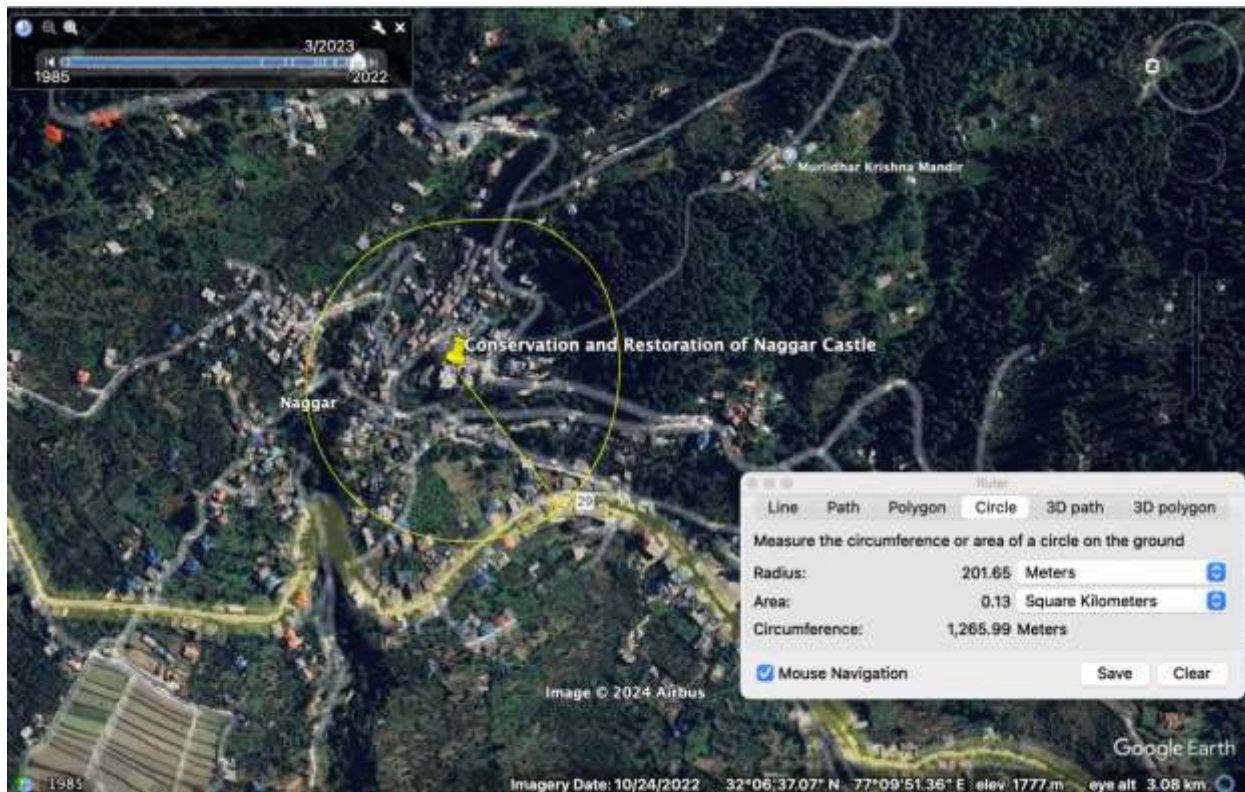
80. **Noise Quality.** Project site located in Naggar characterized mainly by rural areas in its immediate surroundings. No sources of noise pollution in the project area except vehicular road is located near the site (<100m). Baseline noise levels are observed to be low, except during peak tourist seasons when noise levels may slightly increase due to tourist influx. Baseline monitoring will be done by the contractor before commencement of works.

B. Ecological Environment

81. **Forest & Wildlife.** 35.90% of Kullu district is covered by Forest. The project site is not located in any type of forest land. The nearest forest ranges are Naggar Range (130m in South East direction) and Kullu Forest Range. These belong to Himalayan Moist Temperate Forests chiefly dominated by conifers. Main tree species are Deodar, Fir, Spruce, Poplar and Walnut. No felling of trees is required for the project. As the site is mainly for Wellness Centre, hence no impact on the forests is envisaged due to the project activities.

An environmental setting map showing nearby forest & other features is provided in Figure-16.

Figure 15: Environmental Setting Map on Google Earth



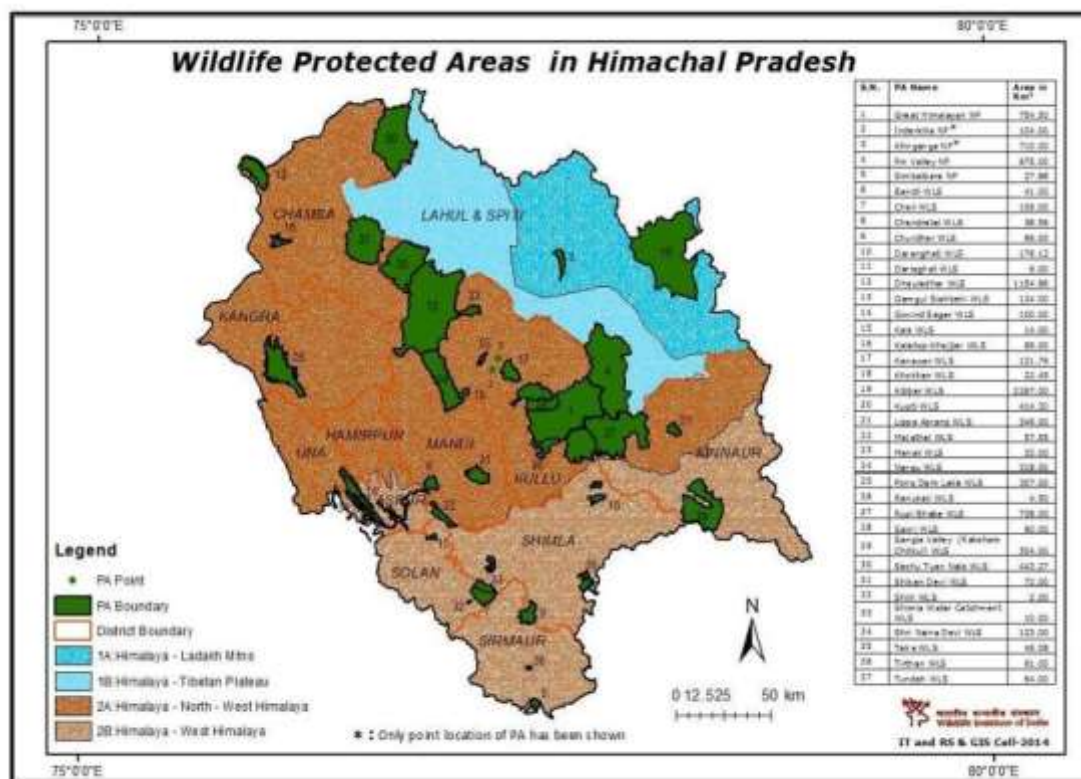
82. **Protected areas.** The list of protected areas (National Parks and Wildlife Sanctuaries) in Himachal Pradesh is given in Table 15. Map showing wildlife protected areas in the State of Himachal Pradesh is provided below in Figure-17.

Table 14: List of Protected Areas in Himachal Pradesh

Sl. No.	Sanctuaries	District	Area (km ²)
1	Bandli	Mandi	32.11
2	Chail	Solan	16
3	Chandra Tal	Lahaul & Spiti	38.56 +(11.53 for Consideration)
4	Churdhar	Sirmour	55.52
5	Daranghati	Shimla	171.50
6	Dhauladhar	Kangra	982.86
7	Gamgul-Siyabehi	Chamba	108.40
8	Kais	Kullu	12.61
9	Kalatop-Khajjiar	Chamba	17.17
10	Kanawar	Kullu	54.27
11	Khokhan	Kullu	14.94
12	Kibber	Lahaul & Spiti	2220.12
13	Kugti	Chamba	379
14	Lipa Asrang	Kinnaur	31
15	Majathal	Solan	30.86
16	Manali	Kullu	29
17	Nargu	Mandi	278
18	Pong Dam Lake	Kangra	207.59
19	Rakchham-Chitkul	Kinnaur	304
20	Renuka	Sirmour	4

Sl. No.	Sanctuaries	District	Area (km ²)
21	Rupi-Bhaba	Kinnaur	503
22	Sechu-Tuan Nalla	Chamba	390.29
23	Sainj	Kullu	90
24	Shikari Devi	Mandi	29.94
25	Shimla Water Catchment	Shimla	10
26	Simbalbara	Sirmour	27.88
27	Talra	Shimla	46.48
28	Tirthan	Kullu	61
29	Tundah	Chamba	64
30	Water Supply Catchment	Shimla	10
National Parks			
1	Great Himalayan National Park	Kullu	765
2	Pin Valley National Park	Lahaul & Spiti	675
3	Inderkilla National Park	Kullu	104
4	Khirganga National Park	Kullu	710
5	Simbalbara National Park	Nahan	27.88
Conservation Areas			
1	Shilli Conservation Reserve	Solan	1.49
2	Shri Naina Devi Conservation Reserve	Bilaspur	17.01
3	Darlaghat Conservation Reserve	Solan	0.67

Figure 16: Map showing Wildlife Protected Areas in the State of Himachal Pradesh



83. **General vegetation of the Study Area:** The project site is in Naggar gram panchayat. There are no trees at proposed project site of Naggar Castle. Adjoining area has about 8-10 trees including *Cedurs deodara* (Deodar) and *Prunus armeniaca* (Apricot/ Khurmani). The design of proposed parking avoids any tree cutting. Shrubs, herbs and grasses includes *Bidens*

Pilosa, *Abutilon theophrasti* (Velvet leaf), (Himalayan butterfly bush), *Giardinia diversifolia.*, *Junglans sp.*, & *Cynodon dactylon* etc.

84. **Faunal Composition of study area:** Faunal data of terrestrial ecosystem collected through field visit, consultation with locals and available literature. In view of faunal composition of project site some birds Common Myna, *Corvus macrorhyncos* (Jungle crow), *Passer domesticus* (House sparrow), *Funambulus palmarum* etc. No wild animal movement observed/ reported from site. In view of aquatic animals, cold water fish is found in Beas River as per discussion with locals.

85. **Screening via Integrated Biodiversity Assessment Tool (IBAT)** and biodiversity assessment report prepared for the project, indicates presence of 1 Protected area; Great Himalayan National Park within 50 km. The nearest Protected area is Kais WL Sanctuary within 10 km radial distance. There are no eco-sensitive or wetlands within or adjacent to the proposed sites. A total of 4 species under critically endangered, 10 species under endangered and 19 species under vulnerable category are found in 50 km radius as a result of IBAT analysis but not within the project area of influence (PAI). There is no Rare, Endangered or Threatened (RET) Species found in the proposed site area. Regarding the conservation status of the fauna, none of the animal species identified from the site belonged to the threatened categories identified by the International Union for Conservation of the Nature and Natural Resources (IUCN). Most of them are common and widely distributed. IBAT report is given as Annexure-15.

86. **Migratory Bird/ Nesting or Breeding habitat.** North India is a broad migratory flyway for birds moving between breeding grounds to the north and wintering grounds to the south. The project implementation impact will be limited to the project site and no migratory bird visiting sites in this location. Thus, the project area would not represent “Critical Habitat” for any migrant birds.

87. **Wetland.** No wetland located near the project site. No project component falling/proposed within any wetland areas.

C. Economic Environment

88. **Demographic Profile.** According to the 2011 census Naggar village has a total population of 1,556 peoples, out of which male population is 780 while female population is 776.

89. **Literacy.** Literacy rate of Naggar village is 77.38% out of which 83.46% males and 71.26% females are literate.

90. **Sex Ratio.** Sex ratio of Kullu is 942 females per 1000 males which is higher than national sex ratio. Also, In 2011 census, child sex ratio is 962 girls per 1000 boys compared to figure of 960 girls per 1000 boys of 2001 census data.

91. **Occupational Structure.** In The occupational structure of Kullu district in Himachal Pradesh is characterized by a diverse range of sectors. Agriculture remains a crucial component, with a significant portion of the population engaged in activities such as apple, plum, and pear cultivation, alongside traditional crops like wheat, barley, and maize. Tourism plays a vital role, with the district being renowned for destinations like Naggar, Manali and Kasol, contributing to hospitality, adventure sports, and transportation sectors. Handicrafts, particularly Kullu shawls and carpets, are prominent, with artisans contributing to the local economy and exporting products to national and international markets. Small-scale industries, including fruit processing units and handloom weaving, also provide employment opportunities. Additionally, animal husbandry, mainly dairy farming and sheep rearing, complement the occupational landscape. Government employment further contributes to the structure, with positions in various public sector institutions. Overall, these sectors collectively form the occupational framework of Kullu district, sustaining livelihoods and fostering economic growth.

92. **Economy and Agriculture.** Kullu district, nestled in the picturesque landscapes of Himachal Pradesh, boasts a dynamic economy anchored by agriculture and bolstered by burgeoning tourism. Agriculture remains the backbone of the district's economy, with fertile lands supporting the cultivation of a variety of crops, including apples, plums, pears, and traditional staples like wheat and barley. The district's orchards yield high-quality fruits, contributing significantly to the agricultural output of the region.

Moreover, Kullu's thriving tourism industry, centered on popular destinations such as Naggar, Manali and Kasol, drives economic growth by attracting visitors seeking adventure sports, scenic beauty, and cultural experiences. This influx of tourists supports a wide array of businesses, including hotels, restaurants, adventure sports operators, and handicraft artisans, providing employment opportunities and fostering local entrepreneurship. The symbiotic relationship between agriculture and tourism forms the cornerstone of Kullu district's economy, ensuring sustainable development and prosperity for its inhabitants.

93. **Industry.** The town has many Medium Scale Industries and Small-Scale Industries engaged in the production of flour mills, spinning mill, mineral water bottling, food processing and readymade garments etc. Some of the very common businesses of the region are canned fruits, bottled fruit juice and other products like pickles, jams and jellies.

94. **Physical Infrastructure and Services.** The present major source of water supply in Kullu Valley Planning Area (KVPA) is river Beas, Sarvari Nallah, Khallara Nallah and other local nallahs/springs. The piped water supply system is available 100% in the urban areas. The Kullu Valley planning area is served by three water supply systems managed by Jal Shakti Vibhag (JSV). The water supplied in rural areas of the Kullu Valley Planning area is by Jal Shakti Vibhag (JSV) and through community facilities. The rural area mostly covered under piped water supply system despite undulating terrains. There is a sewerage line near the site. Existing drainage system available in the proposed site. Existing storm water management available in the proposed site.

95. Kullu Valley Planning Area comprises of territorial areas of Manali Municipal Council, Kullu Municipal Council and Bhuntar Nagar Panchayat as well as 103 villages of Kullu and Manali revenue Sub- Divisions of Kullu District, covering an area of 8202.68 Hectares.

96. **Solid Waste Management.** All the ULB's in KVPA region provides the facility regarding disposal of sewage from the area under the Council. This includes waste generated from domestic, industrial, commercial, and institutional units operating in the town. The coverage under the sewerage system in urban settlements is to the extent of almost 100%. Undulating terrain makes it difficult for the management to ensure a 100% coverage of the sewerage system. There are three sewage treatment plants in Kullu and one in Bhuntar area of Kullu Bhuntar Agglomeration. There is no STP in the vicinity of the project site.

97. Himachal Pradesh State Electricity Board (HPSEB) serves the whole of Kullu Valley Planning Area on left and right bank of river Beas.

98. **Education Facilities.** There are around 117 Primary, 44 Middle Schools, 23 Secondary and 19 Sr. secondary schools in Govt. Sector and 19 senior secondary schools, 23 secondary schools, 18 middle schools and 37 primary school in private sector in Kullu Valley Planning Area. There is one private and two Government Degree colleges in the Kullu Valley Planning Area and several Private Vocational Training centers and ITI's in this area. Details are as: Govt. Degree College, Kullu, G.B. Pant National Institute of Himalayan Environment & Sustainable Development, Mohall, JLN Govt. College, Haripur, Government Degree College, dhalpur, Govt College, Kalehli, Ishwaria Vishwavidyalaya, Naggar, Government Polytechnic College, Seobagh, and ITI Shamshi etc.

99. The Kullu Valley Planning area has several medical, public health and Ayurvedic institutions. The area at moment is served by Zonal Hospital, Government Community Health center in the Kullu and Manali MC areas respectively.

D. Social and Cultural Environment




100. **Tourist Attractions.** Naggar, a quaint and historic village in the Kullu Valley of Himachal Pradesh, India, is a treasure trove of heritage and a burgeoning hub for tourism. As per the tourist statistics 2880219 tourists visited the Kullu during the year 2022. The centerpiece of Naggar's rich cultural tapestry is Naggar Castle, a 15th-century fortress built by Raja Sidh Singh, which exemplifies the unique blend of traditional Himalayan and European architectural styles with its stone and wood construction. This former royal abode now serves as a heritage hotel, offering visitors a chance to experience the regal past firsthand. Beyond the castle, Naggar is renowned for the Nicholas Roerich Art Gallery, dedicated to the celebrated Russian artist who made Naggar his home. The gallery displays his and his family's works, adding a layer of artistic allure to the village. Naggar's charm is further accentuated by its serene surroundings, ancient temples like the Tripura Sundari Temple, and scenic trails perfect for trekking and nature walks. These attributes make Naggar a captivating destination that seamlessly blends historical depth with natural beauty, attracting tourists from around the world seeking both cultural enrichment and tranquil retreat.



101. Gauri Shankar Temple protected under Archaeology Survey of India (ASI) is about 205 m in the North west direction from the proposed site. Permission from ASI needs to be obtained by the PIU before commencement of works. Google Map showing the location of Gauri Shankar temple from the project site is given in Figure 18.

Figure 17 : Map showing Nearest ASI Protected Temple



E. Environmental Settings of Investment Program Component Sites

Project	Environmental features	Remarks
<p>Conservation and Restoration at Naggar Castle Distt Kullu</p>	<p>A hotel Naggar Castle is currently being operated and managed by HPTDC, the Department of Tourism and Civil Aviation, Himachal Pradesh at proposed site.</p> <p>The coordinates of the project site are 32°6'43.57"N latitude and 77°9'52.49"E longitude.</p> <p>The average altitude of the proposed project site is about 1763 m above mean sea level.</p> <p>The Topography of the proposed project site of Naggar Castle is generally flat.</p> <p>Topography of the parking area is sloping. The highest point at the site is about 1768 m and the lowest point is about 1758 m.</p> <p>There are drains present at site. The proposed DPR also has the provision of drains for the new construction.</p> <p>As per the initial assessment the proposed site is less prone to hazards.</p> <p>Utilities. There are existing water supply, sewerage and storm water facilities, electricity at proposed site. The provision of water storage, RWH, septic tanks for proposed toilet in the parking facility and storm water drains has been taken in the DPR.</p> <p>PCR. A small temple exists within the proposed site, and two more temples are located about 50 m from the project site boundary. Gauri Shankar Temple protected under ASI is about 205 m from the site. Since the project focuses on conserving and restoring Naggar Castle, no interventions are proposed for these temples.</p> <p>Trees and vegetation Fauna, etc. The natural vegetation near proposed project site comprises of deodar, rhododendron and chestnut. Bird species such as the Himalayan eagle, chikor and partridges have been reported.</p>	 <p>The image shows existing hotel building of Naggar Castle and adjoining site for proposed parking area</p>  <p>Existing Naggar Castle hotel block</p>  <p>Existing entry to Naggar Castle</p>

		 <p>Existing Naggar Castle hotel block</p>  <p>Main Courtyard of Naggar Castle</p>
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Source: Detailed Project Report

VI. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

A. Environmental Impacts

102. The environmental impacts on environmental components due to implementation of various developments proposed at site & its environs have been assessed for project planning and implementation period. The anticipated impacts in the project and the mitigation/ management measures identified are presented in this chapter.

103. Screening of potential environmental impacts are categorized into four categories considering project phases: location impacts, design impacts (pre-construction phase), construction phase impacts, operation and maintenance phase impacts. These are as follows:

- **Location impacts.** Includes impacts associated with site selection and include loss of on-site biophysical array and encroachment either directly or indirectly on adjacent environments. It also includes impacts on people who will lose their livelihood or any other structure by the development of that site.
- **Design impacts.** Includes Impacts arising from project design, including the technology used, scale of operations, waste production, discharge specification, pollution sources and ancillary services etc.
- Pre-construction impacts includes impact which are anticipated during site preparation, material testing for identification of borrow/ quarry locations, setting up construction and worker's camps etc.
- **Construction impacts.** Include Impacts caused by earthworks, machinery, vehicles and workers. Construction site impacts include erosion, dust, noise, traffic congestion and waste production etc.
- **O&M impacts.** Include Impacts arising from the operation and maintenance activities of the infrastructure facility. These include routine management of operational waste streams and occupational health and safety issues etc.

104. Screening of environmental impacts was based on the impact magnitude (negligible/ moderate/ severe in the order of increasing degree) and impact duration (temporary/ permanent).

105. This section of the IEE reviews possible project related impacts, in order to identify issues requiring further attention and screen out issues of no relevance. ADB SPS, 2009 requires that impact and risks will be analyzed during pre-construction, construction and operational stages in the context of the project's area of influence. The ADB Rapid Environmental Assessment Checklist (REA) checklist has been used to screen the project for environmental impacts and to determine the scope of the IEE. REA checklist is given in Annexure-1.

106. The impact assessment also considers the context and applicability of various regulatory requirements in terms of the NOCs/ clearances/ permissions from various local, state level and national level regulatory authorities. Project is designed to benefit and enhance the tourism in the region, which in turn is intended to benefit the local communities, the economy of the region, provide opportunities for better management of the ecological resources and promote sustainable tourism.

107. Integration of EMP in bidding documents and contracts. Lack of awareness by contractors ADB SPS requirements may result in insufficient budget and non-implementation of EMP.

108. To ensure that EMP will be provided with sufficient budget and implemented:

- i. Once the contractor is selected, the PIU with support from PMDSC will inform contractors on their responsibilities in EMP implementation, in compliance with ADB

and government requirements, self-monitoring and reporting procedures.

- ii. The PMU will incorporate the cost of implementation OHS and the EMP as well as specific provision requiring contractors to comply with all other conditions required by ADB into the bidding and contract document.

109. **Updating the IEE.** The PMU shall update the IEE in case of change in design, design verification prior to start of construction and during construction, if needed and submit the same for review and clearances of ADB.

110. The baseline conditions as identified in the previous section have been analyzed for likely location impacts from the selection and design of the projects.

111. Technical design of the tourist facilities, accommodation, parking, amenities, etc. are all based on the relevant national planning and design guidelines. The physical infrastructure facilities such as water supply, sewerage, storm water drainage, solid waste management, power requirement etc. are based on relevant standards and guidelines of CPHEEO, that focus on providing a robust system which is easy to operate, sustainable, efficient and economically viable.

B. Location Impacts

112. Impacts has been assessed on environmental components for Conservation and Restoration of Naggar Castle are as:

113. The proposed project site of Naggar Castle is owned by HPTDC, Department of Tourism & Civil Aviation, Himachal Pradesh and the total area is about 0.22 hectare. There is no forest land in the proposed project site. There will not be any acquisition of private land. Since project components located in Naggar is existing hotel, therefore there is no need for acquisition of any private assets.

114. The project site of Naggar Castle is relatively flat and the adjoining proposed site for parking area is hilly/inclined in nature. Naggar Castle -hotel under HPTDC, the Department of Tourism and Civil Aviation exists at proposed project site. Conservation and Restoration of Naggar Castle and construction of parking block have been planned and proposed under the detailed project report. The land of proposed project is owned by HPTDC, Department of Tourism & Civil Aviation, and Himachal Pradesh. The project does not require any land acquisition; hence no resettlement impact is anticipated. The project site will also not require any changes in land use as it is already on existing government occupied land same is being used for so many years ago. Habitation is located near the proposed intervention <30m. Proposed parking site is on relatively hilly/inclined terrain, there may be chance of cutting during foundation and filling of soil during site preparation. Dust pollution may occur during proposed work. Vehicular road is exist near site hence impact on account of vehicular air and noise pollution are envisaged. Vehicular road is about a distance of less than 20m, there may be some traffic disruption occurs during the work near residence/ shops. A traffic management plan will be required during construction work. Sample traffic management plan is enclosed in Annexure-11. Preservation of the existing flora and fauna of the site wherever possible and using it to advantage and incorporating them as a part of our landscape design. Slope stabilization measures for proposed parking would also require during construction for stabilizing the soil. Adequate precaution will be required during construction to avoid pollution such as dumping of waste, garbage etc. 8-10 Trees, shrubs and bushes exist at site of proposed parking. Clearing of shrubs and bushes required from site. There will be no cutting of trees. No significant impact can arise due to project location at Naggar will not impinge upon any area of ecological, archaeological or historical importance. There are no significant ecological resources within or nearby the proposed site.

115. **Chance finds.** There is 1 ASI Protected monument 'Gauri Shankar Temple' at about 205 m from the site. Permission needs to be obtained from the ASI prior to commencement of works. It is an existing project with mainly restoration and conservation works. No impacts are envisaged on the temple but considering the presence of protected monument in the vicinity,

the risk of uncovering archaeological remains during the excavations cannot be ruled out completely. Construction contractors therefore should follow the below measures in conducting any excavation work:

- (i) Permission shall be obtained from the ASI prior to start of works.
- (ii) No labour camp, construction facility or material or debris storage shall be located within 300 m from the boundary of the temple.
- (iii) Create awareness among the workers, supervisors and engineers about the chance finds during excavation work;
- (iv) Stop work immediately to allow further investigation if any finds are suspected.
- (v) Inform local Archaeological Department if a find is suspected and take any action, they require to ensure its removal or protection in situ

116. The project site is located within Seismic Zone-V (Very high damage risk zone) and even a small magnitude earthquake may damage the building of the project. The design of the building follows relevant codes (IS: 1893 (Part I)-2002: Indian Standard Criteria for Earthquake Resistance Design of Structures (5th Revision) and IS: 4326-1993: Indian Standard Code of Practice for Earthquake Resistance Design and Construction of Buildings (2nd Revision) for the earthquake resilient structure.

C. Impact during Design and Pre-Construction Phase

117. The proposed site for Conservation and Restoration and Naggar Castle is owned by HPTDC, Department of Tourism & Civil Aviation, Himachal Pradesh of area about 0.22 hectare. There will be no cutting of trees. Clearing of shrubs and bushes required at the project location of proposed parking. Based on the environmental screening of the site, there are no adverse environmental impacts during the design and pre-construction phases.

118. Consents, Permits, clearances, no objection certificate (NOC), etc.

- HPTDB to obtain all necessary consents, permits, clearance, NOCs, etc. prior to start of civil works.
- Contractor to obtain necessary consents, permits, license etc., required for construction, and submit copies to PIU; PIU to acknowledge in writing
- PMU to update IEE and EMP prior to starting of works to reflect any changes in project design during design verification and detailed field survey, and submit to ADB for clearance and disclosure
- Contractor to prepare SEMP based on the updated EMP, and approved by PIU prior to commencement of works
- Include in detailed design drawings and documents, all the conditions and provisions stipulated in permits, consents issued by regulatory agencies, if any.
- Contractor to conduct pre-construction (baseline) environmental monitoring as indicated in EMP budget tables. The monitoring results shall be referred as baseline quality for key environmental parameters of air, water and noise)
- Continue consultation with the local communities during detailed design, and implementation and provide information in the language that is understandable to the local community regarding project activities and the anticipated impacts as part of the project information dissemination.

119. **Utilities.** No electric poles and lines within the project location may require to be shifted. To mitigate the adverse impacts due to relocation of the utilities, the contractor in collaboration with line agencies and ULB will:

- Identify the locations and operators of these utilities to prevent unnecessary disruption of services during construction phase; and
- Instruct construction contractors to prepare a contingency plan to include actions to be done in case of unintentional interruption of services

120. **Site selection of construction work camps, stockpile areas, storage areas, and disposal areas.** Residential areas will not be considered for setting up construction camps 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). Extreme care will be taken to prevent disposals near forest areas, water bodies, khads or in areas which will cause inconvenience to the community. Construction sites, including disposal sites, will be selected by Contractor in compliance with these conditions and the same will be reflected in Site Environmental Management Plan (SEMP) which is to be prepared by Contractor prior to start of construction and approved by PIU.

D. Impact during Construction Phase

All the proposed activities to be undertaken at the site will be approved by PMU. The construction phase impacts due to proposed project components are generic to the proposed development activities. The EMP emphasizes on the construction impacts and necessary mitigation measures to be strictly followed by the contractor and supervised by the PIU.

121. **Sources of materials. Based on preliminary assessment during DPR preparation** approx. stone about 557 cum, Tor Steel-Structural Steel about 85 tonne and about 210 tonne cement will be required for this project of Conservation and Restoration of Naggar Castle. Asbestos containing materials (ACMs) will not be used in the project. The construction contractor will be required to:

- Use material sources permitted by government;
- Verify suitability of all material sources and obtain approval of PIU;
- Ensure that the loading and unloading of the materials and the transportation of the materials from source to construction site does not cause impact on health and safety of the workers and the community; and
- Submit to PIU on a monthly basis documentation of sources of materials. If contractor is purchasing ready mix concrete, asphalt/macadam and aggregates from third party, contractor will assure that all the parties/ suppliers are having CTE/CTO from HPPCB and will collect the copy of these certificates and submit to PIU/ consultants.

122. All the proposed activities to be undertaken at the site will be approved by PMU. The construction phase impacts due to proposed project components are generic to the proposed development activities. The EMP emphasizes on the construction impacts and necessary mitigation measures to be strictly followed by the contractor and supervised by the Department of Tourism & Civil Aviation, Himachal Pradesh and PIU.

123. **Impact due to stock piles of construction materials.** Improper stockpiling of construction materials in and around the sites could obstruct movement of vehicles along access roads. Hence, due consideration will be given for proper material storage on construction sites. Stockpiles will be covered to protect from dust and erosion. Stockpiles of material should always away from nallah/ drain at safest distance (50m) with proper cover and barricade. Waste materials will be disposed of at identified/ designated and approved location or may be auctioned by department.

124. **Disposal of construction waste.** Renovation work is proposed on existing building and parking work is proposed on relatively hilly/inclined terrain. The construction/ demolition waste could lead to untidy conditions at site and may find its way to the river, khads, local drains/ nallah; siltation and obstruction to natural flow in these nallah/ drains. In the proposed project, it shall be mandatory for the contractor to ensure proper disposal of the construction waste at the disposal site as designated by the PIU/ Nagar Panchayat or reuse in cutting and filling or leveling at site. Measures such as Silt traps, stone bunds, gunny bags with the local available material will be used at site to control the velocity of water and silt/ sediments. The excavated materials available from foundations of the structures will be consumed in back filling of structures & leveling of site (to raise the plinth level above the ground level). Priority will be given to use maximum material at site itself for filling, dressing, retaining walls, internal

roads and surplus waste will be disposed as per norms of C&D waste disposal. Sample outline of Spoil Management Plan is given as Annexure-10.

125. **Quarry and Borrow pits operations.** Since the civil works are of a small size, all construction material will be procured from local market. There will not be any need for direct procurement of stone dust and sand building material from quarries. Material will be procured from licensed quarry with valid environmental clearance certificate. In case of material purchase from stone crusher, crusher should have valid CTE & CTO from State Pollution Control Board.

126. **Ambient Air Quality.** Dust generation is anticipated during transportation/ hauling of materials, excavation and construction activities in the proposed Conservation and Restoration of Naggar Castle project. Dust and gaseous emission will also be generated during the construction period from machineries such as mixers, vehicles, engaged in transportation of construction vehicles engaged in transportation of construction materials, loading and unloading of material etc. Nearby habitation is located at distance of about 30m from project site of Naggar Castle. Pollutants of primary concern at this stage include respirable suspended particulate matter (PM₁₀ & PM_{2.5}) and gaseous emission such as SO₂, NO_x & CO etc. Based on extent of construction activities, impact at this stage will be temporary and restricted to the close vicinity of the construction site only. Monitoring of ambient air quality will be taken up as part of environmental monitoring plan of EMP. The baseline data will be collected by the contractor before the start of the execution of the constructional activities.

127. **Increase in noise levels.** Noise levels in the immediate proximity of project site are expected to increase somewhat during construction. However, these will be largely imperceptible as civil works will be confined to relatively small areas. As the Naggar Castle is located approx. 30m from habitation so there will less impact of noise pollution. Site will be properly barricaded during construction. There are no requirements for blasting or piling at the proposed project site. Transportation of construction materials will be confined to day-time, depending upon extent of construction activity. The increase in noise levels is expected <5 dB (A). This increase will be felt up to a distance of 100-200m only. This noise will be intermittent in nature, and will last only during the construction phase. It may be mentioned that construction noise will be intermittent in nature and noise levels outside boundary of project sites are not anticipated to exceed the stipulated limits of Residential areas, commercial areas etc. Necessary monitoring of noise levels will be taken up as part of environmental monitoring plan of EMP.

128. **Impacts on biodiversity (Flora & Fauna) during construction phase.** No major impacts expected on the biodiversity during the construction phase as the site is existing government land. Shrubs and bushes exists on site. During preliminary design no trees exists at site. The design of proposed parking block is prepared in such a manner that no cutting of trees is required. There are 8-10 trees including Cedrus deodara (Deodar) and Apricot at proposed parking site. Clearing of shrubs & bushes will be required from site. There are no rare, endangered and threatened species of flora and fauna observed in and around the proposed site. No nesting habitat observed during visit. During construction activities, keep all measures in consideration to conserve the local biodiversity in/ near the area without any disturbance.

129. **Ground water.** Ground water will not be extracted and used for construction purpose. The contractor will arrange water from the market through water tanker. It will be supplied by the authorized vendor. The chance of ground water contamination is not expected during the construction phase since there will be proper disposal of the waste water by providing septic and soak pit. During construction, measure will be taken to avoid any soil pollution/contamination by way of oil leakages due to improper refueling at site or leakages from machineries and equipment deployed at site.

130. **Surface Water.** All the preventive measure of water pollution control such as silt fencing/ traps, stone bunds, gunny bags will be adhered at site proposed for parking

component under Conservation and Restoration of Naggar Castle. No wastewater will be discharged outside the area, nor will it be connected to surface water drains or rivers. No Khad is located in its immediate vicinity, hence no impact anticipated. As per secondary data of water quality (CPCB river water quality data, 2021³) of river Beas, all the parameter found within permissible limits of standards. No oil and grease will be release into nearby water course. Oils and fuels should be stored and handled well away from surface water to avoid possible contamination. All the excavation related activities should be avoided during monsoon months. The construction work shall be scheduled during dry season so that silting and sedimentation can be avoided. The stockpiles, construction materials have to be kept at least 50m away from the water body. The construction camp should be located away from surface water body >500m distance in consultation with PIU.

131. Impact on Physical & Cultural Resources. A temple exists within the proposed site, and two more temples are located about 30 m outside the project site boundary. Since the project focuses on conserving and restoring Naggar Castle, no interventions are planned for these temples. The proposed project will not have any impact on any religious structure or any other structure of historical and/ or cultural significance. There may be inconvenience to residents, businesses, and other road users due to construction activities in the proposed area. 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.
- Proper barricading of the parking site to avoid dust and noise impacts.
- Provide sign boards to inform nature and duration of construction works and contact numbers for concerns/complaints.
- Implement good housekeeping including removal of waste immediately. Prohibit stockpiling of materials that may obstruct/ slow down pedestrians and/ or vehicular movement.
- Ensure workers will not use nearby/adjacent areas as toilet facility.
- Coordinate with Local Authority 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.
- Avoid working in peak tourist seasons/ and/or important religious festivals.

132. Chance Find Protocol. Since the project site lies within the regulatory zone of the ASI protected Gauri Shankar temple, prior permission from the ASI shall be obtained and regular consultation shall be done with the ASI. Though the site is an existing hotel and mainly conservation works are proposed, there will be some excavations for the parking site and the probability of uncovering any remains is feeble, yet it cannot be ruled out completely. Contractor needs to follow Chance Find Protocol during works. Sample Chance Find Protocol is given in Annexure 16.

133. Disturbance to traffic during construction phase. At the time of construction, there will be some temporary inconvenience to residents/ businesses due to transportation of building material. During the transportation of materials, loading and unloading activities ensure the health and safety measures of people/ tourist & to avoid inconvenience by providing proper access routes, flagmen, safety signage's etc. However, since the scale of works is relatively small, the inconvenience caused will be relatively minor and limited only

³ [WQuality_River-Data-2021.pdf \(cpcb.nic.in\)](http://WQuality_River-Data-2021.pdf(cpcb.nic.in))

to the construction phase. Traffic management plan will be required during construction. Sample traffic management is enclosed in Annexure-11.

134. All vehicles and construction equipment's operating for the contractor and the consultant will obtain and maintain "Pollution under Control" (PUC) certificates for deployed vehicles. To control noise, ensure periodic services of all vehicles engaged in construction. To control dust emission, vehicles deployed for sand and aggregates haulage, will be covered with tarpaulin to prevent spillage of material. Regular water sprinkling during excavation, loading and unloading points, vehicular movement during raw material transportation will prevent spread of dust. Periodic ambient air quality monitoring will be conducted to ensure that emission to comply with the air emission norms/ standards specified by the CPCB/ MOEFCC Government of India. The contractor will submit ambient air quality monitoring results as a compliance of EMP.

135. **Waste during Construction.** C&D waste will be generated (earthwork in excavation work of site development & foundations of proposed parking structure, aggregates, coarse and fine in RCC and PCC work and wood work, stone and brick work etc.) during construction. The construction waste could lead to untidy conditions at site and may find its way to the local drains/ khad, etc. The excavated earth work will be used in the construction of embankment wall, filling, internal pathways and structure foundation. The chance of soil cutting is only expected during structure foundation of proposed parking. All the waste will be properly disposed as per norms of C&D Waste Management Rules, 2016. Debris during construction material can be reused in the subject to the approval of the PIU Engineer during the construction. A sample outline of Spoil Management Plan is given as Annexure-10. Waste generated during construction will be disposed of as per law and to the satisfaction of the Engineer. The clean-up and restoration of temporary sites/operations will be implemented by the contractor prior to demobilization. The contractor will clear all temporary structures and dispose of all garbage from construction site. All construction zones used and affected by the project will be left clean and tidy, at the contractors' expense as per the satisfaction the Engineer.

136. The contractor is likely to engage local labor for various construction activities. However, in case of migrant labor has to be engaged, the contractor will establish properly designed labor camp with all basic amenities such as potable drinking water supply, rest shelter and sanitation facilities (septic tanks and soak pit). Dust bins for wet and dry waste will be placed in adequate numbers. Labour camp will be located minimum 500 m away from the habitation and river. Contractor shall ensure proper disposal of waste during construction and no waste shall be dumped in the nearby river. However, the EMP lays down some measures to address likely adverse impacts associated with the labor camp.

- 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. Sample outline of Spoil Management Plan is given in Annexure-10.
- Coordinate with Local Municipal Authority for beneficial uses of excavated soils/ silts/ sediments or immediately dispose to designated areas.
- Excavated soil emerging at sites is suitable for use at other sites under the project for leveling and filling purpose. Additional quantity of soil if required is being procured from authorized source or with approval of asset owner.
- 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.

137. **Storm water runoff.** During construction there are less chances of storm water entering into the river as the proposed site is located about 1.4km in aerial distance from

Beas River. During construction, impact on storm water during monsoon season cannot be avoided. However the activities shall be planned in view of the monsoon season. Activities involving excavation and stacking of loose earth will increase the chance of silt laden runoff during monsoon and might pollute the nearby water course. Such activities shall be taken up prior to monsoon season. Storm water will be managed by providing drain along the boundary to collect the storm water to avoid pollution of nearby water body and siltation by silt traps arrangement in drains.

138. Impacts on Occupational Health and Safety. Workers need to be mindful of occupational hazards which can arise from construction works. 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. Ensure COVID-19 appropriate behavior and compliance with protocols in project implementation as per the applicable government regulations and relevant guidelines published by WHO, ILO, IFC, and ADB etc.

139. The contractor will be required to:

- Comply with all National, State and local labor laws.
- Follow ADB's Interim Advisory Note on Protecting the Safety and Well-Being of Workers and Communities from COVID-19 (2020).
- Follow and ensure implementation of the Standard Operating Procedure- Health and Safety Plan to Stop the SPREAD of COVID-19 prepared by Sustainable and Inclusive Tourism Development Project in Himachal Pradesh.
- Follow best practice health and safety guidelines: IFC's General EHS Guidelines⁴, IFC's EHS Guidelines on Occupational Health and Safety⁵ WHO Interim Guidance (and its updates) on Water, Sanitation, Hygiene and Waste management for the COVID-19 virus⁶.
- Disallow worker exposure to noise level greater than 85 dB (A) for 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 including. 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 always provided. 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.

⁴ [Final - General EHS Guidelines APRIL 29.doc \(ifc.org\)](#),

⁵ [*Final - General EHS Guidelines APRIL 29.doc \(ifc.org\)](#)

⁶ [WHO-2019-nCoV-IPC_WASH-2020.4-eng.pdf](#)

- 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 public as safety from river (drowning).
- Proper training, induction/ orientation and supervision are mandatory and part of appropriate control measures.
- Health safety and environmental training by Contractor working near water.

140. **Establishment and Operation of Construction Camps and Workers Facilities.** It is likely that the contract may employ workers from outside project area, and therefore may provide temporary workers accommodation during the construction phase. Proper provision and maintenance of facilities is necessary for proper living conditions and avoid health, environment and safety issues. Workers camps may also adversely impact on surrounding communities. Operation of construction camps can cause temporary air and noise pollution from machine operation, water pollution from waste water generation. Potential impacts are negative but short-term and reversible by mitigation measures. The construction contractor will be required to:

- Consult PIU before locating project offices, sheds, and construction plants;
- Minimize removal of vegetation and disallow cutting of trees;
- Provide drinking water, water for other uses, and sanitation facilities for employees;
- Provided temporary rest and eating area at all work sites
- Ensure conditions of livability at work camps are maintained at the highest standards possible at all times; living quarters and construction camps shall be provided with standard materials (as far as possible to use portable ready to fit-in reusable cabins with proper ventilation); thatched huts, and facilities constructed with materials like GI sheets, tarpaulins, etc., shall not be used as accommodation for workers; accommodation shall meet the IFC standards for workers accommodation⁷ which include: provision of safe housing, availability of electricity, plumbing, water and sanitation, adequate fire protection and dormitory/room facilities; accommodation shall be in the range from 10 to 12.5 cubic meters (volume) or 4 to 5.5 square meters (surface) per worker, a minimum ceiling height of 2.10 meters; a reasonable number of workers are allowed to share the same room – (standards range from 2 to 8 workers); workers with accompanying families shall be provided with a proper and safe accommodation (IFC benchmark standards for workers accommodation) Prohibit employees from poaching wildlife and cutting of trees for firewood;
- Trained employees in the storage and handling of materials which can potentially cause soil contamination;
- Recover used oil and lubricants and reuse or remove from the site;
- Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas;
- Remove all wreckage, rubbish, or temporary structures which are no longer required; and
- Report in writing that the camp has been vacated and restored to pre-project conditions before acceptance of work.

141. **Impacts on Socio-Economic Activities.** Manpower about 20-25 numbers will be required during the 18 months construction phase. This can help generate contractual employment and increase in local revenue. Thus, potential impact is positive and long-term. As per detailed design, land acquisition and closure of roads are not required; therefore, no negative impact is expected. However, the contractor will need to adopt the following

⁷ [Workers' accommodation: processes and standards \(ifc.org\)](http://www.ifc.org)

mitigation measures:

- Leave space for access between mounds of soil.
- Provide walkways and metal sheets where required to maintain access to shops/businesses or road side users 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 labor force, or to the maximum extent, local persons within the 2-km immediate area if manpower is available.
- Avoid working in peak tourist seasons and/or important religious festivals

142. **Community Health and Safety.** Hazards posed to the public/tourists, specifically in high pedestrian areas in hilly terrain may include traffic accidents and vehicle collision with pedestrians/ business person. Potential impact is negative but short-term and reversible by mitigation measures. The construction contractor will be required to:

- Plan routes to avoid times of peak-pedestrian/ vehicle movement during work in roads/ streets/ markets areas.
- Liaise with PIU in identifying risk areas on route cards/maps.
- Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure.
- Provide road signs and flag persons to warn of on-going trenching activities.

E. Environmental Impacts during Operation Phase

143. Since only proposed intervention will be undertaken at the proposed project site in Naggar, there will not be any adverse environmental impact during operation as adequate facilities have been provided in the proposed project site. The design provides the conservation and restoration of Naggar Castle, without any structural changes to the castle. The solid waste generated at project site during operation phase will be segregated and its disposal will be integrated with gram panchayat of Naggar and their waste disposal system. Around 20Kg of solid waste shall be generated from the Conservation and Restoration of Naggar Castle.

144. There will not be any increases in vehicular traffic on account of proposed intervention as adequate parking will be considered in design. During power failure provision of alternative power arrangement such as diesel gensets already exists at site. The generator is silent and complies with emission norms as stipulated by CPCB with type approval certificate. 1-DG set of 62.5 KVA is already exists at site. Existing DG set has adequate stack height as per HPPCB norms and acoustic enclosure arrangement.

145. **Waste water generation and management.** There is a septic tank exists at proposed site. Domestic waste will be segregated into wet and dry waste. Wet waste will be treated in the bio-composter at the Naggar Castle and dried waste will be sent to concerned agency or tied up with gram panchayat for final disposal.

146. **Impact of Wellness Operations.** During the operation of wellness activities, small quantity of oil will be generated from spa which will be disposed properly. There will be generation of waste oil due to operations of Massage and therapy. The type of therapy provided will be decided by the O&M Partner. Based on the design maximum 11 persons can utilize these equipment and services in a single day operation. The waste oil generated does not exceed 3-3.5 liters per day from full day operation of Spa/ Massage therapy. This waste oil shall be collected in the connected sinks with the equipment. This collected waste oil is sent back to the supplier for recovery and possible reuse for other purposes. The main generation of water is on account of steam condensation from Sauna Cabin. The steam condensed water in day's operation will not exceed 2.75-3 liters per day from all the steam generating equipment.

147. All the equipment handling oil are wiped with cotton/cotton rags before washing with water. The solid waste generation is in terms of cotton rags, paper tissues and waste herbal products. These are collected in dust bins and shall be disposed of along with other wastes of wellness facilities. The solid waste generation at the respective Conservation and Restoration of Naggar Castle will not exceed 20 kg per day at full capacity operations. The solid waste generated will be segregated and will be disposed of with the gram panchayat waste. The dustbins in adequate numbers will be provided at each site of project.

148. **Storm water Management.** Storm water runoff will be properly considered and managed by installing a drainage system around the entire site. Most of the storm water produced on site will be harvested for ground water recharge. Thus, proper management to ensure that it is free from contamination. Contamination of storm water is possible from the following sources.

- Diesel and oil spills in the diesel power generators and fuel storage area
- Waste spills in the solid and hazardous waste storage area
- Oil spills and leakage in vehicle parking area Oil & grease interceptor will be installed in parking area to arrest oil and grease and this keep the area from free of any contamination of water and soil.
- Silts from soil erosion in garden

149. **Storm water management practices includes:**

- Regular inspection and cleaning of storm drains
- Covered waste storage areas
- Provision of silt traps in storm water drain

150. **Soil Erosion.** The existing Naggar Castle- hotel site is relatively flat so there will be less chance of soil erosion, but the proposed site of parking component side which needs to be protected from soil erosion by slope stabilization measures such as grass turfing or any other suitable measures or through embankment protection measures. In view of soil stabilization, the retaining walls is proposed and also a dry area has been proposed in the parking level, Drains have been proposed all around the site for drainage of rain water.

However landscaping activity will play important role in slope/ soil stabilization. After cutting a terrace, protected using local stones, soil and planted with grass. Most of the impacts will occur due to excavation and earth movements during construction phase only. During post construction phase, 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. Plantation of shrubs and grasses on downward slopes to control further soil erosion.
- 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 by new ones.

151. **Safety Measures.** The design of the proposed intervention includes structural and seismic safety required by India's latest Building Codes (in Seismic Zone-V) very high damage risk zone. The other safety feature are explained below:

- The project site will be equipped with firefighting system with portable fire

extinguishers and smoke detectors.

- During natural calamities, the operation will be stopped. The staff will be safely evacuated as per the Disaster Management Plan (DMP) of Himachal Pradesh.

152. **Socio-economic impacts.** The establishment and operation of proposed intervention will have positive development impact since it will be a revamped facility for the tourists visiting Naggar. Thus proposed interventions will increase tourist satisfaction, quality services in wellness, employability of local youth in the operations of facilities and improve the socio-economic condition of people residing in/ near the town.

153. **Impact on Land and Ecology.** The sustainable tourism acknowledges presence of adequate green area accompanied by healthy environment. In addition, they help to control air pollution, soil erosion as well as support local biodiversity thus improving the aesthetic value of entire project. To enhance the aesthetics of the project sites, plantation of shrubs/trees and landscaping with native species will be taken up in vacant space near proposed parking component. No impact on the flora or fauna is envisaged on account of the operations of the site. No changes will be done to the existing road and it will remain the same to approach the site.

154. **Emergency Plan for Accident and Natural Hazards.** For operation phase onsite emergency plan will be prepared by the Local Administration for minor accidents and fire. For natural calamities the District Disaster Management Plan will be followed. The Disaster Management Plan has been prepared by the respective Department of GOHP as per provisions of Disaster Management Act 2005 of Govt. of India.

F. Description of Planned Mitigation Measures

155. Screening of environmental impacts is based on the magnitude and duration of the impact. Table-16 provides the potential environmental impacts and the mitigation measures including the institutional responsibilities for implementing the same.

Table 15: Summary of Environmental Impacts and Mitigation Measures

SI. No.	Potential Environmental Issues	Duration or Extent	Magnitude	Proposed Mitigation Measures	Institutional Responsibilities
1	Location Impacts				
1.1	Lack of sufficient planning to assure long term sustainability of the site and ensure protection specially from earthquake and other natural disasters	Permanent	Major	The design of site has been taken into considering of earthquake coefficient of Zone-V.	PMU and PIU
1.2	Extraction of Construction material	Permanent	Major	The construction materials shall be procured from the sources having environmental permits and clearances as per prevailing environmental framework.	Contractor and PIU
1.3	Tree Felling	Temporary	Minor	Avoid tree felling at best possible to protect the trees at site. Consider into design to avoid tree felling at best level. Tree felling will be absolute minimum, only done in unavoidable circumstances. Prior permission will be required before felling from concerned department. Proposed Landscaping measures enhance the greenery in the area after implementation of the project.	PMU/PIU
2	Design and Pre-construction Impacts				
2.1	Consents, permits, clearances, no objection certificates (NOC), including Permission from the ASI, HPSPCB, etc.	Permanent	Major	Obtain all necessary consents, permits, clearance, NOCs, etc. prior to start of civil works. Acknowledge in writing and provide report on compliance with all obtained consents, permits, clearance, NOCs, etc. Include in detailed design drawings and documents all conditions and provisions if necessary.	PIU
2.2	Layout of components to avoid impact on the aesthetics of the site	Permanent	Major	The project components will not have any adverse impacts on aesthetics of site as these involve construction of site on building and infrastructure.	PMU/PIU

				Measures to protect physical, cultural and natural aesthetics of site without disturbing the surroundings.	
2.3	Slope stability related issues	Permanent	Minor	As the existing hotel site is relatively flat and adjoining proposed parking site is hilly in nature. In view of soil stabilization, the toe/retaining walls for retaining soil/embankment protection measures towards inclined side (Proposed parking) is proposed.	PMU and PIU
2.4	Increased storm water runoff from alterations of the site's natural drainage patterns due to landscaping, excavation works, Construction of parking lots, and addition of paved surface.	Permanent	Moderate	Design of proposed intervention will allow efficient drainage at the site and maintain natural drainage patterns during the proposed work. There are existing drains at hotel site. and drains have been proposed all around the parking site for storm water runoff.	PMU and PIU
2.5	Integration of energy efficiency and energy conservation programs in design of site	Permanent	Moderate	Following measures have been included in the design to enhance energy efficiency: For the conservation part, material similar to the existing like surkhi lime, stones, slates and wood shall be used. Installation of BEE certified equipment. Usage of energy efficient lighting fixtures (LED) and solar lights in open areas.	PMU and PIU
3	Construction Impacts				
3.1	Construction Camps - Location, Selection, Design and Layouts	Temporary	Moderate	Construction camp at will be located within the site as far as possible or contractor will hire a house to accommodate construction workers. The construction camp, if established at project site will not affect the day-to-day activities of local residents in the vicinity of site. Adequate sanitation facilities shall be provided at camp site and no waste water will be discharged outside. Labor camp should not locate near any of the water body/ forest area.	Contractor and PIU
3.2	Traffic management plan during construction	Temporary	Moderate	Prior to commencement of site activities and mobilization on ground, the contractor will prepare a traffic management plan for safe passage of local traffic during construction phase. This will include alternative access routes, traffic regulations, signage, etc. The	Contractor and PIU

				contractor will get these plans approved from the Engineer in-charge of PIU. The contractor will disseminate the traffic management plan around the project site.	
3.3	Impacts on flora and fauna	Temporary	Moderate	Following mitigation measures are planned: PMDSC will conduct site induction and environmental awareness programs at the project site. The contractor will limit activities within the work areas. Storage of construction materials will be within the project site plot. PIU will prepare site specific landscape, shrubs and tree plantation plans at the end of construction period. These plans will be implemented by the contractor.	Contractor and PIU
3.4	Site clearance activities, including delineation of construction areas	Temporary	Moderate	The commencement of site clearance activities will be undertaken with due permission from the Environment Specialist of the PIU/ PMU to minimize environmental impacts. All areas used for temporary construction operations will be subject to complete restoration to their former condition with appropriate rehabilitation procedures.	Contractor and PIU
3.5	Drinking water availability	Temporary	Major	Sufficient supply of portable water will be provided and maintained at construction site. If the drinking water is obtained from an intermittent public water supply, then storage tanks will be provided.	Contractor and PIU
3.6	Waste disposal	Permanent	Major	Location of disposal site for construction/ demolition waste will be finalized by the Environmental Specialist of the PIU and PMU/ PMDSC. PMU will confirm that disposal of the material will not impact the water body or environmentally sensitive areas. Waste should be dump & disposed in consultation with Engineer in-charge at designated site.	Contractor and PIU
3.7	Stockpiling of construction materials	Temporary	Moderate	Stockpiling of construction materials should not impact or obstruct the local drains/ water body and stockpile will be covered to protect from	Contractor and PIU

				rain and erosion. Site should be properly barricaded and away from the water body.	
3.8	Soil Erosion & Surface runoff	Temporary	Moderate	There may be requirement for temporary slope protection during construction at the excavated areas. These requirements should be met. Adequate measures will be taken up at site so that there is no soil erosion causing risks in the near vicinity. Silt fencing/ stone bunds/ gunny bags arrangement will adhere towards water body to control siltation.	Contractor and PIU
3.9	Soil and Water Pollution due to fuel and lubricants, construction waste	Temporary	Moderate	The fuel storage and vehicle cleaning area at project site will be stationed such that water discharge does not drain into the local drain/ water body. Keep away construction waste and dump at designated site. Soil and water pollution parameters will be monitored as per monitoring plan.	Contractor and PIU
3.10	Siltation of water bodies/ natural drains due to spillage of construction wastes	Temporary	Moderate	No disposal of construction wastes will be carried out into any water body/ natural drains near the project site. Extraneous construction wastes will be transported to the pre-identified disposal site for safe disposal in scientific manner. Loose construction material will be located away from any natural drains/ water body to avoid siltation. Silt fencing arrangement will adhere to control siltation.	Contractor and PIU
3.11	Generation of dust	Temporary	Moderate	The contractor will take every precaution to reduce the levels of dust at construction site. The parking site will be properly barricaded with prefabricated MS sheets. Measures such as water sprinkling at dust prone areas as and when required. Ambient air quality monitoring will be conducted as per monitoring plan.	Contractor and PIU
3.12	Emission from Construction Vehicles, Equipment and Machinery	Temporary	Moderate	Vehicles, equipment and machinery used for construction will conform to the relevant Standard (vehicular emission standards of Government of India and CPCB specified standards for equipment and machinery) and will be regularly maintained to ensure that	Contractor and PIU

				pollution emission levels comply with the relevant requirements.	
3.13	Noise Pollution	Temporary	Moderate	Noise limits for construction equipment used in this project will not exceed 75 dB (A). The site will be properly barricaded with prefabricated MS sheets. Periodical maintenance of vehicle and equipment will do to mitigate the noise level in the area. Noise level monitoring will be conducted as per monitoring plan.	Contractor and PIU
3.14	Material Handling at Site	Temporary	Moderate	Workers employed on mixing cement, lime mortars, concrete, etc., will be provided with personal protective gears/equipment's (PPEs) such as gloves, jackets, shoes, hats, goggles and ear plug etc. Workers, who are engaged in welding works, will be provided with welder's protective face/eye-shields. Workers engaged in stone breaking activities will be provided with protective goggles and clothing.	Contractor and PIU
3.15	Disposal of Construction & Demolition Waste	Temporary	Moderate	Safe disposal of the Construction & demolition waste will be ensured in the pre-identified/ approved disposal locations. Waste will be maximum reuse at site/ low lying areas. In no case, any construction waste will be disposed off round the project site and especially in vacant plots in the locality.	Contractor and PIU
3.16	Safety Measures during Construction	Temporary	Moderate	Adequate safety measures for workers during handling of materials at the project site will be taken up. Community/ pedestrian health and safety will be ensure while work on site. The contractor has to comply with all regulations for the safety of workers. Precaution will be taken to prevent danger of the workers from fire, accidental injury etc. First aid treatment will be made available for all injuries likely to be sustained during the course of work. The Contractor will conform to all anti-malaria instructions given to him by the Engineer.	Contractor and PIU

3.17	Clearing of Construction of Camps and Restoration	Temporary	Major	Contractor will prepare site restoration plan for approval by the Engineer. The construction camp site restoration plans are to be implemented by the contractor prior to demobilization. On completion of the works, all temporary structures will be cleared away, all rubbish burnt, excreta or other disposal pits or trenches filled in and effectively sealed off and the site left clean and tidy, at the Contractor's expense, to the entire satisfaction of the Engineer.	Contractor and PIU
3.18	Onsite emergency plan for minor accidents and mishaps and Disaster Management Plan for Natural Calamities	Temporary	Major in case of natural calamity and minor in case of accidents or mishaps at construction site	The onsite emergency plan will be prepared by the contractor in consultation with PIU and PMDSC. For natural calamities, disaster management plan prepared by the GoHP under the provisions of Disaster Management Act 2005 will be followed.	Contractor
4	Operation and Maintenance impacts				
4.1	Influx of visitors/tourists due to proposed intervention in the area	Temporary	Moderate	<p>Sustainable & Inclusive tourism practices:</p> <ul style="list-style-type: none"> • Promote sustainable tourism practices such as responsible tourism that contribute to the conservation of environment and local culture. • For operation stage, all the tourist related activities to be conducted for visitors/ tourists at site shall be planned and implemented in consultation with HPTDB. • Resource management. Implement resource management practices such as water conservation, waste management and energy efficiency to ensure the sustainability of local resources. • Cultural preservation. Promote the preservation of local culture and traditions and involve local communities in tourism planning and decision making. • It is important to balance the economic benefits of tourism with the need to protect the environment, preserve local culture, 	Operation & Maintenance Agency

				<p>and ensure the well-being of local communities.</p> <p>Electricity:</p> <ul style="list-style-type: none"> • Only energy saving light, equipment to be installed at site. • Solar power plant and solar lights to be installed at site. 	
4.2	Waste oil generation on account of Massage and Spa and its safe disposal	Permanent	Moderate	<p>O&M agency shall ensure that waste oil from the equipment is collected and stored in jerry cans and sent back to the suppliers for recycle or reuse. All the equipment handling oil shall be wiped with cotton/cotton rags before washing with water. The solid waste generation in terms of cotton rags, paper tissues and waste herbal products shall be collected in dust bins and disposed off along with other wastes of wellness facilities.</p>	Operation & Maintenance Agency
4.3	Water Environment and Storm Water Management	Temporary	Moderate	<ul style="list-style-type: none"> • Contractor shall ensure proper storm water management at site by providing covered storm water drainage network. • No sewage shall be directly led to the water bodies; project includes septic tanks and soak pits. • Separate solid waste bins will be provided for organic and plastic waste within the project premises & disposed at regular intervals. The organic waste will be decomposed in nearby/ proposed waste composter and plastic waste will be sold to recyclers/ gram panchayat waste disposal scheme. • Covered waste storage areas. • Regular inspection and cleaning of storm drains. • Provision of silt traps in storm water drains. 	Operation & Maintenance Agency
4.4	Environmental Conditions Air and noise quality etc.	Temporary	Moderate	<p>Air, water, and noise levels will be monitored periodically as per the Environmental Monitoring Plan prepared.</p>	Operation & Maintenance Agency

				<ul style="list-style-type: none"> The DG set should have acoustic enclosure to attenuate noise & vibration. Noise level standards for DG set are given as Annexure-5. The stack height of the DG set should comply with the CTO conditions. Emission limit for DG set is given as Annexure-3. The entire internal road should be maintained and kept in good condition to prevent dust and erosion. Any runoff from roads must be managed to avoid erosion and pollution related problems 	
4.5	Safety risks	Temporary	Major	All safety features provided as part of construction at site will be maintained. The HPTDB will prepare "Do and Dons' check list and display at conspicuous locations for the necessary precautions to be taken by the visitors while staying. Flooding risks to be prevented by careful monitoring of unguarded movement of the visitors especially children towards the river side.	Operation & Maintenance Agency HPTDB
4.6	Solid Waste Management	Temporary	Moderate	<ul style="list-style-type: none"> For waste collection, adequate capacity of bins for dry and wet waste will be available at different locations The recyclable waste will be collected at designated site/ location and sold to recycling vendors periodically Ensure good housekeeping at site Awareness campaigns, hoarding and signage on clean environment, healthy lifestyle, good practices etc. shall be maintained/ displayed 	Operation & Maintenance Agency
4.7	Unhygienic conditions due to poor maintenance of sanitation facilities and irregular solid waste collection	Temporary	Major	<ul style="list-style-type: none"> The implementing agencies will carry out maintenance of the toilets, and carry out the regular collection and disposal of wastes to the local disposal sites. Solid Waste will be properly disposed of in consultation with gram panchayat. There is an existing septic tank operational and functional at the proposed project site. 	Operation & maintenance Agency

4.8	Impact on Land and Ecology			<ul style="list-style-type: none"> Integrate existing trees, shrubs and vegetation as far as possible into the design to avoid need to remove them; Preference should be given to native species of plants in consultation with forest department 	Operation & maintenance Agency
4.9	Onsite emergency plan for minor accidents and mishaps and Disaster Management Plan for Natural Calamities	Temporary	Major in case of natural calamity and minor in case of accidents or mishaps at construction site	<p>The management of site will prepare on-site emergency plan for possible minor accidents and mishaps during operation phase.</p> <ul style="list-style-type: none"> For natural calamities, the disaster management plan prepared by DDMA will be followed. 	Management of Operation & maintenance State Government for Onsite Emergency Plan and DDMA, Kullu for Disaster Management Plan

VII. CONSULTATION, PARTICIPATION & INFORMATION DISCLOSURE

A. Overview

156. The active participation of stakeholders including local community, NGOs etc. in all stages of project preparation and implementation is essential for successful implementation of the project. It ensures that the project are designed, constructed and operated with utmost consideration to local needs, ensures community acceptance and will bring maximum benefits to the people. Public consultation and information disclosure are a must as per the ADB policy.

B. Public Consultation

157. The Public Consultation and disclosure program are a continuous process throughout the project implementation including project planning, design and construction. 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 along with the asset owner.

158. As per ADB safeguard requirement, public consultation is to be carried out before and after impact identification.

C. Consultation during Project Preparation

159. **Public Consultations. Consultations during Detail Design.** During project preparation, consultations have been held with the Department of Tourism & Civil Aviation, tourists of Naggar, Kullu and local administration, local community representatives, and local people regarding issues pertaining to the selection of projects and identification of key issues including addressing the current gaps in Conservation and Restoration of Naggar Castle. Records of the consultations in planning/ design phase are provided in Annexure-14. Project components are decided through consultations with Local Authority, Himachal Pradesh Tourism Development Board, Public representatives, Department of Tourism and Civil Aviation and their suggestions are incorporated in to the project design. Formal and informal discussions were held with different stakeholders. The issues pertaining to the selection of projects and identification of key issues including addressing the current gaps in provision of improvement of tourist infrastructure were discussed.

160. **Consultations during preparation of IEE.** Consultations with several stakeholders like officials of Department of Tourism, tourists/ visitors were done during preparation of IEE. The main objectives of the consultation program were to inform stakeholders on adverse environmental and social impacts, efforts to minimize and mitigate negative impacts while making people aware of the proposed project benefits. General public in the project area were also consulted during visits to the project sites. Views expressed were incorporated into the IEE and in the planning and development of the project. Attendees expressed their happiness over the proposed project. Topics discussed with these stakeholders are given below:

- Awareness about the project and scope of works
- Present status of site/project
- Requirement of any tree cutting due to project
- Present status the of traffic/pedestrian movement at site
- Whether project is beneficial for local people/ tourist in the area
- Whether project is causing any livelihood impact to someone

- Any suggestion about the project
- Any other relevant information found at site

161. Details of the public consultation carried out is given in Table 17 and Annexure-14

Table 16: Consultation Record

S. No.	Date of Consultation	Place of Consultation	Person Consulted (Name & Address/ Designation)	Outcome of Consultation
1	13.03.2023	At Site, Naggar	(List of participants attached as Annexure 14) Male- 12 Female- 13	Consultations were undertaken with key stakeholders and local community members to help identify their concerns and apprehensions related to the project and their priorities. It was explained to the participants that the purpose of the infrastructure development is to increase the scope of tourist inflow, which will likely boost the local economy. The participants expressed happiness over the selection of these facilities under the project. The stakeholders appreciated the development of tourism-related facilities in the areas as they believed that it would help boost tourism and thereby increase the income and avenues of employment for the youth. The participants expressed willingness to support and cooperate with the project. There was no opposition to the proposed project as all the works will be undertaken within the available government land and benefit the local economy. People demanded for the pollution control measures such as dust suppression such as water sprinkling to control dust and noise during construction phase. People indicated that a notice/ advance information on works and awareness program to be conducted prior start of work. Local shop owners along with local residents agreed with the proposed development works in the area as this will improve tourist footfall to the destination, which in turn will enhance economy of the area.

162. The project team explained the proposed mitigation measures to mitigate/ minimize such issues. Attention of stakeholders drawn on the EMP and explained to them how the construction phase issues be avoided, minimize or mitigation and managed.

163. It was observed that people are willing to extend their cooperation as the proposed activities are to enhance the existing infrastructure services by way of providing better infrastructure activities for local and their living standards by increase in tourist/ visitors flow, and aesthetic of site. The public extend their concern regarding the nuisance and disturbance (dust, road closure and traffic management activities) during construction.

D. Consultation during Implementation

164. To ensure continued public participation, stakeholder engagement at main stages of work during the project design and implementation is proposed. Regular consultations will be done during construction phase and will be regularly reported through semi-annual environmental monitoring reports. A grievance redressal cell will be set up within the PIU/PMDSC at field office and PMU at Shimla office. To ensure an effective disclosure of the project proposal to the stakeholders and the community living in the vicinity of the project location, information regarding grievance redress mechanism shall be published in local newspapers. This information will also make available on the executing agency's website.

165. 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.

E. Information Disclosure

166. 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, Kullu District. 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 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.

VIII. GRIEVANCE REDRESS MECHANISM

167. The Project will have a common grievance redress mechanism (GRM) to receive, evaluate, and facilitate the resolution of social, environmental, or any other project-related grievances. The GRM will aim to provide a time-bound and transparent mechanism to voice and resolve social and environmental concerns linked to the Project. The GRM has been developed in consultation with stakeholders. The public awareness campaign will generate awareness of the Project and its grievance redress procedures. The campaign will ensure that the poor, vulnerable, and others know about the GRM.

168. The GRM will provide an accessible, inclusive, gender-sensitive, and culturally appropriate platform for receiving and facilitating the resolution of affected persons' grievances related to the Project. The multi-channel and multi-tier GRM for the Project is outlined below, with each tier having time-bound schedules and responsible persons identified to facilitate and address grievances at each stage. Public awareness campaigns will ensure that awareness of grievance redress procedures is generated through the campaign.

169. Affected persons will have the flexibility of conveying grievances and/or suggestions by dropping grievance redress/suggestion forms in complaint/suggestion boxes that will be installed by project PIUs or by e-mail, by post, or by writing in complaints register or by sending a WhatsApp message on the dedicated number, e-mail to the PIU or by dialing the number of the PIU/PMU.

170. Besides the Project's grievance redress mechanism, the state also has a comprehensive online public grievance monitoring system called Samgr eSamadhan where the public can file grievances through a dedicated web portal (esamadhan.nic.in). The affected persons can also lodge their complaints through this online portal.

171. **Information to the stakeholders about the GRM.** The stakeholders, including affected persons, beneficiaries and citizens, workers engaged during construction activities under the loan will be informed about the GRM under the Project and of the state through public consultations, disclosures, and distribution of public information booklets (PIB). In the case of illiterate persons, the information will be provided verbally during meetings with them.

172. **Who can complain.** A complaint can be registered by stakeholders directly or indirectly affected by the Project. A representative can register a complaint on behalf of the affected person or group, provided that the affected person or group identifies the representative and submits evidence of the authority to act on their behalf.

173. **What the Grievance/Complaint should contain.** Any comments, complaints, queries, and suggestions pertaining to safeguard compliance - environment, involuntary resettlement, indigenous people, design/construction-related issues, compensation, service delivery, or any other issues or concerns related to the Project. The complaint must contain the complainant's name, date, address/contact details, location of the problem area, and the problem.

174. **Where and how to file a Complaint.** The complaint can be filed online and offline. The people can submit their complaints at the contractor's site office or at the PIU/PMU office. In addition, they can also have grievances/suggestions/queries submitted through phone or e-mails or, the state grievance portal, or social media (on a dedicated WhatsApp number). The information about the GRM will also be displayed on the HPTDB website. Contact numbers and names of the concerned staff and contractors will be posted and displayed at all construction sites.

175. **Grievance redress /Problem solving through participatory Process.** The PMU and PIUs will make efforts to resolve the problems and conflicts amicably through a participatory process with the community. In case of immediate and urgent grievances in the complainant's perception, the contractor and supervision personnel from the PIU will provide the most easily accessible or first level of contact to resolve grievances quickly

176. **Grievance Redressal Committee.** The GOHP will establish the grievance redressal committees (GRC) at the site, PIUs, and PMU levels to provide a mechanism to resolve conflict and disputes concerning compensation payments, environmental safeguards related issues and cut down on lengthy litigation. The following will be the composition of the GRCs. The composition of the GRCs at all three levels is provided in the Table 17.

Table 17 Composition of the GRCs at all three levels

Site Level GRC (Level 1)	PIU level GRC (Level 2)	PMU level GRC (Level 3)
1. Assistant Engineer/ Junior Engineer, PIU, of the concerned project site 2. Field Engineer of PMDSC 3. Social and Community Organizer, PIU 4. Safeguard support staff of PMDSC, 5. A representative from the affected community, as and when required.	1. Project Manager, Concerned PIU 2. Assistant Engineer, PIU 3. Asstt. Social and Community Development Officer 4. Social and/or Environment Safeguards Specialist, PMDSC 5. Construction Manager, PMDSC 6. Representative of line departments (PWD, ULB, etc)/ temple trust as and when required and 7. A representative from the affected community, as and when required.	1. Project Director, PMU 2. Deputy Project Director, PMU 3. Executive Engineer, PMU, 4. Environment Specialist, PMU 5. Safeguard Specialist (Social and Gender), PMU 6. Representatives from the line departments (ULB, PWD, etc) / temple trust as and when required

GRC = grievance redress committee, PIU = project implementation unit, PMDSC = project management design and supervision consultant, PMU = project management unit, PWD = public works department, ULB = urban local body.

177. **Site level GRC (First Level).** The site level GRC will comprise an assistant engineer, PIU, a junior engineer. PIU, and safeguards and community organiser, PIU, a field engineer of PMDSC, safeguard support staff of PMDSC, and a representative from the affected community (as and when required). The contractor's site engineer and environment health safety cum social supervisor will jointly support in meetings, consultations, and site-level grievance resolution. The effort will be made to resolve issues on-site, in consultation with each other, and within five days of receipt of a complaint/grievance.

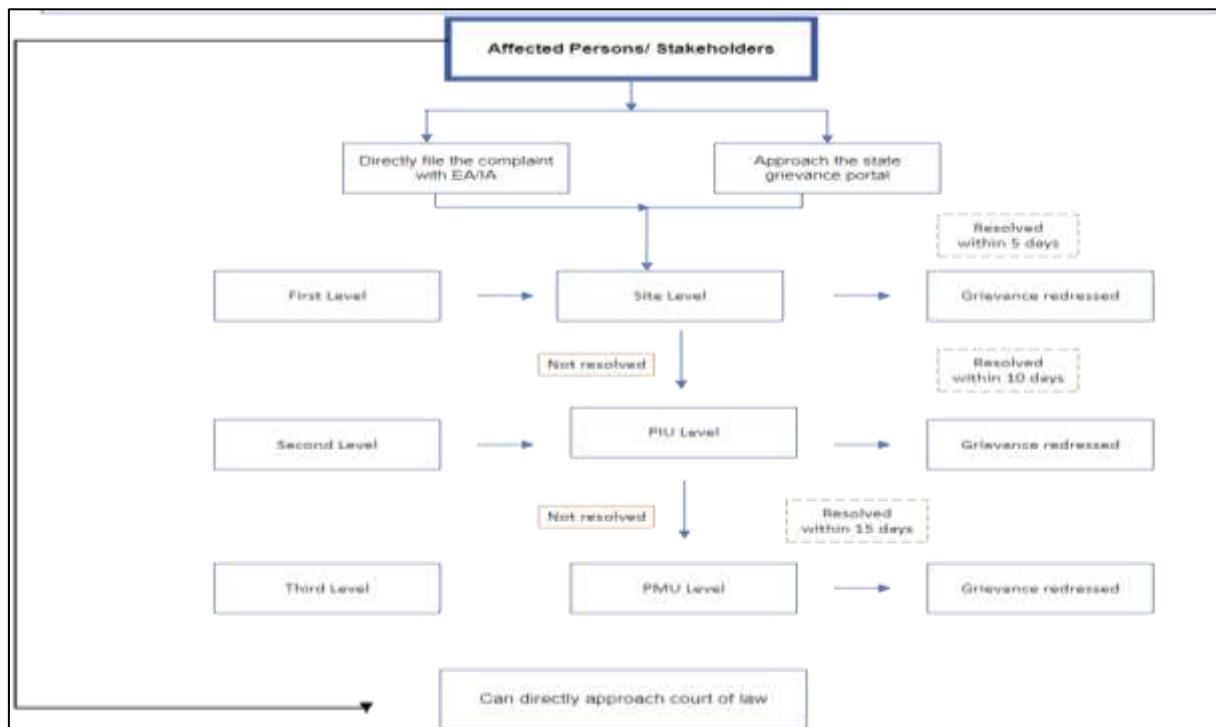
178. **PIU level GRC (Second Level).** All grievances that cannot be redressed within seven days at the first level will be brought to the notice of GRC headed by the executive engineer at the concerned PIU, and will include the assistant engineer, assistant social and community development officer, social and/or environment safeguards specialist, PMDSC, and construction manager, PMDSC The PIU level GRC will also co-opt the representative of line departments (PWD, ULB) and a representative from the affected community, as and when required. GRC will review the grievance and act appropriately to resolve it within 10 days of receipt at this level.

179. **PMU Level GRC (Third Level).** In case the grievances are not addressed at the PIU level within 10 days of receipt, the same shall be brought to the notice of the PMU-level GRC. The PMU-level GRC will be comprised of the project director as chairperson, deputy project director, executive engineer, environment specialist, safeguards specialist (gender and social), and a representative from the line department (ULB, PWD, etc). The community shall have at least one female member. GRC will resolve grievances within 15 days.

180. The complainant will be informed in writing about the resolution of their complaint or the decision of the grievance redress committees. The complainants are free to approach the court of law at any time of their own will at any stage, and accessing the country's legal

system can run parallel to accessing the GRM and is not dependent on the negative outcome of the GRM. GRM will continue to function throughout the Project. The grievance redress process is shown in the figure 18.

Figure 18: Grievance Redress Mechanism in SITDP, Himachal Pradesh



EA= executing agency; IA = implementation agency
 Source: Asian Development Bank.

181. **ADB Accountability Mechanism.** The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB’s operational policies and procedures. In the event that the established GRM is not in a position to resolve the issue, the affected person also can use the ADB Accountability Mechanism through directly contacting (in writing) the complaint receiving officer (CRO) at ADB headquarters. Before submitting a complaint to the Accountability Mechanism, affected people should make an effort in good faith to solve their problems by working with the concerned ADB operations department (ADB India Resident Mission in this case). The complaint can be submitted in any of the official languages of ADB’s developing member countries. The ADB Accountability Mechanism information will be included in the project-relevant information to be distributed to the affected communities as part of the Project GRM.⁸

182. **Documentation.** PMU, with the support of PIUs, will be responsible for the timely registration of grievances, related disclosure, and communication with the aggrieved party. PMU will also ensure that all the details from submission to resolution are well recorded and documented. The environmental and social safeguard specialists of PMU will be responsible for maintaining the records and coordinating with the affected persons regarding complaints related to their respective domain areas. The chair of each GRC will be responsible for informing the complainant in writing about the resolution of their complaint or the decision of the GRC.

⁸ <http://www.adb.org/Accountability-Mechanism/default.asp>.

183. **Record keeping.** PIUs will keep records of grievances received, including contact details of the complainant, the date the complaint was received, the nature of the grievance, agreed corrective actions, the date these were affected, and the final outcome. The number of grievances recorded and resolved and the outcomes will be displayed/disclosed in the PMU and PIU offices, and reported in monitoring reports submitted to ADB on a semi-annual basis.

184. **Periodic review and documentation of lessons learned.** The project director, PMU, will periodically review the functioning of the GRM in each site and record information on the effectiveness of the mechanism, especially on the Project's ability to prevent and address grievances.

185. **Cost.** All costs related to the resolution of grievances (meetings, consultations, communication, and reporting/ information dissemination, as well as costs incurred by affected persons to attend GRC meetings, if any) will be borne by PMU.

IX. ENVIRONMENTAL MANAGEMENT PLAN

186. 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.

187. 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.

188. 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

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

- Department of Tourism and Civil Aviation, Government of H.P. is the Executing Agency (EA) responsible for overall management, coordination, and execution of all activities funded under the loan. Himachal Pradesh Tourism Development Board (HPTDB) is the Implementing Agency (IA) responsible for coordinating procurement and construction of the project.
- The Project Management Design and Supervision Consultant (PMDSC) assists PMU in managing the project including procurement and assures technical quality of design and construction;
- A Project Implementation Unit (PIU) will be established in Kullu. This PIU will look into progress and coordination of day-to-day construction works with the assistance of PMDSC;
- The DPR Consultant has prepared the DPR of the project. The PMDSC will carry out construction supervision during project implementation. Their responsibility will also include EMP implementation supervision;
- The contractor will be responsible for execution of all construction works. The contractor will work under the guidance of the PIU-Kullu and PMDSC. The environmental related mitigation measures will also be implemented by the contractor.
- Contractor will appoint a qualified environmental engineer to implement the mitigation measures as per the EMP.

190. The contractor's conformity with contract procedures and specifications during construction will be carefully monitored by the PIU. Safeguard Specialists will be deputed in PMU and PMDSC, who will monitor the environmental performance of contractors.

191. **Responsibility for preparation/ updating IEE.** PMDSC is responsible for preparation & updating of IEE and updating it, if required and submit to PMU for final review before submission to ADB. PMDSC will assist PMU.

192. **Responsibility for Monitoring.** During construction, PMDSC's Environmental Specialist and the designated representative engineer of the PIU will monitor the contractor's environmental performance on day-to-day basis while PMDSC expert will randomly monitor the performance for corrective measures if required. During the operation phase, monitoring will be the responsibility of the EA.

193. **Responsibility for Reporting.** Environmental Specialist of PMDSC in coordination with PIU will prepare and submit quarterly and semi-annual environmental monitoring report to PMU. A sample of SEMR is given in Annexure-8. PMU will review these reports with assistance of PMDSC Environmental Specialist and submit to ADB semi-annual reports on implementation of the EMP. This will facilitate 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. PMDSC environmental expert will help in preparing quarterly, semiannual and annual progress reports.

194. **Environmental Management Plan (EMP).** Table-19 shows the potential adverse environmental impacts, proposed mitigation measures, monitoring parameters, frequencies, responsible parties and implementation arrangements during pre-construction, construction, post construction & operation phase of the project. This EMP will be included in the bid documents & contract agreement. Same will be further reviewed and updated during project implementation.

Table 18: Environmental Management Plan (EMP)

Parameters	Mitigation Measures	Parameter/ Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring	Source of Funds
Location Impacts						
Lack of sufficient planning to assure long term sustainability of the site and ensure protection specially from earthquake and other natural disasters	<ul style="list-style-type: none"> The design of site has been taken into considering of earthquake coefficient of Zone-V. 		PMU and PIU	PMDSC	Prior to start of civil work and Continuous during construction	PMU
Extraction of Construction material	<ul style="list-style-type: none"> Construction material will be procured from local market. Material procurement will be from sources approved by GoHP or from approved third party 		Contractor	PMDSC	Prior to start of civil work and Continuous during construction	Contractor
Tree Felling	<ul style="list-style-type: none"> Avoid tree felling at best possible to protect the tree at site. Consider into design to avoid tree felling at best level. Tree felling will be absolute minimum, only done in unavoidable circumstances. Prior permission will be required before felling from concerned department. Proposed Landscaping measures enhance the greenery in the area after implementation of the project. 		Contractor	PMDSC	Prior to start of civil work and Continuous during construction	PMU

Parameters	Mitigation Measures	Parameter/ Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring	Source of Funds
Design & Pre-Construction Phase						
Site Specific Environmental Protection measures	<ul style="list-style-type: none"> Preparation of site specific EMP by the contractor. Same shall be approved by PMDSC/ PMU 	Approved Site Specific EMP	Contractor	PMDSC	Prior to start of civil work and Continuous during construction	Contractor/ PMDSC
Consents, permits, clearances, No objection certificate (NOC), etc.	<ul style="list-style-type: none"> Secure all necessary consents, permits, clearance, NOCs, etc. prior to start of civil works. Obtain all necessary consents, permits, clearance, NOCs, etc. prior to start of civil works. Acknowledge in writing and provide report on compliance with all obtained consents, permits, clearance, NOCs, etc. Include in detailed design drawings and documents all conditions and provisions if necessary 	Consents, permits, clearance, NOCs, etc.	PIU/ Contractor	PMDSC	EA to report to ADB in Six monthly Environmental Monitoring Report (EMR)	Contractor/ PMU
Layout of components to avoid impact on the aesthetics of the site	<ul style="list-style-type: none"> The project components will not have any adverse impacts on aesthetics of site as these involve construction of site on building and infrastructure. Measures to protect physical, cultural and natural aesthetics of site without disturbing the surroundings. 	Approved Site Specific EMP	PMU/PIU	PIU & PMDSC	Prior to start of civil work and Continuous during construction	Contractor
Slope stability related issues	<ul style="list-style-type: none"> As the Naggar Castle site is relatively flat terrain and the adjoining parking site is hilly in nature. Keeping in view of soil stabilization, the retaining walls for retaining soil/ 	Approved Site Specific EMP	PMU and PIU	PIU & PMDSC	Prior to start of civil work and Continuous during construction	Contractor

Parameters	Mitigation Measures	Parameter/ Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring	Source of Funds
	embankment protection measures are proposed.					
Increased storm water runoff from alterations of the site's natural drainage patterns due to landscaping, excavation works, Construction of parking lots, and addition of paved surface.	<ul style="list-style-type: none"> Design of proposed intervention will allow efficient drainage at the site and maintain natural drainage patterns during the proposed work. Drains exists at Naggar Castle site and new drains have been proposed all around the adjoining parking site for drainage of rain water. 	Approved DPR	PMU and PIU	PIU & PMDSC	Prior to start of civil work and Continuous during construction	Contractor
Integration of energy efficiency and energy conservation programs in design of site	<ul style="list-style-type: none"> Following measures have been included in the design to enhance energy efficiency: Usage of recyclable materials like wood substitutes. Installation of BEE certified equipment. Usage of energy efficient lighting fixtures (LED). 	Approved DPR	PMU and PIU	PIU & PMDSC	Prior to start of civil work and Continuous during construction	Contractor
Establishment of baseline environmental conditions prior to start of civil works	<ul style="list-style-type: none"> Prior to start of civil works ambient air quality, ambient noise level, water & soil quality data will be generated. 	Records	PMDSC/ Contractor	PIU & PMDSC	Baseline data will be generated prior to start of civil work.	Contractor/ PMDSC
Utility Shifting	<ul style="list-style-type: none"> Identify the utilities and prepare a utility shifting plan 	Approved Utility Shifting Plan	PMDSC/ Contractor	PIU & PMDSC	Prior to start of civil work.	PMU/ Contractor
Sites for construction camps, areas for stockpile, Storage and disposal	<ul style="list-style-type: none"> 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, 	List of pre-approved sites for construction work camps, areas for stockpile, storage and disposal Waste management plan	PMDSC to prepare list of potential sites PMDSC to inspect sites proposed by contractor if not included in pre-approved sites	PIU/ PMDSC	Monthly	Contractor

Parameters	Mitigation Measures	Parameter/ Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring	Source of Funds
	shortages of amenities, and crime). <ul style="list-style-type: none"> Disposal will not be allowed near sensitive areas which will inconvenience the community. The construction camp, storage of fuel and lubricants should be avoided near the water bodies. 					
Sources of construction materials	<ul style="list-style-type: none"> 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 PMDSC on a monthly basis documentation of sources of materials. 	Permits issued to quarries/ sources of materials	Contractor PIU & PMDSC is to verify sources (including permits) if additional is requested by contractor	PMU/PMDSC	Upon submission by contractor, monthly	Contractor
Traffic Management	<ul style="list-style-type: none"> 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. 	Traffic Management Plan	Contractor	PIU and PMDSC	Prior to start of civil work. Continuous during construction	Contractor

Parameters	Mitigation Measures	Parameter/ Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring	Source of Funds
	<ul style="list-style-type: none"> 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 					
Occupational Health and Safety	<ul style="list-style-type: none"> Comply with IFC EHS Guidelines and National/State Occupational Health and Safety regulations. Develop comprehensive site- Specific Health and Safety (H&S) Management Plan & works near river 	Health and Safety (H&S) Management Plan.	Contractor	PIU and PMDSC	Prior to start of civil work. Continuous during construction	Contractor
Public Consultations	<ul style="list-style-type: none"> Continue information dissemination, consultations, and involvement/ participation of stakeholders during project implementation. 	- Disclosure records - Consultations	PMDSC/ Contractor	PMU and PMDSC	Prior to start of civil work. Continuous during project implementation	PMDSC/ Contractor
Construction Phase						
Construction Camps – Location, Selection, Design and Layouts	<ul style="list-style-type: none"> Construction camp will be located within the site as far as possible or contractor will hire a house to accommodate construction workers. The construction camp, if established at project site will not affect the day-to-day activities of local residents in the vicinity of site. Adequate sanitation facilities shall be provided at camp site and no waste water will be discharged 	Approved layout plan of camp	Contractor	PMDSC	<ul style="list-style-type: none"> Daily visual inspection by contractor supervisor and/or environment specialist Weekly visual inspection by PMDSC (more frequent during monsoon) 	Contractor

Parameters	Mitigation Measures	Parameter/ Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring	Source of Funds
	outside. Labour camp should not locate near any of the water body- river/ forest area.				<ul style="list-style-type: none"> Random inspection by PMU, PIU and or PMDSC 	
Traffic management plan during construction	<ul style="list-style-type: none"> Prior to commencement of site activities and mobilization on ground, the contractor will prepare a traffic management plan for safe passage of local traffic during construction phase. This will include alternative access routes, traffic regulations, signage, etc. The contractor will get these plans approved from the Engineer in-charge of PIU. The contractor will disseminate the traffic management plan around the project site. 	Traffic Management Plan	Contractor	PMDSC	<ul style="list-style-type: none"> Daily visual inspection by contractor supervisor and/or environment specialist Weekly visual inspection by PMDSC (more frequent during monsoon) Random inspection by PMU, PIU and or PMDSC 	Contractor
Impact on Flora and Fauna	<ul style="list-style-type: none"> Construction workers prohibited from harvesting wood in the project area during their employment. No tree cutting without permission of competent authority, Replant trees in the area using minimum ratio of 3 new trees for every 1 tree cut. Replacement species must be approved by District Forest Department. Conduct site induction and environmental awareness. Limit activities within the work area. 	Illegal wood/vegetation harvesting (area in m2, number of incidents reported). Tree Cutting permission. Number and species approved by District Forest Department	Contractor	PMDSC	<ul style="list-style-type: none"> Throughout construction period 	Contractor

Parameters	Mitigation Measures	Parameter/ Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring	Source of Funds
Site clearance activities, including delineation of construction areas	<ul style="list-style-type: none"> The commencement of site clearance activities will be undertaken with due permission from the Environment Specialist of the PIU/ PMU to minimize environmental impacts. All areas used for temporary construction operations will be subject to complete restoration to their former condition with appropriate rehabilitation procedures. 	Approved Site Specific EMP	Contractor	PMDSC	<ul style="list-style-type: none"> Prior to start of work 	Contractor and PIU
Soil erosion and surface runoff	<ul style="list-style-type: none"> There may be requirement for temporary slope protection during construction at the excavated areas. These requirements should be met. Adequate measures will be taken up at site so that there is no soil erosion causing risks in the near vicinity. Save top soil removed during excavation and use to reclaim disturbed areas, as soon as it is possible to do so. Use dust abatement measures such as water spraying to minimize wind-blown 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. 	Erosion control and re-vegetation plan	Contractor	PMDSC	<ul style="list-style-type: none"> Daily visual inspection by contractor supervisor and/or environment specialist Weekly visual inspection by PMDSC (more frequent during monsoon) Random inspection by PMU, PIU and or PMDSC 	Contractor

Parameters	Mitigation Measures	Parameter/ Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring	Source of Funds
	<ul style="list-style-type: none"> Clean and maintain catch basins, drainage regularly. Conduct routine site inspections to assess the effectiveness of and the maintenance requirements for erosion and sediment control systems. 					
Impact on Water Quality (Soil, Water Pollution due to fuel and lubricants, construction waste)	<ul style="list-style-type: none"> Ensure drainage and water bodies within the construction zones are kept free of obstructions. Keep loose soil material and stockpiles out of drains and water bodies. Minimize construction activities involving significant ground disturbance during the monsoon season. Provide drains and retention ponds if required. Dispose waste oil and lubricants generated as per provisions of Hazardous Waste (Management and Handling) Rules, 2016. Implementation of Waste Management Plan Conducted Water quality monitoring as per EMP 	Water Quality Testing (Quarterly) as per EMP. Visual inspections. Waste Management Plan	Contractor	PMDSC	Throughout construction period <ul style="list-style-type: none"> (Water Quality Testing as per Environmental Monitoring Plan) 	Contractor
Siltation of water bodies/ natural drains due to spillage of construction wastes	<ul style="list-style-type: none"> No disposal of construction wastes will be carried out into any water body/ natural drains near the project site. Extraneous construction wastes will be transported to 	Visual inspections.	Contractor	PMDSC	Throughout construction period	Contractor

Parameters	Mitigation Measures	Parameter/ Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring	Source of Funds
	the pre-identified disposal site for safe disposal in scientific manner. Loose construction material will be located away from any natural drains/ water body to avoid siltation. Silt fencing arrangement will adhere to control siltation.					
Impact on Air Quality (such as generation of dust, Emission from Construction Vehicles, Equipment and Machinery etc.)	<ul style="list-style-type: none"> The contractor will take every precaution to reduce the levels of dust at construction site. The site will be properly barricaded with prefabricated MS sheets. Measures such as water sprinkling at dust prone areas as and when required. Ambient air quality monitoring will be conducted as per monitoring plan. Vehicles, equipment and machinery used for construction will conform to the relevant Standard (vehicular emission standards of Government of India and CPCB specified standards for equipment and machinery) and will be regularly maintained to ensure that pollution emission levels comply with the relevant requirements. Conduct regular water sprinkling at dust generation sites e.g. haul roads, stockpiles, etc. 	Valid PUC, CTE & CTO. Ambient Air Quality Testing (Quarterly). Visual inspections	Contractor	PMDSC	Throughout construction period (Ambient Air Quality Testing as per Environmental Monitoring Plan)	Contractor

Parameters	Mitigation Measures	Parameter/ Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring	Source of Funds
	<ul style="list-style-type: none"> Maintain construction vehicles and obtain “pollution under control” certificate. Obtain CTE and CTO for hot mix plants, crushers, diesel generators, etc. Construction materials should be stored in covered areas to avoid dust emissions and such materials should be transported in covered trucks. 					
Noise and Vibrations	<ul style="list-style-type: none"> Noise limits for construction equipment used in this project will not exceed 75 dB (A). The site will be properly barricaded with prefabricated MS sheets. Periodical maintenance of vehicle and equipment will be done to mitigate the noise level in the area. Noise level monitoring will be conducted as per monitoring plan. Selection of construction techniques and machinery to minimize ground disturbance. Construction equipment to be well maintained. Construction techniques and Machinery selection to minimize ground disturbance. Proper maintenance and turning off plants not in use Limit construction activities during day time. Minimize noise from construction equipment by 	Construction techniques and machinery. Noise & Vibration Testing (Quarterly). Work schedule	Contractor	PMDSC	Throughout construction period (Noise & Vibration Testing as per Environmental Monitoring Plan)	Contractor

Parameters	Mitigation Measures	Parameter/ Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring	Source of Funds
	<p>using vehicle silencers and fitting jackhammers with noise-reducing mufflers.</p> <ul style="list-style-type: none"> • Avoid loud random noise from sirens, air compression, etc. • 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. • 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 					
Impacts due to Waste generation (Disposal of Construction & Demolition Waste, dry waste, hazardous waste etc.)	<ul style="list-style-type: none"> • Safe disposal of the Construction & Demolition waste will be ensured in the pre-identified/ approved disposal locations. Waste will be maximum reuse at site/ low lying areas. In no case, any construction waste will be disposed off round the project site and especially in vacant 	Waste Management Plan. Visual inspection. Photographs	Contractor	PMDSC	Throughout construction period	Contractor

Parameters	Mitigation Measures	Parameter/ Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring	Source of Funds
	<p>plots in the locality in consultation with PIU.</p> <ul style="list-style-type: none"> • 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. • Excavated soil emerging at some sites is suitable for use at other sites under the project for leveling and filling purpose. Additional quantity of soil if required is being procured from authorized source or with approval of asset owner. • Coordinate with Town Municipal Authority 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). 					

Parameters	Mitigation Measures	Parameter/ Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring	Source of Funds
	<ul style="list-style-type: none"> Prohibit disposal of any material or wastes (including human waste) into drainage, nallah, or watercourse. Consider prohibition on Spreading/throwing garbage in open place, therefore proper solid waste collection and disposal plan should be made and strictly followed by contractor during construction phase. 					
Impacts on occupational Health and Safety (such as material handling at site, safety measures during construction etc.)	<ul style="list-style-type: none"> Comply with IFC & National/ State EHS Guidelines on occupational Health and Safety Workers employed on mixing cement, lime mortars, concrete, etc., will be provided with personal protective gears/equipment's (PPEs) such as gloves, jackets, shoes, hats, goggles and ear plug etc. Workers, who are engaged in welding works, will be provided with welder's protective face/ eye-shields. Workers engaged in stone breaking activities will be provided with protective goggles and clothing. Disallow worker exposure to noise level greater than 85 dB (A) for duration of more than 8 hours per day without hearing 	Site-specific health and safety (H&S) plan. Records. Visual inspection. Noise exposure monitoring in work area. Visible first aid equipment and medical supplies.	Contractor	PMDSC	Throughout construction period	Contractor

Parameters	Mitigation Measures	Parameter/ Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring	Source of Funds
	<p>protection. The use of hearing protection shall be enforced actively.</p> <ul style="list-style-type: none"> • Develop comprehensive site-specific health and safety (H&S) plan. • 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. • Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas. 					

Parameters	Mitigation Measures	Parameter/ Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring	Source of Funds
	<ul style="list-style-type: none"> • 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. • Health Awareness camps & Medical Checkup camps for workers. • Adequate safety measures for workers during handling of materials at the project site will be taken up. Community/ pedestrian health and safety will be ensure while work on site. • The contractor has to comply with all regulations for the safety of workers. Precaution will be taken to prevent danger of the workers from fire, accidental injury etc. First aid treatment will be made available for all injuries likely to be sustained during the course of work. The Contractor will conform to all anti-malaria instructions given to him by the Engineer. 					

Parameters	Mitigation Measures	Parameter/ Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring	Source of Funds
Public inconvenience due to disturbance to public utility services-water & power supply, sanitation, etc.	<ul style="list-style-type: none"> Approval/ implementation of utility shifting by concerned department. Advance notice to the public about the time and the duration of the utility disruption. Use of well trained and experienced machinery operators to reduce accidental damage to the public utilities – pipelines Restore the utilities immediately to overcome public inconvenience 	Approved Utility Shifting Plan. Disruption to other commercial and public activities / public complaints	PIU/ Contractor	PMDSC	Throughout construction period	PMU/ Contractor
Impacts on Physical & Cultural Resources	<ul style="list-style-type: none"> Ensure no damage to structures/ properties near construction zone. Provide sign boards to inform nature and duration of construction works and contact numbers for concerns/complaints. 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/PMDSC for transportation routes and schedule. Schedule transport 	Visual inspection. No complaints received. Photographs	Contractor	PMDSC	Throughout construction period	Contractor

Parameters	Mitigation Measures	Parameter/ Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring	Source of Funds
	<p>and hauling activities during non-peak hours. Communicate road detours via visible boards, advertising, pamphlets, etc.</p> <ul style="list-style-type: none"> • 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. • Avoid working in peak tourist seasons and/ or important religious festivals 					
Impacts on Socio-economic activities	<ul style="list-style-type: none"> • Provide sign boards for pedestrians to inform nature and duration of construction works. • Display contact numbers for concerns & grievances. • Preference to local employment as far as feasible. • Continuous Public Consultation. • Awareness camps & training to workers for dealing with local people. 	Records. Visual inspection. Consultation Records	Contractor	PMDSC	Throughout construction period	Contractor
Onsite emergency plan for minor accidents and	The onsite emergency plan will be prepared by the contractor in consultation with PIU and	Emergency Preparedness Plan	Contractor	PIU/ PMDSC	Monthly	Contractor

Parameters	Mitigation Measures	Parameter/ Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring	Source of Funds
mishaps and Disaster Management Plan for Natural Calamities	PMDSC. For natural calamities, disaster management plan prepared by the GoHP under the provisions of Disaster Management Act 2005 will be followed.					
Post-Construction & Operation Phase						
Site Cleanup & Restoration	<ul style="list-style-type: none"> • 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. 	Visual inspection. Pre-existing condition. Construction zone has been restored. Construction zone vegetation has been enhanced	Contractor	PMDSC	Post construction period	Contractor

Parameters	Mitigation Measures	Parameter/ Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring	Source of Funds
Environmental conditions	<ul style="list-style-type: none"> Monitoring of Ambient Air, Noise, Soil, Ground & Surface Water Quality 	Monitoring results and relevant standards	Contractor up to Defect Liability Period and thereafter PMU/ PIU	PMU	Quarterly. Post Construction & Operation Phase	Contractor up to Defect Liability Period and thereafter PMU
Influx of visitors/ tourist due to increased recreational/ wellness activities	<p>Sustainable tourism practices:</p> <ul style="list-style-type: none"> Promote sustainable tourism practices such as responsible tourism that contribute to the conservation of environment and local culture. For operation stage, all the tourist related activities to be conducted for visitors/ tourists at site shall be planned and implemented in consultation with HPTDB. Resource management. Implement resource management practices such as water conservation, waste management and energy efficiency to ensure the sustainability of local resources. Cultural preservation. Promote the preservation of local culture and traditions and involve local communities in tourism 	Water conservation measures (ZLD), energy efficient equipment, Waste segregation, recycle, proper disposal, permissions for usage of ground water and surface water, if applicable.	Operation & Maintenance Agency	PMU		Contractor up to Defect Liability Period and thereafter PMU

Parameters	Mitigation Measures	Parameter/ Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring	Source of Funds
	<p>planning and decision making.</p> <ul style="list-style-type: none"> It is important to balance the economic benefits of tourism with the need to protect the environment, preserve local culture, and ensure the well-being of local communities. <p>Water:</p> <ul style="list-style-type: none"> Ensure that a ground water extraction permission for the project is obtained and compliance. Ensure that a proper surface water permission from concerned department is obtained. Conduct water quality monitoring to ensure the quality of water. <p>Electricity:</p> <ul style="list-style-type: none"> Only energy saving light, equipment to be installed at site. use of solar energy in illumination of garden and open areas 					
Water Environment and Storm Water Management	<ul style="list-style-type: none"> Contractor shall ensure proper storm water management at site by providing covered storm water drainage network. No sewage shall be directly led to the water bodies; project 	Storm water drains, maintenance of Septic tank	Operation & Maintenance Agency	PMU		Contractor up to Defect Liability Period and thereafter PMU

Parameters	Mitigation Measures	Parameter/ Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring	Source of Funds
	<p>includes septic tanks and soak pits for disposal of waste water.</p> <ul style="list-style-type: none"> Separate solid waste bins will be provided for organic and plastic waste within the project premises at regular intervals. The organic waste will be decomposed in nearby/ proposed waste composter and plastic waste will be sold to recyclers/ Gram Panchayat waste disposal schemes. Covered waste storage areas Regular inspection and cleaning of storm drains Provision of silt traps in storm water drains 					
Waste oil generation on account of Massage and Spa and its safe disposal	<ul style="list-style-type: none"> Waste oil from the equipment shall be collected and stored in jerry cans and sent back to the suppliers for recycle or reuse. All the equipment handling oil shall be wiped with cotton/cotton rags before washing with water. The solid waste generation in terms of cotton rags, paper tissues and waste herbal products shall be collected in dust bins and disposed off along with other wastes of wellness facilities. 	Waste from Spa and Massage operations	Operation & Maintenance Agency	PMU		Operating Agency
Safety risks/ Measures	<ul style="list-style-type: none"> All safety features provided as part of construction at site will be maintained. 		Operation & Maintenance Agency	PMU		Contractor up to Defect Liability Period and thereafter PMU

Parameters	Mitigation Measures	Parameter/ Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring	Source of Funds
	<ul style="list-style-type: none"> The project site will be equipped with firefighting system with portable fire extinguishers and smoke detectors. Separate staircase proposed in case of any mishap etc. During natural calamities, the operation will be stopped. The staff will be safely evacuated as per the Disaster Management Plan (DMP) of Himachal Pradesh. 					
Solid Waste Management	<ul style="list-style-type: none"> For waste collection, adequate capacity of bins for dry and wet waste will be available at different locations The recyclable waste will be collected at designated site/ location and sold to recycling vendors periodically Ensure good housekeeping at site Awareness campaigns, hoarding and signage on clean environment, healthy lifestyle, good practices etc. shall be maintained/ displayed 	Waste segregation, display of suitable signage	Operation & Maintenance Agency	PMU		Contractor up to Defect Liability Period and thereafter PMU
Unhygienic conditions due to poor maintenance of sanitation facilities and irregular solid waste collection	<ul style="list-style-type: none"> The implementing agencies will carry out maintenance of the toilets, and carry out the regular collection and disposal of wastes to the local disposal sites. Ensure the sewerage/septic tank system is maintained and 	Maintenance schedule of Buildings and Septic tank	Operation & Maintenance Agency	PMU		Contractor up to Defect Liability Period and thereafter PMU

Parameters	Mitigation Measures	Parameter/ Indicator of Compliance	Responsible for Implementation	Responsible for Supervision	Frequency of monitoring	Source of Funds
	serviced by qualified personnel in accordance with operating procedure.					
Impact on Land and Ecology	<ul style="list-style-type: none"> Integrate existing trees, shrubs and vegetation as far as possible into the design to avoid need to remove them; Preference should be given to native species of plants in consultation with forest department 	Landscaping Plan	Operation & Maintenance Agency	PMU		Contractor up to Defect Liability Period and thereafter PMU
Onsite emergency plan for minor accidents and mishaps and Disaster Management Plan for Natural Calamities	The management of site will prepare on-site emergency plan for possible minor accidents and mishaps during operation phase. For natural calamities, the disaster management plan prepared by DDMA will be followed.	Health & Safety Plans	Operating Agency	PMU		Operating Agency

B. Environmental Monitoring & Reporting

195. Through integration of mitigation measures in project design, impacts are mostly insignificant, temporary in nature and can be properly avoided or mitigated. The objectives of environmental monitoring are: ensure effective implementation of EMP; comply with all applicable environmental, safety, labour and local legislation; ensure that public opinions and obligations are taken in to account and respected to the required satisfaction level; and modify the mitigation measures or implementing additional measures if required. The environmental monitoring plan contains:

- All performance indicators
- Environmental monitoring program
- Necessary budgetary provisions

196. **Performance Indicator.** The physical, biological and social components identified to be particularly significant in affecting the environment at critical locations have been suggested as Performance Indicators. The Performance Indicators shall be evaluated under three heads as:

- Environmental condition indicators to determine efficiency of environmental management measures in control of air, noise and water pollution.
- Environmental management indicators to determine compliance with the suggested environmental management measures.
- Performance indicators that have been devised to determine efficiency and utility of the proposed mitigation measures.

197. The Performance Indicators and monitoring plans prepared are presented in the Table 20.

Table 19: The Performance Indicators and Monitoring Plan

Performance Indicators	Target	Achievement in Semi-annually and annually
Budget	Environmental Budget (EMP Budget)	Expenditure till date
Performance Indicators of Monitoring Plan		
Ambient Air Quality	Total Number of samples as per Environmental Monitoring Plan	Total Number of samples collected
Noise Level	Total Number of samples as per Environmental Monitoring Plan	Total Number of samples collected
Water Quality	Total Number of samples as per Environmental Monitoring Plan	Total Number of samples collected
Soil	Total Number of samples as per Environmental Monitoring Plan	Total Number of samples collected
Safety of Workers	List of PPE as per the number of labors	List of PPEs actually provided in the project
Performance Indicators of Environmental Management Plan		
Permissions / NOCs/ Consent requirement	Target timeline to obtain the permit/NoC/ consents and its validity	List of Permission and NOCs/ consents obtained till date and status of its validity.
Public Consultation	Total Number of planned Public Consultation with timeline and coverage of people.	Number of public consultations conducted till date and actual coverage of the people.
Grievance redressal	Total number of complaints received, its timeline to response and resolution	Actual number of complaints resolved in percentage, response time.
Issues raised in public consultation	Target to attend the issues raised in the Public Consultation	Status of compliance to the issues of public consultation

Information disclosure	List of information and locations where information to be disclosed	Actual locations where information has been disclosed.
Education of site staff on Environmental training	Total Number of staffs to be trained	No of staff actually
Capacity Building	Total number of sessions to be covered Total Number of contractors, PIUs and PMDSCs to be covered	Number of Sessions completed and Number of contractors, PIUs and PMDSCs.
Implementation of EMP mitigation Measures	All items of Environmental Management Plan with timeline	Implementation status of EMP items till date
Reporting	List and number of Report to be submitted	List and number of reports submitted

198. Progress of implementation of the EMP shall be monitored through a measurable set of indicators for performance assessment and parameters for environmental quality. During the progress of implementation, the monitoring provides information on any corrective action required for achieving the performance requirements as envisaged in the EMP. Regular reporting of the environmental indicators and their performance will be carried out at all stages of project pre-construction, construction and operation stage during the loan period. Annual/ semi-annual reporting of the environmental performance will be carried out to fulfill the ADB requirements which need a description of progress with implementation of the EMP and compliance issues and corrective actions, if any. The environmental monitoring program has been detailed out in Table 21. Monitoring of environmental monitoring components such as air, noise, soil and water are required for successful implementation of the environmental monitoring program and is contingent to the following:

- Contractor has to submit a proposed schedule of subsequent periodic test to be carried out for approval;
- Monitoring by the environmental officers of supervision consultant of all the environmental monitoring tests and subsequent analysis of results
- Where indicated by testing results and any other relevant on-site conditions, supervision consultant to instruct the contractor to:
- Verify testing result with additional testing as/ if required;
- Require re-calibration of equipment etc. as necessary and
- Request the contractor to stop, modify or defer specific construction equipment, processes etc. as necessary, that are deemed to have contributed significantly to monitoring readings in excess of permissible environmentally “safe” levels.
- All issues related to negative environmental impacts of the contractor’s facilities, plant and equipment are to be controlled through:
- The contractor’s self-imposed quality assurance plan
- Regular/ periodic inspection of contractor’s plant and equipment;
- Monthly appraisal of the contractor
- Other environmental impacts are to be regularly identified and noted on the monthly appraisal inspection made to review all aspects of the contractor’s operation. The officer is to review all monthly appraisal reports and through the team leader is to instruct the contractor to rectify all significant negative environmental impacts.

199. Table-21 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.

Table 20: Environmental Monitoring Plan

Environmental component	Project stage	Parameters to be monitored	Location	Frequency	Standards	Implementation	Supervision
1.Air Quality	A. Pre-construction stage (The project once assigned to contractor)	PM10, PM2.5, SO2, NOx, CO	Project Site and nearby receptor areas in downwind, upwind & cross wind directions	One time	National Air quality standards of CPCB	Contractor by CPCB/ NABL/ HPSPCB approved laboratory	PMDSC/ PMU
	B. Construction Stage	PM10, PM2.5, SO2, NOx, CO	Project Site and nearby receptor areas in downwind, upwind & cross wind directions	Quarterly except monsoon	National Air quality standards of CPCB	Contractor by CPCB/NABL/ HPSPCB approved laboratory	PMDSC/ PMU
	C. Operation Stage	PM10, PM2.5, SO2, NOx, CO	Project Site and nearby receptor areas in downwind, upwind & cross wind directions	Six monthly	National Air quality standards of CPCB	Contractor by CPCB/NABL/ HPSPCB approved laboratory	PMU
2.Water Quality	A. Pre-construction stage (The project once assigned to contractor)	Color, Odor, pH, Turbidity, TDS, Calcium, Chloride, Total hardness, total alkalinity	Drinking water samples from the project site & nearby areas, Surface water courses of nearby areas.	One time	National water quality standards of CPCB	Contractor by CPCB/NABL/ HPSPCB approved laboratory	PMDSC/ PMU
	B. Construction Stage	Color, Odor, pH, Turbidity, TDS, Calcium, Chloride, Total hardness, total alkalinity	Drinking water samples from the labour camps & nearby areas, Surface water from U/s and D/s the water courses of nearby areas.	Quarterly	National water quality standards of CPCB	Contractor by CPCB/NABL/ HPSPCB approved laboratory	PMDSC/ PMU
	C. Operation Stage	Color, Odor, pH, Turbidity, TDS, Calcium, Chloride, Total hardness, total alkalinity	Drinking water samples from the project site & nearby areas, Surface water from water courses of nearby areas.	Six monthly	National water quality standards of CPCB	Contractor by CPCB/NABL/ HPSPCB approved laboratory	PMU
3.Noise/ Vibration	A. Pre-construction stage (The project once assigned to contractor)	Noise level in dB (A)	Project Site and nearby sensitive receptors	A single time	CPCB standards for Noise and vibrations	Contractor by CPCB/NABL/ HPSPCB approved laboratory	PMDSC/ PMU
	B. Construction Stage	Noise level in dB (A)	Project Site and nearby sensitive receptors	Quarterly	CPCB standards for Noise and vibrations	Contractor by CPCB/NABL/ HPSPCB approved laboratory	PMDSC/ PMU

Environmental component	Project stage	Parameters to be monitored	Location	Frequency	Standards	Implementation	Supervision
	C. Operation Stage	Noise level in dB (A)	Project Site and nearby sensitive receptors	Six monthly	CPCB standards for Noise and vibrations	Contractor by CPCB/ HPSPCB approved laboratory	PMU
4. Soil	A. Pre-construction stage (The project after assign to contractor)	pH, Texture, Nitrogen, Phosphorus, Potassium, Sodium, Chloride, Organic Carbon, Lead, Moisture Content, Water Holding Capacity, etc.	Project Site, nearby productive agricultural lands & forest areas/ near river	A single time	Indian Standards (IS 2720)	Contractor by CPCB/NABL/ HPSPCB approved laboratory	PMDSC/ PMU
	B. Construction Stage	pH, Texture, Nitrogen, Phosphorus, Potassium, Sodium, Chloride, Organic Carbon, Lead, Moisture Content, Water Holding Capacity, etc.	Project Site, Batching/ Crushing plant site, nearby productive agricultural lands & forest areas/ near river	Quarterly	Indian Standards (IS 2720)	Contractor by CPCB/NABL/ HPSPCB approved laboratory	PMDSC/ PMU
	C. Operation Stage	pH, Texture, Nitrogen, Phosphorus, Potassium, Sodium, Chloride, Organic Carbon, Lead, Moisture Content, Water Holding Capacity, etc.	Project Site, nearby productive agricultural lands & forest areas/ near river	Six monthly	Indian Standards (IS 2720)	Contractor by CPCB/ NABL/ HPSPCB approved laboratory	PMU

C. Institutional Arrangements

200. Department of Tourism and Civil Aviation, Government of Himachal Pradesh is the executing agency and the implementing agencies are HPTDB. A Project Management Unit (PMU) will be established with the Himachal Pradesh Tourism Development Board (HPTDB), Department of Tourism and Civil Aviation as the Project Director and Secretary, Department of Tourism and Civil Aviation, GoHP.

201. At PMU, the project coordinator will be the nodal officer for environmental, social safeguards and gender and will be responsible for ensuring compliance with ADB's Safeguards Policy Statement (SPS), 2009 during the project implementation, including the monitoring and reporting. PMU will engage a qualified and experienced consultant, designated as Environmental Safeguard officer to support project coordinator in environmental safeguards tasks. Project manager or assistant project manager of PIU will be designated as safeguards focal in each PIU. PMDSC team will include an Environmental Safeguard Specialist and other support staff located in PIUs and will provide all necessary support and expert guidance to PMU and PIUs. Contractor will appoint an Environmental Health and Safety officer.

202. **Project Management Unit (PMU).** The PMU will be responsible for planning management, coordination, supervision and progress monitoring. The PMU has the responsibility of fulfilling environmental requirements of the government and ensuring effective implementation of the environmental management provisions in the IEEs, EMPs and civil works contracts. The following are key environmental safeguard task and responsibility of the Environmental Safeguard Officer at the PMU:

- Ensure project compliance with the statutory environmental requirements, ADB SPS, 2009 and loan covenants
- Ensure that draft IEEs prepared based on preliminary design are updated to reflect the final project detailed designs and are approved by ADB and disclosed prior to bid invitation (for works contracts).
- Ensure that IEEs including EMPs are included in the bidding documents and contracts
- Ensure that baseline monitoring as suggested in the EMPs are conducted and baseline data/ values established prior to commencement of works.
- Coordinate with design engineer to avoid potential environmental impacts.
- Ensure that SEMPs are submitted by contractor and cleared by PIU prior to commencement of works.
- Ensure that construction works are not commenced until all applicable government clearances, permits (including those required by Construction Contractor) are obtained;
- Oversee and ensure that contractors comply with labour laws and rules
- Ensure that the IEEs including EMPs are updated in case of any change in project scope design or location during implementation
- Confirm compliance with all measures and requirements set forth in the IEEs, the EMPs and any corrective or preventive actions set forth in safeguard monitoring reports;
- Finalize environmental sections quarterly progress report and environmental monitoring reports for submission to ADB
- Ensure availability of budget for safeguards activities
- Ensure adequate awareness campaigns, information disclosure among affected communities and timely disclosure of final IEEs/ EMPs and SEMRs, including corrective action plans, if any in project website and in a form accessible to the public;
- Assist in setting up of grievance redress mechanism (GRM), identifying grievance redressal committee (GRC) member and developing capacity of GRC members, PIUs, consultants and contractors in addressing environmental safeguard-related issues/ concern/ complaints.
- Ensure any grievance brought about through GRM is redressed in a timely manner.

- Organize periodic capacity building and training programs on safeguards for PMU, PIU and contractor.

203. **Project Implementation Unit (PIU).** The PIU will be responsible for the day-to-day activities of project implementation in the field and will have direct supervision of contractor. PIU will oversee and monitor the day-to-day progress and implementation including environmental safeguards. The following are the key environmental safeguards tasks and responsibilities of the PIU with the PMDSC:

- Promptly report to PMU on any changes in project design/location/scope during the design verification and implementation phase and coordinate with PMDSC to update the IEEs and EMPs
- Liaise with local offices of regulatory agencies and ensure that clearances/ approvals are obtained timely;
- Review and approve contractor SEMP;
- Oversee implementation of SEMP by contractor
- Ensure that contractor comply with labour legislation and standards; ensure that workers are accommodated, paid and treated according to the requirements;
- Ensure strict implementation of occupational health and safety requirements;
- Review monthly reports from contractors on EMP implementation, and support PMU in preparing quarterly progress reports and SEMR.
- Ensure continuous public consultation and awareness
- Coordinate grievance redress process and ensure timely actions by all parties; and
- Support all other environmental safeguards related activities and tasks of the PMU as may be needed;
- Recommend issuance of construction work completion certificate to the contractor upon verification of satisfactory post construction clean up.

204. **Project Management Design & Supervision Consultant (PMDSC).** The PMU and PIU will be supported by PMDSC environmental specialist. Key task of will include, but limited to, the following;

- Assist in preparing, updating, reviewing, implementing, monitoring, and reporting of all tasks related to environmental safeguards as required;
- Monitoring of EMP implementation, regulatory compliance, grievance redress reporting etc.
- Provide all necessary support and expert guidance to environmental officer in managing environmental safeguards tasks
- Update the IEE and EMP as needed to reflect detailed design, change in design verification and / or implementation of projects
- Assist in public consultation, feedback and reporting
- Ensure that relevant provision of EMPs including cost of implementing the EMPs are fully included in bid and contract documents, particularly in the bill of quantities and cost line items;
- Identify statutory clearance/ permission/approvals required and assist in obtaining them;
- Assist in including standards/ conditions of regulatory clearances and consents, if any in the project design;
- Conduct training, capacity building activities for PMU, PIU and Contractor
- Ensure compliance with ADBs disclosure requirements as the SPS;
- Assist PMU/ PIU in reviewing and approving contractor SEMP and other associated plans;
- Carry out site verification, and monitor EMP implementation and ensure compliance by the contractor
- Ensure that contractor comply with labour legislation; ensure that workers are paid and treated according to the labour legislation.
- Identify any non-compliance or unanticipated impacts and recommend corrective actions
- Prepare environmental safeguard sections in quarterly reports

- Prepare semi-annual environmental monitoring reports
- Assist in operating GRM effectively
- Advise contractor on appropriate actions on grievances, ensure timely resolution and proper documentation; and
- Support all other environmental safeguards related activities and task of the PMU and PIU as may be needed.

205. **Contractor.** The approved draft IEE and EMP are to be included in bidding and contract documents. The PMU and PIU will ensure that bidding and contract document include specific provisions requiring contractors to comply with

- (i) all applicable laws and regulations relating to environmental, health and safety;
- (ii) all applicable labour laws and core labour standards on
 - (a) prohibition of child labour as defined in national legislation, international treaties for construction and maintenance activities;
 - (b) equal pay for equal work of equal value regardless of gender, ethnicity or caste;
 - (c) no discrimination in respect of employment and occupation;
 - (d) Allow freedom of association and effectively recognize the right to collective bargaining,
 - (e) Elimination of forced labour;

(iii) The requirement to disseminate information on sexually transmitted diseases including HIV/ AIDS, to employees and local community's surroundings the project sites. The contractor will be required to appoint a full time Environmental Health and Safety officer on site to implement the EMP and will assist contractor in the following:

- Prepare SEMP and submit to PMU/ PIU for approval prior to start of construction.
- Comply with the measures forth in the IEE, the EMP and SEMR
- Ensure implantation of SEMP and report to PIU/ PMDSC on any new or unanticipated impacts
- Ensure that necessary pre-construction and construction permits are obtained
- Ensure to adequately record the site condition and other infrastructure prior to starting to transport materials and construction; and
- Conduct orientation, daily briefing session, tool box talks to workers on environmental, health and safety
- Provide appropriate workers facilities at the workplace and labour camp as per the requirements and contractual provisions.
- Carry out site inspections on a regular basis and prepare site inspection checklist/ reports. A sample site inspection checklist is given as Annexure-7
- Record EHS incidents and undertake remedial actions
- Conduct environmental monitoring (air, noise etc.) as per the monitoring plan
- Prepare monthly EMP monthly reports and submit to PIU
- Comply with labour legislation and ensure implement labour legislation requirements
- Work closely with PIU and PMDSC to ensure communities are aware of project related impacts, mitigation measures and GRM; and
- Receive, record, and redress grievances in an effective and timely manner.
- Provide PIU/ PMU with a written notice of any unanticipated environmental impact that arise during construction, implementation or operation of the project that were not considered in the IEE, the EMP;
- Site clearance and restoration after the completion of works.

D. Capacity Building and Training

206. Safeguard focal of PIU will be trained by Environmental Safeguard Specialist by

PMDSC on safeguard issues related to the project, EMP, SEMP and GRM. The Environmental Specialist of the PMDSC 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 program and the requirements of the project. The entire training will cover basic principles of environmental assessment and management; mitigation plans and program, implementation techniques, monitoring methods and tools. The details cost and specific module are being customized for the available skill set after assessing the capabilities of the target participants and the requirements of the project by the Environmental Safeguard Specialist of PMDSC. Outline of Capacity building program on EMP implementation is given in below Table 22.

Table 21: Outline Capacity Building Program on EMP implementation

Description	Total Participants and Venue	Cost and Source of Funds
1. Introduction and Sensitization to Environmental Issues (1 day) -ADB Safeguard Policy Statement -Government of India and GoHP state applicable laws, regulations and policies including but not limited to core labour standards, OHS etc. -Incorporation of EMP into the project design and contracts - Monitoring, reporting and corrective action planning	All staff and consultants involved in the project At PIU-PMU (Combined for all projects)	Included in the overall project cost
2. EMP Implementation (1/2 day) -EMP mitigation and monitoring measures -roles and responsibilities -public relations-consultation -grievances redress -Monitoring and corrective action planning -Reporting and disclosure -Construction site standard operating procedures (SOP) -Health & safety, specially health risk from COVID-19 -Chance find (archaeological) protocol -Traffic Management Plan -Waste management plan -Site clean-up and restoration	PIU staff, Contractor staff and consultant involved in the project At PIU office	Included in the project cost estimates
3. Contractor orientation to workers (1/2 day) -Environmental, Health and Safety in project construction -Health impact and protection from COVID-19	Once before start of work and thereafter regular training every month once. Daily briefing/ toolbox talk on safety prior to start of work All workers (including unskilled workers)	Contractor's cost Included in EMP budgetary table

E. Monitoring and Reporting

207. Immediately after mobilization and prior to commencement of the works, the contractor is to submit a compliance report of PIU that all identified pre-construction mitigation measures as detailed in the EMP will be undertaken. Contractor should confirm that the staff for EMP implementation (EHS officer) is mobilized. PIU is required to review, and approve the report and permit commencement of works.

208. During construction, results from internal monitoring by the contractor is to be reflected in their monthly EMP/ SEMP implementation reports to the PIU. PMDSC is required to review and advise to contractor for corrective actions if necessary. Quarterly report summarizing compliance and corrective measures taken is to be prepared by PMDSC team at PIU and to be submitted to PMU. During operation, the contractor is required to conduct management and monitoring actions as per the operation stage EMP and submit to PIU a quarterly report on EMP implementation and compliance.

209. Based on the monthly and quarterly reports and measurements, PMU/PIU (assisted by PMDSC) is required to submit semi-annual environmental monitoring report (SEMR). Sample Semi Annual Environment monitoring report format is enclosed as Annexure-8. Once concurrence from the ADB is received the report will be disclosed on the PMU website.

210. ADB will review project performance against the SITDP-GoHP commitments as agreed in the legal documents. The extent of ADBs monitoring and supervision activities will be commensurate with the project's risk and impacts. Monitoring and supervising of social and environmental safeguards will be integrated into the project performance system.

211. ADB monitoring and supervision activities will be carried out on an on-going basis until a Project completion report is issued. ADB issues a PCR within 1-2 years after the project is physically completed and in operation.

F. Environmental Management Plan (EMP) Budget

212. 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 projects. Therefore, these items of costs have not been included in the EMP budget. Only those items not covered under budgets for construction are considered in the EMP budget.

213. 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, soil and noise), Public Consultations, awareness camps and training. The estimated cost for implementation of EMP is Rs. 604,000/-.

214. Detailed EMP budget is provided below in Table 23.

Table 22: Estimated EMP Budget

S. No	Description	Quantity	Unit	Rate	Amount	Responsibility
				(in Rs)	(in Rs)	
A.	Legislation, permits and Agreements (Consents to Establish and Operate for plants and machinery of the contractor)					These consents are to be obtained by contractor on own cost
B.	Public consultations and information disclosure (Construction phases)		Lump sum	100,000	100,000	PIU
C. Environmental Monitoring (Pre-construction Stage)						

S. No	Description	Quantity	Unit	Rate	Amount	Responsibility
				(in Rs)	(in Rs)	
1	Air Quality	4	No	5,000	20,000	Contractor
2	Water Quality	4	No	2500	10,000	
3	Noise Levels	4	No	2500	10,000	
4	Soil	4	No	4000	16,000	
Total Cost					56,000	
D. Environmental Monitoring (Construction Stage)						
1	Air Quality	12	No	5,000	60,000	Contractor
2	Water Quality	16	No	2500	40,000	
3	Noise Levels	16	No	2500	40,000	
4	Soil	16	No	4000	64,000	
Total Cost					204,000	
E. Environmental Monitoring (Operation Stage)						
1	Air Quality	8	No	4,000	32,000	PIU
2	Water Quality	10	No	2000	20,000	
3	Noise Levels	8	No	2500	20,000	
4	Soil	10	No	4000	40,000	
Total Cost					1,12,000	
F.	EHS Awareness Camps	Lump sum			30,000	Contractor
Total Cost					30,000	
G. Training/ Workshops						
1	EMP Training at site	2		25,500	51,000	Contractor
2	Training on Implementation of EMP for Field PIU and Engineers	2		25,500	51,000	PMDSC/PIU
Total Cost					102,000	
Grand Total (A+B+C+D+E+F+G)					6,04,000	

X. CONCLUSION AND RECOMMENDATIONS

215. The proposed project has been categorized as Category “B” based on environmental screening and assessment of likely impacts.

216. The project site does not pass through or located nearby any National Park, Wildlife Sanctuary, or any other notified ecologically sensitive areas. Project area does not fall any notified eco-sensitive zone.

217. All proposed works will conserve the historic built fabric and no new type of material or change in design is proposed in the Naggar Castle. Conditional Heritage impact assessment study was conducted which reviewed the heritage importance of proposed site, assessed the impact of the proposed measures, and provided recommendations to ensure that the improvements are appropriate. Measures have been included in the detailed designs.

218. The project site located in Naggar, District Kullu, Himachal Pradesh. All the precautions shall be taken during planning & construction phase to avoid any adverse impact on the local flora and fauna due to the project activities. Any non-forestry use of forest land and tree cutting if required shall be done only after taking permission from Competent Authority.

219. Gauri Shankar Temple protected under ASI is at a distance of 205 m (aerial distance) from the site. Permission from ASI shall be obtained before commencement of works.

220. The initial environmental examination ascertains that the project is unlikely to cause any significant environmental impacts and the classification of the project 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). Project requires consent to establish (CTE) and consent to operate (CTO) from HPSPCB, which will be obtained prior to start of construction and prior to start of operation, respectively.

221. Few impacts were identified attributable to the proposed projects. Proper mitigation measures have been suggested and incorporated in the Environmental Management Plan to avoid/ minimize these anticipated impacts.

222. Total estimated cost for implementation of EMP is Rs. 604,000/-.

223. The Executing Agency (EA) shall ensure that EMP is included in Bill of Quantity (BOQ) and forms part of bid document and civil works contract. The same shall be revised if necessary, during project implementation or if there is any change in the project design and with approval of ADB.

224. The tourists/ visitors and citizens of Naggar and Kullu town will be the major beneficiaries of the project. The benefits to the tourists and population of the area will be positive and large as the proposed project will provide better infrastructure facilities for locals, visitors/tourists and enhance the tourist satisfaction.

225. **Recommendations.** The following are recommendations applicable to the project to ensure no significant impacts:

- i. Obtain all Statutory clearances/ permission including NOC from ASI for working in the regulated zone of Gauri Shankar temple, CTE from HPSPCB for establishment/ modification of Hospitality Unit (SOP Annexure 17) at the earliest time possible and ensure conditions/ provisions are incorporated in the detailed design.
- ii. Include this IEE in bid and contract documents.
- iii. Commitment from PMU, PIU, Project Consultants and Contractor to protect the environment and people from any impact during project implementation.
- iv. Update/ revise this IEE based prior to start of construction and/ or there are unanticipated impacts, change in scope, alignment or location.

- v. Identify tree species and landscaping plants in consultation with forest department.
- vi. Conduct safeguard induction to the contractor upon award of contract.
- vii. Ensure contractor appointed qualified environment, health and safety (EHS) officer prior to start of works.
- viii. Timely disclosure of information and establishment of GRM.
- ix. Strictly supervise EMP implementation.
 - x. Conduct consultation with stakeholders throughout the implementation period.
 - xi. Document and report on a regular basis as indicated in the IEE.

ANNEXURES

Annexure 1: Rapid Environmental Assessment (REA) Checklist

Project: Conservation and Restoration of Naggar Castle, District-Kullu, H.P.

Country/Project Title: India/ Sustainable and Inclusive Tourism Development Project (SITDP- HP)

Sector Division: Urban Development

Screening Questions	Yes	No	Remarks
A. Project Siting Is the project area.			The site is an existing Castle turned Heritage Hotel under HPTDC and vacant area adjacent to it for development of parking facility. NOC has been provided by the Gram panchayat for construction and development of parking and toilet block.
• Densely populated		✓	The project site is located in rural area within Naggar Gram Panchayat with some private constructions across the road.
• Heavy with development activities?		✓	No heavy development activities are seen nearby as on date.
• Adjacent to or within any environmentally sensitive areas		✓	None The sub-project area is not adjacent to or within any environmentally sensitive areas. No project component falls within any environmental sensitive areas.
• Cultural heritage site	✓		The site is itself a heritage structure. ASI protected Gauri Shankar temple is 205 m from the site. Project interventions aim at conservation of the Naggar Castle.
• Protected Area		✓	None
• Wetland		✓	None
• Mangrove		✓	None
• Estuarine		✓	No estuarine water course nearby
• Buffer zone of protected area		✓	None The project sites does not fall under buffer zone of any of the protected area.
• Bay		✓	None
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 envisaged in view of the project scope and magnitude
• 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		✓	Rapid population growth is not envisaged due to the project as it is an existing hotel and only restoration works are proposed.

natural systems are overloaded and the capacities to manage these systems are overwhelmed?			
• Degradation of land and ecosystems (e.g. loss of wetlands and wild lands, coastal zones, watersheds and forests)?		✓	None No such impact (land/eco-degradation) envisaged.
• Dislocation or involuntary resettlement of people?		✓	Not required as no land acquisition involved
• Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable group?		✓	No such impacts are anticipated. No such indigenous people exist in the area.
• Degradation of cultural property, and loss of cultural heritage and tourism revenues?		✓	Project interventions will protect and improve the Naggar Castle. Tourist revenues will increase due to enhanced tourist satisfaction and influx owing to improved facilities and addition of wellness component.
• 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 envisaged
• Water resource problems (e.g. depletion/degradation of available water supply, deterioration for surface and ground water quality, and pollution of receiving waters)?	✓		Water for construction will be managed and prior permission will be taken from the authorities during the construction. Minor and negligible water resource problems such as deterioration of surface water and ground water and pollution of nearby water course may emerge due to the parking construction for which adequate measures will be included such as solid waste management and waste water management.
• Air pollution due to urban emissions?	✓		Vehicular emissions envisaged for a very short period (during construction phase) from construction vehicles and machinery.
• Risks and vulnerabilities related to occupational health and safety due to physical, chemical and biological hazards during project construction and operation?	✓		During execution stage, workers may face occupational health and safety related issues if personal protection measures are not used properly. No such impacts are anticipated during the operation stage. Contractor is required to adopt safety measures, such as use of personal protective wear, cautionary signage and proper material storage.
• Road blocking and temporary flooding due to land excavation during rainy season?	✓		Temporary road blockage for construction work is envisaged especially during peak tourist seasons as the connecting road is

			narrow. The same shall be addressed by proper scheduling of works and implementing works in a phased manner.
• Noise and dust from construction activities?	✓		Temporary noise and dust may be generated during the construction phase that shall be minimized by adopting suitable mitigation measures during implementation.
• Traffic disturbances due to construction material transport and wastes?	✓		Since the access road is narrow traffic disturbances due to construction material transport and waste are expected during the peak tourist seasons; However, the work will be planned in phased manner.
• Temporary silt runoff due to construction?	✓		Temporary silt run-off possible, coinciding with rainy season. Majority works shall be carried out during dry periods to avoid such impacts. Appropriate material storage will help mitigate temporary silt run-off. Other project components such as landscaping shall also help minimize silt run-off in the long term.
• Hazards to public health due to ambient, household and occupational pollution, thermal inversion, and smog formation?		✓	Not foreseen due to the nature of works involved.
• Water depletion and/or degradation?		✓	No water bodies involved within the limits.
• Overpaying of ground water, leading to land subsidence, lowered ground water table, and salinization?		✓	Water for construction will be made through transportation from external sources.
• Contamination of surface and ground waters due to improper waste disposal?	✓		Contamination of surface and ground water is possible from improper material handling and storage such as paints and fuels. Appropriate material storage and handling practice can help mitigate this risk for which instructions shall be caused to the Contractor
• Pollution of receiving waters resulting in amenity losses, fisheries and marine resource depletion, and health problems?		✓	No such impact is envisaged.
• Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?		✓	No such impact is envisaged.
• Social conflicts if workers from other regions or countries are hired?		✓	No such impact is envisaged.

<ul style="list-style-type: none"> 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? 		✓	The construction activity needs to be well planned & executed in a phased manner so as to minimize community health and safety risks especially with respect to seasonal challenges.
<ul style="list-style-type: none"> 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 could result in injury to the community throughout project construction, operation and decommissioning 	✓		The project is located in seismic zone V. Due to the natural topography of hilly terrain; landslides are a common phenomenon. Safety risks due to accidents and natural causes cannot be ruled out and can become a major hazard if the project execution is not carried out in a well-planned and phased manner.

ASBESTOS SCREENING TOOL

Screening Questions	Yes*	Maybe*	No	Remarks *For those with answers of YES and MAYBE, document the potential likelihood of asbestos being encountered.
<ul style="list-style-type: none"> Does the proposed project involve, or potentially involve, any of the following activities that are commonly associated with asbestos use: 			✓	
<ul style="list-style-type: none"> Construction/commissioning of a new asset? 			✓	
<ul style="list-style-type: none"> Refurbishment / demolition of an existing asset? 			✓	
<ul style="list-style-type: none"> Post-disaster response, involving reconstruction, repair, or removal of damaged asset? 			✓	
<ul style="list-style-type: none"> Maritime activities? 			✓	
<ul style="list-style-type: none"> Water supply, water sanitation, wastewater, sewerage, or water hygiene initiatives? 			✓	
<ul style="list-style-type: none"> Earthworks, remedial activities, or solid waste management? 			✓	
<ul style="list-style-type: none"> Power, telecommunications, or energy supply infrastructure? 			✓	
<ul style="list-style-type: none"> Maintenance, demolition, transportation, or disposal of wastes associated with the above activities? 			✓	

**PRELIMINARY CLIMATE RISK SCREENING CHECKLIST FOR SAMPLE
PROJECT TOWNS**

Screening Questions	Score	Remarks
Location and Design of project	1	Kullu district including Naggar is prone to landslides, though the proposed sites are not affected from them, but transportation of materials could be affected. Chance of Floods at the site is not possible as the HFL line is quite away from site.
	0	No such issue may affect the project
Materials and Maintenance	0	No such issue may affect the project
	0	No problem is envisaged in future which may affect the maintenance
Performance of project outputs	0	No problem is envisaged in future which is likely to affect the performance of project output

Options for answers and corresponding score are provided below:

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): Medium Risk

Other Comments: None

Annexure-2: Ambient Air Quality, and Vehicle Emissions Standards

Table 1: Ambient Air Quality Standards

Parameter	Location ^a	India Ambient Air Quality Standard ($\mu\text{g}/\text{m}^3$) ^b	WHO Air Quality Guidelines ($\mu\text{g}/\text{m}^3$)		Applicable Per ADB SPS ^e ($\mu\text{g}/\text{m}^3$)
			Global Update ^c 2005	Second Edition 2000	
PM ₁₀	Industrial Residential, Rural and Other Areas	60 (Annual) 100 (24-hr)	20 (Annual) 50 (24-hr)	-	20 (Annual) 50 (24-hr)
	Sensitive Area	60 (Annual) 100 (24-hr)	20 (Annual) 50 (24-hr)	-	20 (Annual) 50 (24-hr)
PM ₂₅	Industrial Residential, Rural and Other Areas	40 (Annual) 60 (24-hr)	10 (Annual) 25 (24-hr)	-	10 (Annual) 25 (24-hr)
	Sensitive Area	40 (Annual) 60 (24-hr)	10 (Annual) 25 (24-hr)		10 (Annual) 25 (24-hr)
SO ₂	Industrial Residential, Rural and Other Areas	50 (Annual) 80 (24-hr)	20 (24-hr) 500 (10-min)	-	50 (Annual) 20 (24-hr) 500 (10-min)
	Sensitive Area	20 (Annual) 80 (24-hr)	20 (24-hr) 500 (10-min)	-	20 (Annual) 20 (24-hr) 500 (10-min)
NO ₂	Industrial Residential, Rural and Other Areas	40 (Annual) 80 (24-hr)	40 (Annual) 200 (1-hr)	-	40 (Annual) 80 (24-hr) 200 (1-hr)
	Sensitive Area	30 (Annual) 80 (24-hr)	40 (Annual) 200 (1-hr)	-	30 (Annual) 80 (24-hr) 200 (1-hr)
CO	Industrial Residential, Rural and Other Areas	2,000 (8-hr) 4,000 (1-hr)	-	10,000 (8-hr) 100,000 (15-min)	2,000 (8-hr) 4,000 (1-hr) 100,000 (15-min)
	Sensitive Area	2,000 (8-hr) 4,000 (1-hr)	-	10,000 (8-hr) 100,000 (15-min)	2,000 (8-hr) 4,000 (1-hr) 100,000 (15-min)
Ozone (O ₃)	Industrial Residential, Rural and Other Areas	100 (8-hr) 180 (1-hr)	100 (8-hr)		100 (8-hr) 180 (1-hr)
	Sensitive Area	100 (8-hr) 180 (1-hr)	100 (8-hr)		100 (8-hr) 180 (1-hr)
Lead (Pb)	Industrial, Residential, Rural and Other Areas	0.5 (Annual) 1.0 (24-hr)		0.5 (Annual)	0.5 (Annual) 1.0 (24-hr)
	Sensitive Area	0.5 (Annual) 1.0 (24-hr)		0.5 (Annual)	0.5 (Annual) 1.0 (24-hr)
Ammonia (NH ₃)	Industrial Residential, Rural and Other Areas	100 (Annual) 400 (24-hr)			100 (Annual) 400 (24-hr)
	Sensitive Area	100 (Annual) 400 (24-hr)			100 (Annual) 400 (24-hr)

Parameter	Location ^a	India Ambient Air Quality Standard ($\mu\text{g}/\text{m}^3$) ^b	WHO Air Quality Guidelines ($\mu\text{g}/\text{m}^3$)		Applicable Per ADB SPS ^e ($\mu\text{g}/\text{m}^3$)
			Global Update ^c 2005	Second Edition 2000	
Benzene (C ₆ H ₆)	Industrial Residential, Rural and Other Areas	5 (Annual)			5 (Annual)
	Sensitive Area	5 (Annual)			5 (Annual)
Benzo(o)pyrene (BaP) particulate phase only	Industrial Residential, Rural and Other Areas	0.001 (Annual)			0.001 (Annual)
	Sensitive Area	0.001 (Annual)			0.001 (Annual)
Arsenic (As)	Industrial Residential, Rural and Other Areas	0.006 (Annual)			0.006 (Annual)
	Sensitive Area	0.006 (Annual)			0.006 (Annual)
Nickel (Ni)	Industrial Residential, Rural and Other Areas	0.02 (Annual)			0.02 (Annual)
	Sensitive Area	0.02 (Annual)			0.02 (Annual)

^a Sensitive area refers to such areas notified by the India Central Government.

^b Notification by Ministry of Environment and Forests, Government of India Environment (Protection) Seventh Amendment Rules, 2009

^c WHO Air quality guidelines for particulate matter, ozone, nitrogen dioxide and sulfur dioxide. Global update 2005. WHO. 2006

^d Air Quality Guidelines for Europe Second Edition. WHO 2000.

^e Per ADB SPS, the government shall achieve whichever of the ambient air quality standards is more stringent. If less stringent levels or measures are appropriate in view of specific project circumstances, the executing agency of the government will provide full and detailed justification for any proposed alternatives that are consistent with the requirements presented in ADB SPS

Table 2: Vehicle Exhaust Emission Norms**1. Passenger Cars**

Norms	CO (g/km)	HC+ NOx (g/km)
1991 Norms	14.3-27.1	2.0 (Only HC)
1996 Norms	8.68-12.40	3.00-4.36
1998 Norms	4.34-6.20	1.50-2.18
India stage 2000 norms	2.72	0.97
Bharat stage-II	2.2	0.5
Bharat Stage-III	2.3	0.35 (combined)
Bharat Stage-IV	1.0	0.18 (combined)
Bharat Stage-VI (Petrol)	1.0	0.16 (Combined)

2. Heavy Diesel Vehicles

Norms	CO(g/kmhr)	HC (g/kmhr)	NOx (g/kmhr)	PM(g/kmhr)
1991 Norms	14	3.5	18	-
1996 Norms	11.2	2.4	14.4	-
India stage 2000 norms	4.5	1.1	8.0	0.36
Bharat stage-II	4.0	1.1	7.0	0.15
Bharat Stage-III	2.1	1.6	5.0	0.10
Bharat Stage-IV	1.5	0.96	3.5	0.02
Bharat Stage-VI (Diesel)	0.5	0.17 (HC + NOx)		0.0045

Source: Central Pollution Control Board

CO = Carbon Monoxide; g/km hr = grams per kilometer-hour; HC= Hydrocarbons; NOx= oxides of nitrogen; PM = Particulates Matter

**Annexure-3: Emission Limits for new DG Sets up to 800 KW
(As per Environment (Protection) (Third Amendments) (Rules 2013)**

TABLE

Power Category	Emission Limits (g/kW-hr)			Smoke Limit (light absorption coefficient, m ⁻¹)
	NO _x +HC	CO	PM	
Upto 19 KW	≤ 7.5	≤ 3.5	≤ 0.3	≤ 0.7
More than 19 KW upto 75 KW	≤ 4.7	≤ 3.5	≤ 0.3	≤ 0.7
More than 75 KW upto 800 KW	≤ 4.0	≤ 3.5	≤ 0.2	≤ 0.7

Note:

- The abbreviations used in the Table shall mean as under: NO_x – Oxides of Nitrogen; HC – Hydrocarbon; CO – Carbon Monoxide; and PM – Particulate Matter.
- Smoke shall not exceed above value throughout the operating load points of the test cycle.
- The testing shall be done as per D2 – 5 mode cycle of ISO: 8178- Part 4.
- The above mentioned emission limits shall be applicable for Type Approval and Conformity of Production (COP) carried out by authorised agencies.
- Every manufacturer, importer or, assembler (hereinafter referred to as manufacturer) of the diesel engine (hereinafter referred to as 'engine') for genset application manufactured or imported into India or, diesel genset (hereinafter referred to as 'product'), assembled or imported into India shall obtain Type Approval and comply with COP of their product(s) for the emission limits which shall be valid for the next COP year or, the date of implementation of the revised norms specified above, whichever earlier.
Explanation. - The term 'COP year' means the period from 1st April to 31st March.
- Stack height (in metres), for genset shall be governed as per Central Pollution Control Board (CPCB) guidelines.

Stack Height requirement of DG Set

DIESEL GENERATOR SETS : STACK HEIGHT

The minimum height of stack to be provided with each generator set can be worked out using the following formula :

$$H = h + 0.2 \times \sqrt{\text{KVA}}$$

H = Total height of stack in metre

h = Height of the building in metres where the generator set is installed

KVA = Total generator capacity of the set in KVA

Based on the above formula the minimum stack height to be provided with different range of generator sets may be categorised as follows:

For Generator Sets	Total Height of stack in metre
50 KVA	Ht. of the building + 1.5 metre
50-100 KVA	Ht. of the building + 2.0 metre
100-150 KVA	Ht. of the building + 2.5 metre
150-200 KVA	Ht. of the building + 3.0 metre
200-250 KVA	Ht. of the building + 3.5 metre
250-300 KVA	Ht. of the building + 3.5 metre

Similarly for higher KVA ratings a stack height can be worked out using the above formula.

Source : Evolved By CPCB
[Emission Regulations Part IV:COINDS/26/1986-87]

[Environmental Standards \(hspcb.org.in\)](http://hspcb.org.in)

Annexure-4: Ambient Noise Standards

Receptor/ Source	India National Noise Level Standards ^a (dBA)		WHO Guidelines Value For Noise Levels Measured Out of Doors ^b (One Hour LA _q in dBA)		Applicable Per ADB SPS ^c (dBA)	
	Day	Night	07:00 – 22:00	22:00 – 07:00	Day time	Night time
Industrial area	75	70	70	70	70	70
Commercial area	65	55	70	70	65	55
Residential Area	55	45	55	45	55	45
Silent Zone	50	40	55	45	50	40

^a Noise Pollution (Regulation and Control) Rules, 2002 as amended up to 2010.

^b Guidelines for Community Noise. WHO. 1999

^c Per ADB SPS, the government shall achieve whichever of the ambient air quality standards is more stringent. If less stringent levels or measures are appropriate in view of specific project circumstances, the executing agency of the government will provide full and detailed justification for any proposed alternatives that are consistent with the requirements presented in ADB SPS.

Annexure-5: Noise Limits for DG Set

(Noise Limit for Generator Sets run with Diesel were notified by Environment (Protection) second Amendment Rules vide GSR 371(E), dated 17th May 2002 at serial no.94 and its amendments vide GSR No 520(E) dated 1st July 2003; GSR 448(E), dated 12th July 2004; GSR 315(E) dated 16th May 2005; GSR 464(E) dated 7th August 2006; GSR 566(E) dated 29th August 2007 and GSR 752(E) dated 24th October 2008; G.S.R. 215 (E), dated 15th March, 2011 under the Environment (Protection) Act, 1986)

Noise Limit for Generator Sets run with Diesel

1. Noise limit for diesel generator sets (upto 1000 KVA) manufactured on or after the 1st January, 2005

The maximum permissible sound pressure level for new diesel generator (DG) sets with rated capacity upto 1000 KVA, manufactured on or after the 1st January, 2005 shall be 75 dB(A) at 1 metre from the enclosure surface.

The diesel generator sets should be provided with integral acoustic enclosure at the manufacturing stage itself.

The implementation of noise limit for these diesel generator sets shall be regulated as given in paragraph 3 below.

2. Noise limit for DG sets not covered by paragraph 1.

Noise limits for diesel generator sets not covered by paragraph 1, shall be as follows:-

2.1 Noise from DG set shall be controlled by providing an acoustic enclosure or by treating the room acoustically, at the users end.

2.2 The acoustic enclosure or acoustic treatment of the room shall be designed for minimum 25 dB (A) insertion loss or for meeting the ambient noise standards, whichever is on the higher side (if the actual ambient noise is on the higher side, it may not be possible to check the performance of the acoustic enclosure/acoustic treatment. Under such circumstances the performance may be checked for noise reduction upto actual ambient noise level, preferably, in the night time). The measurement for Insertion Loss may be done at different points at 0.5 m from the acoustic enclosure/ room, then averaged.

2.4 These limits shall be regulated by the State Pollution Control Boards and the State Pollution Control Committees.

2.5 Guidelines for the manufacturers/ users of Diesel Generator sets shall be as under:-

01. The manufacturer shall offer to the user a standard acoustic enclosure of 25 dB (A) insertion loss and also a suitable exhaust muffler with insertion loss of 25 dB(A).
02. The user shall make efforts to bring down the noise levels due to the DG set, outside his premises, within the ambient noise requirements by proper citing and control measures.
03. Installation of DG set must be strictly in compliance with the recommendations of the DG set manufacturer.
04. A proper routine and preventive maintenance procedure for the DG set should be set and followed in consultation with the DG set manufacturer which would help prevent noise levels of the DG set from deteriorating with use.

3.0 Limits of Noise for DG Sets (upto 1000 KVA) Manufactured on or after the 1st January, 2005

3.1 Applicability

01. These rules apply to DG sets upto 1000 KVA rated output, manufactured or imported in India, on or after 1st January, 2005.
02. These rules shall not apply to –
 - a) DG sets manufactured or imported for the purpose of exports outside India; and
 - b) DG sets intended for the purpose of sample and not for sale in India.

3.2 Requirement of Certification

Every manufacturer or assembler or importer (hereinafter referred to as the "manufacturer") of DG set (hereinafter referred to as "product") to which these regulations apply must have valid certificates of Type Approval and also valid certificates of Conformity of Production for each year, for all the product models being manufactured or assembled or imported from 1st January, 2005 with the noise limit specified in paragraph 1.

3.3 Sale, import or use of DG sets not complying with the rules prohibited

No person shall sell, import or use of a product model, which is not having a valid Type Approval Certificate and Conformity of Production certificate.

Annexure- 6: Drinking Water Standards

Group	National Standards for Drinking Water ^a			WHO Guidelines for Drinking-Water Quality, 4 th Edition, 2011 ^b
	Parameter	Unit	Max. Concentration Limits ^d	
Physical	Turbidity	NTU	1 (5)	-
	pH		6.5 – 8.5	none
	Color	Hazen units	5 (15)	none
	Taste and Odor		Agreeable	-
	TDS	mg/l	500 (2,000)	-
	Iron	mg/l	0.3	-
	Manganese	mg/l	0.1 (0.3)	-
	Arsenic	mg/l	0.01 (0.05)	0.01
	Cadmium	mg/l	0.003	0.003
	Chromium	mg/l	0.05	0.05
	Cyanide	mg/l	0.05	none
	Fluoride	mg/l	1 (1.5)	1.5
	Lead	mg/l	0.01	0.01
	Ammonia	mg/l	0.5	none established
Chemical	Chloride	mg/l	250 (1,000)	none established
	Sulphate	mg/l	200 (400)	none
	Nitrate	mg/l	45	50
	Copper	mg/l	0.05 (1.5)	2
	Total Hardness	mg/l	200 (600)	-
	Calcium	mg/l	75 (200)	-
	Zinc	mg/l	5 (15)	none established
	Mercury	mg/l	0.001	0.006
	Aluminum	mg/l	0.1 (0.3)	none established
	Residual Chlorine	mg/l	0.2	5
Micro Germs	E-coli	MPN/100ml	Must not be detectable in any 100 ml sample	Must not be detectable in any 100 ml sample
	Total Coliform	MPN/100ml		

^a Bureau of India Standard 10500: 2012.

^b Health-based guideline values.

^c Per ADB SPS, the government shall achieve whichever of the ambient air quality standards is more stringent. If less stringent levels or measures are appropriate in view of specific project circumstances, the executing agency of the government will provide full and detailed justification for any proposed alternatives that are consistent with the requirements presented in ADB SPS.

^d Figures in parenthesis are maximum limits allowed in the absence of alternate source.

Annexure -7: Sample Environmental Site Inspection Report

Project Name _____
 Contract Number _____

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

WEATHER: _____

Project Activity Stage	Survey	
	Design	
	Implementation	
	Pre-Commissioning	
	Guarantee Period	

Monitoring Items	Compliance
Compliance marked as Yes / No / Not applicable (NA) / Partially Implemented (PI)	
EHS supervisor appointed by contractor and available on site	
Construction site management plan (spoils, safety, schedule, equipment etc.,) prepared	
Traffic management plan prepared	
Dust is under control	
Excavated soil properly placed within minimum space	
Construction area is confined; no traffic/pedestrian entry observed	
Surplus soil/debris/waste is disposed without delay	
Construction material (sand/gravel/aggregate) brought to site as & when required only	
Tarpaulins used to cover sand & other loose material when transported by vehicles	
After unloading, wheels & undercarriage of vehicles cleaned prior to leaving the site	
No chance finds encountered during excavation	
Work is planned in consultation with traffic police	
Work is not being conducted during heavy traffic	
Work at a stretch is completed within a day (excavation, pipe laying & backfilling)	
Pipe trenches are not kept open unduly	
Road is not completely closed; work is conducted on edge; at least one line is kept open	
Road is closed; alternative route provided & public informed, information board provided	
Pedestrian access to houses is not blocked due to pipe laying	
Spaces left in between trenches for access	
Wooden planks/metal sheets provided across trench for pedestrian	
No public/unauthorized entry observed in work site	
Children safety measures (barricades, security) in place at works in residential areas	
Prior public information provided about the work, schedule and disturbances	
Caution/warning board provided on site	
Guards with red flag provided during work at busy roads	

Workers using appropriate PPE (boots, gloves, helmets, ear muffs etc)	
Workers conducting or near heavy noise work is provided with ear muffs	
Contractor is following standard & safe construction practices	
Deep excavation is conducted with land slip/protection measures	
First aid facilities are available on site and workers informed	
Drinking water provided at the site	
Monitoring Items	Compliance
Toilet facility provided at the site	
Separate toilet facility is provided for women workers	
Workers camps are maintained cleanly	
Adequate toilet & bath facilities provided	
Contractor employed local workers as far as possible	
Worker's camp set up with the permission of PIU	
Adequate housing provided	
Sufficient water provided for drinking/washing/bath	
No noisy work is conducted in the nights	
Local people informed of noisy work	
No blasting activity conducted	
Pneumatic drills or other equipment creating vibration is not used near old/risky buildings	

Signature

Sign off

Name
Position

Name
Position

Annexure-8: Semi Annual Environmental Monitoring Report Format

I. INTRODUCTION

- Overall project description and objectives
- Environmental category as per ADB Safeguard Policy Statement, 2009
- Environmental category of each project as per national laws and regulations
- Project Safeguards Team

Name	Designation/Office	Email Address	Contact Number
1. PMU			
2. PIUs			
3. Consultants			

- Overall project and sub-project progress and status
- Description of projects (package-wise) and status of implementation (preliminary, detailed design, on-going construction, completed, and/or O&M stage)

Package Number	Components/ List of Works	Status of Implementation (Preliminary Design/ Detailed Design/ On-going Construction/ Completed/ O&M) ^a	Contract Status (specify if under bidding or contract awarded)	If On-going Construction	
				%Physical Progress	Expected Completion Date

^a If on-going construction, include %physical progress and expected date of completion.

II. COMPLIANCE STATUS WITH NATIONAL/STATE/LOCAL STATUTORY ENVIRONMENTAL REQUIREMENTS^a

Package No.	Project Name	Statutory Environmental Requirements ^b	Status of Compliance ^c	Validity if obtained	Action Required	Specific Conditions that will require environmental monitoring as per Environment Clearance, Consent/Permit to Establish ^d

^a All statutory clearance/s, no-objection certificates, permit/s, etc. should be obtained prior to award of contract/s. Attach as Annexure all clearance obtained during the reporting period. If already reported, specify in the “remarks” column.

^b Specify (environmental clearance? Permit/consent to establish? Forest clearance? Etc.)

^c Specify if obtained, submitted and awaiting approval, application not yet submitted.

^d Example: Environmental Clearance requires ambient air quality monitoring, Forest Clearance/Tree-cutting Permit requires 3 trees for every tree, etc.

III. COMPLIANCE STATUS WITH ENVIRONMENTAL LOAN COVENANTS

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

IV. COMPLIANCE STATUS WITH THE ENVIRONMENTAL MANAGEMENT PLAN (REFER TO EMP TABLES IN APPROVED IEE/S)

- Confirm if IEE/s require contractors to submit site-specific EMP/construction EMPs. If not, describe the methodology of monitoring each package under implementation.

Package-wise Implementation Status

Package Number	Components	Design Status (Preliminary Design Stage/Detailed Design Completed)	Final IEE based on Detailed Design				Site-specific EMP (or Construction EMP) approved by Project Director? (Yes/No)	Remarks
			Not yet due (detailed design not yet completed)	Submitted to ADB (Provide Date of Submission)	Disclosed on project website (Provide Link)	Final IEE provided to Contractor/s (Yes/No)		

- Identify the role/s of Safeguards Team including schedule of on-site verification of reports submitted by consultants and contractors.
- For each package, provide name/s and contact details of contractor/s' nodal person/s for environmental safeguards.
- Include as Annexure all supporting documents including signed monthly environmental site inspection reports prepared by consultants and/or contractors.
- With reference to approved EMP/site-specific EMP/construction EMP, complete the table below
- Provide the monitoring results as per the parameters outlined in the approved EMP (or site-specific EMP/construction EMP when applicable).
- In addition to the table on EMP implementation, the main text of the report should discuss in details the following items:
 - (i) **Grievance Redress Mechanism.** Provide information on establishment of grievance redress mechanism and capacity of grievance redress committee to address project-related issues/complaints. Include as Annexure Notification of the GRM (town-wise if applicable).
 - (ii) **Complaints Received during the Reporting Period.** Provide information on number, nature, and resolution of complaints received during reporting period. Attach records as per GRM in the approved IEE. Identify safeguards team member/s involved in the GRM process. Attach minutes of meetings (ensure English translation is provided).
 - Confirm if any dust was noted to escape the site boundaries and identify dust suppression techniques followed for site/s.
 - Identify muddy water was escaping site boundaries or muddy tracks were seen on adjacent roads.
 - Identify type of erosion and sediment control measures installed on site/s, condition of erosion and sediment control measures including if these were intact following heavy rain;
 - Identify designated areas for concrete works, chemical storage, construction materials, and refueling. Attach photographs of each area.
 - Confirm spill kits on site and site procedure for handling emergencies.
 - Identify any chemical stored on site and provide information on storage condition. Attach photograph.
 - Describe management of stockpiles (construction materials, excavated soils, spoils, etc.). Provide photographs.
 - Describe management of solid and liquid wastes on-site (quantity generated, transport, storage and disposal). Provide photographs.
 - Provide information on barricades, signage, and on-site boards. Provide photographs.
 - Provide information on
 - Checking if there are any activities being under taken out of working hours and how that is being managed.

Summary of Environmental Monitoring Activities (for the Reporting Period)^a

Impacts (List from IEE)	Mitigation Measures (List from IEE)	Parameters Monitored (As a minimum those identified in the IEE should be monitored)	Method of Monitoring	Location of Monitoring	Date of Monitoring Conducted	Name of Person Who Conducted the Monitoring
Design Phase						
Pre-Construction Phase						
Construction Phase						
Operational Phase						

^a Attach Laboratory Results and Sampling Map/Locations

Overall Compliance with CEMP/MP

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

V. APPROACH AND METHODOLOGY FOR ENVIRONMENTAL MONITORING OF THE PROJECT

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

VI. 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:

Ambient Air Quality Results

Site No.	Date of Testing	Site Location	Parameters (Monitoring Results)			
			PM10 $\mu\text{g}/\text{m}^3$	PM2.5 $\mu\text{g}/\text{m}^3$	SO2 $\mu\text{g}/\text{m}^3$	NO2 $\mu\text{g}/\text{m}^3$

Noise Quality Results

Site No.	Date of Testing	Site Location	LA _{eq} (dBA) (Monitoring Results)	
			Day Time	Night Time

Surface Water Quality Results

S.No.	Parameters	Results		
		Location-1 (Name)	Location-2 (Name)	Location-3 (Name)
1.	pH			
2.	Turbidity			
3.	Total Hardness			
4.	DO			
5.	BOD			
6.	COD			
7.	Chloride			
8.	Iron			
9.	TSS			

10.	Arsenic			
11.	Cadmium			
12.	Fluoride			
13.	Potassium			
14.	Sodium			
15.	Calcium			
16.	Zn			
17.	Cr ⁺⁶			
18.	Magnesium			
19.	Copper			
20.	Manganese			
21.	Sulphate			
22.	Cyanide			
23.	Nitrate			
24.	Lead			
25.	Boron			
26.	Selenium			
27.	Aluminium			
28.	Total residual Chlorine			

Ground Water Quality Results

S.No.	Parameters	Results		
		Location-1 (Name)	Location-2 (Name)	Location-3 (Name)
1.	pH			
2.	Total Alkalinity			
3.	Total Hardness			
4.	Chloride			
5.	Iron			
6.	TDS			
7.	Arsenic			
8.	Fluoride			
9.	Zn			
10.	Cr+6			
11.	Copper			
12.	Manganese			
13.	Sulphate			
14.	Phosphate			
15.	Nitrate			
16.	Lead			
17.	Phenolic Compound			

VIII. SUMMARY OF KEY ISSUES AND REMEDIAL ACTIONS

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

Annexure

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

Annexure-9: Applicable Laws for Establishments engaged in Construction of Civil Works

Contractor is required to comply all the provisions stipulated in various Laws, Acts, Rules/Regulations and guidelines applicable with construction sectors. Contractual requirements to follow these Laws, Acts, Rules/ Regulations and guidelines. Contract shall be governed by the law of Union of India and State of Himachal Pradesh. In case of conflict, the Laws of Union of India will prevail. Contractor should “Be familiar with governing Laws and regulations in order to undertake studies and construction activities under the Contract. Major laws applicable to contractor are given below-

(i) Workmen Compensation Act, 1923 - The Act provides for compensation in case of injury by accident arising out of and during the course of employment.

(ii) Payment of Gratuity Act, 1972 - Gratuity is payable to an employee under the Act on satisfaction of certain conditions on separation if an employee has completed 5 years' service or more or on death at the rate of 15 days wages for every completed year of service. The Act is applicable to all establishments employing 10 or more employees.

(iii) Employees' PF and Miscellaneous Provisions Act, 1952 - The Act provides for monthly contributions by the employer plus workers @10 % or 8.33 %. The benefits payable under the Act are: (a) Pension or family pension on retirement or death as the case may be; (b) deposit linked insurance on the death in harness of the worker; (c) payment of PF accumulation on retirement/death etc.

(iv) Maternity Benefit Act, 1951 - The Act provides for leave and some other benefits to women employees in case of confinement or miscarriage etc.

(v) Contract Labour (Regulation and Abolition) Act, 1970 - The Act provides for certain welfare measures to be provided by the Contractor to contract labor and in case the Contractor fails to provide, the same are required to be provided by the Principal Employer by Law. The principal employer is required to take Certificate of Registration and the Contractor is required to take a License from the designated Officer. The Act is applicable to the establishments or Contractor of principal employer if they employ 20 or more contract labor.

(vi) Minimum Wages Act, 1948 - The employer is supposed to pay not less than the Minimum Wages fixed by appropriate Government as per provisions of the Act if the employment is a scheduled employment. Construction of Buildings, Roads, Runways are scheduled employment.

(vii) Payment of Wages Act, 1936 - It lays down as to by what date the wages are to be paid, when it will be paid and what deductions can be made from the wages of the workers.

(viii) Equal Remuneration Act, 1979 - The Act provides for payment of equal wages for work of equal nature to Male and Female workers and not for making discrimination against Female employees in the matters of transfers, training and promotions etc.

(ix) Payment of Bonus Act, 1965 - The Act is applicable to all establishments employing 20 or more workmen. The Act provides for payments of annual bonus subject to a minimum of 8.33% of wages and maximum of 20 % of wages to employees drawing Rs. 3,500/- per month or less. The bonus to be paid to employees getting Rs. 2,500/- per month or above up to Rs.3,500/- per month shall be worked out by taking wages as Rs.2,500/- per month only. The Act does not apply to certain establishments. The newly set up establishments are exempted for five years in certain circumstances. Some of the State Governments have reduced the employment size from 20 to 10 for the purpose of applicability of the Act.

(x) Industrial Disputes Act, 1947 - The Act lays down the machinery and procedure for resolution of industrial disputes, in what situations a strike or lock-out becomes illegal and what are the requirements for laying off or retrenching the employees or closing down the establishment.

(xi) Industrial Employment (Standing Orders) Act, 1946 -It is applicable to all establishments employing 100 or more workmen (employment size reduced by some of the States and Central Government to 50). The Act provides for laying down rules governing the conditions of employment by the employer on matters provided in the Act and get the same certified by the designated Authority.

(xii) Trade Unions Act, 1926 - The Act lays down the procedure for registration of trade unions of workmen and employees. The trade unions registered under the Act have been given certain immunities from civil and criminal liabilities.

(xiii) Child Labor (Prohibition and Regulation) Act, 1986 - The Act prohibits employment of children below 14 years of age in certain occupations and processes and provides for regulation of employment of children in all other occupations and processes. Employment of child labor is prohibited in Building and Construction Industry.

(xiv) Inter-State Migrant Workmen's (Regulation of Employment and Conditions of Service) Act, 1979 - The Act is applicable to an establishment which employs 5 or more inter-state migrant workmen through an intermediary (who has recruited workmen in one state for employment in the establishment situated in another state). The inter-state migrant workmen, in an establishment to which this Act becomes applicable, are required to be provided certain facilities such as housing, medical aid, traveling expenses from home up to the establishment and back, etc.

Annexure-10: 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 spoilmanagement hierarchy
- Mange onsite spoil handling to minimize environmental impacts on resident and otherreceivers
- 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 client 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/PMDSC for their review and approval.

Annexure- 11: SAMPLE TRAFFIC MANAGEMENT PLAN

A. Principles

1. Since the scale of construction work at the sub-project site is relatively small, there will not be any major or prolonged disruption of local traffic. Nevertheless, it is good to prepare a traffic management plan (TMP) to minimize and avoid public inconvenience to the extent feasible. This indicative TMP will ensure the safety of all the road users along the work zone and minimize public inconvenience. It addresses 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) Avoiding traffic congestion and
- (iv) Maintenance of access to adjoining properties.

B. Operating Policies for TMP

2. The following principles will help to 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) Keep the public well informed.
- (vii) Make appropriate accommodation for abutting property owners, residents, businesses, emergency services, railroads, commercial vehicles, and transit operations.

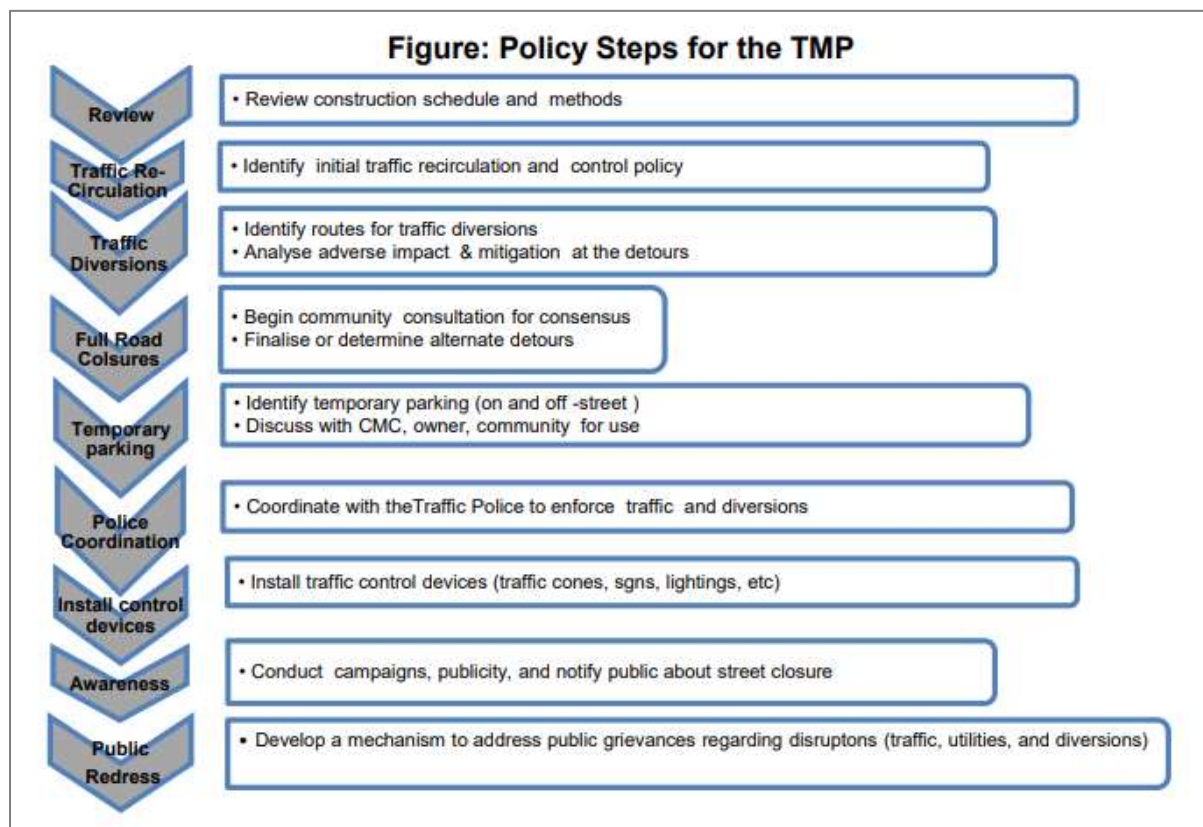
C. Analyze the impact due to street closure, if required

3. A final decision to close a particular street and divert the traffic should involve the following steps:

- (i) approval from the PIU and local administration to use alternative local streets as detours;
- (ii) consultation with businesses, community members, traffic police, MC, 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;

- (i) contacting emergency service, school officials, and transit authorities to determine if there is any effect on their operations; and
- (ii) Developing a notification program to keep the public informed. 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 streets or public opposition, then full closure can be restricted to weekends with the construction commencing on Saturday night and ending on Monday morning prior to the morning rush hour traffic.



D. Public awareness and notifications

5. The contractor will issue timely notifications to inform the public about the following issues:

- (i) Road blockages and alternative routes along with the duration (as applicable)
- (ii) Traffic control devices placed around the construction zones (signs, traffic cones, barriers, etc.);
- (iii) Reduced speed limits to be enforced at the work zones and traffic diversions.

6. It may be necessary to conduct an awareness campaign on road safety during construction. It will target relevant 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 contractors' 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

7. 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 comply with roadworthy and meet certification standards of GoHP. All vehicles should be in good condition and meet the pollution standards of Government of India and GoHP. The drivers will follow the special code of conduct and road safety rules of GoHP. They will ensure that all loads are covered and secured. Vehicles will be cleaned and maintained in designed places.

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

8. 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 key for achieving the above objective, it is important to install good traffic signs at the work zones. The following traffic control devices will be used in work zones:

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

9. 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. 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 II and —GO II).

10. 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 30cm 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.

11. 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 or

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.

12. 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 illumination for night constructions. 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- 12: Grievance Registration Format
 (to be translated and made available in local language/s)

The _____Project welcomes complaints, suggestions, queries and comments regarding project implementation.

Aggravated persons may provide grievance with their name and contact information to enable us to get in touch for clarification and feedback.

In case, someone chooses not to include personal details and wants that the information provided to remain confidential, please indicate by writing/typing *(CONFIDENTIAL)* above Grievance Format.

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-13: Standard Operating Procedure – Health & Safety Plan to Stop the Spread of COVID-19

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SOP-Health and Safety Plan

Stop the **SPREAD** of COVID-19





Face masks
help contain spread of
COVID-19



2 METERS = 6 FEET

BY
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IN HIMACHAL PRADESH



**SUSTAINABLE AND INCLUSIVE TOURISM DEVELOPMENT PROJECT
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Annexure-A : Office Order NO. HFW-H(COVID-19)DCCC, DCHC & DCH dated 04 May 2020 of Health& Family Welfare Deptt, Govt. of Himachal Pradesh regarding Dedicated Covid Care Centers (DCCC), Dedicated Covid Health Centre (DCHC) and Dedicated Covid Hospital (DCH).

Annexure-B: District-wise Emergency Contact number of Operation Centers for COVID-19

Annexure-C: COVID-19 Self Declaration Form

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HEALTH AND SAFETY PLAN(H&SP)–TAKING MAXIMUM PRECAUTIONS DURING COVID-19

1. INTRODUCTION

- This document is intended to supplement formal Health and Safety (H&S) policies, procedures and plans that the contractor has in place for its employees and staff working on Infrastructure Development Investment Program for Tourism in Himachal Pradesh (IDIPT-HP) projects. Hence, this document is not intended to replace any formalized procedures currently in place for the Contractor. Where this guideline does not meet or exceed the standards put forth by the Contractor, the Contractor shall abide by the most stringent procedure available.
- This approved project specific Health and Safety Plan (H&SP) shall be modified to have a COVID-19 Officer¹ at the Contractor's worksite (appointed by Contractor and agreed by PIU) submit a written daily report to the Client's Representative (Project Manager, PIU). The COVID-19 Officer shall certify that the Contractor and all subcontractors are in full compliance with these guidelines.
- The COVID-19 officer should be present on site at all times.
- Any issue of non-compliance with these guidelines shall be a basis for the suspension of work. The Contractor will be required to submit a corrective action plan (on the next day or immediately as per the nature of issue) detailing each issue of non-conformance and a plan to rectify the issue(s). The Contractor will not be allowed to resume work until the plan is approved by the Client (PMU). Any additional issues of non-conformance may be subject to action against the Contractor's as health & safety/safeguard clauses of the contract.
- Construction sites operating during the Covid-19 pandemic need to ensure they are protecting their WORKFORCE and minimising the risk of spread of infection.
 - This guidance is intended to introduce consistent measures on sites of all scale in conformity with the Government's recommendations on social distancing.
 - These are exceptional circumstances and the industry must remain abreast of and comply with the latest Government advice on COVID-19 at all times.

¹ The existing safeguard officer or health & safety officer or Supervisor of the contractor can be designated as COVID-19 Officer by undergoing the training available at :-

- (a) <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/training/online-training>
- (b) <https://openwho.org/courses/eprotect-acute-respiratory-infections>
- (c) <https://openwho.org/courses/COVID-19-IPC-EN>

- The health and safety requirements of any construction activity must also not be compromised at this time. If an activity cannot be undertaken safely due to a lack of suitably qualified personnel being available or social distancing being implemented, it should not take place. However, prior approval of PIU/PMU shall be mandatory in such a case.
- It is to be noted that emergency services are also under great pressure and may not be in a position to respond as quickly as usual.
- Sites should remind the workforce at every opportunity about the Worksite

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Procedures which are aimed at protecting them, their colleagues, their families and the Himachal population.

If a worksite is not consistently implementing the measures in this document, it may be required to shut down.

2. PRINCIPLES OF WORKER PROTECTION

- Consistently practice social distancing
- Cover coughs and sneezes
- Maintain hand hygiene
- Clean surfaces (e.g. desks, tables and door handles) and objects (e.g. telephone, keyboards, mobiles) with disinfectant frequently

3. MAXIMUM PRECAUTION FOR PERSONS/LABOURERS REPORTING TO WORK

- IF SICK, STAY HOME!
- IF SICK, GO HOME!
- IF SOMEONE SICK, SEND THEM HOME!

Contractor to provide face masks (three layered medical mask for use to protect persons from COVID-19) to all persons working in or visiting the worksite. This along with procedures set out in this document is for maximum precaution to protect all persons/labourers at all times.

4. COVID-19 TYPICAL SYMPTOMS

- Fever
- Cough
- Shortness of Breath
- Sore Throat

All persons at the worksite should have their temperature screened by COVID-19 officer with Infrared Thermometer (handheld non-contact)

5. SELF-ATTESTATION BY PERSONS/LABOUR PRIOR TO WORK

Prior to starting a work (on daily basis), each labour /worker will self-attest to the supervisor:

- No signs of COVID-19 symptoms within the past 24 hours.
- No contact with an individual diagnosed with COVID-19. (contact means living with a positive person, being within 6 ft. of positive person OR sharing things with positive person)
- Not undergone quarantine or isolation (in case of any labourer /worker who has been quarantined or isolated previously, the engagement shall be only after quarantine period has been completed)

The engagement of workers falling in the high-risk category such as workers over the age of 55 years, with underlying medical conditions or health issues, etc. should be done only after obtaining the requisite clearance from trained and registered medical practitioners.

The self-attestation would be verified in collaboration with trained and registered medical

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practitioners available at site and through discussions with laborers /workers and/or preliminary checks such as temperature checks, etc. prior to their engagement at site.

In addition, the Contractor shall mandatorily follow all medical test requirements for the workers prior to their engagement and/or mobilization at site as per the guidelines issued by the Central and State government agencies and WHO from time to time.

Persons/Labourers showing COVID-19 symptoms or not providing self attestation shall be directed to leave the work site and report to the nearest Dedicated Covid Care Centres (DCCC), Dedicated Covid Health Centre (DCHC) and Dedicated Covid Hospital (DCH) as notified vide Office Order NO. HFW-H(COVID-19)DCCC,DCHC&DCH dated 04 May 2020 of Health & Family Welfare Deptt, Govt. of Himachal Pradesh /quarantine centre immediately. Labour not to return to the work site until cleared by the DCCC/DCHC/DCH /quarantine centre.

6. GENERAL DIRECTIONS

- No handshake, Only Namaste
- Non-essential physical work that requires close contact between workers should not be carried out
- Work requiring physical contact should not be carried out
- Plan all other work so as to minimise contact between workers
- Wash hands often (every 1-2 hrs or frequently as possible) with soap for at least 20 seconds
- Use hand sanitizer
- No person should enter the work site other than the authorized persons mentioned by supervisor during working hours.
- All must implement social distancing by maintaining a minimum distance of 6-feet from others² at all times to eliminate the potential of cross contamination.
- Avoid face to face meetings – critical situations requiring in-person discussion must follow social distancing i.e., 6 ft from others.
- Conduct all meetings via conference calls, if possible. Do not convene meetings of more than 10 people. Recommend use of cell phones, texting, web meeting sites and conference calls for project discussion
- All individual work group meetings/ talks should follow social distancing
- At each job briefing /toolbox talk, employees are asked if they are experiencing any symptoms, and are sent home if they are
- Each worksite should have laminated COVID-19 safety guidelines and handwashing instructions
- All restroom /toilet facilities should be cleaned (minimum twice a day), and handwashing facility must be provided with soap, hand sanitizer and paper towels
- All surfaces should be regularly cleaned, including mobiles, tabletops /surfaces, door handles, laptops, records, etc.
- All common areas and meeting areas are to be regularly cleaned (minimum twice a day) and disinfected at least twice a day
- All persons to maintain their own water bottle, and should not be shared.
- To avoid external contamination, it is recommended everyone brings food from home

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- Please maintain Social Distancing during breaks and lunch.
- Cover coughing or sneezing with a tissue, then throw the tissue in the trash and wash hands. If no tissue is available then cough/sneeze into your upper sleeves or flex elbow. Do not cough or sneeze into your hands.

² Social distancing may not be practical for undertaking certain specific activities within the workplace. It is, therefore, important to review the work method statements for these types of activities to assess impact and how to find safe ways of doing it in line with best available guidance.

- Clean your hands after coughing or sneezing thoroughly by using soap and water (minimum for 20 seconds). If soap and water are not available, please use a hand sanitizer. The Contractor shall ensure adequate quantities of sanitizer and soap are made available at all locations including site offices, meeting rooms, corridors, washrooms /toilets, etc. as appropriate.
- Avoid touching eyes, nose, and mouth with your hands
- To avoid sharing germs, please clean up after yourself. Do not make others responsible for moving, unpacking and packing up your personal belongings
- If you or a family member is feeling ill, stay home!³
- Work schedules are adjusted to provide time for proper cleaning and disinfecting as required.
- Most importantly, the employees/ workers may be advised not to spread/believe in rumours or create panic. They may also be advised not to spit in working areas or public places.

³ The workers with no sick-leave would be supported with additional leave while affected by COVID-19 by the Contractor. The workers who have to stay home because of COVID-19 affected family member(s), the Contractor shall pay for the days for staying away from the work.

7. PREVENTION PRACTICES

(a) At Work-site

- At the start of each shift, confirm with all employees that they are healthy and fit to resume their work.
- Outside person(s) should be strictly prohibited at worksite
- All construction workers will be required to wear cut-resistant gloves or its equivalent.
- Use of eye protection (reusable safety goggles/face shields) is recommended. The supply of eye protection equipment to the workers is considered as a standard part of PPE during construction works.
- In work conditions where **social distancing is impossible** to achieve, the employees shall be supplied with standard face mask, gloves, and eye protection.
- All employees shall drive to work site in a single occupant vehicle. Staff shall not ride together in the same vehicle
- When entering a machine or vehicle which you are not sure you were the last person to enter, make sure that you wipe down the interior and door handles with disinfectant

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(with 1% sodium hypochlorite solution daily) prior to entry. Adequate quantity of the disinfectant shall be provided by the Contractor at all such site-specific locations.

- Workers should maintain separation of 6' ft. from each other.
- Multi person activities will be limited where feasible (two persons lifting activities)
- Gathering places on the site such as sheds and/or break areas will be eliminated, and instead small break areas will be used with seating limited to ensure social distancing.
- Contact the cleaning person of the worksite and ensure proper COVID-19 sanitation processes. Increase cleaning/disinfection visits to at least 2 times a day. Cleaning person(s) to be provided with gloves, gown and face mask for each cycle of cleaning. The Contractor shall make available adequate supply of cleaning material and disinfectant chemicals while the threat of COVID-19 continues.
- Clean all high contact surfaces a minimum of twice a day in order to minimize the spread of germs in areas that people touch frequently. This includes but is not limited to furniture, electrical, electronic equipment's and vehicles, etc. All the employees be encouraged to maintain good health by getting adequate sleep; eating a balanced and healthy diet, avoiding alcohol and by consuming plenty of fluids.
- Continuation of works in construction project with workers available on.
- The site offices shall have adequate ventilation. The air conditioning or ventilation systems installed at the site offices should have high-efficiency air filters to reduce the risk of infection. The frequency of air changes may be increased for areas where close personal proximity cannot be fully prevented such as control rooms, elevators, waiting rooms, etc.
- The Contractor shall carry out contactless temperature checks of the workers prior to entering the site, during working hours and after site
Works to identify persons showing signs of being unwell with the COVID-19 symptoms.
- The Contractor shall also ensure that the Project sites situated in the border areas of Himachal Pradesh, the employees and workers do not commute from the neighboring States without requisite permission from relevant authorities.

(b) Washing Facility

- All worksites should have access to toilet and hand washing facility.
- Providing hand cleaning facilities at entrances and exits. There should be soap and water wherever possible or hand sanitizer if water is not available.
- Washing facility with hot water, and soap at other water sources to be used for frequent hand washing for all onsite employees
- All onsite workers must help to maintain and keep their working sites clean.
- If a worker notices soap or towels are running low or out, he/she should immediately notify supervisor(s). Proactively supervisor should make sure that shortage situation never occurs.
- Garbage bins will be placed next to the hand wash facility for discarding used tissues/towels with regular removal and disposal facility (at the end of each day)

(c) Cleaning Procedures

Increase cleaning/disinfection at least two times a day. Persons engaged in cleaning be provided with gloves, gown and face mask for each cycle of cleaning.

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Each worksite including sheds, gates, equipment, vehicles, etc. should have enhanced cleaning and disinfection procedures that are posted and shared. These shall be posted at all entry points to the sites, and throughout the project site. These include common areas and high touch points like

- Taps and washing facilities
- Toilet flush and seats
- Door handles and push plates
- Handrails on staircases and corridors
- Lift and hoist controls
- Machinery and equipment controls
- Food preparation and eating surfaces
- Telephone equipment / mobiles
- Electrical and electronic equipment's
- Keyboards, photocopiers and other office equipment

Re-usable PPE should be thoroughly cleaned after use and not shared amongst the workers.

8. LABOUR CAMPS

Contractor shall follow a zero-tolerance policy on wearing of masks. Masks to be provided to all the persons/labourers for use at the camp site as well as at the worksite. Increase cleaning/disinfection visits to at least 2 times a day. Persons engaged in cleaning to be provided with disposable gloves, gown and face mask for each cycle of cleaning.

8.1 Toilet Facility

- Restrict the number of people using toilet facility at any one time e.g. appoint one welfare attendant among the labourers.
- Wash hands before and after using the common facilities
- Enhance the cleaning regimes for toilet facilities particularly door handles, locks and the toilet flush
- Portable toilets should be avoided wherever possible, but where in use these should be cleaned and emptied more frequently
- Provide suitable and sufficient trash bins for hand towels with regular removal and disposal.

8.2 Eating/Snacks Arrangements

- With eateries having been closed (restricted) across Himachal, providing permanent (till society is safe from COVID-19) on-camp/off-camp cook/helpers can be implemented. Make sure that the "Guidelines for food handling, preparation and distribution during COVID-19" and its regular updates are being followed.
- Whilst there is a requirement for construction camps to provide a means of heating food and making hot water, these are exceptional circumstances and where it is not possible to introduce a means of keeping equipment clean between use, etc. must be removed from use.
- Dedicated eating areas should be identified at campsites to reduce food waste and contamination.
- Break times should be staggered to reduce contact, congestion at all times.

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- Hand cleaning facilities or hand sanitizer should be available at the entrance of the room where people eat and it should be used by workers when entering and leaving the area.
- Workers should sit 2 metres apart from each other whilst eating and should avoid all contact
- Where catering is provided at camp site, it should provide pre-prepared and wrapped food only
 - Payments should be taken by contactless options wherever possible
 - Crockery, eating utensils, cups, etc. should be avoided wherever possible
- Taps for drinking water should be provided with such mechanism that contact of hand is minimised (taps with long handle).
- Eating tables should be cleaned between each use.
- All rubbish should be put straight in the bin and not left for someone else to clear up; only covered pedal operated bins should be used and the bins should be cleaned regularly, with strict adherence to safety protocols for disposal and of maintenance hygiene (including proper PPE's such as gloves, mask and apron worn by the waste handler/cleaner and disposal at a designated place);
- All areas used for eating must be thoroughly cleaned at the end of each break and shift, including chairs, door handles, etc.

8.3 Changing Facilities, Showers and Drying Areas

- Introduce staggered start and finish times to reduce contact, congestion at all times.
- Introduce enhanced cleaning of all facilities throughout the day and at the end of each day.
- Consider increasing the number or size of facilities available on camp if possible
- Based on the size of each facility, determine how many people can use it at any one time to maintain a distance of two metres.
- Provide suitable and sufficient garbage bins in these areas with regular removal and disposal.
- Visitor log book with record of thermal screening should be strictly maintained at the labour camps.

COVID-19 officer will ensure compliance of preventive measures at the labour camps at all times.

9. UPDATES ON COVID-19

The Contractor shall be in touch with the Department of Health & Family Welfare and Labour Department to identify any potential worksite exposures relating to COVID-19, including:

- Strictly follow the guidelines issued by Ministry of health, Govt. of India.
- Workers, vendors, inspectors, or visitors to the worksite with close contact to the individual.
- Labour Camps / Work areas such as designated workstations or rooms /sheds
- Work tools and equipment
- Common areas such as break rooms, tables and sanitary facilities

**SUSTAINABLE AND INCLUSIVE TOURISM DEVELOPMENT PROJECT
IN HIMACHAL PRADESH**

HEALTH AND SAFETY PLAN(H&SP)-TAKING MAXIMUM PRECAUTIONS DURING COVID-19

Also refer the following websites from time to time for regular updates.

<https://www.mohfw.gov.in/> <https://covidportal.hp.gov.in>

This document can be updated from time to time based on the advisories or directions of the Govt.

10. TRAINING

- The representative of PMU/PIU to ensure all workers get training on above requirements before start of any construction activity
- During construction period frequent visual and verbal reminders to workers can improve compliance with hand hygiene practices and thus reduce rates of infection. Hand washing posters should also be displayed at work site and labour camps.

11. EMERGENCY CONTACT

- Provide emergency contact number(s) at work site and labour camp for reporting COVID-19 symptoms

In case of any COVID-19 related emergency, please contact at the following helpline numbers :

- (i) Toll Free Helpline (COVID-19)-104
- (ii) State Control Room (COVID-19)-1070
- (iii) District Control Room (COVID-19)-1077 (Every district)

Ensure all staff uses the Aarogya Setu app (can be downloaded from Play Store), recommended by Govt. of India for tracking COVID-19 patients.

"Relaxation is only given by Govt.
Corona hasn't given relaxation"

**SUSTAINABLE AND INCLUSIVE TOURISM DEVELOPMENT PROJECT
 IN HIMACHAL PRADESH
 HEALTH AND SAFETY PLAN(H&SP)-TAKING MAXIMUM PRECAUTIONS DURING COVID-19**

COVID-19 Self-Declaration

Please answer the following questions:

Description	Yes	No
Have you or has anyone you come into close contact with currently or in the last 14 days felt unwell, experienced any cold or flu-like symptoms such as a high temperature (at least 38 degrees C, 100 F), fever, coughing, sneezing, runny nose, sore throat, or had difficulty breathing?		
Have you been or has anyone you come into close contact with confirmed as having COVID-19 (Coronavirus)?		
Have you recently returned from overseas travel (28-45 days)		
Are you a healthcare worker and examined a COVID-19 confirmed case without protective gear		
Have you been in close contact with a person who has recently returned from overseas travel?		
Do you have a respiratory or a heart condition, high blood pressure, kidney problems or diabetes?		
I am and will continue to observe all of the requirements of the lockdown as outlined by the Government		

I, (_____) from (_____) declare that I have answered the above questions truthfully and to the best of my knowledge and I will inform the authorities immediately of any changes to the above statements.

Signed:


Date:


Countersigned by :



Contractor's
 Representative



DSC / PIU Representative

Annexure-14: Public Consultation

<p>Project Location: Naggar Castle Hotel</p>	
<p>Date: 13.03.2023</p>	
<p>Participants: Mr. Naresh Kumar, MDM Mr. Pritam, Receptionist</p>	
<p>Key Outcomes:</p> <ul style="list-style-type: none"> • The proposed project site is entirely on government land, it is the property of Tourism Department. • Entire work is within the Hotel complex; hence no additional land will be required, and that there are no private properties being impacted upon, either permanently or temporarily. • The site has no encroachment issue, either permanent or temporary. • Adjacent to the project site, there are temples, residences and shops, there will be no negative impact on them either. • A major addition in the Hotel complex will be of the wellness center, remaining will only be improvement of existing properties – hotel rooms, toilet provisions, painting and polishing, etc. • The improved provisions at hotel will attract more tourists and that will contribute in local economy. 	

<p>Project Location: Naggar Castle Hotel</p>	
<p>Date: 13.03.2023</p>	
<p>Participants: Ms. Vimla Devi, Local Resident Ms. Nirmal Sharma, Local resident Ms. Meena Thakur, Local resident Ms. Pratima Singh, Tourist Ms. Priti Desmukh, Tourist Ms. Sonia Singh, Local resident</p>	
<p>Key Outcomes:</p> <ul style="list-style-type: none"> • The hotel being a heritage property, attracts tourists and improvements in the hotel will bring in more tourists. • The hotel needs more toilet facilities and some additional parking areas. • There will be some SHGs/women's groups interested in contributing to local tourism promotion. • The hotel is located in a very strategic location, from the porch area and the room it provides a spectacular view of the surrounding. • Introducing a wellness center will add to the value to the property and attract more tourists. • Local people will need awareness on how they can be involved in developing local tourism. 	

<p>Project Location: Naggar Castle Hotel</p>	
<p>Date: 13.03.2023</p>	
<p>Participants: Mr. Pawan Pandey, Shopkeeper Mr. Prem Lal, Shopkeeper Mr. Arun Mahajan, Shopkeeper</p>	
	
<p>Key Outcomes:</p> <ul style="list-style-type: none"> • Additional tourism promotion infrastructure is required, such as, clean toilets, drinking water and sitting arrangements at nearby location. • There should be more parking space for tourists to park their vehicle. • Yes, more tourists will mean more sale of products and improvement in our livelihood. 	

<p>Project Location: Naggar Castle Hotel</p>		
<p>Date: 13.03.2023</p>		
<p>Participants: Mr. Om Prakash, Tourist Ms. Vinita Prakash, Tourist Mr. Arun Rawat, Tourist Ms. Pankaja, Tourist Mrs. Dipali Pandit, Tourist Mrs. Prema Sagar, Tourist Ms. Priya Reddy, Tourist</p>		

Mr. Rakesh Bansal, Tourist

Ms. Anuj Rawat, Tourist

Mr. Preeti Rawat, Tourist

Ms. Priti Krishnan, Tourist

Mr. Saurabh Sen, Tourist

Mr. Shubhojit Sarkar, Tourist

Mr. Arpit Menon, Tourist



Key Outcomes:

- Toilet facilities are much needed, project should take that as priority.
- Sitting arrangement at the porch near the edge, for relaxing and enjoying views outside.
- There should be improvement in parking facilities.
- A guide at the location, may also have women guides, and they should be well trained.
- The area to have waste bins at strategic locations.
- Medical helpline services, as phones often do not work alternative measures have to be established.
- Proper safety signages, parking and other facility signages, emergency numbers should also be displayed at various locations.

Annexure-15: IBAT Report



Integrated Biodiversity Assessment Tool PROXIMITY REPORT NAGGAR CASTLE

Country: India

Location: [32.1, 77.2]

Date of analysis: 16 April 2024 (GMT)

Buffers applied: 1 km | 10 km | 50 km

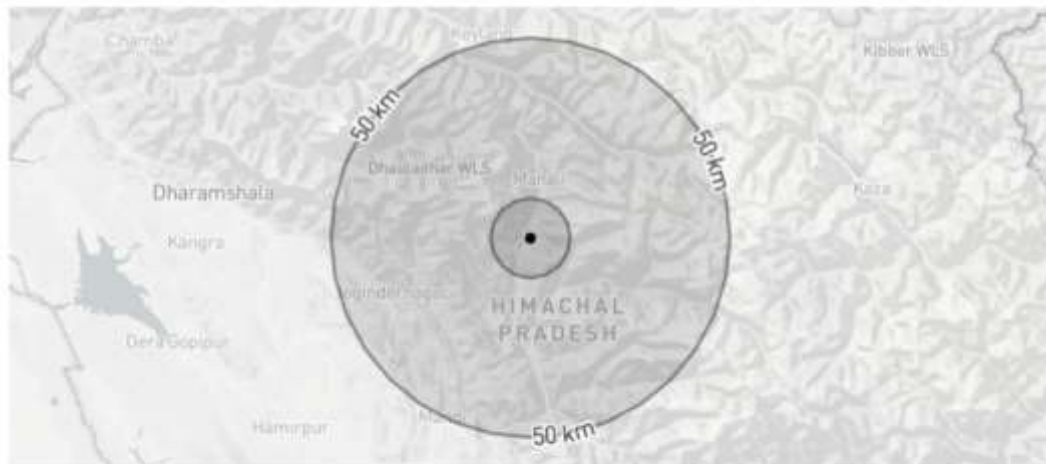
IUCN Red List Biomes: Terrestrial

Generated by: Anjali Semwal

Organisation: ADB

Overlaps with:

Protected Areas	1
Key Biodiversity Areas	10
IUCN Red List	33



Displaying project location and buffers: 1 km, 10 km, 50 km



About this report

This report presents the results of [27783-62396] proximity analysis to identify the biodiversity features and species which are located within the following buffers: 1 km, 10 km, 50 km.

This report is one part of a package generated by IBAT on 16 April 2024 (GMT) that includes full list of all species, protected areas, Key Biodiversity Areas in CSV format, maps showing the area of interest in relation to these features, and a 'How to read IBAT reports' document.

WARNING: IBAT aims to provide the most up-to-date and accurate information available at the time of analysis. There is however a possibility of incomplete, incorrect or out-of-date information. All findings in this report must be supported by further desktop review, consultation with experts and/or on-the-ground field assessment. Please consult IBAT for any additional disclaimers or recommendations applicable to the information used to generate this report.

Please note, sensitive species data are currently not included in IBAT reports in line with the [Sensitive Data Access Restrictions Policy for the IUCN Red List](#). This relates to sensitive Threatened species and KBAs triggered by sensitive species.

Data used to generate this report

- UNEP-WCMC and IUCN, 2024. Protected Planet: The World Database on Protected Areas (WDPA)[On-line], Cambridge, UK: UNEP-WCMC and IUCN. Available at: www.protectedplanet.net - April 2024.
- BirdLife International (on behalf of the KBA Partnership), 2023. Key Biodiversity Areas - October 2023.
- IUCN, 2024. IUCN Red List of Threatened Species - January 2024.
- IUCN. The IUCN Red List of Threatened Species. Version 2019-3. (2019). <https://www.iucnredlist.org>
- IUCN. Threats Classification Scheme (Version 3.2). (2019)
- Strassburg, B.B.N., Iribarrem, A., Beyer, H.L. et al. Global priority areas for ecosystem restoration. Nature 586, 724–729 (2020). <https://doi.org/10.1038/s41586-020-2784-9>





Protected Areas

The following protected areas are found within 1 km, 10 km, 50 km of the area of interest.
 For further details please refer to the associated csv file in the report folder.

Area name	Within buffer of
Great Himalayan National Park Conservation Area	50 km

Key Biodiversity Areas

The following key biodiversity areas are found within 1 km, 10 km, 50 km of the area of interest.
 For further details please refer to the associated csv file in the report folder.

Area name	Distance
Kais Wildlife Sanctuary	10 km
Chamba Valley	50 km
Dhauludhar Wildlife Sanctuary and McLeod Gunj	50 km
Great Himalayan National Park	50 km
Inderkilla National Park	50 km
Kanawar Wildlife Sanctuary	50 km
Khirganga National Park	50 km
Kugti Wildlife Sanctuary	50 km
Manali Wildlife Sanctuary	50 km
Nargu Wildlife Sanctuary	50 km

IUCN Red List of Threatened Species





The following threatened species are potentially found within 50km of the area of interest.

For the full IUCN Red List please refer to the associated csv in the report folder.

Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome
<i>Gyps bengalensis</i>	White-rumped Vulture	AVES	CR	Decreasing	Terrestrial
<i>Sarcogyps calvus</i>	Red-headed Vulture	AVES	CR	Decreasing	Terrestrial
<i>Gyps tenuirostris</i>	Slender-billed Vulture	AVES	CR	Decreasing	Terrestrial
<i>Nardostachys jatamansi</i>	Indian Nard	MAGNOLIOPSIDA	CR	Decreasing	Terrestrial
<i>Moschus leucogaster</i>	Himalayan Muskdeer	MAMMALIA	EN	Decreasing	Terrestrial
<i>Panthera tigris</i>	Tiger	MAMMALIA	EN	Decreasing	Terrestrial
<i>Oxyura leucocephala</i>	White-headed Duck	AVES	EN	Decreasing	Terrestrial, Freshwater
<i>Haliaeetus leucoryphus</i>	Pallas's Fish-eagle	AVES	EN	Decreasing	Terrestrial, Freshwater
<i>Neophron percnopterus</i>	Egyptian Vulture	AVES	EN	Decreasing	Terrestrial, Freshwater
<i>Aquila nipalensis</i>	Steppe Eagle	AVES	EN	Decreasing	Terrestrial
<i>Falco cherrug</i>	Saker Falcon	AVES	EN	Decreasing	Terrestrial, Marine, Freshwater
<i>Picrorhiza kurroa</i>	Picrorrhiza	MAGNOLIOPSIDA	EN	Decreasing	Terrestrial



Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome
Trillium govanianum	Himalayan Trillium	LILIOPSIDA	EN	Decreasing	Terrestrial
Dactylorhiza hatagirea	Salamparja	LILIOPSIDA	EN	Decreasing	Terrestrial
Crocodylus palustris	Mugger	REPTILIA	VU	Stable	Terrestrial, Freshwater
Panthera pardus	Leopard	MAMMALIA	VU	Decreasing	Terrestrial
Panthera uncia	Snow Leopard	MAMMALIA	VU	Decreasing	Terrestrial
Ursus thibetanus	Asiatic Black Bear	MAMMALIA	VU	Decreasing	Terrestrial
Rusa unicolor	Sambar	MAMMALIA	VU	Decreasing	Terrestrial
Tragopan melanocephalus	Western Tragopan	AVES	VU	Decreasing	Terrestrial
Catreus wallichii	Cheer Pheasant	AVES	VU	Decreasing	Terrestrial
Aythya ferina	Common Pochard	AVES	VU	Decreasing	Terrestrial, Marine, Freshwater
Gallinago nemoricola	Wood Snipe	AVES	VU	Decreasing	Terrestrial, Freshwater
Sterna aurantia	River Tern	AVES	VU	Decreasing	Terrestrial, Marine, Freshwater
Clanga clanga	Greater Spotted Eagle	AVES	VU	Decreasing	Terrestrial, Freshwater





Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome
<i>Aquila heliaca</i>	Eastern Imperial Eagle	AVES	VU	Decreasing	Terrestrial, Freshwater
<i>Oryza malampuzhaensis</i>		LILIOPSIDA	VU	Decreasing	Terrestrial
<i>Bovista paludosa</i>	Fen Puffball	AGARICOMYCETES	VU	Decreasing	Terrestrial
<i>Capricornis sumatraensis</i>	Mainland Serow	MAMMALIA	VU	Decreasing	Terrestrial
<i>Ulmus villosa</i>		MAGNOLIOPSIDA	VU	Decreasing	Terrestrial
<i>Paris polyphylla</i>	Love Apple	LILIOPSIDA	VU	Decreasing	Terrestrial
<i>Fritillaria cirrhosa</i>	Yellow Himalayan Fritillary	LILIOPSIDA	VU	Decreasing	Terrestrial
<i>Canis lupus ssp. chanco</i>	Himalayan Wolf	MAMMALIA	VU	Decreasing	Terrestrial



Recommended citation

IBAT Proximity Report. Generated under licence 27783-62396 from the Integrated Biodiversity Assessment Tool on 16 April 2024 (GMT). www.ibat-alliance.org

How to use this report

This report provides an indication of the potential biodiversity-related features - protected areas, key biodiversity areas and species - close to the specified location. It provides an early indication of potential biodiversity concerns, and can provide valuable guidance in making decisions. For example, this information can be helpful when assessing the potential environmental risk and impact of a site, categorising investments/projects, preparing the terms of reference for an impact assessment, focusing attention on key species of conservation concern and sites of known conservation value, and reviewing the results of an impact assessment.

The report does not provide details of potential indirect, downstream or cumulative impacts. Furthermore, the report should be regarded as a "first-step", providing a set of conservation values sourced from global data sets, and is not a substitute for further investigation and due diligence, especially concerning national and/or local conservation priorities.

Annexure 16: Sample Chance find Protocol

Purpose of the chance find procedure. The chance find procedure is a project-specific procedure that outlines actions required if previously unknown heritage resources, particularly archaeological resources, are encountered during project construction or operation. A Chance Find Procedure as described in international best practice like IFC Performance Standard 8 and is a process that prevents chance finds from being disturbed until an assessment by a competent specialist is made and actions consistent with the requirements are implemented.

Scope of the chance find procedure. This procedure is applicable to all activities conducted by the personnel, including contractors, that have the potential to uncover a heritage item/site. The procedure details the actions to be taken when a previously unidentified and potential heritage item/site is found during construction activities. Procedure outlines the roles and responsibilities and the response times required from both project staff, and any relevant heritage authority.

Induction/Training. All personnel, especially those working on earth movements and excavations, are to be inducted on the identification of potential heritage items/sites and the relevant actions for them with regards to this procedure during the Project induction and regular toolbox talks.

Chance find procedure. If any person during construction work discovers a physical cultural resource, such as (but not limited to) archaeological sites, historical sites, remains and objects, or a cemetery and/or individual graves during excavation or construction, the following steps shall be taken:

1. Stop all works in the vicinity of the find, until a solution is found for the preservation of these artefacts, or advice from the relevant authorities is obtained;
2. Immediately notify the Site manager. The Site Manager will then notify the Construction Manager and the Environment Officer (EHS)/PIU/Environmental expert of DSC.
2. Record details in Incident Report and take photos of the find;
3. When clearance and excavation takes place artefacts and historic objects are sometimes found. These should be recovered and kept in a safe place. The place of discovery should be recorded and each find given a number and tag tied to the find with the same number on it. A list of the finds should be kept (with the find no. and place of discovery and date of discovery recorded).
4. Delineate the discovered site or area; secure the site to prevent any damage or loss of removable objects. In cases of removable antiquities or sensitive remains, a night guard shall be arranged until the responsible local authorities take over;
5. PIU/Consultants should inform in written to the Archaeological Department at the earliest with photographs and request to Archaeology Department to visit the site and hand over the chance finds to them.
6. The archaeologist must make a rapid assessment of the site or find to determine its importance. Based on this assessment the appropriate strategy can be implemented. The significance and importance of the findings should be assessed according to the various criteria relevant to cultural heritage such as aesthetic, historic, scientific or research, social and economic values of the find;
7. Sites of minor significance (such as isolated or unclear features, and isolated finds) should be recorded immediately by the archaeologist, thus causing a minimum disruption to the work schedule of the Contractor.

Annexure 17: Standard Operating Procedures and Documentary Requirements Consents/ Registrations/ Authorizations HPSPCB, July 2022

STANDARD OPERATING PROCEDURE FOR TOURISM UNITS

1. Consent to Establish:

The consent to establish is to be obtained by Tourism unit/hotel(s) prior to establishing the industry. The proposed hotel shall obtain Consent to Establish under the provisions of Water Act and/or the Air Act. The application form for Consent to Establish under the Water Act / Air Act is to be submitted/ uploaded online (<http://hpocmms.nic.in>) through the concerned Regional Office (Annexure-I) of the State Board. The Consent to establish can be applied by the tourism unit for minimum of 1 year up to a maximum of 5 years as applied for by the applicant unit by submitting the requisite fees as per Annexure-II.

Check List:

The application for Consent to Establish for a proposed Hotel/Tourism unit shall include the following documents and be submitted to the Regional Office of State Board under jurisdiction of which the proposed unit shall be located.

- (i) General Information Form (To be filled online in OCMMS)
- (ii) **Form-I:** Application for Consent under Section-21 of Air (Prevention & Control of Pollution) Act, 1981 (if applicable). (To be filled online in OCMMS)
- (iii) **Form-XIII:** Application for Consent under Section-25/26 of Water (Prevention & Control of Pollution) Act, 1974. (if applicable). (To be filled online in OCMMS)
- (iv) Proposed plan approved by TCP or NOC of TCP (in non TCP area):
 - Planning area: Self attested copy of proposed plan/drawings (clearly indicating total built-up area of the project) approved by TCP/ competent authority (Municipal Corporation, Municipal Council, SADA etc.)
 - Non Planning area: NOC from TCP department (indicating that the area doesn't fall under the preview of planning area) is required along with self- attested drawings (clearly indicating total built-up area of the project). (Mandatory)
- (v) Approval of the project/ provisional registration by the Tourism Department clearly indicating number of rooms based on approved drawing by competent authority. (Mandatory)
- (vi) Detailed project report (including value of land, building, furniture & fixtures, equipment(s) & working capital) (Mandatory)
- (vii) Feasibility report on Pollution Control Devices/ Solid Waste Management /Plastic Waste Management/ Hazardous Waste/ Noise Pollution Control Measures. (Mandatory)

Detail of Pollution Control Devices:

- Air: Chimney/ hood/Scrubber to be provided in kitchen. Adequate stack height for the stack installed in the DG set.
 - Water: Sewage Treatment Plant for domestic sewage / **Effluent Treatment Plant** for treatment of laundry waste. Septic tank and soak pit is required for hotels below 25 Double Bed Room (DBRs) and STP/ STP cum ETP is mandatory for hotels above 25 Double Bed Rooms. Water flow meter should be provided at the outlet of STP/ETP/ETP cum STP. Separate energy meter should be provided for STP/ETP/ETP cum STP. Log book of ETP/STP/ETP cum STP should be maintained having details regarding daily inflow, energy consumption and chemicals used. **(Mandatory)**
 - Where there is sewerage line unit shall submit the connectivity certificate from concerned authority and there is no need for providing septic tank and STP/ STP cum ETP. (As applicable)
 - Noise: Acoustic enclosure to be provided over the DG Set. Ambient Noise level shall be maintained as per Noise Pollution (Regulation and Control) Rules, 2000. For Banquet Halls, Noise limiters shall be proposed/provided (As applicable)
 - Solid Waste: Biodegradable and non- biodegradable waste shall be disposed of by means of composting/ organic waste converter/vermicomposting/ incineration or authorized recycler/ local body as per Solid Waste Rules,2016.
 - Hotels with capacity of more than 50 DBRs shall have to provide Bio-degradable Organic Waste Composting/Converter Machine. **(Mandatory)**
 - Plastic Waste Management Rules, 2016: The rules shall be adhered to in terms of products which may be used, EPR policy and disposal of waste as defined in these rules shall be done in a scientific manner as per prescribed norms. (As applicable)
- (viii) Source of water: The water consumption/generation details shall be as per the IS 1172 i.e. "Code of Basic Requirements for Water Supply, Drainage and Sanitation"
- (ix) Location Plan which clearly indicate its location from major land marks
- (x) Consent Fee as approved by the Board under Water Act, 1974/Air Act, 1981 **(Mandatory)**
- (xi) Details of muck generation during the construction period and utilization which shall be done thereof. **(Mandatory)**
- (xii) Copy of Environment Clearance (if total built-up area is more than 20,000 sqm) from the competent authority only in respect of projects requiring Environmental Clearance from Govt. of India as per notification No.SO-1533 (E) dated 14-09-2006 as amended from time to time. **(As applicable)**

2. Consent to Operate:

Once the hotel is established along-with the required pollution control systems, the entrepreneur is required to obtain consent to operate of the State Board prior to initiate the operational activities. Consent to Operate is considered by Pollution Control Board after ensuring installation of all the requisite Pollution Control Devices w.r.t. disposal of waste generated from the operation of the Hotel Industry like sewage/ sullage/ solid waste after proper site inspection which is mandatory. The Consent to Operate is issued for the remaining period of the current financial year, which is mandatory to be renewed regularly thereafter. (For instance, a unit applying for CTO from 01-06-2022 onwards shall be granted the first CTO valid up till 31-03-2023 to coincide with the financial year cycle.)

Check List:

The application for Consent to Operate for a proposed Hotel shall include the following documents and submitted/ uploaded online (<http://hpocmms.nic.in>) through the concerned Regional Office (**Annexure-I**) of the State Board under jurisdiction of which the proposed unit shall be located:

- (i) General Information Form (**To be filled online in OCMMS**)
- (ii) **Form-I:** Application for Consent under Section-21 of Air (Prevention & Control of Pollution) Act, 1981 (if applicable). (**To be filled online in OCMMS**)
- (iii) **Form-XIII:** Application for Consent under Section-25/26 of Water (Prevention & Control of Pollution) Act, 1974. (if applicable). (**To be filled online in OCMMS**)
- (iv) A copy of Approval/ Completion certificate from TCP/ Urban Local body for their respective areas or from the certified Architect for remaining areas. (**Mandatory**)
- (v) Compliance Report on installations of the Pollution Control Devices as defined in check list of CTE at Sr. VII. (**Mandatory**)
- (vi) Consent Fee as approved by the Board under Water Act, 1974/Air Act, 1981. (**Mandatory**)

3. Renewal of Consent to Operate:

The Renewal of Consent to operate is required to be obtained by every hotel and needs to be renewed for variable period according to the category and its scale i.e. 5, 10 and 15 years according to the nature of industry. Primary consideration for the renewal of consent to operate is to check and ensure the compliance status to the norms prescribed for the effluents/emissions/solid waste, as the case may be, in the previous period at the time of consideration of the renewal.

Check List:

- (i) Copy of Registration of the Tourism Department. **(Mandatory)**
- (ii) Self-attested Affidavit/undertaking clearly stating that there is no change in process, design & product/ capacity of Industry/ development project/hotel **(Mandatory)**
- (iii) **Red and Orange- Large & Medium units:** Latest sample analysis report (Water and Air) of State Board laboratory as per sampling schedule. **(Mandatory)**
- (iv) **Orange (Small) and Green Categories:** Latest Water sample analysis report of State Board laboratories and Air sample analysis reports of MoEF approved Laboratories (Self emission results) as per sampling schedule. **(Mandatory)**
- (v) Consent Fee as approved by the Board under Water Act, 1974/ Air Act, 1981. **(Mandatory)**
- (vi) Environment Statement form **(Form-V** of EP Rules, 1986) **(Mandatory)**
- (vii) All sample testing charges till date have been paid by the Hotel.

4. Renewal of Consent to Establish

If the Tourism unit/Hotel is still under construction stage, the unit can apply for RCTE for One to Five years. (Note: The Consent shall be valid till end of the financial year for the time period chosen. For instance, for a unit applying for RCTE from 01-06-2022 onwards for two years shall be granted RCTE valid up till 31-03-2024 to coincide with the financial year cycle.)

Check list:

- (i) No document is required except Self-attested Document/Affidavit of no change in process/design/ product capacities. **(Mandatory)**
- (ii) Details of muck generation during the construction period and utilization done thereof. **(Mandatory)**

EXPANSION CASES

5. Consent to Establish (Expansion)

The procedure to obtain CTE (expansion) shall be same as in case of Consent to establish. However, in case of existing operational units going for expansion, the tourism unit shall have to submit the compliance report/results of the existing water and or air pollution control devices. **(As applicable and mentioned in Point no. iii and iv of checklist of RCTO above)**

6. Consent to Operate (Expansion)

The procedure to obtain CTO (expansion) shall be same as in case of Consent to Operate.