

Initial Environmental Examination

Project Number: 49108-002
October 2019

India: Himachal Pradesh Skill Development Project Sub-projects – Model Career Center at Bilaspur

Prepared by the Government of Himachal Pradesh for the Asian Development Bank

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ABBREVIATIONS

ADB	-	Asian Development Bank
ASI	-	Archaeological Survey of India
CPCB	-	Central Pollution Control Board
CLC	-	City Livelihood Centre
CPR	-	Common property resources
DOLE	-	Department of Labor and Employment
DOTE	-	Department of Technical Education, Vocational and Industrial Training
DOP	-	Department of Planning
DOT	-	Department of Tourism
EA	-	Executive Agency
DOUD	-	Department of Urban Development
EIA	-	Environmental Impact Assessment
EMP	-	Environmental Management Plan
FSI	-	Forest Survey of India
GOHP	-	Government of Himachal Pradesh
GOI	-	Government of India
HPSDP	-	Himachal Pradesh Skill Development Project
IEE	-	Initial Environmental Examination
IA	-	Implementing Agency
ITI	-	Industrial Training Institute
IUCN	-	International Union for Conservation of Nature
MOEFCC	-	Ministry of Environment, Forests and Climate Change
MCC	-	Model Career Center
NP	-	National Park
OM	-	Operations Manual
PA	-	Protected area
PD	-	Project Director
PIU	-	Project Implementation Unit
PMC	-	Project Management Consultant
PMU	-	Project Management Unit
PUC	-	Pollution under Control
PWD	-	Public Works Department
RLC	-	Rural Livelihood Centre
REA	-	Rapid Environmental Assessment
SEIAA	-	State Environment Impact Assessment Authority
SLEC	-	State-level Empowered Committee
SPCB	-	State Pollution Control Board
SPM	-	Suspended Particulate Matter
SPS	-	Safeguard Policy Statement 2009
UNESCO	-	United Nations Educational Scientific and Cultural Organization
WLS	-	Wildlife Sanctuary

CURRENCY EQUIVALENTS

(As of October 2019)
Currency unit – Indian rupee (Rs)
Rs1.00 = \$0.014286
\$1.00 = Rs 70.00

WEIGHTS AND MEASURES

dB (A) A-weighted decibel
ha - hectare
Km-kilometer
km²-square kilometer
µg-microgram
m - Meter
m²-square meter
MW (megawatt) – megawatt

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EXECUTIVE SUMMARY

1. At the request of the Government of India and the Government of Himachal Pradesh (GOHP), ADB will offer \$80 million in loan assistance to modernize and reform Himachal Pradesh's technical and vocational education and training (TVET) programs, and scale up training capacity. The Department of Technical Education (DOTE), GOHP, will be the executing agency for the proposed Himachal Pradesh Skill Development Project (HPSDP). The Himachal Pradesh Kaushal Vikas Nigam (HPKVN), the Directorate of Technical Education, Vocational & Industrial Training (DTE), Department of Higher Education (DOHE), and the Public Works Department (PWD) will be the implementing agencies. HPKVN will also operate as the project management unit (PMU) for HPSDP. For the civil works component, it will be assisted by PWD officials who are well aware of the state and India's building codes and environmental regulations.

2. The impact of HPSDP will be a more productive work force in Himachal Pradesh equipped with market-relevant technical and vocational skills created, in alignment with the Himachal Pradesh Skill Development Policy (*Him Kaushal*), 2016. The outcome will be improved employment and livelihood development opportunities for those trained under the project. This will be achieved through the following outputs:

- Output 1: TVET in Himachal Pradesh modernized, expanded, and aligned to national standards
- Output 2: Market-aligned skills ecosystem created
- Output 3: Access to quality training institutes improved.
- Output 4: TVET institutional structure reformed and improved.

3. Output 3 of the Project will involve construction of new training facilities and upgrading of some existing buildings to improve the access of TVET programs across Himachal Pradesh¹. The new facilities include construction of 6 city livelihood centers (CLCs), 7 rural livelihood centers (RLCs), and 1 Polytechnic for women. Eleven employment exchanges will be upgraded into model career centers (MCCs). On average, the CLCs and RLCs will have 3 to 4 floors, and occupy about 900 m². The MCCs will have 3 to 4 floors on average, and occupy around 400 m² each. **The Department of Urban Development (DOUD), Department of Rural Development(DORD), and the Department of Labor and Employment(DOLE) will help HPKVN in running livelihood development and counseling programs at the proposed CLCs, RLCs, and MCCs respectively.**

4. GOHP has assured ADB that the proposed new infrastructure will be built, either within premises owned by the government, or on vacant and unencumbered land owned by the government. No new land will be acquired, nor will anyone be displaced in anticipation of ADB funding. Sites located within or near environmentally-sensitive areas and tribal areas of Himachal Pradesh will not be considered. No project related activity will have any adverse impact on indigenous peoples or impede their cultural and human rights. Hence, from a safeguards perspective, the HPSDP Project is categorized as 'B' for environment, 'C' for involuntary resettlement, and 'C' for indigenous peoples. The proposed project categorization has been reconfirmed by an experienced environment and social safeguards consultants who have already visited all sites.

¹A detailed Environmental and Social Management Framework (ESMF) has been prepared in line with ADB's Safeguards Policy Statement (SPS), 2009, to guide the executing agency and implementing agencies in mainstreaming environmental and social concerns into the design and implementation phases of HPSDP.

5. One MCC as part of HPSPDP has been planned at Bilaspur. This MCC is planned on unencumbered land owned by GOHP. This MCC will provide the needy youth counseling for career development and assistance in placement after gaining skills. There will be construction of one new block. The MCC building will be a three floor building including basement, ground and first floor with a total built up area around 241.49 m². The basement floor will have store, Chowkidar Room and Toilet. The ground floor will have reception, IT Room, Career Counseling Room, Office, Superintendent Room, Regional Employment Room, Toilet, etc. The first floor will have record room, Pantry room, Individual Counseling Rooms (2 nos.), Statistical Assistant Room, Toilet and Employment Officer Room. Already existing septic tank will be utilized. The total electricity load has been estimated as 15 kW. Water consumption has been estimated as 10,000 liters per day. Water source will be from the municipal supply. The solid waste generated will be integrated with the waste disposal system at Bilaspur. The civil cost for MCC has been estimated as INR 31.81 million.

6. The architectural expression of the MCC building is in harmony with the local style of Himachal Pradesh as well as the existing building. The building will be suitable for cool weather, with a long rainy season. The MCC will be barrier-free. There will be ramps and specially designed toilets to make it easy for people with disabilities. The MCC building will have adequate number of modern sanitation and drinking water facilities. Concrete gutters at the end of steel sheeting roofs will direct the rain water to underground rain water harvesting tank proposed. The clean rainwater runoff can be re-used for horticultural purposes and recharging the ground water.

7. The enclosed **initial environment examination (IEE) report** provides details about the MCC site, the potential environmental impact of the civil works, and suggests ways of mitigating and addressing these.² Since the MCC site is within the built up area of Bilaspur city, therefore there is no existence of any protected, reserved or revenue forest areas nearby. There is no natural stream or river near the sub-project site. The MCC site is on undulating terrain. There are no protected areas (national parks, bird sanctuaries, tiger reserves, etc.), wetlands, mangroves, or estuaries in or near the sub-project location. Therefore, there are no ambient air quality and noise level issues.

8. Since the MCC building will be small in size for providing counseling and assistance to job seekers, construction of the building and its operations are unlikely to cause any significant impacts. These routine and localized effects associated with construction and operation of the new building can be mitigated easily by following the measures laid down in the Environment **Management Plan (EMP)** included in the IEE. The EMP will be included in civil work bidding and contract documents. **The IEE confirms that Bilaspur MCC sub-project is of environment category “B” as per ADB SPS 2009 categorization.** No further special study or detailed environmental impact assessment (EIA) needs to be undertaken to comply with ADB SPS, 2009 or Government of India EIA Notification, 2006.

9. HPKVN and PWD will be responsible for overall planning and implementation of the civil works. They will ensure that the ESMF is followed during project implementation. The Project Management Consulting (PMC) firm engaged under the loan has experienced Environment and Social Safeguards specialists. They assist HPKVN and PWD in

²Local stakeholders were involved in developing the IEE through discussions on-site and public consultation. Their views were incorporated into the IEE, and the design of the sub-project. The IEE will be made available at public locations in the town such as Municipal office building, district administration office. It will be disclosed to a wider audience via the ADB, DOUD, and HPKVN websites.

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supervising the civil works, ensuring that the IEE and EMPs are prepared for all sub-projects, and preparing semi-annual safeguards monitoring reports as required by ADB.

I. INTRODUCTION

A. Background

1. **Location.** The sub-project comprises of establishment of one MCC at Bilaspur city. The Bilaspur city is the district headquarters of Bilaspur district in Himachal Pradesh. The latitude and longitude of the Bilaspur MCC site are given below:

Sl. No.	Name of Facility	Latitude	Longitude
1	MCC at Bilaspur	31° 20' 15.0792" N	76° 45' 42.1848" E

2. The nearest rail head at Kiratpur is 62 km away from MCC site. The Bilaspur city is well connected with important destinations such as Shimla, Chandigarh and Delhi. The distances of important destinations is given below:

Sl. No.	Subproject Location	Altitude (m)	District	Distance from site (km)
1.	MCC Bilaspur	549	Bilaspur	Sunder Nagar : 43 km Hamirpur : 59 km Shimla Airport : 93 km Kullu Airport : 125 km Chandigarh Airport : 135 km Mandi : 50 km New Delhi : 376 km Shimla : 86 km Ambala : 161km Kiratpur Sahib (Punjab) : 61.km

3. The MCC site is owned by Department of Labor and Employment (DOLE). The Bilaspur district lies between the parallels of 31°18'00" to 31°55'00" North and 75°55'00" to 76°28'00" East.

4. .

5. **Present Status of Site.** The subproject site is has undulating terrain. The subproject site is vacant land behind the existing building. There are no permanent or temporary structures on the site. There are also no trees. There are some small shrubs. The photographs of sub-project site are shown below in **Figure-1**.

Figure-1: Photographs of Subproject Site



MCC Site Photograph showing National Highway
Close to Site



Another View of MCC Site



MCC Site Photograph Showing Undulating
Nature



MCC Site Showing Presence of Shrubs

B. Compliance with India's Environmental Regulatory Framework

6. India's environmental rules and regulations, as relevant for the Bilaspur MCC are shown in **Table 1**. The Environmental Impact Assessment (EIA) notification, 2006 by the Ministry of Environment, Forests and Climate Change (MOEFCC, GOI) specifies the requirements for mandatory environmental clearances. All projects and activities are broadly categorized into two categories—category 'A' and category 'B', based on the spatial extent of potential impacts on the environment, human health, and natural and man-made resources.³ However, MOEFCC's Office Memorandum (F. No. 19-2/2013-IA- III), dated June

³ All projects or activities included as Category 'A' in the Schedule, including expansion and modernization of existing projects or activities and change in product mix, will require prior environmental clearance from the Central Government in the Ministry of Environment, Forests and Climate Change (MoEFCC) on the recommendations of an Expert Appraisal Committee (EAC) to be constituted by the Central Government for the purposes of this notification; All projects or activities included as Category 'B' in the Schedule, including expansion and modernization of existing projects or activities as specified in sub paragraph (ii) of paragraph 2, or change in product mix as specified in sub paragraph (iii) of paragraph 2, but excluding those which fulfill the General Conditions stipulated in the Schedule, will require prior environmental clearance from the State/Union territory Environment Impact Assessment Authority (SEIAA). The SEIAA shall base its decision on the recommendations of a State or Union territory level Expert Appraisal Committee (SEAC) as to be constituted for in this notification. In addition, General Condition (GC) of the notification specifies that any project or activity

09, 2015, and exempts all educational and training institutes from obtaining prior environmental clearance. Since all the training facilities to be constructed or upgraded under HPSPDP, including MCC Bilaspur, are meant for educational and training purposes, they will not require any prior environmental clearances according to the environmental rules and regulations of India. Further, as shown in **Table 1**, most other rules pertaining to India's regulatory framework such as Ancient Monuments and Archaeological Sites and Remains Act, 1958; the Wildlife (Conservation) Act, 1972, amended in 2003 and 2006; and the Forest (Conservation) Act, 1980, will also not apply to MCC Bilaspur subproject. Only some permission will be required from the Himachal Pradesh State Pollution Control Board for the construction phase of the sub-project.

Table-1: Environmental Regulatory Compliance

Sub-Project	Applicability of Acts/Guidelines	Compliance Criteria
Construction of MCC at Bilaspur	The EIA notification, 2006 (and its subsequent amendments till date) provides for categorization of projects into category 'A' and 'B', based on extent of impacts.	The sub-project is not covered in the ambit of the EIA notification (amended till date), either as a Category 'A' or Category 'B' project. As per the Office Memorandum dated June 09, 2015 of MOEFCC, educational and training institutions are exempted from prior environmental clearance. As a result, the categorization, and the subsequent environmental assessment and clearance requirements, either from the state or the GOI, are not triggered. Not Applicable
	The Ancient Monuments and Archaeological Sites and Remains Act, 1958, and the rules, 1959 provide guidance for carrying out activities including conservation, construction and reuse in and around the protected monuments.	The MCC Bilaspur site is not close to any monument which is protected by the Archaeological Survey of India (ASI). Hence, no clearance is needed from ASI. Not Applicable
	Water (Prevention and control of pollution) Act, 1974 and Air (prevention and control of pollution) Act, 1981	Consent for Establishment (CFE) and Consent for Operation (CFO) from the State Pollution Control Board will be required during construction for installation of diesel generator set, hot mix plant, and concrete batching plant. For the operation phase, no CFO will be required. Applicable only for Construction Phase

specified in Category 'B' will be treated as Category A, if located in whole or in part within 10 km from the boundary of: (i) Protected Areas notified under the Wild Life (Protection) Act, 1972, (ii) Critically Polluted areas as notified by the Central Pollution Control Board from time to time, (iii) Notified Eco-sensitive areas, (iv) inter-State boundaries and international boundaries

Sub-Project	Applicability of Acts/Guidelines	Compliance Criteria
	The Wildlife Conservation Act, 1972, amended in 2003 and 2006, provides for protection and management of Protected Areas.	No wildlife protected areas within 15 km aerial distance from the MCC site. Not Applicable
	Forest (Conservation) Act, 1980	This act provides guidelines for conservation of forests and diversion of forest land for non-forest use. It describes the penalties for contravention of the provisions of the Act. If forest land has to be acquired for the project, clearance is required from the Forest Department. In the current case land to be used is not forest land. Not Applicable

C. Asian Development Bank's Environmental Safeguard Policy Principles

7. Since the proposed HPSPDP is being funded by the ADB, it has to comply with ADB's SPS, 2009, in addition to the India's own environmental laws and regulations. The environmental safeguard policy principles embodied in SPS, 2009 aim to avoid adverse impacts on the environment and on affected people or communities; minimize, mitigate and/or compensate for adverse project impacts, if unavoidable; help borrowers to strengthen their safeguard systems and to develop their capacity in managing the environmental and social risks. The SPS, 2009 categorizes all projects into 3 environmental categories (A, B or C) based on their potential impacts⁴. Similarly, ADB's REA checklist method was followed to assess the potential impact of the proposed MCC sub-project (**Annexure-1**). As explained below, the subproject has been categorized as 'B'. Accordingly, this IEE has been prepared to address the potential impacts in line with the requirements for category 'B' project. The IEE is based mainly on baseline data generation on environmental parameters and secondary sources of information and field reconnaissance surveys. Stakeholder consultations at all the three sites are an integral part of the IEE. An Environmental management plan (EMP) outlining the specific environmental measures to be adhered to during implementation of the sub-project is included in the IEE.

D. Review and Approval Procedure

8. For Category 'B' projects, the draft environmental status report is reviewed by the

⁴ As per SPS 2009, projects are assigned to one of the following four categories: (i) **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 environmental impact assessment is required. (ii) **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. (iii) **Category C**. A proposed project is classified as category C if it is likely to have minimal or no adverse environmental impacts. No environmental assessment is required although environmental implications need to be reviewed (iv) **Category FI**. A proposed project is classified as category FI if it involves investment of ADB funds to or through a FI (paras. 65-67).

relevant ADB Departments and the Executing Agency. Additional comments are incorporated into the final documents as relevant. These are reviewed by the Executive Agency and ADB safeguards team. The Executing Agency then officially submits the IEE report to ADB for consideration by the Board of Directors. The final report is made available worldwide by ADB, via the depository library system and the ADB website.

E. Report Structure

9. This Report contains eight sections including this introductory section: (i) Introduction; (ii) description of sub-project components; (iii) description of the existing environment around the sub-project; (iv) environmental impact and mitigation measures; (v) EMP; (vi) Public Consultation and information disclosure; (vii) findings and recommendations; and (viii) conclusions.

II. DESCRIPTION OF THE PROJECT COMPONENTS

A. Components of the Sub-project

10. The location of the sub-project site and surroundings are shown in **Figures 2 and 3**. **Table -2** summarizes the need for the sub-project, and is proposed components.

Figure-2: Location of MCC Site at Bilaspur



Figure-3: Location of MCC Sub Project Site

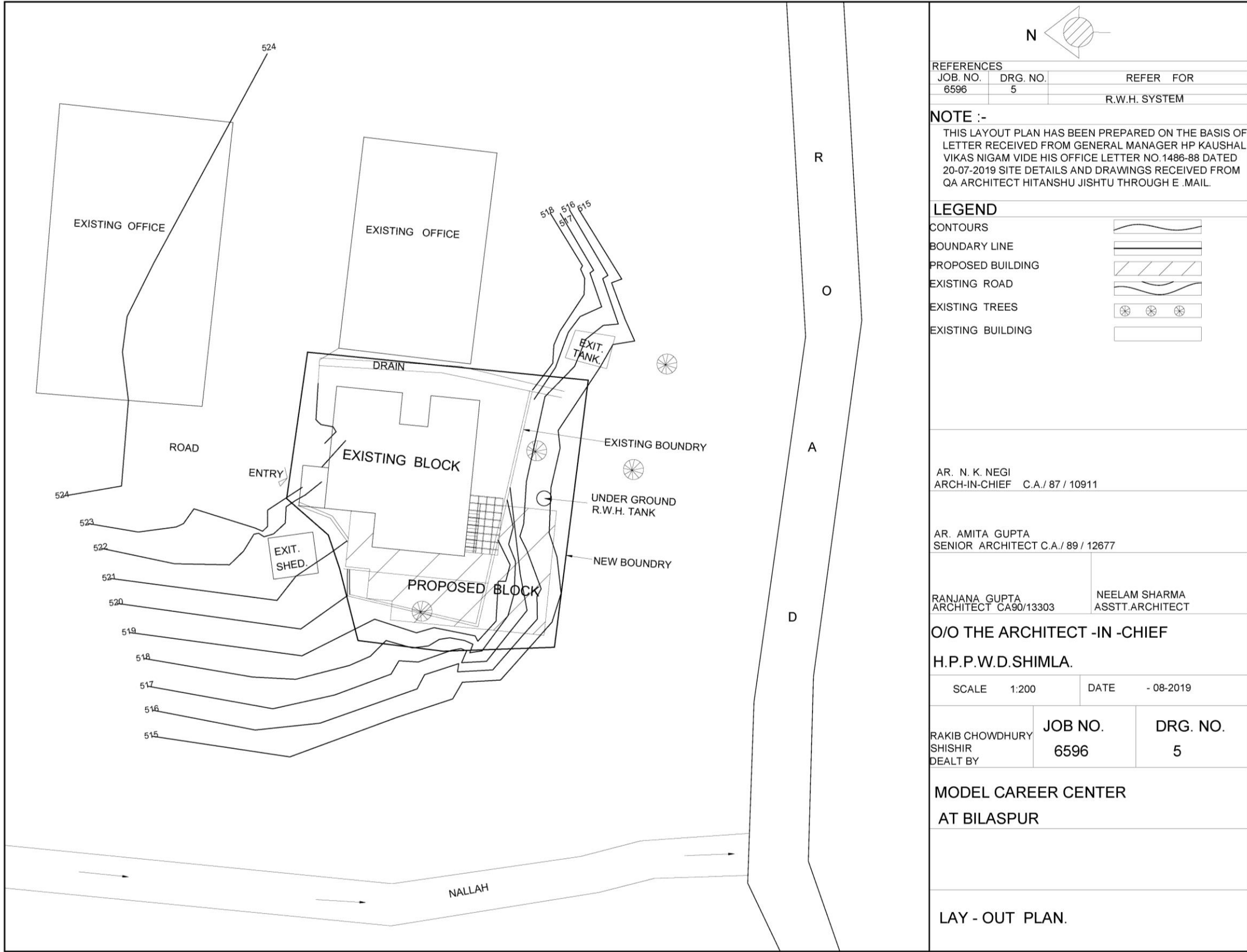


Table-2: Description of the Sub-project Components

Description	Need of the Project	Proposed Components
MCC at Bilaspur	<ul style="list-style-type: none"> Himachal Pradesh lacks the required number of good quality facilities for imparting technical and vocational education training (TVET) to the <i>Himachali</i> youth. The proposed MCC at Bilaspur will provide the skilled youth of Bilaspur district counseling for career opportunities and facilitation of employment in industry through interviews facilitation. The records of employed youth will also be maintained. 	<p>The main sub-project components include:</p> <ol style="list-style-type: none"> The MCC building will be a three floor building including basement, ground and first floor with a total built up area around 242 m². The basement floor will have store, Chowkidar Room and Toilet. The ground floor will have reception, IT Room, Career Counseling Room, Office, Superintendent Room, Regional Employment Room, Toilet, etc. The first floor will have record room, Pantry room, Individual Counseling Rooms (2 nos.), Statistical Assistant Room, Toilet and Employment Officer Room. Already existing septic tank will be utilized. Total built up area on all floors is about 241.49 m². Solar panels will be installed on the roof. They will have the potential to generate a minimum of 3 kVA of power at each location. The total electricity load has been estimated as 25 kW. Water consumption has been estimated as 10,000 liters per day. Water source will be from the municipal supply. The solid waste generated will be integrated with the waste disposal system at Bilaspur. The civil costs for MCC has been estimated as INR 31.81 million

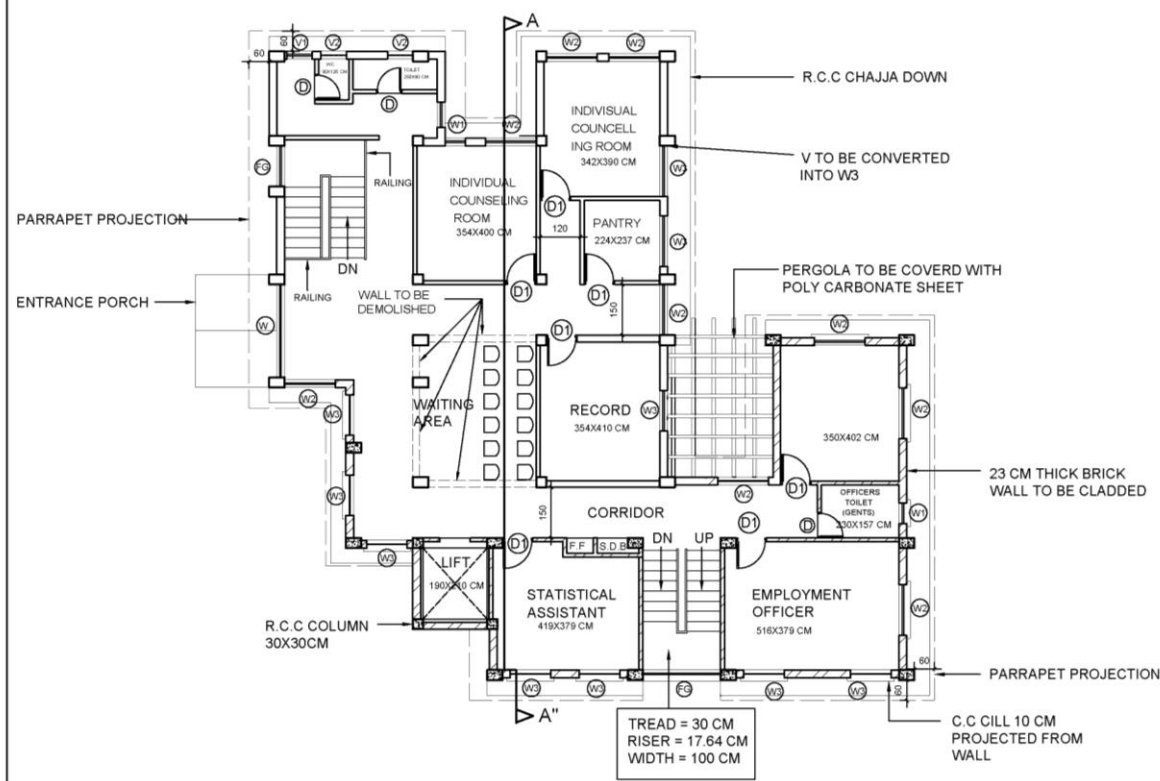
11. The layout plan of MCC Bilaspur is shown below in **Figure-4**.

Figure-4: Layout Plan of MCC Bilaspur

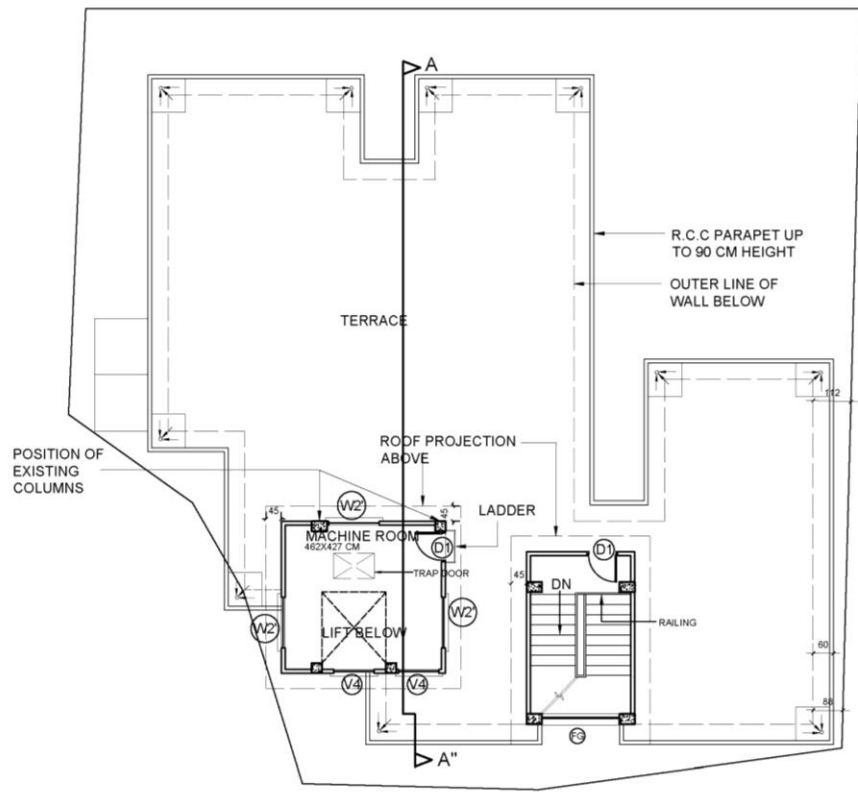




RIGHT SIDE ELEVATION



FIRST FLOOR PLAN



MACHINE ROOM/TERRACE PLAN

REFERENCES :-

DRG. NO.	JOB NO.	REFER FOR
6-7	6596	WORKING DRAWING

LEGEND

PROPOSED WALL	
PROPOSED COLUMN	
EXISTING WORK	
WALL TO BE DEMOLISH	

AR. N.K. NEGI
ARCHITECT - IN - CHIEF (C.A./ 87/ 10911)

AR. AMITA GUPTA
SENIOR ARCHITECT (CA/ 89/ 12677)

AR. RANJANA GUPTA
ARCHITECT C.A. / 90 / 13303

NEELAM SHARMA
ASSTT. ARCHITECT.

O/O THE ARCHITECT - IN - CHIEF
H.P. .P.W.D. NIRMAN BHAWAN, SHIMLA-2

SCALE - 1:100

DATED :- -08- 2019

RAKIB CHOWDHURY
SHISHIR
DELT BY

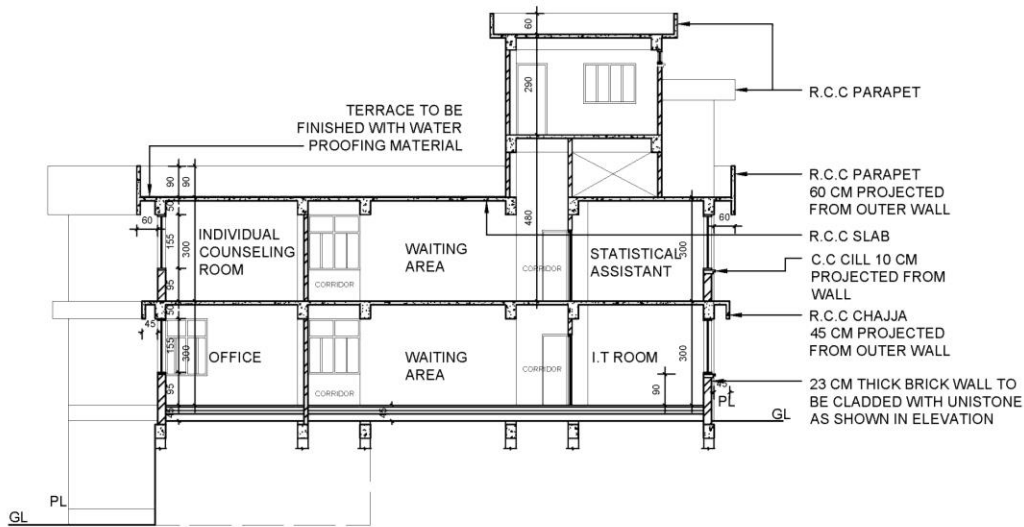
JOB NO.
6596

DRG NO.
7

MODEL CAREER CENTER AT
BILASPUR

WORKING DRAWING (ADDITION AND
ALTERATION)

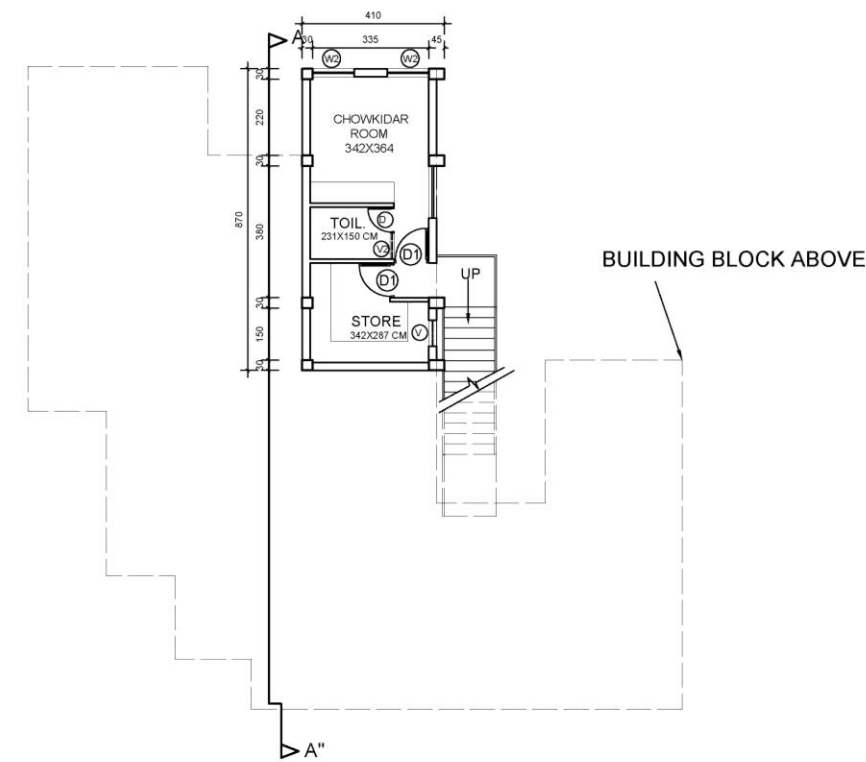
1ST FLOOR, MACHINE ROOM/TERRACE
PLAN AND ELEVATION



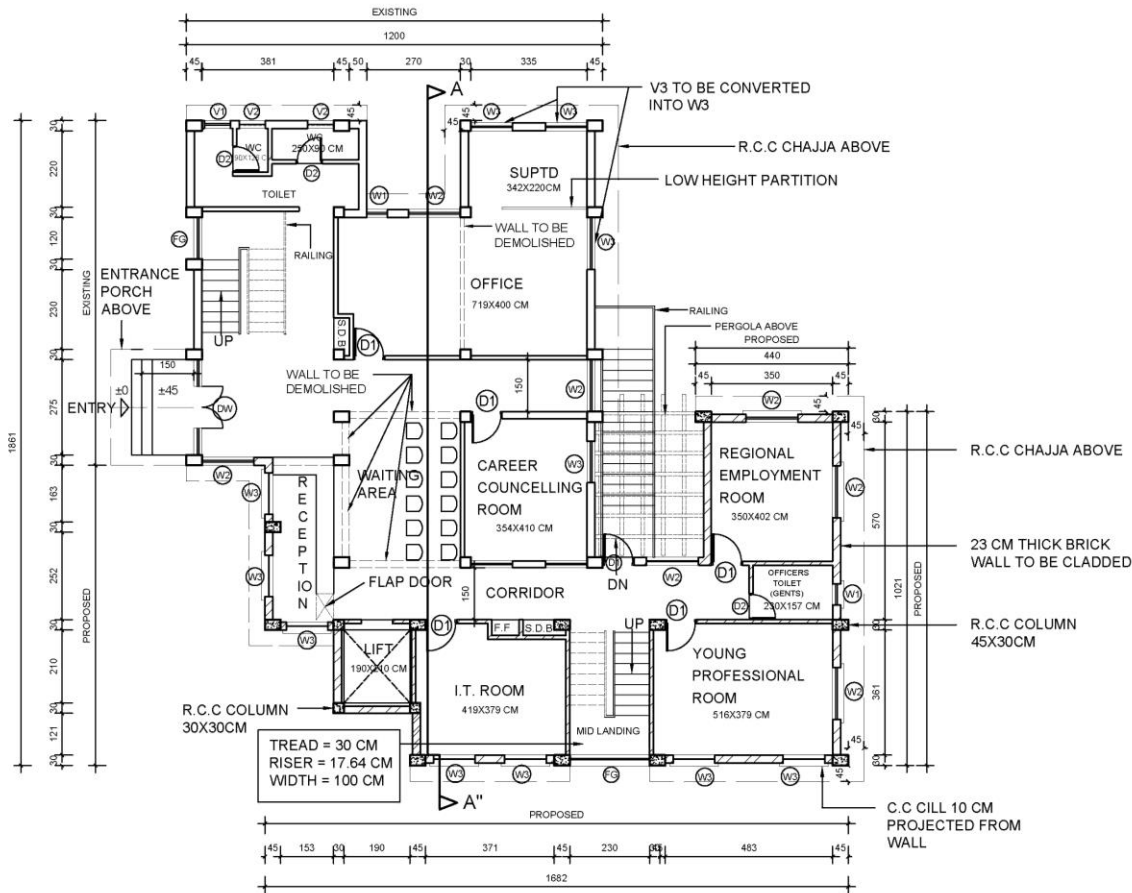
SECTION AT A-A"



FRONT ELEVATION (ENTRANCE SIDE ELEVATION)



BASEMENT PLAN



GROUND FLOOR PLAN

AREA CHART

PROPOSED = 110.43 SQM
EXISTING = 131.49 SQM
TOTAL = 241.49 SQM

REFERENCES :-

DRG. NO.	JOB NO.	REFER FOR
6-7	6596	WORKING DRAWING

SCHEDULE OF DOOR'S, WINDOWS & VENTS

TYPE	W	H	C/L	L/L	DESCRIPTION
DW	270	250		250	DOOR CUM WINDOW
D1	90	205		205	PANELLED DOOR SINGLE HUNG
D	75	205		205	DO
W	270	160	90	250	GLAZED WINDOW PARTLY FIXED, PARTLY OPENABLE. CILL HT. 90 CM
W1	60	160	90	250	GLAZED WINDOW, CILL HT. 90 CM
W2	150	160	90	250	GLAZED WINDOW PARTLY FIXED, PARTLY OPENABLE. CILL HT. 90 CM
W3	120	160	90	250	PARTLY FIXED, PARTLY OPENABLE. CILL HT. 90 CM
V	270	45	205	250	VENT TOP HUNG. CILL HT. 205 CM
V1	60	45	205	250	DO
V2	90	45	205	250	DO
V3	120	45	205	250	DO
V4	120	40	205	250	DO
FG	230	240	30		
W2'	150	115	90	205	GLAZED WINDOW PARTLY FIXED, PARTLY OPENABLE. CILL HT. 90 CM

NOTE:
THIS DRAWING HAS BEEN PREPARED ON THE BASIS OF LETTER RECEIVED FROM GENERAL MANAGER H.P. KAUSHAL VIKAS NIGAM VIDE HIS OFFICE LETTER NO. 1486-88 DT. 20/07/2019 AND DRAWINGS RECEIVED FROM QA ARCHITECT HITANSHU JISHTU.

AR. N.K. NEGI
ARCHITECT - IN - CHIEF (C.A. / 87/ 10911)

AR. AMITA GUPTA
SENIOR ARCHITECT (CA/ 89/ 12677)

AR. RANJANA GUPTA
ARCHITECT C.A. / 90 / 13303

NEELAM SHARMA
ASSTT. ARCHITECT.

O / O THE ARCHITECT - IN - CHIEF
H.P. P.W.D. NIRMAN BHAWAN, SHIMLA-2

SCALE - 1:100

DATED :- -08- 2019

RAKIB CHOWDHURY
SHISHIR
DELT BY

JOB NO.
6596

DRG NO.
6

MODEL CAREER CENTER AT
BILASPUR

WORKING DRAWING (ADDITION AND
ALTERATION)

BASEMENT, GROUND FLOOR PLAN,
FRONT ELEVATION AND SECTION.

B. Executing and Implementing Agencies

12. The Department of Technical Education (DOTE), GOHP, is the executing agency for the proposed HPSPDP. The *Himachal Pradesh Kaushal Vikas Nigam* (HPKVN), the Department of Technical Education, Vocational & Industrial Training (DTE), Department of Higher Education (DOHE), and the Public Works Department (PWD) are the implementing agencies. HPKVN operates as the project management unit (PMU) for the overall project. For the civil works component, it will be assisted by PWD officials who are well aware of the states and India's building codes and environmental rules and regulations. HPKVN and PWD are responsible for overall planning and implementation of the civil works. They ensure that the ESMF is adhered to during project implementation. The Project Management Consulting (PMC) firm engaged under the loan has experienced Environment and Social Safeguards specialists. They assist PWD and HPKVN in supervising the civil works, ensuring that the IEEs and EMPs are prepared for all sub-projects, and also in preparing semi-annual safeguards monitoring reports. HPKVN consolidates the semi-annual reports, and submit them to ADB. ADB discloses the environmental monitoring reports on its website.

C. Implementation Schedule

13. The implementation period for proposed sub-projects is 24 months. The preliminary drawings for MCC have been prepared for approval and these have been approved. The bidding process for the sub-project will be started by December 2019. The sub-projects will be awarded for construction by March 2020. The contractor(s) is expected to be mobilized to site by April 2020 and construction works of sub-project will begin in May 2020 and work will be completed by July 2022.

III. DESCRIPTION OF THE EXISTING SUB-PROJECT ENVIRONMENT

14. This section presents a brief description of the existing environment around the sub-project site 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 sub-project are presented in this section. Secondary information was collected from relevant government agencies like the Forest Department, State Environment Department, and State Pollution Control Board, and Meteorological Department.

A. Environmental Profile

Air and Noise Quality

15. No major air pollution sources have been seen in the surroundings of MCC site as this is located in urban and residential area of Bilaspur city. The subproject site is close to National Highway. There are no industrial emissions in the surroundings of MCC site. In order to record baseline ambient air quality, data published by Himachal Pradesh State Pollution Control Board and Central Pollution Control Board for the locations closest to the MCC site have been referred. This data is available for Sunder Nagar at about 50 km from the project site. The data for ambient air quality has been given in **Table-3** and **Table-4**. It is clear from these tables that ambient air quality is well within the limits in respect of SO₂ and NO_x, but PM₁₀ levels are exceeding the limits. The data has also been referred from the past EIA study conducted and approved by the MoEFCC for the Kiratpur – Bilaspur section of NH-21. The air quality data for Bhardi village near Bilaspur town (at about 10 km distance) has been given in **Table-5**. It is clear that values are well within the limits at this location. At sub-project site AAQ is expected to be within the stipulated limits.

Table-3: Ambient Air Quality Data for Project Area Published by Central Pollution Control Board

Sl. No.	Location	Measured Value Range	Parameter		
			SO ₂	NO _x	PM ₁₀
1	HPSPCB, BBMB Colony, Sunder Nagar	Minimum	2	5	32
		Maximum	2	21	328
		Average	2	9	87
2	Municipal Council Office on NH-21, Sunder Nagar	Minimum	2	5	28
		Maximum	2	23	195
		Average	2	13	102
3	Applicable National Ambient Air Quality Standards		80	80	100
* BDL- Below Detection Limit Source: Ambient Air Quality , Published by CPCB for the year 2012					

Table-4: Ambient Air Quality Data for Project Area Published by Himachal Pradesh State Pollution Control Board for January 2017

Sl. No.	Location	Measured Range	Value	Parameter (ug/m3)		
				SO ₂	NO _x	PM ₁₀
1	HPSPCB, BBMB Colony, Sunder Nagar	Minimum		2	4.5	30
		Maximum		2	20.84	220
		Average		2	14.35	85
2	Municipal Council Office on NH-21, Sunder Nagar	Minimum		2	4.5	44
		Maximum		2	32.75	211
		Average		2	14.35	104
3	Applicable National Ambient Air Quality Standards			80	80	100
<i>* BDL- Below Detection Limit</i> <i>Source: Ambient Air Quality and Noise Levels, Published by Himachal Pradesh State Pollution Control Board</i>						

Table-5: Ambient Air Quality Data for Project Area from Past EIA study

Sl. No.	Location	Measured Range	Value	Parameter (ug/m3)		
				SO ₂	NO _x	PM ₁₀
1	Bhardi Village near Bilaspur Town (6 km from site)	Average		10.41	21.48	70.33
2	Applicable National Ambient Air Quality Standards			80	80	100
<i>* BDL- Below Detection Limit</i> <i>Source: Ambient Air Quality and Noise Levels, Monitored in EIA study of NH-21 Section from Kiratpur to Bilaspur, Year 2012</i>						

Table-6: Ambient Noise Levels in Project Area

Sl. No.	Location	Noise Levels dB(A)	
		Day	Night
1	Bhardi Village near Bilaspur Town (6 km from site)	52.8	42.50
2	Applicable Noise Level Standards	55	45
<i>Source: Ambient Air Quality and Noise Levels, Monitored in EIA study of NH-21 Section from Kiratpur to Bilaspur, Year 2012</i>			

16. Noise levels data is not available for the sub-project site. The data for this has also been referred for the nearest location available. This data has been given in **Table-6** above. It is clear from this table that values are well within the stipulated limits. At sub-project site also, the noise levels are expected to be well within the stipulated limits as there are no commercial or industrial activities in the surroundings of the site.

17. In order to have site specific Ambient air quality monitoring and noise levels data,

monitoring will be conducted by the contractor prior to start of construction works with the aim of establishing baseline conditions.

18. **Climate.** The climate of the sub project area is generally sub-tropical but changes into temperate in a few places on the top of upper hill ranges. The summers are invariably hot, temperature rising to 42°C at some places. And it falls down to 30°C soon after the monsoons. Temperature varies from minimum of 5°C in winter to the maximum of 42°C in summer. The winters start from October to February and are characterized by heavy frost in the lower hills and valleys and a light snowfall during January and February at high reaches. Once during January 1945 the snowfall occurred extensively over the district down to 490 m. The valleys and the Gobind Sagar Lake become full of dense fog during January-February and the fog sometime persist even upto, mid-day at Bilaspur. A cold night breeze also blows down the Sutlej valley at certain places during the small hours of the morning.

19. Summers starts from March onwards and lasts up to middle of June. The weather is hot and humid. This is also the period of severe drought. The days in the month of May and June are very hot and dry. Occasional thunderstorms break the dry spell. Growth period also starts from the beginning of this season. The temperature during winter comes down to less than 2°C.

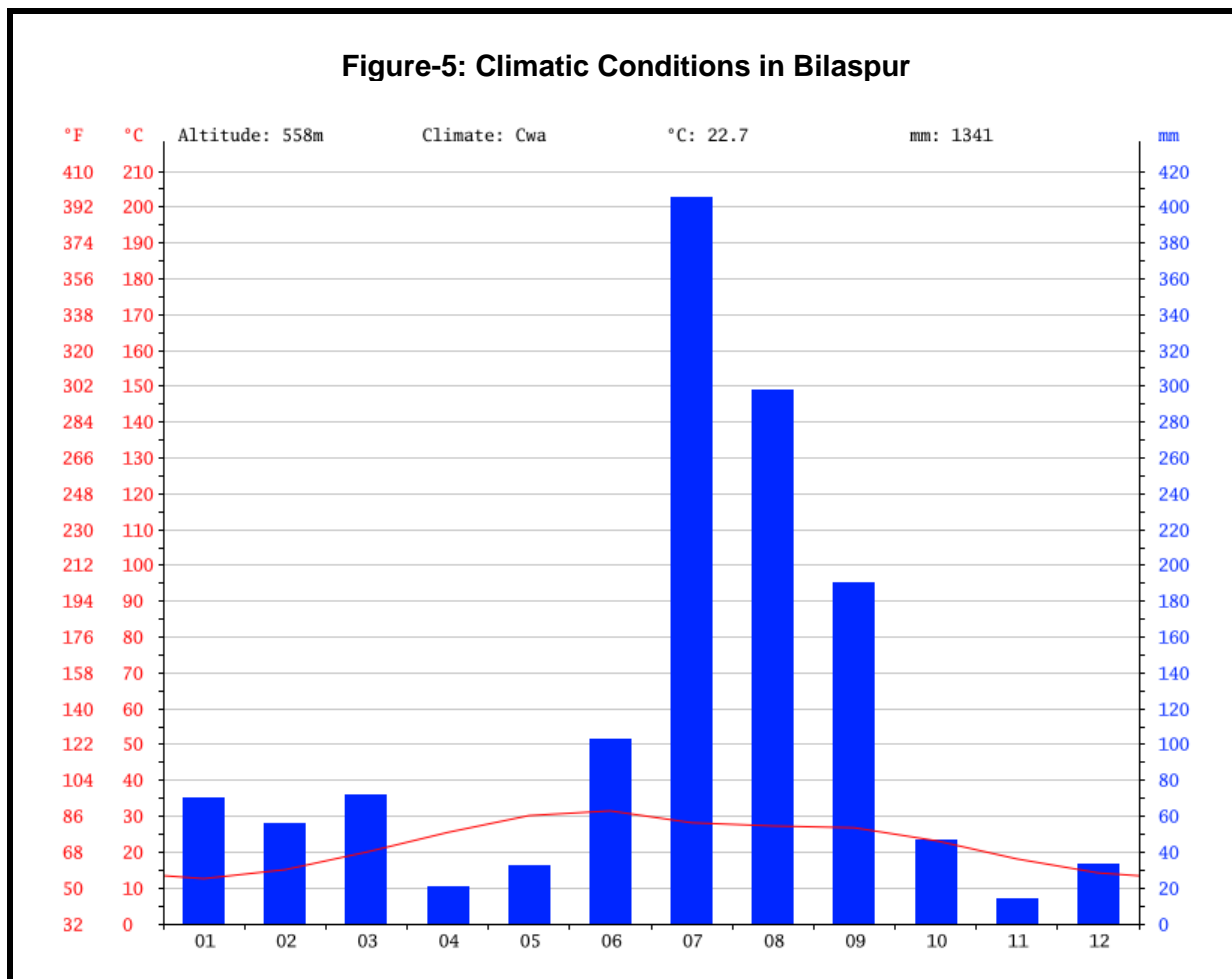
20. Rainfall in Bilaspur varies from 1000 mm to 1800 mm, 70% of which is received during the monsoon months. The annual average rainfall in the area is about 1106.28 mm and about 81.5% rainfall occurs during monsoon period.

21. The **Table-7** below shows month wise weather conditions at Bilaspur.

Table-7: Climatic Conditions in Bilaspur District

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average Temperature (°C)	12.6	15.1	20	25.5	30.2	31.5	28.2	27.3	26.8	23.2	18.1	14.2
Minimum Temperature (°C)	6.7	8.9	13.5	18.3	23.2	25.5	24.3	23.7	22.1	16.8	10.8	7.6
Maximum Temperature (°C)	18.5	21.4	26.5	32.7	37.3	37.6	32.2	31	31.6	29.7	25.5	20.8
Average rainfall /Precipitation (mm)	70	56	72	21	32	103	405	298	190	47	14	33
Source: ' https://www.worldweatheronline.com/ ' title='Historical average weather'>Data (Year 2018)												

22. **Rainfall.** The sub-project area experiences maximum rainfall during Monsoon season from June to September while as least Rainfall is received in November and April months. There has not been any snowfall at Bilaspur after 1945. The monthly average rainfall is around 1350 mm. The climatic conditions for Bilaspur have been depicted in **Figure-5** below:

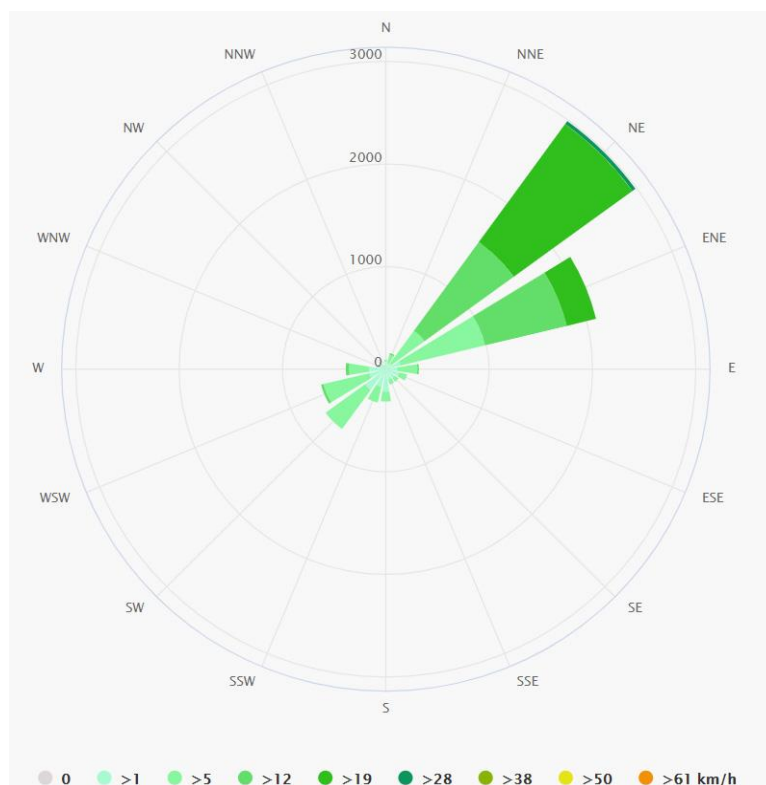


Source: '<https://www.worldweatheronline.com/>' title='Historical average weather'>Data (Year 2018)

23. **Humidity.** Based on long-term climatologically data of the Bilaspur district, it is found that relative humidity increases rapidly with the onset of monsoon and reaches maximum (around 85% in the morning and 84% in the evening) during August, when peak monsoon period sets in. Relative humidity is the minimum during the summer months (from April to June) with May being the driest month (40% in morning and 33% in evening). Skies are heavily clouded during the monsoon months and for short spells when the project area is affected by Western Disturbances.

24. **Wind Speed and Directions.** Generally, light to moderate winds prevail throughout the year with speed ranging from 1 to 19 kmph. Winds were light and moderate particularly during the morning hours, while during the afternoon hours the winds were stronger. The annual wind rose diagrams based on IMD long term data (from IMD Sunder Nagar observatory- nearest to the site) have been given below in **Figure-6**. It is clear from these wind rose diagrams that most predominant wind direction is NW in the morning and SW in the evening. The most predominant wind speed range in project area is 1-5 kmph. Calm conditions (wind speed <1 kmph) prevail in morning and night hours.

Figure-6: Annual Wind Rose Diagram for Subproject Region



Source: '<https://www.worldweatheronline.com/>' title='Historical average weather'>Data (Year 2018)

Topography and Soils

25. The subproject site is a plain land. The elevation of subproject site is 549 m above mean sea level (amsl). The topography of Bilaspur district is part of Himalayan system. The topography of Bilaspur District is criss-crossed by medium to low hills and deep valleys. The highest point is called Dhar Bahadurpur, which is at 6,738 ft. amsl, and the lowest point is about 1,000 ft. from sea level. The district has been divided into seven Dhars (hills); the major Dhar (hill) is Naina Devi where the “Kot Kahlu”, the ancient capital of the State is situated.

26. Two types of soils are observed in the district viz, alluvial soil and non-calcic brown soil. Most of the area in the district is covered with alluvial soil and only hilly area in the district is covered with non-calcic brown soil. Soils are rich in nutrients and are fertile. The soil reaction is slightly acidic to neutral and texture in general varies from loam to sandy loam, except in low valley areas being heavy textured. At the sub project site at Bilaspur, the soils are brown in color.

27. Depth of the soil varies from 50 to 100 cm. But despite this, all the agro climatic conditions provide a range of potentialities for growing cash crops like, off season vegetables, seed potatoes, pulses and temperate fruits.

Surface water and Ground water

28. The MCC site at Bilaspur is in Satluj River catchment. The Satluj River is at about

0.5 km distance from MCC Bilaspur site. To establish baseline scenario, ground water quality data was obtained from the Central Ground Water Board. This water quality data relevant for the sub -project site is given below in **Table-8**.

Table-8: Ground Water quality in Sub-Project Area for Bilaspur District

Parameter	pH	EC μS/cm at 25°C	Cl	NO ₃	F	Ca	Mg	Na	K	Total Hardness as CaCO ₃
Min	7.43	190	7	6	0	20	5	2	2	80
Max	8.20	965	167	95	0.30	122	46	70	9.4	465
Drinking Water Quality Standards	6.5- 8.5	No limit specified	1000	45	1.5	200	100	No limit specified	No limit specified	600

Source: Ground Water Information Booklet Bilaspur District Himachal Pradesh -Central Ground Water Board (Year-2013)

29. Due to the absence of any water polluting sources in the sub project site and surroundings, it is clear that all parameters of water quality are within the permissible limits, specified by Bureau of Standards (BIS), for drinking and irrigation. The water quality monitoring will be conducted by the contractor prior to the start of construction works. The maps showing hydrogeology of Bilaspur district has been given in **Figure -7**.

30. CGWB has drilled 6 exploratory wells in the district in the depth range of 31.8 to 115 m below ground level (bgl). Static water level ranges from 3.35 to 36.55 m bgl and discharge ranges from 7.7 to 20.75 iiter per second (lps) with a drawdown of 2.6 m to 11.11 m.

31. Since Satluj is the only river of significance in the subproject region so water quality data of this river was collected from secondary sources. This data has been given below in **Table-9**. It is clear that River water parameters are well within stipulated standards for drinking water quality.

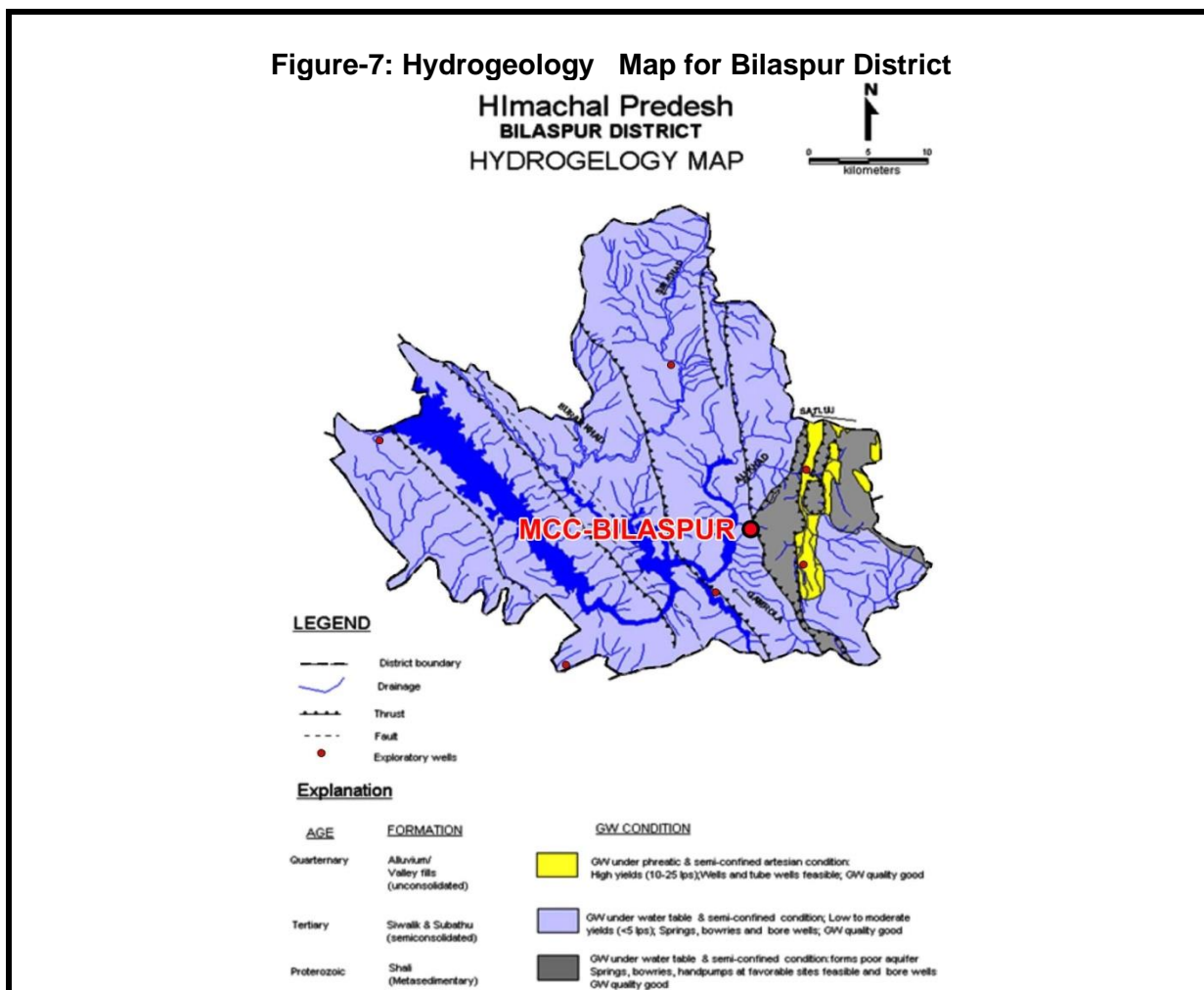
Table-9: Satluj River Water quality in Sub-Projects Region

Sl. No.	Parameter	Unit	Value	Permissible Limit as per Drinking Water Standards
1	Color	Hazen	<5.0	25
2	Odor	Unobjectionable	Unobjectionable	-
3	Taste	Agreeable	Agreeable	-
4	Turbidity	NTU	3.3	10
5	pH	-	7.55	6.5 to 8.5
6	Total Hardness	mg/l	80.0	600
7	Chloride (as Cl)	mg/l	23.82	1000
8	Total Iron (as Fe)	mg/l	0.26	1.0
9	Phosphate	mg/l	0.15	-
10	Boron (as B)	mg/l	0.25	5
11	Calcium (as Ca)	mg/l	18.43	200
12	Alkalinity (as CaCO ₃)	mg/l	39.6	-

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Sl. No.	Parameter	Unit	Value	Permissible Limit as per Drinking Water Standards
13	Fluoride (as F)	mg/l	0.59	1.5
14	Sulphate (as SO ₄)	mg/l	14.70	400
15	Total Dissolved Solids (TDS)	mg/l	118	2000
16	Nitrate (as NO ₃)	mg/l	2.45	100
17	Magnesium (as Mg)	mg/l	8.30	30
18	BOD (3 Days at 27°C)	mg/l	<2.0	-
19	COD (as O ₂)	mg/l	6.90	-
20	Electrical Conductivity	Umhos/cm	187.0	-
21	Total Coliform	MPN/100 ml	58.0	-
22	F. Coliform	MPN/100 ml	12.0	-
23	E. Coli	MPN/100 ml	Absent	-
24	Sodium Absorption Ratio	Meq/l	<1.0	-

Source: Water Quality Monitored in EIA study of NH-21 Section from Kiratpur to Bilaspur, Year 2012



Source: Government of India, Ministry of Water Resources, Central Ground Water Board- Ground Water Information Booklet Bilaspur District. New Delhi (Year -2013)

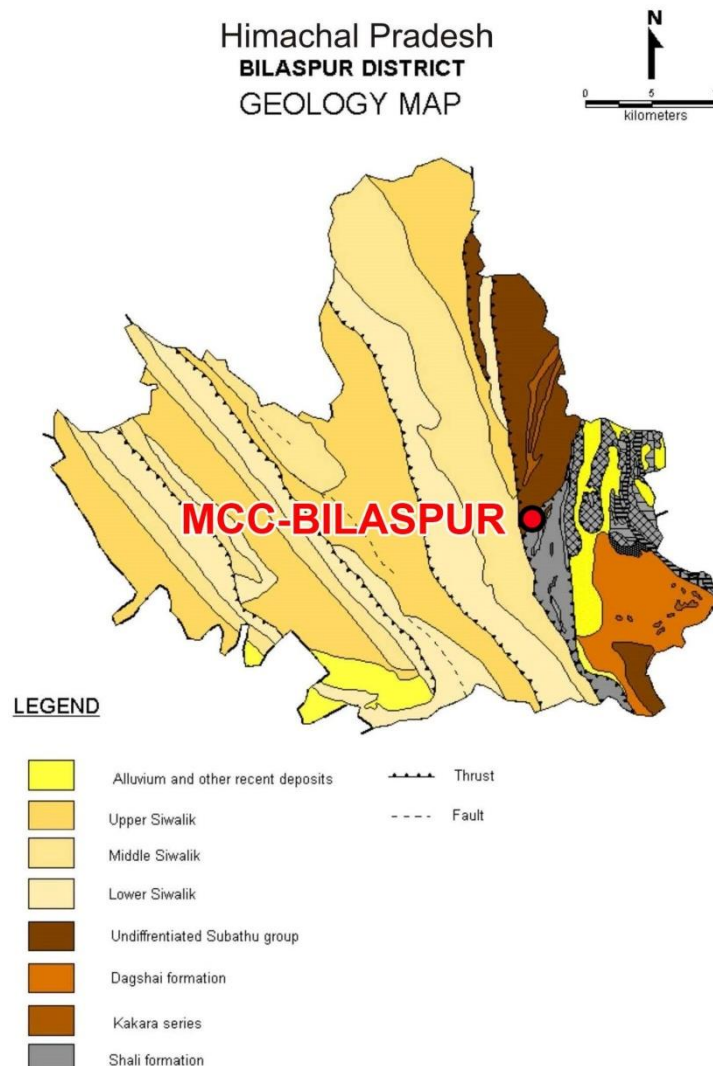
Geology and Seismology

32. The rock formations occupying the district range in age from pre-Cambrian to Quaternary period. The generalized geological succession in the district is given below in **Table -10**. The rock masses in the subproject region consist of sedimentary deposits of mudstone, sandstone, silt stone and conglomerates of the Siwaliks formations. This sedimentary succession is classified as the Siwalik formation Cenozoic age and bounded on the south by the Main Frontal Thrust and on the north by a complex of thrusts regionally referred as the Gambar Thrust; Bilaspur thrust Main Boundary Thrust (MBT). The geological map of project region is given in **Figure-8**.

Table-10: Geological Description of Bilaspur District

Age	Period	Group Formation	Composition (Lithology)
Cenozoic	Quaternary (Recent to sub Recent)	Alluvium; fluvial, terrace, piedmont	Sand, silt, clay, gravel, pebble and cobble etc.
		Undifferentiated	Sand, clay, gravel, pebble, cobble and boulders
	Tertiary Pliocene to Mid. Miocene	Upper Siwalik Group	Soft sandstone, brownish clay, shale, poorly sorted and crudely bedded conglomerate. Boulder beds.
		Middle Siwalik	Grey sandstone, and brownish clay/ shale
		Lower Siwalik	Red and purple sandstone and shale
	Oligocene Lower Miocene	Subathu Group	Grey sandstone, shale, clay
		Kasauli Formation	Greenish to grayish hard sandstones
		Daghshai Formation	Dark-red and purple colored shale
		Subathu Formation	Dark nodular clays
Proterozoic	Upper Proterozoic III Proterozoic II	Krol Formation	Greyish massive dolomites and Limestone
		Shali Formation	Cherty Dolomite, Quartzite and Lime stone

Figure-8: Geological Map of Bilaspur District



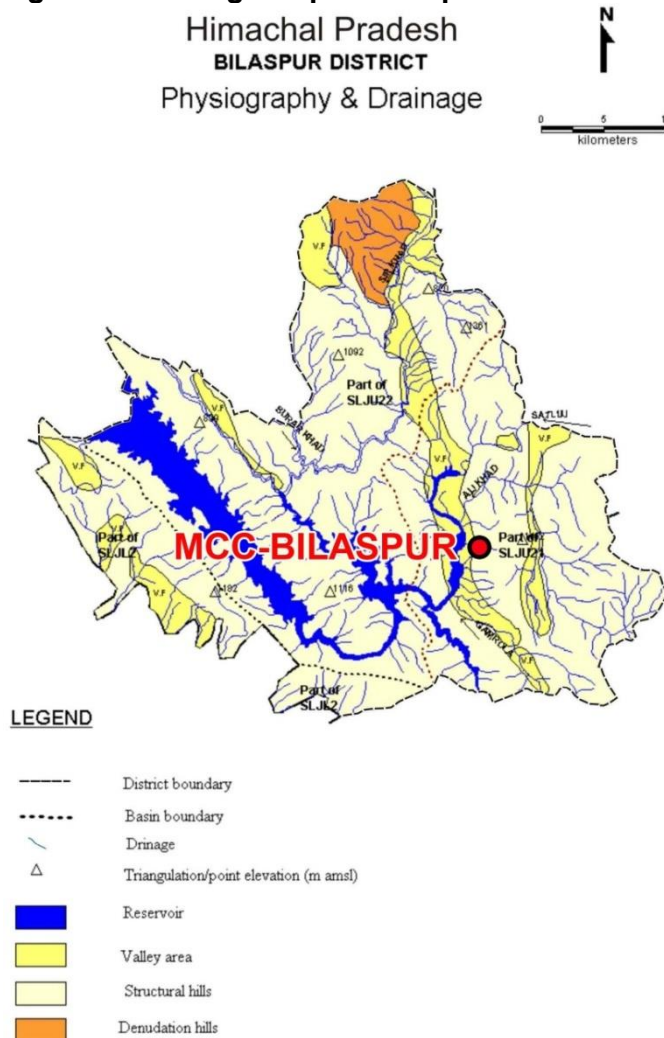
Source: Government of India, Ministry of Water Resources, Central Ground Water Board- Ground Water Information Booklet Bilaspur District. New Delhi (Year -2013)

33. India's seismic code divides the country into five seismic zones (I to V). The sub-project stretch comes under seismic zone V as defined by Urban Earthquake Vulnerability Project (UEVP) and the Atlas prepared by the Building Materials Promotion and Technology Council (BMTPC), Government of India and UNDP [IS 1893 (Part I : 2002)]. All structures have been designed considering seismic zone V. It may be mentioned that intensity of earthquake increases from Zone I to V. The Zone V mainly covers Himalayan region in India and Himachal Pradesh being a hilly state lies in Himalayan region. Zones I, II and III mainly cover Central and Southern parts of Indian peninsula. It may be mentioned that after an earthquake of 7.8 intensity on Richter scale in Kangra district in 1905 no major earthquake has occurred in Himachal Pradesh.

Drainage

34. The MCC sub-project site at Bilaspur is drained by Satluj River as Bilaspur city is in the catchment area of this river. No flooding issues have been reported at the subproject site as site is in Bilaspur city urban area. Further, being in hilly region MCC site has swift drainage. The drainage map of Bilaspur district is given in **Figure-9**.

Figure-9: Drainage Map of Bilaspur District



Source: Government of India, Ministry of Water Resources, Central Ground Water Board- Ground Water Information Booklet Bilaspur District. New Delhi (Year -2013)

B. Ecological Resources

(i) Forests

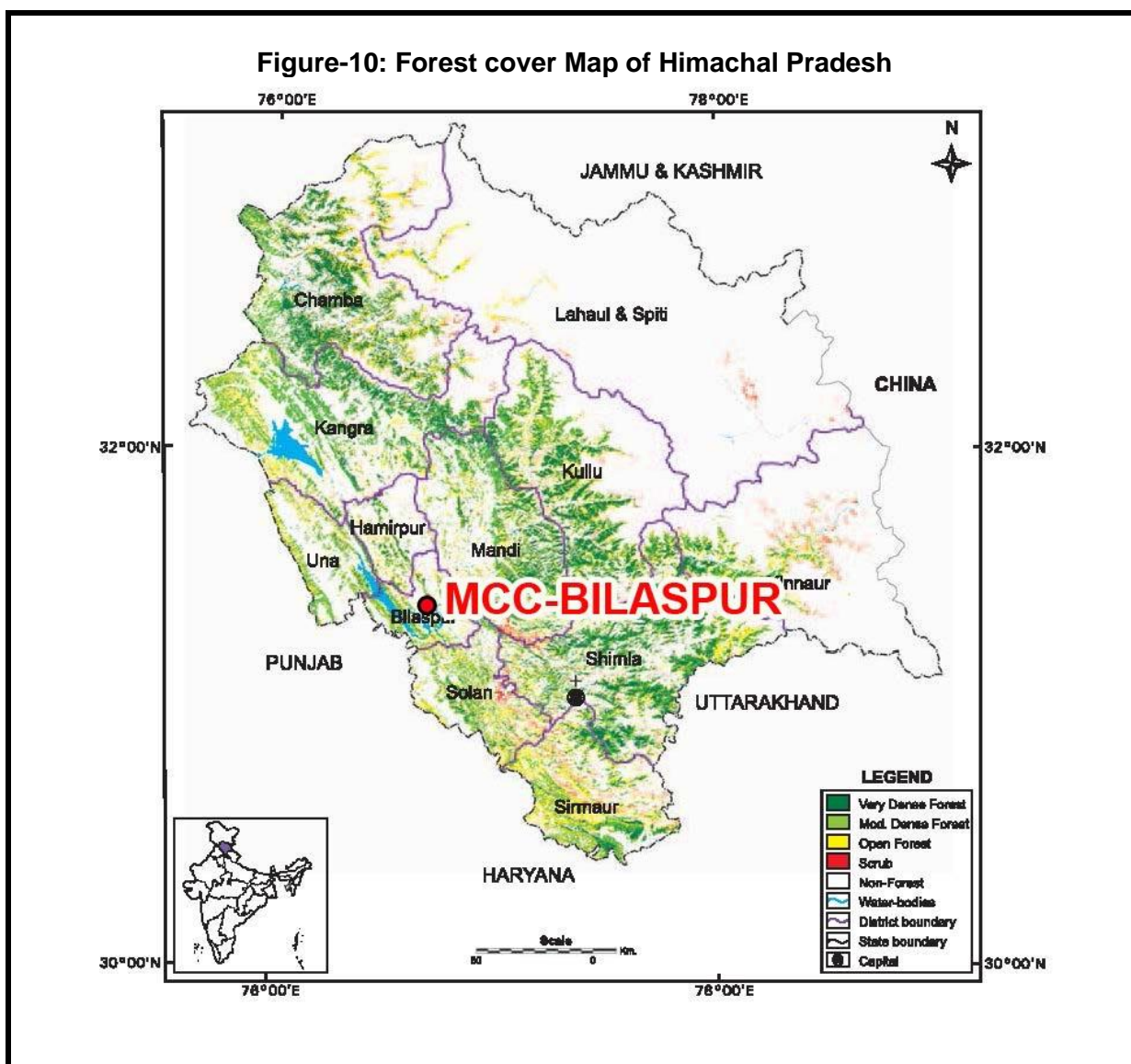
35. Forests in Himachal Pradesh currently cover an area of nearly 37,691 square kilometers (14,553sq.miles), which is about 38.3% of the total land area of the state. The variation in the landscape has created great diversity of flora and fauna. From the snowbound peaks of the Himalayas to the moist Alpine scrub, sub Alpine forests, dry - temperate and moist- temperate forests to moist deciduous forests, the state possesses a wide biodiversity that in return nurtures a large multiplicity of floral and faunal forms. Reserve Forests constitute 71.11%, Protected Forests 28.52% and Un-classed forests constitute 0.35% of the total forest area. The Bilaspur district has 31.01% area of its total geographical area under forest. The most portions of these forest areas are managed by the Forest Department. The forest areas under very dense, moderately dense and open category are presented below in **Table-11**:

Table-11: Different Categories of Forests in Bilaspur District

District	Very Dense Forest Area (km ²)	Moderately Dense Forest Area (km ²)	Open Forest Area (km ²)
Bilaspur	24	171	167

Source : State Forest Department (Forest Survey of India Report -Year 2017)

36. The forests of the Himachal Pradesh have been classified on an ecological basis as laid down by Champion and Seth, and can be broadly classified into Coniferous Forests and broad-leaved Forests. Distribution of various species follows fairly regular altitudinal stratification. The vegetation varies from Dry Scrub Forests at lower altitudes to Alpine Pastures at higher altitudes. In between these two extremes, distinct vegetation zones of Mixed Deciduous Forests, Bamboo, Chir, Oaks, Deodar, Kail, Fir and Spruce, are found. The richness and diversity of Himachal flora can be gauged from the fact that, out of total 45,000 species found in the country as many as 3,295 species (7.32%) are reported in the State. More than 95% of the species are endemic to Himachal Pradesh and characteristic of Western Himalayan flora, while about 5% (150 species) are exotic, introduced over the last 150 years. . Forest cover map for Himachal Pradesh is shown in **Figure -10**.



Source: State Forest Department (Year 2018)

37. The sub-project site does not fall within any reserved, protected, or revenue forest areas. The complete vegetation of Himachal Pradesh relies on two factors - height and rainfall. The southernmost part of the state is at a lower altitude level and it contains both humid and subtropical dry broadleaf woodlands, along with subtropical moist broadleaf forests. The majority of area is covered by Himalayan subtropical broadleaf forests. Apart from this, the state has some of the vegetation which is abundant with sal, sisham, and chirpine, dry deciduous and moist broad-leaved forests. The landscape which falls in temperate regions has trees like oak, deodar, blue pine, fir and spruce. The trees found in higher elevations include Alders, birches, rhododendrons and moist alpine scrubs.

38. Himachal Pradesh has abundant growth of fruits like apple, peaches, plums and berries. It is rightly called the 'fruit bowl of India'. There are plenty of fruit orchards and fruits and these fruits are transported to various parts of the country and exported abroad also. The pleasant climate also helps numerous flower varieties like gladiolas, lilies, chrysanthemums, roses, marigolds, carnations, etc. to grow in abundance.

39. Himachal Pradesh is home to approximately 1200 birds along with 359 animal species. This includes leopards, ghoral, snow leopard, musk deer (state animal), and Western Tragopan (state bird). The state is an ideal tourist destination for animal lovers as it hosts 12 main national parks and sanctuaries. It has two major national sanctuaries -the Great Himalayan National Park and the Pin Valley National Park.

(ii) Flora and Fauna around Subproject Site-

40. Since the sub project site is in urban limits of Bilaspur city, therefore, there are no protected areas within 20 km radius. Around the sub-project site, there is limited fauna because of urban habitation. The common trees in the surroundings of sub-project sites are Mangifera indica (Aam), Cassia fistuca (Alish), Premna latifolia (Baken), Ficus bengalensis (Banian), Zizyphus mauritiana (Ber), Grewia elastic (Beuli), Butea monosperma (Brahmadake), Acacia arabica (Babool), Dianthus (Caimpari), Ficus glomerata (Gular), Syzygium caryophyllum (Jamun), Azadirachta indica (Neem), Ficus religiosa (Pipal), Liriodendron tulipifera (Popular), Eucalyptus camaldulensis (Safeda), Cassia fistuca (Amaltash), Phyllanthus emblica (Amla), Jatropha curcas (Arand), Premna latifolia (Bakar), Terminalia bellerica (Bahera), etc. There is no endangered or rare species flora at or surroundings of MCC site.

41. The fauna in the surroundings of MCC sub-project site includes- Birds such as Bagula, Tota, Koel, Crow, and Mayna. Among the mammals main animals are Jungel Rat, common squirrel, Moles, Shrews, cow, goat, etc. The main reptiles found are Girgit, Dhaman, etc. There are no endangered or rare species fauna at MCC site and surroundings as MCC site is in habited area of Bilaspur city.

42. The water bodies around sub project sites are seasonal in nature because of swift flow. There is not much presence of aquatic life in the water bodies close to the sub-project site.

(iii) Protected Areas

43. The list of protected areas (National Parks and Wildlife Sanctuaries) in Himachal Pradesh is given in **Table 12**. There is only one protected area in Bilaspur district (Naina Devi Conservation Reserve), but this protected area is located more than 15 km away from the proposed MCC site.

Table-12: 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-Siyabehe	Chamba	108.40
8	Kais	Kullu	12.61
9	Kalatop-Khajjar	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
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
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

Source: Himachal Pradesh State Forest Department (Year 2017)

C. Economic Resources

Industries

44. Being a hilly state, Himachal Pradesh has few large industrial units. As shown in **Table-13** for Bilaspur district, there are micro, small, and medium enterprises focusing on agro-products, leather, textiles, wood, etc. The Bilaspur district has three major industrial units also. These are (a) ACC Limited, Gaggal Cement Works Unit I and II, PO Barmana, (b) Suraj Fabrics (Steel div.) Industrial Area Gawalthai and (c) SPS Steel and Power Limited Industrial Area Gawalthai, Distt. Bilaspur H.P.

Table-13: Details of Existing Micro and Small Enterprises and Artisan Units in Bilaspur District

NIC No	Code	Type of Industry	Number of Units	Investment (Lakh Rs.)	Employment
20		Agro based	166	671.51	1600
22		Soda water	-	-	
23		Cotton textile	-	-	-
24		Woolen, silk & artificial Thread based clothes.	143	16.86	143
25.		Jute & jute based	-	-	-
26.		Ready-made garments & embroidery	33	45.43	158
27.		Wood/wooden based furniture	267	297.73	671
28.		Paper & Paper products	26	43.19	136
29.		Leather based	98	18.23	152
31.		Chemical/Chemical based	04	86.86	22
30.		Rubber, Plastic & petro based	23	105.27	112
32.		Mineral based	3	16.71	38
33.		Metal based (Steel Fab.)	108	490.52	265
35.		Engineering units	-	-	-
36.		Electrical machinery and transport equipment	-	-	-
97.		Repairing & servicing	191	254.18	420
01.		Others	261	854.80	411

Source: Government of Himachal Pradesh, District Industry Centre. Bilaspur (Year 2010-2011)

Transportation Facilities

45. The MCC Bilaspur site is well connected with Shimla, Chandigarh, and other destinations in Himachal Pradesh through various national highways and state highways. The nearest rail head from MCC site is Kiratpur Sahib (KART) at about 69 km. The nearest operating airport is Shimla (SLV) at a distance of about 93 km. No clearance or permission from Airport Authority of India (AAI) is needed as MCC building is low height (Basement plus two).

Land Use Pattern

46. A study of the land use (**Table-14**) pattern shows that majority of the area of Bilaspur district is under forest cover and pasture and grazing land. The land under cropped area is also significant. The barren land area is quite low. The land uses of MCC site is urban area. If land use of sub project sites is to be seen in terms of classification of **Tables 14**, it

will fall 'Land put to none agriculture uses'.

Table-14: Land Use Pattern of Bilaspur District

Land use	Area (In 000' hectare)
Geographical Area by Village Papers	118.80
Forest land	14.0
Misc. Tree Crops, Groves (Not included in Net Area Sown)	0.10
Permanent Pastures and Other Grazing Land	39.40
Culturable Waste land	6.2
Land put to None Agriculture Uses	15.30
Barren and Uncultivated land	4.30
Current Fallows	1.50
Other Fallows	1.0
Net Area Sown	30.0
Area Sown more than Once	26.60
Total Cropped area	56.50

Source: District Census Handbooks 2011

47. **Agricultural Development.** Agriculture is the mainstay of the people and 80% of the total population depends on it. The soil is mostly light and somewhat sandy. This is inter-mixed with patches of stiff clay. The land is only moderately fertile. Kharif is the principal harvest and maize the chief crop, and the staple food. Rice is produced both on irrigated and un-irrigated lands. Kulth is grown on inferior lands. Wheat and grams are the Rabi crops. These are mixed together and sown. The main cash crops are ginger and peas. Amongst the vegetables which are grown during the Kharif season are Tomato, Shimla Mirch, Brinjal and Lady Finger. According to District Statistical Abstract of the district, the total cropped area was 56,508 hectares during the year 2008-09. Out of which 26.60 hectares area was sown more than once. The net area sown was 30.00 hectares. The area under food-grains was 54,870 which include 26,520 hectares under wheat, 26,354 hectares under maize, 1,540 hectares under rice and 175 hectares under barley, 26 hectares under other crops and 156 hectares under gram and 99 hectares under other pulses

Electrification

48. The Rural Electrification in Bilaspur is 98.30 % and Urban Electrification is 99.0%. The overall electrification is 98.40 %.

Social and Cultural Resources

Population and Communities

49. According to Census 2011, the total population of Bilaspur district was 381,956 comprising 192,764 males and 189,192 females. This population of the district formed 5.56 per cent of the state population and ranked at 10th place among the districts in the year 2011. Out of total population of the district, 93.4 per cent was distributed in rural areas while 6.6 per cent was living in urban areas. The rural population of the district is distributed among 6 Tahsils/sub-Tahsils and urban population is spread over in 4 towns. The total urban

population in the district in the year 2011 was 25,129 persons constituting 13,111 males and 12,018 females. The total population of rural areas in the district was 356,827 persons with 179,653 males and 177,174 females. This rural population was spread over in 953 villages. Out of total 1,061 villages in the district, 953 were inhabited villages while 108 were uninhabited villages. The density of population in Bilaspur district was 327 persons per sq. km. against the state average of 123 persons. At Tahsil/sub-Tahsil level, the density of population varied between 480 persons in Bharari tahsil and 174 persons in Naina Devi sub-tahsil. In rural areas, the density of population was 310 persons per sq. km in the year 2011, while the density was 1,433 persons per sq. km in urban areas. Of the total population of 3,81,956 persons recorded in Bilaspur district, 25.9 per cent population belonged to Scheduled Castes and only 2.8 per cent to Scheduled Tribes. Percentage of Scheduled Castes population constitutes 26.3 per cent in rural areas and 21.1 per cent in urban areas of the district 2.9 and 1.4 per cent represents the Scheduled Tribes population in rural and urban areas of the district respectively. The Scheduled Tribes population in the district was mainly concentrated in Ghumarwin Jhandutta and Naina Devi sub-Tahsils. Hindu was the most dominating religious community in Bilaspur district with 3, 71,973 Hindu persons (1, 87,567 males and 1, 84,406 females) which constituted 97.39 per cent of the total population. After Hindu, Muslim religious community represented 6,984 persons. The other major religious communities included Sikhs with 2,387 persons. As per Census 2011, Bilaspur district reported 287,620 persons as literates constituting 84.6 per cent of the total population. The proportion of male and female literates in the district was 91.2 and 78.0 per cent, respectively. The literacy rate of males was higher than females in the district. The total literacy rates of rural and urban areas were 84.1 and 91.8 per cent respectively. The proportion of male & female literates in rural areas was 90.9 and 77.2 per cent, respectively. The proportion of male & female literates in urban areas was 94.3 and 89.0 per cent.

Health facilities

50. The health facilities in Bilaspur district include 02 Regional Hospitals, 37 Primary Health Centers, and 74 Community Health Centers, 2 Ayurvedic Hospitals and 67 Ayurvedic Dispenseries.

Education facilities

51. The education facilities in Bilaspur district include 593 Primary Schools, 103 Middle Schools, 154 Higher Secondary Schools, 05 Government colleges and 01 private college. There is many a number technical education training institutes in the districts. The current HSDP project will also contribute towards skills development and employability of Himachali youth.

Archaeological Resources

52. There are no heritage sites notified by Archaeological Survey of India (ASI) within or near the sub-project area. Similarly, no common property resources such as public wells, water tanks, play grounds, common grassing grounds or pastures, market areas and community buildings will be affected by the proposed sub-project.

IV. ENVIRONMENTAL IMPACT AND MITIGATION MEASURES

A. Environmental Impacts

53. Any project creating physical infrastructure will cause some minor impacts on the environment. This IEE examines the potential impacts anticipated during the construction and operation of MCC Bilaspur, including:

- (i) **Location impacts:** Impact associated with site selection including effect on the environment and resettlement or livelihood related impacts on communities;
- (ii) **Design impacts and Pre-Construction Impacts:** Impact arising from project design, including the technology used, scale of operations, discharge standards, topographic survey, geotechnical survey, etc.;
- (iii) **Construction impacts:** Impact resulting from construction activities including site clearance, earthworks, civil works, etc.; and
- (iv) **Operation and Maintenance impacts:** Impact associated with the operation and maintenance of the infrastructure built in the sub-project.

54. ADB's REA checklist for Buildings was used while screening the site and recommending mitigation measures.

B. Location Impacts

55. The MCC sub-project site at Bilaspur is located on unencumbered land owned by the Government of Himachal Pradesh (**Annexure- 2**). No new land has been acquired for this MCC, nor has anyone been displaced in anticipation of the proposed ADB project. There are no significant ecological resources in the surroundings MCC site as this is located in the city of Bilaspur. There are no heritage sites notified by Archaeological Survey of India (ASI) or state archaeological department within the MCC delineated area or in the immediate surroundings. No significant impacts can arise due to sub-project location as MCC building components will not impinge upon any area of ecological, archaeological or historical importance. The subproject site will also not require change in land use as it is already in possession of DOUD GOHP. The MCC site is not in the immediate vicinity of national highway or state highway. Hence impacts on account of vehicular air and noise pollution are not anticipated.

56. The MCC subproject site is located within seismic zone V and even a small magnitude earthquake may damage MCC building.

C. Impacts during Design and Pre-Construction Phase

57. As noted above, the proposed site is owned by GOHP. There are no issues arising due to land acquisition or involuntary resettlement. No tree cutting is required at site. Based on the environmental screening of the site, there are no significant adverse environmental impacts during the design and Pre-construction phases.

D. Impacts during Construction Phase

58. All construction activities to be undertaken at the MCC site will be approved by the PMU. The construction stage impacts due to the proposed project components are generic to the construction activities. The EMP emphasizes on the construction impacts and

necessary mitigation measures to be strictly followed by the contractor and supervised by the PWD and PIUs. The key potential impacts are covered in the following paragraphs.

59. **Impact due to stock piles of construction materials.** Improper stockpiling of construction materials in and around the sites could obstruct movement along access roads. Hence, due consideration will be given for proper materials storage on construction site. Stockpiles will be covered to protect from dust and erosion. Waste materials will be disposed off at identified and approved locations.

60. **Disposal of construction waste.** The construction waste could lead to untidy conditions at site and may find its way to local drains and smaller local streams and siltation and obstruction to natural flow in these drains and streams. In the proposed sub-project, it shall be mandatory for the contractor to ensure proper disposal of the construction waste at the disposal site as designated by the PWD.

61. **Quarry and Borrow pits operations.** Since the civil works are of a small size, all construction material will be procured from market. There will not be any need for direct procurement of stone dust and sand building material from quarries.

62. **Increase in noise levels.** Noise levels in the immediate proximity of sub- 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. The duration of construction will also be relatively brief. Transportation of construction materials will be confined to day-time, depending upon extent of construction activity. The increase in noise levels is expected to be between 5 - 10 % of ambient noise levels. This increase will be felt up to a distance of 200-300 m only. This noise will be intermittent in nature, and will last only during the construction phase. The construction noise will be felt by the residential houses close to MCC site. It may be mentioned that construction noise will be intermittent in nature noise levels outside boundary of MCC plot are not anticipated to exceed the stipulated limits of Residential areas. But necessary monitoring of noise levels will be taken up as part of environmental monitoring plan.

63. **Impacts on biodiversity during construction phase.** No major impacts are expected on the biodiversity during the construction phase as the MCC site is GoHP owned vacant at the back side of existing Government building in the city of Bilaspur. There is no requirement of trees and shrubs cutting for the MCC construction. There are no endangered species of flora and fauna in the surroundings of MCC site.

64. **Disturbance to traffic during construction phase.** At the time of construction, there will be some temporary inconvenience due to transportation of building materials and clearance of debris by trucks. However, since the scale of civil works is relatively small, the inconvenience caused will be relatively minor and limited only to the construction phase. A sample Traffic Management plan is attached in **Annexure- 3**.

65. **Impact on cultural properties.** The proposed sub-project will not have any impact on any religious structure or any other structure of historical and/or cultural significance.

66. **Ground Water.** Ground water will not be extracted and used for construction purposes. The contractor will arrange for water from the market. It will be supplied by the authorized water tankers. The problem of ground water contamination is also not anticipated during the construction phase since there will be proper disposal of the waste water.

67. **Ambient Air Quality.** Generation of dust is anticipated during transportation, excavation, and construction activities. Some dust and gaseous emissions will also be generated during the construction period from machines such as mixers, and vehicles

engaged in transportation of construction materials. Pollutants of primary concern at this stage include respirable and suspended particulate matter (PM₁₀) and gaseous emissions (NO_x, SO₂, CO, etc.). However, transportation of construction materials will be confined to a few trips per day depending upon extent of construction activity. Therefore, impact at this stage will be temporary and restricted to the close vicinity of the construction sites only.

68. All vehicles and construction equipment operating for the contractor and the consultant will obtain and maintain "Pollution under Control" (PUC) certificates. To control dust emissions, vehicles deployed for borrow materials, sand and aggregate haulage, will be covered with tarpaulins to prevent spillage. Regular sprinkling of water during excavations, loading, unloading, vehicular movement, and raw material transport will prevent spread of dust and other contaminants. Periodic air quality monitoring will be conducted to ensure that emissions comply with the vehicle emission standards specified by the Government of India and ambient air quality standards specified by the Central Pollution Control Board. The contractor will submit emission monitoring results as a compliance with environmental monitoring plan. The impacts related to air pollution on account of construction activities will be felt at residential buildings close to subproject site, if site is not properly barricaded.

69. **Construction Waste.** Some waste will be generated due to excavated earth material and generation of waste from construction activity. Debris and excavated earth material can be reused subject to the approval of the PWD Engineer during the construction. Waste generated during construction and demolition will be disposed off as per law to the satisfaction of the Engineer. The clean-up and restoration operations will be implemented by the contractor prior to demobilization. The contractor will clear all temporary structures and dispose off all garbage from construction site. All construction zones used and affected by the sub-project will be left clean and tidy, at the contractors' expense as per the satisfaction of the Engineer.

70. 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 and sanitation facilities (septic tanks and soak pit). Dust bins will be placed in adequate numbers. The EMP lays down some measures to address likely adverse impacts associated with the labor camps.

E. Environmental Impacts during Operation Phase

71. Since only counseling and placement assistance to the trained and skilled youth will be taken up at the proposed MCC, there will not be any adverse environmental impact during operation as adequate sanitation facilities have been planned in MCC building. The MCC design also provides for adequate parking and safe disposal for waste water and solid waste. The solid waste generated at MCC during operation phase will be segregated. Its disposal will be integrated with Bilaspur city waste disposal system. Since septic tanks have been proposed for disposal of waste water, therefore, regular maintenance and cleaning of these needs to be undertaken as part of MCC operation.

72. Given the relatively small size of the MCC, there will not be any significant vehicular traffic increase on account of MCC operation as already employment exchange is functioning. Most of the candidates seeking employment will be using public transport. A diesel generator set will be required, but only during power cuts. The generator will be of the silent type, and will comply with the emission levels stipulated by Central Pollution Control Board.

73. **Safety Measures.** The design of the MCC includes structural and seismic safety measures required by India's latest building codes (in seismic zone V). The other safety features are explained below:

- The MCC will be equipped with fire-fighting system with portable fire extinguishers and smoke detectors. The staircase will have adequate width to allow for people to exit the MCC building during any fire-related or other eventuality.
- During natural calamities, the operations will be stopped. The visitors and MCC staff will be safely evicted as per Disaster Management plan of Himachal Pradesh.
- Necessary first aid facilities will be provided at the MCC building.

74. **Socioeconomic Impacts.** The establishment and operation of MCC at Bilaspur will have a positive development impact since it will provide market-relevant vocational training to the needy urban youth and help them in improving their livelihoods and / or getting formal jobs.

75. **Flora and Fauna.** Since the MCC will be located within the urban area of Bilaspur city, so no adverse impacts on fauna and flora are anticipated due to operation. Further, to enhance the natural look of the MCC building and premises, plantation of shrubs and landscaping will be taken up along the pathways and vacant space. There is no existence of any wild life park, bird sanctuary, national park or any other area notified by the GoHP or MoEFCC for ecological importance within an aerial distance of 15 km from MCC site.

76. **Emergency Plan for Accident and Natural Hazards-** For operation phase onsite emergency plan will be prepared by the MCC Manager for minor accidents and fire. For natural calamities the Disaster Management Plan prepared by DOLE will be followed. The Disaster Management Plans have been prepared by the respective departments of GoHP as per provisions of Disaster Management Act 2005 of Government of India.

F. Description of Planned Mitigation Measures

77. Screening of environmental impacts is based on the magnitude and duration of the impact. **Table-15** provides the potential environmental impacts and the mitigation measures including the institutional responsibilities for implementing the same. The MCC site is located sufficiently away from protected areas and the components proposed will not impact any environmentally sensitive or protected areas. All sub-project activities including construction and operation will take place within available government land.

Table-15: Summary of Environmental Impacts and Planned Mitigation Measures

Sl. 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 MCC building and ensure protection specially from earthquake and other natural disasters	Permanent	Major	<p>The design of MCC building has been completed considering earthquake coefficient of zone V.</p> <p>The MCC Bilaspur site is not on the banks of any river or natural stream.</p>	PMU and PWD
2	Design and Pre-construction Impacts				
2.1	Consents, permits, clearances, no objection certificates (NOC), etc.	Permanent	Major	<p>Obtain all necessary consents, permits, clearance, NOCs, etc. prior to start of civil works.</p> <p>Acknowledge in writing and provide report on compliance on all obtained consents, permits, clearance, NOCs, etc.</p> <p>Include in detailed design drawings and documents all conditions and provisions if necessary</p>	PIU and PWD
2.2	Layout of components to avoid impact on the aesthetics of the site	Permanent	Major	The sub-project components will not have any adverse impacts on aesthetics of site as these involve construction of MCC building as an extension of existing building. Hence, no mitigation measures are warranted.	Not Applicable
2.3	Slope stability related issues	Permanent	Minor	The MCC site is an undulating terrain. Necessary slope stability related measures such as retaining wall and structural safety have been taken into account in the design.	PMU and PWD
2.4	Increased storm water runoff from alterations of the site's natural drainage patterns due to landscaping,	Permanent	Moderate	Design of proposed MCC will allow efficient drainage at the site and maintain natural drainage pattern.	PMU and PWD

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Sl. No.	Potential Environmental Issues	Duration or Extent	Magnitude	Proposed Mitigation Measures	Institutional Responsibilities
	excavation works, construction of parking lots, and addition of paved surface.				
2.5	Integration of energy efficiency and energy conservation programs in design of Bilaspur MCC	Permanent	Moderate	Following measures have been included in the design to enhance energy efficiency: <ul style="list-style-type: none"> • Usage of recyclable materials like wood substitutes. • Installation of BEE certified equipment • Usage of energy efficient lighting fixtures (LED and solar). • Provision of Solar power generation 	PMU and PWD
3	Construction Impacts				
3.1	Construction Camps - Location, Selection, Design and Layouts	Temporary	Moderate	Construction camp at MCC site 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 MCC 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.	Contractor and PIU
3.2	Traffic circulation plan during construction	Temporary	Moderate	Prior to commencement of site activities and mobilization on ground, the contractor will prepare a traffic circulation plan for safe passage of local traffic during construction stage. This will include alternative access routes, traffic regulations, Signages, etc. The contractor will get these plans approved from the PWD (the Engineer), The contractor will disseminate the traffic circulation plan around the MCC site.	Contractor and PWD
3.3	Impacts on flora and fauna	Temporary	Moderate	Following mitigation measures are planned: 1-PMC will Conduct site induction and environmental awareness programs at the MCC	Contractor and PWD

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Sl. No.	Potential Environmental Issues	Duration or Extent	Magnitude	Proposed Mitigation Measures	Institutional Responsibilities
				<p>site.</p> <p>2-The contractor will Limit activities within the work areas.</p> <p>3-Storage of construction materials will be within the MCC plot.</p> <p>4-PWD will prepare site specific landscape and shrubs and tree plantation plans at the end of construction period. These plans will be implemented.</p>	
3.4	Site clearance activities, including delineation of construction areas	Temporary	Moderate	<p>The commencement of site clearance activities will be undertaken with due permission from the Environment Specialist of the PWD/ PMU to minimize environmental impacts.</p> <p>All areas used for temporary construction operations will be subject to complete restoration to their former conditions with appropriate rehabilitation procedures.</p>	Contractor and PWD
3.5	Drinking water availability	Temporary	Major	Sufficient supply of potable 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 PWD
3.6	Waste disposal	Permanent	Major	Location of disposal site for construction waste will be finalized by the Environmental Specialist of the PWD and PMU. He will confirm that disposal of the material will not impact the water body or environmentally sensitive areas. He will also ensure that no endangered or rare flora is impacted by such materials.	Contractor and PWD
3.7	Stockpiling of construction materials	Temporary	Moderate	Stockpiling of construction materials should not impact or obstruct the local drainage and Stockpiles will be covered to protect from dust and erosion.	Contractor and PWD
3.8	Soil Erosion	Temporary	Moderate	There may be requirement for temporary slope	Contractor and PWD

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Sl. No.	Potential Environmental Issues	Duration or Extent	Magnitude	Proposed Mitigation Measures	Institutional Responsibilities
				protection during construction at the excavated areas. These requirements should be met. Adequate measures will be taken up at this site so that there is no soil erosion causing risks in the vicinity.	
3.9	Soil and Water Pollution due to fuel and lubricants, construction waste	Temporary	Moderate	The fuel storage at sub-project site will be bare minimum. The vehicle maintenance will not be taken up at site. The washing will be avoided at site. No waste water discharge shall take place from the site to local drains. Soil and water pollution parameters will be monitored as per monitoring plan.	Contractor and PWD
3.10	Siltation of water bodies due to spillage of construction wastes	Temporary	Moderate	No disposal of construction wastes will be carried out into any streams near the MCC site. Extraneous construction wastes will be transported to the pre-identified disposal site for safe disposal.	Contractor and PWD
3.11	Generation of dust	Temporary	Moderate	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 as MCC site is just behind district administration offices.	Contractor and PWD
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 pollution emission levels comply with the relevant requirements.	Contractor and PWD
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. This will help in arresting noise	Contractor and PWD

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Sl. No.	Potential Environmental Issues	Duration or Extent	Magnitude	Proposed Mitigation Measures	Institutional Responsibilities
				propagation outside.	
3.14	Material Handling at Site	Temporary	Moderate	<p>Workers employed on mixing cement, lime mortars, concrete, etc., will be provided with protective footwear and protective goggles. Workers, who are engaged in welding works, will be provided with welder's protective eye-shields.</p> <p>Workers engaged in stone breaking activities will be provided with protective goggles and clothing.</p> <p>The use of any toxic chemical will be strictly in accordance with the manufacturer's instructions. The Engineer will be given at least 6 working days' notice of the proposed use of any chemical. A register of all toxic chemicals delivered to the site will be kept and maintained up to date by the Contractor.</p>	Contractor and PWD
3.15	Disposal of Construction Waste	Temporary	Moderate	<p>Safe disposal of the construction waste will be ensured in the pre-identified disposal locations. In no case, any construction waste will be disposed off around the sub-project site and especially in vacant plots in the locality.</p>	Contractor and PWD
3.16	Safety Measures During Construction	Temporary	Moderate	<p>Adequate safety measures for workers during handling of materials at the MCC site will be taken up.</p> <p>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.</p>	Contractor and PWD
3.17	Clearing of Construction of Camps and Restoration	Temporary	Major	<p>Contractor will prepare site restoration plan for approval by the Engineer. The construction camp site restoration plans are to be</p>	Contractor and PWD

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Sl. No.	Potential Environmental Issues	Duration or Extent	Magnitude	Proposed Mitigation Measures	Institutional Responsibilities
				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	
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 PWD and PMC. For natural calamities, disaster management plan prepared by the PWD under the provisions of Disaster Management Act 2005 will be followed.	Contractor
4	Operation and Maintenance impacts				
4.1	Environmental Conditions	Temporary	Moderate	Air, water, and noise levels will be monitored periodically as per the Environmental Monitoring Plan prepared.	DoLE
4.2	Safety risks	Temporary	Major	All safety features provided as part of MCC building construction will be maintained.	DOLE
4.3	Unhygienic conditions due to poor maintenance of sanitation facilities and irregular solid waste collection	Temporary	Severe	The implementing agencies will carry out maintenance of the toilets, and carry out the regular collection and disposal of wastes to the local disposal site. The septic tank will be maintained and emptied regularly.	DOLE
4.4	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 MCC Manager will prepare on site emergency plan for possible minor accidents and mishaps during operation phase. For natural calamities, the disaster management plan prepared by DOUD will be followed.	Manger MCC for Onsite Emergency Plan and DOLE for Disaster Management Plan

G. Land Aquisition and Resettlement

78. The proposed MCC site is DOLE owned land. It is encumbrance free. The revenue records showing ownership of GOHP have been given in **Annexure-2**. Hence, there will not be any acquisition of private land. Since MCC site is unencumbered land, therefore, there is no acquisition any private assets. At the proposed MCC site, there are no squatters or encroachers. Hence, there is no requirement of any rehabilitation and resettlement for MCC Bilaspur construction.

V. ENVIRONMENT MANAGEMENT PLAN (EMP)

A. Institutional Arrangements for Project Implementation

79. The Government of Himachal Pradesh through Department of Technical Education is the executing agency. The executing agency (i) assumes overall responsibility for the execution of the project and reporting; (ii) engage adequate permanent or fixed-term staff to implement the Project; (iii) setup a state-level project management unit (PMU) and project implementation units (PIUs) at local sub-project level; (iv) provides overall strategic guidance on technical supervision and project execution; and (v) ensures overall compliance with the loan covenants.

80. The implementing agencies in the project are HPKVN, DTE, DOHE and PWD. The implementing agency responsibilities include (i) project planning and budgeting; (ii) day-to-day assistance, supervision and guidance for the project implementation units and their consultants; (iii) review sub-project for due diligence requirements and approve sub-project proposals; (iv) bidding, evaluation and contract award; (v) managing and disbursing funds; (vi) review compliance with loan covenants, contract specifications, work plans and quality control; and (vii) consolidate and submit progress reports, finance and accounting / audit reports, and matters requiring higher level decision to state-level empowered committee (SLEC) and ADB.

81. A State-level empowered committee (SLEC) has been established in Himachal Pradesh, chaired by State's Chief Secretary, with Principal Secretary/Secretary of the Department of Planning as Member Secretary and comprised of Secretaries from relevant line departments (PWD, DOUD, DORD, DOLE, HPKVN MD). The SLEC has been empowered to take all decisions on behalf of the State and will (i) act as a policy making body, (ii) provide overall advice and guidance to the State's executing agency and PMU, and (iii) accord all approvals under the project.

82. DOTE has established a PMU, headed by a full-time Project Director (PD) at HPKVN. This PMU consists of personnel drawn from relevant line departments and market. This PMU also has safeguards expert (social and environment). The PMU is supported by the Project Management Consultants (PMC). The PMU is the nodal agency for overall management of all program activities and is responsible for: (i) project planning and budgeting; (ii) providing day-to-day assistance, supervision and guidance for the PIUs and PWD; (iii) reviewing sub-project to satisfy ADB's due diligence requirements and approving sub-project proposals submitted by PIUs and line departments; (iv) bidding, evaluation and contract award; (v) managing and disbursing funds; (vi) reviewing compliance with loan covenants, contract specifications, work plans and quality control; (vii) consolidating and submitting progress reports, finance and accounting/audit reports and matters requiring higher-level decision to the SLEC and ADB.

83. The sub-project will be implemented by the Project Implementation Unit (PIU) at local level (Bilaspur), comprising of personnel drawn from relevant line departments on deputation and outside of government and will be headed by a Project Manager. The PIU will be responsible for: (i) prioritizing and preparing sub-project proposals; (ii) providing day-to-day assistance, supervision and guidance to the PWD and an agency to be hired for quality check; (iii) conducting detailed assessments and surveys including public consultation and input from stakeholders; (iv) preparing detailed designs, specifications, schedule of quantity, bidding documents, and related documentation; (v) implementing civil works and related activities; (vi) reporting to PMU; (vii) preparing regular progress reports for the SLEC, the executing agency and ADB through PMU; and (viii) supervising construction, conducting quality control, approving progress payments to contractors; and (ix) maintaining records and accounts on an up-to-date basis and making these available to ADB, its missions, or

auditors for inspection.

84. The Project Management Consultant (PMC) has been engaged to provide support to the PMU in overall planning, risk management, implementation, monitoring and evaluation of sub-projects under the HPSPDP. The PMC also assists the PMU and PIUs in meeting the relevant requirements of ADB, GOHP and GOI for project implementation. The PMC will report to and work under the overall guidance of the PMU. The scope of services of the PMC's will include: (i) planning, reporting, and communication; (ii) establishment of procedures and systems; (iii) review and preparation of plans, manuals and reports; (iv) overall project management, monitoring and implementation of MIS; and (v) social, environmental, archaeological, occupational health and safety, community participation and gender action compliance monitoring.

85. The HPKVN has also engaged one consulting firm for the quality check and to meet timeline requirements. This consulting firm also works under the PMU. The scope of services of quality assurance consulting firm include but not necessarily be limited to: (i) surveys, verification of feasibility studies and base maps; (ii) project planning and management support to the PIU; (iii) finalization of design criteria, preparation of manuals, guidelines and systems; (iv) preparation of detailed design and bid documents; and (v) construction management and contract administration.

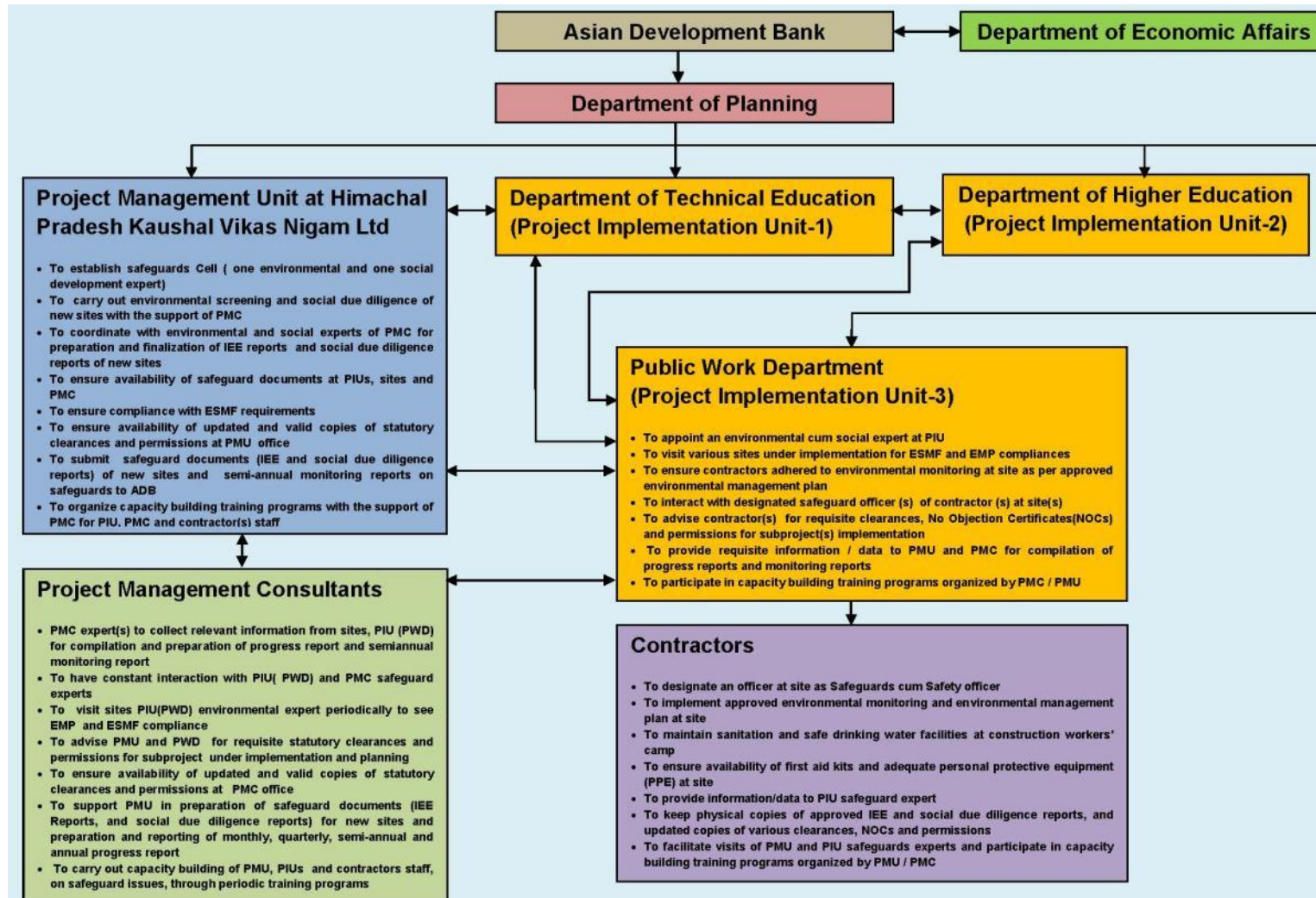
86. In order to ensure effective implementation of safeguard related components in the project PIU at PWD will include a safeguard expert (an environmental cum social expert) in the team. This safeguard expert will ensure compliance with ESMF requirements, and implementation of environmental management plan of sub-project at site through contractor.

87. The PMC also has safeguard experts in their team to support PMU in reporting, safeguards related documents preparation, disclosure and capacity building of PIUs, PMU and contractor(s). The PMU at HPKVN will establish a safeguard cell comprising of an environmental expert, and a social development expert.

88. The contractor at MCC construction site will designate one officer as safeguard cum safety officer for the implementation of IEE and EMP requirements. The project implementation arrangement for safeguard compliance has been shown below in **Figure - 11**.

89. The EMP for Pre construction, construction and operation phases is given in **Tables- 16 to 18**

Figure-11: Project implementation arrangement for safeguard compliance



B. Responsibility for updating IEE during Pre-Construction and Construction

90. **Responsibility for monitoring.** During construction, the Environmental Specialist of the Safeguards cell at PMU (at HPKVN) and the designated representative engineer of the PWD will monitor the contractor's performance. During the operation phase, monitoring will be the responsibility of the PMU. The Environmental specialist PMU will prepare semi-annual reports.

91. **Responsibility for Reporting.** PMU at HPKVN will submit semi-annual reports on the implementation of the EMP to ADB. It will permit ADB to field environmental review missions to examine in detail, the environmental aspects of the project. Any major lapses in adhering to the ESMF and IEE and / or EMPs for specific sub-projects should be reported to ADB immediately. The PMC's Environment Safeguard Specialist assists the PMU in finalizing the semi-annual and annual progress reports. For any non-compliance observed corrective actions are taken in a time bound manner. The cost for mitigating non-compliance will be borne by the contractor as per contract provisions. In case of mitigation costs not coming in scope of contract, these will be met out of contingencies built in EMP cost and in overall project cost.

Table-16: Pre-Construction Phase Environmental Management Plan

Sl. No.	Environmental Issues	Mitigation Measures	Parameters (Indicators for Compliance)	Responsible for Implementation	Responsible for Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
1	Lack of sufficient planning to assure long term sustainability of the improvements and ensure protection of the assets created.	The MCC Design has included provisions for ensuring effective maintenance and protection of the assets to be created so as to ensure the long term sustainability. The long term sustainability has been ensured by taking into consideration appropriate Bureau of Indian Standards Codes (BIS) for MCC building design, Seismic Zone V coefficient, appropriate wind load factor (corresponding to 39 m/s wind speed), and detailed design after carrying geotechnical investigations and topographic surveys.	Verification of site specific design parameters	PWD	PMU and PMC	Review after completion of DPR	Part of PWD and PMC Professional Fee
2	Layout of components to avoid impacts on the aesthetics of the MCC site and surroundings	The site and layout of MCC have been finalized at vacant land close to existing Government building. The exterior of MCC building will well mix with the existing buildings.	MCC building's exteriors	PIU and PWD	PMU and PMC	Review after completion of detailed design	Part of PWD and PMC Professional Fee
3	Slope stability related issues	The slope protection measures as designed will be implemented. Further, during construction any	Slope protection measures as designed and measures at	PIU and PWD	PMU and PMC	Review of recommended slope protection measures	Part of PWD and PMC Professional Fee

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Sl. No.	Environmental Issues	Mitigation Measures	Parameters (Indicators for Compliance)	Responsible for Implementation	Responsible for Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
		exposed slopes at excavated areas will be covered and slope protection measures will be provided specially at side slopes of internal roads.	side slopes of access path, internal roads, etc.				
4	Increased storm water runoff from alterations of the site's natural drainage patterns due to landscaping, excavation works, construction of parking lot, and addition of paved surfaces	Design of proposed MCC building enables efficient drainage of the MCC site. The drainage of MCC building has been integrated with existing drainage pattern of site. The storm water generated will be diverted to local drains through a properly constructed drainage system. Since MCC site is in hilly region, therefore, there is swift flow and drainage is not an issue.	Arrangement for proper diversion of storm water runoff	PIU and PWD	PMU and PMC	After mobilization of contractor at the site and during establishment of construction camp at MCC site.	Incidental to construction cost
5	Integration of energy efficiency and energy conservation programs in design of sub-project components	The detailed design for the proposed MCC at Bilaspur has ensured the environmental sustainability principles, including energy efficiency, resource recycling, waste minimization, etc. The design considers the following energy efficiency measures: <ul style="list-style-type: none"> • Usage of recyclable materials like wood substitutes. • Installation of BEE certified 	Specifications of rain water harvesting structures and electrical fixtures	PIUs and PWD	PMU and PMC	During finalization of detailed design	Part of project cost

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Sl. No.	Environmental Issues	Mitigation Measures	Parameters (Indicators for Compliance)	Responsible for Implementation	Responsible for Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
		equipment <ul style="list-style-type: none"> • Usage of energy efficient lighting fixtures (LED) • Provisions for rainwater harvesting structures 					
6	Consents, permits, clearances, no objection certificate (NOC), etc.	Obtain all necessary consents, permits, clearances, NOCs, etc. prior to start of civil works. Acknowledge in writing and provide report on compliance all obtained consents, permits, clearances, NOCs, etc.	Consents, permits, clearance and NOCs Records and communications	PIU	PMU	check consent for establishment of construction camp at MCC site, and approval from civic authorities	Project cost
7	Establishment of baseline environmental conditions prior to start of civil works	1-Conduct documentation of location of components, areas for construction zone (Camp, staging, storage, stockpiling, etc.) and surroundings (within direct impact zones). Include photos and GPS coordinates 2- Carry out environmental monitoring at MCC site for ambient air quality, water quality and noise levels to establish baseline environmental monitoring for the parameters indicated in	Records and Photographs, baseline environmental monitoring results	Contractor	PIU and PWD	Once prior to start of construction works	Contractor

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Sl. No.	Environmental Issues	Mitigation Measures	Parameters (Indicators for Compliance)	Responsible for Implementation	Responsible for Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
		the monitoring plan					
8	Utilities	<ul style="list-style-type: none"> The locations and operators of utilities to be impacted should be identified and documented in detailed design documents to prevent unnecessary disruption of services during the construction phase. Require contractor to prepare a contingency plan to include actions to be done in case of unintentional interruption of services. Obtain from the PIU and/or PWD the list of affected utilities and operators; If relocations are necessary; contractor will coordinate with the providers to relocate the utility. 	<p>List and maps showing utilities to be shifted</p> <p>Contingency plan for services disruption</p>	<ul style="list-style-type: none"> PWD will prepare preliminary list and maps of utilities to be shifted During detailed design phase, contractor to (i) prepare list and operators of utilities to be shifted; (ii) contingency plan 	PIUs and PWD	Pre-Construction Phase	Contractor
9	Social and Cultural Resources	<ul style="list-style-type: none"> Consult Archaeological Survey of India (ASI) or Himachal Pradesh State Archaeology Department to obtain an expert assessment of the archaeological potential of MCC site although no such 	Chance find protocol	<ul style="list-style-type: none"> PMC to consult ASI or HP State Archaeology Department PMC to develop protocol for chance finds 	PMU	Prior to start of construction activities	PMC

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Sl. No.	Environmental Issues	Mitigation Measures	Parameters (Indicators for Compliance)	Responsible for Implementation	Responsible for Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
		<p>potential is seen.</p> <ul style="list-style-type: none"> Consider alternatives, if the MCC site, is found to be of medium or high risk. Include state and local archaeological, cultural and historical authorities, and interest groups in consultation forums as project stakeholders so that their expertise can be made available. Develop a protocol for use by the contractor in conducting any excavation work, to ensure that any chance finds are recognized and measures are taken to ensure they are protected and conserved. 					
10	Construction Camp- Locations, Selection, Design and Layout	<p>Sitting of the construction Camp, at the MCC site, shall be as per the guidelines below and details of layout to be approved by PWD.</p> <p>The potential locations for labor camp and construction camp shall be identified by the contractor and this identified site shall be visited by the environmental expert of PMU safeguards cell along</p>	Construction Camp site, and locations of material storage areas, sanitation facilities	Contractor	PWD and PIU	At the time of construction camp establishment and finalization of storage areas	Contractor

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Sl. No.	Environmental Issues	Mitigation Measures	Parameters (Indicators for Compliance)	Responsible for Implementation	Responsible for Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
		with environmental expert of PWD and one having least impacts on environment will be approved by the PWD and PMU. As far as possible, construction camp and labor camp will be established at vacant space of plot or a house will be hired in the vicinity of site. Locations for storage of construction materials shall be identified at the site or at any suitable buildings close to MCC site. Sanitation facilities at construction camp shall be adequately planned.					
11	Sources of construction materials	<p>Use quarry sites and sources licensed by the GOHP.</p> <p>Verify suitability of all material sources and obtain approvals from PIU.</p> <p>If additional quarries are required after construction has started, obtain written approval from PIU.</p> <p>Submit to PWD on a monthly basis documentation of sources of materials.</p>	Permits issued to quarries and sources of materials	<p>Contractor</p> <p>PMC and PWD to verify sources (including permits) if additional is requested by contractor</p>	PMU and PIU	Upon submission by contractor	PMC and PWD as part of consultancy fee
12	Access for Construction material transportation	Plan transportation routes so that heavy vehicles do not use narrow local roads,	Traffic management plan	Contractor	PIU and PWD	During Delivery of construction materials	Contractor

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Sl. No.	Environmental Issues	Mitigation Measures	Parameters (Indicators for Compliance)	Responsible for Implementation	Responsible for Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
		<p>except in the immediate vicinity of MCC site.</p> <p>Schedule transport and hauling activities during non-peak hours.</p> <p>Locate entry and exit points in areas where there is low potential for traffic congestion.</p> <p>Keep the site free from all unnecessary obstructions.</p> <p>Drive vehicles in a considerate manner. Coordinate with the Traffic Police Department for temporary road diversions and for provision of traffic aids if transportation activities cannot be avoided during peak hours.</p>					
13	Occupational health and safety	<p>Comply with IFC EHS Guidelines on Occupational Health and Safety. Develop comprehensive site-specific health and safety (H&S) plans. The overall objective is to provide guidance to contractor on establishing a management</p>	Health and safety (H&S) plan	Contractor	PMU and PMC, PIU and PWD	During construction phase	Contractor

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Sl. No.	Environmental Issues	Mitigation Measures	Parameters (Indicators for Compliance)	Responsible for Implementation	Responsible for Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
		<p>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.</p> <p>Include in H&S plan measures such as: (i) type of hazards at MCC construction site; (ii) corresponding personal protective equipment for each identified hazard; (iii) H&S training for all site personnel; (iv) procedures to be followed for all site activities; and (v) documentation of work-related accidents.</p> <p>Provide medical insurance coverage for workers.</p>					
14	Stakeholder consultations	Continue information dissemination, stakeholder consultations, and involvement/participation of stakeholders during project implementation.	<p>-Disclosure records</p> <p>- Consultations</p>	PMU,PMC PIU,PWD and Contractor	PMU and PMC	<ul style="list-style-type: none"> • During updating of IEE Report • During preparation of site- and activity-specific plans as per EMP 	PMU and Contractor

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Sl. No.	Environmental Issues	Mitigation Measures	Parameters (Indicators for Compliance)	Responsible for Implementation	Responsible for Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
						<ul style="list-style-type: none"> • Prior to start of construction • During construction 	

Table-17: Construction Phase Environmental Management Plan

Sl. No.	Environmental Issues	Mitigation Measures	Parameter (Indicators for Compliance)	Responsible Implementation	Responsible Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
1	Sanitation and drinking water facilities at construction Camp	The contractor shall provide sanitation facilities at the camp site. These facilities will include dust bins in adequate numbers for solid waste collection, drinking water facilities, and separate toilets for male and females. These toilets facilities shall be maintained and septic tanks/soak pits shall be provided at the toilets. The dust bins shall be regularly emptied and waste from camp site shall be disposed off at designated locations.	Construction camp sanitation and drinking water facilities	Contractor	PWD and PIU	Regularly during construction phase	Contractor
2	Traffic Circulation plan during construction phase	Prior to commencement of site activities and mobilization on ground ,the Contractor will prepare and get approved from the	Safe movement of Traffic	Contractor	PWD and PIU	Every day during construction phase	Contractor

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Sl. No.	Environmental Issues	Mitigation Measures	Parameter (Indicators for Compliance)	Responsible Implementation	Responsible Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
		Engineer (PWD), circulation plan during construction for safe passage of public vehicles so that locals are not at inconvenience. The Contractor with support of the PIU will carry out dissemination of these information and circulation plan at MCC Bilaspur site and main access roads					
3	Site clearance activities, including delineation of construction areas	Only ground cover/shrubs that impinge directly on the permanent works or necessary temporary works shall be removed with prior approval from the Environmental Experts of PWD and PMC. All areas used for temporary construction operations will be subjected to complete restoration to their former conditions with appropriate rehabilitation procedures. The photographic records shall be maintained for the temporary sites used for construction. These will help in proper restoration.	Pre-construction records of site and vegetation in area of construction	Contractor	PWD and PIU	Duration of site preparation	PWD and PIU
4	Drinking water availability at Construction camp and construction sites	Sufficient supply of cold potable water to be provided and maintained. If the drinking water is obtained	Water supply source and availability of water	Contractor	PWD and PIU	During Construction phase regularly	Contractor

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Sl. No.	Environmental Issues	Mitigation Measures	Parameter (Indicators for Compliance)	Responsible Implementation	Responsible Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
		from an intermittent public water supply then storage tanks will be provided. For this contractor will submit plans how availability of drinking water shall be assured. In case it is obtained from the natural spring then permission from local authorities shall be obtained.	permission of local authority if obtained from local spring				
5	Waste disposal	The pre-identified disposal location shall be part of Comprehensive Waste Disposal Plan. Solid Waste Management Plan to be prepared by the Contractor in consultation with local civic authorities. The Environmental Specialist of PWD shall approve these disposal sites after conducting a joint inspection on the site with the Contractor. Contractor shall ensure that waste shall not be disposed off near natural streams in the surroundings of site and along the access path.	Waste Disposal sites, waste management plan	Contractor	PWD and PIU	Regularly during construction phase	Contractor
6	Stockpiling of construction materials	Stockpiling of construction materials will be done in such a way that it does not impact and obstructs the	Stockpiling sites at MCC site	Contractor	PWD and PIU	Regularly during construction phase	Contractor

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Sl. No.	Environmental Issues	Mitigation Measures	Parameter (Indicators for Compliance)	Responsible Implementation	Responsible Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
		drainage. The stockpiles will be covered to protect from dust and erosion.					
7	Arrangement for Construction Water	(i) The Contractor shall provide a list of locations and type of sources from where water for construction shall be acquired. (ii)The contractor shall use ground/surface water as a source of water for the construction with the written consent from the concerned Department. (iii)To avoid disruption/disturbance to other water users, the Contractor shall arrange water from market or from local municipality and consult PWD before finalizing the source.	Water availability at identified water source locations	Contractor	PWD and PIU	Regularly during construction phase	Contractor
8	Soil Erosion	Slope protection measures will be undertaken as per design to control soil erosion and building stability as MCC site is undulating.	Locations of slope protection	Contractor	PIU and PWD		Contractor
9	Water Pollution from Construction Wastes	The Contractor shall take all precautionary measures to prevent entering of wastewater into any local stream during construction.	Sub-project site	Contractor	PIU and PWD	Regularly during construction phase	Contractor
10	Water Pollution from Fuel and Lubricants	The Contractor shall ensure that all construction vehicle	Vehicle parking, refueling sites,	Contractor	PIU and PWD	Regularly during	Contractor

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Sl. No.	Environmental Issues	Mitigation Measures	Parameter (Indicators for Compliance)	Responsible Implementation	Responsible Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
		<p>parking locations, fuel/lubricants storage sites, vehicle, machinery and equipment maintenance and refueling site shall be located at least 500 m away from the natural streams.</p> <p>Contractor shall ensure that all vehicle/machinery and equipment operation, maintenance and refueling shall be carried out in such a manner that spillage of fuels and lubricants does not contaminate the ground.</p> <p>Waste water from vehicle parking, fuel storage areas, workshops, wash down and refueling areas shall be treated in an oil interceptor before discharging it on land or into surface water bodies or into other treatment system.</p>	Oil interceptor functioning			construction phase	
11	Soil Pollution due to fuel and lubricants, construction wastes	The fuel storage and vehicle cleaning area will be stationed such that spillage of fuels and lubricants does not contaminate the ground. Soil and pollution parameters will be monitored as per monitoring plan.	Vehicle maintenance and parking area, soil quality monitoring results	Contractor	PIU and PWD	Regularly during construction phase	Contractor
12	Siltation of water bodies due to spillage	No disposal of construction wastes will be carried out	Water bodies specially natural	Contractor	PIU and PWD	Regularly during	Contractor

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	of construction wastes	into the surface water bodies. Extraneous construction wastes will be transported to the pre-identified disposal sites for safe disposal.	streams			construction phase	
13	Generation of dust	The contractor will take every precaution to reduce the levels of dust at construction site. All filling works to be protected/ covered in a manner to minimize dust generation. In order to minimize impacts on neighboring buildings, the MCC site will be properly barricaded with prefabricated MS sheets of adequate height (3-4 m).	Sub-project site, air quality monitoring results	Contractor	PIU and PWD	Regularly during construction phase	Contractor
14	Emission from Construction Vehicles, Equipment and Machinery	All vehicles, equipment and machinery used for construction shall conform to the relevant Bureau of India Standard (BIS) norms. The discharge standards promulgated under the Environment Protection Act, 1986 shall be strictly adhered to. The silent/quiet equipment available in the market shall be used in the MCC construction. The Contractor shall	PUC certificates of vehicles and machinery	Contractor	PIU and PWD	Regularly during construction phase	Contractor

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		maintain a record of PUC for all vehicles and machinery used during the contract period which shall be produced for verification whenever required.					
15	Noise Pollution	The Contractor shall confirm that all Construction equipment used in construction shall strictly conform to the MoEFCC and CPCB noise standards and all vehicles and equipment used in construction shall be fitted with exhaust silencers. At the construction sites noisy construction work such as crushing, operation of DG sets, use of high noise generation equipment shall be stopped during the night time between 10.00 pm to 6.00 am. Noise limits for construction equipment used in this project will not exceed 75 dB (A). The MCC site will be properly barricaded with MS Sheets of adequate height to avoid impacts of noise generated due to construction activities.	Certificates of vehicles conforming noise standards, noise monitoring results	Contractor	PWD and PIU	Regularly during construction phase	Contractor
16	Impacts on flora and fauna	Minimize impacts on flora and fauna during	Environmental monitoring	Contractor	PWD and PIU	Regularly during	Contractor

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Sl. No.	Environmental Issues	Mitigation Measures	Parameter (Indicators for Compliance)	Responsible Implementation	Responsible Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
		construction phase by limiting site clearance bare minimum and limiting all types of pollution generation	reports, Trees and shrubs planted at MCC site			construction phase	
17	Material Handling at Sub-Project site	<p>Workers employed on mixing cement, lime mortars, concrete, etc., will be provided with protective footwear and protective goggles.</p> <p>Workers, who are engaged in welding works, will be provided with welder's protective eye-shields.</p> <p>The use of any toxic chemical will be strictly in accordance with the manufacturer's instructions. The PWD will be given at least 6 working days' notice of the proposed use of any chemical. A register of all toxic chemicals delivered to the site will be kept and maintained up to date by the Contractor.</p>	Data on available personal protective equipment	Contractor	PWD and PIU	Regularly during construction phase	Contractor
18	Disposal of Construction Waste, and Debris	The Contractor shall confirm that safe disposal of the construction waste will be ensured in the pre-identified disposal locations. In no case, any construction waste	Disposal site	Contractor	PIU and PWD	Regularly during construction phase	Contractor

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Sl. No.	Environmental Issues	Mitigation Measures	Parameter (Indicators for Compliance)	Responsible Implementation	Responsible Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
		will be disposed of in open area near MCC site					
19	Onsite emergency plan for minor accidents and mishaps and Disaster Management Plan for Natural Calamities	The onsite emergency plan will be prepared by the contractor in consultation with PWD and PMC. For natural calamities, disaster management plan prepared by the PWD under the provisions of Disaster Management Act 2005 will be followed.	Onsite emergency plan document and Disaster Management Plan document of PWD	Contractor	PWD	Mock Drill every quarter	Contractor
20	Safety Measures During Construction	Adequate safety measures for workers during handling of materials at the proposed MCC site will be taken up. The contractor has to comply with all regulations for the safety of workers. Precaution will be taken to prevent danger of the workers from accidental injuries, fire, 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.	Records of availability of personal protective equipment, availability of first aid kits	Contractor	PIU and PWD	Regularly during construction phase	Contractor
21	Clearing of Construction of Camp and Restoration	Contractor to prepare site restoration plans for approval by the Engineer	Restoration plan, and records of pre-construction	Contractor	PIU and PWD	End of construction phase	Contractor

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Sl. No.	Environmental Issues	Mitigation Measures	Parameter (Indicators for Compliance)	Responsible Implementation	Responsible Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
		(PWD). The plan is 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 PWD	of temporary sites				
22	Proper connection of sanitation facilities to the existing sewage system	There is existing sewage system in sub-project area. Proper connection to existing sewage lines shall be made.	Sewage line connection from sanitation facilities	Contractor	PIU and PWD	Construction phase	Contractor

Table-18: Operation Phase Environmental Management Plan

Sl. No.	Environmental Issues	Mitigation Measures	Parameter (Indicators for Compliance)	Responsible Implementation	Responsible Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
1	Environmental Conditions	The periodic monitoring of the ambient air quality, noise levels, and water quality will be taken up as per monitoring plan through an approved monitoring agency. Necessary boundary	Monitoring results and relevant standards	DOLE through Pollution Monitoring Agency	PIU	As per monitoring Plan	DOLE and PMU

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Sl. No.	Environmental Issues	Mitigation Measures	Parameter (Indicators for Compliance)	Responsible Implementation	Responsible Supervision	Frequency for Monitoring	Sources of Fund for Implementing Mitigation Measure
		wall and plantation around boundary will be maintained to screen vehicular traffic emissions from access road.					
2	Unhygienic conditions due to poor maintenance of sanitation facilities and irregular solid waste collection	The DOLE will carry out maintenance of the toilets at MCC and carry out the regular collection and disposal of wastes to a designated waste treatment site. The solid waste disposal will be integrated with the Bilaspur city waste disposal system.	Maintenance schedule of MCC building and facilities created	DOLE	PIU	Every Quarter	DOLE and PMU
3	Natural Disasters	Necessary procedures to be followed by the visitors, MCC staff and trainees during the natural disasters shall be written at prominent locations.	Warnings of disasters by Meteorological Department	District Administration	PIU	During Disasters	Government of Himachal Pradesh
4	Onsite emergency plan for minor accidents and mishaps and Disaster Management Plan for Natural Calamities	The Bilaspur MCC Manager will prepare onsite emergency plan for possible minor accidents and mishaps for operational phase. For natural calamities, the disaster management plan prepared by DOLE will be followed.	Onsite Emergency plan document and Disaster Management Plan document	Manager MCC Bilaspur	DOLE	Mock Drills every quarter	MCC operation cost

C. Environmental Monitoring Plan

92. Environmental monitoring will be undertaken during construction at three levels. The Environment and Social Safeguards Specialists of the PMC will ensure that IEE and EMP are updated if required before start of construction. These PMC staff will also coordinate between PWD, HPKVN and the user department – DOLE in this case to ensure that all the provisions of the EMP are being adhered to by the contractor. Relevant staff from the PWD will monitor the contractor and ensure that the EMP and all of GOHP's rules with respect to the environment, and handling of solid and liquid waste are being followed.

93. To ensure the effective implementation of mitigation measures and EMP during construction and operation phase of the MCC, it is essential that an effective Environmental Monitoring Plan be followed as given in **Table 19**. The proposed monitoring of all relevant environmental parameters, with a description of the sampling stations, frequency of monitoring, applicable standards and responsible agencies are presented in this table.

Table-19: Monitoring Plan for MCC Bilaspur for Preconstruction, Construction and Operation Phases

Sl. No.	Field (Environmental Attribute)	Phase	Parameters to be Monitored	Locations	Frequency	Responsibility	Cost (INR/US\$)
1	Air Quality	During pre-construction phase	CO, NO _x , PM ₁₀ , PM _{2.5} , and SO ₂	MCC construction site	Once in the pre-construction phase to establish baseline	Contractor, PWD, PMU, and DOLE through approved Monitoring Agency	INR130,000/ US \$ 1900
		During Construction Phase			Once in every three months (except monsoon season) during construction phase (24 months construction phase)		
		Operation Phase			Once in season except monsoon season for initial 2 years		
2	Water quality	During pre-construction phase	TDS, TSS, pH, Hardness, BOD, Faecal Coli form	Ground water source close to MCC site	Once in pre-construction phase to establish baseline	Contractor, PWD, PMU, and DOLE through approved Monitoring Agency	INR130,000/ US \$1900
		During Construction Phase			Once in every three months (except monsoon season) during construction phase		
		Operation Phase			Once in season except monsoon season for initial 2 years		
3	Noise Levels	During pre-construction phase	Noise quality as per National Ambient Noise Standards on dB(A) scale	Noise levels at MCC site	Once in pre-Construction phase to establish baseline	Contractor, PWD, PMU, and DOLE through approved Monitoring Agency	INR 39,000/ US \$ 600
		During Construction Phase			Once in every three months (except monsoon season) during construction phase		
		Operation Phase			Once in season except monsoon season for initial 2 years		

Summary of Site- and Activity-Specific Plans as per MCC EMP

94. **Table-20** summarizes site- and activity-specific plans to be prepared as per EMP tables.

Table-20: Site- and Activity-Specific Plans/Programs as per MCC Bilaspur EMP

To be Prepared During	Specific Plan/Program	Purpose	Responsible for Preparation	Responsible for Implementation
Pre-Construction phase	Environmental monitoring program as per detailed design	Indicate sampling locations, methodology and parameters to the contractor	PMU, PIU, PMC and PWD	Contractor
Pre-Construction phase	List and maps showing utilities to be shifted	Utilities shifting	PWD during preliminary design and pre construction phase	Contractor
Pre-Construction Phase	Contingency plan for interruption of services	Mitigate impacts due to interruption of services during utilities shifting	Contractor	Contractor
Pre-Construction	Chance find protocol	Address archaeological or historical chance finds	PMU and PMC	Contractor
Pre-Construction Phase	List of pre-approved sites for construction camp, stockpiles, and waste disposal sites	Location/s for construction camp, areas for stockpile, storage and disposal for minimization of impacts	PMC, PMU, PWD and PIU	Contractor
Pre-Construction phase	Waste/Spoil management plan	Mitigate impacts due to waste generation	Contractor	Contractor
Pre-Construction phase	Spill prevention and containment plan	Mitigate impacts of accidental spills of oil, lubricants, fuels, concrete, and other hazardous materials	Contractor	Contractor
Construction phase	Traffic management plan	Mitigate impacts due to transport of materials and project related traffic movement	Contractor	Contractor
Construction phase	Health and Safety (H&S) plan	To comply with IFC EHS Guidelines on Occupational health and safety	Contractor	Contractor
Construction phase	Erosion control and re-vegetation plan	Mitigate impacts due to erosion and vegetation removal at MCC site	Contractor	Contractor
Construction Phase	Environmental Monitoring Plan Implementation	To check efficacy of mitigation measures	PMC, PMU, and PWD	Contractor
Operation Phase	Maintenance of sub-project sites landscape,	To maintain MCC plantation and to carry out environmental	PMU and DOLE	DOLE

To be Prepared During	Specific Plan/Program	Purpose	Responsible for Preparation	Responsible for Implementation
	and plantation and environmental monitoring plan	monitoring to check environmental conditions at site		

95. The guidelines for preparation of site specific traffic management plans have been provided in **Annexure-3**.

D. Capacity Building

96. In addition to the primary objective of skills enhancement of Himachali youth, the MCC sub-project will also raise awareness about environmental conservation amongst trainees, implementing agencies, and local communities. The project will have the opportunity to build capacity in environment protection for the above mentioned stakeholders.

97. The Environmental Specialists at PMC and safeguards cell at PMU will provide the basic training required for environmental awareness. 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 training would cover basic principles of environmental assessment and management; mitigation plans and programs, implementation techniques, monitoring methods and tools. The proposed training program along with the frequency of sessions is presented in **Table 21** below.

Table-21: Training Modules for Environmental Management

Program	Description	Participants	Duration	Training Conducting Agency
A. Pre-Construction Stage				
Sensitization Workshop on Environment	Introduction to Environment: environmental assessment and social due diligence requirements in the project, Regulatory Clearances, and permission requirements in the project, and EMP Implementation, Introduction of ADB SPS 2009, and ADB Guidelines on Environmental considerations in planning, design and implementing projects	DOLE and PWD officials, Environmental specialist of PWD and other Engineering staff associated with the sub- project, PIU staff and HPKVN PMU staff	½ Working Day	Environmental Specialist of the PMC
Session 1	Environmental impacts due to sub-projects in construction and operation phases, pollution generation activities during pre-construction and construction phases Environmental Management, Environmental Mitigation Provisions in the Contract, Implementation Arrangements, Methodology of Assessment Good engineering practices to be integrated into contract documents	All PIUs, HPKVN, and PWD Staff associated with MCC Bilaspur project	½ Working Day	Safeguards Specialist of the PMC

Program	Description	Participants	Duration	Training Conducting Agency
B. Construction Stage				
Session 2	Roles and Responsibilities- Roles and Responsibilities of Implementing Agencies officials, associated contractor and consultants towards protection of environment. Implementation. Arrangements for EMP and Environmental Monitoring during construction phase	Engineers and staff of line departments of the Government of GOHP, PIUs, PMC, PMU and HPKVN	½ Working Day	Safeguards Specialist of the PMU
Session 3	Monitoring and Reporting System	Engineers and staff of implementing agencies , and PMU/PIU (including the ES)	¼ Working Day	Safeguards Specialist of PMU

E. Environmental Budget

98. Most of the mitigation measures require the contractor to adopt good site practices, which should be part of their normal procedures already, so there are unlikely to be major costs associated with compliance. Only those items not covered under budgets for construction are included in the IEE budget. The IEE costs include mitigation, monitoring and capacity building costs. The summary budget for the environmental management costs for MCC is presented in **Table 22**.

Table-22: Environmental Management and Monitoring costs (INR)

Monitoring Component	Rate	Amount (INR)	Source of Fund
Pre-Construction and Construction Phase			
Air Quality - one location at MCC site(where construction works are in progress), thrice a year (one sample pre construction and 6 samples during construction phase; total 7 samples)	10,000	70,000	Contractor
Water Quality- One ground water sample from MCC construction site, thrice a year (one sample pre construction and 6 samples during construction phase; total 7 samples)	10,000	70,000	Contractor
Noise Quality-One location at project site (where construction works are in progress), thrice a year (one sample pre construction and 6 samples during construction phase; total 7 samples)	3000	21,000	Contractor
Training for Capacity Building of stakeholders	Covered in the consultancy cost of PWD and PMC		
Total Construction Phase Monitoring Cost (A)		161,000	Contractor
O & M Phase			
Air Quality -one location at finished MCC Building, thrice a year at each location,	10,000	60,000	PMU and DOLE

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Monitoring Component	Rate	Amount (INR)	Source of Fund
for initial 2 years (3 samples per annum, total 6 samples)			
Water Quality -one ground water sample MCC building site, thrice a year for initial 2 years (3 samples per annum, total 6 samples)	10,000	60,000	PMU and DOLE
Noise Quality- one location at completed MCC building, thrice a year for initial 2 years (3 samples per annum, total 6 samples)	3000	18,000	PMU and DOLE
Total O&M Phase Monitoring Cost (B)		138,000.00	PMU and DOLE
Total Cost (A+B)		299,000.00	
Contingencies @ 5 %		14,950.00	
Total Budgeted Cost (INR)		313,950 (Say 350,000)	

F. Environmental Monitoring and Reporting

99. The PMU with the assistance of PMC will monitor and measure the progress of EMP implementation during construction phase. During operation phase PMU safeguard cell will take care of EMP implementation. PWD environmental cum social expert will undertake site inspections and document review to verify compliance with the EMP and progress toward the final outcome. PWD will submit monthly monitoring and implementation reports to PMU at HPKVN and to the concerned department (DOLE in the current case of MCC Bilaspur), who will take follow-up actions, if necessary. PWD will also submit quarterly, semiannual and annual monitoring and implementation reports to PMU. The PMU will submit semi-annual monitoring reports to ADB. Monitoring reports will be posted in a location accessible to the public.

100. ADB will review project performance against the EA's commitments as agreed in the legal documents. The extent of ADB's monitoring and supervision activities will be commensurate with the Project's risks and impacts. Monitoring and supervising of social and environmental safeguards will be integrated into the project performance management system. ADB will monitor projects on an ongoing basis until a project completion report is issued.

VI. PUBLIC CONSULTATION AND INFORMATION DISCLOSURE

A. Process For Consultations Followed

101. The MCC Bilaspur sub-project does not involve any elements, which could have an adverse impact on the community. There is no deprivation of any sort for the residents or displacement of any groups. Particularly, with regard to environmental impacts the sub-project can be characterized as innocuous.

102. In view of this, the need for holding a public hearing(as defined in EIA Notification 2006 of Government of India) is not perceived at this stage. However in compliance with the ADB's guidelines, focused public consultations were undertaken during the visit to MCC site. The officials of DOLE building functioning in the vicinity of MCC site were informed about the proposed sub-project in their area and their views were obtained. The elected ward Counselors of municipal council Bilaspur were also invited for consultations. During the preparation of this IEE, consultations have been held with the officials of Department of Planning, HPKVN, and Forest Department, DOUD, DORD and other stakeholders such as DTE.

103. The process of consultations was taken up, as an integral part of the MCC design and environmental assessment, in accordance with ADB Guidelines and following objectives:

- To educate the general public, specially potentially impacted or benefited communities, individuals and stakeholders about the proposed MCC activities;
- To familiarize the people with technical and environmental issues of the proposed MCC for better understanding;
- To solicit the opinion of the communities and individuals on environmental issues and assess the significance of impacts due to the proposed development;
- To foster co-operation among officers of EA and IAs, the community and the stakeholders to achieve a cordial working relationship for smooth implementation of the sub- project and
- To identify the environmental issues relating to the proposed activity.

104. During the consultations local residents opined that there is need to develop skills of local youth as there are limited employment opportunities in the state as well as there is need to support the skilled youth to get the employment. The sub-project building construction will lead to infrastructure creation for the support of employment. They demanded fast implementation of the MCC. The dates of consultations and stakeholders consulted have been summarized below in **Table 23**. The views, comments and suggestions of stakeholders and their incorporation in project design are presented in **Tables 24 and 25**. The records of consultations (list of participants with signatures) and consultation photographs are given in **Annexure- 4**.

Table-23: Dates and Stakeholders Consulted

Sl. No.	Stakeholders Consulted	Dates of Consultations
1	Himachal Pradesh Forest department	23 December 2015
2	Department of Rural Development, Department of Labor and Employment and Department of Higher Education	21 December 2015, May 10, 2016
3	Himachal Pradesh Pollution Control Board	23 December 2015
4	State Department of Environment, GOHP, HPKVN and DOP	14 and 15 March 2016

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Sl. No.	Stakeholders Consulted	Dates of Consultations
5	Department of Technical Education, GOHP	12 December 2015 and, 16 and 17 March 2016
6	Local stakeholders at Bilaspur at Employment Exchange office	09 May 2018

105. It is clear that most of the suggestions of stakeholders have been taken care in the project design.

Table-24: Views, Comments, and Suggestions of Stakeholders at sub-Project Sites and Addressed in Project Design

Sl. No.	Place	Date	Consultations held with	Issues discussed	Outcome of discussions and consideration in project design and Implementation
1	MCC Bilaspur Site (Employment Exchange Office near the site)	09/05/2018	With local residents close to site, Elected members of municipal council, DoLE GoHP officials	MCC proposal, project benefits, implementation schedule, environmental and social impacts during project implementation, etc.	<ol style="list-style-type: none"> 1. Participants welcomed the project and told the consultants that existing employment office is very small and there is requirement for better infrastructure and larger office to support youth in getting employment. 2. One participant (municipal engineer from Bilaspur municipal council) suggested that sewer levels at MCC site should be checked and toilet facilities level should be finalized in the design accordingly. The consultants replied that suggestion has been noted and will be taken care in building design. 3. One elected councilor suggested that Grey water and solid waste during construction and operation phases should be taken care. These should be properly disposed off. The consultants replied that during construction phase, sanitation facilities will be provided at construction camp and site. The possibility of hired accommodation will be explored for the construction workers. The solid waste generated will be segregated and utilized to the extent possible in the construction and balance will be disposed off in consultation with municipal officials. For the solid waste disposal, sites will be identified. In the operation phase, grey water will be diverted to sewage system. The solid waste generated during operation phase will be segregated and its disposal will be integrated with Bilaspur city disposal system. 4. The DOLE officials suggested that employment cards prepared for candidates should be digitized instead of manual today. The environmental consultant replied that this activity of digitization of card can be taken up in the operation phase. 5. One DOLE official suggested that refurbishment of existing building should also be taken up for better efficiency and utilization of space. The consultants replied that building refurbishment is yet to be included in the project scope. The suggestion has been noted.

Table-25: Summary of Stake Holder Consultations at Institutional Level

Sl. No.	Place and date	Consultations held with	Issues discussed	Outcome of discussions and consideration in project design and Implementation
1	Shimla, 23/12/2015	Conservator Forest Cum Nodal Officer CAMPA, State Forest Department	Clearances, permissions and No Objection Certificates (NOCs) - requirements from the State Forest Department and suggestions for the project	<ol style="list-style-type: none"> 1. The ADB Environment and Social Safeguards consultant briefly explained the project concept to the state department officials. 2. It was informed by the officials that for any site falling under forest land, clearance is required either under the 'Forest (Conservation) Act, 1980 or under the 'Schedule Tribe and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006. This point does not pertain to MCC Bilaspur sub-project. 3. For vocational training purposes, GOHP can give clearance up to 1.0 hectare land. If application is submitted under the Forest (Conservation) Act, 1980, then the net present value (NPV) of the land and cost for compensatory forestation are to be paid by the State Government. This point does not pertain to MCC Bilaspur sub-project. This point does not pertain to MCC Bilaspur sub-project. 4. If the application is submitted under Forest Rights Act 2006, then for educational institutes, payment of NPV and compensatory afforestation costs are exempted for the land up to 1.0 hectare. The clearance can also be issued at Divisional Forest Officer level. This point does not pertain to MCC Bilaspur sub-project. 5. The Forest Officials suggested that application may be made under Forest Rights Act for faster clearance if any site falls under the forest. 6. The ADB Environmental consultant assured everyone that sites on forest land will not be considered to the extent feasible. However, under unavoidable situations, applications for clearances will be submitted as suggested. 7. The land transfer for Women's Polytechnic at Rehan in Kangra district is also completed. The land has been transferred by the revenue department in the name of DOTE. This point does not pertain to MCC Bilaspur sub-project.

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Sl. No.	Place and date	Consultations held with	Issues discussed	Outcome of discussions and consideration in project design and Implementation
2	Shimla, 23/12/2016	Senior Environmental Engineer, Himachal Pradesh Pollution Control Board	Clearances and Permissions required from Himachal Pradesh Pollution Control Board (HPPCB) and Department of Environment	<ol style="list-style-type: none"> 1. The ADB Environmental consultant provided an overview on HPSPDP. 2. He enquired about the types of permissions and clearances required from the HPPCB and State Department of Environment. <p>The senior Environmental Engineer, Department of Environment, replied that educational and training institutes are exempted from the environmental clearance process. Therefore, there is no requirement for prior environmental clearances for CLCs, RLCs, MCCs and the Women's Polytechnic planned under HPSPDP. He explained that Consent to establish and Operate has to be obtained from HPPCB only if a residential complex is planned at any of the sites. In case hazardous waste is generated, then a management proposal has to be submitted to the HPPCB for Hazardous waste authorization and disposal.</p> <p>The ADB Environment and Safeguard consultant replied that none of the planned training facilities will generate hazardous waste, either during construction or operation.</p>
3	Sunder Nagar, 22/12/2015, 14/03/2016, and 15/03/2016	Director, DOTE, and other officials	ITI selected for up gradation, locations of RLCs and CLCs selected at ITI campus and site of proposed Women Polytechnic at Rehan in Kangra district	<ol style="list-style-type: none"> 1. The ADB Environment and Safeguard consultant enquired whether any of project sites under DOTE are planned in forest areas or within buffer or core zones of national park or bird sanctuary. Director, DOTE, replied that CLC/RLC sites planned are within the vacant sites within the premises of existing industrial training institutes. Only the site for the Women's Polytechnic in Kangra falls within revenue forest land. For this site NOC from Forest Department has been received. This point does not pertain to MCC subproject at Bilaspur. 2. The ADB Environment and Safeguard consultant suggested that DOTE should submit land ownership details/revenue records for all sites planned under the ADB funding for due diligence. He noted that DOTE should also start the process of getting NOC from the Forest Department and land transfer in DOTE name for the site in Rehan, Kangra, where the Women's Polytechnic is planned. This point does not pertain to MCC Bilaspur sub-project.

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Sl. No.	Place and date	Consultations held with	Issues discussed	Outcome of discussions and consideration in project design and Implementation
4	Shimla, 21/12/2015	Department of Labor and Employment (DOLE)	Locations of MCCs planned, approximate area required for MCCs	<ol style="list-style-type: none"> 1. The ADB Environment and Safeguard consultant enquired about the proposed locations of MCCs. The officials replied that with ADB assistance, 11 MCCs planned. The planned locations are Hamirpur, Shimla, Bilaspur, Kullu, Dharamsala, etc. As per Government of India guidelines, the built up area of around 3,000 sq.feet is needed for MCCs. 2. The ADB Environment and Safeguard consultant noted that the revenue record of land ownership should be provided to the ADB team for due diligence.
5	Shimla, 21/12/2015	Department of Rural Development (DoRD)	Locations of proposed RLCs, environmental and social safeguard issues, tree cutting, etc.	<ol style="list-style-type: none"> 1. The ADB Environment and Safeguard consultant enquired about probable locations of RLCs planned. 2. The environmental expert suggested that no sites with temporary or permanent occupation should be identified and revenue records showing ownership details should be provided for the social due diligence. Further, any site involving tree cutting, necessary tree cutting permission should be obtained. 3. The environmental expert also suggested that sites should be at least 300 m away from buildings/monuments of heritage importance and those declared as protected monuments by the State Archaeological Department or by the Archaeological Survey of India (ASI). The officials noted the suggestions.

B. Future Consultation And Information Disclosure

106. To ensure continued public and stakeholder participation in the sub-project life cycle, periodic consultations and focus group discussion should be continued. A grievance redressal committee will be formed within the PIU (at PWD) and also at PMU Level to register grievances of the people regarding technical, social and environmental issues. This participatory process will ensure that all views of the people are adequately reviewed and suitably incorporated in the design and implementation process. Further, to ensure an effective disclosure of the sub-projects proposals to the stakeholders and the communities in the vicinity of the individual sub-project locations, an extensive project awareness campaign will be carried out.

Information disclosure

107. Electronic version of the IEE will be placed in the official website of the DOLE, HPKVN, GOHP and the website of ADB after approval of the documents by the GOHP and ADB. On demand, any person seeking information can obtain a hard copy of the complete IEE document by paying cost of photocopy from the office of the PMU and PIU, on a written request.

108. The PMU will issue notification on the disclosure mechanism in local newspapers, ahead of the initiation of implementation of the MCC, providing information on the project, as well as the start dates, etc. The notice will be issued by the PMU in local newspapers one month ahead of the implementation works. This will create awareness of the project implementation among the public.

C. Grievance Redress Mechanism

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

110. GRC at PMU shall discuss the issue and try to resolve it and inform the PIU accordingly. If the matter is not resolved by the GRC at PMU level within one month of time the matter will be referred to State Level Empowered Committee (SLEC), who will resolve the complaint within one month. However, the aggrieved person/party can bring the matter to the Court of Law any time after filing the complaint either at PIU level or PMU level. The PIU and sub-project site office shall keep records of all grievances received including contact details of complainant, date of receiving the complaint, nature of grievance, agreed corrective actions and the date these were affected and final outcome. For this a complaint register will be maintained at each sub-project site. The grievance redress process is shown below. The cost for functioning of Grievance Redress Mechanism will be accounted for in project cost as part of PMU or PIU functioning.

111. Further, person(s) / aggrieved party who are, or may be, adversely affected by the subproject may submit complaints to ADB's Accountability Mechanism. The accountability mechanism provides an independent forum and process whereby people can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism,

affected person(s) / aggrieved party should first make a good faith effort to solve their problems by working with the ADB South Asia operations department including the India Resident Mission.

Composition and functions of GRC

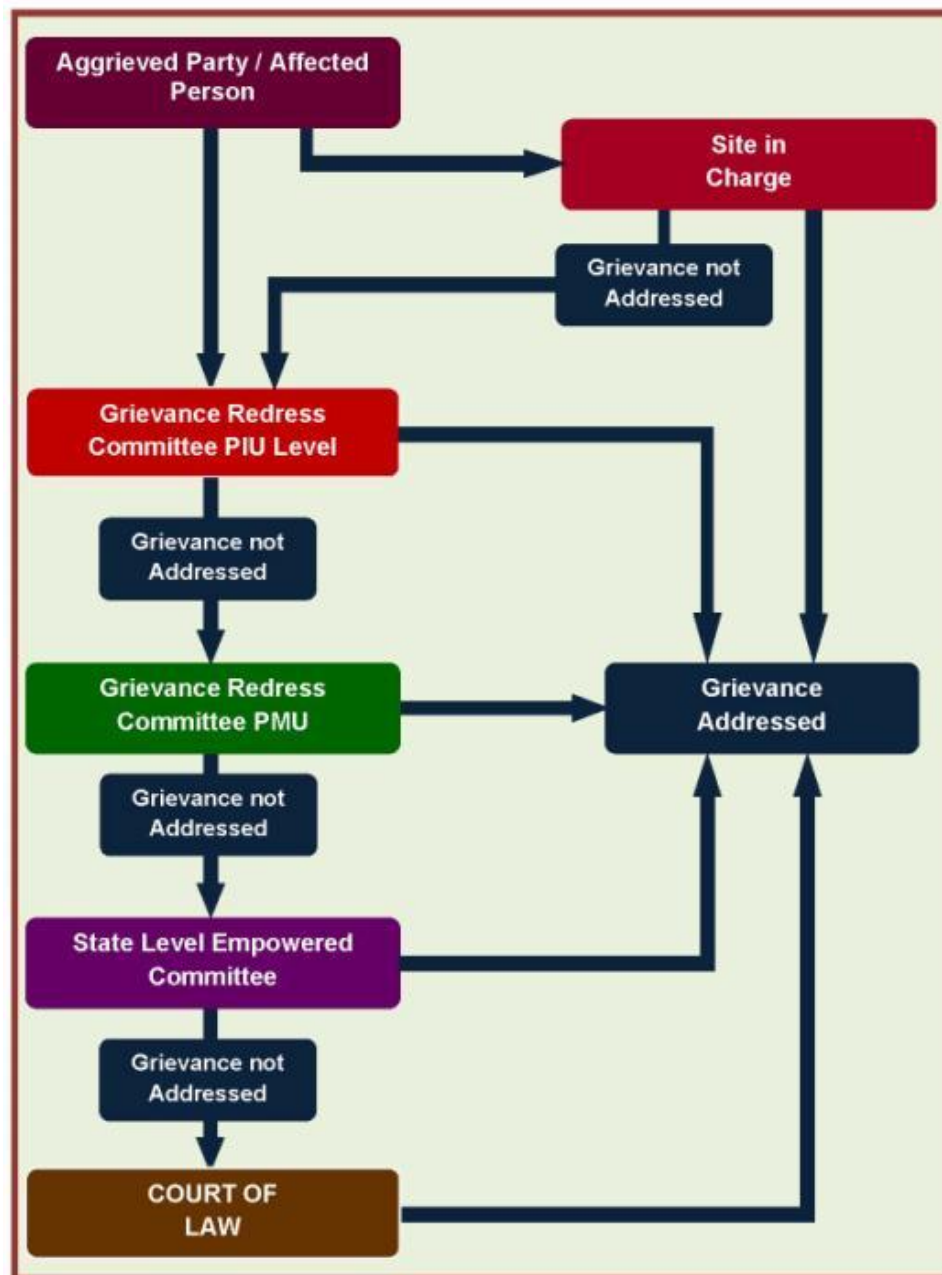
112. **PIU Level Grievance Redress Committee (GRC- PIU)** – This committee will comprise of Project Manager, Site In charge and one officer from contractor team. The GRC- PIU will be headed by Project Manager (PIU). It will meet at least once a month. The agenda of the meeting will be circulated to all the members and the affected persons/aggrieved party along with venue, date and time at least a week prior to the meeting. The matters shall remain with GRC at PIU level for one month. If the grievance is not resolved within this time period, then it will be referred to GRC at PMU.

113. **GRC at PMU.** There shall be one GRC in PMU. The matters not resolved by the GRC at PIU level within one month shall come under GRC at PMU. GRC at PMU will include the Managing Director, HPKVN, and Project Manager PIU (PWD), safeguard specialists (Environmental and Social) of the PMU, and one representative from concerned Department (DOTE/DOLE/DOHE/DOUD/DORD). The Committee shall be headed by the Managing Director, HPKVN. This committee shall look into the matters, which are referred to and not resolved by GRC at PIU level. If the matter is not resolved by the GRC at PMU level within one month of time, then the aggrieved person or party can bring the matter to State Level Empowered Committee (SLEC) which is in-charge of the overall HPSPDP. In case grievance is not readdressed by the SLEC, then complainant can reach to the court of law. It may also be mentioned that aggrieved party / or person is free to reach court of law any time.

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

- Web based: A separate corner will be developed at the HPKVN website so that public and affected person can register their complaints in the online column.
- Telecom based: A telephone number will be displayed at the web site of HPKVN and the construction site (s) sub projects so that general public can register their complaint through telephone and mobile phone to the PIU and PMU office. One complaint register will also be maintained at sub-project
- Construction site. The grievance redress mechanism for the HPSPDP for safeguards related issues has been shown below in **Figure-12**:

Figure 12: Grievance Redress Mechanism (HPSDP Project)



VII. FINDINGS AND RECOMMENDATIONS

115. The components of the proposed Bilaspur MCC subproject do not involve any interventions in and around the natural and cultural heritage destinations and have less significant (direct and indirect) environmental impacts. It is expected that the proposed sub-project will enhance economic growth and employability of local Himachali youth through development of skills.

116. This IEE has identified minor likely impacts on water, air and noise during construction and operation period and has defined mitigation measures. Those mitigation measures will be implemented and monitored during the sub-project execution. The overall environmental quality of sub-project surroundings will not be affected as a result of operating the MCC as adequate sanitation facilities have been planned.

117. The specific management measures laid down in the IEE will effectively address any adverse environmental impacts due to the sub-project. The effective implementation of the measures proposed will be ensured through the building up of capacity towards environmental management within the PMU supplemented by the technical expertise of Safeguards Specialists of the PMC. Further, the environmental monitoring plans provide adequate opportunities towards course correction to address any residual impacts during construction or operation stages.

VIII. CONCLUSIONS

118. On the basis of the IEE, it is expected that the proposed MCC sub-project components have only minor, localized, temporary and insignificant environmental impacts. These can be easily mitigated through adequate mitigation measures and regular monitoring during the design, construction and post construction phases. Negative impacts on water, air quality and noise levels during civil works & operation phase, which will be appropriately monitored and adequately mitigated. This report has not identified any comprehensive, broad, diverse or irreversible adverse impacts caused by the sub project. Based on the findings of the IEE, the classification of the sub-project as Category “B” is confirmed. No further special study or detailed EIA needs to be undertaken to comply with ADB SPS (2009).

ANNEXURE-1: RAPID ENVIRONMENTAL ASSESSMENT (REA) CHECKLIST

Instructions:

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

Country/Project Title:

India/ Supporting Skill Development in Himachal Pradesh

SAHS

Sector Division:

Screening Questions	Yes	No	Remarks
A. Project Siting Is the project area adjacent to or within any of the following areas?			As part of HPSDP, there is proposal to establish a MCC at Bilaspur city. The MCC site is within municipal limits of Bilaspur Municipal Council. This MCC site is located beyond 15 km distance from the (a) core and buffer zones of national parks, sanctuaries, tiger reserves, and biosphere reserves, etc. There are no structures or monuments of archaeological importance in the vicinity (within 300 m distance) of proposed MCC site.
▪ Underground utilities		√	The proposed MCC site is a GOHP owned vacant plot within the city of Bilaspur. There are no underground utilities at this plot as it is being constructed in the vacant space at the backside of existing employment exchange building.
▪ Cultural heritage site		√	No cultural heritage site within 15 km distance from the sub-project site.
▪ Protected Area		√	No protected areas within 25 km distance from the sub-project site.
▪ Wetland		√	There is no wetland within 15 km aerial distance from the MCC site.
▪ Mangrove		√	Since MCC site is not close to coast or creek so there is no question of mangroves close to the site.
▪ Estuarine		√	The MCC site is not close to sea, so not close to estuary.

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Screening Questions	Yes	No	Remarks
▪ Buffer zone of protected area		√	The MCC site is not within or close to buffer zone of protected areas.
▪ Special area for protecting biodiversity		√	There are no special areas for protection of biodiversity close to MCC site.
▪ Bay		√	The MCC site is Hilly State of Himachal Pradesh. This is not close to Bay.
B. Potential Environmental Impacts Will the Project cause...			
▪ Encroachment on historical/cultural areas?		√	The MCC site is not close to any historical /cultural areas.
▪ Encroachment on precious ecology (e.g. sensitive or protected areas)?		√	The MCC site is more than 15 km distance from the notified protected areas of Himachal Pradesh.
▪ Impacts on the sustainability of associated sanitation and solid waste disposal systems?		√	The sanitation facilities will be self-sustained (as toilet blocks planned to be connected to existing sewage system of Bilaspur city) and solid waste collection and disposal will be integrated with the Bilaspur city waste disposal facilities.
▪ Dislocation or involuntary resettlement of people?		√	The MCC site is in the possession and ownership of GOHP DOLE so no Involuntary Resettlement issues.
▪ Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?		√	No such impacts anticipated as site is encumbrance free and is not source of livelihood of poor and vulnerable group. There are no indigenous people at Bilaspur.
▪ Accident risks associated with increased vehicular traffic, leading to loss of life?		√	The proposed MCC site is within inhabited area and on well-connected roads. Since built up area of MCC building is <1000 m ² area, therefore, traffic increase during construction will be insignificant. During operation also traffic increase is not anticipated as the candidates seeking employment will be local. However, to rule out any accident due to project related vehicular traffic, if required, flagmen will be deployed near the MCC construction site to regulate the traffic. Traffic Management Plan will be prepared for the construction phase.

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Screening Questions	Yes	No	Remarks
▪ Increased noise and air pollution resulting from increased traffic volume?		√	Since increase in the traffic is not anticipated, therefore, no increase in air and noise pollution is expected.
▪ Occupational and community health and safety risks?		√	The MCC construction and operational activities will not cause any occupational and community health and safety risks.
▪ Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?		√	No such risks are anticipated
▪ Generation of dust in sensitive areas during construction?	√		No generation of dust during the operation phase. Minor dust generated during construction activities will be controlled through dust suppression measures and through implementation of Environmental Management Plan (EMP).
▪ Requirements for disposal of fill, excavation, and/or spoil materials?	√		The proposed site for MCC is on plain terrain. No filling is required. Minor excavations for foundations will be done. Any spoil generated will be utilized in construction and remaining, if any, will be disposed off at the identified disposal site. The site for disposal will be identified during the construction phase.
▪ Noise and vibration due to blasting and other civil works?		√	No blasting is planned. The noise due to construction activities will be controlled within the stipulated limits through implementation of EMP.
▪ Long-term impacts on groundwater flows as result of needing to drain the project site prior to construction?		√	No requirement for draining of water from MCC site as site within city limit and in residential area. The site being in hilly state and of very small size <245 m ² so impacts on ground water movement are not anticipated.
▪ Long-term impacts on local hydrology as a result of building hard surfaces in or near the building?		√	The proposed built up area of MCC is around 241.49 m ² and this small area will not cause any impact on local hydrology. Further, MCC site is already within inhabited area so construction of MCC building is of no consequence from hydrology point of view.

Himachal Pradesh Skill Development Project
Initial Environmental Examination for Development of Model Career Centre at Bilaspur

Screening Questions	Yes	No	Remarks
<ul style="list-style-type: none"> Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)? 		√	<p>Since MCC building to be constructed is of small in size, so construction force will not exceed 30 at any point of time. The construction workers will be mainly locals so no influx is anticipated during the construction.</p> <p>During operation phase also job seekers will visit for counseling and interviews during day time only and will be locals so no influx and impacts on social infrastructure are anticipated.</p>
<ul style="list-style-type: none"> Social conflicts if workers from other regions or countries are hired? 		√	<p>Preference will be given to locally available labor. The construction activities are limited in nature. In case workers are hired from other regions, requisite awareness programs and consultations with the locals will be organized to avoid social conflicts.</p>
<ul style="list-style-type: none"> Risks to community safety caused by fire, electric shock, or failure of the buildings safety features during operation? 		√	<p>Since proposed MCC building is new, the safety measures are being planned in the building design as per national and state level requirements.</p>
<ul style="list-style-type: none"> Risks to community health and safety caused by management and disposal of waste? 		√	<p>During construction phase waste collection and disposal system will be planned by the contractor and it will be approved by the implementing agency (PWD). For operation phase adequate provisions have been made in the building design to take care disposal of waste water and other solid waste generated. The waste disposal will be integrated with the local disposal system.</p>
<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? 		√	<p>The proposed MCC site is within the built-up area of Bilaspur city. Specific community risks are not foreseen due to operation as such as MCC site has good connectivity through National and State Highways. The MCC building is being designed following applicable seismic coefficient for Himachal Pradesh to build safety in structural design. There will be periodic maintenance of buildings during the operation phase.</p>

A Checklist for Preliminary Climate Risk Screening

Country/Project Title:

Sector:

Subsector:

Division/Department:

	Screening Questions	Score	Remarks ⁵
Location and Design of project	Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides?	0	The proposed MCC building is planned on undulating plot, away from river and streams and not likely to be affected by floods, drought, storms and landslides.
	Would the project design (e.g. the clearance for bridges) need to consider any hydro-meteorological parameters (e.g., sea-level, peak river flow, reliable water level, peak wind speed etc.)?	0	Not Applicable
Materials and Maintenance	Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)?	0	Weather conditions at proposed MCC site do not demand usage of any specific construction material to counteract weather phenomenon.
	Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)?	0	No, weather conditions at selected site do not require specific scheduling for maintenance.
Performance of project outputs	Would weather/climate conditions and related extreme events likely affect the performance (e.g. annual power production) of project output(s) (e.g. hydro-power generation facilities) throughout their design life time?	0	Not Applicable

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

⁵ If possible, provide details on the sensitivity of project components to climate conditions, such as how climate parameters are considered in design standards for infrastructure components, how changes in key climate parameters and sea level might affect the siting/routing of project, the selection of construction material and/or scheduling, performances and/or the maintenance cost/scheduling of project outputs.

more (which include providing a score of 1 in all responses) or a 2 in any single response will be categorized as high risk project.

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

Other Comments: None

Prepared by: Shreeniwas Verma, Environmental Safeguard Specialist

ANNEXURE-3: SAMPLE TRAFFIC MANAGEMENT PLAN

A. Principles

1. Since the scale of construction work at the sub-projects 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.

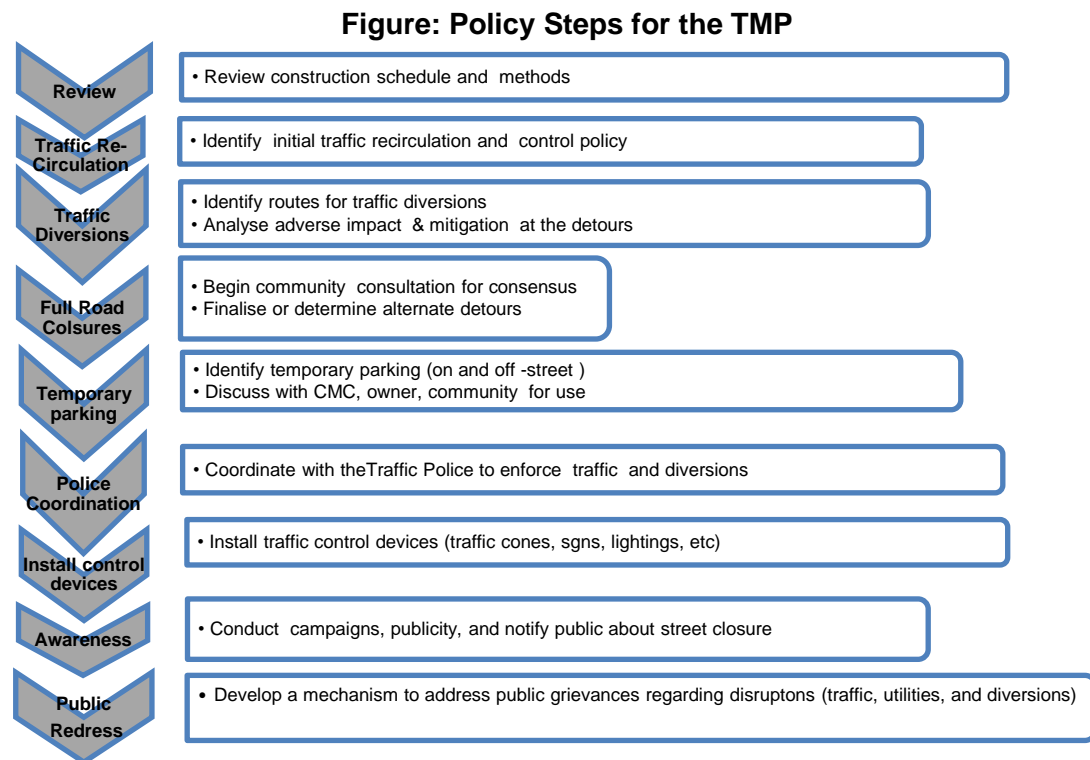
C. Analyze the impact due to street closure, if required

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, PWD, etc, regarding the mitigation measures necessary at the detours where the road is diverted during the construction;
- (iii) determining of the maximum number of days allowed for road closure, and incorporation of such provisions into the contract documents;
- (iv) determining if additional traffic control or temporary improvements are needed along the detour route;
- (v) considering how access will be provided to the worksite;
- (vi) contacting emergency service, school officials, and transit authorities to determine if there is any effect on their operations; and

- (vii) 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 PWD and the contractors 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.

8. 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

10. A vehicle maintenance and safety program shall be implemented by the construction contractor. The contractor should ensure that all the vehicles are in proper running condition, and 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

10. The purpose of installing traffic control devices at the work zones is to delineate these areas to warn, inform, and direct the road users about a hazard ahead, and to protect them as well as the workers. As proper delineation is 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

11. Procedures for installing traffic control devices at any work zone vary depending on road configuration, location of the work, construction activity, duration, traffic speed and volume, and pedestrian traffic. Work will take place along major roads, and the minor internal roads. As such, the traffic volume and road geometry vary. However, regardless of where the construction takes place, all the work zones should be cordoned off, and traffic shifted away at least with traffic cones, barricades, and temporary signs (temporary “STOP” and “GO”).

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


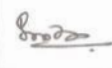
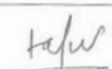



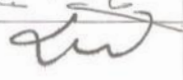


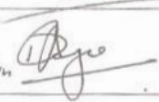
13. Traffic police should regulate traffic away from the work zone and enforce the traffic diversion result from full street closure in certain areas during construction. Flaggers or personnel should be equipped with reflective jackets at all times and have traffic control batons (preferably the LED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

14. In addition to the delineation devices, all the construction workers should wear fluorescent safety vests and helmets in order to be visible to the motorists at all times. There

should be provision for lighting beacons and 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-4: PHOTOGRAPHS AND ATTENDANCESHEETSOFCONSULTATIONS

Attendance Sheet of the meeting held on 18-3-2016 at 11.00 AM in Conference Hall Yojna Bhawan, Shimla-2 with ADB consultants regarding Himachal Pradesh Skill Development Project.

Sr. No.	Name of the Officer and Designation	Mobile No. / e-mail address.	Signature
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4	Dr. Umesh Pathania Technical Officer & Estate Officer State Council Engrs Tech & Engr. & DEST.	9418310231 umeshpathania@red-mat.com	
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6	SN Verma ADB Consultant Environment & Social	0984224458 stundia2@gmail.com	
7	Rajesh Kumar IFS	9418000751	
8	J. R. Subramanian Prominent	9600044487	
9	Basab Basu TVET Expert	7838577785	
10	DEEPAK ANGRA HOD(CE) DTE Sundernagar	9418107688 angradeepak@yahoo.co.in	

Attendance Sheet of Consultations at Bilaspur

Meeting with visited team of ADB, for consultation of Environment safeguard at (MCC) stakeholder, MUNICIPAL COUNCIL BILASPUR HP on Dated on 9th May, 2018 under DAY-NULM Programme.

SL NO	NAME	DESIGNATION	EMAIL ADDRESS	MOBILE NO	SIGNATURE
1	Sh. K. R. Thakur	Executive officer, MCC Bilaspur	nichpe.parker@adb.org	9418497225	[Signature]
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4	Rabin Singh	M.P. P.O.		9457010152	[Signature]
5	Savitri Sharma	President Vidwan ALF	Savitrisharma@adb.org	9817406015	[Signature]
6	Smt. Soma Devi	President MCC Bilaspur		8894180667	[Signature]
7	SHILINI	Safety Vidwan ALF		9419460964	[Signature]
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10	Sivani Thakur	Accountant (MCC)		8982282809	[Signature]
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12	Umesh Gupta	Assistant Officer		9418456725	[Signature]
13	N. L. Datta	President HPK VV		94162-12348	[Signature]

14	Rachhpal Singh, C.L. Secretary			941809193	Aug-5-2018
15	Arun K. Puri	Manager (SSNE)	Rachhpal Singh (C.L.)	941596-87209	
16	Prindana Lalky. Pal	Manager (SDET)	Prindana Lalky. Pal (SDET)	941698721	
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Photographs of consultations at Bilaspur Employment Exchange



Photographs of consultations at Bilaspur Bilaspur Municipal Council Office

