

Initial Environmental Examination

Document Stage: Draft for consultation
Project Number: 42267-034
March 2023

India: Rajasthan Secondary Towns Development
Sector Project – Additional Financing (PART A)

Bhawani Mandi Storm Water Drainage

Prepared by Rajasthan Urban Drinking Water Sewerage and Infrastructure Corporation Limited-
External Aided Project (RUDSICO-EAP) for the Asian Development Bank.

CURRENCY EQUIVALENTS

(as of 31 July 2022)

Currency unit – Indian rupee (₹)

₹1.00 = \$ 0.01

\$1.00 = ₹ 79.19

ABBREVIATIONS

ADB	–	Asian Development Bank
BOCW	–	Building and other Construction Workers
CGWB	–	central ground water board
CLC	–	city level committee
CPCB	–	central pollution control board
CPHEEO	–	Central Public Health and Environmental Engineering Organization
CTE	–	consent to establish
CTO	–	consent to operate
CWR	–	clear water reservoir
DBO	–	design-build-operate
DPR	–	detailed project report
EHS	–	environmental health and safety
EIA	–	environmental impact assessment
EMP	–	environmental management plan
FAO	–	Food and Agricultural Organization
FCO	–	fertilizer control ordinance
FSSM	–	Faecal Sludge and Septage Management
IEE	–	initial environmental examination
IFC	–	International Finance Corporation
LSGD	–	Local Self Government Department
MOEFCC	–	Ministry of Environment, Forest and Climate Change
OHSR	–	overhead service reservoir
PHED	–	Public Health Engineering Department
PIU	–	project implementation unit
PMU	–	project management unit
PWD	–	Public Works Department
REA	–	rapid environmental assessment
ROW	–	right-of-way
RSPCB	–	Rajasthan State Pollution Control Board
RSTDSP	–	Rajasthan Secondary Towns Development Sector Project
RUDSICO-EAP	–	Rajasthan Urban Drinking Water Sewerage and Infrastructure Corporation Limited-Externally Aided Projects
RUDSICO	–	Rajasthan Urban Drinking Water Sewerage and Infrastructure Corporation
SCADA	–	supervisory control and data acquisition
SBR	–	sequential batch reactor
SEIAA	–	State Environmental Impact Assessment Authority
SPS	–	Safeguard Policy Statement, 2009
STP	–	sewage treatment plant
TEER	–	treated effluent elevated reservoir

TESR	–	treated effluent storage reservoir
ULB	–	urban local body
WHO	–	World Health Organization
WTP	–	water treatment plant

WEIGHTS AND MEASURES

m ³	–	cubic meter
dB	–	decibels
°C	–	degree centigrade
dia	–	diameter
kg	–	kilogram
kl	–	kiloliter
km	–	kilometer
kmph	–	kilometer per hour
KLD	–	kiloliters per day
ha	–	hectare
HP	–	horsepower
LPCD	–	liters per capita per day
lps	–	liters per second
m	–	meter
mg	–	milligram
mm	–	millimeter
MCM	–	million cubic meter
MLD	–	million liters per day
km ²	–	square kilometer

NOTE

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

This initial environmental examination is a document of the borrower. The views expressed herein do not necessarily represent those of ADB's Board of Directors, management, or staff, and may be preliminary in nature. Your attention is directed to the "terms of use" section on ADB's website.

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

CONTENTS

I.	INTRODUCTION	1
A.	Rajasthan Secondary Town Development Section Project – Additional Financing	1
B.	Purpose of Initial Environmental Examination Report	2
C.	Scope of IEE	2
D.	Report Structure	2
II.	DESCRIPTION OF PROJECT	3
A.	Bhawani Mandi Town	3
B.	Existing Conditions of the Town	3
C.	Need and Objective of the Project	6
D.	Proposed Drainage Subproject	6
E.	Subproject Benefits	10
F.	Implementation Schedule	10
III.	ANALYSIS OF ALTERNATIVES	19
IV.	POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORKS	21
A.	ADB Safeguard Policy	21
B.	National Laws	24
V.	DESCRIPTION OF ENVIRONMENT	36
A.	Physical Resources	36
B.	Ecological Resources	39
C.	Economic Development	41
D.	Socio Cultural Resources	42
E.	Environmental Settings of Investment Program Component Sites	44
VI.	ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES	55
A.	Introduction	55
B.	Location and Design Impacts	56
C.	Pre-construction Impacts	56
D.	Construction Impacts.	57
E.	Operation and Maintenance Impacts	69
VII.	PUBLIC CONSULTATION AND INFORMATION DISCLOSURE	70
A.	Overview	70
B.	Public Consultation	70
C.	Information Disclosure	72
VIII.	GRIEVANCE REDRESS MECHANISM	73
A.	Project Specific Grievance Redress Mechanism	73
B.	Grievance Redress Process	73
IX.	ENVIRONMENTAL MANAGEMENT PLAN	77
A.	Environmental Management Plan	77
B.	Institutional Arrangements	104
C.	Capacity Building and Development	111
D.	Monitoring and Reporting	112
E.	EMP Implementation Cost	113
X.	CONCLUSION AND RECOMMENDATION	115

LIST OF APPENDICES

Appendix 1: REA Check list	118
Appendix 2: List of ASI and State Protected Monuments in Jhalawar District	122
Appendix 3: Stakeholders Consultations Conducted During Project Preparation	123
Appendix 4. IBAT Screening Report –BHAWANI MANDI	136
Appendix 5: Compliance with Environmental Criteria for Subproject Selection	152

Appendix C1 – C25 – common appendices, attached separately, provide statutory standards, guidelines, reporting templates etc. are applicable to all subproject IEEs.

List of common Appendices

Appendix C-1: Drinking Water Standards	
Appendix C-2: Ambient Air Quality Standards	
Appendix C-3: Emission limits for New DG sets up to 800 KW	
Appendix C-4: Stack Height Requirement of DG set	
Appendix C-5: Vehicle Exhaust Emission Norms	
Appendix C-6: Ambient Noise Quality Standards	
Appendix C-7: Noise Limits for DG Set	
Appendix C-8: Effluent Discharge Standards for Sewage Treatment Plant	
Appendix C-9: Pages from Rajasthan State Sewerage and Wastewater Policy for reuse of treated effluent and sludge	
Appendix C-10: Guidelines for Reuse of Treated Effluent and Sludge from STP for Beneficial Purposes	
Appendix C-11: Guidelines for compensatory tree plantation in RUIDP works.	
Appendix C-12: Salient Features of Laws applicable to Construction Works including Labor Laws	
Appendix C-13: Sample Outline Spoil Management Plan	
Appendix C-14: Sample Outline Traffic Management Plan	
Appendix C-15: Sample Six Monthly Reporting Format	
Appendix C-16: Sample Environmental Site Inspection Report	
Appendix C-17: Sample Grievance Registration Form	
Appendix C-18: Management Plan for Night works at Project Sites	
Appendix C-19: Guidelines for Safety during Monsoon/Heavy rainfall	
Appendix C-20: Sample ACM Management Plan	
Appendix C-21: Guidelines for Workers Camps	
Appendix C-22: Guidelines for Safety in Chlorine Usage	
Appendix C-23: Guidelines for Prevention and Control of COVID-19	
Appendix C-24: RUDSICO-EAP Guidelines for implementation of Prevention and Control Measures for COVID-19	
Appendix C-25: Management of Work Plan during Festivals and Melas	

EXECUTIVE SUMMARY

ADB approved a loan for the Rajasthan Secondary Towns Development Sector Project (RSTDSP, Loan 3972: IND) in September 2020. This is currently under implementation and will close by May 2028. The additional financing (the project) will expand the improved access to WSS services in at least ten urban local bodies (ULBs), benefiting 1.2 million people. Important value addition of the proposed project to the ongoing project is that it will provide innovative solutions to address climate change to respond to the growing climate risks and vulnerability and also to improve livability and prosperity through enhancing natural and/or built heritage at least ten ULBs in Rajasthan, benefiting 1.0 million people. The overall project is aligned with the following impacts: (i) access to potable, affordable, reliable, equitable, environmentally sustainable drinking water supply in all urban areas of Rajasthan improved, (ii) health status of urban population, especially the poor and under-privileged improved, and (iii) productivity, livability and prosperity for the citizens in Rajasthan cities and towns enhanced. Reflecting the additional measures to enhance climate resilience and heritage-sensitive urban development of the project, impact statement (iii) was added; the outcome statement is modified as quality, reliability, equity, and sustainability of urban assets and services in project towns of Rajasthan improved; and additional output was also added, resulting in four outputs.

Bhawani Mandi is one of the project towns, and improvement of drainage system in Bhawani Mandi is proposed under the RSTDSP-AF. Following are the proposed components under drainage system improvement:

- **Storm Water Drainage:** Key storm water drainage components are: re-construction and up-gradation of existing nine numbers of drains having a total length of 7.95 km (covered drain) of which 4.599 km is proposed in Reinforced Cement Concrete (RCC) while 3.352 km is of Plain Cement Concrete (PCC) drain and new construction of thirteen numbers of covered and open drains in newly developed areas of the town having total length of 5.035 km of which 2.068 km is RCC drain and 2.967 km is proposed in PCC.

Screening and Categorization assessment of potential impacts. Bhawani Mandi drainage subproject is classified as environmental category B per ADB's Safeguard Policy Statement (SPS), 2009, and accordingly this initial environmental examination (IEE) assesses the environmental impacts and provides mitigation and monitoring measures to ensure that there are no significant impacts as a result of the subproject. Per Government of India environmental impact assessment (EIA) Notification, 2006, subproject do not require environmental clearance.

Description of the Environment. Subproject components are located in Bhawani Mandi town and in its immediate surroundings which were converted into urban use for many years ago.. The subproject sites are located in existing road right of way (RoW) and government-owned lands. Therefore, no impacts shall be envisaged regarding location. Bhawani Mandi is border town in state of Rajasthan share border with Madhya Pradesh. Bhawani Mandi is a town and a municipality in Jhalawar district in the state of Rajasthan. Town is situated in fairly humid subtropical climate with an average annual rainfall of around 850 mm which is highest in Rajasthan. Vegetation is sparse and comprises mainly domesticated species. There is no remaining natural habitat in the town, where the flora is limited to artificially planted trees and shrubs, and the fauna comprises domesticated animals. There is no forest block or forest area in or around the subproject site, two Notified protected sites Darrah Wildlife Sanctuary and Mukundhara Tiger Reserve are situated in Kota district are located at an aerial distance of about

40 and 42 Km respectively from project coverage area of Bhavani Mandi. There is no ASI protected monument in the project town and the nearest ASI protected monument is located at an aerial distance of 36 km.

Potential Environmental Impacts and Mitigation measures. In this draft IEE, negative impacts were identified in relation to location, design, construction and operation of the improved infrastructure. Environmental impacts as being due to the project design or location were not significant as various measures are already included in site planning and preliminary design. No impacts on forests or archaeological resources envisaged. Discharge of wastewater into open drains may deteriorate the drain water quality and receiving water bodies. Sewerage system is also being improved in the city in uncovered areas. Temporary measures suggested to avoid any disturbance / damage to old/heritage buildings during construction of drains.

Potential impacts during construction are considered significant but temporary and are common impacts of construction in urban areas, and there are well developed methods to mitigate the same. Except for drainage system construction, all other construction activities will be confined to the selected sites and the interference with the general public and community around is minimal. In these works, the temporary negative impacts arise mainly from construction dust and noise, hauling of construction material, waste and equipment on local roads (traffic, dust, safety etc.), mining of construction material, occupational health and safety (OHS) aspects. Drainage works will be conducted along public roads in an urban area congested with people, activities and traffic. Therefore, these works may have adverse, but temporary impacts arising mainly from the disturbance of residents, businesses and traffic due to construction work; safety risk to workers, public and nearby buildings due to deep trench excavations in the road; access impediment to houses and business, disposal of large quantities of construction waste etc.

Environmental Management. An environmental management plan (EMP) has been developed to provide mitigation measures to reduce all negative impacts to acceptable levels, along with the delegation of responsibility to appropriate agency. Various design related measures are already included in the project design. During construction, the EMP includes mitigation measures such as (i) proper planning and scheduling of drainage works to minimize public inconvenience; (ii) measures to avoid impacts on old and heritage building and chance find procedures (iii) barricading, dust suppression and noise control measures; (iv) traffic management measures for works along the roads and for hauling activities; (v) occupational and community health and safety, labour welfare, (vi) provision of walkways and planks over trenches to ensure access will not be impeded; (vii) reuse of excavated materials to extent possible, (viii) spill and sediment control measures to avoid water and soil pollution, etc.,. EMP will guide the environmentally-sound construction of the subproject. EMP includes a monitoring program to measure the effectiveness of EMP implementation and include observations on- and off-site, document checks, and interviews with workers and beneficiaries. A copy of the updated EMP/ site environmental management plan (SEMP) shall be kept on-site during the construction period at all times. The EMP will be included in bids and contracts, and implementation shall be binding on contractors

Implementation Arrangements. The executing and implementing agencies will remain unchanged from the current project, which are Government of Rajasthan's Local Self Government Department (LSGD) and Rajasthan Urban Drinking Water, Sewerage and Infrastructure Corporation (RUDSICO), respectively. The AF project retains the project management unit (PMU) at the implementing agency, as well as the two Zonal Offices in Jaipur and Jodhpur. Project implementation units (PIUs) have been established in project towns. A total of eight PIUs will manage 18 ULBs under the AF Project. Consultants will support the PMU and PIUs. Project

Officer (Environment) at PMU and Safeguard and Safety Officer at each of the PIUs will be responsible for environment management and monitoring activities and will be supported by Safeguard support staff from Supervision Consultant, town staff/team and Environment Safeguard Specialist of Supervision Consultants. Contractor personnel will also include an Environment, Health and Safety (EHS) Engineer in the project construction team.

Consultation, Disclosure and Grievance Redress. The stakeholders were involved in developing the IEE. Informal and formal consultation are conducted with local population of the area at 8 places along with proposed alignment with about 122 persons (86 male and 36 females) in month of December 2021. A City Level Committee (CLC) was held and CLC has appreciated and approved the subproject. The IEE will be made available at public locations; this draft IEE will be disclosed to a wider audience via the ADB and RUDSICO websites. Consultation process will continue during project implementation. A grievance redress mechanism (GRM) will be established to redress public grievances.

Monitoring and Reporting. The PMU, PIU and consultants will be responsible for monitoring and reporting. During construction, results from internal monitoring by the DBO contractor will be reflected in their monthly EMP implementation reports to the PIU. PIU with the assistance of CMSC, will monitor the compliance of contractor, prepare a quarterly environmental monitoring report (QEMR) and submit to PMU. The PMU will oversee the implementation and compliance and will submit semi-annual environmental monitoring reports (SEMR) to ADB. SEMRs will be disclosed on ADB and RUDSICO websites.

Conclusions. The proposed project is unlikely to cause significant adverse impacts, and potential impacts are mainly due to construction and can be mitigated or minimized to acceptable levels through measures included in the EMP. The citizens of the Bhawani Mandi will be the major beneficiaries. The subproject is primarily designed to improve environmental quality and living conditions of Bhawani Mandi Town through provision of improvement of drainage system. The benefits arising from this subproject include: (i) Improved drainage system will result in the better environmental conditions of city, (ii) improved public health particularly reduction in waterborne and infectious diseases, (iii) reduce risk of groundwater contamination, (iv) people would spend less on healthcare and lose fewer working days due to illness, so their economic status, as well as their overall health should also improve.

Based on the findings of the IEE, the classification of the project as Category “B” is confirmed. No further special study or detailed environmental impact assessment (EIA) needs to be undertaken to comply with ADB SPS (2009) or GoI EIA Notification (2006). This IEE needs to be updated during the detailed design, reviewed and approved by ADB, and disclosed prior to start of construction

I. INTRODUCTION

A. Rajasthan Secondary Town Development Section Project – Additional Financing

1. Sector Project (RSTDSP, Loan 3972: IND) from its regular ordinary capital resources on 25 September 2020 and became effective on 4 January 2021. The closing date of the current project is 31 May 2028. This project is on track and has performed well consistently since the first quarter of 2021. Under this project, water supply systems are being improved in eight urban local body (ULB) towns (Output 1), and sanitation systems in 13 ULBs (Output 2). During the implementation, an additional 13 ULBs were added to the project for fecal sludge and septage management system development. Under Output 3, capacity building and training activities on sustainable and resilient water supply and sanitation (WSS) operations, hygiene, gender equality and social inclusion conducted.

2. The additional financing (the project) will expand the improved access to WSS services in at least ten urban local bodies (ULBs), benefiting 1.2 million people. Important value addition of the proposed project to the ongoing project is that it will provide innovative solutions to address climate change to respond to the growing climate risks and vulnerability and also to improve livability and prosperity through enhancing natural and/or built heritage at least ten ULBs in Rajasthan, benefiting 1.0 million people. The overall project is aligned with the following impacts: (i) access to potable, affordable, reliable, equitable, environmentally sustainable drinking water supply in all urban areas of Rajasthan improved, (ii) health status of urban population, especially the poor and under-privileged improved, and (iii) productivity, livability and prosperity for the citizens in Rajasthan cities and towns enhanced. Reflecting the additional measures to enhance climate resilience and heritage-sensitive urban development of the project, impact statement (iii) was added; the outcome statement is modified as quality, reliability, equity, and sustainability of urban assets and services in project towns of Rajasthan improved; and additional output was also added, resulting in four outputs.

- (i) **Output 1: Resilient water supply systems developed or improved.** By 2028, the project will (i) At least 1,300 km of water supply pipelines will be commissioned through a district-metered area approach for effective non-revenue water (NRW) management, (ii) at least 79,000 households will be connected to an improved water supply system, including at least 95% below poverty line households, with 100% functional meters allowing for the introduction of volumetric billing, (iii) three new water treatment plants (WTPs) will be commissioned with a total capacity of at least 24 million liters per day (mld).
- (ii) **Output 2: Resilient and inclusive sanitation systems developed or improved.** By 2028, (i) at least 500 km of sewers will be constructed; (ii) seven sewage treatment plants (STPs) with co-treatment of wastewater and fecal sludge and with a total capacity of at least 30 mld will be commissioned and one existing STP with 10 mld capacity will be upgraded to meet current effluent standards; and (iii) at least 54,000 new household connections (including at least 95% below poverty line households) to the sewer system will be installed.
- (iii) **Output 3: Urban assets to enhance climate resilience and heritage living developed or improved.** By 2028, (i) at least 50 km of drainage networks will be constructed in five ULBs; (ii) at least five either kunds or baories rehabilitated and/or reconstructed in three ULBs that were heritage structures built for drainage, rainwater harvesting, and reuse, but currently are not properly functioning; (iii) five water parks rehabilitated in one ULB to enhance water retention and storage

capacity and/or to improve people's well-being, both residents and visitors; and (iv) at least four heritage structures are refurbished in five ULBs to improve the living environment and attract more tourists.

- (iv) **Output 4: Institutional and human capacities strengthened for sustainable service delivery, gender equality, and improved public health.**

3. The executing and implementing agencies will remain unchanged. GOR's Local Self Government Department (LSGD) is executing agency and the Rajasthan Urban Drinking Water, Sewerage and Infrastructure Corporation (RUDSICO) is implementing agency.

4. **Bhawani Mandi Drainage subproject.** This is one of the subprojects proposed under RSTDSP-AF. It will improve drainage system in the town.

B. Purpose of Initial Environmental Examination Report

5. Per ADB's Safeguards Policy Statement, 2009, ADB requires the consideration of environmental issues in all aspects of the Bank's operations. Using rapid environmental assessment (REA) checklist (Appendix 1), subproject is unlikely to cause significant adverse impacts, and classified as category B and per ADB SPS requirements this IEE is conducted.

C. Scope of IEE

6. The subproject is proposed for implementation under the small works modality. The IEE is based mainly on field reconnaissance surveys and secondary sources of information. No field monitoring (environmental) survey was conducted; however, the environmental monitoring program developed as part of the environmental management plan (EMP) will require the contractors to establish the baseline environmental conditions prior to commencement of civil works. Stakeholder consultation was an integral part of the IEE. This IEE will be updated during the pre-construction phase to reflect any changes and submitted to ADB for approval. IEE will be further updated during implementation if there are any changes in project scope, design or sites updates will supersede the earlier version.

D. Report Structure

7. This Report contains the following sections:

- Executive summary;
- (i) Introduction;
- (ii) Description of the project;
- (iii) Analysis of alternatives;
- (iv) Policy, legal and administrative framework;
- (v) Description of the environment;
- (vi) Anticipated environmental impacts and mitigation measures;
- (vii) Public consultation and information disclosure;
- (viii) Grievance redress mechanism;
- (ix) Environmental management plan; and
- (x) Conclusions and recommendations.

II. DESCRIPTION OF PROJECT

A. Bhawani Mandi Town

8. Location, Area and Connectivity: Bhawani Mandi is a town and a municipality in Jhalawar district in the state of Rajasthan. Bhawani Mandi Town is located an altitude of about 420 meters above MSL and lies on 24°25'N and 75°49'E latitude. Bhawani Mandi is located 47 km distance from the district headquarter Jhalawar. Bhawani Mandi is the railway junction from which we can take trains for all over India. The town is well connected with major cities of Rajasthan with State Highway -19A. The nearest airport is located at Kota at a distance of 110 KM.

9. As of 2011 India census, Bhawani Mandi had a population of 42283. Males constitute 53% of the population and females 47%. Bhawani Mandi has an average literacy rate of 69%, higher than the national average of 59.5%; with male literacy of 78% and female literacy of 58%. 14% of the population is under 6 years of age. The climate of the area is identical to the Chambal region plain. In summer the temperature generally is around 40 °C (104 °F) and at maximum can exceed 45 °C (113 °F). In winter the coldest temperature can reach 1 °C (34 °F). Jhalawar district has the highest rainfall in Rajasthan state. An average of 35 inches (890 mm) of rainfall keeps it cool and gentle breezes ward off the stifling humidity. Jhalawar district receive the maximum annual rain (95 cm) in Rajasthan.

Figure 1: Location of Bhawani Mandi on Google Earth Map



B. Existing Conditions of the Town

1. Water Supply

10. The major source of drinking water for Bhawani Mandi is PHED water supply. The Public Health Engineering Department (PHED) takes care of the water supply in the town.

2. Sewerage

11. Bhawani Mandi Municipality does not have any organized sewerage system. Presently the wastewater from kitchens & bathrooms is discharged into storm water drains culminating finally to the Nallah or on ground, which pollutes the environment and contaminates the ground water. Open defecation is not uncommon in the town. Most of the residential, commercial buildings and educational institutions have on-site septic tanks and soak pits. The effluents from the septic tanks directly drain into the open drains. In the absence of safe disposal system of sewage, the people of town are exposed to unhealthy and unhygienic environment. Therefore, public representatives are also demanding for the facilities of sewerage system on priority basis. Faecal Sludge and Septage Management is proposed for Bhawani Mandi town under RUIDP Ph-VI.

3. Existing Drainage System of Bhawani Mandi

12. Bhawani Mandi initially had a natural system of drainage and governed by the physiographic profile. Over the years, the population grew and utilized the available open space more intensely, which has changed the natural drainage physiographic system. As per Bhawani Mandi Master plan 2031, new inhabitant areas of city are being developed and it is found existing drainage system does not cover newly developed areas.

13. The existing drains are constructed with stone or brick masonry, where some drains are only road side slope. The depth of existing drains varies from 0.3 m to 1.2 m while the width varies from 0.30 m to 1.5 m. There are only two main drains constructed in reinforced cement concrete (RCC) (SDM circle to Kachi Basti Puliya (bridge) and from Balaji circle to Sanskrit school intersection. The drainage network associate with open drain on both side of road is exists in colonies and market areas of the town.

14. All the existing drains are in a bad condition. Most of the drains are open and become a health hazards to the neighbouring population especially in rainy season. In the newly developed areas, there are inadequate drainage facilities, drains are unlined hence water logging in rainy season is observed more frequently.

15. The existing storm water drainage system in Bhawani Mandi comprises of 14 drains which drains into a natural earthen drain (originates in upstream catchment of Bhawani Mandi) passing along the town and this natural drain finally discharges into Piplaad River. The topography of the Bhawani Mandi is such that all the drainages has a slope towards this natural drain. The storm water carried by this natural drain runs north to south through central portion of town and ultimately falls into the Piplaad River (dam site) . The cross section of this natural drain varies according to terrain condition. The catchment area of drains covered the whole town as well as nearby areas.

16. The existing drains covers most area of city, except newly developed areas. Existing drainage system covers most of central and market areas of the city. Open drain on the both side of road are available from individual house hold. The existing drain details have been collected like size, condition, route and catchment area according to contour plan or the city. Details of existing and unlined drains are presented in Table 1 and Table 2.

Table 1: List of existing drains with ward numbers and specifications

Drain No	Area/Location	Ward No	Length (In m)	Depth (In m)	Width (In m)
1	Station Cricle to Anant Nagar Underpass	1,2,4,3	1346	1-1.2	03.-0.6
2	Girls School Fount to bada nala via Sanskrit School, Ashray Sathal (Shelter)	39,40,20,16,17	1153	1.2	0.6
3	Station road to bada nala via old sabji mandi	36,35,22	1029	2	1.5
4	Ambedkar Circle To Bada Nala Via Mela Maidan (Fair ground)- LIC Road	22,23, 33,34	668	0.6-1.2	0.3-0.6
5	Station circle to SDM office	1,32,31,30,33,34,39,37,38,36,26,29,28	1365	1.2	0.6
6	Sarkari Kuaa to cremation ground via Ambedkar colony	40,20,22,38,35,34	895	0.6	0.3
7	Mp border to station road via mukharji nagar, debariya gate	24,25,32	712	0.6	0.3
8	Baba Circle To Dag Gate Via Banshod Gate, Pachpahar	33,22,23, 24,32,25	344	0.6	0.3
9	Station Cricle to Anant Nagar Underpass	31,30,29,28	497	0.1	0.15
10	Girls School Fount To Bada Nala Via Sanskrit School, Ashray Sathal(Shelter)	1,3			
11	Station road to Bada nala via old sabji mandi	5,6,10,11,12,15,13	842	0.3	0.2
12&13	Tehsil road, Pachpahar	11, 15,13,14	543	0.6	0.3
14	Usha colony-Sanskar Ramthi School to bada nala via jawalal colony -Nagar parishad makan	17,18	639	0.3-0.6	0.3

Source: Detailed project report, Bhawani Mandi drainage subproject.

Table 2: List of Unlined drains

Drain Name	Route	Depth (m)	Breadth (m)	Length (m)
ND-1	Satar Bhai Faram -Fairground-Jhawahar Colony – Dhroda- Yojna - Bhawani Shakti Temple Gadan-Fairground-AmbedkarColony	1.00	1.00	1548
ND-2	Bhim Nagar	0.60	0.30	642
ND-3	Bhim Nagar	0.60	0.75	239
ND-4	Bhim Nagar	0.60	0.30	399
ND-5	Bhim Nagar	0.60	0.30	181
ND-6	Annant Nagar	0.60	0.30	646
ND-7	Annant Nagar	1.20	1.00	797
ND-8	Gota Walo Ki Colony Se Honda Show Room	0.60	0.50	534
ND-9	From Gurjar Field To Station Road	0.50	0.50	448

Drain Name	Route	Depth (m)	Breadth (m)	Length (m)
ND-10	Ghasilal Comrade (Harijan Mohalla) Colony to Bhimnagar Nala Via Kalyan Pura	0.75	0.50	105
ND-11	Devariya Gate To Deveriya Nala	1.00	1.00	1500
ND-12	Annat Nagar To Bada Nala	0.50	0.50	104
ND-13	From Sayyed Nagar to Piplad river Via Madarsa Tehsil Road cremation	1.20	1.00	180
ND-14	Nakoda Colony To Tehsil Road	0.75	0.50	225
ND-15	Durga Mata Mandir To Tehsil Road Via Bhramपुरi Colony	0.75	0.50	325

Source: Detailed project report, Bhawani Mandi drainage subproject.

C. Need and Objective of the Project

17. There is need of improvement for future drainage infrastructure in Bhawani Mandi, Bhawani town as the town has existing drainage, carried by a natural drain to Piplaad River and do not have enough storm water discharge capacity in various areas. It is observed that city drains have settlement of sludge from years and requires the repairment of damages. Also, new areas developed in the city have no drainage system which results in flooding, water logging of roads and other public areas. The existing drain can carry wastewater, but for storm water discharge waterlogging has been observed in certain areas owing to insufficient discharge capacity of the drains in those areas.

18. As the available drain was designed on the basis of past population inhabiting the area and do not match with present need of storm water discharge. But as the city developed and habitation expanded, the new areas are devoid of any drainage system, therefore, some new drains have been proposed in the town. Therefore, to ensure the proper drainage system in the city planning of proper outfall drain is necessary to safely discharge the drain water, as development of Bhawani Mandi city is taking place in the new areas. The new drains are provided in newly developed areas with an objective to build the suitable network of drain to prevent overflowing, ponding, stagnation of rain water to create a healthy and clean environment for inhabitants of the town.

D. Proposed Drainage Subproject

19. Bhawani Mandi storm water drainage works is one of the subproject selected under additional financing and key storm water drainage components are: (i) re-construction and upgradation of existing nine numbers of covered drains having a total length of 7.95 km of which 4.599 km is proposed in RCC while 3.352 km is of PCC drain and (ii) new construction of 13 numbers of covered and open drains in newly developed areas of the town having total length of 5.035 km of which 2.068 km is RCC drain and 2.967 km is proposed in PCC.

20. **Proposal of storm water drainage system.** Development of drainage system in newly developed area is taken up as per details of master plan of the town. The construction of new drain considered in RCC U-shape Rectangular and PCC U shaped cross section. The Primary drains size has been designed for storm water discharge. The secondary drains are provided as nominal wide rectangular section. Design of all the drains followed the guideline as suggested in CHPEEO manual. The free board is providing below the ground level at respective location. For covered drains additional height is provided above road, for the collection of storm water

discharge. The location of drain gutter provides as per the recommendation of CPHEEO manual as 30m spaced along the length of covered drain. The covered drain will also facilitate as the road side footpath for the pedestrians. Therefore, covering the drains, Ferro cover are proposed, as per IRC standards codes.

21. **Drains proposed for re-design and upgradation.** The analysis of existing drains shows that the nine drains (drain nos. 1,2,3,4,7,9,11,12 and 14) required to be consider for re-design (refer Table 1 and 3). The suitable network of new drain is prepared to cover the rest of area of town as per master planning based on topography survey of town. The analysis is based on the profile of the town and network of city road and existing drainage network. The existing drain network is analysed for storm water management and improvement is proposed in existing drainage system wherever it was found insufficient to meet the requirement of efficient drainage to enhance the discharge capacities. The proposed new drain network is plotted and water flow is analysis based of slope of catchment area. The proposed drain network is shown in Figure 4. The list of proposed drains considered for re-design / upgradation are given in table below:

Table 3: List of drains proposed for Re-Design / Up-gradation

Drain Name	Ward nos	Area/Location	Existing drains			Proposed upgradation				
			Depth (m)	Breadth (m)	Single side Length (m)	Proposed drain	Drain Require upgradation (From Node to Node)	Total length require upgradation (m)	Type of Drain	Material of construction
Drain-1	1,2,4,3	Station Circle to Anant Nagar Underpass	1.20	0.60	1346	Single side	3-7	633	Covered	RCC
Drain-2	39,40,20,16,17	Girls School Fount to bada nala via Sanskirt School, ashray sathal (Shelter)	1.20	1.00	1153	Single side	13-17	826	Covered	RCC
Drain-3	36,35,22	Station road to bada nala via old sabji mandi	1.20	0.50	1029	Both side of road	23-25	462	Covered	RCC
Drain-4	22,23, 33,34	Ambedkar Circle To Bada Nala Via Mela Maidan (Fair ground)- LIC Road	0.60	0.60	668	Both side of road	36-37	406	Covered	PCC
Drain -5	1,32,31,30,33,34,39, 37,38,36,26, 29,28	Station circle to SDM office	1.2	0.6	1365	Single side	NIL	NIL		
Drain -6	40,20,22,38,35,34	Sarkari Kuaa to cremation ground via Ambedkar colony	0.6	0.3	895	Single side	NIL	NIL		
Drain-7	24,25,32	MP border to station road via Mukharji nagar, debariya gate	0.60	0.60	712	Both side of road	40-43	1280	Open	PCC
Drain -8	33,22,23, 24,32,25	Baba Circle To Dag Gate Via Banshod Gate, Pachpahar	0.6	0.3	344	Single side	NIL	NIL		
Drain-9	31,30,29,28	Station Cricle to Anant Nagar Underpass	1.00	0.50	497	Both side of road	44-60, 60-61,	994	Covered	RCC
Drain-11	5,6,10,11,12,15, 13	Station road to bada nala via old sabji mandi	1.00	0.50	842	Both side of road	199-205-D	1684	Covered	RCC
Drain-12	11, 15,13,14	Tehsile road, Pachpahar	0.60	0.50	543	Both side of road	199-1206, 206-209-D	1086	Covered	PCC
Drain-14	17,18	Usha colony-Sanskar Ramthi School to bada nala via jawalal colony -Nagar parishad makan	0.75	1.00	640	Single side	66-68, 53-118, 84-D	580	Covered	PCC
Total					10034			7951		

Source: Detailed project report, Bhawani Mandi drainage subproject

22. **Construction of New Drainage in Bhawani Mandi.** Thirteen (13) new drains will be provided in newly developed areas as listed in table 4. The drainage network is considered along the road sides and check for the stormwater discharge for respective catchments area. Newly developed area of town has no or inadequate drainage facility and therefore, water logging in rainy season is observed more frequently. Therefore, development of new drainage system in these areas are under need. According to the land profile and available land area, new drainage system is designed. Table 4 provides the details of new drains to be constructed along with details of route, depth, length , width etc.

Table 4: Proposal of New Construction of Drains

Drain Name	Location / Route	Depth (m)	Breadth (m)	Length (m)	No of Sides	Total Length (m)	Type of Drain	Material of construction
ND-2	Bhim Nagar	0.60	0.30	321	Both side of road	642	Covered	RCC
ND-3	Bhim Nagar	0.60	0.75	239	Single side	239	Open	RCC
ND-4	Bhim Nagar	0.60	0.30	399	Single side	399	Open	PCC
ND-5	Bhim Nagar	0.60	0.30	181	Single side	181	Open	PCC
ND-6	Annant Nagar	0.60	0.30	646	Single side	646	Open	PCC
ND-7	Annant Nagar	1.20	1.00	797	Single side	797	Open	RCC
ND-8	Gota Walo Ki Colony to Honda Show Room	0.60	0.50	267	Both side of road	534	Covered	PCC
ND-9	From Gurjar Field to Station Road	0.50	0.50	224	Both side of road	448	Open	PCC
ND-10	Ghasilal Comrade (Harijan Mohalla) Colony to Bhimnagar Nala Via Kalyan Pura	0.75	0.50	105	Single side	105	Open	PCC
ND-12	Annat Nagar to Bada Nala	0.50	0.50	104	Single side	104	Open	PCC
ND-13	From Sayyed Nagar to Piplad river Via Madarsa Tehsil Road crematorium	1.20	1.00	180	Single side	390	Covered	RCC
ND-14	Nakoda Colony To Tehsil Road	0.75	0.50	225	Single side	225	Open	PCC
ND-15	Durga Mata Mandir To Tehsil Road via Bhramपुरi Colony	0.75	0.50	325	Single side	325	Open	PCC
						5035		

Source: Detailed project report, Bhawani Mandi drainage subproject

23. Subproject is proposed for implementation under work contract, wherein which the successful bidder will validate design of the proposed drainage systems and components during Service Improvement Plan (SIP) preparation (within three months of contract award) as per

updated /changed scope of works/project locations (if any) and revised IEE shall be submitted to ADB for approval and after approval from ADB shall be applicable to contractor throughout the project. Contractor will also conduct Environmental monitoring of baseline conditions of air, noise, water and soil and the same will be reflected in the revised IEE to be prepared during SIP Period. This IEE is revisable document and can be revised anytime during project implementation if there is any considerable change in scope of works, change in location of component, change in cost due to addition or subtraction of components etc. which can change the environmental impacts, and revised IEE shall supersede the earlier version of IEE and shall be contractually applicable to the contractor after approval from RUDSICO-EAP and ADB. Maps of proposed Bhavani Mandi drainage sub-project are shown in Figure 2 to 9.

E. Subproject Benefits

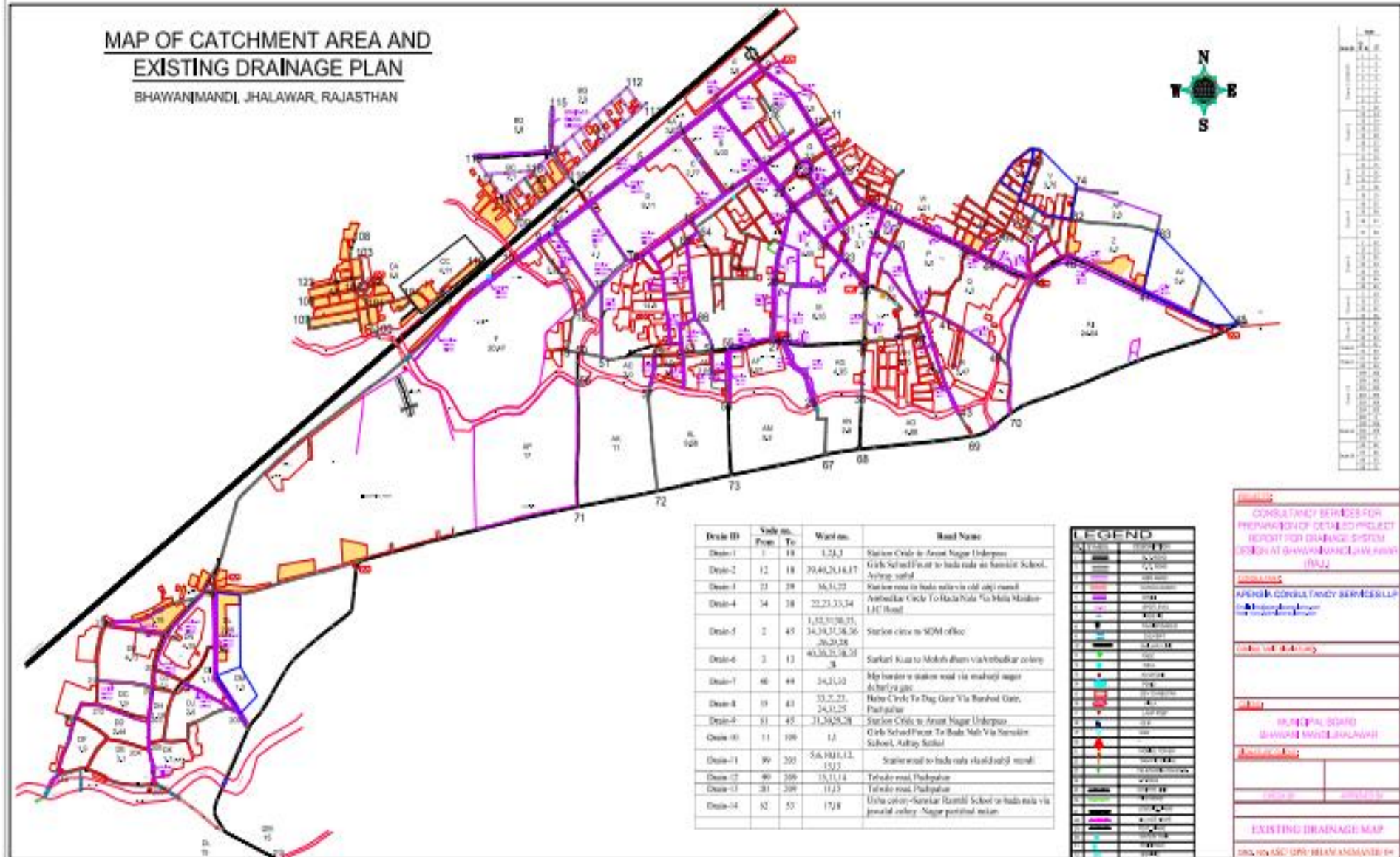
24. The subproject is primarily designed to improve environmental quality and living conditions of Bhawani Mandi town through provision of drainage improvement works. Many of the existing drains are not designed for current population and in some areas there is no drainage at all , therefore, through proper planning of drainage system in the town will help to safely discharge the drain water in to Piplaad River and improve the drainage system of Bhawani Mandi .The citizens of the Bhawani Mandi city will be the major beneficiaries of the improved drainage system, as the unsightly and unhygienic pools of standing wastewater will gradually disappear and should not recur in future.

F. Implementation Schedule

25. After the completion of designs, bids were invited in September 2022 for the subproject. After evaluation of bids LOA was issued to successful bidder on 13 January 2023 and thereafter work is awarded. Project duration of work is 18 months. After completion of construction and commissioning, the drainage works shall be handed over to Bhawani Mandi Municipal Council, who will operate and maintain the drains.

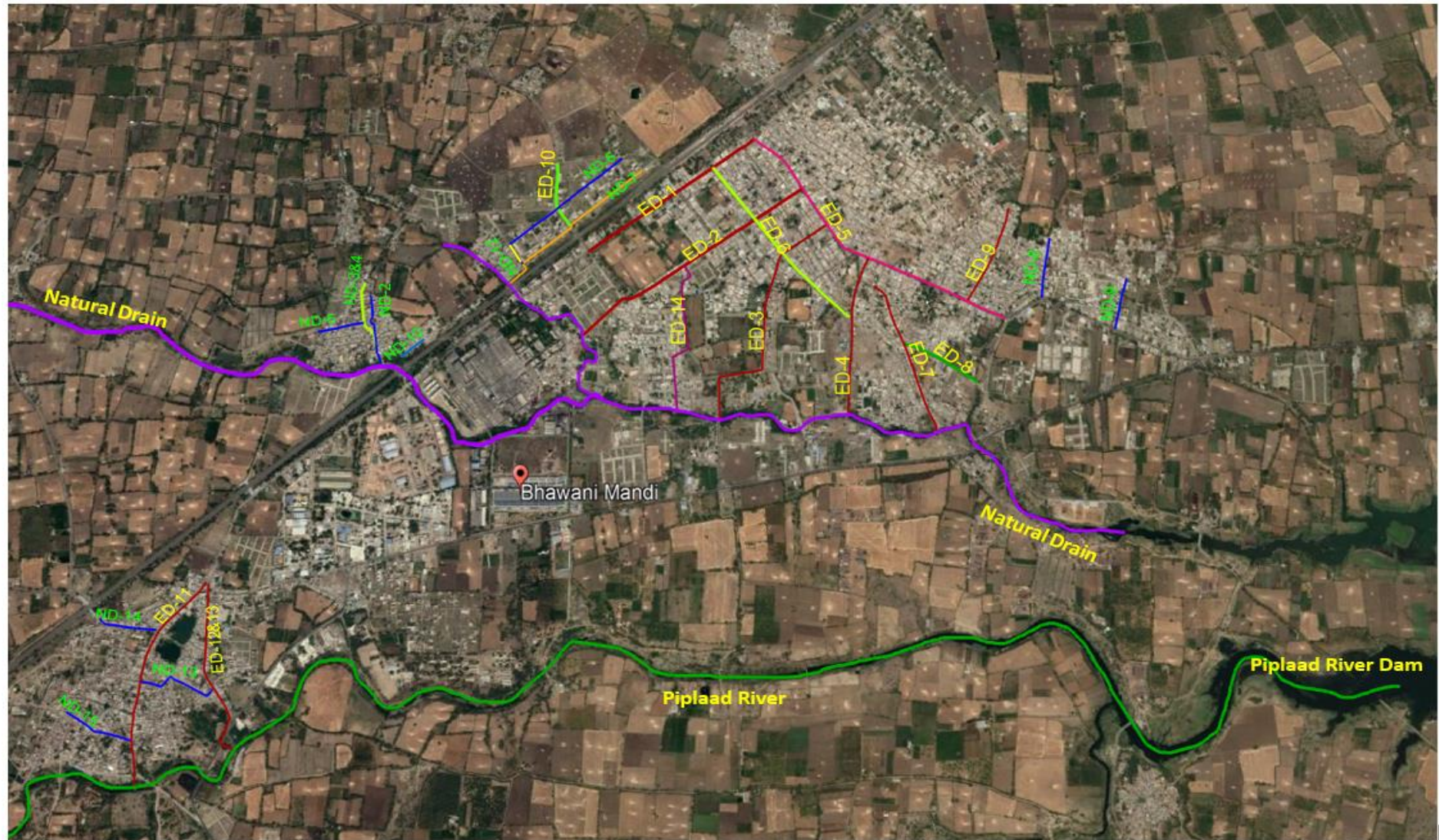
MAP OF CATCHMENT AREA AND EXISTING DRAINAGE PLAN

SHAWANIMANDI, JHALAWAR, RAJASTHAN



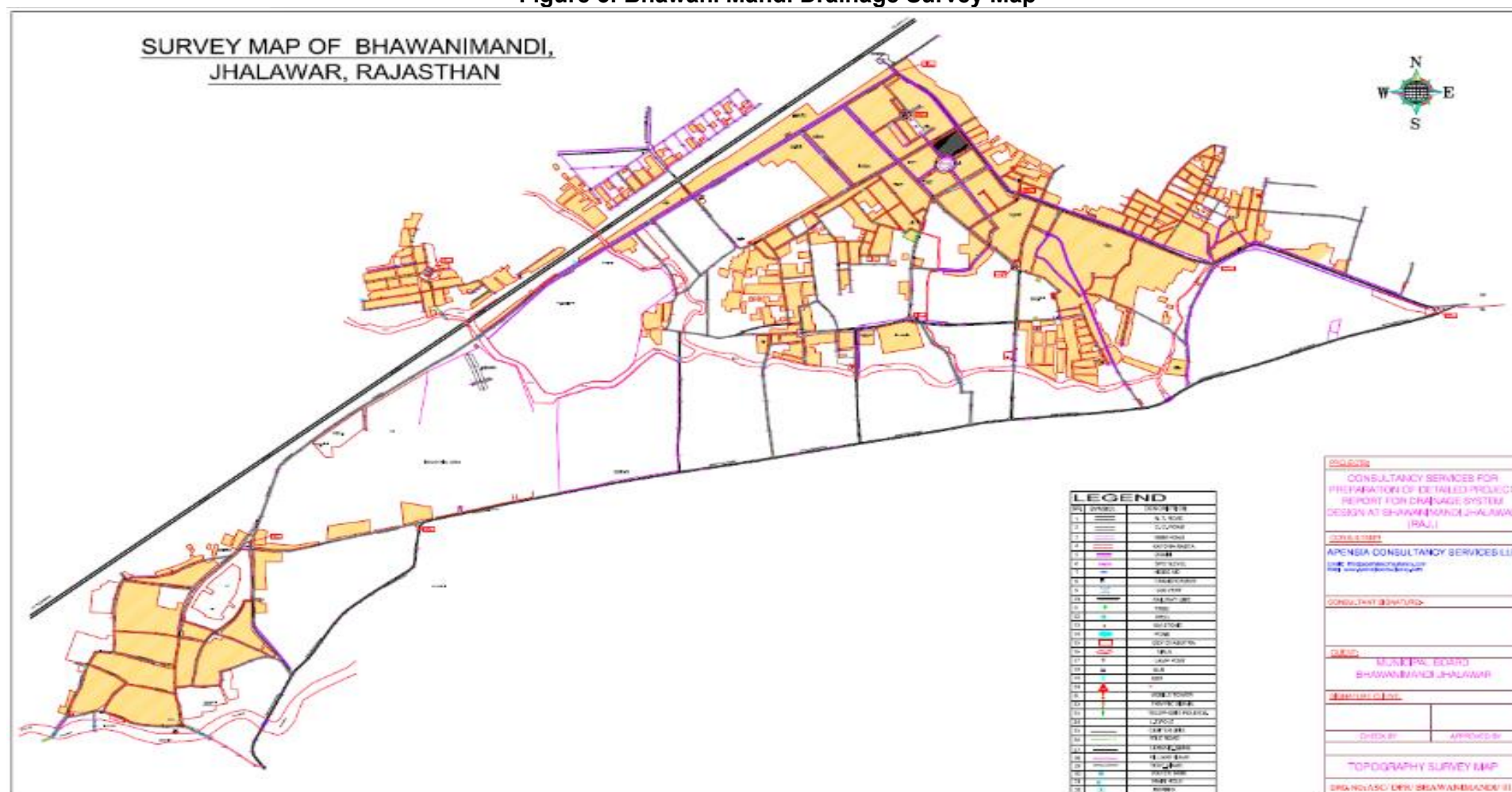
Source: Detailed project report, Bhawani Mandi drainage subproject

Figure 3: Discharge points of storm water in google earth map. (Purple line is natural main drain, Existing drains (ED), Proposed new drain (ND) and Green line is Piplaad River. Arrow denotes the discharge points. Natural drain discharges in Piplaad River Dam, constructed across Piplaad River)



Source: Detailed project report, Bhawani Mandi drainage subproject

Figure 5: Bhawani Mandi Drainage Survey Map



Source: Detailed project report, Bhawani Mandi drainage subproject

Figure 6. Proposed new Drainage in Bhawani Mandi (in Blue Colour)

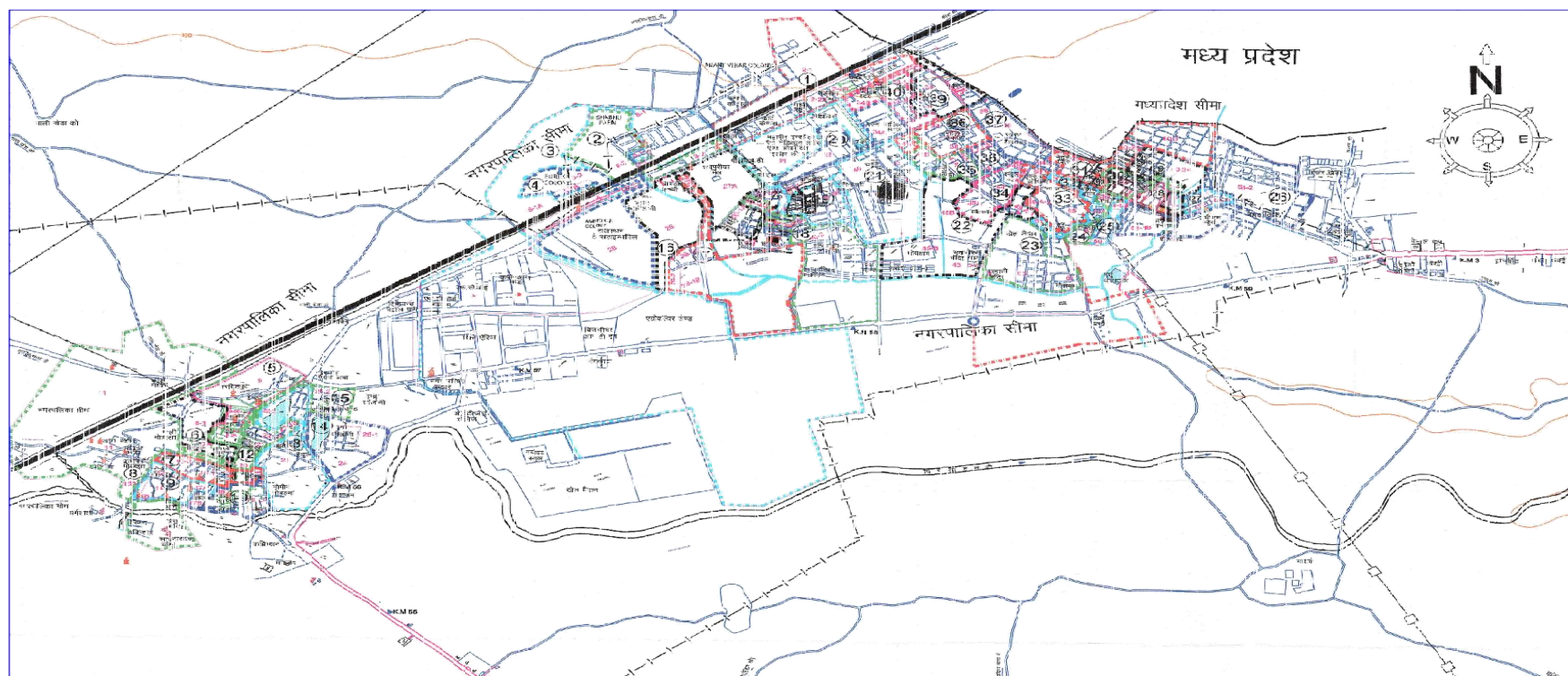


Figure. 7. Contour Profile plan of Bhawani Mandi town

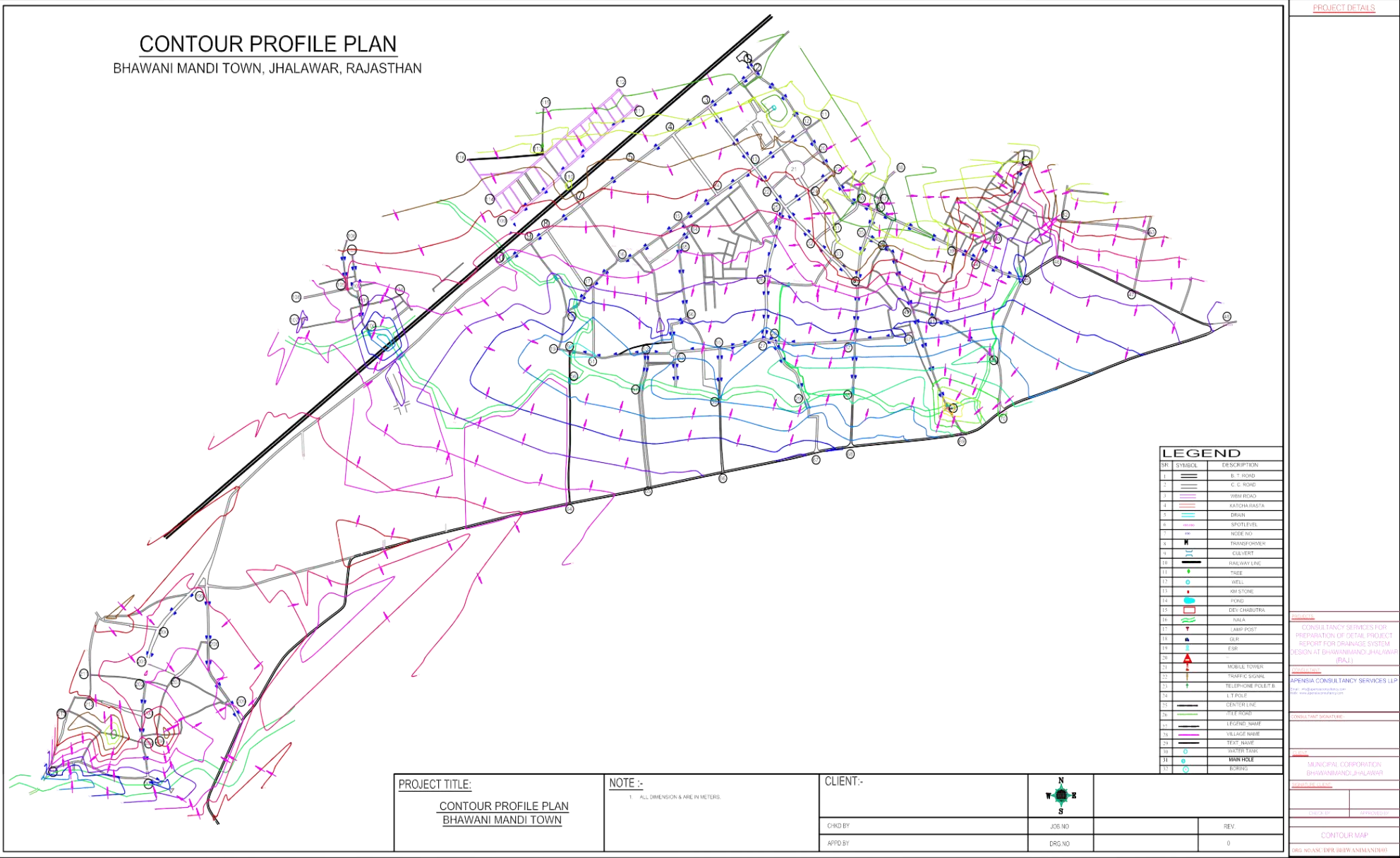


Figure. 8. Design Details of Proposed RCC Drains in Bhawani Mandi

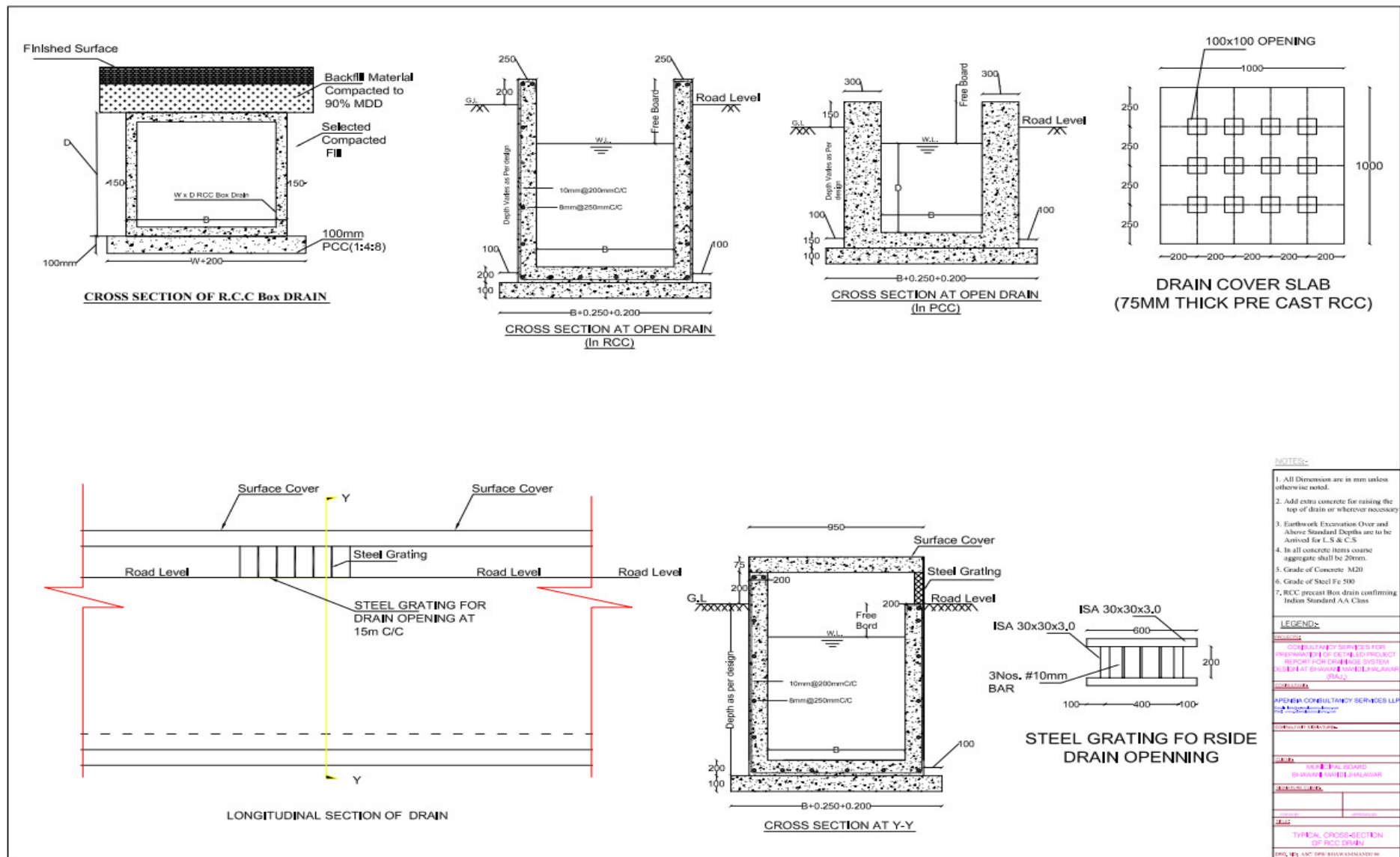
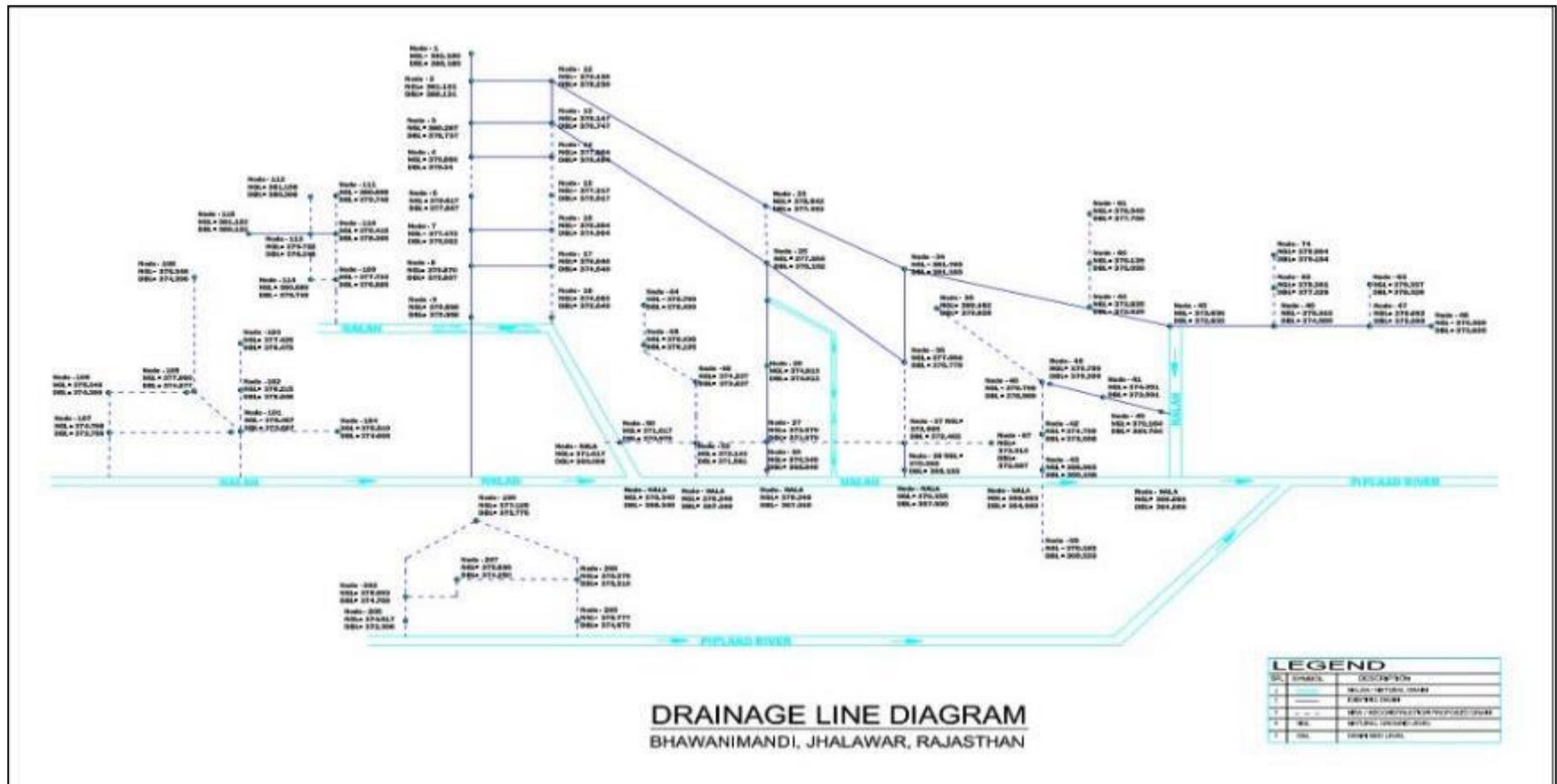


Figure 9: Drainage Network Line Diagram



Source: Detailed project report, Bhawani Mandi drainage subproject

III. ANALYSIS OF ALTERNATIVES

26. The ADB SPS 2009 requires an analysis of project alternatives to determine the best method of achieving project objectives (which is safely collecting and disposing the water Bhawani Mandi Town, in this case) while minimizing environmental impacts. Alternative analysis provides opportunity to integrate environmental considerations into early stages of project (i.e., pre-feasibility or feasibility study), so that adverse environmental impacts can be avoided or minimized by various alternatives. It also provides opportunity to study various options vis a vis costs, provides a logical base, via transparent process, assist in decision making, gaining public support and ultimately in project approvals and timely implementation.

27. The “with” and “without” project scenarios are analyzed with respect to the development of the state by the back-drop of requirement of reliable quality infrastructure for sustained growth economy and consequent well-being of its citizens. The proposed drainage subproject component in Bhawani Mandi includes strengthening of existing drains after redesigning and construction of new drains , for safe collection and disposal of water from city to Piplaad River. Descriptions of various alternatives considered for proposed components are presented in the following Table 5.

Table 5: Analysis of Alternatives

1.	Project Need – No Project Alternative
Type of alternative	‘No project’ / ‘with project’ alternative
Description of alternatives	<u>No project alternative</u> Bhawani Mandi initially had a natural system of drainage and governed by the physiographic profile. Over the years, the population grew and utilizing the available open space more intensely, which has changed the natural drainage physiographic system. The drain system in the town is stabilized in market area and nearby market and is adequate to carry waste water and light storm. As per Bhawani Mandi Master plan 2031, new inhabitant areas of city are being developing and it was found existing drainage system does not cover newly developed area. Therefore its water become septic and causes unhealthy environment. Low depressed areas in the city are submerged during heavy rainfall due to improper drainage system, leakage in underground pipelines, and blockage of road during monsoon season Water born diseases will be increased during monsoon season due to the stagnant water at low depression areas Major problem is created near the Pichphara village a closed water body (pond) is existed. This pond is containing wastewater and rain water of the area. Living conditions due to lack of proper drainage system, and sewerage, are poor, unhealthy and unhygienic. Lack of proper infrastructure is also causing environmental pollution, overall poor quality of life. Poor environmental quality affects the urban poor more. The project intends to provide following benefits to the people residing in the sub-project area, and the “no project” alternative will deprive people of these benefits:

	• better public health particularly reduction in waterborne and infectious diseases. • reduced risk of groundwater contamination through appropriate sewer collection and treatment; • improvement in quality of water bodies due to disposal of storm water • newly constructed drainage systems will cater to not only runoff from roads but also the runoff of complete catchment area, which is causing flooding and overflow in the current scenario <u>With project alternative</u> The proposed sub-projects will support the ongoing efforts of the Government of Rajasthan (the government) towards improving storm water drainage and sewerage systems. The project will construct improved drainage system in the project areas. The project is expected to increase operational efficiency, improve service delivery, and result in a positive impact on health and quality of life for the residents of project towns in the state. Drainage system of Bhavani Mandi will be improved. Water submergence problems will be controlled at Low depressed areas through improvement in storm water drainage system, reconstruction of existing drains and construction of new drains. system & underground pipelines, proposed new pipeline with high pumping capacity. Water born diseases will be controlled due to pumping out the stagnant storm water to Piplaad River. During construction period some temporary degradation of air quality due to emission from hot mix plant, stone crusher, generator and other machinery will occur. Machinery will cause noise pollution and construction spills, wastes, degraded materials will cause deterioration of soil quality and surface water. But all these have short term impacts and proper mitigation measures will be taken through EMP. Overall, the 'with project alternative' will bring about improved public health and living environment that will contribute to improved quality of life in the municipality area. Improved sanitation and drainage systems will create an enabling environment for local economic development and improved social services that communities within the sphere of influence of the municipality will benefit from, thus, contributing to the overall economic development of the region.
Selected Alternative	Without subprojects would yield the area to be continuously under-served that puts the health of the general public at an increasing risk and could potentially worsen the living environment. This 'no project' scenario would impede further social and economic development of the town and the defer commitments to improve the proportion of the population with sustainable access to clean environment and basic drainage and sanitation. Given the large-scale benefits to the population and environment, 'with project' alternative is considered appropriate
2	Project Locations (alignment)
Description of alternatives	The analysis of existing drains shows that the. 9 nos drains required to be re-constructed having a total length of 7.951 km, of which 4.599 Km is proposed in RCC while 3.352 Km is of PCC. Construction of 13 new drains are proposed in a length of 5.035 Km of which

	2.068 km is RCC Drain and 2.967 km is proposed in PCC. Drainage from the existing drains falls into a earthen natural drain flows through city and the natural drain finally discharges in Piplaad river. The alignment of major storm water drains under each drainage zones are identified based on the topography and catchment of drainage area. To the maximum extent, the alignments are proposed along the existing road network only, to avoid any land acquisition. As per preliminary assessment of revenue records, public consultation and transect walks it has been ascertained that there will be no private land acquisition for the proposed subproject. As upgradation of existing drains and works on unlined drains are proposed under this subproject, which are mostly within the right of way (ROW) of existing roads which comes under Municipal Board, Bhawani Mandi. Therefore, proposed alignments of the drains are selected based on available ROW and govt. lands, and no project alternative selected.
--	--

IV. POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORKS

A. ADB Safeguard Policy

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

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

- (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 (EIA) 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 (IEE) 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.
- (i) **Category FI.** A proposed project is classified as category FI if it involves investment of ADB funds to or through a FI.

30. The environmental impacts of Bhawani Mandi Drainage subproject have been identified and assessed as part of the planning and design process. An environmental assessment using ADB's REA checklist for Urban Development (see **Appendix 1**) was conducted, and results of the assessment show that the subproject is unlikely to cause significant adverse impacts. Thus, this IEE has been prepared in accordance with ADB SPS's requirements for environment category B projects.

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

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

33. **Public Disclosure.** The IEE will be put in an accessible place (e.g., local government offices, libraries, community centers, etc.), and a summary translated into local language for the project affected people and other stakeholders. The following safeguard documents will be put up in ADB's website so that the affected people, other stakeholders, and the public can provide meaningful inputs into the project design and implementation:

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

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

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

36. **Monitoring and Reporting.** Borrower shall monitor, measure and document the implementation progress of the EMP. If necessary, the borrower shall identify the necessary

¹ Per ADB SPS, 2009, meaningful consultation means a process that (i) begins early in the project preparation stage and is carried out on an ongoing basis throughout the project cycle 1; (ii) provides timely disclosure of relevant and adequate information that is understandable and readily accessible to affected people; (iii) is undertaken in an atmosphere free of intimidation or coercion; (iv) is gender inclusive and responsive, and tailored to the needs of disadvantaged and vulnerable groups; and (v) enables the incorporation of all relevant views of affected people and other stakeholders into decision making, such as project design, mitigation measures, the sharing of development benefits and opportunities, and implementation issues.

corrective actions, and reflect them in a corrective action plan. The Borrower shall prepare and submit to ADB semi-annual environmental monitoring reports that describe progress with implementation of the EMP and compliance issues and corrective actions, if any. For subprojects likely to have significant adverse environmental impacts during operation, reporting will continue at the minimum on an annual basis until ADB issues a project completion report.

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

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

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

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

41. ADB SPS International Best Practice Requirements. ADB SPS, 2009 requires that, during the design, construction, and operation of the project, the executing agency shall apply pollution prevention and control technologies and practices that are consistent with international good practice, as reflected in internationally recognized standards such as the World Bank Group's Environment, Health and Safety (EHS) Guidelines. (IFC's General EHS Guidelines⁴ and

² In case where responsibility is delegated to subproject contractors during construction phase, borrower shall ensure that the responsibilities on occupational health and safety are included in the contract documents.

³ Including nonemployee workers engaged by the borrower/client through contractors or other intermediaries to work on project sites or perform work directly related to the project's core functions.

⁴ <https://www.ifc.org/wps/wcm/connect/554e8d80488658e4b76af76a6515bb18/Final%2B%2BGeneral%2BEHS%2BG>

Sector Specific [Water and Sanitation] Guidelines⁵). These standards contain performance levels and measures that are normally acceptable and applicable to projects. These standards contain performance levels and measures that are normally acceptable and applicable to projects. When Government of India regulations differ from these levels and measures, the PMU and PIUs will achieve whichever is more stringent. If less stringent levels or measures are appropriate in view of specific project circumstances, the PMU and PIUs will provide full and detailed justification for any proposed alternatives that are consistent with the requirements presented in ADB SPS, 2009.

B. National Laws

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

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

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

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

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

uidelines.pdf?MOD=AJPERES

⁵ <https://www.ifc.org/wps/wcm/connect/e22c050048855ae0875cd76a6515bb18/Final%2B%2BWater%2Band%2BSanitation.pdf?MOD=AJPERES>

47. **Applicable environmental regulations.** Besides EIA Notification 2006, there are various other acts, rules, policies and regulations currently in force in India that deal with environmental issues that could apply to infrastructure development.

48. **Environmental Regulatory Compliance.** Table 6 presents a summary of environmental regulations and mandatory requirements applicable to Bhawani Mandi Drainage subproject.

Table 6: Applicable Environmental Regulations

Law	Description	Requirement	Relevance to Project Phase
National Environment Policy (NEP), 2006.	NEP is a comprehensive guiding document in India for all environmental conservation programs and legislations by Central, State and Local Government. The dominant theme of this policy is to promote betterment of livelihoods without compromising or degrading the environmental resources. The policy also advocates collaboration method of different stakeholders to harness potential resources and strengthen environmental management.	RSTDSP should adhere to NEP principle of “enhancing and conservation of environmental resources and abatement of pollution”.	All phases of project
Rajasthan State Environment Policy, 2010 including And Rajasthan Environment Mission and Climate Change Agenda for Rajasthan (2010-14)	Follows the National Environment Policy, 2006 and core objectives and policies are: -Conserve and enhance environmental resources; assure environmental sustainability of key economic sectors; and, improve environmental governance and capacity building - it recommends specific strategies and actions to address the key environmental issues: water resources, desertification and land degradation, forest and biodiversity, air quality, climate change: adoption and mitigation, mining, industry, tourism, energy, urban development, etc. - Establishment of Environment Mission under the chairpersonship of the Chief Minister and a Steering Committee under the chairpersonship of Chief	Project implementation should adhere to the policy aims of: conservation and enhancement of environmental resources, integration of environmental concerns into projects/plans, and capacity building in environmental management. Under water sector, major concerns, as the policy notes, are huge water losses and wastage, declining water availability, pollution. Relevant recommendations for the project include control of losses, integrated water resources management, control of raw water pollution ¹⁸ , reuse and recycling. Avoid/minimize use of forest lands. With reference to climate change adoption and mitigation following should be considered in the project: (i) diminishing flows in surface water bodies, and groundwater depletion, and revival traditional water bodies as water sources (lakes/tanks); (ii) equal stress on demand side management in water; and (iii)	All phases of project

Law	Description	Requirement	Relevance to Project Phase
	Secretary, Government of Rajasthan Tasks force set up for six key areas	minimize energy use - design energy efficiency systems.	
EIA Notification, 2006	Projects indicated in the schedule of this notification require EIA study and environmental clearance.	None of the components of this subproject falls under the ambit of the notification; no EIA study or environmental clearance required	-
Central Ground Water Authority (CGWA) Public Notice 2/100	Public Notice specifies districts and areas where there are restrictions on the construction and installation of any new structure for extraction of groundwater resources without specific approval from the CGWA	No new ground water well are proposed in subproject	Not applicable
Central Ground Water Authority under Department Of Water Resources, River Development And Ganga Rejuvenation- Gazette Notification dtd. 24.09.2020	extraction of ground water for drinking & Domestic use for Residential apartments/ Group Housing Societies/ Government water supply agencies in urban areas need to take NOC from Central Ground Water Authority (CGWA)	For grant of No Objection Certificate for ground water extraction, the project proponent has to furnish the details as per the guidelines issued by the CGWA in proper format as available in CGWA website (https://cgwa-noc.gov.in/LandingPage/index.htm). No new ground water well are proposed in subproject	Pre-construction/ construction and operation
Water (Prevention and Control of Pollution) Act of 1974, Rules of 1975, and amendments (1987)	Act was enacted to provide for the prevention and control of water pollution and the maintaining or restoring of wholesomeness of water, by Central and State Pollution Control Boards and for conferring on and assigning to CPCB/SPCBs powers and functions relating to water pollution control. Control of water pollution is achieved through administering conditions imposed in consent issued under provision of the Water (Prevention and Control of Pollution) Act of 1974. These conditions regulate the quantity and quantity of effluent, the location of discharge and the frequency of monitoring of effluents. Any component of the subproject having the potential to generate sewage or trade effluent will come under its purview. Such projects have to	Proposed project components does not require consent under this Act	Not applicable

Law	Description	Requirement	Relevance to Project Phase
	obtain Consent to establish (CTE) under Section 25 of the Act from Rajasthan State Pollution Control Board (RSPCB) before starting implementation and Consent to Operate (CTO) before commissioning.		
Air (Prevention and Control of Pollution) Act of 1981, Rules of 1982 and amendments.	This Act was enacted to achieve prevention, control and abatement of air pollution activities by assigning regulatory powers to Central and State boards for all such functions. The Act also establishes ambient air quality standards. The projects having potential to emit air pollutants into the atmosphere have to obtain CTE and CTO under Section 21 of the Act from RPCB. The occupier of the project/facility has the responsibility to adopt necessary air pollution control measures for abating air pollution.	Not Applicable The following will require CTE and CTO from RPCB: (i) Diesel generators); (ii) Batching Plant hot mix plants; and (iii) stone crushers, if installed for construction. All relevant forms, prescribed fees and procedures to obtain the CTE and CTO can be found in the RPCB website (http://environment.rajasthan.gov.in) If ready mix concrete and hot mix bitumen is procured from third party, contractor to ensure that the plants, from where material is being purchased is having CTE/CTO and copy should be collected from third party and submitted in PIU	Construction and operation
Biodiversity Act of 2002	This Act primarily addresses access to genetic resources and associated knowledge by foreign individuals, institutions or companies, to ensure equitable sharing of benefits arising out of the use of these resources and knowledge to the country and the people.	Not Applicable	-
Wildlife Protection Act, 1972 and amendment 1991	This overarching Act provides protection to wild animals, birds, plants and matters connected with habitat protection, processes to declare protected areas, regulation of wildlife trade, constitution of state and national board for wildlife, zoo authority, tiger conservation authority, penalty clauses and other important regulations.	Not applicable, there are no wildlife areas within or near to proposed project sites in Bhawani Mandi	Not Applicable
Forest (Conservation) Act, 1980	The Forest (Conservation) Act prohibits the use of forest land for non-forest purposes without the approval of Ministry of Environment Forests & Climate Change (MoEFCC), Government of India	Not applicable; none of the components of the subproject are located in forest.	Not Applicable

Law	Description	Requirement	Relevance to Project Phase
Environmental (Protection) Act, 1986 amended in 1991 and the following rules/notifications:	This is an “umbrella” legislation that empowers the Central Government to take all necessary measures to protect and improve the quality of the environment and prevent, control and abate environmental pollution.	Environmental (Protection) Act, 1986 amended in 1991 and the following rules/notifications:	Construction and operation
Environmental Standards (ambient and discharge).	Emissions and discharges from the facilities to be created or refurbished or augmented shall comply with the notified standards	Appendix C-2 provides ambient air quality standards, emission limits and emission stack height requirements for diesel generators	Construction and operation
Noise Pollution (Regulation and Control) Rules, 2000 amended up to 2010.	Rule 3 of the Act specifies ambient air quality standards in respect of noise for different areas/zones.	Appendix C-6 provides applicable noise standards	Construction and operation
Solid Waste Management Rules 2016	Responsibility of Solid Waste Generator segregate and store the waste generated in three separate streams namely bio-degradable, non-biodegradable and domestic hazardous wastes in suitable bins and handover segregated wastes to authorized waste pickers or waste collectors as per the direction or notification by the local authorities from time to time; store separately construction and demolition waste, as and when generated, in his own premises and shall dispose off as per the Construction and Demolition Waste Management Rules, 2016; (iii) No waste generator shall throw, burn or bury the solid waste generated by him, on streets, open public spaces outside his premises or in the drain or water bodies.	Contractor to follow all the rules during construction works	Construction and operation
Construction and Demolition Waste Management Rules 2016	(i) Every waste generator shall segregate construction and demolition waste and deposit at collection centre or handover it to the authorized processing facilities (ii) Shall ensure that there is no littering or deposition so as to prevent obstruction to the traffic or the public or drains	Contractor to follow all the rules during construction works. Sludge or any material if classified as hazardous waste / material is to be handled and disposed according to this Rules	Construction

Law	Description	Requirement	Relevance to Project Phase
	(iii) Large generators (who generate more than 20 tons or more in one day or 300 tons per project in a month) shall submit waste management plan and get appropriate approvals from the local authority before starting construction or demolition or remodelling work, (iv) Large generators shall have environment management plan to address the likely environmental issues from construction, demolition, storage, transportation process and disposal / reuse of C & D Waste. (v) Large generators shall segregate the waste into four streams such as concrete, soil, steel, wood and plastics, bricks and mortar, (vi) Large generators shall pay relevant charges for collection, transportation, processing and disposal as notified by the concerned authorities;		
Hazardous and Other Wastes (Management and Trans boundary Movement) Rules, 2016,	Responsibilities of the occupier for management of hazardous and other wastes.- (1) For the management of hazardous and other wastes, an occupier shall follow the following steps, namely:- (a) prevention; (b) minimization; (c) reuse, (d) recycling; (e) recovery, utilization including co-processing; (f) safe disposal. (2) The occupier shall be responsible for safe and environmentally sound management of hazardous and other wastes. (3) The hazardous and other wastes generated in the establishment of an occupier shall be sent or sold to an authorized actual user or shall be disposed of in an authorized disposal facility. (4) The hazardous and other wastes shall be transported from an occupier's establishment to an authorized	Contractor to comply all the requirements of this Act during construction works.	Construction and operation

Law	Description	Requirement	Relevance to Project Phase
	actual user or to an authorized disposal facility in accordance with the provisions of these rules. (5) The occupier who intends to get its hazardous and other wastes treated and disposed of by the operator of a treatment, storage and disposal facility shall give to the operator of that facility, such specific information as may be needed for safe storage and disposal. (6) The occupier shall take all the steps while managing hazardous and other wastes to- 6 (a) contain contaminants and prevent accidents and limit their consequences on human beings and the environment; and (b) provide persons working in the site with appropriate training, equipment and the information necessary to ensure their safety.		
Wetlands (Conservation and Management) Rules, 2017	The Rules specify activities which are harmful and prohibited in the wetlands such as industrialization, construction, dumping of untreated waste and effluents, and reclamation. The Central Government may permit any of the prohibited activities on the recommendation of Central Wetlands Regulatory Authority.	Not applicable as subprojects components are not located in or near to designated wetland area.	Not applicable
Ancient Monuments and Archaeological Sites and Remains Act, 1958 and Ancient Monuments and Archaeological Sites and Remains (Amendment and Validation) Act, 2010.	The Act designates areas within 100 meters (m) of the "protected monument/area" as "prohibited area" and beyond that up to 200 m as "regulated area" respectively. No "construction" is permitted in the "prohibited area" and any construction activity in the "regulated area" requires prior permission of the Archaeological Survey of India (ASI).	Not applicable - there are no protected monuments / places of archaeological / historical places in or near the proposed worksites;	Not applicable
The Rajasthan Monuments, Archaeological Sites and Antiquities Act, 1961; the	In case of chance finds, the contractor/ PIU will be required to follow a protocol as defined in the Environmental Management Plan (EMP)		Not applicable

Law	Description	Requirement	Relevance to Project Phase
Rajasthan Monuments, Archaeological Sites and Antiquities (amendment) Act 2007			
The Building and Other Construction Workers (BOCW) Act 1996 and Rajasthan Building and Construction Workers Rules 2009	Employer shall- • Provide and maintain, at suitable point, sufficient quantity of wholesome drinking water, such point shall be at least 6 meters away from any washing areas, urinals or toilets • Provide sufficient urinals and latrines at convenient place, easily accessible by workers • Provide free of charge, temporary living accommodations near to work sites with separate cooking place, bathing and lavatory facilities and restore the site as preconditions after completing the construction works • Provide crèche with proper accommodation, ventilation, lighting, cleanliness and sanitation if more than fifty female workers are engaged • Provide first aid facilities in all construction sites For safety of workers employer shall provide- • Safe access to site and workplace • Safety in demolition works • Safety in use of explosives • Safety in operation of transporting equipment and appoint competent person to drive or operate such vehicles and equipment • Safety in lifting appliance, hoist and lifting gears • Adequate and suitable lighting to every workplace and approach • Prevention of	Contractors are required to follow all the provisions of BOCW Act and Rajasthan BOCW Rules. Salient features of Rajasthan BOCW Rules are- Chapter III, section 17- Registration of establishments Chapter VIII, section 61- Hours of works, intervals or rest and spread over, overtime Section 62- weekly rest Section 63- night shift Section 67- registers of workers Section 68- Muster roll, wages register Section 70- latrine and urinal facilities Chapter XI- Safety and Health Section 78- fire protection Section 79- emergency action plan Section 80- fencing of motors Section 81- lifting and carrying of weight Section 82- H&S policy Section 83- dangerous and harmful environment Section 84- Overhead protection Section 88- eye protection Section 89- PPEs Section 90- electrical hazards Section 97- use of safety helmets and shoes Chapter XIII-lifting appliances and gears Chapter XV- transport and earth moving equipment Chapter XVI- concrete works Chapter XVII- demolition works Chapter XVIII-Excavation and tunnelling Chapter XX- ladders and step ladders Chapter XXII- structural frame and formworks Chapter XXIV- medical facilities and first aid box	Construction

Law	Description	Requirement	Relevance to Project Phase
	inhalation of dust, smoke, fumes, gases during construction works and provide adequate ventilation in workplace and confined space • Safety in material handling and stacking/unstacking • Safeguarding the machinery with fly-wheel of moving parts • Safe handling and use of plants operated by compressed air • Fire safety • Limit of weight to be lifted by workers individually • Safety in electric wires, apparatus, tools and equipment • Provide safety net, safety sheet, safety belts while working at height (more than 1.6 m as per OSHA) • Providing scaffolding, ladders and stairs, lifting appliances, chains and accessories where required • Safety in pile works, concrete works, hot asphalt, tar, insulation, demolition works, excavation, underground construction and handling materials • Provide and maintain medical facilities for workers Any other matters for the safety and health of workers		
Contract Labour (Regulation and Abolition) Act, 1970; The Inter-State Migrant Workmen (Regulation of Employment and Conditions of Service) Act, 1979	Provides for welfare measures to be provided by the Contractor to contract labour and in case the Contractor fails to provide, the same are required to be provided by the Principal Employer by Law. The principal employer is required to take Certificate of Registration and the Contractor is required to take a License from the designated Officer. The Act is applicable to the establishments or Contractor of principal employer if they	• Applicable to all construction works in the project • Principle employer (RUDSICO-EAP) to obtain Certificate of Registration from Department of Labour, as principle employer • Contractor to obtain license from designated labour officer • Contractor shall register with Labour Department, if Inter-state migrant workmen are engaged • Adequate and appropriate amenities and facilities shall be provided to workers including housing, medical aid, traveling	Construction and operation

Law	Description	Requirement	Relevance to Project Phase
	employ 20 or more contract labour. The inter-state migrant workmen, in an establishment to which this Act becomes applicable, are required to be provided certain facilities such as housing, medical aid, traveling expenses from home up to the establishment and back, etc.,	expenses from home and back, etc., • Appendix C-12 provides applicable labour laws including amendments issued from time to time applicable to establishments engaged in construction of civil works.	
The Child Labour (Prohibition and Regulation) Act, 1986	Prohibits employment of children below 14 years of age in certain occupations and processes Employment of child labour is prohibited in building and construction Industry.	No child labour should be employed	Construction and operation
Minimum Wages Act, 1948	Minimum wages fixed by appropriate Government as per provisions of the Act if the employment is a scheduled employment. Construction of buildings, roads and runways are scheduled employment.	Applicable to all construction works in the project All construction workers should be paid not less than the prescribed minimum wage	Construction and operation
Workmen Compensation Act, 1923	Provides for compensation in case of injury by accident arising out of and during the course of employment.	Compensation for workers in case of injury by accident	Construction and operation
Equal Remuneration Act, 1979	Provides for payment of equal wages for work of equal nature to male and female workers and not for making discrimination against female employees in the matters of transfers, training and promotions etc.	Equal wages for work of equal nature to male and female workers	Construction and operation
The Rajasthan Monuments, Archaeological Sites and Antiquities Act, 1961; the Rajasthan Monuments, Archaeological Sites and Antiquities (amendment) Act 2007	Any construction/excavation work in the 'protected area' (as declared by GoR under the Act) requires priori permission of Department of Archaeology & Museums -Application under the Rules shall be submitted to Director, State Archaeological Department, at least 3 months prior to the work. Department provides conditional permission, including time for completion, procedures to be followed during the work and for chance finds etc.	Not applicable - there are no state protected monuments in or near the proposed project sites In case of chance finds, the contractor/ PIU will be required to follow a protocol as defined in the Environmental Management Plan (EMP).	Not applicable

Law	Description	Requirement	Relevance to Project Phase
Rajasthan Forest Act, 1953 and Rajasthan Forest Rules, 1962	This Act makes the basis for declaration of Reserved Forests, constitution of village forest committees, management of reserved forests and penalties and procedures.	Not applicable; none of the components / pipeline alignment are in reserved or community forest areas.	Construction
International conventions and treaties			
Ramsar Convention, 1971	The Ramsar Convention is an intergovernmental treaty that provides the framework for national action and international co-operation for the conservation and wise use of wetlands and their resources. India is one of the signatories to the treaty. The Ramsar convention made it mandatory for the signatory countries to include wetland conservation in their national land use plans.	There are no Ramsar sites in or near Bhawanimandi. Not applicable to Bhawanimandi drainage subproject.	Not applicable
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), 1973	India is a signatory of this convention which aims to control international commercial trade in endangered species	Not applicable in this project as no endangered species of wild fauna and flora is found in project locations.	-
Montreal Protocol 1992	India is a signatory of this convention which aims to reduction in the consumption and production of ozone-depleting substances (ODS), while recognizing differences in a nation's responsibilities. Ozone depleting substances are divided in two groups Chlorofluorocarbons (CFCs) and Hydrochlorofluoro carbons (HCFCs)	Not applicable in this project as no ODS are involved in construction works	Not applicable
Basel Convention on Trans-boundary Movement of Hazardous Wastes, 1989	India is a signatory of this convention which aims to reduce trans-boundary movement and creation of hazardous wastes	Contractor to follow the provisions of Hazardous Waste Rules 2016 for storage, handling, transport and disposal of hazardous waste emerged during construction works Under this Convention, asbestos or asbestos waste in the form of dust and fibres is classified as hazardous waste.	Not applicable

Law	Description	Requirement	Relevance to Project Phase
Convention on Migratory Species of Wild Animals (CMS), 1979 (Bonn convention)	CMS, also known as Bonn convention, was adopted in 1979 and entered into force on 1 November 1983, which recognizes that states must be the protectors of migratory species that live within or pass through their national jurisdictions, and aims to conserve terrestrial, marine and avian migratory species throughout their ranges. Migratory species threatened with extinction are listed on Appendix I of the Convention. CMS Parties strive towards strictly protecting these species, conserving or restoring the places where they live, mitigating obstacles to migration and controlling other factors that might endanger them. Migratory species that need or would significantly benefit from international cooperation are listed in Appendix II, and CMS encourages the Range States to conclude global or regional agreements.	Not applicable to this project as no migratory species of wild animals are reported in the project areas.	Not applicable

49. **Clearances / permissions to be obtained prior to start of construction.** Table 7 shows the list of clearances/permissions required for project construction. This list is indicative and the contractor should ascertain the requirements prior to start of the construction, and obtain all necessary clearances/permission prior to start of construction.

Table 7: Clearances and permissions required for Construction activities

S. No	Construction Activity	Statute under which Clearance is Required	Implementation
1	Land for project activity	Allotment and approval for specific land use	ULB
2	Establishment of construction camps	Allotment and approval for specific land use	Contractor
3	Tree Cutting	State forest department/Revenue (Tehsildar)	PIU
4	Hot mix plants, Crushers, Batching plants and DG Set	Consent to establish and consent to operate under Air Act, 1981 from RSPCB	Contractor
5	Sand mining, quarries and borrow areas	Permission from District Collector/ State Department of Mines & Geology	Contractor
6	New quarries and borrow areas	Environmental clearance under EIA Notification 2006	Contractor

S. No	Construction Activity	Statute under which Clearance is Required	Implementation
7	Use of vehicles and equipment	Pollution under control certificate (PUC) form RTO	Contractor
8	Temporary traffic diversion measures	Temporary traffic diversion measure including use of alternate road from District traffic police	Contractor

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

V. DESCRIPTION OF ENVIRONMENT

A Physical Resources

1. Location, Area & Connectivity

51. Bhawani Mandi is a town and a municipality in Jhalawar district in the state of Rajasthan. Bhawani Mandi Town is located an altitude of about 420 meters above MSL and lies on 24°25'N and 75°49'E latitude. Bhawani Mandi is located 47 km distance from the district headquarter Jhalawar. Bhawani Mandi is the railway junction from which we can take trains for all over India. The nearest airport is located at Kota at a distance of 110 KM.

52. Bhawani Mandi railway station is divided between two states, viz. Madhya Pradesh and Rajasthan. The northern part of the platform is in Mandsaur district of Madhya Pradesh and the southern part is in Jhalawar district of Rajasthan. It is a border town of Rajasthan.

2. Topography, Soils and Geology

53. The city of Jhalawar in Rajasthan, India is situated in the southeastern region of the state at the edge of the Malwa plateau. The landscape of the township is rocky, but water-laden and fertile. Jhalawar is set upon relative plains in the valley of the hills; Jhalrapatan is located at the pass at the foothills to the south known to comprise the central plains of Pachpahar and Jhalrapatan at local level. Bhawani Mandi town is an expanse of fertile plain having rich black-cotton soil. It is watered by several rivers, giving it a verdant look.

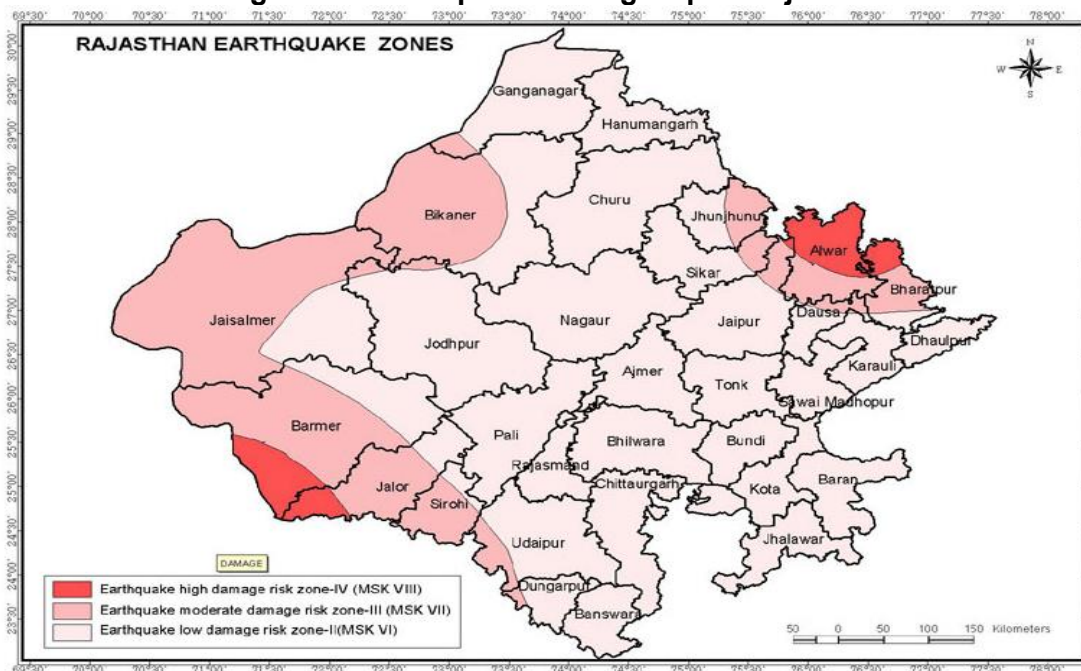
3. Geology

54. The geological structure of Jhalawar district comprises of the Great Malwa Plateau, which is part of Daccan Lawa plateau. The formation of Daccan plateau was due to the volcanic fissure eruptions which took place during cretaceous period about 15 crore years back. Deccan trap extends to more than 5 lacs sqkm area covering part of M.P., Maharashtra and major part of south India. This consists of mostly basalt rocks. There are also scattered hill ranges in the area. major part of south India. This consists of mostly basalt rocks. There are also scattered hill ranges in the area.

4. Seismology and Natural Hazards

55. Many parts of the Indian subcontinent have historically high seismicity. Seven catastrophic earthquakes of magnitude greater than 8 (Richter scale) have occurred in the western, northern and eastern parts of India and adjacent countries in the past 100 years. Approx. 59 % of the land area of India is liable to seismic hazard damage. In India, seismic zones are divided into four zones i.e., V, IV, III and II. As per the seismic zoning map of India, Bhawani Mandi Town falls under the Zone II, which is the lowest earthquake risk zone in India. This zone is termed as “low damage risk zone”. Hence the risk of earthquake at the proposed sites is minimal and so the site is safe.

Figure 10: Earthquake Zoning Map of Rajasthan



5. Climate and Rainfall

56. Bhawani Mandi is situated in fairly humid and tropical climate of Rajasthan with an average annual rainfall of around 850 mm which is highest in Rajasthan. Most of rainfall occurs in span of 3 months only (July and September). Temperatures are extreme for about 3/4th of the year with high temperatures exceeds 42 °C from April to October months. Summer temperatures are always high and the range exceeds even 20 °C. During the day, the summer temperatures may be as high as 49 °C but in the night, the temperatures may fall, to less than 20 °C. In winters, the day temperatures are higher but the night temperatures may be near freezing point. Winters are of short duration, not exceeding three months – December, January and February.

6. Surface Water

57. Jhalawar District receives the most rainfall in Rajasthan and is relatively well provided with surface water as a result. All of the rivers and streams are part of the Chambal system. Kalisindhi and Ahu are the main rivers and both originate in Madhya Pradesh and flow north through Jhalawar into Kota District. All of the rivers and streams are full and swiftly flowing in the monsoon, but most are dry throughout the rest of the year, except for the Kalisindhi and Ahu, which retain water in depressions known locally as deh. These areas were the main source of water supply for Jhalawar and Jhalrapatan until recently, when two weirs were constructed in the Kalisindhi to

provide a more secure supply, at Manpur 4 km northeast of Jhalawar (2001), and at Bhawrasa 6 km southeast of Jhalrapatan (2004). Piplaad river in the south western side of town is the major river in Bhawani Mandi.

58. **Water Quality of Piplaad River.** Water Quality of Piplaad river was assessed under “Water quality of Medium and Minor Rivers “and as recorded in National Water Quality monitoring Programme (NWMP data 2020), the River Piplaad Dam , Bhawani Mandi reflect the temperature of surface water ranged between 19 and 29 °C. Dissolved oxygen concentration ranged from 4.9 to 7.9 mg/l while pH of waters ranged between 8.4 and 8.6. Water conductivity varied in a range of 400 to 560 µmhos/cm and BOD of waters was found between 1.4 and 3.1 mg/l. Nutrient concentration of the surface waters was also recorded and Nitrate-Nitrogen and Nitrite Nitrogen (NO₃-N +NO₂-N) concentration was recorded to vary from 0.58 to 2.29 mg/l. Free coliform in river Piplaad dam were found between 39 and 75 MPN/100 ml while the total Coliform ranged between 64 and 120 MPN/100 ml.

7. Ground Water

59. Bhawani Mandi, Jhalawar district is in the south-eastern plateau region of Rajasthan, where groundwater is mainly found in layers of basalt, sandstone and shale, intercalated with sandstone. The groundwater resource of the Jhalrapatan block covers over 1300 km², but is heavily exploited, mainly by abstraction for agricultural use. The water table varies from 7 m to 15 m below ground level, and rises to 2-7 m after the monsoon.

60. In the District, there are no aquifers formed in sandy or alluvial material in the district. Of the hardrocks, Basalts are most prominent aquifer forming material as more than 76% of district's aquifers are formed within basalt only. Next in prominence are sandstones of Vindhyan Super Group which occupy about 14% of district's aquifer area and a small part of aquifers is formed within shales accounting for just about 8%.

61. Ground water resource estimation studies for Jhalawar District reveal that the dynamic resource is under stress and in most part of the district the exploitation is being done from static resources. The Khanpur block falls under ‘Critical’ category on the basis of stage of development which is close to 100%. All the remaining 6 blocks, including the Manohar Thana where the **Bhawani Mandi falls are within ‘Over Exploited’ category** because the current stage of development of ground water resource exceeds 100% and it is recommended that the exploitation of ground water should not be resorted to anymore so as to prevent further depletion of dynamic resource.

62. Shallow water levels of less than 10m bgl are seen in a narrow strip in the Manohar Thana-Khanpur-Bakani-Jhalrapatan region and also as isolated patches in Dag and Pirawa blocks. Deeper water levels of more than 30m bgl are found in southern part of Dag block, occasionally reaching more than 40m bgl.

8. Air Quality

63. Bhawani Mandi being located in dry arid zone coupled with dust storms, especially during summer months, the particulate matter in ambient air is likely to be high. Traffic on the roads and winds are the main source of dust generation. Ambient air quality in Rajasthan is monitored by Rajasthan Pollution Control Board. There are no ambient air quality station in Bhawani Mandi. Air quality monitoring shall be conducted in the pre-construction phase (SIP period) by the contractor and shall be updated in IEE.

9. Noise Quality

64. There are no industrial or heavy development activities in the municipal areas of Bhawani Mandi town, therefore noise quality in town is almost good though due to vehicular movements noise is increased as compared to prescribed limits. Noise level quality of Bhawani Mandi is not available and contractor is required to conduct noise level monitoring of Bhawanimandi; at prominent project sites, in the pre-construction phase and will update in IEE report.

B Ecological Resources

65. There are no protected areas, forest blocks, wetlands, mangroves, or estuaries in or within the town. Bhawani Mandi is both urban areas surrounded by land that was converted for agricultural use many years ago. There is no remaining natural habitat in either town, where the flora is limited to artificially planted trees and shrubs, and the fauna comprises domesticated animals.

1. Forest, flora and fauna

66. Vegetation is sparse and comprises mainly domesticated species. There is no remaining natural habitat in the town, where the flora is limited to artificially planted trees and shrubs, and the fauna comprises domesticated animals. The common flora in the vicinity of Bhawani Mandi is *Adensonia digitate*, *Prosopis cineraria*, *Adina cordifolia*, *Mangifera indica*, *Azadirachta indica*, etc. Domesticated animals (cows, goats, pigs and chickens), and other species able to live close to humans (urban birds, rodents and some insects) are found in the town.

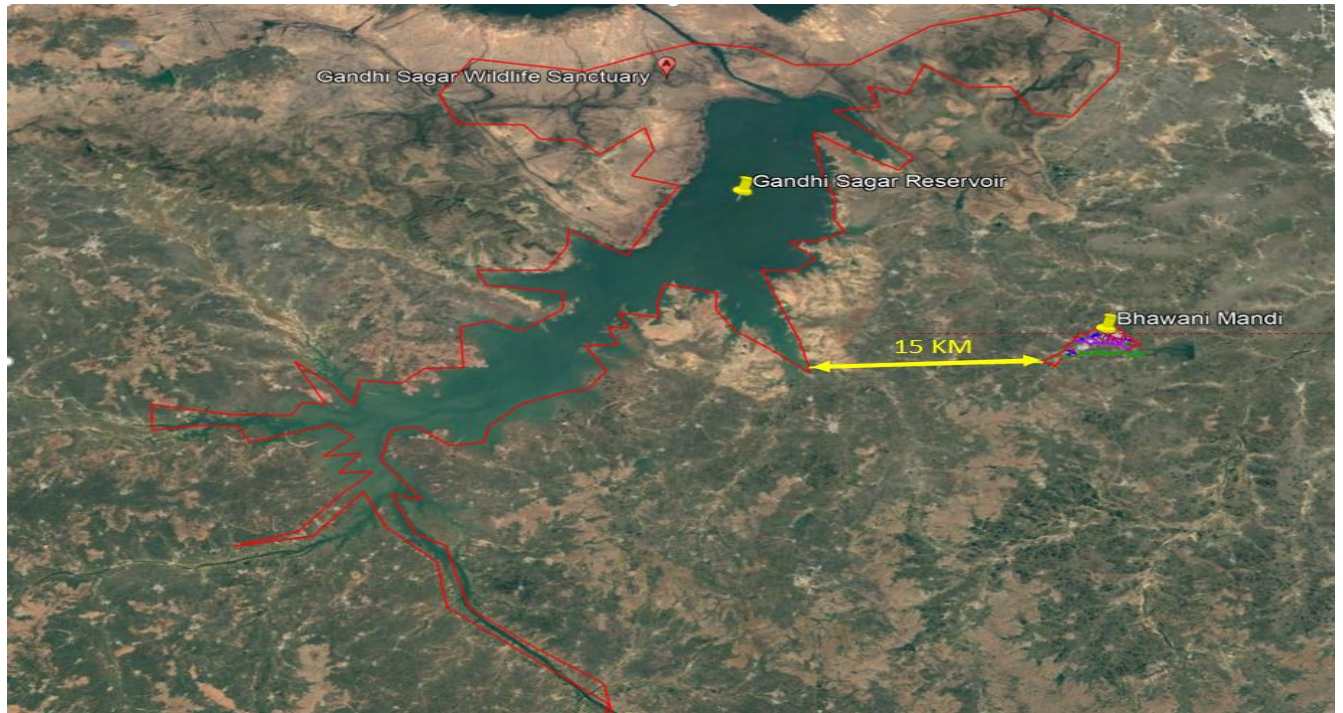
67. The distances of nearest forest blocks and protected area from the Bhawani Mandi subproject area are shown below.

Figure 11. Google map showing distance of nearest forest Blocks from subproject area.



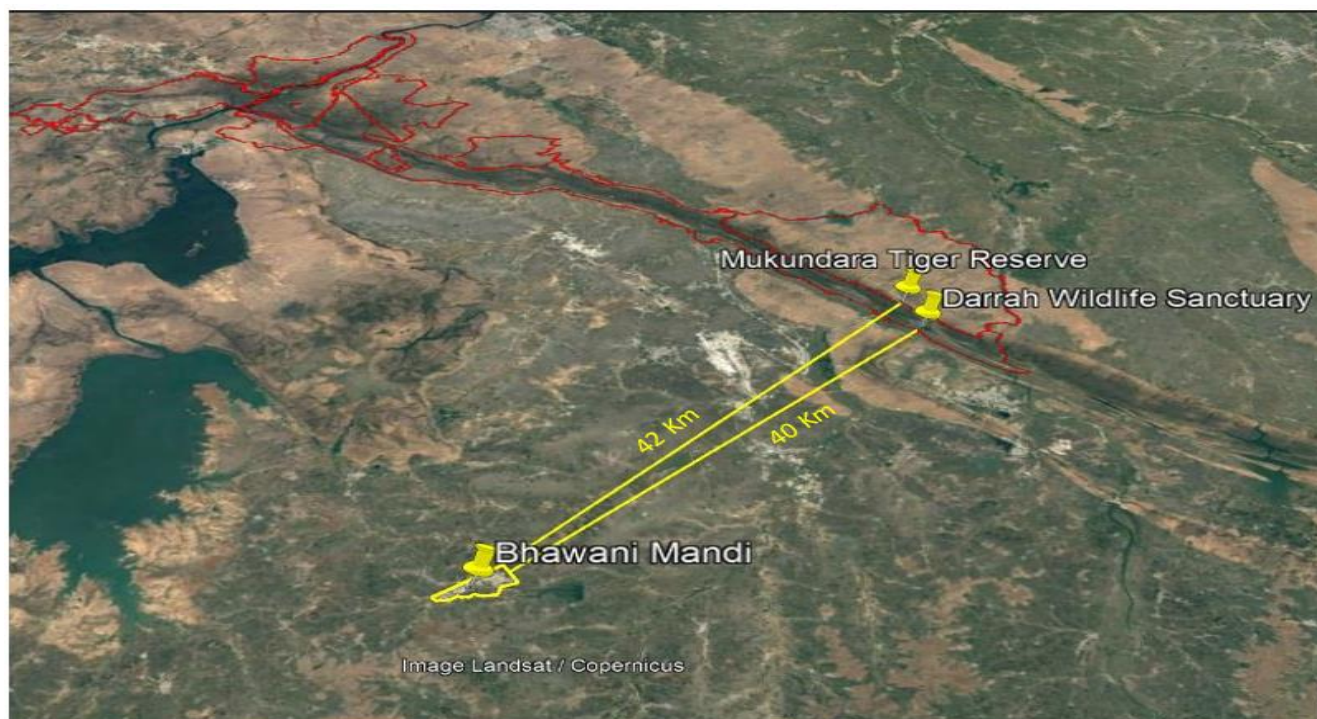
68. Screening of project areas based on Integrated Biodiversity Assessment Tool (IBAT) and IBAT proximity area report shows that there is no protected or key biodiversity area within 10 km of Bhavani Mandi (**Appendix 4**). One Key Biodiversity area (Gandhi Sagar Wildlife Sanctuary and Reservoir) is within 50 km radius of the project town and it is located at 15km aerial distance from the project area (Figure 12). There are total 37 species of IUCN Red List potentially found within 50km of area of interest in IBAT assessment. IUCN Red List species are categorized mainly 20 nos. are vulnerable, 12 nos. are endangered and 5 nos. are critically endangered.

Figure 12. Google map showing nearest Key Biodiversity area (Gandhi Sagar Wildlife Sanctuary and Reservoir) from subproject area



69. Two Notified protected sites Darrah Wildlife Sanctuary and Mukundhara Tiger Reserve are situated in Kota district are located at an aerial distance of about 40 and 42 Km respectively from project coverage area of Bhavani Mandi .

Figure 13: Google map showing distance of nearest protected areas from subproject area.



C Economic Development

1. Land use

72. Bhawani Mandi Master Plan provides land use details of Bhawani Mandi town. Existing Land use and proposed Land use is provided below.

Table 8: Proposed Land Use of Bhawani Mandi as per Bhawani Mandi Master Plan.

S. No.	Land Use	Area (in Acres)	Percentage of Developed area (%)	Percentage of Urban area (%)
1	Residential	1116	44.08	43.76
2	Business	145	5.73	5.69
3	Industrial	219	8.64	8.59
4	Govt. / Semi Govt.	34	1.34	1.33
5	Recreation	143	5.65	14.15
6	Public and Semi Public	361	14.26	5.61
7	Transport, roads and Recirculation	514	20.30	20.16
	Developed Area	2532	100.00	99.29
8	Agricultural Land	18		0.71
	Total Urban area	2550	-	100.00

*Source: Master Plan Bhawani Mandi 2011-2031

2. Industry

70. Jhalawar is emerging as growing centres of commerce and industry. Stone cutting and polishing is one of the main industry in Bhawani Mandi because of the large amounts of sandstone and other decorative materials quarried in surrounding hillsides, and also because of the proximity to Kota, which is famous for its stonework. There are various units related to fabrication, including PVC, agricultural accessories and handicraft.

3. Agriculture

71. Agriculture is also important, because of the fertile plains and reasonably good rainfall, and Jhalawar District is the largest producer of coriander in the country and the second largest producer of oranges. Bhawani Mandi produces significant quantities of both of these crops, together with soya bean, wheat. The main seasons are kharif (April-September: cotton, jowar, maize and groundnut) and rabi (October-March: wheat, gram, coriander, linseed, opium and sugarcane).

D Socio Cultural Resources

1. Demography

72. As per provisional reports of Census India, Bhawani Mandi had a population of 35629. Males constitute 53% of the population and females 47%. Bhawani Mandi has an average literacy rate of 69%, higher than the national average of 59.5%; with male literacy of 78% and female literacy of 58%. 14% of the population is under 6 years.

2. History, Culture and Tourism

73. Bhawani Mandi is a town and a municipality in Jhalawar district in the state of Rajasthan. Bhawani Mandi Town is located an altitude of about 420 meters above MSL and lies on 24°25'N and 75°49'E latitude. Bhawani Mandi is located 47 km distance from the district headquarter Jhalawar. Bhawani Mandi is the railway junction from which we can take trains for all over India. The nearest airport is located at Kota at a distance of 110 KM.

74. Bhawani Mandi was established by Bhawani Singh in the year 1911, ruler of Jhalawar state when the railway passed through this state. The town was developed when some of the richest families of the region were invited to come and settle here. This turned the ancient garrison into a bustling town and soon it became the principal market town of the south-east region. Not only did the economy boom, Jhalawar also became the first Indian town to have a municipality. The state patronized music and drama in the early years and the presence of Bhawani Natyashala, a reputed theatre in those times, bears testimony to this fact. Renowned ballet performer the late Uday Shankar hailed from the court of Jhalawar.

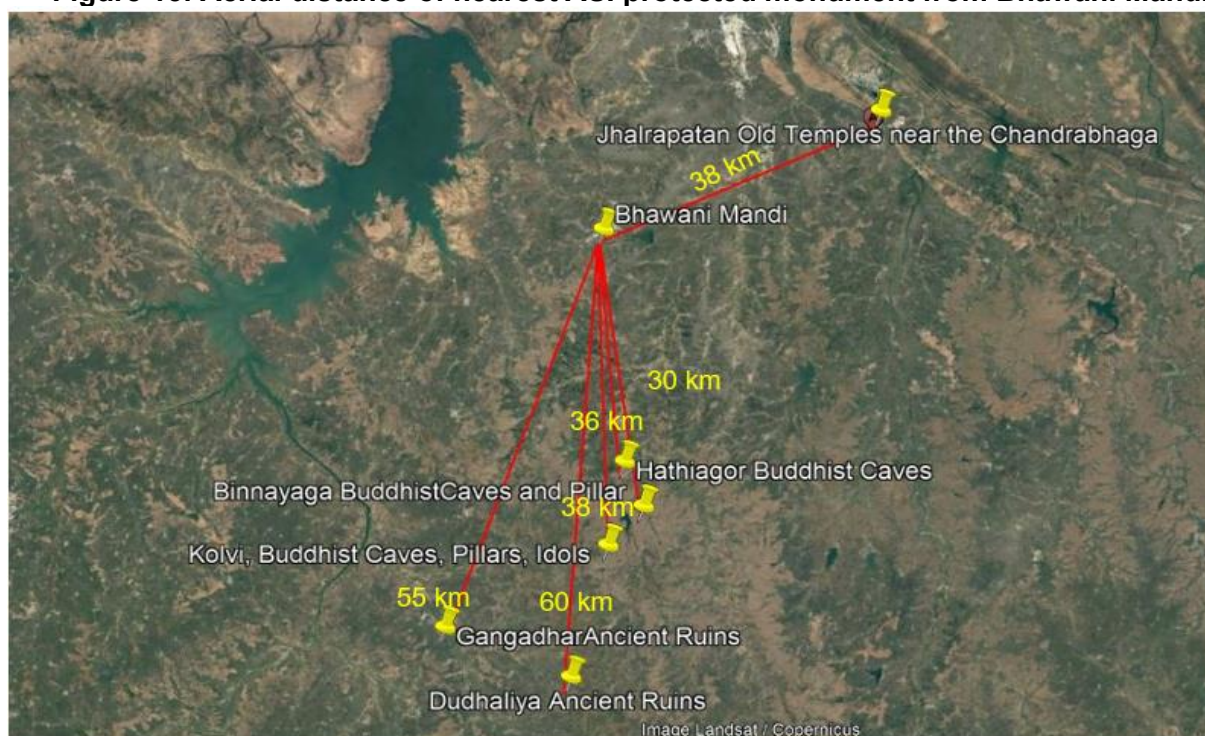
75. Jhalawar district has the highest rainfall in the Rajasthan state. An average of 35 inches (890 mm) of rainfall keeps it cool and gentle breezes ward off the stifling humidity. Jhalawar district receive the maximum annual rain (95 cm) in Rajasthan.

76. There is no State protected or ASI protected monument in Bhawani Mandi, The nearest state protected monument is Madan Vilas, situated in Jhalarpatan at an aerial distance of about

38 km. The nearest ASI protected monument is Binnaya which is located at an aerial distance of 36 km. The distance of protected monuments from the Bhawani Mandi subproject site is given below in Figure 14 and 15.

Figure 14: Aerial distance of nearest state protected monument from Bhawani Mandi



Figure 15: Aerial distance of nearest ASI protected monument from Bhawani Mandi

E. Environmental Settings of Investment Program Component Sites

77. Site environmental features of all subproject sites and photographs are presented in the following **Table 9**.

Table 9: Environmental Features of Proposed Alignment

Sr. No	Subproject components	Environmental Features of the Site	Photographs
A. Details of existing drains that will be upgraded/reconstructed			
1	Drain 1: Station Circle to Anant Nagar Underpass	This is an existing drain not in a good conditions hence upgradation works are proposed for this drain. The drain is not sufficient to discharge the storm water and requires reconstction. The major landuse along the drain is residential. Drain area comes under ownership of Municipal Board, Bhawani Mandi. The existinig alignment of drain is on RHS of the Road and the drain is	

Sr. No	Subproject components	Environmental Features of the Site	Photographs
		covered. Depth of drain varies from 1 m to 1.2 meters while the width of the drain varies from 0.3 m to 0.6 meters.	
2.	Drain 2: Girls School Fount to Bada Nallah Via Sanskrit School, Ashray Satha(Shelter)l	This is an existing drain; no extension work is proposed only upgradation works are proposed for this drain. Drain area comes under ownership of Municipal Board, Bhawani Mandi and the dain is proposed to be covered. There is habitation along the length of drain while some area are vacant but these are resedential plots to be developed later on. Depth of drain is 1.2 m while width is 0.6 m.	
3.	Drain 3: Station Road to Bada Nallah Via Old Sabjl Mandi	This is an existing drain; no extension work is proposed only upgradation works are proposed for this drain. Drain area comes under ownership of Municipal Board, Bhawani Mandi. The alignment of the drain is along the road in LHS and the land use around is resedential. There are some agricultural patches in between the residential areas. The depth of drain varies from 0.6 m to 2 meters while the width varies from 0.3m to 1.5m. This is a open drain and proposed to be covered.	 

Sr. No	Subproject components	Environmental Features of the Site	Photographs
4.	Drain 4: Ambedkar Circle to Bada Nallah Via Mela Maidan-LIC Road	This is an existing drain; no extension work is proposed only upgradation works are proposed for this drain. Drain area comes under ownership of Municipal Board, Bhawani Mandi. The drain is aligned with the existing road and major landuse in adjacent areas is residential, while undeveloped barren land is noticed in the distant end of the drain where it meets with the natural drain. The drain is a open drain and proposed to be covered. The width of drain varies from 0.6 to 1.2 m and depth also varies from 0.3 to 0.6 m. This drain opens into existing natural main drain.	
5.	Drain 5: Sarkari Kuwa to Moksh Dham Via Ambedkar Colony	This is an existing drain; no extension work is proposed only upgradation works are proposed for this drain. Drain area comes under ownership of Municipal Board, Bhawani Mandi. This drain also is aligned along the existing road and entire area along the alignment is residential. The depth of the drain is 1.2 m while the width is 0.6m. this is a open Drain and proposed to be covered.	

Sr. No	Subproject components	Environmental Features of the Site	Photographs
6.	Drain 6: Madhya Pradesh (MP) Border to Station Road Via Mukharji Nagar-Debariya Gate	This is an existing drain; no extension work is proposed only upgradation works are proposed for this drain. Drain area comes under ownership of Municipal Board, Bhawani Mandi. The alignment of the drain is along the existing road and the area is predominantly a residential area with thickly buildup area along the drain alignment. The depth of drain is 0.10m and its width is 0.15m. This is an open drain and proposed to be covered.	
7.	Drain 7: Bada Circle to Dag Gate Via Banshod Gate, Pachpahar	This is an existing drain; no extension work is proposed only upgradation works are proposed for this drain. Drain area comes under ownership of Municipal Board, Bhawani Mandi. Drain is aligned with existing road having residential buildup area in its entire length. The depth of drain is 0.3m and its width is 0.2m. Drain is proposed to be covered.	
8.	Drain 8: Tehsil Road to Pach Pahar	This is an existing drain; no extension work is only lined works are proposed for this drain only upgradation works are proposed for this drain. Drain area comes under ownership of Municipal Board, Bhawani Mandi. The drain is aligned with existing road and surrounding area is a residential area, except in terminal ends where vacant plots exist. The	

Sr. No	Subproject components	Environmental Features of the Site	Photographs
		drain opens into existing natural main drain. Depth of drain is 0.6m and its width is 0.3m. The drain is covered, except in few meters at the point where it meets the main natural rain. The drain is proposed to be covered, in its entire length.	
9.	Drain 9: Usha Colony- Sanskar Ramthi School to Bada Nallah Via Jawalal Colony- Nagar Parishad	This is an existing drain, no extension work is proposed only lined works are proposed for this drain. Drain area comes under ownership of Municipal Board, Bhawani Mandi. Drain is aligned with exiting road in RS in a residential area. There are some undeveloped plots along the alignment which are of residential use. The depth of drain varies from 0.3m to 0.6 m while its depth also varies from 0.3 to 0.6m. This drain opens in natural main drain.	
B. Details of Unlined drains that will be lined / New construction			
1.	ND 2 : Bhim Nagar Area (length 642 m)	This is an unlined drain; no extension work is proposed only concrete shape is proposed for this drain on both sides. Drain area comes under ownership of Municipal Board, Bhawani Mandi. The drain is aligned with the existing road and land use in surrounding area is residential. The drain is aligned to the right side of the road and there are no trees in the	

Sr. No	Subproject components	Environmental Features of the Site	Photographs
		proposed alignment. Drain is proposed to be covered. Depth of drain is 0.6m and width is 0.3m.	
2.	ND 3 : Bhim Nagar Area (length 239 m)	This is an unlined drain; no extension work is proposed only concrete shape is proposed for this drain. Drains comes under Municipal Board, Bhawani Mandi. The drain is aligned with the existing road and landuse in surrounding area is residential . The drain open is aligned to the right side of the road and there are no trees in the proposed alignment. Depth of drain is 0.6m and width is 0.75m.	
3.	ND 4: Bhim Nagar Area (length 399 m)	An unlined drain; no extension work is proposed only concrete shape is proposed for this drain. Drain area comes under ownership of Municipal Board, Bhawani Mandi. The drain is aligned with the existing road and landuse in surrounding area is residential . The drain is aligned to the right side of the road and there are no trees in the proposed alignment. Depth of drain is 0.6m and width is 0.30m.	

Sr. No	Subproject components	Environmental Features of the Site	Photographs
4.	ND 5: Bhim Nagar Area (Length 181 m.)	This is an unlined drain; no extension work is proposed only concrete shape is proposed for this drain. Drain area comes under ownership of Municipal Board, Bhawani Mandi. The drain is aligned with the existing road and landuse in surrounding area is residential. The drain is aligned to the right of the road and there are no trees in the proposed alignment. Depth of drain is 0.6m and width is 0.3m.	
5.	ND 6 : Annant Nagar Area 646 m	This is an unlined drain; no extension work is proposed only concrete shape is proposed for this drain. Drain area comes under ownership of Municipal Board, Bhawani Mandi. The drain is aligned with the existing road and landuse in surrounding area is residential, however undeveloped plot are there in Eastern side of the drain. The drain is aligned to the left side of the road and there are no trees in the proposed alignment. Depth of drain is 0.6m and width is 0.3m.	
6.	ND 7: Annant Nagar Area (Length 797m)	is an unlined drain; no extension work is proposed only concrete shape is proposed for this drain. Drain area comes under ownership of Municipal Board, Bhawani Mandi. The drain is aligned with the existing road and landuse in surrounding area is residential. The drain is aligned to the	

Sr. No	Subproject components	Environmental Features of the Site	Photographs
		right side of the road and there are no trees in the proposed alignment. Depth of drain is 1.2m and width is 1.0m. Drain is proposed to be an open drain. This is a open drain and there are four trees along the drain alignment.	
7.	ND 8: Gota Walo Ki Colony Se Honda Showroom (Length 534m)	This is an unlined drain; no extension work is proposed only concrete shape is proposed for this drain. Drain area comes under ownership of Municipal Board, Bhawani Mandi. The drain is aligned with the existing road and landuse in surrounding area is residential on the west side of the drain while in the eastern side there are undeveloped land plots . The drain is aligned to the right side of the road and there are no trees in the proposed alignment. Depth of drain is 0.6m and width is 0.5m. The drain is to be covered.	
8.	ND 9: From Gurjar Field to Station Road (Length 448m)	This is an unlined drain; no extension work is proposed only concrete shape is proposed for this drain. Drain area comes under ownership of Municipal Board, Bhawani Mandi. The drain is aligned with the existing road and landuse in surrounding area is mostly residential except in its eastern side . The drain is aligned to the right side of the road and there are four trees in the proposed alignment. The drain is proposed to be an open	

Sr. No	Subproject components	Environmental Features of the Site	Photographs
		drain. Depth of drain is 0.5m and width is 0.5m.	
9.	ND 10: Ghasilal Comrade Colony (Harijan Mohalla) to Bhim Nagar Via Kalyanpura (Length 105m)	This is an unline drain; no extension work is proposed only concrete shape is proposed for this drain. Drain area comes under ownership of Municipal Board, Bhawani Mandi. The drain is aligned with the existing road and landuse in surrounding area is residential . The drain is aligned to the left side of the road and there are no trees in the proposed allignment. Depth of drain is 0.75m and width is 0.5m. This drain is proosed to be an open drain.	
10	ND 12 : Annant Nagar to Bada Nallah (Length 104m)	This is an unlined drain; no extension work is proposed only concrete shape is proposed for this drain. Drain area comes under ownership of Municipal Board, Bhawani Mandi. The drain is aligned with the existing road and landuse in surrounding area is residential . The drain is aligned to the left side of the road and there are no trees in the proposed allignment. Depth of drain is 0.5m and width is 0.5m. This drain is proposed to be an open drain.	

Sr. No	Subproject components	Environmental Features of the Site	Photographs
11.	ND 13: Sayyed Nagar to Piplad River Via Madrsa Tehsil Road cremation (Length 180m)	This is an drain; no extension work is proposed only lined works are proposed for this drain. Drain area comes under ownership of Municipal Board, Bhawani Mandi. The drain is alligned along the existing road in its left side. The land use around the drain is predominantly residential. There are no trees along the alignment of erain. The depth of the drain is 1.2m and width is 1.0 m. There are no trees in drain alignment and drain is proposed to be covered RCC drain.	
12.	ND 14: Nakoda Colony to Tehsil Road (Length 225m)	This is an unlined drain; no extension work is proposed only concrete shape is proposed for this drain. Drain area comes under ownership of Municipal Board, Bhawani Mandi. The dain alignment is along the existing road on its right side. There are no trees in the drain alignment and the depth of drain is 0.75 m while its width is 0.5m. It will be an open PCC drain	
13	ND 15: Durga Mata Mandir to Tehsil Road Via Bhramपुरi Colony (Length 325m)	This is an unlined drain; no extension work is proposed only concrete shape is proposed for this drain. Drain area comes under ownership of Municipal Board, Bhawani Mandi. The dain alignment is along the existing road on its right side. There are no trees in the drain	

Sr. No	Subproject components	Environmental Features of the Site	Photographs
		alignment and the depth of drain is 0.75 m while its width is 0.5m. It will be an open PCC drain	

VI. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

A. Introduction

78. Potential environmental impacts of the proposed infrastructure components are presented in this section. Mitigation measures to minimize/mitigate negative impacts, if any, are recommended along with the agency responsible for implementation. Monitoring actions to be conducted during the implementation phase is also recommended to reduce the impact.

79. Screening of potential environmental impacts are categorized into four categories considering subproject phases: location impacts and design impacts (pre-construction phase), construction phase impacts and operations and maintenance phase impacts.

- i. **Location impacts** include impacts associated with site selection and include loss of on-site biophysical array and encroachment either directly or indirectly on adjacent environments. It also includes impacts on people who will lose their livelihood or any other structures by the development of that site.
- ii. **Design impacts** include impacts arising from Investment Program design, including technology used, scale of operation/throughput, waste production, discharge specifications, pollution sources and ancillary services.
- iii. **Pre-construction impacts** include impacts which are anticipated during construction works but planning are required for proposed mitigation measures before start of construction works i.e. during SIP period such as taking consents from various departments, planning for construction and workers camps, deployment of safety officer, arrangement of required barricades and caution boards etc.
- iv. **Construction impacts** include impacts caused by site clearing, earthworks, machinery, vehicles and workers. Construction site impacts include erosion, dust, noise, traffic congestion and waste production.
- v. **O&M impacts** include impacts arising from the operation and maintenance activities of the infrastructure facility. These include routine management of operational waste streams, and occupational health and safety issues.

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

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

82. In the case of this project (i) most of the individual elements are relatively small and involve straight forward construction and operation, so impacts will be mainly localized and not greatly significant; (ii) most of the predicted impacts are associated with the construction process, and are produced because that process is invasive, involving excavation and earth movements; and (iii) being located in an urban area, will not cause direct impact on biodiversity values. The project will be in properties held by the local government body (Jaipur Development Authority/Municipal Corporation) and access to the project location is through public rights-of-way and existing roads hence, land acquisition and encroachment on private property will not occur.

B. Location and Design Impacts

83. **Distance from Protected Areas.** The subproject area is an urban area and no remaining natural habitats are left within the developed area of the town. None of the project components are falling within protected or forest areas and no wildlife has been reported within the proposed service area. There are no environmentally sensitive areas within proposed project activity areas. Screening of project areas based on Integrated Biodiversity Assessment Tool (IBAT) and IBAT proximity area report shows that there is no protected or key biodiversity area within 10 km of Bhavani Mandi (**Appendix 4**). One Key Biodiversity area (Gandhi Sagar Wildlife Sanctuary and Reservoir) is within 50 km radius of the project town and it is located at 15km aerial distance from the project area. Therefore, the project will pose no risk or impact on biodiversity and natural resources. Two Notified protected sites Darrah Wildlife Sanctuary and Mukundhara Tiger Reserve situated in Kota district are located at an aerial distance of about 40 and 42 Km respectively from project coverage area of Bhavani Mandi.

84. **Tree cutting at project sites.** As per preliminary survey, it is accessed that 8 trees (namely neem, babul, amla) may be affected due to proposed drain works along proposed new drain no. 7 near node 109 in Anant Nagar route. There are also few shrubs and small trees (having less than 30 cm girth) on vacant lands/ROW on the alignment of proposed drains, which grow commonly on vacant lands and therefore not considered in preliminary survey. As per RUDSICO-EAP policy compensatory plantation in the ratio of 1:3 will be required therefore, total 30 tree plantations are being suggested for compensatory plantations. During detail survey contractor will be required to confirm the presence of trees on the alignment of drains, which will be required to cut for construction works and provide list of tree cutting required to PIU.

85. During service improvement plan before construction begins, this alignment will be again reviewed and tree cutting will be minimised as much as possible. Maximum possible tree will be transplanted to minimise the negative impact of tree cutting. Tree which required to be cut after taking permission from tree authority, will be replaced by planting 3 times or as suggested by tree authority (which ever in maximum).

86. Following measures need to be implemented to minimize and/or compensate for the loss of tree cover.

- (i) Minimize removal of trees by adopting to site condition and with appropriate layout design of proposed drains;
- (ii) Obtain prior permission for tree cutting at any site that may require tree cutting finalized during detailed design; and
- (iii) Plant and maintain 3 trees for each tree that is removed.

C. Pre-construction Impacts

87. **Utilities.** Telephone lines, electric poles and wires, water lines, gas pipe lines within the proposed project locations may require to be shifted in few cases. To mitigate the adverse impacts due to relocation of the utilities, the contractor, in collaboration with ULB will

- identify the locations and operators of these utilities to prevent unnecessary disruption of services during construction phase;
- take prior permission from/intimation to concerned line agencies for shifting the existing utilities; and
- Instruct construction contractors to prepare a contingency plan to include actions to be done in case of unintentional interruption of services.

88. Site selection of construction work camps, stockpile areas, storage areas, and disposal areas. Construction work camps, stockpile areas, storage areas and disposal sites to be considered so that identified sites should not promote instability and result in destruction of property, vegetation, irrigation, and drinking water supply systems. Residential areas will not be considered for setting up construction camps to protect the human environment (i.e., to curb accident risks, health risks due to air and water pollution and dust and noise and to prevent social conflicts, shortages of amenities and crime). Extreme care will be taken to avoid disposals near forest areas, water bodies, swamps or in areas which will inconvenience the community. Construction sites will be selected by contractor in compliance with these conditions and the same will be reflected in Site Environmental Management Plan (SEMP) which is to be prepared by contractor prior to start of construction and approved by PIU.

89. Site selection of sources of materials. Extraction of materials can disrupt natural land contours and vegetation resulting in accelerated erosion, disturbance in natural drainage patterns, ponding and water logging, and water pollution. To mitigate the potential environmental impacts, locations of quarry site/s and borrow pit/s (for loose material other than stones) would be assessed by PIU. Priority would be sites already permitted by Mines and Geology Department. If new sites are necessary, these would be located away from population centers, drinking water intakes and streams, cultivable lands, and natural drainage systems; and in structurally stable areas. It will be the construction contractor's responsibility to verify the suitability of all material sources and to obtain the approval of Department of Mines & Geology and local revenue administration. If additional quarries will be required after construction is started, then the construction contractor shall use the mentioned criteria to select new quarry sites, with written approval of PIU. Contractor will identify sources of water for construction purposes and obtain necessary permissions as required, and approval of PIU before the use. Details of material sources and water sources will be provided in SEMP.

90. Debris disposal. Prior to the commencement of works, contractor shall identify a debris disposal site in consultation with the PIU and Consultant. Contractor will follow all the prescribed rules⁶during construction and adhering to following criteria (including but not limited to)-

- The site shall be selected preferably from barren, infertile lands. In case agricultural land needs to be selected, top-soil stripping, stacking and preservation should be undertaken prior to initiation of any activities.
- The local governing body and community shall be consulted while selecting the site.
- Contractor shall prepare a construction and demolition waste management plan in pre-construction phase for safe disposal of construction and demolition wastes as per applicable rules and submit to Municipality through PIU for approval
- Debris disposal site shall be at least 200 m away from surface water bodies⁷.
- No residential areas shall be located within 100 m downwind side of the site.
- The site is minimum 250 m. away from sensitive locations like hospitals, religious places, ponds/lakes or other water bodies.

D. Construction Impacts.

⁶Construction and Demolition Waste Management Rules 2016

⁷ In the absence of site meeting the stipulated criteria, an alternate site can be selected specifying the reasons. In such a case, the construction camp management plan should incorporate additional measures specific to the site as suggested by the Construction Manager.

91. The civil works for the subproject include earth work excavation for proposed drains. Earth work excavation will be undertaken by machine (backhoe excavator). Subproject includes construction of box type close drains and open drains. Sufficient care will be taken while excavation for proposed drains so that existing utilities and cables are not damaged. Trenches deeper than 1.5 m will be protected by shoring/bracings/step cutting to avoid collapse of trenches, and also to avoid any risk to surrounding buildings. The minimum working hours will be 8 hours daily, the total duration of each stage depends on the soil condition and other local features. Extraneous soil after excavation of drains shall be used for filling low lying area or stored/ dumped in approved soil disposal sites.

92. Although construction of these project components involves quite simple techniques of civil work, the invasive nature of excavation and the project locations in the built-up areas of the town where there are a variety of human activities, will result in impacts to the environment and sensitive receptors such as residents, businesses, and the community in general. The anticipated impacts are temporary and for short duration. A detail survey is needed after finalization of alignment to access the feasibility of the alignment for need of any tree cutting, demolition of any structure, road and railway crossings, pipe laying in any private land, presence of any sensitive receptor along alignment, disturbance to public or business etc. Mitigation measures have been prepared for potential adverse impacts. Prior consent and NOC from land owners (e.g. PWD, ULB etc.) from concerned departments prior to start of construction works, is required

93. Physical impacts will be reduced by the method of working and scheduling of work, whereby the project components will be (i) constructed by small teams working at a time; (ii) any excavation done near sensitive area like school, religious places and house will be protected as per standard norms etc (iii) finish excavation and construction works at earliest in a stretch (iv) provide adequate barricades and road safety signage during proposed works in traffic areas (v) Further if night works are required (however unlikely, applicable only in extreme conditions) all the mitigation measures to reduce impacts of disturbance to minimum level to nearby habitants and road users should be ensured by contractor.

94. Construction of drains will be started from downstream point, which is general practice of gravity system and will be connected to end point of existing drains at last phase at the time of interconnection. New drains will be used to remove water of existing waterlogged area/ drains.

95. **Demolition works.** In the initial stage of project planning it is accessed that there may be requirement of demolition of structures such as CC road, boundary walls, religious structures etc.. Where demolition works are required, proper work plan and Mitigation measures will be required for demolition works. Structures to be demolished should be wetted through water sprinkling to reduce dust emission. Appropriate site for storage and disposal of demolished materials should be selected prior to start of demolition activities with prior permission/approval of PIU/ULB. All the safety measures should be adopted during demolition activities.

96. **Storage and Disposal of excavated earth.** A large quantity of soil will be excavated for construction of drains. Some part of this excavated soil will be reused for construction of embankments and/or surface leveling; rest of the soil will need to be disposed in other locations. Proper storage and disposal plan from contractor is required before start of the work. Prior permission from land owner/concerned authority for storage and disposal of excess earth is required. Prior to the commencement of works, Contractor will follow all the prescribed rules⁸ and

⁸ Construction and Demolition Waste Management Rules 2016 and Solid Waste Management Rules (refer appendix 8)/ Table 1.

shall identify a soil/debris disposal site in consultation with the PIU/ULB and adhering to following criteria:

- The site shall be selected preferably from barren, infertile lands. In case agricultural land needs to be selected, top-soil stripping, stacking and preservation should be undertaken prior to initiation of any activities.
- Debris disposal site shall be at least 200 m away from any surface water body.
- No residential areas shall be located within 200 m downwind side of the site.
- The site is minimum 250 m. away from sensitive locations like hospitals, religious places, ponds/lakes or other water bodies.
- The local governing body and community shall be consulted while selecting the site.
- Contractor is required to prepare plan for disposal of construction and demolition waste including excavated earth in the designated site/sites and submit the plan in PIU to be approved by Municipal Council as per Construction and Demolition Waste Rules 2016
- Soil storage site should be properly demarcated by fencing and information board should be placed at entrance
- At soil storage site soil should be covered by tarpaulin or regular water sprinkling should be done to reduce dust emission
- At soil disposal site the disposed soil should be levelled on daily basis and no heap or mound should be left at end of the day

97. **Sources of Materials.** Significant amount of gravel, sand, coarse aggregate, and cement will be required for this project. The construction contractor will be required to:

- Use material sources permitted by government⁹;
- Verify suitability of all material sources and obtain approval of PIU;
- Ensure that the loading and unloading of the materials and the transportation of the materials from source to construction site does not cause impact on health and safety of the workers and the community; and
- Submit to PIU on a monthly basis documentation of sources of materials. . If contractor is purchasing ready mix concrete, asphalt/macadam and aggregates from third party, contractor will assure that all the parties/ suppliers are having CTE/CTO from RPCB and will collect the copy of these certificates and submit to PIU/consultants

98. **Air Quality.** Emissions from construction vehicles, equipment, and machinery used for excavation and construction will induce impacts on the air quality in the construction sites. Anticipated impacts include dusts and increase in concentration of vehicle-related pollutants such as carbon monoxide, sulphur oxides, particulate matter, nitrous oxides, and hydrocarbons. These however will be temporary limiting to construction activities only. To mitigate the impacts, construction contractors will be required to:

- Consult with PIU/on the designated areas for stockpiling of soils, gravel, and other construction materials;
- Damp down exposed soil and any stockpiled material on site by water sprinkling;
- Use tarpaulins to cover sand and other loose material when transported by trucks;
- Clean wheels and undercarriage of haul trucks prior to leaving construction site

⁹CTE and CTO will be required for batching plant, hot mix plant, crushers etc. if specifically established for this project. If contractor is purchasing raw material or ready mix concrete, asphalt/macadam and aggregates from third party, he has to be assured that third party is having CTE/CTO from RPCB and should collect the copy of these and submit to PIU/consultants. Quarry sites should also have the desired permissions.

- Don't allow access in the work area except workers to limit soil disturbance and prevent access by barricading and security personnel
- Fit all heavy equipment and machinery with air pollution control devices which are operating correctly, DGs should have proper stake height as per norms;
- Ensure all the equipment are having PUC certificates
- Do regular water sprinkling in dusty areas to reduce dust emission during works
- Damp down the structures before demolishing to reduce dust emission
- Damp down on regular basis all the access ways
- Maintain all the equipment and vehicles to reduce emission of smoke and keep pollution under control and keep records of periodic maintenance
- Conduct ambient air quality monitoring periodically as per Environmental Management Plan EMP

99. **Silt and sludge removal** is regular activity conducted by ULB every year before start of monsoon. The Provision are considered in BOQ for silt and sludge clearance from proposed drains. As the silt is mixed with the water, handling and transport of silt/sediment in semi-solid / slurry form will lead to spillage of contaminated water/slurry. Accumulated drain water with silt/sediment, potentially mixed with solid waste / wastewater in some places, may present hazardous conditions for removal of sediment/silt. Following measures are suggested to safely desilt and dispose the desilted material:

- Desilting process shall be conducted in dry season only
- Prior to desilting process, the drains shall be allowed dry so that there is no standing water on silt / sediment
- Do not conduct manual desilting process, use appropriate equipment / implements
- Desilting process shall be conducted in such a way that water content of the silt/sediment is low, so that contaminated water is not spilled during the loading, transport and unloading process.;
- Workers shall be provided with appropriate PPE's; masks with oxygen cylinders shall be made available at the site, which shall be utilised during emergency
- identify beneficial uses or dispose at suitable disposal site in consultation with the PIU/ULB:

100. **Surface Water Quality.** There is no any surface water source near the proposed site, which can be polluted due to construction activities, however, run-off from stockpiled materials and chemical contamination from fuels and lubricants during construction works can contaminate the drainage system of town. These potential impacts are temporary and short-term duration only. However, to ensure that these are mitigated, construction contractor will be required to:

- Prepare and implement a spoils management plan;
- Avoid to construct any construction camps and labour camps near to any water body and do not allow to dispose any waste or sillage in to any water body
- Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets;
- Prioritize re-use of excess spoils and materials in the construction works. If spoils will be disposed, consult with PIU on designated disposal areas;
- Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies;
- Place storage areas for fuels and lubricants away from any drainage leading to water bodies and provide impermeable lining under the storage yard of fuels and lubricants

- Dispose any wastes generated by construction activities in designated sites;
- Keep oil tray or pans under the DG set or during maintenance of mechanical equipment to avoid oil spillage resulting soil and water pollution, and
- Conduct surface water quality Monitoring according to the Environmental Management Plan (EMP)

101. **Storm water Drainage and Hydrology.** The proposed development is situated within an existing built up area where drainage infrastructure already exists. No water courses, wetlands or estuaries occur within the subproject location. However, the drains ultimately discharge into river Piplaad. Due to the nature and locality of the proposed project there is unlikely to have any significant impacts on water resources within the immediate area. The construction contractor will be required to:

- (i) The site surface to be engineered and shaped in such a way that rapid and efficient evacuation of runoff is achieved.
- (ii) Improve existing alignments and drainage systems.
- (iii) Provide containment areas for potential pollutants at construction camps, refueling, depots, concrete batching plants, etc.
- (iv) Waste management practices will be implemented.
- (v) The transport, storage, handling and disposal of hazardous substances will be controlled and managed.

102. **Noise and Vibration Levels.** Construction works will be conducted along the roads ROW and vacant lands in Bhawani Mandi urban area, where there are majorly houses, commercial activities, few religious places and small-scale businesses. The sensitive receptors are the schools, religious places, hospitals in these areas. Increase in noise level may be caused by excavation, particularly breaking of cement concrete or bitumen roads, operation of construction equipment like concrete mixers, and the transportation of equipment, materials, and people. Vibration generated from construction activity, for instance from the use of pneumatic drills, will have impact on nearby buildings. This impact is negative but short-term, and reversible by mitigation measures. The construction contractor will be required to:

- Plan activities in consultation with PIU so that activities with the greatest potential to generate noise are conducted during periods of the day which will result in least disturbance;
- Use road cutters instead of breaker/hammer for cutting the road before excavation for pipe laying on roads
- Horns should not be used unless it is necessary to warn other road users or animals of the vehicle's approach;
- Minimize noise from construction equipment by using vehicle silencers, fitting jackhammers with noise-reducing mufflers, and use portable street barriers to minimize sound impact to surrounding sensitive receptor;
- DGs being used at site should have sound reducing (acoustic) enclosures, preferably silent DGs should be used at site;
- Maintain maximum sound levels not exceeding 80 decibels (dBA) when measured at a distance of 10 m or more from the vehicle/s and equipment;
- Identify any buildings at risk from vibration damage and avoiding any use of pneumatic drills or heavy vehicles in the vicinity;
- Consult the custodians of important buildings, cultural and tourism authorities and local communities in advance of the work to identify and address key issues, and avoid

working at sensitive times, such as religious and cultural festivals, exams of students etc.;

- Provide all workers appropriate PPEs like ear plug/muff, working in high noise conditions;
- Keep all vehicles and equipment in good conditions to avoid excessive noise generation;
- Provide noise barriers near sensitive receptors like schools, hospitals, temples, courts etc and consult in advance with sensitive receptors about the working hours (specially schools, hospitals, offices, courts etc) and avoid noisy works in those hours;
- Avoid noisy works in nights in inhabited areas to avoid any disturbance to habitants; and
- Consult in advance with habitants and inform them about the nature and duration of works
- Conduct noise monitoring according to the Environmental Management Plan (EMP)

103. **Management Plan for Night works (if required).** Following requirements should be fulfilled for construction works at night hours-

- Night works should be avoided at construction sites specially in residential areas and should be performed only when day works are not possible due to excessive traffic/public/pedestrian movement, site of cultural or religious importance, where there is huge crowd during day hours or any other unavoidable circumstances.
- Contractor should plan for night works only after directions from PMU/PIU/CMSC
- Contractor should submit plan for night works for approval from PIU.
- PIU should ensure that prior written information should be given to local authorities such as district administration, Police/traffic police, line agencies concerned, residents welfare association/business association/vyapar of the affected areas and their consents/permissions should be taken prior to start of night works.
- PIU/CMSC engineers should check and ensure that all the preparation as per management plan is done by contractor and contractor is having all the necessary equipment and materials for night works.
- Contractor is required to have following equipment/arrangements for night works-
 - ✓ Contractors should have hand held noise level meter for measurement of noise during night hours
 - ✓ Contractors should have hand held lux meter for the measurement of illumination during night hours
 - ✓ Preferably electrical connections is available for running equipment otherwise sound proof/super silent Diesel Generator set should be available
- Sound level should not increase as per following-

Type of area of work	Maximum noise level dB(A)
Industrial	70
Commercial	55
Residential	45
Silence zone	40

- Illumination should be as follows-

Minimum illumination (lx)	Areas to be illuminated	Type of work activity
54	Illumination throughout the work area	General work area lighting, and performance of visual tasks of large size, or medium contrast, or low require accuracy

108	Illumination of work area and areas adjacent to equipment	Performance of visual tasks of medium size, or low to medium contrast, or medium required accuracy
216	Illumination of task	Performance of visual tasks of small size, or low contrast or high required accuracy or fine finish

- As far as possible ready mix concrete from batching plant to be used, otherwise the concrete should be prepared away from residential areas and brought to the site
- All the noise activity like hammering, cutting, crushing, running of heavy equipment should be done in day time and avoided in night time
- Workers engaged in night works should have adequate rest/sleep in day time before start of night works
- Worker engaged for night works should have previous experience of night works and should be physically fit for such works including clear vision in night
- All the necessary provisions of traffic aids such as traffic signals, road signage, barricades, cautions boards, traffic diversion boards etc. should be available with fluorescent/retro-reflective arrangements
- Workers should be trained before start of night works about risks and hazards of night works and their mitigation measures and should be provided all the protective aids (PPEs) including fluorescent/retro-reflective vests
- Horns should not be permitted by equipment and vehicles
- Workers should not shout and create noise
- First aid and emergency vehicles should be available at site
- Emergency preparedness plan should be operative during night works
- Old persons and pregnant women and women having small kids should not work in night time
- All the vehicles and equipment being used at night works should have adequate type of silencers/enclosures/mufflers to reduce noise
- All the vehicles should be checked for working head lamps, tail lamps, inner lights etc. before start of night works
- PIU/CMSC site engineers and contractors safety personnel should closely monitor the safety of works continuously and noise and illumination levels on hourly basis and maintain photographic and video graphic records as well as register the observations
- Night works should be stopped early in the morning at least one hour before start of pedestrian/traffic movement
- After completion of night works all the site should be cleaned and maintained obstruction free for day time movement of vehicles and pedestrians
- Drivers and workers should be alert and responsive during night works
- All the wages to workers working in night hours should be as per the applicable labour acts
- Avoid any nuisance which may create problems to nearby habitants and work peacefully during night hours
- Night works should not be conducted near hospitals and during peak seasons such as peak tourist season, students' exam times etc.

104. **Landscape and Aesthetics.** The construction works may require cutting of trees and also will produce excess excavated earth, excess construction materials, and solid waste such as removed concrete, wood, packaging materials, empty containers, spoils, oils, lubricants, and other similar items. Unplanned disposal of these will have negative impacts on Landscape and

overall aesthetics. These impacts are negative but are of short-term and reversible by mitigation measures. The construction contractor will be required to:

- Prepare and implement spoils management plan;
- Avoid stockpiling of excess excavated soils;
- Coordinate with ULB for beneficial uses of excess excavated soils or immediately dispose to designated areas;
- Recover used oil and lubricants and reuse or remove from the sites;
- Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas;
- Minimize removal of vegetation and minimize cutting of trees;
- If tree-removal will be required, obtain tree-cutting permit from the Revenue Department; and
- Plant three native trees for every one that is removed.
- Remove all wreckage, rubbish, or temporary structures which are no longer required; and
- Request PIU to report in writing that the necessary environmental restoration work has been adequately performed before acceptance of work.

105. **Groundwater Quality.** Another physical impact that is often associated with excavation is the effect on drainage and the local water table if groundwater and surface water collect in the voids. Although, groundwater is much deeper than the proposed trenching depth, and rains are scarce and limited to very short duration during monsoon, to ensure that water will not pond in pits and voids near project location, the construction contractor will be required to conduct excavation works in non-monsoon season to the maximum extent possible. These potential impacts are temporary and short-term duration only. However, to ensure that these are mitigated, construction contractor will be required to:

- Prepare and implement a spoils management plan (**Appendix C-13**);
- Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets;
- Prioritize re-use of excess spoils and materials in the construction works. If spoils will be disposed, consult with PIU on designated disposal areas;
- Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies;
- Place storage areas for fuels and lubricants away from any drainage leading to water bodies;
- Dispose any wastes generated by construction activities in designated sites; and
- Conduct periodical ground water quality monitoring according to the Environmental Management Plan (EMP).

106. **Accessibility.** Excavation along the roads, hauling of construction materials and operation of equipment on-site can cause traffic problems. Potential impact is negative but short term and reversible by mitigation measures. The construction contractor will be required to:

- Prepare and implement a Traffic Management Plan (**Appendix C-14**)
- Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites;
- Schedule transport and hauling activities during non-peak hours;

- Locate entry and exit points in areas where there is low potential for traffic congestion;
- Keep the site free from all unnecessary obstructions;
- Drive vehicles in a considerate manner;
- Coordinate with Traffic Police for temporary road diversions and for provision of traffic aids if transportation activities cannot be avoided during peak hours; and
- Notify affected sensitive receptors by providing sign boards informing nature and duration of construction works and contact numbers for concerns/complaints.

107. **Socio-Economic - Income.** The project components will be located in government land and there is no requirement for land acquisition or any resettlement. Construction works will impede the access of residents to specific site in limited cases. The potential impacts are negative and moderate but short-term and temporary. The construction contractor will be required to:

- Prepare and implement spoils management plan (**Appendix C-13**);
- Leave spaces for access between mounds of soil;
- Provide walkways and metal sheets where required to maintain access across for people and vehicles;
- Increase workforce in the areas with predominantly institutions, place of worship, business establishment, hospitals, and schools;
- Consult businesses and institutions regarding operating hours and factoring this in work schedules; and
- Provide sign boards for pedestrians to inform nature and duration of construction works and contact numbers for concerns/complaints.
- Notify community/ water users in advance about likely interruptions in water supply.
- Provide alternate sources of clean water until water supply is restored.
- Provide all mitigation measures as given in resettlement plan (RP) prepared for the project to mitigate impacts on vendors and shopkeepers

108. **Socio-Economic-Employment.** Manpower will be required during the 36-months construction stage. This can result in generation of temporary employment and increase in local revenue. Thus potential impact is positive and long-term. The construction contractor will be required to:

- Employ at least 50% of the labour force, or to the maximum extent, local persons within the 2-km immediate area if manpower is available; and
- Secure construction materials from local market.

109. **Occupational Health and Safety.** Workers need to be mindful of the occupational hazards which can arise from working on roads, in height and excavation (trenches and trenchless) works. Potential impacts are negative and long-term but reversible by mitigation measures. Construction contractor will depute experienced EHS personnel and will be required to:

- Comply with all national, state and local labor laws (see **Appendix C-12**);
- Develop and implement site-specific occupational health and safety (OH&S) Plan which will include measures such as: (a) excluding public from the site; (b) ensuring all workers are provided with and use personal protective equipment; (c) OH&S Training¹⁰ for all site

¹⁰ Some of the key areas that may be covered during training as they relate to the primary causes of accidents include (i) slips, trips and falls; (ii) personal protective equipment; (iii) ergonomics, repetitive motion, and manual handling; (iv) workplace transport; and (v) legislation and responsibilities. Training can provide the foundations of competence but it does not necessarily result in a competent worker. Therefore, it is essential to assess staff competence to ensure that the training provided is relevant and effective.

- personnel; (d) documented procedures to be followed for all site activities; and (e) documentation of work-related accidents;
- Ensure that qualified first-aid is provided at all times. Equipped first-aid stations shall be easily accessible throughout the site;
- Provide medical insurance coverage for workers;
- Secure all installations from unauthorized intrusion and accident risks;
- The project area experiences extreme temperature during summer months of April and May, which may affect the health of workers engaged in construction work. Contractor should take necessary measures during summers including the following:
 - a. Work schedule should be adjusted to avoid peak temperature hours (12 -3 PM)
 - b. Provide appropriate shade near the work place; allow periodic resting and provide adequate water
 - c. Provide necessary medicine and facilities to take care of dehydration related health issues
- Provide supplies of potable drinking water;
- Provide clean eating areas where workers are not exposed to hazardous or noxious substances;
- Provide H&S orientation training to all new workers to ensure that they are apprised of the basic site rules of work at the site, personal protective protection, and preventing injuring to fellow workers;
- Provide visitor orientation if visitors to the site can gain access to areas where hazardous conditions or substances may be present. Ensure also that visitor/s do not enter hazard areas unescorted;
- Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas;
- Ensure moving equipment is outfitted with audible back-up alarms;
- Mark and provide sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal. Signage shall be in accordance with international standards and be well known to, and easily understood by workers, visitors, and the general public as appropriate; and
- Disallow worker exposure to noise level greater than 85 dBA for duration of more than 8 hours per day without hearing protection. The use of hearing protection shall be enforced actively.

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

- Plan routes to avoid times of peak-pedestrian activities.
- Liaise with PIU in identifying risk areas on route cards/maps.
- Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious accidents caused by equipment malfunction or premature failure.
- Provide road signs and flag persons to warn of on-going trenching activities.
- Survey the surrounding vulnerable buildings for likely issues in structural stability/ differential settlement during the excavation works;

Supervision and monitoring arrangements shall be in place to ensure that training has been effective and the worker is competent at their job. The level of supervision and monitoring required is a management decision that shall be based on the risks associated with the job, the level of competence required, the experience of the individual and whether the worker works as part of a team or is a lone worker.

- Provide prior information to the local people about the nature and duration of work;
- Provide hard barricades and deploy security personnel to ensure safe movement of people and also to prevent unnecessary entry and to avoid accidental fall into open trenches.

111. Central part of the town is characterized by narrow roads. Particularly, the areas located on slopes have very narrow roads with sharp turns and are accessible only to pedestrians. Besides impeding the access, the trench excavation and pipe laying will pose safety risks to pedestrians, and the people living in these areas. The construction contractor will be required to:

- (i) Trench excavation works shall be conducted in a safe manner; if the allowing public movement along the work sites (pedestrians or vehicles as the case may be) is likely to cause safety risks, movement should be blocked temporarily and work shall be conducted; in such areas, conducting night work or working in small stretches to avoid blockage of traffic/movement no more than few hours in due consultation with the local community and ULB shall be planned;
- (ii) All trenches deeper than 1.5 m shall be provided with safety shoring/braces;
- (iii) Survey the surrounding vulnerable buildings for likely issues in structural stability/differential settlement during the excavation works;
- (iv) Provide prior information to the local people about the nature and duration of work;
- (v) Conduct awareness program on safety during the construction work;
- (vi) Undertake the construction work stretch-wise; excavation, pipe laying and trench refilling should be completed on the same day; and
- (vii) Provide hard barricades and deploy security personnel to ensure safe movement of people and also to prevent unnecessary entry and to avoid accidental fall into open trenches.

112. **Work Camps.** Operation of work camps can cause temporary air and noise pollution from machine operation, water pollution from storage and use of fuels, oils, solvents, and lubricants. Potential impacts are negative but short-term and reversible by mitigation measures. The construction contractor will be required to:

- Consult PIU before locating project offices, sheds, and construction plants;
- Minimize removal of vegetation and disallow cutting of trees;
- Provide drinking water, water for other uses, and sanitation facilities for employees;
- Provide temporary rest and eating area at all work sites;
- Ensure conditions of liveability at work camps are maintained at the highest standards possible at all times; living quarters and construction camps shall be provided with standard materials (as far as possible to use portable ready to fit-in reusable cabins with proper ventilation); thatched huts, and facilities constructed with materials like GI sheets, tarpaulins, etc., shall not be used as accommodation for workers; accommodation shall meet the IFC standards for workers accommodation¹¹ which include: provision of safe housing, availability of electricity, plumbing, water and sanitation, adequate fire protection and dormitory/room facilities; accommodation shall be in the range from 10 to 12.5 cubic meter (m³) (volume) or 4 to 5.5 square meters (m²) (surface) per worker, a minimum ceiling height of 2.10 m; a reasonable number of workers are allowed to share the same

¹¹

https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/publications/publications_gpn_workersaccommodation

room—(standards range from 2 to 8 workers); workers with accompanying families shall be provided with a proper and safe accommodation (Suggested guidelines based on IFC benchmark standards for workers accommodation is provided in **Appendix C-21**);

- Prohibit employees from poaching wildlife and cutting of trees for firewood;
- Train employees in the storage and handling of materials which can potentially cause soil contamination;
- Recover used oil and lubricants and reuse or remove from the site;
- Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas;
- Remove all wreckage, rubbish, or temporary structures which are no longer required; and
- Report in writing that the camp has been vacated and restored to pre-project conditions before acceptance of work.

113. Social and Cultural Resources. For this project, excavation will occur at locations not known to have archaeological values, so there is no risk of such impacts. Religious places such as temples are present nearby the proposed alignment of nalla and contractor will require to follow the mitigation measures as given below-

- Consult with concerned religious authorities, nearby people and devotees in pre-construction phase and explain the work method and duration of proposed works, take their suggestions and comments and incorporate in design the mitigation measures required
- Adjacent to religious/social/historic sites, undertake excavation and construction work in such a way that no structural damage is caused to the religious building.
- Observe the local rituals and important dates of festivals, weekly/monthly/annual religious occasions in the religious places and do not make any disturbance/hindrance/obstacles during such time to the religious places,
- provide proper signage, barricades etc. to protect public and devotees from dangers of construction works.

114. Traffic diversion and/or road closure- If traffic diversion and/or road closure is required for the proposed works, prior consent from traffic department will be required and prior information to affected areas and public should be disseminated through consultations by CAPC. Proper road signage and traffic aids should be provided at site. Excavation along the roads, hauling of construction materials and operation of equipment on-site can cause traffic problems. Potential impact is negative but short term and reversible by mitigation measures. The construction contractor will be required to:

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

- Maintain sufficient access to houses and shopkeepers (commercial establishments) during pipe laying work through metal sheets and temporary bridges
- Locate entry and exit points in areas where there is low potential for traffic congestion;

E. Operation and Maintenance Impacts

115. **Proposed Drainage System:** The system have a design life of 15/30 years, during which shall not require major repairs or refurbishments and should operate with little maintenance beyond routine actions required to keep the system in working order. The stability and integrity of the system will be monitored periodically to detect any problems and allow remedial action if required. Any repairs will be small-scale involving manual, temporary, and short-term works involving regular checking and recording of performance for signs of deterioration and repairing.

116. Regular cleaning of drains, specially before start of monsoon season is required to avoid any blockage and overflow of drains, which may ultimately create public nuisance such as ponding in nearby places. Identify the suitable place for disposal of silt and solid waste, away from habitation and dispose the silt and solid waste after cleaning of drains; in a scientific manner so that it may not cause public nuisance or any harm to stray animals.

117. The new drains will contribute to an improvement in the physical appearance and condition of the town by helping to remove the large and unsightly pools of water that are an almost permanent feature of the town. New drains should also help to ensure that when drainage project implemented the quality of the town environment would then improve significantly. Removal of blockages in the nallahs and other drains, if left stockpiled alongside the drains, will have adverse impacts on the appearance of the area. Not only is this unhygienic, but it is also inefficient, as much of this material inevitably returns to the drains, where it may cause further blockage.

118. During the rain also, a watch should be kept at the exit and entry point for water for the presence of undesirable collection of rubbish, polythene/paper bags blocking the passage of water and in every way ensuring free unobstructed flow of rain water. The condition of road camber also needs to be watched. During rains, especially after heavy showers, all cross-drainage structure should be inspected to observe any blockage due to debris, log of wood and other such materials. A watch on the deficiencies in the drainage system should be kept and problem locations identified and a record kept. Necessary corrective measures should be adopted immediately after rains. A watch on missing manhole covers and broken covers is also required to be kept and replacement/repairs carried out on priority to avoid accidents.

119. **Pollution of receiving bodies of water and nuisance due to siltation and accumulation of wastes in the drains.** Discharge of wastewater and solid waste from households and roadsides may clog the drains in the medium or longer term. This may result to accumulation of putrescible organic materials causing odor nuisance to the community and pollution to the receiving bodies of water in the area. This may also attract vectors of communicable diseases such as pests and rodents in the drainage system that could affect public health. Local body will also ensure that no wastewater and sewage enter in to proposed drains. Local body will also conduct awareness programs to prevent disposal of solid waste into drains. Following precautionary measures shall be implemented during O&M period by the Nagar Palika :

- (i) strict instruction or directive to households and commercial establishments not to discharge septic wastes and grey water into the drainage system;

- (ii) strict promotion and enforcement of good waste management practices at household level; and
- (iii) regular monitoring and cleaning of the silt traps, drains, and siltation or sedimentation chambers (or similar structures) at the outfalls, to prevent entry or accumulation of silt and solid wastes inside these drains and siltation chambers.

120. **Community hazards due to destroyed or removed drainage cover.** The design of the drainage system suggests that most of the drains are proposed as open drain, however, few will be constructed with cover. Once constructed, there is a possibility that the covers may be damaged or removed in the medium or long term. The situation exposes the drainage as hazard to people, animals and vehicles in the area, especially at night. Nagar Nigam to conduct regular inspection of the drainage alignments and ensure that all drainage covers are intact. In case of damage or loss of drainage cover, the Nagar Nigam shall provide replacement of this cover to avoid occurrence of accidents

121. **Project Benefits.** The citizens of the Bhawani Mandi will be the major beneficiaries of the improved drainage system, as the unsightly and unhygienic pools of standing wastewater will gradually disappear and should not recur in future. This should then improve the appearance and environment of the town, as well as protecting the ancient buildings and sites from the water damage they are exposed to at present. If, as expected, this ultimately brings more tourists into the town, then the citizens could benefit socio-economically from the related growth in the economy apart from improved environmental conditions of town.

VII. PUBLIC CONSULTATION AND INFORMATION DISCLOSURE

A. Overview

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

123. A three-tier consultation process has been adopted for RSTDSP project: focus group discussions, primary household sample surveys and a town-level public consultation workshop. Most of the main stakeholders have already been identified and consulted during preparation of preliminary design and IEE, and any others that are identified during project implementation will be brought into the process in the future. Primary stakeholders of the subproject are: residents, shopkeepers and businesspeople who live and work alongside the roads in which network improvements will be provided, and government and utility agencies responsible for provision of services, Bhawani Mandi Nagar Palika, Public Health Engineering Department, and Rajasthan Pollution Control Board. Secondary stakeholder are: NGOs and CBOs working in the area, community representatives, beneficiary community in general, government agencies, the executing and implementing agencies (LSGD and RUDSICO-EAP), Government of India and the ADB.

B. Public Consultation

124. The meaningful consultations¹² and disclosure program is a continuous process throughout the project implementation, including project planning, design and construction. Informal and formal consultations at different locations were also conducted during social and environmental impact assessment in Bhawani Mandi in December 2021 (**Appendix 3**).

1. Consultation during Project Preparation

125. Institutional consultations were conducted with the Governmental Departments such as Local Self Government Department (Municipal Council, Bhawani Mandi), Pollution Control Board, etc. The project proposals are formulated in consultation with Bhawani Mandi Municipal Council the proposals have been finalized only after certification of the authorities that the proposals suit the requirements of the City.

126. Focus-group discussions with residents and other stakeholders were conducted to learn their views and concerns. The stakeholders were involved in developing the IEE through discussions on-site and a public consultation workshop at city level, after which views expressed were incorporated into the IEE and in the planning and development of the project. meaningful consultation¹³ were conducted with local population of the area, about at Nine places along the proposed drainage alignment with about 122 persons (86 male and 36 females) from 09 December 2021 to 10 December 2021.

127. It was observed that people are willing to extend their cooperation as the proposed activities are supposed to enhance the environmental conditions and the living standard of the public. The public expressed their concern regarding the nuisance and disturbance (dust, road closure and traffic management activities) during the construction stage which can have impact on their day to day activities. Public opined that an appropriate operation and maintenance system should be in place, for proposed drainage system, for its best functioning and to have the maximum health and aesthetic benefits.

128. A town-level City Level Committee (CLC) has been formed in Jhalawar district by Government orders. City Level Committee meeting was organized during the detailed design stage to which representatives of primary and secondary stakeholders were invited. City Level Stakeholder committee meeting was organized for Bhawani Mandi on 21 December 2021 to discuss the matter of proposed Sewerage and Drainage works in Bhawani Mandi under the chairmanship of District Chaiman, BMC, in presence of DPR consultants, RUDSICO-EAP officials, PHED officials, Municipal Council officials, , Water Resource Department, PWD and other invitee members. Proposed scope of works and technology of proposed drainage works in

¹² ADB SPS requires meaningful consultation to be a process that (i) begins early in the project preparation stage and is carried out on as an ongoing process throughout the project cycle; (ii) provides timely disclosure of relevant and adequate information that is understandable and readily accessible to affected people; (iii) is undertaken in an atmosphere free of any socio-economic and cultural etc. pressure ; (iv) is gender inclusive and responsive, and is responsive to the needs of disadvantaged and vulnerable groups; and (v) enables the incorporation of all relevant views of affected people and other stakeholders into decision making, such as project design, mitigation measures, the sharing of development benefits and opportunities, and implementation issues

¹³ Per ADB SPS, 2009, meaningful consultation means a process that (i) begins early in the project preparation stage and is carried out on an ongoing basis throughout the project cycle;1 (ii) provides timely disclosure of relevant and adequate information that is understandable and readily accessible to affected people; (iii) is undertaken in an atmosphere free of intimidation or coercion; (iv) is gender inclusive and responsive, and tailored to the needs of disadvantaged and vulnerable groups; and (v) enables the incorporation of all relevant views of affected people and other stakeholders into decision making, such as project design, mitigation measures, the sharing of development benefits and opportunities, and implementation issues

Bhawani Mandi was discussed in the meeting and approval was given for proposed works by Committee in this meeting. The project was agreed by the committee for further course of action by RUDSICO-EAP. Details of CLC meeting, minutes and photographs are attached in **Appendix 10**.

2. Consultation During Construction

129. Prior to start of construction, Bhawani Mandi Municipal Council (BMC) and PIU with the assistance of Consultants will conduct information dissemination sessions at major intersections and solicit the help of the local community leaders/prominent citizens to encourage the participation of the people to discuss various social and environmental issues. At town level, focus group meetings will be conducted to discuss and plan construction work with local communities to reduce disturbance and other impacts, and provide a mechanism through which stakeholders can participate in project monitoring and evaluation.

130. A constant communication will be established with the affected communities to redress the environmental issues likely to surface during construction and operational phases and also regarding the grievance redress mechanism. PIU with the help of Community Awareness and Participation Consultant (CAPC) will organize public meetings and will appraise the communities about the progress on the implementation of EMP. Meeting will also be organized at the potential hotspots/sensitive locations before and during the construction.

C. Information Disclosure

131. Executive summary of the IEE will be translated in the local language and made available at the offices of BMC, RUDSICO-EAP- PMU and PIU. Copies of summary will be provided to participants of city level workshop to be organized in Bhawani Mandi . Hard copies of the IEE will be accessible to citizens as a means to disclose the document and at the same time creating wider public awareness. Electronic version of the IEE in English and Executive Summary in Hindi will be placed in the official website of the RUDSICO-EAP after approval of the IEE by Government and ADB. Stakeholders will also be made aware of grievance register and redress mechanism.

132. Public information campaigns via newspaper/radio/TV, to explain the project details to a wider population will be conducted. Public disclosure meetings will be conducted at key project stages to inform the public about the progress and future plans. Prior to start of construction, the PIU will issue Notification on the start date of implementation in local newspapers. A board showing the details of the project will be displayed at the construction site for the information of general public.

133. Local communities will be continuously consulted regarding location of construction camps, access and hauling routes and other likely disturbances during construction. The road closure together with the proposed detours will be communicated via advertising, pamphlets, radio broadcasts, road signage, etc.

VIII. GRIEVANCE REDRESS MECHANISM

A. Project Specific Grievance Redress Mechanism

134. A project-specific, three-tier grievance redress mechanism (GRM) covers both environment and social issues. The GRM will be established to receive, evaluate, and facilitate the resolution of affected persons' concerns, complaints, and grievances about the social and environmental performance at project level. The GRM will aim to provide a time-bound and transparent mechanism to voice and resolve social and environmental concerns related to the project. Assessment of the GRM designed and implemented for Rajasthan Urban Sector Development Program (RUSDP)¹⁴ the system was effective in timely resolution of grievances in a transparent manner.¹⁵ The multichannel, project-specific, three-tier GRM is functional at RUSDP, hence the design of GRM for RSTDSP takes into account the proposed institutional structure for RSTDSP and the positive features and learnings from the previous GRM.¹⁶

135. **Common Grievance Redress Mechanism.** A common GRM will be in place for social, environmental, or any other grievances related to the project. Implementation of the resettlement plans/RIPPs/DDR/IEEs will follow the GRM described below. The GRM will provide an accessible and trusted platform for receiving and facilitating resolution of affected persons' grievances related to the project.

136. Public awareness campaigns within entire ULB/Municipal area will ensure that awareness on grievance redress procedures is generated. The nodal officer- social/environment at field level through community awareness and public participation consultant (CAPPC) will conduct ULB/Municipal area-based awareness campaigns to ensure that poor and vulnerable households are made aware of grievance redress procedures and entitlements. Contractors will provide pamphlets to communities prior to start of works and billboards during construction. The pamphlets and billboards will include relevant environmental and social safeguards, GRM information, and contact details of key personnel from PIU and contractors.

B. Grievance Redress Process

¹⁴ The procedures followed for grievance redress during implementation of RUSDP Phase III included the project GRM and the pilot GRM software application (smart check) in Pali, the Sampark portal of Government of Rajasthan, and the Chief Minister's helpline. Complaints received through various channels were mostly minor and pertained to damage to existing water supply pipelines and disruption of water supply during construction, delays in road restoration, and pending new connections. Complaints related to damage to private property (compound walls/steps, etc.) were less in number. The grievances were mostly possible to resolve in coordination with the contractors. Complaints received were immediately referred by the CAPC/PMDSC supervision staff to the PIU Nodal officer (safeguards) and concerned engineer at PIU, who advised them on further action. Follow up with the contractor on complaint resolution was undertaken by PIU Nodal officer CAPC and PMDSC and final feedback sought from complainant upon resolution. Complaints requiring inter-departmental coordination were referred to the PMU for resolution, and feedback provided to complainant. The PMU kept regular track of grievances through WhatsApp and email alerts, ensuring registration and follow-up until resolution.

¹⁵ Town-level grievance registration data indicates that a large number of grievances were registered, pointing to the effectiveness of the multi-channel GRM. No major grievance was received for RUSDP Phase III. The GRM helped smoothen the process of project implementation, hence the proposed architecture for the RSTDSP GRM remains similar, with some refinement, taking into account the changes in institutional setup proposed for project implementation.

¹⁶ Continued logistics support at field level will be key to successful management of grievance redress under RSTDSP. The target date for establishment of the first level (PIU level) and second level (Zonal level) of GRM is before loan negotiation.

137. Affected persons will have the flexibility of conveying grievances/suggestions by dropping grievance redress/suggestion forms in complaint/suggestion boxes that will be installed by project PIUs or by e-mail, by post, or by writing in a complaints register in ULB offices/complaints register at contractor's work site¹⁷ or by sending a WhatsApp message to the PIU¹⁸ or by dialling the phone number of town level PIU/CAPPC or by dialling a toll-free number.¹⁹ Any aggrieved person can also avail the facilities of online grievance monitoring system 'Rajasthan Sampark' portal to register their grievances which are a parallel mechanism of grievance registration, in addition to the project GRM.²⁰ Careful documentation of the name of the complainant, date of receipt of the complaint, address/contact details of the person, location of the problem area, and how the problem was resolved will be undertaken and feedback provided to the complainant on action/decision taken. The Safeguard and safety officer of town/city level PIU will have the overall responsibility for timely grievance redressal on environmental and social safeguards issues and for registration of grievances, related disclosure, with the assistance of project consultants. In case of grievances that are immediate and urgent in the perception of the complainant, the contractor, and officials of PIU with assistance from CMSC and CAPPC on-site will provide the most easily accessible or first level of contact for quick resolution of grievances. Contact numbers and names of the concerned PIU safeguard and safety officer, contractors, CAPPC and CMSC personal will be posted at all construction sites at visible locations.

- (i) **1st level grievance.** The contractors, PIU executive engineer/assistant engineer designated as safeguard and safety officer (social and environment), CMSC (safeguard staff) and CAPPC can immediately resolve issues on-site, in consultation with each other and will be required to do so within 7 days of receipt of a complaint/grievance. If required, city level monitoring committee (CLMC)²¹ will be involved in resolution of grievances at the 1st level;
- (ii) **2nd level grievance.** All grievances that cannot be redressed within 7 days at field/PIU level will be brought to the notice of Zonal PIU headed by Additional Chief Engineer (ACE). The ACE at zonal PIU will resolve the grievance within 7 days of receipt of complaint/grievance in discussion with the ASO, field level PIU, CMSC, CAPPC and the contractor; and
- (iii) **3rd level grievance.** All the grievances that are not addressed by Zonal PIU within 7 days of receipt will be brought to the notice of the PMU. Depending on the nature of grievance, the project officer (social/environment) at PMU will resolve the grievance within 15 days of receipt of grievance with necessary coordination of Zonal PIU and CMSC and guidance/instruction of additional project director (APD-PMU).
- (iv) Grievances not redressed through this process within/at the project level within

¹⁷ RUSDP piloted an online application based live GRM counter for resolution of public grievances over and above the usual process of grievance registration and redressal. This app based GRM - "RUIDP Smart Check" is available at Google play store (free of cost) and is operational. The RUIDP Smart Check "app" was launched in Pali town in July 2017 and is proposed to be scaled up in RSTDSP project towns. For persons without access to the application, the traditional channels will continue to be available.

¹⁸ It is suggested for each PIU to have a dedicated WhatsApp group for registration of grievances and receipt of quick feedback, to be followed by more formal communication.

¹⁹ Project contractors in all project towns will have a toll-free number with specific working hours for registration of grievances related to RSTDSP.

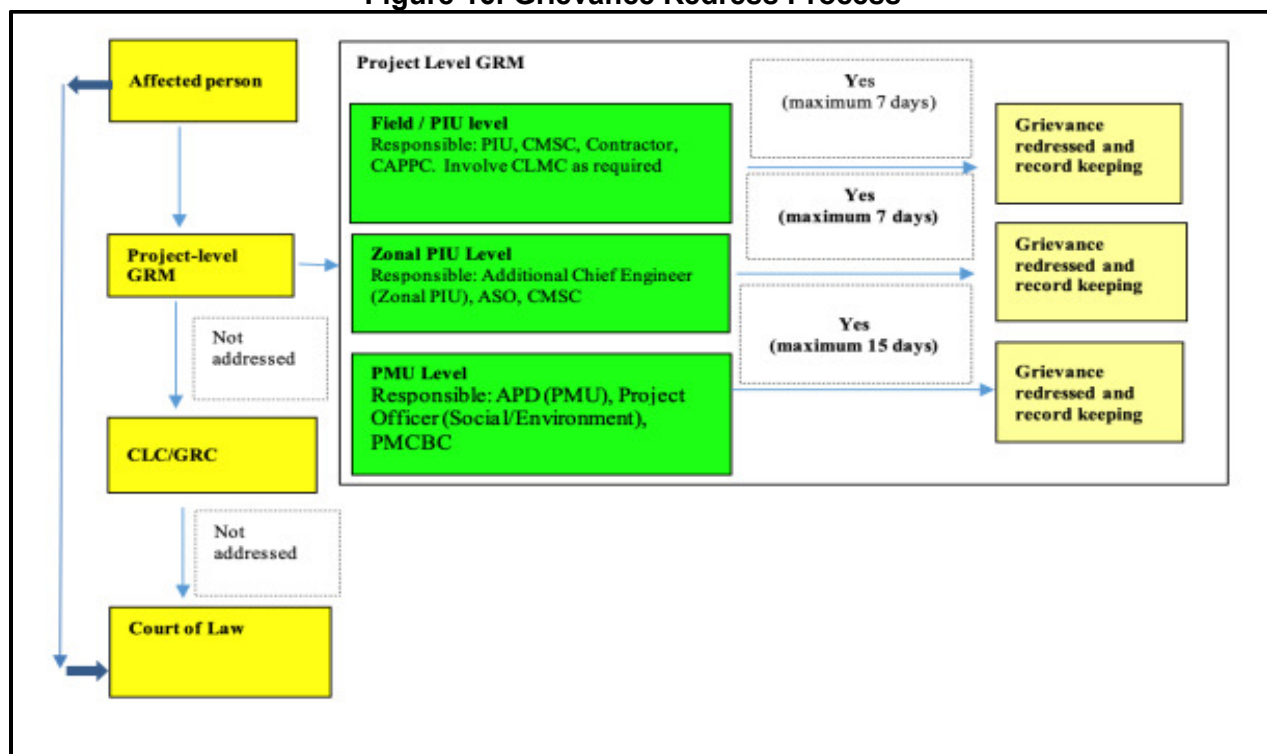
²⁰ <http://www.sampark.rajasthan.gov.in/RajSamWelcome.aspx>

²¹ The CLMC has been formed at the town/city level for planning and monitoring of work, resolve issues related to departmental coordination etc. It is headed by Commissioner/Executive Officer ULB (Chairman) and city engineer of public health engineering department (PHED), public works department (PWD) and head of PIU acting as Member Secretary.

stipulated time period will be referred to the CLC/GRC, which has been set up.²² In its role as a GRC, the CLC will meet whenever there is an urgent, pending grievance. Other grievances can be discussed during its regular meetings. Zonal PIU will inform the CLC regarding any grievances required to be resolved urgently. The GRC will resolve the grievance within 15 days of receiving the complaint. In case of any indigenous peoples impacts in subprojects, the CLC/GRC must have representation of the affected indigenous people community, the chief of the tribe or a member of the tribal council as traditional arbitrator (to ensure that traditional grievance redress systems are integrated) and an NGO working with indigenous people groups.

- (v) The multi-tier GRM for the project is outlined below (**Figure 16**), each tier having time-bound schedules and with responsible persons identified to address grievances and seek appropriate persons' advice at each stage, as required. The GRC will continue to function throughout the project duration.

Figure 16: Grievance Redress Process



APD = Additional Project Director, ASO = Assistant Safeguards Officer, CAPPIC = community awareness and public participation consultant, CMSC = construction management and supervision consultants, CLC = city level committee, CLMC = city level monitoring committee, GRC = grievance redress committee, PIU = project implementation unit, PMU = program management unit, PMCBC = project management and capacity building consultant.

²² City Level Committee (CLC)/grievance redress committees (GRCs) has been constituted for each town/city under the Chairmanship of District Collector to provide overall subproject guidance and "to sort out issues and remove hindrances, if any". CLC formed at city-level/district level with members composed of: District Collector as Chairperson and following as members: ULB Commissioner/Mayor/Chairman; Deputy Mayor/Vice Chairman ULB; Chairman/Secretary Urban Improvement Trust (UIT); Head of Zonal/field level PIU as Member Secretary; one representative each from relevant government departments as appropriate (PWD/PHED/Town Planning Department etc.). All CLCs in their role as GRCs will have at least one-woman member/chairperson. In addition, for project-related grievances, representatives of affected persons, community-based organizations (CBOs), and eminent citizens will be invited as observers in GRC meetings. The concerned Member of Parliament (MP) and Member of Legislative Assembly are also part of the CLC.

138. The project GRM notwithstanding, an aggrieved person shall have access to the country's legal system at any stage and accessing the country's legal system can run parallel to accessing the GRM and is not dependent on the negative outcome of the GRM. In case of grievance related to land acquisition, resettlement and rehabilitation, the affected persons will have to approach a legal body/court specially proposed under the Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act (RFCTLARRA), 2013.²³

139. People who are, or may in the future be, adversely affected by the project may submit complaints to ADB's Accountability Mechanism. The Accountability Mechanism provides an independent forum and process whereby people adversely affected by ADB-assisted projects can voice, and seek a resolution of their problems, as well as report alleged violations of ADB's operational policies and procedures. Before submitting a complaint to the Accountability Mechanism, affected people should make an effort in good faith to solve their problems by working with the concerned ADB operations department. Only after doing that, and if they are still dissatisfied, should they approach the Accountability Mechanism²⁴.

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

141. **Periodic review and documentation of lessons learned.** The PMU Project Officer (Environment) will periodically review the functioning of the GRM in each town and record information on the effectiveness of the mechanism, especially on the project's ability to prevent and address grievances.

142. **Costs.** Contractors are required to allocated budget for pamphlets and billboards as part of the EMP. Costs involved in resolving the complaints (meetings, consultations, communication and reporting/information dissemination) will be borne by the concerned PIU at town level while costs related to escalated grievances will be met by the PMU. Cost estimates for grievance redress are included in resettlement cost estimates.

143. Presently GRC in 14 ongoing project towns are functional as per RSTDSP's Grievance Redress Mechanism (GRM). Therefore 2nd and 3rd level GRC are already functional at Zonal PIUs (at Jaipur and Jodhpur) and PMU levels. PIU level GRC shall be formed in upcoming project towns after PIUs in new towns are established through office order from PMU for the same.

²³The Authority admits grievance only with reference to the Land Acquisition and R&R issues under the RFCTLARRA, 2013.

²⁴ Accountability Mechanism. <http://www.adb.org/Accountability-Mechanism/default.asp>

IX. ENVIRONMENTAL MANAGEMENT PLAN

A. Environmental Management Plan

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

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

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

139. Tables for Environment Management Plan during Design, Pre-construction, Construction and Operation phases are given below-

Table 10: Design Stage Environmental Management Plan

Field	Anticipated Impact	Mitigation Measures	Indicator of Compliance	Responsible for Implementation/ Monitoring	Cost and Source of Funds
Location impacts of proposed components	Nearby community may be affected due to increased pollution during construction and operation	(i) Work method should be prepared so that nearby community may have no or minimum impact due to proposed works (ii) Mitigation measures are prepared and included in design and EMP is attached with contract documents	List of pre-approved sites for -construction work camps, areas for stockpile, storage and disposal -Waste management plan	Consultants/PMU	No cost required
Requirement of tree cutting	Tree cutting may result loss of aesthetics and increase in air pollution	(i) project designs should be done so that minimum tree cutting is required (ii) project documents should include the minimum tree cutting provisions (iii) Provision for Compensatory plantations should be included in contract documents	As per RUDSICO-EAP policy; Tree Cutting Approvals; Compensatory Afforestation Plan;	Consultants/PIU/PMU	No cost required
Energy Efficiency	Loss of natural resources	(ii) Use energy efficient electrical equipment (iii) Provision of use of energy efficient equipment in contract agreements and BOQ	As per BEE norms	Consultants/PMU	No cost required
Incorporating EMP and Health and Safety requirements into Contractor Bid Document	Implementation of the EMP	The EMP should be included in the Bid Document so that the selected Contractor understands the issues and makes necessary plans to prepare and implement the EMP	EMP included in Bid Document	PMU	Project Costs
	Implementation of the Health and Safety measures by contractor	Health and safety requirements should be incorporated as part of the contract bid document so that the selected Contractor understands the issues and makes necessary plans to prepare and implement the health and safety requirements.	EMP included in Bid Document	PMU	Project Costs

Table 11: Environmental Management Plan of Anticipated Impacts during Pre-Construction

Field	Anticipated Impact	Mitigation Measures	Indicator of Compliance	Responsible for Implementation	Monitoring of Mitigation	Cost and Source of Funds
Compliance with environmental subproject selection criteria	Environmental impacts due to subproject	Compliance with environmental subproject selection criteria A compliance checklist is appended to this report (Appendix 5)	Consents, permits, clearance, NOCs, etc.	PIU and BMC	PMU	No costs required
Legal compliance	Environmental legal noncompliance may attract legal actions Failure to obtain necessary consents, permits, NOCs etc. can result to design revisions and/or stoppage of works	(i) Obtain all consents, clearances (CTE/CTO from RPCB), permits NOCs etc. before start of construction works (ii) Ensure that all necessary approvals for construction to be obtained by contractor are in place before start of construction	Consents, permits, clearance, NOCs, etc.	PIU/Consultants in coordination of Bhawani Mandi	PMU	Cost of obtaining all consents, permits, clearance, NOCs etc. prior to start of civil works responsibility of PIU.
Environmental monitoring of baseline conditions of air, noise, water and soil	To establish base line environmental conditions	Environmental monitoring through NABL approved laboratory	Environmental Monitoring Report of Air, noise, soil and water quality	Construction contractor	Consultants/PIU	Contractor
Utilities	Telephone lines, electric poles and wires, water lines within proposed project area	(i) Identify and include locations and operators of these utilities in the detailed design documents to prevent unnecessary	-List and maps showing utilities to be shifted -Contingency plan for services disruption	Contractor in collaboration with PIU and with approval of PMU	(i) List of affected utilities and operators; (ii) Bid document to include requirement for a contingency plan for service	No cost required. Mitigation measures are part of TOR of

Field	Anticipated Impact	Mitigation Measures	Indicator of Compliance	Responsible for Implementation	Monitoring of Mitigation	Cost Source and Funds
		disruption of services during construction phase; and (ii) Require construction contractors to prepare a contingency plan to include actions to be taken in case of unintentional interruption of services. (iii) Require contractors to prepare spoils management plan (Appendix C-12) and traffic management plan (Appendix C-13)			interruptions (example provision of water if disruption is more than 24 hours), spoil management plan (Appendix C-13), and traffic management plan (Appendix C-14)	PMU, PIU and Consultants
Construction work camps, hot mix plants, stockpile areas, storage areas, and disposal areas.	Disruption to traffic flow and sensitive receptors	(i) Prioritize areas within or nearest possible vacant space in the project location; (ii) If it is deemed necessary to locate elsewhere, consider sites that will not promote instability and result in destruction of property, vegetation, irrigation, and drinking water supply systems;	-List of pre-approved sites for construction work camps, areas for stockpile, storage and disposal -Waste management plan	Contractor to finalize locations in consultation and approval of PIU	(i) List of selected sites for construction work camps, hot mix plants, stockpile areas, storage areas, and disposal areas. (ii) Written consent of landowner/s (not lessee/s) for reuse of excess spoils to agricultural land	No cost required. Mitigation measures are part of TOR of PIU and Consultants and also part of contractual terms

Field	Anticipated Impact	Mitigation Measures	Indicator of Compliance	Responsible for Implementation	Monitoring of Mitigation	Cost Source and of Funds
		(iii) Do not consider residential areas; (iv) Take extreme care in selecting sites to avoid direct disposal to water body which will inconvenience the community. (v) For excess spoil disposal, ensure (a) site shall be selected preferably from barren, infertile lands. In case agricultural land needs to be selected, written consent from landowners (not lessees) will be obtained; (b) debris disposal site shall be at least 200 m away from surface water bodies; (c) no residential areas shall be located within 50 m downwind side of the site; and (d) site is minimum 250 m away from sensitive locations like settlements, ponds/lakes or other water bodies.				

Field	Anticipated Impact	Mitigation Measures	Indicator of Compliance	Responsible for Implementation	Monitoring of Mitigation	Cost Source and of Funds
Sources of Materials	Extraction of materials can disrupt natural land contours and vegetation resulting in accelerated erosion, disturbance in natural drainage patterns, ponding and water logging, and water pollution.	(i) Prioritize sites already permitted by the Department of Mines and Geology (ii) If other sites are necessary, inform construction contractor that it is their responsibility to verify the suitability of all material sources and to obtain the approval of PMU and (iii) If additional quarries will be required after construction is started, inform construction contractor to obtain a written approval from PIU.	Permits issued to quarries/sources of materials	Contractor to prepare list of approved quarry sites and sources of materials with the approval of PIU	(i) List of approved quarry sites and sources of materials; (ii) Bid document to include requirement for verification of suitability of sources and permit for additional quarry sites if necessary.	No cost required. Mitigation measures are part of TOR of PIU and Consultants and also part of contractual terms
Consents, permits, clearances, NOCs, etc.	Failure to obtain necessary consents, permits, NOCs, etc. can result to design revisions and/or stoppage of works	(i) Obtain all necessary consents, permits, clearance, NOCs, etc. prior to award of civil works. (ii) Following consents are required- Tree cutting- local authority Storage, handling and transport of hazardous materials- RPCB	Consents, permits, clearance, NOCs, etc.	PIU and Consultants	Incorporated in final design and communicated to contractors.	No cost required. Cost of obtaining all consents, permits, clearance, NOCs, etc. prior to start of civil works responsibility of PIU. Mitigation measures are

Field	Anticipated Impact	Mitigation Measures	Indicator of Compliance	Responsible for Implementation	Monitoring of Mitigation	Cost Source and of Funds
		Sand mining, quarries, borrow areas- Department of mines and Geology Traffic diversion/road cutting- local authority, traffic police (ii) Ensure that all necessary approvals for construction to be obtained by contractor are in place before start of construction (iii) Acknowledge in writing and provide report on compliance all obtained consents, permits, clearance, NOCs, etc. (iv) Include in detailed design drawings and documents all conditions and provisions if necessary				part of TOR of PIU and Consultants

Table 12: Environmental Management Plan of Anticipated Impacts during Construction

Field	Anticipated Impact	Mitigation Measures	Indicator of Compliance	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds
EMP Implementation Training	Irreversible impact to the environment, workers, and community	(i) Project manager and all key workers will be required to undergo EMP implementation including spoils management, Standard operating procedures (SOP) for construction works; occupational health and safety (OH&S), core labor laws, applicable environmental laws, etc. (ii) Contractor has to depute a qualified EHS personnel in the start of the project to conduct training to all the personnel and effective monitoring of mitigation measures during construction	Training Plan and its implementation Achievement of the environmental performance targets by the Contractor;	Construction Contractor	(i) Certificate of Completion (Safeguards Compliance Orientation) (ii) Posting of Certification of Completion at worksites (iii) Posting of EMP at worksites	Cost of EMP Implementation Orientation Training to contractor is responsibility of PMU. Other costs responsibility of contractor.
Air Quality	Emissions from construction vehicles, equipment, and machinery used for installation of pipelines resulting to dusts and increase in concentration of vehicle-related pollutants such as carbon monoxide, sulphur	(i) Consult with PIU on the designated areas for stockpiling of clay, soils, gravel, and other construction materials; (iii) Damp down exposed soil and any stockpiled material on site by water sprinkling necessary during dry weather; (iv) Use tarpaulins to cover sand and other loose material when transported by trucks; and (v) Fit all heavy equipment and machinery with air pollution control devices which are operating correctly. (vi) Quarterly environmental monitoring for ambient air as per EMP	-Visual inspection -No complaints from sensitive receptors -Records -PUC certificates - CTE and CTO; -Periodic Air Quality Monitoring;	Construction Contractor	(i) Location of stockpiles; (ii) Complaints from sensitive receptors; (iii) Heavy equipment and machinery with air pollution control devices; (iv) Certification that vehicles are compliant with Air Act (v) Quarterly environmental monitoring report for ambient air, noise, water and soil	Cost for implementation of mitigation measures responsibility of contractor.

Field	Anticipated Impact	Mitigation Measures	Indicator of Compliance	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds
	oxides, particulate matter, nitrous oxides, and hydrocarbons.					
Water quality	Mobilization of settled silt materials, and chemical contamination from fuels and lubricants during installation of pipelines can contaminate nearby surface water quality.	(i) Prepare and implement a spoils management plan (Appendix C-12) (ii) Avoid stockpiling of earth fill especially during the monsoon season unless covered by tarpaulins or plastic sheets; (ii) Install temporary silt traps or sedimentation basins along the drainage leading to the water bodies; (iii) Place storage areas for fuels and lubricants away from any drainage leading to water bodies; (iv) Dispose any wastes generated by work in designated sites; and (v) Conduct surface quality Monitoring according to the Environmental Management Plan (EMP)	-Periodic Water Quality Monitoring;	Construction Contractor	(i) Areas for stockpiles, storage of fuels and lubricants and waste materials; (ii) Number of silt traps installed along trenches leading to water bodies; (iii) Records of surface water quality Monitoring; (iv) Effectiveness of water management measures; (v) No visible degradation to nearby drainages, nallahs or waterbodies due to civil works	Cost for implementation of mitigation measures responsibility of contractor.
Noise Levels	Increase in noise level due to earth-moving and excavation equipment,	(i) Plan activities in consultation with PIU/Consultants so that activities with the greatest potential to generate noise are conducted during periods of the day which will result in least disturbance;	-No complaints from sensitive receptors;	Construction Contractor	(i) Complaints from sensitive receptors; (ii) Use of silencers in noise-producing	Cost for implementation of mitigation measures responsibility of contractor.

Field	Anticipated Impact	Mitigation Measures	Indicator of Compliance	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds
	and the transportation of equipment, materials, and people	(ii) Horns should not be used unless it is necessary to warn other road users or animals of the vehicle's approach; (iii) Minimize noise from construction equipment by using vehicle silencers, fitting jackhammers with noise-reducing mufflers, and portable street barriers the sound impact to surrounding sensitive receptor; and (iv) Maintain maximum sound levels not exceeding 80 decibels (dbA) when measured at a distance of 10 m or more from the vehicle/s. (v) Quarterly environmental monitoring for ambient noise as per EMP	- Periodic Noise level monitoring reports;		equipment and sound barriers; (iii) Equivalent day and night-time noise levels (see Appendix C-6 of this IEE)	
Ground Water Quality	Contamination of ground water quality due to spillage of oil and lubricants	Prepare and implement a spills management plan; Provide impermeable liner on the ground and place layer of mortar or concrete over it in the oil and lubricants storage areas, provide spillage trap in oil and lubricant store, use dip tray and pump to pour oil from oil and lubricant drums; Dispose any oil contaminated wastes generated by construction activities in scientific manner; and Conduct ground water quality monitoring according to the EMP	-Complaints from sensitive receptors; -CTO and CTE compliance; -Periodic GW Quality Monitoring Reports;	Contractor	(i) Areas for storage of fuels and lubricants and waste materials; (ii) Number of oil traps installed in oil and lubricant storage areas; (iii) Records of ground water quality monitoring;	Cost for implementation of mitigation measures responsibility of contractor.
Drain desilting	Contamination of land, surface and groundwater; occupational and	(i) Desilting process of shall be conducted in dry season only (ii) Prior to desilting process, the drains shall be allowed dry so that there is no standing water on silt / sediment	(i) desilting schedule and proposed method (ii) PPEs to workers	Contractor	CMSC/ PIU	Cost for implementation of mitigation measures responsibility of contractor.

Field	Anticipated Impact	Mitigation Measures	Indicator of Compliance	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds
	community health and safety	(iii) Do not conduct manual desilting process, use appropriate equipment / implements (iv) Desilting process shall be conducted in such a way that water content of the silt/sediment is low, so that contaminated water is not spilled during the loading, transport and unloading process.; (v) Workers shall be provided with appropriate PPE's; masks with oxygen cylinders shall be made available at the site, which shall be utilised during emergency (vi) identify beneficial uses or dispose at suitable disposal site in consultation with the PIU/ULB:	(iii) Reuse or disposal site identification			
Landscape and aesthetics	Impacts due to excess excavated earth, excess construction materials, and solid waste such as removed concrete, wood, packaging materials, empty containers, spoils, oils, lubricants, and other similar items.	(i) Prepare and implement spoils management plan (Appendix C-13); (ii) Avoid stockpiling of excess excavated soils; (iii) Coordinate with ULB/PIU for beneficial uses of excess excavated soils or immediately dispose to designated areas; (iv) Recover used oil and lubricants and reuse or remove from the sites; (v) Manage solid waste according to the following preference hierarchy: reuse, recycling and disposal to designated areas; (vi) Remove all wreckage, rubbish, or temporary structures which are no longer required; and (vii) Request PIU to report in writing that the necessary environmental restoration work has been	As per Appendix C-13	Construction Contractor	(i) Complaints from sensitive receptors; (ii) Worksite clear of hazardous wastes such as oil/fuel (iiv) Worksite clear of any excess excavated earth, excess construction materials, and solid waste such as removed concrete, wood, packaging	Cost for implementation of mitigation measures responsibility of contractor.

Field	Anticipated Impact	Mitigation Measures	Indicator of Compliance	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds
		adequately performed before acceptance of work.			materials, empty containers	
Existing Infrastructure and Facilities	Disruption of service and damage to existing infrastructure at specified project location	(i) Obtain from PIU the list of affected utilities and operators if any; (ii) Prepare a contingency plan to include actions to be done in case of unintentional interruption of service (iii) Take prior permission from concerned departments for shifting/removing the utilities (iv) inform nearby community in advance about the nature and timings of disturbance	As per contingency plan	Construction Contractor	Existing Utilities Contingency Plan	Cost for implementation of mitigation measures responsibility of contractor.
Ecological Resources – Terrestrial	Loss of vegetation and tree cover	(i) Minimize removal of vegetation and disallow cutting of trees; (ii) If tree-removal will be required, obtain tree-cutting permit from the Revenue Department; and (iii) Plant three native trees for every one that is removed.	-Records -Plant native tree species as per RUDSICO-EAP Policy	Construction Contractor	PIU to report in writing the no of trees cut and planted.	Cost for implementation of mitigation measures responsibility of contractor.
Land use	Environmental Issues due to land use change	The impact due to change in land use will be negligible due to this project.	-Latest land use records	Not applicable	Not applicable	Not applicable
Accessibility	Traffic problems and conflicts near project locations and haul road	(i) Plan transportation routes so that heavy vehicles do not use narrow local roads, except in the immediate vicinity of delivery sites; (ii) Schedule transport and hauling activities during non-peak hours; (iii) Locate entry and exit points in areas where there is low potential for traffic congestion; (iv) Keep the site free from all unnecessary obstructions; (v) Drive vehicles in a considerate manner;	As per Traffic Management Plan given in Appendix C-14.	Construction Contractor	(i) Traffic route during construction works including number of permanent signages, barricades and flagmen on worksite (Appendix C-14);	Cost for implementation of mitigation measures responsibility of contractor.

Field	Anticipated Impact	Mitigation Measures	Indicator of Compliance	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds
		(vi) Coordinate with Traffic Police for temporary road diversions and with for provision of traffic aids if transportation activities cannot be avoided during peak hours; (vii) Notify affected sensitive receptors 1-week in advance through consultations and by providing sign boards informing nature and duration of construction works and contact numbers for concerns/complaints. (viii) Plan and execute the work in such a way that the period of disturbance/ loss of access are minimum. (ix) Provide pedestrian access in all the locations until normalcy is restored.			(ii) Complaints from sensitive receptors; (iii) Number of signages placed at project location.	
Socio-Economic Income. –	Impede the access of residents and customers to nearby shops	(i) Prepare and implement spoils management plan (Appendix C-12). Contractor to Implement RP and to follow mitigation measures prescribed such as- (ii) Leave spaces for access between mounds of soil; (ii) Provide walkways and metal sheets where required for people; (iii) Increase workforce in front of critical areas such as institutions, place of worship, business establishment, hospitals, and schools; (iv) Consult businesses and institutions regarding operating hours and factoring this in work schedules; and	-Visible and understandable sign boards in construction zone; -Construction Implementation Schedule	Construction Contractor	(i) Complaints from sensitive receptors; (ii) Spoils management plan (iii) Number of walkways, signages, and metal sheets placed at project location.	Cost for implementation of mitigation measures responsibility of contractor.

Field	Anticipated Impact	Mitigation Measures	Indicator of Compliance	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds
		(v) Provide sign boards for pedestrians to inform nature and duration of construction works and contact numbers for concerns/complaints.				
Socio-Economic - Employment	Generation of temporary employment and increase in local revenue	(i) Employ at least 50% of the labour force, or to the maximum extent, local persons within the 2-km immediate area if manpower is available; (ii) Secure construction materials from local market. (iii) Comply with labor laws	-Employment records	Construction Contractor	(i) Employment records; (ii) Records of sources of materials (iii) Compliance to labor laws (see Appendix 7 of this IEE)	Cost for implementation of mitigation measures responsibility of contractor.
Occupational Health and Safety	Occupational hazards which can arise during work	(A) Comply with all national, state and local core labor laws (see Appendix C-12 of this IEE) (B) Ensure that qualified EHS personnel is deputed to look the H&S matter, EHS personnel should ensure to comply following- (i) Develop and implement site-specific occupational health and safety (OH&S) Plan which will include measures such as: (a) excluding public from the site; (b) ensuring all workers are provided with and use personal protective equipment like helmet, gumboot, safety belt, gloves, nose musk and ear plugs; (c) OH&S Training for all site personnel; (d) documented procedures to be followed for all site activities; and (e) documentation of work-related accidents; (ii) Ensure that qualified first-aid can be provided at all times. Equipped	-Visual inspection -Records -Work schedule -Noise level monitoring in work area -Visible first aid equipment and medical supplies -Condition in H&S plan -Area secured -Trenches barricaded -Supply of water -Providing clean drinking water in worker areas. -Visible and understandable sign boards in	Construction Contractor	(i) Site-specific OH&S Plan; (ii) Equipped first-aid stations; (iii) Medical insurance coverage for workers; (iv) Number of accidents; (v) Supplies of potable drinking water; (vi) Clean eating areas where workers are not exposed to hazardous or noxious substances; (vii) record of H&S orientation trainings	Cost for implementation of mitigation measures responsibility of contractor.

Field	Anticipated Impact	Mitigation Measures	Indicator of Compliance	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds
		first-aid stations shall be easily accessible throughout the site; (iii) Conduct work in confined spaces, trenches, and at height with suitable precautions and using standards and safe construction methods; do not adopt ad hoc methods; all trenches deeper than 1.5 m shall be provided with safety shoring/braces; (iv) Provide medical insurance coverage for workers; (v) Secure all installations from unauthorized intrusion and accident risks; (vi) The project area experiences extreme temperature during summer months of April and May, which may affect the health of workers engaged in construction work. Contractor should take necessary measures during summers including the following: (a) work schedule should be adjusted to avoid peak temperature hours (12 – 3 PM); (b) provide appropriate shade near the work place; allow periodic resting and provide adequate water, and (c) provide necessary medicine and facilities to take care of dehydration related health issues (vii) Provide supplies of potable drinking water; (viii) Provide clean eating areas where workers are not exposed to hazardous or noxious substances;	construction zone -H&S plan including appropriate signs for each hazard present -Construction vehicles condition in H&S plan.		(viii) personal protective equipment; (ix) % of moving equipment outfitted with audible back-up alarms; (xi) permanent sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal. (xii) Compliance to core labor laws (see Appendix C-12 of this IEE)	

Field	Anticipated Impact	Mitigation Measures	Indicator of Compliance	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds
		(ix) Provide H&S orientation training to all new workers to ensure that they are apprised of the basic site rules of work at the site, personal protective protection, and preventing injuring to fellow workers; (x) Provide visitor orientation if visitors to the site can gain access to areas where hazardous conditions or substances may be present. Ensure also that visitor/s do not enter hazard areas unescorted; (xi) Ensure the visibility of workers through their use of high visibility vests when working in or walking through heavy equipment operating areas; (xii) Ensure moving equipment is outfitted with audible back-up alarms; (xii) Mark and provide sign boards for hazardous areas such as energized electrical devices and lines, service rooms housing high voltage equipment, and areas for storage and disposal. Signage shall be in accordance with international standards and be well known to, and easily understood by workers, visitors, and the general public as appropriate; and (xiii) Disallow worker exposure to noise level greater than 85 dBA for a duration of more than 8 hours per day without hearing protection. The use of hearing protection shall be enforced actively.				

Field	Anticipated Impact	Mitigation Measures	Indicator of Compliance	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds
		(xiv) Provide proper solid and liquid waste management program in workers' campsite, separate from spoils and debris disposal, as their presence can add to existing waste volume at the project sites.				
Community Health and Safety.	Traffic accidents and vehicle collision with pedestrians during material and waste transportation	(i) Trench excavation works shall be conducted in a safe manner; if the allowing public movement along the work sites (pedestrians or vehicles as the case may be) is likely to cause safety risks, movement should be blocked temporarily and work shall be conducted; in such areas, conducting night work or working in small stretches to avoid blockage of traffic/movement no more than few hours in due consultation with the local community and ULB shall be planned (ii) All trenches deeper than 1.5 m shall be provided with safety shoring/braces; (iii) Survey the surrounding vulnerable buildings for likely issues in structural stability / differential settlement during the excavation works (iv) Provide prior information to the local people about the (v) Plan routes to avoid times of peak-pedestrian activities. (vi) Liaise with PIU/ULB in identifying high-risk areas on route cards/maps. (vii) Maintain regularly the vehicles and use of manufacturer-approved parts to minimize potentially serious	As per Traffic Management Plan given in Appendix c-14.	Construction Contractor	(i) Traffic Management Plan; (ii) Complaints from sensitive receptors	Cost for implementation of mitigation measures responsibility of contractor.

Field	Anticipated Impact	Mitigation Measures	Indicator of Compliance	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds
		accidents caused by equipment malfunction or premature failure. (viii) Provide road signs and flag persons to warn of on-going trenching activities.				
Safety requirements for deep trench works	Accidents, and risk hazard	Complete information on the underground structures (such as water pipelines, sewers, gas mains, electrical conduit system and other civic facilities) should be collected before doing the excavation work. Proper precautions shall be taken to prevent accident to the workmen engaged in excavation work and for the general public All trenches in soil more than 1.5 m deep shall be securely shored and timbered. All trenches in friable or unstable rock exceeding 1.5 m in depth shall be securely shored and timbered Where the sides of trenches are sloped but not within 1.5 m of the bottom, the vertical sides shall be shored and the shoring shall extend at least 30 cm above the vertical sides. When open spaced sheathing is used, a toe board shall be provided to prevent material rolling down the slope and falling into the part of the trench with vertical walls. Shoring and timbering shall be carried along with the opening of a trench but when conditions permit, protection work, such as sheet piling	Contractor's method statement for excavations On-site verification	Construction Contractor	CMSC/ PIU	Cost for implementation of mitigation measures responsibility of contractor.

Field	Anticipated Impact	Mitigation Measures	Indicator of Compliance	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds
		may be done before the excavation commences. Approved quality of material with adequate structural strength shall be used for shoring and timbering a trench. Workers shall be instructed to use safety devices and appliances provided to them whenever it is necessary to do so Workers who are not aware of the hazards specific to the work shall not be permitted to proceed with the work without being properly instructed. Safety helmets shall be worn by all persons entering trench where hazards from falling stones, timber or other materials exist Appropriate safety footwear (rubber boots, protective covers, etc.,) shall be worn by labours who are engaged in work requiring such protection Sides of excavation shall be inspected by PIU/PMDSC during the course of excavation from time to time and after every rain, storm or other hazard-increasing occurrence and protection against slides and carvings shall be increased, if necessary				
Safety of sensitive groups (children, elders etc.) and others	Trench excavation in narrow streets will pose high risk to children and	(i) Provide prior information to the local people about the nature and duration of work (ii) Conduct awareness program on safety during the construction work (iii) Undertake the construction work stretch-wise; excavation, pipe laying	-H&S plan including appropriate signs for each hazard present -Construction vehicles	Construction Contractor	Complaints from neighborhood and monitoring of accidents	Cost for implementation of mitigation measures responsibility of contractor.

Field	Anticipated Impact	Mitigation Measures	Indicator of Compliance	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds
pedestrians in narrow streets	elders in the locality	and trench refilling should be completed on the same day (iv) Provide barricades, and deploy security personnel to ensure safe movement of people and also to prevent unnecessary entry and to avoid accidental fall into open trenches	condition in H&S plan.			
Work Camps and work sites	Temporary air and noise pollution from machine operation, water pollution from storage and use of fuels, oils, solvents, and lubricants Unsanitary and poor living conditions for workers	(i) Consult with PIU before locating project offices, sheds, and construction plants; (ii) Minimize removal of vegetation and disallow cutting of trees; (iii) Provide drinking water, water for other uses, and sanitation facilities for employees; (iv) Ensure conditions of livability at work camps are maintained at the highest standards possible at all times; (v) Train employees in the storage and handling of materials which can potentially cause soil contamination; (vi) Recover used oil and lubricants and reuse or remove from the site; (vii) Manage solid waste according to the preference hierarchy: reuse, recycling and disposal to designated areas; (viii) Ensure unauthorized persons especially children are not allowed in any worksite at any given time.	-Condition in list of preapproved sites for construction work camps, areas for stockpile, storage and disposal prepared by the Contractor.	Construction Contractor	(i) Complaints from sensitive receptors; (ii) Drinking water and sanitation facilities for employees	Cost for implementation of mitigation measures responsibility of contractor.
Impacts due to night works (if required as per nature of works)	Occupational hazards which can arise during work at night in	(i) Contractors should have hand held noise level meter for measurement of noise during night hours (ii) Contractors should have hand	As per Management Plan for night works (Appendix c-	Contractor	Management Plan for night works (As per Annexure 16)	Cost for implementation of mitigation measures responsibility of

Field	Anticipated Impact	Mitigation Measures	Indicator of Compliance	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds
and feasibility at site)	extreme and unavoidable cases	held lux meter for the measurement of illumination during night hours (iii) Preferably electrical connections is available for running equipments otherwise sound proof/super silent Diesel Generator set should be available (iv) Sound level should not increase as per EMP (v) Illumination should be adequate as required according to nature of works (vi) As far as possible ready mix concrete from batching plant to be used, otherwise the concrete should be prepared away from residential areas and brought to the site (vii) All the noise activity like hammering, cutting, crushing, running of heavy equipments should be done in day time and avoided in night time (viii) Workers engaged in night works should have adequate rest/sleep in day time before start of night works (ix) Worker engaged for night works should have previous experience of night works and should be physically fit for such works including clear vision in night (x) All the necessary provisions of traffic aids such as traffic signals, road signage, barricades, cautions boards, traffic diversion boards etc. should be available with	18).			contractor.

Field	Anticipated Impact	Mitigation Measures	Indicator of Compliance	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds
		fluorescent/retro-reflective arrangements (xi) Workers should be trained before start of night works about risks and hazards of night works and their mitigation measures and should be provided all the protective aids (PPEs) including fluorescent/retro-reflective vests (xii) Horns should not be permitted by equipments and vehicles (xiii) Workers should not shout and create noise (xiv) First aid and emergency vehicles should be available at site (xv) Emergency preparedness plan should be operative during night works (xvi) Old persons and pregnant women and women having small kids should not work in night time (xvii) All the vehicles and equipments being used at night works should have adequate type of silencers/enclosures/mufflers to reduce noise (xviii) All the vehicles should be checked for working head lamps, tail lamps, inner lights etc. before start of night works				
Social and Cultural Resources	Risk of archaeological chance finds	(i) Consult with concerned religious authorities, nearby people and devotees in pre-construction phase and explain the work method and duration of proposed works, take their suggestions and comments and incorporate in	Chance find protocol	Construction Contractor	Records of chance finds	Cost for implementation of mitigation measures responsibility of contractor.

Field	Anticipated Impact	Mitigation Measures	Indicator of Compliance	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds
		design the mitigation measures required (ii) Adjacent to religious/social sites, undertake excavation and construction work in such a way that no structural damage is caused to the religious building. (iii) Observe the local rituals and important dates of festivals, weekly/monthly/annual religious occasions in the religious places and do not make any disturbance/hindrances/obstacles during such time to the religious places, (iv) provide proper signage, barricades etc. to protect public and devotees from dangers of construction works.				
Monsoon preparedness	Disruption of utilities and water logging in trenches	(i) As for a possible avoid trench works and excavation works during monsoon season to avoid any water logging and accident due to it (ii) if open trenches are not avoidable during monsoon, keep ready all the mitigations measures to avoid water logging such as dewatering pumps and sufficient pipes, traffic assistance, barricades etc. (iii) Guidelines for safety during monsoon is attached as Appendix c-19	As per monsoon preparedness plan & as per Appendix c-19 "Guidelines for Safety during Monsoon/Heavy Rainfall"	Construction Contractor	Monsoon preparedness plan	Cost for implementation of mitigation measures responsibility of contractor.
Submission of EMP implementation report	Unsatisfactory compliance to EMP	(i) Appointment of supervisor to ensure EMP implementation (ii) Timely submission of monitoring reports including pictures	Availability and competency of appointed supervisor Monthly report	Construction contractor	Availability and competency of appointed supervisor Monthly report	Cost for implementation of mitigation measures

Field	Anticipated Impact	Mitigation Measures	Indicator of Compliance	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds
						responsibility of contractor.
COVID-19 prevention and control during construction works	Health risk to workers due to COVID-19 virus	(i) provide face mask, hand gloves and sanitizers to workers during works (ii) Keep social distancing (iii) Educate workers about risks of COVID-19 (iv) Health check-up of workers suffering with symptoms of COVID-19 and test for same (v) isolation of workers suspected/suffering with COVID-19 and due medical care (vi) follow guidelines of WHO/Central/State/Local government and RUDSICO-EAP regarding COVID-19 (refer Appendix c-23 & c-24)	Compliance of COVID-19 protocol and guidelines	Construction contractor	CMSC/ PIU	Contractor
Post-construction clean-up	Damage due to debris, spoils, excess construction materials	(i) Remove all spoils wreckage, rubbish, or temporary structures (such as buildings, shelters, and latrines) which are no longer required; and (ii) All excavated roads shall be reinstated to original condition. (iii) All disrupted utilities restored (iv) All affected structures rehabilitated/compensated (v) The area that previously housed the construction camp is to be checked for spills of substances such as oil, paint, etc. and these shall be cleaned up. (vi) All hardened surfaces within the construction camp area shall be ripped, all imported materials	PIU/Consultant report in writing that (i) worksite is restored to original conditions; (ii) camp has been vacated and restored to pre-project conditions; (iii) All construction related structures not relevant to O&M are removed;	Construction Contractor	PIU/Consultants report in writing that (i) worksite is restored to original conditions; (ii) camp has been vacated and restored to pre-project conditions; (iii) all construction related structures not relevant to O&M are removed; and (iv) worksite	Cost for implementation of mitigation measures responsibility of contractor.

Field	Anticipated Impact	Mitigation Measures	Indicator of Compliance	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds
		removed, and the area shall be top soiled and regressed using the guidelines set out in the revegetation specification that forms part of this document. (vii) The contractor must arrange the cancellation of all temporary services. (viii) Request PIU to report in writing that worksites and camps have been vacated and restored to pre-project conditions before acceptance of work.	and (iv) worksite clean-up is satisfactory.		clean-up is satisfactory.	

Table 13: Environmental Management Plan of Anticipated Impacts during Operation

Field	Anticipated Impact	Mitigation Measures	Indicator of Compliance	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds
Cleaning of drainage	All work sites- Cleaning of drains may cause traffic disturbances, nuisances, public & worker safety	Remove the silts and other solid waste after cleaning the drains from site and dispose at approved dumping site in scientific manner Ensure traffic management during cleaning of drains and transportation of silt and solid waste	Site inspection will be done as per checklist is given in Appendix c-16 .	Weekly during construction	Supervising staff and safeguards specialists	No costs required
Check the blockages, overflow problem in drains	It may affect the draining system, overflow problem may contaminate land, water and create public health issues	Regular cleaning of drains, specially before start of monsoon to avoid blockages Implementation of regular O&M schedules	Follows regular O & M schedule	Bhawani Mandi Municipal Council	Bhawani Mandi Municipal Council	Bhawani Mandi Municipal Council
Disposal of silt and solid waste	Unsafe disposal of silt and solid waste may cause public nuisance and health issues	Identify the suitable place for disposal of silt and solid waste, away from habitation, in a scientific manner so that it may not cause public nuisance	Disposal site at suitable location	Bhawani Mandi Municipal Council	Bhawani Mandi Municipal Council	Bhawani Mandi Municipal Council

Field	Anticipated Impact	Mitigation Measures	Indicator of Compliance	Responsible for Mitigation	Monitoring of Mitigation	Cost and Source of Funds
Safety precautions during drainage cleaning	Health and safety risk to workers engaged in drainage cleaning	Ensure all the safety equipment are available during manual cleaning As for as possible, use mechanical cleaning for cleaning of drains	-Training and Awareness campaign for Occupational, Health & Safety to ensure the use of PPE's.	Bhawani Mandi Municipal Council	Bhawani Mandi Municipal Council	Bhawani Mandi Municipal Council

Table 14: Environmental Monitoring Plan of ambient air, noise, water and soil quality and other during Construction

Monitoring field	Monitoring location	Monitoring parameters	Frequency	Responsibility	Cost & Source of Funds
Construction disturbances, nuisances, public & worker safety	All work sites	Implementation of dust control, noise control, traffic management, & safety measures. Site inspection checklist to review implementation is appended at Appendix c-16	Weekly during construction	Supervising staff, EHS officer and safeguards specialists	No costs required
Tree cutting	Alignment of both drains	Tree cutting permit taken, Tree cutting done	Continuous	Supervising staff, EHS officer and safeguards specialists	Contractor
Ambient air quality	At 4 different locations to be decided by the Environment Specialist of PMCBC.	PM ₁₀ , PM _{2.5} , NO ₂ , SO ₂ , CO	Once before start of construction and yearly 3 times excluding monsoon season during construction periods (18 months period considered).	Contractor	Cost for implementation of monitoring measures responsibility of contractor (24 samples)
Ambient noise	At 4 different locations to be decided by the Environment Specialist of PMCBC.	Day time and night time noise levels	Once before start of construction and yearly 3 times excluding monsoon season during construction periods (18 months period considered).	Contractor	Cost for implementation of monitoring measures responsibility of contractor (24 samples)
Surface Water quality	At 4 different locations to be decided by the Environment	pH, TDS, Total Hardness, Zn, Chloride, Iron, Copper, DO, Manganese, Suphate,	Once before start of construction and yearly 3 times excluding	Contractor	Cost for implementation of monitoring measures responsibility of

Monitoring field	Monitoring location	Monitoring parameters	Frequency	Responsibility	Cost & Source of Funds
	Specialist of PMCBC.	Nitrate, Fluoride, Hg, Cadmium, Cr ⁺⁶ , Arsenic, Lead, Total Alkalinity, Phosphate, Phenolic compound	monsoon season during construction periods (18 months period considered).		contractor (24 samples)

Table 15: Environmental Monitoring Plan of Anticipated Impacts during Operation

Monitoring field	Monitoring location	Monitoring parameters	Frequency	Responsibility	Cost & Source of Funds
Monitoring of drain conditions	Full length of both the drains	Cracks, blockage, leakages etc.	Monthly	Bhawani Mandi Municipal Board	Municipal Board
Monitoring of plantations	Plantations locations	Nos. of tree survived	monthly	Municipal Board	Municipal Board
Storm water discharge quality at outfall	Piplaad river discharge point	pH, Turbidity, Total Hardness, DO, BOD, COD, Chloride, Iron, TDS, TSS,	Twice a year	Municipal Board	Municipal Board
Disposal of silt and solid waste after cleaning of drains	Full length of both the drains	Identify suitable site and disposal of silt and solid waste in scientific manner	Monthly/ when required	Municipal Board	Municipal Board

B. Institutional Arrangements

140. The Local Self Government Department (LGSD) is the executing agency which will be responsible for the overall strategic guidance and ensure the compliance with ADB loan covenants. RUDSICO is the implementing agency responsible for the technical supervision and project implementation. The RUDSICO Board (under the chairmanship of the Honorable Minister), the LGSD and the City Level Monitoring Committees (CLMCs, under the chairmanship of their respective commissioner/executive officer) is proposed to monitor the project implementation. The PMU is at state-level and headed by a dedicated Project Director. The PIUs have two zonal offices (1 in Jaipur and 1 in Jodhpur). Each zonal office will be headed by an additional chief engineer. Urban Local Bodies (ULBs) will be the final custodian and user of the created infrastructure. As primary stakeholders, the ULBs will be involved and engaged in the day-to-day monitoring and implementation.

141. At the PMU level, the Project Director shall be supported by Additional Project Director (Chief Engineer-level) and a Chief Engineer, who shall then be supported by Dy Project Director and a financial advisor. There shall be one project officer for Social and another project officer for Environmental aspects of the project.

142. **Project Management and Capacity Building Consultant (PMCBC).** The PMU shall be supported by the Project Management and Capacity Building Consultants (PMCBC). The PMCBC shall manage preparation/vetting design documents, tendering of contracts, implementation of

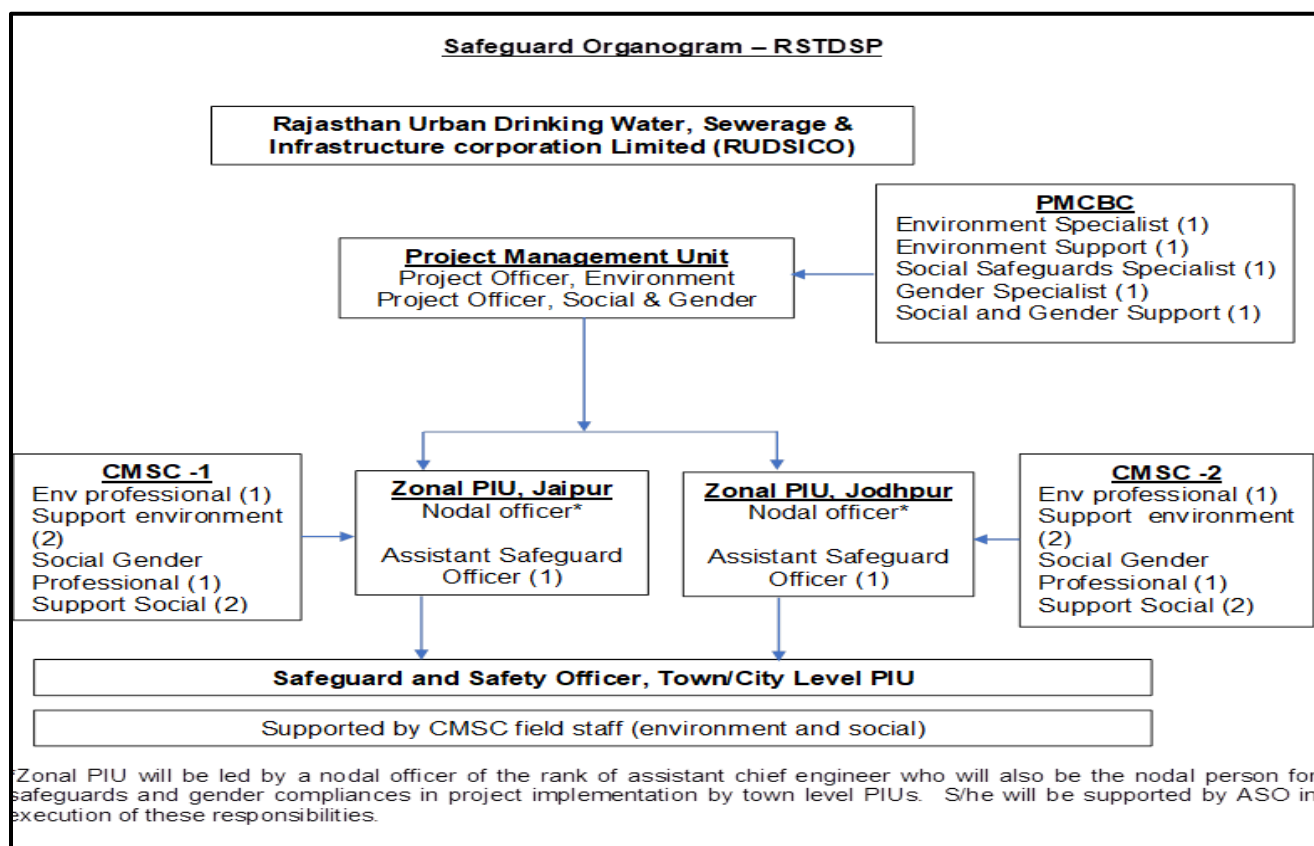
resettlement, environmental management and gender action plans; setting and managing project performance monitoring systems, planning and managing implementation of training and capacity building as well as institutional strengthening activities besides preparing reports as per ADB requirements. PMCBC shall engage a social safeguard specialist and environmental safeguard specialist at the PMU level for managing all social and environmental safeguard related support services as envisaged in its scope of work. They will be assisted by social and environmental safeguard support staff at headquarter and concerned field level safeguard support staffs of CMSCs.

143. There will be two zonal PIUs and one PIU at every town. PIUs at the town-level shall be headed by a Superintending Engineer / Executive Engineer, who shall work as Project Manager and shall sign the contract documents, manage the contract and disburse payments as Drawing and Disbursing Officer.

144. **Construction management and supervision consultants (CMSC) - 2 nos.** CMSCs catering to Jaipur and Jodhpur units. They shall directly support PIUs in day to day contract management, construction supervision including quality management of ongoing works etc. This shall include work measurement, quantities, verification of bills of contractors etc. In compliance with the EMP, the CMSC shall develop a strategy to overcome the difficulties of construction/traffic management in narrow streets and also prepare detailed plans for detour of traffic during excavation for pipe laying. The CMSC will propose and implement mechanism for coordination among all stakeholders such as traffic police, roads department, user committees, etc., for smooth construction execution. Adequate measures shall be taken for working near physical cultural resources involving close coordination with the Department of Archaeology. The CMSC will lead design of surveys and investigations required for the protection of archaeological sites/heritage areas and prepare Archaeological Impact Assessments, or other agreed upon document to be approved by the Department of Archaeology for the archaeologically sensitive locations;

145. **Community awareness and public participation consultants (CAPPC)** will closely work in the field (with PIUs) to facilitate creation of project awareness and ensuring public participation for all project works at the community level. This shall mainly involve house connections for water supply, sewerage and metering. CAPPC shall also undertake various IEC activities to promote and pursue health and hygiene among the communities.

146. **Figure 17** shows Environmental Safeguards Implementation Arrangements within RUDSICO-EAP and **Table 16** summarize the institutional responsibility of environmental safeguards implementation at all stages of the project.

Figure 17: Environmental Safeguards Implementation Arrangement

147. **Project Management Unit.** RUDSICO will establish a state-level PMU, headed by dedicated project director, and housed in EAP division of RUDSICO. For the purpose of project implementation, 2 Zonal project implementation units (Zonal PIUs), at Jaipur and Jodhpur, headed by additional chief engineers (ACE) will be established. At PMU, there will be two dedicated project officers (i) project officer (Environment) and (ii) project officer (Social and Gender), who will be responsible for compliance with the environmental, social safeguards and gender in program implementation. Key responsibilities of the project officer (Environment) are enumerated in **Table 16**.

148. The PMU will be supported by 3 institutional consultants under the supervision and control of PD, PMU: (i) the project management and capacity building consultants (PMCBC) will support the PMU; (ii) 2 CMSC will support the 2 zonal PIUs and town-level PIUs; and (iii) CAPPC, will support the zonal PIUs and town-level PIUs.

149. **Zonal Project implementation units (Zonal PIUs).** There are 2 zonal level PIUs at Jaipur and Jodhpur. Under each zonal PIU, there will be city/town level PIUs, for ease of day-to-day monitoring and management at local level. The additional chief engineer at each Zonal PIU will serve as the Nodal Officer, Safeguards and Gender. Each Zonal PIU will be staffed with an assistant safeguards officer (ASO Environmental and Social Safeguards) who will assist PMU project officer (environment/social) in implementation of the environmental/social safeguards and GESI action plan in PIUs under its jurisdiction. Zonal PIUs will undertake internal monitoring and

supervision and record observations throughout the project period to ensure that the safeguards and mitigation measures are provided as intended.

150. The zonal level ASO will oversee safeguards implementation by the city/town level PIUs, coordinate public consultations, information disclosure, regulatory clearances and approvals, implementation of resettlement plans, EMP implementation, and grievance redressal. Key safeguard tasks and responsibilities of the zonal PIU ASO (Environment) are enumerated in **Table 16**.

151. **Town/City Level Project Implementation Unit.** The town-level PIUs shall be responsible for the quality of works executed under the project and will be guided by the zonal PIUs. The city/town PIUs will be responsible for implementation of the IEE. The town-level PIUs will be headed by a project manager (executive engineer or assistant engineer) and supported by CMSC field staff. Environment Safeguard Professional of CMSCs will assist PIUs in implementation of environmental safeguard. At each PIU, the Assistant Project Manager will be given additional responsibilities of safeguard tasks and will be designated as safeguard and safety officer (SSO). The SSO will be assisted by the social and gender specialist and environment specialist of CMSC in reviewing updated/revised IEEs, etc. They will also be responsible for coordination of field level activities related to safeguards conducted by the contractor and CMSC. Key responsibilities of the town-level environment specialist are enumerated in **Table 16**.

152. **Contractors.** The contractor will be required to update the IEE and will be responsible for providing final design (including pipe alignments) to the supervision consultant for finalization/updating of resettlement plan. The contractor shall appoint an environment, health and safety (EHS) engineer who will be responsible on a day-to-day basis for (i) ensuring implementation of EMP, (ii) coordinating with the town-level PIUs and environment specialists of project consultant teams; (iii) community liaison²⁵ consultations with interested/affected people, (iv) field-level grievance redress; and (iv) reporting.

153. The Contractor has required to submitted to RUDSICO-EAP, for review and approval, a SEMP including (i) proposed sites or locations for construction work camps, storage areas, hauling roads, lay down areas, disposal areas for solid and hazardous wastes; (ii) specific mitigation measures following the approved EMP; (iii) monitoring program per SEMP; (iv) budget for SEMP implementation. No works can commence prior to approval of SEMP.

154. A copy of the EMP or approved SEMP will be kept on-site during the construction period at all times. Non-compliance with, or any deviation from, the conditions set out in the EMP or SEMP constitutes a failure in compliance and will require corrective actions. The EARF and the IEEs specify responsibilities in EMP implementation during design, construction and O&M phases.

155. RUDSICO-EAP will ensure that bidding and contract documents include specific provision requiring Contractors to comply with: (i) all applicable labor laws and core labor standards on (a) prohibition of child labor as defined in national legislation for construction and maintenance activities; (b) equal pay for equal work of equal value regardless of gender, ethnicity, or caste and (c) elimination of forced labor; and (ii) the requirement to disseminate information on sexually

²⁵ Reasonable size social outreach team (SOT) to be appointed by contractor to facilitate community liaison, consultations and R&R implementation (including resolution of grievances). Requirement of SOT will be included in bid document.

transmitted diseases including HIV/AIDS, to employees and local communities surrounding the project sites.

Table 16: Institutional Roles and Responsibilities for Environmental Safeguards Implementation

Responsible Agency	Responsibility		
	Pre-Construction Stage	Construction Stage	Post-Construction
PMU (Project Officer; Environment),	(i) Review REA checklists and assign categorization based on ADB SPS 2009 (ii) Review and approve EIA/IEE (iii) Submit EIA/IEE to ADB for approval and disclosure in ADB website (iv) Ensure approved IEEs are disclosed in RSTDSP/PMU websites and summary posted in public areas accessible and understandable by local people. (v) Ensure environmental management plans (EMPs) are included in the bid documents and contracts (vi) Organize an orientation workshop for PMU, PIU, ULB and all staff involved in the project implementation on (a) ADB SPS, (b) Government of India national, state, and local environmental laws and regulations, (c) core labor standards, (d) OH&S, (e) EMP implementation especially spoil management, working in congested areas, public relations and ongoing consultations, grievance redress, etc. (vii) Assist in addressing any grievances brought about through the Grievance Redress Mechanism in a timely manner as per the IEEs (viii) Organize an induction course for the training of contractors preparing them on EMP implementation, environmental monitoring requirements related to mitigation measures; and taking immediate actions to remedy unexpected adverse	(i) Over-all environmental safeguards compliance of the project (iii) Monitor and ensure compliance of EMPs as well as any other environmental provisions and conditions. (i) Review monthly monitoring report (ii) Prepare and submit to ADB semi-annual monitoring reports (iv) If necessary, prepare Corrective Action Plan and ensure implementation of corrective actions to ensure no environmental impacts; (iii) Review and submit Corrective Action Plans to ADB (iv) Organize capacity building programs on environmental safeguards (iv) Coordinate with national and state level government agencies (vi) Assist in addressing any grievances brought about through the Grievance Redress Mechanism in a timely manner as per the IEEs (ix) Coordinate PIUs, consultants and contractors on mitigation measures involving the community and affected persons and ensure that environmental concerns and suggestions are incorporated and implemented	Compliance monitoring to review the environmental performance of project component, if required and as specified in EMP

Responsible Agency	Responsibility		
	Pre-Construction Stage	Construction Stage	Post-Construction
	impacts or ineffective mitigation measures found during the course of implementation. (ix) Ensure compliance with all government rules and regulations regarding site and environmental clearances as well as any other environmental requirements (x) Assist PMU, PIUs, and project NGOs to document and develop good practice construction guidelines to assist the contractors in implementing the provisions of IEE. (xi) Assist in the review of the contractors' implementation plans to ensure compliance with the IEE.		
PIU, Safeguard and Safety Officer (SSO)	(i) Ensure IEE is included in bid documents and contract agreements. Ensure cost of EMP implementation is provided. (iv) Disclose of approved EIAs/IEEs. (v) Obtain all necessary clearances, permits, consents, NOCs, etc. Ensure compliance to the provisions and conditions. (vi) EMP implementation regarding sites for disposal of wastes, camps, storage areas, quarry sites, etc. (vii) Organize an induction course for the training of contractors, preparing them on EMP implementation, environmental monitoring requirements related to mitigation measures, and on taking immediate action to remedy unexpected adverse impacts or ineffective mitigation measures found during the course of implementation.	(i) oversee day-to-day implementation of EMPs by contractors, including compliance with all government rules and regulations. (ii) take necessary action for obtaining rights of way; (iii) oversee implementation of EMPs, including environmental monitoring by contractors; (iv) take corrective actions when necessary to ensure no environmental impacts; (v) submit monthly environmental monitoring reports to PMU, (vi) conduct continuous public consultation and awareness; (vii) address any grievances brought about through the grievance redress mechanism in a timely manner as per the IEEs; and	(i) Conducting environmental monitoring, as specified in the EMP. (ii) Issuance of clearance for contractor's post-construction activities as specified in the EMP.
Consultant – 1.PMCBC-Environmental	(i) Review IEE/EMP submitted by CMSC and revise report to submit to PMU	(i) Monitor EMP implementation (ii) Assist in addressing any grievances brought about	

Responsible Agency	Responsibility		
	Pre-Construction Stage	Construction Stage	Post-Construction
Safeguard Specialist – 1 no.	(ii) Assist PMU and PIU in obtaining all necessary clearances, permits, consents, NOCs, etc. Ensure provisions and conditions are incorporated in the IEE and detailed design documents. (iii) Assist in ensuring IEE is included in bid documents and contract agreements. (iv) Assist in determining adequacy of cost for EMP implementation. (v) Assist in addressing any concern related to IEE and EMP. (vi). Conduct specific assessment requirements	through the Grievance Redress Mechanism in a timely manner as per the IEEs.	
Consultant- 2. CMSC- 2 nos. Environmental safeguards professional	(i) Update initial environmental assessment for proposed project using REA checklists and submit to PIU/PMCBC (ii) Assist in summarizing IEE and translating to language understood by local people.	Monitoring of Implementation of EMP at site by contractor Recommend corrective action measures for non-compliance by contractors Assist in the review of monitoring reports submitted by contractors (iv) Assist in the preparation of monthly monitoring reports conduct continuous public consultation and awareness;	(i) Assist in the inspection and verification of contractor's post-construction activities.
Contractors (EHS Engineer)	(i) Review the IEE and provide information about changes needed as per revised design and scope of works to ESS of PMCBC for final revision of IEE (ii) Prepare EHS plan and take approval from CMSC/PIU and Ensure EMP implementation cost is included in the methodology. (iii) Undergo EMP implementation orientation by ESS of supervision consultant prior to start of works (iv) Provide EMP implementation orientation to all workers prior to deployment to worksites (v) Seek approval for camp sites and sources of materials.	(i) Implement EMP. (ii) Implement corrective actions if necessary. (iii) Prepare and submit monitoring reports including pictures to PIU (iv) Comply with all applicable legislation, is conversant with the requirements of the EMP; (v) Brief his staff, employees, and laborer about the requirements of the EMP and provide environmental awareness training to staff, employees, and laborers; (vi) Ensure any sub-contractors/ suppliers who are utilized within the context of the contract comply with all requirements of the EMP. The Contractor will be held	(i) Ensure EMP post-construction requirements are satisfactorily complied (ii) Request certification from PIU

Responsible Agency	Responsibility		
	Pre-Construction Stage	Construction Stage	Post-Construction
	(vi) Ensure copy of IEE is available at worksites. Summary of IEE is translated to language understood by workers and posted at visible places at all times.	responsible for non-compliance on their behalf; (vii) Bear the costs of any damages/compensation resulting from non-adherence to the EMP or written site instructions; (viii) Ensure that PIU and ACM/SO are timely informed of any foreseeable activities related to EMP implementation.	

C. Capacity Building and Development

219. Executing and implementing agencies need to have a sustained capacity to manage and monitor environmental safeguards. Although specialist consultants support will be available to PMU and PIUs, it is necessary to mainstream safeguards in day-to-day working. Therefore, PMU and PIUs require capacity building measures for (i) a better understanding of the project-related environmental issues; and (ii) to strengthen their role in preparation of IEE, implementation of mitigation measures, and subsequent monitoring. Trainings and awareness workshops are included in the project with the primary focus of enabling the PMU and PIU staff to understand impact assessments and carry out environmental monitoring and implement EMPs. After participating in such activities, the participants will be able to review environmental assessments, conduct monitoring of EMPs, understand government and ADB requirements for environmental assessment, management, and monitoring (short- and long-term), and incorporate environmental features into future project designs, specifications, and tender documents and carry out necessary checks and balances during project implementation.

220. PMCBC's ESS shall assess the capabilities of the target participants, customize the training modules accordingly and provide the detailed cost.

221. Typical modules would be as follows: (i) sensitization; (ii) introduction to environment and environmental considerations in water supply and wastewater projects; (iii) review of IEEs and integration into the project detailed design; (iv) improved coordination within nodal departments; and (v) monitoring and reporting system. Specific modules customized for the available skill set will be devised after assessing the capabilities of the target participants and the requirements of the project. The contractors will be required to conduct environmental awareness and orientation of workers prior to deployment to work sites. The proposed training project, along with the frequency of sessions, is presented in Table 17.

Table 17: Capacity Building Program on EMP Implementation

Sl. No.	Description	Target Participants and Venue	Cost and Source of Funds
1	Introduction and Sensitization to Environmental Issues (1 day) - ADB Safeguards Policy Statement -EARF of RSTDSP -Government of India and Rajasthan applicable safeguard laws, regulations and policies	All staff, ULBs and consultants involved in the project At PMU, Jaipur	PMU cost

Sl. No.	Description	Target Participants and Venue	Cost and Source of Funds
	including but not limited to core labor standards, OH&S, etc. -Incorporation of EMP into the project design and contracts -Monitoring, reporting and corrective action planning		
2	Treated Effluent Reuse Concepts, Design and Management	All staff at PMU and ULBs	PMU cost
3	Sludge Reuse Concept, Design and Management	All staff at PMU and ULBs	PMU cost
4	EMP implementation (2 days) -Roles and responsibilities -OH&S planning and implementation -Wastes management (water, hazardous, solid, excess construction materials, spoils, etc.) -Working in congested areas, - Public relations - Consultations - Grievance redress -Monitoring and corrective action planning -Reporting and disclosure -Post-construction planning	All staff and consultants involved in the subproject All contractors before start of construction works At PIU	PMU cost
5	Plans and Protocols (1 day) -Construction site standard operating procedures (SOP) - Asbestos Management Plan -Heritage Impact Assessment -Biodiversity and Critical Habitat Assessment - Site-specific EMP -Traffic management plan -Spoils management plan -Waste management plan - Chance find protocol - O&M plans - Post-construction plan	All staff and consultants involved in the project All contractors before start of construction works or during mobilization stage. At PIU	PMU cost Contractors cost as compliance to contract provisions on EMP implementation
6	Experiences and best practices sharing - Experiences on EMP implementation - Issues and challenges - Best practices followed	All staff and consultants involved in the project All contractors All NGOs At PMU Jaipur	PMU Cost
7	Contractors Orientation to Workers on EMP implementation (OH&S, core labor laws, spoils management, etc.)	All workers (including manual laborers) of the contractor prior to dispatch to worksite	Contractors cost as compliance to contract provisions on EMP implementation

D. Monitoring and Reporting

222. Prior to commencement of the work, the contractor will submit a compliance report to PIU ensuring that all identified pre-construction environmental impact mitigation measures as detailed in the EMP will be undertaken. PIU with the assistance of the SO and ESS of PMCBC, consultant will review the report and thereafter PMU will allow commencement of works.

223. During construction, results from internal monitoring by the contractor will be reflected in their monthly EMP implementation reports to the PIU and ACM, CMSC. Project officer (Environment) and ACM will review and advise contractors for corrective actions if necessary. Monthly report summarizing compliance and corrective measures taken will be prepared by safeguard officer with the assistance of ACM and submitted to PMU.

224. Quarterly report shall be prepared by CMSC and PIU and submitted to PMU for review and further actions.

225. Based on monthly and quarterly reports and measurements, PMCBC will draft semi-annual report and submit PMU for their review and further submission to ADB (**Appendix c-15**). Once concurrence from the ADB is received the report will be disclosed in the Project website.

226. The PMU will submit semi-annual environmental and social safeguards monitoring reports to ADB, which will be reviewed and disclosed on ADB's website. The monitoring reports will be prepared by PMU with assistance from the PMCBC based on inputs from the PIU's safeguard officers, CMSC, contractors and NGOs, where relevant. The status of safeguard implementation, issues, and corrective actions including associated cost and schedule are to be clearly reported to ADB. The status of safeguards implementation will also be discussed at each ADB review mission and with necessary issues and agreed actions recorded in Aide Memoires. ADB will also carry out annual environmental and/or social (including gender) reviews of the Project. The outline of the semi-annual environmental monitoring report is in **Appendix c-165**. ADB's monitoring and supervision activities are carried out on an ongoing basis until a project completion report (PCR) is issued. Thus, semi-annual report, which may cover O&M of completed packages, will be submitted to ADB until PCR is issued.

227. ADB will review project performance against the project 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.

E. EMP Implementation Cost

228. Most of the mitigation measures require the contractors to adopt good site practice. Contractor being bound to adopt several mitigation measures through various legal obligations (e.g. BOCW Act, Labour acts etc.) such as use of PPEs, provide toilets and potable drinking water, labour camp management, safety at work sites, safety in equipment operations etc. which should be part of their normal procedures; are not included in EMP cost of this project. Mitigation that is the responsibility of PIU/ULB will be provided as part of their management of the project, so this also does not need to be duplicated here. Cost for the capacity building program is included as part of the project. Regardless of these, project specific costs of mitigation by the construction contractors are included in the EMP budget for the civil works are enumerated here (**Table 18**).

Table 18: Cost Estimates to Implement the EMP

	Particulars	Stages	Unit	Total Number	Rate (INR)	Cost (INR)	Costs Covered By
A.	Mitigation Measures						
1	Compensatory plantation measures*	Construction	per tree	30	4050	12,1500	Civil works cost

	Particulars	Stages	Unit	Total Number	Rate (INR)	Cost (INR)	Costs Covered By
	Subtotal (A)					12,1500	
B.	Monitoring Measures						
1	Air quality monitoring**	Pre-construction and Construction (quarterly)	per sample	24	4920	118,080	Civil works cost
2	Noise levels monitoring**	Pre-construction and Construction (quarterly)	Per sample	24	1980	47,520	Civil works cost
3	Surface water quality**	Pre-construction and Construction (quarterly)	per sample	24	6720	161,280	Civil works cost
	Subtotal (B)					326880	
C.	Capacity Building						
1.	Introduction and sensitization to environment issues	Pre-construction	lump sum			100,000	PMU
2.	EMP implementation	Construction	lump sum			50,000	PMU
3.	Plans and Protocols	Construction	lump sum			25,000	PMU
			lump sum			25,000	Civil works cost
4.	Experiences and best practices sharing	Construction/ Post-Construction	lump sum			100,000	PMU
5.	Contractors Orientation to Workers on EMP implementation	Prior to dispatch to worksite	Lump sum			25,000	Civil works cost
	Subtotal (C)					325,000	
D	Civil Works						
1	Water Sprinkling for dust suppression	Construction	KL	1000	111	111,000	Civil works cost
2	Barricading						
	Providing and fixing Barricading using 40 mm dia M.S. pipe vertical and horizontal posts	Construction	m	15902	48.1	764886	Civil works cost
	Sub Total (D)					875,886	
E	Grievance Redressed Mechanism and				Lump sum	350,000	Civil works cost

	Particulars	Stages	Unit	Total Number	Rate (INR)	Cost (INR)	Costs Covered By
	other legal requirements						
	Sub Total (E)					350,000	
	Total (A+B+C+D+E)				INR	1,999,266	

* In preliminary design about 8 trees may be required to cut. During reconnaissance survey by contractor required to confirm exact number of tree cutting. Tree cutting requirement for proposed drainage works can be decided only after confirmatory survey of full length of alignment by contractor. In this stage higher side of tree cutting numbers are taken as 30 trees. As per RUDSICO-EAP policy; compensatory plantation in the ratio of 1:3 is to be followed during construction works. Therefore 30 numbers of trees are taken as compensatory plantation.

Summary of EMP Cost incurred by Institution :

Contractor Cost	- INR 1,724,266/-
PMU Cost	- INR 2,75,000/-
Total	- INR 1,999,266/-

(In Words: Rupees Nineteen Lacs Ninety Nine Thousand Two Hundred and Sixty Six only)

X. CONCLUSION AND RECOMMENDATION

229. The process described in this document has assessed the environmental impacts of all elements of the Bhawani Mandi Drainage subproject. All potential impacts were identified in relation to pre-construction, construction, and operation phases. Planning principles and design considerations have been reviewed and incorporated into the site planning and design process wherever possible; thus, environmental impacts as being due to the project design or location were not significant. During the construction phase, impacts mainly arise from the construction dust and noise, the need to dispose of large quantities of waste soil due to excavation of proposed drains; and from the disturbance of residents, businesses, traffic and important buildings by the construction work. The social impacts (access disruptions) due to construction activities are unavoidable, as the residential and commercial establishments exist along the roads where drains will be constructed. A resettlement plan has been developed in accordance with ADB SPS 2009 and Government of India laws and regulations.

230. Bhawani Mandi initially had a natural system of drainage and governed by the physiographic profile. Over the years, the population grew and utilizing the available open space more intensely, which has changed the natural drainage physiographic system. All the existing drains are in a bad condition. Most of the drains are open and become a health hazards to the neighbouring population especially in rainy season. In the newly developed areas, there are inadequate drainage facilities, drains are unlined hence water logging in rainy season is observed more frequently. Therefore, construction of drainage in these areas is urgently needed.

231. The subproject is formulated to address gaps in Drainage infrastructure in a holistic and integrated manner. The project components include improvements in drainage infrastructures of Bhawani Mandi to discharge the storm water to Piplaad River to improve the drainage system of the town and to prevent the stagnant water of both the drains. Bhawani Mandi storm water drainage works is one of the subprojects selected under additional financing and key storm water drainage components are : (i) re-construction and upgradation of existing nine numbers of drains having a total length of 7.95 km (covered drain) of which 4.599 km is proposed in RCC while

3.352 km is of PCC drain and (ii) new construction of 13 numbers of covered and open drains in newly developed areas of the town having total length of 5.035 km of which 2.068 km is RCC drain and 2.967 km is proposed in PCC.

156. Bhawani Mandi has both urban areas surrounded by land that was converted for agricultural use many years ago. There is no forest block or forest area in or around the subproject site, while there is no protected area (National Park or Wild life sanctuary) in and near vicinity of project area. Two nearest Notified protected sites Darrah Wildlife Sanctuary and Mukundhara Tiger Reserve are situated in Kota district are located at an aerial distance of about 40 and 42 Km respectively from project coverage area of Bhawani Mandi. There is no State protected or ASI protected monument in Bhawani Mandi

157. Screening of project areas based on Integrated Biodiversity Assessment Tool (IBAT) and IBAT proximity area report shows that there is no protected or key biodiversity area within 10 km of Bhawani Mandi. One Key Biodiversity area (Gandhi Sagar Wildlife Sanctuary and Reservoir) is within 50 km radius of the project town and it is located at 15km aerial distance from the project area. As per preliminary survey, it is accessed that 8 trees (namely neem, babul, amla) may be affected due to proposed drain works along proposed new drain no. 7 near node 109 in Anant Nagar route. There are also few shrubs and small trees (having less than 30 cm girth) on vacant lands/ROW on the alignment of proposed drains, which grow commonly on vacant lands and therefore not considered in preliminary survey. As per RUDSICO-EAP policy compensatory plantation in the ratio of 1:3 will be required therefore, total 30 tree plantations are being suggested for compensatory plantations.

232. The potential adverse environmental impacts are mainly related to the construction period, which can be minimized by the mitigation measures and environmentally sound engineering and construction practices.

233. Anticipated impacts of proposed drainage systems during operation and maintenance will be related to check and repair of blocks, overflows and leakages in both drains. Regular cleaning of drains and safe disposal of removed silt and solid waste from drains are major area of concern during operation phase and mitigation plans are required for same.

234. The public participation processes undertaken during project design ensured stakeholders are engaged during the preparation of the IEE. The planned information disclosure measures and process for carrying out consultation with affected people will facilitate their participation during implementation. The project's grievance redress mechanism will provide the citizens with a platform for redressing grievances, and describes the channels, timeframe, and mechanisms for resolving complaints about environmental performance.

235. **The Environmental Management Plan** proposed in the project includes mitigation measures for identified impacts, training and capacity building activities, a monitoring plan to ensure that the environmental standards are maintained throughout the project construction period and a reporting plan to ensure that the project is implemented as per environmentally sound engineering and construction practices. The budgetary provision for mitigating the anticipated impacts by proposed subproject component is made in the project for effective implementation of the EMP Plan. Total estimated cost for EMP implementation is approximately Rs.1,999,266/- .

236. The EMP will assist the PMU, PIU, Consultants and contractors in mitigating the

environmental impacts, and guide them in the environmentally sound execution of the proposed project. The EMP will also ensure efficient lines of communication between PIU/ULB, PMU, consultants and contractor. A copy of the EMP shall be kept on-site during the construction period at all times. The EMP shall be made binding on all contractors operating on the site, and will be included in the contractual clauses. Non-compliance with, or any deviation from, the conditions set out in this document shall constitute a failure in compliance.

158. The project will benefit the general public by contributing to the long-term improvement of drainage system and community liveability in Bhawani Mandi. The citizens of the Bhawani Mandi town will be the major beneficiaries of the improved drainage system, as the unsightly and unhygienic pools of standing wastewater will gradually disappear and should not recur in future.

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

237. **Recommendations.** The following are recommendations applicable to the subproject to ensure no significant impacts:

- Obtain all statutory clearances at the earliest time possible and ensure conditions/provisions are incorporated in the detailed design;
- Include this IEE in bid and contract documents;
- Update/revise this IEE based on detailed design and/or if there are unanticipated impacts, change in scope, alignment, or location;
- Conduct safeguards induction to the contractor after award of contract;
- Ensure contractor appointed qualified environment, health and safety (EHS) officers prior to start of works;
- Timely disclosure of information and establishment of GRM;
- Involvement of contractors, including subcontractors, in first level GRM;
- Strictly supervise EMP implementation;
- Continuous consultations with stakeholders;
- Urban local body will ensure that no industrial wastewater and sewerage enter in to proposed drains
- Documentation and reporting on a regular basis as indicated in the IEE.

Appendix 1: REA Check list

Instructions:

The project team completes this checklist to support the environmental classification of a project. It is to be attached to the environmental categorization form and submitted to the Environment and Safeguards Division (RSES) for endorsement by the Director, RSES and for approval by the Chief Compliance Officer. This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB checklists and handbooks on (i) involuntary resettlement, (ii) indigenous peoples planning, (iii) poverty reduction, (iv) participation, and (v) gender and development. 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/Rajasthan Secondary Towns Development Investment Program (RSTDP)/Bhawani Mandi Drainage subproject, Distt. Jhalawar, Rajasthan
Sector Division: Urban Development

REA Checklist- Drainage

SCREENING QUESTIONS	Yes	No	REMARKS
A. Project Siting Is the project area...			
Densely populated?	√		Subproject activities are scattered to entire town including the densely populated areas.
Heavy with development activities?	√		Bhawani Mandi is a developed town with continuous urban expansion, surrounding area is mostly agricultural, business and service are the common occupations
Adjacent to or within any environmentally sensitive areas?		√	There are no environmental sensitive areas near the proposed sites.
Cultural heritage site		√	There are no cultural heritage site in Bhawani Mandi
Protected Area		√	
Wetland		√	
Mangrove		√	
Estuarine		√	
Buffer zone of protected area		√	
Special area for protecting biodiversity		√	
Bay		√	
B. Potential Environmental Impacts Will the Project cause...			
Impacts on the sustainability of associated sanitation and solid waste disposal systems and their interactions with other urban services.		√	No such impacts on existing sanitation and solid waste disposal systems

SCREENING QUESTIONS	Yes	No	REMARKS
Deterioration of surrounding environmental conditions due to rapid urban population growth, commercial and industrial activity, and increased waste generation to the point that both manmade and natural systems are overloaded and the capacities to manage these systems are overwhelmed?		√	No such impact is anticipated
Degradation of land and ecosystems (e.g. loss of wetlands and wild lands, coastal zones, watersheds and forests)?		√	No impacts on land and ecosystem is anticipated
dislocation or involuntary resettlement of people		√	Project does not involve land acquisition / involuntary resettlement /displacement. During the drains construction, particularly in narrow streets there may be temporary disruption to household and there will also be temporary loss of livelihood to roadside vendors.
Disproportionate impacts on the poor, women and children, Indigenous Peoples or other vulnerable groups?		√	No such impact on vulnerable groups
Degradation of cultural property, and loss of cultural heritage and tourism revenues?		√	There will be no impact on any cultural property, heritage and tourism revenues
Occupation of low-lying lands, floodplains, and steep hillsides by squatters and low-income groups, and their exposure to increased health hazards and risks due to polluting industries?		√	No such impact is anticipated
Water resource problems (e.g. depletion/degradation of available water supply, deterioration for surface and ground water quality, and pollution of receiving waters?		√	No such impact is anticipated rather proposed improvements of both drains will improve the environmental conditions of the city
Air pollution due to urban emissions?		√	No such impact is anticipated
Risks and vulnerabilities related to occupational health and safety due to physical, chemical, and biological hazards during project construction and operation?	√		Occupational health and safety risks are negligible due to chemical and biological hazards during construction in sewerage works, physical hazards may arise due to safety risks during construction works. During operation of drainage system physical and biological hazards may cause health and safety risks to workers for which mitigation measures will be required
Road blocking and temporary flooding due to land excavation during rainy season?	√		Temporary flooding may occur in excavated trenches during rainy season and mitigation measures will be required to overcome flooding due to construction works
Noise and dust from construction activities?	√		Noise and dust problem may occur during construction activities

SCREENING QUESTIONS	Yes	No	REMARKS
Traffic disturbances due to construction material transport and wastes?	√		Traffic disturbances may occur during construction works and traffic management plan will be required
Temporary silt runoff due to construction?	√		Bhawani Mandi is not a dry area and rainfall is to a tune of 800-900 mm/year.
Water depletion and/or degradation?		√	No such impact is anticipated
Overpaying of ground water, leading to land subsidence, lowered ground water table, and salinization?		√	No such impact is anticipated
Contamination of surface and ground waters due to sludge disposal on land?		√	Silt and solid waste emerging from cleaning of drains will create such problem if not addressed
Pollution of receiving waters resulting in amenity losses, fisheries and marine resource depletion, and health problems?		√	No such impact is anticipated
Large population influx during project construction and operation that causes increased burden on social infrastructure (such as sanitation system)?		√	Most of the unskilled workers will be hired locally, some of skilled workers will be brought from outside but numbers will not so large to have impacts on social infrastructure and services.
Social conflicts if workers from other regions or countries are hired?		√	The contractor will be utilizing the local labour force as far as possible; in case if it is necessary, labour camps and facilities will be provided appropriately. No conflicts envisaged
Risks to community health and safety due to the transport, storage, and use and/or disposal of materials such as explosives, fuel and other chemicals during construction and operation?		√	No explosives shall be used in project. Fuel and other chemicals will be used in very less quantities which will not have significant impact on community health and safety. Safe handling of fuels and chemicals will be ensured by contractor.
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?	√		Community safety risk may be there during construction during excavation for pipe laying, equipment and vehicle operation, construction of STP etc. for which mitigation measures will be required by contractor

Checklist for Preliminary Climate Risk Screening

Country/Project Title: India/Rajasthan Secondary Towns Development Investment Program (RSTDP), Bhawani Mandi Drainage subproject, District - Jhalawar, Rajasthan

Sector: Urban Development

Subsector: Sewerage and Drainage

Division/Department: SARD/SAUW

Screening Questions		Score	Remarks ²⁶
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	No such issue may affect the project
	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	No such issue may affect the project
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	No such issues may affect the project
	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 such issue may affect the project
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	No problem will envisaged in future which likely affect the performance of project output

Options for answers and corresponding score are provided below:

Response	Score
Not Likely	0
Likely	1
Very Likely	2

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

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

Other Comments: The proposed subproject activity involves construction of two new STPs, CWRs and pump houses along with water supply and sewerage networks and the anticipated environmental impacts are very marginal and the construction activity does not impose any threat to the existing climatic conditions.

²⁶ 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.

Appendix 2: List of ASI and State Protected Monuments in Jhalawar District

A. List of ASI Protected Monuments in Jhalawar District and distance from project area.

S.N. in ASI List	Monument's name	Location	Town	Distance from Bhawani Mandi Project Area
1	Buddhist Caves and Pillar	Binnayaga	Binnayaga	36km
2	Caves of Niranjani etc.	Binnayaga	Binnayaga	36km
3	Ancient Ruines	Dalsagarh/Gangadhar	Dalsagarh/Gangadhar	55km
4	Ancient Ruines	Dudhaliya	Dudhaliya	60km
5	Buddhist Caves	Hathigor	Hathigor	30km
6	Old Temple Near Chandrabhaga	Jhalarpatan	Jhalarpatan	38km
7	Buddhist Caves, Pillars, Idols	Kolvi	Kolvi	38km

B. List of State Protected Monuments in Jhalawar and distance from Project area

S.No. in State List	Monuments names	Location	Distance from Bhawani Mandi Project Area
226	Fort	Gagron	43km
227	Dargah Meethe Sahab	Gagron	43 km
228	Padma Nabhi/Sun Temple	Jhalara Patan	38 Km
229	Antiques of Dehalanpur	Dehalanpur, Aklera	68 Km/75 km
230	Antiques of Mau Borda	Mau Borda, Khanpur	55 Km/65 Km
231	Chhaneri Paneri Temple	Jhalarapatan	38 Km
232	Maadan Vilas	Jhalarapatan	38 Km
234	Garh Palace	Jhalawar	39 Km

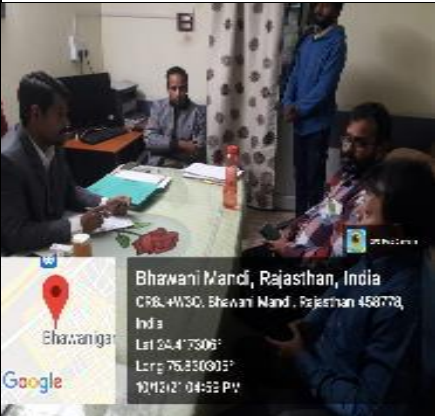
Appendix 3: Stakeholders Consultations Conducted During Project Preparation

A. Consultations during Social and Environmental Impact Assessment

Location/ Date	participants	Topic Discussed	Outcome	Photos
10.12.2021 Near Sarkari Kuwa, Bhanwani Mandi	Total- 10 Male-05 Female-05	Awareness of the project-including Project Coverage area. Present condition of Sewerage, Drainage and Solid Waste facilities and problem in the town. In what way people may associate with the project and can improve Health & Hygiene conditions in the town	People are not aware about the subproject proposed in the town. People are concerned about the poor sewerage and drainage conditions in the town. Nearby households want to engage with the project as a job opportunity and want to become beneficiaries under the project. Issues related to drainage and sewerage are the major problems in this area and solid waste collection facility is also poor in the area.	
09.12.2021 Near Railway Station, Bhanwani Mandi	Total- 09 Male-06 Female-03	Project components under RSTDSP and the benefits to the Community. Present status and access of waste water and drainage facilities in the town and other concerned issues and challenges. Process of logging grievance and its mechanism under the project.	Drainage work are proposed in the area and it was informed by nearby habitation that there is no structured waste water and drainage facilities in the town and water logging and choking is general problem in low lying areas of the town. Process of grievance mechanism was also briefed with participants for lodging complaints. Participants are happy with proposed project and are willing to pay for improved wastewater and drainage services in the town.	

Location/ Date	participants	Topic Discussed	Outcome	Photos
10.12.2021 Near Bus Stand, Bhanwani Mandi	Total- 09 Male-05 Female-04	Awareness of the project-including Project Coverage area. Present condition of Sewerage, Drainage and Solid Waste facilities and problem in the town. In what way people may associate with the project and can improve Health & Hygiene conditions in the town	People are not aware about the subproject proposed in the town. People are concerned about the poor sewerage and drainage conditions in the town. Nearby households want to engage with the project as a job opportunity and want to become beneficiaries under the project. Issues related to drainage and sewerage are the major problems in this area and solid waste collection facility is also poor in the area.	
10.12.2021 Annantviha r/Bhim Nagar, Bhanwani Mandi	Total- 11 Male-06 Female-05	Project components under RSTDSP and the benefits to the Community. Present status and access of wastewater and drainage facilities in the town and other concerned issues and challenges. Process of logging grievance and its mechanism under the project.	Drainage work and wastewater works are proposed in the area and it was informed by nearby habitation that there is no structured waste water and drainage facilities in the town and water logging and choking is general problem in low laying areas of the town. Process of grievance mechanism was also briefed with participants for lodging complaints. Participants are happy with proposed project	
10.12.2021 Near Bhim Nagar, Bhanwani Mandi	Total- 12 Male-09 Female-03	Project components under RSTDSP and the benefits to the Community. Present status and access of wastewater and drainage facilities in the town and other concerned issues and challenges. Process of logging grievance and its mechanism under the project.	Drainage work and wastewater works are proposed in the area and it was informed by nearby habitation that there is no structured waste water and drainage facilities in the town and water logging and choking is general problem in low laying areas of the town. Process of grievance mechanism was also briefed with participants for lodging complaints.	

Location/ Date	participants	Topic Discussed	Outcome	Photos
			Participants are happy with proposed project	
09.12.2021 RTML, Pachpahad Road, Bhanwani Mandi	Total- 09 Male-06 Female-03	Awareness of the project-including Project Coverage area. Present condition of Sewerage, Drainage and Solid Waste facilities and problem in the town. In what way people may associate with the project and can improve Health & Hygiene conditions in the town	People are not aware about the subproject proposed in the town. People are concerned about the poor sewerage and drainage conditions in the town. Nearby households want to engage with the project as a job opportunity and want to become beneficiaries under the project. Issues related to drainage and sewerage are the major problems in this area and solid waste collection facility is also poor in the area.	
09.12.2021 Near Pachpahad Road, Bhanwani Mandi	Total- 10 Male-07 Female-03	Project components under RSTDSP and the benefits to the Community. Present status and access of wastewater and drainage facilities in the town and other concerned issues and challenges. Process of logging grievance and its mechanism under the project.	Drainage work and wastewater works are proposed in the area and it was informed by nearby habitation that there is no structured waste water and drainage facilities in the town and water logging and choking is general problem in low laying areas of the town. Process of grievance mechanism was also briefed with participants for lodging complaints. Participants are happy with proposed.	

Location/ Date	participants	Topic Discussed	Outcome	Photos
09.12.2021 Nagar Palika, Bhanwani Mandi	Total- 06 Male-06 Female-00	Proposed drainage facilities and availability of land, requirement of No objection certificates (NOCs) etc.	Meeting with Nagar Parishad A. en, J. en, ward, Boardors and officials and discussion were done about proposed project under phase-4. Nagar Parishad officers and officials assured of their full cooperation with RUIDP/RSTDSP during planning and implementation of the project	
09.12.2021 PHED and Nagar Palika, Bhanwani Mandi	Total- 04 Male-04 Female-00	Proposed drainage facilities and availability of land, requirement of No objection certificates (NOCs) etc	Meeting with Nagar Palika Chairperson, and officials and discussion were done about proposed project under phase-4. Chairman and other Nagar Palika officers assured of their full cooperation with RUIDP/RSTDSP during planning and implementation of the project	

List of Participants

Rajasthan Secondary Town Development Sector Project (RSTDSP-Ph-IV)
Consultations with Stakeholders

Project Town: Bhawani mand Name of Project: Drainage
Date: 09/12/21 Place of Consultation: पंचायत

Attendance Sheet

S.N.	Name	Occupation	Mobile Number	Signature
1	मनीष मेहता	EO.	9664225197	
2	प.स. मेहता	JEN	7970052613	
3	कुलदीप सिंह	Apurva Gaudh	8058898908	
4	नासीर हुसैन	सहायक	9650175186	
5	संजीव गुप्ता	सहायक	9602408289	
6				
7				

TRANSCRIPT

LOCATION: PACHPAD
DATE – 10.12.2022
Key topics discussed - present status of Drainage work system and works proposed under phase-4 and its advantages

S.NO	NAME	DESIGNATION	MOBILE NO.	SIGNATURE
1	MANISH MEENA	EO	9664225197	
2	P.C.MEENA	JEN	7970052613	
3	KULDEEP SINGH	OFFICE STAFF	8058898908	
4	NASIR HUSAIN		69650175186	
5	SANJEEV GPUTA		9602408289	

Rajasthan Secondary Town Development Sector Project (RSTDSP-Ph-IV)
Consultations with Stakeholders

Project Town: Bhawani mand Name of Project: Drainage
Date: 10/12/21 Place of Consultation: Sarkari kua se meena, Gujar drain

Attendance Sheet

S.N.	Name	Occupation	Mobile Number	Signature
1	गोविंद कुमार	ईओ	9887727363	
2	अनिल	ईएचओ	7877894598	
3	सिद्धार्थ	ईएचओ	2239387441	
4				
5				

TRANSCRIPT

LOCATION: SARKARI KUA SE MEENA, GUJAR DRAIN
DATE – 10.12.2022

Key topics discussed - present status of Drainage work system and works proposed under phase-4 and its advantages			
S.NO	NAME	MOBILE NO.	SIGNATURE
1	GOVIND KUMAR	9887727363	
2	MANOJ	7877894598	
3	SHIVRAJ	8239287441	

Rajasthan Secondary Town Development Sector Project (RSTDSP-Ph-IV)
Consultations with Stakeholders

Project Town: Ahmednagar Name of Project: Drainage
Date: 09.12.2021 Place of Consultation: Railway Station

Attendance Sheet

S.N.	Name	Occupation	Mobile Number	Signature
1	मनिष शर्मा	Shop	9929756071	मनिष शर्मा
2	पंकज कुमार	Shop	9509531833	पंकज
3	चंद्रेश शर्मा	Shop	8614678053	चंद्रेश
4	महेश शर्मा	Shop	9928100495	महेश
5	नरेश शर्मा	House	9166929094	नरेश
6	अतीफ खान	Shakeshipping	8890376072	अतीफ खान
7	विमल कुमार	Shop	9799104189	विमल
8	विमल कुमार	Shop	9882279119	विमल
9	मिताली गुप्ता	Artist	9461786754	मिताली
10	हर्ष गुप्ता	Falodi	9887244818	हर्ष गुप्ता
11	पुनर्जीवन	Shop	9928150094	पुनर्जीवन
12	अशोक जैन	Shree Narayan Enterprises	9887456945	अशोक
13	जुहा	Teacher	9414369062	जुहा
14	विनीत शर्मा	Self-employed	9694128840	विनीत
15	विमल कासा	Self-employed	8720809329	विमल
16	अशोक अली	Shopkeeper	8058035281	अशोक
17	शुभराज	Shop	9660011553	शुभराज
18	हर्ष	Shop Keeper	7073575575	हर्ष
19				

TRANSCRIPT

LOCATION: RAILWAY STATION

DATE - 09.12.2021

Key topics discussed - present status of Drainage work system and works proposed under phase-4 and its advantages

S.NO	NAME	MOBILE NO.	SIGNATURE
1	MANISH SHARMA	9929756071	
2	PANKAJ KUMAR	9509531833	
3	CHANDRESH	8614678053	
4	MAHESH SHARMA	9928100495	
5	NARENDRA	9166929094	
6	AATIF KHAN	8890376072	

7	VISHANU KUMAR	9799104189	
8	DILIP GUPTA	9887227949	
9	MITALI GUPTA	9461786754	
10	HARSH GUPTA	9887244818	
11	PRAKASH JAIN	9928150094	
12	ASHOK JAIN	9887456945	
13	HARIRAM	9414569062	
14	VINIT SHARMA	9694128840	
15	VIMAL KALA	8720809329	
16	SAJID ALI	8058035231	
17	MUSTHAFA	9660011553	
18	HEMANT	7073575575	

Rajasthan Secondary Town Development Sector Project (RSTDSP-Ph-IV)
Consultations with Stakeholders

Project Town: Bhawani, Mo-Ja Name of Project: Drainage Project
Date: 10/12/2022 Place of Consultation: R.T. Road to Rly. Station Pachwad Road

Attendance Sheet

S.N.	Name	Occupation	Mobile Number	Signature
1	दुर्गा शंकर	डिप्टी	8230 331018	दुर्गा शंकर
2	निर्मल जयसवाल	डिप्टी	9001401119	निर्मल
3	विनोद कुमार	डिप्टी	9414569156	विनोद
4	प्राकाश	डिप्टी	9887051429	प्राकाश
5	गुड्डू जयसवाल	डिप्टी	9414652444	गुड्डू
6	विजय पोवाल	डिप्टी	9269544002	विजय
7	राकेश पोवाल	डिप्टी	8769562675	राकेश
8	रमेश शंकर	डिप्टी	723131	रमेश
9	विनोद कुमार	डिप्टी	9660806660	विनोद
10	निर्मल जयसवाल	डिप्टी	9928150094	निर्मल
11	विनोद कुमार	डिप्टी	222 870	विनोद
12	गुड्डू जयसवाल	डिप्टी	882048046	गुड्डू
13	विजय पोवाल	डिप्टी	9785018144	विजय
14	राकेश पोवाल	डिप्टी	9785267504	राकेश
15	गुड्डू जयसवाल	डिप्टी	9414651433	गुड्डू
16	विजय पोवाल	डिप्टी	9799182185	विजय
17	राकेश पोवाल	डिप्टी	999917796	राकेश
18	गुड्डू जयसवाल	डिप्टी	9414420791	गुड्डू
19	विजय पोवाल	डिप्टी	9214771672	विजय
20	राकेश पोवाल	डिप्टी	8058283277	राकेश

TRANSCRIPT

LOCATION: RTM ROAD TO RAILWAY STATION PACHWAD ROAD			
DATE – 10.12.2022			
Key topics discussed - present status of Drainage work system and works proposed under phase-4 and its advantages			
S.NO	NAME	MOBILE NO.	SIGNATURE
1	DURGA SHANKAR	8290931018	
2	NIRMAL JAYSWAL	9001401119	
3	VINOD KUMAR	9414569156	
4	PRAKASH	9887051429	
5	GUDDU JAYSWAL	9414652444	
6	VIJAY PORWAL	9269544002	
7	RAKESH PORWAL	8769562675	

8	MARDUL GUPTA	7891511585	
9	MAHENDRA KUMAR	9660806440	
10	NIRBHAY SINGH	9928384048	
11	TIKAM SAIN	222876	
12	MUKESH KUMAR	8890483465	
13	MANGI LAL	9785016144	
14	MOHHAMAD HABIB	9785367504	
15	PREMCHAND BATHORE	9414651439	
16	JAGAT KISHORE	9799982185	
17	SHJUBHAM	9928977726	
18	MANOJ JAIN	9414420791	
19	RAJESH	9214871672	
20	KRISHANKANT	8058943277	

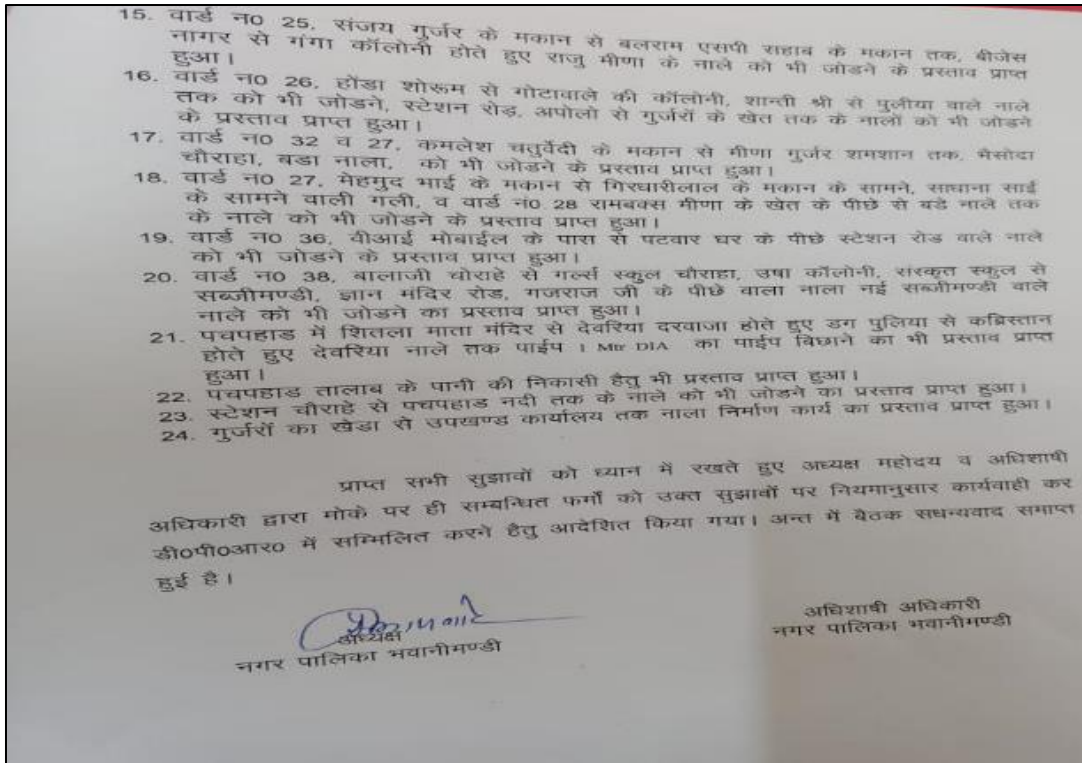
B. MINUTES OF MEEINGS OF CITY LEVEL COMMITTEE (CLC) MEETING

कार्यालय नगर पालिका भवानीमण्डी, जिला-झालावाड (राज0)

:- बैठक कार्यवाही विवरण :-

माननीय मुख्यमंत्री महोदय, की बजट घोषणा के अन्तर्गत भवानीमण्डी में ड्रेनेज एवं एफ.एस.एस.एम डीपीआर का कार्य करवाया जाना प्रस्तावित है। जिसके क्रम में पालिका द्वारा नियमानुसार निविदा आमंत्रित कर डीपीआर तैयार करवाई गई। श्रीमान् जिला कलेक्टर महोदय के निर्देशानुसार FSTP तथा Drainage System की DPR पर सुझाव हेतु नगरपालिका स्तर पर श्रीमान् अध्यक्ष महोदय, की अध्यक्षता में दिनांक 10.12.2021 को बैठक आयोजित की गई जिसमें निम्नांकित जनप्रतिनिधियों से निम्नानुसार सुझाव प्राप्त हुये।

1. वार्ड न0 04 में घांसीलाल कामरेड से हरिजन मोहल्ले तक नाला को कल्याण पुरा तक बाढयाजाने हैतु प्रस्ताव प्राप्त हुआ।
2. वार्ड न0 05 नरसिंह पुरा के मकान से तालाब व तहसील रोड, बाबा चौराहा से तहसील चौराहा, बाबा रामदेव मंदिर से तहसील चौराहे तक, ब्रहमपुरी मोहल्ले से खारी कुईया तक के नालों को भी जोडने के प्रस्ताव प्राप्त हुआ।
3. वार्ड न0 08 कुम्हार मोहल्ले से माताजी मंदिर के पीछे का नाला, माली मोहल्ले से अंजुमन तक के नालों को भी जोडने के प्रस्ताव प्राप्त हुआ।
4. वार्ड न0 06, नाकोडा कोलोनी व रेल्वे लाईन से हरिओम हॉस्पिटल के सामने के नालों को भी जोडने के प्रस्ताव प्राप्त हुआ।
5. वार्ड न0 08, शीतला माता मंदिर के सामने वाला नाला, बालाजी मंदिर के सामने, और शिवालय के पीछे के नालों को भी जोडने के प्रस्ताव प्राप्त हुआ।
6. वार्ड न0 15, कविता होटल, इन्द्रा कॉलोनी, बतुल भाई की फैक्ट्री के सामने नालों को भी जोडने के प्रस्ताव प्राप्त हुआ।
7. वार्ड न0 10, प्राथमिक स्वास्थ्य केन्द्र के सामने के सामने नालों को भी जोडने के प्रस्ताव प्राप्त हुआ।
8. वार्ड न0 11 मेहर मोहल्ला, भंवरलाल मेहर की बागर से सालगराम के घर तक, राजाराम के मकान से मदरसा तक नालों को भी जोडने के प्रस्ताव प्राप्त हुआ।
9. वार्ड न0 12 व 13 भैसोदा दरवाजे से मुक्तीधाम, फकरु चाचा जी के घर से मुक्तीधाम तक नालों को भी जोडने के प्रस्ताव प्राप्त हुआ।
10. वार्ड न0 16, शिव नगर कॉलोनी, अनिल कुमावत से प्रमोद के मकान, श्याम सुन्दर वेल्डिंग वाले के पास, गोलनियां धर्मशाला से जवाहर कॉलोनी, आश्रय स्थल के सामने का नाला, खण्डेलवाल कोचिंग के पीछे, महादेव मंदिर के सामने के नालों को भी जोडने के प्रस्ताव प्राप्त हुआ।
11. वार्ड न0 19, तुलसीराम के सामने से पंचायत समिति, आईएचएसडीपी कॉलोनी का नाला, विवेकानन्द सर्किल से जवाहर कॉलेनी नाले तक के नालों को भी जोडने के प्रस्ताव प्राप्त हुआ।
12. वार्ड न0 22, एल0आई0सी0 के दोनो और, फरीद भाई चौधरी के घर के पीछे से एल0आई0सी0 तक के नालों को भी जोडने के प्रस्ताव प्राप्त हुआ।
13. वार्ड न0 23, शमशान से बडे नाले तक, मैला मैदान से गोतम नगर तक, अशोक पंडत से मुकेश मीणा के मकान तक के नालों को भी जोडने के प्रस्ताव प्राप्त हुआ।
14. वार्ड न0 17, पावर हाउस से रामठी रोड तक, पावर हाउस से बडा नाले तक, मकान तक के नालों को भी जोडने के प्रस्ताव प्राप्त हुआ।



Transcript

A City Level Committee (CLC) meeting was held on 10.12.2021 regarding proposed RUIDP Phase IV subproject components of Faecal Sludge Treatment Plant (FSTP) and Storm Water Drainage works of Bhawani Mandi under the Chairmanship of Chairman of Municipal Board in the meeting hall at Municipal Board, Bhawani Mandi. During the meeting, a detailed discussion was held on different project related components and various suggestions for planning and implementation were received by government officials and ward Boardors. Chairman, Municipal Board and Executive officer, Bhawani Mandi suggested to concerned firms for take -up the suggestions in Detail Project Reports (DPR). The meeting was ended with a vote of thanks by chairperson of Municipal Board, Bhawani Mandi.

**PHOTOGRAPHS AND LIST OF PARTICIPANTS IN CITY LEVEL COMMITTEE
(CLC) MEETING**



कार्यालय नगर पालिका भवानीमण्डी जिला झालावाड (राज0)

आज दिनांक 10/12/2021 को कार्यालय नगर पालिका भवानीमण्डी में FSTP तथा Drainage System की DPR पर सुझाव हेतु बैठक आयोजित की गई जिसमें उपस्थित जनप्रतिनिधी/अधिकारी/कर्मचारी का विवरण

क्र.सं.	नाम अधिकारी/कर्मचारी/ जनप्रतिनिधी	पद	हस्ताक्षर
1	के.ए.टी.के.ए.टी.	चेयरमैन	के.ए.टी.के.ए.टी.
2	अनिल वर्मा	उपचेयरमैन	अनिल वर्मा
3	मनीष मीणा	E.O. & M.	मनीष मीणा
4	म.रा. मीणा	उप	म.रा. मीणा
5	अमर कुमार शर्मा	इंजीनियर	अमर कुमार शर्मा
6	विजय कुमार	पार्षद	विजय कुमार
7	अविनाश	पार्षद	अविनाश
8	मेहनू सिंह	पार्षद	मेहनू सिंह
9	अमित पादनी	पार्षद	अमित पादनी
10	प्रदीप जैन	पार्षद	प्रदीप जैन
11	सुगना मुखरि	पार्षद	सुगना मुखरि
12	विजय कुमार	पार्षद	विजय कुमार
13	अरुण कुमार	पार्षद	अरुण कुमार
14	दीन मेहरा	पार्षद	दीन मेहरा
15	हरीश रावटे	पार्षद	हरीश रावटे
16	शशील अंसारी	पार्षद	शशील अंसारी
17	Alchewu Bechu	पार्षद	Alchewu Bechu

18	अमीर चन्द	पार्षद	उदयजी मह
19	विजयशंकर	पार्षद	वि
20	R. RAHUL BOHRA	member	वि
21	राजेश कुमार	पार्षद	वि
22	अशोक कुमार	नगर निगम	वि
23	पुष्करान्त जेठ	पार्षद	वि
24	केलेश (जजावर)	पार्षद	वि
25	मनमोहन सिंह	पार्षद	वि
26	लालिच गुमान	पार्षद	वि
27	मुकेश (माली)	पार्षद	वि
28	राजकुमार गुप्ता	पार्षद	वि
29	राहुल मे वबाल	पार्षद	वि
30	पुनमोहन	पार्षद	वि
31	शीतल बार्	पार्षद	वि
32	शबनम रक्षसारी	पार्षद	वि
33	भावना आर्या	पार्षद	वि
34	अचल बार्	पार्षद	वि
35	नादिर बेगम	पार्षद	वि
36	सलमान	पार्षद	वि
37	जगत बार्	पार्षद	वि
38	प्रेम बार्	पार्षद	वि
39	मनमोहन बरवा	पार्षद	वि
40	मोहम्मद	पार्षद	वि

41	राजेश	पार्षद	राजेश
42	राजेश	पार्षद	वि

Appendix 4: IBAT Screening Report –BHAWANI MANDI



Integrated Biodiversity Assessment Tool PROXIMITY REPORT BHAWANI MANDI DRAINAGE

Country: India

Location: [24.4, 75.8]

Date of analysis: 24 August 2022 (GMT)

Buffers applied: 10 km | 50 km

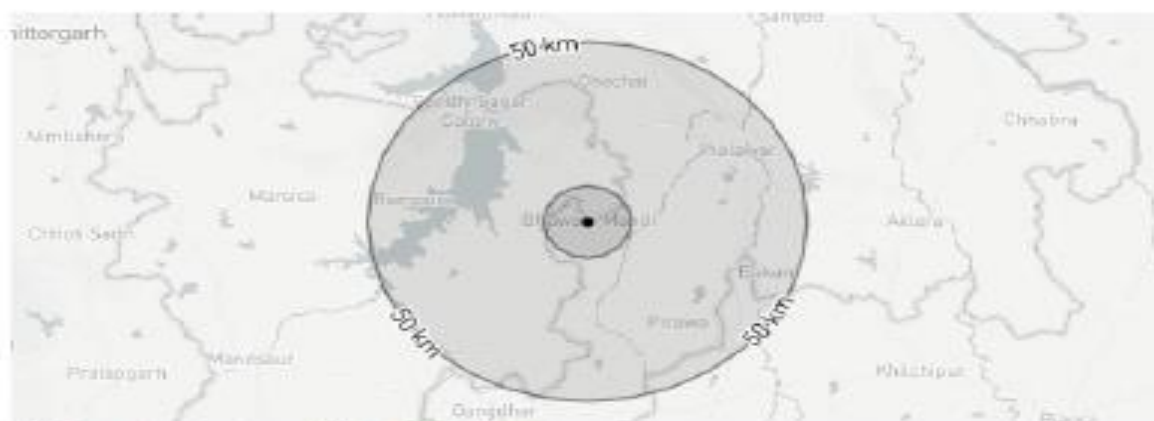
IUCN Red List Biomes: Freshwater, Terrestrial

Generated by: Govind Rathore

Organisation: ADB

Overlaps with:

Protected Areas	0
Key Biodiversity Areas	1
IUCN Red List	38



Displaying project location and buffers: 10 km, 50 km





Protected Areas

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

No protected areas within buffer distance

Key Biodiversity Areas

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

Area name	Distance
Gandhi Sagar Wildlife Sanctuary and reservoir	50 km

IUCN Red List of Threatened Species

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

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

Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome
Sypheotides indicus	Lesser Florican	AVES	CR	Decreasing	Terrestrial
Vanellus gregarius	Sociable Lapwing	AVES	CR	Decreasing	Terrestrial
Gyps bengalensis	White-rumped Vulture	AVES	CR	Decreasing	Terrestrial
Sarcogyps calvus	Red-headed Vulture	AVES	CR	Decreasing	Terrestrial
Gyps indicus	Indian Vulture	AVES	CR	Decreasing	Terrestrial



About this report

This report presents the results of [30102-33674] proximity analysis to identify the biodiversity features and species which are located within the following buffers: 10 km, 50 km.

This report is one part of a package generated by IBAT on 24 August 2022 (GMT) that includes full list of all species, protected areas, Key Biodiversity Areas in CSV format, maps showing the area of interest in relation to these features, and a 'How to read IBAT reports' document.

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

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

Data used to generate this report

- UNEP-WCMC and IUCN, 2022. Protected Planet: The World Database on Protected Areas (WDPA)[On-line], Cambridge, UK: UNEP-WCMC and IUCN. Available at: www.protectedplanet.net - August 2022.
- BirdLife International (on behalf of the KBA Partnership), 2022. Key Biodiversity Areas - April 2022.
- IUCN, 2022. IUCN Red List of Threatened Species - August 2022.
- IUCN. The IUCN Red List of Threatened Species. Version 2019-3. (2019). <https://www.iucnredlist.org>
- IUCN. Threats Classification Scheme (Version 3.2). (2019)
- Strassburg, B.B.N., Iribarrem, A., Beyer, H.L. et al. Global priority areas for ecosystem restoration. Nature 586, 724–729 (2020). <https://doi.org/10.1038/s41586-020-2784-9>



Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome
<i>Nilssonia gangetica</i>	Indian Softshell Turtle	REPTILIA	EN	Decreasing	Terrestrial, Freshwater
<i>Rynchops albicollis</i>	Indian Skimmer	AVES	EN	Decreasing	Terrestrial, Freshwater
<i>Sterna acuticauda</i>	Black-bellied Tern	AVES	EN	Decreasing	Terrestrial, Freshwater
<i>Haliaeetus leucoryphus</i>	Pallas's Fish-eagle	AVES	EN	Decreasing	Terrestrial, Freshwater
<i>Neophron percnopterus</i>	Egyptian Vulture	AVES	EN	Decreasing	Terrestrial, Freshwater
<i>Falco cherrug</i>	Saker Falcon	AVES	EN	Decreasing	Terrestrial, Marine, Freshwater
<i>Leptoptilos dubius</i>	Greater Adjutant	AVES	EN	Decreasing	Terrestrial, Freshwater
<i>Tor putitora</i>		ACTINOPTERYGII	EN	Decreasing	Freshwater
<i>Manis crassicaudata</i>	Indian Pangolin	MAMMALIA	EN	Decreasing	Terrestrial
<i>Panthera tigris</i>	Tiger	MAMMALIA	EN	Decreasing	Terrestrial
<i>Varanus flavescens</i>	Yellow Monitor	REPTILIA	EN	Decreasing	Terrestrial
<i>Aquila nipalensis</i>	Steppe Eagle	AVES	EN	Decreasing	Terrestrial
<i>Crocodylus palustris</i>	Mugger	REPTILIA	VU	Stable	Terrestrial, Freshwater



KNOW YOUR
ENVIRONMENT





Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome
<i>Lutrogale perspicillata</i>	Smooth-coated Otter	MAMMALIA	VU	Decreasing	Terrestrial, Marine, Freshwater
<i>Wallago attu</i>		ACTINOPTERYGII	VU	Decreasing	Freshwater
<i>Aythya ferina</i>	Common Pochard	AVES	VU	Decreasing	Terrestrial, Marine, Freshwater
<i>Columba eversmanni</i>	Yellow-eyed Pigeon	AVES	VU	Decreasing	Terrestrial, Freshwater
<i>Grus antigone</i>	Sarus Crane	AVES	VU	Decreasing	Terrestrial, Freshwater
<i>Sterna aurantia</i>	River Tern	AVES	VU	Decreasing	Terrestrial, Marine, Freshwater
<i>Olanga clanga</i>	Greater Spotted Eagle	AVES	VU	Decreasing	Terrestrial, Freshwater
<i>Aquila rapax</i>	Tawny Eagle	AVES	VU	Decreasing	Terrestrial, Freshwater
<i>Lissemys punctata</i>	Indian Flapshell Turtle	REPTILIA	VU	Decreasing	Terrestrial, Freshwater
<i>Schizothorax plagiostomus</i>	Snow Trout	ACTINOPTERYGII	VU	Decreasing	Freshwater
<i>Bagarius bagarius</i>		ACTINOPTERYGII	VU	Decreasing	Freshwater
<i>Acinonyx jubatus</i>	Cheetah	MAMMALIA	VU	Decreasing	Terrestrial
<i>Melursus ursinus</i>	Sloth Bear	MAMMALIA	VU	Decreasing	Terrestrial





Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome
<i>Panthera pardus</i>	Leopard	MAMMALIA	VU	Decreasing	Terrestrial
<i>Tetracerus quadricornis</i>	Four-horned Antelope	MAMMALIA	VU	Decreasing	Terrestrial
<i>Geochelone elegans</i>	Indian Star Tortoise	REPTILIA	VU	Decreasing	Terrestrial
<i>Rusa unicolor</i>	Sambar	MAMMALIA	VU	Decreasing	Terrestrial
<i>Amandava formosa</i>	Green Avadavat	AVES	VU	Decreasing	Terrestrial
<i>Clanga hastata</i>	Indian Spotted Eagle	AVES	VU	Decreasing	Terrestrial
<i>Oryza malampuzhaensis</i>		LILIOPSIDA	VU	Decreasing	Terrestrial



Recommended citation

IBAT Proximity Report. Generated under licence 30102-33674 from the Integrated Biodiversity Assessment Tool on 24 August 2022 (GMT). www.ibat-alliance.org

How to use this report

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

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



Integrated Biodiversity Assessment Tool

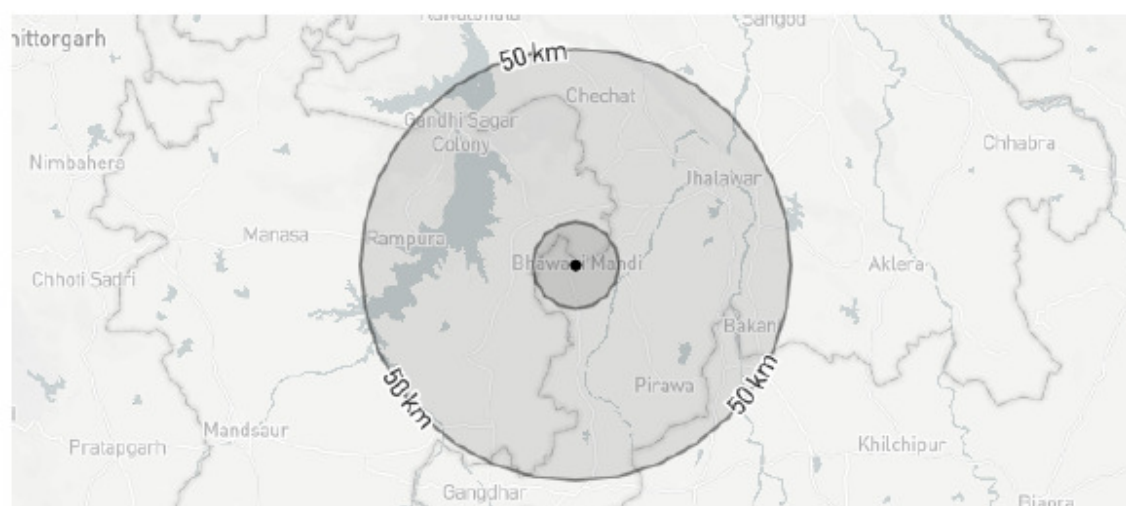
World Bank Group Biodiversity Risk Screen

BHAWANI MANDI DRAINAGE

- **Country:** India
- **Location:** [24.4, 75.8]
- **IUCN Red List Biomes:** Freshwater, Terrestrial
- **Created by:** Govind Rathore

Overlaps with:

Protected Areas	1 km: 0	10 km: 0	50 km: 0	0
World Heritage (WH)	1 km: 0	10 km: 0	50 km: 0	0
Key Biodiversity Areas	1 km: 0	10 km: 0	50 km: 1	1
Alliance for Zero Extinction (AZE)	1 km: 0	10 km: 0	50 km: 0	0
IUCN Red List	17			
Critical Habitat	Likely			



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



This report is based on IFC Performance Standard 6 (PS6) but applies to World Bank Environmental and Social Standard 6 (ESS6)





About this report

The recommendations stated alongside any Protected Areas and Key Biodiversity Areas identified in this report are determined by the following:

Protected Areas:

- 'Highest risk. Seek expert help' is stated if the report identifies a designation that includes either 'natural' or 'mixed world heritage site'.
- 'Assess for Critical Habitat' is stated if the report identifies a Strict Nature Reserve, Wilderness Area or National Park as coded by IUCN protected area categories Ia, Ib and II.
- 'Assess for biodiversity risk' is stated if the report identifies any other type of protected area.

Key Biodiversity Areas:

- 'Highest risk. Seek expert help' is stated if the report identifies an Alliance for Zero Extinction site.
- 'Assess for Critical Habitat' is stated if the report identifies Critically Endangered or Endangered species OR species with restricted ranges OR congregatory species as coded in the IUCN Red List of Threatened Species.
- 'Assess for biodiversity risk' is stated if the report identifies any other type of Key Biodiversity Area.

IBAT provides initial screening for Critical Habitat values. Performance Standard 6 (PS6) defines these values for Critical Habitat (PS6: para. 16) and legally protected and internationally recognized areas (PS6: para. 20). PS6 will be triggered when IFC client activities are located in modified habitats containing 'significant biodiversity value,' natural habitats, Critical Habitats, legally protected areas, or areas that are internationally recognized for biodiversity. References to PS6 and Guidance Note 6 (GN6) are provided to guide further assessment and detailed definitions where necessary. Please see <https://www.ifc.org/ps6> for full details on PS6 and GN6.

This report identifies restricted range species according to the KBA Standard definition ([hyperlink KBA Standard https://portals.iucn.org/library/sites/library/files/documents/2016-048.pdf](https://portals.iucn.org/library/sites/library/files/documents/2016-048.pdf)):

Species having a global range size less than or equal to the 25th percentile of range-size distribution in a taxonomic group within which all species have been mapped globally, up to a maximum of 50,000 km². If all species in a taxonomic group have not been mapped globally, or if the 25th percentile of range-size distribution for a taxonomic group falls below 10,000 km², restricted range should be defined as having a global range size less than or equal to 10,000 km². For coastal, riverine and other species with linear distributions that do not exceed 200 km width at any point, restricted range is defined as having a global range less than or equal to 500 km linear geographic span (i.e. the distance between occupied locations furthest apart).

Note, sites supporting restricted range species can qualify as KBAs under criterion B2. These are sites that hold a significant proportion of the global population size of multiple restricted-range species, and so contribute significantly to the global persistence of biodiversity at the genetic and species level.

The report screens for known risks within a standard 50km buffer of the coordinates used for analysis. This buffer is not intended to indicate the area of impact. The report can be used to:

- Scope risks to include within an assessment of risks and impacts



- Identify gaps within an existing assessment of risks and impacts
- Prioritize between sites in a portfolio for further assessment of risks and impacts
- Inform a preliminary determination of Critical Habitat
- Assess the need for engaging a biodiversity specialist
- Identify additional conservation experts or organizations to inform further assessment or planning

WARNING: IBAT aims to provide the most up-to-date and accurate information available at the time of analysis. There is however a possibility of incomplete, incorrect or out-of-date information. All findings in this report must be supported by further desktop review, consultation with experts and/or on-the-ground field assessment as described in PS6 and GN6. Please consult IBAT for any additional disclaimers or recommendations applicable to the information used to generate this report.

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

Legal disclaimer

The Integrated Biodiversity Assessment Tool (IBAT) and IBAT products, which include the IBAT Portal, reports, and data, are owned by IBAT Alliance and accessible by paid subscription.

The IBAT and IBAT products may contain reference to or include content owned and provided by the International Bank for Reconstruction and Development ("IBRD"), the International Development Association ("IDA"), the International Finance Corporation ("IFC"), the Multilateral Investment Guarantee Agency ("MIGA"), and the International Center for Settlement of Investment Disputes ("ICSID") (collectively, the "World Bank Group" or "WBG", individually, the "WBG Member"). The content owned and provided by the WBG Members (the "Member Content") is the respective property of the WBG Member and is protected under general principles of copyright.

The use of Member Content in IBAT and IBAT products is under license and intended for informational purposes only. Such use is not intended to constitute legal, securities, or investment advice, an opinion regarding the appropriateness of any investment, or a solicitation of any type. Additionally, the information is provided on a strictly "as-is" basis, without any assurance or representation of any kind.

The WBG Member does not guarantee the accuracy, reliability or completeness of any Member Content included in IBAT or IBAT products or for the conclusions or judgments described therein. The WBG Member accepts no responsibility or liability for any omissions or errors (including, without limitation, typographical errors and technical errors) in any Member Content whatsoever or for reliance thereon. The boundaries, colors, denominations, and other information shown on any map in IBAT do not imply any judgment on the part of WBG Member concerning the legal status of any territory or the endorsement or acceptance of such boundaries. The findings, interpretations, and conclusions expressed in the IBAT and the IBAT products do not necessarily reflect the views of the WBG Member, its member countries, Executive Directors, or the governments it represents.

The WBG Members are international organizations established under their respective constituent agreement among their member countries. IBRD owns the WBG logos and trademark. The logos and other trademarks, service marks,





graphics of a WBG Member are the tradenames, trademarks or registered trademarks of that WBG Member (the "WBG Member Mark"). The WBG logo and trademark and WBG Member Marks may not be copied, imitated, or used, in whole or in part, without the prior written permission of WBG or its Members, as appropriate. All other queries on rights and licenses, including subsidiary rights, should be addressed as follows. If to IFC, to IFC's Corporate Relations Department, 2121 Pennsylvania Avenue, N.W., Washington, D.C. 20433. If to MIGA, to MIGA's Legal Affairs and Claims Group (Attn: Chief Counsel, Operations & Policy), 1818 H Street N.W., U12-1204, Washington, D.C. 20433. If to IBRD and/or IDA, to the Office of the Publisher, The World Bank, 1818 H Street N.W., Washington, D.C. 20433; Email: pubrights@worldbank.org



Priority Species

Habitat of significant importance to priority species will trigger Critical Habitat status (See PS6: para 16). IBAT provides a preliminary list of priority species that could occur within the 50km buffer. This list is drawn from the IUCN Red List of Threatened Species (IUCN RL). This list should be used to guide any further assessment, with the aim of confirming known or likely occurrence of these species within the project area. It is also possible that further assessment may confirm occurrence of additional priority species not listed here. It is strongly encouraged that any new species information collected by the project be shared with species experts and/or IUCN wherever possible in order to improve IUCN datasets.

IUCN Red List of Threatened Species - CR & EN

The following species are potentially found within 50km of the area of interest.
For the full IUCN Red List please refer to the associated csv in the report folder.

Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome
<i>Nilssonia gangetica</i>	Indian Softshell Turtle	REPTILIA	EN	Decreasing	Terrestrial, Freshwater
<i>Rynchops albicollis</i>	Indian Skimmer	AVES	EN	Decreasing	Terrestrial, Freshwater
<i>Sterna acuticauda</i>	Black-bellied Tern	AVES	EN	Decreasing	Terrestrial, Freshwater
<i>Haliaeetus leucoryphus</i>	Pallas's Fish-eagle	AVES	EN	Decreasing	Terrestrial, Freshwater
<i>Neophron percnopterus</i>	Egyptian Vulture	AVES	EN	Decreasing	Terrestrial, Freshwater
<i>Falco cherrug</i>	Saker Falcon	AVES	EN	Decreasing	Terrestrial, Marine, Freshwater
<i>Leptoptilos dubius</i>	Greater Adjutant	AVES	EN	Decreasing	Terrestrial, Freshwater
<i>Tor putitora</i>		ACTINOPTERYGII	EN	Decreasing	Freshwater



KNOW YOUR
ENVIRONMENT





Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome
<i>Sypheotides indicus</i>	Lesser Florican	AVES	CR	Decreasing	Terrestrial
<i>Vanellus gregarius</i>	Sociable Lapwing	AVES	CR	Decreasing	Terrestrial
<i>Gyps bengalensis</i>	White-rumped Vulture	AVES	CR	Decreasing	Terrestrial
<i>Sarcogyps calvus</i>	Red-headed Vulture	AVES	CR	Decreasing	Terrestrial
<i>Gyps indicus</i>	Indian Vulture	AVES	CR	Decreasing	Terrestrial
<i>Manis crassicaudata</i>	Indian Pangolin	MAMMALIA	EN	Decreasing	Terrestrial
<i>Panthera tigris</i>	Tiger	MAMMALIA	EN	Decreasing	Terrestrial
<i>Varanus flavescens</i>	Yellow Monitor	REPTILIA	EN	Decreasing	Terrestrial
<i>Aquila nipalensis</i>	Steppe Eagle	AVES	EN	Decreasing	Terrestrial

Restricted Range Species

Species Name	Common Name	Taxonomic Group	IUCN Category	Population Trend	Biome
<i>Oreochthys cosuatis</i>		ACTINOPTERYGII	LC OR LR/LC	Unknown	Freshwater
<i>Macrobrachium rosenbergii</i>	Giant River Prawn	MALACOSTRACA	LC OR LR/LC	Unknown	Freshwater



Biodiversity features which are likely to trigger Critical Habitat

Protected Areas

There are no protected areas to show for this report.

Key Biodiversity Areas

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

Area name	Distance	IBA	AZE	Recommendation
Gandhi Sagar Wildlife Sanctuary and reservoir	50 km	Yes	No	 Assess for critical habitat

Species with potential to occur

Area Taxonomic group	Total assessed species	Total (CR, EN & VU)	CR	EN	VU	NT	LC	DD
REPTILIA	54	5	0	2	3	3	46	0
AVES	311	20	5	7	8	13	278	0
ACTINOPTERYGII	38	4	0	1	3	2	31	1
MAMMALIA	61	8	0	2	6	3	50	0
AMPHIBIA	9	0	0	0	0	0	9	0
INSECTA	50	0	0	0	0	0	49	1
MALACOSTRACA	5	0	0	0	0	0	5	0
GASTROPODA	23	0	0	0	0	0	22	1



Area Taxonomic group	Total assessed species	Total (CR, EN & VU)	CR	EN	VU	NT	LC	DD
POLYPODIOPSIDA	2	0	0	0	0	0	2	0
MAGNOLIOPSIDA	36	0	0	0	0	0	35	1
LILIOPSIDA	46	1	0	0	1	0	43	2
BIVALVIA	10	0	0	0	0	0	10	0
ARACHNIDA	1	0	0	0	0	0	1	0



Recommended citation

IBAT PS6 & ESS6 Report. Generated under licence 30102-33673 from the Integrated Biodiversity Assessment Tool on 24 August 2022 (GMT). www.ibat-alliance.org

Recommended Experts and Organizations

For projects located in Critical Habitat, clients must ensure that external experts with regional expertise are involved in further assessment (GN6: GN22). Clients are encouraged to develop partnerships with recognized and credible conservation organizations and/or academic institutes, especially with respect to potential developments in natural or Critical Habitat (GN6: GN23). Where Critical Habitats are triggered by priority species, species specialists must be involved. IBAT provides data originally collected by a large network of national partners, while species information is sourced via the IUCN Red List and affiliated Species Specialist Groups. These experts and organizations are listed below. **Please note that this is not intended as a comprehensive list of organizations and experts. These organizations and experts are under no obligation to support any further assessment and do so entirely at their discretion and under their terms. Any views expressed or recommendations made by these stakeholders should not be attributed to the IFC or IBAT for IFC partners.**

Birdlife Partners

URL: <https://www.birdlife.org/worldwide/partnership/birdlife-partners>

Directory for Species Survival Commission (SSC) Specialist Groups and Red List Authorities

URL: <https://www.iucn.org/commissions/ssc-groups>

Appendix 5: Compliance with Environmental Criteria for Subproject Selection

Applicability	Environmental Selection Criteria	Compliance
All Subprojects	i. Comply with all requirements of relevant national and state laws.	Being complied
	ii. Avoid significant environmental impacts.	Being complied
	iii. Avoid and/or minimize involuntary resettlement by prioritizing rehabilitation over new construction, using vacant government land where possible, and taking all possible measures in design and selection of site or alignment to avoid resettlement impacts	Being complied
	iv. Avoid locating subprojects in forest areas	Complied
	v. Avoid where possible, and minimize to extent feasible, facilities in locations with social conflicts.	Complied
	vi. Avoid where possible locations that will result in destruction/disturbance to historical and cultural places/values.	Being complied
	vii. Avoid tree-cutting where possible. Retain mature roadside trees which are important/valuable or historically significant. If any trees have to be removed, plant two new trees for every one that is lost.	Being complied
	viii. Ensure all planning and design interventions and decisions are made in consultation with local communities and include women. Reflect inputs from public consultation and disclosure for site selection.	Being complied