

**Environmental and Social Impact Assessment
(ESIA)
&
Environmental and Social Management Plan
(ESMP)**

for



**Construction of New 100 Bedded District Hospital at
Abhayapuri, District- Bongaigaon, Assam**

**Assam State Secondary Health Care Initiative for Service
Delivery Transformation Project (ASSIST)**

**Assam Health Infrastructure Development & Management Society (AHIDMS),
Medical Education & Research Development,
Govt. of Assam**

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LIST OF ABBREVIATIONS

AAAS- Atal Amrit Abhiyan Society

AHIDMS- Assam Health Infrastructure Development and Management Society

AHU- Air Handling Unit

AMSC- Assam Medical Supply Corporation Limited

ANC- Antenatal Care

ANM- Auxiliary Nursing Midwifery

ASHA- Accredited social health activist

ASSIST- Assam State Secondary Healthcare Initiative for Service Delivery Transformation

AQM- Automated Quality Management

BEE- Bureau of Energy Efficiency

BMWM- Biomedical Waste Management

BIS- Bureau of Indian Standards
BPL- Below Poverty Line
BSC- Bio-safety Cabinet
CBWTF- Common Bio-medical Waste Treatment Facility
C&D- Construction and Demolition
CDC- Centers for Disease Control and Prevention
CHC- Community Health Centre
CMNND- Communicable, Maternal, Neonatal and Nutritional Diseases
CPCB- Central Pollution Control Board
CFL- Compact Fluorescent Lamp
CTF- Common Treatment Facility
DG- Diesel Generator
DH- District Hospital
DHS- District Health Society
DHFV- Departments of Health and Family Welfare
DoHFW- Department of Health & Family Welfare
DME- Durable medical equipment
DPR- Detailed Project Report
EAP- Employee Assistance Program
ECBC- Energy Conservation Building Code
ECG- Electrocardiogram
ECoP- Environmental Code of Practices
EHS- Environment Health and Safety
EMP- Environment Management Plan
ESIA- Environment and Social Impact Assessment
ESMP- Environment and Social Management Plan
ESMF- Environmental and Social Management Framework
ESS- Environmental and Social Standards
EPA- Environmental Protection Agency
ETP- Effluent Treatment Plant
FAAMCH- Fakhruddin Ali Ahmed Medical College and Hospital, Assam
FRU- First Referral Unit
FPIC- Free, Prior & Informed Consent
GBV- Gender Based Violence

GLS- General Lighting Service
GoA- Government of Assam
GOI- Government of India
GRM- Grievance Redressal Management
HAI- Health care-associated infections
HCF- Health Care Facility
HIV- Human Immunodeficiency Viruses
HRH- Human Resources for Health
HQ- Head Quarters
H&S- Health and Safety
IGBC- Indian Green Building Council
IHD- Ischemic Heart Disease
IRC- Indian Road Congress
IP- Indigenous Peoples
IPA- Internal Performance Agreement
IPC- Infection Prevention and Control
IPHS- Indian Public Health Standards
IPP- Indigenous Peoples Plan
IPPF- Indigenous Peoples Policy Framework
IS- Indian Standard
JCB- Joseph Cyril Bramford
LED- Light Emitting Diode
LMO- Liquid Medical Oxygen
MCH- Maternal and Child Health
MHA- Ministry of Home Affairs
MMR- Maternal Mortality Rate
MoEF& CC- Ministry of Environment, Forest & Climate Change
MoHFW- Ministry of Health and Family Welfare
MoU- Memorandum of understanding
NAAQS- National Ambient Air Quality Standards
NBC- National Building Codes
NBCC- National Buildings Construction Corporation Ltd
NBSU- Newborn Stabilization Unit
NCD- Non-Communicable Diseases

NDMA- National Disaster Management Authority
NFHS- National Family Health Survey
NGO- Non Government Organization
NH- National Highway
NHM- National Health Mission
NICU- Neonatal intensive care unit
NOC- No Objection Certificate
NQAS- National Quality Assurance Standards
OHS- Occupation and Health Safety
O &M- Operation and Maintenance
OPD- Out Patient Department
ORT- Oral Rehydration Therapy
OT- Operation Theatre
PDO- Project Development Objective
PCU- Passenger Car Unit
PHC- Primary Health Centre
PM- Particulate Matter
PMU- Project Management Unit
PPE- Personal Protective Equipment
PUC- Pollution under control certificate
PwD- Person with a Disability
PWD- Public Works Department
RCC- Reinforced Cement Concrete
RMC- Ready Mix Concrete
RNTCP- Revised National Tuberculosis Control Programme
RTO- Regional Transport Office
RWH- Rain Water Harvesting
SC- Sub Centre
SDH- Sub-District Hospital
SEA/SH- Sexual exploitation and abuse/Sexual harassment
SEMP- Site Specific EHS Plan
SEP- Stakeholder Engagement Plan
SH- State Highway
SMACNA- Sheet Metal and Air Conditioning Contractors' National Association

SMP- Social Management Plan

STD- Sexually Transmitted Diseases

STP- Sewage Treatment Plant

SNCU- Special Newborn Care Unit

SPCB- State Pollution Control Board

SPMU- State Project Management Unit

SOP- Standard Operating Procedures

SC-ST- Scheduled Caste Scheduled Tribe

SS- Social Security

ToR- Terms of Reference

TSSU- Theatre Sterile Supply Unit

UNESCO- United Nations Educational, Scientific and Cultural Organization

USG- Ultrasound or Sonogram or Ultrasonogram

UT- Union Territory

WHO- World Health Organization

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

1.0 Introduction

Government of Assam (GoA) is implementing World Bank assisted “Assam State Secondary Health Care Initiative for Service Delivery Transformation Project (ASSIST)” Project under Assam Health Infrastructure Development & Management Society (AHIDMS), Medical Education and Research Department, GoA with an objective to initiate improvement in the quality and delivery of health care system in the state and under this project, 100 to 200 Bedded District Hospitals (DHs) are going to be constructed in 10 Districts of the state.

One of the proposed sites is Abhayapuri in the Bongaigaon district of the state where a new 100 Bedded District Hospital is proposed to be constructed at the premise of Abhayapuri CHC-FRU. It has been envisioned that the proposed DH at Abhayapuri will come a long way in fulfilling the gap in providing secondary health care services to the people of the area.

2.0 Project Description

The proposed project involves construction of 100 bedded District Hospital at the premise of CHC-FRU, Abhayapuri situated at 26°20'16"N 90°39'38"E, the proposed DH covers an area of 13,332.8 square meters which will house all the necessary contemporary facilities as per IPHS, 2022 norms which will further be human centric and GRIHA compliant.

3.0 Environment and Social Impact Assessment (ESIA)

The baseline environment and social attributes of the proposed site and the vicinity has been assessed to identify possible impacts of construction of DH on the same.

The screening of environmental parameters showed that all the results are within norms and thereby it can be derived that impacts arising during the construction works of the proposed project is not likely to have any major impact on the environment. However, site issues may occur which includes disturbance to top soil and existing green cover of the site, soil erosion and contamination, flooding due to surface runoff and water contamination, air pollution due to dust and smoke, noise pollution due to vibrations and noise coming out of construction activity.

Likewise social issues may occur at site which includes risks related to community health and safety, public inconveniences and disruption of medical service at Abhayapuri CHC-FRU due to construction activity, conflict between migrant workforce and local, risks of Gender based violence and SEA/SH at site and its vicinity and occupational health and safety of labors at site.

4.0 Environmental and Social Management Plan (ESMP)

The ESMP has been prepared considering the identified risks and impacts of construction of proposed DH at Abhayapuri along with the name of agency/department that is responsible for the mitigation action in a specified time period starting from the pre-construction period to construction and operation period.

As a part of mitigation measures, there is a need to obtain Consent/ Permit/ Clearance/ No Objection Certificate (NOC), etc. for establishment of new DH, RMC/ Batching Plant, Labor Camp, Storage for construction materials, tree felling, use of vehicles and equipment, connections of water supply, electricity etc. by the Contractor who is assigned with the task of construction DH at Abhayapuri.

The mitigation measures are planned against the identified environmental and social risks of the pre-construction and construction period of proposed project at Abhayapuri. Proposed mitigation

measures aim to protect, prevent and minimize environmental issues of disturbance of land, water, soil and air arising out of construction activity at site and surrounding areas. Further, the mitigation measures addressing the social issues will minimize and prevent risks to community health and safety, occupational health and safety of labors, and inconveniences and disturbance to public. The measures will also address road safety, stakeholder engagement for awareness and involvement in the project and prevent or mitigate Risks of SEA/SH to community members, particularly women and children by contractors' workers during construction period, workplace sexual harassment at project site (consultants and contractors' staff & laborers)

5.0 Stakeholder Engagement

World Bank's ESS10 recognizes that effective engagement with the stakeholders can significantly improve the project outcomes and their sustainability through better community acceptance and ownership, enhance the environmental and social sustainability of the project, and hence make a significant contribution to successful project implementation.

In view of the above, Stakeholder engagement through talks, interviews, and public meetings with the stakeholders were conducted for assessing their views and opinions on the project at Abhayapuri. Suggestions of important stakeholders have been considered as inputs for preparation of the ESIA-ESMP. Site inspections that were required to confirm the information gathered have been carried out.

6.0 Alternatives

To implement the project at Abhayapuri, State Government of Assam has provided the land i.e. land of Abhayapuri CHC-FRU, so no alternate locations were explored for the project. The best building materials and technologies that are appropriate for the project site and surrounding environment will be used.

7.0 Conclusion and Recommendations

Based on the ESIA findings, it has been determined that there are no major negative effects of the planned project. However the proposed project shall have temporary negative impacts during the project construction period, which shall be reversed during the project operation. The report's objectives are in line with World Bank Safeguard Policies and Governmental (India and Assam) regulatory requirements.

It is recommended that the project implementing agency to Obtain all statutory clearances before start of activities and ensures that conditions/provisions are incorporated in the detailed design. ESIA-ESMP should be included in contract documents, Commitment from contractors to protect the environment and the people from any impact during project implementation.

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CHAPTER-1

INTRODUCTION AND BACKGROUND

1-INTRODUCTION AND BACKGROUND

1.1 Background

State of Assam interwoven by mountains, valleys and two major river systems (Brahmaputra and Barak) is in the eastern most part of India between 24°.07' N to 28°00' N Latitude and 89°.42' E to 96°.02' E Longitude. At present, Assam has 35 administrative districts. As per the Census 2011, the total population of Assam is 31,205,576 of which 15,939,443 are males while female are 15,266,133. Thus, the population of Assam forms 2.58 percent of the population of India in 2011.

Assam is one of the highest maternal mortality rate (MMR) states, with around 205 deaths per 100,000 live births in 2017-19 (*Office of the Registrar General, India*). Low ANC Coverage in Cachar, Bongaigaon, South Salmara Mancachar, Kokrajhar, and Increased Prevalence of anemia in women aged 15-49 years. Neonatal mortality rate and Still Birth (per 1,000 live births) rates have significantly decreased with the life expectancy at birth also improved (66.9) though it is below the national average of 69.4 years. The proportion of communicable, maternal, neonatal, and nutritional diseases (CMNND) contribute to 34.06% of total disease burden. Further, the burden of non-communicable diseases (NCDs) is growing in Assam.

The Assam State Government is planning to construct 100 to 200 Bedded District Hospitals (DHs) in 10 Districts of the state under "Assam State Secondary Health Care Initiative for Service Delivery Transformation Project (ASSIST)" Project. One of the proposed sites is Abhayapuri in the Bongaigaon district of the state where a new 100 Bedded District Hospital is proposed to be constructed at the premises of Abhayapuri CHC-FRU.

1.2 Requirement of New District Hospital

The Area is one of the major districts of Assam however it is worth noting that there is a high shortage of public healthcare services. The Public health facilities are predominant health service providers. Presently public healthcare services are provided by Lalmati PHC, Amguri Mini PHC, Majgaon PHC, Pachania PHC and Isabpur PHC are available at a distance of 15 km, but the facilities provided by those are not sufficient.

The proposed new District Hospital will be providing advanced health care services to the people of the locality as well as areas like Lalmati, Amguri, Majgaon, Pachania, Isabpur, Uttar Moinbari etc. Abhayapuri C.H.C. (F.R.U.) exists at the site which is catering the medical needs of the local people. Most of the patients who visit the CHC-FRU are related to Obstetric cases coming from the nearby areas. The CHC - F.R.U. is providing health care services to a good number of patients. But the services are not adequate in terms of facilities, manpower, space, infrastructure and equipment. The Existing C.H.C. (F.R.U.) will be upgraded to new 100 Bedded District Hospital with modern facilities and infrastructure.

1.3 Objective to undertake the Environmental and Social Impact Assessment (ESIA) and Environmental and Social Management Plan (ESMP) and its necessity

The Objective of the consulting assignment is to develop site specific architectural and engineering designs for construction of district hospital of Abhayapuri as per the IPHS standards and patient

movement, interior design complying with human-centric design philosophy in the proposed hospital, develop specifications for the works and estimate the costs for development of the Hospital. GoA is committed to carry out the project in accordance with World Bank's Environmental and Social Standards (ESSs) and Environmental and Social Commitment Plan (ESCP), is a part of the Legal Agreements. Under ESS 1 i.e. Environmental and Social Assessment, ASSIST commits adoption of the site-specific ESIA and ESMP for the respective subproject. Once adopted, ESIA and ESMP will be implemented throughout Project implementation period i.e. pre-construction, construction and operation phase.

1.4 Objectives of Environmental and Social Impact Assessment (ESIA)

- Assessment of legislative, institutional and policy frameworks and guidelines relevant to the project
- Environment and social baseline
- Anticipated environmental and social impacts & mitigation measures
- Institutional capacity building
- Monitoring program and project benefits
- Identify potential environmental and social risks arising out of the proposed schemes
- Recommend ways in which such risks could be mitigated or managed by the project, including recommendations to carry out projects specific environment and social management plans (ESMP)
- Provide inputs into the detailed design of the project
- To study the socio-economic status of the people living in the study area and impact of the project on socio-economic environment in the study area.
- To evaluate and recommend the community development measures proposed to be taken up by the project authorities if any.

1.5 Objectives of Environmental and Social Management Plan (ESMP)

- Identifying potential adverse and beneficial environmental and social impacts of the Project along with the extent of short- and long-term effects
- Developing a set of mitigation and enhancement measures for the adverse and beneficial impacts and define the roles of personnel in charge
- Specifying actions which would help in mitigation of the environmental impact of the project along with ensuring what safety measures should be followed during the occurrence of an emergency.

1.6 Methodology for ESIA-ESMP

An Environmental and Social Impact Assessment (ESIA)& Environmental and Social Management Plan (ESMP) is a decision-making tool to ensure that the project design and implementation are environmentally and socially sound and sustainable. During the implementation phase, environmental and social management plans will provide guidance for executing the mitigation, enhancement and monitoring measures. The key steps/methods taken for preparing for this ESIA-ESMP are:

- Desk Review
- Scoping
- Baseline data collection and its analysis
- Collection of primary and secondary socio-economic data for the assessment of Socio-economic environment
- Screening and identification of Environmental and Social risk and impacts;
- Analysis of Alternatives
- Stakeholder engagement
- Assessment of impacts and identification of mitigation measures
- Reporting and disclosure

CHAPTER-2

PROJECT DESCRIPTION

2-PROJECT DESCRIPTION

2.1 Location of District Hospital

The site or proposed District Hospital is located in Abhayapuri, Bongaigaon, Assam. Presently the proposed site is occupied by Abhayapuri CHC. The site for construction of the proposed DH covers a total area of 17,556.40 Sq.m (13 Bigha, 0 Katha, 12.33 Lessa). The site is surrounded by Abhayapuri Police Station (350 m) in north direction, Deohati Govt. LP School (382 m) in west direction, SDO Office (214 m) in east direction and Sankardev Sishu Niketan (179 m) in south direction.

The Geographical Location is 26°20'16"N, 90°39'38"E. The Google image of the project site is given in **Figure 2.1**

Table 2.1: Site Surroundings Related To Study Area within 15 Kms

S. No.	Particulars	Details
1.	Nearest National /State Highway/Road	NH 17: 2.463 km
2.	Nearest Railway Station	Abhayapuri Railway Station: 2.161 km
3.	Nearest Airport	Lokpriya Gopinath Borodolai International Airport: 96.721 km
4.	Nearest Town/ City/Village	Abhayapuri: 0.181 km
5.	Nearest Water Body	Kulia River (stream): 2.570 km
6.	Nearest School	Deohati Govt. LP School: 0.381 km
7.	Nearest Hospital	Abhayapuri State Dispensary: 0.949 km
8.	Nearest Fire Station	Fire Brigade Station, Abhayapuri: 0.674 km
9.	Site Topography	Flat topography
10.	Archaeologically Important Site	Lalmati Ganesh Mandir, Abhayapuri: 5 km
11.	National Parks/ Wildlife Sanctuaries	None
12.	State Boundary	Meghalaya state boundary: 42.810 km
13.	Seismicity	Zone –V, as per BIS,2016

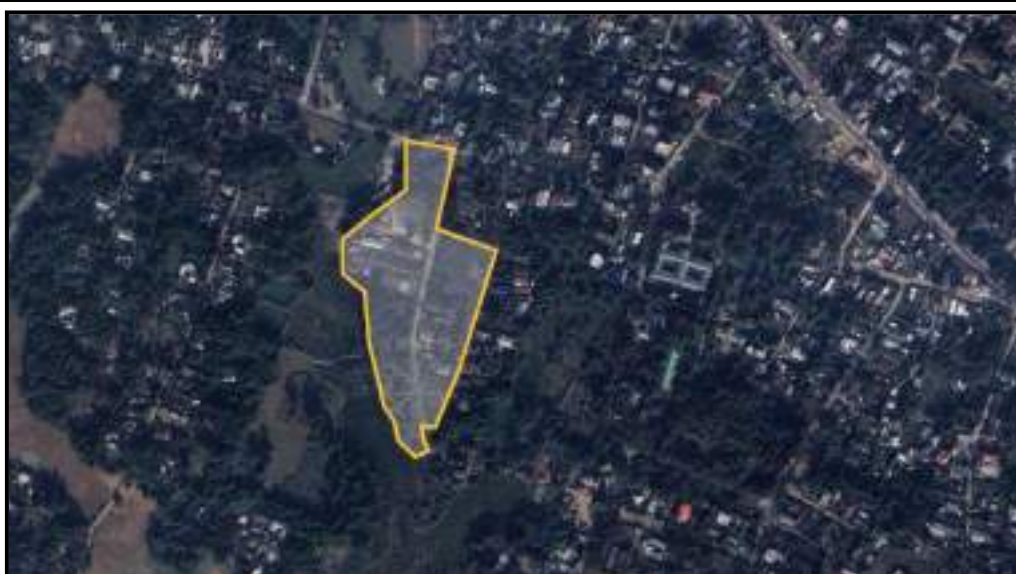


Figure 2.1: Google image of the project site

2.2 Existing Site Situation

Presently Abhayapuri C.H.C. (F.R.U.) exists at the site which is catering the medical needs of the local people. The existing site photographs of the project site are given in **Figure 2.2**.

Abhayapuri C.H.C. (F.R.U.) Departments assessed are-

1. Out- patient department
2. In-patient department
3. Operation Theatre
4. HLAB
5. Immunization Room (cold chain)
6. Male Ward
7. Female Ward
8. Maternity
9. NBSU
10. X Ray Room
11. RNTCP
12. Dental OPD
13. Staff and Duty room for doctors
14. Sister room
15. sick room
16. Conference Hall
17. Medicine Store and Dispensary
18. ASHA Rest Room,
19. Homeopathy OPD
20. Adolescent friendly health clinic
21. Kitchen
22. Registration and waiting area,
23. Saubhagya Mother and child care
24. Changing Rooms.
25. Color coded dustbins to segregate different type solid waste
26. Biomedical waste disposal through sharp pits and deep burial
27. Waste water disposal including liquid waste through pipeline within the campus

Present mode of BMW disposal is through Sharp pits and Deep Burial at the site. Further, for safe disposal of biomedical waste for the proposed DH, agreement with CBWTF located at Metuakuchi, Barpeta for disposal of BMW will be made before starting operation of District Hospital. The CBWTF of Metuakuchi is located within the 75 km from the site and it is functional.



Figure 2.2: Existing site photographs of the project site

2.3 Proposed Project Details/Components

The components of proposed district Hospital are: Emergency Unit, Police Post, Triage Room Yellow zone beds, Pediatrics beds, Isolation bed, Toilet, Nurse's station, Emergency OT Lobby, Patient Holding Area, Emergency TSSU, OT Pharmacy, Sterile store, Dirty Utility, 1 No. Emergency Operation theatre, Plaster and Plaster Cutting room, OPD, Radiology, Laboratory, Medical Store, District Early Intervention Centre, Obstetrics Critical Care Unit, OPD Consultation Room, SNCU & NICU, and Paying Cain Complex, waiting area with public toilets, Day care, Rehabilitation Centre, Nursing Station, Burn Unit, HDU Ward, OT Complex, Blood Bank, Mortuary, Services and Laundry etc. The details of Facilities-proposed in 100 bedded District Hospital are given separately in **Annexure-II**.

2.4 Area Statement

The total built-up area of proposed project is 13332.8 Sq.m. The details area statement is given in **Annexure III**.

2.5 Other Project requirements

2.5.1 Water Requirement: The total water requirement as per NBC-2016 of the proposed project is 70 KLD. Out of this 48 KLD is fresh water demand and 22 KLD is for flushing water demand. The available source of water at project location is bore well with chlorine treatment and hand pump. Further, water for drinking purpose is made available through RO system at various locations within premises. The total sewage generated will be 57 KLD. The waste water will be treated in the STP of 70 KLD capacity and ETP of 10 KLD (for treatment of used water from Laboratory, O.T). Total treated water available for reuse will be 46 KLD, which will be used in Flushing, DG set cooling, Filter Backwash and Horticulture. The detailed water requirement along with water balance is attached as **Annexure XIII**.

2.5.2 Power requirement: The power requirement for the proposed project is 1250 KVA. The two DG sets of 625 KVA capacity is proposed to install as 100% power backup. Power factor for Transformer considered is 0.95 and loading factor is 0.80. Minimum capacity of Transformer shall be 2 x 630 KVA. However for future load, additional transformer space as well as HT/LT Panel space shall be provided as per Engineer-in-charge.

2.6 Volume of Civil Works

At present no civil works has been done for proposed DH only geotechnical investigation has been done till date. Civil work will be done according to the DPR and sanction drawings.

CHAPTER-3

LEGAL AND INSTITUTIONAL FRAMEWORK

3-LEGAL AND INSTITUTIONAL FRAMEWORK

3.1 Introduction

This Chapter outlines and provides a review of existing policies, legislations, and regulations. It identifies the requirements that guide the implementation of the ESIA. There are several Indian Acts and Regulations that are relevant to this project. Also, as this Project is being financed by the World Bank, its guidelines are paramount and are discussed. There must be harmony between both sets of frameworks, but should there be any discrepancies between these, the guidelines of the World Bank shall supersede those of the country.

3.2 Environmental and Social Standards of World Bank and Indian National and State Regulations

3.2.1 The World Bank's Environmental and Social Standards (ESS)

The World Bank's Environmental and Social Standards (ESSs) is cornerstone to its support to sustainable development. The Environmental and Social Standards set out the requirements for ASSIST project relating to the identification and assessment of environmental and social risks and impacts associated with project through Investment Project Financing. The objective of these policies is to prevent and mitigate undue harm to people and their environment in the development process. Any project that is likely to pose any form of adverse environmental impact will trigger the relevant ESSs. The ESSs relevant to this project are given in **Table 3.1** as follows:

Table 3.1 Environment & Social Standard relevant to the project

S. No.	Environment & Social Standard	Relevance
1.	ESS1: Assessment and Management of Environmental and Social Risks and Impacts	Yes
2.	ESS2: Labor and Working Conditions	Yes
3.	ESS3: Resource Efficiency and Pollution Prevention and Management	Yes
4.	ESS4: Community Health and Safety	Yes
5.	ESS5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	No
6.	ESS6: Biodiversity Conservation and Sustainable Management of Living Natural Resources	No
7.	ESS7: Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Yes
8.	ESS8: Cultural Heritage	Yes
9.	ESS9: Financial Intermediaries	No
10.	ESS10: Stakeholder Engagement and Information Disclosure	Yes

3.2.2 Environmental, Health, Safety and Social Regulations (Acts/Law) applicable to the Project are:

Indian National Regulations and State Specific Laws and Regulations:

- ✓ The Constitution of India (especially, Articles 15, 16 and 46)
- ✓ Biomedical Waste (Management and Handling) Rules 2016, as amended up to 2019
- ✓ E-Waste (Management and Handling) Rules 2011 as Amendment up to 2018
- ✓ Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules 2008
- ✓ Hazardous and Other Wastes (Management and Trans boundary Movement) Amendment Rules, 2016
- ✓ Plastic Waste Management Rules 2016
- ✓ The Epidemic Diseases Act 1897
- ✓ The Water (Prevention & Control of Pollution) Act 1974
- ✓ The Air (Prevention & Control of Pollution) Act 1981
- ✓ Environment Protection Act (and Rules), 1986 and 1996 Environment (Protection) Second Amendment Rules 2002
- ✓ The Water (Prevention and Control of Pollution) Cess Act, 1977 Rules framed under the water (Prevention & Control of Pollution) Act, 1974 (Assam) Rules 1977
- ✓ CPCB Guidelines for BMW Incinerators (2003)
- ✓ Draft Guidelines for Biomedical Waste Incinerator, 2017
- ✓ Revised guidelines for Common Biomedical Waste Treatment Facilities (2016)
- ✓ The Assam Air (Prevention and Control of Pollution) (Amendment) Rules 2010
- ✓ Noise (Regulation and Control) Rules, 2000 amended in 2010
- ✓ National Disaster Management Act, 2005
- ✓ Solid waste management rules, 2016
- ✓ The Epidemic Diseases (Amendment) Ordinance, 2020
- ✓ Construction and demolition wastes management rules, 2016
- ✓ Guidance note on Liquid Medical Oxygen (LMO) Storage Tanks, April 2021
- ✓ Maternity Benefit Act, 1961 and Assam Rules, 1965
- ✓ Child Labor (Prohibition and Regulation) Act, 1986 and Assam (Amendment) Rules, 2017
- ✓ Contract Labor (Regulation and Abolition) Act, 1970 and Assam Rules 1971
- ✓ Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996 and Assam Rules, 2007
- ✓ Inter State Migrant Workmen's (Regulation of Employment and Conditions of Service) Act, 1979 and Assam Rules 1981
- ✓ Equal Remuneration Act, 1976
- ✓ Minimum Wages Act, 1948 and Assam Rules, 1952
- ✓ Payment of Wages Act, 1936 and Assam Rules, 1937
- ✓ Employees' Compensation Act, 1923
- ✓ Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement (RFCTLARR) Act, 2013 and Assam Rules, 2015
- ✓ Scheduled Caste and the Scheduled Tribes (Prevention of Atrocities) Act, 1989 and Rules, 1995
- ✓ Rights of Persons with Disabilities (PwD) Act, 2016

- ✓ Sexual Harassment of Women at Workplace Prevention, Prohibition, and Redressal Act, 2013
- ✓ Right to Information Act, 2005
- ✓ Assam Scheduled Castes and Scheduled Tribes (Reservation of Posts in Services) Act, 1978
- ✓ Settlement Rules under Assam Land and Revenue Regulation, 1886.

The details about provisions, Agency responsibility, Key provisions and relevance to project is summarized in *Chapter 3 of ESMF*, The link is attached here: https://ahidms.assam.gov.in/sites/default/files/public_utility/Environmental%20and%20Social%20Management%20Framework%20ASSIST_PMU.pdf

CHAPTER-4

BASELINE ENVIRONMENTAL AND SOCIAL DATA

4-BASELINE ENVIRONMENTAL AND SOCIAL DATA

4.1 Physical Environment

(a) Project Site- Abhayapuri: Abhayapuri is a Town in Bongaigaon District of Assam State, India. It is located 21 KM away from Bongaigaon city and 200 km west of Guwahati. It is the headquarters of North Salmara sub-division.

The proposed location of District Hospital is in the plot of Abhayapuri CHC-FRU and the site covers a total area of 17,556.40 Sqm (13 Bigha, 0 Katha, 12.33 Lessa).

The site location, description and topography can be seen with the help of the 500 m and 5 km buffer map of the project site as given in **Figure 4.1 & 4.2** below



Figure 4.1: 500 m buffer map of the project site



Figure 4.2: 5 Km buffer map of the project site

Out of the total plot area, proposed built up area is 13,332.8 Sq.m. Here the plinth or the physical footprint area is 3,388.3 Sq.m. The proposed land is a government land.

4.2 Climate: The climate of Bongaigaon remains mild and pleasant round the year. Tropical monsoon climate of the district provides two distinct seasons- summer and winter. The summer season of March to May is followed by the Monsoons from June to September. This is followed by cool winter season from October to February.

(Source- <https://bongaigaon.assam.gov.in/about-district/district-glance>)

4.2.1 Rainfall

The Rainfall data for the district was sourced from Customized Rainfall Information System (CRIS), Hydromet Division, India Meteorological Department (IMD). The data was collected for last five years i.e. 2018-2022. The data has been presented in **Table 4.1**

Table 4.1: Rainfall data (in mm)

	2018	2019	2020	2021	2022
January	1	0	3.6	4.2	14.6
February	13.3	17.4	8.6	3	87.4
March	97.2	5.6	14.2	32.8	24.6
April	192.3	60.4	43	124.2	676.8
May	497	476.2	607.2	107.6	678
June	381.4	457.3	628.7	316	1526.8
July	760.9	1321.7	783.3	334	306.2
August	273.6	335.5	236.8	428.4	425.2
September	746.1	379.1	723.5	283	238.8
October	58.8	92.9	98.8	297.6	192.8
November	16	16.7	34.8	4	0
December	25.8	25.8	0	0	0
Min	1	0	0	0	0
Max	760.9	1321.7	783.3	428.4	1526.8
Average	255.28	265.72	265.21	161.23	347.60

4.2.2 Earthquake

As per the plate tectonics, Assam is in the eastern-most projection of the Indian Plate, where the plate is thrusting underneath the Eurasian Plate creating a subduction zone and the Himalayas. This led the state of Assam fall under the seismic zone V making the entire State prone to earthquake of moderate to very high intensity. The State has experienced two major earthquakes in the year 1897 and 1950. The intensities of these two earthquakes were 8.7 and 8.5 on the Richter scales respectively.

(<https://asdma.gov.in/hazardous.html#:~:text=This%20led%20the%20state%20of,the%20year%201897%20and%201950>)

An earthquake of magnitude five on the Richter scale jolted Assam's Morigaon district in the early hours on 27th February, 2025, the National Center for Seismology (NCS) noted. According to the quake monitoring agency, the earthquake occurred at a depth of 16 kilometer at around 2:25 am, on the southern bank of Brahmaputra in the district. Darrang, Tamulpur, Sonitpur, Kamrup, Biswanath, Udalguri, Nalbari, Bajali, Barpeta, Baksa, Chirang, Kokrajhar, **Bongaigaon** and Lakhimpur on the northern bank of Brahmaputra too felt the tremor.

(Source: Newspaper article published in "The Hindu" dated February 27, 2025)

<https://www.thehindu.com/news/national/assam/earthquake-of-magnitude-5-jolts-assams-morigaon-district/article69268858.ece>

Apart from this incident, during stakeholder consultation with local people, no recent major earthquake event was reported in the area.

4.2.3 Flood Scenario

No flood events has occurred at the proposed site since last 5 years as per the data reported in the Flood reports published by Assam State Disaster Management Authority. The supporting flood data is given in **Annexure XIX**.

4.3 Baseline Environment

Base line attributes like ambient air, water, meteorology, noise, and soil were collected on 30.11.2023. Secondary data was also collected from various government department as well as local people. Baseline attributes studied for the project are discussed below along with the methodologies adopted for collecting the data.

4.3.1 Soil Environment

The composite soil samples were collected from the study area analyzed for characterization. The locations of the monitoring sites are depicted in the **table 4.2** within the study area of the proposed project. The sample was collected by driving an auger into the soil. The present study on the soil quality establishes the baseline characteristics and identifies the incremental concentrations if any, due to the proposed project. The objective of the sampling are:

- To determine the baseline soil characteristics of the study area;
- To determine the impact of proposed activity on soil characteristics and;
- To determine the impact on soil more importantly agriculture production point of view.

The test results for soil sampling locations are provided below and map showing the monitoring location is given in **Figure 4.3** and monitoring photographs are given in **Annexure XVII**.

Table 4.2: Soil Sampling Locations

S. No	Location of monitoring	Distance from site (km)	Latitudes	Longitudes
1	Project site	--	26°20' 21.94"N	90°39'17.42" E
2	Deohati Village	1.879	26°20' 38.98" N	90°38'9.87" E



Figure 4.3: Map Showing the Soil Quality Locations

Soil Analysis

Result obtained is compared with the standard soil classification as given in Agriculture Handbook. Two numbers of soil samples have been collected within study area and analyzed for physical and chemical properties. The table showing the results of soil analysis is given in **table 4.3**. The Environment Monitoring Report for soil quality analysis has been attached as **Annexure XII**.

Table 4.3: Soil Analysis Results

S. No.	Parameters	Units	Test Method	SQ1	SQ2
				Project Site	Deohati Village
1	Texture	-	GEL/LAB/SOP/SOIL/22	Sandy Loam	Sandy Loam
	Sand	%		59	60
	Silt	%		27	25
	Clay	%		14	15
2	*Color	-	GEL/LAB/SOP/SOIL/07	Light Brownish to grey	Light Brownish to grey
3	pH (1:2 Suspension)	-	IS 2720 (P-26): 1987, RA 2011	6.83	6.75
4	Specific Conductivity	µmhos/cm	IS 14767: 2000, RA 2016	508	513
5	Moisture	%	IS 2720(Part-2): 1973, RA 2015	24.2	25.3
6	Exchangeable Potassium	mg/kg	GEL/LAB/SOP/SOIL/07	8.1	7.3
7	Exchangeable Sodium	mg/kg	GEL/LAB/SOP/SOIL/06	21.4	21.5
8	Exchangeable Calcium	mg/kg	GEL/LAB/SOP/SOIL/08	302	312

9	Exchangeable Magnesium	mg/kg	GEL/LAB/SOP/SOIL/08	82.2	83.0
10	Porosity	%	GEL/LAB/SOP/SOIL/20	35.5	33.9
11	Organic Matter	%	IS 2720 (P-22) : 1972, RA 2010	0.57	0.56
12	Phosphorous	mg/kg	GEL/LAB/SOP/SOIL/10	12.1	11.8
13	*Nitrogen	mg/kg	GEL/LAB/SOP/SOIL/09	85	78
14	Chloride	mg/kg	GEL/LAB/SOP/SOIL/14	63	61
15	Bulk Density	gm/cc	IS 2720 (P-28) : 1974, RA 2010	1.9	1.8

4.3.2 Ambient Air Quality

The ambient air quality at selected 05 locations was carried out as per Indian standards guidelines and monitoring stations was selected as per CPCB manual. The location of the monitoring stations with reference to the proposed project is given in the **table 4.4** and map showing the monitoring locations are given in **Figure 4.4**. Monitoring photographs are given in **Annexure XVII**.

Table 4.4: Ambient Air Monitoring Stations

S. No	Location of monitoring	Distance from site (km)	Coordinates	Criteria
1	Project site	--	26°20'22.68" N 90°39'16.90" E	Core Zone
2	Near Project site	0.003	26°20'25.25" N 90°39'18.08" E	Residential area
3	Lakshmi Mandir	0.05	26°20'25.77" N 90°39'14.18" E	Sensitive Receptor
4	Abhayapuri College	0.602	26°20'22.12" N 90°39'42.07" E	Commercial area
5	S & R Kalita L.P School	1.953	26°20'36.92" N 90°38'6.67" E	Sensitive Receptor



Figure 4.4: Map Showing the Ambient Air Quality Locations

4.3.2.1 Ambient Air Quality Monitoring Inference

All the measured parameters were found below the standards prescribed by CPCB, New Delhi. The Environment Monitoring Report for Ambient Air Quality has been given in **Annexure XII**.

Table 4.5: Ambient Air Quality Analysis Results

S. No	Location of monitoring	Parameters						
		PM10 µg/m ³	PM 2.5 µg/m ³	PM1 µg/m ³	So ₂ µg/m ³	No ₂ µg/m ³	Temperature °C	Humidity %
1.	Project site	11	10	07	4.1	5.3	28	46
2.	Near Project site	12	11	08	4.3	4.7	28	48
3.	Lakshmi Mandir	13	12	09	4.9	4.4	28	49
4.	Abhayapuri College	15	13	06	5.1	6.2	29	42
5.	S & R Kalita L.P School	11	10	07	5.3	6.5	29	46
NAAQS		100	60	--	80	80	--	--

4.3.3 Noise Level in the Study Area

A preliminary reconnaissance survey was undertaken to identify the major noise generating sources in the area. The noise survey was conducted on 30.11.2023, to assess the background noise levels in different zones viz. industrial, commercial, and residential and silence zones.

The sampling locations for noise are confined to residential, commercial, and sensitive areas; however, no industrial area is present within the study area.

The baseline noise levels have been monitored at 05 locations within the study zone. Locations were identified for assessment of existing noise level status, keeping in view the land use pattern, industrial area, Silence Zone, residential areas in villages etc., if available within the study area. The day levels have been monitored during 6.00 AM to 10.00 PM and night noise levels, during 10.00 PM to 6.00 AM. The noise monitoring stations are shown in the **table 4.6** and map showing the monitoring locations are given in **Figure 4.5**. Monitoring photographs are given in **Annexure XVII**.

Table 4.6: Noise Quality Monitoring Locations

S. No	Location of monitoring	Zone	Latitude	Longitude
1	Project site	Silence zone	26°20'22.90'' N	90°39'16.93'' E
2	Near Project site	Residential area	26°20'25.19'' N	90°39'18.27'' E
3	Lakshmi Mandir	Silence zone	26°20'24.99'' N	90°39'12.99'' E
4	Near Abhayapuri College	Commercial area	26°20'21.99'' N	90°39'42.18'' E
5	S & R Kalita L.P School	Silence zone	26°20'36.72'' N	90°38'6.39'' E



Figure 4.5: Map Showing the Noise Quality Locations

4.3.3.1 Interpretation and conclusion

Generally, noise levels in public places like temples and community hall have higher values in day time. The Environment Monitoring Report for noise quality has been given in **Annexure XII**.

Table 4.7: Ambient Noise Quality Analysis Results

S. No.	Date	Location	Zone	Limit for As Per EPA, 1986 ; Leq, dB (A)		Observed Value Leq, dB (A)	
				Day Time*	Night Time**	Day Time*	Night Time**
1.	30.11.2023	Project site	Silence zone	50	40	48.3	38.5
2.	30.11.2023	Near Project site	Residential area	55	45	53.4	43.8
3.	30.11.2023	Lakshmi Mandir	Silence zone	50	40	47.2	38.2
4.	30.11.2023	Near Abhayapuri College	Commercial area	65	55	64.5	53.9
5.	30.11.2023	S & R Kalita L.P School	Silence zone	50	40	48.7	39.1
* Day Time			6.00 a.m. to 10.00 p.m.				
**Night Time			10.00 p.m. to 6.00 a.m.				

It was observed from the noise monitoring results that the noise levels near Abhayapuri College and the surrounding were on the higher side due to close proximity of the site to commercial area and Abhayapuri Main Road. However, results are within the noise standards prescribed by CPCB for residential, sensitive, and industrial areas.

4.3.4 Water

To analyze the surface and ground water quality of study area, sampling was carried out on 30.11.2023 for primary data. Sampling of surface and ground water was collected as per IS 3025

Part I. Water quality assessment is one of the essential components of Baseline study. Such assessment helps in evaluating the existing health of water body and suggesting appropriate mitigation measures to minimize the potential impact from proposed project.

4.3.4.1 Water Monitoring Sampling Locations

Ground water and Surface have been collected from the study area. The water sampling locations are provided in the **table 4.8** and monitoring photographs are given in **Annexure XVII**. Map showing the monitoring locations are given in **Figure 4.6**.

Table 4.8: Water Monitoring Sampling Locations

S. No.	Sampling Locations	Latitude	Longitude
1.	Project Site (Ground Water)	26°20'22.07'' N	90°39'17.11'' E
2.	School (Ground Water)	26°20'36.64'' N	90°38'6.29'' E
3.	Kulia River (Surface Water)	26°20'2.41'' N	90°37'42.97'' E

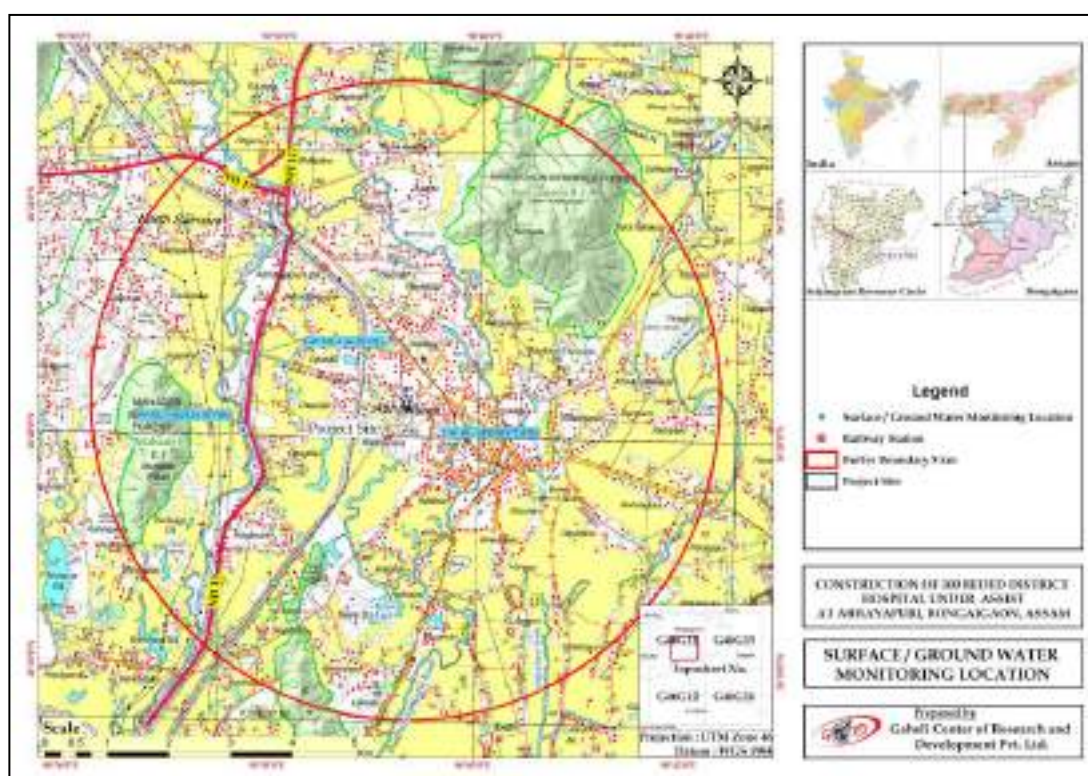


Figure 4.6: Map Showing the Surface/Ground Water Monitoring Locations

4.3.5 Ground Water Level

Ground water level data for the district is sourced from India Water Resources Information System (India-WRIS). The data is presented in **table 4.9** and **figure 4.7** below

Table 4.9: Year Wise Average Ground Water Level in the District

S. No.	Year	Average Ground Water Level (in m)
1.	2018	3.72
2.	2019	3.65
3.	2020	3.7
4.	2021	4.21

5.	2022	3.41
6.	2023	3.06



Figure 4.7: Year Wise Average Ground Water Level in the District

4.3.6 Surface and Ground Water Quality

The available source of water at project location is bore well with chlorine treatment and hand pump. Further, water for drinking purpose is made available through RO system at various locations within premises.

For the proposed New District Hospital, the same water source i.e. bore well with chlorine treatment will be continued for water supply.



Figure 4.8: Source of Water at Project site

4.3.7 Inference-Surface Water

Surface water samples were collected and analyzed and compared with Indian standard. The table showing the results of Surface Water is given in **table 4.10**. The Environment Monitoring Report for Surface Water has been given in **Annexure XII**. The overall surface water quality of the available sources within the study area was found to be good physico-chemically with respect to all the parameters. There is no organic load observed in the sources monitored indicating no pollution load in the source.

Table 4.10: Surface Water Analysis Results

S. No.	Parameter	Protocol Used	Results	IS: 10500:2012 (Second Revision)		Unit
				Desirable Limit	Max. Permissible Limit	
1.	pH	IS: 3025: Part 11	7.36	6.5 – 8.5	No Relaxation	pH unit
2.	TDS	IS: 3025: Part 16	40	500	2000	mg/L
3.	Turbidity	IS: 3025: Part 10	0	1	5	NTU
4.	Chloride	IS: 3025: Part 32	7.01	250	1000	mg/L
5.	Total Hardness	IS: 3025: Part 21	12.6	200	600	mg/L
6.	Total Alkalinity	IS: 3025: Part 23	4.2	200	600	mg/L
7.	Colour	IS: 3025: Part 4	<6	5	15	Hazen
8.	Residual Chlorine	FTK	-	0.2	1	mg/L
9.	Taste	IS: 3025: Part 8	Agreeable	Agreeable	Agreeable	
10.	Calcium	IS: 3025: Part 40	3.36	75	200	mg/L
11.	Magnesium	APHA 3500- Mg B	2.24	30	100	mg/L
12.	Iron	APHA 3500- Fe B	0.34	1	No Relaxation	mg/L
13.	Nitrate	APHA 3500- Fe B	7.912	45	No Relaxation	mg/L
14.	Fluoride	APHA 4500- NO ₃ B	0.014	1	1.5	mg/L
15.	Sulphate	APHA 4500- SO ₄ E	20.308	200	400	mg/L
16.	Arsenic	IS: 3025: Part 37	-	No Relaxation	0.01	mg/L
17.	Odour	IS: 3025(Part 37)	Agreeable	Agreeable	Agreeable	Agreeable
18	Total Coliform	-	Present	No organism/100 ml		CFU/100 ml

4.3.7.1 Inference- Ground Water

The table showing the results of Surface Water is given in **table 4.11**. The Environment Monitoring Report for Ground Water has been given in **Annexure XII**. It is seen that the physicochemical analysis of other parameters like iron and fluoride were found within the permissible limit of IS (10500:2012).

Table 4.11: Ground Water Analysis Results

S. No.	Parameter	Protocol Used	Results Project Site	Results LP School	IS: 10500:2012 (Second Revision)		Unit
					Desirable Limit	Max. Permissible Limit	
1.	pH	IS: 3025: Part 11	7.943	7.54	6.5 – 8.5	No Relaxation	pH unit
2.	TDS	IS: 3025: Part 16	50	50	500	2000	mg/L
3.	Turbidity	IS: 3025: Part 10	0	0	1	5	NTU
4.	Chloride	IS: 3025: Part 32	24.95	20.27	250	1000	mg/L
5.	Total Hardness	IS: 3025: Part 21	4.2	4.2	200	600	mg/L
6.	Total Alkalinity	IS: 3025: Part 23	2.2	4.2	200	600	mg/L
7.	Colour	IS: 3025: Part 4	<6	<6	5	15	Hazen
8.	Residual Chlorine	FTK	-	-	0.2	1	mg/L
9.	Taste	IS: 3025: Part 8	Agreeable	Agreeable	Agreeable	Agreeable	
10.	Calcium	IS: 3025: Part 40	1.68	1.68	75	200	mg/L
11.	Magnesium	APHA 3500-Mg B	0.61	0.61	30	100	mg/L
12.	Iron	APHA 3500- Fe B	0.29	0.28	1	No Relaxation	mg/L
13.	Nitrate	APHA 3500- Fe B	7.943	8.009	45	No Relaxation	mg/L
14.	Fluoride	APHA 4500- NO ₃ B	0.008	0.009	1	1.5	mg/L
15.	Sulphate	APHA	21.001	20.601	200	400	mg/L

		4500-SO ₄ E					
16.	Arsenic	IS: 3025: Part 37	-	-	No Relaxation	0.01	mg/L
17.	Odour	IS: 3025(Part 37)	Agreeable	Agreeable	Agreeable	Agreeable	-
18	Total coliform	-	Absent	Absent	No organism/100 ml		CFU/100 ml

4.3.8 Data of inflow of patients in the existing facilities

Based on records and data provided by the Hospital Authorities for the 1st week of November 2023, it was found that:

- About 150 patients were visiting the OPD per day, 10-15 IPD per day and about 12-15 deliveries per day were taking place.
- The Labor room records also included information such as age, address of patient, type of delivery, delivery outcome, Gestation (full term or premature), weight and gender of baby, complications, Hb gms %, blood group, gravida/Parity/abortion/living children etc. On the basis of this record, it was analyzed that average age of patient during sample period was found to be 22 years and all the babies delivered were normal and alive and average weight of the baby observed was 2.8 kg. No high risk pregnancies were observed during the sample period and G2P1 gravida/Parity/abortion/living children was prevalent.
- Child Immunization Services are provided by the hospital which includes vaccinations of BCG, OPV-1&2, PCV-1, Pentavalent 1, 2 & 3, IPV-1, RVV-1, 2& 3, vitamin A (A1-A9) etc.
- Many cases of animal bites (pig bites, dog bites and monkey bites) are also reported on a daily basis.

The Extracts of Patient inflow data received from the hospital is given in **Annexure IV**.

4.3.9 Biological Environment

The Biological Study was undertaken which comprises of primary and secondary data collection gathered during field survey and from records of Forest Dept. and published literatures.

4.3.9.1 Flora

Vegetation observed during site visit- The common trees observed are Gulmohar (*Delonix regia*), Banyan tree (*Ficus benghalensis*), Siris (*Albizia sp.*), Bakain (*Melia azedarach*), Kadamba (*Bauhinia malabarica*), Bakain (*Melia azedarach*), Sissoo (*Dalbergia sissoo*), Imli (*Tamarindus indica*), Rubber tree (*Ficus elastica*), Amaltas (*Crassia fistula*), Semal (*Bombax ceiba*), Jamun (*Eugenia jambolana*), Coconut (*Cocos nucifera*) and Bamboo etc. The herbs and shrubs observed in the area are Lantana (*Lantana camara*), Pragma (*Pragmites karkar*), Congress grass (*Parthenium hysterophorus*), Dub grass (*Cynodon dactylon*), Jimson weed (*Datura stramonium*), Barnyard grass (*Echinochloa crus galli*), Johnson grass

(*Sorghum halepense*), *Echinochloa colona*, Chick weeds (*Ageratum conyzoides*) and Green giant (*Alocasia sp.*).

4.3.9.2 Fauna

The common fauna species observed are: Gilahri (*Funambulus pennant*), Chuha (*Bandicota bengalensis*), Nevala (*Herpestes edwardsi*), Langur (*Presbytis entellus*), Bandar (*Macaca mulatta*), Chamgadad (*Cynopterus sphinx*), Bamboo Rat (*Rhizomys pruinosus*), dog (*Canis lupus familiaris*), Sheep (*Ovis Aries*), Cow (*Bos taurus*) etc.

The detailed list of flora and fauna is given in **Annexure V**.

4.4 Socio-Economic Characteristics

4.4.1 Description of the study area

In conducting the ESIA, area within 5 km radius from the “Project Site” is considered as the “Study Area”. The proposed project covers 46 villages and 1 town of Bongaigaon District in Assam State.

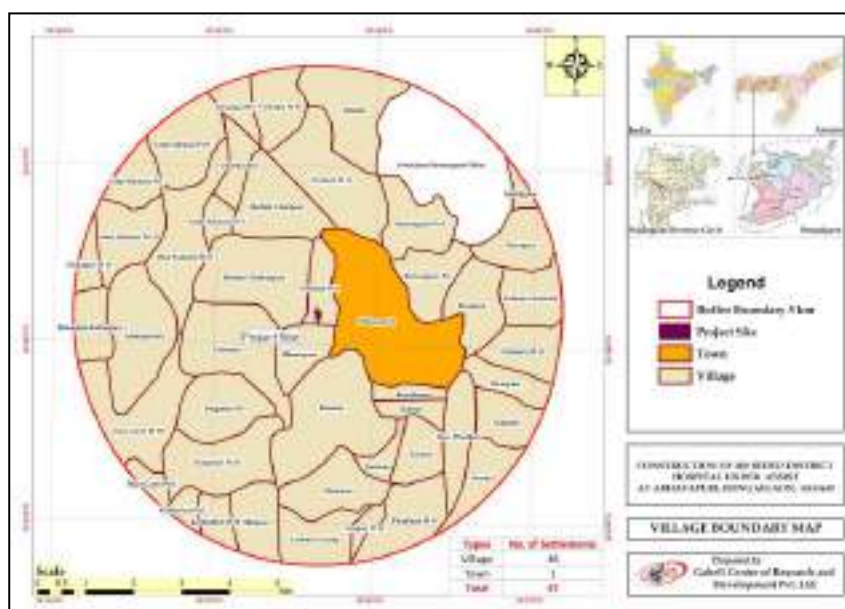


Figure 4.9: Village-Town Boundary Map

4.4.2 The salient features of the study area includes –

1. Total population of study area is **66784**. The percentages of male & female population are **50.23%** & **49.77%** respectively with sex ratio (number of Females per thousand Male) of the study area is **991**.
2. Total household in the study area are **14,266** with a family size of **5**.
3. Total number of literates in the study area is **45,637 (68.34%)**.
4. Sex ratio (number of Females per thousand Male) of the study area is **991** which shows that male population is higher in the study area as compared with the female population.
5. Out of the total population, Scheduled Caste population in the study area is **10737 (16.08%)** and Scheduled Tribe population is **2201 (3.30%)**.

6. Child population (0-6 years) in the study area is 8584 which is **12.85%** of the total Population out of which 4440 (**13.24%**) is boys population and 4144 (**12.47%**) is girls population.

4.4.3 Social Structure

a) The Schedule Caste:

The total number of Schedule caste within the study area is approximately **10737** which is 16.08% of total population with 4440 (8.28%) Male and 4144 (7.79%) are female. The graphical representation is given below.

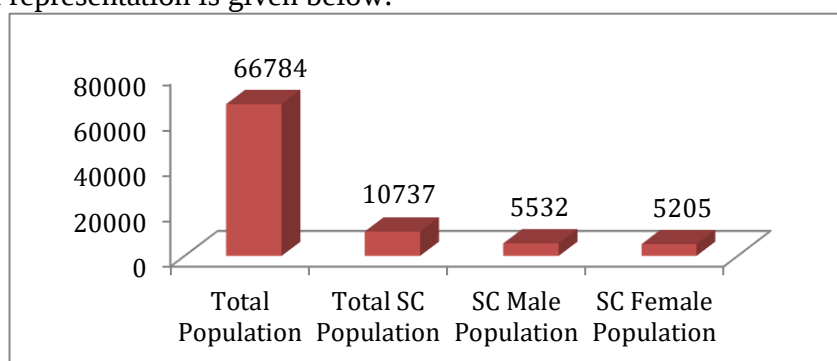


Figure 4.10: Graph Showing Schedule Caste Structure of the Study Area

b) The Schedule Tribe:

The Schedule Tribe (ST) population within the study Area is 2201 (**3.30%**) of the total population with **1051 (1.57%)** Males and **1150 (1.72%)** Females. Detailed status of social structure and their graphical representation for the same is given below –

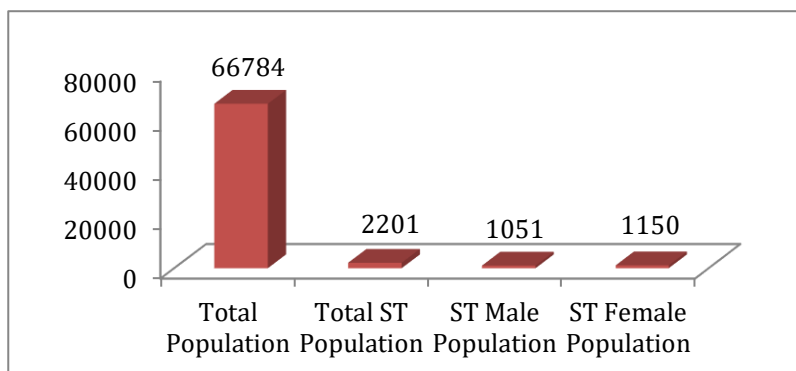


Figure 4.11: Graph Showing Schedule Tribe Structure of the Study Area

c) Literacy

The total number of literates within the study area is approximately **45637** which are 68.34% of total population. Male literacy rate of the study area is 24140 (**52.90%**) and female literacy rate is 21497 (**47.10%**). Detailed status of literacy is given below. Graphical structure of the literacy & illiteracy structure of the area is as follows:

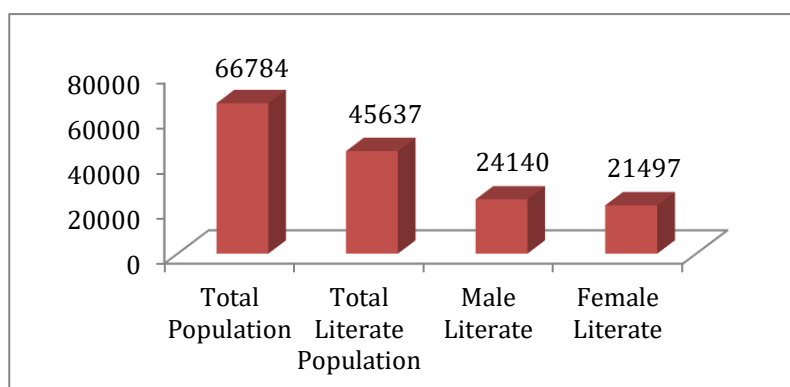


Figure 4.12: Graph showing Literacy Structure of the Study Area

d) Illiteracy

The total number of illiterates within the study area is approximately 21,147 which are 31.66% of total population. Male Illiteracy in the study area is 9,407 (44.48%) and female Illiteracy is 11,740 (55.52%). Graphical representation for the same is given below:

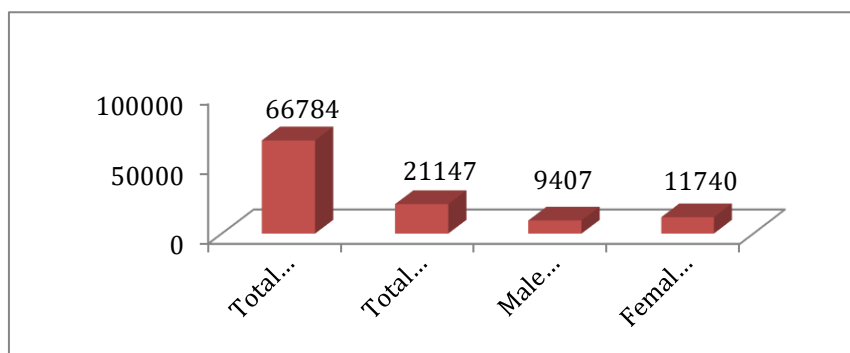


Figure 4.13; Graph showing Illiteracy structure of the study area

The details of Demographic Structure of the Study Area is given in **Annexure VI**.

4.4.4 Occupational Structure

“Occupational Structure” of the population in the ‘Study Area’ has been studied with reference to the total workers and non-workers. Further total workers grouped into two categories “main workers” and “marginal workers”.

4.4.4.1 Total workers

“Work” is defined as participation in any economically productive activity with or without compensation, wages or profit; such participation may be physical and/or mental in nature.

The number of total workers in the study area is approximately **23,070 (34.54%)** out of which **18,203 (78.90%)** are male and **4,867 (21.10%)** are female workers.

Total workers further divided into main workers and marginal workers –

(i) Main Workers

The workers who had worked for the major part of the reference period (i.e. 6 months or more) are termed as “Main Workers”. Total number of main workers in the Study Area is approximately **17,597** persons, which is **76.28%** of total workers and **26.35%** of total population.

(ii) Marginal Workers

Marginal Workers are those workers, who are engaged in some work for a period of less than six months, during the reference year prior to the census survey. Total number of marginal workers in the Study Area is approximately 5473 persons which, is 23.72% of the total workers and 8.20% of total population.

4.4.4.2 Non Workers

The non-workers include those engaged in unpaid household duties, students, retired persons, dependents, beggars etc. More than half 43714 (65.46%) of population is not working. 35.10% of male population and 64.90% is female population are non-workers.

The percent distribution of Occupational pattern within the study area is given in the table below. Occupation structure of each village in the study area is tabulated below and the graphical representation has also been provided.

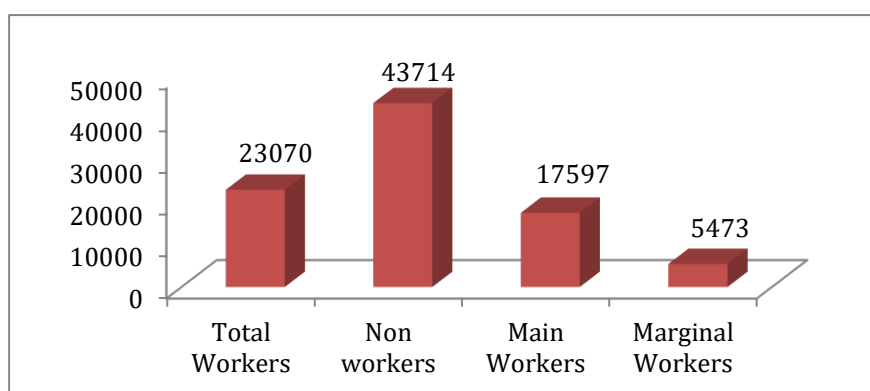


Figure 4.14: Occupational Pattern in the Study Area

The details of Occupational Pattern of the Study Area is given in **Annexure VII**.

CHAPTER-5

ENVIRONMENT AND SOCIAL RISKS AND IMPACTS

5. ENVIRONMENT AND SOCIAL RISKS AND IMPACTS

5.1. Introduction

This Chapter identifies and discusses both positive and negative impacts associated with the proposed project. Screenings of potential environmental and social impacts are categorized into three categories considering project phases: pre-construction impacts, construction impacts and operations and maintenance impacts.

Screening of environmental and social impacts has been assessed on the basis of screening format for Environment & Social Risks/Impacts as given in ASSIST-ESMF (Jan-Feb 2023), baseline data collected through primary as well as secondary sources and stakeholder consultations

5.1.1. Pre-Construction Impacts

i. Consents, permits, clearances, no objection certificate (NOC), etc.

All the consents, permits, clearances and NOCs should be obtained before start of construction activities. Failure to obtain necessary consents, permits, NOCs, etc. can result to design revisions and/or stoppage of works. Suggestive list of consents, permits, NOCs etc. required before construction works are given in table below:

Table 5.1: Suggestive lists of consents, permits, NOCs

S.No	Construction Activity	Statute under which Clearance is Required	Responsibility
1	Establishment of new 100 bedded DH /Temporary Labor camps / storage of construction materials batching plant etc.	Pre establishment permission (consents, authorization) from Assam Pollution Control Board.	Contractor
2	Tree Cutting (if required)	Assam State Forest department	Contractor
3	RMC/Batching plants (if required)	Consent to establish and consent to operate under Water and Air Act, 1981 from ASPCB	Contractor
4	Use of vehicles and equipment	Pollution under control certificate (PUC) form RTO	Contractor
5	Temporary water supply and Electrical Connections for work site and camps during construction phase	Concerned local state department	Contractor
6	Labor License	Concerned local / state department	Contractor

ii. Risk/Impacts during Pre-construction Activities

Table 5.2: Pre-Construction Activities and its risk/Impacts

S. No	Pre-Construction Activity	Anticipated Risk/Impacts
1.	Site clearance	Abhayapuri CHC-FRU along with old existing buildings in the site of proposed DH. These structures requires to be

		demolished for construction of new DH at the site. • Presently, 2-3 electric poles, 1 hand pump, 1 overhead water storage structure exist at site. Some of them may be shifted or closed. • At present, 50-60 trees are present at the proposed DH site. No major tree cutting except clearance of firewood (as per preliminary records and discussion with Deputy Superintendent CHC and FRU).
2.	Site Selection	Selection of proper sites for Construction worker camps, stockpile areas, storage areas and sources of materials safeguarding environmental and social concerns governing the same.
3.	Debris disposal	Prior to the commencement of works, contractor shall identify a debris disposal site (possibly near to project site) in consultation with local body and implementing agency. It will prevent impending soil and water pollution to be caused by construction activities. Further, Asbestos is not a part of debris disposal site as there is no generation of asbestos at the site.
4.	Consultations	• Lack of awareness on the project among community may restrict public participation in decision making • Lack of knowledge on the facilities to be provided by the proposed DH at their own neighborhood will prevent them from availing the facilities. • Lack of prior intimation of the demolition and construction activities may lead to health hazards caused by probable air, water and noise pollution.
5	Grievances of community	• Public resistance anticipating negative impacts of the project like tree felling for site clearance, air and land and water pollution due to heavy construction activities • Accessibility issues of public • Land demarcation issues.

5.1.2. Construction Phase Impacts

Table 5.3: Construction Activities and its Anticipated Risk

S. No	Concerns	Anticipated Risk
1.	Demolition of existing structures	Generation of noise and dust emissions. Demolition materials may be scattered and thrown away in a manner that may cause hindrance to neighborhood and in the access routes
2.	Ground Water	Ground water contamination and Ground water depletion

		due to construction works and machine operations
3.	Surface Water	Temporary flooding at site and nearby areas and contamination of the surface water bodies in and around site
4.	Ambient Air Quality	Dust Emissions (PM), SO ₂ , NO ₂ and CO from construction activities, Vehicular movement, DG sets
5.	Noise and visual impacts	Environmental noise can cause Hearing impairment, hypertension, and ischemic heart disease (IHD), annoyance and sleep disturbances. Noise exposure may also cause birth defects
6.	Land Environment	Loss of topsoil, soil erosion, and soil contamination due to construction activities. Loss of agricultural productivity due to contamination of drained off water & sludge from construction site or drained off cement from batching plant.
7.	Waste Management	Water pollution, emissions and soil degradation
8.	Storm Water Management	Poor sanitation, drainage problem which results in water running over roads and water logging.
9.	Hazardous material storage and waste handling & disposal	Storage and handling of hazardous substances: substances that may harm people or the environment shall be handled and stored in a way that prevents accidental release.
10.	Energy Efficiency	Loss of natural resources
11.	Fire Fighting	Loss of Life and Property
12.	Occupational Health & Safety (OHS) and Community Health & Safety	Contractors staff and Labours will be engaged in the proposed construction. So there will be Health and Safety risks to construction workers; as well as to the community living near the proposed construction sites.
13.	Gender based violence, SEA/SH	During construction phase, probable incidents of gender-based discrimination in employment and Sexual Exploitation and Abuse/ Sexual Harassment (SEA/SH) of women workers at site (consultants and contractors' staff & laborers) as well as in the community in and around may take place.
14.	Road safety	Issues and concerns of Road safety to pedestrians and community staying nearby site due to movement of construction vehicles
15.	Grievances of workers as well as community	• The workers at the construction site may have grievances due to non-receipt of basic facilities, PPE related, non- Receipt of dues, work place discrimination, excessive work load etc. • Potential conflict between migrant workforce and local may take place • Moreover, local residents and passers-by may raise

		concerns regarding the lack of transparency about the project, construction-related issues such as pollution, waterlogging, and tree felling for site clearance, as well as problems related to demolition and restricted accessibility.
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5.1.3 Operation Phase Impacts

The project has positive impact on the society as provider of health care services to the local people. This will alleviate the overall health status of the local people in terms of affordable health care services.

During the operational phase, various impacts relating to the functioning of the healthcare facilities supported under the project are summarized below:

Table 5.4: Anticipated Risk during operation phase

S. No	Concerns	Anticipated Risk
1.	Consent to Operate under Air & Water Act	Violations to applicable environment norms, which overall affects the start of operations of proposed project.
2.	Authorization for Handling, Storage, Treatment of BMW under BMW Rules	Violations to applicable environment norms, which overall affects the start of operations of proposed project.
3.	Air Pollution	Emissions from vehicular movement and functioning of DG sets are envisaged.
4.	Water	Risk of Ground water contamination is envisaged from wide range of medications, Pharmaceuticals activities can persist in wastewater and contaminate groundwater, sterilization and cleaning processes which lead to the release of heavy metals into wastewater and Pathogens.
5.	Solid waste	Risk of Improper solid waste generation is envisaged. from various departments and activities, including surgical operations, dialysis, laboratories, and general areas is envisaged.
6.	Infection control	Improper handling and disposal of Bio-medical waste. Improper waste disposal can create unsanitary conditions that can spread infectious diseases.
7.	Occupational Health and Safety	Health, Hygiene and Safety of employees
8.	Life and fire safety	Loss of Life and Property
9.	Gender based violence's, SEA/SH	There may be issues of GBV, SEA/SH of women patients and attendants as well as the women employees & staff at the new Hospital.
10.	Grievance Redressal of community/ patients and employees.	The community people/ patients may have grievances of not receiving or delay in treatment, lack of doctors/nurses, insurance, facilities at hospital, lack of medicines etc.

		And employees may have grievances of not having basic and proper facilities at hospital, hectic schedules etc.
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The Environment Health and Safety (EHS) committee assisted by other members of healthcare facility will be formed which will do the best to minimize the environment and social risk.

CHAPTER-6

STAKEHOLDER ENGAGEMENT

CHAPTER 6-STAKEHOLDER ENGAGEMENT

6.1 Introduction on Stakeholder Engagement

Stakeholder Engagement is a process made to involve the public as stakeholders in project preparation through consultations and focus group discussion meetings. Stakeholder Engagement seeks to provide a transparent engagement and open communication between and among the project stakeholders to maximize participation and inclusion for project design, implementation, monitoring and evaluation; enhance project acceptance and improve the environmental and social sustainability.

The main objectives of undertaking these consultations are dissemination of information to build awareness among stakeholders and inform them about the objective, the adverse and positive impacts, design aspects of the project and discuss about the training requirements to enhance their skills and livelihood options.

6.2 Key Stakeholders

(i) **Affected Parties** are impacted or likely to be impacted directly or indirectly, positively or adversely, by the Project.

The Stakeholder engagement with affected parties such as patients, healthcare work force and social activist (influencer) was undertaken.

(ii) **Interested Parties** may have an interest in the Project. They include individuals or groups whose interests may be affected by the Project and who have the potential to influence the Project outcomes in any way.

The Stakeholder engagement with interested parties such as social activist (influencer), ASHA workers was undertaken.

(iii) **Vulnerable Groups** include:

- Patients: Elderly, persons with disabilities, persons below poverty line, female and minor patients at heightened risk of gender-based violence, ethnic minorities, LGBTQI.
- Communities affected by the construction activities: Scheduled tribes (ST), scheduled castes (SC), and communities living in remote and hilly locations, female headed households, illiterate and poor population.

6.3. Methods of Stakeholder Engagement

Different tools were employed in interviews conducted and discussions ranged from informal and undirected to formal and directed.

6.3.1. Stakeholder Consultation

As part of the ESIA process, the project team has undertaken consultation with the stakeholders of the project to understand their expectations from the proposed project. The main objective of the stakeholder consultation is to develop an understanding and awareness on the project among the different stakeholders, assess the level of stakeholder interest and support for the project, and to ensure that appropriate measures for mitigating environmental and social risks and impacts are disclosed to stakeholders in a timely, understandable, accessible and appropriate manner.

6.3.2 Stakeholder Engagement Meeting

Stakeholder Meeting for the proposed DH has been conducted on 30.11.2023 at Campus of Abhayapuri C.H.C (FRU), Abhayapuri, Assam. The meeting was attended by 24 people including

(i) Medical officer, (ii) Govt. Contractor (iii) CHC employee (iv) Local villagers (v) Pharmacist (vi) Chairman Abhayapuri Municipal Board (vii) patients. The attendance sheet is given in **Annexure VIII**. The photographs of stakeholder Engagement are given in **figure 6.1**.





Figure 6.1: Photographs of stakeholder engagement

6.3.3 Information, Education and Communication (IEC)

The Information, Education & Communication (IEC) aims to create awareness and disseminate information regarding the benefits available under various schemes/programmes through banner, leaflets, posters, announcements, newspaper, notices, signages, social media etc. The aim of such advertisements is to encourage people to adopt positive behavior, raise awareness and disseminate information regarding availability and access to quality healthcare provided by the Government. Snippets of incorporation of IEC in the Abhayapuri CHC-FRU are shown in the figure below:





Figure 6.2: Banners and posters displayed at CHC FRU, Abhayapuri

6.3.4. Outcome of the stakeholder Consultation

During stakeholder consultation, dissemination of information for building awareness about the project was discussed. The outcome of the meeting was that there is inadequate facility present for Cesarean section cases, as presently they have to go to Bongaigaon Civil Hospital which is far away from the existing CHC-FRU and the local people wants no interruption in health services during construction phase

All the stakeholders supported for the development of proposed New District Hospital and were in support of the upgradation of existing facility to proposed DC. The proposed project will cater to all the concerns of stakeholder once it gets start functioning. The key suggestion given by stakeholder are presented in table below:

Table 6.1: Key issues and suggestions of different Stakeholders

S. No.	Stakeholders	Commitment made during the Stakeholder Engagement meeting
1.	Medical Officer	- Mr. M.K. Kakati, Deputy Superintendent, CHC-FRU, Abhayapuri the representative of the CHC-FRU, Abhayapuri. - He supports the proposed project. - Safe disposal of biomedical waste will be done. He ensured that in operation phase, will make the tie-up with CBWTF located at Metuakuchi, Barpeta for disposal of BMW will be made before starting operation of District Hospital. The CBWTF of Metuakuchi is located within the 75km from the site and it is functional. Present mode of BMW disposal is through Sharp pits and Deep Burial at the site. - To ensure all the activities related to healthcare facilities will be followed.

		There will no discrimination on the basis of gender, age, and color.
2.	Local body/Chairman (Abhayapuri Municipal Board)	- Mr. Sushanta Taddu was the representative from the Abhayapuri Municipal Board. - As a representative of the Abhayapuri Municipal Board, he has no objection on the proposed project. - He issued the NOC regarding the proposed project activities and same is given in Annexure VIII.
3.	Residents from the locality within 100 m from the hospital building	- Mr. Rashu Ram Mandal and Mr. Pranab Kalita attend the Engagement meeting. - They supports the proposed project.
4.	Pharmacist	- Mr. Deepak Chakraborty supports the project. - Mr. Abdul Karim, Secretary, Abhayapuri Chemist and Drugist Association, has given NOC regarding the proposed project activities and same is given in Annexure VIII.
5.	Patients (Vulnerable Group)	- Mrs. Das and Mrs. Mofida Khatun attended the Stakeholder Engagement meeting under vulnerable group (patient). - They were happy with the services available at the hospital and was in support of the upgradation of existing facility to proposed DH. - Various Pregnant women, Elderly patients and Patients with Disabilities were interacted and informed about various ongoing Govt. Insurance Schemes such as Pradhan Mantri Jan Arogya Yojana (PM-JAY) and Janani Suraksha Yojana (JSY).

6.4. Cost for implementation of IEC, Community meetings and Awareness & Training

The budget for the same has been allocated and mentioned under **table 6.2** given below:

Table 6.2: Cost for implementation of IEC, Community meetings and Awareness & Training

S. No.	Particular	Stage	Total Cost INR
1.	IEC Development (Banner, Leaflets, posters, announcement costs, new paper Notices, signage, etc.)	Pre-Construction, Construction and facility operation phase	1,00,000/-
2.	Community meetings in nearby locations	Construction	50,000/-

3.	Awareness & training programs with Stakeholders	Construction	2,00,000/-
Total			3,50,000/-

CHAPTER-7

ENVIRONMENT AND SOCIAL MANAGEMENT PLAN (ESMP)

7- ENVIRONMENT AND SOCIAL MANAGEMENT PLAN (ESMP)

7.1 Environment and Social Management Plan Introduction

The objective of ESMP is to manage and monitor environmental and social impacts during the **pre-construction, construction and operation phase** of the proposed project. To attain this, the ESMP identifies possible adverse impacts from the proposed project activities and outlines mitigation measures required to reduce the likely negative effects on the built, natural and social environment. ESMP is covering the following parameters-

1. Legal Consents, permits, clearances, NOCs, etc. required before the commencement of the project.
2. Existing condition of Air Environment, Noise Environment, Water Environment (Ground water/ Surface Water) and Biological Environment and impact induced on these during the Pre-construction, Construction and Operational Phases.
3. Community Health and Safety, Labor welfare, Occupational Health & Safety, Transportation and Vehicle Movement, Socio-economic condition during and after commencement of the project.
4. Key areas/activities/concerns resulting in adverse environmental and social impacts and its mitigation measures including impacts, operating procedure and agencies that would be responsible.
5. Estimation of potential environmental and social impacts and their mitigation measures given in **Table 7.1.** below:

Table 7.1(i): Environmental and Social Risks/Impacts assessment and Mitigation Measures during Pre-Construction Phase

Key Area/Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures	Responsibilities
Consent to Establish from Assam State Pollution Control Board, Land ownership documents from Government of Assam, tree cutting permission from Assam State Forest Department.	Non availability of the necessary consents or permits can result in stoppage of further processing of works.	➤ Ensure availability of necessary consents, clearances and permits, land compensation, design, engineering, equipment, material, construction, erection, testing & commissioning.	Contractor, Joint Director, DH & Project In-charge
Site Clearance	Presently, exiting CHC-FRU, old building structures including one overhead water storage structure, electric poles and 50-60 trees are present and they may possess the risk during the development of new building structures.	➤ Electric poles will be shifted within the site to a safe place under the guidance of a concerned person. ➤ Water Overhead structure will be demolished as it is an old structure. ➤ No major tree cutting except clearance of firewood (as per preliminary records and discussion with Deputy Superintendent CHC and FRU). ➤ Use barriers to protect tree trunks from mechanical injuries caused by construction equipment. ➤ Maintain a regular watering schedule to support tree health throughout the construction process, especially during dry periods. ➤ Regularly monitor the condition of protected trees and adjust protection	Contractor, Joint Director, DH & Project In-charge

		measures as needed to respond to potential stress or damage. ➤ Mark and provide sign boards in order to prevent any mishap.	
Archeology and Cultural Heritage	Not within 5 km Radius of the study area; A historical type Structure Lalmati Ganesh Mandir, Abhayapuri was constructed during 8th AD at a distance of 5.0 km from the CHC & FRU.	➤ No Archeology and Cultural Heritage site is present within 5 km Radius of the study area, therefore, no impact expected from this component.	NA
Site Selection	Selection of site for Construction worker camps, stockpile areas, storage areas, sources of materials	➤ For establishing temporarily workers camp, the priority should be to locate these near the subproject sites. ➤ The temporary workers camp, storage of fuel and lubricants should be avoided near any water body, at land being used for production of crops, near to any sensitive area. ➤ Prior permission is required from concerned agency for establishing workers camps, stockpile areas, storage areas. ➤ Verify the suitability of all material sources and to obtain the approval of applicable department and local revenue administration.	Contractor & Project In-charge
Debris disposal	Prior to the commencement of works, contractor shall identify a debris disposal site (possibly near to project	➤ The site shall be selected preferably from barren, infertile lands. ➤ Prepare a construction and demolition	Contractor, Joint Director, DH & Project In-charge

	site) in consultation with local body and implementing agency.	waste management plan in preconstruction phase for safe disposal (no asbestos generation). ➤ As the proposed DH is surrounded by residential area, at the time of selecting the disposal site minimum distance criteria will be followed and minimum 2.570 km (Kulia River stream) away from sensitive locations like hospitals, religious places, ponds/lakes or other water bodies.	
Stakeholder Engagement	Lack of awareness on the project among community may restrict them from participating in decision making and knowing about the facilities to be provided by the proposed DH at their own neighborhood thereby preventing them from availing the facilities. Further lack of prior intimation of the demolition and construction activities may lead to health hazards caused by probable air, water and noise pollution.	• Prior intimation to the public about the time and the duration of the particular construction works which causes inconveniences to the community residing nearby. • Stakeholder consultation for - o allowing them to participate in decision making for the proposed DH - o Making people aware of the proposed DH and the facilities to be provided by the DH at specific intervals with representation from all the sections of the community in and around the proposed site including women members of the community. - o responding to their queries regarding, proposed DH, construction activity etc.	Contractor, Joint Director, DH & Project In-charge
Grievances of community	• Public resistance for the project	• Public consultation to gather data on the	Contractor, Joint Director,

	anticipating negative impacts of the project like tree felling for site clearance, air and land and water pollution due to heavy construction activities • Accessibility issues of public • Land demarcation issues.	proposed site while also raising awareness about the potential impacts and benefits of the project. • Installation of Drop Boxes with proper signage's at entry gate so that it is visible to community to drop grievances. • Display of contact number and e-mail dedicated for GRM at entry gate • Developing of Grievance Redressal Protocol to address the grievances received at site • Designation of manpower to register the grievances at site • Developing of proper formats to capture all the relevant details of complainant for registering grievances of Community	DH & Project In-charge
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Table7.1 (ii): Environmental and Social Risks/Impacts assessment and Mitigation Measures during Construction Phase

Key Area/Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures	Responsibilities
Disruption of Health services at CHC-FRU	Temporary disruption/delay of health services due to change in location of existing medical facilities (to nearby areas) during up gradation of CHC-FRU and construction of District Hospital.	It will be ensured that there will not be major delay/disruption of health services due to upgradation of health facility.	Project In-charge
Demolition of brick wall/ existing structures	Noise, dust, disruption of the neighborhood, underground or overhead services (if any) etc.	➤ Structures to be demolished should be wetted through water sprinkling to reduce	Contractor

Key Area/Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures	Responsibilities
		dust emission. ➤ C&D rules and mitigation measures should be displayed at the project site. ➤ Green net fencing (3mhigh) all around the site. ➤ The location of any underground or overhead services (water, electricity, gas, etc.) ➤ Appropriate site for storage and disposal of demolished materials (properly covered) ➤ All the safety measures such as providing appropriate Personal Protective Equipment (PPE) should be adopted during demolition activities. ➤ Development of greenbelt in and around project site. ➤ A Management Plan for Construction and Demolition waste is prepared and attached as Annexure- I.	
Ground Water	➤ Ground Water Contamination ➤ Ground Water Depletion	➤ Waste water generating at the project site will be disposed	Contractor and Project In-charge

Key Area/Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures	Responsibilities
		of in the septic tanks/soak pits conforming to CPCB/ASPCB norms. ➤ Waste water generated will be treated in a STP in operational phase. ➤ Disposal of liquid waste from Labs, blood bank, O.Ts etc during operations phase shall be disposed through proposed ETP in operational phase ➤ Will use the available water more efficiently. ➤ Will use Re-cycled water ➤ Use of Water Efficient fixtures like flow regulators & dual flushing cisterns ➤ Provision of RWH pits to collect rain water for ground water recharge.	
Surface Water	Surface water contamination	➤ Curing will be done by spraying water to reduce run-off. ➤ It will be ensured that surface water runoff will be disposed through proper drainage channel to minimize the	Contractor

Key Area/Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures	Responsibilities
		contamination risk. ➤ Rain water Harvesting	
Ambient Air Quality	Dust Emissions (PM), SO ₂ , NO ₂ and CO from Construction activities, Vehicular movement, DG sets	➤ Water sprinkling will be carried out. ➤ Regular sweeping of construction site Construction material & debris carrying vehicles will be covered. ➤ Regular monitoring of emissions and control measures will be taken to reduce the emission levels. ➤ Use of low sulfur diesel. ➤ Regular maintenance and servicing of vehicles. ➤ Stack height of DG set as per CPCB standards ➤ Developing of Green belt ➤ All vehicles must carry Pollution under Control Certificate. ➤ All transportation/vehicle movements for material transport shall be carried out during 10.00 pm to 6.00 am ➤ All the material shall be properly covered at site as	Contractor in consultation with hired consultant (environment monitoring)

Key Area/Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures	Responsibilities
		well as during transportation so that the dust cannot get airborne ➤ Hard barricading shall be provided around the construction site ➤ Regular ambient air monitoring (twice a year).	
Noise and visual impacts	➤ Environmental noise can cause Hearing impairment, hypertension, and ischemic heart disease (IHD), annoyance and sleep disturbances. Noise exposure may also cause birth defects	➤ Construction activities involving high level noise generation will be restricted to day time only. ➤ Provision of ear muffs to workers. ➤ Use of machinery of modern make meeting the noise standards ➤ Development of green belt. ➤ DG sets will be provided with acoustic enclosures and will be placed in a room to reduce noise level. ➤ Proper traffic management & circulation. ➤ Honking will be prohibited in the premises. ➤ All vehicles will carry PUC.	Contractor

Key Area/Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures	Responsibilities
		➤ Regular ambient noise monitoring and work site noise monitoring	
Land Environment	Soil Contamination	➤ Construction debris will be used for leveling or sent to authorized site for disposal ➤ Proper work management to avoid spillage ➤ Excavated topsoil will be re-used for landscaping in the project area.	Contractor
Waste Management	Water pollution, emissions and soil degradation	➤ Estimation of waste generated, on site handling, storage and processing, collection, transfer and transport, processing and recovery & disposal through following methods. ➤ Installation of STP for domestic effluent and ETP for Lab, OT and blood bank waste separately. ➤ Garbage chute system and color coded bins for segregation of waste for domestic and biomedical waste respectively.	Contractor in consultation with Architect

Key Area/Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures	Responsibilities
		➤ Organic Waste Compost Machine for 100 Kg/Day Waste per Day will be installed.	
Storm Water Management	Poor sanitation, drainage problem which results in water running over roads and water logging.	➤ Re-establish the drainage pattern to the extent practicable. ➤ Provision of dual plumbing system/ two pipe (stack) system and use of zero liquid discharge technology. Water balance chart is attached in Annexure XIII. ➤ The rain water to be diverted using rain water pipes to the drainage network. ➤ The entire site storm water to be diverted into the rainwater harvesting well for recharging the aquifer and the surplus will be connect to the municipal drain.	Contractor in consultation with Architect
Transportation and Vehicle Movement	Increase in volume of traffic Issues and concerns of Road safety to pedestrians and community staying nearby site due to movement of construction vehicles	➤ As proposed works of construction of DH at Abhayapuri is limited to proposed site only, which is a closed premise bounded by	Contractor and Project In-charge

Key Area/Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures	Responsibilities
		distinct wall and gate. Separate routes for transportation of vehicles for construction are planned in the site. ➤ The road will be metaled and regularly water sprinkled during construction activities ➤ During construction, transportation during busy traffic hours will be avoided and time schedules will be prepared for transportation of construction materials in consultation with the authorities concerned ➤ Proper Traffic Management & circulation with adequate lighting and signage system. ➤ Provision of adequate parking spaces as per Norms. ➤ Trained and qualified drivers/operators. ➤ Separate routes for the movement of machineries and vehicles away from the patients/visitors route.	

Key Area/Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures	Responsibilities
		➤ Regular checks and inspections for the ambulances and other vehicles. ➤ Traffic Survey was conducted near the vicinity of the project and details of survey forms and its analysis are given in Annexure-X.	
Hazardous material storage and waste handling & disposal (no asbestos generated)	Storage and handling of hazardous substances: substances that may harm people or the environment shall be handled and stored in a way that prevents accidental release.	➤ Drip trays shall be placed under leaking under vehicles and other equipment to prevent spills of hydrocarbons reaching the soil or watercourses. ➤ Storage of hazardous substances shall have secondary containment, so that leaking liquids can be contained in the event of a failure. Secondary containment should ideally have a capacity of at least 110% of the holding capacity of the primary storage. ➤ To avoid leaks, proper funnels should be used when	Contractor and Project In-charge

Key Area/Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures	Responsibilities
		decanting to other containers. It is recommended to use a hand pump rather than a funnel and smaller containers for frequent/routine transfers from one container to another (or to a vehicle tank). ➤ Disposal of waste from site must only be carried out as per the applicable rules and regulations in an authorized and licensed areas / facilities.	
Occupational Health and Safety	➤ Workers Injuries ➤ Health, Hygiene and Safety of Workers	➤ In the construction phase, approx. 50 workers (preferably local) including both skilled and unskilled workers will be engaged at site. The workers for civil construction (on contract basis- on payroll of construction agency will be employed for the period of one year initially; later on, contract will be extended further. Several workers including casual laborers, plumbers, and engineers are	Contractor and Project In-charge

Key Area/Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures	Responsibilities
		expected to work on the site. Occupational Health and Safety of the workers is utmost essential as it could prevent risks of injuries and accidents, health, hygiene and safety of workers. ➤ Comply with the labor laws. ➤ Provide training on occupational health and safety to all the workers. ➤ Ensuring all workers are provided with personal protective equipment's like helmet, gumboot, safety belt, gloves, nose mask and ear plugs. ➤ Provision of harness, lifts etc for workers working on heights ➤ Ensuring that qualified first-aid is provided along with a Standard first aid box with all standard contents at Site. ➤ Provide medical insurance coverage for workers. ➤ Provide worker's	

Key Area/Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures	Responsibilities
		accommodation which may include Provision of fuel for cooking, proper & hygienic lodging/living facility, proper toilets & bathroom, liquid and solid waste management facilities for workers and safety measures in labour camps ➤ No child labor will be employed. ➤ Emergency Readiness Plan to be displayed at a prominent site ➤ Training to workers on emergency readiness ➤ Occupational Health and Safety Plan is attached as Annexure XIV.	
Community Health and Safety	➤ Injury, accidents and sickness of workers and local people ➤ Restricted movement of visitors within the facility premises	➤ Organizing regular health check-ups and creating awareness about diseases like on communicable diseases like COVID, Tuberculosis, HIV and STDs. ➤ Alternative and safe routes for patient's flow.	Contractor and Medical In-charge

Key Area/Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures	Responsibilities
		➤ Mandatory deployment of security personnel at site specifically at high-risk zones ➤ Scheduling of fixed time for movement of vehicles carrying construction machineries and materials in consultation with the authority of existing CHC to ensure safe movement of passersby. ➤ Construction area to be properly hard barricaded and safety signage's viz. "No entry for public"; "Work is going on, be careful"; "Area for reinforcement", "Construction Zone", etc and also important signage's indicating diversion, danger signs at appropriate locations are to be installed during construction. ➤ 24×7 security in and around project	
Employment	Employment generation during construction phase and operation phase.	➤ Demand for skilled, semi-skilled and unskilled workers	Contractor

Key Area/Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures	Responsibilities
		during construction period. ➤ Employment opportunities will be generated. ➤ Equal and minimum wages as per govt. norms will be provided.	
Energy Efficiency	Loss of natural resources	➤ Use energy efficient measures as per DPR such as Water Efficient fixtures, STP treated water after regular testing shall be used for, flushing & landscape irrigation, Rain water harvesting system, Pressure reducing device, Sprinkler Irrigation etc.	Architect and Contractor
Fire Fighting	Loss of Life and Property	➤ Provision of Fire extinguisher system at site. ➤ Staff should be trained to handle emergency situations like firefighting and should be responsible to contact the emergency personnel in case of any emergency. ➤ Provision of Fire Alarm System fire buckets, fire extinguishers, fire pumps,	Architect and Contractor

Key Area/Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures	Responsibilities
		fire proof enclosures etc. ➤ Storage of raw water in underground fire water tanks has been provided for hospital building.	
Stakeholder Engagement	Lack of prior intimation of the demolition and construction activities may lead to health hazards caused by probable air, water and noise pollution. Community health and safety concerns	Prior intimation to the public about the time and the duration of particular construction works which causes inconveniences to the community residing nearby. • Stakeholder consultation for ➤ Responding to the queries of community regarding, proposed DH, construction activity etc. ➤ Making community aware that all safety measures in terms of air pollution, noise pollution, water pollution, community health and safety will be undertaken in the construction phase.	Contractor, Joint Director, DH & Project In-charge
Gender based violence's, SEA/SH	• Risks of SEA/SH to community members, particularly women and children by contractors' workers during construction period • About 75 percent of the contract workers are anticipated to be men, and women's participation is around 25 percent. The women labor force may face GBV/SEA/SH because of their numerical inferiority at the workplace • Risks of workplace sexual harassment at project site (consultants and	➤ Codes of conduct will be prepared in languages easy to understand, preferably in local language and adopted by Contractor as well as all the workers under Contractor of	Contractor, Joint Director, DH & Project In-charge

Key Area/Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures	Responsibilities
	contractors' staff & laborers).	the project. Annexure XIV ➤ Any GBV/SEA/SH complaints to be taken care by Local Committee notified under POSH Act by District Commissioner to receive complains on SEA/SH from establishments where Internal Committee has not been constituted. ➤ Duties of Contractor who employs the labours are to : - o Provide a safe secure working environment for workers like provision of lighting around project sites, including around latrines and access routes, separate and lockable toilets for female construction workers etc. - o Display (a) warnings which say "Respect the dignity of women" alike at conspicuous positions in site premises , (b) project site is an area	

Key Area/Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures	Responsibilities
		where GBV/SEA/SH is prohibited (c) order constituting the Local Committee (LC) - o Organize regular trainings on (a) CoC and (b) prevention of GBV/SEA/SH to all workers, including contractors, subcontractors, core suppliers, and relevant consultants and clients (c) sensitization on Local Committee (LC) - o Ensuring all employees should attend regular training programs on the prevention of SEA/SH in the workplace, including training for new workers/employees - o Treat Sexual harassment as misconduct and initiate action for such misconduct. - o Facilitating complainants	

Key Area/Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures	Responsibilities
		by providing linkages with One Stop Centers of the district, orienting on Women Helpline Number 181 etc.	
Grievances of workers as well as community	Grievances of workers - The workers at the construction site may have grievances due to non-receipt of basic facilities, PPE related, non- Receipt of dues, workplace discrimination, excessive workload etc. - Potential conflict between migrant workforce and local may take place Grievances of Community - Tree felling for site clearance. - Inconveniences caused to community by construction activities like dust, water source contamination, noise, water logging, etc. - Community health and safety concerns Community residing nearby site or passers-by may have grievances related to non-disclosure of project information, tree felling	❖ GRM at proposed DH Site (Manual): - Submission of grievances by workers and community - Installation of Drop Boxes with proper signage's at workers camp and entry gate so that it is visible to workers and community to drop grievances in person at site. - Display of contact number and e-mail dedicated for GRM at workers camp and entry gate for submission of grievances by workers and community. - Designation of manpower to register grievances at site - Developing of proper	Contractor, Joint Director, DH & Project In-charge

Key Area/Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures	Responsibilities
		formats to capture all the relevant details of complainant for registering grievances of Labors and Community received at the site physically. • Developing a Grievance Redressal Protocol to address the grievances physically received at site (till the time the online platform is operationalized) • Sensitization of workers on the existing physical GRM mechanism at site. ❖ <u>GRM Portal (Online)</u> • An online GRM Portal to be developed for grievance online submission and Redressal of the grievances of the workers and community. The grievances received through drop boxes, email, online entry, mobile phone will be registered on the online portal and the Redressal will	

Key Area/Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures	Responsibilities
		be done following a protocol developed for the purpose. The stakeholder departments will have the credentials to redress and escalate the grievances. The complainant will be communicated receipt and final Redressal of the grievances with SMSs. •Grievance Redressal Mechanism is detailed at Annexure XVI.	

Table 7.1(iii): Environmental and Social Risks/Impacts assessment and Mitigation Measures during Operation Phase

Key Area/Activities	Potential E&S Risks and Impacts	Proposed Mitigation Measures	Responsibilities
Consent to Operate, Authorization under BMW Rules 2016, Land ownership documents, Fire NOC	Non availability of the necessary consents, authorization or permits can result in closure of the facility by concerned authority.	➤ Ensure availability of consent to establish and consent to operate under Water Act 1974 and Air Act 1981, Authorization under BMW Rules 2016/2018 from PCBA, other necessary clearances, Licenses and permits	Contractor, Hospital Authority, Abhayapuri DH & Project In-charge
Flora and Fauna	Deforestation and loss of vegetation cover (if happened post construction phase)	➤ Development of thick green belt with local and indigenous species in consultation of forest department ➤ To maintain the aesthetic beauty of the site.	Contractor, Hospital Authority, Abhayapuri DH & Project In-charge

Ground Water	➤ Ground Water Contamination ➤ Ground Water Depletion	➤ Dual plumbing system is proposed in the project. ➤ Waste water will be treated in STP and reused during operational phase. ➤ Use of Water Efficient fixtures like flow regulators & dual flushing cisterns	Hospital Authority, Abhayapuri DH & Project In-charge
Surface Water	Surface water contamination	➤ It will be ensured that surface water runoff will be disposed through proper drainage channel to minimize the contamination risk. ➤ Regular maintenance of rain water harvesting system	Hospital Authority, Abhayapuri DH & Project In-charge
Ambient Air Quality	Emissions from vehicular movement and operation of DG sets	➤ Water sprinkling will be carried out to reduce emission ➤ Regular monitoring of emissions and control measures will be taken to reduce the emission levels. ➤ Use of low sulfur diesel. ➤ Acoustic enclosures ➤ Green belt development	Hospital Authority, Abhayapuri DH & Project In-charge
Noise and visual impacts	➤ Environmental noise can cause Hearing impairment, hypertension, and ischemic heart disease (IHD), annoyance and sleep disturbances. Noise exposure may also cause birth defects	➤ DG sets will be provided with acoustic enclosures and will be placed in a room to reduce noise level. ➤ Proper traffic management & circulation. ➤ Honking will be prohibited in the premises. ➤ All vehicles will carry PUC. ➤ Regular ambient noise monitoring and work site noise monitoring	Hospital Authority, Abhayapuri DH & Project In-charge

Waste Management	Solid Waste generation	➤ Garbage chute system and color coded bins for segregation of waste for domestic and biomedical waste respectively. ➤ Separate color coded bins for waste disposal i.e. green for organic waste, red for hazardous waste, brown for compostable waste, blue for recyclable waste. ➤ Organic Waste Compost Machine for 100 Kg/Day Waste per Day will be installed.	Hospital Authority, Abhayapuri DH & Project In-charge
BMW Management	Infections and Toxicity due to improper handling of bio-medical wastes	➤ The authorization for handling of BMW will be obtained from Assam State Pollution Control Board. ➤ Separate temporary storage area shall be provided inside the premises of DH for temporary storage of color-coded biomedical waste bags/containers and disposal to take place within 48 hrs. ➤ For safe disposal of biomedical waste, agreement with CBWTF located at Metuakuchi, Barpeta for disposal of BMW will be made before starting operation of District Hospital. The CBWTF of Metuakuchi is located within the 75 km from the site and it is functional. Present mode of BMW disposal is through Sharp pits and Deep Burial at the site. ➤ Formation of BMW Management	Hospital Authority, Abhayapuri DH & Project In-charge

		Committee as per BMW Rules. Details about biomedical medical waste are given in Waste management plan which is attached as Annexure IX .	
Water Management	Poor sanitation, drainage problem which results in water running over roads and water logging.	➤ Re-establish the drainage pattern to the extent practicable. ➤ Provision of dual plumbing system/ two pipe (stack) system and use of zero liquid discharge technology. ➤ The rain water to be diverted using rain water pipes to the drainage network.	Hospital Authority, Abhayapuri DH & Project In-charge
Transportation and Vehicle Movement	Increase in volume of traffic	➤ Proper Traffic Management & circulation with adequate lighting and signage system. ➤ Provision of adequate parking spaces as per Norms. ➤ Trained and qualified drivers/operators. ➤ Separate routes for the movement of machineries and vehicles away from the patients/visitors route. ➤ Regular checks and inspections for the ambulances and other vehicles.	Hospital Authority, Abhayapuri DH & Project In-charge
Occupational Health and Safety	➤ Health, Hygiene and Safety of employees	➤ Provision of PPE to healthcare workers ➤ Provision of PPE to BMW handling staff ➤ Regular immunization of the staff and waste handlers ➤ Regular Health checkup ➤ Provide training on health and safety to all the employees.	Hospital Authority, Abhayapuri DH & Project In-charge

		➤ Provide medical insurance coverage for employees. ➤ Emergency Readiness Plan to be displayed at a prominent site ➤ Training to employees on emergency readiness ➤ Occupational Health and Safety Plan is attached as Annexure XIV.	
Gender based violence's, SEA/SH	➤ There may be issues of GBV, SEA/SH of women patients and attendants as well as the women employees & staff at the new Hospital.	➤ GBV/SEA/SH complaints of staff as well as community to be taken care by Internal Committee notified under POSH Act by the Hospital ➤ Duties of Head of the Hospital are to : - o Provide (a) a safe secure working environment like provision of 24x7 security service manned by both male and female security guards, (b) lighting around the hospital, including around latrines and access routes, (c) separate and lockable toilets for female staff and patients (d) proper signage's of male and female toilets and wards - o display (a) warnings which say "Respect the dignity of women" alike at conspicuous positions in hospital premises , (b) Hospital is an area where GBV/SEA/SH is prohibited (c) order constituting the Internal	Hospital Authority, Abhayapuri DH & Project In-charge

		Committee (IC) - o organize regular trainings on (a) prevention of GBV/SEA/SH to all staff including all male and females (c) sensitization on Internal Committee (IC) - o ensuring all employees should attend regular training programs on the prevention of SEA/SH in the workplace, including training for new staff/employees - o treat Sexual harassment as misconduct and initiate action for such misconduct. ➤ Facilitating complainants by providing linkages with One Stop Centers of the district, orienting on Women Helpline Number 181. etc.	
Grievance Redressal of community/ patients and employees	➤ The community people/ patients may have grievances of not receiving or delay in treatment, lack of doctors /nurses, insurance, facilities at hospital, lack of medicines etc. ➤ And employees may have grievances of not having basic and proper facilities at hospital, hectic schedules etc.	• Installation of Drop Boxes with proper signage's at multiple sites of the Hospital so that it is visible to community to drop grievances. • Display of contact number and e-mail dedicated for GRM at specific sites. • Developing a Grievance Redressal Protocol to address the grievances received at Hospital • Designation of manpower to register the grievances at Hospital	Hospital Authority, Abhayapuri DH & Project In-charge

		• The online GRM Portal will facilitate submission of grievance of Patients and Hospital Staff and Redressal of the same. The grievances received through drop boxes, email, online entry, mobile phone will be registered in the online portal and the Redressal to be done will follow a protocol where stakeholder departments will have the credentials to redress and escalate the grievances. The complainant will be communicated receipt and final Redressal of the grievances with SMSs.	
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CHAPTER-8

ANALYSIS OF ALTERNATIVES

CHAPTER 8- ANALYSIS OF ALTERNATIVES

8.1 Introduction

This chapter includes the assessment of various options may be available for different components of the project in terms of environmental sustainability. Consideration of alternative technologies to be used in building material, energy conservation, and transportation methods are addressed in this chapter. The various applicable options are thus evaluated for their suitability or availability to project site and local environment.

8.2 Building Material

Only IS approved building materials will be used for the construction. Construction material will be selected based on their thermal characteristics and the U and R values. The additional considerations are as under.

- The major materials required for construction of the project are steel, cement, bricks, metal, stones, electrical fittings, water, etc.
- All the items used in the project are as per the national building code specification.
- The basic materials used for the construction of the proposed project are cement, steel, bricks, stones, ready mix concrete, sand, plywood, hard wood, aluminum, glass etc.

The following measures is proposed to for conserving the energy

- Low energy embodied materials will be preferred.
- Energy efficient construction materials such as Autoclaved Aerated Concrete Blocks (AAC Blocks) will be used. Apart from energy efficiency, AAC Blocks are durable and a high-strength building material that has excellent insulation properties and is resistant to fire and moisture.
- Ready Mix Concrete will be used for construction of RCC structures.
- Minimizing overall waste and the transport of waste from site.
- Provision for Solar powered street lighting for common areas is planned.
- LED's, CFL bulbs, lights, and fixtures for most of the common area,
- Use of energy efficient lighting.
- All the items used in the project will be as per the National Building Code-2016 and ECBC.

8.2.1 Use of Recycled Material

Recycled materials will be used in filling of roads as well as for pavers. Also, materials with low embodied energy used in construction which will significantly result in energy savings. The total savings in terms of roads and paving may be up-to 20%. Whole Bricks received from segregation of C&D Waste will be kept separately for use. Recyclable waste construction materials will be sold to authorized recyclers and recycled into aggregates which are converted to Ready Mix Concrete (RMC), pavement blocks, kerb stones and concrete bricks. Recycled coarse aggregate will be used in construction of roads within the site.

8.2.2 Walls

8.2.2.1 Conventional Material

Redbrick for peripheral walls and AAC blocks for internal walls are used for construction. Bricks are laid in courses and numerous patterns known as bonds, collectively known as brickwork, and laid in various kindsof cement mortar to hold the bricks together to make a durable structure. Cement mortar becomes hard when it cures, resulting in a rigid aggregate structure.

8.2.2.2 Alternatives

- **Structural Insulated Panels-** Structural Insulated Panels are modular wall sections made from foam sandwiched between two pieces of Oriented Strand Board. They're incredibly strong and energy efficient, as the foam inside the Oriented Strand Board acts not only as the web to provide strength but also as insulation.
- **Brick and block** products with waste and recycled contents (waste from coal burning plants), blast furnace slag, sewage sludge, waste wood fiber, rice husk ash, etc.
- **Concrete blocks using lime or waste wood fiber** provide reduction of waste and saves energy.

8.2.3 Roofs Conventional Material

Roofing is RCC, as it is suitable for longer spans. The constituents of RCC, i.e., cement, sand, aggregate and steel all are energy intensive materials and high-embodied energy content.

Alternatives

- **Pre-cast/aerated cellular concrete walling blocks and roofing slabs-** These are manufactured by the aerated cellular concrete manufacturing process. When used in multistoried structures, they reduce the weight, resulting in a more economical design.
- **Roofing sheets-** Corrugated roofing sheets for their reliable utility and enhanced strength, Polycarbonate roofing sheets for their insulation properties and high strength quotient and Metal roofing sheets for their high insulating capabilities can be used.

8.2.4 Roads & Open Spaces

Use of grass pavers along the roadside, parking and pedestrian areas is a solution to reduce the heat island effect. Recycled materials are being used for construction of road purpose as well as for pavers and will be followed for expansion purpose if locally available.

- **Permeable paving-**Permeable (porous) paving will be provided to control surface water runoff by allowing storm water to infiltrate the soil and return to the ground water. The traffic areas will however continue to be impermeable

Gravel/crusher fines: Loose aggregate materials from masonry wastes will be used to cover pedestrian surfaces.

- **Drainage System:** Drainage system is placed under gravels for collection of rainwater and will be collected to the sump.

8.3 Natural Hazards Prone Areas

The project falls under zone V (as per IS 1893 (Part-I):2002), as per the Seismic Zone Map of India and Assam. Zone 5 covers the areas with the highest risk of suffering earthquakes of intensity MSK IX or more significantly. Adequate measures will be adopted during operation phase of the project by project proponent. All applicable guidelines will also be followed in this regard to ensure safety of the building.

8.4 Alternatives of Location

The State Government of Assam has allotted the required land to the project proponent for development of 100 Bedded Hospital; hence no other alternative of the location was explored.

8.5 Energy Efficiency & Renewable Energy

To promote energy conservation, it is proposed to provide the buildings with low energy consuming fixtures maximize availability of natural light and make plans in conformance to the sun's path. In

the operational phase, appropriate energy conservation measures and management plan will be adopted to minimize the consumptions of non-renewable fuel. The following measures are suggested to be adopted.

- All Buildings are spaced in such a way that sunlight, natural ventilation is not disturbed due to each other.
- Buildings will be designed to have least exposed surface of glass.
- Energy efficient compact fluorescent lamps to be used as these CFL gives same illumination with less wattage compared to GLS Lamps.
- Power factor of the complete electrical system will be maintained close to unity. This will reduce electrical power distribution losses in the installation.
- Occupancy Sensor based light system to be used for rooms which detect movement within a room and automatically turn lights on or off as needed.

CHAPTER-9

RECOMMENDATIONS AND CONCLUSIONS

CHAPTER 9- RECOMMENDATIONS AND CONCLUSIONS

9.1 Recommendations

The following are recommendations applicable to the project to ensure no significant impacts:

- Obtain all statutory clearances at the earliest time possible (CTE and Tree cutting permission at first) and ensure conditions/provisions are incorporated in the detailed design
- Include this ESIA in contract documents
- Commitment from contractors to protect the environment and the people from any impact during project implementation
- Update/revise this ESIA based on detailed design and/or if there are unanticipated impacts, change in scope, alignment, or location
- Conduct safeguards induction to the contractor before start of construction works
- Contractor to submit site specific Contractors Environment and Social Management Plan (C-ESMP) with final designs.
- Ensure contractor appoints qualified environment, health and safety (EHS) officer prior to start of works
- Timely disclosure of information and establishment of Grievance Redressal Management (GRM)
- Effective implementation of GRM
- Strictly supervise EMP implementation
- Continuous consultations with stakeholders and grievance redress; if any
- Documentation and reporting on a regular basis as indicated in the ESMF.

9.2 Conclusions

The ESIA-ESMP described in this document has detailed about the environmental and social impacts of the proposed construction of 100 bedded District Hospital under ASSIST at Abhayapuri, Bongaigaon, Assam. All potential impacts have been identified in relation to pre-construction, construction, and operation phases and a mitigation plan along with its monitoring schedule have been incorporated in the ESIA-ESMP. Planning principles and design considerations have been reviewed and incorporated into the site planning and design process wherever possible as per DPR.

During the construction phase, environmental and social impacts mainly arise from the construction dust; handling and storage of building materials; movement and noise of construction machineries and vehicles in an area surrounded by local residents, chemist shops, market areas and passersby of the adjacent roads.

The public participation (stakeholder consultation) was undertaken during project design ensured stakeholders are engaged during the preparation of the ESMP. The views and suggestions were taken into account in preparing the ESIA-ESMP. This will make the proposed project a success in providing essential and affordable health care services.

The Environmental and Social Management Plan (ESMP) proposed in the project includes mitigation measures for identified impacts, training and capacity building activities, an environment 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. Social Impact Assessment also

considered Gender Based Violence, Gender equality, equal wages, minimum wages (as per Government Norms), workers facilities etc. The budgetary provisions for mitigating the anticipated impacts were proposed for effective implementation of the ESMP.

The ESMP will assist the implementing agency, Architect and Contractor in mitigating the environmental and social impacts, and guide them in the environmentally sound execution of the proposed project. The ESMP will also ensure efficient lines of communication between AHIDMS, Implementing agency, architect and contractor. A copy of the ESIA-ESMP will be kept on-site during the construction period at all times. The ESIA-ESMP will make on all sub-contractors operating on the site accountable, and will be included in the contractual clauses. Noncompliance with, or any deviation from, the conditions set out in this document shall constitute a failure in compliance.

The project will benefit the general public including local community, patients and health care workers with the initiation of the new District Hospital at Abhayapuri. The potential adverse environmental impacts are mainly related to the construction period and operational period, which can be minimized by the mitigation measures and environmentally sound engineering and safe construction practices.

This report presents a comprehensive environmental and social impact assessment for the proposed project. The study proposed measures for mitigating the adverse impacts while enhancing the positive ones during the phases of construction, operation & maintenance. The proposed construction works of District Hospital will bring a series of benefits to the local people such as:

- Improved Health status;
- Employment Generation during construction and operational period;
- Increased Economic Opportunity after operation of facility starts (in terms of Diagnostics, chemist and other supporting services);
- Women Empowerment;
- Providing basic infrastructure, road connectivity, and clean air through thick landscaping around site.
- Overall Quality of life increases

Based on the ESIA findings, it has been found that there are no significant adverse impacts of proposed project. The report's objectives are in line with World Bank Safeguard Policies and Governmental (India and Assam) regulatory requirements.

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ANNEXURE-I
Construction and Demolition
Waste Management Plan

ANNEXURE-I

Construction and Demolition Waste Management Plan

1.0 Introduction

As per the Construction and Demolition (C&D) Waste Rules 2016, “any waste comprising of building materials, debris and rubble resulting from construction, remodeling, repair and demolition of any civil structure” is classified as C&D waste.

Improper management of C&D waste impacts environment in the following ways:

- C&D waste is routinely dumped in open drains and water channels, clogging them and leading to urban flooding during rains.
- Dumping of C&D waste in wetlands, water channels and riverbeds disrupt the hydrology and destroys the aquatic ecosystem.
- Leachate and fine chemical particles from C&D waste degrade the soil, leading to land and ground water pollution. Especially hazardous components include paints, oil and asbestos sheets.
- C&D waste is filling up existing landfills and dump-yards, resulting in the need for more and fills or alternative dump sites.
- C&D waste usually gets mixed up with other municipal solid waste during the process of transfer or at the collection site. Once mixed, it makes composting and/or recycling of MSW highly difficult.
- C&D waste includes hazardous substances such as sharps, broken glass, boulders, broken wooden logs, rusted metal, broken ceramics, etc., which create a hazardous environment when dumped on unfenced open places.
- C&D waste dumped on streets and footpaths blocks traffic and pedestrians, frequently contributing to traffic congestion and even accidents.
- C&D waste is one of the primary sources of fugitive dust pollution.

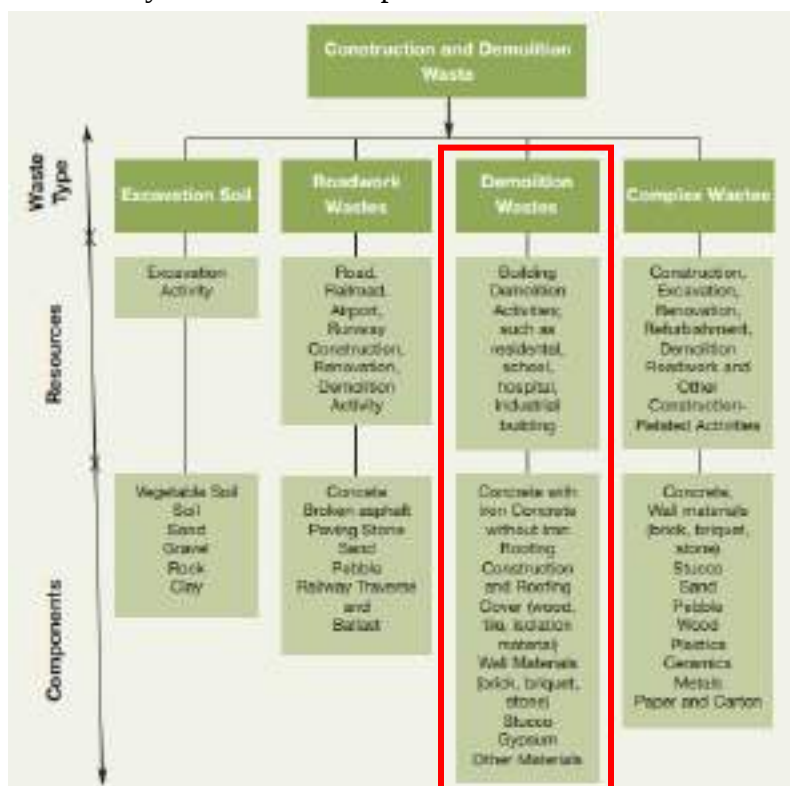
2.0 C&D Waste Management Rules, 2016

The Ministry of Environment, Forest and Climate Change (MoEF&CC) notified the Construction and Demolition Management Rules in 2016.

Key highlights of the C&D Waste Management Rules, 2016:

- The Rules mandate use of recycled products in construction. Local bodies will have to utilize 10– 20 percent of material from C&D waste in municipal and government contracts for construction.
- The tipping fee for delivery of C&D waste to the recycling plant, and terms and conditions of civic body with the concessionaire may be designed to keep the price of C&D waste recycled products about 20 percent lower than the corresponding conventional products.
- All large developers are accountable for collection and disposal of C&D waste
- Local authorities to give appropriate incentives to waste generators for salvaging, processing, and recycling, preferably in situ.

- Recycling facilities will have to be created at a safe distance from habitation with adequate buffer zone.
- Local authorities to be established at a base and update it once in a year.
- All renovation projects involving demolition, even in the private sector, may be mandated to use at least 20 percent of recycled C&D waste products.



3.0 Details regarding the Proposed Project

Presently there is a CHC-FRU, Abhayapuri (running) located in Abhayapuri, District Bongaigaon, Assam. Currently This CHC-FRU, Abhayapuri is catering the medical needs of the local villagers.

4.0 Details regarding the Existing Structures in Proposed Project

The proposed project involves demolition of brick wall i.e. demolition of old existing buildings present at the site area. Site photographs of the existing structures are given below-





Figure1. Site photographs of the existing structures

Lifting of Construction & Demolition Waste from Storage bins would be manual or mechanical through JCB, Loader and dumper. Following proposals regarding Construction and Demolition waste generated at the projects it would be made-

- Whole Bricks received from segregation of C&D Waste will be kept separately for internal use.
- Recyclable waste construction materials will be sold to authorized recyclers and recycled into aggregates which are converted to Ready Mix Concrete (RMC), pavement blocks, kerb stones and concrete bricks.
- Recycled coarse aggregate will be used in construction of roads within the site.
- Wood will be chipped to make particle boards, pallets or to create mulch for the protection and improvement of soil.
- Unusable and excess Construction and Demolition debris will be disposed at designated places in tune with the local and national norms. No asbestos generation at site
- C&D Waste mitigation measures shall be displayed prominently at the construction site for easy public viewing.

ANNEXURE-II
**List of Facilities -Proposed (100
Beds District Hospital)**

ANNEXURE II

List of Facilities -Proposed (100 Beds District Hospital)

1. Ground Floor

Emergency Care Unit

- Emergency Entrance Lobby, Emergency Help Desk/ Reception
- Police Post
- Triage Room with 3 No. Yellow zone beds, 2 no. Pediatrics beds, 1 Isolation bed,
- Toilet, Nurse's station, Cu & DU.
- Plaster and Plaster Cutting room.
- Trolley wash area/ Decontamination area.
- 3 No. Red zone beds with Nurse's Station
- Examination /Treatment Room.
- Doctor's Room
- CCMO Room with attached toilet and Medico-Legal Case
- Duty Doctor Room
- 3 No. Pre & Post Operative beds.
- Change rooms
- Emergency OT Lobby, Patient Holding Area, Emergency TSSU, OT Pharmacy, Sterile store, Dirty Utility
- 1 No. Emergency Operation theatre
- AHU Room

Outpatient Department

- OPD & MCH Entrance Lobby (Double Height)
- OPD & MCH Registration (3 Counters)
- Pharmacy with 3 counters and Pharmacy store
- General Public toilet, Lift Lobby and Staircase
- **Radiology** with 1 X-ray, ECG, Mobile X-ray, Dark room Printing, Dental Room, USG with color doppler, Reporting Room and Radiology Waiting Area
- **Laboratory** with Sample collection Area, Clinical pathology Lab, Pathology lab, BSC Room, lab In-charge room with toilet.
- **OPD consultation rooms:** Ortho, Psychiatry, Wellness clinic, Family Medicine, Immunization/Cold chain room and patient waiting hall.
- **Support Services (Dietary):** Cold storage, dry store, washing area, toilet and cooking area.

****STP and ETP (Liquid waste treatment of O.T/Blood Bank)** and Solid Waste disposal and Hazardous waste disposal with collection system proposed in a separate block in the site plan.

2. FIRST FLOOR

Outpatient Department

- Waiting Area with Lift Lobby, public toilets, staircase
- **OPD consultation rooms:** Counseling room, NCD, Adolescent clinic, Dermatology, ENT, PAC Room, Surgery, Specialty clinics, Physiotherapy, Tele-consultation room, Wellness clinic, PFT/ECG Room.
- **District Early Intervention Centre:** Examination room, Nourishing nutrition, Psych, lang, Laboratory, RCG, Play Area, Hearing assessment room, soundproof audiometry, Dental examination room, Vision Assessment room, Early Interventional occupational therapy, Sensory Integration, Anthropometry.

Administrative unit

- Waiting area, Medical Superintendent room with attached toilet, Nursing-in-charge room, Hospital manager room, Office Area with supervisors' cabins, meeting hall.

Ward Complex

- 6 beds Day care ward, Nutrition Rehabilitation Centre, Treatment room, Nurse's station, CU & DU.
- Dialysis Complex: change rooms with toilets, Dialysis ward with 4 beds and nurses station, Isolation room, Wash Area, RO Room, toilets.

3. SECOND FLOOR

Mother & Child Hospital

- MCH Triage 2 beds, change rooms, Doctor's room with toilet, Delivery complex reception and Lobby, MW Room, change rooms, MW LDR Complex-3 Nos with NBCC and toilet, Isolation LDR with NBCC and toilet, Minor OT, AHU Room.
- **Obstetrics Critical Care unit:** Air lock, patient changing area, Change room, Obstetrics HDU-6 Nos., Obstetrics ICU, Isolation Room, CU room, Linen room, Toilet, Critical Equipment room, Nurse-in-charge, Therapeutic diet prep.
- **OPD Consultation room:** Pediatrics 2 Nos., Child Play Area, OBS & Gynae-2 nos., USG Room, waiting area.
- **Mother's & new born Ward:** 12 bedded mothers & new born ward, Nurse's Lounge, Duty doctor with toilet, Nurse's Station, patient toilet.
- **SNCU & NICU:** Triage + Radiant warmer Area, Doctor's Lounge with toilet, dirty Linen & Sluice room, pantry, out born (06 beds), In born (06 beds), 04 beds ventilator NICU, Isolation-2 Nos., Nurses station, feeding room, Point of care, AHU Room.
- **Hospital Stores**

4. THIRD FLOOR

- Waiting area with public toilet, lift lobby and staircase.
- **Burn unit:** 04 beds ward, 2 beds Isolation, treatment room, Nurse's Station, Duty doctor, CU & DU, Toilet complex.

- **General ward complex:** 42 beds ward complex, Nurse's station, Treatment room, CU & DU, Duty doctor, toilets
- **Paying cain complex:** 18 rooms with attached toilet, almirah and attendant's sleeping couch, Doctor's Lounge, Nurse's Lounge, Pantry.

5. FOURTH FLOOR

- Waiting area with public toilet, lift lobby and staircase.
- **Blood bank:** Reception with waiting area, Testing & Counseling, Donor's room, refreshment area, laboratory, Doctor's room, Sterilization cum washing area, components separation room, blood storage room.
- **HDU Ward:** HDU Waiting, counseling room, patient change, change room with toilet, pediatrics HDU beds-2 Nos., general HDU beds-4 Nos., 1 No. isolation bed, duty doctor with attached toilet.
- **OT Complex:** Change rooms (Doctor's, nurse's and staff change), Trolley exchange area, 2 No. preoperative and post Operative ward, Nurse's station, Toilet, Doctor's room, Nurse's room, Airlock, Sterile corridor, patient Holding area, Scrub Area, sterile store, Operation Theatre-2 Nos., TSSU, AHU rooms, Dirty Corridor.

List of Facilities (BMW Room)

- 3 categories of room for BMW

List of Facilities (Mortuary & Gas manifold Room)

- Waiting and reception.
- Body viewing area.
- Store
- Body cold storage area
- Change rooms, Post mortem room, Embalming room, Instrument room.
- X-ray room, Supervisor room, Toilets.

List of additional Facilities

- Provision of ramps, Handicap Washroom, Common public space and reserve parking space for Handicap
- Selection of local & indigenous plant species for greenbelt development
- Provision of Dual plumbing, Rain Water Harvesting and use of solar energy
- Adequate parking provision for smooth traffic movement
- Solid waste management through on site Organic Waste Converter
- Waste water treatment through on-site STP and ETP

ANNEXURE-III
**Area Statement of The Proposed
Project**

ANNEXURE III

Area Statement of The Proposed Project

	Main District Hospital (G+4)	Mortuary & Gas Manifold (G)	BMW (G) & Laundry Block	ESS Block (G)
Floor Height	4.05	3.9	3.6	5.10
Ground floor	2687.3	329.00	122.00	250.00
First floor	2479.4			
Second floor	2583.7			
Third floor	2521.4			
Fourth floor	2360			
Total	12631.8	329.00	122.00	250.00
Grand Total	13332.80			
Total Beds	100	Beds		
Total Campus area	17556.40	Sqm		
Less total ground coverage	-3388.30	Sqm		
Actual Development Area	14168.10	Sqm		
Total Boundary wall length	771.44	Meter		
Floor to Floor Height (in meter)	4.05	3.90	3.60	5.10
Plinth Height (in meter)	0.60	0.60	0.60	0.60
Lifts	02 Nos (26 Pax Bed Lift)			
	02 Nos. Service Lift			

ANNEXURE-IV

Extracts of Patient Inflow Data Received From The Hospital

ANNEXURE IV
Extracts of Patient Inflow Data Received From The Hospital



The image displays three photographs of patient inflow data registers from a hospital. The top left photograph shows a page titled "LADDER BOOK REGISTER" with columns for patient details and dates. The top right photograph shows another page of the same register. The bottom photograph shows a more detailed register with multiple columns and a pink tab labeled "07" at the top.

ANNEXURE-V
**List of Flora And Fauna Found
in the Region**

ANNEXURE V

List of Flora and Fauna found in the region

1. List of Flora found in the region

S. No.	Scientific Name	Local Name
TREES		
1	<i>Acacia auriculiformis</i>	Akash moni
2	<i>Acacia catechu</i>	Khair
3	<i>Acacia nilotica</i>	Babul
4	<i>Adina cordifolia</i>	Karam
5	<i>Aegle marmelos</i>	Bel
6	<i>Albizzia lebbek</i>	Siris
7	<i>Albizzia odoratissima</i>	Jung siris
8	<i>Albizzia procera</i>	Safed siris
9	<i>Anogeissus latifolia</i>	-
10	<i>Areca catechu</i>	Supari
11	<i>Artocarpus Hitrophyllum</i>	Kathal
12	<i>Azadirachta indica</i>	Neem
13	<i>Bauhinia variegata</i>	Kachnar
14	<i>Bischofia javanica</i>	Uraim
15	<i>Bombax ceiba</i>	Semal
16	<i>Boswellia serrata</i>	Salia
17	<i>Buchnanania lanzan</i>	Piar
18	<i>Butea monosperma</i>	Palas
19	<i>Cassia fistula</i>	Dharanj/Amaltash
20	<i>Cocus nucifera</i>	Nariyal
21	<i>Cordia dichotma</i>	Bahuar
22	<i>Dalbergia sissoo</i>	Sheesham
23	<i>Delonix regia</i>	Gulmohar
24	<i>Eugenia jambolana</i>	Jamun
25	<i>Ficus bengalensis</i>	Bar
26	<i>Ficus elastica</i>	Ruber
27	<i>Ficus religiosa</i>	Pipal
28	<i>Gmelina arborea</i>	Gamhar
29	<i>Holoptelea integrifolia</i>	Chilbil
30	<i>Kydia calycina Roxb.</i>	Puda
31	<i>Lager stoemiaparviflora</i>	Sida/Dauli
32	<i>Mangifera indica.</i>	Aam
33	<i>Phoenix sylvestric</i>	Khajur
34	<i>Pongamia pinnata</i>	Kranj
35	<i>Pterocarpus marsupium</i>	Piasal
36	<i>Schima wallichii</i>	Ghugra
37	<i>Shorea robusta</i>	Sal/ Sakhua

38	<i>Stereospermum prsonatum</i>	Paruli
39	<i>Tectona grandis</i>	Saguan
40	<i>Terminalia arjuna</i>	Arjun
41	<i>Terminalia bellirica</i>	Bahera
42	<i>Terminalia tomentosa</i>	Asan
43	<i>Toona ciliate</i>	Pooma
44	<i>Zizyphus mauritiana</i>	Ber
SHRUBS		
1	<i>Asparagus racemosus</i>	Satawar
2	<i>Agave americana</i>	Rambas
3	<i>Calotropis gigantea</i>	Akaon
4	<i>Carissa carandas</i>	Kanwar
5	<i>Cannabis sativa</i>	Bhang
6	<i>Casiaalata</i>	-
7	<i>Catharanthusroseus</i>	-
8	<i>Datura metal</i>	Dhatura
9	<i>Dichrosta chyscinerea</i>	-
10	<i>Cyperusrotundus</i>	-
11	<i>Flacourtia Ramontchi</i>	Salpani
12	<i>Indigo ferapulchela</i>	Jirhul
13	<i>Ipomoea carnea</i>	-
14	<i>Lantana camara</i>	Putus
15	<i>Phoenix acaulis</i>	Khejur
16	<i>Randia dumetorum</i>	Mowar
17	<i>Thespesia lampas</i>	Ban kapasi
18	<i>Vitex negundo</i>	Sindwar
19	<i>Bougainvillea spectabilis</i>	Voganvila
20	<i>Zizyphus oenoplia</i>	-
21	<i>Ricinus communis</i>	Arandi
22	<i>Rosa rubiginosa</i>	Rosa
HERBS		
1	<i>Achyranthe saspera</i>	Chirchiri
2	<i>Aervalanata</i>	-
3	<i>Ageratum conyzoides</i>	-
4	<i>Alternantherasessilis</i>	-
5	<i>Boerhavia diffusa</i>	-
6	<i>Cassia tora</i>	Chakor
7	<i>Elephantopusscaber</i>	-
8	<i>Euphorbia hirta</i>	-
9	<i>Hygrophilaspinosa</i>	-
10	<i>Justiciaproculumbens.</i>	-
11	<i>Leonotis nepataiefolia</i>	-
12	<i>Mimosa pudica</i>	-
13	<i>Parthenium histerophorus.</i>	-
14	<i>Sidaacuta Burm.</i>	-

15	<i>Sidarhombifolia</i>	-
16	<i>Solanum nigrum</i>	Makoi
17	<i>Solanumsurattense</i>	-
18	<i>Sphaeranthus indicus</i>	-
19	<i>Tridaxprocumbens</i>	-
20	<i>Xanthium strumarium</i>	-
GRASSES AND CLIMBERS		
1	<i>Vetive riazizanooides</i>	Khus-Khus
2	<i>Apludavaria</i>	Dudhiasauri
3	<i>Arundinell asetosa</i>	Jharu/Motaminjhar
4	<i>Bambusa arundinaceae</i>	Bara bans
5	<i>Cymbopogon martini</i>	-
6	<i>Cynodon dactylon</i>	Dhoob
7	<i>Dendrocalamusstricus</i>	Bans/Bamboo
8	<i>Eulaliopsisbinata</i>	-
9	<i>Heteropogoncontortus</i>	Kher/Sauri
10	<i>Imperata cylindrical</i>	-
11	<i>Saccharum munja</i>	Munj
12	<i>Mukiamaderaspatana</i>	Bilari
13	<i>Abrusprecatorius</i>	Karjani
14	<i>Acacia pinnata</i>	Arar
15	<i>Buteaparviflora</i>	Cihut

2. List of Fauna found in the region

S. No.	Scientific Name	Local Name/Common Name
MAMMALS		
1	<i>Funambulus pennant</i>	Gilahri
2	<i>Bandicota bangalonsis</i>	Chuha
3	<i>Herpestes edwardsi</i>	Nevala
4	<i>Presliptis entellus</i>	Langur
5	<i>Macaca mulatto</i>	Bandar
6	<i>Cynopterus sphinx</i>	Chamgadam
7	<i>Rhizomyspruinusu</i>	Bamboo Rat
8	<i>Canis lupus familiaris</i>	Dog
9	<i>Ovis Aries</i>	Sheep
10	<i>Bostaurus</i>	Cow
AMPHIBIANS AND REPTILES		
1	<i>Rana tigrina</i>	Frog
2	<i>Najanaja</i>	Binocellate cobra
3	<i>Bungaru scoeruleus</i>	Common Krait
4	<i>Ptyasmucosus</i>	Rat snake
5	<i>Calotes versicolor</i>	Forest Lizard
6	<i>Hoplobatrachustigerinus</i>	Indian bull frog
7	<i>Viperarussellis</i>	Russell's Viper

8	<i>Chameleon zeylanicus</i>	Indian chameleon
AVIFAUNA		
1	<i>Corvus splendens</i>	House Crow
2	<i>Dicrurus macrocerus</i>	Black Drongo
3	<i>Passer domesticus</i>	Sparrow
4	<i>Streptopelia chinensis</i>	Spotted Dove
5	<i>Centropus sinensis</i>	Greater Coucal
6	<i>Acridothera tristis</i>	Common Myna
7	<i>Saxicola fulicata</i>	Indian Robin
8	<i>Bubulcus ibis</i>	Cattle Egret
9	<i>Vanellus indicus</i>	Lapwing
10	<i>Anas platyrhynchos</i>	Duck

ANNEXURE-VI
**Demographic Structure of The
Study Area**

ANNEXURE VI

Demographic Structure of The Study Area

(a) Demographic Structure of the Study Area

S. No.	Name	No_HH	TOT_P	TOT_M	TOT_F	Sex Ratio	P_06	M_06	F_06	Sex Ratio
1	Abhayapuri (TC)	3563	15847	7936	7911	997	1488	780	708	908
2	Amguri Pt II	164	772	422	350	829	101	57	44	772
3	Amtola	329	1363	666	697	1047	165	72	93	1292
4	Bamungaon Pt I	245	1091	560	531	948	101	65	36	554
5	Bamungaon Pt II	162	661	341	320	938	58	34	24	706
6	Batabari	500	2068	998	1070	1072	285	142	143	1007
7	Bawalimari	267	1205	642	563	877	141	86	55	640
8	Bhomapara	51	185	95	90	947	17	10	7	700
9	Borigaon	365	1624	829	795	959	175	97	78	804
10	Choutaki	193	864	446	418	937	65	43	22	512
11	Deohati Dakhinpara	402	1741	880	861	978	161	91	70	769
12	Deohati Pt I	287	1267	611	656	1074	118	54	64	1185
13	Deohati Pt II	497	2183	1016	1167	1149	209	109	100	917
14	Deohati Uttarpara	299	1274	610	664	1089	104	55	49	891
15	Dumuria Pt II	141	720	370	350	946	129	64	65	1016
16	Duramari	429	2066	1086	980	902	314	185	129	697
17	Ghankursha	78	337	159	178	1119	41	20	21	1050
18	Ghilaguri Pt II	444	2127	1083	1044	964	369	183	186	1016
19	Haripur	320	1538	778	760	977	175	89	86	966
20	Kakaijana Bamungaon Pahar	8	31	17	14	824	5	3	2	667
21	Kalbari	148	817	419	398	950	167	85	82	965
22	Kerkhabari Pt I	119	563	287	276	962	65	32	33	1031
23	Kshudra Narikola	167	712	333	379	1138	86	38	48	1263

24	Kerkhabari Pt II	120	616	309	307	994	71	35	36	1029
25	Lalmati Grazing	35	208	118	90	763	30	21	9	429
26	Mahadeb Hill	1	1	1	0	0	0	0	0	0
27	Majpara	96	517	252	265	1052	81	37	44	1189
28	Mulagaon Rabhapara	90	446	215	231	1074	44	20	24	1200
29	Nadialpara	150	713	346	367	1061	74	37	37	1000
30	Naldoba	84	509	252	257	1020	93	50	43	860
31	Nasatra	734	4191	2187	2004	916	859	422	437	1036
32	Naya Gaon Pt II	147	634	322	312	969	54	30	24	800
33	Naya Gaon Pt III	220	1093	564	529	938	166	88	78	886
34	New Piradhara	436	2384	1231	1153	937	538	272	266	978
35	Piknapara	152	760	391	369	944	173	85	88	1035
36	Piradhara Pt II	201	1151	583	568	974	252	124	128	1032
37	Ravapara	53	260	118	142	1203	21	12	9	750
38	Singimari Pt I	250	1053	492	561	1140	96	47	49	1043
39	Singimari Pt.II	142	715	348	367	1055	99	41	58	1415
40	Tapattary	407	2160	1108	1052	949	475	230	245	1065
41	Tulungia Pt I	184	953	465	488	1049	104	60	44	733
42	Tulungia Pt II	284	1326	664	662	997	151	77	74	961
43	Uttar Salmara Pt I	701	3294	1649	1645	998	420	221	199	900
44	Uttar Salmara Pt II	344	1536	758	778	1026	135	76	59	776
45	Uttar Salmara Pt III	200	923	455	468	1029	80	44	36	818
46	Uttar Salmara Pt IV	33	176	87	89	1023	16	10	6	600
47	Uttar Salmara Pt V	24	109	48	61	1271	13	7	6	857
Total		14266	66784	33547	33237	991	8584	4440	4144	933

(b) Demographic Structure of the Study Area

S. No.	Name	P_SC	M_SC	F_SC	P_ST	M_ST	F_ST	P_LIT	M_LIT	F_LIT	P_ILL	M_ILL	F_ILL
1	Abhayapuri (TC)	3185	1612	1573	172	90	82	13138	6763	6375	2709	1173	1536
2	Amguri Pt II	747	405	342	0	0	0	451	287	164	321	135	186
3	Amtola	64	32	32	4	3	1	847	456	391	516	210	306
4	Bamungaon Pt I	366	187	179	4	2	2	824	445	379	267	115	152
5	Bamungaon Pt II	101	58	43	235	118	117	492	272	220	169	69	100
6	Batabari	176	92	84	3	1	2	1307	673	634	761	325	436
7	Bawalimari	252	138	114	1	0	1	896	496	400	309	146	163
8	Bhomapara	0	0	0	0	0	0	145	79	66	40	16	24
9	Borigaon	449	226	223	3	2	1	1259	669	590	365	160	205
10	Choutaki	0	0	0	0	0	0	671	368	303	193	78	115
11	Deohati Dakhinpara	452	230	222	6	2	4	1350	717	633	391	163	228
12	Deohati Pt I	60	30	30	2	0	2	1038	524	514	229	87	142
13	Deohati Pt II	226	111	115	208	98	110	1693	834	859	490	182	308
14	Deohati Uttarpara	64	32	32	26	13	13	1015	513	502	259	97	162
15	Dumuria Pt II	0	0	0	0	0	0	456	253	203	264	117	147
16	Duramari	772	427	345	6	2	4	1125	639	486	941	447	494
17	Ghankursha	0	0	0	11	3	8	234	119	115	103	40	63
18	Ghilaguri Pt II	912	469	443	150	72	78	1078	606	472	1049	477	572
19	Haripur	788	404	384	3	1	2	1051	581	470	487	197	290
20	Kakaijana Bamungaon Pahar	0	0	0	0	0	0	16	10	6	15	7	8
21	Kalbari	2	1	1	2	2	0	467	250	217	350	169	181
22	Kerkhabari Pt I	0	0	0	0	0	0	406	230	176	157	57	100
23	Kshudra Narikola	11	6	5	0	0	0	554	280	274	158	53	105

24	Kerkhabari Pt II	1	1	0	173	89	84	415	224	191	201	85	116
25	Lalmati Grazing	205	117	88	0	0	0	118	69	49	90	49	41
26	Mahadeb Hill	0	0	0	0	0	0	0	0	0	1	1	0
27	Majpara	0	0	0	0	0	0	341	174	167	176	78	98
28	Mulagaon Rabhapara	99	45	54	240	114	126	335	173	162	111	42	69
29	Nadialpara	190	88	102	14	2	12	539	289	250	174	57	117
30	Naldoba	60	28	32	0	0	0	259	137	122	250	115	135
31	Nasatra	0	0	0	0	0	0	1762	964	798	2429	1223	1206
32	Naya Gaon Pt II	33	17	16	0	0	0	487	263	224	147	59	88
33	Naya Gaon Pt III	352	186	166	238	116	122	573	320	253	520	244	276
34	New Piradhara	0	0	0	0	0	0	824	482	342	1560	749	811
35	Piknapara	0	0	0	0	0	0	319	176	143	441	215	226
36	Piradhara Pt II	37	18	19	0	0	0	538	279	259	613	304	309
37	Ravapara	38	19	19	173	77	96	217	103	114	43	15	28
38	Singimari Pt I	0	0	0	0	0	0	771	384	387	282	108	174
39	Singimari Pt.II	0	0	0	8	4	4	503	263	240	212	85	127
40	Tapattary	0	0	0	0	0	0	1086	597	489	1074	511	563
41	Tulungia Pt I	77	39	38	0	0	0	716	369	347	237	96	141
42	Tulungia Pt II	40	19	21	0	0	0	1006	537	469	320	127	193
43	Uttar Salmara Pt I	328	161	167	494	234	260	2159	1158	1001	1135	491	644
44	Uttar Salmara Pt II	268	147	121	23	6	17	1271	657	614	265	101	164
45	Uttar Salmara Pt III	355	175	180	2	0	2	670	348	322	253	107	146
46	Uttar Salmara Pt IV	0	0	0	0	0	0	132	69	63	44	18	26
47	Uttar Salmara Pt V	27	12	15	0	0	0	83	41	42	26	7	19
		10737	5532	5205	2201	1051	1150	45637	24140	21497	21147	9407	11740

(Source: As per Census Data, 2011)

ANNEXURE-VII
**Occupational Pattern of the
Study Area**

ANNEXURE VII

Occupational Pattern of the Study Area

(a): Occupational Pattern of the Study Area

S. No.	Particulars	Number of workers in the study area				
		Total	Male	Male %	Female	Female %
1	Total Workers	23070	18203	78.90	4867	21.10
2	Non-Workers	43714	15344	35.10	28380	64.92
3	Main Workers	17597	15142	86.05	2455	13.95
4	Marginal Workers	5473	3061	55.93	2412	44.07

(b): Occupation Structure of Each Village in the Study Area

S. No.	Name	Total Workers			Main workers			Marginal Workers			Non-Workers		
		Total	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female
1	Abhayapuri (TC)	4997	4189	808	4878	4104	774	119	85	34	10850	3747	7103
2	Amguri Pt II	251	241	10	238	230	8	13	11	2	521	181	340
3	Amtola	493	377	116	341	292	49	152	85	67	870	289	581
4	Bamungaon Pt I	396	318	78	341	297	44	55	21	34	695	242	453
5	Bamungaon Pt II	228	179	49	199	172	27	29	7	22	433	162	271
6	Batabari	758	583	175	527	443	84	231	140	91	1310	415	895
7	Bawalimari	426	371	55	373	350	23	53	21	32	779	271	508
8	Bhomapara	60	47	13	54	44	10	6	3	3	125	48	77
9	Borigaon	563	464	99	467	399	68	96	65	31	1061	365	696
10	Choutaki	395	267	128	351	249	102	44	18	26	469	179	290
11	Deohati Dakhinpara	705	514	191	459	322	137	246	192	54	1036	366	670
12	Deohati Pt I	328	283	45	268	229	39	60	54	6	939	328	611
13	Deohati Pt II	620	475	145	502	420	82	118	55	63	1563	541	1022

14	Deohati Uttarpara	375	333	42	283	251	32	92	82	10	899	277	622
15	Dumuria Pt II	189	187	2	189	187	2	0	0	0	531	183	348
16	Duramari	721	602	119	576	552	24	145	50	95	1345	484	861
17	Ghankursha	111	88	23	45	40	5	66	48	18	226	71	155
18	Ghilaguri Pt II	633	578	55	443	416	27	190	162	28	1494	505	989
19	Haripur	476	443	33	320	299	21	156	144	12	1062	335	727
20	Kakaijana Bamungaon Pahar	8	7	1	8	7	1	0	0	0	23	10	13
21	Kalbari	224	206	18	193	177	16	31	29	2	593	213	380
22	Kerkhabari Pt I	202	176	26	80	77	3	122	99	23	361	111	250
23	Kshudra Narikola	171	144	27	127	118	9	44	26	18	541	189	352
24	Kerkhabari Pt II	217	168	49	210	164	46	7	4	3	399	141	258
25	Lalmati Grazing	65	62	3	65	62	3	0	0	0	143	56	87
26	Mahadeb Hill	0	0	0	0	0	0	0	0	0	1	1	0
27	Majpara	209	153	56	155	149	6	54	4	50	308	99	209
28	Mulagaon Rabhapara	135	109	26	86	80	6	49	29	20	311	106	205
29	Nadialpara	422	219	203	173	152	21	249	67	182	291	127	164
30	Naldoba	150	126	24	120	113	7	30	13	17	359	126	233
31	Nasatra	1285	1225	60	844	823	21	441	402	39	2906	962	1944
32	Naya Gaon Pt II	278	187	91	184	158	26	94	29	65	356	135	221
33	Naya Gaon Pt III	337	295	42	239	226	13	98	69	29	756	269	487
34	New Piradhara	740	630	110	637	570	67	103	60	43	1644	601	1043
35	Piknapara	202	196	6	179	175	4	23	21	2	558	195	363
36	Piradhara Pt II	303	291	12	174	169	5	129	122	7	848	292	556
37	Ravapara	67	60	7	65	58	7	2	2	0	193	58	135
38	Singimari Pt I	687	326	361	289	237	52	398	89	309	366	166	200
39	Singimari Pt.II	357	234	123	251	223	28	106	11	95	358	114	244
40	Tapattary	595	567	28	569	546	23	26	21	5	1565	541	1024

41	Tulungia Pt I	375	264	111	179	158	21	196	106	90	578	201	377
42	Tulungia Pt II	610	365	245	362	316	46	248	49	199	716	299	417
43	Uttar Salmara Pt I	1609	927	682	811	506	305	798	421	377	1685	722	963
44	Uttar Salmara Pt II	521	397	124	380	308	72	141	89	52	1015	361	654
45	Uttar Salmara Pt III	418	257	161	270	204	66	148	53	95	505	198	307
46	Uttar Salmara Pt IV	92	43	49	53	40	13	39	3	36	84	44	40
47	Uttar Salmara Pt V	66	30	36	40	30	10	26	0	26	43	18	25
		23070	18203	4867	17597	15142	2455	5473	3061	2412	43714	15344	28370

(Source: Census Data, 2011)

ANNEXURE-VIII
**Stakeholder Consultation-
Attendance Sheet & NOCs**

S.No	Name of Person	Designation	Signature
1.	for M K Mahanta	Dy Supd Abhayapuri	[Signature]
2.	Shri Islam	General Secretary Kulapatrikha Apur Road Commission A/prop M.B	[Signature]
3.	Prasab Kalita	Ward Commissioner AMB W/No-18	[Signature]
4.	Sushanta Talder	Chairman Abhaya pari (M.B)	[Signature]
5.	Dipak Chandra Borthy	Pharmacy Matri Medical	[Signature]
6.	KIRAN Sankar Das.	Pharmacy MANISH MEDICAL	[Signature]
7.	Rashu Ram Mandal	Joy Guha Medical Stores Abhayapuri	[Signature] 30/11/23
8.	Sonjeeb Paul	Town Medical	[Signature] 30/11/23
9.	Nur Mohamammad.	(pharmacist)	[Signature] 30-11-23
10.	Jasmigana Begum	Staff Nurse	[Signature] 30/11/23

[10(a)]	১০ জন লক্ষ্য	ন্যস্ত	Patient	[Signature]
(10(b))	মহিলা	মহিলা	পরিচালক	[Signature]

Stakeholder Consultation Meeting (attendance sheet)
Proposed District Hospital Abhayapuri, Bongaigaon, Assam

[Date:]

S.No	Name of Person	Designation	Signature
11	Supriya Adhikary	Staff Nurse	SA 30-11-23
12	Debjit Das	Driver	D 30/11/23
13	Memoka Nath	Staff Nurse	MN 30/11/23
14	Bhargya Sank	pharmac/-	B 30/11/23
15	Nazma Khatun	ANM	N.Khatun 30/11/23
16	Kipak Kalita	Electrician	K.Kalita 30/11/23
17	Jeehasree	Lab Tech	J 30/11/23
18	Ebrahim Ali	Lab Tech	E 30/10/23
19	Abdul Karim	Secretary	A 30/11/23
20	Biswanath Das	Member	B 30/11/23

21. Gaurav Jataw

GEL, Delhi

Gaurav

22. Amrit Sharma

GEL, Delhi

A

22. Debjit Ruybongha

LDA

DR

STOCKHOLDER CONSULTANT FORM

Name of the project: Proposed District Hospital, Abhayapuri, Bongaigaon, Assam.

Location of the project: Abhayapuri, Bongaigaon, Assam.

Date of Meeting: 30.11.2023

S. No	Stakeholders	Represented by	Roles/ responsibility	Social Impact and tasks	Commitment checklist	Environmental impact and Tasks	Commitment checklist	Commitments/remarks
1	Medical in charge	Dr. M. N. Bhatia	Post construction	Governance and oversee activities of Healthcare facility	1.	Safe disposal of BMW	Measures to contain BMW	Ok we will do our best for safe disposal BMW.

Signature
 Deputy Superintendent
 Abhayapuri C.H.C., Abhayapuri
 Bongaigaon : Assam

STOCKHOLDER CONSULTANT FORM

Name of the project: Proposed District Hospital, Abhayapuri, Bongaigaon, Assam.

Location of the project: Abhayapuri, Bongaigaon, Assam.

Date of Meeting: 30.11.2023

S. No	Stakeholders	Represented by	Roles/ responsibility	Social Impact and tasks	Commitment checklist	Commitments/remarks	Environmental impact and Tasks	Commitment checklist	Commitments/remarks
5	Common biomedical waste treatment facilities (CBWTF)	BMX Kavish	During post construction phase	Reduction of waste	Waste Reduction Use of disposal		Safe disposal of HMW	100 % BMW disposal through CBMWTF	Ok during opening phase we will work on ensuring - CBWTF at P. B. B. is B. B. division

Mr.

30/11/2023

Deputy Superintendent
Abhayapuri C. G., Abhayapuri
Bongaigaon : Assam

STOCKHOLDER CONSULTANT FORM

Name of the project: Proposed District Hospital, Abhayapuri, Assam

Location of the project: Abhayapuri, Bongaigaon, Assam

Date of Meeting: 30.11.2023

S. No	Stakeholders	Represented by	Roles/ responsibility	Social Impact and tasks	Commitment checklist	Commitments/ remarks	Environmental impact and Tasks	Commitment checklist	Commitments/ remarks
1	Contractor	HITESH DAS	During construction phase	Gender equality	1. Wage equality 2. Temporary labor camps 3. Fuel for cooking food for labors 4. Creche for children	Payroll abide by the norms	Dust mitigation measures (green nets, fencing, water sprinkling) C & D waste Regular environmental monitoring (Air, noise, water, soil)	1. Fencing of the project site 2. Green net covering for loose building materials 3. Mobile Toilets 4. Safe drinking water 5. Mobile STP	Payroll abide by the norms

STOCKHOLDER CONSULTANT FORM

Name of the project: Proposed District Hospital Abhayapuri, Bongaigaon, Assam

Location of the project: Abhayapuri, Bongaigaon, Assam.

Date of Meeting: 30.11.2023

S. No	Stakeholders	Represented by	Roles/ responsibility	Social Impact and tasks	Commitment checklist	Commitments/remarks	Environmental impact and Tasks	Commitment at checklist	Commitments/remarks
4	Local body	Sushanta Fellu	During and post construction phase	Supervision	Tax collection Solid waste collection Disposal of C & D waste	OK ✓			✓

Sushanta
Chairman Bongaigaon
(M.B)

No. AMB.1-35/2023/945,

Dated: 30/11/23



To,

The Deputy Superintendent
Abhayapuri CHC.

Sub: Regarding No objection.

Sir,

With reference to the subject cited above. I have the honour to inform you that the undersigned have no objection towards setting up 100 bedded capacity Community Health Care centre at Abhayapuri CHC.

The undersigned conveys his best wishes and support helping hands towards this noble deeds.

Yours faithfully.


30/11/23

Chairman
Abhayapuri Municipal Board
Abhayapur

STOCKHOLDER CONSULTANT FORM

Name of the project: Proposed District Hospital, Abhayapuri, Assam.

Location of the project: Abhayapuri, Bengaigan, Assam.

Date of Meeting: 30.11.2023.

S. No	Stakeholders	Represented by	Roles/responsibility	Social Impact and tasks	Commitment checklist	Commitments/remarks	Environmental impact and Tasks	Commitment checklist	Commitments/remarks
3	Locality within 100 m from the hospital building	Rashmi Ram Maolal	During Pre and post construction phase	1. Easy accessibility and affordability of the medical facility 2. Employment generation	1. Hospital at doorstep 2. Opening of hospital supportive activities 3. Preference will be given to locals for employment 3. Sourcing of local, organic and sustainable grown food	NO objection (Rashmi Ram Maolal)	1. Greenbelt development 2. Clean environment 3. Disposal of waste	1. Local & indigenous plant species 2. Energy Conservation 3. Waste reduction 4. Deploy electricity vehicle for hospital use	Rashmi Ram Maolal NO objection (Abhayapuri) NO objection D.D. Abhayapuri.

Abhayapuri Chemist and Drugist Association

Abhayapuri

P.O.-Abhayapuri, Dist.-Bongaigaon (Assam), Pin-783384

Estd.-2005

অতি,
Ref.....মাননীয় বঙ্গাইর জিলাৰ অফিসাৰীৰ সন্মুখিতা-
কেন্দ্ৰ অধীক্ষক-মহোদয়।

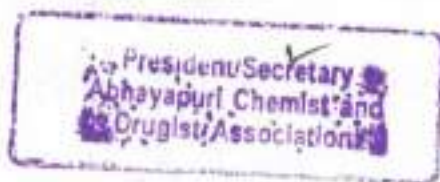
অভয়াপুৰী
মিলাংক-৩০/১১/২০

মহোদয়,

বিনামূলি মিয়াকন লই চুই, আমি -
অভয়াপুৰী সন্মিতি-ওষধ বিপণন সমিতি -
বিভিন্ন পৰী-ডালোকা হ'ব হৈ, আমাৰ
অভয়াপুৰী ২০০ (এম) এম বিপণন
চিকিৎসাৰ্থীৰ স্থাপন হোৱাত আমাৰ কাম
অসুবিধা বা জাপতি নাই।

Abdul Karim

৩০/১১/২০



ANNEXURE-IX

Waste Management Plan

ANNEXURE IX

Waste Management Plan

(During construction and post construction phase)

1.0 SOLID WASTE GENERATION

Solid waste will be generated both during construction and post construction phase.

2.0 WASTE GENERATION ON CONSTRUCTION PHASE

The expected to be generated during the construction phase will comprise of excavated materials, used bags, bricks, concrete, MS rods, tiles, wood etc. The following steps are proposed to be taken for proper management of solid waste:

- Construction yards are proposed for storage of construction materials.
- The excavated materials such as topsoil and stones will be stacked in a safe place for reuse during later stages of construction.
- Excavated top soil will be stored in temporary constructed soil bank and will be reused for landscaping.
- Remaining soil will be utilized for refilling, road construction and rising of site level at various locations or selling to outside agency for their use.

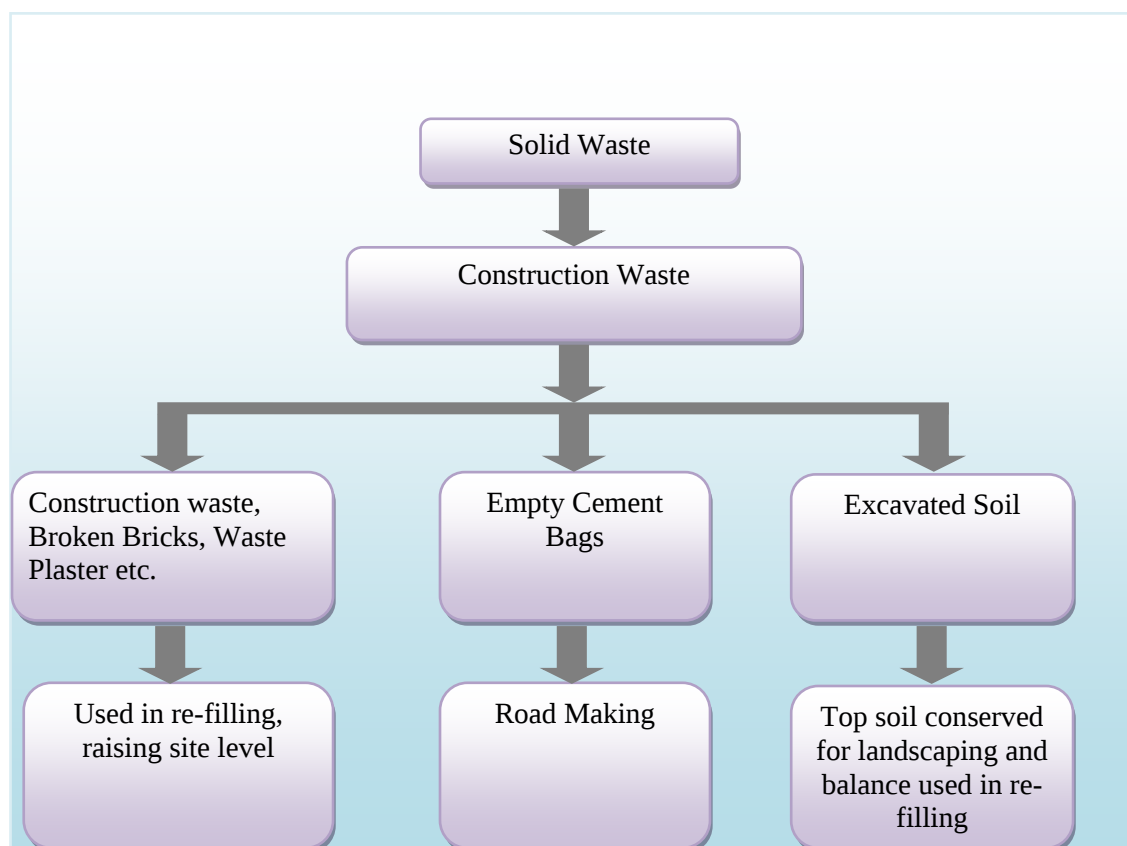


Figure 1: Solid Waste Management Scheme (Construction Phase)

2.1 TYPES OF CONSTRUCTION WASTE

Based on the type of material, construction waste can be classified into the following types:

Concrete, Bricks, Tiles and Ceramics

Concrete, Bricks Tiles & Ceramics and Concrete, bricks, tiles and ceramics in mixtures, containing no hazardous substances (Non-Hazardous Waste)

Concrete, Bricks, Tiles & Ceramics (alone or in mixtures containing hazardous substances) – Hazardous Waste

Wood, Glass & Plastic

Untreated Wood, Waste, Uncontaminated Glass, Plastic (Excluding Packaging Plastic):

Non-Hazardous Waste

Treated Wood (Alone or in Mixtures Containing Hazardous Substances), Treated Glass (Alone or in Mixtures Containing Hazardous Substances) and Treated Plastic (Alone or in Mixtures Containing Hazardous Substances) – Hazardous Waste

Metallic Waste (Includes Electrical Wires and Cable)

Copper, Brass, Bronze, Lead, Iron, Steel, Tin, Mixed Metals- Non-Hazardous

Metals Containing Hazardous Substances, Cables containing Oil & Cables containing Coal Tar – Hazardous Waste

Soil, Contaminated Soil, Stones & Dredging Spoil

Soil containing hazardous substances, Stones containing hazardous substances and Dredging Spoil containing hazardous substances – Hazardous Waste

Other Soil and Other Stones and Other Dredging Spoil – Non-Hazardous Waste

Gypsum

Gypsum Materials – Non-Hazardous Waste

Other Gypsum Materials containing hazardous substances- Hazardous Waste

Insulation, Fiber Glass & Asbestos

Insulation Containing Asbestos (if any), Fiberglass, FRP and Other Construction Materials – Hazardous Waste

Other Insulation Containing Hazardous Substances and Other Insulation Materials – Non-Hazardous Waste.

****Disposal** is planned through handing over such waste (if generated at the site) to registered HW-recycler with State Pollution Control Board, Assam.

Cement

Unused Cement and Unset Cement – Hazardous Waste

Paints & Varnishes

Paint Cans Paint Remover Varnish Remover Organic Solvents and Other Hazardous Substances.

**Disposal is planned through handing over such waste (if generated at the site) to registered HW-recycler with State Pollution Control Board, Assam.

Adhesives & Sealants

Adhesive Containers and Sealant Containers – Hazardous Waste

**Disposal is planned through handing over such waste (if generated at the site) to registered HW-recycler with State Pollution Control Board, Assam.

3.0 WASTE GENERATION IN OPERATION PHASE

3.1 Type of Waste

- Bio-Degradable waste
- Non-Bio-Degradable waste

3.2 Collection and Segregation

1. The local vendors will be hired to provide separate-colored bins for dry recyclables and Bio-Degradable waste.
2. For waste collection, adequate number of colored bins (Green, Blue, and dark grey bins separately for Bio-degradable and non-Bio-degradable) are proposed to be provided at strategic locations of the area.
3. Litter bins will also be provided in open areas like parks etc.

3.3 Treatment of waste

- Bio-Degradable wastes
 1. Bio-degradable waste will be subjected to Organic Waste Converter and 20% of the subjected waste will be used as manure.
 2. STP sludge is proposed to be used for horticultural purposes as manure.
 3. Horticultural Waste is proposed to be composted and will be used for gardening purposes.
- Recyclable wastes
 - i. The cropped grasses will be spread on the green area. It will act as manure after decomposition. Recyclable wastes like paper, plastic, metals etc. will be sold to recyclers.

3.4 Disposal of Recyclable And Non-Recyclable Wastes

Recyclable and non-recyclable wastes will be disposed through Govt. approved agency. Hence, the Municipal Solid Waste Management will be conducted as per the guidelines of Municipal Solid Wastes (Management and Handling) Rules, 2000. A Solid waste management Scheme is depicted in the following figure for the proposed Project.

- The Hazardous waste Management

The Hazardous waste will be managed/ disposed according to *Hazardous and Other Wastes (Management and Tran boundary Movement) Rules, 2016*.

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 according to waste generation (category wise) as per rules in accordance with norms of State Pollution Control Board, Assam.

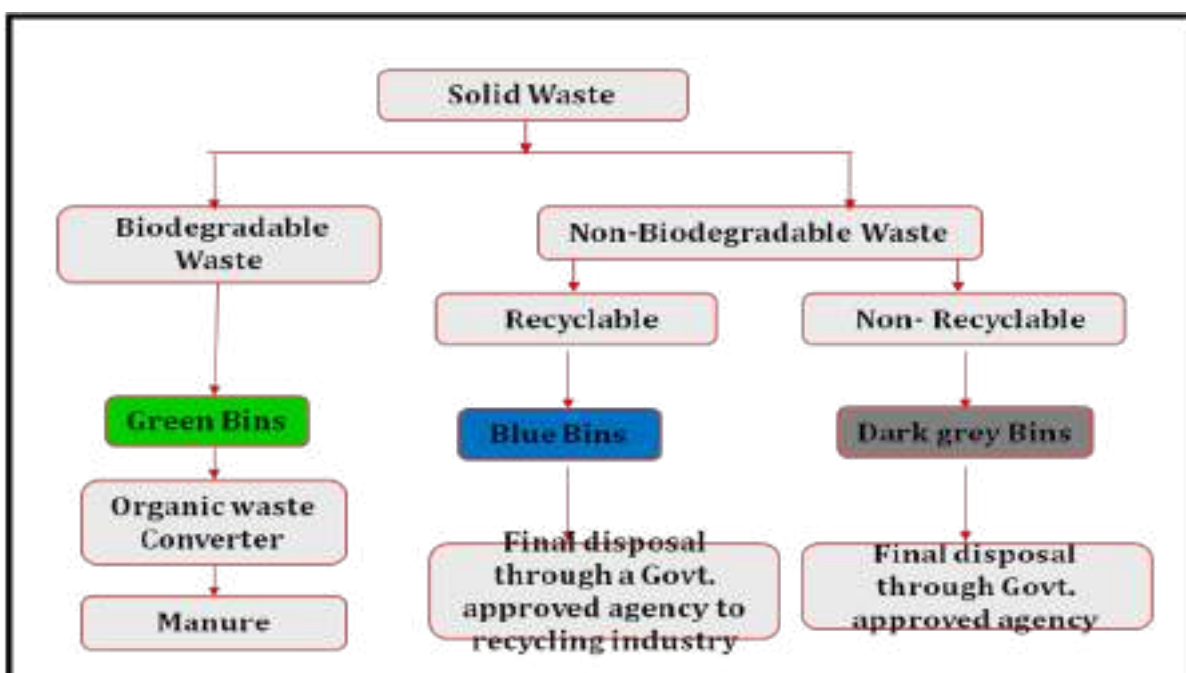


Figure 2: Solid Waste Management Scheme (Operational Phase)

4.0 Biomedical Waste Management

4.1 Introduction

Biomedical waste management (BMWM) Plan is a management tool for effective management of BMW and associated risks on health functionaries and communities. Biomedical waste management is an essential requirement for compliance to the Biomedical Waste Management Rules, 2016 and for managing environmental, occupational health and safety, community safety aspects and their impacts. This plan is being prepared for Abhayapuri District Hospital (proposed) which is being upgraded from CHC-FRU under Bongaigaon district.

4.2 Project specific waste generation details

For calculating biomedical waste generated from the proposed district hospital first we have to calculate solid waste, which is summarized as follows in below table:

Table 1: Calculation of Solid Waste Generation

S. No.	Category	Kg per capita per day	Waste generated (kg/day)
1	Patients	100 @ 1.5 kg/day	150.0
2	Staff	50 @ 0.25 kg / day	12.5
3	Visitor + OPD	1500 @ 0.025 kg /day	37.5
4.	Landscape waste (5757.27 m ²)	1.4 @ 0.2 kg/acres	0.28
Total Solid Waste Generated			200.28 KG/Day or say 200 kg/day

Total Waste generated per day: 200.0 kg/day

S. No	Waste	Quantity Kg/day	Percentage
1	Biomedical waste	37.5	***Estimated generation of total waste @1.5 kg/bed: 100* 1.5 = 150 kg/day Estimated generation of bio-medical waste @ 25% of the total waste generated: 37.5 kg/day
Rest remaining MSW 162.5 kg/day			
2	Bio degradable waste	81.25	50
3	Non-bio degradable	65.0	40
4	Recyclable waste	16.25	10

****Source:** CPHEEO Manual Ministry of Urban Development (MoUD), Government of India (May 2000) on municipal solid waste management 2000 under **Chapter VII- Biomedical waste (Page -34)**

- Following arrangements will be made at the site in accordance to Municipal Solid Wastes (Management and Handling) Rules, 2000
- Total Bio medical waste is 25% of total solid waste generated from hospital block i.e. **37.5 kg/day.**

Category	Type of Waste	Estimated Generated Quantity	
		%	kg/day
Yellow	(a) Human Anatomical Waste	75.0	28.125
	(b) Animal Anatomical Waste		
	(c) Soiled Waste		
	(d) Expired or Discarded Medicines		

	(e) Chemical Solid Waste		
	(f) Chemical Liquid Waste		
	(g) Discarded linen, mattresses, beddings contaminated with blood or body fluid.		
	(h) Microbiology, Biotechnology and other clinical laboratory waste		
Red	Contaminated Waste (Recyclable)	10.0	3.75
White (Translucent)	Waste sharps including Metals	8.0	3.0
Blue	Glassware	7.0	2.625
	Metallic Body Implants		
Total			37.5

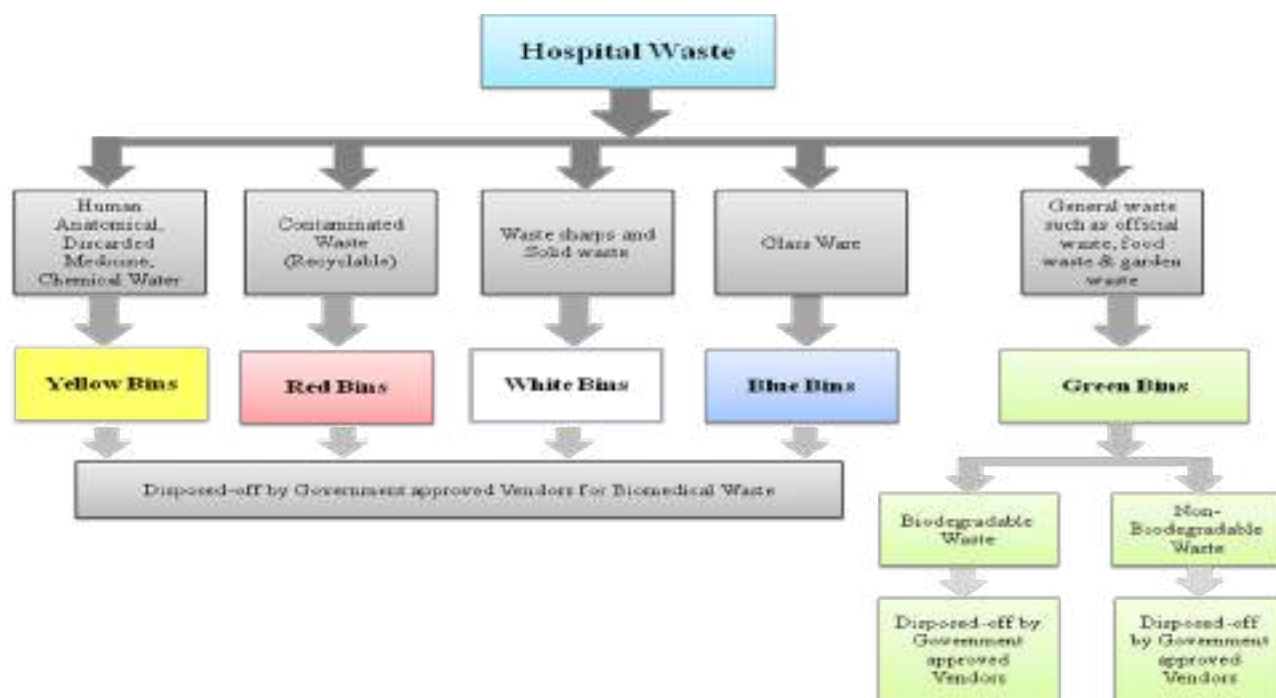


Figure 3: BMW Waste Management Scheme (Operation Phase)

4.3 Organization arrangement at Facility level for Biomedical waste Management and disposal

A Bio Medical Waste Management Committee will be formed in the proposed facility. The indicative composition of such committee is given below:

- ❖ SMO/ CMO/ Medical Superintendent (Chairperson)
- ❖ District Quality Consultant/ District BMW Officer (Invitee Members)
- ❖ Quality Manager

- ❖ Hospital Infection Control Nurse/ Officer
- ❖ Nursing in-charge
- ❖ Medical Officer (Surgery)
- ❖ Medical Officer (Emergency)
- ❖ Medical Officer (Gynae & Obs) Microbiologist/ Pathologist
- ❖ OT Nurse / Technician/ Assistant
- ❖ Lab Technician
- ❖ Blood Bank/Storage Unit Technician
- ❖ Housekeeping in-charge
- ❖ Pharmacist
- ✓ The Committee shall meet once in every six months and the record of the minutes of the meetings of this committee shall be submitted along with the annual report to the Pollution Control Board
- ✓ The function of such committee is to ensure that bio-medical wastes shall be segregated at source, and disposed of safely, legally, and in compliance with all applicable regulations by the Assam Pollution Control Board.
- ✓ HCFs should submit the annual report
- ✓ To maintain all record for operation of incineration, hydro or autoclaving etc., for a period of five years;
- ✓ HCFs may have a dedicated budget for BMWM as a part of annual budget of the health care facilities. Such budget must include recurring and non- recurring costs expected to be incurred by HCFs, related to Bio Medical Waste Management

4.4 Training and capacity building

Based on the identified needs, training plan for awareness and training on BMW management covering district health facilities will take place. The training sessions will be designed for specific groups of workers.

4.5 Implementation of waste management in health facilities

Waste management is the implementation plan covers details of options and mitigative measures to be implemented covering entire cycle of different types of BMW at facility level including special provisions for meeting requirements during outbreaks, including following according to BMW rules:

- Generation of waste
- Segregation
- Handling and storage within the facilities
- On-site treatment of wastes e.g., disinfection, microwaving, incineration, deep burials etc.
- Transportation to external facilities
- End treatment
- Final disposal

- Compliance status

Presently at exiting CHC-FRU, Abhayapuri there is deep burial pit and sharp pit facility which exists at site for Yellow (a), (b) and (c) wastes namely human anatomical, animal anatomical and soiled Waste and sharps (white). This is being treated as per norms.

Effort will be made to make a tie up with the CBMWTF at Metuakuchi, Barpeta, for safe disposal of BMW, located at Metuakuchi, Barpeta for disposal of BMW will be made before starting operation of District Hospital. The CBWTF of Metuakuchi is located within the 75km from the site and it is functional. Necessary agreement and authorization for BMW will be taken from CBMWTF/ASPCB before the start of such activity.

4.6 Treatment and Disposal of BMW as per rules as follows:

Type of Waste	Type of Bag or Container to be used	Treatment and Disposal options
Human or Animal anatomical waste	Yellow colored non-chlorinated plastic bags	Incineration or Plasma Pyrolysis or deep burial
Soiled Waste		Incineration or Plasma Pyrolysis or deep burial* In absence of above facilities, autoclaving or micro-waving/hydroclaving followed by shredding or mutilation or combination of sterilization and shredding. Treated waste to be sent for energy Recovery.
Expired or Discarded Medicines (Pharmaceutical waste like antibiotics, cytotoxic drugs including all items contaminated with cytotoxic drugs along with glass or plastic ampoules, vials etc.)	Yellow colored non-chlorinated plastic bags	Expired cytotoxic drugs and items contaminated with cytotoxic drugs to be returned back to the manufacturer or supplier for incineration at temperature >1200 °C or to common bio-medical waste treatment facility or hazardous waste treatment, storage and disposal facility for incineration at >1200°C Or Encapsulation or Plasma Pyrolysis at >1200°C. All other discarded medicines shall be either sent back to manufacturer or disposed by incineration.
Chemical Waste (Chemicals used in production of biological)	Yellow colored non-chlorinated plastic bags	Disposed of by incineration or Plasma Pyrolysis or Encapsulation in hazardous waste treatment, storage

and used or discarded disinfectants)		and disposal facility.
Chemical Liquid Waste: Liquid waste generated due to use of chemicals in production of biological and used or discarded disinfectants, Silver X-ray film developing liquid, discarded Formalin, infected secretions, aspirated body fluids, liquid from laboratories and floor washings, cleaning, house-keeping and disinfecting activities etc.	Separate collection system leading to effluent treatment system	After resource recovery, the chemical liquid waste shall be pre-treated before mixing with other wastewater. The combined discharge shall conform to the discharge norms given in Schedule III.
Discarded linen, mattresses, beddings contaminated with blood or body fluid, routine mask and gown	Non-chlorinated yellow plastic bags or suitable packing material	Non- chlorinated chemical disinfection followed by incineration or Plasma Pyrolysis or for energy recovery. In absence of above facilities, shredding or mutilation or combination of sterilization and shredding. Treated waste to be sent for energy recovery or incineration or Plasma Pyrolysis.
Microbiology, Biotechnology and other clinical laboratory waste (Blood bags, Laboratory cultures, stocks or specimens of micro-organisms, live or attenuated vaccines, human and animal cell cultures used in research, industrial laboratories, production of biological, residual toxins, dishes and devices used for cultures)	Autoclave or Microwave or Hydroclave safe plastic bags or containers	Pre-treat to sterilize with non-chlorinated chemicals on-site as per World Health Organization (WHO) guidelines on Safe management of wastes from health care activities and WHO Blue Book, 2014 and then sent for Incineration.

Contaminated Waste (Recyclable) (a) Wastes generated from disposable items such as tubing, bottles, intravenous tubes and sets, catheters, urine bags, syringes (without needles and fixed needle syringes and vaccutainers with their needles cut) and gloves.	Red coloured non-chlorinated plastic bags or containers	Autoclaving or micro-waving/ hydroclaving followed by shredding or mutilation or combination of sterilization and shredding. Treated waste to be sent to registered or authorized recyclers or for energy recovery or plastics to diesel or fuel oil or for road making, whichever is possible. Plastic waste should not be sent to landfill sites.
Waste sharps including Metals (Needles, syringes with fixed needles, needles from needle tip cutter or burner, scalpels, blades, or any other contaminated sharp object that may cause puncture and cuts. This includes both used, discarded and contaminated metal sharps)	Puncture proof, Leak-proof, tamper-proof containers	Autoclaving or Dry Heat Sterilization followed by shredding or mutilation or encapsulation in metal container or cement concrete; combination of shredding cum autoclaving; and sent for final disposal to iron foundries (having consent to operate from the State Pollution Control Boards or Pollution Control Committees) or sanitary landfill or designated concrete waste sharp pit.
Glassware: Broken or discarded and contaminated glass including medicine vials and ampoules except those contaminated with cytotoxic wastes.	Puncture proof and leak proof boxes or containers with blue colored marking	Disinfection (by soaking the washed glass waste after cleaning with detergent and Sodium Hypochlorite treatment) or through autoclaving or microwaving or hydroclaving and then sent for recycling.
Metallic Body Implants	Puncture proof and leak proof boxes or containers with blue colored marking	

4.7 Resources and tools for BMW management

Effective management of wastes such as sharps and infectious wastes cannot be achieved without provision of safety to waste handlers and proper equipment for storage and transportation of wastes. Therefore, necessary occupational safeguards will be taken into

account for waste collection bags, trolleys, needle cutters, personal protective equipment, disinfectants etc.

4.8 Occupational health and safety provisions to be implemented at health facilities covering:

- Infection, prevention and Control (IPC) protocols for biological hazards, with special emphasis for high-risk infectious diseases agents for health sector workers e.g., MERS, SARS-CoV-2, Ebola etc.
- Safe work practices for hazardous works e.g., handling sharps, cytotoxic drugs, radiation work, environmental sanitation, etc.
- Preventive immunization of health workers against Hepatitis B
- Availability of Post Exposure Prophylaxis against HIV infections.

4.9 Supervision of BMWM implementation by Nodal officer (qualified medical practitioner) / members of Waste Management Committee are required, covering following minimum aspects:

- Segregation of waste into appropriate bags and bins.
- Availability and use of needle cutters, waste collection and transportation materials etc.
- Availability and use of personal protective gears by waste handlers.
- Regular environmental cleaning e.g., cleaning of walls, surfaces and equipment etc by housekeeping staff.
- Regular transport of biomedical wastes from wards / clinics to central wastes storage area (if present) or to deep burial site / common treatment facility and quantities of wastes disposed.

4.10 Monitoring and evaluation mechanism

Monitoring and evaluation mechanisms with role and responsibilities and resources available for carrying out activities will be developed for the proposed project. The monitoring activities and organization will be aligned to the Quality Assurance activities for patient safety.

ANNEXURE-X

Traffic survey

Traffic Survey for Proposed Project
District Hospital at Abhayapuri, Bongaigaon, Assam
Classified Traffic Volume Count Survey

Road: SDO Office Road
 Location: Wear Site
 Direction From: SDO Office Road
 Weather: Fine

To: Hospital (Intersection)

Name of Enumerator: Narveet
 SHE No: 1
 Date & Day: 30.11.2023 Thursday
 Sheet No: 1

Time Period	Motorised Vehicles																	Non-Motorised Vehicles			
	Car/Jeep/ Van (other than taxi)	Taxi	Auto Rikshaw (2W)	Two Wheeler	Tata Magic/ Shared Auto	Bus					Goods Vehicle					Agri. Tractor		Animal Herd Drawn	Cycle		Others
						Mini Bus	GSRTC Bus	Govt. Inter City Bus	Private Bus	School Bus	Mini LCV	LCV	2-Axe (Truck)	3-Axe (Truck)	BAV (Tractor/Trailer)	Tractor	Tractor & Trolley				
																					
8:00 am to 8:05 am	EEE=	=	EEE-	EEEEEE-	EEEEE=	=					III	I				I		I	EEF=		
8:05 am to 8:30 am	EEF	=	EE	EEEF-	EEEF	-					=							I	EE=		
8:30 am to 9:00 am	EE=	=	EE=	EEEF	EEFE=	-					III					I			E-		
9:00 am to 9:30 am	EE-	-	EE=	EEFE-	EEF						I	I							EE=		
Total	56	8	46	88	75	4	0	0	0	0	10	2	0	0	0	2	0	2	40	0	0

Checked by:

Time

Traffic Survey for Proposed Project
District Hospital at Abhayapuri, Bongaigaon, Assam
Classified Traffic Volume Count Survey

Road: SDO Office Road
 Location: Near S.I.C
 Direction From: SDO Office Road
 Weather: Dry

To: Hospital (Intersection)

Name of Enumerator: Narmad
 Shift No: 1
 Date & Day: 30.11.2023 Thursday
 Sheet No: 1

Time Period	Motorised Vehicles																	Non-Motorised Vehicles			
	Car/Jeep/Van (other than taxi)	Taxi	Auto Rickshaw (3W)	Two Wheeler	Tata/Mini/Shared Auto	Mini Bus	GSRTC Bus	Govt. Inter City Bus	Private Bus	School Bus	Mini LCV	LCV	3-Axe (Truck)	3-Axe (Truck)	MAV (Tractor/Trolley)	Tractor	Tractor & Trolley	Animal Hand Drawn	Cycle		Others
12.00 pm to 1.30 pm	EEI	-	EEI	EEI	EEI	-					II								EEI		
1.30 pm to 2.00 pm	EE		EEI	EEI	EEI														E		
2.00 pm to 3.00 pm	EEI		EEI	EEI	EEI	-					-								E		
3.00 pm to 4.00 pm	EEI	-	EEI	EEI	EEI	-					II								EEI		
Total	45	2	74	84	59	3	0	0	0	0	5	0	0	0	0	0	0	0	31	0	0

Checked by:

Time:

Traffic Survey for Proposed Project
District Hospital at Abhayapuri, Bongaigaon, Assam
Classified Traffic Volume Count Survey

Road: 500 Office Road
 Location: Near S.I.E
 Direction From: 520 Office Road
 Weather: Sun

To: Hospital (Intersection)

Name of Enumerator: Narveet
 SMT No: 5
 Date & Day: 30.11.2023 Tuesday
 Sheet No: 1

Time Period	Motorised Vehicles																	Non-Motorised Vehicles			
	Car/Jeeep/ Van (other than taxi)	Taxi	Auto Rickshaw (3W)	Two Wheeler	Tata Magna/ Shared Auto	Bus					Goods Vehicle					Agri. Tractor		Animal Herd Drawn	Cycle		Others
						Mini Bus	OSRTC Bus	Govt. Inter City Bus	Private Bus	School Bus	Mini LCV	LCV	2-Axle (Truck)	3-Axle (Truck)	HAAT (Truck/Trol- ly)	Tractor	Tractor & Trailer				
																					
4.00 to 5.00	EE E E	1	EEEE E	EEEE E	EE E	1					1	1				1			EE E E		
5.00 to 6.00	EE E	1	EEEE E	EEEE E	EE E						1								EE E		
6.00 to 7.00	EE E E		EE E	EEEE E	EE E						11								EE E		
7.00 to 8.00	EE E		EE E	EEEE E	EE E														EE E		
Total	50	3	48	80	54	1	0	0	0	0	5	1	0	0	0	1	0	0	28	0	0

Checked by:

Time:

Road:		SDO Office Road				Name of Enumerator:		Navnet		District Hospital at Abhegapuri, Bospagaon, Assam														
Location:		Near Site				Shift No:		1																
Direction from		SDO Office Road towards Hospital (Intersection)				Date & Day:		30.11.2023 Thursday																
Weather:		Fine				Sheet No:		1																
Time Period:	Motorised Vehicles																				Non-Motorised Vehicles			
	Car/Jeep/ Van(other than taxi)	Taxi	Auto Rickshaw (3W)	Two Wheeler	Tata Magic/ Shared Auto	Bus					Mini LCV	Goods Vehicle				Agri. Tractor		Animal/ Hand- Drawn	Cycle		Others			
						Mini Bus	AJTC Bus	Govt. Inter City Bus	Private Bus	School Bus		LCV	2- Axle(Tru ck)	3- Axle(Truck)	MAV (Truck/Trai ler)	Tractor	Tractor & Trailer							
Time Periods:																								
Total 8:00:00 AM to 08:00:00 PM	151	13	168	252	188	8	0	0	0	0	20	3	0	0	0	3	0	2	99			967		
PCU Conversion	1	1	1	0.5	1.5	3	3	3	3	3	1.5	1.5	3	4.5	4.5	3	4.5	4	0.5	2	0			
Sectoral PCU	151	13	168	126	282	24	0	0	0	0	30	4.5	0	0	0	9	0	8	49.5	0	0	865		
Total PCU	865	Based on IRC 64 - 1999																						
08:00:00 AM to 09:00:00 AM	18	2	16	26	23	2	0	0	0	0	4	1	0	0	0	1	0	1	15	0	0			
09:00:00 AM to 10:00:00 AM	15	3	18	21	20	1	0	0	0	0	2	0	0	0	0	0	0	1	12	0	0			
10:00:00 AM to 11:00:00 AM	12	2	12	20	17	1	0	0	0	0	3	0	0	0	0	1	0	0	6	0	0			
11:00:00 AM to 12:00:00 PM	11	1	8	21	15	0	0	0	0	0	1	1	0	0	0	0	0	0	7	0	0			
12:00:00 PM to 1:00:00 PM	9	1	16	18	13	1	0	0	0	0	2	0	0	0	0	0	0	0	9	0	0			
1:00:00 PM to 2:00:00 PM	7	0	21	22	17	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0			
2:00:00 PM to 3:00:00 PM	13	0	26	19	15	1	0	0	0	0	1	0	0	0	0	0	0	0	8	0	0			
3:00:00 PM to 4:00:00 PM	16	1	17	25	14	1	0	0	0	0	2	0	0	0	0	0	0	0	9	0	0			
4:00:00 PM to 5:00:00 PM	14	1	18	21	11	1	0	0	0	0	1	1	0	0	0	1	0	0	8	0	0			
5:00:00 PM to 6:00:00 PM	9	2	11	23	18	0	0	0	0	0	1	0	0	0	0	0	0	0	7	0	0			
6:00:00 PM to 7:00:00 PM	16	0	9	19	14	0	0	0	0	0	3	0	0	0	0	0	0	0	6	0	0			
7:00:00 PM to 8:00:00 PM	11	0	8	17	11	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	116		
Total:	151	13	168	252	188	8	0	0	0	0	20	3	0	0	0	3	0	2	99	0	0	967		



CONSTRUCTION OF 100 BEDED DISTRICT HOSPITAL UNDER ASSIST AT ABHAYAPURI, BONGAIGAON, ASSAM

TRAFFIC STUDY MAP

Prepared by
Gaheli Center of Research and Development Pvt. Ltd.

Traffic Study

Vehicular Traffic Density

Traffic study was carried out as primary data to know the existing traffic density. Traffic survey forms are attached as **Annexure**.

Incremental pollution load as per IRC 64 has been calculated to estimate the level of services (LOS). Traffic study was conducted at following survey points:

1. SDO Office Road towards Hospital (Intersection) (Survey Point 01)

Then depending on the capacity of the road, the number of vehicles that will be added to the present scenario will be compared to the carrying capacity as recommended by Indian Road Congress (IRC). The existing volume of traffic and, the Level of Service are given below:

Traffic data was collected from the following points.

1. SDO Office Road towards Hospital (Intersection) (907-Vehicle Count)

The road is undivided 2 lane (SDO Office Road) with RoW = 3.5 Meters.



Traffic Survey Photographs

Survey hours: 8.00 am to 8.00 pm

Vehicle Count in PCU = 865

1: SDO Office Road towards Hospital (Intersection) – 865 PCU

Total accommodative capacity of the SDO Office Road, IRC: 64 – 1990 is 12,000 PCU.

Carrying capacity, SDO Office Road= $\text{Volume} / \text{Capacity} = 865/12,000 = 0.07$ (LOS – A – Excellent)

Additional Traffic load added due to proposed project:

Number of Cars: 218 PCU

Modified V/C Ratio SDO Office Road
= Existing PCU + Additional PCU load of project /12,000
=865+218/12,000 = 0.09

Inference: New V/C ratio near SDO Office Road is 0.09 (LOS – A – Excellent).

Even if the entire load of project of 218 PCU (worst case scenario) is added upon, the level of service will have minimal impact and correspond to LOS – A – Excellent near SDO Office Road.

ANNEXURE-XI

Dust Mitigation measures

ANNEXURE-XI**DUST MITIGATION PLAN**

Introduction: In the building Construction projects, dust mitigation is one of the primary concerns and which needs to be addressed properly to minimize its impacts. In the proposed project, dust mitigation measures have been proposed for different stages of the project. Dust Mitigation measures proposed for the project is given below:

S. No	Project Stage	Dust generation Source	Mitigation Measures
1.	Pre-construction Stage	1. Demolition waste 2. Site Preparation 3. Vehicle Movement	1. Tarpaulin or green net should be there around the boundary of the construction site. 2. The vehicle carrying the demolition waste should be fully covered with tarpaulin sheet. 3. All vehicles including carrying construction debris of any kind should be cleaned and wheels washed. 4. All construction debris and construction material of any kind should be stored on the site and not dumped on public roads or pavements. 5. No loose soil or sand or Construction & Demolition Waste or any other construction material that causes dust shall be left uncovered. 6. Every worker working on construction site and involved in loading, unloading and carriage of construction material and

			construction debris should be provided with dust-mask to prevent inhalation of dust particle. 7. Vehicle with PUC certificate will be allowed in construction site. 8. Construction and demolition waste should be recycled on-site or transported to authorized recycling facility and due record of the same should be maintained.
2.	Construction phase	1. Construction activities 2. Vehicle Movement	1. Tarpaulin or green net should be there around the boundary of the construction site. 2. The vehicle carrying the construction and demolition waste, construction materials should be fully covered with tarpaulin sheet. 3. All vehicles including carrying construction debris of any kind and construction material should be cleaned and wheels washed. 4. All construction debris and construction material of any kind should be stored on the site and not dumped on public roads or pavements. 5. No loose soil or sand or Construction & Demolition Waste or any other construction material that causes dust shall be left uncovered. 6. Every worker working on construction site and involved in loading, unloading and carriage of construction material and construction debris should be provided with dust-mask to prevent inhalation of dust particle.

			7. Vehicle with PUC certificate will be allowed in construction site. 8. No grinding and cutting of building materials in open area. Wet jet should be used in grinding and stone cutting. 9. Unpaved surfaces, if any and areas with loose soil should be adequately sprinkled with water to suppress dust. 10. Dust mitigation measures shall be displayed prominently at the construction site For easy public viewing.
3.	Operational phase	Vehicular movement	Water sprinkling will be done twice a week.

ANNEXURE-XII
Environment Monitoring Reports



Gaheli Environmental Laboratory
(A unit of Gaheli Center of Research and Development Pvt. Ltd.)
(ISO 9001:2015, 14001:2015, OHSAS 18001:2007 Certified Company)



Circuit House Road, Near Parwan Orthopaedic Hospital, New Paradise Fountain Circle,
Porbandar - 360575, Gujarat, E-mail - contact@gahelindia.com, website - www.gahelindia.com
Tel.: 0286-2253630, Mobile -91-9990416608, GSTIN: 24AHCPA6690B1ZV

TEST REPORT

Report Code: GEL/A/2023/12/02-001
Issued to: Project in charge- Construction of
proposed 100 Beds District Hospital under
ASSIST at Abhayapuri, Bongaigaon, Assam

Issue Date: : 02.12.2023
Date of Sampling: : 30.11.2023

RESULTS (Ambient Air Quality Analysis)

SAMPLING DETAILS

Sample Collected by: : GEL STAFF
Sampling Protocol: : Portable air detector (AQM-02)
Weather Condition: : Clear Sky

S.No	Location of monitoring	Parameters						
		PM10 µg/m³	PM 2.5 µg/m³	PM1 µg/m³	SO ₂ µg/m³	NO ₂ µg/m³	Temperature °C	Humidity %
1	Project site	11	10	07	4.1	5.3	28	46
2	Near Project site	12	11	08	4.3	4.7	28	48
3	Lakshmi Mandir	13	12	09	4.9	4.4	28	49
4	Abhayapuri College	15	13	06	5.1	6.2	29	42
5	S & R Kalita L.P School	11	10	07	5.3	6.5	29	46
NAAQS		100	60	—	80	80	—	—

****End of Report****



Authorized Signatory
Varsha Pandey
Varsha Pandey
(Managing Director)

Serial No.: 8986



Dispatch Date: 02.12.2023

Dispatch No.: 8986



Gaheli Environmental Laboratory

(A unit of Gaheli Center of Research and Development Pvt. Ltd.)

(ISO 9001:2015, 14001:2015, OHSAS 18001:2007 Certified Company)

Circuit House Road, Near Parwan Orthopaedic Hospital, New Paradise Fountain Circle,
Porbandar - 360575, Gujarat. E-mail - contact@gaheliindia.com, website - www.gaheliindia.com
Tel.: 0286-2253630, Mobile +91-9990416608, GSTIN: 24AHCPA6690B1ZV



TEST REPORT

Sample Description: Ambient Noise

Report Code: GEL/N/2023/12/02-001

Issued to: Project in charge- Construction of
proposed 100 Beds District Hospital under
ASSIST at Abhayapuri, Bongaigaon, Assam

Issue Date: 02.12.2023

Date of Sampling: 30.11.2023

Sample Collected by: GEL STAFF

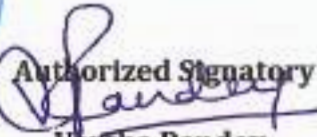
RESULTS

(Ambient Noise Quality Analysis)

S. No.	Date	Location	Zone	Limit for As Per EPA, 1986 ; Leq, dB (A)		Observed Value Leq, dB (A)	
				Day Time*	Night Time**	Day Time*	Night Time**
1	30.11.2023	Project site	Silence zone	50	40	48.3	38.5
2	30.11.2023	Near Project site	Residential area	55	45	53.4	43.8
3	30.11.2023	Lakshmi Mandir	Silence zone	50	40	47.2	38.2
4	30.11.2023	Near Abhayapuri College	Commercial area	65	55	64.5	53.9
5	30.11.2023	S & R Kalita I. P School	Silence zone	50	40	48.7	39.1
* Day Time			6.00 a.m. to 10.00 p.m.				
**Night Time			10.00 p.m. to 6.00 a.m.				

****End of Report****



Authorized Signatory

Varsha Pandey
(Managing Director)

Serial No.: 8987



Dispatch Date: 02.12.2023

Dispatch No.: 8987



Gaheli Environmental Laboratory

(A unit of Gaheli Center of Research and Development Pvt. Ltd.)

(ISO 9001:2015, 14001:2015, OHSAS 18001:2007 Certified Company)

Circuit House Road, Near Parwana Orthopaedic Hospital, New Paradise Fountain Circle,
Porbandar - 360575, Gujarat, E-mail - contact@gaheliindia.com, website - www.gaheliindia.com
Tel: 0286-2233630, Mobile: +91-9990416608, GSTIN: 24AHCPA6690B1ZV



TEST REPORT

Report Code: GEL/S/2023/12/02-001

Issued to: Project in charge- Construction of
proposed 100 Beds District Hospital under
ASSIST at Abhayapuri, Bongaigaon, Assam

Issue Date : 02.12.2023

Sample Collected by : Amrit Kr

Sample Collected on : 30.11.2023

Sampling Protocol : GEL/LAB/SOP/SOIL/01

Sample Quantity : 1 kg

Sample Packing : Zip Polybag

Sample Description: Soil (Project Site) and Deohati village

RESULTS

(Soil Quality Analysis- Project Site, near village- Deohati)

S. No.	Parameters	Units	Test Method	SQ1 Project Site	SQ2 Deohati Village
1	Texture	-	GEL/LAB/SOP/SOIL/22	Sandy Loam	Sandy Loam
	Sand	%		59	60
	Silt	%		27	25
	Clay	%		14	15
2	*Color	-	GEL/LAB/SOP/SOIL/07	Light Brownish to grey	Light Brownish to grey
3	pH (1:2 Suspension)	-	IS 2726 (P-26): 1987, RA 2011	6.83	6.75
4	Specific Conductivity	µmhos/cm	IS 14767: 2000, RA 2016	508	513
5	Moisture	%	IS 2720(Part-2): 1973, RA 2015	24.2	25.3
6	Exchangeable Potassium	mg/kg	GEL/LAB/SOP/SOIL/07	8.1	7.3
7	Exchangeable Sodium	mg/kg	GEL/LAB/SOP/SOIL/06	21.4	21.5
8	Exchangeable Calcium	mg/kg	GEL/LAB/SOP/SOIL/08	302	312
9	Exchangeable Magnesium	mg/kg	GEL/LAB/SOP/SOIL/08	82.2	83.0
10	Porosity	%	GEL/LAB/SOP/SOIL/20	35.5	33.9
11	Organic Matter	%	IS 2720 (P-22): 1972, RA 2010	0.57	0.56



Authorized Signatory

Varsha Pandey

(Managing Director)

Serial No.: 2988



Dispatch Date: 02.12.2023

Dispatch No.: 2988



Gaheli Environmental Laboratory

(A unit of Gaheli Center of Research and Development Pvt. Ltd.)

(ISO 9001:2015, ISO 14001:2015, OHSAS 18001:2007 Certified Company)

Circuit House Road, Near Parwana Orthopaedic Hospital, New Paradise Fountain Circle,
Porbandar - 360575, Gujarat, E-mail : contact@gelindia.com, website - www.gelindia.com
Tel : 0286-2257630, Mobile: +91-9990416608, GSTIN: 24AECPA6690B1ZV



TEST REPORT

12	Phosphorous	mg/kg	GEL/LAB/SOP/SOIL/10	12.1	11.8
13	*Nitrogen	mg/kg	GEL/LAB/SOP/SOIL/09	85	78
14	Chloride	mg/kg	GEL/LAB/SOP/SOIL/14	63	61
15	Bulk Density	gm/cc	IS 2720 (P-28) : 1974, RA 2010	1.9	1.8

****End of Report****



Authorized Signatory

Varsha Pandey

(Managing Director)

Serial No.: 8969



Dispatch Date: 02.12.2023

Dispatch No.: 8969

DISTRICT LEVEL LABORATORY (PHED), KAMRUP

Address: Bamunimaidam, Guwahati 21

Email ID: phe.kamrup@gmail.com, Ph No: 0361-225641

Test Report

UID No.: TC977623000000826F

Issue Date: 12/12/2023

Customer Reference No: KDLL/23/54

Issue No: 54

Customer Name & Address: Gaheli Environmental Laboratory, North West Delhi

Sample collected on dated: 30/11/2023

Sample Collected by: Gaurav Jatav

Sample Location: Abhayapuri CHC Project Site

Date of Analysis started: 01/12/2023

Temp: 25.5°C Humidity: 64%

Test Sample: Drinking Water

Customer Contact No: 9818736012

Sample received on dated: 01/12/2023

Quantity: 1000 ml

Sample Condition: Good Condition at 4°C

Dated of analysis completed: 02/12/2023

RES ULTS

Sr. No.	Parameter	Protocol Used	Results	IS: 10500:2012 (Second Revision)		Unit
				Desirable limit	Max. Permissible limit (in absence better alternate source)	
1	Colour	IS: 3025 (Part 4)	≤6	5	15	Hazen
2	Taste	IS: 3025 (part 8)	Agreeable	Agreeable	Agreeable	
3	Turbidity	IS: 3025 (Part 10)	0	1	5	NTU
4	pH	IS: 3025 (Part 11)	7.943	6.5 - 8.5	No relaxation	pH unit
5	TDS	IS: 3025 (Part 16)	50	500		mg/L
6	Chloride	IS: 3025 (Part 32)	24.95	250	1000	mg/L
7	Total Alkalinity	IS: 3025 (Part 23)	2.2	200	600	mg/L
8	Total Hardness	IS: 3025 (Part 21)	4.2	200	600	mg/L
9	Calcium (as Ca)	IS: 3025 (Part 40)	1.68	75	200	mg/L
10	Magnesium	APHA (24th ed) 3500 Mg B	0.61	30	100	mg/L
11	Total Iron	APHA 3500 (24th Ed) Fe B	0.29	1	No relaxation	mg/L
12	Arsenic	APHA 3500 (24th Ed) As B	-	0.01	No relaxation	mg/L
13	Free Residual Chlorine	IS 3025 (Part 26)	-	0.2	1	mg/L
14	Fluoride	APHA (24rd Ed) 4500 F	0.008	1	1.5	mg/L
15	Nitrate	APHA (24rd Ed) 4500	7.943	45	No relaxation	mg/L
16	Sulphate	IS 3025 (Part 24)	21.001	200	400	mg/L
17	Odour	IS 3025 (Part 5)	Agreeable	Agreeable	Agreeable	

Notes:

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END OF TEST REPORT

Authorized By,

Nova Deka

Quality Manager

Kamrup DLL

QUALITY MANAGER
DLL(NABL), PHED, ASSAM
Bamunimaidam, Guwahati-21

LABORATORY (PHED), KAMRUP

Address: Bamunimaidam, Guwahati 21

Email ID: phe.kamrup@gmail.com, Ph No: 0361-225641**Test Report**

Report No: 75	Issue date: 12/12/23
Sample ID No: 826	Issued to: Gaheli Environmental Laboratory
Sample Description: Ground Water (Handpump)	Temperature: 26.2°C Humidity: 60%
Sample Type: Water	Sample Condition: Good Condition at 4°C
Sample collected on dated: 30/11/2023	Sample quantity: 100 ml
Sample collected by: Gaurav Jatav	Sample received on dated: 01/12/2023
Sample location: Abhayapur CHC (Project Site)	
Date of Analysis started: 01/12/2023	Date of Analysis completed: 03/12/2023

Sl No	Parameter	Results	Desirable limit	Max. Permissible Limit (in absence better alternate source)	Unit
1.	Total Coliform	Absent	No coliform organism/100ml	No organism/100ml	CFU/100ml
2.	Faecal Coliform	-	No coliform organism/100ml	No organism/100ml	CFU/100ml

Notes

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.....END.....

Authorized signatory

Nova Deka
Quality Manager
Kamrup DLL

Test Report

UID No.: TC977623000000827F

Issue Date: 12/12/2023

Customer Reference No: KDLL/23/55

Issue No: 55

Customer Name & Address: Gaheli Environmental Laboratory, North West Delhi

Sample collected on dated: 30/11/2023

Sample Collected by: Gaurav Jatav

Sample Location: LP School Abhayapuri, Bongaigaon

Date of Analysis started: 01/12/2023

Temp: 25.5°C Humidity: 64%

Test Sample: Drinking Water

Customer Contact No: 9818736012

Sample received on dated: 01/12/2023

Quantity: 1000 ml

Sample Condition: Good Condition at 4°C

Dated of analysis completed: 02/12/2023

RES ULTS

Sr. No.	Parameter	Protocol Used	Results	IS: 10500:2012(Second Revision)		Unit
				Desirable limit	Max. Permissible limit (in absence better alternate source)	
1	Colour	IS: 3025 (Part 4)	≤6	5	15	Hazen
2	Taste	IS: 3025 (part 8)	Agreeable	Agreeable	Agreeable	NTU
3	Turbidity	IS: 3025 (Part 10)	0	1	5	pH unit
4	pH	IS: 3025 (Part 11)	7.54	6.5 - 8.5	No relaxation	mg/L
5	TDS	IS: 3025 (Part 16)	50	500		mg/L
6	Chloride	IS: 3025 (Part 32)	20.27	250	1000	mg/L
7	Total Alkalinity	IS: 3025 (Part 23)	4.2	200	600	mg/L
8	Total Hardness	IS: 3025 (Part 21)	4.2	200	600	mg/L
9	Calcium (as Ca)	IS: 3025 (Part 40)	1.68	75	200	mg/L
10	Magnesium	APHA (24th ed) 3500 Mg B	0.61	30	100	mg/L
11	Total Iron	APHA 3500 (24th Ed) Fe B	0.28	1	No relaxation	mg/L
12	Arsenic	APHA 3500 (24th Ed) As B	-	0.01	No relaxation	mg/L
13	Free Residual Chlorine	IS 3025(Part 26)	-	0.2	1	mg/L
14	Fluoride	APHA (24rd Ed) 4500 F	0.009	1	1.5	mg/L
15	Nitrate	APHA (24rd Ed) 4500	8.009	45	No relaxation	mg/L
16	Sulphate	IS 3025 (Part 24)	20.601	200	400	mg/L
17	Odour	IS 3025 (Part 5)	Agreeable	Agreeable	Agreeable	

Notes:

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END OF TEST REPORT

Authorized By,



Nova Deka
 Quality Manager
 Kamrup DLL

QUALITY MANAGER
 DLL(NABL) PHED, ASSAM
 Bamunimaidam, Guwahati-21

LABORATORY (PHED), KAMRUP

Address: Bamunimaidam, Guwahati 21
Email ID: phe.kamrup@gmail.com, Ph No: 0361-225641

Test Report**Report No: 76****Sample ID No: 827****Sample Description: Ground Water (Handpump)****Sample Type: Water****Sample collected on dated: 30/11/2023****Sample collected by: Gaurav Jatav****Sample location: L.P School Abhayapuri****Date of Analysis completed: 03/12/2023****Issue date: 12/12/23****Issued to: Gaheli Environmental Laboratory****Temperature: 28.2°C Humidity: 60%****Sample Condition: Good Condition at 4°C****Sample quantity: 100 ml****Sample received on dated: 01/12/2023****Date of Analysis started: 01/12/2023**

Sl No	Parameter	Results	Desirable limit	Max. Permissible Limit (in absence better alternate source)	Unit
1.	Total Coliform	Absent	No coliform organism/100ml	No organism/100ml	CFU/100ml
2.	Faecal Coliform	-	No coliform organism/100ml	No organism/100ml	CFU/100ml

Notes

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.....END.....

Authorized signatory

Nova Deka
Quality Manager
Kamrup DLL



DISTRICT LEVEL LABORATORY (PHED), KAMRUP

Address: Bamunimaidam, Guwahati 21

Email ID: phe.kamrup@gmail.com, Ph No: 0361-225641

Test Report

UID No.: TC977623000000828F

Issue Date: 12/12/2023

Customer Reference No: KDLL/23/56

Issue No: 56

Customer Name & Address: Gaheli Environmental Laboratory, North West Delhi

Sample collected on dated: 30/11/2023

Sample Collected by: Gaurav Jataw

Sample Location: Kulia River, choutaki, Gomain, Bongaingaon

Date of Analysis started: 01/12/2023

Temp: 25.5°C Humidity: 64%

Test Sample: Drinking Water

Customer Contact No: 9818736012

Sample received on dated: 01/12/2023

Quantity: 1000 ml

Sample Condition: Good Condition at 4°C

Dated of analysis completed: 02/12/2023

RES ULTS

Sr. No.	Parameter	Protocol Used	Results	IS: 10500:2012(Second Revision)		Unit
				Desirable limit	Max. Permissible limit (in absence better alternate source)	
1	Colour	IS: 3025 (Part 4)	≤8	5	15	Hazen
2	Taste	IS: 3025 (part 8)	Agreeable	Agreeable	Agreeable	NTU
3	Turbidity	IS: 3025 (Part 10)	0	1	5	pH unit
4	pH	IS: 3025 (Part 11)	7.36	6.5 - 8.5	No relaxation	mg/L
5	TDS	IS: 3025 (Part 16)	40	500		mg/L
6	Chloride	IS: 3025 (Part 32)	7.01	250	1000	mg/L
7	Total Alkalinity	IS: 3025 (Part 23)	4.2	200	600	mg/L
8	Total Hardness	IS: 3025 (Part 21)	12.6	200	600	mg/L
9	Calcium (as Ca)	IS: 3025 (Part 40)	3.36	75	200	mg/L
10	Magnesium	APHA (24th ed) 3500 Mg B	2.24	30	100	mg/L
11	Total Iron	APHA 3500 (24th Ed) Fe B	0.34	1	No relaxation	mg/L
12	Arsenic	APHA 3500 (24th Ed) As B	-	0.01	No relaxation	mg/L
13	Free Residual Chlorine	IS 3025(Part 26)	-	0.2	1	mg/L
14	Fluoride	APHA (24rd Ed) 4500 F	0.014	1	1.5	mg/L
15	Nitrate	APHA (24rd Ed) 4500	7.912	45	No relaxation	mg/L
16	Sulphate	IS 3025 (Part 24)	20.308	200	400	mg/L
17	Odour	IS 3025 (Part 5)	Agreeable	Agreeable	Agreeable	

Notes:

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END OF TEST REPORT

Authorized By,

Nova Deka
Quality Manager
Kamrup DLLQUALITY MANAGER
DLL(NABL), PHED, ASSAM
Bamunimaidam, Guwahati-21

LABORATORY (PHED), KAMRUP

Address: Bamunimaidam, Guwahati 21

Email ID: phc.kamrup@gmail.com, Ph No: 0361-225641

Test Report

Report No: 77

Sample ID No: 828

Sample Description: Surface Water (Kulla River)

Sample Type: Water

Sample collected on dated: 30/11/2023

Sample collected by: Gaurav Jatav

Sample location: Kulla River, Choutaki, Bongaingaon

Date of Analysis completed: 03/12/2023

Issue date: 12/12/23

Issued to: Gaheli Environmental Laboratory

Temperature: 26.2°C Humidity: 60%

Sample Condition: Good Condition at 4°C

Sample quantity: 100 ml

Sample received on dated: 01/12/2023

Date of Analysis started: 01/12/2023

Sl No	Parameter	Results	Desirable limit	Max. Permissible Limit (in absence better alternate source)	Unit
1.	Total Coliform	Present	No coliform organism/100ml	No organism/100ml	CFU/100ml
2.	Faecal Coliform	-	No coliform organism/100ml	No organism/100ml	CFU/100ml

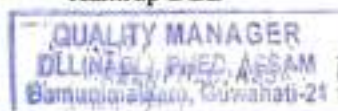
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END

Authorized signatory

Nova Deka
Quality Manager
Kamrup DLL



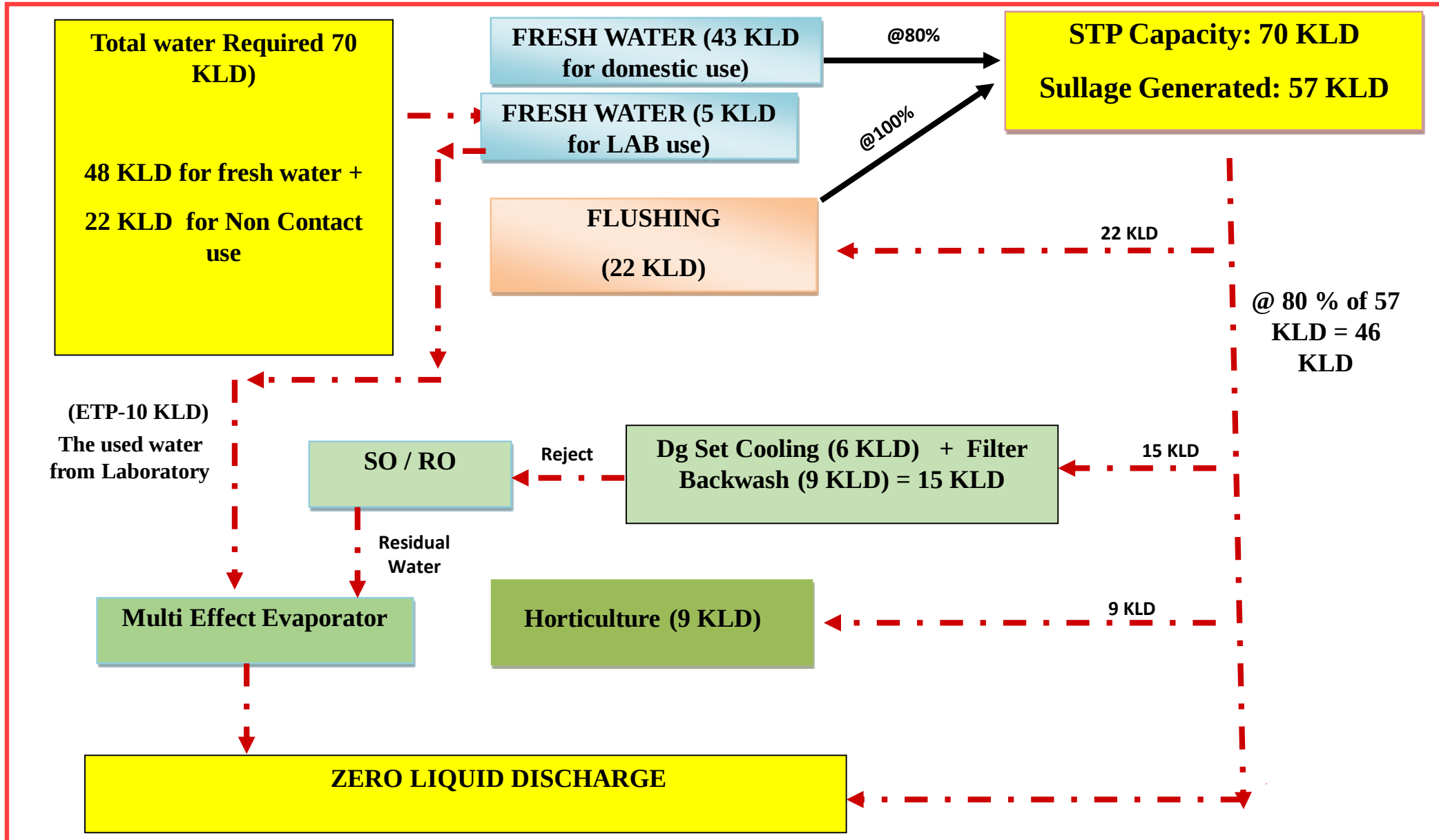
ANNEXURE-XIII

Water requirement

WATER REQUIREMENT CALCULATION

S. No	Description	No of Occupancy	Consumption Litres per Head/ day NBC, 2016 -BIS	Total /Litres per Head/ day /KLD	Fresh water (KLD)	Non contact use (KLD)
1.	Number of beds	100	450 LPH/D (300 fresh + 150 Non contact water)	45000 LPH/D or 45.0 KLD	30.0	15.0
2.	OPD	1200	15 LPH/D (10 fresh + 5 Non contact water)	18000 LPH/D or 18.0 KLD	12.0	6.0
3.	Labs, Operation Theaters & Labour Rooms Etc.	--	5,000 LPH/D or 5 KLD	5 KLD	5.0	--
4.	Mortuary and Gas Manifold	32	45 (25 fresh + 20 Non contact water)	1440 LPH/D or 1.44 KLD	0.80	0.64
5.	DG Set	1250 KVA	0.9 *KVA * 8 HOURS	90000 LPH/D or 9.0 KLD	--	--
6.	Horticulture	1755 Sqm	5 sqm/litre	9.0 KLD	--	--
7.	Filter Backwash	--	--	6000 LPH/D or 6.0 KLD	--	--
Total Water (in KLD)					47.8 Say 48 KLD	21.64 Say 22 KLD

WATER BALANCE DIAGRAM



ANNEXURE-XIV
**Occupational Health and Safety
Plan**

ANNEXURE XIV

Occupational Health and Safety Plan

1.0 Introduction: An Occupational Health and Safety (OHS) Plan is a comprehensive approach aimed at ensuring the safety and health of workers working at the site. The plan sets out processes and practices to help prevent injuries, illnesses, and fatalities on the job.

Its emphasis is on proactive measures to identify and manage workplace hazards, thereby reducing risks.

2.0 Purpose of an Occupational Health and Safety Plan: The purpose of an Occupational Health and Safety Plan is the prevention of workplace injuries, illnesses, and fatalities. Here are the main objectives and purposes of an OHS Plan:

Protection of Workers: At its core, the primary purpose of an OHS Plan is to protect employees and other individuals at the workplace from potential hazards that could harm them physically, mentally, or emotionally.

Compliance with Legislation: An OHS Plan helps ensure that the project is compliant with these regulatory requirements.

Identification of Hazards: The plan provides a systematic approach to identifying potential dangers in the workplace, from machinery operations during construction phase to health hazards exposure during operational phase.

Risk Management: Beyond identifying hazards, the plan outlines measures to assess, prioritize, and mitigate risks associated with these hazards.

Emergency Preparedness: The plan ensures that there are protocols in place to handle unexpected events, such as fires, chemical spills, or natural disasters, thereby reducing potential harm.

Promotion of a Safety Culture: A well-documented and communicated OHS Plan fosters a culture where safety is valued and prioritized, encouraging workers at all levels to participate actively in safety initiatives.

Reduction in Economic Costs: Injuries, illnesses, and accidents can be expensive in terms of medical costs, compensation, lost workdays, and reduced productivity. An OHS Plan helps reduce these economic impacts.

Continuous Improvement: The plan provides mechanisms for regular reviews, audits, and feedback, facilitating a process of ongoing improvement in safety standards and practices.

Training and Awareness: The OHS Plan ensures that employees are adequately trained and aware of potential workplace hazards and know how to protect themselves.

Clear Communication: It sets clear lines of communication regarding safety concerns, reporting mechanisms, and responsibilities, ensuring that everyone knows what's expected of them.

3. OHS Provisions for the proposed project: As the proposed project plans major infrastructure construction in the form of developing new district hospital and refurbishment of the existing ones. So, comprehensive OHS provisions to protect health and safety of the labour workforce will be provided on construction site. These provisions shall incorporate in Construction Contracts by the construction agency and monitored by health facilities officials in a systematic manner.

3.1 Construction phase: ASSIST Project, AHIMDS will appoint the contractor and he will abide by the applicable norms during construction phase of the project. The contractor will manage construction related workplace occupational health and safety, community health and safety risks. Occupational health and safety measures as given below will be implemented:

- PPE will be provided to all workers along with provision of onsite toilet and washing facilities, potable drinking, waste and rest areas, standard First -Aid Box at site.

- Cordoning off areas under construction and provide hazards communication signage to warn of ongoing construction works and prevent nuisance of dust etc. to the health workers and community.
- Providing Safety signs that will allow management to warn and raise health and safety awareness for employees and visitors. Appropriately place them around the site where necessary.
- Workers will be made familiar with the construction site safety tips and different signs: prohibition signs, mandatory signs, warning signs, safe condition signs, and firefighting equipment signs.
- Often, accidents occur due to the misuse of a tool or equipment. Using makeshift tools will be avoided. Instead, the correct tool to get the job done quicker and safer will be used.
- Pre-checks on tools and equipment will be done before commencing work and it will be ensured that tools and equipment to be used are free of defect or damage.
- Training will be given to workers to report defects and near misses on site as soon as they notice them. The sooner issues get reported, the fewer chances of them worsening and causing accidents or further damage.
- Planning and implementing the awareness sessions for workers and community on health and safety hazards and risks and their role in their management including their responsibilities.
- Equal wages will be given without discrimination on the basis of gender, age and color
- Temporary labor camp will be provided with crèche for children
- To provide the basic facilities like safe drinking water, mobile toilets, fuel for cooking and mobile STP/septic tank
- Fencing of the project during construction phase
- Green net covering for loose building material will be done

3.2 Operational Phase: Occupational Health and safety provisions like regular Immunizations, health screening, post exposure prophylaxis and use of personal protective devices etc. for health care providers will be provided to reduce occupational hazard during operational phase. Further details related to hospital infection and its prevention measures are provided under Annexure Hospital Infection Prevention and Control Plan. Further details related to hospital infection and its prevention measures are provided separately under ***Annexure XVIII Hospital Infection Prevention and Control Plan***

4.0 Monitoring and evaluation:

Safety & Occupational Health issues will be periodically monitored during construction and operation phase and reviewed at all relevant levels, including the highest levels will be done. This will ensure continual improvement for District hospital which helps in minimize occupational health and safety issues.

ANNEXURE-XV
Worker Site Management Plan

ANNEXURE-XV

Worker Site Management Plan

1. Introduction

The Worker Site Management Plan sets out the Program's approach to meeting national requirements as well as objectives of the World Bank's Environmental and Social Framework, specific objectives of Environmental and Social Standard 2: Labor and Working Conditions (ESS2) and Standard 4: Community Health and Safety (ESS4).

2. Assessment of Key Potential Labor Risks

The safety and health risks to which the workers and staff may be exposed from any project-related activities will be assessed. The ability to prevent or eliminate such risks or, if the risk cannot be controlled or eliminated, measures to protect workers and staff from exposure will be explored. Though, given the small-scale construction works, no major risks are envisaged.

Potential risks that may arise from the nature of activities to be undertaken include:

- a) Employment practice that are not compliant with either labor law or ESS 2. For example, not providing written documents of assignments, wages not proportionate with tasks performed, or industry standards, excess workload without provision of adequate rests and leisure, lack of hygiene facilities, discrimination towards women and labor with disability, unlawful termination, and withholding of benefit, etc.
- b) Lack of Occupational Health and Safety (OHS) practice and procedures during construction and operation resulting in unsafe work environment.
- c) Short and long-term effects on health due to over exposure to dust, noise levels, and exposure to chemicals /hazardous wastes.
- d) Absence or inadequate or non-responsive emergency response mechanism for rescue of workforce, during natural calamities like cloud bursts, landslides, disasters due to earthquake/floods/fire outbreak, etc.
- e) Lack of adequate sanitation and health facilities at the work sites.
- f) Community health and safety issues, especially, rise of communicable diseases, including Malaria and Cholera to the workforce and staff.
- g) The conduct of hazardous work, such as working at heights or in confined spaces, use of heavy machinery, or use of hazardous materials.
- h) Generation of solid, liquid and fecal wastes, especially around labor camps and toilet area.
- i) Increased competition over resources due to influx of labor; labor conflicts and work conditions.
- j) Other project related risk may include of child and forced labor and use of unscrupulous labor practice, and denial for workers' rights to form workers organizations, etc. (particularly for unskilled construction workers/labor), etc.

3. Mitigation and its Measures

1. There is a need to demarcate the risk zones. Proper signage for notifying the zones will be placed, and awareness regarding the same will be created among the most impacted workers and staff.

2. Procedure and guidelines will be defined as per best industry practices and legislative requirements applicable for task-specific hazard prevention and safety,
3. Provision of first aid room with necessary first aid items and on-call first aid providers/attendees.
4. Avoiding and minimizing the use and release of hazardous materials; for example, non-hazardous materials can substitute asbestos in building materials. Preventing uncontrolled releases of hazardous materials to the environment, e.g., paint, oils, etc.
5. Hazard communication and training programs to prepare workers to recognize and respond to workplace chemical hazards.
6. Provide appropriate Personal Protective Equipment (PPE) to workers.
7. Use of dust control methods such as covers, water suppression on loose materials and surfaces, or increased moisture content for open materials storage piles to reduce particulate matter and dust exposure.
8. Provisions will be made to provide a clean and hygiene eating place and safe drinking water at the workplace along with quarterly testing of drinking water. Similarly, an adequate provision will be made for clean and separate toilets for men and women with sewage treatment (Mobile STP).
9. Salary and other emoluments will conform to the Rules and Regulations issued by the Department of Personnel and Training (DoPT), GoI.
10. The Direct workers at the DHE will work as per State Government Rules, which will follow the relevant notification by the Department of Personnel and Training, GoI. The work hours for contracted workers will not be more than 48 hours per week and 9 hours per day. Any contract or community workers made to work over the same will be entitled to overtime pay per building and other construction workers act, 1996.

4. Worker's Code of Conduct

The Contractors are expected to prevent Gender-based Violence (GBV) and Sexual Abuse & Exploitation (SEA) emanating from the labors by developing Codes of Conduct for their workers. This needs to be continuously reinforced through positive action and trainings. The Code of Conduct will highlight the positive behavior to be demonstrated by their workers, including maintaining harmonious relations with the local communities. The CoCs will include all persons employed by the contractor, including sub-contractors and suppliers, to acceptable standards of behavior in its applicability. The CoCs will have sanctions for non-compliance, including non-compliance with specific policies related to gender-based violence, sexual exploitation, and sexual harassment (e.g., termination). The CoC will be written in plain language and signed by each worker. The Worker's Code of Conduct is detailed below:

Worker's Code of Conduct

*The **Codes of Conduct** are to prevent Gender-based Violence (GBV) and Sexual Abuse & Exploitation (SEA) of Children & Women.*

The Contractor needs to implement measures to address environmental and social risks related to the workers. The Contractor should provide an environment in which gender-based violence (GBV)

has no place, and are responsible in preventing potential risks of sexual exploitation and abuse and gender-based violence.

Therefore, in order to ensure that all staff, laborers and other employees at the Works Site are aware of this commitment, and in order to prevent, identify, and respond to any allegations of GBV, the following Code of Conduct will apply to all the staff, laborers and other employees without exception.

This Code of Conduct identifies the behavior that is required for all personnel of Contractor.

REQUIRED CONDUCT

1. Carry **out** his/her duties competently and diligently;
2. Comply with this Code of Conduct and all applicable laws, regulations and other requirements, including requirements to protect the health, safety and well-being of other Contractor's Personnel and any other person;
3. Maintain a safe working environment including by:
 - a. Ensuring that workplaces, machinery, equipment and processes under each person's control are safe and without risk to health;
 - b. Wearing required personal protective equipment;
 - c. Using appropriate measures relating to chemical, physical and biological substances and agents; and
 - d. Following applicable emergency operating procedures.
4. Report works situations that he/she believes are not safe or healthy and remove himself/herself from a work situation which he/she reasonably believes presents an imminent and serious danger to his/her life or health;
5. Treat other people with respect, and not discriminate against specific groups such as women, people with disabilities, migrant workers or children;
6. No women shall be subjected to sexual harassment at any workplace
7. Not engage in any form of sexual harassment including unwelcome sexual advances, requests for sexual favors, and other unwanted verbal or physical conduct of a sexual nature with other Contractor's or Employer's Personnel;
8. Not engage in Sexual Exploitation, which means any actual or attempted abuse of position of vulnerability, differential power or trust for sexual purposes, including, but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another. In Bank financed projects, sexual exploitation occurs when access to or benefit from Bank financed Goods, Works, Consulting or Non-consulting services is used to extract sexual gain;
9. Not engage in circumstances of any act of behavior of sexual harassment which amounts to sexual harassment viz. (i) implied or explicit promise of preferential treatment in her employment, (ii) implied or explicit threat of detrimental treatment in her employment, (iii) implied or explicit threat about her present or future employment status, (iv) interference

with her work or creating an intimidating or offensive or hostile work environment for her,
(v) humiliating treatment likely to affect her health or safety

10. Not engage in Sexual Abuse, which means sexual activity with another person who does not consent. It is a violation of bodily integrity and sexual autonomy and is broader than narrower conceptions of “rape”, especially because (a) it may be committed by other means than force or violence, and (b) it does not necessarily entail penetration.
11. Not engage in any form of sexual activity with individuals under the age of 18, except in case of pre-existing marriage;
12. Complete relevant training courses that will be provided related to the environmental and social aspects of the Contract, including on health and safety matters, and Sexual Exploitation, and Abuse (SEA);
13. Report violations of this Code of Conduct; and
14. Not retaliate against any person who reports violations of this Code of Conduct, whether to us or the Employer, or who makes use of the [Project Grievance [Redress] Mechanism].

ANNEXURE-XVI

Grievance Redressal Mechanism

ANNEXURE-XVI

Grievance Redressal Mechanism

1.0 Introduction

Grievance Redressal Mechanism (GRM) shall be established to receive, assess and facilitate the resolution of affected persons' concerns, objections, and grievances about the social and environmental performance at project level. The main aim of GRM is to provide a time-bound and transparent mechanism to voice, influence and resolve social and environmental concerns related to the project. This system has been purely designed for stakeholders such as aggrieved parties, project affected people, employees, labor, contractor, workers etc. The GRM is anchored on the five principles to guide in facilitating and resolving concerns and grievances:

- **Transparency:** The GRM encourages comments and feedback (negative and positive) to improve the project. The community must be aware of all complaints, grievances and problems reported, must be involved in their solution and must be kept informed on progress made in resolving grievances.
- **Socially Inclusive:** The whole community is given the opportunity to raise concerns and the right to be accorded a response. The GRM provides an accessible, inclusive, gender-sensitive and culturally appropriate platform for receiving and facilitating resolution of affected persons' grievances related to the project.
- **Simple and Accessible:** Procedures to file complaints and seek solutions are to be kept simple and easy to understand by the affected people, most specially the non-literate, and their communities.
- **Anonymity and Security:** To remain accessible, open and trusted, the GRM must ensure that the identities of those filing complaints are kept confidential. This encourages people to openly participate.
- **Institutional Outreach:** Through the GRM, the project can strengthen channels of communication and mechanisms for grievance redressed or solution at the community/project area level.

2.0 Grievances under the Project

2.1 The possible grievances of the community as envisaged, and which could be addressed through this project include: **Grievances of workers**

- The workers at the construction site may have grievances due to non-receipt of basic facilities, PPE related, non- Receipt of dues, work place discrimination, excessive work load etc

- Potential conflict between migrant workforce and local may take place

2.2 Grievances of Community

- Tree felling for site clearance.
- Inconveniences caused to community by construction activities like dust, water source contamination, noise, water logging, etc
- Community health and safety concerns
- Community residing nearby site or passers-by may have grievances related to non-disclosure of project information
- Public resistance for the project anticipating negative impacts of the project like tree felling for site clearance
- Accessibility issues of public
- Land demarcation issues.

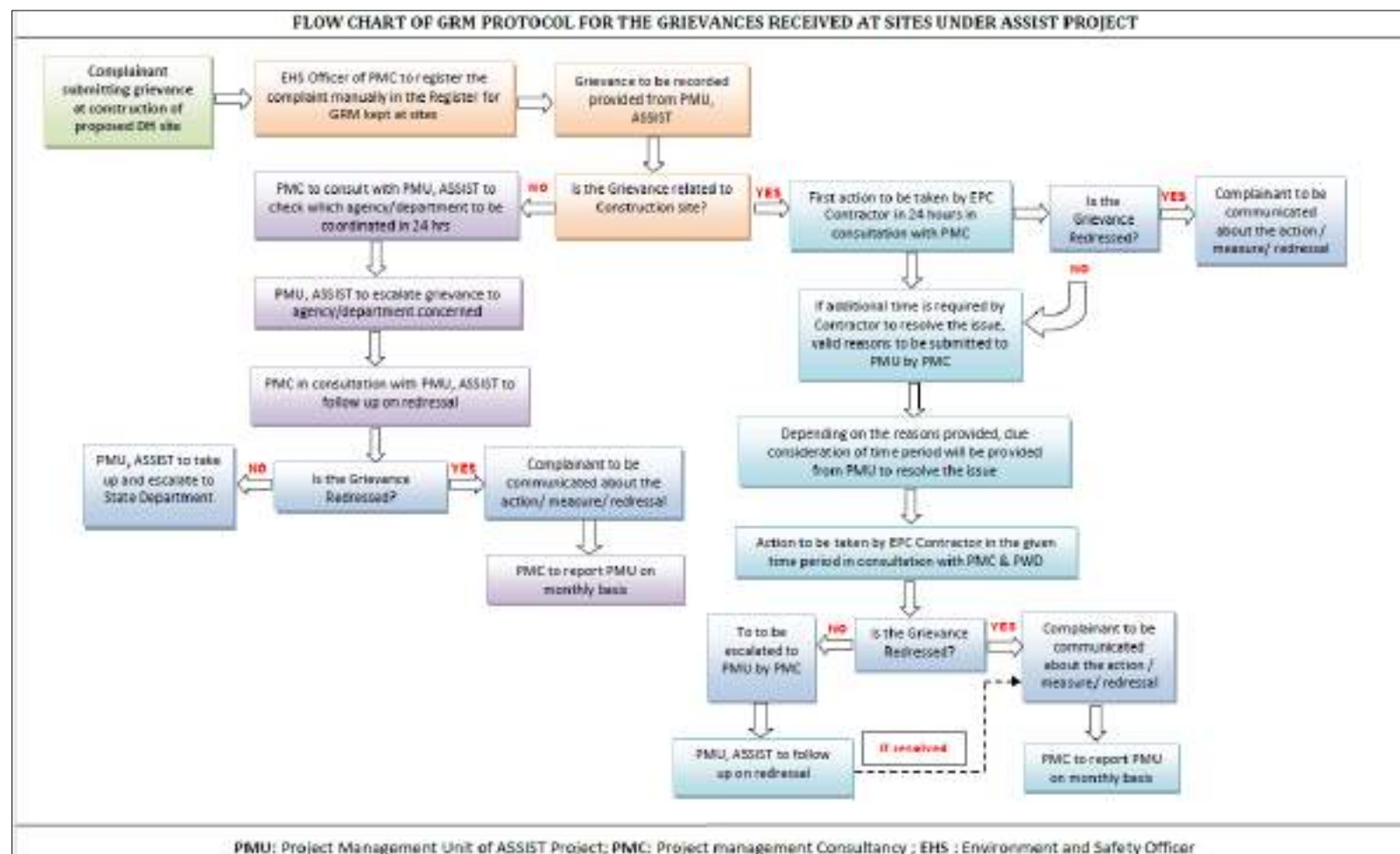
3.0 Functioning of GRM

All complaints and concerns will be addressed through a transparent, gender responsive, culturally appropriate process and will be readily available to the aggrieved party at no cost and without retribution. The following channels should be established to receive inquiries/comments and concerns /grievances:

- Toll free phone number
- Email, On-line form
- Regular post/mail
- Suggestion box/Walk-ins etc.

3.1 During Construction

The Contractor will be monitored by a Project Management Consultancy (PMC) and the Environment and Safety Officer of PMC will be responsible to register the grievances received from the community as well as workers of the site. The protocol for Grievance Redressal Management is shown with the help of the flow chart below:



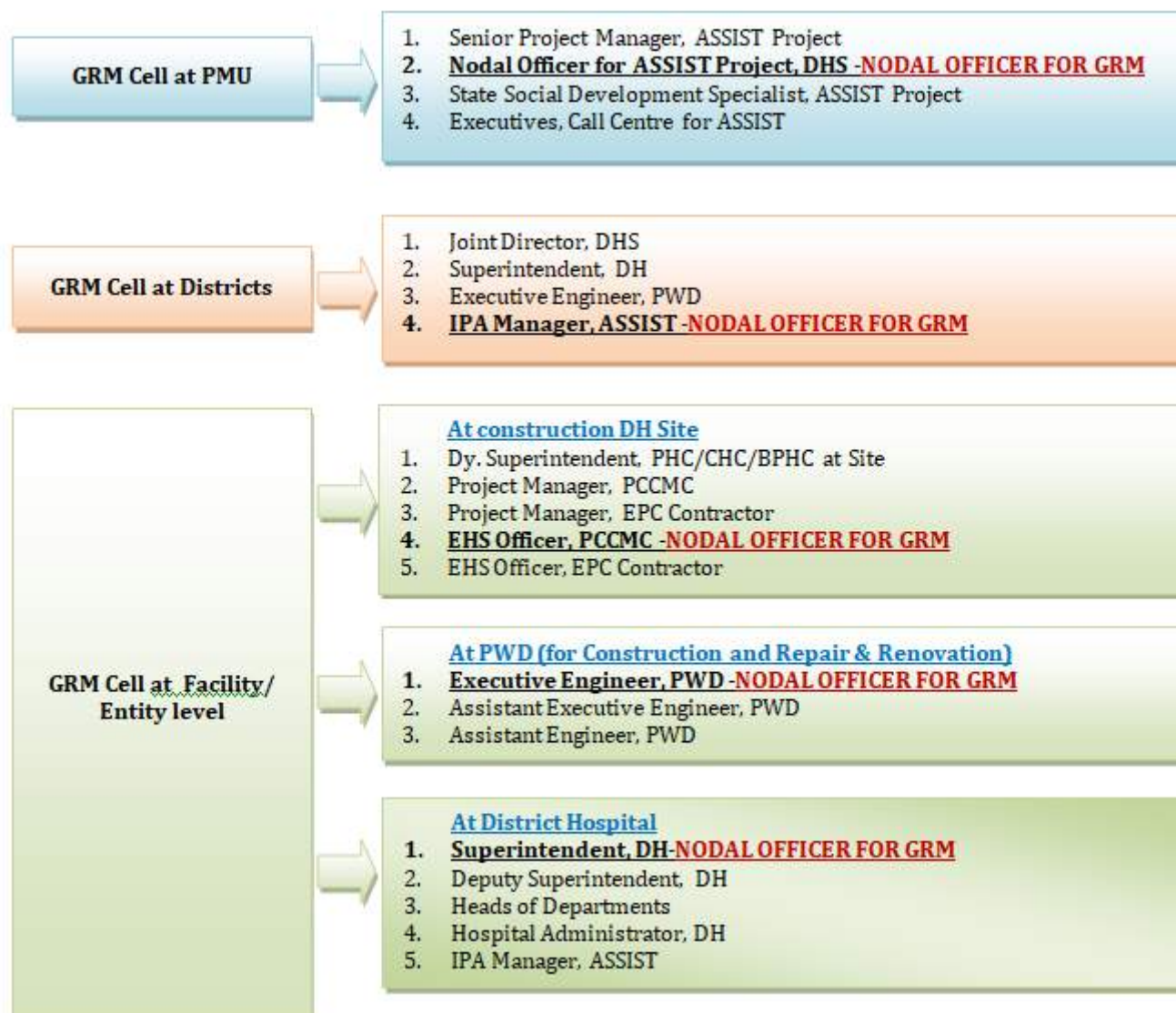
For registering complaints of Community

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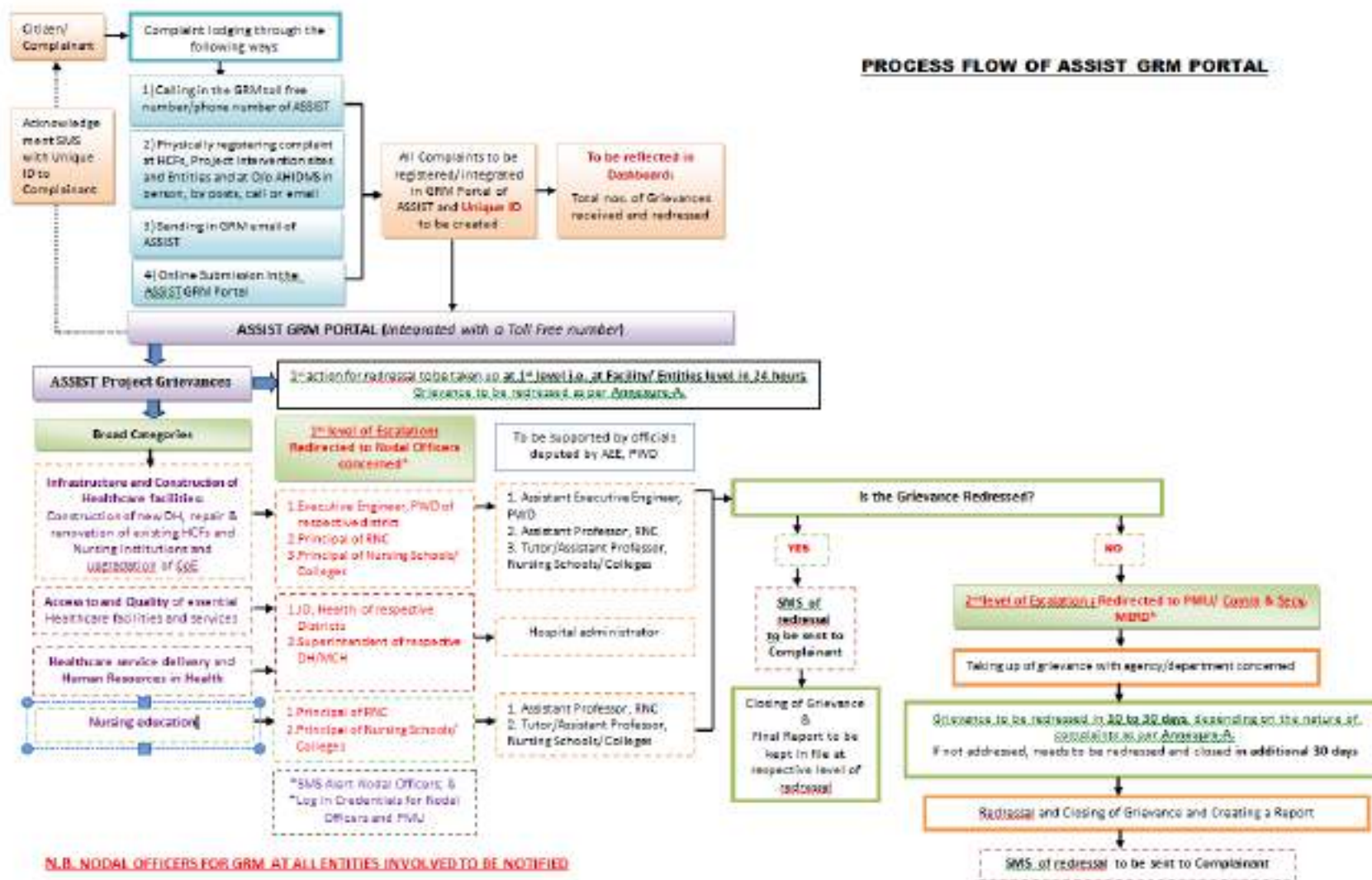
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4.1 During Operation Period:

4.1.1 The Institutional Mechanism for GRM during Operation Period is shown with the help of the flow chart below:



4.1.2 The process flow of the Online GRM Portal during Operation Period which will be an comprehensive mechanism for the project is shown with the help of the flow chart below:



ANNEXURE-XVII
Monitoring Photographs

ANNEXURE XVII

Monitoring Photographs



Soil Monitoring Photographs





School

Air Monitoring Photographs



Project Site



Near Project Site



Temple



College



School

Noise Monitoring Photographs



Project Site- GW



School- GW



Kulia River-SW

Water Monitoring Photographs

ANNEXURE-XVIII
**Hospital Infection Prevention
And Control Plan**

ANNEXURE-XVIII

HOSPITAL INFECTION PREVENTION AND CONTROL PLAN

1.0 Introduction: Health care-associated infections (HAIs) are preventable with correct infection prevention and control (IPC) practices. This IPC guideline will ensure a safe working environment for the health care providers and patients.

2.0 Cause of Infections: The most important HAIs are

- Urinary tract infections, pneumonia, and diarrhea
- Infections following surgery or invasive medical procedures
- Maternal and newborn infections

The organisms causing most HAIs come from the patient's own body (endogenous flora). They also can come from contact with staff (cross-contamination), contaminated instruments and needles, and the environment (exogenous flora). Key contributing factors are:

- Inadequate standards and practices for operating blood transfusion services
- Increasing use of invasive medical devices (e.g., mechanical ventilators, urinary catheters, and central intravenous lines) without proper training or laboratory support
- Use of contaminated intravenous fluids
- Antibiotic resistance due to overuse of broad spectrum antibiotics
- Unsafe and frequently unnecessary injections
- Unscientific disposal of BMW Infection to waste handlers

3.0 Preventive Measures from the Infection: Most of these infections can be prevented with readily available, relatively inexpensive strategies by:

- Adhering to recommended infection prevention practices, especially hand hygiene and wearing gloves.
- Paying attention to well-established processes for decontamination and cleaning of soiled instruments and other items, followed by either sterilization or high-level disinfection
- Improving safety in operating rooms and other high-risk areas where the most serious and frequent injuries and exposures to infectious agents occur.

ANNEXURE-XIX

Flood Data

Assam Flood Report as on 16-06-2024							
Particulars	Assam Flood Report as on 16-06-2024						
Rivers flowing above Danger Level (as per CWC bulletin issued at 8 AM)	Rivers flowing above danger level				Nil		
	Rivers flowing above highest flood level				Nil		
District Affected	No. of Distircts Affected	Name of Affected Districts					
	7	Baksa, Barpeta, Bongaigaon, Dhemaji, Goalpara, Karimganj, South Salmara					
No. Of Revenue Circles Affected	9						
Name Of Revenue Circle Affected	District	Total	Revenue Circle				
	Baksa	1	Barnagar RC part				
	Barpeta	1	Barnagar				
	Bongaigaon	1	Manikpur				
	Dhemaji	2	Sissiborgaon, Dhemaji				
	Goalpara	1	Lakhipur				
	Karimganj	2	Karimganj, RK Nagar				
	South Salmara	1	Mankachar				
	Total	9					
Villages Affected	District	Total	Revenue Circle				
	Bongaigaon	4	(Manikpur 4)				
	Barpeta	1	(Barnagar 1)				
	Dhemaji	4	(Sissiborgaon 2), (Dhemaji 2)				
	South Salmara	2	(Mankachar 2)				
	Karimganj	77	(Karimganj 6), (RK Nagar 71)				
	Goalpara	4	(Lakhipur 4)				
	Baksa	1	(Barnagar RC part 1)				
	Total	93					
Population And Crop Area Affected	District	Male	Female	Children	Total Population	Total Crop Area	Population and Crop Area Details
	Baksa	390	570	220	1180	0	(Barnagar RC part Population Affected: 1180 Crop Area: 0)
	Barpeta	605	770	470	1845	0	(Barnagar Population Affected: 1845 Crop Area: 0)
	Bongaigaon	0	0	0	0	0	(Manikpur Population Affected: 0 Crop Area: 0)
	Dhemaji	316	307	106	729	2	(Sissiborgaon Population Affected: 0 Crop Area: 0), (Dhemaji Population Affected: 729 Crop Area: 2)
	Goalpara	0	0	0	0	0	(Lakhipur Population Affected: 0 Crop Area: 0)
	Karimganj	1231	985	15	2231	0	(Karimganj Population Affected: 2231 Crop Area: 0), (RK Nagar Population Affected: 0 Crop Area: 0)
	South Salmara	0	0	0	0	0	(Mankachar Population Affected: 0 Crop Area: 0)
	Total	2542	2632	811	5985	2	
Relief Camps / Centres Opened	District	Total	Relief Camp			Relief Distribution Centres	
	Baksa	0	0 (Barnagar RC part 0)			0 (Barnagar RC part 0)	
	Barpeta	0	0 (Barnagar 0)			0 (Barnagar 0)	
	Bongaigaon	0	0 (Manikpur 0)			0 (Manikpur 0)	
	Dhemaji	0	0 (Sissiborgaon 0), (Dhemaji 0)			0 (Sissiborgaon 0), (Dhemaji 0)	
	Goalpara	0	0 (Lakhipur 0)			0 (Lakhipur 0)	
	Karimganj	3	3 (Karimganj 3), (RK Nagar 0)			0 (Karimganj 0), (RK Nagar 0)	
	South Salmara	0	0 (Mankachar 0)			0 (Mankachar 0)	
	Total	3	3			0	

Inmates In Relief Camps	District	Total	Revenue Circlewise			Male	Female	Children	Pregnant / Lactating Mother	Person with Disability	
	Baksa	0	(Barnagar RC part 0)			0	0	0	0	0	
	Barpeta	0	(Barnagar 0)			0	0	0	0	0	
	Bongaigaon	0	(Manikpur 0)			0	0	0	0	0	
	Dhemaji	0	(Sissiborgaon 0), (Dhemaji 0)			0	0	0	0	0	
	Goalpara	0	(Lakhipur 0)			0	0	0	0	0	
	Karimganj	930	(Karimganj 930), (RK Nagar 0)			440	240	250	0	0	
	South Salmara	0	(Mankachar 0)			0	0	0	0	0	
	Total	930				440	240	250	0	0	
Non Camp Inmates in Relief Distribution Centers	District	Total	Revenue Circlewise			Male	Female	Children	Animals		
									Big	Small	Poultry
	Baksa	0	(Barnagar RC part 0)			0	0	0	0		00
	Barpeta	0	(Barnagar 0)			0	0	0	0		00
	Bongaigaon	0	(Manikpur 0)			0	0	0	0		00
	Dhemaji	0	(Sissiborgaon 0), (Dhemaji 0)			0	0	0	0		00
	Goalpara	0	(Lakhipur 0)			0	0	0	0		00
	Karimganj	0	(Karimganj 0), (RK Nagar 0)			0	0	0	0		00
	South Salmara	0	(Mankachar 0)			0	0	0	0		00
Total	0				0	0	0	0		00	
Human Lives Lost - Confirmed	District	Total	Male	Female	Children		Others	Revenue Circlewise			
					Male	Female					
	Bongaigaon	0	0	0	0	0	0	0 (Manikpur 0)			
	Barpeta	0	0	0	0	0	0	0 (Barnagar 0)			
	Dhemaji	0	0	0	0	0	0	0 (Sissiborgaon 0), (Dhemaji 0)			
	South Salmara	0	0	0	0	0	0	0 (Mankachar 0)			
	Karimganj	0	0	0	0	0	0	0 (Karimganj 0), (RK Nagar 0)			
	Goalpara	0	0	0	0	0	0	0 (Lakhipur 0)			
	Baksa	0	0	0	0	0	0	0 (Barnagar RC part 0)			
Total	0	0	0	0	0	0					
Human Lives Lost - Missing	District	Total	Male	Female	Children		Others	Revenue Circlewise			
					Male	Female					
	Bongaigaon	0	0	0	0	0	0	0 (Manikpur 0)			
	Barpeta	0	0	0	0	0	0	0 (Barnagar 0)			
	Dhemaji	0	0	0	0	0	0	0 (Sissiborgaon 0), (Dhemaji 0)			
	South Salmara	0	0	0	0	0	0	0 (Mankachar 0)			
	Karimganj	0	0	0	0	0	0	0 (Karimganj 0), (RK Nagar 0)			
	Goalpara	0	0	0	0	0	0	0 (Lakhipur 0)			
	Baksa	0	0	0	0	0	0	0 (Barnagar RC part 0)			
Total	0	0	0	0	0	0					
Animals Affected	District	Total	Big	Small	Poultry						
	Baksa	236	110	89	37						
	Barpeta	78	45	22	11						
	Bongaigaon	0	0	0	0						
	Dhemaji	0	0	0	0						
	Goalpara	0	0	0	0						
	Karimganj	58169	13904	6901	37364						
	South Salmara	0	0	0	0						
	Total	58483	14059	7012	37412						
Animals Washed Away	District	Total	Big	Small	Poultry						
	Baksa	0	0	0	0						
	Barpeta	0	0	0	0						
	Bongaigaon	0	0	0	0						
	Dhemaji	0	0	0	0						
	Goalpara	0	0	0	0						

	Karimganj	0	0	0	0								
	South Salmara	0	0	0	0								
	Total	0	0	0	0								
Houses Damaged	District	Fully Kuccha	Fully Pukka	Fully Total		Partially Kuccha	Partially Pukka		Partially Total				
	Bongaigaon	0	0	0		0	0		0				
	Barpeta	0	0	0		0	0		0				
	Dhemaji	0	0	0		0	0		0				
	South Salmara	0	0	0		0	0		0				
	Karimganj	0	0	0		0	0		0				
	Goalpara	0	0	0		0	0		0				
	Baksa	0	0	0		0	0		0				
	Total	0	0	0		0	0		0				
Houses Damaged Others	District	Others Huts			Others Cattle Shed			Others Total					
	Bongaigaon	0			0			0					
	Barpeta	0			0			0					
	Dhemaji	0			0			0					
	South Salmara	0			0			0					
	Karimganj	0			0			0					
	Goalpara	0			0			0					
	Baksa	0			0			0					
	Total	0			0			0					
Rescue Operation	District	Agency			Other Agencies Involved		Medical Team Deployed		Boats Deployed	Person Evacuated By Boats	Animal Evacuated By Boats	Helicopters Deployed	Person Evacuated By Helicopters
	Baksa								0	0	0	0	0
	Barpeta								0	0	0	0	0
	Bongaigaon								0	0	0	0	0
	Dhemaji								0	0	0	0	0
	Goalpara								0	0	0	0	0
	Karimganj								0	0	0	0	0
	South Salmara								0	0	0	0	0
	Total								0	0	0	0	0
	Relief Distributed	District	Rice (in Q)	Dal (in Q)	Salt (in Q)	M. Oil (in L)	Cattle Feed - Green Fooder (in Q)	Cattle Feed - Wheat Bran (in Q)	Cattle Feed - Rice Bran (in Q)				
Baksa		0	0	0	0	0	0	0					
Barpeta		0	0	0	0	0	0	0					
Bongaigaon		0	0	0	0	0	0	0					
Dhemaji		0	0	0	0	0	0	0					
Goalpara		0	0	0	0	0	0	0					
Karimganj		13.2	2.43	0.72	72	0	0	10					
South Salmara		0	0	0	0	0	0	0					
Total		13.2	2.43	0.72	72	0	0	10					
Relief Distributed - Others	District	Baby Food Liquid		Baby Food Solid		Others							
	Baksa												
	Barpeta												
	Bongaigaon												
	Dhemaji												
	Goalpara												
	Karimganj	0.00-Kg		0.00-Kg		Biscuits-0.00-Pck.							
	South Salmara												
	Infrastructure Damaged - Road	District	Number	Revenue Circle	Road Name		Department	Village		Location		Longitude	Latitude
	Baksa	0	(Barnagar RC part 0)	Nil		Nil	Nil		Nil		Nil	Nil	Nil

	Barpeta	0	(Barnagar 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Bongaigaon	3	(Manikpur 3)	Gerukabari Jamdoha PMGSY Road	PWD (Roads)	No. 3 Jamdoha	Vill- No. 3 Jamdoha	90.7	26.45	Footbridge damaged at 1st km and side shoulder damaged. Reported By PWRD, Bongaigaon. Dated- 15.06.2024.
				No. 1 Bhandra to No.5 Bhandra road	PWD (Roads)	No. 1 Bhandara	No.1 Bhandara	90.75	26.42	Approach of RCC bridge No. 1/1 is partially damaged. Hard crust damaged at 1st, 2nd and 3rd km, submerged from Ch. 2800.00 mtr to Ch. 2900.00 mtr with a average dept of 0.150 mtr. side shoulder damaged. Reported By PWRD, Bongaigaon. Dated- 15.06.2024.
				Raha Chakla Kokila Road	PWD (NH Roads)	Abadi	Vill-Abadi	90.85	26.43	Approaches of RCC bridge No. 1/1 partially damaged. Reported By PWRD, Bongaigaon. Dated- 15.06.2024.
	Dhemaji	1	(Sissiborgaon 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
			(Dhemaji 1)	MRL05-No.2 Deogharia to Shantipur Majgaon	PWD (Roads)	Baruah Lalung	Latitude 27.563888, Longitude 94.572222	94.57	27.56	Submerged of road portion up to 45 Cm, Erosion of Side berm at (Ch.12400.00 m to Ch.12700.00), L 300.00 m. Dated 15/06/2024
	Goalpara	4	(Lakhipur 4)	Road from Khaimuddin house to Ajar river	PWD (Roads)	Haldibari Pt-II	Haldibari Pt-II	90.22	25.98	As per report of PWRD, Goalpara West and Dudhnai TR Division, Lakhipur affected length 350 meter, breach length 50 meter due to incessant rain and consequent flash flood and

										overflowing of river Ghagua from 15.06.2024 to till date i.e 16.6.2024
				Tikrikilla NEC road to Gumaijhar Road	PWD (Roads)	Gumaijhar	Gumaijhar	90.23	25.95	As per report of PWRD, Goalpara West and Dudhnai TR Division, Lakhipur affected length 300 meter, submerged length 300 meter due to incessant rain and consequent flash flood and overflowing of river Ghagua from 15.06.2024 to till date i.e 16.6.2024
				Simlabari to Fulgossa road	PWD (Roads)	Simlabari	Near simlabari	90.22	25.97	As per report of PWRD, Goalpara East and Jaleswar TR Division, Lakhipur affected length 581 meter and submerged from Chainage 0.00 M to 581 M due to incessant rain and overflowing of river Ghagua from 15.06.2024 to till date i.e 16.6.2024
				Chataimari to Gumaijhar road	PWD (Roads)	Gumaijhar	Near Gumaijhar	90.21	25.96	As per report of PWRD, Goalpara East and Jaleswar TR Division, Lakhipur affected length 500 meter and submerged from Chainage 380.00 M to 1477 M due to incessant rain and overflowing of river Ghagua from 15.06.2024 to till date i.e 16.6.2024
	Karimganj	0	(Karimganj 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil

			(RK Nagar 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	South Salmara	2	(Mankachar 2)	Hatsingimari to Ssumara IBB link road	PWD (Roads)	Kaliralg Pt II	Kaliralg Pt-II	89.86	25.72	
				New Fekamari to Manullapara road	PWD (Roads)	Manullapara	Manullapara	89.92	25.68	
	Total	10								
Infrastructure Damaged - Bridge	District	Number	Revenue Circle	Bridge Name	Department	Village	Location	Longitude	Latitude	Remarks
	Baksa	0	(Barnagar RC part 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Barpeta	0	(Barnagar 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Bongaigaon	1	(Manikpur 1)	RCC Bridge No. 2/1 on Dangaigaon Kirtanpara road	PWD (Roads)	No. 1 Bhandara	Vill- No.1 Bhandara (Kachdoha)	90.73	26.46	Bridge approaches on both sides of Bridge No.2/1 at kachdoha is partially damaged. Reported By PWRD, Bongaigaon. Dated- 15.06.2024.
	Dhemaji	0	(Sissiborgaon 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
			(Dhemaji 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Goalpara	1	(Lakhipur 1)	1st KM of Morisbari Gumaijhar(Haldibari) to Rakhalkilla bazar via Chakli Chariali road	PWD (Roads)	Haldibari Pt-I	Haldibari Pt-I	90.19	25.98	As per report of PWRD, Goalpara East and Jaleswar TR Division, Lakhipur Bridge approaches has eroded from Chainage 10.00 M to 130 M due to incessant rain and overflowing of river Ghagua from 15.06.2024 to till date i.e 16.6.2024
	Karimganj	0	(Karimganj 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
			(RK Nagar 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	South Salmara	0	(Mankachar 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Total	2								
Infrastructure Damaged - Embankment Breached	District	Number	Revenue Circle	Embankment Breached Name	Department	Village	Location	Longitude	Latitude	Remarks
	Baksa	0	(Barnagar RC part 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Barpeta	0	(Barnagar 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Bongaigaon	0	(Manikpur 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Dhemaji	0	(Sissiborgaon 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
			(Dhemaji 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Goalpara	0	(Lakhipur 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Karimganj	0	(Karimganj 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
			(RK Nagar 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil

	South Salmara	0	(Mankachar 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Total	0									
Infrastructure Damaged - Embankment Affected	District	Number	Revenue Circle	Embankment Affected Name	Department	Village	Location	Longitude	Latitude	Remarks	
	Baksa	0	(Barnagar RC part 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	
	Barpeta	0	(Barnagar 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	
	Bongaigaon	0	(Manikpur 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	
	Dhemaji	0	(Sissiborgaon 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	
			(Dhemaji 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	
	Goalpara	0	(Lakhipur 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	
	Karimganj	0	(Karimganj 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	
			(RK Nagar 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	
	South Salmara	0	(Mankachar 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	
	Total	0									
Infrastructure Damaged - Others	District	Revenue Circle	Damages	Number	Name	Department	Village	Location	Longitude	Latitude	Remarks
	Baksa	Barnagar RC part	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Barpeta	Barnagar	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Bongaigaon	Manikpur	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Dhemaji	Sissiborgaon	Power Dept. Poles (in Nos)	1	Pole	APDCL	NilakhshalkhaniBorbam	nilakhshalakhani borbam			due to flood
			Power Dept. Conductors (in Nos)	2	Conductors	APDCL	NilakhshalkhaniBorbam	at Nilakh Balijan			Damage by flood. Extends of damage LT. (in KM) 0.5
				Conductors	APDCL	NilakhshalkhaniBorbam	At Nilakh Halakhani and Goroimari.			Damaged due to flood. Conductors HT (KM) 0.1 at Goroimari-Conductors damaged HT (KM) 0.1 and LT (KM) 0.1	
		Dhemaji	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Goalpara	Lakhipur	Irrigation Canal/Scheme Damaged (in Nos)	1	Ghagua FIS	Irrigation	Rakhalkilla	Rakhalkilla	90.225.97		As per report of Goalpara west and Jaleswar Division, Irrigation, Goalpara Right side afflux bund from CH. 235 M to 270 M damage due to incessant rain and overflowing of river Ghagua from 15.06.2024 to till date i.e 16.6.2024
	Karimganj	Karimganj	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
		RK Nagar	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	South Salmara	Mankachar	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	District	Details									

Wildlife affected under protected areas description	Baksa	
	Barpeta	
	Bongaigaon	
	Dhemaji	
	Goalpara	
	Karimganj	
	South Salmara	
Remarks	District	Details
	Baksa	
	Barpeta	
	Bongaigaon	
	Dhemaji	
	Goalpara	
	Karimganj	(RK Nagar - As report Submitted by Veterinary Department)
	South Salmara	(Mankachar - As per report received from EE PWRD, South Salmara Mankachar Territorial Road Division, Mankachar has been road site bum damaged due to heavy rainfall at Kalirailga Pt-II and Manullapara on 16-06-2023)
	Report Generated On: 16-06-2024 05:23 PM	

Assam Urban Flood Report as on 16-06-2024										
Particulars	Assam Urban Flood Report as on 16-06-2024									
District Affected	No. of Distircts Affected	Name of Affected Districts								
	3	Dibrugarh, Kamrup (M), Cachar								
No. Of Revenue Circles Affected	3									
Name Of Revenue Circle Affected	District	Total	Revenue Circle							
	Dibrugarh	1	Dibrugarh East							
	Kamrup (M)	1	Dispur							
	Cachar	1	Silchar							
	Total	3								
Villages Affected	District	Total	Revenue Circle							
	Dibrugarh	1	(Dibrugarh East 1)							
	Kamrup (M)	2	(Dispur 2)							
	Cachar	1	(Silchar 1)							
	Total	4								
Population Affected	District	Male	Female	Children	Total Population	Population Details	Ward	Total Ward	Locality	
	Dibrugarh	0	0	0	0	[PopDetails]		0	0	
	Kamrup (M)	0	0	0	0	[PopDetails]		0	0	
	Cachar	1200	1000	800	3000	[PopDetails]	Ward 15, Ward 9, Ward 17, Ward 16, Ward 23		5 Sonai Road, Link Road, National Highway, Bilpar, Shillong Patty, & Vivekananda Road.	
	Total	1200	1000	800	3000			5		
	Relief Camps / Centres Opened	District	Total	Relief Camp				Relief Distribution Centres		
Dibrugarh		0	0 (Dibrugarh East 0)				0 (Dibrugarh East 0)			
Kamrup (M)		0	0 (Dispur 0)				0 (Dispur 0)			
Cachar		0	0 (Silchar 0)				0 (Silchar 0)			
Total		0	0				0			
Inmates In Relief Camps		District	Total	Revenue Circlewise			Male	Female	Children	Pregnant / Lactating Mother
	Dibrugarh	0	(Dibrugarh East 0)			0	0	0	0	0
	Kamrup (M)	0	(Dispur 0)			0	0	0	0	0
	Cachar	0	(Silchar 0)			0	0	0	0	0
	Total	0				0	0	0	0	0
	Human Lives Lost - Confirmed	District	Total	Male	Female	Children		Others	Revenue Circlewise	
					Male	Female				
Dibrugarh		0	0	0	0	0	0	0 (Dibrugarh East 0)		
Kamrup (M)		0	0	0	0	0	0	0 (Dispur 0)		
Cachar		0	0	0	0	0	0	0 (Silchar 0)		
Total		0	0	0	0	0	0			
Human Lives Lost - Missing		District	Total	Male	Female	Children		Others	Revenue Circlewise	
					Male	Female				
	Dibrugarh	0	0	0	0	0	0	0 (Dibrugarh East 0)		
	Kamrup (M)	0	0	0	0	0	0	0 (Dispur 0)		
	Cachar	0	0	0	0	0	0	0 (Silchar 0)		
	Total	0	0	0	0	0	0			
	Livestocks Affected	District	Total	Big	Small	Poultry				
Dibrugarh		0	0	0	0					
Kamrup (M)		0	0	0	0					
Cachar		0	0	0	0					
Total		0	0	0	0					
Livestocks Washed Away		District	Total	Big	Small	Poultry				
	Dibrugarh	0	0	0	0					
	Kamrup (M)	0	0	0	0					

	Cachar	0	0	0	0							
	Total	0	0	0	0							
Houses Damaged	District	Fully Kuccha	Fully Pukka	Fully Total		Partially Kuccha	Partially Pukka	Partially Total		Severely Kuccha	Severely Pukka	Severely Total
	Dibrugarh	0	0	0		0	0	0		0	0	0
	Kamrup (M)	0	0	0		0	0	0		0	0	0
	Cachar	0	0	0		0	0	0		0	0	0
	Total	0	0	0		0	0	0		0	0	0
Rescue Operation	District	Agency			Other Agencies Involved		Number of Boat Deployed	Person Evacuated by Boat	Animal Evacuated by Boat	Number of Helicopter Deployed	Person Evacuated by Helicopter	Medical Team Deployed
	Dibrugarh						0	0	0	0	0	0
	Kamrup (M)						0	0	0	0	0	0
	Cachar						0	0	0	0	0	0
	Total						0	0	0	0	0	0
Relief Distributed	District	Rice (in Q)	Dal (in Q)	Salt (in Q)	M. Oil (in L)	Cattle Feed - Green Fooder (in Q)	Cattle Feed - Wheat Bran (in Q)	Cattle Feed - Rice Bran (in Q)				
	Dibrugarh	0	0	0	0	0	0	0				
	Kamrup (M)	0	0	0	0	0	0	0				
	Cachar	0	0	0	0	0	0	0				
	Total	0	0	0	0	0	0	0				
Relief Distributed - Others	District	Baby Food Liquid		Baby Food Solid		Others						
	Dibrugarh											
		Kamrup (M)										
		Cachar										
Infrastructure Damaged - Road	District	Number	Revenue Circle	Road Name		Department	Village	Location		Longitude	Latitude	Remarks
	Dibrugarh	0	(Dibrugarh East 0)	Nil		Nil	Nil	Nil		Nil	Nil	Nil
	Kamrup (M)	0	(Dispur 0)	Nil		Nil	Nil	Nil		Nil	Nil	Nil
	Cachar	0	(Silchar 0)	Nil		Nil	Nil	Nil		Nil	Nil	Nil
	Total	0										
Infrastructure Damaged - Bridge	District	Number	Revenue Circle	Bridge Name		Department	Village	Location		Longitude	Latitude	Remarks
	Dibrugarh	0	(Dibrugarh East 0)	Nil		Nil	Nil	Nil		Nil	Nil	Nil
	Kamrup (M)	0	(Dispur 0)	Nil		Nil	Nil	Nil		Nil	Nil	Nil
	Cachar	0	(Silchar 0)	Nil		Nil	Nil	Nil		Nil	Nil	Nil
	Total	0										
Infrastructure Damaged - Others	District	Revenue Circle	Damages	Number	Name	Department	Village	Location		Longitude	Latitude	Remarks
	Dibrugarh	Dibrugarh East	Nil	Nil	Nil	Nil	Nil	Nil		Nil	Nil	Nil
	Kamrup (M)	Dispur	Nil	Nil	Nil	Nil	Nil	Nil		Nil	Nil	Nil
	Cachar	Silchar	Nil	Nil	Nil	Nil	Nil	Nil		Nil	Nil	Nil
Remarks	District	Details										
	Dibrugarh	(Dibrugarh East - Ward no. - 06 Name of the ward (part) - Chiring Chapori (Ganesh Dutta path, Krishna Nagar path and Jyotirupa Path) Reason of urban flood - Poor drainage system and Lowlying area))										
	Kamrup (M)	(Dispur - Due to rain on 16/06/2024, waterlogging took place on Hatigaon, Sijubari, and Wireless.)										
	Cachar											
	Report Generated On: 16-06-2024 05:21 PM											

Assam Flood Report as on 17-06-2024							
Particulars	Assam Flood Report as on 17-06-2024						
Rivers flowing above Danger Level (as per CWC bulletin issued at 8 AM)	Rivers flowing above danger level				Kopili (Kampur)		
	Rivers flowing above highest flood level				Nil		
District Affected	No. of Distircts Affected	Name of Affected Districts					
	14	Tamulpur, Bongaigaon, Karimganj, Lakhimpur, Udalguri, Darrang, Dhemaji, Nagaon, Hojai, Chirang, Barpeta, Baksa, Nalbari, Goalpara					
No. Of Revenue Circles Affected	21						
Name Of Revenue Circle Affected	District	Total	Revenue Circle				
	Baksa	1	Barnagar RC part				
	Barpeta	1	Barnagar				
	Bongaigaon	2	Dangtol, Manikpur				
	Chirang	1	Bijni				
	Darrang	1	Mangaldoi				
	Dhemaji	2	Sissiborgaon, Dhemaji				
	Goalpara	1	Lakhipur				
	Hojai	2	Hojai, Doboka				
	Karimganj	4	Nilambazar, RK Nagar, Badarpur, Karimganj				
	Lakhimpur	1	Subansiri				
	Nagaon	1	Kampur				
	Nalbari	1	Paschim Nalbari				
	Tamulpur	2	Tamulpur, Goreswar				
	Udalguri	1	Khairabari				
		Total	21				
Villages Affected	District	Total	Revenue Circle				
	Tamulpur	13	(Tamulpur 4), (Goreswar 9)				
	Bongaigaon	59	(Dangtol 1), (Manikpur 58)				
	Karimganj	192	(Nilambazar 82), (RK Nagar 71), (Badarpur 6), (Karimganj 33)				
	Lakhimpur	2	(Subansiri 2)				
	Udalguri	5	(Khairabari 5)				
	Darrang	1	(Mangaldoi 1)				
	Dhemaji	9	(Sissiborgaon 7), (Dhemaji 2)				
	Nagaon	11	(Kampur 11)				
	Hojai	9	(Hojai 5), (Doboka 4)				
	Chirang	4	(Bijni 4)				
	Barpeta	1	(Barnagar 1)				
	Baksa	1	(Barnagar RC part 1)				
	Nalbari	1	(Paschim Nalbari 1)				
	Goalpara	1	(Lakhipur 1)				
		Total	309				
Population And Crop Area Affected	District	Male	Female	Children	Total Population	Total Crop Area	Population and Crop Area Details
	Baksa	110	89	37	236	0	(Barnagar RC part Population Affected: 236 Crop Area: 0)
	Barpeta	401	511	197	1109	0	(Barnagar Population Affected: 1109 Crop Area: 0)
	Bongaigaon	0	0	0	0	446	(Dangtol Population Affected: 0 Crop Area: 0), (Manikpur Population Affected: 0 Crop Area: 446)
	Chirang	0	0	0	0	0	(Bijni Population Affected: 0 Crop Area: 0)
	Darrang	250	231	8	489	6	(Mangaldoi Population Affected: 489 Crop Area: 6)
	Dhemaji	1531	1415	675	3621	45.7	(Sissiborgaon Population Affected: 2892 Crop Area: 17.2), (Dhemaji Population Affected: 729 Crop Area: 28.5)

	Goalpara	7	7	0	14	0	(Lakhipur Population Affected: 14 Crop Area: 0)				
	Hojai	0	0	0	0	61	(Hojai Population Affected: 0 Crop Area: 26), (Doboka Population Affected: 0 Crop Area: 35)				
	Karimganj	39463	32410	23442	95315	0	(Nilambazar Population Affected: 45012 Crop Area: 0), (RK Nagar Population Affected: 27649 Crop Area: 0), (Badarpur Population Affected: 4825 Crop Area: 0), (Karimganj Population Affected: 17829 Crop Area: 0)				
	Lakhimpur	0	0	0	0	0	(Subansiri Population Affected: 0 Crop Area: 0)				
	Nagaon	1837	1970	1175	4982	388	(Kampur Population Affected: 4982 Crop Area: 388)				
	Nalbari	7	9	4	20	0	(Paschim Nalbari Population Affected: 20 Crop Area: 0)				
	Tamulpur	0	0	0	0	59	(Tamulpur Population Affected: 0 Crop Area: 0), (Goreswar Population Affected: 0 Crop Area: 59)				
	Udalguri	0	0	0	0	0	(Khairabari Population Affected: 0 Crop Area: 0)				
	Total	43606	36642	25538	105786	1005.7					
Relief Camps / Centres Opened	District	Total	Relief Camp				Relief Distribution Centres				
	Baksa	0	0 (Barnagar RC part 0)				0 (Barnagar RC part 0)				
	Barpeta	0	0 (Barnagar 0)				0 (Barnagar 0)				
	Bongaigaon	0	0 (Dangtol 0), (Manikpur 0)				0 (Dangtol 0), (Manikpur 0)				
	Chirang	0	0 (Bijni 0)				0 (Bijni 0)				
	Darrang	0	0 (Mangaldoi 0)				0 (Mangaldoi 0)				
	Dhemaji	0	0 (Sissiborgaon 0), (Dhemaji 0)				0 (Sissiborgaon 0), (Dhemaji 0)				
	Goalpara	0	0 (Lakhipur 0)				0 (Lakhipur 0)				
	Hojai	0	0 (Hojai 0), (Doboka 0)				0 (Hojai 0), (Doboka 0)				
	Karimganj	14	11 (Nilambazar 0), (RK Nagar 0), (Badarpur 3), (Karimganj 8)				3 (Nilambazar 0), (RK Nagar 3), (Badarpur 0), (Karimganj 0)				
	Lakhimpur	0	0 (Subansiri 0)				0 (Subansiri 0)				
	Nagaon	0	0 (Kampur 0)				0 (Kampur 0)				
	Nalbari	0	0 (Paschim Nalbari 0)				0 (Paschim Nalbari 0)				
	Tamulpur	0	0 (Tamulpur 0), (Goreswar 0)				0 (Tamulpur 0), (Goreswar 0)				
	Udalguri	0	0 (Khairabari 0)				0 (Khairabari 0)				
	Total	14	11				3				
	Inmates In Relief Camps	District	Total	Revenue Circlewise			Male	Female	Children	Pregnant / Lactating Mother	Person with Disability
Baksa		0	(Barnagar RC part 0)			0	0	0	0	0	
Barpeta		0	(Barnagar 0)			0	0	0	0	0	
Bongaigaon		0	(Dangtol 0), (Manikpur 0)			0	0	0	0	0	
Chirang		0	(Bijni 0)			0	0	0	0	0	
Darrang		0	(Mangaldoi 0)			0	0	0	0	0	
Dhemaji		0	(Sissiborgaon 0), (Dhemaji 0)			0	0	0	0	0	
Goalpara		0	(Lakhipur 0)			0	0	0	0	0	
Hojai		0	(Hojai 0), (Doboka 0)			0	0	0	0	0	
Karimganj		3168	(Nilambazar 0), (RK Nagar 0), (Badarpur 108), (Karimganj 3060)			1429	941	795	3	0	
Lakhimpur		0	(Subansiri 0)			0	0	0	0	0	
Nagaon		0	(Kampur 0)			0	0	0	0	0	
Nalbari		0	(Paschim Nalbari 0)			0	0	0	0	0	
Tamulpur		0	(Tamulpur 0), (Goreswar 0)			0	0	0	0	0	
Udalguri		0	(Khairabari 0)			0	0	0	0	0	
Total		3168				1429	941	795	3	0	
Non Camp Inmates in Relief Distribution Centers		District	Total	Revenue Circlewise			Male	Female	Children	Animals	
									Big	Small	Poultry
	Baksa	0	(Barnagar RC part 0)			0	0	0	0		00
	Barpeta	0	(Barnagar 0)			0	0	0	0		00
	Bongaigaon	0	(Dangtol 0), (Manikpur 0)			0	0	0	0		00
	Chirang	0	(Bijni 0)			0	0	0	0		00
	Darrang	0	(Mangaldoi 0)			0	0	0	0		00
	Dhemaji	0	(Sissiborgaon 0), (Dhemaji 0)			0	0	0	0		00

	Goalpara	0	(Lakhipur 0)			0	0	0	0	00
	Hojai	0	(Hojai 0), (Doboka 0)			0	0	0	0	00
	Karimganj	0	(Nilambazar 0), (RK Nagar 0), (Badarpur 0), (Karimganj 0)			0	0	0	2580	5390
	Lakhimpur	0	(Subansiri 0)			0	0	0	0	00
	Nagaon	0	(Kampur 0)			0	0	0	0	00
	Nalbari	0	(Paschim Nalbari 0)			0	0	0	0	00
	Tamulpur	0	(Tamulpur 0), (Goreswar 0)			0	0	0	0	00
	Udalguri	0	(Khairabari 0)			0	0	0	0	00
	Total	0				0	0	0	2580	5390
Human Lives Lost - Confirmed	District	Total	Male	Female	Children		Others	Revenue Circlewise		
					Male	Female				
	Tamulpur	0	0	0	0	0	0	0 (Tamulpur 0), (Goreswar 0)		
	Bongaigaon	0	0	0	0	0	0	0 (Dangtol 0), (Manikpur 0)		
	Karimganj	0	0	0	0	0	0	0 (Nilambazar 0), (RK Nagar 0), (Badarpur 0), (Karimganj 0)		
	Lakhimpur	0	0	0	0	0	0	0 (Subansiri 0)		
	Udalguri	0	0	0	0	0	0	0 (Khairabari 0)		
	Darrang	0	0	0	0	0	0	0 (Mangaldoi 0)		
	Dhemaji	0	0	0	0	0	0	0 (Sissiborgaon 0), (Dhemaji 0)		
	Nagaon	0	0	0	0	0	0	0 (Kampur 0)		
	Hojai	0	0	0	0	0	0	0 (Hojai 0), (Doboka 0)		
	Chirang	0	0	0	0	0	0	0 (Bijni 0)		
	Barpeta	0	0	0	0	0	0	0 (Barnagar 0)		
	Baksa	0	0	0	0	0	0	0 (Barnagar RC part 0)		
	Nalbari	0	0	0	0	0	0	0 (Paschim Nalbari 0)		
	Goalpara	0	0	0	0	0	0	0 (Lakhipur 0)		
	Total	0	0	0	0	0	0			
Human Lives Lost - Missing	District	Total	Male	Female	Children		Others	Revenue Circlewise		
					Male	Female				
	Tamulpur	0	0	0	0	0	0	0 (Tamulpur 0), (Goreswar 0)		
	Bongaigaon	0	0	0	0	0	0	0 (Dangtol 0), (Manikpur 0)		
	Karimganj	0	0	0	0	0	0	0 (Nilambazar 0), (RK Nagar 0), (Badarpur 0), (Karimganj 0)		
	Lakhimpur	0	0	0	0	0	0	0 (Subansiri 0)		
	Udalguri	0	0	0	0	0	0	0 (Khairabari 0)		
	Darrang	0	0	0	0	0	0	0 (Mangaldoi 0)		
	Dhemaji	0	0	0	0	0	0	0 (Sissiborgaon 0), (Dhemaji 0)		
	Nagaon	0	0	0	0	0	0	0 (Kampur 0)		
	Hojai	0	0	0	0	0	0	0 (Hojai 0), (Doboka 0)		
	Chirang	0	0	0	0	0	0	0 (Bijni 0)		
	Barpeta	0	0	0	0	0	0	0 (Barnagar 0)		
	Baksa	0	0	0	0	0	0	0 (Barnagar RC part 0)		
	Nalbari	0	0	0	0	0	0	0 (Paschim Nalbari 0)		
	Goalpara	0	0	0	0	0	0	0 (Lakhipur 0)		
	Total	0	0	0	0	0	0			
Animals Affected	District	Total	Big	Small	Poultry					
	Baksa	236	110	89	37					
	Barpeta	78	45	22	11					
	Bongaigaon	0	0	0	0					
	Chirang	0	0	0	0					
	Darrang	0	0	0	0					
	Dhemaji	845	216	245	384					
	Goalpara	0	0	0	0					
	Hojai	0	0	0	0					
	Karimganj	60640	14214	7052	39374					
	Lakhimpur	0	0	0	0					
	Nagaon	0	0	0	0					
	Nalbari	374	210	164	0					

	Tamulpur	0	0	0	0							
	Udalguri	0	0	0	0							
	Total	62173	14795	7572	39806							
Animals Washed Away	District	Total	Big	Small	Poultry							
	Baksa	0	0	0	0							
	Barpeta	0	0	0	0							
	Bongaigaon	0	0	0	0							
	Chirang	0	0	0	0							
	Darrang	0	0	0	0							
	Dhemaji	21	21	0	0							
	Goalpara	0	0	0	0							
	Hojai	0	0	0	0							
	Karimganj	0	0	0	0							
	Lakhimpur	0	0	0	0							
	Nagaon	0	0	0	0							
	Nalbari	0	0	0	0							
	Tamulpur	0	0	0	0							
	Udalguri	0	0	0	0							
	Total	21	21	0	0							
	Houses Damaged	District	Fully Kuccha	Fully Pukka	Fully Total	Partially Kuccha	Partially Pukka	Partially Total				
Tamulpur		0	0	0	0	0	0					
Bongaigaon		0	0	0	0	0	0					
Karimganj		0	0	0	0	0	0					
Lakhimpur		0	0	0	0	0	0					
Udalguri		0	0	0	0	0	0					
Darrang		0	0	0	0	0	0					
Dhemaji		0	0	0	0	0	0					
Nagaon		0	0	0	0	0	0					
Hojai		0	0	0	0	0	0					
Chirang		0	0	0	0	0	0					
Barpeta		0	0	0	0	0	0					
Baksa		0	0	0	0	0	0					
Nalbari		0	0	0	0	0	0					
Goalpara		0	0	0	0	0	0					
Total		0	0	0	0	0	0					
Houses Damaged Others		District	Others Huts			Others Cattle Shed			Others Total			
	Tamulpur	0			0			0				
	Bongaigaon	0			0			0				
	Karimganj	0			0			0				
	Lakhimpur	0			0			0				
	Udalguri	0			0			0				
	Darrang	0			0			0				
	Dhemaji	0			0			0				
	Nagaon	0			0			0				
	Hojai	0			0			0				
	Chirang	0			0			0				
	Barpeta	0			0			0				
	Baksa	0			0			0				
	Nalbari	0			0			0				
	Goalpara	0			0			0				
	Total	0			0			0				
	Rescue Operation	District	Agency			Other Agencies Involved		Medical Team Deployed	Boats Deployed	Person Evacuated By Boats	Animal Evacuated By Boats	Helicopters Deployed
Baksa								0	0	0	0	0
Barpeta								0	0	0	0	0

	Bongaigaon					0	0	0	0	0	0
	Chirang					0	0	0	0	0	0
	Darrang					0	0	0	0	0	0
	Dhemaji					0	0	0	0	0	0
	Goalpara					0	0	0	0	0	0
	Hojai					0	0	0	0	0	0
	Karimganj	Local People, Civil Defence/Trained Volunteers, Circle Office/Local Administration, Circle Office/Local Administration				4	15	72	5	0	0
	Lakhimpur					0	0	0	0	0	0
	Nagaon					0	0	0	0	0	0
	Nalbari					0	0	0	0	0	0
	Tamulpur					0	0	0	0	0	0
Udalguri					0	0	0	0	0	0	
	Total					4	15	72	5	0	0
Relief Distributed	District	Rice (in Q)	Dal (in Q)	Salt (in Q)	M. Oil (in L)	Cattle Feed - Green Fooder (in Q)	Cattle Feed - Wheat Bran (in Q)	Cattle Feed - Rice Bran (in Q)			
	Baksa	0	0	0	0	0	0	0			
	Barpeta	0	0	0	0	0	0	0			
	Bongaigaon	0	0	0	0	0	0	0			
	Chirang	0	0	0	0	0	0	0			
	Darrang	0	0	0	0	0	0	0			
	Dhemaji	0	0	0	0	0	0	0			
	Goalpara	0	0	0	0	0	0	0			
	Hojai	0	0	0	0	0	0	0			
	Karimganj	21.5	3.81	1.14	114	0	0	64			
	Lakhimpur	0	0	0	0	0	0	0			
	Nagaon	0	0	0	0	0	0	0			
	Nalbari	0	0	0	0	0	0	0			
	Tamulpur	0	0	0	0	0	0	0			
	Udalguri	0	0	0	0	0	0	0			
		Total	21.5	3.81	1.14	114	0	0	64		
Relief Distributed - Others	District	Baby Food Liquid		Baby Food Solid		Others					
	Baksa										
	Barpeta										
	Bongaigaon										
	Chirang										
	Darrang										
	Dhemaji										
	Goalpara	0.00-Kg		0.00-Kg		Tarpaulin-20.00-Pcs					
	Hojai										
	Karimganj	0.00-Kg, 25.00-Pkt		0.00-Kg, 0.00-Pieces		Mosquito Coil-12.00-Pck., Candle-12.00-Pcs, Tarpaulin-1.00-Pcs, Biscuits-27.00-Pck., Sanitary Napkins-16.00-Pck.					
	Lakhimpur										
	Nagaon										
	Nalbari										
	Tamulpur										
	Udalguri										
	Infrastructure Damaged - Road	District	Number	Revenue Circle	Road Name	Department	Village	Location	Longitude	Latitude	Remarks
Baksa		0	(Barnagar RC part 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	
Barpeta		0	(Barnagar 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	
Bongaigaon		1	(Dangtol 1)	Road	PWD (Roads)	Bamunitila	Dhantala nankargaon road near slab culveet	90.46	26.37	Dhontola Nankargaon road at ch 110 00m located at	

										Bamunitila under Dangtol Revenue Circle Bidyapur got affected near Slab culvert due to heavy rain. As per report received from PWD road date- 17.06.2024
		(Manikpur 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Chirang	1	(Bijni 1)	Road No.1	P&RD	Batabari	Batabari	90.69	26.51	As reported by the BDO, Manikpur development block a road from Kuklung PWD Road to Matleb house via Gul Hussain house at Batabari road land was washed out due to flood on 16-06-2024. Damaged in physical, length 10 M, Breadth 7.50 M, Depth 3.0 M.	
Darrang	0	(Mangaldoi 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	
Dhemaji	1	(Sissiborgaon 1)	Kamchi to Jengrai Road to No.3 Lakhipur Gohain via No.2 Lakhipur. (PMGSY Package No. As 04-229)	PWD (Roads)	Shantipurjengrai	At Ch 10,100.00 M to Ch 10,200.00 M.	94.6	27.56	Damaged of 2nos Calvert and road embankment from Ch.10,100.00 M to Ch 10,200.00 M alongwith hard crust and OGPC. Extend of Damage length is 100.00 M and Population effected is (approx.) 15000. Date of damage on 15.06.2024	
		(Dhemaji 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	
Goalpara	1	(Lakhipur 1)	Gossaidubi to Fulgossa Road	PWD (Roads)	Rakhalkilla	Rakhalkilla	90.2	25.97	As per report of PWRD, Goalpara East and Jaleswar TR Division, Lakhipur affected length 120 meter eroded and submerged from Chainage 4620 M to 4740 M due to incessant rain and overflowing of river Ghagua from 16.06.2024 to till date i.e 17.6.2024	
Hojai	1	(Hojai 1)	Hojai Tumpreng Road under PWD (Roads)	PWD (Roads)	Komorakata	Theplaguri, Komorakata	92.77	26.01	Submerged on dated 17/06/2024 and	

									road is closed , no traffic movement is there.
		(Doboka 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Karimganj	0	(Nilambazar 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
		(RK Nagar 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
		(Badarpur 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
		(Karimganj 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Lakhimpur	0	(Subansiri 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Nagaon	1	(Kampur 1)	Changchaki Garukhunda Kumbhirdubi Road	PWD (Roads)	Garubat Gaon	Changchaki Garukhunda Kumbhirdubi Road, Total Length 26.4KM			Changchaki Garukhunda Kumbhirdubi Road, Total Length 26.4KM submerged at chainage 970m to 5900m on dated 17.06.2024. Report submitted by AEE, PWD (R), Barhampur Territorial Road Sub-Division, Kampur.
Nalbari	0	(Paschim Nalbari 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Tamulpur	4	(Tamulpur 4)	Ananda Bazar to Balahbari Hahkata road	PWD (Roads)	Balahbari	Balahbari Hahkata	91.51	26.6	As per PWD-R Ananda Bazar to Balahbari Hahkata road (Ch. 5200.00m to ch 7000.00m) got affected and submerged on 16/06/2024 due to heavy rain.
			Dwamakha Iron bridge road	PWD (Roads)	Dowamakha	Dwamakha	91.66	26.66	As per PWD-R Dwamakha Iron bridge approach road damaged on 16/06/2024 due to heavy rain.
			Mure chowk to Simulbari road	PWD (Roads)	Chranjangal	Mure chowk	91.51	26.66	As per PWD-R Mure chowk to Simulbari road (Ch. 0.00m to ch.200.00m) got affected and submerged on 16/06/2024 due to heavy rain.
			Kumarikata Jalah Road	PWD (Roads)	N.C. Darranga	Darranga	91.51	26.73	As per PWD-R Kumarikata Jalah Road over river Daranga BR No. 5/1 (Ch. 5120.00 m to ch. 5160.00 m) damaged on 16/06/2024 due to heavy rain.
		(Goreswar 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Udalguri	0	(Khairabari 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Total	10								

Infrastructure Damaged - Bridge	District	Number	Revenue Circle	Bridge Name	Department	Village	Location	Longitude	Latitude	Remarks
	Baksa	0	(Barnagar RC part 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Barpeta	0	(Barnagar 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Bongaigaon	0	(Dangtol 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
			(Manikpur 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Chirang	0	(Bijni 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Darrang	0	(Mangaldoi 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Dhemaji	0	(Sissiborgaon 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
			(Dhemaji 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Goalpara	0	(Lakhipur 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Hojai	0	(Hojai 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
			(Doboka 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Karimganj	0	(Nilambazar 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
			(RK Nagar 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
			(Badarpur 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
			(Karimganj 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Lakhimpur	0	(Subansiri 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Nagaon	0	(Kampur 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Nalbari	0	(Paschim Nalbari 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Tamulpur	0	(Tamulpur 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
			(Goreswar 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Udalguri	0	(Khairabari 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Total	0								
Infrastructure Damaged - Embankment Breached	District	Number	Revenue Circle	Embankment Breached Name	Department	Village	Location	Longitude	Latitude	Remarks
	Baksa	0	(Barnagar RC part 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Barpeta	0	(Barnagar 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Bongaigaon	0	(Dangtol 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
			(Manikpur 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Chirang	0	(Bijni 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Darrang	1	(Mangaldoi 1)	CM Dutta Guide Bund	Irrigation	Bahjani	At Village Bahjani under Mangaldai Revenue Circle.	92.04	26.44	As per report received from Irrigation Department CM Dutta Guide Bund is breached at village Bahjani under Mangaldai Revenue Circle. The approx. length of damage is 210 meter.
	Dhemaji	0	(Sissiborgaon 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
			(Dhemaji 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Goalpara	0	(Lakhipur 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Hojai	0	(Hojai 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
			(Doboka 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Karimganj	0	(Nilambazar 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
			(RK Nagar 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
			(Badarpur 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil

			(Karimganj 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Lakhimpur	0	(Subansiri 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Nagaon	0	(Kampur 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Nalbari	5	(Paschim Nalbari 5)	Uttar Amoni (Purnipam)Buradia R/B Agribandh	Water Resource Deptt.	Amani	Uttar Amoni (Purnipam)			Uttar Amoni (Purnipam)Buradia R/B Agribandh maintain by WRD. length 27 M dated 17/06/2024
				Uttar Amoni (Purnipam)Buradia R/B Agribandh	Water Resource Deptt.	Amani	Uttar Amoni (Purnipam)			Uttar Amoni (Purnipam)Buradia R/B Agribandh maintain by WRD. length 30 M dated 17/06/2024
				Uttar Amoni (Purnipam)Buradia R/B Agribandh	Water Resource Deptt.	Amani	Uttar Amoni (Purnipam)			Uttar Amoni (Purnipam)Buradia R/B Agribandh maintain by WRD. length 35M dated 17/06/2024
				Uttar Amoni (Purnipam)Buradia R/B Agribandh	Water Resource Deptt.	Amani	Uttar Amoni (Purnipam)			Uttar Amoni (Purnipam)Buradia R/B Agribandh maintain by WRD. length 45 M dated 17/06/2024
				Uttar Amoni (Purnipam)Buradia R/B Agribandh	Water Resource Deptt.	Amani	Uttar Amoni (Purnipam)			Uttar Amoni (Purnipam)Buradia R/B Agribandh maintain by WRD. length 18 M dated 17/06/2024
	Tamulpur	0	(Tamulpur 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
			(Goreswar 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Udalguri	0	(Khairabari 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Total	6								
Infrastructure Damaged - Embankment Affected	District	Number	Revenue Circle	Embankment Affected Name	Department	Village	Location	Longitude	Latitude	Remarks
	Baksa	0	(Barnagar RC part 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Barpeta	0	(Barnagar 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Bongaigaon	0	(Dangtol 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
			(Manikpur 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Chirang	1	(Bijni 1)	Earthen Peripheral Bund	P&RD	No-1 Majrabari	Near Sajahan Ali land			As reported by the BDO, Manikpur Development Block Earthen Peripheral Bund at No.1 Majrabari near Sajahan Ali land was washed out due to flood which occurred on 16-06-2024. Damaged in physical, Length

											9.0 M Breadth 5.0 M Depth 3.0 M.
	Darrang	0	(Mangaldoi 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Dhemaji	0	(Sissiborgaon 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
			(Dhemaji 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Goalpara	0	(Lakhipur 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Hojai	0	(Hojai 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
			(Doboka 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Karimganj	0	(Nilambazar 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
			(RK Nagar 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
			(Badarpur 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
			(Karimganj 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Lakhimpur	0	(Subansiri 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Nagaon	0	(Kampur 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Nalbari	0	(Paschim Nalbari 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Tamulpur	0	(Tamulpur 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
			(Goreswar 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Udalguri	0	(Khairabari 0)	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Total	1									
Infrastructure Damaged - Others	District	Revenue Circle	Damages	Number	Name	Department	Village	Location	Longitude	Latitude	Remarks
	Baksa	Barnagar RC part	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Barpeta	Barnagar	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Bongaigaon	Dangtol	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
		Manikpur	Washed away Culverts (in Nos)	1	RCC Culvert No. 4/1 on Patiladoha Panbari Road at Baripara , Patiladoha	PWD (Roads)	Baripara	Vill-Baripara, Patiladoha	90.82	26.51	RCC Culvert No. 4/1 on Patiladoha Panbari Road at Baripara , as per report received from PWD roads date-17.06.2024
	Chirang	Bijni	Fisheries/Pond (in Hect.)	7	Pond 1 No. (0.35 Hect.)	Fishery	Matiapara	Matiapara	90.72	26.52	As reported by the FDO of Fishery department, Chirang one number pond was submerged under water at Matiapara of Subir Mazumdar S/O Anil Mazumdar on 16-06-2024.
					Pond 1 No. (0.2 Hect.)	Fishery	No-1 Saragaon	Matiapara	90.73	26.52	As reported by the FDO of Fishery department, Chirang one number pond was submerged under water at No.1 Saragaon of Kajal sarkar S/O Anil Ch. Sarkar on 16-06-2024.
					Pond 1 No. (0.4 Hect)	Fishery	No-1 Saragaon	Matiapara	90.73	26.52	As reported by the FDO of

											Fishery department, Chirang one number pond was submerged under water at No.1 Saragaon of Nikunja Sarkar S/O Nityananda Sarkar on 16-05-2024.
					Pond 2 Nos. (0.52 Hect.)	Fishery	No-1 Saragaon	Matiapara	90.73	26.53	As reported by the FDO of Fishery department, Chirang two numbers pond was submerged under water at No.1 Saragaon of Ajit Dhar S/O Late Niren Dhar on 16-06-2024.
					Pond 2 Nos. (0.35 Hect.)	Fishery	No-1 Saragaon	Near kali Mandir, Matiapara	90.73	26.53	As reported by the FDO of Fishery department, Chirang two numbers pond was submerged under water at No.1 Saragaon of Paban Tarapdar S/O Prasenjit Tarapdar on 16-06-2024.
	Darrang	Mangaldoi	Power Dept. Conductors (in Nos)	2	Conductor	APDCL	Jaberikuchi (Kalaigaon Mouza)	At village Jaberikuchi under Mangaldai Revenue Circle.			As per report received from APDCL, Mangaldai approx. 200mt of conductor damaged at Village Jaberikuchi.
					Conductor	APDCL	Adhikari	At village Adhikari under Mangaldai Revenue Circle.			As per report received from APDCL, Mangaldai approx. 400mt of conductor damaged at Village Adhikari.
			Fisheries/Pond (in Hect.)	1	Fishery	Fishery	Bahjani	At Bahjani Village under Mangaldai Revenue Circle.			As per report received from Fishery Department 30 numbers of beneficiaries are affected where total no of tank is 30 and total water area is 3.00 Ha.
					Power Dept. Poles (in Nos)	2	Pole	APDCL	Jaberikuchi (Kalaigaon Mouza)	At village Jaberikuchi under Mangaldai Revenue Circle.	

										at Village Jaberikuchi.
					Pole	APDCL	Adhikari	At village Adhikari under Mangaldai Revenue Circle.	9226.47	As per report received from APDCL, Mangaldai 1 No of pole damaged at Village Adhikari.
	Dhemaji	Sissiborgaon	Power Dept. Conductors (in Nos)	1	Conductors	APDCL	GhagaraAadi	At Ghagra		Affected by Ghagra River of Likabali. 1 nos. HT (0.2) KM Conductors damaged.
			Power Dept. Poles (in Nos)	1	PSC Pole	APDCL	GhagaraAadi	At Ghagra.		1 nos. of PSC pole (8.5 Mtr.) damaged by Ghagra River of Likabali.
	Dhemaji	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Goalpara	Lakhipur	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Hojai	Hojai	Public Health Engineering (PHE) (in Nos)	1	Warrigeding PWSS	PHE	Warrigading	Warrigeding near Hayong Basti Sub centre	92.79	26.02 submerged on dated 17th June,2024
		Doboka	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Karimganj	Nilambazar	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
		RK Nagar	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
		Badarpur	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
		Karimganj	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Lakhimpur	Subansiri	Bamboo Foot Bridge (in Nos)	2	Bamboo foot Bridge	PWD (Roads)	Hatigarh	Napam Koibatra to Chutiakari		The bamboo foot bridge on Napam Koibatra to Chutiakari Road at 1st KM is damaged (L 75Mtr) on 16/06/2024 as reported by PWD Roads, Dhakuakhana Divn.
					Bamboo foot Bridge	PWD (Roads)	N.C. Tamuli Rochaki	Bolahi to Balipukhuri Road		The bamboo bridge on Bolahi to Balipukhuri Road at 1st KM is damaged (L 75Mtr) on 16/06/2024 as reported by PWD Roads, Dhakuakhana Divn.
			Culvert Approach Road Damaged (in Nos)	1	Culvert approach road	PWD (Roads)	Hatigarh	Box culvert at Bordoibam to Napam koibatra		The approach of box culvert at Bordoibam to Napam koibatra is damaged (L 25Mtr) on 16/06/2024 as reported by PWD Roads, Dhakuakhana Divn.
	Nagaon	Kampur	Elementary Schools Damaged (in Nos)	2	Bakulaguri Muktab	Education Deptt.	Bakulaguri Gaon	Bakulaguri		Bakulaguri Muktab submerged on dated

											17.06.2024. Report submitted by BEE0 Kathiatoli Education Block.
					Borgaon LPS submerged	Education Deptt.	Changchaki Mikirgaon	Borgaon			550 No Borgaon LPS submerged on dated 17.06.2024. Report submitted by BEE0 Kathiatoli Education Block.
		Protection Bundh Damaged (in Nos)		1	Changchaki Kumbhirdubi Road	PWD (Roads)	Kawomari Lalung Gaon	Kawoimari Lalung Gaon			Changchaki Kumbhirdubi Road at 6Km and 7Km existing boulder protection work eroded total length 50m on dated 17.06.2024.
Nalbari	Paschim Nalbari	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Tamulpur	Tamulpur	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Goreswar	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Udalguri	Khairabari	Power Dept. Poles (in Nos)		5	APDCL Tangla Sub Division	APDCL	No.1 Rowmari	No 1 Rowmari	91.75	26.6	As reported by the department, due to incessant rainfall, one number of LT pole has been damaged.
					APDCL Tangla Sub Division	APDCL	Malmura	Malmura	91.76	26.64	As reported by the department, due to incessant rainfall, one number of LT pole has been damaged.
					APDCL Tangla Sub Division	APDCL	Singrimari	Singrimari	91.83	26.61	As reported by the department, due to incessant rainfall, one number of LT pole has been damaged.
					APDCL Tangla Sub Division	APDCL	Singrimari	Singrimari	91.86	26.69	As reported by the department, due to incessant rainfall, one number of LT pole has been damaged.
					APDCL Tangla Sub Division	APDCL	Doulchuba	Near Civil Sub- Division	91.83	26.64	As reported by the department, due to incessant rainfall, one number of LT pole has been damaged.
		Power Dept. Conductors (in Nos)		3	APDCL Tangla Sub Division	APDCL	Doulchuba	Doulchuba	91.83	26.64	As reported by the department, due to incessant rainfall, 0.31 km of conductors has been snapped.

					APDCL Tangla Sub Division	APDCL	Singrimari	Singrimari	91.86	26.69	As reported by the department, due to incessant rainfall, 0.53 km of conductors has been snapped.
					APDCL Tangla Sub Division	APDCL	Singrimari	Singrimari	91.86	26.69	As reported by the department, due to incessant rainfall, 0.48 km of conductors has been snapped.
Wildlife affected under protected areas description	District	Details									
	Baksa										
	Barpeta										
	Bongaigaon										
	Chirang										
	Darrang										
	Dhemaji										
	Goalpara										
	Hojai	(Hojai - 0)									
	Karimganj										
	Lakhimpur										
	Nagaon										
	Nalbari										
	Tamulpur										
	Udalguri										
Remarks	District	Details									
	Baksa										
	Barpeta										
	Bongaigaon										
	Chirang										
	Darrang										
	Dhemaji										
	Goalpara	(Lakhipur - As per report 20 nos tarpaulin distributed the Ghagua river Erossion affected families.Now water level has been receaded.)									
	Hojai	(Doboka - Crop submerged report by ADO Rengbeng dated 17.06.2024 - 35ha (village affected-Patiapathar, Panipam, changjurai, kathkatia bharat gaon))									
	Karimganj										
	Lakhimpur										
	Nagaon	(Kampur - Due to rising water level of River Kapili 11 Nos of villages affected under Kampur Revenue Circle.)									
	Nalbari										
	Tamulpur										
	Udalguri										
	Report Generated On: 17-06-2024 06:29 PM										

Assam Urban Flood Report as on 17-06-2024												
Particulars	Assam Urban Flood Report as on 17-06-2024											
District Affected	No. of Districts Affected	Name of Affected Districts										
	2	Cachar, Kamrup (M)										
No. Of Revenue Circles Affected	2											
Name Of Revenue Circle Affected	District	Total	Revenue Circle									
	Cachar	1	Silchar									
	Kamrup (M)	1	Dispur									
	Total	2										
Villages Affected	District	Total	Revenue Circle									
	Cachar	1	(Silchar 1)									
	Kamrup (M)	9	(Dispur 9)									
	Total	10										
Population Affected	District	Male	Female	Children	Total Population	Population Details		Ward	Total Ward	Locality		
	Cachar	0	0	0	0	[PopDetails]				00		
	Kamrup (M)	0	0	0	0	[PopDetails]				00		
	Total	0	0	0	0				0			
Relief Camps / Centres Opened	District	Total	Relief Camp				Relief Distribution Centres					
	Cachar	0	0 (Silchar 0)				0 (Silchar 0)					
	Kamrup (M)	0	0 (Dispur 0)				0 (Dispur 0)					
	Total	0	0				0					
Inmates In Relief Camps	District	Total	Revenue Circlewise			Male	Female	Children	Pregnant / Lactating Mother	Person with Disability		
	Cachar	0	(Silchar 0)			0	0	0	0	0		
	Kamrup (M)	0	(Dispur 0)			0	0	0	0	0		
	Total	0				0	0	0	0	0		
Human Lives Lost - Confirmed	District	Total	Male	Female	Children		Others	Revenue Circlewise				
					Male	Female						
	Cachar	0	0	0	0	0	0	0 (Silchar 0)				
	Kamrup (M)	0	0	0	0	0	0	0 (Dispur 0)				
	Total	0	0	0	0	0	0					
Human Lives Lost - Missing	District	Total	Male	Female	Children		Others	Revenue Circlewise				
					Male	Female						
	Cachar	0	0	0	0	0	0	0 (Silchar 0)				
	Kamrup (M)	0	0	0	0	0	0	0 (Dispur 0)				
	Total	0	0	0	0	0	0					
Livestocks Affected	District	Total	Big	Small	Poultry							
	Cachar	0	0	0	0							
	Kamrup (M)	0	0	0	0							
	Total	0	0	0	0							
Livestocks Washed Away	District	Total	Big	Small	Poultry							
	Cachar	0	0	0	0							
	Kamrup (M)	0	0	0	0							
	Total	0	0	0	0							
Houses Damaged	District	Fully Kuccha	Fully Pukka	Fully Total		Partially Kuccha	Partially Pukka	Partially Total		Severely Kuccha	Severely Pukka	Severely Total
	Cachar	0	0	0		0	0	0		0	0	0

	Kamrup (M)	0	0	0	0	0	0	0	0	0	0	
	Total	0	0	0	0	0	0	0	0	0	0	
Rescue Operation	District	Agency			Other Agencies Involved		Number of Boat Deployed	Person Evacuated by Boat	Animal Evacuated by Boat	Number of Helicopter Deployed	Person Evacuated by Helicopter	Medical Team Deployed
	Cachar						0	0	0	0	0	0
	Kamrup (M)						0	0	0	0	0	0
	Total						0	0	0	0	0	0
Relief Distributed	District	Rice (in Q)	Dal (in Q)	Salt (in Q)	M. Oil (in L)	Cattle Feed - Green Fooder (in Q)	Cattle Feed - Wheat Bran (in Q)	Cattle Feed - Rice Bran (in Q)				
	Cachar	0	0	0	0	0	0	0				
	Kamrup (M)	0	0	0	0	0	0	0				
	Total	0	0	0	0	0	0	0				
Relief Distributed - Others	District	Baby Food Liquid		Baby Food Solid		Others						
	Cachar											
	Kamrup (M)											
Infrastructure Damaged - Road	District	Number	Revenue Circle	Road Name		Department	Village	Location		Longitude	Latitude	Remarks
	Cachar	0	(Silchar 0)	Nil		Nil	Nil	Nil		Nil	Nil	Nil
	Kamrup (M)	0	(Dispur 0)	Nil		Nil	Nil	Nil		Nil	Nil	Nil
	Total	0										
Infrastructure Damaged - Bridge	District	Number	Revenue Circle	Bridge Name		Department	Village	Location		Longitude	Latitude	Remarks
	Cachar	0	(Silchar 0)	Nil		Nil	Nil	Nil		Nil	Nil	Nil
	Kamrup (M)	0	(Dispur 0)	Nil		Nil	Nil	Nil		Nil	Nil	Nil
	Total	0										
Infrastructure Damaged - Others	District	Revenue Circle	Damages	Number	Name	Department	Village	Location		Longitude	Latitude	Remarks
	Cachar	Silchar	Nil	Nil	Nil	Nil	Nil	Nil		Nil	Nil	Nil
	Kamrup (M)	Dispur	Nil	Nil	Nil	Nil	Nil	Nil		Nil	Nil	Nil
Remarks	District	Details										
	Cachar	(Silchar - Ward No 9, 14, 15,16,17, 23 Link Road, Sonai Road, National Highway, Vivekananda Road, Saratpally, Bilpar , due to heavy Rainfall, water logging Flash Flood have been occurred in different places of Silchar town on dated 17.06.2024 (Due to Urban flood Male 1200, Female 1000, Children 800 Total approx 3000 population affected))										
	Kamrup (M)	(Dispur - Due to rain on 17/06/2024 waterlogging took place at Sijubari, Hatigaon, Wireless, Greenland path, saneki path, Rukminigaon, Kahilipara near SBI, Satgaon, Anil Nagar, Nabin Nagar , Tarun Nagar, Bye lane no-09 Rupkonwar path, Byelane no-03 Swahid Dilip Huzuri Path, Goramara chariali.)										