



## Component-4: Automated Mail Processing Center

February, 2023

[Final Report]

# FEASIBILITY STUDY

of  
Automated Mail Processing  
Centre of Bangladesh Post Office  
Project (1st Revised)

(Digital Transformation, Service Model Re-engineering and Enhancement of Postal Services)

**Directorate of Posts**  
Post and Telecommunication Division  
Ministry of Posts, Telecommunications and IT

### ADVISORY SUPPORT BY:



Cabinet  
Division



ICT  
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# **FEASIBILITY STUDY REPORT**

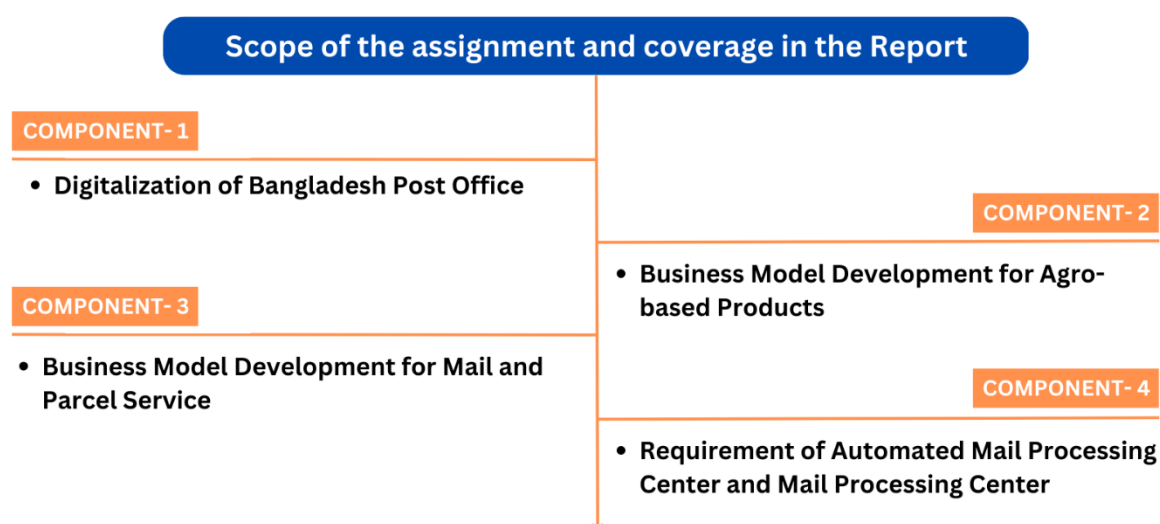
## **Component 4:**

### **AUTOMATED MAIL PROCESSING CENTER**

## Context of the Study

As Bangladesh is moving towards digitalization and planning to harvest the benefits of the 4<sup>th</sup> industrial revolution with the introduction of emerging technologies. Due to technological revolution and the country's economic achievement, time demands to deliver every service with the touch of technology. Accordingly, Bangladesh Post Office (BPO) is planning to initiate different projects to provide benefits to the customers digitally and efficiently. Therefore, the Bangladesh Postal Service automation is essential in providing services with ease and speed through digitalization. Besides, SDGs targets 5.b, 8.10, 9.c, 17.6 and 17.8 encourage the Post and Telecommunications Division (PTD) to take the new technology through BPO.

This study is being undertaken to carry out the requirement analysis on digital transformation, service model designing and overall enhancement of postal services. The scope of work under the study have been mapped below:



### The study conducted by:

**The NewVision Solutions Ltd.**, is a Research & Consultancy firm working in the sectors including energy, transportation, water & sanitation, agriculture & environment, and industrial and institutional and the **Tri-Vision Limited** is an innovative solutions and service provider in the field of Information and Communication Technology (ICT), Information Technology Enable Service (ITES), Technology Consultancy, Architectural Design, Development and support services.

The team of NewVision Solutions Ltd. and Tri-Vision Ltd. by using their extensive experience, technical ability, and management skills, implemented the feasibility study.

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## A. ACRONYMS AND ABBREVIATIONS

a2i	:	Aspire to Innovate
ACR	:	Annual Confidential Report
ACS	:	Assistant Controller of Stamp
AD	:	Acknowledgement Delivery
AGM	:	Assistant General Manager
AHP	:	Analytical Hierarchy Process
AI	:	Artificial Intelligence
AIR	:	Audit Inspection Report
AIT	:	Advance Income Tax
AMC	:	Air Mail Centers
AME	:	Assistant Maintenance Engineer
AMPC	:	Automated Mail Processing Center
API	:	Application Programming Interface
ARPU	:	Average Revenue Per User
ATI	:	Agriculture Training Institute
ATM	:	Automated Teller Machine
BB	:	Bangladesh Bank
BBS	:	Bangladesh Bureau of Statistics
BCR	:	Benefit-Cost Ratio
BDCCL	:	Bangladesh Data Center Company Ltd.
BDT	:	Bangladeshi Taka
BIAM	:	Bangladesh Institute of Administration and Management
BNPL	:	Book Now Pay Later
BPO	:	Bangladesh Post Office
BRT	:	Bus Rapid Transit
BTCL	:	Bangladesh Telecommunications Company Limited
CAAB	:	Civil Aviation Authority of Bangladesh
CB	:	Certification Body
CBRNE	:	Chemical, Biological, Radiological, Nuclear, or Explosive Threats
CCT	:	Conditional Cash Transfer

CCTV	:	Closed Circuit Television
CEO	:	Chief Executive Officer
CEP	:	Courier Express and Parcel
CEPT	:	Centre for Excellence in Postal Technology
CGA	:	Controller General of Accounts
COD	:	Cash on Delivery
CPTU	:	Central Procurement and Technical Unit
CRM	:	Customer Relation Management
CSMPC	:	Customer Service Mail Processing Center
DAE	:	Department of Agricultural Extension
DAM	:	Department of Agriculture Marketing
DC office	:	District Commissioner Office
DG	:	Director General
DM	:	Disaster Management
DMS	:	Domestic Mail Service
DNCC	:	Dhaka North City Corporation
DOE	:	Department of Environment
DoP	:	Directorate of Posts
DPC	:	Departmental Promotion Committee
DPHE	:	Directorate of Public Health Engineering
DPMG	:	Deputy Postmaster General
DSA	:	Digital Service Accelerator
DSCC	:	Dhaka South City Corporation
DSDL	:	Digital Service Design Lab
DTCA	:	Dhaka Transport Coordination Authority
EBCR	:	Economic Benefit Cost Ratio
ECA	:	Environmental Conservation Act
e-CAB	:	e-Commerce Association of Bangladesh
EDA	:	Extra Departmental Agent
EDBO	:	Extra Divisional Branch Office
EDDA	:	Extra Departmental Delivery Agent
EDMC	:	Extra Departmental Mail Carrier

EDSO	:	Extra Divisional Sub Office
EDSPM	:	Extra Departmental Sub Post Master
EFT	:	Electronic Fund Transfer
EIN	:	Employer Identification Number
EIRR	:	Economic Internal Rate of Return
EMS	:	Express Mail Service
EMS	:	Emergency Mail Service
EMTS	:	Electronic Money Transfer Service
ENPV	:	Economic Net Present Value
EQS	:	Environmental Quality Standards
ERP	:	Enterprise Resource Planning
ESIA	:	Environment and Social Impact Assessment
ESMP	:	Environment and Social Management Plan
FD	:	Fixed Deposited
FGD	:	Focused Group Discussion
FMCG	:	Fast Moving Consumer Goods
FSM	:	Financial Service Management
FY	:	Fiscal Year
FYP	:	Fiscal Year Plan
G2C	:	Government to Customer
G2E	:	Government to Employee
G2G	:	Government to Government
GAP	:	Good Agricultural Practices
GDP	:	Gross Domestic Product
GEO-code	:	Geographical Code
GEP	:	Guaranteed Express Post
GM	:	General Manager
GO	:	Government Order
GoB	:	Government of Bangladesh
GPO	:	General Post Office
GPS	:	Geographic Positioning System
HIES	:	Household Income and Expenditure Survey

HO	:	Head Office
HoPE	:	Head of Procuring Entity
HR	:	Human Resource
HRD	:	Human Resource Development
HSU	:	Hartridge Smoke Unit
HVAC	:	Heating, ventilation, and air conditioning
iBAS	:	Integrated Budget and Accounting. System
ICT	:	Information Communication Technology
ICTD	:	Information & Communication Technology Division
IEE	:	Initial Environmental Examination
IFS	:	International Financial Service
ILR	:	Internal Land Rate
IMPC	:	International Mail Processing Center
INGO	:	International Non-Government Organization
IoT	:	Internet of Things
IPC	:	Integrated Parcel Centre
IPPB	:	India Post Payments Bank
IRD	:	Internal Resource Division
IRD	:	Internal Resource Division
IRR	:	Internal Rate of Return
ISC	:	International Service Centers
ISDP	:	Integrated Service Delivery Platform
ISO	:	International Organization for Standardization
IT	:	Information Technology
KII	:	Key Informant Interview
KPI	:	Key Performance Indicator
LAN	:	Local Area Network
LGED	:	Local Government Engineering Department
LPH	:	Letter Per Hour
LSM	:	Letter Sorting Machine
LTM	:	Limited Tendering Method
MC	:	Municipality

ME	:	Maintenance Engineer
MFI	:	Micro-Finance Institute
MFS	:	Mobile Financial Service
MIS	:	Management Information System
MJM	:	Mail Journey Management
MMS	:	Mixed Mail Sorter
MoA	:	Ministry of Agriculture
MoFE	:	Ministry of Forest and Environment
MOPA	:	Ministry of Public Administration
MoPT&IT	:	Ministry of Post, Telecommunication and IT
MPC	:	Mail Processing Center
MRT	:	Metro Rail Transit
MT	:	Metric Ton
MVP	:	Minimum Viable Product
NAPD	:	National Academy for Planning and Development
NBR	:	National Board of Revenue
NBR	:	National Board of Revenue
NDC	:	Network Distribution Center
NDC	:	Nodal Delivery Center
NGO	:	Non-Governmental Organization
NID	:	National Identity
NJS	:	Non-Judicial Stamp
NOA	:	Notification of Award
NOC	:	No Objection Certificate
NPV	:	Net Present Value
NTTN	:	Nationwide Telecommunication Transmission Network
OCR	:	Optical Character Recognition
OTM	:	Open Tendering Method
OTP	:	One-time password
PD	:	Project Director
PF	:	Provident Fund
PFS	:	Proposal for Feasibility Study

PH	:	Parcel Hub
PI	:	Postal Innovation
PID	:	Postal Identification
PIN	:	Personal Identification Number
PLI	:	Postal Life Insurance
PMA	:	Postman Mobile Application
PO	:	Postal Order
POD	:	Pay on Delivery
POS	:	Point of Sale
PPE	:	Personal Protective Equipment
PPP	:	Public–Private Partnership
PRP	:	Postal Resource Planning
PSO	:	Payment System Operator
PSP	:	Payment Service Provider
PTC	:	Postal Training Center
PTD	:	Post and Telecommunication Division
QA	:	Quality Assurance
RAJUK	:	Rajdhani Unnayan Kartripakkha
REC	:	Remote Encoding Center
RFP	:	Request for Proposal
RFQ	:	Request for Quotation
RM	:	Regional Manager
RMS	:	Railway Mail Sorting
RoI	:	Return on Investment
RPATC	:	Regional Public Administration Training Center
RSTP	:	Revised Strategic Transport Plan
RTN	:	Road Transport Network
SDD	:	Software Design Document
SDG	:	Sustainable Development Goal
SME	:	Small And Medium-Sized Enterprises
SO	:	Sub Office
SPCBL	:	The Security Printing Corporation (Bangladesh) Ltd.

SPS	:	Service Process Simplification
SRS	:	Software Requirements Specification
SRTM	:	Shuttle Radar Topography Mission
SSP	:	Site Selection Protocol
STC	:	Surface Transfer Centers
SWOT	:	Strengths, Weaknesses, Opportunities, and Threats
TAITRA	:	Taiwan External Trade Development Council
TIN	:	Taxpayer Identification Number
TOR	:	Terms of Reference
TOWS	:	Threats, Opportunities, Weaknesses, Strengths
TSO	:	Thana Sub Office
UAT	:	User Acceptance Testing
UDC	:	Union Digital Center
UI	:	User Interface
UNCDP	:	UN Capital Development Fund
UNO	:	United Nations Organization
UPU	:	Universal Postal Union
USPS	:	United States Postal Service
UX	:	User Experience
VAT	:	Value Added Service
VPL	:	Value Payable Letter
VPN	:	Virtual Private Network
VPP	:	Value Payable Parcel
WE	:	Women and e-Commerce Forum
WU	:	Western Union



## B. AUTOMETED MAIL PROCESSING CENTER

### 1. SECTION 1: BASIC INFORMATION

1.	Name of the Project	:	<b>Strengthening Sorting Operations through Semi-auto and Automated Mail Processing Center</b> <b>(Bangla: সেমি-অটো এবং অটোমেটেড মেল প্রসেসিং সেন্টারের মাধ্যমে সচিৎ অপারেশনগুলি শক্তিশালীকরণ)</b>
2.	(a) Sponsoring Ministry/Division (b) Implementing Agency	:	a) Ministry of Post, Telecommunication and IT b) Directorate of Posts (DoP)
3.	Project Objectives (Project to be taken based on the study)	:	<ul style="list-style-type: none"> <li>To increase accuracy, faster delivery and transparent article tracking</li> <li>To make a smart postal service with emerging technologies</li> </ul>
4.	Estimated Project Cost (Taka in Crore)	:	1 <sup>st</sup> Phase: GOB: BDT 711.89 Crore 2 <sup>nd</sup> Phase: GOB: BDT 673.85 Crore
5.	Sector & Sub-Sector	:	Physical Infrastructure Division
6.	Project Category (Based on Environment Conservation Rules 1997)	:	Green
7.	Project Geographic Location (a) Countrywide (b) Division (c) District (d) Upazila (e) Others (City Corporation/ Pourashva)	:	(a) Countywide:
8.	Project Duration	:	1 <sup>st</sup> Phase: Five years 2 <sup>nd</sup> Phase: Next Five Years

## **2. SECTION 2: INTRODUCTION**

### **2.1 AUTOMATED MAIL PROCESSING SYSTEM**

#### **History of AMPC:**

The history of the usage of technology in postal service administration is a large story set on a broad canvas. It is intertwined with the history of the world, and it provides a lens from which to observe the evolution of the science and technology. The postal system strengthened the foundations of global democracy by fostering the flow of ideas and access to information and knowledge. It enabled the vast expansion of industry and commerce in every country, spanning and influencing the rise of the railroads in the 19th century, air travel in the 20th century, and the advanced digital technology of recent decades. As the global economy and society have evolved, so too has the postal service progressed, both meeting and reflecting the world's changing needs.

The first machine that was used in post offices was the cancelling machine. For much of the 20th century, mail was sorted by hand using what is called a "pigeon-hole message box" method. Addresses were read and manually slotted into specific compartments. Early forms of a mechanical mail sorter were developed and tested in the 1920s. The Transorma, manufactured by the Dutch company Werkspoor, was first operated in Rotterdam in 1930 and then spread to other Dutch cities. By the mid-1950s, Transormas had been introduced to Brazil, Belgium, Argentina, Venezuela, and Canada. The Transorma 5/300 consisted of an upper and lower section, a conveyor belt transport and a series of five sorting keyboards. Operators read the destination and keyed a sorting code. The letter was then automatically transferred to a letter tray and deposited into one of 300 chutes. The Transorma could sort 15,000 letters per hour.

### **2.2 OBJECTIVES OF THE TECHNICAL FEASIBILITY STUDY**

A Feasibility study to determine the need of AMPC or MPC including the requirement of application of emerging technologies for the same. Consider the infrastructure master plan and come up with the budget. Identifying the most suitable and strategic locations to construct- the Mail Processing center including chiller chambers' business requirements. In case of feasible AMPC and MPC, a requirement design on business function including the project budget. A ToR to hire an international consultant for the technical design of AMPC including consultancy budget.

### **2.3 APPROACH AND METHODOLOGY OF THE FEASIBILITY STUDY**

The methodological design of the feasibility study is the combination of quantitative and qualitative research methods such as literature review, data collection and analysis, semi-structured interviews, focus groups discussions, key informant interviews and workshops. The

choice of method has been taken into account the needs and capacities of the different target groups and stakeholders (citizen, agencies, companies, local partners, local and district government representatives, etc.). The study team arranged workshops on all components to figure out the ins and outs of that specific component. The design of the workshops ensured 100% participation from all participants. The following important stakeholders participated in the workshops.

- Essential government ministry's concerned officials
- Client's Officials
- Government Technical Assistance Organization experts (viz. DSA, a2i, ICT Division etc.)
- Potential Vendors who have worked with Bangladesh Post before and those who are relevant
- Other key non-governmental stakeholders are relevant
- Potential vendors of E-commerce in national level

However, designing the methodology/ instruments for assessment, emphasis has been given on in-depth understanding of the need side from BPO and of the customers/ stakeholders with focus on sustainability and Return on Investment (RoI) of the automation/ services or infrastructural investments. During this deep learning process, the consultant also analyzed the capacity development requirements of the BPO for transformation. The Feasibility Study team organized workshops with various pertinent agencies, companies, local partners, local and district government representatives, etc.

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### **2.3.1 Demand assessment**

The team responsible for the feasibility study conducted several workshops and conducted key informant interviews with key stakeholders to determine the current demand for mail and parcel services throughout Bangladesh. The team also took into consideration various factors such as the social conditions, economic activity, agricultural productivity, and the volume of letters and parcels in order to assess the need for an Automated Mail Processing Center (AMPC) and a Mail Processing Center (MPC). To carry out the assessment, the team utilized the Analytical Hierarchy Process (AHP) method. In addition, the team also conducted market demand forecasting to anticipate future demand, using a straight-line forecasting method with a constant growth rate to estimate the demand for the next ten years.

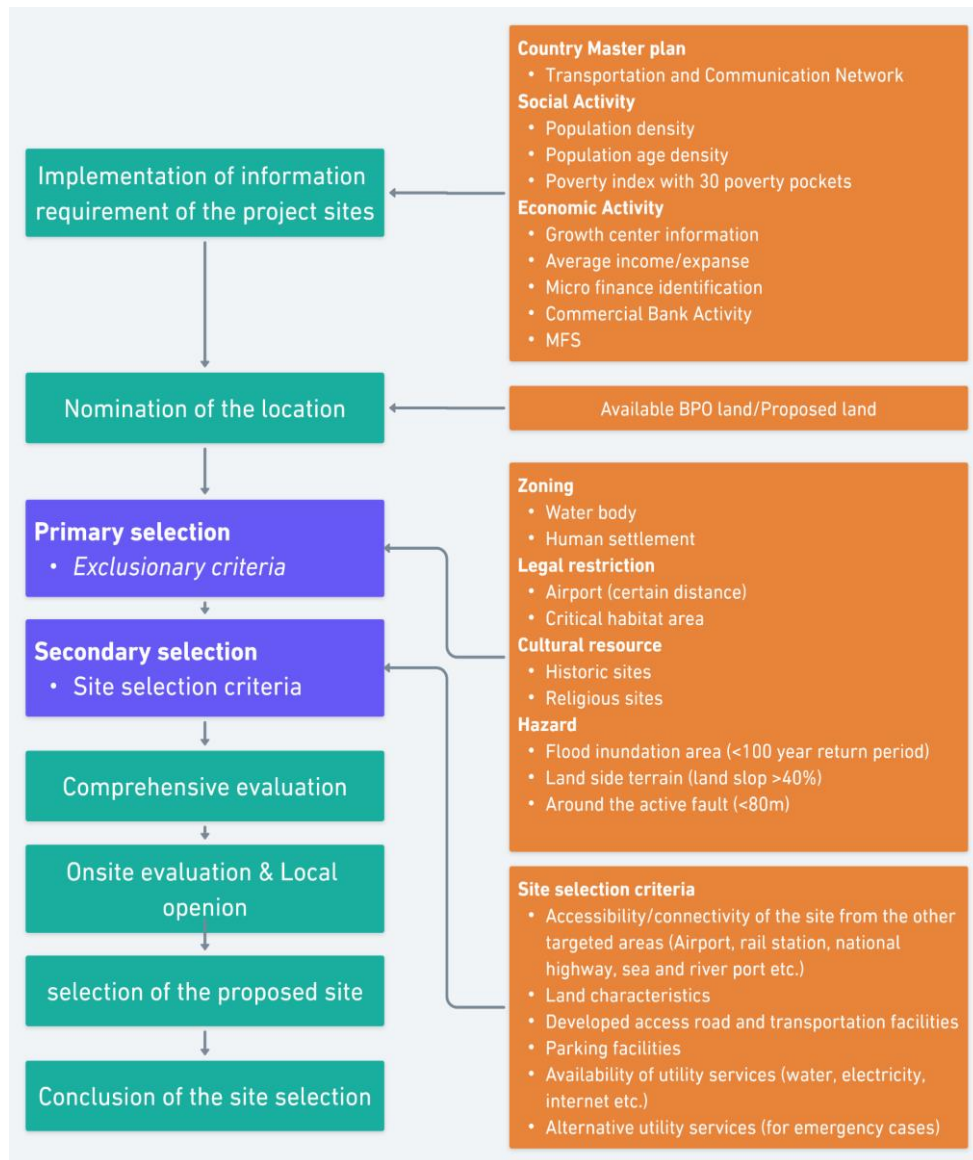
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### **2.3.2 Location Suitability**

Location suitability or priority analysis has been done focusing on current market demand and social and economic factors of the locality. For the successful site selection, as illustrated in RFP documents, we prepared a site selection protocol (SSP), however, examinations of; i)

surrounding context, ii) land tenure/ ownership, iii) physical landscape, iv) access to national infrastructure, v) availability to utility services, vi) environmental, and vii) the social settlement, issues, opportunities and constraints were rigorously surveyed. Fatal flaws if any were identified and discussed with the authorities and stakeholders, then such faults would be minimized as far as possible.

**Figure 1: Site selection protocol**



### 2.3.3 technical/technological and engineering analysis

Using the expertise of the study team and learnings from the review of different international mail and parcel services, the equipment list and floor area have been assessed. Conceptual floor area design has been done and finally a ToR has been developed to hire an international consulting firm for detail designing and equipment specification for establishment of automated mail processing center.

## **2.4 ORGANIZATION OF THE FEASIBILITY STUDY**

The covid-19 pandemic has greatly influenced the E-commerce and logistics industry as more and more consumers were more inclined to purchase online due to the virus outbreak. Human behavior has also changed as a result of this outbreak, and people today are more comfortable buying online rather than physically visiting and purchasing their products offline. The recent significant growth of our E-commerce market is a clear indication of human behavior changing.

To comply with this significant growth of the E-commerce market, a comprehensive, efficient and time-consuming process with the assurance of product safety is very much imperative, and Bangladesh Post Office can play a vital role by upgrading their services.

In this study the future demand for the upgradation of logistic services has been assessed by demand forecast calculation considering the existing Bangladeshi market. And the reason of establishment of new automated mail processing center (AMPC) and Semi automatic mail processing center (AMPC) has been carried out to meet the growing opportunities.

At last for the successful site selection, a site selection protocol (SSP) has been developed to find out appropriate locations to establish the proposed AMPC (Automated mail processing center) and MPC (semi-automated mail processing centers) based on the examinations of; i) surrounding context, ii) land tenure/ ownership, iii) physical landscape, iv) access to national infrastructure, v) availability to utility services, vi) environmental, and vii) the social settlement, issues, opportunities and constraints. Inconsistency if any is identified and discussed with the authorities and stakeholders, then such inconsistency would be minimized as far as possible.

## **3. SECTION 3: SERVICE DEMAND ANALYSIS**

### **3.1 SWOT ANALYSIS**

Bangladesh post office (BPO), one of the oldest and largest government-owned organizations in Bangladesh, has been providing citizen-centric services since its inception. The organization derives its competitive advantage from its national footprint.

Even in the private/ open market competition, the organizations survive due to government support and an extensive network of infrastructures.

But BPO could not afford to ignore the emerging market threats from a wide range of global, regional, and local players.

The market has vast opportunities and threats that BPO has to grab and avoid. However, despite its strengths, it also has many weaknesses. Addressing these weaknesses is very important. Otherwise, the growing competition and existing/ new market players will

override BPO's Market position. The following figure shows the brief of the SWOT analysis of the Bangladesh postal department:

**Figure 2: SWOT Analysis of the BPO.**



Below we have discussed the Strengths, Weaknesses, Opportunities, and Threats in more detail:

### 3.1.1 Strengths

BPO being one of the oldest and government-owned organizations, has several strengths. Below Strengths of BPO are discussed.

✓ **Country-wide Office establishment:**

BPO has 9,886 offices all over Bangladesh.

- These offices are branched out from Divisions, Districts, Upazilas, and most of Bangladesh's unions. Among these offices, 1,111 can book any letter and parcels from all the offices (9,886) letter, and parcels can be delivered.
- One of the core strengths of BPO is that it has at least one office per 15 square km, and for 15,000 People, it has one official.

✓ **A large number of Manpower:**

BPO has a workforce of 39,888, including officers and staff; currently, each employee serves 3,760 customers.

✓ **Service coverage:**

According to BPO's Mandate, each citizen is under service coverage in Bangladesh. No citizens are left, even those living in remote areas like char. No private company in Bangladesh has such extensive service coverage.

✓ **UPU Member:**

Bangladesh is a Universal Postal Union (UPU) member. Being a member of BPO's International postal wing is very compliant and has connectivity with all the UPU Members worldwide.

✓ **Mail Transport:**

Bangladesh post office has more than 500 mail motor vans nationwide. No other companies have such a number of self-owned vehicles in Bangladesh. On top of that, BPO has access to the Bangladesh Railway's Mail train, through which they can transport mail and parcels at a meager cost.

✓ **Extensive Experience:**

BPO has more experience than any other logistics/ mail and parcel delivery company in Bangladesh. Due to this vast experience, they could manage to solve and also have solutions for any challenges they face.

✓ **No Default Risk:**

BPO has zero default risk being a government institute. Recently we have seen many private companies committing fraud/ escaping with public money. BPO has that advantage over any other company; due to this superiority, they also have the highest reliability among domestic and international customers.

✓ **Low Service Fees:**

BPO is a highly subsidized service-providing institute in Bangladesh. Due to its mandate of non-excluding any citizen of Bangladesh, the service fees of BPO are low and, in some cases, below market prices.

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### 3.1.2 Weaknesses

With strengths, BPO also has significant weaknesses, which are not letting BPO go to its optimum potentiality. Below the weaknesses are discussed in detail.

- **Limited-Service Hours:**
  - BPO's Office hours are limited compared to other private sector companies. Where all the mail and parcel delivery offices work beyond regular office hours, BPO booking and delivery offices operate from 9 to 5, sometimes even less.
  - Thus, working-class people working 9 to 5 and trying to book parcels in the evening or night-time are not getting this facility.
  - So, they are moving to private companies.
- **Lack of Promotional Activity:**
  - Bangladesh Post Office has no marketing and promotional activities budget. Thus, they are not getting new customers even after introducing new services and activities.
  - Ultimately, their new services become obsolete due to a lack of demand. One example is "speed post."
- **Traditional and Manual Service Manner:**
  - Most of the services of Bangladesh postal are still running on a manual process, though they have recently introduced some automation in some offices, but that automation is not integrated and shareable.
  - According to government policy ICT Budget should be at least 2% of the total budget, whereas BPO has only 0.31%.
  - Automation still requires human effort, making things more complicated and lengthier.
  - All the mail sorting centers are human-intensive workplaces; thus, things are taking more time, and delivering mail and parcels is taking time.
- **Bureaucratic System:**

Being a government institution, the Bangladesh Post Office has to maintain a bureaucratic system. Where all the private companies can make the decision quickly, BPO takes time to approve them. Due to this system, BPO cannot take the fast-movers advantage.
- **Lack of Resource Sharing:**

The resource-sharing tendency is significantly less among government institutes. Though it takes less effort to share resources among public institutes, BPO's resources are not adequately shared with others.
- **Management Inefficiency:**
  - Bangladesh Post Office is one of the largest and oldest public institutes, but there are many scopes to increase efficiency in human resources management.



- According to consultant analysis, a large amount of money is spent on EDSOs and EDBOs every year, but not enough outputs are generated from their services.
- Again, in the booking and delivery offices, people are not cooperative with customers; sometimes, customers are dissatisfied and not returning for BPOs service again.
- **Master Plan:**

During the feasibility study, the consultant could not find any master plan or perspective plan of BPO to understand their long-term vision/goal. For an institute like BPO, there should be a Master plan or specific target plan which will work as their sacred book.

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### 3.1.3 Opportunity

With the advent of urbanization and globalization, many opportunities are coming up for BPO. With enough preparedness and competence, BPO has to utilize these opportunities; otherwise, in the long run, BPO's remaining or current market position will be overthrown. Below the opportunities are discussed.

- **Growing E-commerce market:**
  - During the study, we understand that both global and national E-commerce market is expanding. Nationally the market is growing by around 20% per year, which opens up an excellent opportunity for BPO.
  - Apart from that, the largest E-commerce company in Bangladesh Daraz is suffering from logistics facilities to maintain delivery all over Bangladesh.
  - Whereas most e-commerce, F-commerce, and SMEs use third-party delivery Services.
  - Thus, increase Digital-Commerce Industry is an excellent opportunity for Bangladesh Post Office.
- **Digitalization of Agro-Market in Bangladesh:**
  - Though it is a part of the E-commerce Market, one of the fast-growing segments is the agro-market.
  - People are moving from the traditional to the digital agro-market, where daily agro-products are purchased from digital platforms.
  - With BPO's newly built MPC and Chiller Chambers, the opportunity to work in this Market increases.

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### 3.1.4 Threats

With excellent opportunities and potentiality, there are many threats for the Bangladesh post office in the current and coming days.

- **Growing Private Sector Logistic Market with Customer-centric Services:**

- In Bangladesh, there are more than 1,000 logistics/ mail and Parcel delivery companies.
- They are providing customer-centric service, which provides convenience to customers. BPO's services must be customer-friendly; otherwise, the private sector will capture customer segments.

- **Adaptation of Emerging Technology:**

Currently, technology is changing very quickly, and the private sector is adopting them quickly. If BPO does not adopt these technologies quickly, its services will be outdated.

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## 3.2 TOWS ANALYSIS

A TOWS analysis is a **planning tool that examines a company's threats, opportunities, weaknesses, and strengths**. Using this analysis, the consultant prepares strategies for BPO for future challenges and initiatives.

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### 3.2.1 TOWS Matrix Canvas

	Internal Strength	Internal-Weakness
External Opportunities	1. Strengths-Opportunity Strategies	3. Strengths-Threats Strategies
External Threats	2. Weakness- Opportunities Strategies	4. Weakness- Threats Strategies

The above matrix helps to plan the strategies. **The First Quadrant** will identify, which of the strengths can be used to maximize the opportunities which is identified during the SWOT analysis.

**The Second Quadrant** tells how can one use the company's strengths to minimize the threats the consultant identified?

**The Third Quadrant** suggests 'What action(s) can be taken to minimize the company's weaknesses using the consultant's identified opportunities?

And finally, **The Fourth-One** tells, how can one minimize the company's weaknesses to avoid the threats that consultant identified.

### 3.2.2 TOWS Matrix Analysis for BPO

	<u>Internal Strength</u>	<u>Internal-Weakness</u>
	<ul style="list-style-type: none"> <li>Country-wide Office Establishment</li> <li>Large-Man Power Base</li> <li>Broad Service Coverage</li> <li>UPU Membership</li> <li>No. of Mail Transport</li> <li>Extensive Experience</li> <li>No Default Risk (Government)</li> <li>Low Service Fees</li> </ul>	<ul style="list-style-type: none"> <li>Limited-Service Hour</li> <li>Lack of Promotional Activity (Marketing and Advertisement)</li> <li>Traditional/Manual Service Manner</li> <li>Bureaucratic System</li> <li>Lack of Resource Sharing</li> <li>Inefficiency in Management</li> <li>Updated Master Plan</li> </ul>
<p style="text-align: center;"><u>External Opportunities</u></p> <ul style="list-style-type: none"> <li>Growing E-commerce Market</li> <li>Digitalization of Agro-based Market</li> </ul>	<ul style="list-style-type: none"> <li>Deliver E-commerce and Agro-Based Products Country wide, using broad service coverage, existing manpower and vehicles including existing chiller chambers</li> <li>Increase delivery efficiency and accuracy using Automated (AMPC) and Semi automated (MPC) mail processing centers</li> </ul>	<ul style="list-style-type: none"> <li>Increase service hour, automate service processes, use technology for efficiency to deliver products faster for the e-commerce industry and agro-based perishable goods.</li> </ul>
<p style="text-align: center;"><u>External Threats</u></p> <ul style="list-style-type: none"> <li>Growing Private Sector Logistic Market with Customer-centric Services</li> <li>Adaptation of Emerging Technology</li> </ul>	<ul style="list-style-type: none"> <li>Prepare MPCs/ AMPC to facilitate private and international market players to delivery products in remote areas with existing strengths.</li> </ul>	<ul style="list-style-type: none"> <li>Adopt digitalization initiatives to adopt emerging technologies faster to cope up with rapidly changing market demand.</li> </ul>

### 3.2.3 Future Strategies for Bangladesh Post office

- Deliver E-commerce and Agro-Based Products Country wide, using broad service coverage, existing manpower.
- Prepare MPCs/ AMPC to facilitate private and international market players to delivery products in remote areas with existing strengths.**
- Increase service hour, automate service processes, use technology for efficiency to deliver products faster for the e-commerce industry and agro-based perishable goods.**
- Prepare a strategic paper like masterplan, so that management level employee could take decision faster and provide faster services.

- **Adopt digitalization initiatives to adopt emerging technologies faster to cope up with rapidly changing market demand.**

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### **3.3 PROBLEM STATEMENT**

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#### **3.3.1 Traditional or manual mail sorting and management**

As a traditional service providing organization, Still, Bangladesh Post Office are providing their services in manual process which is more time-consuming and human involved. It is very difficult cope up with the growing demand and this organization is losing the trust of service consumers.

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#### **3.3.2 Mail Processing Center and Mail Route**

Bangladesh Post Office has a long history of providing services to citizens. As a result, the mail sorting and routing centers have been expanded periodically without much planning. However, now it is in dire need of updating to keep up with the increasing market needs. To increase the efficacy, accuracy and timeliness of the service, the Bangladesh post office needs to adopt automation technology which will ease the burden of excessive load and also help to gain customer satisfaction. In addition, a proper mail routing plan will play a huge role in upgrading their service.

The district-based mail processing centers including mail sorting and a dynamics mail route with the combined of roads highway, railway and waterway might be a proper solution for better performance. A new air route may be considered for new service.

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### **3.4 RELEVANCE OF THE PROJECT IDEA**

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The relevance of the project idea covers the most recent national 8<sup>th</sup> Five Year Plan, Sustainable Development Goal, Bangladesh Perspective Plan 2041. The major project objective is to:

- The overall Digitization/Automation of the Bangladesh Postal Resource Planning, Postal Mail and Parcel Services
- Establishment of AMPC or MPC including the application of emerging technologies;

The proposed project has linked the project goals, outcomes and outputs to national perspective plan, five years plan and SDG. The following are the details of relevance with the national development plans:

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### **3.4.1 Relevance with the Perspective Plan 2041**

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#### **3.4.1.1 9.2 The State of Progress towards Innovation Economy**

Since 2017, 8500 post offices have been converted into post-e-centers where IT training is being provided.

Introducing new automated mail processing centers will increase the efficiency, accuracy, tracking facilities

Converting the manual sorting centers into Auto and Semi-automated sorting centers with chiller chamber facilities will directly beneficiary to SMEs and Agribusinesses.

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#### **3.4.1.2 10.6 Communications**

“Bangladesh Post Office offers a range of services, including Express Mail Service, an electronic mail service, e-post for internet and e-mail services. Private providers supply high quality international courier services. All this progress has greatly benefitted trade and commerce, especially online commerce.

This progress has continued during the PP2021 and the strategy is broadly on track. The communications outlets for Bangladesh are multi-faceted and vibrant. The flow of information through social media, video and print media has moved ahead well with huge private investment. This is a major area of success for the PP2021.

PP2041 will build on this success and continue to modernize communications in Bangladesh. The PP2041 strategy will continue to provide policy and institutional support to private investment in expanding telecommunications network and services, boost the expansion of private print, audio and video media, and provide an enabling environment for competitive and healthy expansion of communication services and knowledge and information sharing. Public and national interest will be protected through regulations that ensure that information exchange is fact-based and prevent improper use that fans social unrest or creates law and order breaches. The PP2041 will implement the provisions of the Right to Information Act that supports the growth of an informed and democratic society.

Postal services will continue to be modernized through faster transfers of mail with greater reliability of services. Private services in partnership with global carriers will continue to be encouraged. Service modernization through the use of digital technology such as mail tracking will be strengthened.”

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### 3.4.2 Relevance with the Sustainable Development Goal (SDG)

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#### 3.4.2.1 Goal-2

*“End hunger, achieve food security and improved nutrition and promote sustainable agriculture.”*

##### Target-2.3

*“By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.”*

Converting the manual sorting centers into semi-automated mail processing centers with chiller chamber facilities will directly encourage small-scale food producers, in particular women, indigenous peoples, family farmers to market their products which will trigger **target 2.3**

##### Target-2.c

*“Adopt measures to ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility.”*

Proper and defined delivery route with the facilities of the chiller vans and the chiller chamber in the MPCs will upgrade the delivery process with timing and proper food quality. This process will directly influence the **target-2.c**

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### 3.4.3 Relevance with the 8<sup>th</sup> Five Year Plan

#### 8FYP GOALS, TARGETS AND STRATEGIES FOR POSTAL SERVICES

- a) Introducing digital postal services along with traditional postal services;
- b) Commercializing postal services;
- c) Introducing Domestic and International Financial Services;
- d) Bringing Mail transportation, collection and distribution under ICT based strict supervision;**
- e) Ensuring imparting of high-quality ICT based training;
- f) Following international standard in providing customer service and introducing zero tolerance policy;**
- g) Giving importance to rural people in case of proving improved postal services;**
- h) Adopting activities for making at least one IT based entrepreneur in each of rural post offices.

- i) **Increasing the capacity of mailing operator and courier service in order to ensure quality service.**
- j) Expansion Department of Posts digital financial service 'Nagad' provided remote areas across the country.
- k) Bringing all the villages of the country under the services of digital post office.
- l) Introduction of nationwide ad-mail service by 2021.
- m) Establishment of in-house digital commerce hubs across the country.
- n) Introduction of education insurance "Sukanya" for school going girls.

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### 3.5 PROPOSED PROJECT PROLOGUE

There are several key places to begin looking for possible project interventions to meet the results-oriented goals:

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#### 3.5.1 Specific Challenges of the department

- ❖ Bangladesh Post Office Mail and Parcel services are running traditional way where service hours are 5 days' week and not more than 6 hours, mail article sorting are most traditional manual, very few uses of information technology, postal department manpower mind setup are traditional, mail article are reducing gradually, each year expenditure are going up than allocation which making postal department as loss-making organization;

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#### 3.5.2 Project Objectives

- ❖ The overall Digitization/Automation of the Bangladesh Postal Mail and Parcel Services
- ❖ Establishment of AMPC or MPC including the application of emerging technologies

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#### 3.5.3 Output of the Project

The output of the study is total transformation of Bangladesh Post Office services and modernization of postal journey.

**Transformation of BPO mail journey:**

- ❖ The citizen live will be easy to receive postal services;
- ❖ Mail tracking ID and scanning system will provide trackable and traceable mail and parcel system;
- ❖ Awareness, promotion and publication will be increased the postal mail services;

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#### 3.5.4 Expected Result of the Project

- ❖ Bangladesh Post Office Mail and Parcel service will be most flexible and comfortable for customer to drop, payment, tracking and receive the mail article;

### 3.6 STAKEHOLDERS:

The key stakeholders who will be associated with the project interventions are:

- ❖ Private e-Commerce Service Providers: The e-Commerce Service Providers will be delivered their product in the remote area through BPO network where they don't have any service.
- ❖ Private e-Couriers Service Providers: The e-Couriers Service Providers will be delivered their product in the remote area at the customer's door step through BPO network where they don't have any service.
- ❖ Farmers: The farmers will be sold their product directly to the consumers to use the BPO e-Commerce site and will gain more benefit.

### 3.7 DEMAND ANALYSIS

#### 3.7.1 Area Wise Parcel Distribution

*Table 1: Area wise parcel distribution<sup>1</sup>*

Division	District	Per day Total	Yearly
Barishal	Barguna	1,734	632,956
	Barishal	8,876	3,239,740
	Bhola	1,734	632,956
	Jhallokati	1,734	632,956
	Patuakhali	6,679	2,437,653
	Pirojpur	1,734	632,956
Chattogram	Bandarban	2,837	1,035,505
	Brahmanbaria	2,837	1,035,505
	Chandpur	2,837	1,035,505
	Chattogram	25,762	9,403,130
	Cumilla	6,505	2,374,325
	Cox's Bazar	2,837	1,035,505
	Feni	6,505	2,374,325
	Khagrachari	2,837	1,035,505
	Lakshmipur	2,837	1,035,505
	Noakhali	6,505	2,374,325
	Rangamati	2,837	1,035,505

<sup>1</sup> Consultant's estimations based on Primary Survey



Division	District	Per day Total	Yearly
Dhaka	Dhaka	168,536	61,515,640
	Faridpur	11,878	4,335,288
	Gazipur	25,354	9,254,028
	Gopalganj	11,878	4,335,288
	Kishoreganj	11,878	4,335,288
	Madaripur	11,878	4,335,288
	Manikganj	11,878	4,335,288
	Munshiganj	11,878	4,335,288
	Narayanganj	25,354	9,254,028
	Narsingdi	11,878	4,335,288
	Rajbari	11,878	4,335,288
	Shariatpur	11,878	4,335,288
	Tangail	11,878	4,335,288
Khulna	Bagerhat	1,762	643,221
	Chuadanga	1,762	643,221
	Jashore	13,384	4,884,978
	Jhenaidah	1,762	643,221
	Khulna	17,816	6,502,840
	Kushtia	1,762	643,221
	Magura	1,762	643,221
	Meherpur	1,762	643,221
	Narail	1,762	643,221
	Satkhira	1,762	643,221
Mymen singh	Jamalpur	1,141	416,283
	Mymensingh	18,013	6,574,563
	Netrokona	1,141	416,283
	Sherpur	1,141	416,283
Rajshahi	Bogura	7,517	2,743,705
	Joypurhat	1,325	483,443
	Naogaon	1,325	483,443
	Natore	1,325	483,443
	Chapai Nawabganj	1,325	483,443

Division	District	Per day Total	Yearly
	Pabna	1,325	483,443
	Rajshahi	9,994	3,647,810
Rangpur	Sirajganj	1,325	483,443
	Dinajpur	7,252	2,646,798
	Gaibandha	1,280	467,291
	Kurigram	1,280	467,291
	Lalmonirhat	1,280	467,291
	Nilphamari	1,280	467,291
	Panchagar	1,280	467,291
	Rangpur	9,640	3,518,600
	Thakurgaon	1,280	467,291
Sylhet	Habiganj	6,505	2,374,325
	Moulvibazar	19,343	7,060,195
	Sunamganj	6,505	2,374,325
	Sylhet	32,181	11,746,065
<b>Total</b>		<b>606,942</b>	<b>221,533,648</b>

### 3.7.2 Future growth outlook

The logistic and courier market of Bangladesh is expected to grow significantly in next 10-year period. According to Statista, the Y2Y growth is projected to be at 19.27% in 2022 onwards for e-commerce, delivery of which is solely relying on postal and courier services<sup>2</sup>. According to other global research wings the e-commerce industry in Bangladesh will grow @17.61% annually till 2026<sup>3</sup>

- Revenue in the eCommerce market is projected to reach US\$7.28bn in 2022.
- Revenue is expected to show an annual growth rate (CAGR 2022-2027) of 19.23%, resulting in a projected market volume of US\$17.54bn by 2027.
- In the eCommerce market, the number of users is expected to amount to 86.1m users by 2027.
- User penetration will be 35.0% in 2022 and is expected to hit 49.1% by 2027.
- The average revenue per user (ARPU) is expected to amount to US\$124.00.

<sup>2</sup> <https://www.statista.com/outlook/dmo/ecommerce/bangladesh>

<sup>3</sup> <https://finance.yahoo.com/news/bangladesh-b2c-ecommerce-market-report-082300154.html>

For AMPC sizing, however – we have taken a conservative approach of gauging this growth capped at 15% flat for the next 10 years. For peak-time calculation, we have added a multiplying factor of 1.2 to ensure the facilities do not run out of capacity during Eid or Pahela Baishakh or other seasonal occasions. The table below captures the projection for daily volumes of parcels and packages.

**Table 2: Projected daily volume of parcels 2023-2034 (Figure in Thousand)**

Region	Current volume	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	Ref. vol (daily)
Barisal	22.5	25.9	29.7	34.2	39.3	45.2	52.0	59.8	68.8	79.1	91.0	104.6	120.3	144.4
Chattogram	65.1	74.9	86.1	99.1	113.9	131.0	150.7	173.3	199.3	229.1	263.5	303.0	348.5	418.2
Dhaka	338.0	388.7	447.0	514.1	591.2	679.9	781.9	899.1	1034.0	1189.1	1367.5	1572.6	1808.5	2170.2
Khulna	45.3	52.1	59.9	68.9	79.2	91.1	104.8	120.5	138.6	159.4	183.3	210.7	242.4	290.8
Mymensingh	21.4	24.6	28.3	32.6	37.5	43.1	49.6	57.0	65.6	75.4	86.7	99.7	114.7	137.6
Rajshahi	25.5	29.3	33.7	38.7	44.5	51.2	58.9	67.7	77.9	89.6	103.0	118.4	136.2	163.4
Rangpur	24.6	28.3	32.5	37.4	43.0	49.4	56.8	65.4	75.2	86.4	99.4	114.3	131.5	157.8
Sylhet	64.5	74.2	85.3	98.1	112.9	129.8	149.3	171.7	197.4	227.0	261.1	300.2	345.3	414.3

### 3.7.3 Projected sizing of the mail processing centers

Based on the analysis of the data presented in the table, the expert team has calculated the system requirements for the top performing sites of Bangladesh. It was determined that the projected volume of mail and parcels in Dhaka city will significantly surpass the volume in other cities, such as Chattagram. In order to address this demand, the team conducted a comprehensive priority and suitability analysis to determine the best course of action below. The results of this analysis indicate that the BPO should focus on establishing an automated mail processing center (AMPC) in Dhaka city, in order to maximize efficiency and meet the growing demand for its services. In addition, the team recommends upgrading the existing mail processing centers (MPCs) in other important cities with automated sorting machines, in order to improve the overall performance of the BPO and better serve its customers. These recommendations are the result of a thorough analysis of market trends, future projections, and the suitability and priorities of different locations

Table: System landscape for BPO sites (proposed)

Location	Letter Sorting System	Culler Facer Cancellor System	Flat Sorting System	Package Sorting System
Dhaka	2	2	1	2
Chattagram	0	1	1	0
Sylhet	0	1	1	0
Mymensing	0	1	1	0
Comillah	0	1	1	0

Tangail	0	1	1	0
Faridpur	0	1	1	0
Jessore	0	1	1	0
Khulna	0	1	1	0
Gazipur	0	1	1	0
Narayanganj	0	1	1	0
Noakhali	0	1	1	0
Sirajganj	0	1	1	0
Bogra	0	1	1	0
Rajshahi	0	1	1	0
Maulvibazar	0	1	1	0
Feni	0	1	1	0
Brahmanbaria	0	1	1	0
Narsingdi	0	1	1	0
Barisal	0	1	1	0
Habiganj	0	1	1	0
Munshiganj	0	1	1	0
Kishoreganj	0	1	1	0
Gopalganj	0	1	1	0
Naogaon	0	1	1	0
Rangpur	0	1	1	0

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### 3.7.4 Required Readiness for AMPC

- **National Geospatial database for Addresses**

Accurate and up-to-date addresses are critical to transportation safety and are a vital part of a multitude of services including mail delivery, emergency services, urban planning and others. Every destination scanned from the mail is matched against this database to plan and coordinate with the right courier /delivery process.

- **Optical Character Recognition**

Modern Mail Sorting machines use multiple high-definition cameras connected with optical reader that reads the address and puts a bar code on the back of the letter package. The machines then read the barcode and puts the mail to the right area or larger geographic region. In the second pass, the machine sorts to carrier route and 3rd pass sorts to sequence the route to deliver. These machines sort 30,000 pieces per hour. Other requirements of the OCR include:

SL	Topic	Requirement
1	Recognition rate	95.05%
2	Error rate	0.93%
3	Reliability	99.03%
4	Speed requirement	39000 LPH

- **Training and support**

On an average an operator requires 6 weeks of intense training to maintain any mail sorting machine. Accordingly, the principal system integrator needs to establish local knowledgebase and resource pool to ensure sustainable training process for healthy supply of machine operators and subject matter experts (SMEs). Additionally, the principal supplier also needs to ensure onsite equipment redundancy for mission critical components of the solution for at least 60 months followed by successful implementation of the system.

## 4. SECTION 4: TECHNICAL/ TECHNOLOGICAL & ENGINEERING ANALYSIS

### 4.1 DISTRICT-WISE PRIORITY/SUITABILITY ANALYSIS

Updated and well-located mail processing centers throughout the country are the key resource for providing delivery services in a quick and easy manner. For this purpose, the Bangladesh Post Office is upgrading its existing shorting centers into mail processing centers (MPC). Bangladesh Post Office has already adopted 14 MPCs and intends to adopt more to provide improved services to the nation. This study has been undertaken with the aim of assessing the district-level potentialities to introduce new MPCs as well as to reassess the performance of the existing ones.

#### 4.1.1 Evaluation method:

The evaluation method adapted is to calculate the total score after scoring according to the evaluation criteria are set for the following evaluation items and then multiplied by the weight (point allocation) according to the significance of the evaluation items. As part of this analysis, we plan on using the same methodology that was used by the AMPC for its site suitability analysis.

#### SETTING OF EVALUATION ITEMS:

To assess district-wise suitability for MPC establishment, eleven evaluation items have been set within three major aspects.

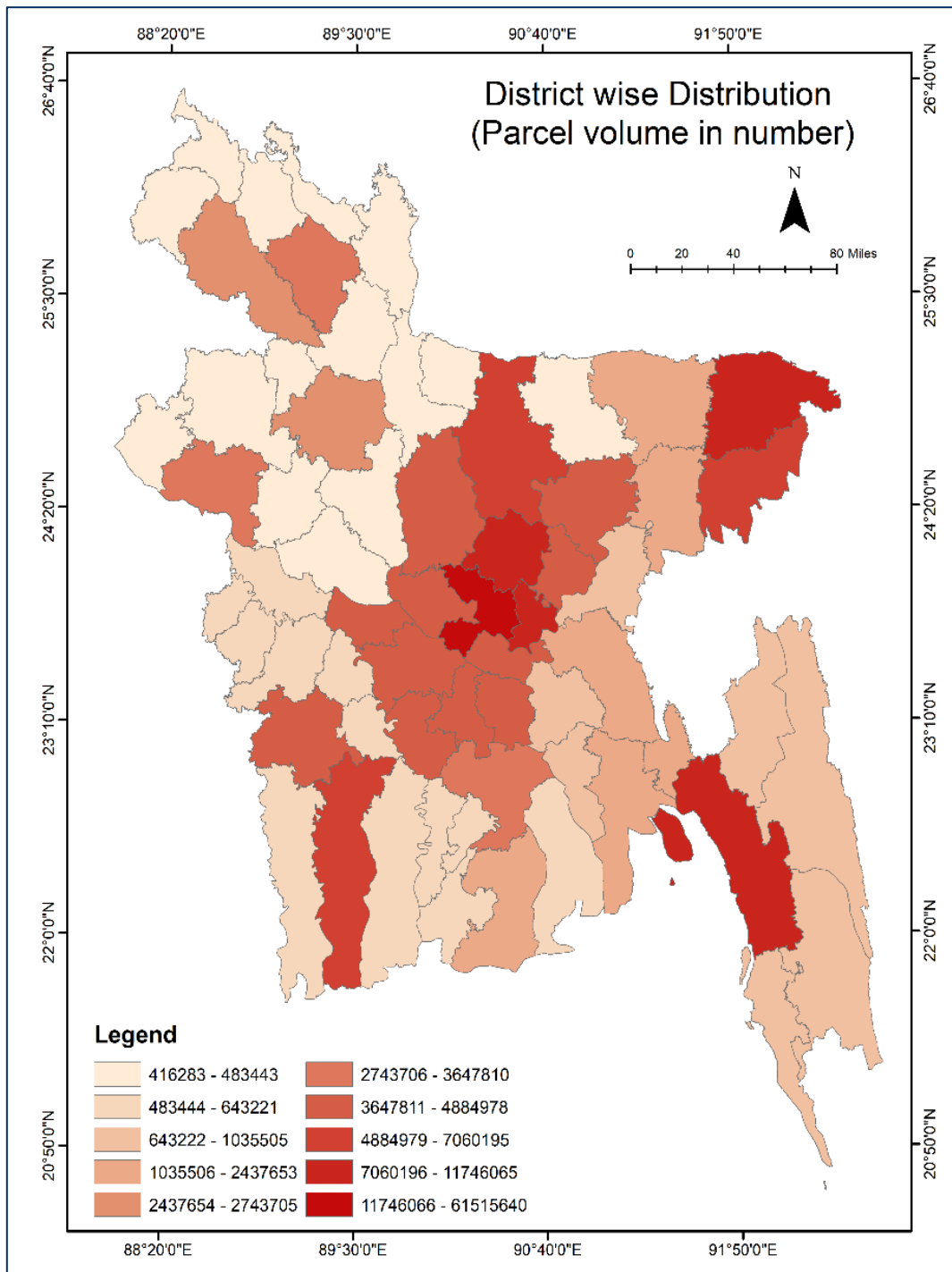
**Table 3: Evaluation items for district-wise suitability analysis for MPC establishment**

Perspective	Item
Parcel volume	Parcel movement volume assessment
Existing Infrastructure	Existing infrastructure of Bangladesh post office for mail and parcel sorting
Social activity	Population
	Poverty index/ poverty rate
	Population age density
Economic activity	Income indicator Gini co-efficient
	Consumption indicator Gini co-efficient
	Monthly household expenditure
	Monthly household consumption
	Transportation facility
	Number of Growth centers
Agricultural activity	Production of fruits
	Production of vegetables

- **Parcel movement volume assessment:**

In this study, parcel volume information along with spatial distribution is one of the key evaluation items. Where parcel volume or transaction is higher, there are more opportunities and activities for the Bangladesh Post Office.

**Figure 3: District-wise parcel distribution (yearly)**

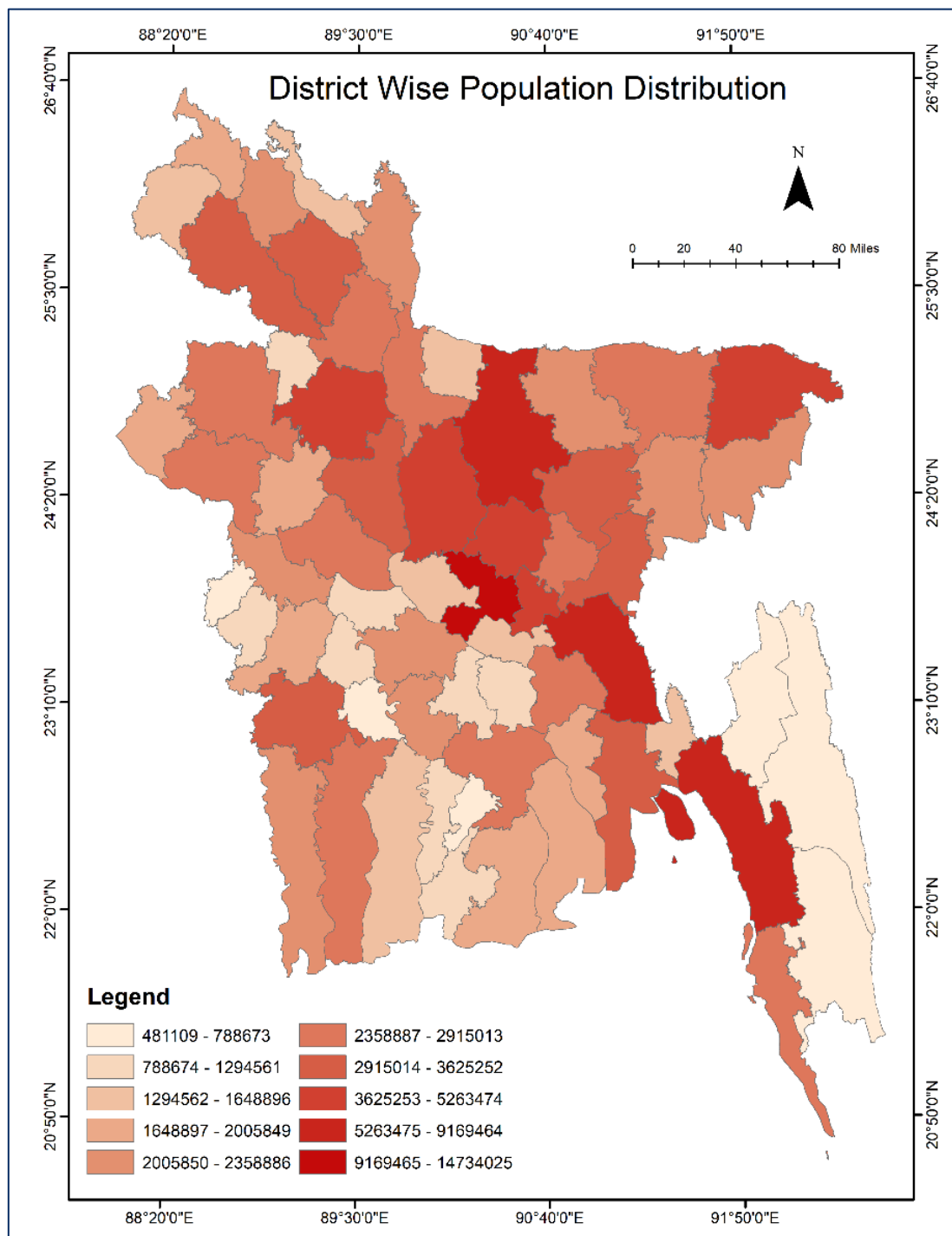


*Data source: Primary study by the study team*

- **Population of that area:**

The population is a key indicator of social and economic activity. More population means more people and more opportunities for jobs and business activities within the locality. For a better understanding of spatial variation within the country, a population density map was developed based on the population census in 2021.

**Figure 4: District-wise population distribution of Bangladesh**



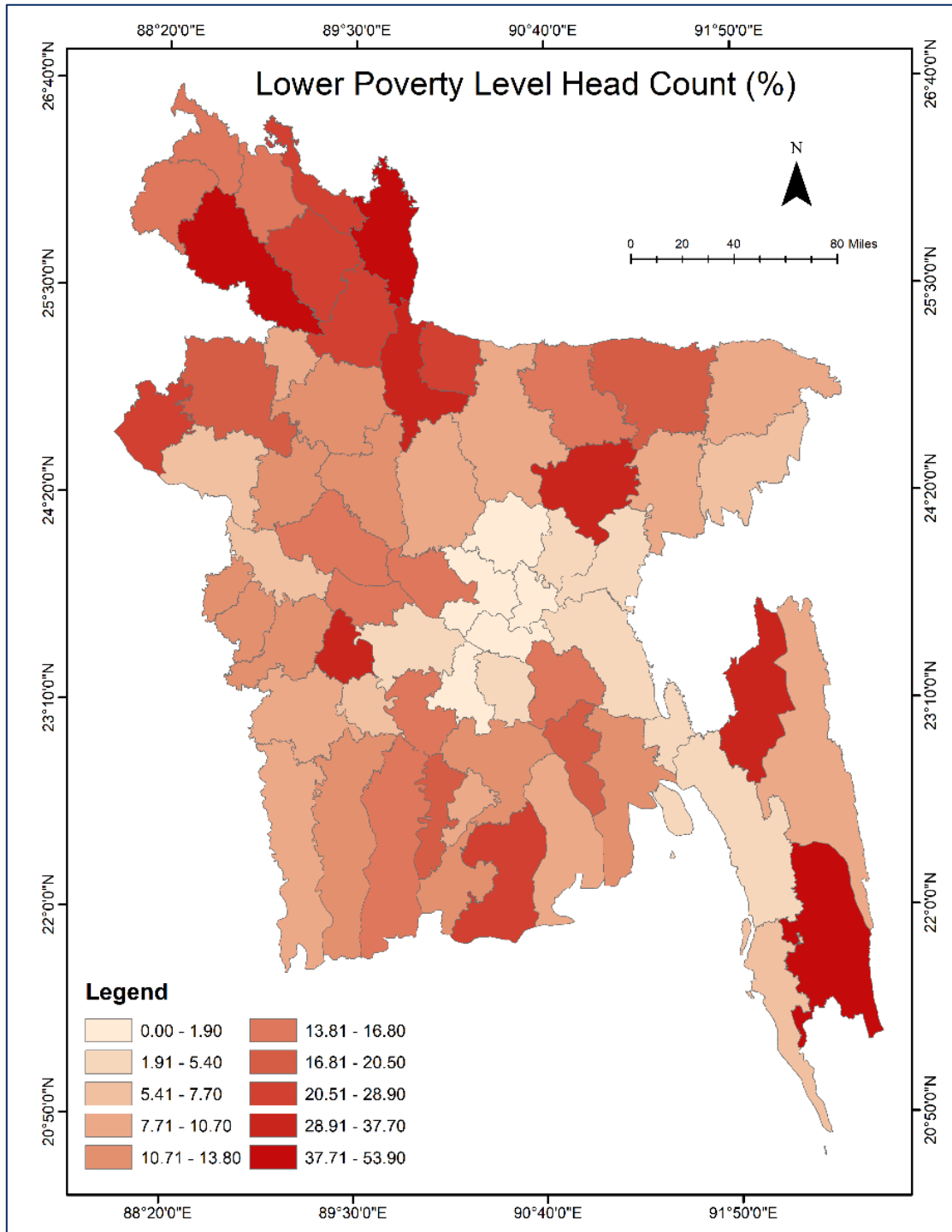
Data source: BBS (Bangladesh Bureau of Statistics)



- **Poverty index/poverty rate:**

A higher poverty rate indicates low living standards and fewer income opportunities. A high poverty rate negatively affects the location's suitability for establishing a new MPC.

**Figure 5: District-wise lower poverty level head count (%)**

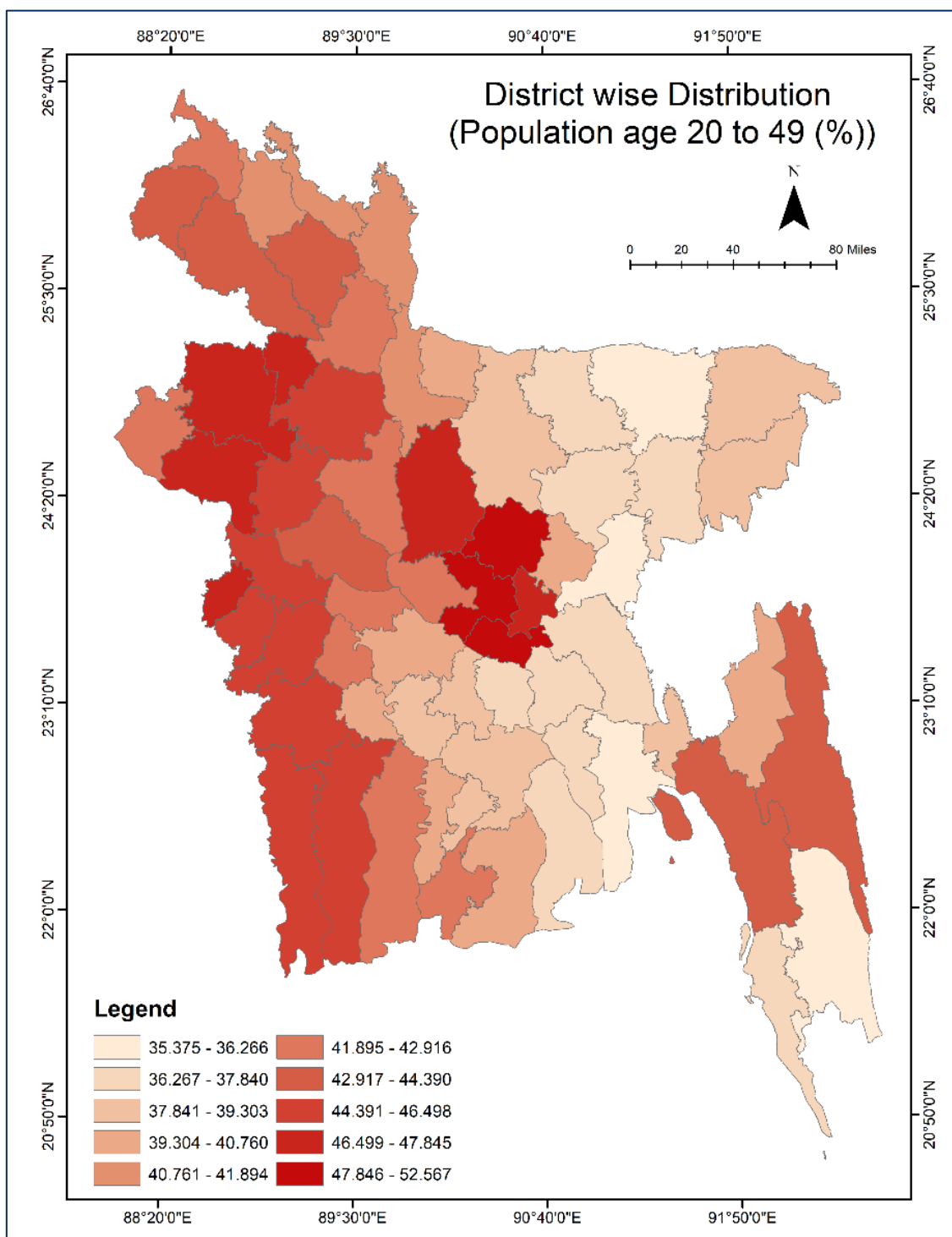


Data source: BBS (Bangladesh Bureau of Statistics)

- **Population age density:**

Those who can participate actively in income-generating activities comprise a percentage or number of young and middle-aged people. As a result, the number of young people living in the vicinity is a key indicator of economic activity, which indirectly leads to the need for more transaction facilities.

**Figure 6: District-wise distribution youth and middle age people**

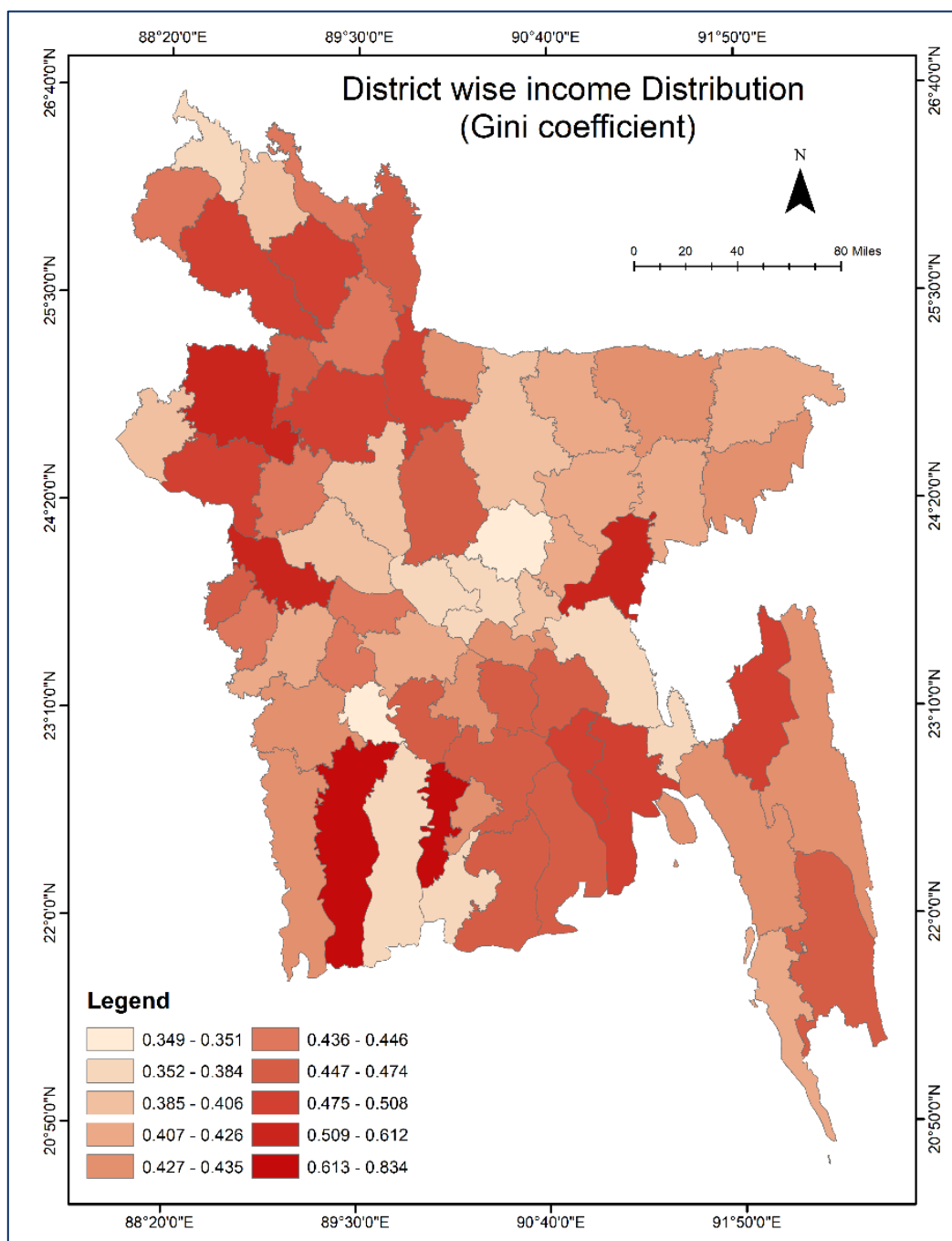


Data source: BBS (Bangladesh Bureau of Statistics)

- **Income indicator Gini coefficient:**

Gini coefficient measures the inequality among values of a frequency distribution, such as income levels. Gini index < 0.2 corresponds with perfect income equality, 0.2–0.3 corresponds with relative equality, 0.3–0.4 corresponds with a relatively reasonable income gap, 0.4–0.5 corresponds with high-income disparity, and above 0.5 corresponds with severe income disparity.

**Figure 7: District-wise income distribution (Gini coefficient)**

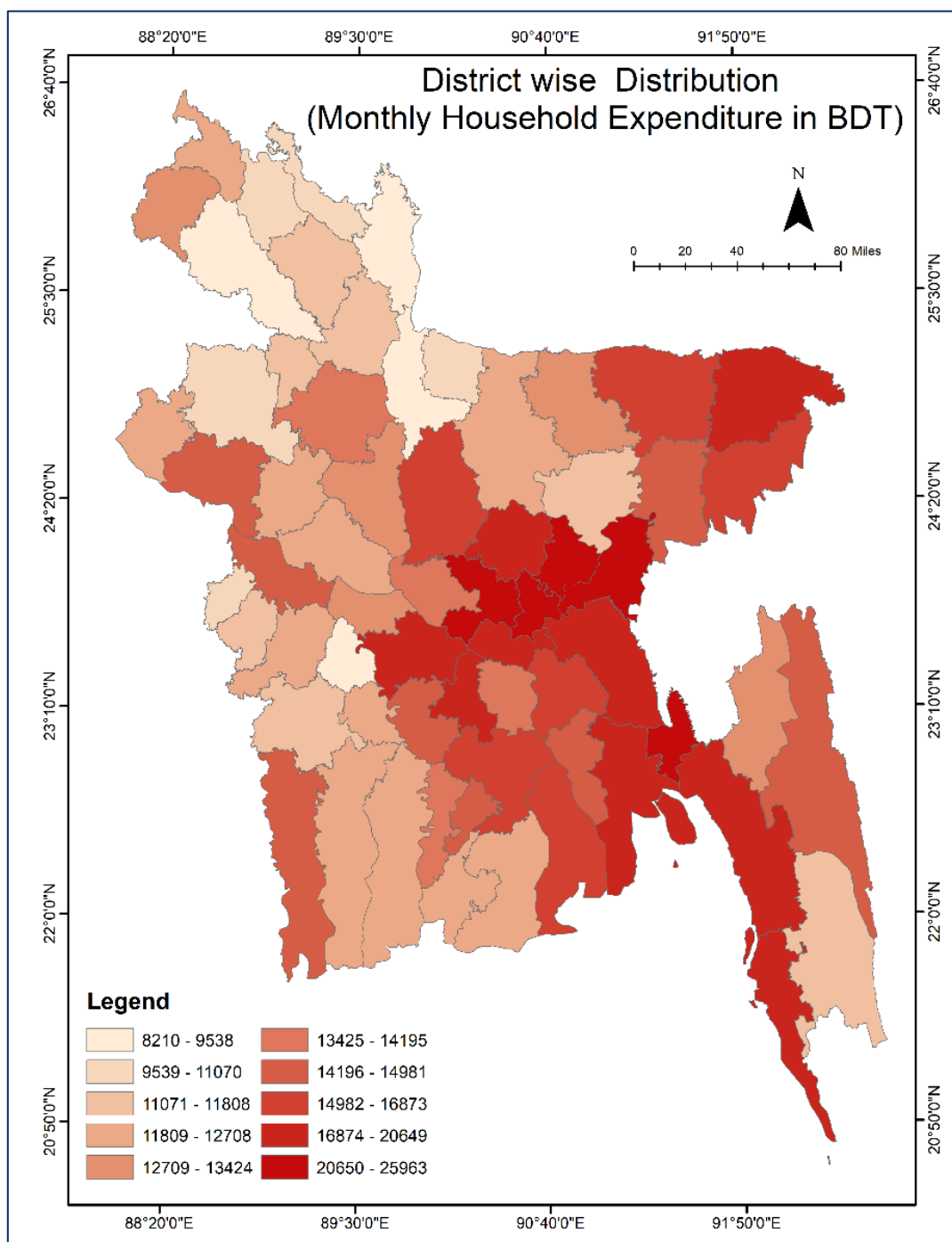


Data source: BBS (Bangladesh Bureau of Statistics)

- **Monthly household expenditure:**

The amount of money spent by the family during a period of one month on personal consumption is the amount spent by the family. It also includes the living cost excluding basic needs. Higher monthly household expenditure means the ability to spend more excluding the basic needs for better living standards.

*Figure 8: District-wise average monthly household expenditure in BDT*

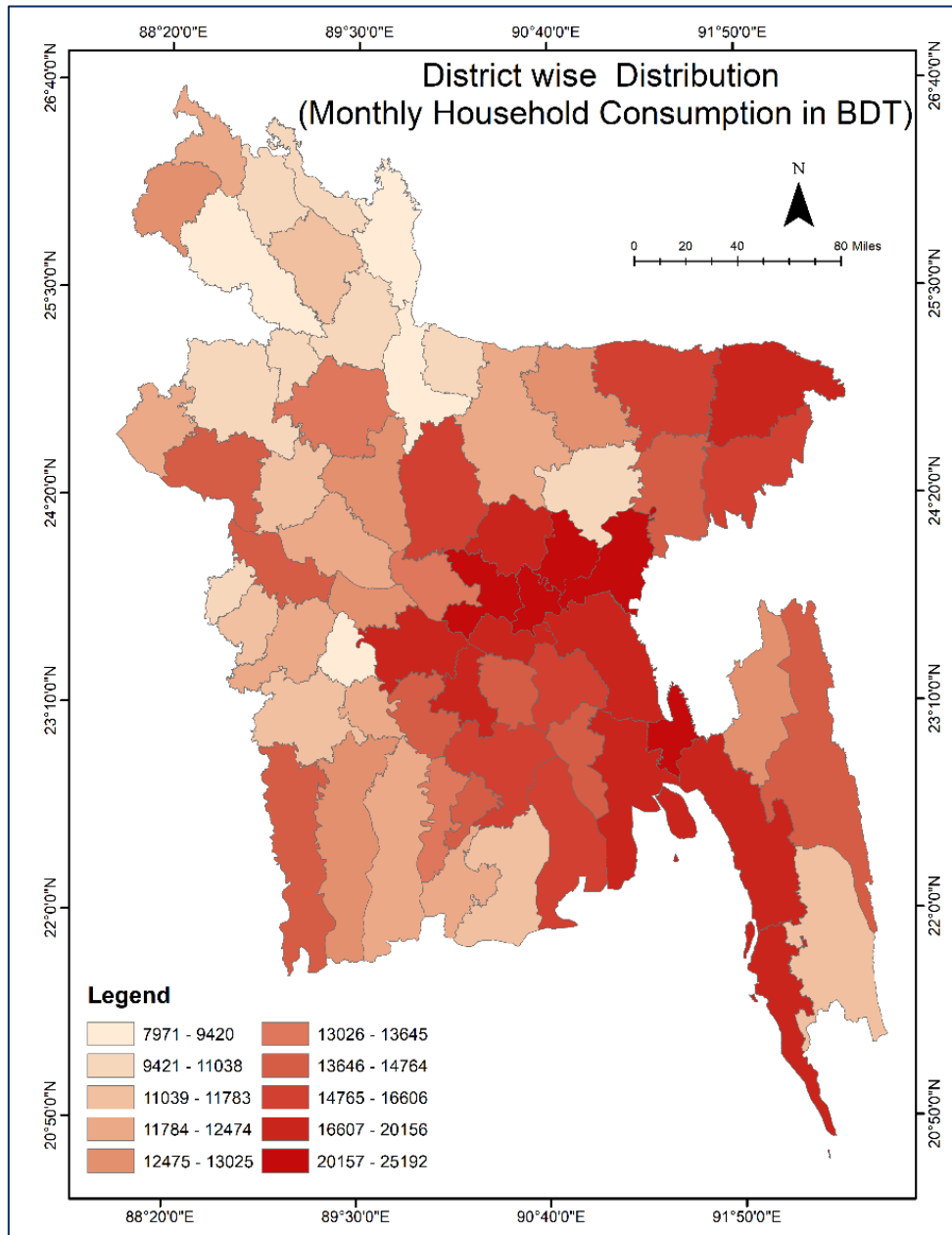


*Data source: BBS (Bangladesh Bureau of Statistics)*

- **Monthly household consumption:**

Consumption expenditure made by resident households to meet their everyday needs, such as food, clothing, housing (rent), energy, transport, durable goods (notably cars), health costs, leisure, and miscellaneous services during one-month time period. Higher monthly household consumption indicates the capacity of that resident to pay more for their daily needs. Together, household consumption and income are indicators of the overall living standard and income-generating capacity of a locality.

**Figure 9: District-wise monthly household consumption in BDT**

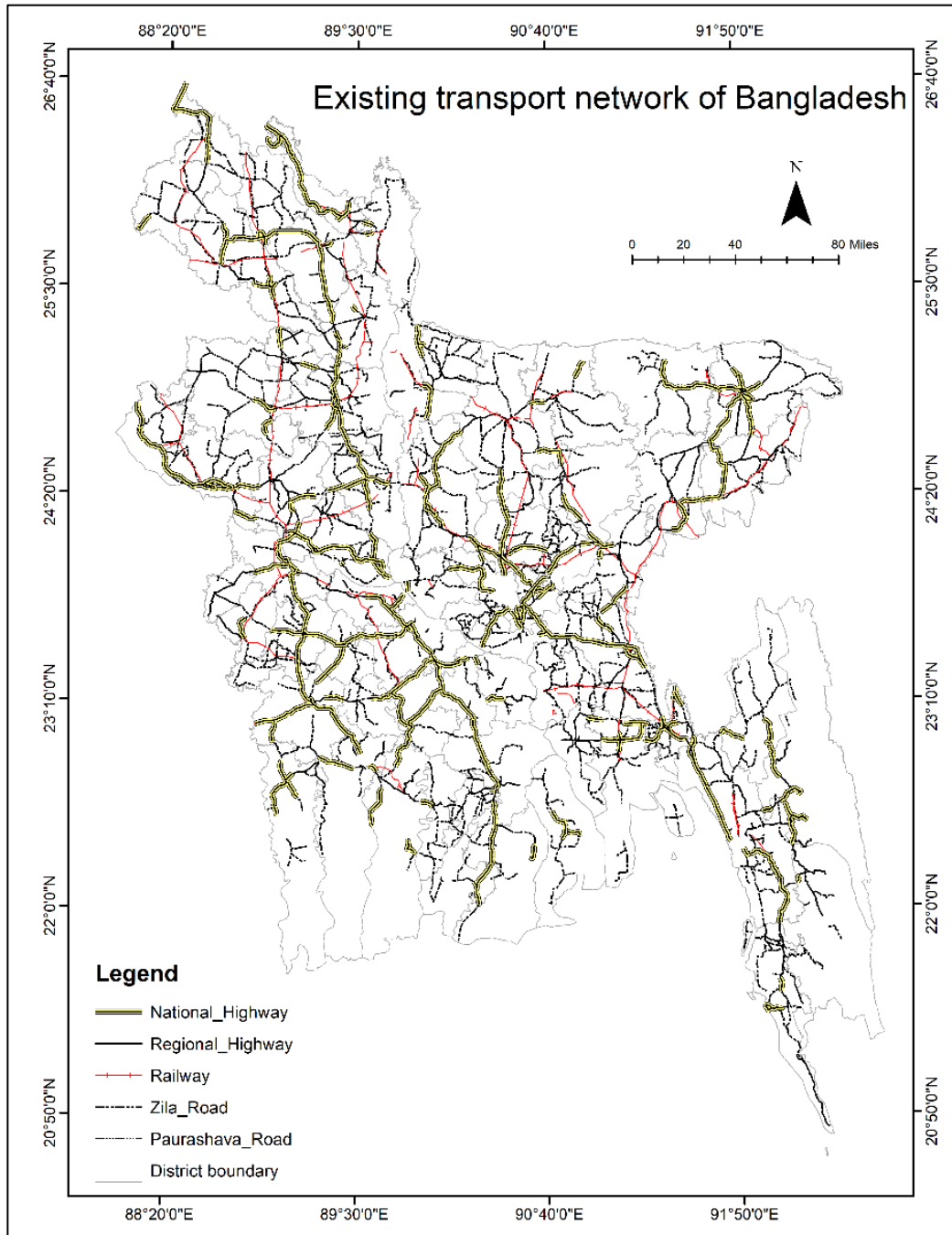


Data source: BBS (Bangladesh Bureau of Statistics)

- **Transportation facility:**

There is a correlation between road connectivity and the accessibility of a region. It is known that road connectivity enhances the convenience of accessing transport facilities in a region, which in turn increases the region's economic activity.

**Figure 10: Existing transport network of Bangladesh**

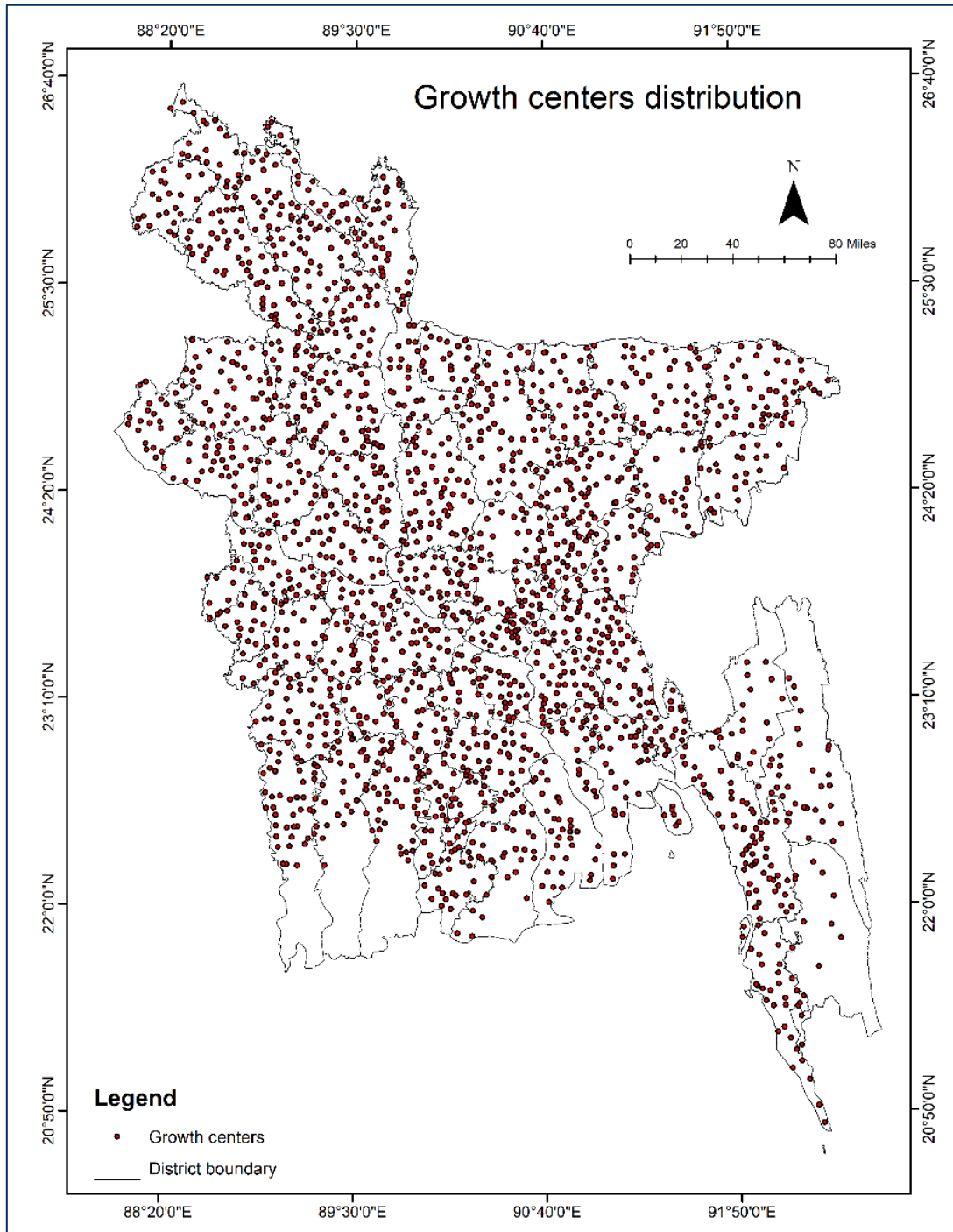


**Data source: LGED (Local Government Engineering Department), RHD (Roads and Highway Department)**

- **Number of growth centers:**

In the context of an area, a growth center refers to the center of economic, social, and cultural activity. These include places such as markets, shopping malls, bazaars, and so on.

**Figure 11: Growth centers distribution throughout all over Bangladesh**

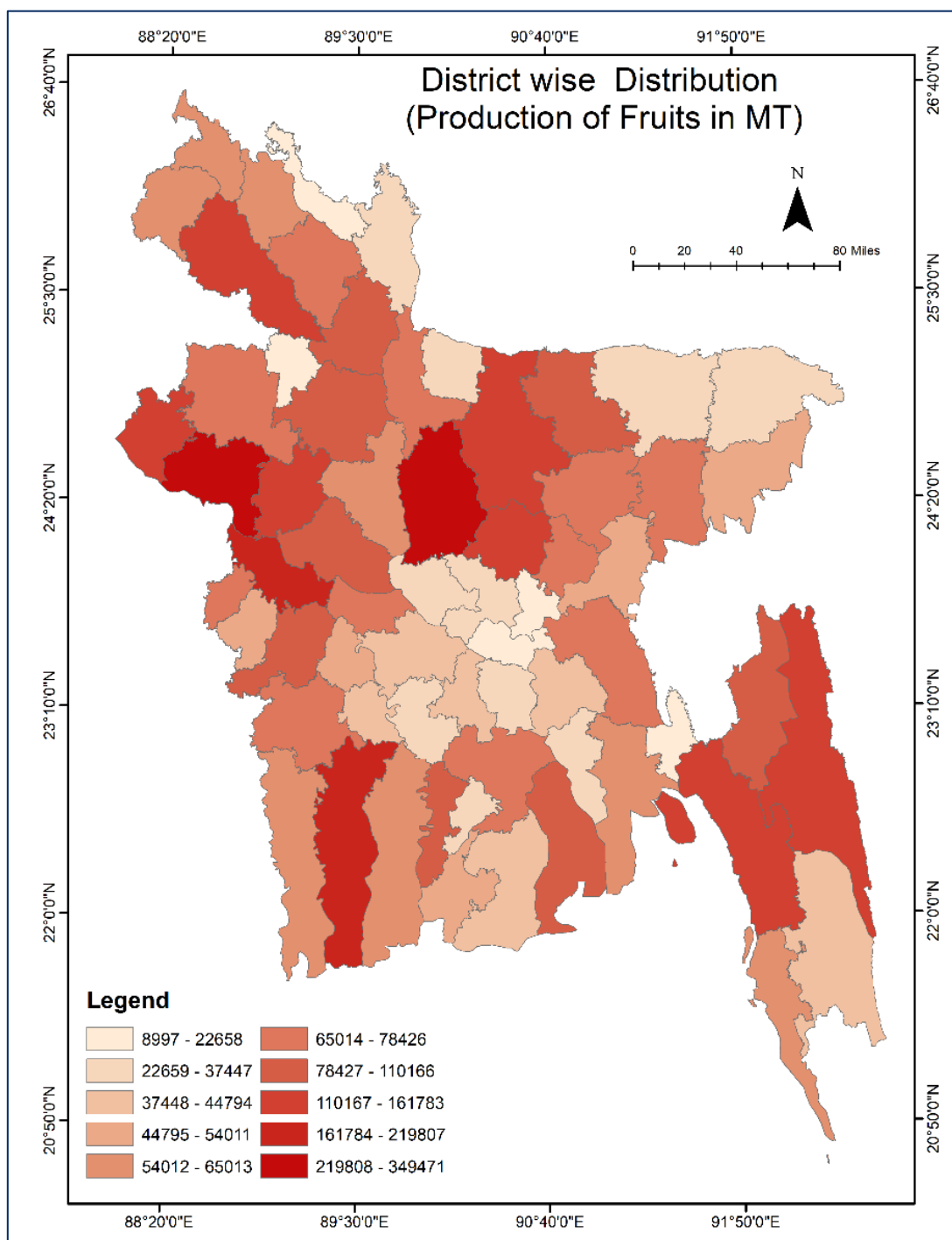


*Data source: LGED (Local Government Engineering Department, 2018)*

- **Production of fruits and vegetables:**

The main economic activity in Bangladesh is still agriculture, which is the main economic activity of the country. When it comes to the production of foods, it is evident that a chiller chamber is required for the transport of products.

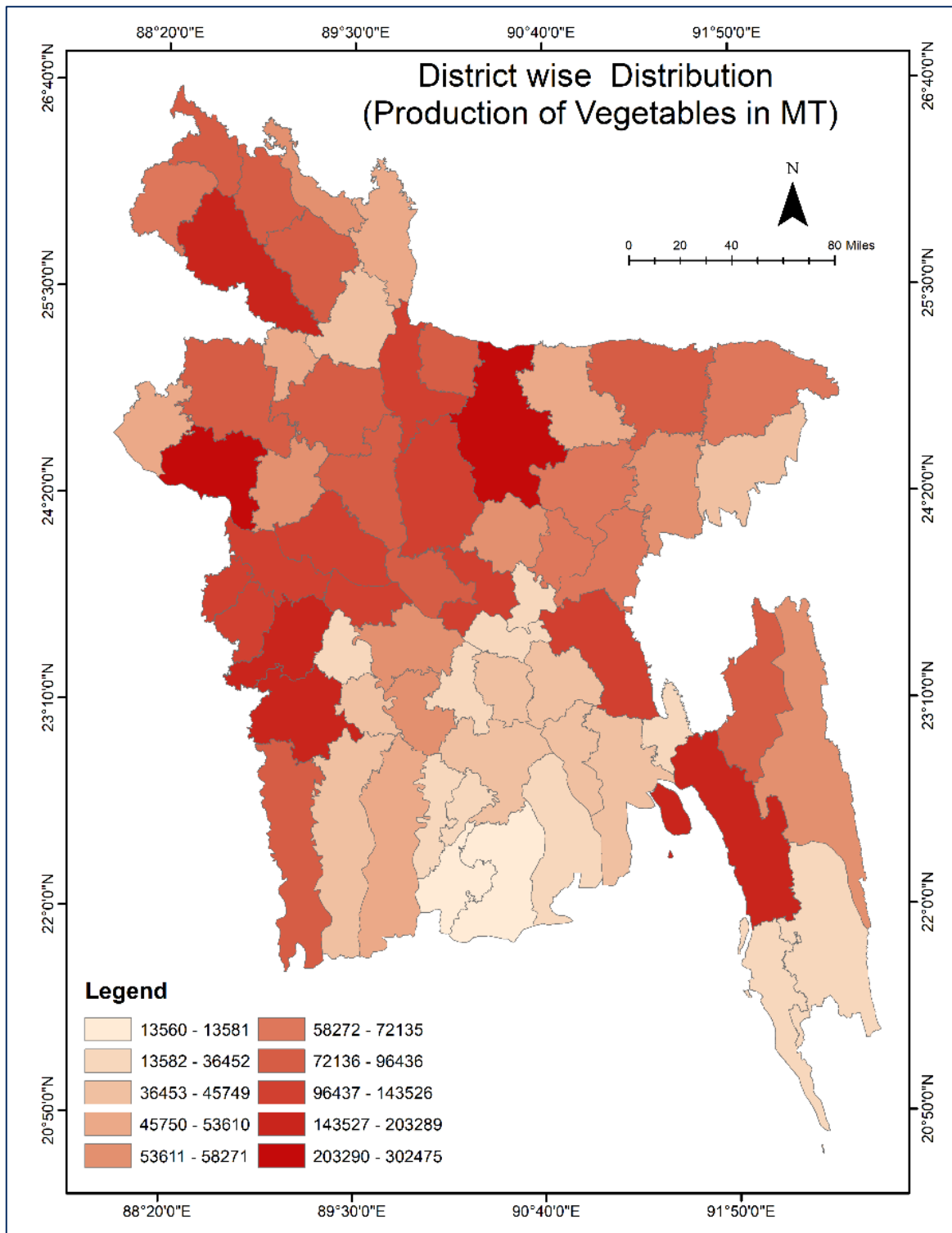
**Figure 12: District-wise production of fruits in metric ton**



Data source BBS (Bangladesh Bureau of Statistics)



**Figure 13: District-wise vegetable production in metric tones**



Data source BBS (Bangladesh Bureau of Statistics)

### 4.1.2 Setting evaluation criteria

In setting the evaluation criteria, the study team adopted a quantitative index that enables Objective evaluation as much as possible. There are three evaluation methods: suitability high (5 points), suitability moderate (3 points), and suitability low (1 point)

*Table 4: Evaluation criteria for suitability analysis*

Perspective	Item	Evaluation criteria		
		Suitability Low (1 point)	Suitability Fair (3 points)	Suitability High (5 points)
<b>Parcel volume</b>	Parcel movement volume assessment	<2000000	2000000 to 4500000	>4500000
<b>Existing Infrastructure</b>	Existing infrastructure for Bangladesh post office for mail and parcel sorting	No	-	Yes
<b>Social activity</b>	Population	<1600000	2900000 to 1600000	>3000000
	Poverty index/ poverty rate	>20%	20% to 13%	<13%
	Population age density	<25%	25% to 45%	>45%
<b>Economic activity</b>	Income indicator Gini co-efficient	>0.4	0.3 to 0.4	0 to 0.3
	Consumption indicator Gini co-efficient	>0.4	0.3 to 0.4	0 to 0.3
	Monthly household expenditure	<15000 (BDT)	15000 to 20000 (BDT)	>20000 (BDT)
	Monthly household consumption	<15000 (BDT)	15000 to 20000 (BDT)	>20000 (BDT)
	Transportation facility	<6000 km	6000km to 7200km	>7200km
	Number of Growth centers	<30	30 to 50	>50
<b>Agricultural activity</b>	Production of fruits	<60000 (MT)	60000 to 9000 (MT)	> 90000 (MT)
	Production of vegetables	< 50000 (MT)	90000 to 50000 (MT)	>90000 (MT)

### 4.1.3 Setting of weight on evaluation item (point allocation)

When setting the weights (point allocation) of evaluation items, the study team adopted AHP in order to ensure fairness, transparency, rationality, etc. AHP is an analytical hierarchy process (AHP), which is a process of making decisions by structuring the mechanism of comprehensive Hierarchical structure of human judgment and evaluation.

Value	Significance
5	The item on the left is more important than the item above
3	The item on the left is slightly more important than the item above
1	The item on the left is as important as the item above
0.3	The item on the left is slightly less important than the item above
0.2	The item on the left is less important than the item above

\* 0.3 in the table represents  $1/3 = 0.333\dots$

		Parcel movement volume assessment	Existing infrastructure for sorting	Population	Poverty index/ poverty rate	Population age density	Income indicator Gini co-efficient	Consumption indicator Gini co-efficient	Monthly household expenditure	Transportation facility	Number of Growth centers	Production of fruits	Production of vegetables	Weight (before adjustment)	Weight
Parcel volume	Parcel movement volume assessment	1	3	3	3	3	3	3	5	1	1	5	5	2.59	3.51
Infrastructure	Existing infrastructure for sorting	0.3	1	3	5	5	5	5	5	1	1	5	5	2.53	3.44
Social activity	Population	0.3	0.3	1	0.3	0.2	1	3	0.3	0.3	0.3	3	3	0.63	0.85
	Poverty index/ poverty rate	0.3	0.2	3	1	0.3	0.2	0.3	0.3	0.2	0.2	3	3	0.52	0.70
	Population age density	0.3	0.3	5	3	1	1	1	0.3	0.2	0.2	3	5	0.89	1.20
Economic activity	Income indicator Gini co-efficient	0.3	0.2	1	3	3	1	1	0.3	0.3	0.2	3	3	0.82	1.11
	Consumption indicator Gini co-efficient	0.3	0.2	1	3	1	0.3	1	0.3	0.3	0.2	1	1	0.56	0.76
	Monthly household expenditure	0.2	0.2	3	5	3	1	3	1	0.3	1	3	3	1.25	1.69
	Transportation facility	1	1	3	5	3	3	3	3	1	1	5	5	2.36	3.20
	Number of Growth centers	1	1	3	3	3	1	3	3	1	1	5	5	2.07	2.80
Agricultural activity	Production of fruits	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	1	1	0.27	0.37
	Production of vegetables	0.2	0.2	0.2	0.3	0.2	0.2	0.2	0.2	0.2	0.2	1	1	0.27	0.37

14.76 ⇒ 20.00

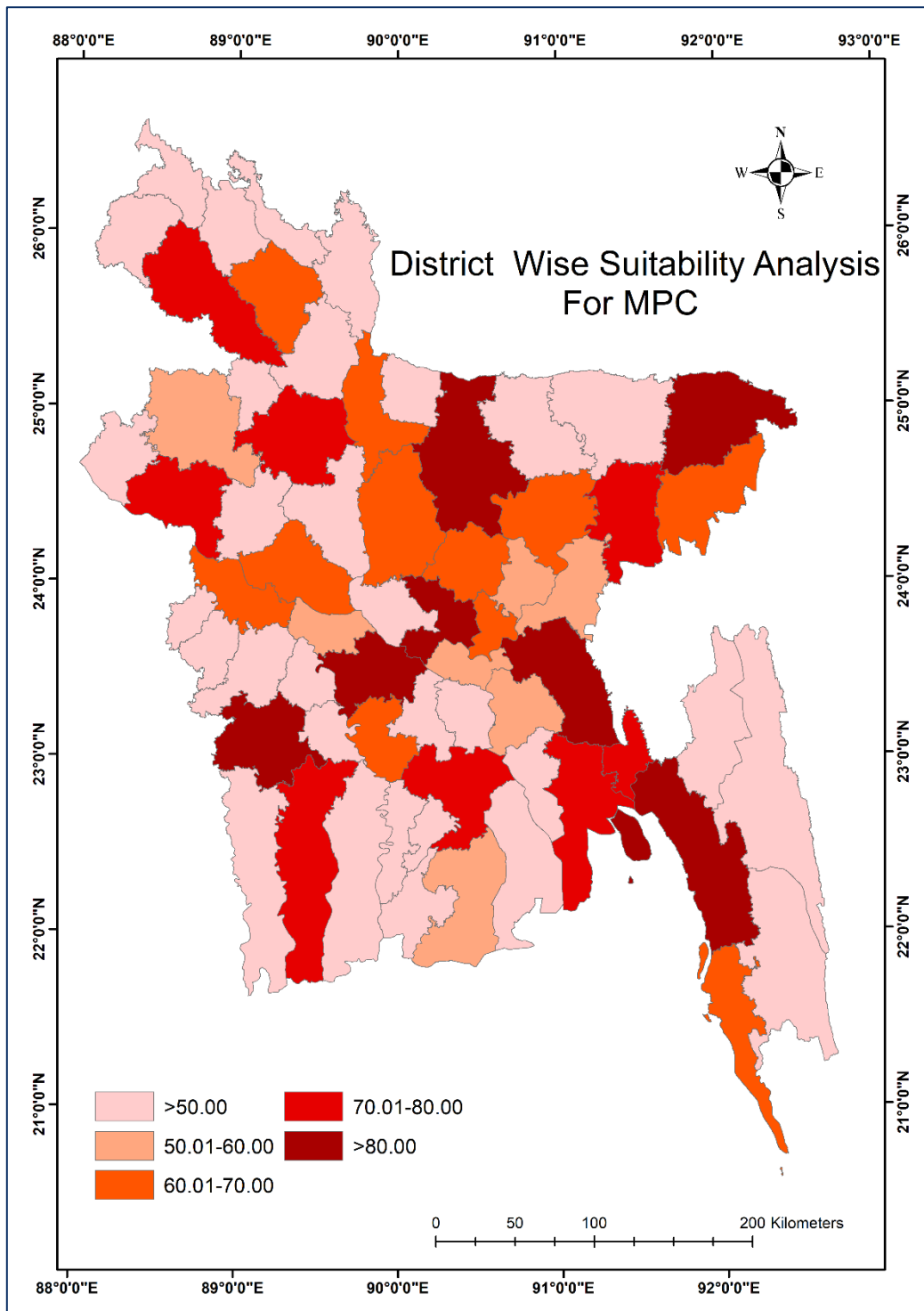
#### 4.1.4 Evaluation result:

After putting each score and multiplying the score of each item (Max 5 points for each criterion (3 ratings of 1 point, 3 points, 5 points)) by the weighting points (20 points in total), the total points (Max 100 points) for each candidate project site were calculated. The result of the secondary evaluation based on this methodology is shown in Table.

**Table 5: District-wise priority/suitability assessment**

SL no	District	Score	Suitability	SL no	District	Score	Suitability
1	DHAKA	96.3	Very high suitable	33	CHANDPUR	50.32	Low suitable
2	CHITTAGONG	89.78	Very high suitable	34	SIRAJGANJ	50	Low suitable
3	SYLHET	89.42	Very high suitable	35	NATORE	49.58	Less suitable
4	MYMENSINGH	86.4	Very high suitable	36	BAGERHAT	48.38	Less suitable
5	FARIDPUR	84.7	Very high suitable	37	JHENAI DAH	48.1	Less suitable
6	COMILLA	84.24	Very high suitable	38	MANIKGANJ	48.1	Less suitable
7	JESSORE	82.46	Very high suitable	39	SATKHIRA	47.56	Less suitable
8	BOGRA	78.86	High suitable	40	BHOLA	46.8	Less suitable
9	KHULNA	78.62	High suitable	41	LALMONIRHAT	46.34	Less suitable
10	NOAKHALI	77.62	High suitable	42	GAIBANDHA	45.5	Less suitable
11	DINAJPUR	75.06	High suitable	43	SUNAMGANJ	45.28	Less suitable
12	RAJSHAHI	74.48	High suitable	44	MADARIPUR	45.04	Less suitable
13	FENI	72.5	High suitable	45	NETROKONA	44.24	Less suitable
14	HABIGANJ	70.6	High suitable	46	CHUADANGA	43.4	Less suitable
15	BARISAL	70.32	High suitable	47	PANCHAGARH	42.82	Less suitable
16	TANGAIL	69.88	Moderately suitable	48	RANGAMATI	42.46	Less suitable
17	KISHOREGANJ	69.5	Moderately suitable	49	NILPHAMARI	42.08	Less suitable
18	GAZIPUR	68.7	Moderately suitable	50	SHARIATPUR	41.66	Less suitable
19	GOPALGANJ	68.46	Moderately suitable	51	JHALOKATI	41.04	Less suitable
20	RANGPUR	67.98	Moderately suitable	52	LAKSHMIPUR	39.94	Less suitable
21	NARAYANGANJ	67.64	Moderately suitable	53	KURIGRAM	39.88	Less suitable
22	PABNA	65.88	Moderately suitable	54	THAKURGAON	39.6	Less suitable
23	MAULVIBAZAR	65.76	Moderately suitable	55	KHAGRACHHARI	38.94	Less suitable
24	COX'S BAZAR	64.34	Moderately suitable	56	MEHERPUR	37.74	Less suitable
25	JAMALPUR	61.52	Moderately suitable	57	JOYPURHAT	37.04	Less suitable
26	KUSHTIA	60.34	Moderately suitable	58	BARGUNA	36.86	Less suitable
27	BRAHMANBARIA	57.54	Low suitable	59	NARAIL	36.86	Less suitable
28	NARSINGDI	56.48	Low suitable	60	BANDARBAN	36.72	Less suitable
29	MUNSHIGANJ	55.54	Low suitable	61	MAGURA	36.72	Less suitable
30	RAJBARI	54.72	Low suitable	62	NAWABGANJ	34.24	Less suitable
31	NAOGAON	53.78	Low suitable	63	SHERPUR	32.58	Less suitable
32	PATUAKHALI	52.56	Low suitable	64	PIROJPUR	32.46	Less suitable

**Figure 14: District-wise suitability analysis for MPC (mail Processing center)**



*Data source: Study findings by the study team*

The figure displayed above depicts the suitability mapping for the establishment of an MPC up to the district level. The scalability of the districts has been divided into five major parts. The districts that are classified as very highly suitable represent over 80% of the area's suitability for the MPC. The districts classified as highly suitable represent between 70 to 80%

of the area's suitability. The districts classified as moderately suitable and low suitable represent 60 to 70% and 50 to 60% of the area's suitability, respectively. Districts that represent less than 50% suitability have been deemed less suitable for the development of an MPC in the present context. This information can be used to guide the decision-making process for MPC establishment.

**Table 6: Scalability of suitability range with major division**

Range	Major class
More than 80%	Very high suitability
70% to 80%	High suitable
60% to 70%	Moderately suitable
50% to 60%	Low suitable
Less than 50%	Less suitable

In the analysis, the suitability of the existing 26 sorting centers of the Bangladesh Post Office was assessed. 14 of these centers were found to be equipped with chiller chambers and updated accordingly, while the remaining 12 were traditional sorting centers. Among the 14 MPC (mail processing center with chiller chamber and updated facilities) locations, 3 were installed in very highly suitable areas in terms of district-wise assessment, and 3 were installed in highly suitable locations. 6 were installed in moderately suitable locations, and 2 were installed in low-suitable areas. Within the 12 traditional sorting centers, 2 were installed in highly suitable locations, 1 was placed in highly suitable locations, 6 were placed in moderately suitable locations, and 2 and 1 were placed in less and low-suited areas, respectively.

Based on the evaluation criteria used, the Bangladesh Post Office can focus its efforts on the 4 traditional sorting centers that are already installed in very high and highly suitable areas for further development as an initial step. Subsequently, the organization can concentrate on other high-potential areas where the development of new MPCs can be a feasible solution. However, before doing so, an in-depth feasibility study will be necessary for each individual site, based on updated and available data sources during that timeframe

**Table 7: Suitability assessment of Existing MPCs with chiller chamber and other updated facilities.**

District location of Existing MPC (mail processing center)	Suitability Score	Suitability Ranking
BARISAL	70.30	High suitable
CHATTAGRAM	89.78	Very highly suitable
DHAKA	96.3	Very highly suitable
DINAJPUR	75.06	High suitable
GOPALGANJ	68.46	Moderately suitable
JESSORE	82.46	Very high suitable
KHULNA	78.62	Highly suitable

KUSHTIA	60.34	Moderately suitable
MYMENSINGH	86.40	Very highly suitable
NOAKHALI	77.62	Highly suitable
PABNA	65.88	Moderately suitable
RAJSHAHI	74.48	High suitable
RANGPUR	67.98	Moderately suitable
HOBIGANJ	64.08	Moderately suitable

**Table 8: Suitability assessment of existing mail sorting centers (without chiller chamber and updated facilities).**

District location of Existing mail sorting center	Suitability Score	Suitable ranking
RAJBARI	54.72	Low suitable
BHANGA (FARIDPUR)	84.74	Very high suitable
SANTAHAR (BOGRA)	78.86	High suitable
PARBOTIPUR (DINAJPUR)	75.06	High suitable
LALMONIRHAT	46.34	Less suitable
JAMALPUR	61.62	Moderately suitable
BHAIRAB (KISHORGANJ)	69.50	Moderately suitable
AKHAURA (BRAHMANBARIA)	66.50	Moderately suitable
COMILLA	84.24	Very high suitable
FENI	72.50	High suitable
SYLHET	89.42	Very high suitable
SHAYESTAGANJ (HABIGANJ)	64.08	Moderately suitable

## 4.2 TECHNICAL ANALYSIS AND DESIGN FOR MPC

In order to prepare for future demand, it is recommended that Bangladesh Post upgrade their existing Mail Processing Centers (MPCs) as well as their traditional sorting centers, also known as RMS (Railway Mail Service), to become semi-automated mail processing centers.

This will be based on the priority analysis conducted and the need for increased efficiency in the postal service.

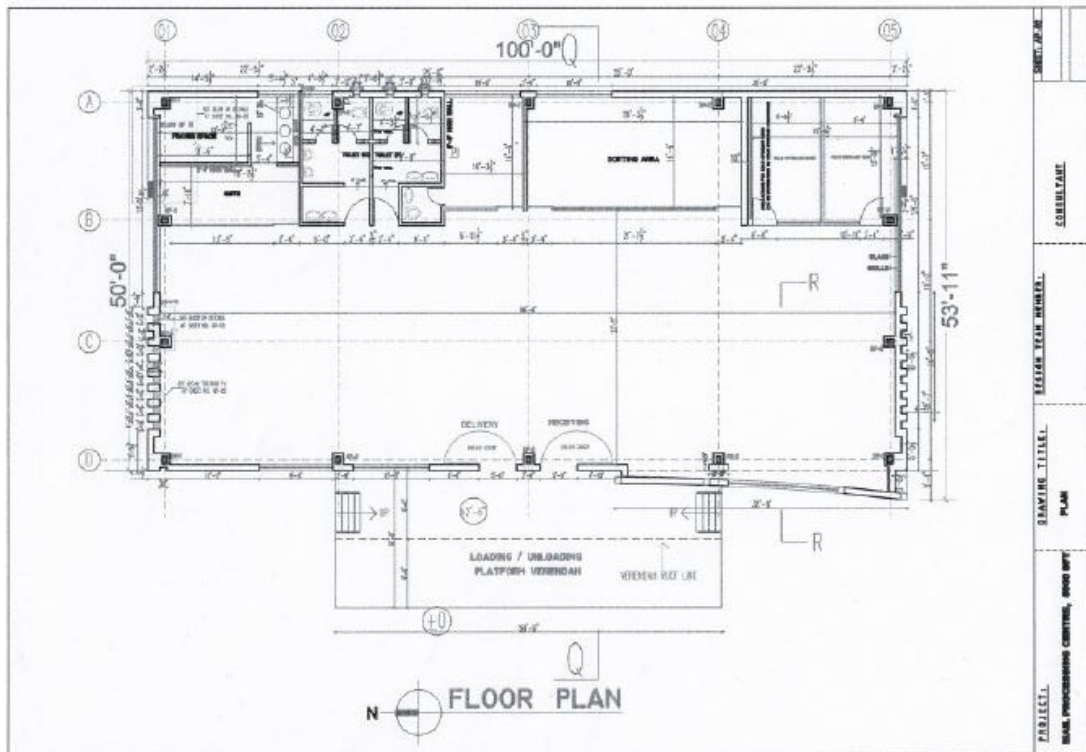
Semi-automated mail processing centers will be designed to streamline the sorting process, reduce errors, and increase the overall speed of delivery. This will not only improve the service provided to customers but also allow Bangladesh Post to handle higher volumes of mail effectively

### 4.2.1 Major components for upgrading existing sorting centers

The study team has conducted an assessment and has recommended the installation of a single flat sorting machine along with a culler canceler machine to enhance the existing sorting facilities. It has been suggested that Bangladesh Post Office should adhere to the guidelines set by the Universal Postal Union (UPU) for the installation of these machineries.

The existing floor design of the Mail Processing Centre (MPC) has been provided and will be taken into consideration during the installation process. It is important to note that the suggested approach aims to improve the efficiency and effectiveness of the sorting process and is expected to positively impact the overall performance of the postal service

**Figure 15: Basic Floor plan for the development of MPC**



### Culler Facer Cancellor

Letters, postcards and other small mail items are culled by dimension, faced and oriented, and their stamps cancelled.

- 30,000 pcs / hour
- Uses Image Capture (OCR), Phosphorescent
- Metered Impression
- Postal Value Recognition

- Usual rejection criteria:**
- - Letters without stamps.
  - - Letters with incomplete addresses.
  - - Letters with insufficient postage.
  - - Damaged envelopes.
  - - Envelopes that are too thick (rarely).
  - - Envelopes with clear tape over the stamps.

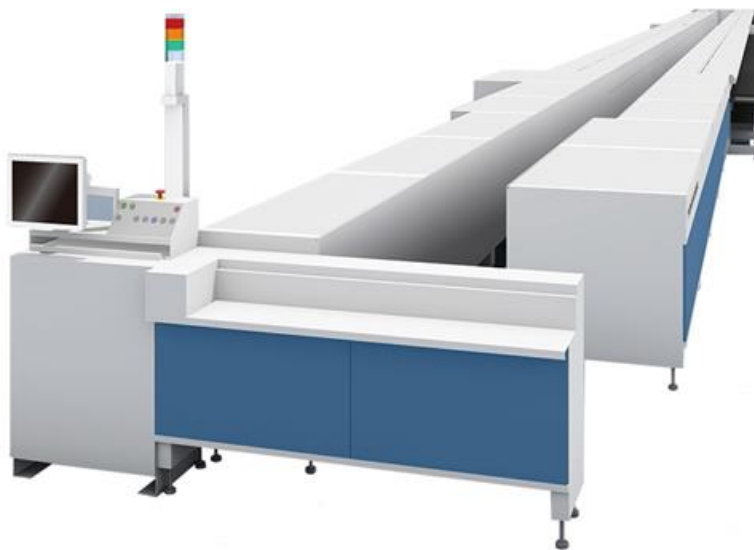




## Flat Sorting System

High speed reading of addresses on large mail, such as magazines and catalogues, and sorting by destination.

- Flats 25,000 pcs / hour
- Uses Image Capture (OCR), Phosphorescent
- Acceptable Mail Size Range:
  - Size: 250 mm x 325 mm
  - Weight: Min 2g - Max 350g
- Can support mixed mail types



## 4.3 LOCATION (SITE SELECTION FOR AMPC)

### 4.3.1 Introduction (Based on site selection)

In 1766, Warren Hastings initiated the country's postal service under the East India Company. It was initially established under the name "Company Mail". Which was later modified into a service under the Crown in 1854 by Lord Dalhousie. In the cycle of time, it has been named Bangladesh post office by gaining independence in 1971. The main services of the Bangladesh post office are to mail letters, Postal Life Insurance (PLI), postcards, parcels, newspapers and periodicals, books, or packets. Generally, delivery takes 2-3 days depending on the distance and communication of the destination. To cope up with the demand of upcoming days, the Bangladesh post office is taking various initiatives towards modernization. With that objective in mind, Bangladesh post office is now focusing on MPC (mail processing centers) and AMPC (Automated mail processing centers) instead of their old RMS (rail mail processing centers). The purpose of this chapter is to discuss potential suitable locations to develop an AMPC and to assess and re-assess the suitability of existing MPCs and those to be developed in the future.

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## 4.3.2 Project site selection methodology

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### 4.3.2.1 Basic policy

The selection policy is based on the "basic policy for selecting suitable sites" as shown below. The study team has decided to set location criteria (safety, Transportation network, economy, and environment) suitable for constructing the AMPC (Automated Mail Processing Center) site, and to proceed with selection works that ensure fairness and transparency.

- **Ensuring safety:**

Ensuring safety is an essential factor in selecting a site for AMPC establishment. A relatively large volume of traffic will be expected and a huge volume of different parcels and documents will be handled there as well. For this purpose, the study team considers fire protection and fighting facilities nearby or within its own premises. The study team also considers a location where safety is ensured against various disasters such as floods and earthquakes.

- **Ensuring a good transportation network:**

The study team ensures a suitable site consisting of good transportation network facilities. AMPC will be the central hub for mail and parcel movement and needs to ensure access to every possible medium of transportation (Air, Water, Rail and by road). The study team considers the country's master plan to align with future Bangladesh and its economy.

- **Ensuring economic efficiency:**

After ensuring safety and a good communication network, the team considers the topographical and geological conditions that match the characteristics of the AMPC site, mail and parcel transportation efficiency and where the economic efficiency will be ensured.

- **Consideration of the environment:**

The team will select a place where the impact of the natural environment, water environment, and living environment in the area can be reduced as much as possible and give thorough consideration to the environment.

- **Ensuring transparency:**

For the selection of suitable sites, hearing from the Bangladesh post office (if the site is owned by BPO) and hearing from the inhabitants, academic experts, and citizens (if the site is not owned by BPO) will be ensured.

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#### 4.3.2.2 Due Consideration

To cater for the successful site selection, as illustrated in RFP documents, we prepared a site selection protocol (SSP), however, examinations of; i) surrounding context, ii) land tenure/ ownership, iii) physical landscape, iv) access to national infrastructure, v) availability to utility services, vi) environmental, and vii) the social settlement, issues, opportunities and constraints were rigorously surveyed. Fatal flaws if any were identified and discussed with the authorities and stakeholders, then such faults would be minimized as far as possible.

The study team made a thorough investigation of the surrounding areas of each potential/ candidate site. The objective was to see possible positive or negative impacts of the sites on the surrounding environment and vice versa. The land ownership of the sites was looked into as this has cost as well as social implications that might impact the development of the site as AMPC. A BPO-owned land is usually a better option for project execution. When the land of the site is owned by numerous private owners, compulsory land acquisition is extremely cumbersome and time-consuming and often delays project execution.

The physical landscape is an important determinant in the choice of the right site. As huge traffic will occur an open space is more preferable. Protection in case of fire hazards is also a significant factor. Flood-free highland comparatively saves the cost of development, rather than marshland.

Access to national infrastructure is also highly required for the successful operation of AMPC. Proximity to the national highway, railway, and waterways would reduce the cost of transportation of mail, intermediate goods, and parcel. The intensity of traffic load on the connecting roads was preliminarily studied, along with the potential increase in traffic which would have a major impact on the collection and transportation of mail and parcel.

The availability of gas, electricity, and water would reduce the cost of the installation of new service lines. The study team assessed the advantages and disadvantages of the sites from accessibility to all these infrastructure and service facilities.

Taking in all the important factors which can affect the development of AMPC, we evaluated critical factors by weighing points. If the prospect of the proposed AMPC site is promising based on the market-driven approach, then, we would be able to select the project site after the preparation of comparative analysis for each site. The study team has detected that there are some defects in each site that need to be improved by additional countermeasures. The result of the site selection study is summarized herein in this report, and then it will be presented at workshop for the steering committee for its decision on site selection for the proposed AMPC.

### 4.3.3 Suitability Analysis for AMPC

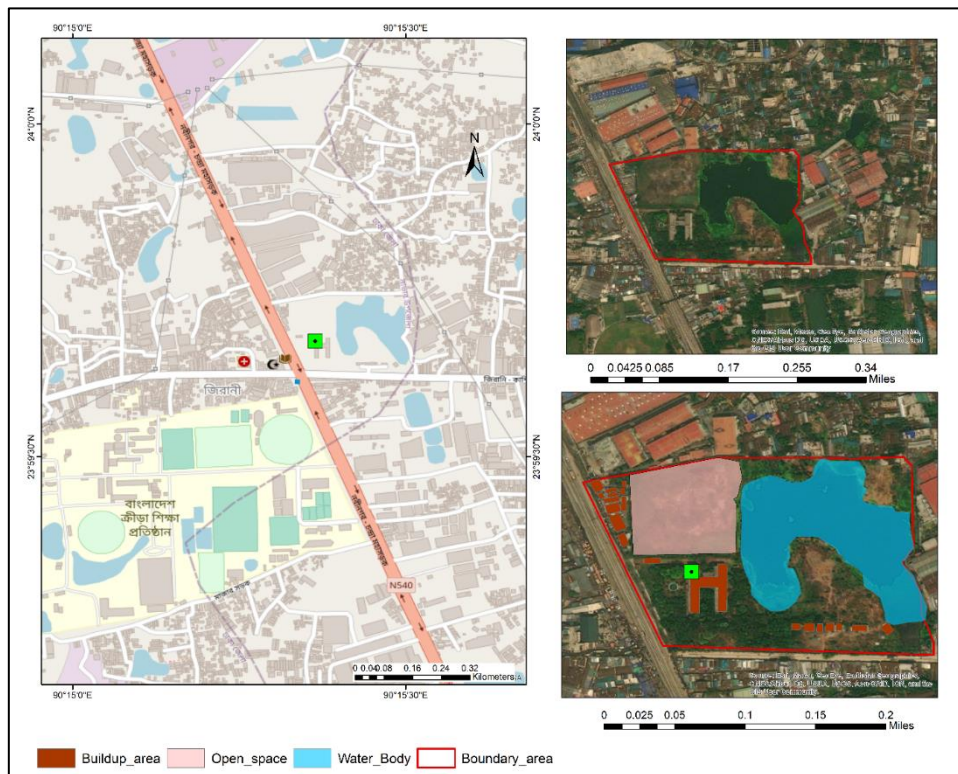
#### 4.3.3.1 Proposed Sites for selection

The study team has selected several candidate sites that are supposed to be suitable as "candidate project sites" with the consultation of Bangladesh post office and decided to select one of the most suitable candidate sites from the total.

As a result of the consultation with the Bangladesh Post Office and information solicitation, the number of applications for the candidate project site of 3 sites were identified.

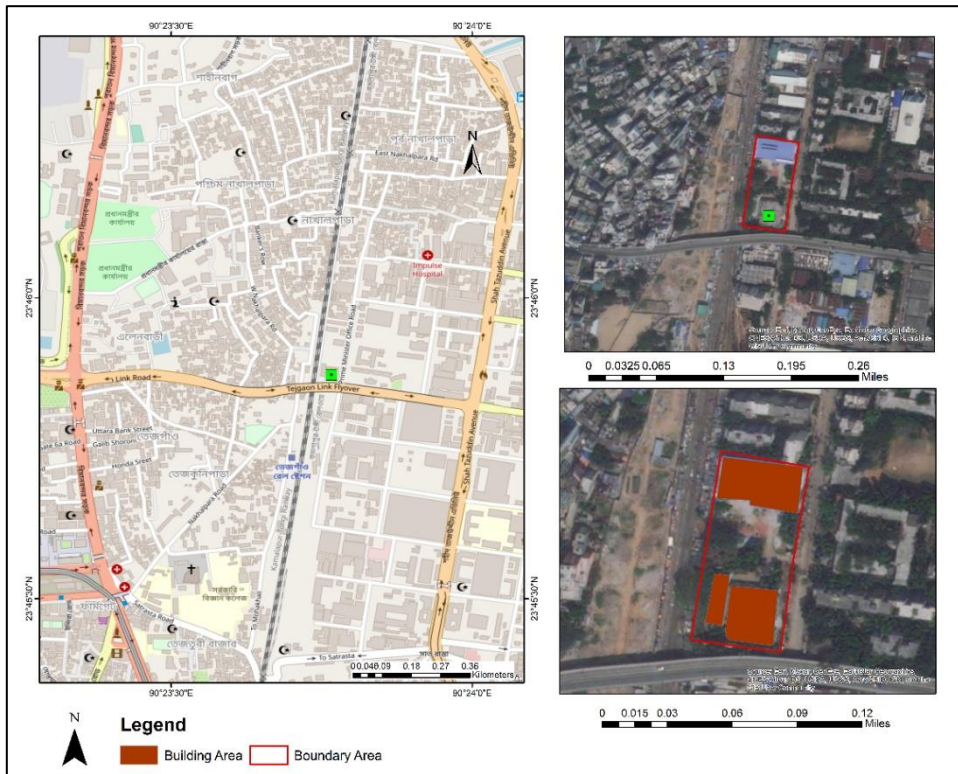
Sl. No	Proposed location	Detail Address
1	Dhaka GPO (General post office)	Paltan, Dhaka Bangladesh
2	Tejgaon mail processing center	Tejgaon, Dhaka.
3	Postal training center	Postal Training Centre (PTC), Zirani Bus Stand, Gazipur-1349.
4	Narayanganj Postal Quarter	Chasara, Narayanganj, Bangladesh

Figure 16: Postal training center, Gazipur (proposed site- 1)



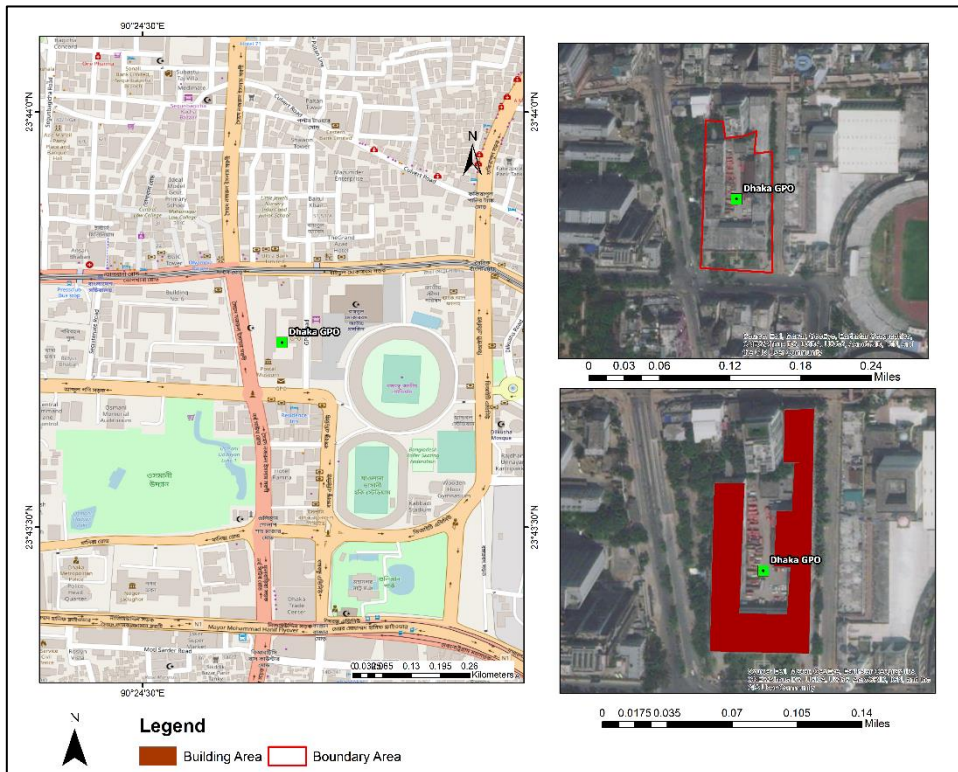
Data source: OSM (Open Street map), Sentinel-2 (Satellite image)

**Figure 17: Proposed location of Tejgaon mail processing center (proposed site-2)**



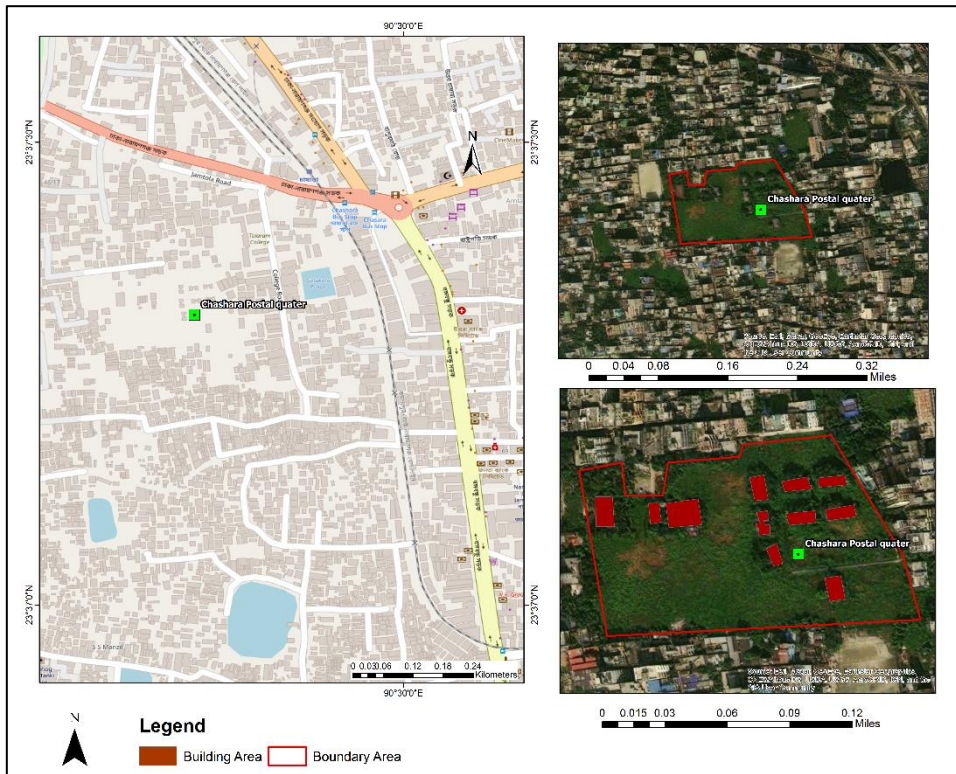
*Data source: OSM (Open Street map), Sentinel-2 (Satellite image)*

**Figure 18: Dhaka GPO, Paltan, Dhaka (proposed site- 3)**



*Data source: OSM (Open Street map), Sentinel-2 (Satellite image)*

**Figure 19: Narayanganj postal quarter, Chashara, Narayanganj (proposed site-4)**



*Data source: OSM (Open Street map), Sentinel-2 (Satellite image)*

#### 4.3.3.2 Selection protocol of the candidate project site

- Primary evaluation:**  
 Areas where the structured establishment and development are restricted by laws, and regulations, areas that are considered unsuitable for construction, and areas that are considered desirable to be excluded from the basic policy for selecting suitable sites were excluded.
- Secondary evaluation:**  
 For candidate project sites that were not excluded in the primary evaluation, the study team evaluated them from the viewpoints of location characteristics, living environment, natural environment, and disaster risk, and selected candidate project sites that are highly suitable for the construction of the AMPC.
- Tertiary evaluation:**  
 The study team evaluated the candidate project sites selected in the secondary selection from the viewpoint of local intentions and economic efficiency. The local intentions will be evaluated by holding an opinion exchange meeting with the local residents, BPO officials and other stakeholders. A comprehensive evaluation will be conducted by adding

the results of the secondary selection and tertiary evaluation of those evaluation results, and the project site will be selected.

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#### 4.3.3.3 Field Survey

From the viewpoints of site quality, surrounding environment, land use, and risk, the study team conducted a field survey of the candidate project sites and then prepared the mapping information.

- **Physio-geographical information**

To cater to the assessment criteria on i) availability of required land, ii) accessibility/ connectivity of the site from the contributing hubs, and iii) land characteristics, practical data collection of the physio-geography for identification of the most suitable site for the proposed AMPC has been conducted through field visits, physical surveys and from secondary source collection like through literature research and interviewing. The major data/ information/ maps that have been collected in this regard for our assessment include a) flood map, b) geologic and seismic data, c) climatic condition and air quality and e) transformation and country's master plan.

- **Economic industry and market information**

In addition to physio-geographic information, economic information for identification of potential/ candidate sites in terms of; a) volume of articles generated from the hubs to be handled at the AMPC, b) availability of utility services, and c) service price factors are collected as equivalently important for the selection of suitable sites.

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#### 4.3.3.4 Primary evaluation

In the primary evaluation, among the items surveyed in the previous section (field survey), the exclusionary criteria which are deemed particularly inappropriate for the development of the AMPC site due to the regulations of related laws and regulations such as land use planning, environmental conservation, cultural property protection, disaster prevention, etc. are considered. In this line, areas, where the location should be avoided, have been set as excluded areas. The criteria are classified into zoning. The natural environment, cultural properties, natural disasters, and economic aspects, and are shown in the Table together with the relevant laws and regulations that form the basis.

As a result of confirming the positional relationship between these exclusionary criteria and the two candidate project sites, none of the candidate sites corresponded to the excluded areas, and all the candidate sites were evaluated as "conforming". The result of the primary evaluation is shown in Table.

### 4.3.3.5 Secondary evaluation

- Outline of the secondary evaluation:**  
 In the secondary evaluation, to judge the suitability of the candidate project sites, the study team analyzed the differences in the evaluation results from the survey results in the previous section (field survey) and evaluated the suitability of the sites.
- Secondary evaluation method:**  
 The evaluation method adapted is to calculate the total score after scoring according to the evaluation criteria set for the following evaluation items and then multiplied by the weight (point allocation) according to the significance of the evaluation items.
- Setting evaluation criteria:**  
 In setting the evaluation criteria, the study team adopted a quantitative index that enables objective evaluation as much as possible. There are three evaluation methods: suitability high (5 points), suitability moderate (3 points), and suitability low (1 point).
- Setting of weight on evaluation item (point allocation):**  
 When setting the weights (point allocation) of evaluation items, the study team adopted AHP in order to ensure fairness, transparency, rationality, etc. AHP is an analytic hierarchy process (AHP), which is a process of making decisions by structuring the mechanism of comprehensive human judgment and evaluation into a hierarchical structure. The logic is illustrated in Table
- Secondary evaluation result:**

*Table 9: Evaluation criteria with explanation*

Perspective	Item	Explanation
Site Quality	Weight land/pond/seasonal waterbody inside the project area	Number and scale of obstructed properties, weight land/pond/seasonal water body, and underground buried objects in the candidate site focusing on to avoid pounding problem
	Distance required for new road construction and repair	Distance required for new construction / repair of carry-in road to the candidate site
	Distance from the drain	Distance required for drainage pipeline maintenance from the candidate site
	Land reclamation scale (height difference in the crossing direction) & Availability of parking area	Evaluation of the scale of land reclamation by the height difference in the crossing-cutting section (the more moderate plain topography, the smaller the scale of land reclamation) on the other hand availability of parking area is a major concern issue for development of AMPC



Perspective	Item	Explanation
	Distance from nearby city/buildup area	AMPC in the middle of a city can cause extra traffic volume in the road. To avoid this problem outside of a city is more preferable but a far from the city area is not suitable for AMPC
	Number of owners	Number of land owners included in the candidate site
	Status of securing flat land (use of former site)	Use of flat land (gradient 0%)
<b>Surrounding environment</b>	Distance from drinking water source	Existence of a water source within 500m of the candidate site
	Distance from electricity source	Existence of an electricity source within 500m of the candidate site
	Width of the existing road	Width of the existing road will affect the transportation facilities
	Distance of the U-turn from the proposed project site	If the existing approach has divider then the distance of the U-turn will effect on transport facility
	Agricultural land collectiveness	Whether or not there is a possibility that conditions will be set for the use of agricultural land due to the agricultural promotion method (inhibition of the collective nature of agricultural land)
<b>Natural environment</b>	Protection forest	Presence or absence of protection forest
	Wildlife Sanctuary	Whether or not it is a wildlife sanctuary
	Vegetation naturalness	Rank of vegetation naturalness in the candidate site
<b>Hazard</b>	Fire protection facilities and evacuation route	The existence of alternative exit points and road can reduce damage during fire hazard
	Riverbank erosion/embankment collapse danger area	Whether or not there is a collapsed sediment outflow danger zone
	Flood danger area	Whether or not there is a flood danger zone
	Soft ground	Applicability of soft ground and proximity situation

**Table 10: Setting up weightage of evaluation criteria**

Perspective	Item	Evaluation criteria		
		Suitability Low (1 point)	Suitability Fair (3 points)	Suitability High (5 points)
<b>Site Quality</b>	Weight land/pond/seasonal waterbody inside the project area	Yes	Closely	No
	Distance required for new road construction and repair	More than 501m	101~500m	0~100m
	Distance from the drain	More than 500m	499~200m	0~199m
	Land reclamation scale (height difference in the crossing direction) &	Large	Medium	Small

Perspective	Item	Evaluation criteria		
		Suitability Low (1 point)	Suitability Fair (3 points)	Suitability High (5 points)
	Availability of parking area			
	Distance from nearby city/buildup area	Driving distance more than 1 hour	Driving distance within 1 hour to 30 minutes	Driving distance less than 30 minutes
	Number of owners	26 people/organizations or more	11~25 people/organizations	1~10 people/organizations
	Status of securing flat land (use of former site)	20,001ft <sup>2</sup> or more	1-20,000 ft <sup>2</sup>	0 ft <sup>2</sup>
<b>Surrounding environment</b>	Distance from drinking water source	No	-	Yes
	Distance from electricity source	No	-	Yes
	Width of the existing road	Less than 20 m	Two-way road without divider	Two-way road with divider
	Distance of the U-turn from the proposed project site	More than 500m	499~200m	0~199m
	Agricultural land collectiveness	High probability	-	Low probability
<b>Natural environment</b>	Protection forest	Yes	-	No
	Wildlife Sanctuary	Yes	-	No
	Vegetation naturalness	Vegetation naturalness 7-10	Vegetation naturalness 4-6	Vegetation naturalness 1-3
<b>Hazard</b>	Fire protection facilities and evacuation route	No	-	Yes
	Riverbank erosion / embankment collapse danger area	Yes	-	No
	Flood danger area	Yes	-	No
	Soft ground	Yes	Close by	No

**Table 11: Suitability matrix for AMPC site selection**

		Weight	Weight (before adjustment)	Weight																		
	Soft ground	0.3	0.3	1.25																		
	Flood danger area	0.3	0.3	1.25																		
	Riverbank erosion / embankment collapse danger area	1	0.3	1.25																		
	Fire protection facilities and evacuation route	3	0.3	1.25																		
	Vegetation naturalness	5	0.3	1.25																		
	Wildlife Sanctuary	1	0.3	1.25																		
	Protection forest	1	0.3	1.25																		
	Agricultural land collectiveness	1	0.3	1.25																		
	Distance of the U-turn from the proposed project site	3	0.3	1.25																		
	Width of the existing road	3	0.3	1.25																		
	Distance from electricity source	5	0.3	1.25																		
	Distance from drinking water source	5	0.3	1.25																		
	Status of securing flat land (use of former site)	3	0.3	1.25																		
	Number of owners	3	0.3	1.25																		
	Distance from the nearby city	3	0.3	1.25																		
	Land reclamation scale (height difference in the crossing direction)	0.3	0.3	1.25																		
	Distance from the drain	3	0.3	1.25																		
	Distance required for new road construction and repair	1	0.3	1.25																		
	Weight land/pond/seasonal waterbody inside the project area	1	0.3	1.25																		
Site Quality	Weight land/pond/seasonal waterbody inside the project area	1	1	3	0.3	0.3	0.3	3	5	5	3	3	1	1	1	5	3	1	0.3	0.3	1.25	<b>1.49</b>
	Distance required for new road construction and repair	1	1	5	1	0.3	3	3	3	3	1	3	3	3	3	3	1	0.2	0.2	3	1.54	<b>1.83</b>
	Distance from the drain	0.2	0.2	1	0.2	0.2	0.2	0.2	0.3	0.3	0.3	0.2	1	0.3	0.3	3	0.3	1	0.2	1	0.37	<b>0.44</b>
	Land reclamation scale (height difference in the crossing direction)	3	1	5	1	3	1	1	3	3	1	3	3	0.3	0.3	3	3	0.2	0.2	1	1.29	<b>1.53</b>
	Distance from the nearby city	3	1	5	1	1	3	3	3	3	0.3	3	3	0.3	0.3	3	3	3	3	0.3	1.60	<b>1.90</b>
	Number of owners	0.3	0.3	3	0.3	0.3	1	3	3	3	1	3	3	0.3	0.3	3	0.3	0.2	0.2	0.3	0.76	<b>0.91</b>
	Status of securing flat land (use of former site)	0.2	0.3	3	0.3	0.3	0.3	1	3	3	0.3	0.3	1	0.2	0.2	1	0.2	0.2	0.2	0.3	0.46	<b>0.55</b>
	Distance from drinking water source	0.3	0.2	1	0.2	0.2	0.3	0.3	1	1	0.3	0.3	1	0.3	0.3	1	0.3	0.3	0.3	1	0.41	<b>0.49</b>
	Distance from electricity source	0.2	0.2	1	0.2	0.2	0.2	0.3	1	1	0.3	1	3	1	1	5	1	1	1	3	0.70	<b>0.84</b>
Surrounding environment	Distance from drinking water source	0.3	0.2	1	0.2	0.2	0.3	0.3	1	1	0.3	0.3	1	0.3	0.3	1	0.3	0.3	0.3	1	0.41	<b>0.49</b>
	Distance from electricity source	0.2	0.2	1	0.2	0.2	0.2	0.3	1	1	0.3	1	3	1	1	5	1	1	1	3	0.70	<b>0.84</b>

		Weight																				Weight (before adjustment)	Weight
	Wigth of the existing road	3	1	3	1	0.3	1	3	3	3	1	3	3	0.3	0.3	3	0.3	0.3	0.3	1	1.09	<b>1.29</b>	
	Distance of the U-turn from the proposed project site	0.3	0.3	1	0.3	0.2	0.2	3	3	3	1	1	3	0.3	0.3	3	0.3	0.3	0.3	1	0.68	<b>0.81</b>	
	Agricultural land collectiveness	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	1	0.2	0.2	1	0.2	0.2	0.2	0.3	0.30	<b>0.36</b>	
	Distance of the U-turn from the proposed project site	0.3	0.3	1	0.3	0.2	0.2	3	3	3	1	1	3	0.3	0.3	3	0.3	0.3	0.3	1	0.68	<b>0.81</b>	
Natural environment	Protection forest	1	0.3	3	0.3	0.3	3	0.3	1	1	1	3	5	1	1	5	1	3	3	3	1.30	<b>1.55</b>	
	Wildlife Sanctuary	1	1	3	1	0.2	1	1	1	1	1	1	5	1	1	5	0.3	1	3	3	1.22	<b>1.45</b>	
	Vegetation naturalness	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.3	0.3	1	0.2	0.2	1	0.2	0.2	0.2	0.3	0.29	<b>0.34</b>	
Hazard	Fire protection facilities and evacuation route	0.3	0.3	3	1	0.3	0.3	1	3	3	0.3	0.3	5	1	1	5	1	1	3	1.02	<b>1.22</b>		
	Riverbank erosion / embankment collapse danger area	0.3	0.3	3	1	0.3	0.3	1	3	1	0.3	0.3	5	0.3	0.3	5	1	1	1	0.80	<b>0.95</b>		
	Flood danger area	1	0.3	3	1	0.3	0.3	5	1	1	3	3	5	1	1	5	1	1	1	5	1.38	<b>1.65</b>	
	Soft ground	0.3	0.3	0.2	0.2	0.3	0.2	0.3	0.3	0.3	0.2	0.2	0.3	0.3	0.3	3	0.3	1	0.2	1	0.34	<b>0.40</b>	
		Total																			16.79	<b>20.00</b>	

<b>*Vegetation Naturalness</b>	
<b>10</b>	Natural vegetation of grassland and moorland.
<b>9</b>	Natural vegetation of forest.
<b>8</b>	Substitutional vegetation close to natural vegetation of forest.
<b>7</b>	Substitutional vegetation of secondary forest.
<b>6</b>	Planted forest.
<b>5</b>	Substitutional vegetation of high profile grassland.
<b>4</b>	Substitutional vegetation of low profile grassland.
<b>3</b>	Fruit orchards, mulberry plantations, tea gardens, and other horticultural areas.
<b>2</b>	Paddies, fields, and other arable land, residential area with abundant trees.
<b>1</b>	Urban land, developed tracts, and other zones where plant life is virtually nonexistent.

<b>Paired comparison table</b>	
<b>Value</b>	<b>Significance</b>
<b>5</b>	The item on the left is more important than the item above
<b>3</b>	The item on the left is slightly more important than the item above
<b>1</b>	The item on the left is as important as the item above
<b>0.3</b>	The item on the left is slightly less important than the item above
<b>0.2</b>	The item on the left is less important than the item above
<b>* 0.3 in the table represents <math>1/3 = 0.333\dots</math></b>	

**Table 12: Site suitability assessment for proposed AMPC (automated mail processing center)**

Perspective	Item	Explanation	Evaluation criteria			Weight	Site -1 (Postal training center Zirani)		Site -2 (Tejgaon MPC)		Site -3 (Dhaka GPO)		Site -4 (Postal colony Narayanganj)	
			Suitability Low ( 1 point)	Suitability Fair (3 points)	Suitability High (5 points)		Rating	Score	Rating	Score	Rating	Score	Rating	Score
Site Quality	Weight land/pond/seasonal waterbody inside the project area	Number and scale of obstructed properties, rivers / waterways, and underground buried objects in the candidate site	High	Medium	Low or No	<b>1.49</b>	1	1.49	5	7.45	5	7.45	5	7.45
	Distance required for new road construction and repair	Distance required for new construction / repair of carry-in road to the candidate site	More than 501m	101~500m	0~100m	<b>1.83</b>	5	9.15	5	9.15	5	9.15	1	1.83
	Distance from the drain	Distance required for drainage pipeline maintenance from the candidate site to the drainage destination river	More than 2,001m	1,001~2,000m	0~1,000m	<b>0.44</b>	5	2.20	5	2.20	5	2.20	3	1.32
	Landreclamation scale (height difference in the crossing direction) & Availability of parking area	Evaluation of the scale of land reclamation by the height difference in the crossing-cutting section (the more moderate plain topography, the smaller the scale of land reclamation) on the other hand availability of parking area is a major concern issue for development of AMPC	Large	Medium	Small	<b>1.53</b>	3	4.59	3	4.59	3	4.59	3	4.59
	Distance from the nearby city	Whether or not there is a possibility that conditions will be set for the use of agricultural land due to the agricultural promotion method (inhibition of the	High probability	-	Low probability	<b>1.9</b>	5	9.50	5	9.50	5	9.50	3	5.7

Perspective	Item	Explanation	Evaluation criteria			Weight	Site -1 (Postal training center Zirani)		Site -2 (Tejgaon MPC)		Site -3 (Dhaka GPO)		Site -4 (Postal colony Narayanganj)	
			Suitability Low (1 point)	Suitability Fair (3 points)	Suitability High (5 points)		Rating	Score	Rating	Score	Rating	Score	Rating	Score
		collective nature of agricultural land)												
	Number of owners	Number of land owners included in the candidate site	26 people or more	11~25 people	1~10 people	<b>0.91</b>	5	4.55	5	4.55	5	4.55	5	4.55
	Status of securing flat land (use of former site)	Use of flat land (gradient 0%)	20,001ft <sup>2</sup> or more	1-20,000ft <sup>2</sup>	0ft <sup>2</sup>	<b>0.55</b>	3	1.65	5	2.75	5	2.75	5	2.75
Surrounding environment	Distance from tap water source	Existence of tap water source within 500m downstream of the candidate site	Yes	-	No	<b>0.49</b>	5	2.45	5	2.45	5	2.45	5	2.45
	Distance from electricity source	Number of houses within 50m of the outer circumference of the candidate site	6 or more	1-5 houses	0	<b>0.84</b>	5	4.20	5	4.20	5	4.20	5	4.2
	Wigth of the existing road	Number of houses within 300m of the outer circumference of the candidate site	Less than 20 m	Two way road without divider	Two way road with divider	<b>1.29</b>	5	6.45	3	3.87	1	1.29	1	1.29
	Distance of the U-turn from the proposed project site	Number and scale of obstacles in widening the carry-in route	Many obstacles	Moderate	No obstacle	<b>0.81</b>	3	2.43	1	0.81	5	4.05	1	0.81
	Agricultural land collectiveness	Applicability of agricultural land area (inside and outside the land improvement area)	Yes, within agricultural land area	Yes, Outside agricultural land area	No	<b>0.36</b>	5	1.80	5	1.80	5	1.80	5	1.8
Natural environment	Protection forest	Presence or absence of protection forest	Yes	-	No	<b>1.55</b>	5	7.75	5	7.75	5	7.75	5	7.75
	Wildlife Sanctuary	Whether or not it is a wildlife sanctuary	Yes	-	No	<b>1.45</b>	5	7.25	5	7.25	5	7.25	5	7.25
	Vegetation naturalness	Rank of vegetation naturalness in the candidate site	Vegetation naturalness 7-10	Vegetation naturalness 4-6	Vegetation naturalness 1-3	<b>0.34</b>	3	1.02	5	1.70	5	1.70	3	1.02
Hazard	Fire protection facilities and evacuation route	If any dangerous area (debris flow) / dangerous mountain stream (debris flow)	Yes	-	No	<b>1.22</b>	5	6.10	5	6.10	5	6.10	3	3.66

Perspective	Item	Explanation	Evaluation criteria			Weight	Site -1 (Postal training center Zirani)		Site -2 (Tejgaon MPC)		Site -3 (Dhaka GPO)		Site -4 (Postal colony Narayanganj)	
			Suitability Low (1 point)	Suitability Fair (3 points)	Suitability High (5 points)		Rating	Score	Rating	Score	Rating	Score	Rating	Score
	Riverbank erosion / embankment collapse danger area	Whether or not there is a collapsed sediment outflow danger zone	Yes	-	No	<b>0.95</b>	5	4.75	5	4.75	5	4.75	5	4.75
	Flood danger area	Whether or not there is a hillside collapse danger zone	Yes	-	No	<b>1.65</b>	5	8.25	5	8.25	5	8.25	5	8.25
	Soft ground	Applicability of soft ground and proximity situation	Yes	Closeby	No	<b>0.40</b>	3	1.20	3	1.20	5	2.00	3	1.2
<b>Total score</b>						<b>20.00</b>	<b>86.78</b>		<b>90.32</b>		<b>91.78</b>		<b>72.62</b>	



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#### **4.3.3.6 Comprehensive evaluation result and conclusion:**

After conducting a comprehensive comparative analysis of the different proposed sites for the development of an automated mail processing center, it has been found that site 2, located in Tejgaon, is the most suitable location. Although the scores of the Postal Training Center and Dhaka GPO are not very far behind, various factors have contributed to the difference in evaluation among them. Bangladesh Post Office can choose any of the proposed sites based on the findings of the analysis.

The results of this analysis will serve as a supportive document for the decision-makers who will ultimately make the final decision on the location of the automated mail processing center. It is hoped that the information and insights gained from this analysis will assist them in making an informed and sound decision that will best serve the needs of the Bangladesh Post Office and its customers.

#### ***Considering the country's master plan and connectivity network:***

The Gazipur Postal Training Center (PTC) boasts of a strategic location in close proximity to Dhaka, providing it with an advantage in terms of priority. This advantageous position eliminates the need for vehicles used in transporting facilities to the northern parts of the country to navigate through the traffic congestion of Dhaka city. Similarly, vehicles from the southern parts of the country can leverage the elevated expressway (which is part of the country's master plan) to circumvent traffic in the city area. This results in reduced transportation costs and travel time.

Tejgaon, on the other hand, is situated in the heart of the capital city, and enjoys closer proximity to the airport and railway station than other locations. Although traffic congestion in Dhaka city may pose a challenge, access to the airport for international mail and the railway is better than other locations.

Dhaka GPO, being located in the southern part of the city, enjoys easy connectivity with this part of the country, thanks to the Padma Multipurpose Bridge and expressway. However, the issue of traffic congestion in Dhaka city needs to be taken into consideration, just as with Tejgaon.

The Narayanganj postal quarter presents a more challenging connectivity issue than the other locations. The construction of a new connectivity road is required to link the area to the highway and provide access to the nearby railway station.

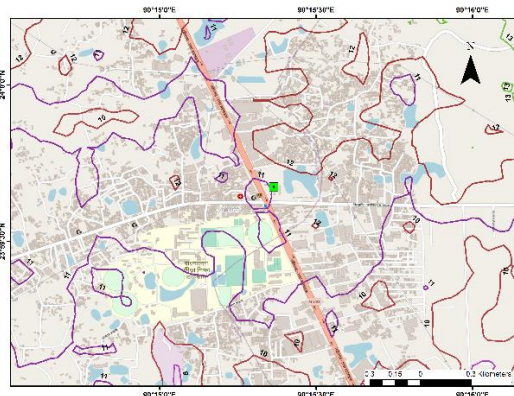
#### ***Land reclamation scale and availability of parking area:***

According to the assessment conducted, it has been found that the mean sea level is higher for Site-1, Site-2, and Site-3, in comparison to the proposed Site-4. To perform this assessment, the SRTM (Shuttle Radar Topography Mission) dataset was utilized.

When it comes to the availability of free land for new infrastructure construction and the development of parking areas, Bangladesh Post Office has more space available for Site-1 and

Site-4. However, for Site-2 and Site-3, Bangladesh Post Office would need to consider clearing some space by adjusting with other existing old infrastructures and parking space. Therefore, when it comes to infrastructure development and parking space,

**Figure 20: Elevation in meters compared to mean sea level**



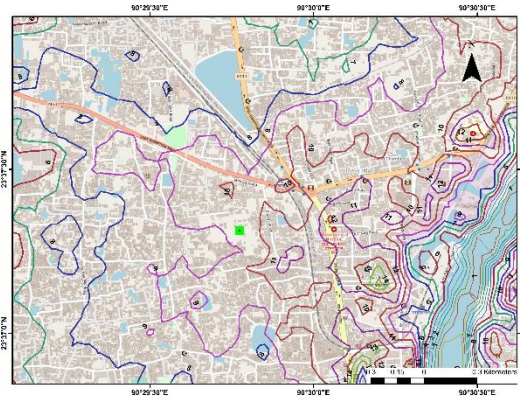
**Proposed site-1**



**Proposed site-2**



**Proposed site-3**



**Proposed site-4**

**Data source: SRTM (Shuttle Radar Topography Mission), ASTER (Advanced Spaceborne Thermal Emission and Reflection Radiometer)**

In terms of parking area, Site-1 is more suitable than others as it has more open space as well as other adjacent areas than can be developed as parking areas if it demands.

**Figure 21: Open space mapping with existing buildup areas(source: Sentinel-2 satellite image)**



Proposed site-1



Proposed site-2



Proposed site-3

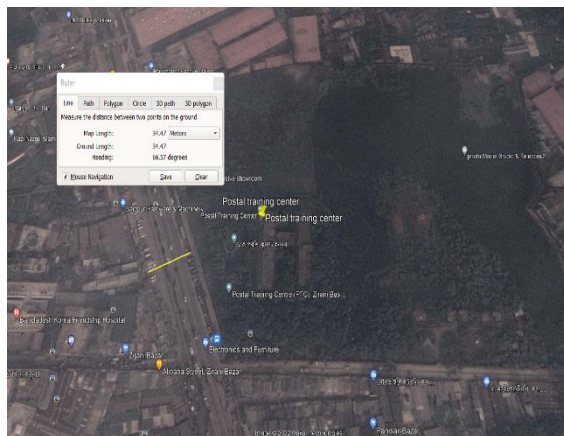
Proposed site-4

Data source: Sentinel-2 satellite image processing and Arc GIS platform

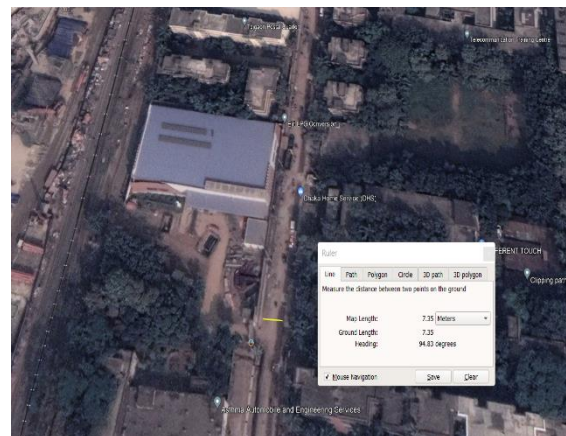
**Status of existing road width:**

Site-1 stands out as the most suitable option for the new infrastructure construction due to its relatively wider road, which decreases the possibility of accidents. The two-way road layout is an added advantage that further enhances its suitability. Site-2, on the other hand, has a one-way road layout but is wide enough to accommodate motor vehicles comfortably. In terms of communication road network, Site-3 enjoys a superior advantage with multiple access points. Site-4, however, presents a challenge with its communication road network, requiring the construction of new connectivity roads. When considering rail connectivity, Site-2 emerges as the most feasible option as it enjoys better rail connectivity than the other sites..

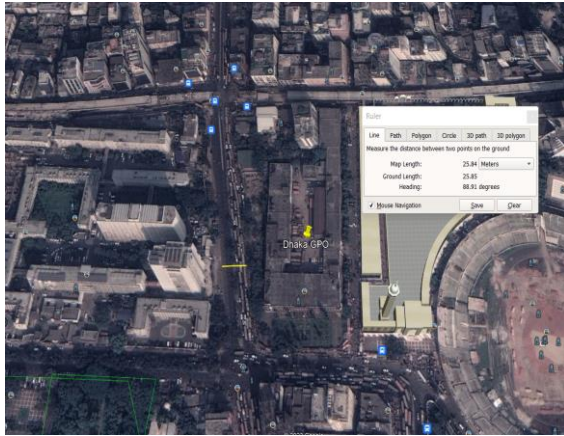
**Figure 22: Existing road width for proposed 3 locations (RGB visual image,GEE)**



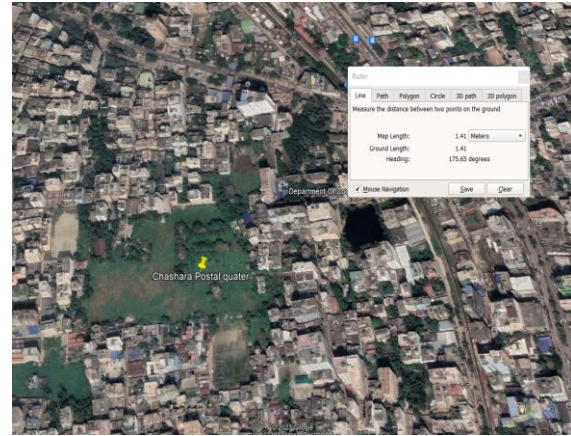
Proposed site-1



Proposed site-2



Proposed site-3



Proposed site-4

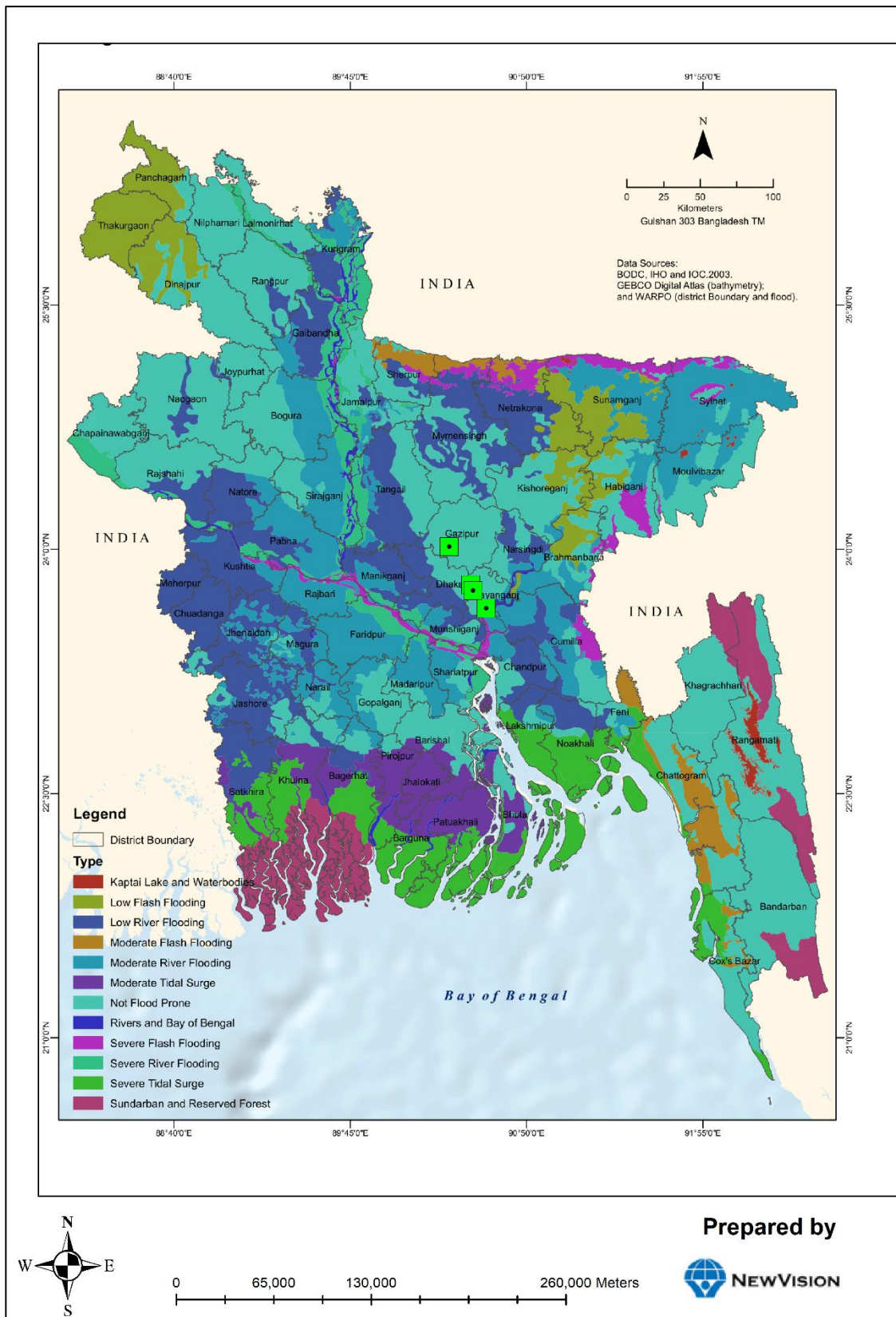
*Data source: Sentinel-2 satellite image processing and Arc GIS platform with GEE (Google earth engine)*

**Fire, River bank erosion and flood risk:**

In terms of fire risk, Site -01 and 3 have alternative access route which increase the alternative options for evacuation as well as the access of the firefighting team in terms of fire hazard and provide an extra advantage in the suitability analysis.

In terms of Flood and riverbank erosion risk, all the locations are in low risk zone. The GPS (geographic positioning system) locations of these three project have been analyzed with the flood risk of Bangladesh to have an idea about the flood risk of those proposed locations.

**Figure 23: Flood risk map of Bangladesh with the GPS locations of three proposed sites**



Data source: WARPO (Water Resources Planning Organization)

### 4.4.1 Understanding of AMPC

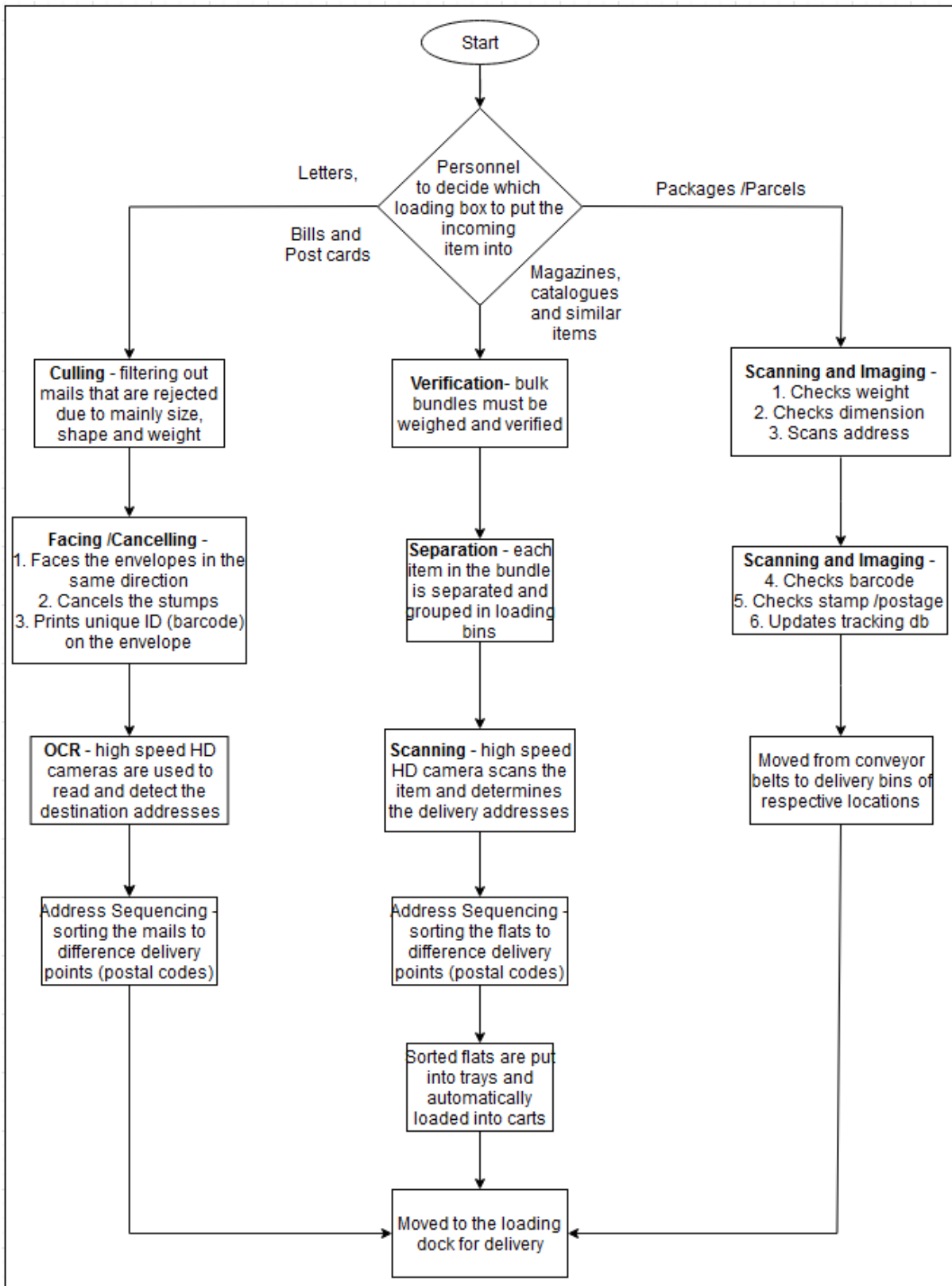
Since the 1950s there has been a marked intensification of research and development efforts to apply technology to the handling of mails, especially in countries faced by manpower problems and higher labor costs. Actual implementation has generally been slower than expected. There have been good reasons for this. Primarily, most postal administrations, being government agencies, are subject to strict control of their capital investment programs. Second, mail traffic patterns—with marked peaks of work—make economic utilization of machines difficult: the introduction of measures to counteract this problem takes considerable time. Similarly, the introduction of postal address codes and the standardization of sizes of envelopes and cards, which are prerequisites for mechanical handling, are relatively slow because of difficulties inherent in the change of procedures.

Postal systems still continue to rely heavily on human labor for bulk materials handling and distribution, both at loading bays and between work processes within sorting centers. New mail sorting and distribution centers, however, are normally built in the style of factories and include all appropriate materials-handling equipment. Equipment used for loading and unloading sacks of mail, rigid containers, and loose parcels includes mobile belt conveyors, roller conveyors, forklift trucks, mobile and fixed cranes, and table lifts. Handling equipment within buildings includes chain conveyors; horizontal and rising belt conveyors of all types, for the transport of loose letters, packets, and trays of letters (notably used for continuous clearance of public posting boxes); tow conveyors, which allow wheeled containers to be hooked onto a fixed-path underfloor traction system; bucket or pan elevators; and chutes and other gravity devices.

The use of a wide range of equipment is necessitated by the varied handling characteristics of different types of mail at particular stages. Buffer-storage facilities, in the form of ramps, hoppers, and moving belts, have to be incorporated to compensate for normal postal traffic fluctuations. The smooth distribution of traffic through the system is often monitored by closed-circuit television, which allows effective centralized control. Automatic regulation and recording, using a variety of sensing and counting devices linked to a computer, are the ideal. Modern systems-engineering techniques are thus able to ensure a carefully planned continuous mechanized mail flow with maximum productivity benefits.

A basic process flow of automatic mail sorting diagram is shown in the next page.

Figure 24: Process flow of AMPC



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#### 4.4.1.1 Major components

Depending on the size and volumes, the design and implementation of automated mail processing centers vary greatly. A basic classification is as follows:

Type	Daily mail volume	# of staffs	Geographical distribution
Small	<1,000	<10	Satellite mail centre
Medium	1,000 – 9,999	10-49	Distribution point
Large	10,000+	50+	Centralized

*Figure 25: Sample floor plan of AMPC*



#### Letter Sorting System

High speed reading of addresses on letters, postcards, bills and sorting by destination.

- Up to 60,000 pcs /hour
- Uses Image Capture (OCR)
- Dimension: 8 feet tall x 4 feet wide x 32 feet long.





## Culler Facer Cancellor

Letters, postcards and other small mail items are culled by dimension, faced and oriented, and their stamps cancelled.

- 30,000 pcs / hour
- Uses Image Capture (OCR), Phosphorescent
- Metered Impression
- Postal Value Recognition

### **Usual rejection criteria:**

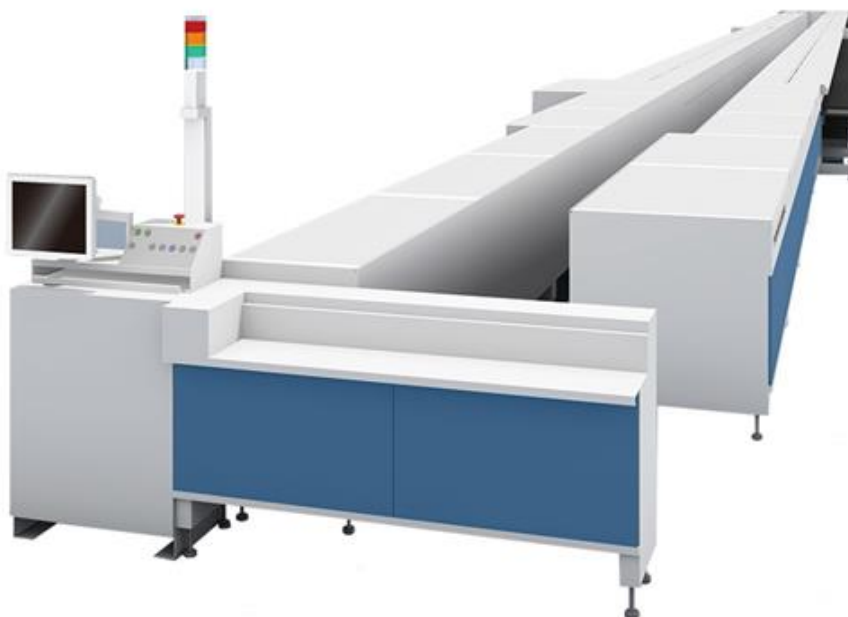
- - Letters without stamps.
- - Letters with incomplete addresses.
- - Letters with insufficient postage.
- - Damaged envelopes.
- - Envelopes that are too thick (rarely).
- - Envelopes with clear tape over the stamps.



## Flat Sorting System

High speed reading of addresses on large mail, such as magazines and catalogues, and sorting by destination.

- Flats 25,000 pcs / hour
- Uses Image Capture (OCR), Phosphorescent
- Acceptable Mail Size Range:
  - Size: 250 mm x 325 mm
  - Weight: Min 2g - Max 350g
- Can support mixed mail types



### **Package /Parcel /Bundle Sorting /Singulator System**

High speed reading of addresses on small parcels and packets, and sorting by destination.

- Modular design supporting up to 50,000+ shipments /hour
- System control and user interface
- Imaging for BCR and/or OCR processing
- Volumetric dimensioning and weighing modules
- Conveyors, safety and electrical controls
- SQL data interface to customer MIS



### **Mail Screening System**

The movement of mail and packages is an important part of an organization's daily operations. Mail centres must have a mail screening facility implemented in order to mitigate the security risk posed by suspicious items and avoid unnecessary disruption of their operations. These items may contain any Chemical, Biological, Radiological, Nuclear, or Explosive Threats (CBRNE). It is suggested that the screening facility should be Isolated and On-Campus if offsite location is not possible. Standard systems of a mail screening facility include:

- X-ray screening room with blast containment precaution
- Monitored closed circuit television (CCTV) cameras
- Visitor and access control system
- Separate inbound and outbound loading docks
- Mail and package quarantine rooms
- Emergency facewash /decontamination facility

- Separate HVAC system with negative pressure facility
- Incident handling procedure specifying alert, evacuation, communication and post-event follow-up processes



## Software Systems

Associated systems include:

- Operations analytics dashboard: enables supervisors to view, monitor and track performance trends
  - Shipment Statistics
  - Bay Statistics
  - Induction Statistics
  - System Utilization Status
  - Feed lane Utilization Status
  - Rejection Statistics
  - Search Shipment
- Management systems to support sustainable management of the sorting system and staffs
  - Predictive maintenance using machine learning
  - Spares and warranties management
  - Learning management system

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## 4.4.2 Readiness against implementation requirements

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### 4.4.2.1 Civil requirements

Before choosing the site for implementing an AMPC, an in-depth study of the location suitability needs to be checked and confirmed before initiating the construction work. Existing or proposed development by local authorities, city planning agencies, and transportation departments for areas in the project vicinity shall be reviewed and considered for impact with regard to each mail processing facility site design.

A short list of such checklist items should include:

- Subsurface investigation has been prepared, reviewed and coordinated.
- Soils report included in final construction documents.
- Environmental Assessment has been coordinated with design.
- Easements, zoning restrictions and/or property covenants have been identified in writing.
- Availability of utilities has been confirmed. Agreements are signed off and coordinated with utility companies of respective disciplines.
- A floodwater /stormwater management plan is in place and has been approved by the appropriate governing agency prior to 30% design completion.
- Sediment/erosion control plan has been developed.
- Site design checked against local compliance with parking requirements (number of spaces and sizes) for covered vans, trucks, lorries, customers and staff vehicle.
- Mail platform maneuvering area is properly sized. Verify vehicle size, loading height requirements with transport department or outsourced vendors.
- Paving slopes away from building, provides adequate drainage and sloped between 2% and
- Traffic signs are provided, parking spaces are cleared striped, and handicapped parking spaces are properly designated.
- Slip resistant surfaces are specified at stairs, ramps and sidewalks.
- Perimeter fencing is used to separate public areas from USPS restricted areas.
- Proper connection is made for wastewater disposal at vehicle washing areas (if provided).
- A construction waste disposition/recycling plan has been developed.
- A diked area and drainage path for surface water and spilled flammables has been provided.

Multiple standards for implementing the civil engineering requirements exist, some of which are added in the annexure. These standards can be consulted to determine the exact guideline before initiating the implementation.

Based on the system landscape from Table 3, the following space requirement is advised for the automated mail processing centers.

**Table 13: Space requirement for AMPC**

Dhaka	Qty	Space req (sqft)
Letter Sorting System (14x42 ft each)	2	1,176
Culler Facer Cancellor (30x80 ft each)	2	4,800
Flat Sorting System (50x30 ft each)	1	1,500
Package Sorting System (30x80 ft each)	2	4,800

Loading and unloading docks	10	3,600
Specialized space requirements (including Workrooms, Platforms, Support Areas, Chiller)	1	2,500
Standard space requirements (Toilet Facilities, Locker Rooms, Lunchroom, Administrative Offices, Janitor's Closet, Outside Storage Area)	1	5,000
<b>Total space requirement (in sqft)</b>		<b>12,276</b>

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#### 4.4.2.2 Transport infrastructure requirement

The Government of Bangladesh formulated the Revised Strategic Transport Plan (RSTP) in 2016 as an urban transport master plan for Dhaka with a 20-year planning horizon through support from the Japan International Cooperation Agency. The RSTP identifies six distinct public transport corridors with high passenger traffic demand to connect Dhaka's central business district with surrounding satellite regional centres. To accommodate the projected high demand, the RSTP proposes six MRT lines and two BRT lines to be completed by 2035 along those corridors. Since the proposed AMPC sites are bound to have large vehicular movement 24x7 – it is imperative to take the proposed transport into consideration for incoming and outgoing transports both commercial and customer vehicles.

Additionally for any International Mail Processing Centre (IMPC), the shorter the distance from the closest airport and railway, faster is the shipping time. While selecting the location, proximity to such transport facility is essential for reducing the transport bottleneck.

Relevant stakeholders for this consultation may include:

- Rajdhani Unnayan Kartripakkha (RAJUK)
- Dhaka Transport Coordination Authority (DTCA)
- LGED
- DNCC and DSCC
- Civil Aviation Authority of Bangladesh (CAAB)
- Bangladesh Railway

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#### 4.4.3 Readiness against operational requirements

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##### 4.4.3.1 Skill and capacity requirement

Proper training and certification are essential for ensuring upkeep and maintenance of the facility as well as sustainability of the devices. Additionally upskilling the employees is also critical to ensure existing workforce can be revitalized and reused to successfully implement the technology transformation.

We are proposing a certification run internally by BPO to train up employees about the system as well as standard operating procedure of warehouse management. The course would be

divided into two categories, core and elective. 3 core units and 3 general units should be selected from the list below. After successful completion of the training program and the exam – the candidate will be fit to work in an AMPC.

- Core competencies
  - Apply chain of responsibility legislation, regulations and workplace procedures
  - Follow work health and safety procedures
  - Complete workplace orientation/induction procedures
- Elective competencies (any 3)
  - Regulate temperature-controlled stock (freezers /chillers)
  - Consolidate freight
  - Organize transport of freight or goods
  - Operate a forklift
  - Collect, analyze and present workplace data and information
  - Organize transport workload
  - Coordinate quality customer service
  - Assess and confirm customer transport requirements
  - Coordinate the erection and dismantling of temporary storage facilities
  - Develop, apply and amend rosters
  - Learn to operate a forklift truck

#### 4.4.4 Proposed TOR for hiring an international consultant

##### 4.4.4.1 Vendor Qualification

*Table 14: Proposed score distribution*

SL	Topic	Score Weight	Points Obtainable
<b>1</b>	<b><i>Expertise of Firms/ Organization Submitting Proposal</i></b>	<b>25%</b>	
	1.1 Proof of company's year of experience as registered technology provider		5
	1.2 Specific experience in the provision with Turnkey Solution provider for Automated Mail Processing Solution Project		10
<b>2</b>	<b><i>Proposal Quality</i></b>	<b>25%</b>	
	2.1 Technical Compliance with RFQ sent by BPO		10
	2.2 Quality of technical documents submitted (all are required): <ul style="list-style-type: none"> <li>• Description and engineering diagrams of products, services and activities proposed of the following categories: <ul style="list-style-type: none"> <li>○ Civil</li> <li>○ Architectural</li> <li>○ Structural</li> <li>○ Mechanical</li> <li>○ Electrical</li> <li>○ HVAC</li> <li>○ IT Systems</li> </ul> </li> <li>• Logical Data Traffic Flow Diagram showing interconnectivity of the systems (where applicable)</li> <li>• A Quality Assurance (QA) plan: (overview-only of test plans, basic test case hierarchy for integrity/regression/load/security testing for manual/automated testing procedures)</li> </ul>		20
	2.3 Other documents provided (Brochures, Datasheet, and related documents with proposal)		5
<b>3</b>	<b><i>Key Personnel</i></b>	<b>20%</b>	
	<b>3.1 Detailed description of the Project Technical Lead</b>		
	3.1.1 Year of experience		2
	3.1.2 Number of projects worked		2
	3.1.3 Expertise & skill set		2
	3.1.4 Expertise in similar Project (AMPC-only)		4
	<b>3.2 Detailed description of the Project Engineers</b>		
	3.2.1 Year of experience		2
	3.2.2 Number of projects worked		2

SL	Topic	Score Weight	Points Obtainable
	3.2.3 Expertise & skill set		2
	3.2.4 Expertise in similar projects		4
<b>4</b>	<b><i>Delivery and Installation Schedule</i></b>	<b>15%</b>	
	4.1 Detailed roadmap of delivery and installation process		5
	4.2 Lead delivery time		5
	4.3 Installation and configuration plan		3
	4.4 Contingency plan		2
<b>5</b>	<b><i>Warranty and Support</i></b>	<b>15%</b>	
	5.1 Quality of warranty and support plan provided		5
	5.2 Support response time: how long would it take to provide response depending on severity levels		5
	5.3 Spare replacement time: how long to replace /fix any component /item if faulty		5
	<b>Total</b>	<b>100%</b>	<b>100</b>

**Table 15: Basis of scoring**

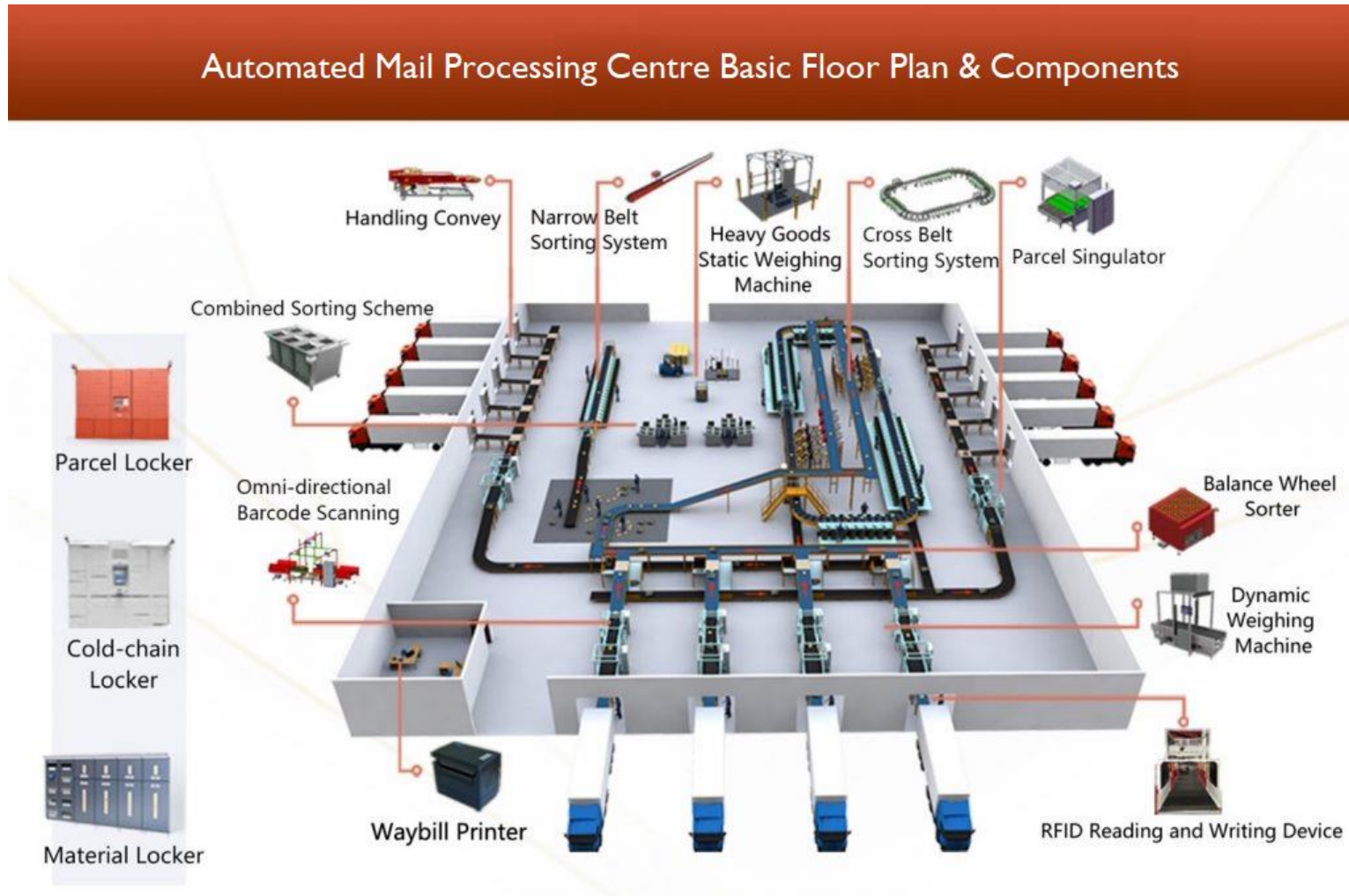
SL	Description
<b>1</b>	<b><i>Expertise of Firms/ Organization Submitting Proposal</i></b>
1.1	0-2 if inadequate information, 3-4 if <10 years of experience, 10+ years would get 5.
1.2	For at least 10 nos. of AMPC related full project implementation vendor will get 10 points total. Similarly, the lesser the experience, the lower the scores will be calculated
<b>2</b>	<b><i>Proposal Quality</i></b>
2.1	Vendor must meet 100% compliance with the required product to receive full points. Any deviation will result in zero for specified brand /items. No partial marking would be allowed.
2.2	Completeness of each of the documents (Civil, Architectural, Structural, Mechanical, Electrical, HVAC, IT Systems etc.) are subjective. However, a proper case-to-case study needs to be done to understand their proposal in terms of reliability, scalability and sustainability to ensure business case justification. Discussion and conformation within the evaluation team is advised.
2.3	All complete products must have brochures /datasheet submitted to receive full 5 points.
<b>3</b>	<b><i>Key Personnel</i></b>



SL		Description
	3.1	
	3.1.1	1-5 years of experience will get 1 point, 5+ years of experience will get full 2 points.
	3.1.2	1-5 nos. of projects will get 1-point, successful completion of 5+ projects will get full 2 points.
	3.1.3	AMPC implementation related training from principals, industry certifications etc. are necessary to get full 2 points.
	3.1.4	1-2 nos. of AMPC related projects will get full 4 points.
	3.2	
	3.2.1	1-5 years of experience will get 1 point, 5+ years of experience will get full 2 points.
	3.2.2	1-5 nos. of projects will get 1-point, successful completion of 5+ projects will get full 2 points.
	3.2.3	AMPC implementation related training from principals, industry certifications etc. are necessary to get full 2 points.
	3.2.4	1-2 nos. of AMPC related projects will get 1-point, successful completion of 3+ projects will get full 2 points.
4		<b><i>Delivery and Installation Schedule</i></b>
	4.1	Delivery roadmap should include specific dates of each milestone of all steps including shipping, unloading, delivery and configuration works. Evaluators will provide points based on evaluating feasibility of the milestones in the delivery schedule.
	4.2	Delivery time needs to be completely within project boundary as specified by BPO including buffer time to make up for any mishaps. Evaluators will provide points based on evaluating feasibility of the milestones in the delivery schedule.
	4.3	Installation and configuration need to be completed as specified by BPO including buffer time to make up for any mishaps. Evaluators will provide points based on evaluating feasibility of the milestones in the installation schedule.
	4.4	Evaluators will check if proper contingency plan is devised to ensure on time delivery and completion of each milestone and overall project timeline.
5		<b><i>Warranty and Support</i></b>
	5.1	The support plan should be exhaustive and detailed with escalation matrix, contact details and possible resolution period for each severity level. Evaluators will apply own judgement to ensure best interest of BPO is maintained.
	5.2	Vendors with minimum and realistic response time would get full points as judged by the evaluators.
	5.3	Vendors with minimum and realistic replacement /fixing time would get full points as judged by the evaluators.

## 4.5 BASIC FLOOR PLAN FOR THE DEVELOPMENT

Figure 26: Basic floor plan for development of AMPC



## 4.6 IMPLEMENTATION TIMELINE:

### 4.6.1 Phase-1 (1st Five Year)

Task	Year-1		Year-2		Year-3		Year-4		Year-5	
	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2
<b>For 10 MPC</b>										
Machineries specification Finalization for upgrading MPCs	■									
Procurement process and ToR preparation	■									
Tendering process	■									
Hardware procurement		■								
Hardware installation		■								
Training and Workshop					■	■	■	■	■	■
Operational management			■	■	■	■	■	■	■	■
Ensuring Pre-requisites (Proper addressing, packing, and optical character reader in Bangla)	■	■	■	■	■	■	■	■	■	■
<b>For 1 AMPC</b>										
Hiring International consultant firm and prepare technical design for AMPC										■

#### 4.6.2 Phase-2 (Next Five Year)

Task	Year-6		Year-7		Year-8		Year-9		Year-10	
	H1	H2	H1	H2	H1	H2	H1	H2	H1	H2
<b>For 1 AMPC</b>										
Technical design and machineries specification finalization for AMPC	■									
Site development for AMPC	■									
Procurement process and ToR for AMPC	■									
Tendering process for AMPC	■									
Hardware procurement for AMPC		■								
Configuration and dry run for AMPC		■								
Operational management for AMPC			■	■	■	■	■	■	■	■
Training and workshop	■	■	■	■	■	■	■	■	■	■
<b>For 20 MPC</b>										
Installation and development of 20 MPCs with automated sorting machine	■	■	■	■	■	■	■	■	■	■

4.6.3 Project Implementation Timeline (AMPC)

Supply, Installation and Commissioning of Automated Mail Processing Centre																																
Proposed Project Plan																																
	Month1				Month2				Month3				Month4				Month5				Month6				Month7				Month8			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>1. Approval</b>																																
Proposal prepared for approval	■	■																														
Proposal presented to top management			■																													
Approval received				■																												
<b>2. Vendor Selection</b>																																
TOR preparation, review, finalisation	■	■	■																													
TOR approval obtained from committee				■																												
SRF issued					■																											
RFP prepared and issued						■																										
Bidders Conference							■																									
BIDS collected								■																								
BIDS evaluation /Vendor selection /notification									■																							
Contract issued to Vendor										■																						
<b>3. Requirement Finalization</b>																																
Formation of client consultative committees /groups						■																										
Site Requirements Analysis											■																					
<b>4. Consultative Workshop</b>																																
Workshop preparation												■																				
Holding Workshop													■																			
<b>7. Pre-construction</b>																																
Design approval from all stakeholders																																
Building permit approval																																
Environmental Approval																																



## 4.7 OUTPUT AND OUTCOME

### 4.7.1 Outcome of the Project (AMPC)

The postal automation market is expected to grow at a CAGR of 6.10% over the forecast period to reach a market size of US\$4.900 billion in 2026.<sup>4</sup>

Automation is growing in several industries as it improves organizational efficiency while reducing the total operational cost. The postal automation system is an intelligent system, which provides a solution for effective parcel sorting and brings mails from the sender to the recipient in a reliable and fast manner. Study showed, the traditional postal systems are plagued with human errors, higher processing time, and high labour requirement. Automation of the Postal industry provides a faster and better categorization of letters and parcels, it further assists in the digitalization of this procedure.

#### Short and mid-term impacts

- **High costs:**

The initial investment associated with automating the postal system is huge. To automate the entire postal system large amount of funds will be required as the entire process will be digitalized along with the installation of various hardware and software. Furthermore, once the automated system is installed, it will require regular maintenance, servicing, and renewal, which will further increase the variable cost. Thus, the high costs associated with the installation and maintenance of the postal automation system may hinder the market growth during the forecast period as company companies would want to minimize or avoid this additional expenditure.

- **Resistance to change:**

Reskilling the existing employees of BPO is essential to create ownership of the digital transformation process and assure employability in a sustainable fashion.

#### Longer-term impacts

- **Increase transactions in the E-commerce industry:**

The growing popularity of the e-commerce industry is expected to propel the market growth for the postal automation market during the forecast period. The increasing popularity of the e-commerce industry is becoming a challenge for the logistics industry as the manual procedures may be erroneous and involve a lot of time and money.

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<sup>4</sup> <https://www.globenewswire.com/en/news-release/2021/07/01/2256276/28124/en/The-Postal-Automation-Global-Market-is-Expected-to-Reach-4-9-Billion-by-2026-at-a-CAGR-of-6-10-from-2021.html>

- **Increased efficiency:**

According to the Wall Street Journal, online sales generate the need for reverse logistics as approximately one-third of all the products are ultimately returned by consumers. The voluminous amount of package transfers is expected to fuel the market growth for the postal automation market as a large number of packages will require an efficient parcel automation system.

- **Increased Security:**

Automated processes help increase any organization’s security. Because mail is automatically routed and tracked through a system, it’s easier to identify and prevent any malicious activity. Additionally, automated processes help ensure that all of the packages are processed quickly and accurately resulting in fewer delays.

## 4.8 COSTS ESTIMATES:

### 4.8.1 Estimated Budget for the implementation (Phase-1, First 5 years)

*Table 16: Estimated Summary budget (in lakh taka)*

Sl. No.	Cost Head	Total Amount (Tk)
1	Establishment of 10 MPC with Sorting Machine	4842.39
2	Infrastructure development of Post offices	65901.84
3	Consultancy Cost for AMPC Detail Design	445.00
	<b>Total</b>	<b>71189.22</b>

*Table 17: Year-wise distribution of estimated summary budget (in lakh taka)*

Cost Head	Year-wise Cost					Total Amount (Tk)
	Year-1	Year-2	Year-3	Year-4	Year-5	
<b>1. Establishment of 10 MPC with Sorting Machine</b>						
1.1. Machineries Cost	3750.00	0	0	0	0	3750.00
1.2. Training Cost	0	0	26.19	26.19	26.19	78.57
1.3. Manpower (Technical) Cost	0	0	191.20	191.20	191.20	573.60
1.4. Project Implementation Unit Cost	88.0434	88.0434	88.0434	88.0434	88.0434	440.22
<b>2. Infrastructure development of Post offices</b>	<b>13180.37</b>	<b>13180.37</b>	<b>13180.37</b>	<b>13180.37</b>	<b>13180.37</b>	<b>65901.84</b>
<b>3. Consultancy Cost for AMPC Detail Design</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>445.00</b>	<b>445.00</b>
<b>Total</b>	<b>17018.41</b>	<b>13268.41</b>	<b>13485.80</b>	<b>13485.80</b>	<b>13930.80</b>	<b>71189.22</b>



#### 4.8.1.1 Estimated Budget for Establishment of 10 MPC with Sorting Machine

**Table 18: Estimated Budget for establishment of 10 MPC with Sorting Machine (in lakh taka)**

Sl. No.	Items	Total Amount
1	Machineries Cost	3750.00
2	Training Cost	78.57
3	Manpower (Technical) Cost	573.60
	<b>Total</b>	<b>4402.17</b>
4	Project Implementation Unit Cost	440.22
	<b>Grand Total</b>	<b>4842.39</b>

**Table 19: Estimated Cost for Sorting Machine (in lakh taka)**

SI	Items	Unit	Unit Cost (Tk)	Unit	Total Amount (Tk)
1	Flat Sorting machine for MPC	Number	250.00	10	2500.00
2	Culler Facer canceller	Number	125.00	10	1250.00
	<b>Grand Total</b>				<b>3750.00</b>

**Table 20: Detail training cost of human resource development for 10 equipped MPC (in lakh taka)**

SI	Training Type	Employee Type	Total Participants	Participant (Per Batch)	No. of Batch	Duration (Day)	Cost/ Per Batch (Tk)	Total Amount (Tk)
1	Apply chain of responsibility legislation, regulations and workplace procedures	Officer	50	25	2	5	3.38	6.75
2	Follow work health and safety procedures	Officer	50	25	2	1	0.68	1.35
3	Complete workplace orientation/induction procedures	Officer	50	25	2	2	1.35	2.70
4	Regulate temperature-controlled stock (freezers /chillers)	Staff/ Officer	80	20	4	5	2.70	10.80
5	Consolidate freight	Staff	80	20	4	5	2.70	10.80
6	Organize transport of freight or goods	Staff	200	25	8	5	3.38	27.00
7	Operate a forklift	Staff	30	15	2	5	2.03	4.05
8	Collect, analyze and present workplace data and information	Staff/ Officer	40	20	2	2	1.08	2.16
9	Organize transport workload	Staff	30	15	2	3	1.22	2.43
10	Coordinate quality customer service	Staff/ Officer	100	25	4	1	0.68	2.70
11	Assess and confirm customer transport requirements	Staff/ Officer	50	25	2	2	1.35	2.70
12	Coordinate the erection and dismantling of	Staff	50	25	2	2	1.35	2.70

	temporary storage facilities								
13	Develop, apply and amend rosters	Staff	30	15	2	1	0.41	0.81	
14	Learn to operate a forklift truck	Staff	30	15	2	2	0.81	1.62	
	<b>Total</b>								<b>78.57</b>

**\*\* Assume that per participant per day cost is 2700 BDT**

**Table 21: Newly proposed technical manpower salary/allowance cost (in lakh taka)**

Sl. No	Name of positions	Unit Type	Unit	Unit Cost (Tk)/Year	Year-wise Cost (Tk)					Total Amount (Tk)
					Year-1	Year-2	Year-3	Year-4	Year-5	
1	Assistant Mechanical Engineer (9th grade)	Number	10	3.56	0.00	0.00	35.60	35.60	35.60	106.80
2	Sub-Assistant Engineer (Mechanical) (10th grade)	Number	20	3.00	0.00	0.00	60.00	60.00	60.00	180.00
3	Assistant Electrical Engineer (9th grade)	Number	10	3.56	0.00	0.00	35.60	35.60	35.60	106.80
4	Sub-Assistant engineer (Electrical) (10th grade)	Number	20	3.00	0.00	0.00	60.00	60.00	60.00	180.00
	<b>Total</b>						<b>191.20</b>	<b>191.20</b>	<b>191.20</b>	<b>573.60</b>

#### 4.8.1.2 Estimated Budget for Infrastructure Development of Post Offices

**Table 22: Investment for Infrastructure development of Post offices (in lakh taka)**

Sl	Items	Unit Type	Unit	Unit Cost (TK)	Year-wise Cost (TK)					Total Amount (TK)
					Year-1	Year-2	Year-3	Year-4	Year-5	
1	District Post Office*	Nb	9	1083.47	9751.25	0.00	0.00	0.00	0.00	9751.25
2	Upazilla Post Office*	Nb	155	256.33	7946.13	7946.13	7946.13	7946.13	7946.13	39730.64
3	Sub Post Office*	Nb	114	91.48	2012.59	2012.59	2012.59	2287.03	2104.07	10428.87
	<b>Total</b>				<b>19709.97</b>	<b>9958.72</b>	<b>9958.72</b>	<b>10233.16</b>	<b>10050.20</b>	<b>59910.76</b>
4	Project Implementation Unit Cost (PIU)									5991.08
	<b>Grand Total</b>									<b>65901.84</b>

**\*\* Detail breakdown is in the annex**

#### 4.8.1.3 Estimated Budget for Hiring International Consultancy Firm for AMPC Detail Design

*Table 23: Hiring international consulting firm for AMPC detail design (in lakh taka)*

SL	Position title	Unit Type	Unit	Salary/ Month (TK)	Total Month	Total Amount (TK)
1	Consultant for AMPC design and Team Leader	Number	1	20.00	5	100.00
2	Structural Engineer	Number	1	15.00	5	75.00
3	Mechanical Engineer	Number	1	15.00	5	75.00
4	Electrical Engineer	Number	1	15.00	5	75.00
5	Autocad Technician	Number	1	5.00	5	25.00
6	System Integration Specialist	Number	1	5.00	5	25.00
7	Research Associate	Number	2	2.00	5	20.00
8	Travel, Workshop, and other cost	L/S				50.00
				<b>Total</b>	35	<b>445.00</b>

#### 4.8.2 Estimated Budget for the implementation (Phase-2, Next 5 years)

*Table 24: Estimated Summary budget for phase-2 (in lakh taka)*

Sl. No.	Cost Head	Total Amount (Tk)
1	Establishment of 20 MPC with Sorting Machine	56158.05
2	Establishment of AMPC	11227.61
	<b>Total</b>	<b>67385.66</b>

*Table 25: Year-wise estimated summary budget for phase-2 (in lakh taka)*

Cost Head	Year-wise Cost (TK)					Total Amount (TK)
	Year-6	Year-7	Year-8	Year-9	Year-10	
<b>1.Establishment of 20 MPC with Sorting Machine</b>						
1.1. Civil construction and Machineries cost	1125.00	14076.07	14076.07	14076.07	5630.43	48983.63
1.2. Training Cost	31.43	31.43	31.43	31.43	31.43	157.14
1.3. Manpower (Technical) Cost	382.40	382.40	382.40	382.40	382.40	1912.00
1.4. Project Implementation Unit Cost	1021.06	1021.06	1021.06	1021.06	1021.06	5105.28
<b>2.Establishment of AMPC</b>						
2.1. Civil construction and Machineries cost	10000	0	0	0	0	10000.00
2.2. Training Cost	3.1428	3.1428	3.1428	3.1428	3.1428	15.71
2.3. Manpower (Technical) Cost	38.24	38.24	38.24	38.24	38.24	191.20
2.4. Project Implementation Unit Cost	204.14	204.14	204.14	204.14	204.14	1020.69
<b>Total</b>	<b>12601.27</b>	<b>15552.34</b>	<b>15552.34</b>	<b>15552.34</b>	<b>7106.69</b>	<b>67385.66</b>

#### 4.8.2.1 Estimated Budget for Establishment of 20 MPC with Sorting Machine

**Table 26: Estimated Budget for Establishment of 20 MPC with Sorting Machine (in lakh taka)**

Sl. No.	Items	Total Amount
1	Infrastructure and Machineries Cost	48983.63
2	Training Cost	157.14
3	Manpower (Technical) Cost	1912.00
	<b>Total</b>	<b>51052.77</b>
4	Project Implementation Unit Cost	5105.28
	<b>Grand Total</b>	<b>56158.05</b>

**Table 27: Estimated Cost for Infrastructure and Machineries for 20 MPCs (in lakh taka)**

Sl	Item	Unit Type *	Unit	Unit cost	Year-wise Cost (TK)					Total Amount (TK)
					Year-6	Year-7	Year-8	Year-9	Year-10	
1	Civil construction cost for MPC*	Nb	17	304.96	0.00	1524.79	1524.79	1524.79	609.92	5184.28
2	Flat Sorting Machine	Nb	20	250.00	750	1250.00	1250.00	1250.00	500.00	5000.00
3	Culler Facer canceller	Nb	20	125.00	375	625.00	625.00	625.00	250.00	2500.00
4	Equipment cost for MPC **	Nb	17	2135.26	0.00	10676.28	10676.28	10676.28	4270.51	36299.35
	<b>Total</b>				<b>1125</b>	<b>14076.07</b>	<b>14076.07</b>	<b>14076.07</b>	<b>5630.43</b>	<b>48983.63</b>

\*Nb= Number \*\*Detail civil construction cost and equipment cost for MPC is in the annex

**Table 28: Detail training cost of human resource development for 20 equipped MPC (in lakh taka)**

Sl	Training Type	Employee Type	Total Participants	Participant (Per Batch)	No. of Batch	Duration (Day)	Cost/ Per Batch (Tk)	Total Amount (Tk)
1	Apply chain of responsibility legislation, regulations and workplace procedures	Officer	100	25	4	5	3.38	13.50
2	Follow work health and safety procedures	Officer	100	25	4	1	0.68	2.70
3	Complete workplace orientation/induction procedures	Officer	100	25	4	2	1.35	5.40
4	Regulate temperature-controlled stock (freezers /chillers)	Staff/ Officer	160	20	8	5	2.70	21.60
5	Consolidate freight	Staff	160	20	8	5	2.70	21.60
6	Organize transport of freight or goods	Staff	400	25	16	5	3.38	54.00
7	Operate a forklift	Staff	60	15	4	5	2.03	8.10

8	Collect, analyze and present workplace data and information	Staff/ Officer	80	20	4	2	1.08	4.32
9	Organize transport workload	Staff	60	15	4	3	1.22	4.86
10	Coordinate quality customer service	Staff/ Officer	200	25	8	1	0.68	5.40
11	Assess and confirm customer transport requirements	Staff/ Officer	100	25	4	2	1.35	5.40
12	Coordinate the erection and dismantling of temporary storage facilities	Staff	100	25	4	2	1.35	5.40
13	Develop, apply and amend rosters	Staff	60	15	4	1	0.41	1.62
14	Learn to operate a forklift truck	Staff	60	15	4	2	0.81	3.24
	<b>Total</b>							<b>157.14</b>

**Table 29: Newly proposed technical manpower salary/allowance cost (in lakh taka)**

SI	Name of positions	Unit Type	Unit	Unit Cost (Tk)/ Year	Year-wise Cost (Tk)					Total Amount (Tk)
					Year-6	Year-7	Year-8	Year-9	Year-10	
1	Assistant Mechanical Engineer (9th grade)	Number	20	3.56	71.20	71.20	71.20	71.20	71.20	356.00
2	Sub-Assistant Engineer (Mechanical) (10th grade)	Number	40	3.00	120.00	120.00	120.00	120.00	120.00	600.00
3	Assistant Electrical Engineer (9th grade)	Number	20	3.56	71.20	71.20	71.20	71.20	71.20	356.00
4	Sub-Assistant engineer (Electrical) (10th grade)	Number	40	3.00	120.00	120.00	120.00	120.00	120.00	600.00
	<b>Total</b>				<b>382.40</b>	<b>382.40</b>	<b>382.40</b>	<b>382.40</b>	<b>382.40</b>	<b>1912.00</b>

#### 4.8.2.2 Estimated Budget for Establishment of AMPC

**Table 30: Estimated budget for establishment of AMPC (in lakh taka)**

Sl. No.	Items	Total Amount (Tk)
1	Training Cost	15.71
2	Manpower (Technical) Cost	191.20
3	Machineries and Equipment Cost	4000.00
4	Civil construction cost	6000.00
	<b>Total</b>	<b>10206.91</b>
5	Project Implementation Unit Cost	1020.69
	<b>Grand Total</b>	<b>11227.61</b>

**Table 31: Detail training cost of human resource development for AMPC (in lakh taka)**

Sl	Training Type	Employee Type	Total Participants	Participant (Per Batch)	No. of Batch	Duration (Day)	Cost/Per Batch (Tk)	Total Amount (Tk)
1	Apply chain of responsibility legislation, regulations and workplace procedures	Officer	10	10	1	5	1.35	1.35
2	Follow work health and safety procedures	Officer	10	10	1	1	0.27	0.27
3	Complete workplace orientation/induction procedures	Officer	10	10	1	2	0.54	0.54
4	Regulate temperature-controlled stock (freezers /chillers)	Staff/ Officer	16	16	1	5	2.16	2.16
5	Consolidate freight	Staff	16	16	1	5	2.16	2.16
6	Organize transport of freight or goods	Staff	40	20	2	5	2.70	5.40
7	Operate a forklift	Staff	6	6	1	5	0.81	0.81
8	Collect, analyze and present workplace data and information	Staff/ Officer	8	8	1	2	0.43	0.43
9	Organize transport workload	Staff	6	6	1	3	0.49	0.49
10	Coordinate quality customer service	Staff/ Officer	20	20	1	1	0.54	0.54
11	Assess and confirm customer transport requirements	Staff/ Officer	10	10	1	2	0.54	0.54
12	Coordinate the erection and dismantling of temporary storage facilities	Staff	10	10	1	2	0.54	0.54
13	Develop, apply and amend rosters	Staff	6	6	1	1	0.16	0.16
14	Learn to operate a forklift truck	Staff	6	6	1	2	0.32	0.32
	<b>Total</b>							<b>15.71</b>

**Table 32: Newly proposed technical manpower salary/allowance cost (in lakh taka)**

Sl. No	Name of positions	Unit Type	Unit	Unit Cost (Tk)/ Year	Year-wise Cost (Tk)					Total Amount (Tk)
					Year-6	Year-7	Year-8	Year-9	Year-10	
1	Assistant Mechanical Engineer (9th grade)	Number	2	3.56	7.12	7.12	7.12	7.12	7.12	35.60
2	Sub-Assistant Engineer (Mechanical) (10th grade)	Number	4	3.00	12.00	12.00	12.00	12.00	12.00	60.00
3	Assistant Electrical Engineer (9th grade)	Number	2	3.56	7.12	7.12	7.12	7.12	7.12	35.60

4	Sub-Assistant engineer (Electrical) (10th grade)	Number	4	3.00	12.00	12.00	12.00	12.00	12.00	60.00
	<b>Total</b>				<b>38.24</b>	<b>38.24</b>	<b>38.24</b>	<b>38.24</b>	<b>38.24</b>	<b>191.20</b>

## 5. SECTION 5: ENVIRONMENTAL SUSTAINABILITY, CLIMATE RESILIENCE AND DISASTER RISK ANALYSIS

### 5.1 ENVIRONMENTAL, CLIMATE CHANGE AND DISASTER RISK ANALYSIS

#### 5.1.1 Environment risk/impact:

For the establishment of an AMPC (automated mail processing center), A place or location should be selected where the impact of the natural environment, water environment, and living environment can be reduced as much as possible. In order to evaluate the environmental factors, it is necessary to refer to "The Environment Conservation Rules, 1997." According to the rules, all industries and projects have been divided into four classes (i.Green, ii. Orange-A, iii. Orange-B, and, iv. Red) based on considering their site and the environmental impact. Having taken into consideration the type of product, functionality, capacity, as well as probability that it will have an adverse effect on the environment, the establishment of an AMPC in Bangladesh would qualify as a **green** category project.

As an institutional arrangement, the Government of Bangladesh has designated the "Department of Environment" (DOE) with the responsibility for the regulatory functions to enforce of the provisions of environmental laws, rules and regulations to prevent environmental degradation in the country. Under these legal provisions, the industrial entrepreneur/project owner must take mitigation measures to protect the environment from pollution and adverse impacts and must get an "Environmental Clearance" from DOE before setting up and running their industries/projects.

The project authority is committed to environmental protection in accordance with the existing environmental laws, rules, and regulations of Bangladesh. The project authority is also keen to abide by the international conventions and standards for making the project environmentally friendly.

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### **5.1.1.1 Legislation and Regulations relevant to the project (Environmental perspective):**

#### **Environmental Conservation Act, 1995 (ECA 1995), Amended in 2000, 2002 and 2010**

Formal concern at the national level, for the state of the environment in Bangladesh, can be traced back to at least Independence and the passing of the Water Pollution Control Act in 1973. Under this a small unit was established in the Directorate of Public Health Engineering (DPHE) to monitor pollution of groundwater and surface water. In order to expand the scope of environmental management and to strengthen the powers for achieving it, the Government issued the Environmental Pollution Control Ordinance in 1977. The ordinance provided for the establishment of an Environmental Pollution Control Board, which was charged with formulating policies and proposing measures for their implementation. In 1982, the board was renamed as Department of Environmental Pollution Control (DEPC). Four divisional offices were established in Dhaka, Chittagong, Khulna and Bogura. A special presidential order again renamed the DEPC to the Department of Environment (DOE) and placed it under the newly formed Ministry of Environment and Forest (MoEF) in 1989. The national environmental legislation known as Environmental Conservation Act, 1995 (ECA'95) is currently the main legislative document relating to environmental protection in Bangladesh, which repealed the earlier environment pollution control ordinance of 1977 and has been promulgated in 1995. It was amended in 2002 and then again in 2010. The main objectives of ECA'95 are:

- Conservation and improvement of the environment, and
- Control and mitigation of pollution of the environment

#### **The main strategies of the act can be summarized as:**

- i. Declaration of ecologically critical areas, and restriction on the operation and process, which can be carried, out or cannot be initiated in the ecologically critical areas
- ii. Restriction on pollution due on water reservoir
- iii. Restriction on production, import, storage, loading, transportation etc. of hazardous waste
- iv. Regulation in respect of vehicles emitting smoke harmful for the environment
- v. Environmental clearance
- vi. Regulation of the industries and other development activities - discharge permit
- vii. Promulgation of standards for quality of air, water, noise and soil for different areas for different purposes.
- viii. Promulgation of standard limit for discharging and emitting waste.
- ix. Formulation and declaration of environmental guidelines.

#### **Environment Conservation Rules, 1997 (subsequent amendments in 2002,2003 and 2017)**

A set of the relevant rules to implement the ECA' 95 has been promulgated (August 1997). The rules mainly consist of:



- i. The National Environmental Quality Standards (EQS) for ambient air, surface water, groundwater, drinking water, industrial effluents, emissions, noise and vehicular exhaust;
- ii. Categorization of industries, development projects and other activities on the basis of pollution activities of the existing or proposed industries/development projects/activities.
- iii. Procedure for obtaining environmental clearance
- iv. Requirement for undertaking IEE and ESIA as well as formulating ESMP according to categories of industries/development projects/activities
- v. Procedure for damage-claim by persons affected or likely to be affected due to polluting activities or activities causing hindrance to normal civic life.

The Rules incorporate "inclusion lists" of projects requiring varying degrees of environmental investigation.

- **Green:** Industries/development projects/activities are considered relatively pollution-free and therefore do not require an environmental clearance certificate from the DOE and no environmental study.
- **Orange:** Industries/development projects/activities fall into two categories. **Orange "A"** is less polluted and **Orange "B"** are moderately polluted required to submit general information, a process flow diagram and schematic diagrams of waste treatment facilities along with their application to DOE for obtaining environmental site clearance and environmental clearance.
- **Red:** Industries/development projects/activities are those which may cause 'significant adverse' environmental impacts and are therefore required to submit an ESIA report. It should be noted that they might obtain an environmental site clearance on the basis of an IEE report, and subsequently submit an ESIA report for obtaining environmental clearance along with other necessary papers.

*Table 33: Compliance with the acts and rules on Environment*

Act/ Rule/ Law/ Ordinance	Enforcement Agency - Ministry/ Authority	Key Features	Applicability to the Project AMPC
The Environment Conservation Act, 1995 and subsequent amendments in 2000, 2002 and 2010	Department of Environment Ministry of Environment and Forests	The main objectives of the ECA 1995 are: <ul style="list-style-type: none"> <li>• Conservation and improvement of the environment, and</li> <li>• Control and mitigation of pollution of the environment</li> </ul> <p>The main strategies of the act can be summarized as:</p>	The project is categorized as <b>Green</b> . All requisite clearances (SCC and ECC) from the DOE shall be obtained prior to the commencement of civil work.

Act/ Rule/ Law/ Ordinance	Enforcement Agency - Ministry/ Authority	Key Features	Applicability to the Project AMPC
		<ul style="list-style-type: none"> <li>• Declaration of ecologically critical areas, and restriction on the operation and process, which can be carried, out or cannot be initiated in the ecologically critical areas</li> <li>• Restriction on pollution due on water reservoir</li> <li>• Restriction on production, import, storage, loading, transportation etc. of hazardous waste</li> <li>• Regulation in respect of vehicles emitting smoke harmful for the environment</li> <li>• Environmental clearance</li> <li>• Regulation of the industries and other development activities - discharge permit</li> <li>• Promulgation of standards for quality of air, water, noise and soil for different areas for different purposes.</li> <li>• Promulgation of standard limit for discharging and emitting waste.</li> <li>• Formulation and declaration of environmental guidelines.</li> </ul>	AMPC project will proceed with the application for clearance in due course and obtain the required clearance before any construction activities are initiated.
Environmental conservation Rules, 1997 and subsequent amendments in 2002, 2003 and 2017	Department of Environment Ministry of Environment and Forests	<p>A set of the relevant rules to implement the ECA' 95 has been promulgated (August 1997). The rules mainly consist of:</p> <p>The National Environmental Quality Standards (EQS) for ambient air, surface water, groundwater, drinking water, industrial effluents, emissions, noise and vehicular exhaust;</p> <p>Categorization of industries, development projects and other activities on the basis of pollution activities of the existing or proposed industries/development projects/activities.</p> <p>Procedure for obtaining environmental clearance</p> <p>Requirement for undertaking IEE and ESIA as well as formulating ESMP according to categories of industries/development projects/activities</p> <p>Procedure for damage-claim by persons affected or likely to be affected due to</p>	The project is categorized as <b>Green</b> . All requisite clearances (SCC and ECC) from the DOE shall be obtained prior to the commencement of civil work. AMPC project will proceed with the application for clearance in due course and obtain the required clearance before any construction

Act/ Rule/ Law/ Ordinance	Enforcement Agency - Ministry/ Authority	Key Features	Applicability to the Project AMPC
		polluting activities or activities causing hindrance to normal civic life.	activities are initiated.

### 5.1.1.2 Production type and capacity:

AMPC Will handle nonhazardous materials like articles and parcels. It's basically a place for the aggregation and sorting of articles. AMPC will not handle any hazardous material according to "Hazardous Waste and Ship Breaking Waste Management Rule 2011".

### 5.1.1.3 Quantity of Water used and Source

During the construction phase, the health of the project personnel and construction workers could be impacted if the arrangement of sanitation and drinking water is not ensured adequately and properly. During construction stage, local labors work and hence they generate human waste. These are the potential source for spread of diseases, as various insects will play dominating role in the spread of diseases. There are chances for the spread of water borne diseases also. The site waste management plan should be followed properly. Contractors and workers will follow appropriate means of waste removal and sanitation measures. The workers will use the toilet facility at the premises of the AMPC construction site. The workers will be made aware to practice of those facilities. A proper means of waste removal and sanitation measures will be followed to reduce those impacts.

In the operation phase, the Automated mail processing center will use water only for drinking purposes and will maintain the proper guideline of "Environmental conservation rules 1997".

**Table 34: Standards for drinking water**

Sl no.	Parameter	Unit	Standard
1	Aluminum	mg/l	0.2
2	Ammonia (NH3)	mg/l	0.5
3	Arsenic	mg/l	0.05
4	Balium	mg/l	0.01
5	Benzene	mg/l	0.01
6	BOD5 20°C	mg/l	0.2
7	Boron	mg/l	1.0
8	Cadmium	mg/l	0.005

Sl no.	Parameter	Unit	Standard
9	Calcium	mg/l	75
10	Chloride	mg/l	150 – 600
11	Chlorinated alkane	mg/l	
	Carbon tetrachloride	mg/l	0.01
	1.1 dichloroethylene	mg/l	0.001
	1.2 dichloroethylene	mg/l	0.03
	Tetrachloroethylene	mg/l	0.03
	trichloroethylene	mg/l	0.09
12	Chlorinated phenol	mg/l	
	- pentachlorophenol	mg/l	0.03
	- 2.4.6 trichlorophenol	mg/l	0.03
13	Chlorine (residual)	mg/l	0.2
14	Chloroform	mg/l	0.09
15	Chromium (hexavalent)	mg/l	0.05
16	Chromium (total)	mg/l	0.05
17	COD	mg/l	4
18	Coliform (fecal)	n/100 ml	0
19	Coliform (total)	n/100 ml	0
20	Color	Hazen unit	15
21	Copper	mg/l	1
22	Cyanide	mg/l	0.1
23	Detergents	mg/l	0.2
24	DO	mg/l	0.2
25	Fluoride	mg/l	1
26	Hardness (as CaCO <sub>3</sub> )	mg/l	200-500
27	Iron	mg/l	0.3-1.0
28	Kjeldhl Nitrogen (total)	mg/l	1
29	Lead	mg/l	0.05
30	Magnesium	mg/l	30-35
31	Manganese	mg/l	0.1
32	Mercury	mg/l	0.001
33	Nickel	mg/l	0.1

Sl no.	Parameter	Unit	Standard
34	Nitrate	mg/l	10
35	Nitrite	mg/l	<1
36	Odor		Odorless
37	Oil and grease	mg/l	0.01
38	pH	mg/l	6.5 – 8.5
39	Phenolic compounds		0.002
40	Phosphate		6
41	Phosphorus		0
42	Potassium		12
43	Radioactive materials (gross alpha activity)	Bq/l	0.01
44	Radioactive materials (gross beta activity)	Bq/l	0.1
45	Selenium	mg/l	0.01
46	Silver	mg/l	0.02
47	Sodium	mg/l	200
48	Suspended particulate matters	mg/l	10
49	Sufide	mg/l	0
50	Sulfate	mg/l	400
51	Total dissolved solids	mg/l	1000
52	Temperature	°C	20-30
53	Tin	mg/l	2
54	Turbidity	JTU	10
55	Zinc	mg/l	5

**Table 35: Standards for Sewage Discharge**

Parameter	Unit	Standard Limit
BOD	miligram/l	40
Nitrate	miligram/l	250
Phosphate	miligram/l	35
Suspended Solids (SS)	miligram/l	100
Temperature	Degree Centigrade	30
Coliform	number per 100 ml	1000

#### 5.1.1.4 Number of vehicles used and maintenance:

A significant number of vehicles will move for carrying articles. To reduce the effect on the environment during the operation phase, the performance and fitness of those vehicles will be monitored at regular intervals. To control the emission from the motor vehicle,

**Table 36: Standards for Emission from Motor Vehicles**

Parameter	Unit	Standard Limit
Black Smoke	Hartridge Smoke Unit (HSU)	65
Carbon Monoxide	gm/k.m.	24
	percent area	04
Hydrocarbon	gm/k.m	02
	ppm	180
Oxides of Nitrogen	gm/k.m	02
	ppm	600

#### 5.1.1.5 Sound Pollution and remediation:

Impact of noise during the construction and operation phase can potentially impact the ecology, immediate neighbor and employees. Construction activities' noise and vibration can influence the ecological behavior of the surrounding area. Heavy types of equipment and construction material transportation can affect the surrounding area. Continuous exposure of neighbors to noise nuisance may result noise-induced hearing loss. To reduce the impact noisy construction works to be limited to daytime hours. On the other hand, standards for sound and sound, originating from motor vehicles will be followed accordingly.

**Table 37: Standard for sound**

Sl no	Category of areas	Standards determined at dBa unit (day)	Standards determined at dBa unit (night)
A	Silent zone	45	35
B	Residential area	50	40
C	Mixed area (mainly residential area, and also simultaneously used for commercial and industrial purposes)	60	50
D	Commercial area	<b>70</b>	<b>60</b>
E	Industrial area	<b>75</b>	<b>70</b>

*Table 38: Standards for Sound originating from Motor Vehicles*

Category of Vehicles	Unit	Standards	Remarks
Motor Vehicles (all types)	dBa	85	As measured at a distance of 7.5 meters from exhaust pipe
	dBa	100	As measured at a distance of 0.5 meter from exhaust pipe

## 5.2 ASSESSMENT OF DISASTER RESILIENCE OF THE PROJECT

### 5.2.1 Assessment of Disaster Resilience of the Project

For the operation of the AMPC at the site, a detailed risk analysis study needs to be undertaken and based on the study all precautionary measures are supposed to be incorporated in the basic design of the system itself, considering the environmental safety during construction as well as operation of the plant.

After the completion of the plant, a detailed disaster management will be prepared and its details are provided as below:

#### 5.2.1.1 Disaster Management Study

A detailed disaster management study is conducted consisting of the followings.

- i. Prevention of Disaster
- ii. Emergency Preparedness
- iii. Surveillance alert verification
- iv. Response in case of emergency
- v. Follow-up

#### Prevention of Disaster & Emergency Preparedness

The disaster prevention is possible only if the detailed risk potential of all the activities are worked out. The most common quote "Prevention is better than Cure" holds good for risk prevention as well.

Prevention of disaster and emergency preparedness activities are deemed to be prepared and carried out purely based on the risk analysis study covering the off-site and on-site activities.

## **Risk Analysis Study Covering Off-Site & On-Site Activities**

In order to prevent disaster, a detailed risk analysis study covering on-site and off-site activities will be conducted as detailed in the subsequent sections.

---

### **5.2.1.2 Methodology to be Adopted for The Risk Assessment Study**

- i. The various activities to be undertaken in the proposed site during the project preparation stage will be identified and listed;
- ii. The details of the various facilities proposed at the site will be identified and listed;
- iii. The detailed water and energy requirement for the different operations will be identified and listed;
- iv. The impacts of the different activities proposed to be undertaken at the site and the potential risks of the various activities will be identified and listed;
- v. Detailed brainstorming sessions will be conducted to identify the potential risks and to develop mitigation methods;
- vi. Apart from listing the activities, their impact as well as the remedial actions at the site, detailed impacts of the activities expected to be carried out off-site will also be identified and listed, and
- vii. The remedial measures to be undertaken for mitigation of risk due to the off-site activities will also be listed and elaborated

All the activities proposed to be undertaken during the various stages of the project, the potential risks envisaged from each activity and the different risk mitigation measures for the various potential risks identified should be planned systematically so that they could be implemented during the various stages of the project.

#### **Details of The Activities to be Undertaken On-Site**

The following are the various activities expected to be undertaken during the different stages of the proposed facility.

#### **During the Project Execution Stage:**

During the project execution stage, the major activities envisaged are:

##### ***a) Site-clearing activities***

This is a major activity as the site contains unwanted plantations like shrubs, bushes etc. Also leveling of the site is another major activity requiring the use of heavy machinery like dozers, dumpers etc. Necessary care must be taken while using this equipment, reversing etc.

##### **Potential risks**

- i. Potential for accidents due to unsafe working conditions, and
- ii. Air borne dust may be another issue.



### **Mitigation measures**

- i. Safety of the workers would be prioritized and the workforce involved in the leveling activities would be given proper instruction to adopt all safety measures;
- ii. The entire labor force would be checked for Employee's Social Insurance (ESI) and no workforce would be employed without ESI;
- iii. All the heavy machinery operators would be instructed on a regular basis to adopt safe operations and would be monitored regularly, and
- iv. All heavy machineries involved in the leveling activities would be periodically maintained and checked for the promptness of indicator and other lamps, brakes etc.

### **b) Excavation activities**

Excavation is another site activity envisaged during the initial development of the site and would involve heavy machinery like the excavators and would also involve labor.

#### **Potential risks**

- i. Potential for accidents due to unsafe working conditions, and
- ii. Air borne dust would be another issue.

### **Mitigation measures**

- i. Safety of the workers would be prioritized and the workforce involved in the excavation activities would be given proper instruction to adopt all safety measures;
- ii. The entire labor force would be checked for ESI and no work force would be employed without ESI;
- iii. All the heavy machinery operators would be instructed on a regular basis to adopt safe operations and would be monitored regularly;
- iv. During the excavation stages adequate water sprinkling will be undertaken to avoid air boning of dust, and
- v. All heavy machinery involved in the excavation activities would be periodically maintained and checked for the promptness of indicators and other lamps, brakes etc.

### **c) Construction activities**

The second major activity during project development stage is the construction activities wherein a large workforce is involved.

#### **Potential risks**

- i. Potential for accidents due to unsafe working conditions, and
- ii. Air borne dust would be another issue.

### **Mitigation measures**

- i. Here again safety of the workers is of prime importance and all safety instruction would be regularly imparted to the labors in the local language and safe working practices would be adhered to;
- ii. The entire labor force would be checked for ESI and no work force would be employed without ESI;
- iii. All the machinery operators (concrete mixers etc.) would be instructed on a regular basis to adopt safe operations and would be monitored regularly;
- iv. Any loose material having potential to be air borne would be either covered properly with tarpaulin or water sprinkling will be undertaken to avoid air boning of dust, and
- v. All machineries involved in the construction activities would be periodically maintained and checked for safe operation.

### **d) Fabrication & erection of equipment and vessels**

After the civil construction activities, the third major activity is the fabrication and erection of equipment.

### **Potential risks**

- i. During this stage, apart from the usage of heavy material handling equipment like cranes, usage of electricity and generation of spark (operations like welding) and heat are anticipated, and
- ii. Potential for accidents due to unsafe working conditions.

### **Mitigation measures**

- i. It is of prime importance to plan, design and erect all the safety equipment and adopt safety measures at this project execution stage in order to ensure safe operation during the operation phase of the facility;
- ii. The firefighting equipment should be kept ready before the start of the fabrication and erection activities;
- iii. All the bolts and fasteners should be checked before any material is lifted above ground for erection activities;
- iv. The sling and other lifting accessories should be inspected for wear and tear before being put for use and it should be regularly inspected on daily basis;
- v. No material should be left in hanging position during the lunch and the night hours or during shift change. The activity should be completed and the material should be supported properly, and
- vi. The work force involved in the erection activities should be instructed in local language for the safe operating practices to be followed.
- vii.

***e) During the Project Commissioning Stage:***

***Commissioning and trial run of equipment***

After the fabrication and erection of the equipment at site, the most critical activity is the commissioning and trial run of the equipment before putting them in continuous operation.

**Potential risks**

- i. Potential for accidents due to unsafe working conditions, and
- ii. Potential for accidents due to improper operating conditions.

**Mitigation measures**

- i. It is of at most necessity to plan, study and follow the step-by-step operating procedures of the equipment and follow the operating conditions specified by the supplier and as well follow the safety procedures;
- ii. The firefighting equipment should be kept ready as well as the safety trip / cut-off mechanisms should be tested before the start of the commissioning activities;
- iii. All the bolts and fasteners should be checked before operating any rotary / sliding equipment;
- iv. The work force involved in the commissioning activities should be instructed in local language for the safe operating practices to be followed during the commissioning activities, and
- v. Before commissioning, all precautionary measures should be followed like checking the availability of safety PPEs, fire hydrant and the firefighting systems, availability of the emergency preparedness arrangement (like emergency shut off procedures, equipment etc.), emergency showers etc.

As per the study and the details mentioned above, the various activities will be implemented and completed eliminating all the potential risks envisaged above.

***f) During the Normal Operation of the Facility:***

***Commissioning and trial run of vessels and equipment***

After the erection and commissioning of the equipment at site, the project stage is completed and the routine operation of the facility will be started.

**Potential risks:**

- i. Potential for accidents due to careless / unsafe working practices, and
- ii. Potential for accidents due to improper operating conditions.

**Mitigation measures:**

- i. Since the project stage is completed and the facility is under routine operation, it is advised to prepare safe working condition & procedures and strictly adhered to;
- ii. It is important to plan, study and follow the step-by-step operating procedures of the equipment and follow the operating conditions specified by the supplier and as well follow the safety procedures on a regular basis and make it a practice;
- iii. It is also important to check the availability of the firefighting equipments and periodically test safety trip / cut-off mechanisms for its operating conditions;
- iv. All the bolts and fasteners of any rotary / sliding equipment should be checked periodically for its operating fitness;
- v. The work force involve in the facility should be instructed in local language for the safe operating practices to be followed in the facility and should be trained & re-trained on safe operating practices;
- vi. Incentive as well as dis-incentive schemes should be devised to encourage safe working practices and regular use of the safety PPEs;
- vii. Off-site and on-site emergency preparedness procedures should be developed and put into practice;
- viii. The safety rules as well as the persons to be contacted in case of emergency should be written down and displayed in local language at the critical points in the facility, and
- ix. Work force in the facility should be given regular training and mock drills should be undertaken periodically for the emergency preparedness.

**Details of The Activities Undertaken Off-Site**

The major activity expected to be undertaken off-site during the different stages of the proposed facility is the transportation of material.

During the different stages of the project, the transportation requirement varies and accordingly different types of transportation fleet may be employed.

During the project execution stages, the major requirement is the transportation of the construction material and subsequently the transportation of the vessels and equipment.

Subsequent to the project execution, during the regular operation of the facility, transportation of the different hazardous and non-hazardous materials would be the major off-site activity.

**Potential risks:**

- i. Potential for accidents due to careless / unsafe storage of the material in the vehicles, and

- ii. Potential for accidents due to careless / unsafe driving.

**Mitigation measures:**

- i. Proper care must be taken to stack / store the material in the vehicles;
- ii. Care must be taken to cover the stock by a tarpaulin sheet and secure them in position so that they are not shaky during the transportation;
- iii. Cover the material properly, if they have potential to be air-borne in order to avoid the spillages during transport;
- iv. If loose stacking of material is done, they should be properly covered and secured with ropes before the transportation;

This risk analysis report will be used as the basis for creating all the safety infrastructures required for the facility and the detailed safety precautionary measures will be prepared along with the systematic operating procedures for planning and executing the project and running the facility.

After analyzing the potential risks / hazards and implementing all the remedial measures for mitigating the same, a detailed disaster management plan will be prepared to act in case of any disaster. A detailed brainstorming session will be conducted including all the stake holders, in order to ascertain the effectiveness of the mitigation measures developed considering the potential risks from the incineration plant.

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### **5.2.1.3 Surveillance & Alert Verification and Emergency Response**

The surveillance & alert verification of the installed emergency systems and the response of the employees to the emergency alert will be strengthened by conducting mock drills at regular intervals (at least twice a year).

Awareness/ training programs should be conducted to train all the new employees of the disaster management plan prepared by the company for emergency. In spite of all the emergency preparedness, if some disaster occurs, then they have to be handled effectively to avoid any casualty and serious damages. A detailed action plan will be charted, considering the potential of the disaster envisaged.

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### **5.2.1.4 Action Plan for Disaster Management**

#### **Awareness and Preparedness**

First and foremost, the activity under the disaster management plan is the awareness creation and preparedness for any untoward emergency.

## **Preparation of Disaster Management Plan**

Once the employees are aware of the importance of a disaster management plan, the second action should be charting of detailed action plan.

The disaster management plan consists of constitution of a Disaster Management Committee (DM Committee), under whom a Disaster Management Team (DM Team) would be constituted.

## **Disaster Management Team**

The disaster management team is the core team responsible for all the activities to be carried out during emergency, including evacuation of the employees, alerting the DM Committee, periodic conduction of mock drills, regular training of the safety and firefighting exercises etc.

## **Training of The Disaster Management Team**

The disaster management team has to be trained regularly so that they in turn could execute their duties and subsequently train the employees. It is the responsibility of the Disaster Management (DM) committee to organize the training of the DM team.

## **Mock Drill**

The detailed action plan during any emergency involves evacuation of the employees to avoid casualty and serious damage by alerting the line of command to plunge into action.

- i. The personnel to be contacted (DM Committee) in case of any emergency will be listed with name, designation and contact numbers;
- ii. The list should be displayed on the wall in a prominent location, which is easily available to everyone in the premises, and
- iii. During emergency alert, all the employees would evacuate the site and assemble at the assembly point near the main entrance, assigned for the purpose.

The DM team conducts the regular mock drills (at least twice a year), during which time the employees are evacuated and asked to assemble at the assembly point and the working condition of the firefighting and other emergency preparedness equipment are tested.

## **Plan Upgradation**

The most important step of the disaster management plan is the regular up-gradation of the plan as per the revision and the requirement with respect to time. The plan will be dynamic only if it is regularly up-graded.

## **Evacuation Route**

A sketch showing the evacuation route should be prepared and displayed at prominent location so that all the employees are aware and are reminded regularly. This route should be followed during the mock drills.

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#### **5.2.1.5 Conclusion on risk analysis**

This risk analysis report will be used as the basis for creating all the safety infrastructures required for the facility and the detailed safety precautionary measures will be prepared along with the systematic operating procedures for planning and executing the project and running the facility.

## 6. SECTION 6: COST-BENEFIT ANALYSIS

### 6.1 FINANCIAL ANALYSIS

#### 6.1.1 Financial Analysis for AMPC and Mail and Parcel Business Model:

#### 6.1.2 Calculation of the Revenue from the Business Model:

Values in crore Taka

Particulars	Year-1	Year-2	Year-3	Year-4	Year-5	Year-6	Year-7	Year-8	Year-9	Year-10
<b>Total Market Size</b>	30.11	34.62	39.82	45.79	52.66	60.56	69.64	80.09	92.10	105.92
<b>BPO Market share</b>	10%	7%	7%	8%	9%	10%	15%	20%	25%	30%
<b>BPO Market Size (Mail and Parcel)</b>	3.01	2.25	2.59	3.66	4.74	6.06	10.45	16.02	23.03	31.77
<b>% Of Letter</b>	90%	85%	80%	75%	70%	65%	50%	45%	35%	30%
<b>% Of Parcel</b>	10%	15%	20%	25%	30%	35%	50%	55%	65%	70%
<b>BPO Market Size (Mail)</b>	2.71	1.91	2.07	2.75	3.32	3.94	5.22	7.21	8.06	9.53
<b>BPO Market Size (Parcel)</b>	0.30	0.34	0.52	0.92	1.42	2.12	5.22	8.81	14.97	22.24
<b>Average Mail Delivery price (in Taka)/ per mail</b>	9.40	9.40	9.40	9.40	9.40	9.40	9.40	9.40	9.40	9.40
<b>Average Parcel Delivery price (in Taka)/ per parcel</b>	166.8	166.8	166.8	166.8	166.8	166.8	166.8	166.8	166.8	166.8
<b>Revenue from Mail (in Taka)</b>	25	18	19	26	31	37	49	68	76	90
<b>Revenue from Parcel (in Taka)</b>	50	56	86	153	237	353	871	1,469	2,496	3,709
<b>Total Revenue</b>	76	74	106	179	268	390	920	1,537	2,572	3,799

#### 6.1.3 Calculation of the Cost from the Business Model:

Values in crore Taka

Particulars	Year-1	Year-2	Year-3	Year-4	Year-5	Year-6	Year-7	Year-8	Year-9	Year-10
<b>1. Establishment of 10 MPC with Sorting Machine</b>										
<b>1.1. Machineries Cost</b>	37.50	-	-	-	-	-	-	-	-	-
<b>1.2. Training Cost</b>	-	-	0.26	0.26	0.26	-	-	-	-	-
<b>1.3. Manpower (Technical) Cost</b>	-	-	1.91	1.91	1.91	-	-	-	-	-
<b>1.4. Project Implementation Unit Cost</b>	0.88	0.88	0.88	0.88	0.88	-	-	-	-	-
<b>2. Infrastructure development of Post offices</b>	131.80	131.80	131.80	131.80	131.80	-	-	-	-	-
<b>3. Consultancy Cost for AMPC Detail Design</b>	-	-	-	-	4.45	-	-	-	-	-
<b>4. Establishment of 20 MPC with Sorting Machine</b>	-	-	-	-	-	-	-	-	-	-
<b>4.1. Civil construction and Machineries cost</b>	-	-	-	-	-	11.25	140.76	140.76	140.76	56.30
<b>4.2. Training Cost</b>	-	-	-	-	-	0.31	0.31	0.31	0.31	0.31
<b>4.3. Manpower (Technical) Cost</b>	-	-	-	-	-	3.82	3.82	3.82	3.82	3.82



4.4. Project Implementation Unit Cost	-	-	-	-	-	10.21	10.21	10.21	10.21	10.21
6.Establishment of AMPC	-	-	-	-	-	-	-	-	-	-
6.1. Civil construction and Machineries cost	-	-	-	-	-	100.00	-	-	-	-
6.2. Training Cost	-	-	-	-	-	0.03	0.03	0.03	0.03	0.03
6.3. Manpower (Technical) Cost	-	-	-	-	-	0.38	0.38	0.38	0.38	0.38
2.4. Project Implementation Unit Cost	-	-	-	-	-	2.04	2.04	2.04	2.04	2.04
7. Cost from Component-3	-	-	-	-	-	-	-	-	-	-
7.1 Training and Capacity building and Recruitment	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
7.2 Equipment	11.47	-	-	-	-	-	-	-	-	-
7.3 Vehicles (5 Ton)	35.20	35.20	-	-	-	-	-	-	-	-
7.4 Vehicles ( 1 Ton)	16.00	16.00	-	-	-	-	-	-	-	-
Vehicle Management Cost	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10	4.10
Fuel Cost	4.19	4.19	4.19	4.19	4.19	4.19	4.19	4.19	4.19	4.19
Packaging Cost	11.24	11.24	11.24	11.24	11.24	11.24	11.24	11.24	11.24	11.24
Insurance Cost	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60	0.60
Promotional and Marketing	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PIU	4.46	4.46	4.46	4.46	4.46	4.46	4.46	4.46	4.46	4.46
<b>Total Cost</b>	<b>259.13</b>	<b>210.16</b>	<b>161.13</b>	<b>161.13</b>	<b>165.58</b>	<b>154.33</b>	<b>183.84</b>	<b>183.84</b>	<b>183.84</b>	<b>99.38</b>

#### 6.1.4 Net Cashflow:

Values in crore Taka

	Year-1	Year-2	Year-3	Year-4	Year-5	Year-6	Year-7	Year-8	Year-9	Year-10
<b>Net Cashflow</b>	(183)	(136)	(55)	17	103	236	736	1,353	2,388	3,699

#### 6.1.5 Key Assumptions:

- Discounting Rate: 12%
- Project Implementation Year: 10 Years

#### 6.1.6 Calculation of Financial Analysis:

##### Calculation of the Net Present Value (NPV):

$$\text{Formula: } NPV = \frac{P}{(1+i)^t}$$

Where NPV= Net Present Value

P= Present value of the Net Cash flow

i= Discount rate

t= time

## **Result of the NPV = BDT 2,809 crore (Positive)**

### **Calculation of the Internal Rate of Return (IRR):**

$$\text{Formula: } NPV = \sum \frac{P}{(1+irr)^t}$$

Where NPV= Net Present Value

P= Present value of the Net Cash flow

irr= Internal rate of return

t= time

## **Result of Internal Rate of Return (IRR): 56% (Positive)**

### **Calculation of the Benefit-Cost Ratio (BCR):**

Result of the Benefit- Cost Ratio:

- $BCR : \frac{PV \text{ of Benefit Expected from the Project}}{PV \text{ of the Cost of the Project}} = \frac{3,853}{1,044} = 3.69 > 1$

The financial model for the Bangladesh Post Office with an NPV of BDT 2,809 crore, an IRR of 56%, and a benefit-cost ratio of 3.69 indicates that the project is financially viable and profitable. The financial model includes estimating the initial investment cost, calculating the expected cash inflows and outflows, and determining the net present value, internal rate of return, and benefit-cost ratio.

To calculate the NPV, IRR, and benefit-cost ratio, the following steps can be taken:

- Determine the initial investment cost, including the cost of equipment, infrastructure, and other capital expenditures.
- Estimate the expected cash inflows from the project over its lifetime, including revenue from increased efficiency, reduced operating costs, and other benefits.
- Estimate the expected cash outflows over the project's lifetime, including operating expenses, maintenance costs, and other expenses.
- Calculate the net present value (NPV) of the project by discounting the expected cash inflows and outflows at the project's required rate of return or cost of capital.
- Calculate the internal rate of return (IRR) of the project, which represents the discount rate that makes the net present value of the project equal to zero.
- Calculate the benefit-cost ratio, which is the ratio of the present value of expected benefits to the present value of expected costs.

Based on these calculations, a financial model has been developed that outlines the project's financial viability and profitability. The NPV of BDT 2,809 crore indicates that the project is expected to generate a positive net present value, while the IRR of 56% indicates that the project is expected to generate a high rate of return. The benefit-cost ratio of 3.69 indicates that the project's benefits are expected to outweigh its costs by a factor of 3.69.

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## **6.2 ECONOMIC ANALYSIS**

This business model will have a few indirect benefits which the economy and the people of Bangladesh will enjoy. However, these benefits are not directly measurable but have their own value.

The Business model will open new employment opportunities for the citizens of Bangladesh, and consumers are expected to get additional values than the current market structure, which also has an economic value.

Below the Yearly additional economic values are calculated using the current market values.

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### 6.2.1.1 Calculation of Economic Benefits from AMPC and Mail and Parcel Business Model:

*Table 39: Economic and Financial Benefits From The Business Model*

Values in Crore taka

Particulars	Year-1	Year-2	Year-3	Year-4	Year-5	Year-6	Year-7	Year-8	Year-9	Year-10
<b>Income Generation</b>	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
<b>Consumer Benefit</b>	15.1	14.9	21.2	35.7	53.7	78.1	184.0	307.4	514.3	759.7
<b>Total Benefits</b>	16.4	16.1	22.4	37.0	54.9	79.4	185.3	308.6	515.6	761.0
<b>Total Financial Benefit</b>	75.7	74.3	105.8	178.5	268.3	390.4	920.1	1,536.8	2,571.5	3,798.7
<b>Total Benefits (Economic and Financial)</b>	92.1	90.4	128.2	215.5	323.2	469.8	1,105.4	1,845.5	3,087.1	4,559.7

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### 6.2.1.2 Net Economic Cashflow from AMPC and Mail and Parcel Business Model

Values in Crore taka

Particulars	Year-1	Year-2	Year-3	Year-4	Year-5	Year-6	Year-7	Year-8	Year-9	Year-10
<b>Net Cashflow</b>	(167)	(120)	(33)	54	158	315	922	1,662	2,903	4,460

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### 6.2.1.3 Key Assumptions:

- Discounting Rate: 12%
- Project Implementation Year: 10 Year

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### 6.2.1.4 Calculation of Economic Analysis:

#### (A) CALCULATION OF THE NET PRESENT VALUE (NPV):

---

$$\text{Formula: } ENPV = \frac{P}{(1+i)^t}$$

Where ENPV= Economic Net Present Value

P= Present value of the Net Economic Cash flow

i= Discount rate

t= time

**Result of the NPV = BDT 3,587 crore (Positive)**

#### (B) CALCULATION OF THE INTERNAL RATE OF RETURN (IRR):

---

$$\text{Formula: } NPV = \sum \frac{P}{(1+irr)^t}$$

Where NPV= Net Present Value

P= Present value of the Net Cash flow

irr= Internal rate of return

t= time

**Result of Internal Rate of Return (IRR): 66% (Positive)**

#### (C) CALCULATION OF THE BENEFIT-COST RATIO (BCR):

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Result of the Benefit- Cost Ratio:

- $BCR : \frac{PV \text{ of Benefit Expected from the Project}}{PV \text{ of the Cost of the Project}} = \frac{4,631}{1,044} = 4.44 > 1$

All the three criteria ensure that project could be accepted.

The Economic model of the AMPC and Mail and Parcel Business Model for the Bangladesh Post Office with an NPV of BDT 3587 crore, an IRR of 66%, and a benefit-cost ratio of 4.46

indicates that the project is both financial and economically viable and profitable. Besides the financial model, the economic model includes estimating the initial investment cost, calculating the expected economic cash inflows and outflows, and determining the net economic present value, economic internal rate of return, and economic benefit-cost ratio.

Based on these calculations, an Economic model has been developed that outlines the project's economic viability and profitability.

***This business model is both economically and financially viable.***

## 7. SECTION 7: HUMAN RESOURCES AND ADMINISTRATIVE SUPPORT ANALYSIS

Necessary human resources and administrative support is essential to ensure sustainable operation of Automated Mail Processing System. For this reason, the following initiatives are deemed as essential:

- a. To support the implementation of the Automated Mail Processing Center (AMPC), a change in the existing organizational structure is required. A standard and sample organizational structure for AMPC has been developed, which includes four major categories: administrative management, process engineering, operation management, and IT management. Of these segments, the administrative, operation, and IT management will be operated with the existing manpower with proper training facilities. However, for process engineering, Bangladesh Post Office will need to create new positions. Job clarifications have been provided in the table below. This change in the organizational structure will help ensure that the AMPC operates efficiently and effectively, with dedicated personnel overseeing each aspect of the operation. It will also allow for a more streamlined decision-making process and improved communication between different departments

Position	Pay scale	Allowance per year in BDT
Electrical engineer	9 <sup>th</sup>	356000
Sub Assistant engineer (electrical)	10 <sup>th</sup>	300000
Mechanical engineer	9 <sup>th</sup>	356000
Sub Assistant engineer (Mechanical)	10 <sup>th</sup>	300000

- b. Allocation in revenue budget for smooth operation of the center which may include payroll, regular maintenance and update of the systems installed and other miscellaneous expenses.
- c. Empower and accommodate necessary changes in policy and business process documents to ensure the organization can run as commercially self-sustainable and independent without budget aid from Ministry of Post and Telecom.
- d. Ensure close coordination with e-commerce industry in both global and local market to support and engage in mutually beneficial activities resulting in closer tie and bigger business volume.
- e. Classify and treat the organization as specialized service body (such as Bangladesh Data Center Company Limited (BDCCL) or Bangladesh Submarine Cable Company Limited (BSCCL) to ensure smooth operation in both global and local markets.
- f. A standard operating procedure (SOP) is usually maintained to ensure all service level agreements between different internal and external bodies are properly met. A further operational audit exercise should also be periodically performed to review the order of business.

## **8. SECTION 8: INSTITUTIONAL AND LEGAL ANALYSIS**

To do this Infrastructural project BPO would not face any Institutional and legal challenges. Though a few reforms are required, which can be formalize by Director general/respective ministry.

## **9. SECTION 9: RISK (UNCERTAINTY) AND SENSITIVITY ANALYSIS**

### **9.1 INEFFICIENT INVENTORY MANAGEMENT:**

Inefficient Inventory management could cause delay in product delivery; thus, one of the model's values propositions (fast delivery) will fail. The whole business model could fail if inventories are not efficiently managed. To mitigate this risk, Automated/ Digitalized inventory management has to be installed.

### **9.2 PRICING OF THE SERVICES:**

Pricing of the services has to be re-calculated. Currently, BPO Service fees are subsidized. Other businesses will take this advantage. They will send the product at a low rate, and the burden on the government will increase; thus, project financing could be in danger. Thus, market competitive pricing with a better value proposition has to be offered. To mitigate this risk, an AI-based pricing tool must be installed, which will revise the service fees frequently.

### **9.3 EMPLOYEE BEHAVIOR TOWARDS THE WORK:**

BPO employees must change their behavior; they need to be more customer-friendly rather than too professional. They have to give proper attention to the customers, other-wise customer dissatisfaction will become the reason for the downfall. To mitigate, Lots of Training and motivational Training needs to be conducted at each level of Employee.

### **9.4 TOOLS AND EQUIPMENT:**

Without proper and up to date tools, even a motivated employee will lose motivation; thus, proper and advanced tools and equipment are required.

### **9.5 DATA SECURITY AND HACKING:**

If the customer data are unsecured and someone hacks the platform or accounts, that will critically damage the image of BPO, and They will never be able to acquire these or any new customers anymore. Thus a well-protected security system needs to be appointed.

### **9.6 RISK OF THEFTS:**

Delivery persons/ drivers or other in-house or out persons can steal the products. to avoid any stealing case, a proper monitoring and tracking system is required.



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## **9.7 VEHICLE ACCIDENT:**

In case of accidents, all the products of the customers might be destroyed. In that case, compensation to customers are must, and this compensation has to be settled down quickly. To mitigate this risk, all vehicles are required to be insured from good insurance companies.

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## **9.8 GOVERNMENT INSTITUTE**

Being a government entity Bangladesh Post Office has some risk. Government offices are slow in decision making due to its bureaucratic nature. Also, government offices are not technological very advanced. To compete with this technologically advanced market, BPO must act dynamically and systematically.

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# **10. SECTION 10: ALTERNATIVE/OPTIONS ANALYSIS**

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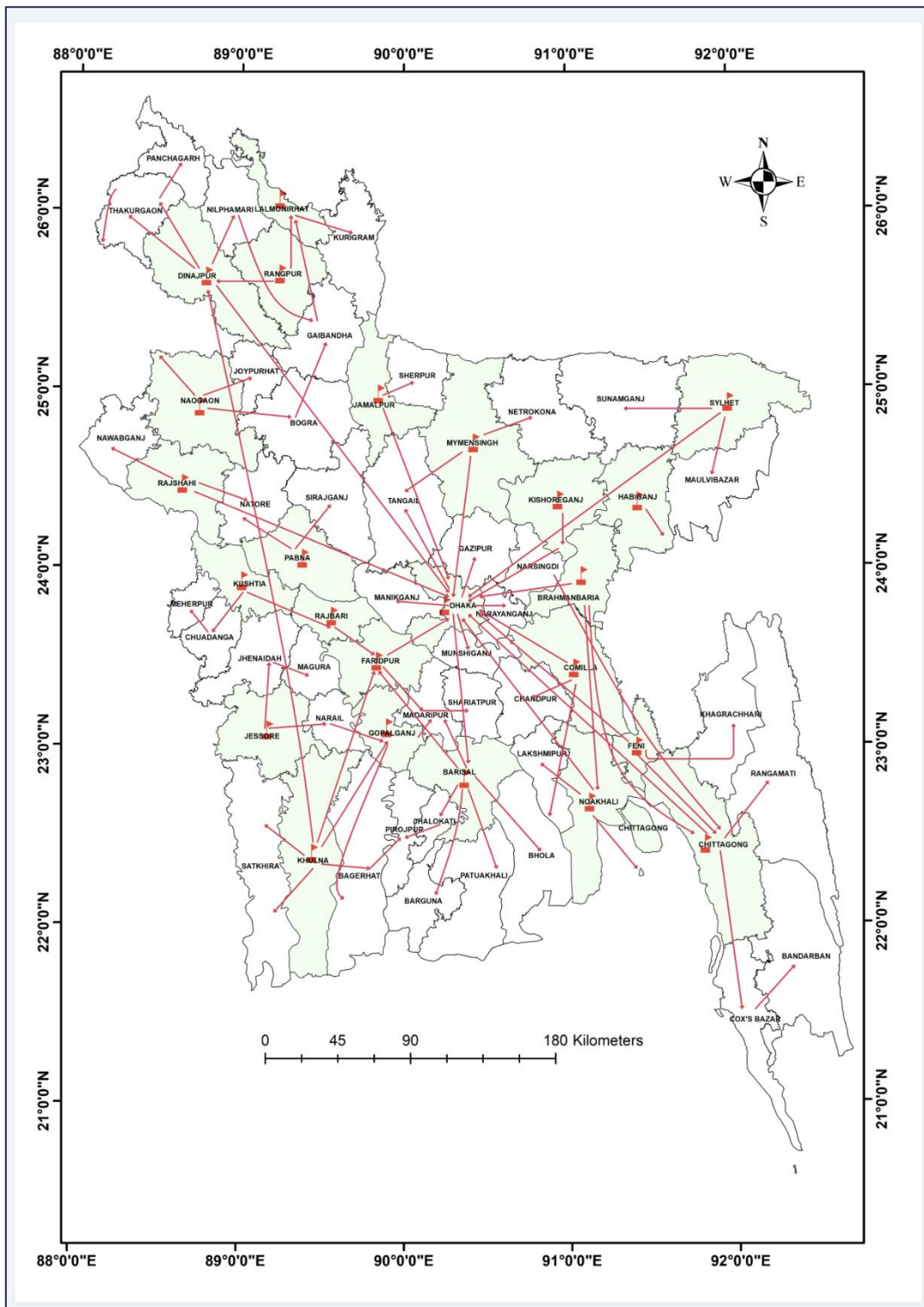
## **10.1 REORGANIZE THE MAIL PROCESSING CENTER AND MAIL ROUTE**

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### **10.1.1 Present scenario of Mail Processing Center:**

At present 26 Mail Processing Centers (MPC) are working for mail processing and sorting. After analysis the MPC's, it was found that the MPC located in Dhaka is in the center point and the mail route following a start topology. That means, most of the case, all the district mail coming to Dhaka and send again to another district. The MPC's coverage area, which is treated as internal mail route. The following figure describes the present mail processing center and mail route.

Figure 27: Present MPC and Mail Route



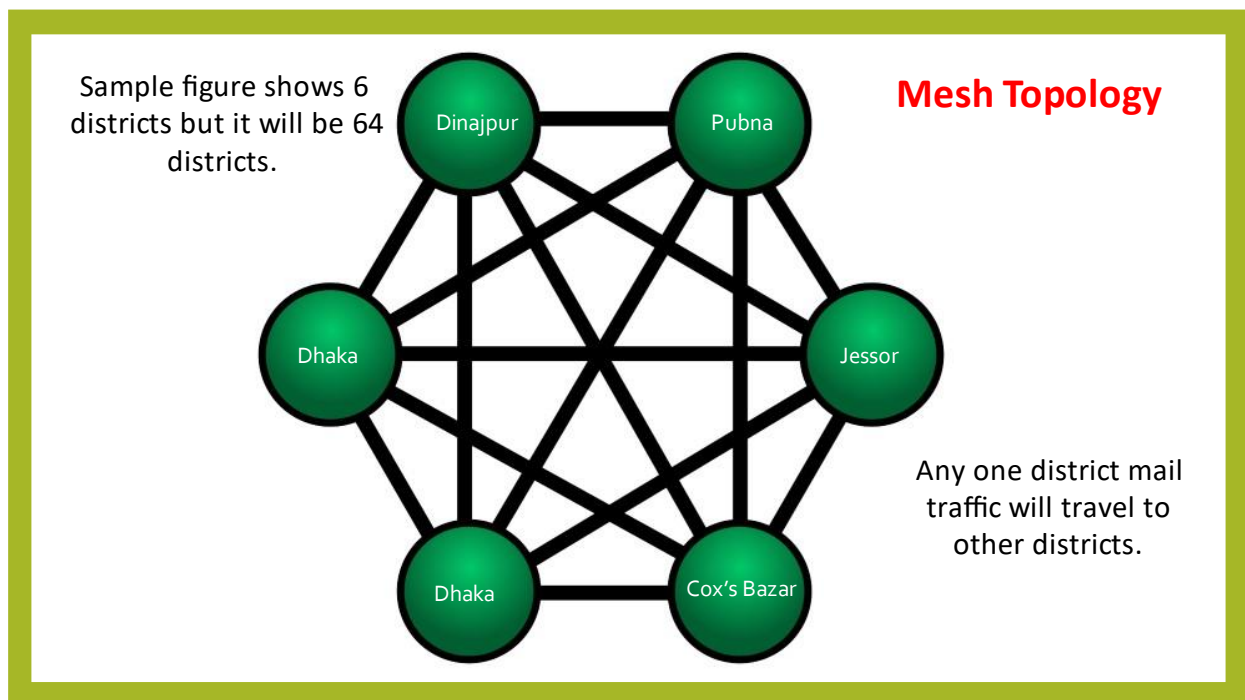
### 10.1.2 Proposed Mail Processing Center and Mail Route:

Hon'ble Prime Minister has given her kind instruction in the Executive Committee of the National Economic Council (ECNEC) meeting held on 29 May, 2018 to establish MPC in 64

districts gradually. The technical feasibility study team also find that for better mail processing and faster delivery of mail and parcel have to be setup 64 MPC in District level. In the proposed system Mail processing will be only in the District MPC. Any district will make 63 article bags for other districts. Each district will have the internal mail sorting and delivery system separately. The following figure show the 64 districts of Bangladesh.

The Mail Route will be divided into two parts. One is internal mail route and other is highway mail route. Internal mail route will be delivered within the district. The highway mail route will be organized such a way with Railway, Roads and Waterway connections where shortest path and minimum cost will be considered. In the highway, there will be several hubs to exchange the mail bag between the transports. The highway mail route will follow the mess tropology to transport the mail bag. The following figure shows an example of mess tropology.

*Figure 28: Mesh Topology shows how article will move to each other*



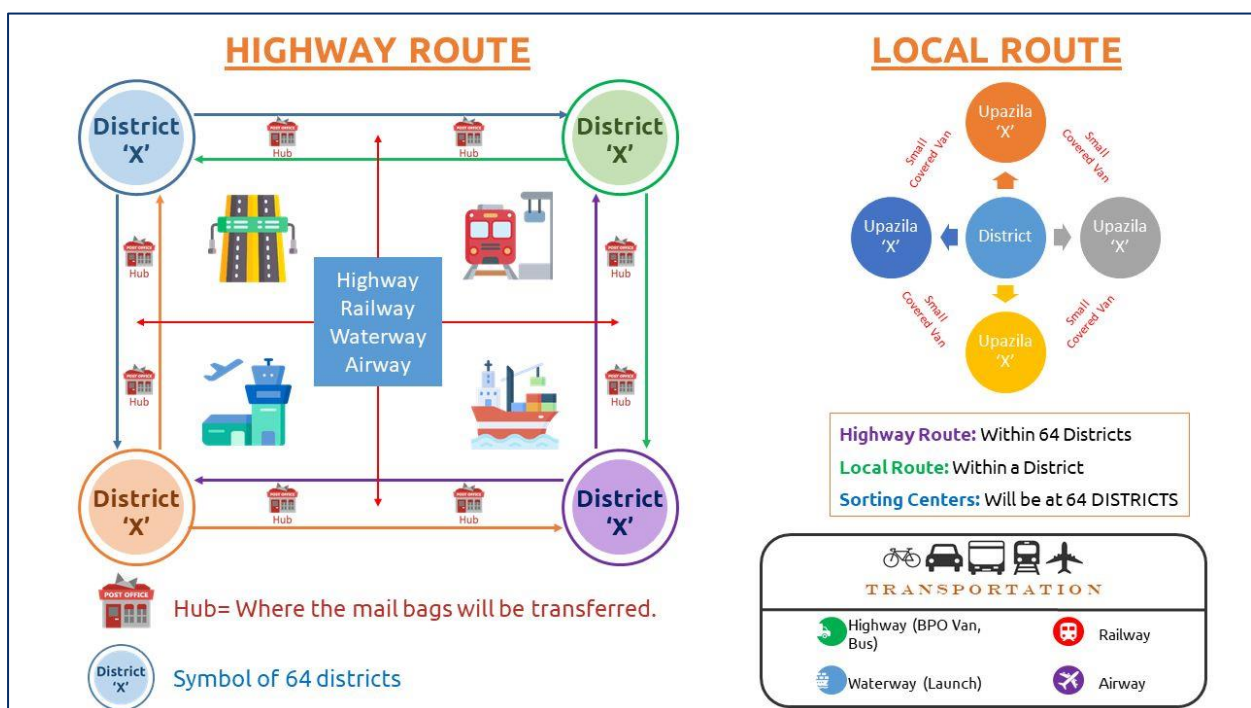
The above figure shows that, the mesh topology where mail article moves with each other points. An effective logistic plan can make this topology success for faster article delivery.

### 10.1.3 The dynamic logistic plan:

To make mail and parcel delivery process faster, effective and sustainable, a dynamic logistic plan is essential. To do this, Roads and Highway, Waterway, Railway and Airway have to be considered. Note that, Hon'ble Prime Minister also suggested to make a comprehensive route plan considering above mentioned transportation ways in the ECNEC meeting held on 29 May, 2018. The Bangladesh transportation network in the map as follows:

Considering that, Postal Departments has 64 Mail Processing Center (Sorting Center) in districts level and no other places has sorting activities. The Logistic plan will be considered in two level, one is highway route and other one is local route. The highway route will be district to district MPC centric and local route will be a single district internal route mainly district-to-upazila centric. The highway routes will have some hub which is a secured place for transit where the mail bag will transfer between logistic vehicle. The highway route logistic will be considered as BPO own covered van, BRTC inter district bus, Railway intercity train services, waterway service like launch service, and domestic Airway services for low-cost transportation. The different kinds of transportation links such a way where the delivery will be faster and transportation cost will be minimum. The dynamic logistic plan diagram for better understanding as follows:

**Figure 29: The highway route and local route of Logistic Plan**



## 11. SECTION 11: RECOMMENDATION AND CONCLUSION

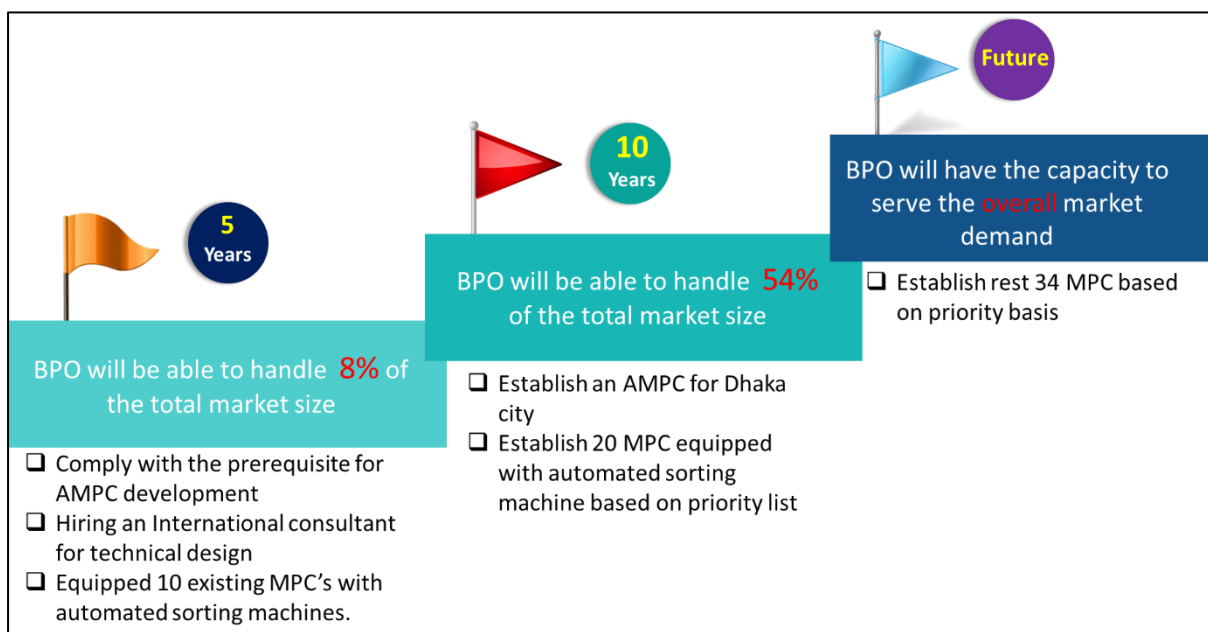
### 11.1 RECOMMENDATION

#### 11.1.1 Recommendation for AMPC and MPC

After the assessment, the feasibility study team suggested a development road map that will help the decision maker to make further decisions. The roadmap has been categorized into three major milestones based on priorities. First, the study proposes to comply with the prerequisite for establishing an AMPC and equipped 10 MPCs with automated sorting machine

which are already established in the most suitable areas . When the Bangladesh Post office reaches the first milestone, they can improve their service quality with the existing resources and capacity. This will help them gain the trust of their service consumers. Additionally, BPOs can expand their opportunities into the E-commerce service market. By this time when the demand increases, the Bangladesh Post Office can focus on developing an AMPC for Dhaka. Because Dhaka's mail and parcel service demand will be five times greater than other major cities in the country in the upcoming 10 years. Then they can upgrade the existing MPCs in very high and high and moderate suitable areas with automated letter and parcel sorting machines and establish new where necessary. Afterward, in the next phase, BPOs will have the opportunity to focus on the border aspects to ensure a robust and well-managed delivery service to every citizen by ensuring updated post offices at district, Upazilla and union level , as well as district-wise MPCs (mail processing centers with automated letter and parcel sorting machines), are put into place on a priority basis.

This road map for the Bangladesh Post Office outlines a clear and phased approach to improving the quality of its services and expanding its offerings, starting with compliance with the necessary prerequisites and focusing on building consumer trust. The development of the Automated Mail Processing Center (AMPC) in Dhaka is prioritized, taking into account the expected increase in demand for mail and parcel services in the city in the coming years. The upgrading of existing MPCs and the development of district-level facilities is also prioritized in order to ensure robust and efficient delivery services to all citizens. This road map provides a comprehensive and prioritized plan for the Bangladesh Post Office to achieve its goals and improve its services.



### **Comply with the prerequisite for establishing automated mail processing center:**

Establishing an automated mail processing center requires some preparations. The establishment of a national geo-database for addressing is one of them. Accurate and up-to-date addresses are critical to transportation safety and are a vital part of many services, including mail delivery, emergency services, urban planning and others. Every destination scanned from the mail is matched against this database to plan and coordinate the proper courier/delivery process.

Modern Mail Sorting machines use multiple high-definition cameras connected with the optical reader that reads the address and puts a bar code on the back of the letter package. For this, we need an optical character recognition system.

Establishing an automated sorting machine requires extensive training and support for human resources. On an average an operator requires 6 weeks of intense training to maintain any mail sorting machine. Accordingly, the principal system integrator needs to establish a local knowledge base and resource pool in order to ensure a steady supply of machine operators and subject matter experts.

### **Strengthening the operation and functional activity of existing MPCs by providing sorting machines:**

For the upgradation of the postal service to the standard level, a modernized and technology-dependent mail sorting and processing system is mandatory. In contrast, the rapid expansion of the e-commerce market in Bangladesh calls for an effective, accurate, and time-consuming delivery service. The Bangladesh post office has the opportunity to capitalize on this by upgrading its facilities. Bangladesh Post Office has already taken a step forward by constructing 14 postal processing centers with modern facilities in various parts of the country. This will ensure service to remote and inaccessible areas of the country at the earliest. To help increase the capacity and timeliness of these mail processing centers, we recommend upgrading them with automatic letter and parcel sorting machines.

### **Establish an automated mail processing center (AMPC) for Dhaka city:**

After complying with the prerequisites and upgrading existing MPCs. Focus can be put on the development of an automated mail processing center (AMPC) in Dhaka. It has been determined through a demand analysis that the parcel transaction volume in Dhaka city will increase to 65,570 per day after 10 years. This is 5 times greater than adjacent demanding cities like Chattagram and Sylhet.

### **Updating post offices located at the District, Upazilla, and Union levels:**

The Bangladesh Post Office (BPO) has identified a need to improve the robustness and management of its delivery services for all citizens. In order to achieve this goal, the BPO intends to focus on the border aspects of its operations, which include updating post offices located at the district, Upazilla, and union levels. **(Details has been attached as an Annex)** These updates will enable the BPO to provide a more efficient and effective delivery service to all citizens, regardless of their location. By improving the management and reliability of its delivery services, the BPO aims to ensure that all citizens have access to high-quality postal services and to establish itself as a trusted and reliable provider of such services. Through its focus on the border aspects of its operations, the BPO seeks to ensure that it remains at the forefront of providing top-notch postal services to all citizens in Bangladesh.

### **Establishment of semi-automated MPCs (with letter and parcel sorting machine) for 64 districts based on priority basis:**

On the border aspects to ensure a robust and well managed delivery service to every citizen by ensuring that district-wise MPCs (mail processing centers with automated letter and parcel sorting machines) are put into place on a priority basis as a third milestone.

## **11.2 LIMITATION OF THE STUDY**

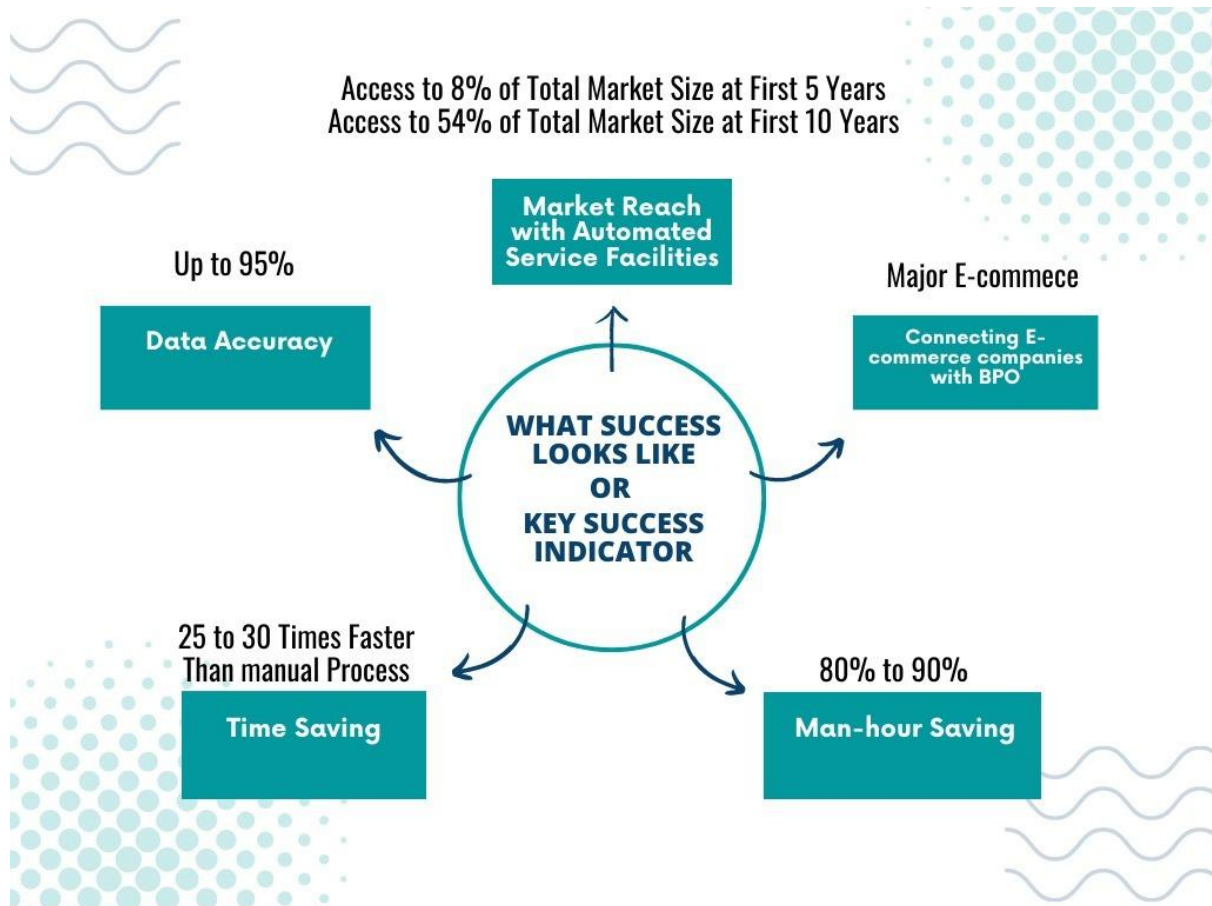
Limited access to data: the sizing of the solution is based on the projected volume of the parcels/packages and mail /flats for next 12 years. This is greatly linked with the industry related data fetched from Statista and Research & Market Analysis group based on tertiary data for the following companies:

- Daraz Bangladesh
- Chaldal
- Evaly
- Pickaboo
- Ajkerdeal

A primary data exchange protocol would have been better to confirm the data received from these research bodies and further instigate confidence in the industry volume projection calculated and used in this document. Budget and cost estimation: due to confidentiality and conflict of interest, the major providers of such equipment and systems could not be directly contacted and quoted to use while preparing the estimated budget for implementing AMPC in Dhaka and 8 other locations. Also, as per supplied RFP, the estimation needs to be constructed by comparing with similar AMPC /mail sorting facility projects in other countries and calculate on the basis of parcel /mail volume. The consultants found the latest of such project was in Canada by Canada Post worth of \$470 mn CAD on May 2022 for 60,000 packages /hour. This was used as a basis of calculation for capex in this document. However, direct contact with the major suppliers of these systems would have resulted in a much more accurate estimation keeping country and world context in consideration.

## 11.3 CONCLUSION:

### 11.3.1 What success looks like



### 11.3.2 Next Step

#### 11.3.2.1 Project preparation and midterm evaluation

After submission of the Feasibility Study report a project has to be formed immediately to start the development work as per plan. For the technical feasibility study, an implementation timeline has been design for the propose project. For more clarification, please visit technical analysis part.

The Bangladesh Post Office (BPO) is advised to undertake regular midterm evaluations in order to continuously monitor and assess its progress towards its development milestones. These evaluations should focus on re-examining the existing market conditions, capacities, and key indicators, in order to determine if any adjustments are necessary to the organization's strategic approach. The purpose of these evaluations is to provide valuable insight into the BPO's performance and enable it to adapt to changing market demands and conditions. This is essential for ensuring that the BPO stays on course to achieve its goals and objectives in a timely and effective manner.



## 12. SECTION 12: ANNEXES

### 12.1 PRIME MINISTER'S INSTRUCTION ABOUT MPC

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার  
ডাক, টেলিযোগাযোগ ও তথ্যপ্রযুক্তি মন্ত্রণালয়  
ডাক ও টেলিযোগাযোগ বিভাগ  
মাননীয় মন্ত্রীর দপ্তর  
বাংলাদেশ সচিবালয়, ঢাকা।

বিষয় : মেইল প্রসেসিং ও লজিস্টিক সার্ভিস সেন্টার স্থাপন এবং ডাক পরিবহন প্রসঙ্গে।

উপর্যুক্ত বিষয়ে জানানো যাচ্ছে যে, জাতীয় অর্থনৈতিক পরিষদের নির্বাহী কমিটির (একনেক) গত ২৯-৫-২০১৮ তারিখে অনুষ্ঠিত সভায় "মেইল প্রসেসিং ও লজিস্টিক সার্ভিস সেন্টার নির্মাণ" সংক্রান্ত আলোচনা হয়। উক্ত সভায় মাননীয় প্রধানমন্ত্রী নির্দেশনা প্রদান করেন যে, ১৪টি মেইল প্রসেসিং সেন্টারে যে সকল আধুনিক যন্ত্রপাতিসমূহ স্থাপন করা হবে সেগুলো পরিচালনার জন্য সংশ্লিষ্ট ব্যক্তিদের প্রশিক্ষণের ব্যবস্থা গ্রহণ করতে হবে। তিনি পর্যায়ক্রমে ৬৪টি জেলায় মেইল পোস্ট অফিসসমূহে মেইল প্রসেসিং সেন্টার স্থাপনসহ উপজেলা ও ইউনিয়ন পর্যায়ে বিদ্যমান পোস্ট অফিসসমূহ আরও উন্নয়নের উপর গুরুত্বারোপ করেন। রেলপথ, সড়কপথ, নদীপথ এবং বিমানপথে ডাক পরিবহনের জন্য একটি সামগ্রিক পরিকল্পনা গ্রহণের লক্ষ্যে তিনি নির্দেশনা প্রদান করেন।

এমতাবস্থায়, মাননীয় প্রধানমন্ত্রীর নির্দেশনা মোতাবেক, ৬৪ টি জেলার মধ্যে প্রাথমিকভাবে ১৪ টি জেলা সদরে মেইল প্রসেসিং ও লজিস্টিক সার্ভিস সেন্টার স্থাপনের পর অবশিষ্ট ৫০ টি জেলা সদরে মেইল প্রসেসিং ও লজিস্টিক সার্ভিস সেন্টার স্থাপন এবং "রেলপথ, সড়কপথ, নদীপথ ও বিমানপথে ডাক পরিবহন" জন্য একটি সামগ্রিক পরিকল্পনা গ্রহণের প্রয়োজনীয় ব্যবস্থা গ্রহণের জন্য নির্দেশক্রমে অনুরোধ করা হলো।

  
২৪/০৩/২০১৮  
(সেবাধীন-রেমা)

মন্ত্রীর একান্ত সচিব (উপসচিব)  
ফোন : ৯৫১৪৪০৩ (অঃ)

নং-১৪.০০.০০০০.০২৭.০২৫.০০২.১৭-১৭৪

তারিখ : ২৪/০৩/২০১৮ খ্রিঃ

প্রাপক :  
✓ সচিব  
ডাক ও টেলিযোগাযোগ বিভাগ  
বাংলাদেশ সচিবালয়, ঢাকা।  
২০১৮  
২৫/৩/১৮  
১৫ (Post)

ডাক ও টেলিযোগাযোগ বিভাগ  
অতিরিক্ত সচিব (প্রশাসন) এর দপ্তর

ডায়েরী নং ২৫৬৪	তারিখ ২৫/০৩/১৮
বেশ কসক	স্বাক্ষরিত কর্মকর্তা
মুদ্রা-সচিব (প্রশাসন)	মুদ্রা-সচিব (সঃ) (নিরীক্ষা)
	ব্যক্তিগত কর্মকর্তা

ক্রমিক নং	সূত্র	তারিখ
১	ডাক ও টেলিযোগাযোগ বিভাগ	২৪/০৩/১৮
২	মুদ্রা-সচিব (প্রশাসন)	২৫/০৩/১৮
৩	অতিরিক্ত সচিব (প্রশাসন)	২৫/০৩/১৮
৪	মুদ্রা-সচিব (প্রশাসন) (সঃ)	২৫/০৩/১৮
৫	মুদ্রা-সচিব (ডাক)	২৫/০৩/১৮
৬	মুদ্রা-সচিব (সঃ) (নিরীক্ষা)	২৫/০৩/১৮
৭	মুদ্রা-সচিব (সঃ) (নিরীক্ষা)	২৫/০৩/১৮
৮	মুদ্রা-সচিব (সঃ) (নিরীক্ষা)	২৫/০৩/১৮

৪০৪  
২৫/৩/১৮  
ডায়েরী নং  
ডাক ও টেলিযোগাযোগ বিভাগ  
মুদ্রা-সচিব (প্রশাসন) এর দপ্তর  
তারিখ : ২৫/০৩/১৮  
ডাক-১/৩-২

অতি জরুরী  
বিশেষ বাহক মারফত

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার  
ডাক, টেলিযোগাযোগ ও তথ্যপ্রযুক্তি মন্ত্রণালয়  
ডাক ও টেলিযোগাযোগ বিভাগ  
পরিকল্পনা উইং  
বাংলাদেশ সচিবালয়, ঢাকা।


স্মারক নং-১৪.০০.০০০০.০১৪.১৮.০১৬.১৪-১৬৪

তারিখঃ ২২ জ্যৈষ্ঠ ১৪২৫  
০৫ জুন ২০১৮

বিষয়ঃ ডাক অধিদপ্তর সম্পর্কে মাননীয় প্রধানমন্ত্রী কর্তৃক প্রদত্ত সদয় অনুশাসন সংক্রান্ত।

উপর্যুক্ত বিষয়ে জানানো যাচ্ছে যে, গত ২৯/০৫/২০১৮ তারিখে অনুষ্ঠিত একনেক সভায় ডাক অধিদপ্তর কর্তৃক উপস্থাপিত “মেইল প্রসেসিং ও লজিস্টিক সার্ভিস সেন্টার নির্মাণ” শীর্ষক প্রকল্পের আলোচনায় ডাক অধিদপ্তর সম্পর্কে মাননীয় প্রধানমন্ত্রী কর্তৃক প্রদত্ত সদয় অনুশাসন নিম্নরূপঃ

- ক) “মেইল প্রসেসিং ও লজিস্টিক সার্ভিস সেন্টার নির্মাণ” শীর্ষক প্রকল্পের আওতায় বর্তমানে প্রস্তাবিত ১৪টি স্থানে মেইল প্রসেসিং সেন্টার নির্মাণের স্থলে পর্যায়ক্রমে দেশের ৬৪টি জেলার অবশিষ্ট জেলাগুলোতেও নির্মাণের ব্যবস্থা গ্রহণ করতে হবে।
  - খ) ডাক পরিবহণের জন্য সংগৃহিত যানবাহনে Chill Chamber এর সংস্থান রাখতে হবে।
  - গ) ডাক অধিদপ্তরের আওতায় প্রতিটি ডাকঘরে পণ্য পরিবহণ ব্যবস্থায় E-Commerce প্রবর্তন করতে হবে।
  - ঘ) রেলের মাধ্যমে পণ্য পরিবহণে ডাক গাড়ীতে (Mail Van) Chill Chamber এর সংস্থান রাখতে হবে।
- ২। এমতাবস্থায়, মাননীয় প্রধানমন্ত্রী কর্তৃক প্রদত্ত উক্ত অনুশাসন অনুযায়ী পরবর্তী প্রয়োজনীয় ব্যবস্থা গ্রহণের জন্য নির্দেশক্রমে অনুরোধ করা হল।

  
০৫-০৬-১৮  
(মোঃ আব্দুল মান্নান)  
সিনিয়র সহকারী প্রধান  
ফোন-৯৫৭৩৫৬৬

মহাপরিচালক  
ডাক অধিদপ্তর, ঢাকা।

অনুলিপিঃ

- ১। সচিবের একান্ত সচিব, ডাক ও টেলিযোগাযোগ বিভাগ।
- ২। যুগ্ম-প্রধানের ব্যক্তিগত কর্মকর্তা, ডাক ও টেলিযোগাযোগ বিভাগ।

## 12.2 DISTRICT WISE PRIORITY OR SUITABILITY ANALYSIS TABLE

	Perspective		Parcel volume	Infrastructure	Social activity			Economic activity					Agricultural activity		Total score
	Item		Parcel movement volume assessment	Existing Infrastructure	Population	Pove rty index / pover ty rate	Populat ion age density	Incom e indica tor Gini co- efficie nt	Consump tion indicator Gini co- efficient	Monthly household expendet ure	Transporta tion facility	Num ber of Grow th center s	Product ion of fruits	Product ion of vegetab les	
Evaluation criteria	Suitabi lity Low (1 point)	<20000 00	No	<16000 00	>20 %	<25%	>0.4	>0.4	<15000 (BDT)	<6000 km	<30	<60000 (MT)	< 50000 (MT)		
	Suitabi lity Fair (3 points)	200000 0 to 450000 0		290000 0 to 160000 0	20% to 13%	25% to 45%	0.3 to 0.4	0.3 to 0.4	15000 to 20000 (BDT)	6000km to 7200km	30 to 50	60000 to 90000 (MT)	90000 to 50000 (MT)		
	Suitabi lity High (5 points)	>45000 00	Yes	>30000 00	<13 %	>45%	0 to 0.3	0 to 0.3	>20000 (BDT)	>7200km	>50	> 90000 (MT)	>90000 (MT)		
	<b>Weight</b>	<b>3.51</b>	<b>3.44</b>	<b>0.85</b>	<b>0.70</b>	<b>1.20</b>	<b>1.11</b>	<b>0.76</b>	<b>1.69</b>	<b>3.20</b>	<b>2.80</b>	<b>0.37</b>	<b>0.37</b>	<b>20.00</b>	
BAGERHA T	<b>Rating</b>	1	1	3	3	3	3	3	1	5	3	1	3	48.38	
	<b>Score</b>	3.51	3.44	2.55	2.10	3.60	3.33	2.28	1.69	16.00	8.40	0.37	1.11		
BANDARB AN	<b>Rating</b>	1	1	1	1	3	1	3	1	5	1	1	1	36.72	
	<b>Score</b>	3.51	3.44	0.85	0.70	3.60	1.11	2.28	1.69	16.00	2.80	0.37	0.37		
BARGUNA	<b>Rating</b>	1	1	1	5	3	3	5	1	3	1	1	1	36.86	
	<b>Score</b>	3.51	3.44	0.85	3.50	3.60	3.33	3.80	1.69	9.60	2.80	0.37	0.37		

	Perspective		Parcel volume	Infrastructure	Social activity			Economic activity					Agricultural activity		Total score
	Item		Parcel movement volume assessment	Existing Infrastructure	Population	Pove rty index / pove rty rate	Populat ion age density	Incom e indica tor Gini co- efficie nt	Consump tion indicator Gini co- efficient	Monthly household expendet ure	Transporta tion facility	Num ber of Grow th center s	Product ion of fruits	Product ion of vegetab les	
Evaluation criteria	Suitabi lity Low (1 point)	<20000 00	No	<16000 00	>20 %	<25%	>0.4	>0.4	<15000 (BDT)	<6000 km	<30	<60000 (MT)	< 50000 (MT)		
	Suitabi lity Fair (3 points)	200000 0 to 450000 0		290000 0 to 160000 0	20% to 13%	25% to 45%	0.3 to 0.4	0.3 to 0.4	15000 to 20000 (BDT)	6000km to 7200km	30 to 50	60000 to 90000 (MT)	90000 to 50000 (MT)		
	Suitabi lity High (5 points)	>45000 00	Yes	>30000 00	<13 %	>45%	0 to 0.3	0 to 0.3	>20000 (BDT)	>7200km	>50	> 90000 (MT)	>90000 (MT)		
<b>Weight</b>		<b>3.51</b>	<b>3.44</b>	<b>0.85</b>	<b>0.70</b>	<b>1.20</b>	<b>1.11</b>	<b>0.76</b>	<b>1.69</b>	<b>3.20</b>	<b>2.80</b>	<b>0.37</b>	<b>0.37</b>	<b>20.00</b>	
BARISAL	<b>Rating</b>	3	5	3	3	3	1	3	3	5	3	3	1	70.32	
	<b>Score</b>	10.53	17.20	2.55	2.10	3.60	1.11	2.28	5.07	16.00	8.40	1.11	0.37		
BHOLA	<b>Rating</b>	1	1	3	5	3	1	5	3	3	3	5	1	46.80	
	<b>Score</b>	3.51	3.44	2.55	3.50	3.60	1.11	3.80	5.07	9.60	8.40	1.85	0.37		
BOGRA	<b>Rating</b>	3	5	5	3	5	1	3	1	5	5	5	5	78.86	
	<b>Score</b>	10.53	17.20	4.25	2.10	6.00	1.11	2.28	1.69	16.00	14.00	1.85	1.85		
BRAHMANB ARIA	<b>Rating</b>	1	1	5	5	3	1	5	5	5	3	1	3	57.54	
	<b>Score</b>	3.51	3.44	4.25	3.50	3.60	1.11	3.80	8.45	16.00	8.40	0.37	1.11		
CHANDPUR	<b>Rating</b>	1	1	3	3	3	1	5	3	5	3	1	1	50.32	

	Perspective		Parcel volume	Infrastructure	Social activity			Economic activity					Agricultural activity		Total score
	Item		Parcel movement volume assessment	Existing Infrastructure	Population	Pove rty index / pove rty rate	Populat ion age density	Incom e indica tor Gini co- efficie nt	Consump tion indicator Gini co- efficient	Monthly household expendet ure	Transporta tion facility	Num ber of Grow th center s	Product ion of fruits	Product ion of vegetab les	
Evaluation criteria	Suitabi lity Low (1 point)	<20000 00	No	<16000 00	>20 %	<25%	>0.4	>0.4	<15000 (BDT)	<6000 km	<30	<60000 (MT)	< 50000 (MT)		
	Suitabi lity Fair (3 points)	200000 0 to 450000 0		290000 0 to 160000 0	20% to 13%	25% to 45%	0.3 to 0.4	0.3 to 0.4	15000 to 20000 (BDT)	6000km to 7200km	30 to 50	60000 to 90000 (MT)	90000 to 50000 (MT)		
	Suitabi lity High (5 points)	>45000 00	Yes	>30000 00	<13 %	>45%	0 to 0.3	0 to 0.3	>20000 (BDT)	>7200km	>50	> 90000 (MT)	>90000 (MT)		
	<b>Weight</b>	<b>3.51</b>	<b>3.44</b>	<b>0.85</b>	<b>0.70</b>	<b>1.20</b>	<b>1.11</b>	<b>0.76</b>	<b>1.69</b>	<b>3.20</b>	<b>2.80</b>	<b>0.37</b>	<b>0.37</b>		<b>20.00</b>
	<b>Score</b>	3.51	3.44	2.55	2.10	3.60	1.11	3.80	5.07	16.00	8.40	0.37	0.37		
CHITTAGON G	<b>Rating</b>	5	5	5	5	3	1	5	3	5	5	5	5	<b>89.78</b>	
	<b>Score</b>	17.55	17.20	4.25	3.50	3.60	1.11	3.80	5.07	16.00	14.00	1.85	1.85		
CHUADANG A	<b>Rating</b>	1	1	1	5	5	1	3	1	5	1	1	5	<b>43.40</b>	
	<b>Score</b>	3.51	3.44	0.85	3.50	6.00	1.11	2.28	1.69	16.00	2.80	0.37	1.85		
COMILLA	<b>Rating</b>	3	5	5	5	3	3	5	3	5	5	3	5	<b>84.24</b>	
	<b>Score</b>	10.53	17.20	4.25	3.50	3.60	3.33	3.80	5.07	16.00	14.00	1.11	1.85		
COX'S BAZAR	<b>Rating</b>	3	1	3	5	3	1	5	3	5	5	1	1	<b>64.34</b>	
	<b>Score</b>	10.53	3.44	2.55	3.50	3.60	1.11	3.80	5.07	16.00	14.00	0.37	0.37		

	Perspective		Parcel volume	Infrastructure	Social activity			Economic activity					Agricultural activity		Total score
	Item		Parcel movement volume assessment	Existing Infrastructure	Population	Pove rty index / pove rty rate	Populat ion age density	Incom e indica tor Gini co- efficie nt	Consump tion indicator Gini co- efficient	Monthly household expendet ure	Transporta tion facility	Num ber of Grow th center s	Product ion of fruits	Product ion of vegetab les	
Evaluation criteria	Suitabi lity Low (1 point)	<20000 00	No	<16000 00	>20 %	<25%	>0.4	>0.4	<15000 (BDT)	<6000 km	<30	<60000 (MT)	< 50000 (MT)		
	Suitabi lity Fair (3 points)	200000 0 to 450000 0		290000 0 to 160000 0	20% to 13%	25% to 45%	0.3 to 0.4	0.3 to 0.4	15000 to 20000 (BDT)	6000km to 7200km	30 to 50	60000 to 90000 (MT)	90000 to 50000 (MT)		
	Suitabi lity High (5 points)	>45000 00	Yes	>30000 00	<13 %	>45%	0 to 0.3	0 to 0.3	>20000 (BDT)	>7200km	>50	> 90000 (MT)	>90000 (MT)		
<b>Weight</b>		<b>3.51</b>	<b>3.44</b>	<b>0.85</b>	<b>0.70</b>	<b>1.20</b>	<b>1.11</b>	<b>0.76</b>	<b>1.69</b>	<b>3.20</b>	<b>2.80</b>	<b>0.37</b>	<b>0.37</b>	<b>20.00</b>	
DHAKA	<b>Rating</b>	5	5	5	5	5	3	5	5	5	5	1	5	<b>96.30</b>	
	<b>Score</b>	17.55	17.20	4.25	3.50	6.00	3.33	3.80	8.45	16.00	14.00	0.37	1.85		
DINAJPUR	<b>Rating</b>	3	5	5	1	3	1	3	1	5	5	5	5	<b>75.06</b>	
	<b>Score</b>	10.53	17.20	4.25	0.70	3.60	1.11	2.28	1.69	16.00	14.00	1.85	1.85		
FARIDPUR	<b>Rating</b>	5	5	3	5	3	5	5	3	5	3	1	3	<b>84.70</b>	
	<b>Score</b>	17.55	17.20	2.55	3.50	3.60	5.55	3.80	5.07	16.00	8.40	0.37	1.11		
FENI	<b>Rating</b>	3	5	3	5	3	3	5	5	5	1	1	1	<b>72.50</b>	
	<b>Score</b>	10.53	17.20	2.55	3.50	3.60	3.33	3.80	8.45	16.00	2.80	0.37	0.37		
GAIBANDHA	<b>Rating</b>	1	1	3	1	3	1	3	1	5	3	5	1	<b>45.50</b>	

	Perspective		Parcel volume	Infrastructure	Social activity			Economic activity					Agricultural activity		Total score	
	Item		Parcel movement volume assessment	Existing Infrastructure	Population	Pove rty index / pove rty rate	Populat ion age density	Incom e indica tor Gini co- efficie nt	Consump tion indicator Gini co- efficient	Monthly household expendet ure	Transporta tion facility	Num ber of Grow th center s	Product ion of fruits	Product ion of vegetab les		
	Evaluation criteria	Suitabi lity Low (1 point)	<20000 00	No	<16000 00	>20 %	<25%	>0.4	>0.4	<15000 (BDT)	<6000 km	<30	<60000 (MT)	< 50000 (MT)		
		Suitabi lity Fair (3 points)	200000 0 to 450000 0		290000 0 to 160000 0	20% to 13%	25% to 45%	0.3 to 0.4	0.3 to 0.4	15000 to 20000 (BDT)	6000km to 7200km	30 to 50	60000 to 90000 (MT)	90000 to 50000 (MT)		
		Suitabi lity High (5 points)	>45000 00	Yes	>30000 00	<13 %	>45%	0 to 0.3	0 to 0.3	>20000 (BDT)	>7200km	>50	> 90000 (MT)	>90000 (MT)		
	Weight		3.51	3.44	0.85	0.70	1.20	1.11	0.76	1.69	3.20	2.80	0.37	0.37		20.00
	Score		3.51	3.44	2.55	0.70	3.60	1.11	2.28	1.69	16.00	8.40	1.85	0.37		
GAZIPUR	Rating		5	1	5	5	5	3	5	3	5	1	5	3	68.70	
	Score		17.55	3.44	4.25	3.50	6.00	3.33	3.80	5.07	16.00	2.80	1.85	1.11		
GOPALGANJ	Rating		3	5	3	3	3	1	5	1	5	3	1	3	68.46	
	Score		10.53	17.20	2.55	2.10	3.60	1.11	3.80	1.69	16.00	8.40	0.37	1.11		
HABIGANJ	Rating		3	5	3	5	3	1	5	1	5	3	3	3	70.60	
	Score		10.53	17.20	2.55	3.50	3.60	1.11	3.80	1.69	16.00	8.40	1.11	1.11		
JAMALPUR	Rating		1	5	3	1	3	1	5	1	5	3	3	5	61.52	
	Score		3.51	17.20	2.55	0.70	3.60	1.11	3.80	1.69	16.00	8.40	1.11	1.85		

	Perspective		Parcel volume	Infrastructure	Social activity			Economic activity					Agricultural activity		Total score
	Item		Parcel movement volume assessment	Existing Infrastructure	Population	Pove rty index / pove rty rate	Populat ion age density	Incom e indica tor Gini co- efficie nt	Consump tion indicator Gini co- efficient	Monthly household expendet ure	Transporta tion facility	Num ber of Grow th center s	Product ion of fruits	Product ion of vegetab les	
Evaluation criteria	Suitabi lity Low (1 point)	<20000 00	No	<16000 00	>20 %	<25%	>0.4	>0.4	<15000 (BDT)	<6000 km	<30	<60000 (MT)	< 50000 (MT)		
	Suitabi lity Fair (3 points)	200000 0 to 450000 0		290000 0 to 160000 0	20% to 13%	25% to 45%	0.3 to 0.4	0.3 to 0.4	15000 to 20000 (BDT)	6000km to 7200km	30 to 50	60000 to 90000 (MT)	90000 to 50000 (MT)		
	Suitabi lity High (5 points)	>45000 00	Yes	>30000 00	<13 %	>45%	0 to 0.3	0 to 0.3	>20000 (BDT)	>7200km	>50	> 90000 (MT)	>90000 (MT)		
<b>Weight</b>		<b>3.51</b>	<b>3.44</b>	<b>0.85</b>	<b>0.70</b>	<b>1.20</b>	<b>1.11</b>	<b>0.76</b>	<b>1.69</b>	<b>3.20</b>	<b>2.80</b>	<b>0.37</b>	<b>0.37</b>	<b>20.00</b>	
JESSORE	<b>Rating</b>	5	5	5	5	5	1	5	1	5	3	3	5	<b>82.46</b>	
	<b>Score</b>	17.55	17.20	4.25	3.50	6.00	1.11	3.80	1.69	16.00	8.40	1.11	1.85		
JHALOKATI	<b>Rating</b>	1	1	1	5	3	1	5	1	5	1	1	1	<b>41.04</b>	
	<b>Score</b>	3.51	3.44	0.85	3.50	3.60	1.11	3.80	1.69	16.00	2.80	0.37	0.37		
JHENAI DAH	<b>Rating</b>	1	1	3	5	5	1	5	1	5	1	5	5	<b>48.10</b>	
	<b>Score</b>	3.51	3.44	2.55	3.50	6.00	1.11	3.80	1.69	16.00	2.80	1.85	1.85		
JOYPURHAT	<b>Rating</b>	1	1	1	5	5	1	5	1	3	1	1	1	<b>37.04</b>	
	<b>Score</b>	3.51	3.44	0.85	3.50	6.00	1.11	3.80	1.69	9.60	2.80	0.37	0.37		
<b>Rating</b>		<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>3</b>	<b>1</b>	<b>5</b>	<b>1</b>	<b>5</b>	<b>3</b>	<b>38.94</b>	



	Perspective		Parcel volume	Infrastructure	Social activity			Economic activity					Agricultural activity		Total score
	Item		Parcel movement volume assessment	Existing Infrastructure	Population	Pove rty index / pove rty rate	Populat ion age density	Incom e indica tor Gini co- efficie nt	Consump tion indicator Gini co- efficient	Monthly household expendet ure	Transporta tion facility	Num ber of Grow th center s	Product ion of fruits	Product ion of vegetab les	
Evaluation criteria	Suitabi lity Low (1 point)	<20000 00	No	<16000 00	>20 %	<25%	>0.4	>0.4	<15000 (BDT)	<6000 km	<30	<60000 (MT)	< 50000 (MT)		
	Suitabi lity Fair (3 points)	200000 0 to 450000 0		290000 0 to 160000 0	20% to 13%	25% to 45%	0.3 to 0.4	0.3 to 0.4	15000 to 20000 (BDT)	6000km to 7200km	30 to 50	60000 to 90000 (MT)	90000 to 50000 (MT)		
	Suitabi lity High (5 points)	>45000 00	Yes	>30000 00	<13 %	>45%	0 to 0.3	0 to 0.3	>20000 (BDT)	>7200km	>50	> 90000 (MT)	>90000 (MT)		
	<b>Weight</b>	<b>3.51</b>	<b>3.44</b>	<b>0.85</b>	<b>0.70</b>	<b>1.20</b>	<b>1.11</b>	<b>0.76</b>	<b>1.69</b>	<b>3.20</b>	<b>2.80</b>	<b>0.37</b>	<b>0.37</b>	<b>20.00</b>	
KHAGRACH HARI	<b>Score</b>	3.51	3.44	0.85	0.70	3.60	1.11	2.28	1.69	16.00	2.80	1.85	1.11		
KHULNA	<b>Rating</b>	5	5	3	3	5	1	5	1	5	3	5	1	78.62	
	<b>Score</b>	17.55	17.20	2.55	2.10	6.00	1.11	3.80	1.69	16.00	8.40	1.85	0.37		
KISHOREGA NJ	<b>Rating</b>	3	5	5	1	3	1	5	1	5	3	3	3	69.50	
	<b>Score</b>	10.53	17.20	4.25	0.70	3.60	1.11	3.80	1.69	16.00	8.40	1.11	1.11		
KURIGRAM	<b>Rating</b>	1	1	3	1	3	1	5	1	3	3	1	3	39.88	
	<b>Score</b>	3.51	3.44	2.55	0.70	3.60	1.11	3.80	1.69	9.60	8.40	0.37	1.11		
KUSHTIA	<b>Rating</b>	1	5	3	5	5	1	3	1	5	1	5	5	60.34	
	<b>Score</b>	3.51	17.20	2.55	3.50	6.00	1.11	2.28	1.69	16.00	2.80	1.85	1.85		

	Perspective		Parcel volume	Infrastructure	Social activity			Economic activity					Agricultural activity		Total score
	Item		Parcel movement volume assessment	Existing Infrastructure	Population	Pove rty index / pove rty rate	Populat ion age density	Incom e indica tor Gini co- efficie nt	Consump tion indicator Gini co- efficient	Monthly household expendet ure	Transporta tion facility	Num ber of Grow th center s	Product ion of fruits	Product ion of vegetab les	
	Evaluation criteria	Suitabi lity Low (1 point)	<20000 00	No	<16000 00	>20 %	<25%	>0.4	>0.4	<15000 (BDT)	<6000 km	<30	<60000 (MT)	< 50000 (MT)	
		Suitabi lity Fair (3 points)	200000 0 to 450000 0		290000 0 to 160000 0	20% to 13%	25% to 45%	0.3 to 0.4	0.3 to 0.4	15000 to 20000 (BDT)	6000km to 7200km	30 to 50	60000 to 90000 (MT)	90000 to 50000 (MT)	
		Suitabi lity High (5 points)	>45000 00	Yes	>30000 00	<13 %	>45%	0 to 0.3	0 to 0.3	>20000 (BDT)	>7200km	>50	> 90000 (MT)	>90000 (MT)	
	<b>Weight</b>	<b>3.51</b>	<b>3.44</b>	<b>0.85</b>	<b>0.70</b>	<b>1.20</b>	<b>1.11</b>	<b>0.76</b>	<b>1.69</b>	<b>3.20</b>	<b>2.80</b>	<b>0.37</b>	<b>0.37</b>	<b>20.00</b>	
LAKSHMIPUR	<b>Rating</b>	1	1	3	1	3	1	5	1	5	1	1	1	39.94	
	<b>Score</b>	3.51	3.44	2.55	0.70	3.60	1.11	3.80	1.69	16.00	2.80	0.37	0.37		
LALMONIRHAT	<b>Rating</b>	1	5	1	1	3	1	5	1	3	1	1	3	46.34	
	<b>Score</b>	3.51	17.20	0.85	0.70	3.60	1.11	3.80	1.69	9.60	2.80	0.37	1.11		
MADARIPUR	<b>Rating</b>	3	1	1	5	3	1	5	3	3	1	1	1	45.04	
	<b>Score</b>	10.53	3.44	0.85	3.50	3.60	1.11	3.80	5.07	9.60	2.80	0.37	0.37		
MAGURA	<b>Rating</b>	1	1	1	1	3	1	3	1	5	1	1	1	36.72	
	<b>Score</b>	3.51	3.44	0.85	0.70	3.60	1.11	2.28	1.69	16.00	2.80	0.37	0.37		
MANIKGANJ	<b>Rating</b>	3	1	1	3	3	3	3	1	5	1	1	3	48.10	

	Perspective		Parcel volume	Infrastructure	Social activity			Economic activity					Agricultural activity		Total score
	Item		Parcel movement volume assessment	Existing Infrastructure	Population	Pove rty index / pove rty rate	Populat ion age density	Incom e indica tor Gini co- efficie nt	Consump tion indicator Gini co- efficient	Monthly household expendet ure	Transporta tion facility	Num ber of Grow th center s	Product ion of fruits	Product ion of vegetab les	
Evaluation criteria	Suitabi lity Low (1 point)	<20000 00	No	<16000 00	>20 %	<25%	>0.4	>0.4	<15000 (BDT)	<6000 km	<30	<60000 (MT)	< 50000 (MT)		
	Suitabi lity Fair (3 points)	200000 0 to 450000 0		290000 0 to 160000 0	20% to 13%	25% to 45%	0.3 to 0.4	0.3 to 0.4	15000 to 20000 (BDT)	6000km to 7200km	30 to 50	60000 to 90000 (MT)	90000 to 50000 (MT)		
	Suitabi lity High (5 points)	>45000 00	Yes	>30000 00	<13 %	>45%	0 to 0.3	0 to 0.3	>20000 (BDT)	>7200km	>50	> 90000 (MT)	>90000 (MT)		
	<b>Weight</b>	<b>3.51</b>	<b>3.44</b>	<b>0.85</b>	<b>0.70</b>	<b>1.20</b>	<b>1.11</b>	<b>0.76</b>	<b>1.69</b>	<b>3.20</b>	<b>2.80</b>	<b>0.37</b>	<b>0.37</b>		<b>20.00</b>
	<b>Score</b>	10.53	3.44	0.85	2.10	3.60	3.33	2.28	1.69	16.00	2.80	0.37	1.11		
MAULVIBAZ AR	<b>Rating</b>	5	1	3	5	3	1	5	3	5	3	1	1	65.76	
	<b>Score</b>	17.55	3.44	2.55	3.50	3.60	1.11	3.80	5.07	16.00	8.40	0.37	0.37		
MEHERPUR	<b>Rating</b>	1	1	1	5	5	1	3	1	3	1	3	5	37.74	
	<b>Score</b>	3.51	3.44	0.85	3.50	6.00	1.11	2.28	1.69	9.60	2.80	1.11	1.85		
MUNSHIGA NJ	<b>Rating</b>	3	1	3	5	5	1	5	3	5	1	1	1	55.54	
	<b>Score</b>	10.53	3.44	2.55	3.50	6.00	1.11	3.80	5.07	16.00	2.80	0.37	0.37		
MYMENSIN GH	<b>Rating</b>	5	5	5	5	3	1	5	1	5	5	5	5	86.40	
	<b>Score</b>	17.55	17.20	4.25	3.50	3.60	1.11	3.80	1.69	16.00	14.00	1.85	1.85		

	Perspective		Parcel volume	Infrastructure	Social activity			Economic activity					Agricultural activity		Total score
	Item		Parcel movement volume assessment	Existing Infrastructure	Population	Pove rty index / pove rty rate	Populat ion age density	Incom e indica tor Gini co- efficie nt	Consump tion indicator Gini co- efficient	Monthly household expendet ure	Transporta tion facility	Num ber of Grow th center s	Product ion of fruits	Product ion of vegetab les	
	Evaluation criteria	Suitabi lity Low (1 point)	<20000 00	No	<16000 00	>20 %	<25%	>0.4	>0.4	<15000 (BDT)	<6000 km	<30	<60000 (MT)	< 50000 (MT)	
		Suitabi lity Fair (3 points)	200000 0 to 450000 0		290000 0 to 160000 0	20% to 13%	25% to 45%	0.3 to 0.4	0.3 to 0.4	15000 to 20000 (BDT)	6000km to 7200km	30 to 50	60000 to 90000 (MT)	90000 to 50000 (MT)	
		Suitabi lity High (5 points)	>45000 00	Yes	>30000 00	<13 %	>45%	0 to 0.3	0 to 0.3	>20000 (BDT)	>7200km	>50	> 90000 (MT)	>90000 (MT)	
	<b>Weight</b>	<b>3.51</b>	<b>3.44</b>	<b>0.85</b>	<b>0.70</b>	<b>1.20</b>	<b>1.11</b>	<b>0.76</b>	<b>1.69</b>	<b>3.20</b>	<b>2.80</b>	<b>0.37</b>	<b>0.37</b>	<b>20.00</b>	
NAOGAON	<b>Rating</b>	1	1	3	3	5	3	5	1	5	3	3	5	53.78	
	<b>Score</b>	3.51	3.44	2.55	2.10	6.00	3.33	3.80	1.69	16.00	8.40	1.11	1.85		
NARAIL	<b>Rating</b>	1	1	1	5	3	3	5	1	3	1	1	1	36.86	
	<b>Score</b>	3.51	3.44	0.85	3.50	3.60	3.33	3.80	1.69	9.60	2.80	0.37	0.37		
NARAYANG ANJ	<b>Rating</b>	5	1	5	5	5	1	5	5	5	1	1	1	67.64	
	<b>Score</b>	17.55	3.44	4.25	3.50	6.00	1.11	3.80	8.45	16.00	2.80	0.37	0.37		
NARSINGDI	<b>Rating</b>	3	1	3	5	3	1	3	5	5	1	3	3	56.48	
	<b>Score</b>	10.53	3.44	2.55	3.50	3.60	1.11	2.28	8.45	16.00	2.80	1.11	1.11		
NATORE	<b>Rating</b>	1	1	3	5	5	3	5	1	5	1	5	3	49.58	

	Perspective		Parcel volume	Infrastructure	Social activity			Economic activity					Agricultural activity		Total score
	Item		Parcel movement volume assessment	Existing Infrastructure	Population	Pove rty index / pove rty rate	Populat ion age density	Incom e indica tor Gini co- efficie nt	Consump tion indicator Gini co- efficient	Monthly household expendet ure	Transporta tion facility	Num ber of Grow th center s	Product ion of fruits	Product ion of vegetab les	
Evaluation criteria	Suitabi lity Low (1 point)	<20000 00	No	<16000 00	>20 %	<25%	>0.4	>0.4	<15000 (BDT)	<6000 km	<30	<60000 (MT)	< 50000 (MT)	20.00	
	Suitabi lity Fair (3 points)	200000 0 to 450000 0		290000 0 to 160000 0	20% to 13%	25% to 45%	0.3 to 0.4	0.3 to 0.4	15000 to 20000 (BDT)	6000km to 7200km	30 to 50	60000 to 90000 (MT)	90000 to 50000 (MT)		
	Suitabi lity High (5 points)	>45000 00	Yes	>30000 00	<13 %	>45%	0 to 0.3	0 to 0.3	>20000 (BDT)	>7200km	>50	> 90000 (MT)	>90000 (MT)		
	<b>Weight</b>	<b>3.51</b>	<b>3.44</b>	<b>0.85</b>	<b>0.70</b>	<b>1.20</b>	<b>1.11</b>	<b>0.76</b>	<b>1.69</b>	<b>3.20</b>	<b>2.80</b>	<b>0.37</b>	<b>0.37</b>		<b>20.00</b>
	<b>Score</b>	3.51	3.44	2.55	3.50	6.00	3.33	3.80	1.69	16.00	2.80	1.85	1.11		
NAWABGAN J	<b>Rating</b>	1	1	3	1	3	1	3	1	3	1	5	3	34.24	
	<b>Score</b>	3.51	3.44	2.55	0.70	3.60	1.11	2.28	1.69	9.60	2.80	1.85	1.11		
NETROKON A	<b>Rating</b>	1	1	3	3	3	3	5	1	3	3	5	1	44.24	
	<b>Score</b>	3.51	3.44	2.55	2.10	3.60	3.33	3.80	1.69	9.60	8.40	1.85	0.37		
NILPHAMAR I	<b>Rating</b>	1	1	3	3	3	1	5	1	5	1	1	3	42.08	
	<b>Score</b>	3.51	3.44	2.55	2.10	3.60	1.11	3.80	1.69	16.00	2.80	0.37	1.11		
NOAKHALI	<b>Rating</b>	3	5	5	3	3	3	3	5	5	3	3	1	77.62	
	<b>Score</b>	10.53	17.20	4.25	2.10	3.60	3.33	2.28	8.45	16.00	8.40	1.11	0.37		

	Perspective		Parcel volume	Infrastructure	Social activity			Economic activity					Agricultural activity		Total score
	Item		Parcel movement volume assessment	Existing Infrastructure	Population	Pove rty index / pove rty rate	Populat ion age density	Incom e indica tor Gini co- efficie nt	Consump tion indicator Gini co- efficient	Monthly household expendet ure	Transporta tion facility	Num ber of Grow th center s	Product ion of fruits	Product ion of vegetab les	
	Evaluation criteria	Suitabi lity Low (1 point)	<20000 00	No	<16000 00	>20 %	<25%	>0.4	>0.4	<15000 (BDT)	<6000 km	<30	<60000 (MT)	< 50000 (MT)	
		Suitabi lity Fair (3 points)	200000 0 to 450000 0		290000 0 to 160000 0	20% to 13%	25% to 45%	0.3 to 0.4	0.3 to 0.4	15000 to 20000 (BDT)	6000km to 7200km	30 to 50	60000 to 90000 (MT)	90000 to 50000 (MT)	
		Suitabi lity High (5 points)	>45000 00	Yes	>30000 00	<13 %	>45%	0 to 0.3	0 to 0.3	>20000 (BDT)	>7200km	>50	> 90000 (MT)	>90000 (MT)	
	<b>Weight</b>	<b>3.51</b>	<b>3.44</b>	<b>0.85</b>	<b>0.70</b>	<b>1.20</b>	<b>1.11</b>	<b>0.76</b>	<b>1.69</b>	<b>3.20</b>	<b>2.80</b>	<b>0.37</b>	<b>0.37</b>	<b>20.00</b>	
PABNA	<b>Rating</b>	1	5	3	3	3	3	5	1	5	3	5	5	65.88	
	<b>Score</b>	3.51	17.20	2.55	2.10	3.60	3.33	3.80	1.69	16.00	8.40	1.85	1.85		
PANCHAGA RH	<b>Rating</b>	1	1	3	3	3	1	5	1	5	1	3	3	42.82	
	<b>Score</b>	3.51	3.44	2.55	2.10	3.60	1.11	3.80	1.69	16.00	2.80	1.11	1.11		
PATUAKHAL I	<b>Rating</b>	3	1	3	1	3	1	5	1	5	3	1	1	52.56	
	<b>Score</b>	10.53	3.44	2.55	0.70	3.60	1.11	3.80	1.69	16.00	8.40	0.37	0.37		
PIROJPUR	<b>Rating</b>	1	1	1	3	3	1	3	1	3	1	3	1	32.46	
	<b>Score</b>	3.51	3.44	0.85	2.10	3.60	1.11	2.28	1.69	9.60	2.80	1.11	0.37		
RAJBARI	<b>Rating</b>	3	5	1	3	3	1	3	1	3	1	3	5	54.72	

	Perspective		Parcel volume	Infrastructure	Social activity			Economic activity					Agricultural activity		Total score
	Item		Parcel movement volume assessment	Existing Infrastructure	Population	Pove rty index / pove rty rate	Populat ion age density	Incom e indica tor Gini co- efficie nt	Consump tion indicator Gini co- efficient	Monthly household expendet ure	Transporta tion facility	Num ber of Grow th center s	Product ion of fruits	Product ion of vegetab les	
	Evaluation criteria	Suitabi lity Low (1 point)	<20000 00	No	<16000 00	>20 %	<25%	>0.4	>0.4	<15000 (BDT)	<6000 km	<30	<60000 (MT)	< 50000 (MT)	
		Suitabi lity Fair (3 points)	200000 0 to 450000 0		290000 0 to 160000 0	20% to 13%	25% to 45%	0.3 to 0.4	0.3 to 0.4	15000 to 20000 (BDT)	6000km to 7200km	30 to 50	60000 to 90000 (MT)	90000 to 50000 (MT)	
		Suitabi lity High (5 points)	>45000 00	Yes	>30000 00	<13 %	>45%	0 to 0.3	0 to 0.3	>20000 (BDT)	>7200km	>50	> 90000 (MT)	>90000 (MT)	
	Weight	3.51	3.44	0.85	0.70	1.20	1.11	0.76	1.69	3.20	2.80	0.37	0.37	20.00	
	Score		10.53	17.20	0.85	2.10	3.60	1.11	2.28	1.69	9.60	2.80	1.11	1.85	
RAJSHAHI	Rating		3	5	3	5	5	1	5	1	5	3	5	5	74.48
	Score		10.53	17.20	2.55	3.50	6.00	1.11	3.80	1.69	16.00	8.40	1.85	1.85	
RANGAMAT I	Rating		1	1	1	5	3	1	5	1	3	3	5	3	42.46
	Score		3.51	3.44	0.85	3.50	3.60	1.11	3.80	1.69	9.60	8.40	1.85	1.11	
RANGPUR	Rating		3	5	5	1	3	1	3	1	5	3	3	3	67.98
	Score		10.53	17.20	4.25	0.70	3.60	1.11	2.28	1.69	16.00	8.40	1.11	1.11	
SATKHIRA	Rating		1	1	3	5	3	1	3	1	5	3	1	3	47.56
	Score		3.51	3.44	2.55	3.50	3.60	1.11	2.28	1.69	16.00	8.40	0.37	1.11	

	Perspective		Parcel volume	Infrastructure	Social activity			Economic activity					Agricultural activity		Total score
	Item		Parcel movement volume assessment	Existing Infrastructure	Population	Pove rty index / pove rty rate	Populat ion age density	Incom e indica tor Gini co- efficie nt	Consump tion indicator Gini co- efficient	Monthly household expendet ure	Transporta tion facility	Num ber of Grow th center s	Product ion of fruits	Product ion of vegetab les	
	Evaluation criteria	Suitabi lity Low (1 point)	<20000 00	No	<16000 00	>20 %	<25%	>0.4	>0.4	<15000 (BDT)	<6000 km	<30	<60000 (MT)	< 50000 (MT)	
		Suitabi lity Fair (3 points)	200000 0 to 450000 0		290000 0 to 160000 0	20% to 13%	25% to 45%	0.3 to 0.4	0.3 to 0.4	15000 to 20000 (BDT)	6000km to 7200km	30 to 50	60000 to 90000 (MT)	90000 to 50000 (MT)	
		Suitabi lity High (5 points)	>45000 00	Yes	>30000 00	<13 %	>45%	0 to 0.3	0 to 0.3	>20000 (BDT)	>7200km	>50	> 90000 (MT)	>90000 (MT)	
	<b>Weight</b>	<b>3.51</b>	<b>3.44</b>	<b>0.85</b>	<b>0.70</b>	<b>1.20</b>	<b>1.11</b>	<b>0.76</b>	<b>1.69</b>	<b>3.20</b>	<b>2.80</b>	<b>0.37</b>	<b>0.37</b>	<b>20.00</b>	
SHARIATPUR	<b>Rating</b>	3	1	1	5	3	1	5	1	3	1	1	1	41.66	
	<b>Score</b>	10.53	3.44	0.85	3.50	3.60	1.11	3.80	1.69	9.60	2.80	0.37	0.37		
SHERPUR	<b>Rating</b>	1	1	1	1	3	1	5	1	3	1	1	3	32.58	
	<b>Score</b>	3.51	3.44	0.85	0.70	3.60	1.11	3.80	1.69	9.60	2.80	0.37	1.11		
SIRAJGANJ	<b>Rating</b>	1	1	5	5	3	1	3	1	5	3	3	3	50.00	
	<b>Score</b>	3.51	3.44	4.25	3.50	3.60	1.11	2.28	1.69	16.00	8.40	1.11	1.11		
SUNAMGANJ	<b>Rating</b>	3	1	3	3	3	1	5	3	1	3	1	3	45.28	
	<b>Score</b>	10.53	3.44	2.55	2.10	3.60	1.11	3.80	5.07	3.20	8.40	0.37	1.11		
SYLHET	<b>Rating</b>	5	5	5	5	3	1	3	5	5	5	1	3	89.42	



	Perspective		Parcel volume	Infrastructure	Social activity			Economic activity					Agricultural activity		Total score
	Item		Parcel movement volume assessment	Existing Infrastructure	Population	Pove rty index / pove rty rate	Populat ion age density	Incom e indica tor Gini co- efficient	Consump tion indicator Gini co- efficient	Monthly household expendet ure	Transporta tion facility	Num ber of Grow th center s	Product ion of fruits	Product ion of vegetab les	
Evaluation criteria	Suitabi lity Low (1 point)	<20000 00	No	<16000 00	>20 %	<25%	>0.4	>0.4	<15000 (BDT)	<6000 km	<30	<60000 (MT)	< 50000 (MT)		
	Suitabi lity Fair (3 points)	200000 0 to 450000 0		290000 0 to 160000 0	20% to 13%	25% to 45%	0.3 to 0.4	0.3 to 0.4	15000 to 20000 (BDT)	6000km to 7200km	30 to 50	60000 to 90000 (MT)	90000 to 50000 (MT)		
	Suitabi lity High (5 points)	>45000 00	Yes	>30000 00	<13 %	>45%	0 to 0.3	0 to 0.3	>20000 (BDT)	>7200km	>50	> 90000 (MT)	>90000 (MT)		
	<b>Weight</b>	<b>3.51</b>	<b>3.44</b>	<b>0.85</b>	<b>0.70</b>	<b>1.20</b>	<b>1.11</b>	<b>0.76</b>	<b>1.69</b>	<b>3.20</b>	<b>2.80</b>	<b>0.37</b>	<b>0.37</b>		<b>20.00</b>
	<b>Score</b>	17.55	17.20	4.25	3.50	3.60	1.11	2.28	8.45	16.00	14.00	0.37	1.11		
TANGAIL	<b>Rating</b>	3	1	5	5	5	1	3	3	5	5	5	5	<b>69.88</b>	
	<b>Score</b>	10.53	3.44	4.25	3.50	6.00	1.11	2.28	5.07	16.00	14.00	1.85	1.85		
THAKURGA ON	<b>Rating</b>	1	1	1	3	3	1	3	1	5	1	3	3	<b>39.60</b>	
	<b>Score</b>	3.51	3.44	0.85	2.10	3.60	1.11	2.28	1.69	16.00	2.80	1.11	1.11		

### 12.3 ESTIMATED BUDGET FOR MPC DEVELOPMENT (INFRASTRUCTURE)

The infrastructure cost has been estimated for an ideal MPC development

#### ABSTRACT OF COST

A	Civil work	17,736,797.69
B	Steel work	6,102,375.43
C	Electrical work	5,060,361.80
D	Sanitary work	1,596,465.08
	<b>Total Tk.</b>	<b>30,496,000.00</b>

#### Estimate for Steel Structure Mail Processing Center

##### A. Civil Works

SL. No	Items	Unit	Qty	Rate (BD Taka)	Amount
1	Engineers site office/ labour Shade	Job	1.00	779,408.00	779,408.00
2	Mobilization and cleaning site before commencing actual physical work and during contract period and demobilization after completion of the works under contract to be accepted by the Engineer-in-charge. This work shall also cover cleaning and clearing, cutting or filling, dressing the project area on and in the ground to an extent that all the events of works of the project can be executed smoothly in a working environment with a particular attention on safety and security in all respects, and to stockpile the end outcome to a place for disposal agreed by the Engineer-in-charge, where, payments are to be based on ground area determined by the Engineer-in-charge and be proportionate to the percentage progress of work under contract as a whole in all respects and approved by the Engineer-in-charge.	Sqm	445.00	348.80	155,216.00
3	Earth work in excavation of all kinds of soils of foundation trenches in/leveling, ramming and preparing the base, bailing out water and shoring if necessary, providing center line D16 and etc. To a lead not exceeding 10 meter. complete and accepted by the Engineer in charge	Cum	109.59	536.00	58,740.24
4	Cleaning and disposing of excavated earth from the construction site by truck or by any others	Cum	65.00	1,209.60	78,624.00
5	Supply and laying of single layer polythene sheet. Complete and accepted by the Engineer in charge.	Sqm	929.00	75.20	69,860.80
6	One layer of brick flat soling in foundation or in floor with 1st class or picked jhama brick in/c preparation of bed and filling the interstices with local sand.complete and accepted by the Engineer-in-charge.	Sqm	513.36	828.80	425,472.77

7	Reinforced cement concrete works using wooden shutter, with minimum cement content relates to mix ratio 1:2:4 having minimum $f'_{cr} = 24$ Mpa, and satisfying, specified compressive strength $f_c = 19$ Mpa at 28 days on standard cylinders as per standard practice of Code ACI/BNBC/ASTM & cement conforming to BDS EN-197-1-CEM1, 52.5N (52.5MPA)/ ASTM-C 150 Type - 1, best quality sand [50% quantity of best local sand (F.M. 1.2) and 50% quantity of Sylhet sand or coarse sand of equivalent F.M. 2.2] and 20 mm down well graded picked jhama brick chips conforming ASTM C-33 including breaking chips and screening, making, placing shutter in position and maintaining true to plumb, making shutter water-tight properly, placing reinforcement in position; mixing in standard mixer machine with hopper fed by standard measuring boxes, casting in forms, compacting by vibrator machine and curing for 28 days, and removing centering-shuttering after specified time approved; including cost of water, electricity, additional testing charges of materials and cylinders required by engineer, other charges etc. all complete approved and accepted by the Engineer. (Rate is excluding the cost of reinforcement and its fabrication, placing and Binding etc.)				
	a) Footing	Cum	10.40	21,872.00	227,468.80
	i) Footing Shutter	Sqm	23.15	836.80	19,371.92
	b) Short Column	Cum	9.14	22,436.80	205,072.35
	I Short column shutter	Sqm	79.18	841.60	66,637.89
	c) Grade Beam	Cum	16.00	22,097.60	353,561.60
	i) Grade beam shutter	Sqm	109.25	833.60	91,070.80
	d) floor slab	Cum	83.04	23,003.20	1,910,185.73
	i) False Slab shutter	Sqm	21.87	753.60	16,481.23
	e) lintel	Cum	7.53	22,097.60	166,394.93
	i) Lintel shutter	Sqm	60.01	734.40	44,071.34
8	Grade 400 (RB 400 / RB 400W: complying BDS ISO 6935-2:2006) ribbed or deformed bar produced and marked according to Bangladesh standard, with minimum yield strength, $f_y$ ( $R_{eH}$ ) = 400 MPa but $f_y$ not exceeding 450 MPa and whatever is the yield strength within allowable limit as per BNBCI ACI 318, the ratio of ultimate tensile strength $f_u$ to yield strength $f_y$ , shall be at least 1.25 and minimum elongation after fracture and minimum total elongation at maximum force is 16% and 8% respectively up to ground floor	Quintal	108.72	16,000.00	1,739,520.00

9	Mass cement concrete (1:3.6) in foundation or flooring with best quality cement, coarse sand F.M (1.2) and brick chips, screening, missing, laying, compacting and curing at least for 7 days etc. All complete and accepted by the Engineer in charge.	Cum	13.23	14,217.60	188,098.85
10	Sand filling in foundation trenches and plinth with fine local sand having minimum F.M 0.50 to 0.8 in 150 mm layers in/C leveling, watering and consolidating each layer upto finished level.	Cum	610.91	1,748.80	1,068,359.41
11	Brick walls of width one brick or one and half brick length with 1st class bricks in cement mortar (1:6)in superstructure in/c racking out joints, filling the interstices with mortar, cleaning and soaking the bricks at least 24 hr.. before use and necessary scaffolding, curing at least 7 days etc. all amplete (measurement to be given as 250 mm width for one brick length and 375 mm for one and a half brick length).	Cum	105.90	13,078.40	1,385,002.56
12	125 mm brick work with 1st class backing in cement mortar (1:4) and making bond with connected walls in/c necessary scaffolding, racking out joints, cleaning & soaking the bricks for at least 24 hr. before use and curing at least 7 days in all floors	Sqm	183.89	1,896.00	348,655.44
13	12mm thick cement plaster (1:4) to wall both inter &outer surface, finishing the corner and edges in/c cleaning the surface, scaffolding and curing at least 7 days etc. all complete including cost of water, electricity and other charges and accepted by the Engineer-in-charge.	Sqm	806.87	478.40	386,006.61
14	Minimum 12 mm thick cement plaster (1:4) to dado and width wall upto 150 mm below GL with neat cement finishing in/c finishing the edge & corners and curing ai least 7 days etc.all complete including cost of water, electricity and other charges and accepted by the Engineer-in-charge.	Sqm	55.76	596.80	33,277.57
15	Supply, fitting and fixing Window grill made of 18 mm x 18 mm hollow M.S. box made of minimum 16 BG M.S. sheets 100mm c/c with outer frame of 18 mm x 18 mm M. S box as per drawing approved and accepted by the Engineer-in-charge.	Sqm	81.92	4,520.00	370,278.40
16	Supplying fitting and fixing of aluminum sliding window / partition as per the U.S architectural aluminum Manufacturer's Association (AAMA) standard specification having 1.5mm thick outer bottom (size 75.50mm. 32mm) thick outer top (size 75.50mm.26.80mm) 1.5mm thick shutter top (size 33mm.26.80mm.22mm). 1.5mm thick shutter bottom (size 60mm.24.40mm) 1.5mm thick outer side (size 75.50mm.19.90mm). 1.5 thick sliding fixed side (size 31mm. 26mm). 1.5mm thick shutter lock (size 34.40mm. 32.10mm) sections all aluminum members will be anodized to aluminum bronze/silver color with acoat not less than 15 microns in thickness and density of 4mg per square cm etc. including all accessories like handle, locks Japan roller, stopper etc. keeping provision for fitting Smm thick glass	Sqm	89.26	7,332.80	654,525.73

	including neoprene. Sealant etc. complete in all respect as per drawing and direction of engineer in-charge				
17	Weather coat paint of approved quality and color delivered from authorized local agent of the manufacturer in a sealed container, made from water based powder mixed with water (1:1), applying first coat, curing the same after six hours for 24 hours, second coat applied and curing the same for 7 (seven) days etc. taking care and cleaning the surface fully from grease, oily substances, old paints, lime wash, fungus, algae etc. sand papering the surface before applying 1st and 2nd coat, complete in/c cost of electricity, water & other charges as per direction of the engineer in charge	Sqm	455.00	476.80	216,944.00
18	Approves best quality and color plastic paint delivered from authorized local agent of the manufacturer in a sealed container. applying to wall & ceiling in 2 coats over a coat of brand specific primer or sealer finished including cleaning and sand papering making the surface free from loose and flaky materials, dirt, grease, wax, polish, scraping all chalked & scaled materials, applying the paint by brush/roller and necessary scaffolding etc. all complete in all floors as per direction of the engineer in charge.	Sqm	435.00	412.80	179,568.00
19	Providing clay wall tile facing strips (water absorption ratio below 4.5%) in superstructure with machine made hard pressed Clinker facing strips of approved quality with 20 mm thick cement sand (F.M.1.2) mortar (1:3) in adjacent side wall, column, drop wall etc. and racking out joints, cutting to required sizes wherever necessary with high class recessed pointing, cleaning and soaking at least for 24 hours before use washing and screening of sand and necessary scaffoldings, curing at least 7 days including cost of water, electricity and other charges etc. all complete and accepted by the Engineer-in-charge. (Cement: CEM-II/A-M) In ground floor. With 241 mm s 70 mm x 127 mm red strip	Sqm	205.00	5,387.20	1,104,376.00
20	Supplying fitting, fixing unglazed homogeneous floor tiles (local made) on 20 mm thick cement sand ( F.M. 1.2) mortar (1.2) base and raking out the joints with white cement and colored pigment including cutting and laying tiles in proper way and finishing with care etc. all complete as per direction of the engineer in charge.	Sqm	161.57	3,515.20	567,950.86

21	Supplying, fitting and fixing glazed wall tiles (local made) with on 20mm thick cement sand (F.M.1.2) mortar (1.3) base and raking out the joints with white cement including cutting, laying & hire charge of machine and finishing with care etc.in/C water, electricity 8 other charges complete all respect as per direction of the engineer in charge.	Sqm	89.12	3,224.00	287,322.88
22	Application of 02 coats of epoxy compound (4 mm thick) as base coat & finishing coat over a single layer of screet coat (primer) for making smooth hygienic floor surface; all chemicals delivered from authorized local agent of the manu(acter in sealed container, materials having high water resistance, high bondibility, flexibility property; applying by applicator machine after being mixed by force action mixer elapsing time for drying, surface preparation including surface cleaning from dust, oil or dirt, preparing underlying surface having minimum moisture content, smoothening, finishing & polishing by grinding machine & necessary tools, repairing significant ups/downs in floor before application with sacaffolding, testing charges etc. all complete in all floors approved & accepted by the Engineer-in-charge	Sqm	383.00	4,700.80	1,800,406.40
23	Supplying, fabrication and Installation of approved colour (4 mm thick) Aluminium composite panel (Alucobond/Alcopanel/Alpolic) as per US Architectural Aluminium Manufacturer's Association (AAMA) in column, beam and wall surface providing with 18 mm x 18 mm x 1 mm aluminum section including supply of necessary hardwares, consumables, scaffolding etc fitted with necessary accessories like rivet, screw, rowel bolt etc. all complete in all respect as per drawing and direction of the Enaineer-in-charge	Sqm	64.20	11,544.00	741,124.80
24	Supplying, fitting and fixing Gypsum board ceiling of 8 mm thick board, framing by powder coated T-bar in 600 mm x 600 mm grid from ceiling by 18 SWG GI win , fixed to the ceiling by , screws, hooks nail etc. all complete as per direction of the engineer in charge	Sqm	418.58	3,640.00	1,523,631.20
25	Main Door, Door Frame: 10" x 21/2" by 14 SIG MS. Sheet Shutter: 11/2" Thick by 16 SWG MS. Sheet. Shutter In- Side Stffener: 18 SWG MS. Sheet, Shutter Periphery Chanel: 16 S\YG MS. Sheet, Shutter Grove /Bit Chanel: 16 SWG MS. Sheet, Shutter In j II: Rock-Wool, Hinge: 19 mm Dia MS. Sheet with 3 mm Thick MS. Plate Made Flag Hinge 04 Pcs. Each Shutter Paint Power Coating Paint	Sqm	7.44	45,441.76	338,086.69

26	Supplying, fitting, fixing of UPVC hollow or solid plastic door having specific gravity of 1.35 - 1.45, thickness 1,7 mm-2.2 mm, and other physical, chemical, thermal, fire resistivity properties etc. as per BSTI approved manufacturer standards or ASTM, BS/150/15 standards of different sizes, fitted fixed with UPVC plastic door frame weighing 5.82 kg/m <sup>2</sup> with at least 3 Nos. SS hinges by min 64 Nos, 0 3.17 mm and 3.97 mm 12.7 mm long rivets, 12 nos. 25.4 mm SS screws, 0 9.38 mm, 150 mm long SS tower bolts 2 146 mm SS handle by rivet 2 Nos., G.I inner joint, 234.95 mm x 127 mm clamp, 76.2 mm x 57.15 mm, 25 mm dia 1 no ss haspbolt, k, carrying the same to the site and local carriage etc. complete in all respect and accepted by the Engineer-in- charge. Size 760 mm x 1980 mm uPVC plastic shutter (hollow)	Nos	5.00	11,648.00	58,240.00
27	Supplying and making door and window frames (Chowkat) for Toilel with matured seasoned wood of required size. Fitting and fixing in position etc. all complete and accepted by the Engineer-in- charge. (All sizes of wood are finished).	Cum	0.10	250,558.88	25,055.89
28	Supplying, fitting and fixing 3b mm thick well matured seasoned (minimum 250 mm wide plank) solid wood single leaf flush door shutter having a frame of top, lock and bottom rail of sections 100 mm x 12 mm styles 100 mm x 38 mm covered with 100 mm x 12 mm plank, screwed to each face and provided with best quality 4 nos 100 mm iron hinges, 2 (Mo) nos best quality 12 mm dia 250 mm and 200 mm long iron tower and socket bolts, 1 (one) no best quality hasp bolt, 2 (two) nos heavy type nickel plated handles, hinged cleats, buffer blocks and finished by sand papering etc. all complete in all floors and accepted by the Engineer-in-charge. (All sizes of wood are finished) Burma Teak	Sqm	3.90	13,520.00	52,728.00
	<b>Sub Total</b>				17,736,797.69

#### B. Steel Works

SL. No	Items	Unit	Qty	Rate	Amount
1	Supply and fixing of galvanized anchor bolts of variable dia for rigid frame conforming to ASTM F1554 Grade 55, Galvanized to A153, Class C or equivalent with minimum yield strength of 380 MPa, manual of steel construction by American Institute of Steel Construction (AISC) etc. including the cost of washer & bolts, material testing etc. all complete as per drawing, specification and direction of the Engineer-in-charge.	Kg	163.00	278.40	45,379.20
2	Supply, fabrication and installation of built-up sections ie columns, beams, rafters, bracings etc, from steel plates conforming to ASTM A572, with a minimum yield strength of 345 MPa, including the cost of application of red/grey-oxide primer etc all complete as	Kg	9,041.00	232.00	2,097,512.00

	per drawing, specification and direction of Engineer-in-charge				
3	Supply, fabrication and installation of built-up sections ie columns, beams, rafters, bracings etc, from steel plates conforming to ASTM A572, with a minimum yield strength” 345 MPa, including the cost of applicaton of red/grey-oxide primer etc all complete as per drawing, specification and direction of Engineer-in-charge	Kg	2,500.74	232.00	580,171.68
4	Builtup Section [Rafter Bracing] Supply, fabrication and installation of built-up sections ie columns, beams, rafters, bracings etc, from steel plates conforming to ASTM A572, with a minimum yield strength of 345 MPa, including the cost of applicator of red/grey-oxide primer etc all complete as per drawing, specification and direction of Engineer-in-charge	Kg	530.00	217.50	115,275.00
5	Supply and installation of GI purlin & girl of any size conforming to "ASTM A653 grade 45, with a minimum yield strength of 310 MPa, including the cost of testing of materials, all complete as per drawing, specification and direction of Engineer-in-charge.	Kg	3,394.00	237.80	807,093.20
6	Supply and faxing of sag rod conforming to grade 40, with a minimum yield strength of 275 MPa, induding the cost of making threads, nuts and washers, red oxide primer etc. all Complete as per drawing, specification and direction of Engineer-in-charge.	Kg	265.00	201.55	53,410.75
7	Supply and f xing of connection bolts of variable diameter with nut and washer according to "ASTM A325 Type 1 or equivalent with Fu =720 Mpa, induding the cost of testing of bolts, all complete as per drawing, specification and direction of Engineer-In-Charge.	Kg	275.00	523.45	143,948.75
8	Supply and fixing of cable/are bracing conforming to "ASTM AA75" with a minimum yield strength of 119.3 MPa, with 1- bolt and hill side washer, all complete as per drawing, specification and direction of Engineer-in-charge.	Kg	225.00	323.35	72,753.75
9	<b>Sheeting &amp; Accessories</b>			-	-
10	Supply and installation of 0.47 mm thick zinc alum color coated profile sheet for roof 2. wall, caping, flashing, trimming, gutter etc. conforming to ASTM A792, Grade: 80, AZ150 gm/m, including the cost of necessary accessories complete as per drawing specification and direction of Engineer-in-charge.	Kg	2,365.26	466.90	1,104,339.89
11	Supplying, fitting and fixing of 100 mm inside diameter & wall thickness 2.7 mm -3.4 mm best quality UPVC rain water down pipe fitting, fixed in position with head and shoes, bends, minimum20 mm width F.L. Bar clamp and nails, and including all accessories such as round grating/domed roof grating,	rm	230.00	1,232.50	283,475.00



	bands. sockets approved and accepted by the Engineer- in- charge.				
12	Premium Synthetic Enamel paint of approved best quality and colour delivered from authorized local agent of the manufacturelBerger robbialac supergloss synthetic enamel/Elite lucky seven/ Asian apcolipe premium paint or equivalent brand) in a sealed container, having highly water resistant, high bondibility, flexibility property; using specified brand thinner applying to metallic surfaoe by spray in two coats over single coat anti- corrosive coating including cleaning drying, making free from dirt, grease, wax, removing all chalked and scaled materialr, all complete in al floors accepted by the Engineer-in- charge.	Kg	12,071.74	13.05	157,536.21
13	Supply and installation of double bubble foil insulation at wall and roof of nominal thickness of 8 mm conforming to Class A in accordance with the ASTM-E84-09 fire test standard, including the cost of lapping, costape, adhesive and necessary aceosonies, all complete as per drawing, specification and direction of Engineer-in-charge	Sqm	520.00	507.50	263,900.00
14	Saftey Canopy: Supplying temporary safety canopy around construction work place where public safety is likely to be endangered due to construction amivities; which shall be made of truss system of steel sections (main frame) at 1800 mm c/c with purlins @ 750 mm c/c, making flooring system by corrugated galvanized iron sheets of thickness 0.45 mm, laying wire mesh net on iron sheets, providing continuous gutter along the edges of the building with downpipe @ 6000 mm c/c, including fitting and fixing in position providing necessary anchors, cables, wires, ties etc. by standard anchori• 9 and welding, nut-bolts etc, all complete and accepted by the Engineer-in-change	Sqm	84.00	4,495.00	377,580.00
	<b>Sub Total</b>				<b>6,102,375.43</b>

### C. Electric Works

SL. No	Items	Unit	Qty	Rate	Amount
1	Supplying and fitting conceled conduit distribution wiring for light and fan point by BRB/Super Sign/Poly Cable all complete as per E/C				-
	Light point	Nos	78.00	2,028.00	158,184.00
	Fan	Nos	29.00	2,028.00	58,812.00
2	2x1.5 sq. mm BYA and ECC BRB/Super Sign/Poly Cable	Nos	1,500.00	213.20	319,800.00
3	2x2.5 sq. mm BYA and ECC BRB/Super Sign/Poly Cable	Mtr.	1,300.00	306.80	398,840.00
4	2x4 sq. mm BYA and ECCBRB/SuperSign/Poly Cable	Mtr.	1,600.00	468.00	748,800.00

5	4x10Sq.mm NYY BRB/SuperSign/Poly Cable	Mtr.	60.00	2,340.00	140,400.00
6	4x25 Sq.mm NYY BRB/Super Sign/Poly Cable	Mtr.	38.00	5,148.00	195,624.00
7	1X16 Sq.mm ECC Green BRB/Super Sign/Poly Cable	Mtr.	20.00	455.00	9,100.00
8	Switch Board-1GangAB8/LEGRAND/EG	pcs	3.00	728.00	2,184.00
9	SwiFch Board-2Gang ABB/LEGRAND/EG	pcs	7.00	1,235.00	8,645.00
10	Switch Board-3Gang ABB/LEGRAND/EG	pcs	12.00	1,604.20	19,250.40
11	Switch Board-4 Gang ABB/LEGRAND/EG	pcs	14.00	2,516.80	35,235.20
12	Switch Board-Fan Dimmer ABB/LEGRAND/EG	pcs	32.00	5,002.40	160,076.80
13	5 A, 2-Pin Power Socket-Switch Board Level/Universal ABB/LEGRAND/EG	pcs	15.00	2,095.60	31,434.00
14	23A, 3-in Power Sacket-Wall IVlounted ABB/LEGRAND/EG	pcs	24.00	4,394.00	105,456.00
15	20A, 3-Pin Power Socket-For PUMP ABB/LEGRAND/EG	pcs	1.00	4,394.00	4,394.00
16	Circuit Breaker-1OASPABB/LEGRAND/EG	pcs	18.00	1,183.00	21,294.00
17	Circuit Breaker-16ASPABB/LEGRAND/EG	pcs	7.00	1,183.00	8,281.00
18	Circuit Breaker-2OASPABB/LEGRAND/EG	pcs	21.00	1,183.00	24,843.00
19	Circuit Breaker-4OATPABB/LEGRAND/EG	pcs	5.00	26,026.00	130,130.00
20	Circuit Breaker-1OOATPABB/LEGRAND/EG	pcs	5.00	26,026.00	130,130.00
21	18W Led Panel Light C/WFittingsABB/LEGRAND/EG	pcs	65.00	2,298.40	149,396.00
22	12W Celing Light C/W Fittings Superstar/Tachi	pcs	8.00	1,892.80	15,142.40
23	40W Tube LightC/W Fittings Superstar/Tachi	pcs	15.00	1,976.00	29,640.00
24	LAN& TNT all complete	LS	1.00	130,000.00	130,000.00
25	Generator Power Distribution Panel	Units	1.00	249,236.00	249,236.00
26	DB-1Panel	Units	1.00	27,300.00	27,300.00
27	DB-2Panel	Units	1.00	27,300.00	27,300.00
28	good quality Exhust Fan C/W Fittings 8" x 8"	pcs	5.00	5,876.00	29,380.00
29	Circuit Breaker-800 ATP (Generator)	pcs	1.00	567,840.00	567,840.00
30	Circuit Breaker-2OOATPABB/LEGRAND/EG	pcs	1.00	26,026.00	26,026.00
31	13A, 3-in Power Socket-Floor Mounted ABB/LEGRAND/EG	pcs	2.00	4,394.00	8,788.00
32	Material C/W Earthing System as per engineer incharge -Max 120'	Set	4.00	109,850.00	439,400.00
33	Electric supply charge for load sanction	LS	1.00	260,000.00	260,000.00
34	Demand charge for load	LS	1.00	130,000.00	130,000.00
35	Security deposit for load	LS	1.00	260,000.00	260,000.00
	<b>Sub Total</b>				<b>5,060,361.80</b>

#### D. Sanitary Work

SL. No	Items	Unit	Qty	Rate	Amount
1	Supply, fitting and fixing of Bangladesh pattern, long pan (RAK or equivalent) with foot rest, made of white or Ivory color. mending good the damages and fitting, fixing, finishing etc. complete with all necessary fittings and approval and accepted by the Engineer- in- Charge	Nos	2.00	5,124.60	10,249.20
2	Supplying, fitting and fixing Bangladesh pakistan China white or Ivory plastic lowdown, capacity 3 gallons filtered or wall by screws and FI bar clamp, royel plugs, making holes whereverrequired and mending good the damages fitting, fixing, finishing etc, complete with all necessary fitting and connection as per direction of the engineer-in-charge.White Special quality	Nos	2.00	4,350.60	8,701.20
3	Supplying, fitting and fixing of glazed wash basin (RAK or equivalent) including pedestal of apoxy size 585 mm x 460 mm x 235 mm, including fitting, fixing the same in position with heavy type C.I brackets, 30 mm dia pvc waste water pipe, mending good the damages and fitting, fixing, finishing etc. complete with all necessary fittings and approval and accented by the Engineer- in- Charge	Nos	5.00	9,531.00	47,655.00
4	Supplying, fitting and fixing of 450 mm x 600 mm size and 5 mm thick unframed supper quality Mirror mending good the damages and fitting, fixing, finishing etc. complete with all necessary fittings and approval and accepted by the Engineer- in- Charge	Nos	5.00	4,662.00	23,310.00
5	Supplying, fitting and fixing of super quality glass shelf of 600 mm x 125 mm size and 5 mm thick with fancy CP brackets, screws and frames including making holes in wall and mending good the damages and fitting, fixing, finishing etc. complete with all necessary fittings and approval and accepted by the Engineer- in- Charge	Nos	5.00	1,857.60	9,288.00
6	Supplying, fitting and fixing of C.P Towal rail of 600 m long and 20mm dia with CP holder including making holes in wall and mending good the damages and fitting, fixing, finishing etc. complete with all necessary fittings and approval and accepted by the Engineer- in- Charge	Nos	3.00	1,292.40	3,877.20
7	Supplying, fiking and fixing of soap dispenser ( push up type) including making holes in wall and mending good the damages and fitting, fixing, finishing etc. complete with all necessary fittings and approval and accepted by the Engineer- in- Charpe	Nos	3.00	2,939.40	8,818.20
8	Supplying, fitting and fixing of special toilet paper holder with cover of size (150 mm x150 mm x 126 mm) including making drills in walls and mending good the damages with cement mortar (1:4) etc. all complete approved and accepted by the Engineer- in- charge.	Nos	5.00	1,013.40	5,067.00

9	Supplying, filing and fixing of 50 mm best quality UPVC soil waste pipe , wall thick 3 mm and others physical , chemical, thermal, fire, resistivity properties etc. complete with all necessary fitngs and approval and accepted by the Engineer- in- Charge. Standard size stainless steel bracket and holder rod with cover	Rm	14.00	1,015.20	14,212.80
10	Supplying 100 mm inside dia best quality uPVC soil, waste and ventilaton pipe having specific gravity 1.35-1.45, wall thickness 3.4-4.0 mm, and other physical, chemical, themal, fire resisfvty properties etc. as per BSTI approved manufacturer standards or ASTM, BS/ISO/IS standards fittin9 and fixing in position with sockets, bends, with all accessones such as round grating/domed roof grating bands sockets etc. approved and accepted by the Engineer- in-charge	Rm	25.00	1,585.80	39,645.00
11	Supplying 150 mm inside dia best quality uPVC soil, waste and ventilation pipe having specific gravity 1.35 - 1.45, wall thickness 4.5 mm - 5.2 mm, and other physical, chemical, thermal, fire resistivity properties etc. as per BSTI approved manufacturer standards or ASTM, BS/ISO/IS standards fitting and fixing in position with sockets, bends, with all accessories such as Round grating/domed roof grating bands, sockets etc. approved and accepted by the Engineer- in- charae	Rm	37.00	2,878.20	106,493.40
12	Supplying, fitting and fixing of CPVC Gate valve meeting the performance & long tern strength requirements of ASTM F 2389 in accordance with the manufacture specification all complete accept by engineer			-	-
	a) 50 mm	Nos		3,780.00	-
	b)37 mm	Nos	2.00	3,150.00	6,300.00
	c)25 mm	Nos	4.00	2,970.00	11,880.00
	d)20 mm	Nos	3.00	2,070.00	6,210.00
				-	-
13	Supplying, fitting and fixing of 125 mm stainless steel Floor grating in traps or in drain including making holes in wall and mending good the damages and fitting, fixing, finishing etc. complete with all necessary fittings and approval and accepted by the Engineer- in- Char0e	Nos	8.00	1,170.00	9,360.00
14	Supplying, fitting and fixing of angle stop cock etc. complete approved and accepted by the Engineer- in- charge.	Nos	15.00	1,980.00	29,700.00
15	Supplying, fitting and fixing of best quality CP pillar cock etc. complete approved and accepted by the Engineer- in-charge. 12 mm CP special heavy duty pillar cock	each	5.00	3,366.00	16,830.00
16	Supplying different inside dia best quality CPVC pressure pipe for water supply having specifc gravity 1,35 - 1.45, and other physical, chemical, thermal, fiF9 f9STstivity properties etc. as per BSTI approved manufacturer standards or ASTM, BS/ISO/IS standards fitting and fixing in position with sockets, bends, with all accessories such as round grating/domed roof grating, bends,			-	-

	sockets etc. approved and accepted by the Engineer-in-charge (length: 6000 mm each).				
	a) 50 mm dia wall thickness 3.9 mm - 4.5 mm	Rm		2,673.00	-
	b) 37 mm dia wall thickness 3.7 mm - 4.3 mm	Rm	18.00	1,562.40	28,123.20
	c) 25 mm dia wall thickness 3.4 mm - 4.0 mm	Rm	18.00	817.20	14,709.60
	d) 19 mm dia wall thickness 2.9 mm - 3.4 mm	Rm	35.00	696.60	24,381.00
17	Groove cutting in brick work and R.C.C work, including cost for concealing of G.I. pipe work (12 mm and 20 mm dia) in brick wall by cutting groove in wall, lintel, beam etc. by any means carefully without damaging the structure and filling the grooves with C.C (4:2:1) after laying of pipe including cost of scaffolding, finishing, curing etc. all complete approved and accepted by the Engineer-in-charge. Groove size 75 mm x 75 mm (For 25 mm to 40 mm dia pipes)	Rm	48.00	230.40	11,059.20
18	Supplying, fitting and fixing of food graded plastic overhead water reservoir tank including all necessary fittings, hardware and consumables etc. all complete approved and accepted by the Engineer-in-charge. 2000 Ltr	Nos	1.00	61,200.00	61,200.00
19	Construction of septic tank for 200 user including all materials, accessories complete and accept by engineer	Nos	1.00	569,783.72	569,783.72
20	Construction of soak well of different sizes (medium and large sizes) with 250 mm thick solid brick work and 250 mm honey comb brick work with cement mortar (1:6) as per design over R.C.C. (1:2:4) well curb with 1% reinforcement up to the depth as per drawing with 450 mm dia water sealed heavy type. C.I. manhole cover with locking arrangement, filling the well up to the required depth with graded khoa and sand including supplying and fabricating M.S. rod, casting, curing including necessary earth work in excavation, skelring and bailing out water including cost of all materials etc. all complete as per drawing, design approved and accepted by the (Rate is including cost of reinforcement and its fabrication, binding and placing) Engineer-in-charge 100 users	Nos	1.00	347,368.56	347,368.56
21	Supply, installation, testing and commissioning of auto control booster pump system to maintain a pressure 0.8-2.2 bar in the water pipe line in the top floor(s). The booster pump system consists of the following components -(i) Single phase pump motor- 01 no. HP 0.5-1.0, IP: 65 RPM:2900 (ii) Easy press switch : a device which control the pressure etc. all complete approved by the Engineer-in-charge. Made in or assembled in Banaladesh	Nos	1.00	39,600.00	39,600.00

22	Supplying, fitting and fixing of European type glazed combi closet, of white color, 370 mm x 760 mm x 800 mm size, 44.69 kg of weight, including plastic seat cover with soft closing, cistern system, water consumption 6 litter, siphon wash down dual flushing system which reduce water consumption, hygienic glaze in toilet bowl, glaze in inner waste line, round bowl, outlet range 305 mm, preparing the base with cement concrete and with wire mesh or rods if necessary, in all floors including making holes wherever required and mending good the damages and fitting, fixing, finishing, complete with all necessary fittings and connection approved and accepted by the Engineer- in-charge	Nos	3.00	26,100.00	78,300.00
23	Supplying and fitting-fixing hand / push shower for ablution including holder etc. all complete approved and accepted by the Engineer- in- charge. Moving type hand shower	Nos	3.00	2,610.00	7,830.00
24	Supplying, fitting and fixing of glazed vitreous standing bowl urinal, fitting, fixing the same in position after making holes in walls and doors, providing 32 mm dia plastic waste pipe with brass coupling up to grading below, 12 mm dia plastic connection pipe with brass coupling, 12 mm dia brass stop cock including mending good the damages with cement mortar (1:4) etc. all complete approved and accepted by the Engineer- in-charge Coloured	Nos	2.00	5,778.00	11,556.00
25	Supplying, fitting and fixing of best quality faucets etc. complete approved and accepted by the Engineer- in-charge. 12 mm special quality CP bib cock	Nos	8.00	2,034.00	16,272.00
26	Supply, fitting and fixing of 600 mm dia G.I. man hole cover etc all complete approved by the Engineer- in- charge	each	2.00	3,542.40	7,084.80
27	Construction of masonry inspection pit with 250 mm thick brick work in cement mortar (1:4) including necessary earth work, side filling and one layer brick flat soling, 75 mm thick (1:3:6) base concrete for making invert channel and 12 mm thick (1:2) cement plaster with neat finishing etc. all complete up to a depth of 700 mm approved and accepted by the Engineer- in- charge. Clear 600 x 600 mm and depth 750 mm to 900 mm, average 825 mm for single 300 mm dia R.C.C. DiDes and 400 mm PVC pipe.	Nos	2.00	10,800.00	21,600.00
	<b>Sub Total</b>				<b>1,596,465.08</b>

## 12.4 ESTIMATED BUDGET FOR EQUIPMENT OF MPC (EXCLUDING AUTOMATED SORTING MACHINE)

The cost has been estimated for an ideal MPC development

SI no	Equipment	Number/Set	Unit cost	Total cost
1	Weighing Scale (150 kg)	15	61200	918000
2	Manual Hydraulic Fork Lift	3	600000	1800000
3	Hand Tracker	6	110000	660000
4	Collapsable Trolley Case	10	96000	960000
5	Folding Trolley Case	10	66000	660000
6	Pallete Case	10	60000	600000
7	Platform Trolley	10	44400	444000
8	Hand Trolley	10	52000	520000
9	Roller Conveyor 15 feet	2	1080000	2160000
10	X Ray Goods scanner machine	1	3340000	3340000
11	Chiller with instalation (500ft)	1	11820000	11820000
12	Barcode Scanner	30	30000	900000
13	Stamp Cancellor	4	420000	1680000
14	Metal Detector	2	14400	28800
15	Archway Gate	2	345600	691200
16	Barcode Printer	15	112600	1689000
17	Air Condition	5	585600	2928000
18	Solar System SKW	1	4920000	4920000
19	Smoke detectator	4	24400	97600
20	Generator 500 KVA	1	8840000	8840000
21	Smart Access Control System	1	105600	105600
22	Fire Extingusher	9	8700	78300
23	Commercial POS machine	1000	40100	40100000
24	Franking machine Server based	80	1122000	89760000
25	Smart Postage Solution	20	465000	9300000
26	Note Counting Machine	80	223000	17840000
27	Note Binding Machine	15	190000	2850000
28	Queue Management System	5	381000	1905000
29	Ceilling Fan	15	4700	70500
30	CC camera with installation	10	411000	4110000
31	Computer Desktop	10	75000	750000
32	POS roll	LS	1000000	1000000
	<b>Total</b>			<b>213526000</b>

## 12.5 ESTIMATED BUDGET AND FLOOR AREA PLAN FOR STRENGTHENING THE LOCAL OFFICE

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**PROJECT**

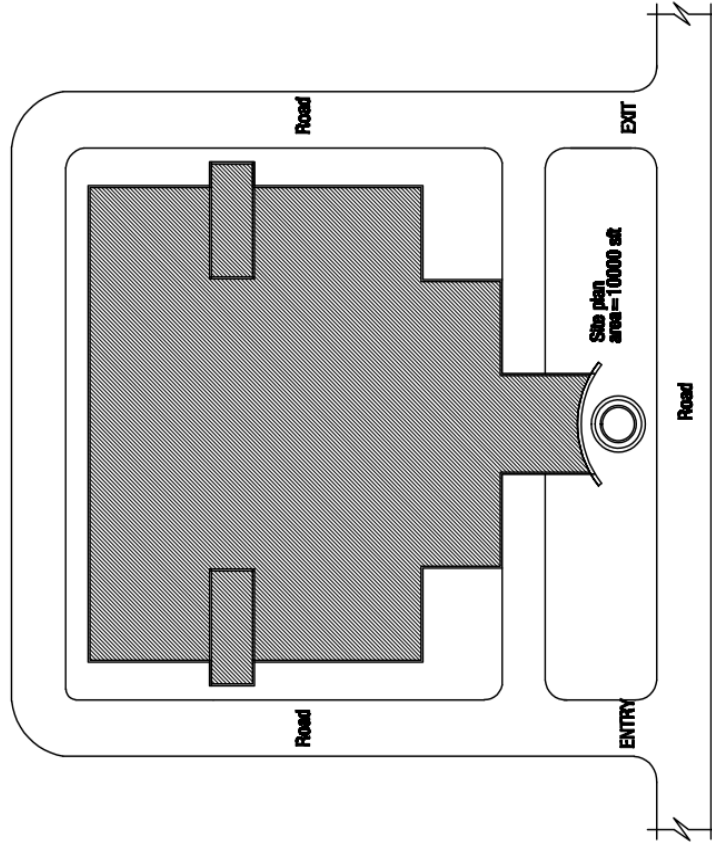
proposed District head  
post office  
area=10000sft

**ARCHITECT**

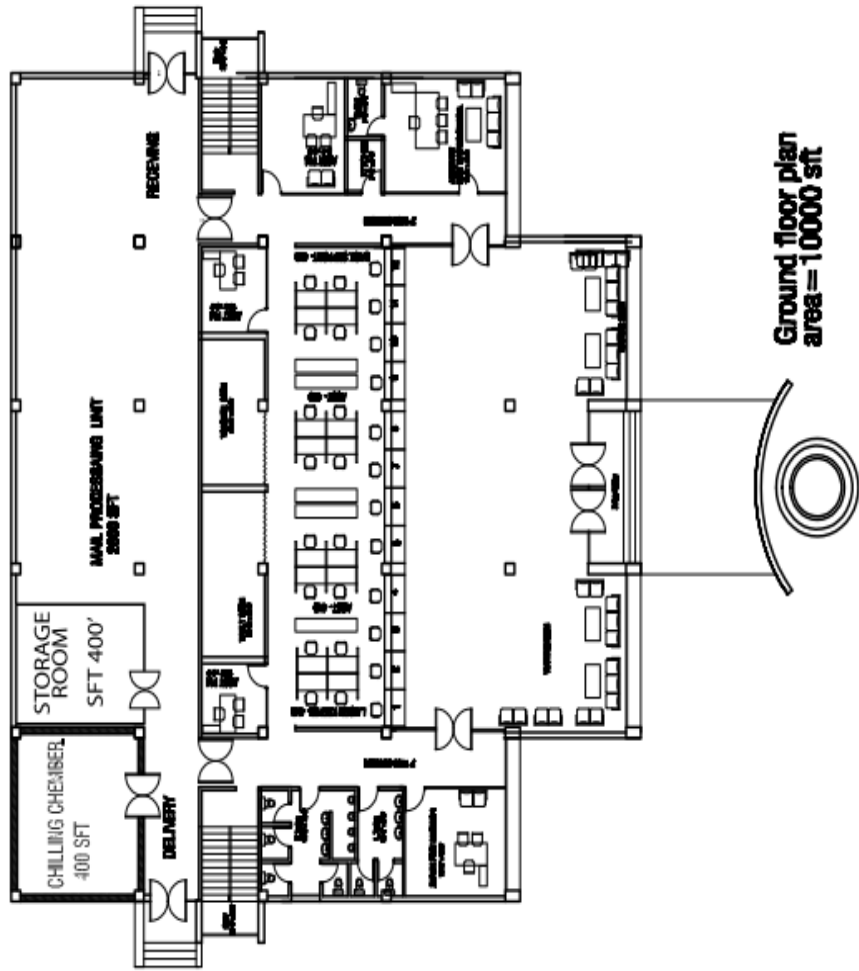
KALIBRAK ARCHITECTS  
100, KALIBRAK ROAD  
14B, MIDLANDS & RAJASTHAN, NO. 8-018  
HILL VIEW (2ND FLOOR)  
66, Outer Circular Road, Anaparthi  
Dharmapuri, Coimbatore-641014

<b>CAD BY</b>	SHILPI PAUL
<b>DATE</b>	21.07.2018

<b>SHEET</b>	A-01
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<b>PROJECT</b> proposed District post office	
<b>ARCHITECT</b> KIMBERLY BROWN ARCHITECTS 1000 UNIVERSITY BLVD SUITE 1000 ANN ARBOR MI 48106 TEL: 734.769.1100 WWW.KIMBERLYBROWNARCHITECTS.COM	
<b>QAD BY</b>	<b>DATE</b>
<b>DATE</b>	<b>DATE</b>
<b>SHEET</b>	<b>SHEET</b>
	<b>A-04</b>



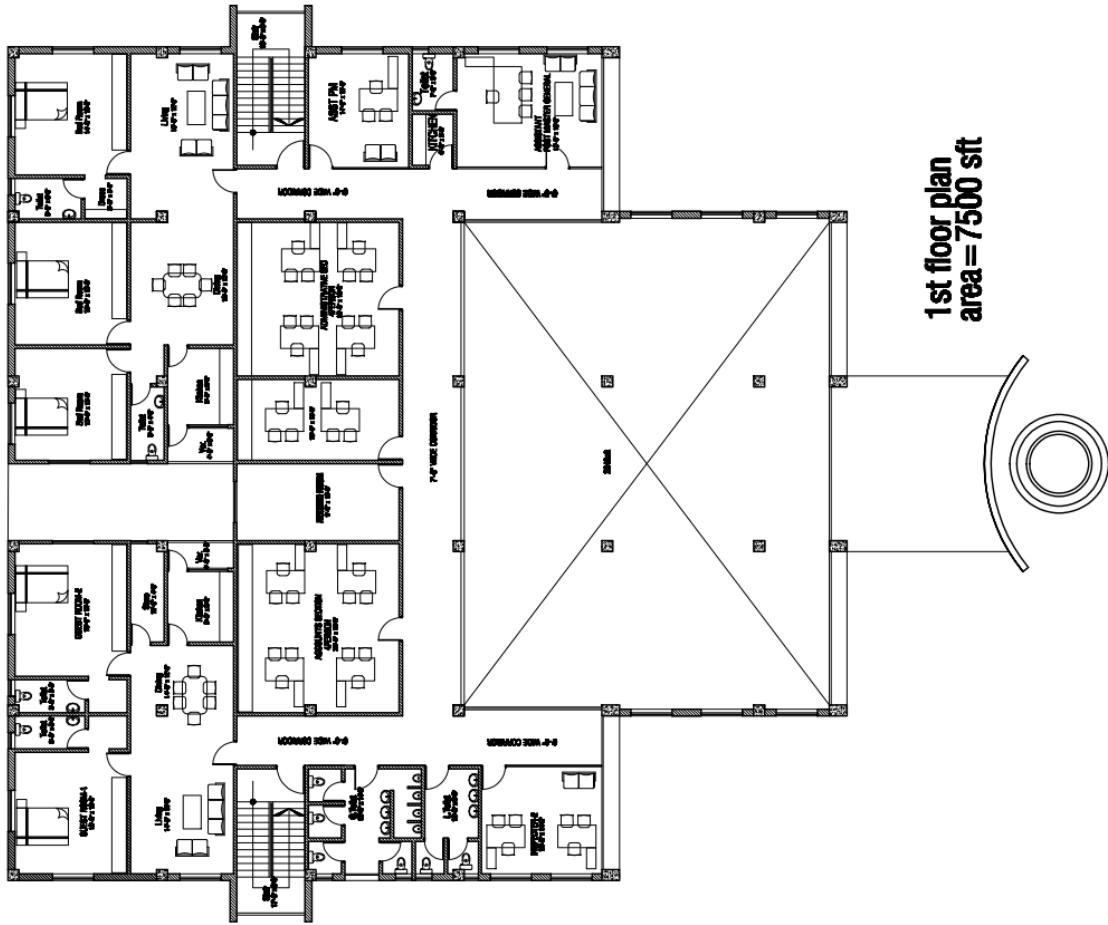
PROJECT

proposed District head  
post office  
area=1000sqft

ARCHITECT

KALINIK BROWNS  
S.Architect  
100 Massachusetts Ave. No. 5015  
Boston, MA 02118  
85. Oliver Street, Boston, Massachusetts  
02111-1217. Cell: 617-514-7827

CAD BY	SHILPI PAUL
DATE	21.07.2018
SHEET	A-03



**Construction of District Post Office Building with 2 Storied Pile Foundation.  
(As per PWD Schedule Rate of 2022).**

Building Type : Non Residential

Building Category: Super

Type of Structure: R.C.C frame structure with (1:1.5:3) Stone chips

Soil Type: Bearing capacity of soil=3ksf

Foundation: Pile Foundation (2 Storied)

Pinth area: 10000.00 sft. 929.37 sqm

Site: Other than coastal area.

Area- 1 Ground floor =929.37  
sqm

2. 1st floor =697.02 sqm

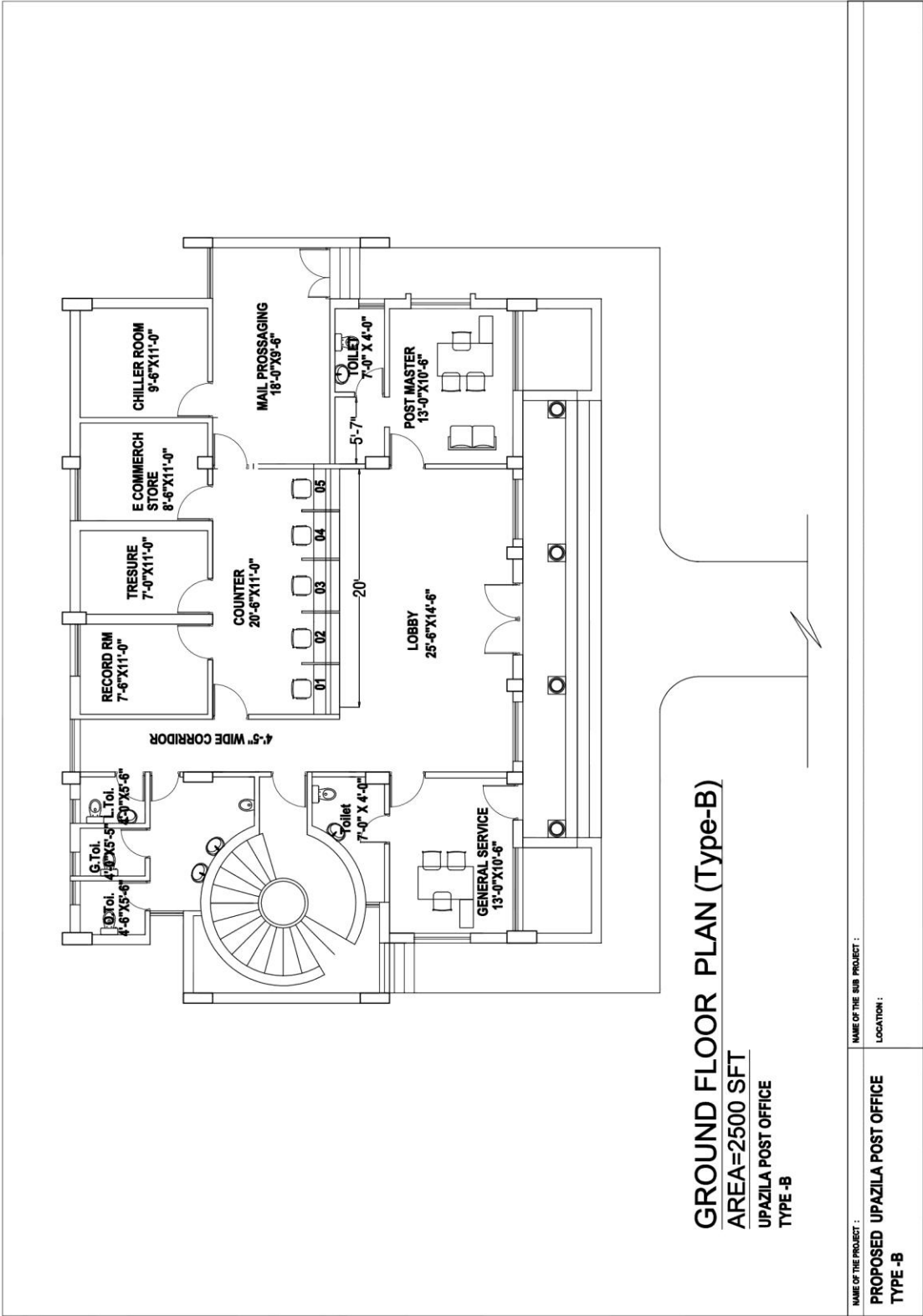
SL	Description	Qty	Unit	Rate PWD 2022	Amount (Tk.)
<b>A</b>	<b>Foundation Cost</b>				
1	Soil Investigation	5.00	nos	38821	194,105.00
2	Foundation Cost	929.37	sqm	24640	22,899,676.80
3	Add extra 2% cost for wind and earth quake load				457,993.54
	<b>Sub Total A:</b>				<b>23,551,775.34</b>
<b>B</b>	<b>Superstructure Cost</b>				
4	i) Ground floor- Functional area, Mail Processing room, <b>Storage room, Chilling room</b> & others	929.37	sqm	28615	26,593,922.55
	ii) Add. Extra cost for member weightage (mw)	929.37	sqm	1369	1,272,307.53
5	i) 1st floor	697.02	sqm	27153	18,926,184.06
	ii) Add. Extra cost for member weightage (mw)	697.02	sqm	1095	763,236.90
	<b>Sub Total B:</b>				<b>47,555,651.04</b>
<b>C.</b>	<b>Additional Superstructure cost</b>				
6	Add extra superstructure cost 2% for wind (other than coastal area) and earth quake load resisting structure)				951,113.02
7	Extra cost for roof top and chillakota	55.76	sqm	3360	187,353.60

8	Extra cost for roof top RCC parpet	121.92	sqm	4642	565,952.64
9	Extra cost for roof top RCC water tank	4,000.00	gallon	178	712,000.00
10	Porch	37.17	sqm	7540	280,261.80
11	Modern Counter System	12.00	nos	25000	300,000.00
13	Power Generator 250KVA	1.00	nos	2500000	2,500,000.00
14	Air Conditioning System (Counter Area)	30.00	ton	135000	4,050,000.00
15	Interior Furniture works Name/Description: Work station-30, Counter-12, Conference Table (12 Person Accommodation)-1, Table: Executive-2, Table: Staff Officers-30 , Chair: Executive-60, Chair: Visitor-25, Chair: Conference-12, Chair: Training-22, Sofa (Set)-4, Cabinet: Stuff-40, Cabinet: Storage-22,	260.00	nos	7500000	7,500,000.00
16	Security System (8 cc cam+DVR+others Set)	2.00	Set	300000	600,000.00
	<b>Sub Total C:</b>				<b>17,646,681.06</b>
<b>D</b>	<b>Others Building Cost</b>				
17	Internal water supply and sanitation	1,626.39	sqm	1563	2,542,047.57
18	Internal Electrification	1,626.39	sqm	1930	3,138,932.70
19	<b>External water supply</b>				
	i) Construction of underground reservoir	8,000.00	gallon	106	848,000.00
	ii) Sinking of Deep tubewell water pump, pump house wasa	LS		2250000	2250000
20	<b>Gss connection</b>				
	i) Ground floor	929.37	sqm	455	422,863.35
	1st floor	697.02	sqm	182	126,857.64
21	<b>Road work</b>				
	RCC Road	130.00	sqm	3163	411,190.00
22	RCC Boundary wall	323.00	sqm	23129	7,470,667.00
23	<b>Drain and apron</b>				

	i) Drain (300 mm clear width and depth upto 300mm)	95.00	mm	3196	303,620.00
	ii) surface drain of 225 clear and 600mm (av) depth	30.48	mm	5614	171,114.72
24	Main gate	20.16	mm	38690	779,990.40
25	Site Development by carted Earthwork	1,484.00	cum	760	1,127,840.00
	<b>Sub Total D:</b>				<b>19,593,123.38</b>
	<b>Total Cost of Taka (A+B+C+D):</b>				<b>108,347,230.82</b>

### নকশা (টাইপ-বি)





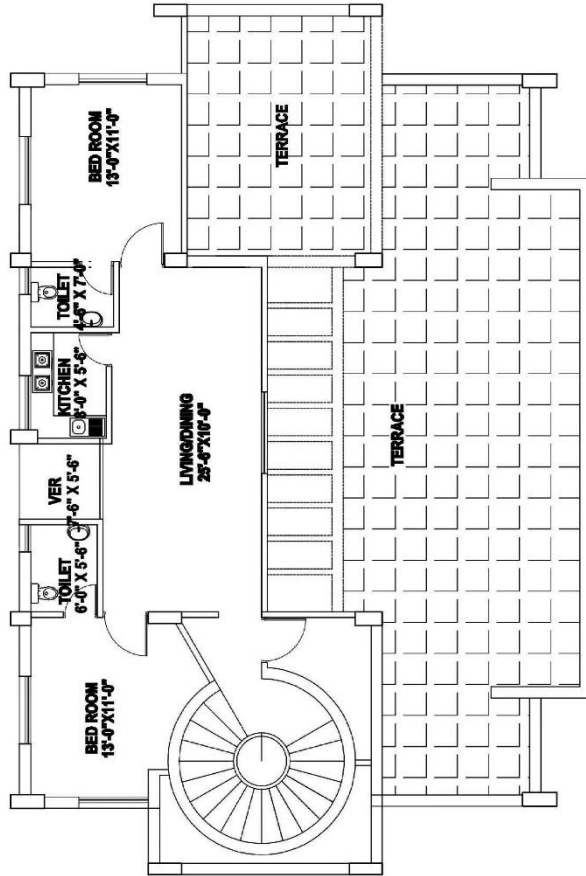
**GROUND FLOOR PLAN (Type-B)**

AREA=2500 SFT  
 UPAZILA POST OFFICE  
 TYPE -B

NAME OF THE PROJECT :

LOCATION :

**PROPOSED UPAZILA POST OFFICE  
 TYPE -B**



**1ST FLOOR PLAN**  
**AREA=800 SFT**  
**Upazila Post Office( 2 storied)**  
**TYPE -B**

NAME OF THE PROJECT :

**PROPOSED UPAZILA POST OFFICE**  
**TYPE -B**

NAME OF THE NEW PROJECT :

LOCATION :



## Construction of Upazilla Post Office Building(type-B) with 2 Storied Pile Foundation. (As per PWD Schedule Rate of 2022).

Building Type : Non Residential

Building Category: Super

Type of Structure: R.C.C frame structure with (1:1.5:3) Stone chips

Soil Type: Bearing capacity of soil=3ksf

Foundation: Pile Foundation (2 Storied)

Pinth area: 2500.00 sft. 232.34 sqm

Site: Other than coastal area.

Area- 1 Ground floor =232.34 sqm

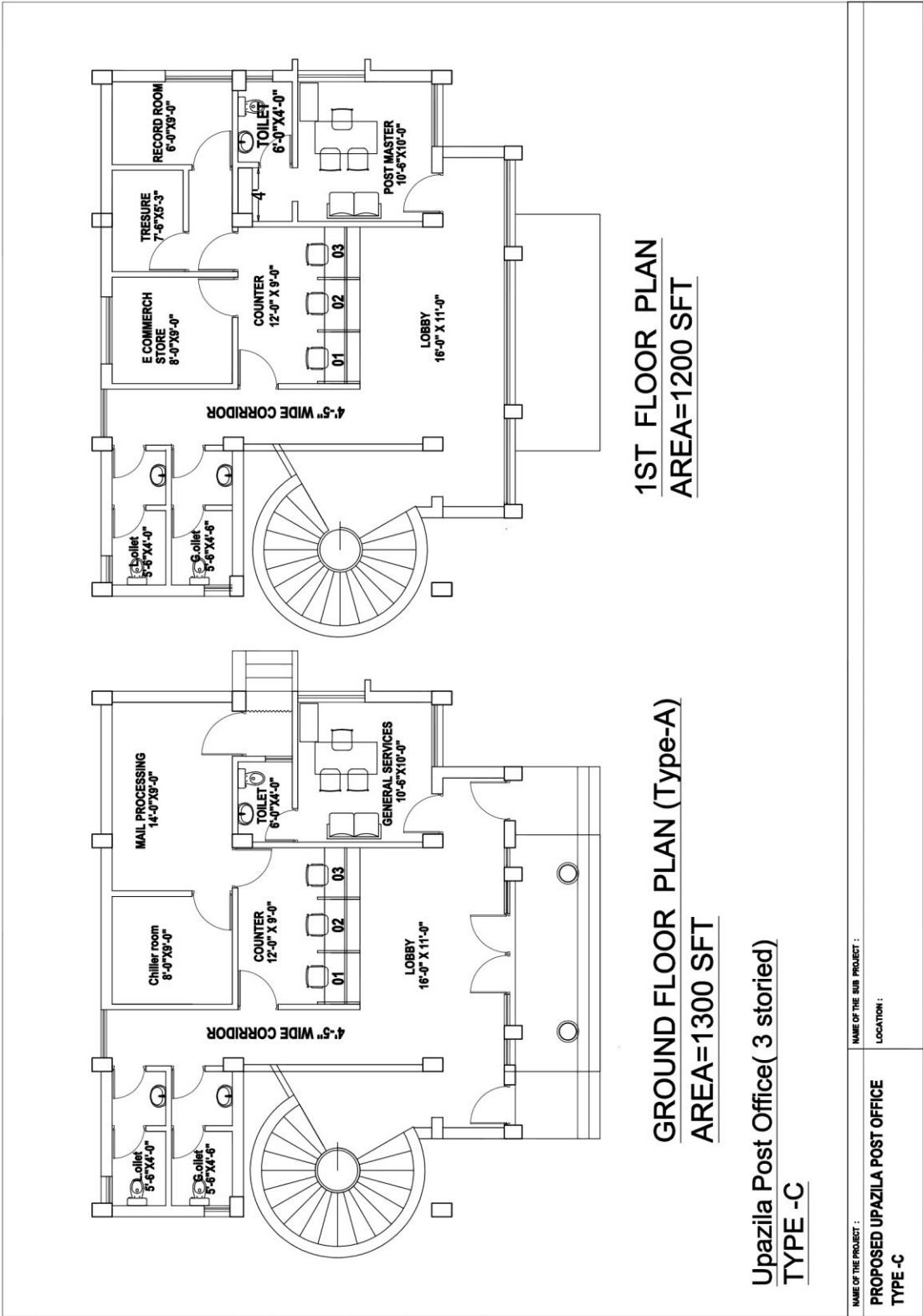
2. 1st floor =74.35 sqm

SL	Description	Qty	Unit	Rate PWD 2022	Amount (Tk.)
<b>A</b>	<b>Foundation Cost</b>				
1	Soil Investigation	3.00	nos	38821	116,463.00
2	Foundation Cost	232.34	sqm	24640	5,724,857.60
3	Add extra 2% cost for wind and earth quake load				114,497.15
	<b>Sub Total A:</b>				<b>5,955,817.75</b>
<b>B</b>	<b>Superstructure Cost</b>				
4	i) Ground floor- Functional area, Mail Processing room, <b>Storage room, Chilling room</b> & others	232.34	sqm	28615	6,648,409.10
	ii) Add. Extra cost for member weightage (mw)	232.34	sqm	1369	318,073.46
5	i) 1st floor	74.35	sqm	27153	2,018,825.55
	ii) Add. Extra cost for member weightage (mw)	74.35	sqm	1095	81,413.25
	<b>Sub Total B:</b>				<b>9,066,721.36</b>
<b>C.</b>	<b>Additional Superstructure cost</b>				
<b>7</b>	Add extra superstructure cost 2% for wind (other than coastal area) and earth quake load resisting structure)				181,334.43
<b>8</b>	Extra cost for roof top and chillakota	27.88	sqm	3360	93,676.80

9	Extra cost for roof top RCC parpet	100.00	sqm	4642	464,200.00
10	Extra cost for roof top RCC water tank	1000.00	gallon	178	178,000.00
11	Porch	10.00	sqm	7540	75,400.00
13	Power Generator 10KVA		LS		1,100,000.00
14	Air Conditioning System (Counter Area)	6.00	ton	135000	810,000.00
15	Interior Furniture works Name/Description: staff chair-5; filr rack(steel)-2; mobaj lock-5; dining table-1; bed(double)-1; bed (single)-2; storage cabinet-2; parcel weiging machine-1; digital weighing machine-1; trolly-2; reading table-2; chair-5; visitors chair(steel)-2 set; freezer-1	30.00	nos	1500000	1,500,000.00
16	Security System (8 cc cam+others Set)	2.00	Set	150000	300,000.00
	<b>Sub Total C:</b>				<b>4702611.23</b>
<b>D</b>	<b>Others Building Cost</b>				
17	Internal water supply and sanitation	316.69	sqm	1563	494986.47
18	Internal Electrification	316.69	sqm	1563	494,986.47
19	<b>External water supply</b>				-
	i) Construction of underground reserovor	1000.00	gallon	106	106000
20	<b>Road work</b>				-
	RCC Road	100.00	sqm	3163	316300
21	RCC Boundary wall	153.00	m	23129	3538737
22	<b>Drain and apron</b>				-
	i) Drain (300 mm clear width and depth upto 300mm)	65.00	sqm	3196	207,740.00
23	<b>Apron</b>	30.00	sqm	5614	168,420.00
24	<b>Main gate</b>	15.00	sqm	38690	580,350.00
	<b>Sub Total D:</b>				<b>5,907,519.94</b>
	<b>Total Cost of Taka (A+B+C+D):</b>				<b>25,632,670.28</b>

উপজেলা ডাকঘর:



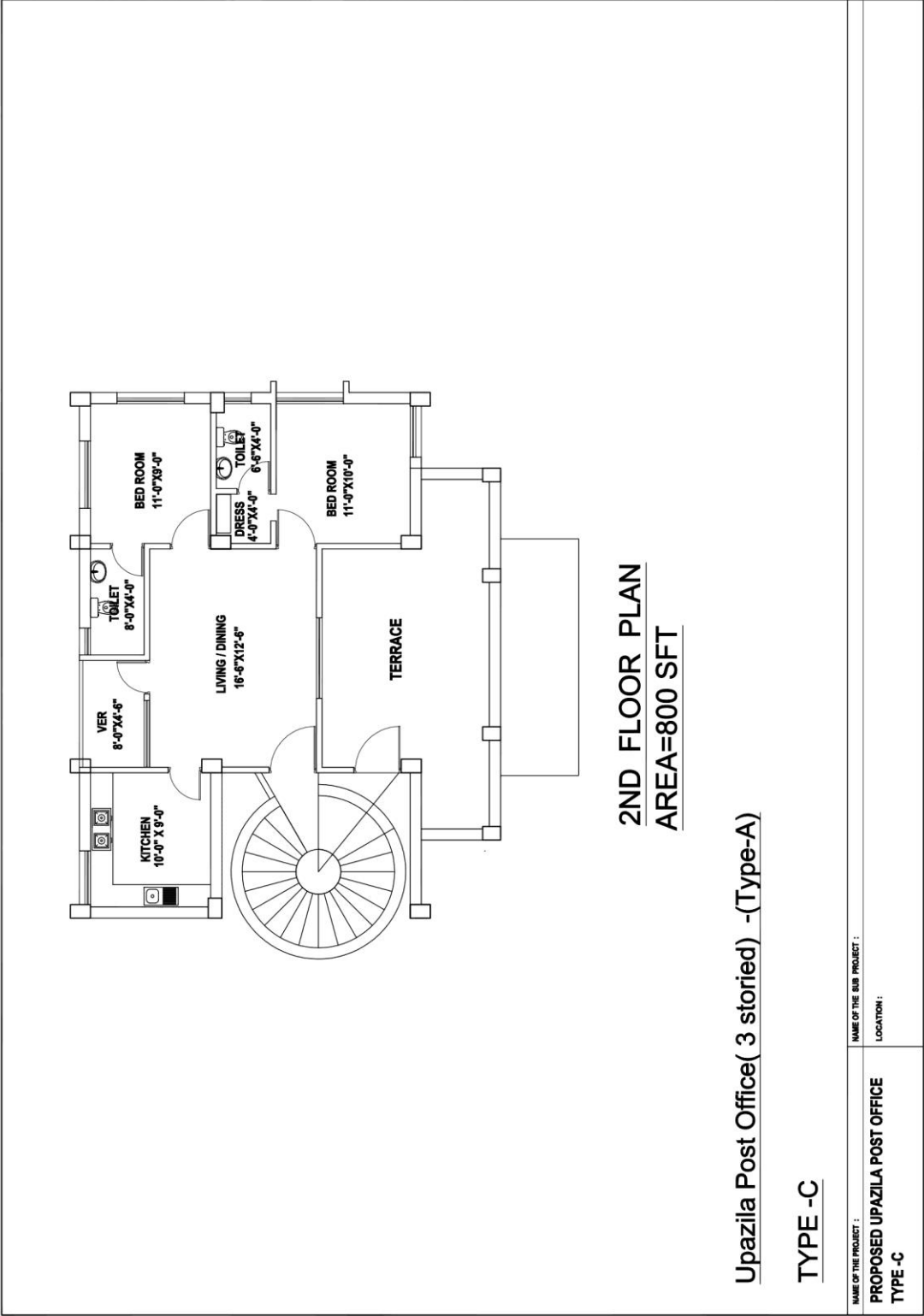


**1ST FLOOR PLAN**  
**AREA=1200 SFT**

**GROUND FLOOR PLAN (Type-A)**  
**AREA=1300 SFT**

**Upazila Post Office( 3 storied)**  
**TYPE -C**

NAME OF THE PROJECT :	NAME OF THE SUB PROJECT :
PROPOSED UPAZILA POST OFFICE	LOCATION :
TYPE -C	



**Upazila Post Office( 3 storied) -(Type-A)**

**TYPE -C**

<b>NAME OF THE PROJECT :</b>	<b>NAME OF THE SUB PROJECT :</b>
<b>PROPOSED UPAZILA POST OFFICE</b>	<b>LOCATION :</b>
<b>TYPE -C</b>	

## Construction of Upzilla Post Office Building (type-C) with 3 Storied Pile Foundation. (As per PWD Schedule Rate of 2022).

Building Type : Non Residential

Building Category: Super

Type of Structure: R.C.C frame structure with (1:1.5:3) Stone chips

Soil Type: Bearing capacity of soil=3ksf

Foundation: Pile Foundation (3 Storied)

Pinth area: 1300.00 sft. 120.82 sqm

Site: Other than coastal area.

Area- 1 Ground floor =120.82 sqm

2. 1st floor =111.52 sqm

3. 2nd floor =74.35 sqm

SL	Description	Qty	Unit	Rate PWD 2022	Amount (Tk.)
<b>A</b>	<b>Foundation Cost</b>				
1	Soil Investigation	3.00	nos	38821	116,463.00
2	Foundation Cost	120.82	sqm	24640	2,977,004.80
3	Add extra 2% cost for wind and earth quake load				59,540.10
	<b>Sub Total A:</b>				<b>3,153,007.90</b>
<b>B</b>	<b>Superstructure Cost</b>				
4	i) Ground floor- Functional area, Mail Processing room, <b>Storage room, Chilling room</b> & others	120.82	sqm	28615	3,457,264.30
	ii) Add. Extra cost for member weightage (mw)	120.82	sqm	1369	165,402.58
5	i) 1st floor	111.52	sqm	27153	3,028,102.56
	ii) Add. Extra cost for member weightage (mw)	111.52	sqm	1095	122,114.40
	i) 2nd floor	74.35	sqm	29868.3	2,220,708.11
	ii) Add. Extra cost for member weightage (mw)	74.35	sqm	1204.5	89,554.58
	<b>Sub Total B:</b>				<b>9,083,146.52</b>
<b>C.</b>	Additional Superstructure cost				

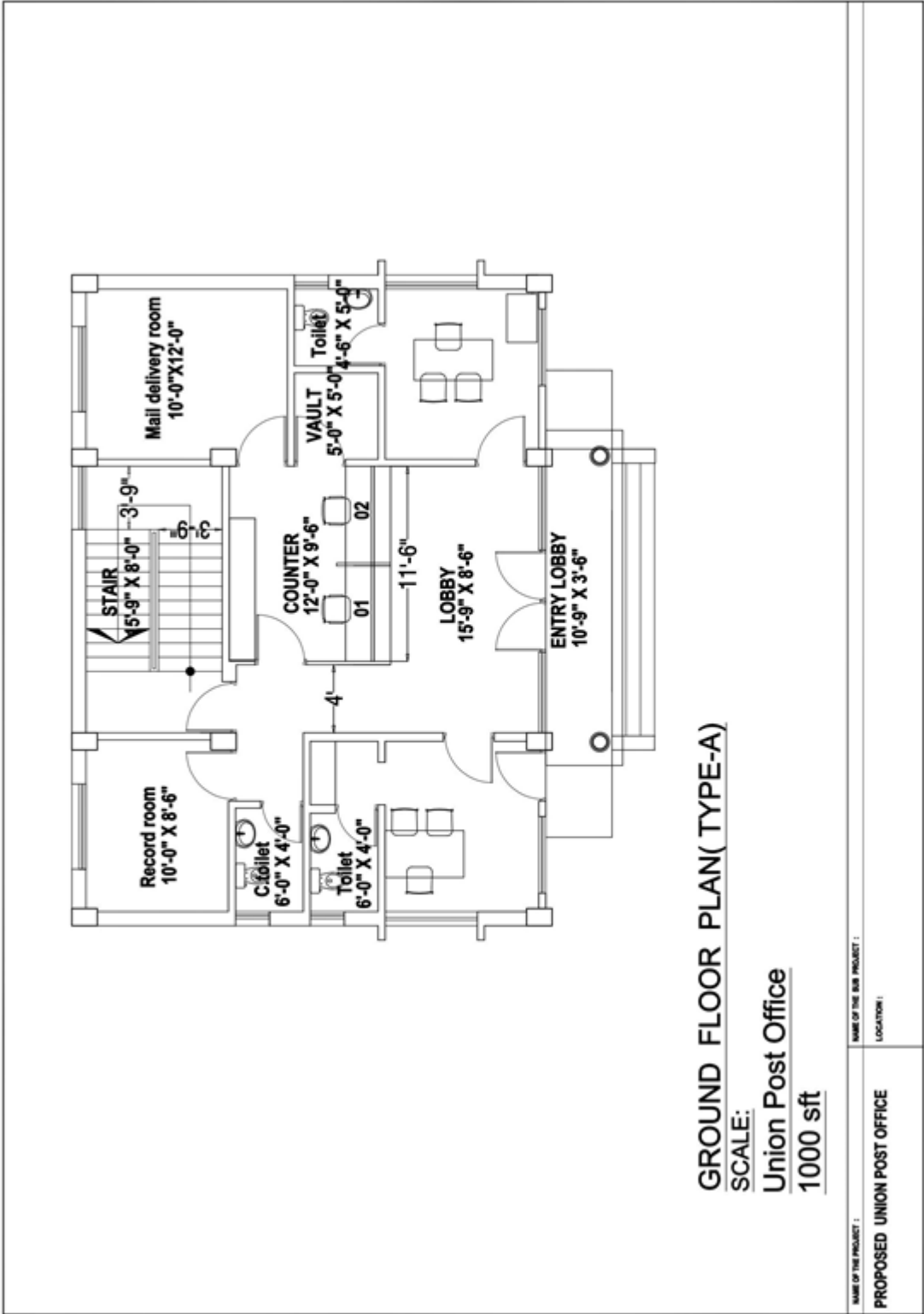
7	Add extra superstructure cost 2% for wind (other than coastal area) and earth quake load resisting structure)				181,662.93
8	Extra cost for roof top and chillakota	27.88	sqm	3360	93,676.80
9	Extra cost for roof top RCC parpet	80.00	sqm	4642	371,360.00
10	Extra cost for roof top RCC water tank	1000.00	gallon	178	178,000.00
11	Porch	15.00	sqm	7540	113,100.00
13	Power Generator 10KVA		LS		1,100,000.00
14	Air Conditioning System (Counter Area)	10.00	ton	135000	1,350,000.00
15	Interior Furniture works Name/Description: staff chair-5; filr rack(steel)-2; mobaj lock-5; dining table-1; bed(double)-1; bed (single)-2; storage cabinet-2; parcel weiging machine-1; digital weighing machine-1; trolly-2; reading table-2; chair-5; visitors chair(steel)-2 set; freezer-1	40.00	nos	1500000	1,500,000.00
16	Security System (8 cc cam+others Set)	2.00	Set	150000	300,000.00
	<b>Sub Total C:</b>				<b>5187799.73</b>
<b>D</b>	<b>Others Building Cost</b>				
17	Internal water supply and sanitation	306.69	sqm	1563	479356.47
18	Internal Electrification	306.69	sqm	1563	479,356.47
19	<b>External water supply</b>				-
	i) Construction of underground reservoir	1000.00	gallon	106	106000
20	<b>Road work</b>				-
	RCC Road	130.00	sqm	3163	411190
21	RCC Boundary wall	175.00	m	23129	4047575
22	<b>Drain and apron</b>				-
	i) Drain (300 mm clear width and depth upto 300mm)	75.00	sqm	3196	239,700.00
23	<b>Apron</b>	35.00	sqm	5614	196,490.00
24	<b>Main gate</b>	20.00	sqm	38690	773,800.00

	<b>Sub Total D:</b>				<b>6,733,467.94</b>
	<b>Total Cost of Taka (A+B+C+D):</b>				<b>24,157,422.09</b>

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## Construction of Union Post Office Building(type-A) with 1 Storied Pile Foundation. (As per PWD Schedule Rate of 2022).

Building Type : Non Residential

Building Category: Super

Type of Structure: R.C.C frame structure with (1:1.5:3) Stone chips

Soil Type: Bearing capacity of soil=3ksf

Foundation: Pile Foundation (1 Storied)

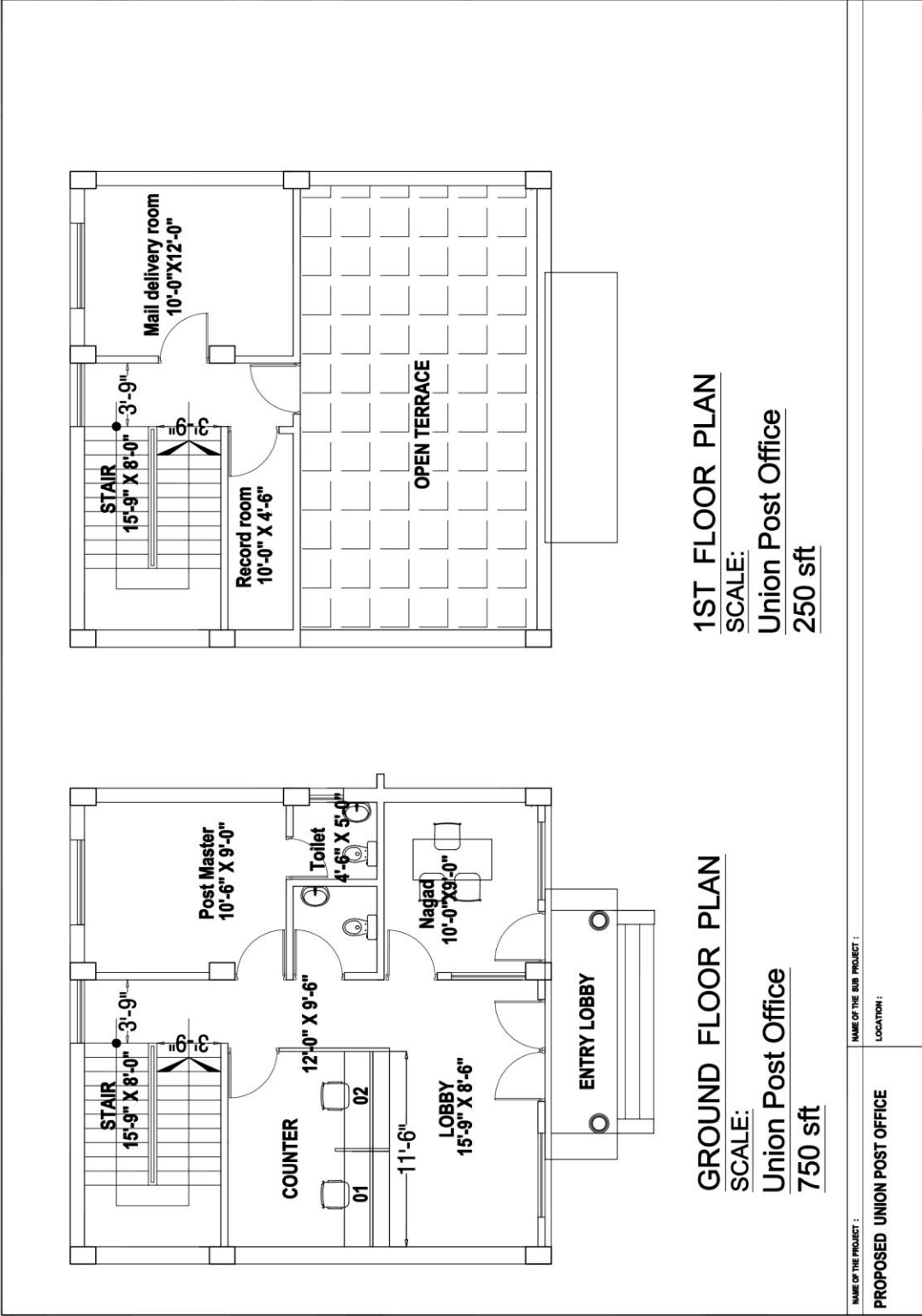
Pinth area: 1000.00 sft. 92.94 sqm

Site: Other than coastal area.

Area- 1 Ground floor =92.94 sqm

SL	Description	Qty	Unit	Rate PWD 2022	Amount (Tk.)
<b>A</b>	<b>Foundation Cost</b>				
1	Soil Investigation	3.00	nos	38821	116463
2	Foundation Cost	92.94	sqm	21735	2020050.9
3	Add extra 2% cost for wind and earth quake load				42730.278
	<b>Sub Total A:</b>				<b>2179244.178</b>
<b>B</b>	<b>Superstructure Cost</b>				
4	i) Ground floor- Functional area, Mail Processing room, <b>Storage room</b> & others	92.94	sqm	28615	2659478.1
	ii) Add. Extra cost for member weightage (mw)	92.94	sqm	1369	127234.86
	<b>Sub Total B:</b>				<b>2786712.96</b>
<b>C.</b>	<b>Additional Superstructure cost</b>				
7	Add extra superstructure cost 2% for wind (other than coastal area) and earth quake load resisting structure)				55734.2592
8	Extra cost for roof top and chillakota	27.88	sqm	3360	93676.8
9	Extra cost for roof top RCC parpet	40.00	sqm	4642	185680
10	Extra cost for roof top RCC water tank	250.00	gallon	178	44500
11	Porch	10.00	sqm	7540	75400
14	Air Conditioning System (Counter Area)	3.00	ton	135000	405000
15	Interior Furniture works Name/Description: staff chair-5; filr rack(steel)-2; mobaj lock-5; storage cabinet-2; parcel weiging machine-1; digital weighing machine-1; trolly-2; ; chair-5; visitors chair(steel)-2 set	25.00	nos		750000
16	Security System (8 cc cam+others Set)	1.00	Set	150000	150000

	<b>Sub Total C:</b>				<b>1759991.059</b>
<b>D</b>	<b>Others Building Cost</b>				
<b>17</b>	Internal water supply and sanitation	42.94	sqm	1563	67115.22
<b>18</b>	Internal Electrification	42.94	sqm	1930	82874.2
<b>19</b>	<b>External water supply</b>				
<b>20</b>	<b>Road work</b>				
	RCC Road	15.00	sqm	3163	47445
<b>21</b>	RCC Boundary wall	52.00	m	23129	1202708
<b>22</b>	<b>Drain and apron</b>				
	i) Drain (300 mm clear width and depth upto 300mm)	40.00	sqm	3196	127840
<b>23</b>	<b>Apron</b>	18.00	sqm	5614	101052
<b>24</b>	<b>Main gate</b>	15.00	sqm	38690	580350
<b>25</b>	<b>Site Development by carted Earthwork</b>	280.00	cum	760	212800
	<b>Sub Total D:</b>				<b>2422184.42</b>
	<b>Total Cost of Taka (A+B+C+D):</b>				<b>9148132.617</b>



**GROUND FLOOR PLAN**  
**SCALE:**  
**Union Post Office**  
**750 sft**

**1ST FLOOR PLAN**  
**SCALE:**  
**Union Post Office**  
**250 sft**



**Union Post Office ,  
Type-B, 750+250=1000 SFT**

## Construction of Union Post Office Building (type-B) with 2 Storied Pile Foundation. (As per PWD Schedule Rate of 2022).

Building Type : Non Residential

Building Category: Super

Type of Structure: R.C.C frame structure with (1:1.5:3) Stone chips

Soil Type: Bearing capacity of soil=3ksf

Foundation: Pile Foundation (2 Storied)

Pinth area: 750.00 sft. 69.70 sqm

Site: Other than coastal area.

Area- 1 Ground floor =69.70 sqm

2. 1st floor =23.23 sqm

SL	Description	Qty	Unit	Rate PWD 2022	Amount (Tk.)
<b>A</b>	<b>Foundation Cost</b>				
1	Soil Investigation	3.00	nos	38821	116,463.00
2	Foundation Cost	69.70	sqm	24640	1,717,408.00
3	Add extra 2% cost for wind and earth quake load				34,348.16
	<b>Sub Total A:</b>				<b>1,868,219.16</b>
<b>B</b>	<b>Superstructure Cost</b>				
4	i) Ground floor- Functional area, Mail Processing room, <b>Storage room, Chilling room</b> & others	69.70	sqm	28615	1,994,465.50
	ii) Add. Extra cost for member weightage (mw)	69.70	sqm	1369	95,419.30
5	i) 1st floor	23.23	sqm	27153	630,764.19
	ii) Add. Extra cost for member weightage (mw)	23.23	sqm	1095	25,436.85
	<b>Sub Total B:</b>				<b>2,746,085.84</b>
<b>C.</b>	<b>Additional Superstructure cost</b>				
<b>7</b>	Add extra superstructure cost 2% for wind (other than coastal area) and earth quake load resisting structure)				54,921.72
<b>8</b>	Extra cost for roof top and chillakota	14.80	sqm	3360	49,728.00

9	Extra cost for roof top RCC parpet	60.00	sqm	4642	278,520.00
10	Extra cost for roof top RCC water tank	1000.00	gallon	178	178,000.00
11	Porch	8.00	sqm	7540	60,320.00
13	Power Generator 10KVA		LS		1,100,000.00
14	Air Conditioning System (Counter Area)	5.00	ton	135000	675,000.00
15	Interior Furniture works Name/Description: staff chair-5; filr rack(steel)-2; mobaj lock-5; dining table-1; bed(double)-1; bed (single)-2; storage cabinet-2; parcel weiging machine-1; digital weighing machine-1; trolly-2; reading table-2; chair-5; visitors chair(steel)-2 set; freezer-1	25.00	nos	1500000	1,500,000.00
16	Security System (8 cc cam+others Set)	2.00	Set	150000	300,000.00
	<b>Sub Total C:</b>				<b>4196489.72</b>
<b>D</b>	<b>Others Building Cost</b>				
17	Internal water supply and sanitation	92.93	sqm	1563	145249.59
18	Internal Electrification	92.93	sqm	1563	145,249.59
19	<b>External water supply</b>				-
	i) Construction of underground reserovor	1000.00	gallon	106	106000
20	<b>Road work</b>				-
	RCC Road	80.00	sqm	3163	253040
21	RCC Boundary wall	120.00	m	23129	2775480
22	<b>Drain and apron</b>				-
	i) Drain (300 mm clear width and depth upto 300mm)	50.00	sqm	3196	159,800.00
23	<b>Apron</b>	25.00	sqm	5614	140,350.00
24	<b>Main gate</b>	15.00	sqm	38690	580,350.00
	<b>Sub Total D:</b>				<b>4,305,519.18</b>
	<b>Total Cost of Taka (A+B+C+D):</b>				<b>13,116,313.90</b>

**12.6 LIST OF LOCAL OFFICE THAT NEED TO BE DEVELOPED****Head Post Office**

Sl no.	Post Office	Upzilla	District	Area
1	Tanjail head post office	Tanjail Sadar	Tanjail	62 Decimal
2	Habiganj head post office	Habijang Sadar	Habijang	40 Decimal
3	Ramgar head post office	Ramgar	Khagrachari	40 Decimal
4	Bagerhat head post office	Bagerhat Sadar	Bagerhat	43 Decimal
5	Pirojpur head post office	Pirojpur Sadar	Pirojpur	22 Decimal

**Divisional Office**

SI No.	Post Office	Upazilla	District	Area
1	Office of the inspector	Munshiganj Sadar	Munshiganj	39 Decimal
2	Kishoreganjh divisional office	Kishoreganjh Sadar	Kishoreganjh	10 Decimal
3	Mymensingh divisional office and inspector's banglow	Mymensingh Sadar	Mymensingh	159 Decimal
4	Inspector's Office, Chattogram North Subdivision	Hathazari	Chattogram	10 Decimal

**Upzilla Post Office**

SI No.	Post Office	Upazilla	District	Area
1	Joypara UPO	Dohar	Dhaka	22 Decimal
2	Sonargaon UPO	Sonargaon	Narayanganj	30 Decimal
3	Bandar UPO	Bandar	Narayanganj	7.45 Decimal
4	Rupganj UPO	Rupganj	Narayanganj	18 Decimal
5	Araihasar UPO	Araihasar	Narayanganj	10 Decimal
6	Fatulla UPO	Sadar	Narayanganj	9 Decimal
7	Lauhajong UPO	Lauhajong	Munshiganj	10 Decimal
8	Tongibari UPO	Tongibari	Munshiganj	20 Decimal



9	Shibpur UPO	Shibpur	Narshingdi	20 Decimal
10	Monohardi UPO	Monohardi	Narshingdi	25 Decimal
11	Palash UPO	Palash	Narshingdi	20 Decimal
12	Mirzapur UPO	Mirzapur	Tangail	76 Decimal
13	Nagarpur UPO	Nagarpur	Tangail	69 Decimal
14	Basail UPO	Basail	Tangail	36 Decimal
15	Ghatail UPO	Ghatail	Tangail	28 Decimal
16	Delduar UPO	Delduar	Tangail	33 Decimal
17	Nikli UPO	Nikli	Kishoreganj	16 Decimal
18	Austagram UPO	Austagram	Kishoreganj	32 Decimal
19	Pakundia UPO	Pakundia	Kishoreganj	20 Decimal
20	Hossainpur UPO	Hossainpur	Kishoreganj	22 Decimal
21	Karimganj UPO	Karimganj	Kishoreganj	20 Decimal
22	Tarail UPO	Tarail	Kishoreganj	15 Decimal
23	Itna UPO	Itna	Kishoreganj	24 Decimal
24	Bajitpur UPO	Bajitpur	Kishoreganj	49 Decimal
25	Nandail UPO	Nandail	Kishoreganj	27 Decimal
26	Katiadi UPO	Katiadi	Kishoreganj	19 Decimal
27	Susong UPO	Sarsang	Netrokona	38Decimal
28	Haluaghat UPO	Haluaghat	Mymensingh	19 Decimal
29	Phulpur UPO	Phulpur	Mymensingh	91 Decimal
30	Fulbaria UPO	Fulbaria	Mymensingh	19 Decimal
31	Muktagacha UPO	Muktagacha	Mymensingh	54 Decimal
32	Trishal UPO	Trishal	Mymensingh	33 Decimal
33	Gouripur UPO	Gouripur	Mymensingh	70 Decimal
34	Bhaluka UPO	Bhaluka	Mymensingh	70 Decimal
35	Mirsarai UPO	Mirsarai	Chattogram	28 Decimal
36	Sandwip UPO	Sandwip	Chattogram	19 Decimal
37	Hathazari UPO	Hathazari	Chattogram	43 Decimal
38	Raozan UPO	Raozan,	Chattogram	61 Decimal
39	Anwara UPO	Anwara	Chattogram	8 Decimal
40	Boalkhali UPO	Boalkhali	Chattogram	26Decimal
41	East Joara UPO	Chandanaish	Chattogram	16 Decimal
42	Satkania UPO	Satkania	Chattogram	36 Decimal
43	Sarail UPO	Sarail	Brahmanbaria	18 Decimal
44	Nasirnagar UPO	Nasirnagar	Brahmanbaria	12 Decimal
45	Brahmanpara UPO	Brahmanpara	Brahmanbaria	30.64 Decimal
46	Kasba UPO	Kasba	Brahmanbaria	42 Decimal

47	Bancharampur UPO	Bancharampur	Brahmanbaria	16.50 Decimal
48	Nangalkot UPO	Nangalkot	Cumilla	33 Decimal
49	Debidwar UPO	Debidwar	Cumilla	14.75 Decimal
50	Chouddogram, UPO	Chouddogram	Cumilla	09 Decimal
51	Motlob UPO	Motlob	Cumilla	27 Decimal
52	Kochua UPO	Kochua	Chandpur	30 Decimal
53	Bishonath	Bishonath	Sylhet	28 Decimal
54	Kompaniganj	Kompaniganj	Sylhet	16 Decimal
55	Gowainghat	Gowainghat	Sylhet	29 Decimal
56	Fanchuganj	Fanchuganj	Sylhet	18 Decimal
57	Jokiganj	Jokiganj	Sylhet	40 Decimal
58	Kanaighat	Kanaighat	Sylhet	40 Decimal
59	Jointapur	Jointapur	Sylhet	36 Decimal
60	Chatok	Chatok	Sunamganj	33 Decimal
61	Bishomborpur	Bishomborpur	Sunamganj	27 Decimal
62	Tahirpur	Tahirpur	Sunamganj	25 Decimal
63	Diraichatpur	Dirai	Sunamganj	30 Decimal
64	Dowarabazar	Dowarabazar	Sunamganj	60 Decimal
65	Sacna	Jamanganj	Sunamganj	10 Decimal
66	Ghongiyargaw	Salla	Sunamganj	21 Decimal
67	Kulaura	Kulaura	Moulovibazar	48 Decimal
68	Borolekha	Borolekha	Moulovibazar	30 Decimal
69	Rajongor	Rajongor	Moulovibazar	36 Decimal
70	Srimongol UPO	Srimongol	Moulovibazar	42 Decimal
71	Madhoppur UPO	Madhoppur	Habiganj	32 Decimal
72	Bahubol UPO	Bahubol	Habiganj	34 Decimal
73	Cunarughat UPO	Cunarughat	Habiganj	30 Decimal
74	Kalauk UPO	Lakhai	Habiganj	28 Decimal
75	Azmirigonj UPO	Azmiri	Habiganj	12 Decimal
76	Nobiganj	Nobiganj	Habiganj	26 Decimal
77	Lohagora	Lohagora	Cox's Bazar	33 Decimal
78	Pekua UPO	Pekua	Cox's Bazar	10 Decimal

79	Ciringa cici	Chashmari	Cox's Bazar	66Decimal
80	Ramu	Ramu	Cox's Bazar	175Decima l
81	Ukhiya	Ukhiya	Cox's Bazar	53Decimal
82	Teknaf	Teknaf	Cox's Bazar	15Decimal
83	Kutubdiya	Kutubdiya	Cox's Bazar	18Decimal
84	Bashurhat	Kompaniganj	Noakhali	33 Decimal
85	Charalekgender	Ramgoti	Laxmipur	33 Decimal
86	Marisha	Baghaichori	Rangamati	72 Decimal
87	Kaptai	Kaptai	Rangamati	143 Decimal
88	Manikchari	Manikchari	Khagrachari	66 Decimal
89	Roangchari UPO	Roangchari Sadar	Roangchari	50 Decimal
90	Ruma UPO	Ruma Sadar	Ruma	50 Decimal
91	Alikodom UPO	Alikodom Sadar	Alikodom	40 Decimal
92	Naikhongchori UPO	Naikhongchar i Sadar	Naikhongchari	16 Decimal
93	Sariyakandi	Sariyakandi	Bogura	22 Decimal
94	Gabtoli	Gabtoli	Bogura	41 Decimal
95	Sherpur	Sherpur	Bogura	15 Decimal
96	Dhunot	Dhunot	Bogura	17 Decimal
97	Shibganj	Ahibganj	Bogura	20.94 Decimal
98	Nondigram	Nondigram	Bogura	24 Decimal
99	Sundorganj	Sundorganj	Gaibandha	10.69 Decimal
100	Gobindoganj	Gobindaganj	Gaibandha	17 Decimal
101	Fulchori	Fulchori	Gaibandha	10 Decimal
102	Bonarpara	Saghata	Gaibandha	11.15 Decimal
103	Ahsanganj	Atrai	Naogaon	28 Decimal
104	Potnitola UPO	Potnitola	Naogaon	12 Decimal
105	Mohadeppur Upazilla post office	Mohadeppur	Naogaon	55 Decimal
106	Bolodgachi upazilla post office	Bolodgachi	Naogaon	177 Decimal

107	Dhamuirhat upazilla post office	Dhamuirhat	Naogaon	33 Decimal
108	Tanor upazilla post office	Tanor	Naogaon	33 Decimal
109	Kalai	Kalai	Joypurhat	32 Decimal
110	Akkelpur	Akkelpur	Joypurhat	28 Decimal
111	Khetlal	Khetlal	Joypurhat	33 Decimal
112	Ranisongkoil upazilla post office	Ranisongkoil	Thakurgaon	33 Decimal
113	Jibonpur uzillah post office	Jibonpur	Thakurgaon	14 Decimal
114	Mithapukur	Mithapukur	Rangpur	13.1 Decimal
115	Badarganj	Badarganj	Rangpur	17 Decimal
116	Khansama	Khansama	Dinajpur	11 Decimal
117	Moharajganj	Kaharol	Dinajpur	5 Decimal
118	Fulbari	Fulbari	Dinajpur	70 Decimal
119	Parbotipur	Parbotipur	Dinajpur	29 Decimal
120	Shajadpur upazilla post office	Shajadpur	Sirajganj	28.12 Decimal
121	Boiddojamtoil	Kamarkhand	Sirajganj	17.19 Decimal
122	Ullapara	Ullapara	Sirajganj	32 Decimal
123	Singra upazilla post office	Singra	Natore	12 Decimal
124	Harowa upazilla post office	Boraigram	Natore	53.50 Decimal
125	Vabaniganj upazilla post office	Vabaniganj	Natore	33.50 Decimal
126	Lakhanhati upazilla post office	Lakhanhati	Natore	49 Decimal
127	Puthiya upazilla post office	Puthiya	Rajshahi	23 Decimal
128	Khuddamohonpur UPO	Mononpur	Rajshahi	33 Decimal
129	Bagha	Baghe	Rajshahi	6 Decimal
130	Ishordi	Ishordi	Pabna	53.50 Decimal
131	Boda UPO	Boda	Panchagarh	53.50 Decimal
132	Debiganj UPO	Debiganj	Panchagarh	54 Decimal
133	Sayadpur UPO	Sayadpur	Nilphamari	16 Decimal
134	Dimla UPO	Dimla	Nilphamari	33 Decimal
135	Chilmari	Chilmari	Kurigram	42 Decimal
136	Nageshori UPO	Nageshori	Kurigram	54 Decimal
137	Patgram UPO	Patgram	Lalmonirhat	15 Decimal
138	Aditmari UPO	Aditmari	Lalmonirhat	33 Decimal

139	Nachol UPO	Nachol	Chapainobabganj	33 Decimal
140	Morelganj UPO	Morelganj	Bagerhat	16 Decimal
141	Rupsha	Rupsha	Khulna	25 Decimal
142	Paikgacha	Paikgacha	Khulna	11 Decimal
143	Noriya	Noriya	Sariatpur	23 Decimal
144	Rajapur	Rajapur	Jhalokhathi	20 Decimal
145	Agoilchora	Agoilghora	Barisal	22 Decimal
146	Gouronodi	Gouronodi	Barisal	27 Decimal
147	Pathorghata	Pathorghata	Barisal	33 Decimal
148	Keshppur	Keshoppur	Jessore	30 Decimal
149	Kumarkhali	Kumarkhali	Kushtia	19 Decimal
150	Alomdanga	Alomdanga	Chuadanga	24 Decimal
151	Pangsha	Pangsha	Rajbari	6.50 Decimal
152	Baliakandi	Baliakandi	Rajbari	19 Decimal
153	Gangni	Ganjni	Meherpur	25 Decimal
154	Kolarowa	Kolarowa	Satkhira	16.50 Decimal
155	Koyra	Koyra	Khulna	

**Sub Post office**

Sl No.	Post Office	Upazilla	District	Area
1	Matuail	Jatrabari	Dhaka	2.12 Decimal
2	Hasnabad	Nobabganj	Dhaka	8 Decimal
3	Dawdpur	Nababganj	Dhaka	10 Decimal
4	Curain	Nobabganj	Dhaka	10 Decimal
5	Muksudpur	Dohar	Dhaka	10 Decimal
6	Kolatiya	Keraniganj	Dhaka	6 Decimal
7	Shimuliya	Dhamrai	Dhaka	15 Decimal
8	Shekhornogor	Shirajdikhan	Munshiganj	5 Decimal
9	Mirkadim	Sadar	Munshiganj	40 Decimal
10	Holdiya	Lowhgonj	Munshiganj	8 Decimal
11	Hemnogor	Gopalpur	Tangail	33 Decimal
12	Jhawail	Gopalpur	Tangail	57 Decimal
13	Sontosh	Sadar	Tangail	21 Decimal
14	Lohani	Ghatail	Tangail	56Decimal

15	Nogorbari	Kalihati	Tangail	27 Decimal
16	Mohera	Mirjapur	Tangail	99 Decimal
17	Elenga	Kalihati	Tangail	10 Decimal
18	Golachipa		Kishoreganj	30 Decimal
19	Atharbari		Kishoreganj	48 Decimal
20	Sorarchor		Kishoreganj	10 Decimal
21	Bakhoirhati	Netrokona	Netrokona	3 Decimal
22	Dholasab	Trishal	Mymensingh	26 Decimal
23	Kandipara	Goforgawn	Mymensingh	3 Decimal
24	Jaforbad	Shitakundo	Chattogram	11Decimal
25	Dohajari	Chandonaish	Chattogram	18Decimal
26	Ajimpur	Kornofuli	Chattogram	6 Decimal
27	Gashbariya		Chattogram	8Decimal
28	Banigram	Bashkhali	Chattogram	35 Decimal
29	Joldi	Bashkhali	Chattogram	4 Decimal
30	Gonga sagor	Akhaowra	Brahmanbaria	30 Decimal
31	Ashuginj	Ashuganj	Bi-bariya	10 Decimal
32	Eliotganj	Dawodkandi	Cumilla	12 Decimal
33	Bangura	Muradnoger	Cumilla	9.67 Decimal
34	Gunborti	Chouddogram	Cumilla	15 Decimal
35	Kuti	Kosba	Cumilla	15 Decimal
36	Ramchandrapur	Muradnoger	Cumilla	13 Decimal
37	Mohonpur	Motlob	Chadpur	10 Decimal
38	Shacar	Kochuya	Chadpur	05 Decimal
39	Golapgonj	Golapganj	Sylhet	26 Decimal
40	Golapganj Bazar	Golapgonj	Sylhet	14 Decimal
41	Moglabazar	South Surma	Sylhet	10 Decimal
42	Tajpur	Osmani Nagar	Sylhet	24 Decimal
43	Marhiura	Biyani bazar	Sylhet	04 Decimal
44	Gobindoganj	Chatok	Sunamganj	6 Decimal
45	Moinpur	Chatok	Sunamganj	10 Decimal
46	Soyadpur	Jagannathpur	Sunamganj	8 Decimal
47	Dokkhinvag	Borolekha	Moulovibazar	24 Decimal
48	Shomshernoger	Komolgonj	Moulovibazar	32 Decimal
49	Ciringa	Cashriya	Cox's bazar	9 Decimal
50	Eidgaw	Eidgaw	Cox's bazar	1 Decimal

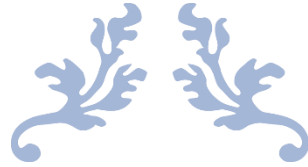
51	Hila	Hila	Cox's bazar	15 Decimal
52	Sonapur	Sadar	Noakhali	100 Decimal
53	Subornochar	Subornochar	Noakhali	10 Decimal
54	Gopalpur	Begumganj	Noakhali	10 Decimal
55	Doshgoriya	Catkhil	Noakhali	25 Decimal
56	Dalalbazar	Sadar	Laximipur	07 Decimal
57	Dattapara	Sadar	Laximipur	46 Decimal
58	Dolta	Ramganj	Laximipur	06 Decimal
59	Kaptai notun bazar	Kaptai	Rangamati	166 Decimal
60	Betbuniya	Kawkhali	Rangamati	100 Decimal
61	Lama	Lama	Bandorban	54 Decimal
62	Changraganj	Sadar	Madaripur	12 Decimal
63	Santahar	Adomdighi	Bagura	14 Decimal
64	Candaikona	Sherpur	Bogura	31 Decimal
65	Talora	Cupcaciya	Bogura	21 Decimal
66	Bamondanga	Sundorganj	Gaibandha	19 Decimal
67	Saghata	Saghata	Gaibandha	10 Decimal
68	Manda	Manda	Naoga	51 Decimal
69	Lahirimohonpur	Ullapara	Sirajganj	14 Decimal
70	Solongasab	Ullapara	Sirajganj	0.80 Decimal
71	Jamirta	Shahjatpur	Sirajganj	22 Decimal
72	Gaibandha	Kajipur	Sirajganj	10 Decimal
73	Bangabandhu Bridge	Sirajganj Sadar	Sirajganj	20 Decimal
74	Taherpur	Taherpur	Nator	19 Decimal
75	Madhongor	Noldanga	Natore	26 Decimal
76	Dighapotiya	Nator Sadar	Nator	10 Decimal
77	Doyarampur	Bagatipara	Nator	1 Decimal
78	Kashempur	Kashempur	Nator	7 Decimal
79	Kakonhat	Godagari	Rajshahi	10 Decimal
80	Satbariya	Sujanogor	Pabna	10 Decimal
81	Sagorkandi	Sujanogor	Pabna	5 Decimal
82	Kansart	Shibganj	Chapainobabganj	10 Decimal
83	Shahpur	Dumuriya	Khulna	20 Decimal
84	Chuknogor	Dumuriya	Khulna	18 Decimal

85	Nilokkhi	Borhamgonj	Faridpur	10 Decimal
86	Birkathi	Jhalokathi	Jhalokathi	10 Decimal
87	Osmanmonjil	Hijla	Barisal	87 Decimal
88	Goila	Agoiljhora	Barisal	17 Decimal
89	Ayla Chandkhali	Betagi	Barguna	03 Decimal
90	Dumki	Dumki	Patuakhali	18 Decimal
91	Birpasha	Bauphal	Patuakhali	10 Decimal
92	Gournodi	Bagarpara	Jessore	3 Decimal
93	Jadoppur	Jikorgasa	Jessore	26 Decimal
94	Poradaho	Mirpur	Kushtiya	28 Decimal
95	Jogoti	Kustiya Sadar	Kustiya	25 Decimal
96	Dorshona	Jibonnogor	Chuyadanga	33 Decimal
97	Noliya	Baliyakandi	Rajbari	3.87 Decimal
98	Noragoti	Kaliya	Norail	10 Decimal
99	Rotonganj	Norail sadar	Norail	4 Decimal
100	Mohajonsab	Kaliya	Norail	10 Decimal
101	Nahata	Mohammadpur	Magura	11 Decimal
102	Kopilmoni	Paikgasha	Khulna	
103	Amadi	Koyra	Khulna	
104	Borodol	Ashasuni	Shatkhira	
105	K Mohonpur	Golappur	Tangail	
106	Dorshona	Damurhuda	Chuadanga	

### **Town Sub-Office**

<b>Sl No.</b>	<b>Post Office</b>	<b>Upazilla</b>	<b>District</b>	<b>Area</b>
1	Chawkbazar TSO	Chawkbazar	Chattogram	6 Decimal
2	Jalalabad TSO	Pahartoli	Chattogram	2.4 Decimal
3	Chandgaon Bazar TSo	Chandgaon	Chattogram	5 Decimal
4	Daulatpur TSO	Daulatpur	Khulna	20.50 Decimal
5	Khalishpur TSpO	Khalishpur	Khulna	11.50 Decimal
6	Kushtia Sadar TSO	Kushtia Sadar	Kushtia	28 Decimal
7	Mirpur TSO	Mirpur	Dhaka	18.6 Decimal
8	Khilgaon TSO	Khilgaon	Dhaka	6 Katha





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# TERMS OF REFERENCE (DRAFT)

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