Government of the Peoples Republic of Bangladesh

Ministry of Local Government, Rural Development & Cooperatives

Local Government Division

SHARISHABARI POURASHAVA

MASTER PLAN: 2011-2031

April, 2014

Local Government Engineering Department (LGED)

Government of the Peoples Republic of Bangladesh

Ministry of Local Government, Rural Development & Cooperatives

Local Government Division

Local Government Engineering Department (LGED)

Preparation of Master Plan for 223 Porushava Towns under Upazila Towns Infrastructure Development Project (UTIDP)

SHARISHABARI POURASHAVA MASTER PLAN: 2011-2031

STRUCTURE PLAN

URBAN AREA PLAN:

- **Landuse Plan**
- **Transportation & Traffic Management Plan**
- **Drainage & Environmental Management Plan**

WARD ACTION PLAN

April, 2014

SHARISHABARI POURASHAVA

SHARISHABARI, JAMALPUR

SHARISHABARI POURASHAVA MASTER PLAN: 2011-2031

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Master Plan of Sharishabari Pourashava

Table of Contents

PART-B: URBAN AREA PLAN

Chapter- 3.6: Existing Environmental Condition

Chapter- 3.7: Plan for Environmental Management and Pollution Control

Chapter- 3.8: Plan Implementation Strategies

PART- C : WARD ACTION PLAN

LIST OF TABLES:

LIST OF MAPS:

LIST OF FIGURES:

APPENDICES:

PREFACE

It is a great pleasure for all concerned that on behalf of Sharishabari Pourashava, Local Government Engineering Department through the Project titled "Upazila Towns Infrastructure Development Project (UTIDP) has prepared Master Plan for this Pourashava. This Master plan will serve as guideline for the future infrastructure development of Sharishabari Pourashava together with land use control and effective management of service facilities. This will also ensure planned physical, social and economic development of Sharishabari Pourashava. The Master Plan comprises of three stages and tires in a hierarchical order. These are:

i). Structure Plan for 20 years
ii). Urban Area Plan for 10 years
iii). Ward Action Plan for 5 years

This Master Plan is prepared for the fulfillment of the legal directives assigned in the Local Government (Pourashava) Act, 2009. LGED has been providing technical support to the Pourashava as the Pourashava can prepare this essential development document. For preparation of the Master Plan, LGED engaged consulting firm Sheltech (Pvt.) Ltd. For finalization of the Master Plan, the consultant accomplished all the necessary tasks such as, consultation with the Pourashava & other stake-holders in several stages, collected mouza maps and digitized, demarcated Pourashava boundary, conducted different types of Engineering Surveys, Socio-economic and Traffic & Transport studies. After formulation of the Master Plan, Pourashava has completed all procedures necessary for its approval as per the Local Government (Pourashava) Act, 2009. The Pourashava Authority has submitted this Plan to the Local Government Division for approval. While approved, the Local Government Division will publish the plan through gazette notification.

The Local Government Engineering Department acknowledges the full support and cooperation of Sharishabari Pourashava Authority, Public Representatives, Stake-holders and Civil Societies with the deepest gratitude for accomplishment of this remarkable assignment.

(Md. Abdul Hakim Mondal)	**(Md. Mosle Uddin)**	**(A.K.M. Fazlul Kabir Talukder)**
TEAM LEADER	PROJECT DIRECTOR	MAYOR
UTIDP, Package-2	UTIDP, LGED	Sharishabari Pourashava
BETS Consulting Services Ltd.		

EXECUTIVE SUMMARY

Sharishabari Pourashava is located in the core of Sharishabari Upazila under Jamalpur District. It is connected with Dhaka-Jamalpur National Highway (N 4) through feeder road (F 4023). It is well connected with other districts through rail way. It has geographical extent of 89°48´-89°53´E and 24°42´-24°47´N. Sharishabari Pourashava surrounded by Satpoa union at west, Mahadan union at east, Bhatara union at north and Pogaldigha union at south.

According to the BBS, 2011 (Jamalpur District), the population of Sharishabari Pourashava as per recorded in 2011 is 52,310 of which 25,809 (49.34%) are male and 26,502 (50.66%) are female. The population of Sharishabari are Muslim, Hindu, Buddhist and other tribal people. At present the density of population is 2570 per sq.km. SharishabariPourashava consists of 21(twenty-one) mouzas with an area of 20.95 sq km as per area calculation of GIS data.

Sharishabari Thana was established in 1960 and was turned into an upazila in 1983. Sharishabari Pourashava was established in 08/11/1998. It's present status is **"B"** Class Pourashava (**Appendix-E**: *Pourashava Gazette Notification*).

Under such circumstances a Master Plan can help creating advantages for living and working in the pourashava that will indirectly help attracting investment for economic growth leading to employment generation. There are not very much development activities going on and there is also lack of organized system of development activities at present. Current development emphasizes only on road and structural development. Other utilities are neglected here. The proposed Master Plan will induce such development activities that will ensure proper provisions of utility services, urban services and with these; social development. It will also ensure good and automated governance of the pourashava and ensure good collection and utilization of its resources and thus enhance the development activities.

The Master Plan is prepared in three tiers. First one is Structure Plan, then Urban Area Plan and finally Ward Action Plan. The Structure Plan provides the policies that will guide the future development of the Pourashava. In the Structure Plan of SharishabariPourashava 7.85% land is kept as core area, 26.92% as peripheral area, 3.39% as new urban area, 7.08% as circulation network and the remaining 49.73% as agricultural area and 5.04% as water body to support the future need for food and other agricultural products of the town and to facilitate the future drainage network. The Structure Plan proposes the restructuring of the organogram of the Pourashava and inclusion of town planning department comprising town planners. This will ensure the better implementation and monitoring of the plan. It also proposes the system of periodic review and updating of the plan and also the resource mobilization process.

Urban Area Plan consists three types of Plans; Land Use Plan, Traffic and Transportation Management Plan and Drainage and Environmental Management Plan. Under the Land Use Plan the future land use of the pourashava is proposed according to the fixed standards during the interim phase of the Master Plan.

Land Use Plan proposes the pourashava land to be earmarked under Urban Residential Zone and Rural Settlement. These two zones will form the future residential areas of the Pourashava. Proposals for other land uses like Commercial Zone, Education and Research

Zone, Open Space, Circulation Network etc. are made. Under the Land Use Plan the development proposals to support the future needs of the people are also given. It is proposes one general industrial zone, one heavy industrial zone, neighbourhood market, super market, stadium, hospital, waste disposal ground, land for poor people, bus terminal, truck terminal, tempo stand, parking area, central park, college, high school, primary school, neighborhood park, community centre and many other facilities.

In the Traffic and Transportation Management Plan the Road Network Plan is proposed. The transportation facilities are proposed here in this plan. In the Road Network Plan of the Pourashava 38.751 km of road for widening and 32.350 km for construction of new road is proposed. The road hierarchy is also proposed in this plan. The proposed road network will comprise of primary road (100-150 ft. RoW), secondary road (60-100ft. RoW), local road (20-40 ft. RoW). The proposed road network and the transportation facilities along with the proposed management system will provide a good system of management for future traffic and transportation problems. The proposed transportation facilities include bus terminal, truck terminal, bus-stand, auto-rickshaw/tempo/microbus stands, parking area and some other proposals.

Under the Drainage and Environmental Management Plan the drainage network of the pourashava is proposed. This plan will analyze drainage aspects in the planning of the pourashava, study geological fault and lineament of the project area and its surroundings, study the existing water development, flood protection and flood control project (if any) in the area and their impacts in the Pourashava plan, present planning options for drainage of the future Pourashava area, study conservation of the natural resources like parks, open space, water bodies, existing ponds etc. and conserve place of historical, architectural (if any) and agricultural importance including natural fisheries. At present there is only 10.747 km of pucca drain in the pourashava and the river and natural canals cover 10.62 km. This network is not enough to support the present need and will not be suitable to support in the future. That is why the consultants proposed a comprehensive network of drains that comprises 10.97 km of primary drain, 24.44 km of secondary drain and 20.12 km of tertiary drain are proposed in the plan to support the drainage network.

Ward Action Plan is the third and final tier of the Master Plan which prepared including the proposals that will be implemented during the first to fifth year of the Master Plan period. Two or more Ward Action Plans will be prepared under this Master Plan to address the need of the people for the remaining fifteen-year's period of the Master Plan. This first Ward Action Plan, which is described in this report, addresses the urgent needs of the people of the pourashava and incorporates those in the Master Plan. It analyzes the immediate requirements of the people living in the nine wards of the pourashava and then provides facilities in a manner that it support the particular ward in the first phase of the Master Plan period of twenty years.

Previously no Master Plan was prepared for Sharishabari Pourashava town. This is the first Master Plan of the Pourashava prepared by LGED under Package#2 of the Upazila Towns Infrastructure Development Project (UTIDP. It is expected that the implementation of the plan will ensure planned development with compatible land use, development control, optimum utilization of land resources and socio-economic development of the urban dwellers.

INTRODUCTION

In Bangladesh the present average urban growth rate is about 4.5%. Present trend of population increase indicates that by 2020 about 40% of the total population will live in urban areas. According to a recent survey it was revealed that 45% of urban populations have access to potable water while have limited access to sewerage facilities. In addition inefficient transport management greatly contributes to the problems in traffic and transportation system. These aspects are not only influence our urban life but also arrest the national economic growth of the country. On the other hand, demand for urban service facilities has increased substantially because of the population expansion in urban areas. The expansion of urban economy leads to the growth of urban population and concomitant haphazard urban spatial growth without planning.

The urban centers are going to be the focus of future employment and economic regeneration. The population and economic growth, particularly, in large urban centers is likely to boost in next few decades creating increased burden on them. The smaller urban centers imbued with opportunities for investment and livable environment can help release pressure on big cities at the same time serve as growth poles for development of undeveloped hinterlands. Without adequate infrastructure and services provision to support the increasing population and activities the small urban centers, it would be difficult to turn urban centers as environmentally congenial livable places. Planned development of infrastructure and services and development control through land use plan is essential.

The present infrastructure provisions in Pourashavas are in a precarious state. Drains are mostly clogged that can not drain out water during heavy rains, natural drainage systems have either been filled up or occupied by land grabbers creating water logging during monsoon. Traffic in Pourashavas is increasing day by day with the increase in population and demand. But the substandard road network can keep pace with the growing demand for movement; as a result congestion becomes a common problem. Road networks has not developed in planned and systematic way leaving room for traffic congestion that increases economic loss to the people due to travel delay. The land use development in the Pourashavas is inorganized and unplanned, which is a major source of environment deterioration. Building Construction Rules has not effectively enforced in Pourashavas.

It is high time to think about problems that might be emerged in future if they are not addressed now. To overcome all likely problems to come in future, the Pourashava should go for planned development through preparation of a master plan and move the development forward accordingly. The master plan can be prepared exercising the power conferred to them by the Local Government (Pourashava) Act, 2009. The Upazila Town Infrastructure Development Project aims to prepare master plan for 223 Pourashava upazila as for a period of next 20 years. The project keeps provision for a separate plan for land use control, drainage and environment, traffic and transportation management and improvement. The project aims to prepare a Ward Action Plan to ensure systematic execution of infrastructure development projects in future. There is also aim to prepare proposals to enhance Pourashava revenue so that it becomes more capable of meeting its own capital needs. The master plan of Sharishabari Pourashava will suggest development of new roads and bridges/culverts, drainage facilities, streetlights, markets, bus stands, solid waste management, sanitation, water supply and other infrastructure facilities to face future needs.

OBJECTIVES

The objectives of Pourashava Master Plan are to:

- Find the development issues and potential of the Pourashavas and make a 20-year development vision for the development;
- Plan for the people of the town to develop and update provisions for better transport network, housing, infrastructure for road, markets, bus terminals, sanitation, water supply, drainage, solid waste management, electricity, education, leisure and such other infrastructure facilities for meeting the social and community needs of the poor and the disadvantaged groups for the better quality of life; and
- Prepare a multi-sector short and long term investment plan through participatory process for better living standards by identifying area based priority- Drainage master plan, transportation and traffic management plan, other need specific plan as per requirement in accordance with principal of sustainability.
- Provide controls for private sector development, clarity and security with regard to future development.
- Provide guidelines for development considering the opportunity and constraints for future development of Upazila Town.
- Prepare 20-years Master Plan to be used as a tool to ensure and promote growth of the city in line with the guideline principles of the master plan and control any unplanned growth by any private and public organization.

APPROACH & METHODOLOGY

The approach and methodology of planning that has been followed is worth mentioning here. Various studies are the integral part of the planning process, while the planning method covers a wide range of issues duly considered during the process of planning. In this Master Plan Preparation exercise, following Several-phases of planning methodology have been followed.

The methodology related for preparing the Master Plan/Urban Area Plan including Land Use Plan, Transportation and Traffic Management Plan, Drainage and Environmental Plan and Ward Action Plan for Sharishabari Pourashava was taken under the following sequential way.

Phase 1: Preliminary Visit to the Pourashava

At first, the planning goals and objectives were conceived, preparations were made. A preliminary visit was made by the team of consultants to acquire basic idea about the areas to be planned. The goal in this step was to conceptualize the planning process and the operational activities.

Phase 2: Organize Inception Seminar

After conceptualize the planning inception, Seminar was held at the Sharishabari Pourashava in which stakeholders was informed about the scope and Terms of Reference for the preparation of Master Plan and the output in this step was the preparation of an Inception Report.

Phase 3: Delineation of the Planning Area

Under the project (UTIDP), basing on existing condition, demand of Sharishabari Pourashava and potential scope for future development, study area have been delineated.

Methodology involved in the process of establishment of Bench Marks (BM) and demarcation of existing Pourashava boundary and proposed planning area for Sharishabari Pourashava is as follows:

A. Collection of Pourashava Gazette to identify the Existing Pourashava Area
B. Reconnaissance survey about Pourashava Growth Trend
C. Establishment of Bench Marks (BM)
    - Site selection
    - Construction and Installation of BM pillars
    - Establishment of Coordinate of BM Pillars (x,y,z i.e. Northing, Easting and RL in meter)
D. Establishment of Ground Control Points (GCPs)
E. Demarcation of Pourashava and Planning Area
    - Collection, Scanning and Digitizing of Mouza Maps
    - Edit Plot Checking of Digitized Mouza Maps
    - Geo-referencing of Mouza Maps
    - Joining and Edge-matching of Mouza Maps
F. Participation of Pourashava in the Demarcation of Pourashava and Planning Area.
G. Preparation of GIS Map Layout.

Phase 4: Carry out Detailed Survey for Sharishabari Pourashava

A number of studies were conducted in order to prepare a database and get an insight into the existing conditions. The studies, however, have focused on three different but inter-related aspects; the physical condition of the town, the economic and social conditions of the people, and their perceptions about the problems and prospects of the town.

Data and information collected includes topography, physical features, physical infrastructures, land use, socio-economic and traffic and transportation situation of the study area. Detail Socio economic, Physical Feature, Traffic and Transport, Environment survey of Sharishabari Pourashava area have been conducted according to the approved format of ToR. Other relevant data have also been collected from primary and secondary sources. These surveys and analysis of data and information have helped to find out possible area of intervention to accommodate future population of the Pourashava.

Total station based advanced technology for topographic, physical features; land use surveys done along with household sample survey for socio-economic information were used in the study. The Physical Feature Surveys were conducted covering the entire area under the jurisdiction of Sharishabari Pourashava. The stepwise works for survey and mapping are as follows,

- Reconnaissance survey;
- Collection of Mouza maps;
- Identification of Ground Control Point (GCP) on the Mouza maps;
- Geo-referencing of Mouza maps;
- Preparation of Arc/Info coverage;
- Preparation Edit Plot of Mouza maps;
- Planning Area Demarcation from Pourashava Gazette and detail information from the Pourashava authority;
- Establishment of Reference Bench Marks in the Project area;
- Detailed Physical feature Survey (Point, Line, Closed boundary);
- Spot level/Land level survey

- Detailed Land Use, Socio-economic, Drainage and Environment, Traffic and Transport survey;
- Survey Data processing and Preparation of GIS database;
- Preparation of GIS based physical feature survey Map layout;
- Verification of map at field level;
- Map production (all Categories).

All these information were collected using the modern survey equipments (i.e. Total Station, RTK-GPS, etc.). As per ToR, to collect the topographic information, RTK-GPS and Total Station (TS) were used as advanced survey techniques.

The following variables were measured in topographic survey: Land level/spot level at an interval of 50m in general cases but for high undulated areas this regular interval were decreased as necessary. Alignment and crest levels (not exceeding 50m) of road, embankment and drainage divides were also considered during taking spot levels. Contour map was prepared using 0.3m contour interval. Besides, alignment of rivers, lakes, canals drainage channels and outline of bazaars, water body, swamps etc. were also recorded in the physical feature survey.

Land use survey covered different uses of land i.e. agricultural, residential, commercial, industrial, community services, educational, transport and communication, water body, vacant land and circulation network etc. Land Use Surveys were conducted by recording the current use of the land within the project area. Physical feature survey data and maps were used as the basis for land use survey.

The drainage information was primarily collected from the topographic and physical feature surveys. Some additional information has also been collected through key Informant Survey of knowledgeable personal of the Pourashava using an unstructured questionnaire.

Through the socio-economic survey data on population, family size, distribution of age/sex, occupation, household structure, dwelling occupancy, migration pattern, education status, Income and expenditure level, land ownership pattern, land value, health facilities, recreational facilities etc. were collected. Detailed traffic and transportation survey was conducted through traffic volume survey, origin destination (O-D) survey and speed survey, Congestion point, inventory of road networks etc.

Phase 5: Preparation of Base Maps and Survey Report

After conducting the all sorts of survey, processing and analysis of survey data of the planning area, base maps incorporating all the natural features and man-made infrastructures along with their alignment and essential attribute were prepared by the consultant. The final outcome of this phase is preparation of survey report which illustrates the components of survey in order to understand the existing condition of the project area.

Phase 6: Preparation of Interim Report

This is an intermediary phase towards preparation of Master Plan for Sharishabari Pourashava which involves projection of population and landuse, thorough review of existing policies relevant to the different development sectors, assessment of institutional capacity of the Pourashava. An overview of recent past budget and the list of existing/recent past infrastructure related development schemes undertaken by the Pourashava have also been reviewed at this phase to get an idea of financial capacity of the Pourashava Authority.

Phase 7: Analysis and Projection of Existing and Future Condition
This phase involves analysis of existing trend of growth based on maps, BBS data and other primary and secondary data relevant to the project area and projection of future requirement through assessing the growth direction, planning standards provided by LGED and the projected population for the planning period.

Phase 8: Public Consultation Meeting
The eighth phase of the methodology of Draft Master Plan is to conduct 'Public Consultation Meeting' where discussion on existing facilities and services, future requirements, identification of proposals on maps and field verification have been conducted. The proposals have been finalized after conforming and incorporating the views and ideas of the stakeholders.

Phase 9: Preparation of Draft Master Plan for Sharishabari Pourashava
The ninth phase of the methodology is 'Preparation of Draft Master Plan Report'. This portion of the methodology is directly linked with three different issues, which are – Structure Plan, Urban Area Plan and Ward Action Plan.

In the Structure Plan, Pourashava's existing trend of growth and the development problems are identified; whereas, the future land use, future population and the future growth by 2031 of Sharishabari is projected. Finally, a Policy Zoning Map is prepared and optimum use of urban resource strategy is taken to implement and ensure better urban environment.

The Urban Area Plan is composed with four parts, which are Land Use Plan, Transportation and Traffic Management Plan, Drainage and Environmental Management Plan and Plan for Urban Services

Land requirements for each broad category of land uses have been determined based on projected population for a time period of 20 years and the recommended Planning Standards provided by LGED in the Land Use Plan. After estimating land requirements, allocation of uses is made based on land suitability. A land suitability analysis is performed on a qualitative basis through field visits, consultation meeting, analysis of topographic map, physical feature map and soil condition to justify the suitability of land for a specific use. Land allocation is a process which depends on the demand and supply of land. Whereas land suitability yields information on supply, land requirements indicate demand of land available for development. Final land allocation or land use recommendation for competing uses is then shown on proposed land use plan map and described in detail in the explanatory report.

The first step of the methodology of Transportation and Traffic Management Plan is to identify the existing transport condition, which is the result of O-D survey, traffic survey at intersection, traffic survey at links and speed study; have already described in the survey report. In the next step, the future projection of transportation network and traffic demand is identified, which is described in the interim report. The third phase of the study is to adopt new traffic and transportation management plan, which is prepared based on future projection. After that, some strategies on transportation system management (TSM) are undertaken. Finally, plan implementation strategies are espoused based on both transportation management plan and transportation system management.

Preparation of the Drainage Plan involves (I) analyzing the existing conditions related to drainage facilities and the flood management (II) identifying major drainage outfalls and on

the basis of the outfalls splitting the total drainage area into a number of drainage zones (III) defining all pertinent design criteria and (IV) defining drainage facility requirements and sizing. The drains are designed to collect excess rainfall that comes as surface runoff from urban area, convey the runoff and finally discharge them to outfalls. The design of drains involves hydrological computations of rainfall intensity, its frequency of occurrence, duration etc., and the total runoff of a particular area.

The Environmental Management Plan consists of the Supplementary Living Environment Survey, the Comprehensive Ecological Survey and the Water Quality Survey. The Supplementary Living Environment includes water supply, land pollution, sewerage and sanitation, solid waste management, and resettlement of population due to construction of canals and primary drains. The Comprehensive Ecological Survey aims at facilitating comprehensive environmental assessment by subsequent urbanization and implementation of the drainage on the ecological elements of fauna and flora, agricultural and aqua cultural resources etc. The Water Quality Survey is the sampling and analysis of surface water from rivers, natural canals, ponds etc., and from ground water. These are required to be done to ensure necessary urban environment enhancement measures.

In case of Urban Services, the existing condition of urban services is analyzed. After that, future urban service requirement is estimated and some proposal has provided. Finally, to implement the proposal some strategies are undertaken.

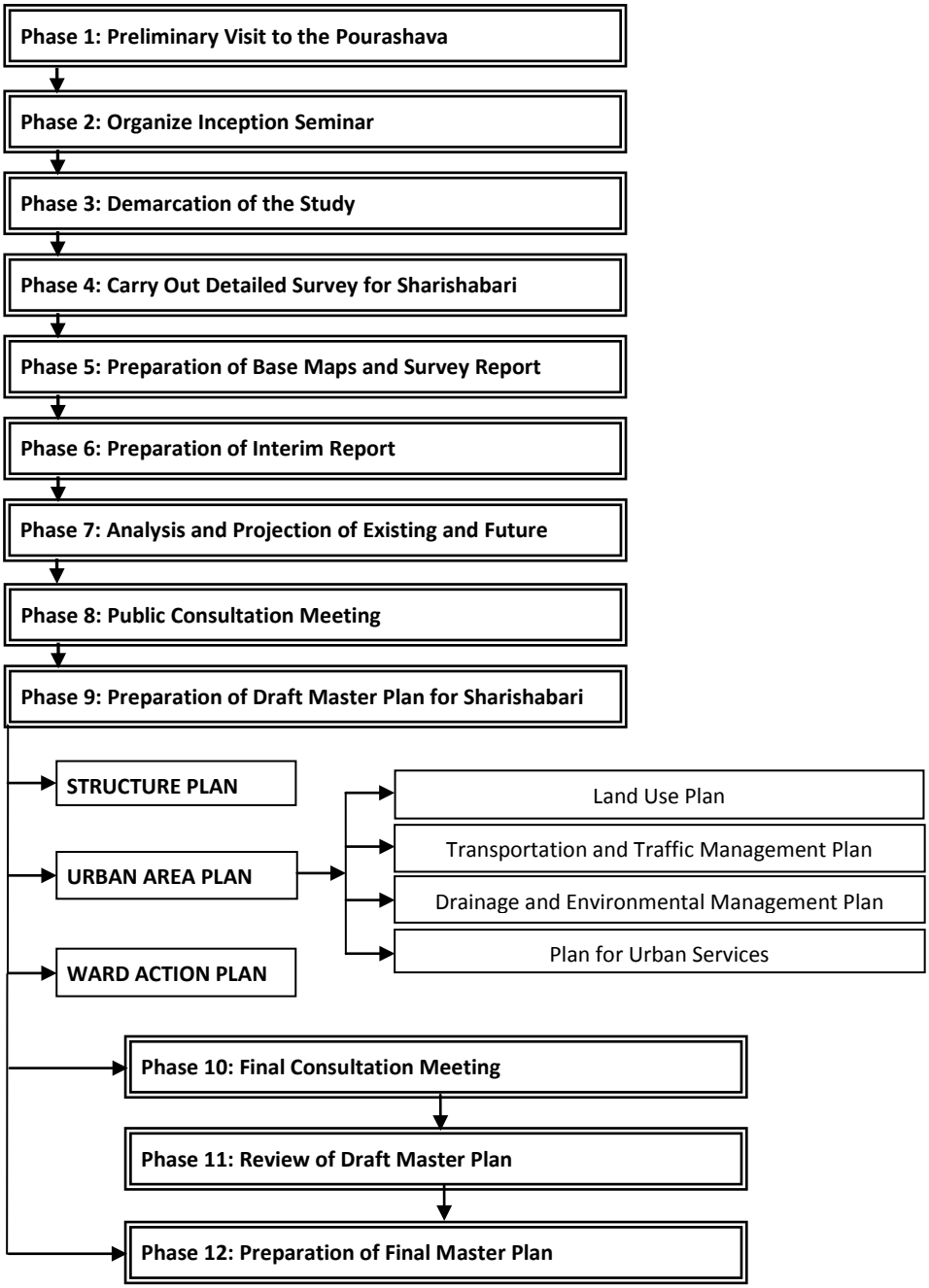
The last step of the methodology is Ward Action Plan, conceptualize the content and background of the plan. In the next step, the linkage with Structure Plan & Urban Area Plan is identified. The final phase of the study is to adopt ward action plan in details. The proposal and planning, priority tasks and cost estimation are incorporated here to get a pictorial view of the Ward Action Plan.

Phase 10: Final Consultation Meeting

The tenth phase of the methodology is to conduct 'Final Consultation Meeting' where Draft Master Plan was presented to the stakeholders for review and rectification. The plans and proposals have been discussed in the meeting for seeking comments of the stakeholders.

Phase 11: Review of Draft Master Plan and Preparation of Final Master Plan

Finalization of the Master Plan is the last phase in the process of Preparation of Master Plan for Ishwarganj Pourashava. The consultants reviewed the Draft Master Plan based on comments of the stakeholders made in the Final Consultation Meeting and that of PMO of UTIDP, LGED. After that the Final Master Plan has been prepared addressing all comments and suggestions of the stakeholders and PMO Officials.



Flow Chart of Methodology

SCOPE OF WORK

The scope of work under this Consultancy services will cover all aspects related to the preparation of Master Plan/ Urban Area Plan which will include, land Use Plan, Traffic Management Plan, Drainage and Environment Plan and Ward Action Plan for the listed Upazila Town. In order to prepare plan the activity will contain but not limited to the following:

- Visit the Pourashava included under the package work and list the passive name of Pourashava that will undertake preparation of Master Plan. In case if any Pourashava has already prepared Master Plan it has no need for Pourashava of Master Plan then it will be excluded from the package, written opinion of the concerned Chairman of the Pourashava

whether or not Master plan Preparation will be included. A copy of list of Pourashavas feasible for preparation of Master Plan will be submitted to the office of the PD, UTIDP.

- Organize an inception Seminar at the Pourashava level and inform of the Pourashava about the scope and terms of reference for the preparation of Master Plan. Make a thorough investigation and based on potential scope and opportunities available in the Pourashava develop a 20 years development vision for the Pourashava liking the ideas and view of the Pourashava.
- Determine the study area based on exciting condition, demand of the Pourashava and potential scope for future development. Carry out detailed socio-economic Demographic and Topographic survey of the Pourashava area following approved format and collect data from primary and secondary sources. Analyze such data and information, find out possible area of intervention to forecast future population of such Pourashava(15-20 years), vis-a-vis assess their requirement for different services, physical and social infrastructure facilities, employment generation, housing right of way and land requirement for the existing and proposed roads, drains, play grounds, recreation centers and other environmental and social infrastructure.
- Identify and investigate the existing natural and manmade drains, natural river system, assess the extend and frequency of flood, determine area of intervention. Study the contour and topographic map produced by the relevant agencies and also review any previous Drainage Master plan available for the Pourashava.
- Prepare a comprehensive (storm water) Drainage master plan for a plan period of 20 years. In such exercise consider all relevant issues including discharge calculation, catchment area, design of main and secondary drains along with their sizes, types and gradients and retention areas with primary cost estimates for the proposed drainage system.
- Recommend Planning, institution and legal mechanism to ensure provision of adequate land for the establishment of proper right of way of (storm water) drainage system in the Pourashava.
- Collect and assess the essential data relating to existing transport land use Plan, relevant regional and natural highway development plan, accident statistics, number and type of vehicle registered of each Pourashava.
- Assess requirements of critical data and collect data through reconnaissance and traffic survey, which should estimate present traffic volume, forecast the future traffic growth, identification travel pattern, areas of traffic conflict and their underlying cause.
- Study the viability of different solution for traffic management and develop a practical short term traffic management plan, including one way systems, restricted access for large vehicles, improved signal system traffic islands, roundabouts, pedestrians crossing, deceleration lanes for turning traffic, suitable turning radius, parking policies and separation of pedestrians and rickshaws etc.
- Assess the non-pedestrian traffic movements that are dominated by cycle rickshaw. Special recommendations should be made of as to how best to utilize this form to transport without causing unnecessary to other vehicles. Proposal should also consider pedestrians and their safety, with special children.
- Assess the current land use with regard to road transportation, bus & truck station, railway station etc, and recommend action to optimize this land use.
- Prepare a road network plan based on topographic and base map prepared under the project. Recommend road development standards, which will serve as a guide for the long and short term implementation of road. Also suggest Traffic and transportation management plan and also suggest a traffic enforcement measure to be taken.
- Prepare the Master Plan with all the suitable intervention, supported by appropriate strategic policy, outline framework, institutional arrangement and possible source of fund for effective implementation of the plan.

- Prepare a plan to set out proposed Master Plan at 3-levels namely Structure Plan, Master Plan/ Urban Area plan and Ward Action Plan.
- At the first level, work out frame strategy policy for the preparation of a structure plan for each Pourashavas under the package. as a follow up of structure Plan prepare a master plan consisting a land use plan. Transportation and traffic Management Plan, Drainage and Environment Management Plan and Ward Action plan.
- Make a total list of primary and secondary roads, drains, and other social infrastructures for each Pourashava for a plan period of 20 years. Examine and classify according to the existing condition, propose long, medium and short-term plan and estimate cost for improvement of the drain and alignment and other infrastructures.
- In line with the proposed Master plan propose a Word Action Plan with list of Priority schemes for the development of roads, drain, traffic management and other social infrastructures for implementation during the first five years of the period.
- Organize with the help of concerned Pourashava at least 2 public consultation meeting/seminar one for discussion on interium report and the other on draft final Report on the proposed Master plan. Integrate beneficiary's point of view in the plan with utmost careful consideration.
- Prepare and submit Master plan and Report with required standards as required by the ToR.

ORGANIZATION OF THE REPORT

The Sharishabari Pourashava Master plan Report is organized into three main parts namely- Part A: The Structure Plan, Part B: The Urban Area Plan and Part C: The Word Action Plan.

Part A: is the Structure Plan is a policy guideline plan for next 20 years period. It describes Pourashava's existing trend of growth and the development problems are identified; whereas, the future land use, future population and the future growth by 2031 of Sharishabari is projected. Finally, a Policy Zoning Map is prepared and optimum use of urban resource strategy is taken to implement and ensure better urban environment.

Part B: is the Urban Area Plan.The Urban Area Plan is for 10 years period up to 2021. It has been divided into four main sub-parts as follows: 1) Land use Plan, 2) Transportation and Traffic Management Plan, 3) Drainage & Environmental Management Plan and 4) Plan for Urban Services.

1) The Land use Plan identifies approaches of planning, existing and projected land use and proposed land use. Requirement of land for different purposes, land use zoning and plan implementation strategies are also included here.
2) The Transportation and Traffic Management Plan includes existing conditions of transportation facilities, intensity of traffic volume, degree of traffic congestion and delay, analysis of existing deficiencies, travel demand forecasting for next 20 years, future traffic volume and level of services and transportation development plan. Moreover, transportation system management strategy and plan implementation strategies are also presented in this plan.
3) Drainage and Environmental Management Plan again subdivided into two parts - Drainage part and Environment part.

Drainage Management Plan describes the existing drainage network, land level and topographic contour. Plan for drainage management and flood control and plan implementation strategies are the components of the drainage part.

Environmental Management Plan describes the existing environmental condition, solid waste and

garbage disposal, environment pollution, water logging, natural calamities and localized hazards, plan for environmental management and pollution control and plan implementation strategies are the key issues of the environment part.

4) Plan for Urban Services describes the existing condition and demand of the Services, projection on existing and proposed Urban Services, Proposals for Urban Services and Implementation, monitoring and evaluation of the Urban Services Plan are the key issues of this part.

Part C: is the Ward Action Plan. The Ward Action Plan is spanning for the 5 years period. The Structure Plan paints the broad picture on the future pattern of housing, jobs, transport, services and the environment. Ward Action Plan is much more specific. They tackle the problems and opportunities associated with individual communities and show exactly where it apply. The proposal and planning, priority tasks and cost estimation are incorporated here to get a pictorial view of the Ward Action Plan.

PART A: STRUCTURE PLAN

CHAPTER-1: INTRODUCTION

1.1 BACKGROUND OF THE POURASHAVA

Sharishabari Pourashava is located in the core of Sharishabari Upazila under Jamalpur District. It is connected with Dhaka-Jamalpur National Highway (N 4) through feeder road (F 4023). (**Map-1.1**, Location Map) It is well connected with other districts through rail way. It has geographical extent of 89°48′-89°53′E and 24°42′-24°47′N. Sharishabari Pourashava surrounded by Satpoa union at west, Mahadan union at east, Bhatara union at north and Pogaldigha union at south.

At present Sharishabari is "**B Class**" Pourashava. It has an area of about 20.95 square kilometer (as per GIS measurement). There are 35 Mahallas within the Pourashava. The Pourashava consists of full and part of 21 (twenty one) mouzas. These are Bangali, Fulbaria, Shimla Gupinath, Shimla Chand, Shimla Bhogobath, Magura Para, Shimla Madab, Shimla Raghunath, Shimla Monohar, Diar Krishna, Bilshimla, Diar Krishna, Bil Itaria, Chalk Hatbari, Dhan Ata, Bhurar Bari, Shamorthabari, Mulbari, Sat Poa, Bolar Dia and Katiar Bari

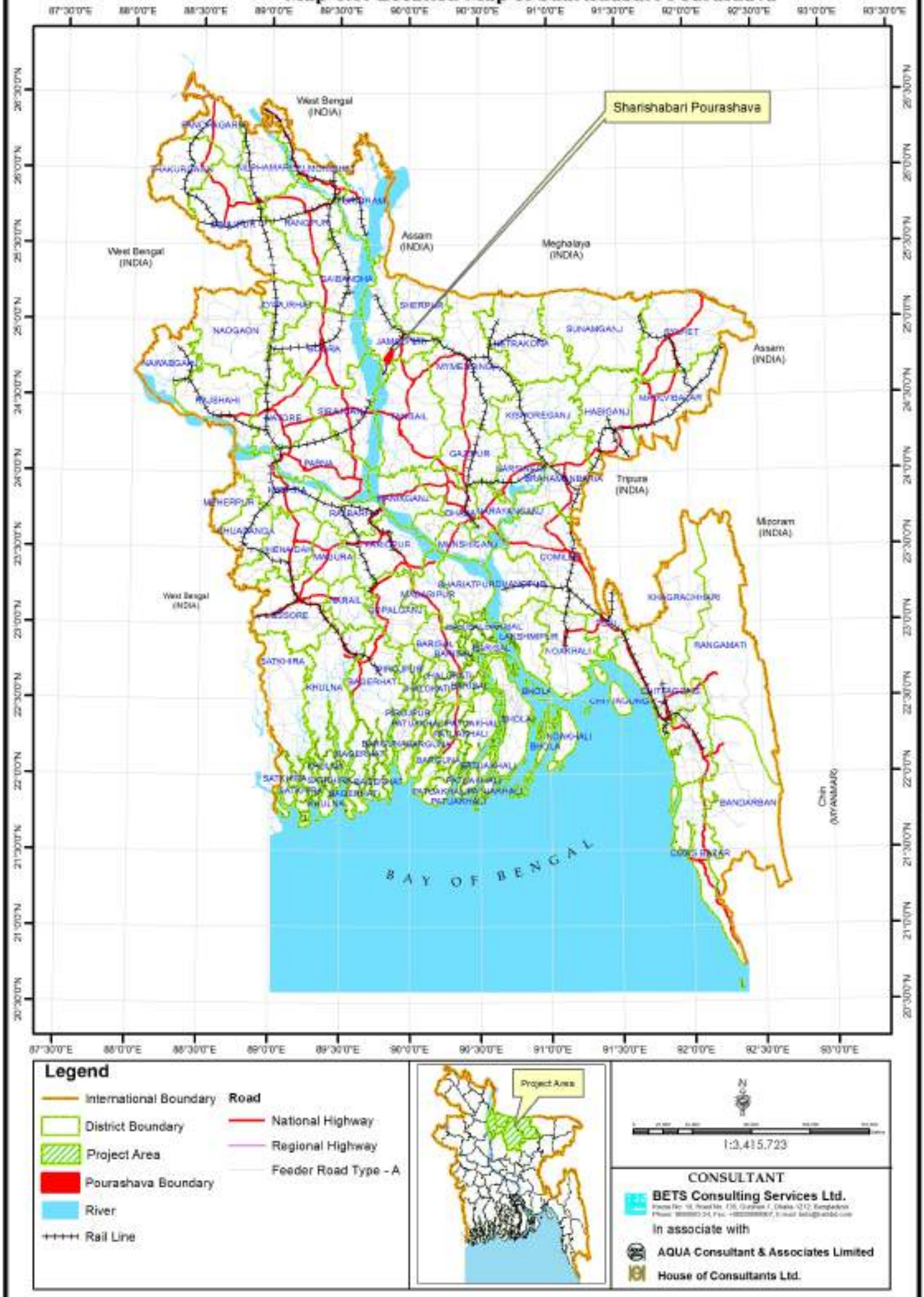
According to Population Census 2011, it has a population of 52,310 of which male are 25,809(49.34%) and female are 26,502 (50.66%); density of population is 2,570 per sq km. Male-female ratio is 97. Sharishabari Upazila was established in 1960. Sharishabari Pourashava was established in 31st December 1990.

The development scenario of Sharishabari Pourashava shows a very grave situation. The town has evolved as an administrative centre of Upazila Parishad. No other factor lies behind the growth of the town. The roads and other infrastructures have developed for functioning of the Upazila Headquerters. Residential and commercial development has taken places following the road network leading to ribbon development. The houses have built in haphazard manner without considering any planning standards and provisions.

The main and secondary drains and natural streams in the Pourashava Town do not function as an integrated drainage system. Encroachment on drainage reservations causes inundation to many areas, including houses and roads, during heavy storms. There are very few roadside drains only in the central part of the town.

Equally, the traffic and transportation problem in Sharishabari has been continuously increasing as the development and management of road network has not been commensurate with the increasing demand for its usage. Traffic congestion, accidents, pedestrian and parking difficulties, air and noise pollution are among the problems. In the absence of proper Master Plan construction of all types of infrastructure like houses, roads, drains, markets are going on in unplanned pattern. This situation is creating an adverse effect in the original landscape thereby creating environmental hazards.

Map-1.1: Location Map of Sharishabari Pourashava



1.2 PHILOSOPHY OF THE MASTER PLAN

The Philosophy behind Sharishabari Pourashava Master Plan lies in the very motive to community welfare through a process of spatial organization, environmental improvement and provision of amenities to the future generations.

Planning for the future should be based upon enhancing the quality of life and create all the possible facilities such as residential, commercial, educational, recreational, infrastructural, utilities etc.

Like any town Sharishabari also wish to promote economic and social prosperity in this town, and thus continually strive to balance quality of life issues with prosperity. To that end, it believes the following considerations are critical:

- that any development should be harmonious, and aesthetically pleasing, as well as consistent with the character of the town;
- that the land uses such as residential, commercial, industrial etc. should be environmentally safe and compatible with existing structures, terrain and landscape;
- that it must keep the air, groundwater, khal, beel and other surface waters clean and safe.

1.3 VISION & OBJECTIVES OF THE STRUCTURE PLAN

Vision:
The Vision seeks to encapsulate the outcomes sought through the combination of objectives and strategies contained in this Structure Plan. The vision diagramed in the Structure Plan shows changes and choices about how our Pourashava town might develop. The Plan reflects significant decisions made in several key areas:

- Develop the Pourashava in the most planned manner by controlling the unplanned and haphazard development and manage the land uses in the most compatible manner so that it can save our precious agricultural land.
- Reduce the increasing pressure of population by controlling density and also to reduce population influx pushing towards the capital city.
- Develop the transportation network and to provide the different utilities and services.
- Amenities of the pourashava are to be increased and kept provision of open spaces, play fields and recreational areas for all class of people.
- Promote income generating activities for the low income people within the pourashava jurisdiction.
- Indicate the direction of growth and commercial development patterns.
- Develop the pourashava as a self-dependent entity.

Objectives
The purpose of the Structure Plan is to outline a preferred pattern of development from the perspective of the Pourashava as a service provider and planning authority. The objectives of the Structure Plan are identified as follows:

- Accommodate future residential, commercial and industrial development in appropriate locations.
- Manage the future growth through proper planning and appropriate development controls

- Preserve high value agricultural lands, natural features and open spaces.
- Ensure optimum use of urban land resources through proper development strategies.
- Discourages the sitting of land uses that are incompatible with adjacent land uses
- Seek the options for enhancing the non-agricultural economic activities and employment opportunities.
- Enhance the connectivity of the Pourashava in the regional transport network as well as among different areas/neighbourhood within Pourashava boundary.
- Promote a livable living environment free from pollution, hazard and disaster.
- Ensure public safety and security from fire extinguishing, accidents etc.

1.4 CONTENT AND FORM OF STRUCTURE PLAN

Structure Plan is basically concerned with development of broad strategies for managing and promoting efficient urban development over the long term and attempts to integrate economic, physical and environmental objectives. Thus Structure Plan provides a broad frame work for development activities over a long period of time in and around the Sharishabari Pourashava.

The process includes studies on future growth potentials of the area/regions. It then identifies basic strategic options available to accommodate the anticipated growth. After evaluation the preferred strategic option is accepted. The preferred strategy then identifies spatial and other structural issues relating to the overall development of Sharishabari Pourashava Town. It also provides area-wise strategies for expansion of different urban activities in space. The Structure Plan also outlines major sectoral policies to guide development in the desired manner over a longer period of time.

However, Sharishabari Structure Plan is focused primarily on the physical form and development pattern of the Pourashava Urban Center on the Maps and Reports that sets forth a basic framework, showing how Sharishabari Pourashava should grow and evolve over the next 20 years. It will serve as a blueprint towards the desired future described in the Vision & Goals element of Urban center.

CHAPTER-2: POURASHAVA'S EXISTING TREND OF GROWTH

2.1 SOCIAL DEVELOPMENT

Sharishabari Pourashava is inhabited by cent percent local people who have been inherited their land for a long time. The social composition is from rich to poor and different religious groups are living together.

Sharishabari Pourashava was established in 31st December 1990 before the date of conducting the BBS Census, 2011. Thus Socio-economic data of Phulpur Pourashava is available from BBS. However, some social data of the Pourashava is presented below.

Population
According to Population Census 2011, it has a population of 52,310 of which male are 25,809 and female are 26,502; density of population is 2,497 per sq km. Male-female ratio is 106. Muslim, Hindu, Buddhist and others have been living in this area.

Household
The total no. of household of the Sharishabari Pourashava is 12,671 in 2011. The average dwelling household size is 4.128 in 2011.

Education
According to BBS, increasing trend of literacy observed in the Sharishabari Pourashava over the decades. The literacy rate is 44.30% in 2011 against 39.20% in 2001 in the Sharishabari Pourashava. It appears that the literacy rate has increased to 5.1% in 2011 over 2001.

In the project area it is found that about 44.41% people have attained education level ranging from primary level to higher education. Out of the total population 55.59% never attended school. People with primary level education (Class I-V) accounts 2.01%. People with high school level education (Class VI-X) constitute 13.4%. About 8.63% people attained secondary level education. About 2.31% people are reported to have attained higher secondary education level.

At present there are in all 86 educational establishments in the project area of which 4 are colleges, 6 High Schools, 17 Primary Schools, 17 Madrashas, 42 other institutions. Out of all educational institutes, schools (Both Primary and Secondary) comprise about 26.74%, Madrashas 19.76% and college 4.65%. The area is not served by academic institute (e.g. University) of national importance.

Income Level
The socio-economic survey reveals that more that 17.7% household have a monthly income of Tk. 3,500 or below and may be classified as poor. The people with income ranging from Tk. 3,500-12.000 constitute 71.0% household. The high income people with above Tk.12,000 constitute only 11.3% households. It also reveals that mean monthly income of the project area is Tk.5,000.

Religion
According to latest population census report (2011), 92.51% of the population of this Pourashava belongs to Muslim community, 7.35% Hindu community, 0.08% Christian community and 0.05% are others people.

Main Source of Household Income

Acoording to BBS 2011, the main source of household income in Sharishabari Pourashava are as: service 37.45%, agricultural labour 49.43%, industry 13.12%.

Ownership and value of land

Almost cent percent people of Sharishabari Pourashava are local (About 99.40 % household's ownership are own). The occupied inherited land areas and have been changing the ownership due to sale and purchase.

From the socio-economic survey it has been found that highest value of habitable land is Tk.88500.00 in Ward No.2 and lowest value is Tk. 7602.00 in Ward No.5. Average value of habitable land is Tk. 32078.50 per decimal. In Sharishabari pourashava, medium high land is Tk.7602 to Tk. 41062.5. The value is seems to be high because the presence of commercial land under this category. Average value of medium land is Tk. 24037.08 per decimal.

Occupancy Type

Household ownership pattern indicates the socioeconomic status of the inhabitants. From the survey it has been found that most of the houses are owner occupied and that 95.57% families live in their own houses. Only 3.92% families live in rental accommodations and other housing accommodates about 0.51% of the population. From the home ownership pattern, migration status of the population can be ascertained. It also reveals the financial strength of the people as wealthy people tend to construct pucca houses.

2.2 ECONOMIC DEVELOPMENT

Economic development is the increase in the standard of living of people. Its scope includes the process and policies by which a nation improves the economic, political, and social well-being of its people. Economic development typically involves improvements in a variety of indicators such as rates, life expectancy, and poverty rates. A country's economic development is related to its human development, which encompasses, among other things, health and education. These factors are, however, closely related to economic growth so that development and growth often go together.

In Sharishabari Pourashava an economic development has been taken place over last few decades. Being located in a strategically important position the town has been evolved as a centre of small trade and agro-based industry. The geographical location of the Pourashava and its well connectivity in the regional set-up are identified as prime mover to raise the economic growth of the Pourashava. The central part of the Pourashava is found to have high economic growth compared to other parts of the town. Infrastructural development as an administrative centre of Upazila Headquarters has been identified to be one of the fundamental reasons behind such economic development. After establishment of Upazila, this area have been developed as a hub of small trade and business of the entire Upazila. However, the trend of economic development is observed around Kishno Shagor and along both the side of Surzo kanti road and also both the sides of Mymensingh road.

2.3 PHYSICAL INFRASTRUCTURE DEVELOPMENT

Physical infrastructures includes different type of structures e.g. buildings, roads, bridges, culverts, canals, drains, embankments, sewerage lines, industries, offices, institutions, health centers, storage / godowns etc.

From survey report Smaller Jhenai River & Shubarno khali river, and Bolerdia khal were identified as natural water bodies. The length of the Smaller Jhenai River is 7823.29 m and Shubarno khali river is 2333.70 m and Bolerdia khal is 467.56 m passing through the Pourashava.

Table 6.6: List of River/Khals in the Study Area

Sl No	River/khal	Name	Length (m)	Total length (m)
1	**River**	Smaller Jhenai River	7823.29	
2		Subarno Khali river	2333.70	
		Total length:		**10,156.99**
	Khal			
1		Bolerdia khal	467.56	
		Total length:		**467.56**

***Source**: Field Survey, 2008-2009 by BETS*

In the Sharishabari Pourashava over the last few decades as many as 19,391 number of structures has been developed of which 17,640 residential buildings, 1,082 commercial buildings, 71 industrial buildings, 60 educational buildings, 2 health structures(hospitals), 149 religious structures, 161 bridge & culverts, 25.38 km pucca drain and 97.72 km (60.31 acres) road has been developed.

2.4 ENVIRONMENTAL

The term environmental includes rainfall, geological condition, surface and ground water pollution, water bodies, drinking water quality, sanitation, land pollution, air pollution, noise pollution, flooding, water logging, drainage blockage, natural and manmade disasters, collection and disposal of solid waste. Environmental growth is means to minimize the adverse environmental impacts on land pollution, water and air quality and biodiversity resources by energy usage, transport network, waste management, slum improvement, disaster mitigation etc.

The urban environment of the Sharishabari Pourashava includes both built and natural environment. Built environment includes waste management, water, air quality, energy usage, transport network, slum improvement and disaster mitigation.

The urbanization where the built environment overburdens the natural environment cannot be sustainable.

So in every phase of planning processes all these environmental issues will be evaluated and proper measure will be taken to minimize the adverse environmental impacts on land pollution, water and air quality, biodiversity resources, transport network, waste management, slum improvement, disaster mitigation etc.

2.5 POPULATION

According to Population Census 2011, it has a population of 52,310 of which male are 25,809 and female are 26,502; density of population is 2,497 per sq km and 11 per acre. Muslim, Hindu, Christian and others have been living in this area. Wardwise Distribution of Population shown in Tale No.2.1 below.

Table- 2.1: Wardwise Distribution of Population

Ward No.	Population' 2011					
	Male		Female		Total	
	No.	%	No.	%	No.	%
Ward No.01	4213	8.05	4225	8.08	8438	16.13
Ward No.02	3504	6.70	3349	6.40	6853	13.10
Ward No.03	3271	6.25	3436	6.57	6707	12.82
Ward No.04	2228	4.26	2303	4.40	4531	8.66
Ward No.05	3314	6.34	3451	6.60	6765	12.93
Ward No.06	3146	6.01	3119	5.96	6265	11.98
Ward No.07	2216	4.24	2344	4.48	4560	8.72
Ward No.08	1820	3.48	1896	3.62	3716	7.10
Ward No.09	2026	3.87	2301	4.40	4327	8.27
Ext. Area	71	0.13	78	0.15	148	0.28
Total	**25809**	**49.34**	**26502**	**50.66**	**52310**	**100**

***Source**: BBS, 2011*

Table- 2.2: Population Growth Trend

Census Year	1981	1991	2001	2011
Population	18,305	22,965	48,808	52,310

***Source**: BBS, 1981, 1991, 2001 & 2011*

2.6 INSTITUTIONAL CAPACITY

In general terms, capacity can be defined as "the ability to perform functions, solve problems and set and achieve objectives". Capacity is systemic, so, in some sense, all dimensions of institutional capacity deserve attention. Sharishabari Pourashava consists of nine wards. It has one elected Mayor, 9 elected counselor and three reserve women counsilors. There are total nineteen numbers of employees in Pourashava (**Table- 2.3**).

Table- 2.3: List of Existing Manpower

Designation	Existing Manpower
Sub-Asstt. Engineer (Civil)	1 Person
Sub-Asstt. Engineer(Electrical)	1 Person
Store keeper	1 Person
Work Assistant	2 Persons
Road Roller Driver	1 Person
Truck/Tructor Driver	1 Person
MLSS	3 Persons
Secretary	1 Person
LDC cum Typist	1 Person
Accountant	1 Person
Treasurer	1 Person
Tax Assessor	1 Person
Tax Collector	1 Person
Asstt.Tax Collector	4 Persons
Collector	1 Person
Bazar Inspector	1 Person

Designation	Existing Manpower
Night Guard	2 Persons
Supervisor	1 Person
Vaccination Supervisor	1 Person
Total	**26 persons**

***Source**: Sharishabari Pourashava*

Existing logistic support of Sharishabari Pourashava is not satisfactory. To run the Pourashava smoothly with its multilateral function, the existing logistic support/ equipment should be improved in such a way that no function can be left. However, the existing logistic support/ equipment of Sharishabari Pourashava are given in **Table-2.4** below:

Table No.2.4: Logistic support/Equipment of Sharishabari Pourashava

Sl.No.	Type of Equipment	Number
1.	Television	1
2.	Road Roller	1
3.	Truck for garbage collection	1
4.	Van (3 wheel) for garbage collection and disposal	6
5.	Push cart for garbage collection	10
6.	Motor Cycle	2
7.	Computer	3

***Source**: Sharishabari Pourashava*

The institutional capacity of the Sharishabari Pourashava at present is very limited. It is observed that the staff numbers are not sufficient with regards to work volume (duty and responsibility) of Pourashava. To commensurate with the modern scientific advancement the Pourashava is lagging behind in terms of logistics. Its computer facility, GIS software, use of satellite image, modern survey equipment, internet etc. are deplorable. To run the Pourashava smoothly with its multilateral function, the existing logistic support/ equipment should be improved in such a way that no function can be left.

The Pourashavas or Municipalities are classified according to financial strength/ Annual Revenue Earning by the Ministry of Local Government, Rural Development & Co-operatives. The existing classification of all municipalities and their criteria are shown in **Table-2.5**. Sharishabari falls under B-Class Pourashava having a revenue earning of Tk.2 million by the classification of the Ministry.

Holding tax is mainly asses on the basis of construction type and plinth area of structure. As there are majority of kutcha structures in Sharishabari, so the holding tax collection is very minimum amount. The statement of Holding Tax Collection for the financial year 2007-2008 was 532641; for the financial year 2008-2009 was 2853128 and for the financial year 2009-2010 was 3173448.

Table 2.5: Hierarchy of Pourashavas (Municipalities)

Category of Pourashavas (Municipalities)	Annual Revenue Earning
Class-A	6 million +
Class-B	2 million
Class-C	Less than 2 million

***Source**: Country Reports on Local Government Systems: Bangladesh*

Table No 2.6: Budget for the Financial Year-2008-2009

Type of Earning	Total Amount (Taka)	Type of Expenditure	Total Amount (Taka)
Revenue Earning	**13912841.00**	Revenue Expenditure	**10773211.00**
Development Earning	**61608022.00**	Development Expenditure	**73668351.00**
Capital Earning	**700000.00**	Capital Expenditure	**700000.00**
Total	76220863.00	**Total**	85141562.00

***Source**: Sharishabari Pourashava, 2011*

At present there are no Town Planning personnel in Sharishabari Pourashava. All town planning works have been performed by the Engineering Section headed by one Assistant Engineer. At least one Town Planner is required to perform the planning works as well as guide and control physical development of the Porashava in a planned manner. However, the existing institutional capacity of the Pourashava should be enhanced.

2.7 URBAN GROWTH AREA

Sharishabari Upazila was established in 1960. Sharishabari Pourashava was established in 31st December 1990. Its present status is "B" Class pourashava. Since the inception of Pourashava people started to migrate from the neighbouring Upazilas to Sharishabari Pourashova with a view to get better urban facilities. From that time different Govt. offices have been established and at the same time business also have been expanded.

Physical growth has been taken place radially following the connecting transport networks. Till now as many as 22,556 structures have been established.

During delineation of Pourashava area and physical feature survey it is observed that, the physical growth is observed mainly in the western side of Sharishabari- Jamalpur railway line and in between railway line & Subarno khali river and also both the sides of Pourashava road and Dik Pati road.

Besides, the gradual physical growth of Sharishabari Pourashava town also identified along all the transport routes.

Sharishabari Pourashava area and its boundary have been clearly defined by the Government through gazette notification at the time of declaration of Pourashava. In the gazette notification of 31st December 1990 the covered area are shown by the full/part mouza maps together with individual plot numbers covering an area of 20.95 square kilometers (as per our GIS measurement). Therefore, Pourashava area and boundary is well defined.

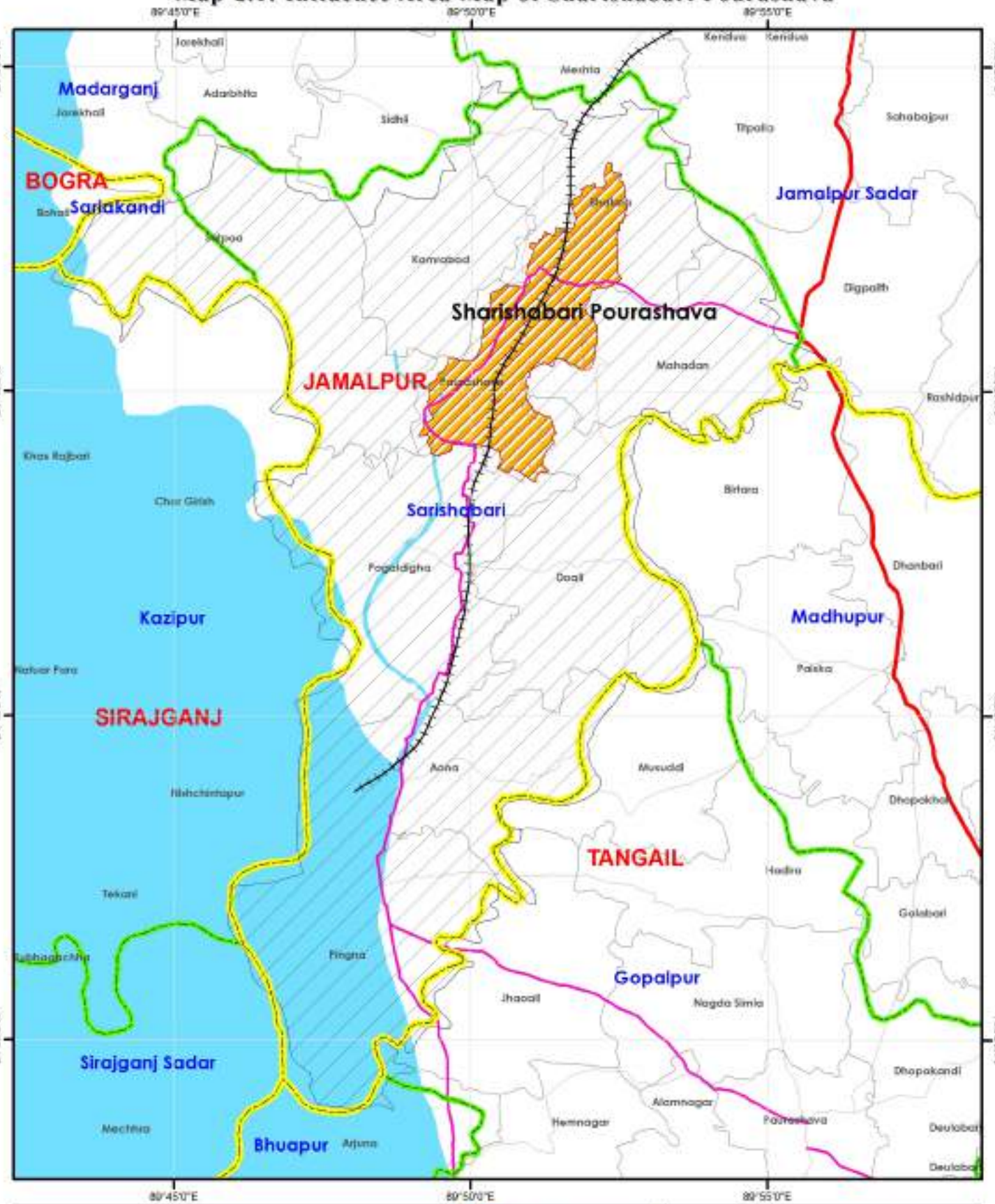
2.8 INFLUENCE AREA

The favourable location has benefits Sharishabari in two ways: it allows people to come to Sharishabari to purchase goods and services, and it allows Sharishabari businesses, including wholesale businesses, to deliver goods and services to places outside the town. The Sharishabari Upazila HQ's provides govt. services for neighbouring communities of the entire Upazila including the Pouarashava area. Sharishabari has three colleges, and eight high schools which draw students from the population in surrounding communities. The schools bring children and parents from surrounding villages and unions to Sharishabari for educational and co-curricular activities. In addition to offering educational and recreational services, the Pouarashava has a number of retail stores including markets, clothing, gifts,

furniture, drug stores, and general merchandise stores. The town has a number of restaurants. As well, there are professional medical services such as doctors, dentists, dispensing opticians, and veterinarians in the upazila health complex, which attracts people from the surrounding areas of Sharishabari Pourashava.

However, the influence area of Sharishabari Pourashava is delineated along the transport routes of surrounding area outside the Pourashava. Sharishabari Pourashava area and 04 Union Parishads of Sharishabari Upazila fall under the influence area of the town. The delineation of influence area of Sharishabari Pourashava is shown in **Map-2.1**.

Map-2.1: Influence Area Map of Sharishabari Pourashava



Legend

- National Boundary
- District Boundary
- Upazila Boundary
- Union Boundary
- Pourashava Boundary
- Railway
- River
- Project Area
- Influence Area

Road

- National Highway
- Regional Highway
- Feeder Road-A
- Feeder Road-B

N

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2.9 LAND USE AND URBAN SERVICES

Sharishabari urban centre and the peripheral and fringe areas of this urban centre are in continuous process of changes. As such, the land use character of the area is expected to be of non-rural in nature and found to comprise activities commensurate with urban living.

The spatial structure and land use pattern of the project area have been mostly the result of natural growth. Here although a development took place during the last decade yet the project area is still predominantly agricultural in character. Urban growth is found in mainly western part of Sharishabari-Jamalpur railway line of the project area. Residential rural settlements are also found along the major roads and in almost scattered manner in the peripheral area.

Agricultural Land Use
The major portion of land of the project area is under agricultural use. Total land under agricultural use is 3024.51 acres which is 58.42% of the land. Ward No. 9, Ward No. 3 and Ward No. 8 rank high in terms of agricultural use of land. These areas have distinct rural character.

Residential Land Use
Total acreage under residential use has been found to be 1610.95 acres. As expected the second highest land use category is the residential use which occupies 31.12% of the total land of project area. Residential uses are spread over mainly along the roads. Residential uses are mostly concentrated on central part of Pourashava area. The residential use mostly covered Ward No. 1, Ward No. 2 and Ward No. 6.

Commercial Land Use
The commercial activities have been occupied 30.18 acres of land in the project area, which is very insignificant and covers about 0.58% of the total land of the project area. Ward No. 2 has the highest acreage amounting 11.21 acres in this category.

Water body
The third highest land use category is water body. In all 302.89 acres of land are covered by water bodies which represents about 5.85% of the project area. Water bodies include river, ponds, ditches, beel and khals. Major water bodies of the area are the ponds which are distributed scatteredly all over the project area. Ward No. 1, Ward No. 2 and Ward No. 3 are the three places with higher acreage of water bodies.

Circulation Network
Circulation Network occupies 1.99% land of the project area. Total area under this use amounts to 102.88 acres. The main circulation network is road.

Education and Research Land Use
education and Research facility occupied 0.53% of the project area that covered 27.41 acres of land. Educational Institutions were generally Kindergarten, Government and Non-Government Primary School, High Schools, College, Madrasha, Computer Training Institute, Tutorial Coaching Center, etc. Ward No. 1 tops the list of having highest coverage (i.e., 31.21%) in educational institution.

Industrial Land Use
Manufacturing and Processing land use occupies 47.41 acres of land and which is only

0.91% of the total land of the project area. Jute mills and Rice mils are the main industry of Sharishabari Pourashava, which cover almost full part of this category.

Transportation Facilities
A total of 0.42 acres of land are occupied by Transport & Communication category of land use.

Urban Green Space
The existing land under urban green space is 3.93 acres covering 0.08% of the total area.

Essential utilities
Essential utilities and services which the Sharishabari Pourashava has been performing may be considered as urban service. Those utilities are Electric supply, Water supply, Solid waste management, Telecommunication and Gas supply.

2.10 POURASHAVA'S FUNCTIONAL LINKAGE WITH THE REGIONAL AND NATIONAL NETWORK

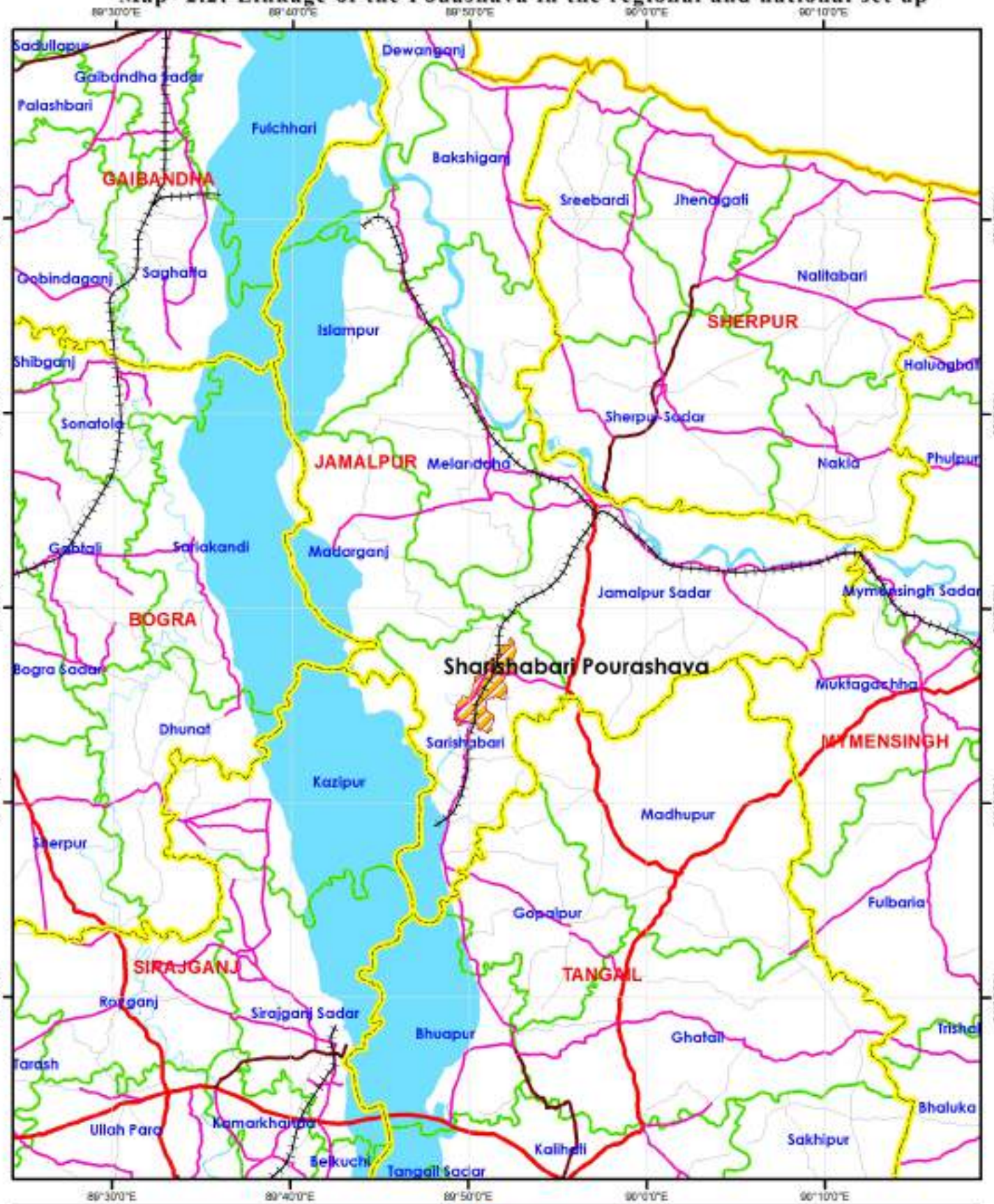
Although Sharishabari Pourashva is located at the western part of Bangladesh under Jamalpur District, yet the Pourashava is well - linked with the district head quarters of Mymensingh, Sherpur, and Tangail by road network. This town can contribute towards transportation of agrarian economy as an industrial one.

The Pourashava has also good transport linkage with Melandaha and Jamalpur sadar Upazilas of Jamalpur District, Madhupur and Gopalpur Upazilas od Tangail District. Therefore, the Sharishabari Pourashava functionally linked with the national and regional context.

Although Sharishabari Pourashava has good road linkage in the regional and national transport network there is also railway line and station in this Pourashava.

Although the river Smaller Jhenai and river Subarno khali are within the Sharishabari Pourashava but are not navigable in the dry season, there is seasonal prospect of water transport in the provision of functional linkage in the regional and national network. A map showing linkage of Sharishabari Pourashava in the regional and national set up is provided in **Map-2.2** below.

Map- 2.2: Linkage of the Pouashava in the regional and national set up



Legend

- National Boundary
- District Boundary
- Upazila Boundary
- Union Boundary
- Pourashava Boundary
- Railway
- River

Road

- National Highway
- Regional Highway
- Feeder Road-A
- Feeder Road-B

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2.11 ROLE OF AGENCIES FOR DIFFERENT SECTORAL ACTIVITIES

Local Government Engineering Department (LGED) is one of the largest public sector organizations in Bangladesh entrusted for planning and implementation of local level and small scale water resources infrastructure development programs. LGED works closely with the local stakeholders to ensure people's participation and bottom–up planning approach in all stages of project implementation cycle. LGED promotes labour-based technology to create employment opportunity at local level and uses local materials in construction and maintenance to optimize the project implementation cost with preserving the desired quality. LGED works in a wide range of diversified programs like construction of roads, bridges/ culverts and markets to social mobilization, empowerment and environmental protection.

Roads & Highways Department (RHD) is responsible for the construction, maintenance and management of the National, Regional and Zilla road network and some bridges under the Bangladesh Government. Presently Zilla road passing through the Pourashava area is executing by the RHD department.

Implementation of Flood Control and Drainage (FCD) programme and Flood Control, Drainage and Irrigation (FCDI) programme falls under the responsibility of Bangladesh Water Development Board(BWDB). BWDB is playing vital role in providing flood control, drainage and irrigation facilities through construction of embankment, irrigation canals, drainage channels, bridges, sluice, regulator and other water control structures in the Pourashava vicinity as well as other areas of the country.

In Pourashava areas the DPHE solely or jointly with the Pourashava is responsible for Water Supply & Sanitation services. In addition, DPHE is responsible for assisting the Pourashavas through infrastructure development and technical assistance. To Strengthen water testing facilities through establishment of laboratories, carryout Hydro-geological investigations in search of safe source of water supply and promote social mobilization for awareness raising towards proper management of water supply & sanitation infrastructure and promotion of personal hygiene practices are also some of the major responsibilities of DPHE.

The Power Development Board (PDB) supplies electricity to Sharishabari from a substation located at Darirampur. Both the PDB and Rural Electrification Board (REB) have the responsibility for distribution of electricity to Sharishabari Upazilla. Out of total connections within the Pourashava the PDB has connected about 80% and rest by REB.

Ministry of Health and Family Planning provide health facilities at the upazila level including Pourashava area through Upazila Health Complex. Ministry of education is responsible for construction of educational institutions at the upazila level. The Pourashava Authority has the responsibility to provide piped water supply, construct hats/bazaar, kitchen market, auditorium, community centre, street lighting and other civic amenities. Among other sectoral agencies, Department of Agricultural Extension, Fisheries Department, Veterinary Department under Upazila Parishad and Zilla Parishad, PWD, NGO's are also involved in the provision of concerned services and facilities.

The following Sectoral/Sub-Sectoral Agencies are involved in the development activities of Sharishabari Pourashava (**Table-2.6**).

Table-2.6: Sectoral/Sub-Sectoral Agencies of Sharishabari Pourashava

Name of Agencies	Type of works done
Sharishabari Upazila Parishad (through PIO)	- Construction of Pucca, Semi-pucca and Kutcha Roads - Pond Excavation - Construction of earthen Embankment
Roads & Highway Dept.	- Construction of Zilla Road
LGED	- Construction of Local Roads, drains
Dept. of Public Health Engineering (DPHE)	- Provide low-cost water-sealed latrine - Piped Water Supply - Provide Tube Well (Tara pump) - Simple Hand Tube Well
Zilla Parishad	- Construction of Educational Building
Bangladesh Water Development Board	- Construction of Embankment with RCC blocks, construction of Bridges/ Culvert and water control structures
PDB/REB	- Supply of electricity
Ministry of Education	- Construction of Educational Institutions
Ministry of Health and Family Planning	- Providing health facilities
Public Works Department (PWD)	- Construction and maintenance of public buildings

CHAPTER- 3: PROJECTION OF FUTURE GROWTH BY 2031

3.1 INTRODUCTION

Sharishabari Pourashava is a predominantly residential town that has experienced moderate growth over the last decade. It is likely that these circumstances will substantially change over the next 20 years. However, a clear defined set of growth policies, comprehensive Master Plan and related regulations are needed to guide the Pourashava town in future development. The proposed Master Plan provides guidelines for the development of remaining vacant areas within the proposed areas within and beyond current gazetted Pourashava boundaries.

3.2 PROJECTION OF POPULATION

The assumptions are based on past trends and the projections only indicate what may happen should recent trends continue. The trend-based assumptions remain valid. The mechanics of projecting population growth from base year data and assumed future trends of growth rate are straightforward. Compound rate of growth method is adopted in projecting the future population of any target year assuming a growth rate from past trends. In this method following formula is used to compute the projected population.

$P_n = P_o (1+r/100)^n$ Where

r = annual rate of growth

P_n = population in the target year

P_o = population in the base year

n = number of intermediary years#

During the period 2001 to 2011, the annual population growth rate of Jamalpur District was 4.55 in the urban as against 1.18 in the entire district irrespective of urban and rural area. In the urban area of Sharishabari Upazila the annual growth rate was 0.69 as against 0.89 for the entire Upazila during the same period. However comparative growth rates at the regional and local level is presented in **Table-3.1**.

Table- 3.1: Comparative regional and local growth rates

Administrative Unit		Growth Rate
Jamalpur District	District	1.18
	Urban	4.55
Sharishabari Upazila	Upazila	0.89
	Urban	0.69

***Source**: BBS, 2011*

The growth rate of Sharishabari Pourashava (0.69 as urban growth rate) found from BBS, 2001 & 2011 has been used for population projection. This growth rate has been adopted to estimate the projected population at 5 years interval up to 2031 and presented in **Table-3.2**.

Table-3.2: Projected Population of Sharishabari Pourashava

Year	Population
2011	**52,310**
2016	54,155
2021	56,064

Year	Population
2026	58,041
2031	**60,087**

The population of each ward at Sharishabari Pourashava is estimated assuming 0.69% as annual growth rate. Details are provided in following **Table-3.3**.

Table-3.3: Ward wise Projected Population of Sharishabari Pourashava

Ward No.	Census Population			Projected Population		
	2001	2011	2016	2021	2026	2031
Ward No. 1	7404	8438	8736	9044	9362	9692
Ward No. 2	6961	6853	7095	7345	7604	7872
Ward No. 3	6269	6707	6943	7188	7442	7704
Ward No. 4	4631	4531	4691	4856	5027	5205
Ward No. 5	5956	6765	7004	7250	7506	7771
Ward No. 6	6460	6265	6486	6715	6951	7196
Ward No. 7	3799	4560	4721	4887	5060	5238
Ward No. 8	3171	3716	3847	3983	4123	4268
Ward No. 9	4046	4327	4480	4638	4801	4970
Extended Area	111	148	154	159	165	171
Total	**7404**	**52310**	**54155**	**56064**	**58041**	**60087**

3.3 IDENTIFICATION OF FUTURE ECONOMIC OPPORTUNITIES

The prospect of Economic Activities related to availability of man- power, their level of education, their income level, transport network, marketing facilities, power supply and Government policy.

In Sharishabari the availability of manpower is sufficient. There are 44.18% population of the Pourashava within age group 16-57 years, 14.7% are above SSC level educated and 11.3% people's monthly income are above Tk. 8000/=.

Sharishabari Pourashava is well connected with the district headquarters of Jamalpur and neighbouring district headquarters namely- Sherpur, Tangail and Mymensingh. Its functional geographic location in the regional and national transport network is an important factor in raising the opportunities for trade and commerce.Finding the comparatively cheap land new Industries are gradually establishing in the Pourashava area.

3.4 PROJECTION OF LAND USE

The main basis of the projection of future land uses is the projected population and the planning standard (approved by the LGED).

Since the land use categories of survey data (i.e., 19 items) and the land use catagories as per approved planning standard (i.e., 13 items) are not similar, it was not possible to derive the projected land use from the extrapolation of land use catagories provided in the survey data. The requirements of land was calculated based on the given standard and the projected population for the year 2031 which was presented in **Table-3.4**.

Table-3.4: Projected Landuse of Sharishabari Pourashava at 10 years interval up to Year 2031

Facilities	Standard (LGED)	Existing Land of 2011 (acres)	Land Requirement for 2021 (acres)	Additional Requirement (Up to 2021)	Land Requirement for 2031 (acres)	Additional Requirement (Up to 2031)
Residential		**1610.14**	**560.64**	**-**	**600.87**	**-**
General Residential	1.00 acre/ 100 pop.	1610.14	560.64	-	600.87	-
Adminstration		**1.741**	**18**	**16.259**	**18**	**16.259**
Upazila Complex	15 acres/ Upazila HQ	1.213	15.00	13.79	15.00	13.79
Pourashava Office	3 acres/ Upazila HQ	0.528	3.00	2.47	3.00	2.47
Commerce		**30.18**	**67.17**	**36.99**	**71.60**	**41.42**
Wholesale Market	1.00 acre/ 10000 pop.	0	5.61	5.61	6.01	6.01
Retail sale Market	1.00 acre/1000 pop.	30.06	56.06	26.01	60.09	30.03
Neighborhood Market	1.00 acre/ Neighborhood market	0	4.00	4.00	4.00	4.00
Super Market	1.50 acres/ super market	0.1227	1.50	1.38	1.50	1.38
Industry	2.00 acres/ 1000 pop.	**47.2**	**112.13**	**64.93**	**120.17**	**72.97**
Education		**27.41**	**83.49**	**53.72**	**89.12**	**59.36**
Primary School	2.00 acres/ 5000 pop.	6.948	22.43	15.48	24.03	17.09
Secondary School	5.00 acres/ 20000 pop.	7.974	14.02	6.04	15.02	7.05
College	10.00 acres/ 20000 pop.	6.503	28.03	21.53	30.04	23.54
Vocational Inistitute	5.00 acres/upazila	2.64	5.00	-	5.00	-
Others (Madrasa)	5.00 acres/ 20000 pop.	3.34	14.02	10.68	15.02	11.68
Health Facilities		**4.98**	**21.21**	**16.23**	**22.02**	**17.03**
Upazila Health Complex/ Hospital	10 acres/ Upazila HQ	3.72	10.00	6.28	10.00	6.28
Health Center/ Maternity Clinic	1.00 acre/ 5000 pop.	1.263	11.21	9.95	12.02	10.75
Open Space/ Recreation		**0.51**	**128.94**	**128.38**	**137.69**	**137.07**
Playground	3.00 acres/ 20000 pop.	0	8.41	8.36	9.01	8.90
Park/ Open space	1.00 acre/ 1000 pop.	0.17	56.06	55.89	60.09	59.92
Neighborhood Park	1.00 acre/ 1000 pop.	0	56.06	56.06	60.09	60.09
Stadium	7 acres/upazila HQ	0	7.00	7.00	7.00	7.00
Cinema	0.5 acre/ 20000 pop.	0.3361	1.40	1.07	1.50	1.17
Community Facilities		**8.26**	**15.61**	**9.16**	**16.52**	**9.66**
Mosque/ Temple/ Church	0.50 acre/ 20000 pop.	2.4027	1.40	-	1.50	-
Eidgah	0.50 acre/ 20000 pop.	2.6904	1.40	-	1.50	-
Graveyard	1.00 acre/ 20000 pop.	2.3159	2.80	-	3.00	-
Community Center	1.00 acre/ 20000 pop.	0	2.80	2.80	3.00	3.00
Police Station	3 acres/ Upazila HQ	0.41	3.00	2.59	3.00	2.59
Fire Service Station	1.00 acre/ 20000 pop.	0.411	2.80	2.39	3.00	2.59
Post Office	0.50 acre/ 20000 pop.	0.03	1.40	1.37	1.50	1.47
Utility Services		**0.16**	**20.56**	**20.40**	**21.27**	**21.11**
Telephone/ Telegraph Exchange	0.50 acre/ 20000 pop.	0.07	1.40	1.33	1.50	1.43
Electric sub-station	1.00 acre/ 20000 pop.	0	2.80	2.80	3.00	3.00
Water Supply	1.00 acre/ 20000 pop.	0.09	2.80	2.71	3.00	2.91

Facilities	Standard (LGED)	Existing Land of 2011 (acres)	Land Requirement for 2021 (acres)	Additional Requirement (Up to 2021)	Land Requirement for 2031 (acres)	Additional Requirement (Up to 2031)
Gas	1.00 acre/ 20000 pop.	0	2.80	2.80	3.00	3.00
Waste Disposal Ground	5-10 acre/ Site	0	10.00	10.00	10.00	10.00
Waste Transfer Station	0.25 acre/ Transfer Station	0	0.75	0.75	0.75	0.75
Transportation Services		**0.42**	**5.61**	**5.19**	**6.01**	**5.59**
Bus Terminal	1.00 acre/ 20000 pop.	0	2.80	2.80	3.00	3.00
Truck Terminal	0.50 acre/ 20000 pop.	0	1.40	1.40	1.50	1.50
Tempoo Stand	0.25 acre/ 20000 pop.	0.42	0.70	0.28	0.75	0.33
Rickshaw Stand	0.25 acre/ 20000 pop.	0	0.70	0.70	0.75	0.75
Roads	15% of the built-up land	**102.88**	**277.41**	**174.53**	**277.41**	**174.53**
Urban Deferred	10% of the total built-up area	**0**	**184.94**	**184.94**	**184.94**	**184.94**

CHAPTER- 4: DEVELOPMENT PROBLEMS OF POURASHAVA

The towns and cities of Bangladesh have been developed without following any proper planning process and standards. The Pourashavas are evolved as administrative centers for performing functions of the administrative units (e.g. Upazila, Zilla). Sharishabari Pourashava is not an exception of that. As a result, some development problems are identified during conducting survey and field visits.

4.1 PHYSICAL INFRASTRUCTURE

In Sharishabari Pourashava town, the buildings have been constructed in haphazard manner without following any planning standard which raises some development problems, such as narrow roads leaving no provision for expansion in future, lack of space for construction of drains, footpaths and utility lines. In case of any emergency such as fire or death, fire fighting vehicle/ambulance face difficulties to reach the destination.

There are two rivers namely-Smaller Jhenai river and Shubarno khali river, Bolerdia khal and 706 water bodies are located within the Pourashava area. These river, khals and ponds create some problem while construction of transport network, drain, pipeline, gas line etc.

There is very little roadside drain in Sharishabari. And if any, the roadside drains are inadequate and incapable of draining out the storm runoff generated in the catchment area due to insufficient capacities, incorrect gradients and improper outfall. Most of the existing drains, as identified from field visit, remain inoperative due to blockage from disposal of solid waste into the drains.

During conducting the Physical Feature Survey it has been recorded that total un-planned, haphazard, incompatible land uses has been developed in Sharishabari Pourashava. This sort of land use development also create problem.

Transport problem of Sharishabari Pourashava has been continuously rising as the development and management of road network has not been commensurating with the increasing demand for its usage. Traffic congestion, accidents, pedestrian and parking difficulties, air and noise pollution are the traffic and transportation problem of Sharishabari Pourashava. If this unplanned construction goes on unabated, it will make the environment of Sharishabari Pourashava unsuitable and inhabitable.

4.2 SOCIO-ECONOMIC

Development Problems of Sharishabari Pourashava with regards to socio-economic were mainly the education level, marital status, migration, occupation/employment and income-expenditure.

From the socio-economic study it has been revealed that, out of total population 44.4% never attended school for more than one reason.

Regarding occupation / employment it has been observed that, young people are not getting job in the local level. The case of women's employment is not satisfactory.

Lastly, the income level of general people of Sharishabari Pourashava is less but expenditure is comparatively high. So, it is difficult on the part of the habitant to make any

surplus.

4.3 ENVIRONMENTAL

The problems concerning environmental issues of Sharishabari Pourashava are stated below:

In Sharishabari Pourashava with the increased population, generation of solid waste per person per day also is increasing. Lack of proper solid waste management system has been polluting the ambient air and surface water.

Improper solid waste disposal, lack of sanitation system and untreated sewage mixes with the water may deteriorate both surface and ground water quality. Water pollution problem often is compounded by the low flow situation in dry season.

Air pollution may be another problem of Sharishabari Pourashava. The main sources of air pollution are emission of harmful gaseous matters from vehicle, industrial sectors, and construction and open dumping of garbage.

In Sharishabari Pourashava a gradual process of increase different types of land uses including road and other infrastructures are going on. All these activities will reduce agricultural land, water bodies and other natural resources.

CHAPTER- 5: REVIEW OF POLICIES, LAWS AND REGULATIONS

5.1 INDICATIVE PRESCRIPTION OF POLICY FOR POURASHAVA IN THE LIGHT OF DIFFERENT URBAN POLICIES, LAWS, REGULATIONS AND GUIDELINES

The policies, laws and regulations relevant to urban development and implementation of the plan is thoroughly reviewed which is summarized in the following **Table-5.1**.

Table-5.1: Review of Policies/laws/Regulations

Sl No.	Policies/Laws/ regulations	Application	Implementation Agencies
1	Local Government (Pourashava) Act, 2009	Guide for the growth, development, and control of the different functions of Pourashava	The Pourashava Authority
2	National Land use Policy, 2001	Integrated planning and management of land resources	Ministry of Land
3	National Housing Policy (1993)	Physical Planning, Water Supply and Housing Sector	UDD, National Housing Authority, Ministry of Housing and Public Works
4	National Land Transport Policy (2004)	Provision of safe and dependable transport services, and improving the regulatory and legal framework	BRTA, BRTC, Ministry of Communication
5	The Environment Policy, 1992	To ensure environmentally sound development in all sectors	Ministry of Environment and Forestry
6	The Environment Conservation Rules,1997	Application relating to pollution control through issuance of Environment Clearance Certificate	Department of Environment
7	Disaster Management and Climate change Policy	Improve disaster awareness and develop disaster management plans	Ministry of Disaster Management and Relief
8	Bangladesh National Tourism Policy	To preserve, protect, develop and maintain tourism resources	Ministry of Civil Aviation and Tourism, Bangladesh Parjatan Corporation
9	Agriculture Policy	To ensure planned utilization of land	Ministry of Agriculture, Department of Agricultural Extension
10	National Forest Policy (1994)	Protection and management of resources (natural forests, protected areas, and plantations)	Ministry of Environment and Forestry, Bangladesh forest Department
11	Population Policy, 2004	Urban growth and development, Urban Migration and Planned Urbanization	Ministry of Health and Family Welfare
12	Canal and Drainage Act, 1873 (Act No. VIII of *1873)*	Preserve Natural Drainage Network through man-made canal linking withothers and River	BWDB, LGED
13	The Motor Vehicles Ordinance, 1983	Control and scrutinize the movement pattern of motorized traffic	BRTA, Pourashava Authority
14	The Motor vehicle rules, 1997	Design and specification of the length and height of motorized vehicles and repair of break down vehicles	BRTA, Pourashava Authority

Sl No.	Policies/Laws/ regulations	Application	Implementation Agencies
15	National Water Policy, 1999	Policy direction for water sector and Implementation of the Drainage and Flood Plan	BWDB, LGED, Pourashava Authority
16	Industrial Policy, 2005	Settting up planned industries and discouraging unplanned industries in the light of past experience	Pourashava Authority, BSCIC, Ministry of Industry

5.2 LAWS AND REGULATIONS RELATED TO

5.2.1 Urban Development Control

The physical growth and development of Sharishabari Pourashava Town is subject to controlled mainly by the Local Government (Pourashava) Act, 2009& Building Construction Act-1952 and 2004. But a very weak Development Control system has been implemented in Sharishabari Pourashava. So it's spatial land use pattern has been become the haphazard, incompatible and therefore, inefficient and un-healthy.

In the past without the presence of full guideline all the development has taken place as a peach meal as per the requirement of locality /people so a total network could not be developed. Existing road network, drain, residential houses, commercial units, industrial units etc. all are the example of such spontaneous development.

5.2.2 Pourashava Development Management

Whatever may be contained in the relevant ordinance/act but in practice that are not properly implemented. This is due to mainly shortage of technical man power. As per Govt. allocated organogram there should be 32 employees in Engineering Section, 35 employees in Administration Section and 22 employees in Health Section. But in practice, there are only 11 employees in Engineering Section, 13 employees in Administration Section and 03 employees in Health, Family Planning and Conservation Section are presently employed in Sharishabari Pourashava. Besides, there are other reasons also which are out of development management.

CHAPTER- 6: CRITICAL PLANNING ISSUES

6.1 TRANSPORT

In Sharishabari the existing traffic and transportation infrastructures are confined mainly with the existing road network. The project area is served by 97.72 kilometers of roads. Total area covered by road network is about 60.31 acres. Out of the total length of roads 110.21 are pucca, 27.21 km are semi-pucca and 127.22 km are Katcha.

The most critical transport issues of Sharishabari Pourashava identified from field visits is that the town is divided into two parts (north part and the south part). Smaller Jhenai river acts as an impediment in channelizing traffic to the north and southern portion of the Pourashava. It is very critical to by-pass the inter-upazila and inter-district traffic movement without interrupting the living environment and intra-movement pattern of the inhabitants. All the through traffic are observed to ply over the bazaar area (in the western part) of the Pourashava.

Commercial development occurs in the south–west part of Pourashava in Aram nagar Bazar area, west of central part is Shimla Bazar area and north of Smaller Jhenai river is Baushi Bazar area. As a result, the pourashava dwellers have to travel a long distance to buy their daily necessities which raises traffic congestion in the bazaar area and increases the travel time. The bazaar area is the most congested areas in Sharishabari Pourashava. The entire area of Aramnagar bazar remain congested especially during the peak hour and hat day.

There is no bus/truck/tempo terminal provided with facilities for loading-unloading and passenger-shed. All the buses stop on the roadside generating congestion and inconvenience to both the commuters and pedestrians.

Traffic generation centers at Sharishabari Pourashava are very limited. The Upazila complex is the main Traffic generation center. Besides, different governmental offices, cinema hall, shopping centers, educational institutions, Bus Stand, Upazila Complex, Police Station, Different Educational Institutions, Different Markets, Kutcha Bazars, Hospitals, Land Office, Different Govt. Offices etc. are also generating traffic.

The Dhanbari Baz-Satariya Road and Sharishabari to Bhatya Road intersections area are the most busy and congested areas in Sharishabari Pourashava.

Among all the modes the road transport is only available in Sharishabari Pourashava. The transportation services are also very limited in Sharishabari Pourashava. There are services both for the passengers and goods. Bus, Auto Rickshaw/Tempo, Bhodvodi, Rickshaw, Rickshaw-van, Push cart and Bi-cycle offering services for the people and Truck, rickshaw van and push cart for different goods.

There is no designated place for parking the vehicles in Sharishabari Pourashava. Unfortunately there is no footpath besides any roads of the Sharishabari Pourashava.

Traffic management system of Sharishabari Pourashava is unorganized, backdated and poor. There is no either any traffic police or computerized signal system to manage and control the traffic. There is no lane marking and footpaths of roads. In case of any emergency or any accident the local Thana tackle the problem.

6.2 ENVIRONMENT

The urban environment of the Sharishabari Pourashava includes both built and natural environment. Built environment includes waste management, water, air quality, energy usage, transport network, slum improvement, and disaster mitigation. The urbanization where the built environment overburdens the natural environment cannot be sustainable. But urbanization is inevitable for countries economic growth.

The water table within Pourashava ranges from 6 ft to 20 ft and is lower during winter. A branch of the mighty river the Jamuna flows along west boundary of the Sharishabari Upazila and serves for good recharge of the ground water. There is no difficulty of getting drinking water from hand tube wells in winter. The water supply within the Pourashava is by hand tube wells. 100% people of the Pourashava uses hand tube wells as source of drinking water. Within the Pourashava any mineral contaminated or arsenic contaminated hand tube well not yet identified.

Another critical environmental issue that can be considered in the planning process of Sharishabari Pourashava is the use of chemical fertilizers and synthetic pesticides which remain persistent for a longer term. This is a serious threat to the fertility of soil leading to subsequent pollution of water after wash out through rainfall. As a result of over-utilization of these chemical fertilizer and synthetic pesticides, living of all habitats will be in serious threat that may cause the ecological imbalance and loss of biodiversity.

6.3 LAND USE CONTROL

The spatial structure and land use pattern of Sharishabari Pourashava have been mostly the result of natural growth. Urban growth is found in mainly eastern and southern portion of the Pourashava. The residential land use covers the major part (31.36%) of the Pourashava area.

The roads inside the project area are quite narrow. The shops and different commercial establishments have followed along internal roads.

Residential development occurs mainly as **Ribbon Development** along the existing roads. Scattered settlement pattern has been evolved in the Pourashava area since establishment of Sharishabari Upazila Headquarters. As a result, vast agricultural land has been exploited through low density scattered settlement. Thus, it is very difficult to take any irrigation scheme in the agricultural land and if possible the command area is less compared to a single agricultural zone. On the other hand provision of supplying any utility services in the scattered settlement is not cost effective. In this point of view land use control is a critical issue that should be considered carefully in the formulation of land use plan and zoning.

6.4. DISASTER

Sharishabari is susceptible to any kind of major disaster like flood, cyclone, earthquake, Nor'westers and tornado, landslide, erosion, drought etc. Some natural hazards and calamities like flood, tornado and drought cause loss of property, livestock and agricultural production in almost every year imposing an impact on human life.

Sharishabari falls under the tornado prone districts of the north-central regions in Bangladesh. Thus it is an critical issue in the planning process.

Drought causes the depletion of ground water and soil moisture and hence damage of crops which is visible in the Northern Region of Bangladesh. Mainly agricultural drought is observed in some years which aggravates the yield of the main crops affecting food security.

Sharishabari located in the north and north central part of Bangladesh is the most active seismic zone(Zone-II: Basic Sismic Coefficient-0.059) and had experienced earthquakes of moderate to high intensity in the past. This critical issue should be considered in the planning process especially during the plan permit process regarding construction of houses, buildings, other structures and infrastructures to be build earthquake-resistant at the maximum recorded level.

The most critical issue regarding natural hazards and disaster is the flood hazard. Although Sharishabari is affected by annual flood, most of the areas of Sharishabari Pourashava was inundated during 1998 and 2004 flood events causing loss of lives, resources, crops and siltation of beels, natural khals and agricultural lands. The Smaller Jhenai River and Subarno khali River flowing through the Pourashava carries huge amount of silt causing decrease in drainage capacity and subsequent inundation of the adjoining areas.

6.5 LAWS AND REGULATIONS

There is no provision in the Industrial Policy, 2005 regarding setting up of industrial estate or special economic zones to reduce environment pollution and make service provision easier. Thus it is a critical planning issue pertinent to the regulations of industrial establishment.

National Environmental Policy 1992 does not provide guidelines for controlling of pollution in all kinds of water bodies by municipal, industrial waste and toxic materials and shifting of industries from residential areas. This point is a critical issue that should be considered in the planning process of environmental management.

Vast agricultural land was incorporated in the urban area during declaration of the Pourashava without considering fertility or agricultural productivity and requirement of land for providing urban services and land uses. According to Agricultural Policy 1999, acquisition of land in excess of requirement for non-agricultural purposes will be discouraged. Thus implementation of development proposals in the light of Local Government (Pourashava) Act, 2009 will conflict with the Agricultural Policy 1999.

The Government of Bangladesh formulated the first ever housing policy of the country in 1993. Despite formulation of National Housing Policy 1993, no effective programme and projects have been undertaken. National Housing Authority has been formed but it is yet to draw up any workable programme to realize national housing policy.

The policies, laws, by-laws, acts and regulations relevant to the implementation of the Structure plan of Sharishabari Pourashava are executed, exercised and implemented by different departments, ministries and authorities.There is no coordination among these departments, ministries and authorities regarding inter-related policies, laws and regulations. This is the most critical issue to be considered in formulation of the Structure Plan.

CHAPTER- 7: LAND USE DEVELOPMENT STRATEGIES

7.1 BROAD VIEW OF THE PLAN

Sharishabari Pourashava is predominantly an Upazila headquarters town with emphasizing administrative functions facilitated with limited support services and agro-based small trade center meeting the community needs from the inhabitants of the Upazila jurisdiction area. The Pourashava should be developed with necessary infrastructures and ancillary facilities along with provisions for planned growth of the town.

The Structure Plan sets forth certain strategies and policies for managing growth of the town, which is anticipated to encourage the planned growth and control any unplanned growth within the Pourashava area. Strategies for land use development is formulated in such way that conform the regulations associated with the optimum use of land, ensure a sound traffic movement system and promote a livable environment. The plan also indicates certain polices for promoting the economic growth, employment opportunities for the Pourashava dwellers and upgrading the living standards of the inhabitants as a whole.

7.2 STRATEGIES FOR OPTIMUM USE OF URBAN LAND RESOURCE

The Structure Plan aims to ensure optimum use of urban land resources in the long term. The demands of almost most of the population growth within the Pourashava area other than the migrated population will be met by densification of the existing residential land in the core area. The migrated population will be accommodated in the peripheral area provided with infrastructures and necessary services. However the optimization strategies for urban land resources can be summarized under two broad sub-strategies.

a) Consolidation of the Core Area

After the establishment of upazila headquarters in 1960 and Pourashava in3 December 1990, the vast majority of population growth occurred within the core area. This phenomenon was the result of several factors. The most dominant factor was development of infrastructures, transport and communication facilities and utility services for functioning activities of Upazila Parishad. Further population growth occurred in this area after the declaration of Pourashava in 1990 due to availability of urban services and buildable land at affordable price adjoining the Upazila Headquarters.

This sub-strategy calls for further consolidation of the existing core area in the short to medium term to optimize existing urban land resources with priority given to serviced low-density areas, vacant and under-utilized land. Policies regarding this sub-strategy are detailed in the Urban Area Plan (Land Use Plan).

b) Accelerated Development in the Peripheral Area

The areas beyond the core area where a slow trend of urbanization is continuing in unplanned manner falls under this sub-strategy. Scattered settlements along the transport network approaching the upazila headquarters have been evolved in a radial pattern. This type of settlement in the peripheral area may also be termed as ribbon development.

This sub-strategy involves adoption of policies aimed at accelerating development in the medium to long term through provision of necessary primary infrastructures in a planned way. The areas under this sub-strategy are expected to absorbed by most of the migrated population from rural areas of Sharishabari Upazila and other areas beyond the Pourashava.

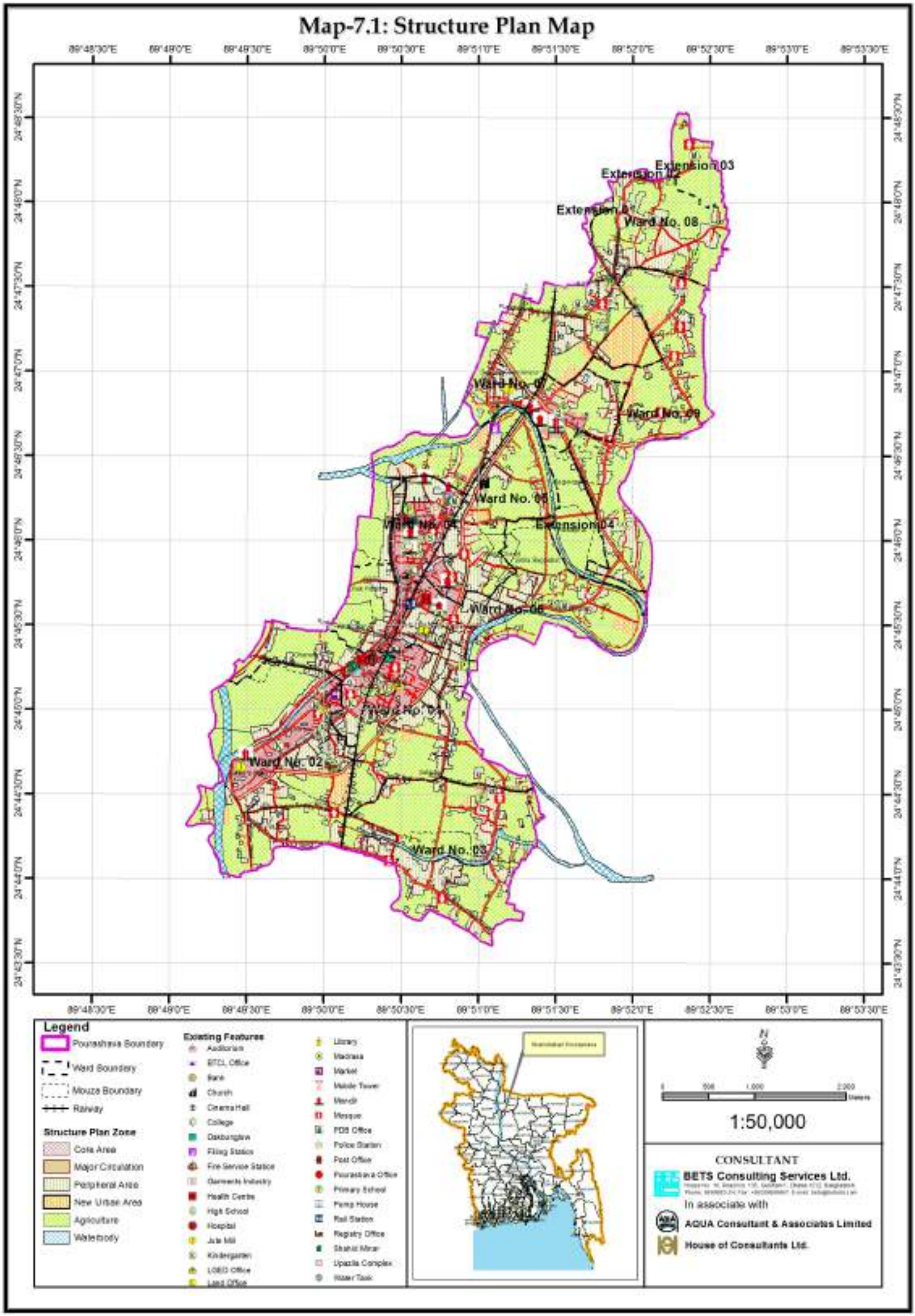
Priority will be accorded to south-west part of the Ward-02,south-east part of Ward-03, Ward-05, western part of Ward-07, southern part of Ward -08 and western part of Ward-9 where potential areas for accelerating development is available and provision of necessary services will be to some extent cost effective. The areas to be impacted by this strategy have been shown in **Map 7.1** (*Structure Plan Map*) and the policy options have been entailed in the Urban Area Plan.

Strategies shall also be implemented to consolidate the development, enhance the environment of stable areas and enhance the working, living and business environment of the core area. Areas for policy zoning was determined based on considering the existing trend of growth and optimization strategy which is shown in **Map-7.1 and** *Policy Zone* **(Appendix-A) in Table-7.1** below:

Table-7.1: Policy Zoning Areas of Structure Plan

Policy Zones	Illustrated	Areas (acres)	Percentage
Agriculture	Agricultural land denotes the land suitable for agricultural production, both crops and livestock. It is one of the main resources in agriculture.	2574.31	49.73
Major Circulation	Major circulation contains major road network and railways linkage with regional and national settings.	366.59	7.08
Core Area	This area is also known as built-up area. This is defined as the area which has the highest concentration of services; it also has the highest population concentration and density. It will absorb most population growth during the Landuse Plan (2011-2021) period.	406.37	7.85
New Urban Area	This zone will be the required additional area for future planned urban development as per population projection. Existing physical trend of growth and potential areas shall have to be considered in demarking for new urban land development.	175.63	3.39
Peripheral Area	This is the zone where a slow trend of urbanization is continuing in unplanned manner. The area identified in the Structure Plan as the likely choice for new urban development beyond the core area.	1393.39	26.92
Water body	Waterbody containing an area equals to or more than 0.15 acres excluding those of khal, irrigation canal and river will be treated as this category.	260.69	5.04
Total		**5176.97**	**100.00**

Map-7.1: Structure Plan Map



7.3 PLANS FOR NEW AREA DEVELOPMENT

The more outlying areas that are going to be urbanized spontaneously or in a planned way tend to grow very slowly. As a result, the costly infrastructure facilities and services that have to be provided are underused even lay idle for a long period. Additionally, the development is often very scattered, making provision of adequate services even more difficult.

Strategy
The Promoting Development Strategy for this urban sub area is to adopt policies which will accelerate development at the potential areas commensurating the existing physical trend of growth. This will release the population pressure from the core area, accommodate population growth in the long term up to the 2031 and ensure planned development. The purpose of this policy is to optimize the utilization of these extensive, but scattered and underutilized lands, at the same time promoting further outward, planned urban growth. The area selected under this strategy are shown in **Map-7.1**.

Policy NAD/01- New Area Development
To promote land subdivision of the selected area and provide necessary infrastructure and services in a planned way.

Implementing Agency: Sharishabari Pourashava, LGED, PDB, REB, DPHE, NGOs

Justification
Fringe areas under slow development offer excellent opportunity for planned development by means of land subdivision and infrastructure development.

Means of Implementation
Land acquisition should be done through the initiative of Pourashava Authority, then land preparation, land subdivision, earthwork will be furnished. New facilities and services like road, drains, footpath, waste transfer station and other civic services will be provided by involving the concerned agencies. Involvement of public sector along with private sector and NGO's or PPP(Public Private Partnership) may be a innovative concept for financing in this respect.

7.4 AREAS FOR CONSERVATION AND PROTECTION

Historic preservation is an endeavor that seeks to preserve, conserve and protect buildings, objects, landscapes or other artifacts of historical significance. In Sharishabari there are very minor things to be count under conservation and protection. However, the heritage sites of any archaeological and historical importance should be preserved and conserved following the proper planning procedure. The natural landscape including river, khal, lake, large ponds should be protected from encroachment, misuse or any other human intervention. The productive agricultural land should also be protected from converting it into unproductive urban land The relevant policies regarding the conservation and protection of these sites are formulated as follows.

Policy CP/01- Preserve and conserve the heritage sites
To preserve the heritage sites in the Pourashava area without any change and conserve with controlled modifications and alterations.

Implementing Agency: Pourashava, Department of Archeology, Bangladesh Parjatan Corporation

Policy CP/02- Protect the Natural Landscape

The ponds with area more than 0.15 acres, lakes, canals, river, beels must be protected as water body from encroachment and conversion into other use. The permission for filling up of these ponds should not be given without any special case. These water bodies should be protected for the purpose of using them as retention pond and drainage channel.

Implementing Agency: Pourashava, LGED, BWDB

Policy CP/03- Protect the Productive Agricultural Land

The high value agricultural land should be protected from conversion into inefficient and unproductive urban land. These areas will be conserved and promoted as areas of high intensity food production in order to ensure urban food security in close proximity to the town and improve the income level within agricultural sector of the Pourashava' s economy.

Implementing Agency: Pourashava, DoE, Department of Agricultural Extension

CHAPTER-8: STRATEGIES AND POLICIES FOR SECTORAL DEVELOPMENT OF THE POURASHAVA

8.1 SOCIO-ECONOMIC SECTORS

8.1.1 Population

Controlling population should be given utmost importance nationally, as because of the uninterrupted population growth, the country's economic problems are being accentuated, pressing on its resources. It makes poverty reduction difficult which is the key to overall national development. So it is necessary to enhance population control drive. Grassroots level workers can play very effective role in this regard. An efficient, well-trained and well paid grassroots level work force can help profoundly in achieving the targets of population control policy of the government. Side by side promotion of education can be very effective in creation of awareness about small family size.

The base year (2011) and projected (2031) population of Sharishabari Pourashava are 52,310 and 60,087 respectively. The working population is considered as the population of 15-59 years of age. The number of population able to work at present is 30,992 and this figure is anticipated to rise at 35,361 up to year 2031. 63.25% of the present workforce is currently employed in various economic sectors. If the current trend continues, 44.57% of the total projected workforce that is 15,759 more employment should be provided for complete eradication of unemployment problem from the Pourashava. The population growth rate 0.69% and projection method of population are assumed to be same in the projection of workforce. The following table shows detail in this regard.

Table- 8.1: Projection of Workforce for the Year 2031

	Base Year (2011)	Projected (2031)	Employed Population		Employment Required	
			No.	% of present Workforce	No.	% of Projected Workforce (2031)
Total Population	52,310	60,087	19,602	63.25	15,759	44.57
Workforce(15-59)	30,992	35,361				

The existing (2011) population density of Sharishabari Pourashava is 33 persons per acre and it is expected that if the plan is implemented properly the density will rise at 41 persons per acre in 2021 and it will be 43 at the end of the plan period Year 2031.

Strategy-1:

- Raise the education level among mass people and emphasize more on grassroots level family planning workers services with effective delivery of birth control services.

Policy:

Item	Executing Agency
Popu/1: Declare population as one of the most critical sectors of national development	✓ Ministry of Planning, ✓ Ministry of Health and Family Planning
Justification: Per capita national growth is being eaten up by constantly growing population. By controlling population national benefits earned from economic growth can be shared in a better way, raising the living standard of the people.	
Popu/2: Put more efforts and resources in raising the level of education.	✓ Ministry of Planning, ✓ Ministry of Health and Family Planning ✓ Ministry of Education.
Justification: Education would not only create awareness among the masses about the benefits of small family size, it will also help secure better job with pay that would reduce poverty, which is a major source of large family.	
Popu/3:	✓ Ministry of Planning,

Item	Executing Agency
Create well-paid and well-trained grass root level family planning workers for motivational work.	✓ Ministry of Health and Family Planning,
Justification: Grassroots level workers can give door to door motivational services and distribute birth control materials in a better way. To get good services they must be well paid and efficient.	

Strategy-2:

- Ensure rational distribution of population all over the planning area to control and regulate population growth and density.

Policy:

Item	Executing Agency
Popu/4: Encourage people, especially the migrated people, through arrangement of awareness building program to settle them in the peripheral and fringe area	✓ Ministry of Planning, ✓ Ministry of Health and Family Planning ✓ Sharishabari Pourashava
Popu/5: Provide urban services to the peripheral area to enhance settlement in this area	✓ SharishabariPourashav

8.1.2 Economic Development and Employment Generation

Economic development of any place is associated with generation of employment.And generation of employment depends on the rate of investment in various sectors of an economy. An urban economy of any town starts building up with investment in the basic sector that leads to the building up of the non-basic sector. Investment in basic sector is not very bright in Sharishabari as it is a very small town with a very low level of population. Besides, it has to compete with other adjoining urban centers like Madarganj of Jamalpur District, Madhupur and Gopalpur of Tangail District and larger towns like Jamalpur, Sherpur and Mymensingh. These urban centres are counter magnets of investment.

Strategy:

- Creating basic sector investment climate and lead the local economy forward through promotion of Small and medium Enterprise (SME).

Policy:

Item	Executing Agency
Econ/1: Provide bank loans on easy terms to attract prospective investors in the SME sector.	✓ Ministry of Industries ✓ Ministry of Commerce
Justification: Easy loans would Encourage and attract prospective investors for investment in small scale industries.	
Popu/2: Take measures to channelize remittance to value adding productive sectors.	✓ Ministry of Industries ✓ Ministry of Commerce
Justification: Larger amount of Remittance is being diverted to land purchase, which is considered as the safest investment. This huge capital may be channelized to productive sectors to help create more employment.	
Popu/3: Arrange entrepreneurship training programmes for prospective investors.	✓ Ministry of Industries ✓ Ministry of Commerce
Justification: There are many potential investors who are ignorant of the ways and means of investment and. Operating an enterprise The training can help them get educated in these lines.	

8.1.3 Housing and Slum Improvement

As the town has low level of population, housing is yet to become a problem here. Housing policy and programmes are provided and executed by the national government. There is no

local office of the National Housing Authority to execute housing programmes at Upazila level. As a local government, Pourashava can facilitate housing area development by means of providing road infrastructure, drainage, water supply, etc in designated housing zones.The consultant supports the prevailing national housing policy and advocates its execution at all levels, which is highly lacking. The projection of housing unit is shown in **Table-8.2**.

Table-8.2: Projection of Housing

	Base Year(2011)	Projected(2031)
No. of Population	52,310	60,087
No. of Families	12,671	14,361
Housing Demand	**1690**	

It is observed that 1690 no's of housing unit is required for accommodation of the anticipated growth of population. No slums are observed in this small town, the way they are exposed in large cities. Therefore, no slum and squatter related problems are there in the town.

Strategy:

- Upholding the role of Pourashava, as a facilitator to provide a!! necessary infrastructure and services to enable housing by people in general. As a least cost approach, involvement of the landowners in housing area development on public-private partnership basis will be encouraged.

Policy:

Item	Executing Agency
Policy House/1: Provide all necessary services and facilities to promote housing at private sector.	✓ Ministry of LGRD ✓ Sharishabari Pourashava
Justification: It is more difficult to provide housing on public sector initiatives as it involves funding, land acquisition, takes long time. By providing infrastructure and services, general people can be enabled to build their own houses.	
Policy House/2: The land owners of housing area can be involved in a participatory development technique where Pourashava will provide infrastructure and the cost will be shared by land owners.	✓ Ministry of LGRD ✓ Sharishabari Pourashava

8.1.4 Social Amenities and Community Facilities

Social amenities and community facilities include, education facilities, health facilities, open space recreation facilities, like, park and play ground, amusement park, community centre. For comfortable and healthy urban living these facilities are the fundamentals. Since these are social services, they must be provided by the public sector agencies as public goods. For education and health facilities national government has policies and there are separate ministries and their agencies to execute the policies through programmes and projects. There are also upazila level offices of the concerned agencies to take care of the national education and health policies and programmes execution. For providing amenities like, park and play ground, community centre the responsibility lies with the Pourashava.

For park and playground the Pourashava may secure local khas land. The open space recreation is difficult to provide as population expands and land price goes higher. Once time is lost vacant lands are also lost. Amid soaring land price and absence of vacant land, it becomes extremely difficult to provide open space recreation. So, it is better to secure vacant lands for open space before density of population increases and land becomes scarce. For community centre intensive use of land should be made by making multiple use of same space. For example, providing community centre, ward commissioner's office, clinic or any other use in the same building.

Strategy:

- Exploring khas/ public land within Pourashava and catching the unused/ vacant land for providing amenities before density of population increases and land becomes scarce and dear.

Policy:

Item	Executing Agency
Policy-Amenity/1: Procurement of khas and other public land for park, playfield, community centre.	✓ Ministry of LGRD &C ✓ Sharishabari Pourashava
Justification: Since above facilities are non-revenue earning, they should be procured at least cost.	
Policy-Amenity/2: Procure land for open space facilities as quick as possible, because when land value will be higher cost of providing the facilities will also be very high. Besides, with the growth of population vacant land will disappear gradually, so no land will be available at strategic locations for providing open space facilities.	✓ Ministry of LGRD &C ✓ Sharishabari Pourashava

8.1.5 Tourism and Recreational Facilities

Sharishabari Pourashava is lagging behind the sites of historical importance or recreational facilities to attract the tourists from different places of Sharishabari Upazila and the surrounding areas. However, the suitable location of the Pourashava in regional transport network connecting both the Jamalpur, Sherpur and Mymensingh district headquarters make it strategically important to attract tourists from the neighbouring and outlying areas. Following strategy and the relevant policies may be taken for improvement of tourism sector and providing recreational facilities in the Sharishabari town.

Strategy:

- Enhance the tourism and recreational facilities through provision of hotel/motel facilities, improvement of transport and communication facilities, ensuring public safety and security, establishment of tourism centre equipped and provided with trained work force and development of new tourist/picnic spot.

Policy:

Item	Executing Agency
Policy-Tourism/1: Improvement of road network and introduction of comfortable and convenient bus service.	✓ RHD, LGED, BRTC ✓ Sharishabari Pourashava
Justification: This will encourage and attract the tourists to come into the Pourashava and thereby visit the important sites in and around the Porashava	
Policy-Tourism/2: Setting up and develop tourist resort provided with proper landscaping and recreational facilities, rest house, hotels and motels	✓ Bangladesh Parjatan Corporation ✓ Sharishabari Pourashava
Justification: It will create interest in tourism among the people	
Policy-Tourism/3: Ensuring security of both life and assets of the tourists	✓ Sharishabari Thana ✓ Sharishabari Pourashava
Justification: The tourists will be assured of their life and belongings in visiting to the Pourashava area	

8.1.6 Safety and Security

Safety and security is a fundamental right of all citizens of Bangladesh as per provision of the constitution. Bangladesh Government has the responsibility to ensure safety and security to all the citizens. However, having conformed to the constitutional provision there may be certain strategy and policy prescription in the structure plan to ensure safety and security to the Pourashava dwellers.

Strategy:

• Ensure public safety and security from fire, accident, hijacking and other threats through prevention and rehabilitation measures.

Policy:

Item	Executing Agency
Policy-Safety & and Security/1: Expansion of the existing fire station or construction of a new, larger facility to replace the existing one. If the existing fire station is not enlarged, it would be prudent to find a central location for the new fire station, so that it will be possible to provide a rapid response to incidents.	✓ Department of fire service and civil defense ✓ Ministry of state affairs ✓ Sharishabari Pourashava
Justification: Loss of lives and property of the Pourashava inhabitants will be minimized.	
Policy-Safety & and Security/2: Enhance the capacity of the fire service station with more trained personnel, modern equipment of fire extinguishing and vehicles equipped and ready for firefighting at any time.	✓ Department of fire service and civil defence ✓ Ministry of state affairs ✓ Sharishabari Pourashava
Justification: Loss of lives and property of the Pourashava inhabitants will be minimized.	
Policy-Safety & and Security/3: Reduce the risk of accidents and traffic conflicts at a minimum level by introducing automated signal system, proper traffic sign and symbol, road marking and other traffic management measures. Besides, arrangement of awareness building program may be an effective measures in this respect.	✓ Sharishabari Thana ✓ Police Department (Traffic) ✓ Sharishabari Pourashava
Justification: The probability of accident and the subsequent health hazard, loss of lives will be reduced.	
Policy-Safety & and Security/4: Hijacking, terrorist attack, robbery etc. will be wiped out by strict enforcement of law. The police department will play active role as a constant vigilant. The community leaders may also take actions in this issue.	✓ Sharishabari Thana ✓ Sharishabari Pourashava
Justification: Improved public safety will help to maintain the character of the community	

8.2 PHYSICAL INFRASTRUCTURE SECTOR

8.2.1 Transport

By far, transport is the most important means to revitalize an urban centre. lntra and inter transportation facilities create economies of scale for prospective investors and enables easy and comfortable mobility of the residents. Easy and cheaper transportation of raw materials and finished goods create good investment climate for manufacturing enterprises that lead to development of the service sector firms. New employment generates and the non-basic sector expands leading to thriving urban centre. To create transportation facilities, quality inter-district road network will have to be created that makes movement faster and easy. With good infrastructure transport on the road will be forthcoming. Besides, quality of local roads will have to be upgraded to encourage people live in the town. Once population starts increasing it will expand local consumer market and will attract new investments in consumer goods production.

Strategy:

• Creation of efficient inter-city and intra-city communication for easy transportation of goods and passengers.

Policy:

Item	Executing Authority
Policy-Transport/1: Development of efficient inter-city road network with standard road.	✓ Roads and Highways Department (RHD)
Justification: Increased inter-city mobility will increase business transactions and generate investment and employment.	

Item	Executing Authority
Policy-Transport/2: Promotion of efficient road transport facilities between urban centres.	✓ Bangladesh Road Transport Authority (BRTA) ✓ Deputy Commissioner, Jamalpur
Justification: Not only that communication is needed between urban centres, but to attract transport movement emphasis must be laid on quality of roads built.	
Policy-Transport/3: Development of local road network through participatory approach	✓ Sharishabari Pourashava ✓ Local Government Engineering Department (LGED)
Justification: Development of roads will involve huge cost. Participatory development will enable cost sharing, which will reduce cost of road construction substantially.	

8.2.2 Utility Services

Utility services are the most essential parts of urban life. To make an urban centre livable there must be adequate provision for utility services including water supply, solid waste management, power supply, sanitation and drainage. Except power supply, the rest are the responsibility of Pourashava.

Strategy:

• Attainment of self reliance in revenue collection and adoption of participatory approach to service provision to ensure better services and facilities to the people.

Policy:

Item	Executing Agency
Policy-Utility/1: Exploration of alternative sources of water to ensure sustainable supply.	✓ LGED ✓ Sharishabari Pourashava
Justification: Amid constant rise of urban population, it is time to explore alternative sources of water, like, rain water harvesting and surface water supply.	
Policy-Utility/2: Involve beneficiary participation in solid waste management.	✓ Sharishabari Pourashava ✓ NGO and CBO
Justification: Involvement of beneficiaries in solid waste management will make the operation more effective and reduce financial responsibility of the pourashava.	
Policy-Utility/3: Exploring re-use and recycling of waste materials to extract resources.	✓ Sharishabari Pourashava ✓ NGO and CBO
Justification: Re-use and recycling of waste materials will produce resources and reduce cost of waste management.	
Policy-Utility/4: Publicity on the benefits of hygienic sanitation to motivate people and enable people to have easy access to sanitary materials.	✓ LGED ✓ Sharishabari Pourashava ✓ NGO and CBO
Justification: Motivation will encourage people to adopt healthy sanitation and reduce health risks.	
Policy-Utility/5: Protection of natural drainage system and preparation of hierarchical drainage network.	✓ LGED ✓ Sharishabari Pourashava
Justification: Natural drainage systems are being grabbed and filled up, which increases the risk of water logging. Well planned hierarchical drainage network help smooth drainage of storm and waste water.	

8.2.3 Flood Control and Drainage

The Sharishabari Pourashava is free from internal flood. Flood caused by overflow of river water (river Smaller Jhenai and river Subarno khali)) is called the external flood, while that caused due to lack of the drainage facilities is called the internal flood.

Most of the drains of Sharishabari Pourashava have been constructed in an unplanned way without considering proper outfalls as piece meal, no proper size and gradient has been maintained. Those drains shall have to be excavated further downstream and to be linked

them with the khals so that the runoff can recede freely. The existing two khals shall have to rehabilitate with proper section and gradient so that they can function properly as primary drains that are sufficient to carry the total runoff of the Pourashava. For man-made primary drains, secondary and tertiary drains these khals shall be their outfalls. Besides, there are a number of Beels and Swampy areas which can be utilized as water retention ponds for retaining the storm runoff generated from rainfall and hence reducing the vulnerability to internal flood.

Strategy:

•The Town should be protected from external flood.

Policy:

Item	Executing Authority
Policy–Flood Control/1: Construction of embankment wherever necessary.	✓ BWDB ✓ Ministry of LGRD ✓ Sharishabari Pourashava
Justification: To save the life and property of people during external flood.	
Policy-Utility/5: Protection of natural drainage system and preparation of hierarchical drainage network.	✓ LGED ✓ Sharishabari Pourashava
Justification: Natural drainage systems are being grabbed and filled up, which increases the risk of water logging. Well planned hierarchical drainage network help smooth drainage of storm and waste water	

8.3 ENVIRONMENTAL ISSUES

8.3.1 Natural Resource

The Sharishabari Pourashava is not endowed with many natural resources that can be conserved. Among the meager natural resources it has are, 706 no's of ponds/ditches and 01 natural khals (467.56 m). Out of the natural resources, all khals should be vested to Pourashava by the Ministry of Land for proper maintenance and also for the community interest. This will help prevent encroachment and un-authorized filling of natural khals and beels.

Strategy:

• The river and all khals should be vested with Pourashava for use in community interest.

Policy:

Item	Executing Agency
Policy-Nature/1: The river bank and all khas land within Pourashava must be assessed and Handed over to the Pourashava for use in community interest.	✓ Ministry of Land ✓ Sharishabari Pourashava
Justification: This will prevent misuse of river bank and khas land.	
Policy-Nature/2: The river bank and all khals within Pourashava must be vested with the Pourashava for maintenance and proper use as drainage channel.	✓ Ministry of Land ✓ NGO and CBO
Justification: This will help prevent unauthorized occupation and filling of natural drainage.	

8.3.2 Sanitation

There is no sewerage network in Sharishabari Pourashava, only there are few sanitary latrines with septic tank and soak pit. The Pourashava claims that they have achieved to bring 80% of its population under sanitation coverage. In Sharishabari there are 12,671 households for which there are 5471 toilets with septic tank and soak pit that covers about 43.17% of its population, 22% usages semi pacca latrines, 12% uses kachcha latrines, 3%

open area and 5% hanging latrines. The DPHE and Pourashava are the main implementing agencies for sanitation projects whereas the UNICEF, WORLD VISION, and other NGOs are their co-partners in different sanitation programmes.

Strategy:

- All households of Sharishabari Pourashava should be provided with hygienic sanitation facilities.

Policy:

Item	Executing Agency
Policy-Sanitation/1: Septic tank, soak well and low-cost sanitation to be provided.	✓ Ministry of Public Health ✓ Sharishabari Pourashava
Justification: This will provide a proper hygienic sanitation of Sharishabari Pourashava.	
Policy-Sanitation/2: All the households are to be facilitates with sanitation facilities.	✓ DPHE ✓ NGO and UNICEF, WORLD VISION, BRAC, Proshika, etc.
Justification: This will help the deprived households.	

8.3.3 Hazard

In Sharishabari Pourashava natural hazards can be identified into storm, cyclone, nor'wester, tornado, flood, earth quake etc. The frequency of the Norwesters is maximum in April, whereas there are a few in May and minimum in March. The Norwesters and Tornadoes cause uproot trees, telephone and electricity lines, loss of human life and biodiversity, injury of life, damage and destruction of property, damage of cash crops, disruption in lifestyle, damage to essential services, and national economic loss.

From rainfall data of Sharishabari from year 1988 to 2007, the calculated mean annual rainfall stands 2018.14 mm. Every year the Sharishabari Pourashava is either partly or fully inundated by flood. The flood water comes from upstream regions through the Smaller Jhenai River and Subarno khali River. The heavy sediment load that carried from upstream by Smaller Jhenai River and Subarno khali araiver during monsoon enters in flood plain along with flood water.

Strategy:

- All preventive measures and pre-disaster preparedness, rescue & evacuation operation during disaster and post-disaster relief & rehabilitation are to be adopted.

Policy:

Item	Executing Agency
Policy-Hazard/1: Natural khals and river are to be preserved as a discharging point (outfall) of drainage water and necessary embankment to be constructed.	✓ BWDB, LGED ✓ Sharishabari Pourashava
Justification: This will reduce flood water and facilitate the discharging process.	
Policy-Hazard/2: All physical structures (including houses) should be designed in such a way so that it can resist/prevent any natural hazard.	✓ Sharishabari Pourashava
Justification: Structures with raised plinth level and earthquake resistant design can reduce loss of human life, damage and destruction of property.	
Policy-Hazard/3: Establishment of new flood shelter and develop the educational institutions as a place of shelter during devastating flood hazard.	✓ Ministry of Education ✓ Disaster Management Bureau ✓ Sharishabari Pourashava
Justification: This will reduce the loss of lives and property caused by flood.	
Policy-Hazard/4: Provision of rescue and evacuation operation during severe flood	✓ Bangladesh Army ✓ Fire service and civil defense ✓ Police department ✓ Sharishabari Pourashava
Justification: This will reduce the loss of lives and property caused by flood.	

Item	Executing Agency
Policy-Hazard/5: Arrangement of post disaster relief and rehabilitation program will be undertaken	✓ Disaster Management Bureau ✓ Ministry of food and disaster management ✓ Sharishabari Pourashava
Justification: The flood affected people will be able to overcome from the hazard within very short time.	

8.3.4 Environmental Aspects (Air, Water, Soil, etc. Quality)

A review of ambient environmental trends in Bangladesh showed that suspended particulate matter exceeded ambient standards in all major cities in Bangladesh. The suspended particulate matter problem is most acute in the highly populated and industrial areas. The major sources of suspended particulate matter are re-suspended road dusts (mostly coarse particles from construction activities), vehicular emissions (mostly fine pnb 0.3articles) and industrial sources like brick kiln and cement factories. Fortunately those are very minor scale in Sharishabari Pourashava.

Protection and preservation of the natural environment is essential for sustainable development. Given that most of the country's environmental resources are linked to water resources, it is vital that the continued development and management of the nation's water resources should include the protection, restoration, and preservation of the environment and its bio-diversity including wetlands, mangrove and other national forests, endangered species, and the water quality. Accordingly, water resource management actions will take care to avoid or minimize environmental damages.

The soil consists of active natural levee, flood flain, sand bar, point bar sediments composed of naturally low to medium compact sandy silt, sandy clay, organic clay, loose sand , depression and abandoned channel sediments.

Strategy:

- The environment comprising air, water and land should be enhanced and promoted.

Policy:

Item	Executing Agency
Policy-Air/1: Air pollution should be reduced through banning of two-stroke three wheelers, introduction of high-rise chimneys in the industries	✓ BRTA, DoE ✓ Sharishabari Pourashava
Justification: This will reduce the amount of CO, CO_2, SPM, lead and other heavy metals, harmful chemicals which are injurious to health.	
Policy-Water/2: Protection, restoration and preservation of water resources and reduction of pollution should be done.	✓ DoE, DPHE, BWDB ✓ Sharishabari Pourashava
Justification: This will restrain the natural drainage system, ecology, biodiversity of the Pourashava and will ensure clean and livable environment.	
Policy-Soil/3: Soil pollution should be minimized though reduction of chemical fertilizer, synthetic pesticides and introduction of rotations in the farming system.	✓ Department of Agricultural Extention, Upazila Parishad ✓ Sharishabari Pourashava
Justification: This will enhance soil fertility resulting high crop yield and reduce water pollution.	

CHAPTER- 9: IMPLEMENTATION ISSUES

9.1 INSTITUTIONAL CAPACITY BUILDING OF THE POURASHAVA

In order to implement the Structure Plan of Sharishabari Pourashava the Institutional Capacity of the Pourashava Authority should be strengthened so that the Pourashava can be developed in a planned manner following the proposed strategies, policies and guidlines outlined in the Structure Plan. The prevailing capacity of the Pourashava Authority is not sufficient to implement the plan and even to continue the customary practices of the Pourashava. Institutional capacity building should be enhanced in respect of legal, financial, staffing and instrumental, which is illustrated as follows.

Legal: The Local Government (Pourashava) Act, 2009 is legal basis to guide and control the growth and development of the Pourashava. The legal power which laid down in the Local Government (Pourashava) Act, 2009 and also mentioned in different Acts, Codes and Policies are as follows:

- Building Construction Act-1952, 2004
- Bangladesh National Building Code-1993
- Building Construction Code (BNBC)-2006
- Pourashava Ordinance-2008
- Environmental policy-1992
- Bangladesh National Housing Policy-1993
- National Land Transport Policy-2004

The Pouarashava Authority should exercise the principles, policies and guidelines of the Local Government (Pourashava) Act, 2009 conforming to the Structure Plan policies, strategies and guidelines. The Pourashava Authority should be given the legal power of appointing one executive magistrate enforced with a number of police staff by the government of Bangladesh. It will help to take legal action at the field level to implement the policies of Structure Plan. This legal and law-enforcing team will work under the guidance of Town Planning Unit headed by a Town Planner. In the absence of Magistrate appointed in the Pourashava, the Assistant Commissioner (Land) posted in the Upazila administration can be hired to perform this job when required.

Financial: Proper Implementation of Structure Plan requires a strong financial base of the Pourashava of its own. Financial capacity of Sharishabari Pourashava is not solvent therefore the Pourashava is dependable on other resources i.e. mainly on Government Grant. Economic activity should be increased so that the Pourashava can run by its own resources and become a self-sustained organization. Following measures should be taken to enhance the financial capacity of the Pourashava:

- Enhance the efficiency of revenue collection system to gain 100% achievement on collection.
- Provide community facilities through construction of modern markets, community centers, parks etc. as per structure plan policies and land use proposals which will be a major source of revenue collection.
- Increase the fees on existing licenses and issue new license.
- Impose penalties and tolls for violation laws, rules and acts in the Pourashava area under the jurisdiction of the Pourashava Authority.
- Develop a solid waste collection system and impose tax on it.

Staffing: Sharishabari is a 'B' class Pourashava. For the 'B'class Pourashava Government approved an organogram/manpower requirement. If we compare the existing man power with the approved organogram we find that there is a huge gap between the two. Many positions have been vacant since the inception of Pourashava. Out of total 89 numbers of allocated positions only 26 numbers are filled up. However, strengthening of the Town Planning Unit is a pre-requisite for successful implementation of the Structure Plan. Following organogram of the Town Planning Unit is proposed for staffing capacity building of this Unit.

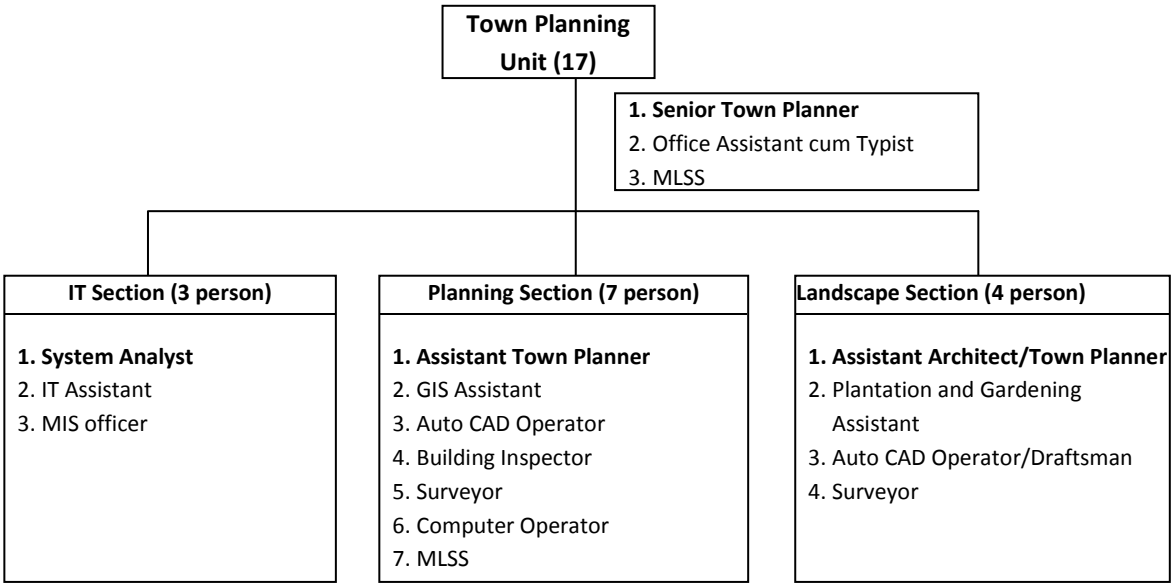


Figure 9.1: Proposed Organogram of the Town Planning Unit

Instrumental capacity: Instrumental capacity of Sharishabari is very weak. There are only a limited number of instruments in the Pourashava. Modern technological equipments and instruments are required for proper functioning of the Pourashava as well as implementation of the Structure Plan. The existing and required number of instruments are listed **Table-9.1** as follows.

Table-9.1: Proposed Instrumental capacity of Sharishabari Pourashava

Sl.No.	Type of Instrument	Number (Existing)	Number
1.	Jeep	-	1
2.	Road Roller-10 Tonnes	1	1
3.	Concrete Mixer Machine	-	1
4.	Truck for garbage collection and disposal-3 Tonnes	1	1
5.	Leveling Machine	-	1
6.	Van (3 wheel) for garbage collection and disposal	6	-
7.	Hand trolley	10	-
8.	Motor Cycle	2	3
9.	Bicycle	-	4
10.	Photocopier	-	3
11.	Type-writer Machine	-	1
12.	Computer	3	2
13.	Printer	2	2
14	Plotter	-	1

***Source**: Sharishabari Pourashava, 2011*

Monitoring, Evaluation and Updating:
Implementation of the Structure Plan requires thorough monitoring and evaluation of the policies, strategies and plan proposals. It should be done by forming a Monitoring and Evaluation Committee (MEC) that will monitor and evaluate the short-term (Ward Action Plan) and medium-term (Urban Area Plan) proposals whether they are violating or conforming the structure plan policies. The committee will do this job from time to time and call for a meeting at least two times a year for overall evaluation of the Plan. The Chairman of this committee can arrange extra-ordinary meeting during any emergency situation for settlement of any disputes regarding implementation of the plan. The MEC headed by the Mayor of the Pourashava should be formed as follows (**Table-9.2**):

Table-9.2: Proposed Structure of the Monitoring & Evaluation Committee (MEC)

Sl. No.	Representatives of Different Organizations	Position
1.	Mayor of Nalitabari Pourashava	Chairman
2.	MP of the corresponding area	Executive Member
3.	Upazila Chairman	Executive Member
4.	Upazila Nirbahi Officer (UNO)	Executive Member
5.	Executive Engineer, BWDB, Sherpur	Member
6.	Upazila Engineer, LGED	Member
7.	Assistant Engineer, DPHE, Nalitabari	Member
8.	Assistant Engineer, RHD	Member
9.	All Councilors of Nalitabari Pourashava	Member

Sharishabari Pourashava Authority is the sole agency for implementation of the Structure Plan. Thus the proposed Town Planning Unit of the Pourashava will remain transparent and accountable to the MEC for any planning practice including land use permit procedure, undertaking development schemes, projects leading to implementation of the Structure Plan.

The Structure Plan is not a blueprint of proposals pre-defined for the future development. This is flexible enough to adapt the changing circumstances. The Structure Plan policies, strategies and guidelines should be reviewed and updated at 5 years interval of the plan period. The aim of the review will be to take an overview on the implementation of plan provisions, changing physical growth pattern, infrastructure development, the trend of all categories of public and private physical development including growth direction, adherence to Structure Plan provisions by public and private developments. Necessary changes in the Structure Plan should be attempted in the light of the findings of the review of existing situation. However, apart from periodic review any part of the plan can also be amended and updated if necessity arises for the sake of community's interest.

9.2 RESOURCE MOBILIZATION

Sharishabari Pourashava has been experienced deficit budget. So it is needed to develop an annual surplus of revenues over expenditures. This surplus is then available to cover payments to investors that provide new long term financing to the Pourashava.

There are only three ways that a Sharishabari Pourashava can reliably develop a surplus that it can commit to long-term debt repayment:

- can increase own source revenues.
- can reduce expenditures.
- can develop new sources of revenue.

It has been observed that it is easiest to undertake option 1, harder to use option 2, and hardest to do option 3.

Sharishabari Pourashava derived their revenues from two principal sources: A) Government grant (funds transfer) and B) funds collected and retained in the locality itself. Funds coming from Government grant are referred to as transfer payments. Transfer payments may vary substantially from year to year. Regardless of the characteristics, transfer payments are not "own source revenue" because it is not under the direct control of the Sharishabari Pourshava.

In Sharishabari Pourashava it is find that own source revenues are a small (or very small) portion of Pourashava's total revenue.

This can be due to a variety of factors including restrictions imposed from government on the types of revenue sources available to the Pourashava and the rates that can be charged.

The Sharishabari Pourashava is usually over-dependent on Government grant (transfer payments) and less able to exercise decentralized leadership for development.

The revenue sources of Sharishabari are mainly of three types: For example- 1) taxes 2) fees and 3) user charges.

In order to mobilize the resource of Sharishabari Pourashava town the revenue should be increased and a surplus to be made.

9.3 CONCLUDING REMARKS

The background information together with vision and objectives of Structure Plan has been pointed out. Existing trend of growth, Development problems, Critical planning issues has also been focused. A growth projection up to 2031 has been made. Development related policies, regulations and sectoral development policies also discussed. At the time of preparation of Urban Area Plan and Ward Action Plan, the policy and overall guidance as stated in the Structure Plan should be followed.

PART B: URBAN AREA PLAN

INTRODUCTION

The second tier of UTIDP master Plan package of Sharishabari Pourashava is the Urban Area Plan followed by the Structure Plan. The Urban Area Plan (UAP) consists of the following plans: Land Use Plan, Transportation and Traffic Management Plan and Drainage & Environmental Management Plan and Plan for Urban Services. Part-B of the Report entails the objectives, purpose and the role of Urban Area Plan and its relation with Structure Plan and the planning standard. The development plan proposals and land use zoning provisions are envisaged in The Urban Area Plan in the light of policy prescriptions of Structure Plan for a medium term (2011-2021).

CONTENT AND FORM OF URBAN AREA PLAN

The Urban Area Plan covers existing urban area of Sharishabari Pourashava and has a ten years time-frame from 2010 to 2021. It comprises Part-B of the explanatory report supported by necessary maps.

The Urban Area Plan is concerned only with the area where the greatest change is expected in the medium term (10 years). For this area, it indicates how the Structure Plan policies might be pursued whilst also giving greater precision to the spatial dimension of the policies.

The outline of the Urban Area Plan gives guidance to the Pourashava as to how it can develop the roles i.e. to promote development, to co-ordinate development and to control development The Urban Area Plan has been divided into four main parts. These are preceded by four introductory chapters which explain the scope of the report and provide background to the Urban Area Plan including its relationship with the Structure Plan.

Part-B of the report starts with the Land use Plan. The Land use Plan identifies approaches of planning, existing and projected land use and proposed land use. Requirement of land for different purposes, land use zoning and plan implementation strategies are also included here.

The Transportation and Traffic Management Plan includes existing conditions of transportation facilities, intensity of traffic volume, degree of traffic congestion and delay, analysis of existing deficiencies, travel demand forecasting for next 20 years, future traffic volume and level of services and transportation development plan. Moreover, transportation system management strategy and plan implementation strategies are also presented in this plan.

Drainage and Environmental Management Plan is the third chapter of the Urban Area Plan. The chapter again subdivided into two parts - Drainage Plan and Environment Management Plan. Existing drainage network, land level and topography, plan for drainage management and flood control and plan implementation strategies are the components of the drainage plan. Existing environmental condition, solid waste and garbage disposal, environment pollution, water logging, natural calamities and localized hazards, plan for environmental management and pollution control and plan implementation strategies are the key issues of the environment management plan.

Fourth part of this report is Plan for Urban Services. Existing condition and demand of the Services, projection on existing and proposed Urban Services, Proposals for Urban Services and Implementation, monitoring and evaluation of the Urban Services Plan are the key issues of this part.

AREA OF URBAN AREA PLAN

The Pourashava area of Sharishabari as per gazette notification is considered as the area of Urban Area Plan. This area is the same as the Structure Plan area or Planning area. The Urban Area Plan of Sharishabari Pourashava covers an area of 5176.72 acres (As per GIS Database) that is 20.95 sq.km. The total pourashava area has been regarded as the area of Urban Area Plan since the Pourashava Authority has the responsibility of providing basic urban services and facilities in the entire jurisdiction area.

FUNCTION OF URBAN AREA PLAN

Urban Area Plan is prepared for managing and promoting development over medium terms following the broad guidelines set by the longer term Structure Plan. It shows the urban structure of sub- system in space over the medium term and identifies broad programs of direct action especially related to infrastructure development, institutional issues as well as broad financing strategies. The plan may also outline more specific area-wise development policies to guide development over the medium terms, one major objective of preparing Urban Area Plan is the consolidation of development activities by various agencies in areas that have strongest potential for growth in the medium term and can accommodate the anticipated volume of growth. Other purpose of preparing Urban Area Plan is to facilitate the development control function. It shows the broad land use zones on a more detailed scale of maps as derived from Structure Plan.

DURATION AND AMENDMENT OF URBAN AREA PLAN

The duration of Urban Area Plan (Land Use Plan, Transportation and Traffic Management Plan, Drainage and Environmental Management Plan and Urban Services Plan) of Sharishabari Pourashava will be 10 years and that will remain valid till 2021 AD. A new Urban Area Plan will replace the current plan after its validity to be expired in 2021. The next plan will remain valid for rest of Structure Plan period. Mid term revision of the plan should be carried out during the 4th year (2015) of the plan period. However, any amendment of the plan can be carried out any time on public interest.

CHAPTER-1: LAND USE PLAN

1.1 INTRODUCTION

This is the first chapter of Part- B that starts with Land Use Plan of Urban Area Plan. Land use plan covers the existing and projected land uses of urban area of the Pourashava. It lays down the land use policies, guidelines and proposals including land use zoning plan. It also states the plan implementation strategy at the town level.

The land use plan, a major component of Urban Area Plan, is an official document with legal backing, consisting of a report and necessary maps prepared by the consultant, which sets forth major policies to guide the physical development of the town. The land use plan is prepared by the consultant for a specified time period, following the full development of Pourashava considering the existing land uses and future demand of the area and population. It will interpret the Structure Plan proposal and policy. The future land uses, zoning, land development regulations for the future probable population have been indicated through land use plan.

1.1.1 Goals and Objectives

The broad goals of land use plan are to create an urban space for habitation with comfort, a livable urban environment for economic flourishment and social cohesion and to ensure the optimum and conforming use of land in the built-up areas and its immediate surroundings, potential for development. Urban Area Plan aimed at interpreting the long-term broad policies and guidelines of Structure Plan over the medium term (10 years) is composed four components, as such Land Use Plan, Traffic and Transportation Management Plan, Drainage and Environmental management Plan and Plan for Urban Services. Thus, Land Use Plan is one of the major components of UAP providing land use policies, strategies and guidelines in the urban growth areas of Sharishabari Pourashava. Major objectives of Land Use Plan of Sharishabari Pourashava can be summarized as follows:

- Consolidate the Core Area to accommodate most urban growth within next 10 years (2011-2021).
- Promote mixed-use development (mainly Residential-Commercial) in the built-up area permitting compatible uses.
- Develop the central area as a commercial hub for higher order commercial activities.
- Promote several growth centres for the least developed areas to meet only the local needs.
- Locate the industrial area apart from residential areas with better transportation access in order to ensure better living environment.
- Encourage new development to be innovative and to protect natural and cultural resources.
- Where possible, promote land preservation through conservation easements and sound development practices.
- Encourage the land best suited for agriculture to remain agricultural
- Encourage more dense residential and commercial development in the existing built-up areas.

1.1.2 Methodology and Approach to Planning

Landuse Planning starts with the collection of information on existing landuse derived from landuse survey indicating the use of each plot by its functional quality such as residential,

industrial, commercial, health service etc.Total Station and DGPS survey technique was used for land use survey.

Spatial and attribute data of all existing landuses from landuse survey was processed and stored under a comprehensive GIS database component. GIS software such as PC ArcView and PC ArcInfo (Version as suggested in the ToR) has been used for processing of physical feature survey data. Data was stored in WGS-1984 format (latitude, longitude, ellipsoidal height in meter) and later on, it was projected and stored in Lambert Conformal Conic (LCC) projection system.

The survey team carried out the land use survey simultaneously with topographic and physical feature surveys. Most land use information were collected during physical feature survey through personal inquiry of the building/space users. Land use information was extracted from survey according to use of land by its functional activity such as residential, commercial, industrial etc. Each survey feature was recorded with individual ID or Code. A detailed land use category with their user ID selected by the coordination of different experts of consulting groups and approved by LGED was followed for land use survey. The land use features were identified, classified and separated in different layers during data processing stage. The existing land use map was prepared indicating the broad categories of land uses on the RS Mouza map at a scale of 1:1980 as per ToR.

Based on the existing landuse map, the landuse plan was prepared according to the guidelines given by the ToR. The planning starts from formulation of strategies to issues like functional quality (meeting of space requirements for different functions, relation between functions etc., aesthetic quality, flexibility, deviation, public agency support etc.) for plan implementation. The planning in detail also covers the delineated existing urban area and the new urban area.

The formulation of Landuse Plan involves the following systematic approaches:

At the First phase of the planning process, review of previous plans and higher-level plans concerned with the development of Sharishabari Pourashava area was tried to find. But no higher level plan was found for the Pourashava.

The Second phase of the process comprises formulation of planning principles and standards addressing the landuse, infrastructures and utility services. This is an important stage in design process, crucial to the final functional quality of the result and its efficiency and cost effectiveness. These planning principles and standards address two distinct situations: existing urban area and new urban areas.

Population projection based on analysis of the growth trend from previous Censuses (1981-2001) was performed in the Third phase. In projecting the future population of the target years at two distinct phases (2011-2021 and 2021-2031), Compound rate of growth method was adopted assuming a growth rate from past trends.

At the Fourth phase, land requirements for each specific land uses was determined based on projected population for a cycle of 10 years upto 2031 and the recommended Planning Standards approved by the PMO of LGED. After estimating land requirements, tentative allocation of specific land use proposals was made based on land suitability analysis and was drafted on base map.

The Fifth phase of the planning process involves conducting public consultation meeting with local communities / beneficiaries and other agencies / interest groups (stakeholders). Views and ideas regarding proposed uses resulting from the consultation meeting held on 19/02/2012 among all the stakeholders involved with the development of the Pourashava area was then summarized and incorporated in this report as an explanatory report as well as a fourth overlay on the base map.

At this stage, a land suitability analysis was performed on a qualitative basis through field visits, consultation meeting, analysis of topographic map, physical feature map and soil condition to justify the suitability of land for a specific use. Land allocation is a process which depends on the demand and supply of land. Whereas land suitability yields information on supply, land requirements indicate demand of land available for development. Final land allocation or land use recommendation for competing uses was then shown on proposed land use plan map and described in detail in the explanatory report.

The consultants formulated an integrated Lanuse Plan at the Sixth phase. The integrated Landuse Plan was formulated through the consolidation of inputs from different sectors, local leaders, interest groups, etc. At the same time assessment was made on future economic, social and environmental impact of the integrated plan and its financial viability.

Finally, the development proposals of the plan have been prioritized and phasing out.

1.1.3 Delineation of Planning Areas

In the preparation of Master Plan the ToR assigns the delineation of Planning Area. During the survey work, planning area has been delineated. In the delineation of planning area, the area of pourashava as declared in 31st December 1990 by gazette notification was considered. Later the Pourashaa proposed to include part of neighbouring mouza with the Pourashava.The total area covered 20.95 square kilometers (as per our GIS measurement). It included 21 Mouzas with full and partial plot numbers.

Once the pourashava area as per gazette notification was determined, the planning area was then delineated based on systematic procedure.

At the next step, the trend of growth of the pourashava area for the last 30 years was determined along with assessing the potentiality of the adjoining area. Therefore, based on the existing area of pourashava and assessing the trend of growth and potentiality through intensive survey, the necessity for probable extension of the existing area was determined in consultation with the representatives of the Pourashava. The planning area discussed in the pourashava monthly meeting held on 12/05/2008. It discussed in the meeting that the existing area of the Pourashava covers a huge area of 20.95 sq.km, and most of which is agricultural and rural in nature. As, this area is sufficient enough to accommodate the future growth for the next 20 years and the adjoining area is not so potential, it was decided in the meeting led by the Mayor to continue the prevailing area of the Pourashava without any extension.

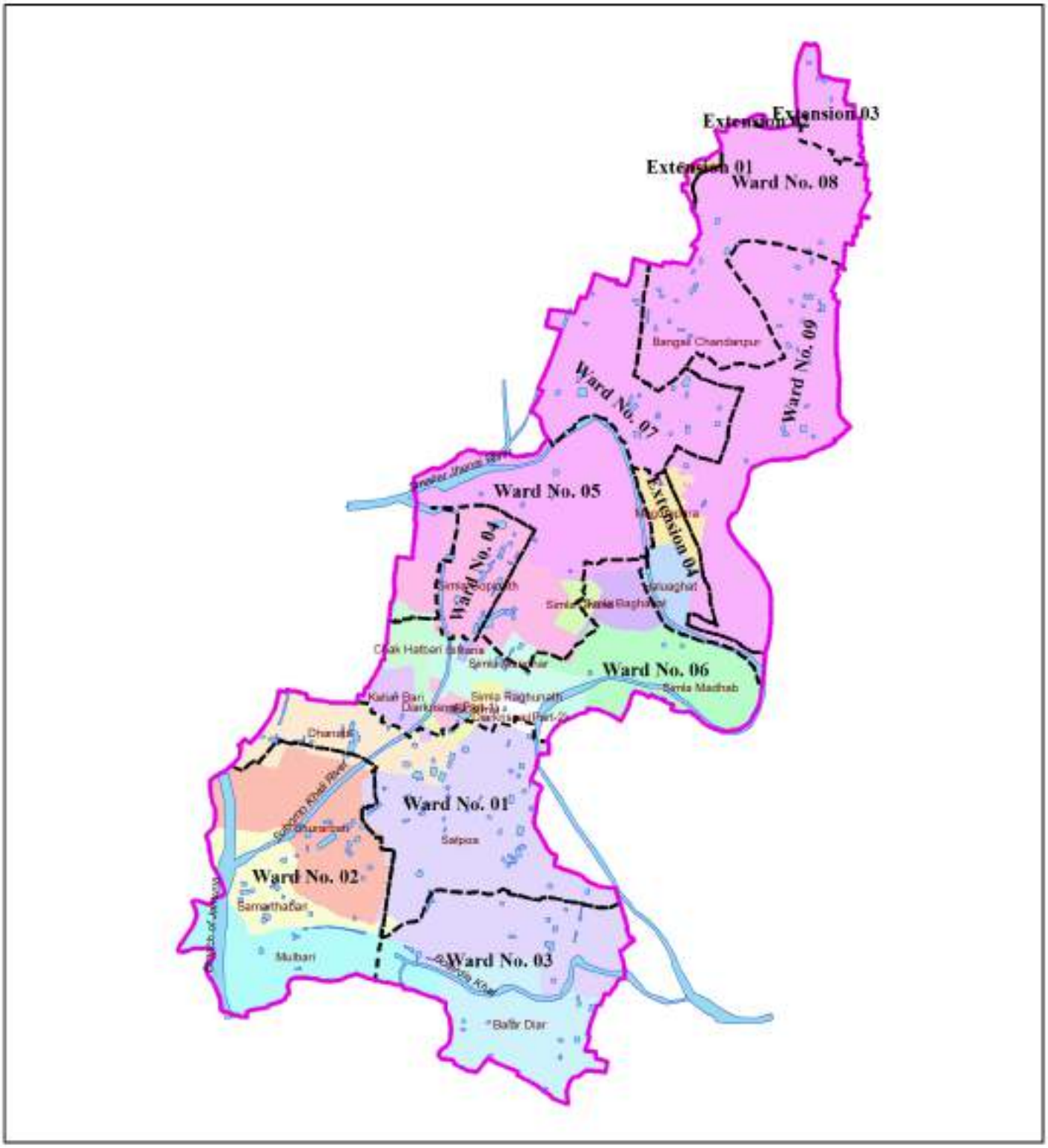
Thus the existing Pourashava area of Sharishabari considered as the Planning area in the formulation of Structure Plan, Urban Area Plan and Ward Action Plan. The Pourashava area and Planning area has been finalized as same as 20.95 sq.km. There is no difference between the Pourashava area and Planning area. The delineation of planning area supported by the minutes of the Pourashava meeting and which shown in **Map-1.1**.

1.1.4 Content and Form of Landuse Plan

The Landuse Plan covers existing urban areas of Sharishabari Pourashava and its immediate surroundings and has a ten years time - frame from 2011 to 2021. It also comprises a report and a map. The planning map depicts the proposed land use, zoning, infrastructure development and other development proposals. Report elaborates all the proposals made in the plan including rules, regulations and recommendations for implementation of the plan.

Part-B of the report starts with the Landuse Plan. The Landuse Plan identifies approaches of planning, existing and projected landuse and proposed landuse. Requirement of land for different purposes, landuse zoning and plan implementation strategies are also included here.

Map-1.1: Delineation of Planning Area

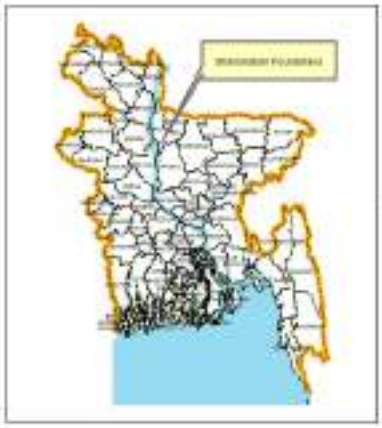


Legend

- Planning Area Boundary
- Ward Boundary
- Waterbody

Mouza

- Balar Diar
- Bangali Chandanpur
- Bhurarbari
- Bil Simla
- Biltaria
- Chak Hatbari
- Dhanata
- Diarkrisnat(Part-1)
- Diarkrisnat(Part-2)
- Haluaghat
- Katiar Bari
- Magurapara
- Mulbari
- Rulbaria
- Samarthabari
- Satpos
- Simla Raghabari
- Simla Chand
- Simla Gopinath
- Simla Madhab
- Simla Manohar
- Simla Raghunath



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1.2 EXISTING AND PROJECTED LAND USE

1.2.1 Introduction

The spatial structure and land use pattern of project area have been mostly the result of natural growth. Here although a development took place during the last decade yet the project area is still predominantly agricultural in character. Urban growth is found in mainly souh of River smaller Jhenai and both the sides of railway line of the project area. Sharishabari pourashava. Residential rural settlements are also found along the major roads and in almost scattered manner in the peripheral area. The residential land use covers the major portion (33.22%) of the project area while overwhelming portion of land of the project area is under agricultural use (62.37%). The roads inside the project area are quite narrow. The shops and different commercial establishments followed along internal roads. The broad categories of existing land uses of the project area are presented in **Table-1.1** and shown in **Map-1.2**.

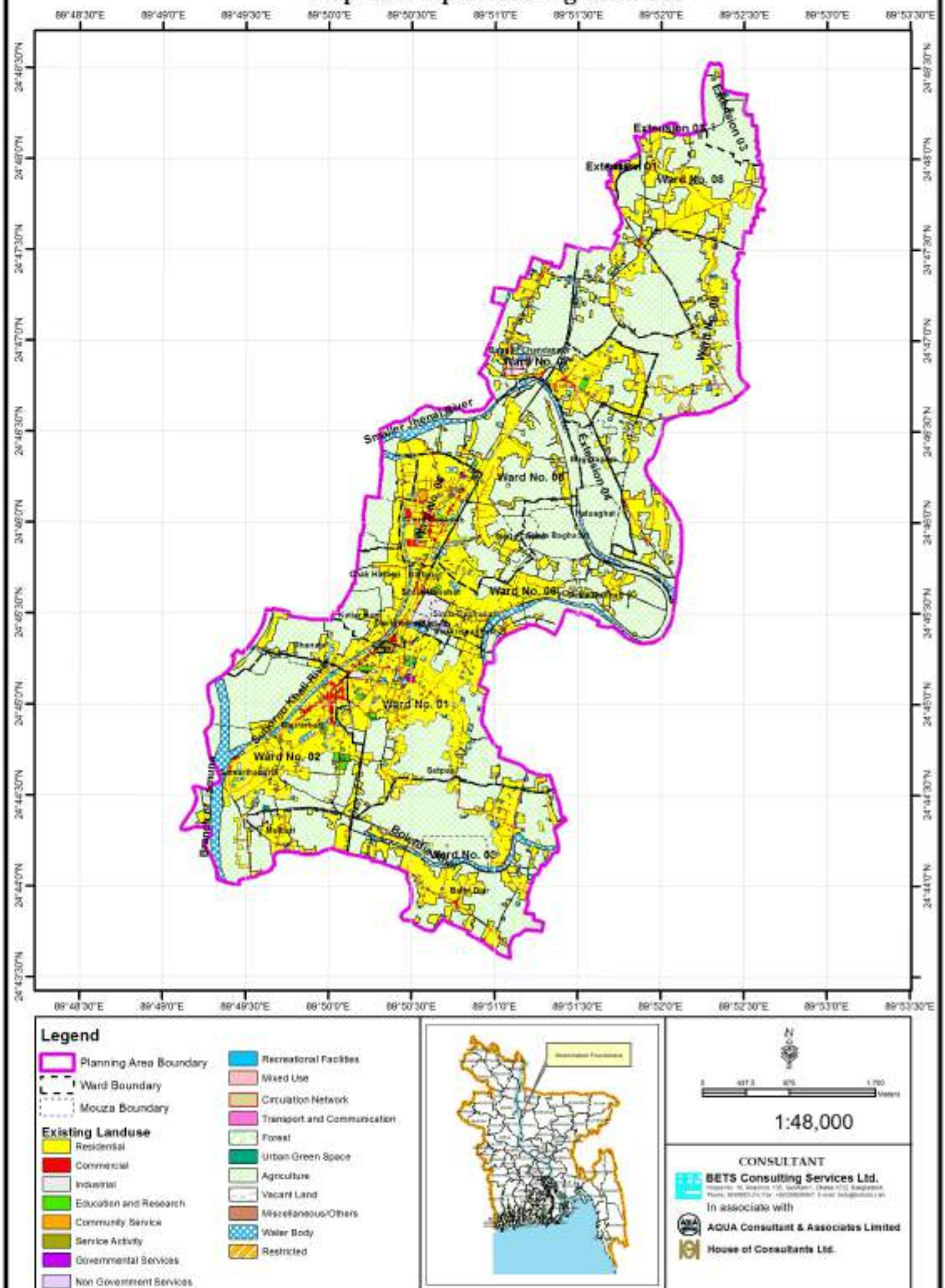
Table-1.1: Existing Landuse of Sharishabari Pourashava

SL. No.	Land Use	Area in Acres	% of Area
1	Agricultural	3024.51	58.42
2	Circulation Network	102.88	1.99
3	Commercial Activity	30.18	0.58
4	Community Service	8.26	0.16
5	Educational Facility	27.41	0.53
6	Forest Area	3.92	0.08
7	Governmental Services	47.20	0.91
8	Manufacturing and Processing Activity	1.33	0.03
9	Miscellaneous	0.34	0.01
10	Mixed Use	0.50	0.01
11	Non Government Services	1610.14	31.10
12	Recreational Facilities	6.62	0.13
13	Residential	0.42	0.01
14	Restricted Area	3.93	0.08
15	Service Activity	6.47	0.13
16	Transport & Communication	-	0
17	Urban Green Space	302.89	5.85
18	Vacant Land	-	-
19	Water Body	-	0
Total		**5176.72**	**100**

***Source**: Land Use Survey by BETS, 2008-2009*

The most driving factors of landuse change is the income of the people, government policy, new establishment like industry, higher level educational institute, construction of road and embankment and availability of services. The Pourashava was developed as a growth centre long before, then a police station. In the year 1990, it was notified as Pourashava. Radical change of landuses has been found after declaration of Pourashava. Previously, agricultural domination was the key landuse. During the last ten years, the landuse scenarios remain same.

Map-1.2: Map of Existing Land Use



1.2.2 Analysis and projection on existing and proposed land uses.

Sharishabari Pourashava has not been evolved as an ideal township. The Pourashava was declared with an area of vast agricultural land focusing built-up land in the Upazila Headquarters only. Growth of population is the natural trend and at the same time, expansion of non-agricultural use on agriculture land is also natural tendency of the people. This unplanned, scattered and horizontal development will be controlled by promoting certain policy prescriptions and proper planning proposals emphasizing compact township concept. Vertical development can also be encouraged and introduced in order to optimize urban land resource and minimize the misuse of valuable agricultural land.

Sharishabari Pourashava exhibits both rural and urban characteristics. Rural characteristics relate to the drivers of the economy through agricultural linkages. Urban characteristics may relate to the role of light industry, small business and service activity in the economy but are more often linked to living conditions as a function of density and changing social systems as a reflection of increased diversity. Agro-based economy is proposed to retain in the landuse plan and a certain percentage of existing agricultural land is proposed to continue farming practice. However, provisions for encouraging non-agricultural activity are made to enhance the living standard of the pourashava inhabitants as well as to raise the economic base of the Pourashava as a whole. General industrial zone, heavy industrial zone and commercial zone of a considerable amount of land are proposed to allocate in the landuse plan with a view to accelerate non-agricultural activity.

Proposed landuse of Sharishabari Pourashava is projected based on the projected population and Planning Standards for UTIDP provided by LGED after finalization through several consultation meeting with the consultants. Proposed landuse projected for the target year 2021 and 2031. As such, the time - frame of Urban Area Plan is 10 years, 2021 is considered as the target year for implementation of the landuse plan. Following the planning standard of UTIDP, projected landuse of Sharishabari Pourashava has been calculated and shown in **Table-1.2**.

Table-1.2: Projected Landuse of Sharishabari Pourashava

Facilities	Standard (LGED)	Existing Land of 2011 (acres)	Land Requirement for 2021 (acres)	Additional Requirement (Up to 2021)	Land Requirement for 2031 (acres)	Additional Requirement (Up to 2031)
Residential		**1610.14**	**560.64**	**-**	**600.87**	**-**
General Residential	1.00 acre/ 100 pop.	1610.14	560.64	-	600.87	-
Adminstration		**1.741**	**18**	**16.259**	**18**	**16.259**
Upazila Complex	15 acres/ Upazila HQ	1.213	15.00	13.79	15.00	13.79
Pourashava Office	3 acres/ Upazila HQ	0.528	3.00	2.47	3.00	2.47
Commerce		**30.18**	**67.17**	**36.99**	**71.60**	**41.42**
Wholesale Market	1.00 acre/ 10000 pop.	0	5.61	5.61	6.01	6.01
Retail sale Market	1.00 acre/1000 pop.	30.06	56.06	26.01	60.09	30.03
Neighborhood Market	1.00 acre/ Neighborhood market	0	4.00	4.00	4.00	4.00
Super Market	1.50 acres/ super market	0.1227	1.50	1.38	1.50	1.38
Industry	2.00 acres/ 1000 pop.	**47.2**	**112.13**	**64.93**	**120.17**	**72.97**
Education		**27.41**	**83.49**	**53.72**	**89.12**	**59.36**
Primary School	2.00 acres/ 5000 pop.	6.948	22.43	15.48	24.03	17.09
Secondary School	5.00 acres/ 20000 pop.	7.974	14.02	6.04	15.02	7.05

Facilities	Standard (LGED)	Existing Land of 2011 (acres)	Land Requirement for 2021 (acres)	Additional Requirement (Up to 2021)	Land Requirement for 2031 (acres)	Additional Requirement (Up to 2031)
College	10.00 acres/ 20000 pop.	6.503	28.03	21.53	30.04	23.54
Vocational Institute	5.00 acres/upazila	2.64	5.00	-	5.00	-
Others (Madrasa)	5.00 acres/ 20000 pop.	3.34	14.02	10.68	15.02	11.68
Health Facilities		**4.98**	**21.21**	**16.23**	**22.02**	**17.03**
Upazila Health Complex/ Hospital	10 acres/ Upazila HQ	3.72	10.00	6.28	10.00	6.28
Health Center/ Maternity Clinic	1.00 acre/ 5000 pop.	1.263	11.21	9.95	12.02	10.75
Open Space/ Recreation		**0.51**	**128.94**	**128.38**	**137.69**	**137.07**
Playground	3.00 acres/ 20000 pop.	0	8.41	8.36	9.01	8.90
Park/ Open space	1.00 acre/ 1000 pop.	0.17	56.06	55.89	60.09	59.92
Neighborhood Park	1.00 acre/ 1000 pop.	0	56.06	56.06	60.09	60.09
Stadium	7 acres/upazila HQ	0	7.00	7.00	7.00	7.00
Cinema	0.5 acre/ 20000 pop.	0.3361	1.40	1.07	1.50	1.17
Community Facilities		**8.26**	**15.61**	**9.16**	**16.52**	**9.66**
Mosque/ Temple/ Church	0.50 acre/ 20000 pop.	2.4027	1.40	-	1.50	-
Eidgah	0.50 acre/ 20000 pop.	2.6904	1.40	-	1.50	-
Graveyard	1.00 acre/ 20000 pop.	2.3159	2.80	-	3.00	-
Community Center	1.00 acre/ 20000 pop.	0	2.80	2.80	3.00	3.00
Police Station	3 acres/ Upazila HQ	0.41	3.00	2.59	3.00	2.59
Fire Service Station	1.00 acre/ 20000 pop.	0.411	2.80	2.39	3.00	2.59
Post Office	0.50 acre/ 20000 pop.	0.03	1.40	1.37	1.50	1.47
Utility Services		**0.16**	**20.56**	**20.40**	**21.27**	**21.11**
Telephone/ Telegraph Exchange	0.50 acre/ 20000 pop.	0.07	1.40	1.33	1.50	1.43
Electric sub-station	1.00 acre/ 20000 pop.	0	2.80	2.80	3.00	3.00
Water Supply	1.00 acre/ 20000 pop.	0.09	2.80	2.71	3.00	2.91
Gas	1.00 acre/ 20000 pop.	0	2.80	2.80	3.00	3.00
Waste Disposal Ground	5-10 acre/ Site	0	10.00	10.00	10.00	10.00
Waste Transfer Station	0.25 acre/ Transfer Station	0	0.75	0.75	0.75	0.75
Transportation Services		**0.42**	**5.61**	**5.19**	**6.01**	**5.59**
Bus Terminal	1.00 acre/ 20000 pop.	0	2.80	2.80	3.00	3.00
Truck Terminal	0.50 acre/ 20000 pop.	0	1.40	1.40	1.50	1.50
Tempo Stand	0.25 acre/ 20000 pop.	0.42	0.70	0.28	0.75	0.33
Rickshaw Stand	0.25 acre/ 20000 pop.	0	0.70	0.70	0.75	0.75
Roads	15% of the built-up land	**102.88**	**277.41**	**174.53**	**277.41**	**174.53**
Urban Deferred	10% of the total built-up area	**0**	**184.94**	**184.94**	**184.94**	**184.94**

1.2.3 Summary showing distribution of land for existing and proposed land uses

Residential Land Use

The existing total acreage under residential use has been found to be 1610.14 acres. Residential uses scatteredly distributed all over the Pourashava area and which is 31.10% of total Pourashava area. The projected population of the Pourashava is expected to be

56,064 in the year 2021 and 60,087 in the year 2031. The net density of population is32 persons/acre at present (2011) which is very low compared to the planning standard. If the current trend of population continues, the projected density is anticipated as 40 persons/acre in the year 2021 and 43 persons/acre in 2031 which is sufficient enough to meet the future housing requirements based on planning standard. So it is found that no additional land is required for residential development. The increasing demand of land for residential development is recommended to be met by the densification of existing areas through vertical development and compact township concept to ensure the optimum use of land.

According to the planning standards of UTIDP provided by LGED, the density of population (net density) is recommended to be 50-100 persons/acre for general residential use. The projected residential land is 557.01 for 2021 and 593.11 for 2031. The existing residential area is proposed to be splited into two distinct type of residential uses e.g. Urban Residential Zone (675.23 acre) and Rural Settlement (853.19 acre). A considerable amount of residential land has been designated as mixed use where some other compatible activities (e.g. light commercial, light industrial) are observed and expected to continue.

Commercial Land Use

The commercial activities have been occupied 30.18 acres of land in the project area, which is insufficient covering only about 0.58% of the total land. Considering planning standards and projected population it is notified that 67.17 acres of land is required for commercial development which is 1.29% of the total project area. It includes wholesale market, retail sale market, corner shops, neighborhood market that will accelerate trade and commerce of the Pourashava.

An area of 40.81 acres of land has been newly proposed in addition to the existing commercial land. 3 (three)no's of neighbourhood markets comprising 3.01 acres of land, 1(one) Slaughter House of 0.60, 1(one) wholesale market of 5.15 acres land and 2 (one) Super Markets of 2.06 acres land is proposed as commercial land use. In addition to the development proposals, a number of land parcels having potentiality and requirement to be developed as commercial area have been proposed as commercial land use. Thus as a whole 70.98 acres of land constituting 1.37% of the total area are proposed as commercial land use.

Water body

The third highest land use category is water body. In all 302.89 acres of land are covered by water bodies which represents about 5.85% of the project area. Water bodies include river, ponds, ditches, beel and khals. Major water bodies of the area are the ponds and beels which are distributed scatteredly all over the project area. The existing water body (River, canal, beel, pond, ditch) each with an area of more than 0.15 acre is preserved by using '**Water Body Act 2000**' which is precise in the plot schedule to be retained for functioning of water body as detention pond of storm runoff and thereby mitigation of rainfall induced flood vulnerability. The remaining water bodies in terms of ponds/ditches with an area of less than 0.15 acre is proposed to be permitted to use as the adjoining uses. The total area of the waterbody to be preserved stands 260.69 acres.

Agricultural Land Use

The major portion of land of the project area is under agricultural use. Total land under agricultural use is 3024.51 acres which is 58.42% of the land. These areas have distinct rural character. Agricultural land of 2574.31 acres, which is 49.73% of the total land, is proposed

to continue the current agricultural trend and the remaining land is proposed to be shifted in industrial/manufacturing, commercial, service or some other non-agricultural uses.

Urban Deferred

There is no land in the Pourashava which can be termed as urban deferred. Agricultural land having potentiality for development comprising 184.94 acres of land which is 10% of built-up area as per standard has been proposed. Urban deferred land is proposed for the provision of urban development in future.

Circulation Network

Circulation Network occupies 1.99% land of the project area. Total area under this use amounts to 102.88 acres. The main circulation network is road. The projected area for circulation network use is estimated as 277.41 acre, which is 15% of the total built-up area. The projected area of circulation network was not followed properly in the provision of land allocation for circulation network. The proposed use of circulation network is 366.59 acres of land. The reason behind this anomaly is that in practice more roads have been proposed to ensure connectivity and accessibility among the localities along with more wide primary and secondary roads with a view to bypass through traffic .

Education and Research Land Use

Educational Facility occupied 0.53% of the project area that covered 27.41 acres of land. Educational Institutions were generally Kindergarten, Government and Non-Government Primary School, High Schools, College, Madrasha, Computer Training Institute, Tutorial Coaching Center etc. The projected area for education and research land use is 39.31 acres comprising of about 0.76% land of the total project area. The planning standard of educational facilities seems to be very ambitious regarding the size of educational institution. Thus a total of 82.10 acres including the existing area is proposed to be allocated for educational and research activity which is sufficient enough to meet the demand of land for this purpose.

Industrial Land Use

Manufacturing and Processing land use occupies 47.20 acres of land and which is only 0.91% of the total land of the project area. Jute mills and Rice mils are the main industry of Sharishabari Pourashava which cover almost full part of this category. Alhaj Jute Mill occupying an area of 24.629 acres of land is the largest existing industry which play a vital role in the economy of Sharishabari Pourashava. As per standard (2.00 acres/1000 population), 112.13 acres of land is required for industrial activity. A general industrial zone of additional 26.2841 acres of land and a heavy industrial zone of 24.9863 acre land is proposed for advancement of industrial activity and generation of employment opportunity for the Pourashava inhabitants. The acreage under industrial land use stands for 96.57.

Transportation Facilities

A total of 0.42 acres of land are occupied by Transportation facilities. For provision of transportation facilities including bus terminal, bus stand and rickshaw/van/tempo stand, passengers' shed, ghat, helipad, filling station, CNG station, mobile tower/transmission centre, railway station a total of 6.62 acres of land is proposed for such type of facilities.

Open Space (Outdoor Recreation)

The existing land under open space, designated as urban green space at the survey stage, is 0.17 acres covering 0.003% of the total area. Additional 123.08 acres of land is required for outdoor recreation to serve the projected population up to year 2021 reserving open land

with a view to sustain hydrological processes as well as. In order to preserve high value agricultural land and to ensure food security, a total of 35.69 acres of land has been proposed as open space. It includes central park, children's park, playground and other outdoor recreational facilities.

Recreational Use (Indoor Recreation)

Presently there are 3 (three) numbers of cinema hall comprising 0.50 acres of land for indoor recreational facilities to meet the requirement of such purpose. However, 0.90 acres of additional land is required to designate for this purpose up to year the 2021. This additional requirement can be met either by providing recreational facilities in the Ward Centre or through allocating land from mixed use zone.

Health Services

Presently 4.98 acres of land is used for Health services in the Pourashava. According to planning standard, total 21.21 acres of land is projected for future use up to year 2021. However, the Doctor's residential areas are not counted in health services landuse according to landuse category provided the PMO. So, the Upazila Health Complex have sufficient land to support the Pourashava. Furthermore, 2 no's (two) of community hospitals are proposed within the Pourashava with 4.074 acres of land.

Utility Services

Presently there is only 0.16 acres of land under utility services. According to planning standard, total 20.56 acres of land is projected for future use up to year 2021. A total of 14.31 acres or land comprising 0.28% of the project area has been proposed as utility services. It includes public toilets, waste disposal ground, waste transfer stations, fire service station, pump house and overhead tank.

Community Facilities

Currently 8.26 acres of land is used as community facilities. According to planning standard, total 15.61 acres of land is projected for future use up to year 2021. However 13.21 acres of land has been proposed as community facilities. It includes community center, Eidgah and graveyard.

Mixed Use

Some mixed use zone has been proposed in the adjoining areas of proposed public places, e.g. stadium, central park, neighborhood park and other functionally important areas where co-existence of more than one compatible land uses is anticipated by the planning team. This co-existence of land uses is requisite to ensure a livable urban environment as well as a means of income generating activities for the Pourashava dwellers. The existing area under this use is only 1.32 acres. A total of 99.95 acres of land has been proposed as mixed use zone at different locations of the planning area. Mixed use zone will accommodate mainly residential use along with light commercial or some other activities compatible with living environment of the locality.

Besides, some mixed use zone under the name Ward Centre has been proposed in each Ward at strategic location which may also be considered as hub of the respective Ward. Ward Centre will accommodate councilor office, community centre, super market and in some cases primary school provided with adequate open space for playground. Other compatible uses may also be provided in the Ward Centre which is justified to be an vigorous agent in turning it into a livable growth centre.

Government Office

Being a Upazila Headquarters, Sharishabari Pourashava accommodates almost all the government offices necessary for proper functioning of the Upazila as an administrative center as well as providing government services to the of the Pourashava. The Pourashava authority has been continuing its administrative functions inhabitants of the entire Upazila. However, the Pourashava has its own office building for functioning from this Pourashava Building and the area is suuficient to continue its functions. Thus no additional land has been proposed for Pourashava Office Complex.

Miscellaneous

Other categories of uses which do not fall under the classified 23 types of land uses have been designated as miscellaneous use. NGO office, vacant land etc. falls under this category. An area of 3.22 acres that is 0.06% of the total area has been designated as miscellaneous use.

1.2.4 An estimate on the requirement of land for different uses

The requirement of land for different uses were estimated based on Planning Standards for UTIDP provided by the PMO Office of LGED and the projected population for up to the year 2021. The forecasted areas for each specific use were calculated through spreadsheet analysis (Microsoft Excel 2007) Software and further summarized into category wise land requirement for the 2021 and 2031, which was presented in **Table -1.2**.

1.3 LAND USE PROPOSALS

1.3.1 Introduction

The land use proposals is the result of the goals, land use analysis, and policies set forth in this document. Land suitability analysis defined which areas may be more suitable for each specific development. The urban growth areas delineate which areas are planned for future urban development. The recommendations of land use plans are generally followed within the urban growth areas. Other areas of potential residential, commercial, or industrial development are designated in key locations.

Mixed use, such as commercial and residential either shared within the same building or in close proximity, may become more common. The composition of development is largely determined by the market forces of supply and demand. The Pourashava has many acres of open, undeveloped land, and all future development will be dependent on this supply of developable land. Land supply is restricted by the ability to provide utilities and transportation services.

1.3.2 Designation of Future Land Use

Future Land Use is proposed for the next 10 years up to 2021 i.e. within the time frame of Urban Area Plan. It was done based on public consultation meeting with the stakeholders and land suitability analysis. The future land uses of the planning area were designated as a combination of two approaches, e.g. i) allocating development proposals of various services and facilities necessary to ensure habitable urban living ii) redefining uses of the remaining land as per structure plan policies, strategies and guidelines. The list of development proposals has been summarized in **Table-1.4** (List of Development Proposals) with detailed plot schedule and shown in **Map-1.3**. After that proposed general land use map was prepared and the details are shown in **Table-1.5** (Proposed general Land Use) and **Map-1.3** (Land Use Plan Map) below. Development Plan Proposal has been listed in **Appendix-B**.

Table-1.4: List of Development Proposals

ID	Name of Proposal	Location	Ward No.	Area (Acre)	Mouza Schedule	
					Mouza	Plot No.
BT	Bus Terminal	Western part of W-7 beside proposed PR-02 and West of Railway line	7	1.525	Bangali	10362-10370, 10755, 10756, 10776, 10779
C	College	Southern part of W-8 beside Bousi Bazar road	8	5.051	Bangali	5270, 5271, 5282-5292, 5295, 5298-5303, 7379
CP	Central Park	Northern margin of W-5 and in between Sharishabari-Jamalpur road and small Jhenai river	5	10.069	Bangali	10278-10282, 12205, 12208-12210, 12287, 12288, 12291-12328
CT	Container Terminal	West of Rail Line at the opposite side of Kali Mondir	7	1.277	Bangali	10825, 10851
ED-01	Eidgah	At the centre of the Ward-1	1	0.509	Satpoa	1666, 1667, 1669, 1670
ED-02	Eidgah	South-west margin of W-9 and adjacent to Bangali Para road	9	0.536	Bangali	6244, 6245, 6247, 6310, 6311
GY-01	Graveyard	Southern margin of W-1 and end of satpoya mouza	1	0.890	Satpoa	1590-1596, 1793-1795, 1796
GY-02	Graveyard	Western part of W-8 and north of Kharizia madrasha	8	0.605	Bangali	5118-5126
Hos-01	Hospital	South-west corner of W-2 beside Boyra Bamar road	2	2.063	Mulbari	47, 90-94, 96--106
Hos-02	Hospital	Adjecent to north boundary of W-3 and beside Bat Tala to Bolerdia road	3	2.012	Satpoa	729, 770, 774-776, 778-782, 784-789
HS-01	Secondary School	Northern part of W-3 beside Bolerdia road	3	3.020	Satpoa	729, 756-762, 766, 767, 797-800, 802-804
HS-02	Secondary School	South-west margin of W-9 and adjacent to Bangali Para road	9	3.063	Bangali	6230, 6234-6244, 6247-6249, 6312-6314
HS-03	Secondary School	North-west part of W-9 beside Foyezer Morer road	9	3.092	Bangali	6850-6854, 6857-6859, 6862-6866
IZ-01	General Industrial Zone	South-east part of W-8 beside Foyezar morer road (South part)	8	26.284	Bangali	6274, 6436, 6466-6490, 6492-6496, 6506, 6507, 6551, 6554-6582, 6584, 6585, 6589, 6661-6691, 6694-6698, 6700
IZ-02	Heavy Industrial Zone	South-east part of W-8 beside Foyezar morer road (North part)	8	24.986	Bangali	6453-6457, 6581-6649, 6651-6663, 6677, 6687, 6689-6694, 6696-6747, 6753-6760
LPP	Land for Poor People	North-west part of W-9 beside Foyezer Morer road	9	7.721	Bangali	6934, 6953, 6954, 6959-6987, 6995, 6996, 7086, 7087, 7221
LT	Launch Terminal	West of Rail Line on the North Bank of Jhinai River	7	0.713	Bangali	10811, 10812,10813,10818, 10819, 10821, 10822,

ID	Name of Proposal	Location	Ward No.	Area (Acre)	Mouza Schedule	
					Mouza	Plot No.
						10823, 10824, 10851
NM-01	Neighborhood Market	Northern part of W-3 and at the junction of proposed SR-02 and Bolerdia road	3	1.006	Satpoa	729, 731, 735-742
NM-02	Neighborhood Market	At the centre of W-6 beside proposed SR-02	6	1.002	Simla Madhab	197-202, 206
NM-03	Neighborhood Market	South of Panch Rasta mor of W-8	8	1.006	Bangali	5040, 5043-5046, 5049, 5078-5080
NP-01	Neighborhood Park	At the centre of the W-1 beside proposed east-west 60 ft secondary Road	1	3.020	Satpoa	1301-1319, 1652, 1653, 1665-1667
NP-02	Neighborhood Park	South-west part of W-2 on the east bank of river	2	3.128	Mulbari	30, 124-126, 141, 142, 774
NP-03	Neighborhood Park	North-east margin of W-7	9	3.076	Bangali	6209, 6214-6217, 6219, 6220, 6249-6263
OH	Old Home	North-east corner of W-1 on the west bank of river small Jhenai River	1	0.502	Diarkrisnat (2nd Part)	35, 37, 38, 39, 40, 41, 42
OHT-01	Overhead Tank	North side of Bolerdia Road	1	0.214	Satpoa	935, 939
OHT-02	Overhead Tank	East side of Salam Talukder Road	2	0.240	Bhurar Bari	685, 689-691
OHT-03	Overhead Tank	Beside Chowdhury Bazar Road	3	0.214	Balardiar	2350, 2351
OHT-04	Overhead Tank	Opposite side of Fire Service Station	4	0.204	Shimla Gopinath	368-370
OHT-05	Overhead Tank	Between Grameen Bank Office and Mondir beside Dhik Pati Road	7	0.300	Bangali	5419-5421, 13111-13114
OHT-06	Overhead Tank	South-east of Panchpir Govt. Primary School	8	0.349	Bangali	6783
PA	Parking Area	Between Suborno Khali river and Sharishabari-Jamalpur road	4	0.535	Simla Gopinath	1532, 1544
PG-01	Playground	At the centre of the Ward-1	1	1.091	Satpoa	1218-1220, 1667-1669, 1926, 1928, 1929, 99999
PG-02	Playground	Beside Dhanbari road nearer to Jute Mill office	2	1.088	Samarthabari	86, 88-96
PG-03	Playground	North of Bolerdia Khal beside Uttarpara road	3	1.034	Satpoa	1312-1322, 1333-1335, 1340
PG-04	Playground	Beside rail gate road nearer to mosque and east bank of Suborno Khali river	4	1.060	Bangali	12126, 12127, 12129, 12144
					Shimla Gopinath	286-288
PG-05	Playground	Beside Shimla Bazar road and west of railway line	5	1.019	Bangali	12249, 12250, 12257, 12261-12263
PG-06	Playground	Beside the junction of proposed PR-01 and Maize Bari road	6	0.930	Shimla Ragunath	1, 2, 6
					Bil Shimla	52
PG-07	Playground	Beside Bousi Bazar road	7	1.001	Bangali	5374-6379, 10907-10911
PG-08	Playground	North of Panchpir Gazariya road	8	1.023	Bangali	1171-1175, 1181, 1420

ID	Name of Proposal	Location	Ward No.	Area (Acre)	Mouza Schedule	
					Mouza	Plot No.
PG-09	Playground	Adjacent to Bangali Para road	9	1.012	Bangali	5909-5916,6236, 6239
PH-01	Pump House	North side of Bolerdia Road	1	0.135	Satpoa	939, 943, 944
PH-02	Pump House	East side of Salam Talukder Road	2	0.192	Bhurar Bari	683-686
PH-03	Pump House	Beside Chowdhury Bazar Road	3	0.110	Balardiar	2350, 2351
PH-04	Pump House	Opposite side of Fire Service Station	4	0.123	Shimla Gopinath	360, 369, 370
PH-05	Pump House	Between Grameen Bank Office and Mondir beside Dhik Pati Road	7	0.112	Bangali	5419, 5421, 13111
PH-06	Pump House	South-east of Panchpir Govt. Primary School	8	0.199	Bangali	6783
PT-01	Public Toilet	Eastern part of W-2 beside proposed PR-01	2	0.102	Bhurar bari	675, 677
PT-02	Public Toilet	Southern part of W-3 beside Chowdhuri Bazar road	3	0.137	Balar Diar	2365, 2368, 2371, 2372
PT-03	Public Toilet	North part of W-5 and east of railway line	5	0.102	Bangali	10975, 13179
PT-04	Public Toilet	North part of W-5 and adjacent to proposed wholesale market (WM)	5	0.017	Bangali	12566, 12569
PT-05	Public Toilet	At the centre of W-6 beside proposed SR-02	6	0.108	Simla Madhab	184, 185, 186, 198, 199
PT-06	Public Toilet	Beside Bousi Bazar road	7	0.102	Bangali	10913, 10914, 10915
PT-07	Public Toilet	Western part of W-7 beside Sharishabari-Bhatiya road	7	0.103	Bangali	10436, 10437
PT-08	Public Toilet	South of Panch Rasta mor of W-8	8	0.107	Bangali	5079, 5080
RZ	Resettlement Zone	South margin of W-8 and beside Bousi Bazar road	8	8.677	Bangali	5325-5327, 5329, 5331-5338, 5340-5346, 10880, 10881
SH	Slaughter House	South of Shimla Palli Purbapara Jame Mosque	5	0.601	Shimla Gopinath	616, 617
SM-01	Super Market	Eastern part of W-2 beside proposed PR-01	2	1.036	Bhurarbari	597, 598, 603, 672-675
SM-02	Super Market	Eastern margin of W-5 beside Kamrabad road	5	1.020	Bangali	12587, 12605-12608, 12610-12612, 12618-12620
ST	Stadium	Eastern margin of W-2 and north of Samarthabari Purbapara Jame mosque	2	5.918	Bhurarbari	831, 837-851, 854, 855, 861
					Satpoa	225-235, 239, 240, 862
TS-01	Tempo Stand	Eastern part of W-2 beside proposed PR-01	2	0.276	Bhurarbari	704, 705, 706, 707
TS-02	Tempo Stand	Southern part of W-3 beside Chowdhuri Bazar road	3	0.261	Balardiar	2368-2372
TS-03	Tempo Stand	North part of W-5 and east of railway line	5	0.298	Bangali	10975, 13063, 13064, 13179
TS-04	Tempo Stand	Western part of W-7 beside Sharishabari-Bhatiya road	7	0.273	Bangali	10433, 10434, 10435, 10436

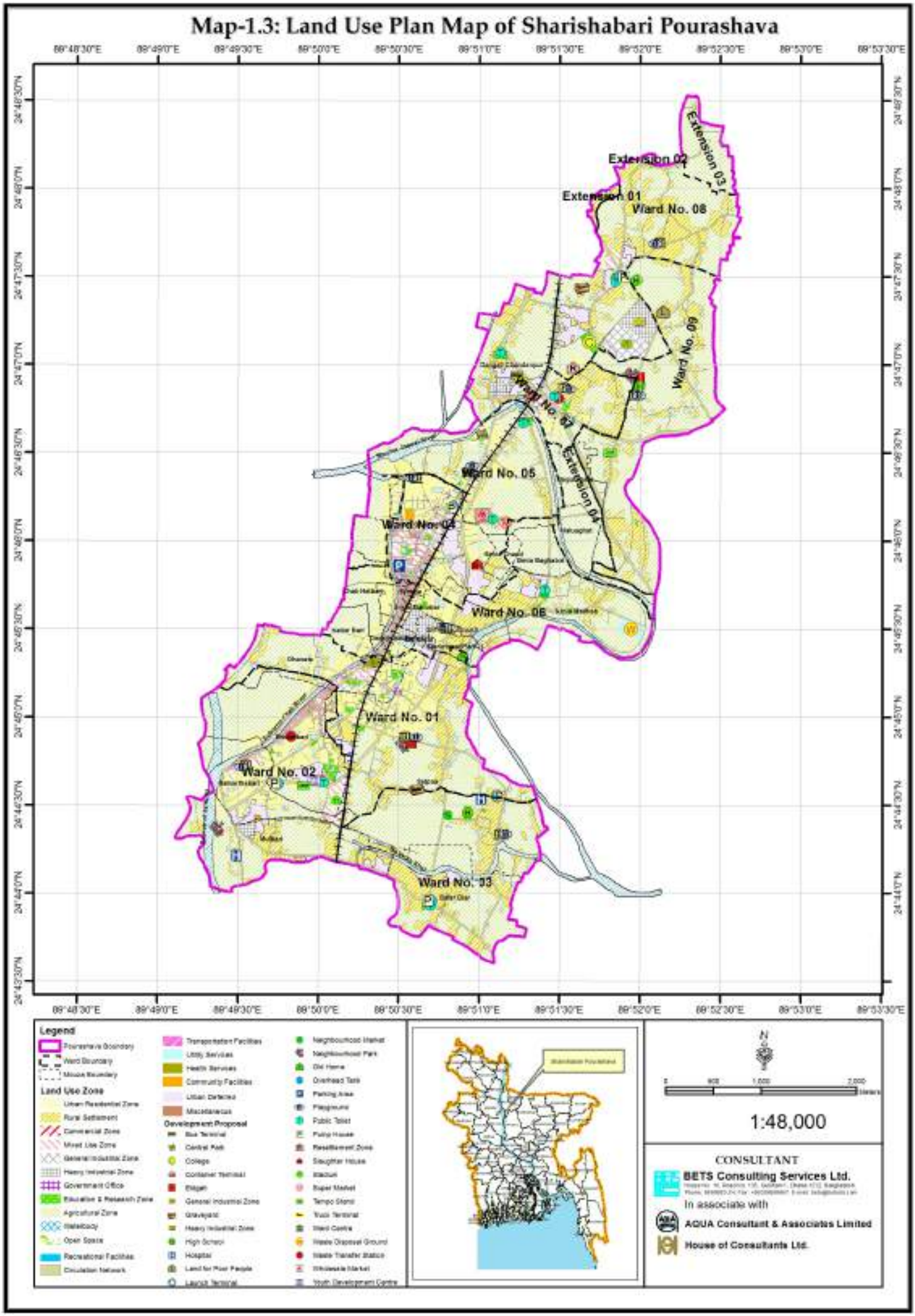
ID	Name of Proposal	Location	Ward No.	Area (Acre)	Mouza Schedule	
					Mouza	Plot No.
TS-05	Tempo Stand	Eastern part of W-9 beside Bangali Para road	9	0.271	Bangali	5487, 5491
TT	Truck Terminal	Western part of W-7 beside proposed PR-02 and West of Railway line	7	1.024	Bangali	10345, 10779, 10780, 10786-10794
WC-01	Ward Center	At the centre of the Ward-1	1	1.176	Satpoa	1292-1301, 1304-1306, 1667, 1668
WC-02	Ward Center	Beside Dhanbari road nearer to Jute Mill office	2	1.031	Samarthabari	93, 94, 96, 97,103
WC-03	Ward Center	North of Bolerdia Khal beside Uttarpara road	3	0.727	Satpoa	1311-1312, 1317-1318 1321-1323
WC-04	Ward Center	Beside rail gate road nearer to mosque and east bank of Suborno Khali river	4	0.923	Bangali	12126, 12129, 12130, 12139, 12143, 12144
					Simla Gopinath	286, 288, 290, 292
WC-05	Ward Center	Beside Shimla Bazar road and west of railway line	5	1.023	Bangali	12248-12252
WC-06	Ward Center	Beside the junction of proposed PR-01 and Maize Bari road	6	0.818	Simla Raghunath	2, 3, 4, 5, 6
WC-07	Ward Center	Beside Bousi Bazar road	7	1.005	Bangali	5374-5376, 10905-10907, 10911
WC-08	Ward Center	North of Panchpir Gazariya road	8	1.016	Bangali	1174-1178
WC-09	Ward Center	Adjacent to Bangali Para road	9	0.822	Bangali	5911, 5916-5920, 6230, 6236
WDG	Waste Disposal Ground	Beside central boundary of W-6 and on the bank of river small Jhenai	6	10.144	Simla Madhab	493, 511-539, 543-561, 589, 590, 636, 971
WM	Wholesale Market	East side of rail gate and Simla Purbapara Mor at Bangali Chandanpur	5	5152	Bangali	12386-12390, 12392-12400,12552-12554, 12569-12575
WTS-01	Waste Transfer Station	Central part of W-2 beside proposed PR-01	2	0.262	Bhurarbari	482, 486, 494
WTS-02	Waste Transfer Station	Central part of W-7 and north of Dikpati road	7	0.285	Bangali	10913, 10916-10919
YDC	Youth Development Center	Eastern part of W-2 beside proposed PR-01	2	0.506	Bhurarbari	666-670, 672-674

Table-1.4: Proposed General Land Use

SI No.	Landuse Type	Illustrated	Area (acre)	%
1	Agricultural Zone	Agricultural land denotes the land suitable for agricultural production, both crops and livestock.	2574.31	49.73
2	Circulation Network	Road and Rail communication	366.59	7.08
3	Commercial Zone	The land used for commercial activities is considered as commercial land use. Commercial land includes established markets and areas earmarked for markets.	70.98	1.37
4	Community Facilities	All community facilities including funeral places and other religious uses	13.21	0.26
5	Education & Research Zone	All kinds of educational institutes	39.31	0.76
6	General Industrial Zone	Green and Orange A categories as per The Environment Conservation Rules, 1997	31.71	0.61
7	Government	All Government Offices	4.68	0.09

SI No.	Landuse Type	Illustrated	Area (acre)	%
	Office			
8	Health Services	All Hospitals, clinics and diagnostic center	8.34	0.16
9	Heavy Industrial Zone	Other toxic and pollutions Industries (Orange B and Red categories as per the Environment Conservation Rules, 1997)	64.86	1.25
10	Miscellaneous	Any other categories, which are not related to other 23 categories	3.22	0.06
11	Mixed Use Zone	Mixed land use refers to the area without a dominant land use or, multiuse	99.95	1.93
12	Open Space	Playground, Botanical Garden, Stadium, Zoo etc.	35.69	0.69
13	Recreational Facilities (Indoor Recreation)	Indoor based facilities with designated building structure i.e. Cinema Hall, Theater Hall etc.	0.50	0.01
14	Restricted Area	Where no one but certain people can enter, i.e. Electric Sub-Station, Fuel Reserve Depot, Gas Transmission, Cantonment etc.	-	0.00
15	Rural Settlement	Rural settlement includes the low dense residential area, which is scattered and rural in nature.	835.93	16.15
16	Transportation Facilities	This category includes airport, bus terminal/ stand, ferry ghat, filling station, garage, launch terminal, post office, passenger shed, telephone exchange, ticket counter, transport office etc.	6.62	0.13
17	Urban Deferred	Urban reserved area for future development	176.52	3.41
18	Urban Residential Zone	It includes high dense residential area	569.57	11.00
19	Utility Services	Utility services include Overhead Tank, Power Office/Control Room, Public Toilet, Sewerage Office, Waste Disposal, Fire Service, Water Pump House, Water Reservoir, Water Treatment Plant etc.	14.31	0.28
20	Beach	Sea Beach	-	0
21	Forest	Designated Forest Area	-	0
22	Overlay Zone	Undefined Zone	-	0
23	Historical & Heritage Site	The entire mentionable historical and heritage site	-	0
24	Water Body	Equal or More than 0.15 acre and justification by the consultant and wet land will merge with water body	260.69	5.04
Grand Total			5177.38	100

Map-1.3: Land Use Plan Map of Sharishabari Pourashava



1.3.3 Land use Zoning

Zoning is a device of land use planning used by local governments in most developed countries. The word is derived from the practice of designating permitted uses of land based on mapped zones which separate one set of land uses from another. Zoning may be use-based (regulating the uses to which land may be put), or it may regulate building height, lot coverage, and similar characteristics, or some combination of these. Combinations of zoning designations can also be applied to the same area.

Zoning is the process of planning for land use by an executing agency/Pourashava to allocate certain kinds of structures in certain areas. Zoning also includes restrictions in different zoning areas such as, a) height of buildings, b) density (number of structures in a certain area), c) use of lots, green space etc. According to these above criteria following 3(three) types of zoning regulations can be exercised in the land use planning.

a) Height Zoning

The height zoning provides height limits for structures and objects of natural growth and standards for use of an area, which encourage and promote the proper and sound development of areas. It is also applicable to height restrictions for flight safety around airports or other similar purposes.

Maximum allowable height of buildings is determined based on relation between ground cover of buildings and the land parcel that house it, minimum setback of building from the adjoining plot boundaries and the maximum floor area that can be constructed in relation to plot size and the connecting road.

As there is no airport/ Helipad in the Pourashava vicinity and population density is very low compared to the built-up cities and towns, there should not be any height limit of buildings for **Sharishabari Pourashava**. However, in order to ensure habitable urban environment maximum allowable height should be determined based on setback, building bulk, allowable FAR(Floor Area Ratio) and width of the adjacent road.

b) Density Zoning/Bulk Zoning

Density Zoning can be defined as the zoning ordinances that restrict the average number of houses per acre that may be built within a particular area, generally in a subdivision. Density based zoning assigns a total permissible number of residential units that may be built on any given parcel of land using a base density plus environmental criteria to establish the numbers of residential units the land can reasonably accommodate.

Bulk zoning regulations restrict the density in a given area through a variety of building-specific measures, including floor-area-ratio (FAR), setback requirements, and open space requirements. Such provisions are separate from use-based zoning regulations, which restrict the type of use permitted in a given area, such as residential, industrial, or commercial.

Sharishabari Pourashava is a Upazila level agro-based town where rural homesteads are prevalent and most of the houses are katcha and semi-pucca. Density Zoning/Bulk zoning regulation is not applicable for this town with low population density and scattered development.

c) Use Zoning

The primary purpose of use zoning is to segregate uses that are thought to be

incompatible. In practice, this zoning is used to prevent new development from interfering with existing residents or businesses and to preserve the "character" of a community. The list of permitted, conditionally permitted and restricted uses in each zones have been illustrated in **Appendix-C**.

1.4 PLAN IMPLEMENTATION STRATEGY

1.4.1 Land Development Regulations to implement the Land use Plan

Effective implementation of a plan is the most important part of the planning process. This chapter highlights various measures needed to be taken in order to implement the land use plan proposals.

Implementation of the Land use Plan depends on successful pursuit of the policies specified in the Structure Plan. Those policies represent a significant challenge face with the responsibility of planning and managing the development of the Pourashava area. However, at present no authority is responsible for planning and managing physical development activities in the Pourashava and no regulation except Local Government (Pourashava) Ordinance, 2009 for controlling physical development. This poses a serious constraint to the implementation of the Land use Plan and in fact, any development plans.

Prior to introduction of the regulations, to implement the land u se plan Legislative involvement is recommended here:

1. Impose control on all type of buildings in the Pourashava according to the setback rules prescribed in the Building Construction (Amendment) Rules, 1996 (Notification No. S.R. O. No. 112-L/96). Building permission for extended areas shall be according to the land use provision prescribed in the plan. Any permission for building construction, front road width shall not be less than 16 ft. and the construction must follow the Building Construction (Amendment) Rules. 1996.
2. To control the air, water, noise and soil pollution, Conservation of Environment and Pollution Control Act, 1995 (Act No. I of 1995) was enacted. In the Pourashava, there is no authority for enforcing the provisions prescribed in the said Act. The pollution related with the implementation of land use component may be controlled with this Act.
3. Haphazard development of commercial activities is the general scenario of the Pourashava. It is necessary to impose control on commercial activities provisioned in the Shops and Establishments Act, 1965 (Act No. VII of 1965).
4. In case of man-made canal, regulations prescribed in the Canal and Drainage Act, 1873 (Act No. VIII of 1873) is the best weapon. For the linking of canal with others and river considering drainage facilities the Act may be enforced.
5. For the conservation of archeological monuments or structures or historical development the Ancient Monuments Preservation Act, 1904 (Act No. VII of 1904) may be enforced. Archeological Department of Bangladesh and Pourashava authority through a partnership process may preserve such type of development.
6. To control air pollution due to brick burning with the establishment of brick field, Brick Burning Control Ordinance, 1989 (Ordinance No. VIII of 1989) is the appropriate regulation. The Pourashava authority may enforce this Ordinance with the authorization given by the government to him.
7. To control the medical practitioner, establishment of private clinics and pathological laboratories, the statute named Medical Practice, Private Clinics and Laboratories (Regulation) Ordinance, 1982 (Ordinance No. IV of 1982) was enacted. For efficient enforcement of the Ordinance, the Pourashava authority' may execute the Ordinance with the authorization of government.

8. The Pourashava will have to exercise strictly Playfield, Open space, Garden and Natural Tank in Urban Areas Preservation Act, 2000 (Act No. XXX VI of 2000) to some specially important areas like, riverfront and water bodies, drainage channels, low land below certain level, designated open space, etc. Development restrictions are needed around security and key point installations. The provision of restriction will strengthen the power of the plan to afeguard its development proposals and landuse provisions.
9. The government is authorized for establishment of hat and bazar with the acquisition of land through the statute named Hat and Bazar (Establishment and Acquisition) Ordinance, 1959 (No. XIX of 1959). In case of private hat and bazar, a management body is being empowered through the Bangladesh Hats and Bazars (Management) Order, 1973 (P.O. 73/72). The Pourashava authority is also empowered establishing hat and bazar in his jurisdiction through the Local Government (Pourashava) Ordinance, 2009. Coordination may be framed among the government (Upazila Parishad), Pourashava and private owner for the establishment, development and management of the hat and bazar located in the Pourashava premises.
10. In the Pourashava premises, industrial development is controlled by the Bangladesh Cottage Industries Corporation through Bangladesh Cottage Industries Corporation Act, 1973 (Act No. XXVIII of 1973), Industrial Development Corporation through East Pakistan Industrial Development Corporation Rules, 1965 (No. EPIDC / 2A-2/63/354) and Factory Inspector through Factories Act, 1965 (Act No. IV of 1965). Locational aspects and issuing of trade license is controlled by the Pourashava authority. A joint coordination cell among those four authorities may control the establishment of factories and industries in the Pourashava.
11. In the Pourashava, for rain water harvesting, some specific ponds / tanks will needed to be preserved. A number of derelict tanks may be improved through tank improvement project and in this case Tanks improvement Act, 1939 (Act No. XV of 1939) will support the Pourashava is regulatory aspects.
12. Except Khas land, a considerable amount of public land in the Pourashava may be identified as fallow land or unproductive land. In regulatory term those lands are considered as culturable waste land and those lands are being fallow during five consecutive years. Those lands may be utilized under the guidance of Culturable Waste Land (Utilization) Ordinance, 1959 (Ordinance No. E.P. XIII of 1959).

1.4.2 Implementation, Monitoring and Evaluation of the Land Use Plan

The implementation, monitoring and evaluation strategies of Structure Plan have been illustrated in Chapter-9 of Part-A. The Land Use Plan should also be implemented, monitored and evaluated under the same strategy by strengthening capacity of the Pourashava and forming a Monitoring and Evaluation Committee (MEC).

As the Land Use Plan is a mid-term plan with a period of 10 years (2011-2021), it will be implemented on phase wise according to priority. The proposals have been prioritized based on the most urgent community needs, since the Government of Bangladesh is a least developed country and it has a very limited budget on infrastructure development. Besides, the Pourashava Authority itself is not capable of financing this huge cost.

The land use Plan will be implemented gradually following prioritized landuse proposals. Phasing of land use proposals was done based on the priority needs for development of the town. The Phase-I of the land use proposals, to be also incorporated in the Ward Action Plan, will be implemented within first 5 year (2011-2016) of the land use plan period. The consultants have proposed Phase-II of the proposals to be implemented within next 5 years following the recent past Ward Action Plan. The details of phasing are shown in **Table-1.5**.

After each 5 years the Land Use Plan will be evaluated, updated and new Ward Action Plan will be formulated under the changing circumstances.

Table-1.5: Phasing of Development Proposals

Phase-I (2011-2016)		
ID	**Name of Proposal**	**Location**
BT	Bus Terminal	Ward no. 07
GY-01	Graveyard	Ward no. 01
Hos-01	Hospital	Ward no. 02
HS-01	Secondary School	Ward no. 03
HS-02	Secondary School	Ward no. 09
NM-01	Neighbourhood	Ward no. 03
NM-02	Neighbourhood	Ward no. 06
NP-02	Neighbourhood Park	Ward no. 02
OHT-02	Overhead Tank	Ward no. 02
OHT-04	Overhead Tank	Ward no. 04
OHT-05	Overhead Tank	Ward no. 07
PA	Parking Area	Ward no. 04
PG-01	Playground	Ward no. 01
PG-02	Playground	Ward no. 02
PG-03	Playground	Ward no. 03
PG-04	Playground	Ward no. 04
PG-05	Playground	Ward no. 05
PG-06	Playground	Ward no. 06
PG-07	Playground	Ward no. 07
PG-08	Playground	Ward no. 08
PG-09	Playground	Ward no. 09
PH-02	Pump House	Ward no. 02
PH-04	Pump House	Ward no. 04
PH-05	Pump House	Ward no. 07
PT-01	Public Toilet	Ward no. 02
PT-03	Public Toilet	Ward no. 05
PT-05	Public Toilet	Ward no. 06
PT-06	Public Toilet	Ward no. 07
PT-08	Public Toilet	Ward no. 08
SH	Slaughter House	Ward no. 05
SM-02	Super Market	Ward no. 05
TS-02	Tempo Stand	Ward no. 03
TS-04	Tempo Stand	Ward no. 07
TS-05	Tempo Stand	Ward no. 09
TT	Truck Terminal	Ward no. 07
WDG	Waste Disposal	Ward no. 06
WM	Wholesale Market	Ward no. 05
WTS-01	Waste Transfer	Ward no. 02
WTS-02	Waste Transfer	Ward no. 07
YDC	Youth Development	Ward no. 02

Phase-II (2016-2021)		
ID	**Name of Proposal**	**Location**
C	College	Ward no. 08
CP	Central Park	Ward no. 05
CT	Container Terminal	Ward no. 07
ED-01	Eidgah	Ward no. 01
ED-02	Eidgah	Ward no. 09
GY-02	Graveyard	Ward no. 08
Hos-02	Hospital	Ward no. 03
HS-03	Secondary School	Ward no. 09
IZ-01	General Industrial Zone	Ward no. 08
IZ-02	Heavy Industrial Zone	Ward no. 08
LPP	Land for Poor People	Ward no. 09
LT	Launch Terminal	Ward no. 07
NM-03	Neighbourhood Market	Ward no. 08
NP-01	Neighbourhood Park	Ward no. 01
NP-03	Neighbourhood Park	Ward no. 09
OH	Old Home	Ward no. 01
OHT-01	Overhead Tank	Ward no. 01
OHT-03	Overhead Tank	Ward no. 03
OHT-06	Overhead Tank	Ward no. 08
PH-01	Pump House	Ward no. 01
PH-03	Pump House	Ward no. 03
PH-06	Pump House	Ward no. 08
PT-02	Public Toilet	Ward no. 03
PT-04	Public Toilet	Ward no. 05
PT-07	Public Toilet	Ward no. 07
RZ	Resettlement Zone	Ward no. 08
SM-01	Super Market	Ward no. 02
ST	Stadium	Ward no. 02
TS-01	Tempo Stand	Ward no. 02
TS-03	Tempo Stand	Ward no. 05
WC-01	Ward Centre	Ward no. 01
WC-02	Ward Centre	Ward no. 02
WC-03	Ward Centre	Ward no. 03
WC-04	Ward Centre	Ward no. 04
WC-05	Ward Centre	Ward no. 05
WC-06	Ward Centre	Ward no. 06
WC-07	Ward Centre	Ward no. 07
WC-08	Ward Centre	Ward no. 08
WC-09	Ward Centre	Ward no. 09

Monitoring is a very important part of plan implementation. Monitoring helps check if the plan is being implemented properly. It also measures the level of implementation of the plan. If the plan implementation is not on track, corrective measures can be taken to put execution on the track. Thus the Plan should be monitored by the MEC for proper implementation of the Plan. The MEC should call for a meeting at least two times a year on regular basis. In addition, it should sit for a meeting in any situation if any dispute arises regarding implementation of the Plan. After expiry of any plan evaluation will be made about the errors and omissions. Such evaluation will help to take corrective measures in the next plan.

CHAPTER-2: TRANSPORTATION AND TRAFFIC MANAGEMENT PLAN

2.1 INTRODUCTION

2.1.1 Introduction

Transportation and Traffic Management Plan is an advanced document that sets out the long-term direction for transport in a particular area. The plan guides development of a town's transportation system. It covers the movement of people by mode, for example, public transport, car, walking and cycling, and freight by road and waterway as appropriate to an area.

It is useful for defining the direction of transport-related issues in a particular area. It can recognize the links between transport and land use and urban form and set objectives and policies to address these linkages.

The Sharishabari Pourashava connects Jamalpur district head quarter, Tangail district head quarter,Mymensingh district head quarter and Dhaka. Most of the offices are located in the southern part of Pourashava area both the sides of railway line whereas the educational institutions are scatteredly distributed all over the Pourashava and mostly in ward no.02 and 01. All markets and shopping centers are placed in Aram Nagar at the southern part of Pourashava,in Shimla Bazar at the central area and in Baushi Bazar at the north of Smaller Jhenai River.

The project area is served by 264.94 kilometers of roads. Total area covered by road network is about 93.30 acres. Out of the total length of roads 110.21m are pucca, 27.51 km are semi-pucca and 127.22 km are Katcha.

There are major road e.g. Dhanbari road, Kamrabad road, Maize bari road, Sataria road and Sharishabari to Bhatya road. Sharishabari is already wel connected with national network. A railway line from Jagonnathganj ghat to Jamalpur passes through the Pourashava. Food grain such as rice are continuously transporting by truck towards Dhaka regularly.

Rickshaw and Rickshaw-Van are the main mode of transport within the jurisdiction of the Pourashava. Bhodvodi is a locally made motorized vehicle are another mode of transport, those are being using passenger into the heart from long distance.

2.1.2 Approach and Methodology

The methodology of the study could be illustrated through five-step process for the assessment of Transportation and Traffic Management Plan. These five steps are:

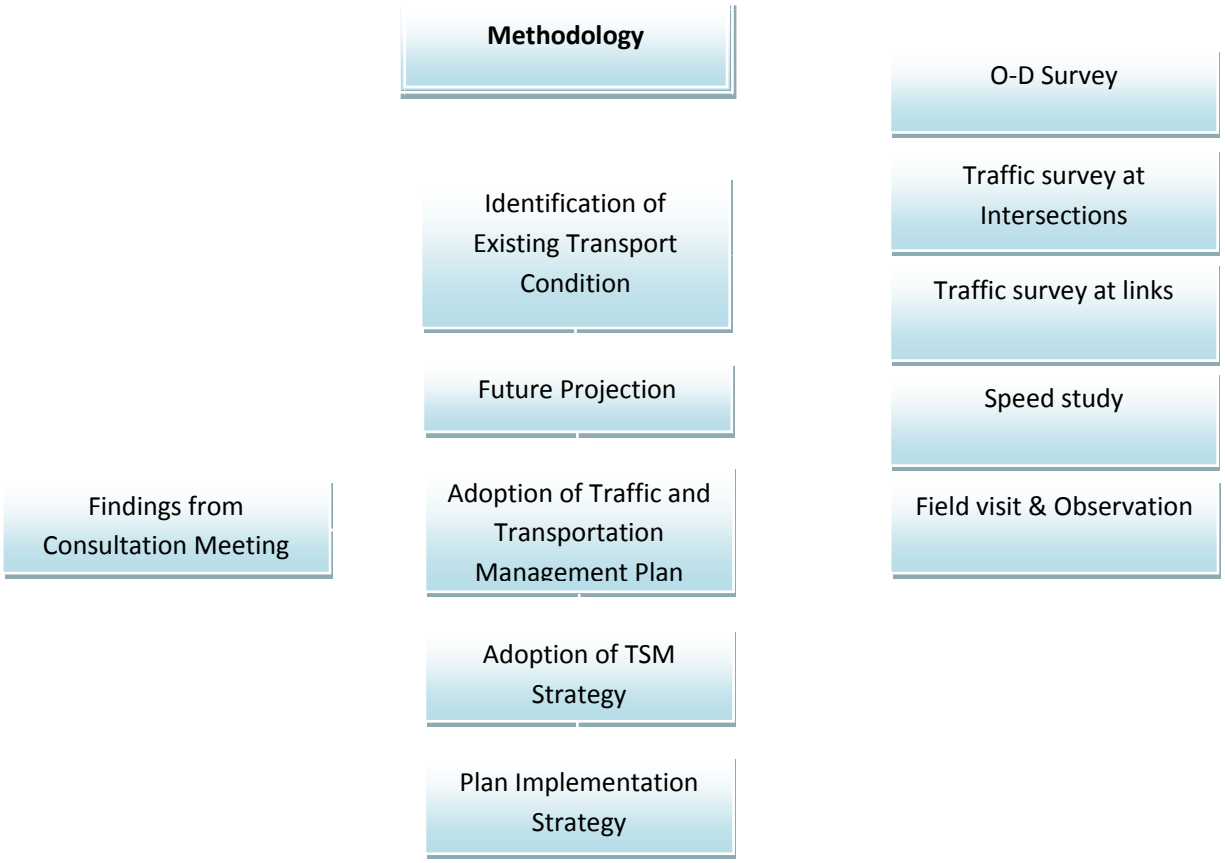


Figure- 2.1: Flow Chart of the Methodology

The first step of the methodology of transportation and traffic management plan is to identify the existing transport condition, which is the result of O-D survey, traffic survey at intersection, traffic survey at links and speed study; have already described in the survey report. In the next step, the future projection of transportation network and traffic demand is identified, which is described in the interim report. The third phase of the study is to adopt new traffic and transportation management plan, which is prepared based on future projection. After that, some strategies on transportation system management (TSM) are undertaken. Finally, plan implementation strategies are espoused based on both transportation management plan and transportation system management.

2.2 EXISTING CONDITIONS OF TRANSPORTATION FACILITIES

2.2.1 Roadway Characteristics and Functional Classification

The road hierarchy of Sharishabari Pourashava is limited to District Roads, Feeder Roads and Rural Roads (Category R1) only. There is no National or Regional Highways in this Pourashava. It is connected with Dhaka-Jamalpur National Highway (N 4) through feeder road (F 4023). It is also well connected with other districts through rail way. According to the Rural Infrastructure Strategy Study '96 of World Bank & Planning Commission the Road hierarchy of Bangladesh are categorized as illustrated in **Table 2.1**.

Table 2.1: Road Hierarchy in Bangladesh

SL No.	Category	Definition
1.	National Highway (NH)	Connecting national capital with divisional head quarters, old district headquarters, port cities and international highways;

SL No.	Category	Definition
2.	Regional Highway (RH)	Connecting different regions with each other, which are not connected by the national highways;
3.	Feeder Road Type-A (FRA)	Connecting Thana headquarters to the arterial network;
4.	Feeder Road Type-B (FRB)	Connecting growth centers to the RHD network (FRA or arterial road) or to the Thana Headquarters;
5.	Rural Road Class 1 (R1)	Connecting union headquarters/local markets with the Thana headquarters or road system.
6.	Rural Road Class 2 (R2)	Connecting villages and farms to local markets/union headquarters.
7.	Rural Road Class 3 (R3)	Roads within villages.

***Source**: World Bank and Planning Commission, 1996*

There are as many as three types of roads are existed in Sharishabari Pourashava which is Pucca, Semi-Pucca and Kutcha.

The Pucca roads are usually the paved bituminous roads, Semi-Pucca roads are mostly the Herring Bone Bond (HBB) type, and the Kutcha roads are usually earthen roads.#A list of some major roads of functional importance in the regional transport network has been given in **Table-2.2** below:

Table 2.2: Inventory of Some Major Roads at Sharishabari Pourashava

Sl. No.	Name of Major Roads	Road Hierarchy	Width (m)	Total Length (km)	Classification of road as		
					Pucca	Semi-Pucca	Kutcha
1.	Sharishabari to Jamalpur Rd	Feeder Road Type-A (FRA)	3.87	7.31	√		
2.	Sharishabari to Bhatya Rd	Feeder Road Type-B (FRB)	3.71	1.33	√		
3.	Dhik Paith Road	Feeder Road Type-A (FRA)	5.01	2.46	√		
4.	Dhan Bari Road	Feeder Road Type-B (FRB)	3.57	2.28	√		

***Source**: Physical Feature Survey by BETS, 2008-2009*

2.2.2 Traffic Pattern

The traffic pattern of Sharishabari Pourashava is characterized by only road transport which is available among all the transport modes prevailing in other towns and cities all over Bangladesh. Both vehicular and pedestrian traffic is observed to ply over the town. The types of vehicular traffic generally found in that mode are:

Motorized Traffic		Non-Motorized Traffic
Car/Jeep	Truck	Cycle Rickshaw
Bus	Bhodvodi	Rickshaw van
Micro-bus	Auto-rickshaw/tempo	Animal/push cart and
Mini-bus	Motor cycle	Bi-cycle

It was revealed from traffic volume survey that non-motorized traffic comprises 76.22% of the total volume and the remaining 23.78% is composed of motorized traffic. Thus Non-motorized traffic (NMT) should be considered as a major issue in formulating traffic and transportation management plan.

2.2.3 Intensity of Traffic Volume

In most important intersections, traffic surveys were conducted. Considering office time from 9:00 AM to 5:00 PM, intersection traffic flow were presented during morning peak hour 9:00-10:00 AM and evening peak hour 4:00-5:00 PM. The off-peak hour have been considered at 6.00-7.00 AM and 11.00-12.00 PM for lowest volume of traffic in the

observed intersection.

The Dhanbari Baz-Satariya Road and Sharishabari to Bhatya Road intersections area are the most busiest areas in Sharishabari Pourashava.

The peak hour and off-peak hour volume of motorized (MT) and non-motorized traffic at both intersections has been presented in **Table-2.2** below.

Table-2.3: Peak and Off-Peak Hour Traffic Volume at Major Intersections

Peak/ Off-Peak	Day time	Duration	Traffic Volume			
			Dhanbari Baz-Satariya Road Intersection		Sharishabari to Bhatya Road Intersection	
			MT	NMT	MT	NMT
Peak	Morning	9:00 AM-10:00 PM	121	406	83	285
	Evening	4:00 PM-5:00 PM	97	371	74	232
off-Peak	Morning	6:00 AM-7:00 AM	72	252	49	138
	Evening	11:00 PM-12:00 PM	65	249	47	120

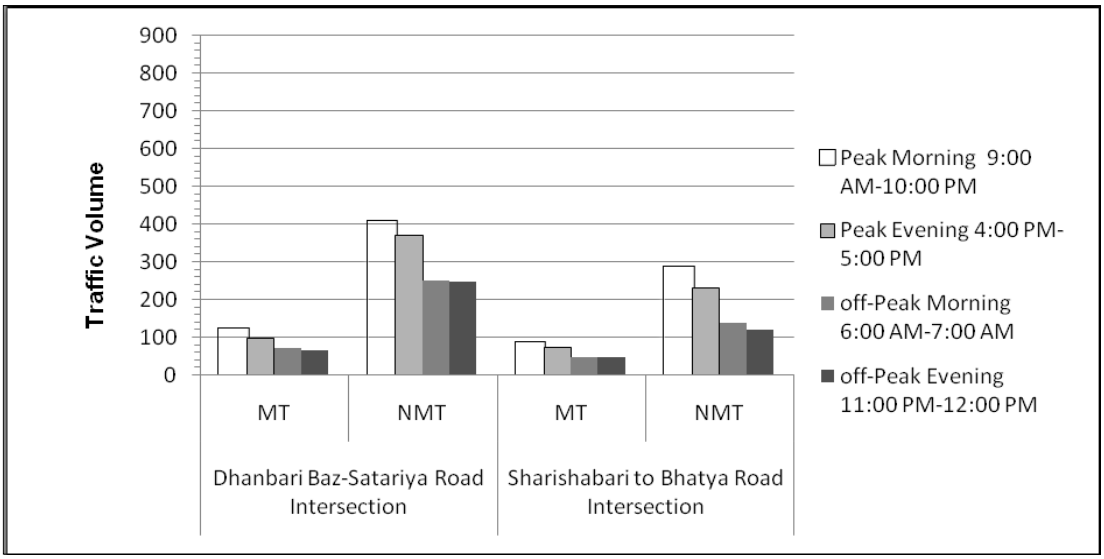


Figure-2.2: Composition of Peak/Off-Peak Traffic Volume at two Intersections

2.2.4 Level of Service: Degree of Traffic Congestion and Delay

Level of Service (also called Quality of Service or Service Quality) refers to the speed, convenience, comfort and security of transportation facilities and services as experienced by users. Level-Of-Service (LOS) ratings, typically from A (best) to F (worst), are widely used in transport Planning to evaluate problems and potential solutions. Because they are easy to understand, Level-Of-Service rating often influences transport planning decisions. Such ratings systems can be used to identify problems, establish performance indicators and targets, evaluate potential solutions, compare locations, and track trends.

Level of service (LOS) is a measure used by traffic engineers to determine the effectiveness of elements of transportation infrastructure. LOS is most commonly used to analyze highways by categorizing traffic flow with corresponding safe driving conditions.

Traffic generation centers are mostly Bus Stand, Upazila Complex, Police Station, Different Educational Institutions, Different Markets, Kutcha Bazars, Hospitals, Land Office and

Different Govt. Offices.

Sharishabari bazaar area is the most congested areas in Sharishabari Pourashava. From the intersection, Bus stand road leg, Chandpur road leg and Upazila road leg can be considered as congested areas.

There are various methods of determining LOS of road links and intersections, e.g., average vehicle control delay method(for intersection), speed-based method, vehicle capacity ratio (v/c) method. The Level of Service measure is much more suited to American Roads than roads in Europe and Asian countries like Bangladesh where Speed ranges of Level of Service (LOS) categories of urban streets are not well defined for highly heterogeneous traffic flow condition on urban streets in Indian context. Moreover, it requires more relevant, accurate and specific data on speed, delay, traffic volume, capacity of roadway link derived from detailed engineering survey. For a upazila level small town like Sharishabari, where Non-motorized traffic comprises about 60% volume, assessment of Level of Service (LOS) is not requisite in the formulation of Traffic and Transportation Management Plan.

2.2.5 Facilities for Pedestrians

Most of the public generally considers pedestrian facilities to be limited to sidewalks; however, they encompass a much broader scope of services and facilities. Pedestrian facilities include, but are not limited to, traffic control devices, curb ramps, grade separations (overpasses and underpasses), crosswalks, and design features intended to encourage pedestrian travel (such as traffic calming devices including speed bumps or center refuge islands). In general, these facilities parallel the roadway system and provided as part of the public right-of-way. Pedestrian facilities or “pedestrian lanes” provide people with space to travel within the public right-of way that separated from roadway vehicles. It improves mobility for pedestrians and provides access and an alternative means of travel to and from home, work, parks, schools, shopping areas, and transit stops. It also provides places for children to walk, run, skate, bike, and play, where no walkways are provided, or where walkways are in poor repair or have missing sections. It is obligatory to mention here that, at present there is no pedestrian facilities available at Sharishabari Pourashava.

2.2.6 Analysis of Existing Deficiencies

Like any other upazila town, Sharishabari has also transportation deficiencies, which are identified from two different sources. Firstly, by reconnaissance survey of the town, field observation interview of passenger and operator and secondly, by means of household sample survey.

2.2.6.1 Roadway capacity Deficiencies

Narrow Road Width

Narrow widths of roads and poor maintenance have been marked as major transport problems in the town. It causes higher traffic volume exceeding roadway capacity and creates serious traffic congestion on the narrow streets. There is little chance that the authority will be able increase the road width in highly built up areas, especially in the crossing point of main bazaar area, as there will be high cost involvement and social-pressure on any attempt to demolition will be very high.

Traffic congestion due to narrow width of roads has been identified as one of the challenging issues regarding the resolution of transport problem. Most of roads have been constructed without maintaining the minimum standard of road width. A list of some

functionally important narrow roads has been provided in **Table-2.4** below.

Table-2.4: List of Narrow Roads

Sl No.	Road Name	Road Hierarchy	Avg. Width (m)	Length (km)	Type
1.	Sharishabari to Jamalpur Road	Feeder Road Type-A (FRA)	3.87	7.31	Pucca
2.	Sharishabari to Bhatya Road	Feeder Road Type-B (FRB)	3.71	1.33	Pucca
3.	Dhik Bari Road	Feeder Road Type-A (FRA)	5.01	2.46	Pucca
4.	Dhan Bari Road	Feeder Road Type-B (FRB)	3.57	2.28	Pucca
5.	Dhanta to Shatariya Road	Rural Road Class 1 (R1)	2.26	0.92	Pucca

***Source**: Physical Feature Survey by BETS, 2008-2009*

Traffic Conflict

Traffic conflict is common and frequent in towns where there is admixture of transport vehicles – slow and fast – in the streets. Areas of conflict occur at point where the intensity of traffic movement is high. The consultant studied the traffic movement in all over the town and identified two main points where the traffic conflict is highest. The Dhanbari Baz-Satariya Road and Sharishabari to Bhatya Road intersections area are the most busy and congested areas in Sharishabari Pourashava. At these points the slow moving vehicles, like, rickshaw and vans come in conflict with motor vehicles, creating traffic congestion. As the slow moving vehicles are higher, the conflict is usually frequent.

The identified reasons for traffic conflict are improper intersection design, parking of vehicles on the street, waiting of operators on the roads looking for possible passengers, absence of traffic signal, disobedience of traffic rules etc.

2.2.6.2 Operational Safety, Signal and other Deficiencies

Like any other upazila town, which is beyond the regional and national movement directly, Sharishabari Pourashava has no traffic management system. There is no traffic point and traffic islands including road dividers, no signal posts. That is why operational and road safety is not existed.

2.2.7 Condition of other mode of transport (Rail/Water/Air)

Sharishabari is wel connected with national railway. In Sharishabari, there is 6.67 km of rail line which passes through the middle of the Pourashava. Within the Pourashava jurisdiction, the rail line starts from Mulabari at south and ends to Fulbaria at north. Except Ward No. 09, the rail line passes through all Wards of Sharishabari Pourashava.

Although there is river Jhenai and river Subarto khali within the jurisdiction area of Sharishabari Pourashava yet it is not navigable throughout the year. One number of canal are found here, which have also insufficient water. So, there is no water transportation within this Pourashava. There is no air transport facility in Sharishabari, for air travelling the people of Sharishabari depending upon the Capital City of Dhaka.

2.3 FUTURE PROJECTIONS

2.3.1 Travel Demad

Travel demand occurs as a result of thousands of individual travelers making individual decisions on how, where and when to travel. These decisions are affected by many factors such as family situations, characteristics of the person making the trip, and the choices (destination, route and mode) available for the trip.

Before forecasts are made of travel, it is necessary to determine how the community will look in the future. Transportation is directly linked to land use. Trips are assumed to follow future land use patterns. If land use is changed, there should be a change in travel.

The travel forecasting process is at the heart of urban transportation planning. This process is used to estimate the number of trips that will be made on a transportation systems alternative at some future date. Many assumptions need to be made about how people make decisions, the factors they consider and how they react a particular transportation alternative.

Travel demand is expressed as the number of persons or vehicles per unit of time that can be expected to travel on a given segment of a transportation system under a set of given land-use, socioeconomic, and environmental conditions. Three factors affect the demand for urban travel:

- Location and intensity of land use
- Socioeconomic characteristics of people living in the area; and
- Extent, cost, and quality of available transportation services

Land use characteristics are a primary determinant of travel demand. The amount of traffic generated by a parcel of land depends on how the land is used, for example, shopping centers, residential complexes, and office buildings produce different traffic generation patterns. Socioeconomic characteristics of the people also influence the demand for transportation. Lifestyles and values affect how people use their resources for transportation, for example, a residential area consisting of high-income workers will generate more trips by automobile per person than a residential area populated primarily by low-income workers.

The availability of transportation facilities and services, referred to as the supply, also affects the demand for travel. Travelers are sensitive to the level of service provided by alternative transportation modes, when deciding whether to travel at all or which mode to use they consider attributes such as travel time, cost, convenience, comfort, and safety. To extrapolate the transport demand, it was necessary to accumulate data on Employment, vehicle ownership, trip distribution, etc. Though some categories of data mentioned above have been collected by Socio-economic Survey, yet these data sets are scanty to enable forecast of future travel demand.

Furthermore, the traffic survey for the UTIDP was conducted to get the overall picture of traffic pattern in the study area and this survey is not detail enough to allow extrapolation of traffic. That is why; the consultants have some limitations to adopt any traffic model to forecast future traffic demand. The complexities of traffic in the study area, as per common observation are assumed to be insignificant. However, prior to maintaining proper planning standard, the Pourashava is yet capable of regulating the traffic. Nevertheless, the recommended planning standards of road are the followings (**Table- 2.5**):

Table-2.5: Recommended Planning Standard

Types of Road	Recommended width (RoW)
Pourashava Primary Roads	30.49-45.73 meter(100'-150')
Pourashava Secondary Roads	18.29-30.49 meter(60'-100')
Local Roads	6.10-12.20 meter(20'-40')

***Source**: UTIDP Planning Standard, LGED*

However, a little bit of jamming concentration has been observed in some major roads of the Pourashava. Generally, the concentration of traffic reaches to its peak during 9:00 am-10:00 and 4:00 pm-5:00 pm. Moreover, it is also observed that most of the major roads of Sharishabari Pourashava are below 6.10 meter in width, which is assumed to be a potential threat to accommodate the future traffic. Therefore, the road capacity needs to be improved as per the UTIDP planning standard of LGED.

2.3.2 Transportation Network Considered

The growth of transport networks obviously affects the social and economic activities that an area can support; yet the dynamics of how such growth occurs is one of the least understood areas in transport, geography, and planning. Transport network changes are treated exclusively as the result of top-down decision-making. Changes to the transport network are rather the result of numerous small decisions (and some large ones) by property owners, firms, developers, towns, cities, counters, and MPOs in response to market conditions and policy initiatives. Understanding how markets and policies translate into facilities on the ground is essential for scientific understanding and improving forecasting, planning, policymaking, and evaluation.

2.3.3 Future Traffic Volume and Level of Service

Traffic volume, as indicated by traffic counts at various locations on the roadway network; which reflect current travel patterns and how well the network is serving the travel demand.

When planning ahead to address the needs of our transportation network, it is important to project the level of traffic that we can anticipate during our planning period and beyond. Population growth plays a key role in determining the needs of a transportation system. Generally, an increase in population results in an increase in the use of transportation facilities; which in most cases means more vehicles on the roadways.

The two intersections are the Dhanbari Baz-Satariya Road and Sharishabari to Bhatya Road intersections area are the most busy and congested areas in Sharishabari Pourashava.The intensity of traffic movement observed in these intersections is high and traffic conflict is prevalent at these points.

The Level of Service (LOS) represents the minimum acceptable performance standards on a particular roadway facility. The Pourashava authority should have adopted the policy LOS for their road system. The key factors in the policy of Level of Service (LOS) consider the following:

- The individual characteristics of the community, its goals, objectives and needs
- The ability to provide the facilities that are determined necessary to maintain the policy level of service for current and future traffic volumes
- The ability to fund the facilities that are determined necessary to maintain the policy level of service for current and future traffic volumes

2.4 TRANSPORTATION DEVELOPMENT PLAN

2.4.1 Plan for Road Network Development

Road Network of the town has been developed without considering external and internal linkage of the Pourashava. As a result lack of an integrated road network has been observed among the localities. Since road transport is the only mode of transport prevailing in the Pourashava, road network development is the key component of the Transportation

Development Plan. The Road Network should be developed through the provision of new roads and connecting roads along with improvement of existing road network.

2.4.1.1 Road Network Plan

Planning standard is a fundamental tool for formulation of any planning perspective including transport plan. The suggested planning standards of road width for UTIDP are illustrated in **Table-2.5**. The standards are meant for use by UTIDP, LGED and other planning and development agencies. The standards have been adopted by the consultants to draw up the current series of plans. An integrated road network plan has been prepared commensurating the planning standards and considering the convenient movement of all vehicular and pedestrian traffic. Three types of road, such as Pourashava Primary Road, Pourashava Secondary Road and Local Road are proposed designating a unique ID No. to each road for identifying them in map. The road network plan along with transportation management plan is presented in **Map-2.1** below. Description of some Primary and Secondary roads have been provided in the following section and a list of primary and secondary road is provided in **Table-2.6**.

PR-01:

This road will start from Donbari road of W-02 and extend northwards through W-01, 05 and 06 up to river small Jhenai. To divert the through traffic by avoiding Aram Nagar and Shimla Bazar this road will be helpful. The width of this has been proposed to 100 feet.

PR-02:

This road will follow the alignment of Bhatiya road of W-07 and proceed towards south-east and meet with Dik Pati road and proceed up to eastern margin of W-09 (Jamalpur road).The width of this road will be 120 feet.

SR-01:

This road will start from Salam Talukder road and proceed eastwards through W-01then turn south and proceed up to Bolerdia khal (W-03). The width will be 60 feet.

SR-02:

Start from south of small Jhenai river (W-05) and proceed to southwards through W-06, 01 and 03 up to Bolerdia khal. The width will be 60 feet.

SR-03:

Located at the western part of W-07. Following the alignment of Bhatiya road proceed up to river small Jhenai in the south. The width will be 80 feet.

SR-04:

River small Jhenai to eastwards and then northwards through W-09 by the side of proposed Industrial Zone and Land for Poor People. The width will be 60 feet.

SR-05:

Located on the south part of W-09. From Dhanbari road to small Jhenai river. The width will be 60 feet.

SR-06:

From Bhatiya road to south-east direction following the alignment of Dik Pati road and Dhanbari road up to the last margin of W-09. The width will be 60 feet.

SWR-01:

From Satariya Bazar road to eastwards up to railway line then turn south-west direction up to Donbari road. This will be a bi-pass of Aram Nagar Bazar. This road will mostly follow the alignment of Salam Talukder road. The width will be 60 feet.

SWR-02:

Start from south of small Jhenai river (W-05) and proceed to southwards through W-05, 04, 06, 01 and 02 and proceed towards eastwards up to Bolerdia khal (W-03). The width will be 60 feet.

SWR-03:
From Bolerdia khal (W-03) to southwards up to Chowdhury bazaar road.This road is a continuation of SR-02. The width will be 60 feet.

SWR-04:
From Bolerdia khal (W-03)to southwards up to Chowdhury bazaar road. The width will be 60 ft.

SWR-05:
Located at the southern part of W-03. This road extended east-west direction following the alignment of Chowdhury bazaar road. The width will be 60 feet.

SWR-06:
From Sharishabari-Jamalpur road of W-04 to eastwards through Shimla Purba para moor and Kamrabad road up to small Jhenai river. The width will be 60 feet.

SWR-07:
From Shimla Madhab mouza (W-06) to Bengali mouza (W-09). This road will be within ox-bow lake. The width will be 60 feet.

SWR-08:
From Purba Izarapara road to the south parallel to the railway line following the alignment of Kausi bazaar road up to river small Jhenai by crossing Dik pati road. The width will be 80 feet.

SWR-09:
This road will connect the proposed secondary road (SR-03) on Bhatia Road and SWR-08 at the south of Kali Mondir. It is proposed widening of Bhatia Road to 60 ft.

SWR-10:
This is the widening of Bhatia road from SWR-09 to PR-02. It will provide accessibility and connectivity to the proposed Launch Terminal and Container Terminal with the proposed primary road (PR-02). The proposed RoW of this road is 60 ft.

SWR-11:
From Bawsi bazaar road to northwards through Panch rasta (W-08)up to extended part of Pourashava at the north-eastern margin. The width will be 60 feet.

SWR-12:
From Bakultala through Panch rasta to south-east direction. The width will be 60 feet.

Table-2.6: List of Proposed Primary and Secondary Roads

ID	Type	Ward No.	Proposed Status	Proposed RoW	Length (km)
PR-01	Primary Road	Ward no. 01	New Construction	100 ft	5.837
PR-02	Primary Road	Ward no. 07	New Construction	120 ft	3.048
SR-01	Secondary Road	Ward no. 01	New Construction	60 ft	2.806
SR-02	Secondary Road	Ward no. 01	New Construction	60 ft	5.502
SR-03	Secondary Road	Ward no. 07	New Construction	80 ft	0.720
SR-04	Secondary Road	Ward no. 09	New Construction	60 ft	3.644
SR-05	Secondary Road	Ward no. 09	New Construction	60 ft	0.328
SR-06	Secondary Road	Ward no. 09	New Construction	80 ft	2.175
SWR-01	Secondary Road	Ward no. 02	Widening	60 ft	1.790
SWR-02	Secondary Road	Ward no. 02	Widening	60 ft	6.875
SWR-03	Secondary Road	Ward no. 03	Widening	60 ft	0.304
SWR-04	Secondary Road	Ward no. 03	Widening	60 ft	0.757
SWR-05	Secondary Road	Ward no. 03	Widening	60 ft	1.724
SWR-06	Secondary Road	Ward no. 05	Widening	60 ft	1.214
SWR-07	Secondary Road	Ward no. 06	Widening	60 ft	0.964

ID	Type	Ward No.	Proposed Status	Proposed RoW	Length (km)
SWR-08	Secondary Road	Ward no. 07	Widening	80 ft	1.156
SWR-09	Secondary Road	Ward no. 07	Widening	60 ft	0.466
SWR-10	Secondary Road	Ward no. 07	Widening	60 ft	0.151
SWR-11	Secondary Road	Ward no. 08	Widening	60 ft	3.931
SWR-12	Secondary Road	Ward no. 09	Widening	60 ft	2.269
Total					**45.66**

2.4.1.2 Proposal for improvement of the existing road networks

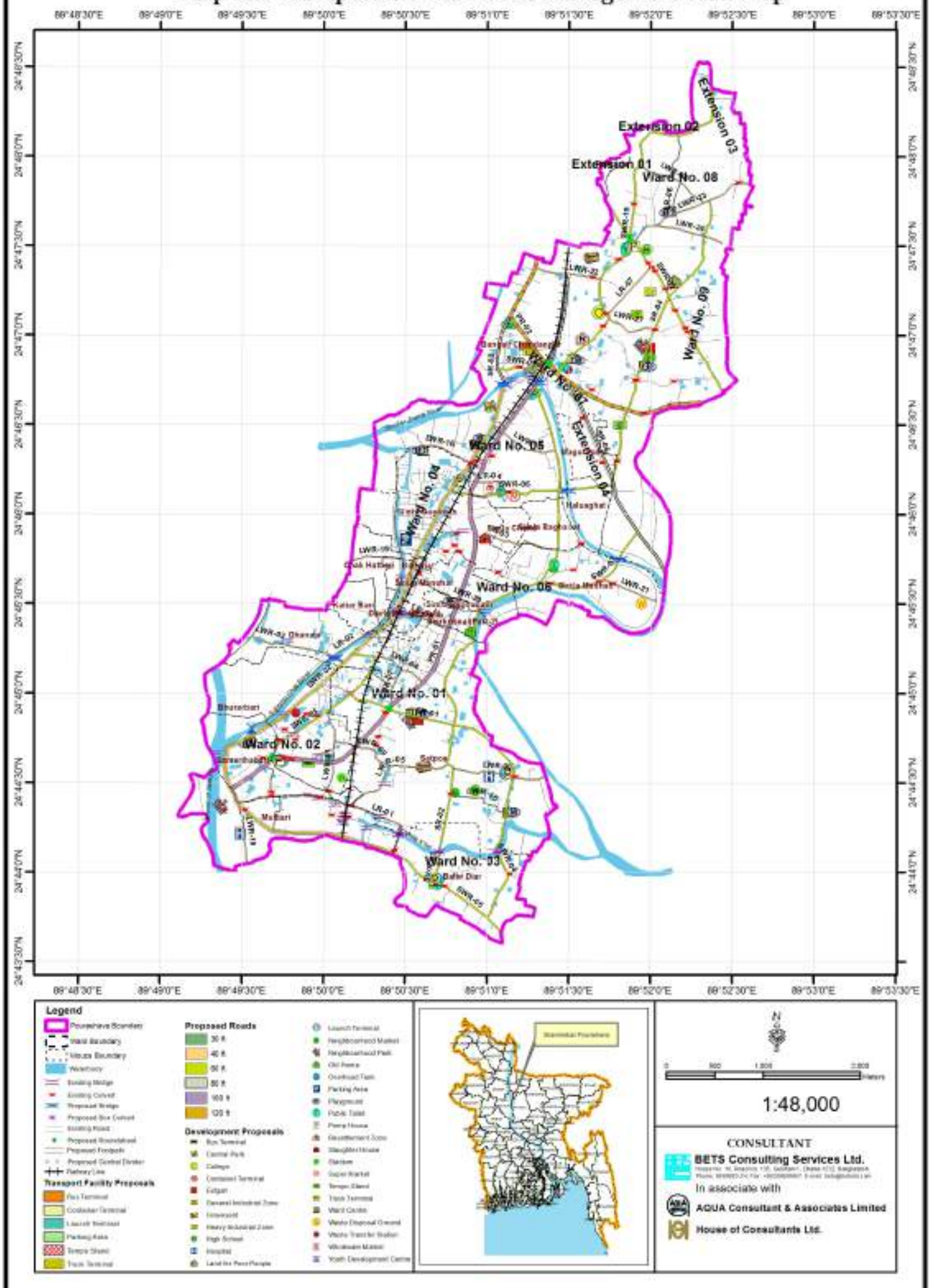
Traffic management measures may be adopted to increase traffic capacity and safety. The improvement could be done by removing the deficiencies in the existing core road network by widening and/or strengthening of selected stretches / corridors in a phased manner and improvement of road geometrics and safety provisions. The proposals for widening of roads existing roads are listed in tabular form (**Table: 2.7**) below:

Table-2.7: Road improvement proposal

ID	Type	Ward No.	Proposed Status	Proposed RoW	Length (km)
LWR-01	Local Road	Ward no. 01	Widening	30 ft	0.850
LWR-02	Local Road	Ward no. 01	Widening	40 ft	0.881
LWR-03	Local Road	Ward no. 01	Widening	40 ft	0.090
LWR-04	Local Road	Ward no. 01	Widening	40 ft	0.584
LWR-05	Local Road	Ward no. 01	Widening	40 ft	1.233
LWR-06	Local Road	Ward no. 01	Widening	40 ft	0.989
LWR-07	Local Road	Ward no. 01	Widening	40 ft	0.394
LWR-08	Local Road	Ward no. 01	Widening	30 ft	0.280
LWR-09	Local Road	Ward no. 02	Widening	40 ft	0.685
LWR-10	Local Road	Ward no. 02	Widening	40 ft	0.629
LWR-11	Local Road	Ward no. 02	Widening	40 ft	0.968
LWR-12	Local Road	Ward no. 02	Widening	30 ft	0.393
LWR-13	Local Road	Ward no. 02	Widening	30 ft	0.361
LWR-14	Local Road	Ward no. 03	Widening	40 ft	0.192
LWR-15	Local Road	Ward no. 03	Widening	30 ft	0.657
LWR-16	Local Road	Ward no. 04	Widening	40 ft	0.695
LWR-17	Local Road	Ward no. 05	Widening	40 ft	0.669
LWR-18	Local Road	Ward no. 05	Widening	40 ft	0.069
LWR-19	Local Road	Ward no. 06	Widening	40 ft	0.549
LWR-20	Local Road	Ward no. 06	Widening	40 ft	0.715
LWR-21	Local Road	Ward no. 06	Widening	40 ft	0.584
LWR-22	Local Road	Ward no. 07	Widening	40 ft	0.692
LWR-23	Local Road	Ward no. 08	Widening	40 ft	1.453
LWR-24	Local Road	Ward no. 08	Widening	40 ft	0.723
LWR-25	Local Road	Ward no. 08	Widening	30 ft	0.779
LWR-26	Local Road	Ward no. 08	Widening	30 ft	0.508
LWR-27	Local Road	Ward no. 09	Widening	40 ft	0.530
SWR-01	Secondary Road	Ward no. 02	Widening	60 ft	1.790
SWR-02	Secondary Road	Ward no. 02	Widening	60 ft	6.875
SWR-03	Secondary Road	Ward no. 03	Widening	60 ft	0.304
SWR-04	Secondary Road	Ward no. 03	Widening	60 ft	0.757

ID	Type	Ward No.	Proposed Status	Proposed RoW	Length (km)
SWR-05	Secondary Road	Ward no. 03	Widening	60 ft	1.724
SWR-06	Secondary Road	Ward no. 05	Widening	60 ft	1.214
SWR-07	Secondary Road	Ward no. 06	Widening	60 ft	0.964
SWR-08	Secondary Road	Ward no. 07	Widening	80 ft	1.156
SWR-09	Secondary Road	Ward no. 07	Widening	60 ft	0.466
SWR-10	Secondary Road	Ward no. 07	Widening	60 ft	0.151
SWR-11	Secondary Road	Ward no. 08	Widening	60 ft	3.931
SWR-12	Secondary Road	Ward no. 09	Widening	60 ft	2.269
Total					**38.751**

Map-2.1: Transportation & Traffic Management Plan Map



2.4.1.3 List of Proposed new roads

The Urban Area Plan provides brief description of any proposed transport improvements. The transport content of this plan has been developed around the framework of the Structure Plan. The specific transport proposals set out in the Urban Area Plan for public consideration include new road schemes and improvements, traffic management measures, the co-ordination of public transport services, the control of car and lorry parking and the improvement of cyclist and pedestrian safety. The proposals put forward for discussion to the mass people of the pourashava. The pourashava authority also advises about road development should not be duplicated in the public examination of Urban Area Plan and Ward Action Plans. Local Authority roads, which are not strategic, are not included in the Ward Action Plan and both the need for the road and the line of the route are matters for the Urban Area Plan to consider. A list proposed of new roads have been made after studying the existing road network, travel demand pattern, potential for future urban growth and conducting public consultation meeting with Pourashava officilals, councilors, local people and other stakeholders which is presented in **Table-2.8**.

Table-2.8: List of Proposed New Roads in the Project Area

ID	Type	Ward No.	Proposed Status	Proposed RoW	Length (km)
LR-01	Local Road	Ward no. 02	New Construction	40 ft	1.834
LR-02	Local Road	Ward no. 02	New Construction	30 ft	3.623
LR-03	Local Road	Ward no. 05	New Construction	40 ft	0.912
LR-04	Local Road	Ward no. 05	New Construction	40 ft	0.347
LR-05	Local Road	Ward no. 06	New Construction	30 ft	0.561
LR-06	Local Road	Ward no. 08	New Construction	30 ft	0.342
LR-07	Local Road	Ward no. 08	New Construction	40 ft	0.672
PR-01	Primary Road	Ward no. 01	New Construction	100 ft	5.837
PR-02	Primary Road	Ward no. 07	New Construction	120 ft	3.048
SR-01	Secondary Road	Ward no. 01	New Construction	60 ft	2.806
SR-02	Secondary Road	Ward no. 01	New Construction	60 ft	5.502
SR-03	Secondary Road	Ward no. 07	New Construction	80 ft	0.720
SR-04	Secondary Road	Ward no. 09	New Construction	60 ft	3.644
SR-05	Secondary Road	Ward no. 09	New Construction	60 ft	0.328
SR-06	Secondary Road	Ward no. 09	New Construction	80 ft	2.175
Total					**32.350**

2.4.2 Plan for Transportation Facilities

2.4.2.1 Transportation Facilities Plan

Bus Terminal

There is no designated bus terminal in this pourashava. Considering inter-town movement of high speed vehicular traffic without interrupting safe urban living of the Pourashava inhabitants, an inter town bus terminal (BT) has been proposed at the Western part of Ward-7 beside proposed PR-02 and West of Railway line.

As per standard of UTIDP the required area of Bus Terminal for the Projected population of 55,701 up to year 2021 is about 2.79 acre. Thus, an area of 1.5245 acres comprising one bus terminal is proposed for this bus terminal. BT comprises Plot No- 10362-10370, 10755, 10756, 10776, 10779 of Bangali Mouza. The location and outline of the proposed bus terminals is shown in **Map 2.1**. The details are given in **Table-2.9**.

Launch Terminal

Sharishabari Pourashava is well known for production and business of Jute. As a result, trading of jute products requires waterway transport through Jhinai river. The town is well connected in the river network of Northern Region as well as all over the country. A Launch Terminal has been proposed on the West of Rail Line and on the North Bank of Jhinai River at Ward No.07. It will cover an area of 0.713 acre on Bangali Mouza comprising part of Plot No.10811, 10812, 10813, 10818, 10819, 10821, 10822, 10823, 10824, 10851. It is expected that the Proposed Launch Terminal will enhance trade and commerce of Sharishabari Pourashava and will integrate the town in the regional and national waterway transport network.

Container Terminal

The proposed Launch Terminal requires ancillary facilities for loading and unloading of goods. It will also provide dockyard facilities including building, repairing, fitting out or dry-docking of vessels. The Container Terminal has been proposed on the West of Rail Line beside Bhatyia Road at Ward No.07. It will cover an area of 1.277 acre on Bangali Mouza comprising part of Plot No. 10825 and 10851.

Truck Terminal

There is no desifnated truck terminal in this pourashava. Considering the necessity of terminal facilities for freight traffic, one truck terminal have been proposed at the Western part of Ward-7 beside proposed PR-02 and West of Railway line. As per standard of UTIDP the required area of Truck Terminal for the Projected population of 55,701 up to year 2021 is about 1.39 acre. An area of 1.0242 acres is proposed for the truck terminal. TT comprises Plot No- 10345, 10779, 10780, 10786-10794 of Bangali Mouza. The location and outline of the proposed truck terminal is shown in **Map-2.1**. The details are given in **Table-2.9**.

Table-2.9: List of Proposed Transport Facilities

ID	Name of Facilities	Location	Ward No.	Area (acre)	Mouza Schedule	
					Mouza	Plot No.
BT	Bus Terminal	Western part of W-7 beside proposed PR-02 and West of Railway line	7	1.525	Bangali	10362-10370, 10755, 10756, 10776, 10779
CT	Container Terminal	West of Rail Line at the opposite side of Kali Mondir	7	1.277	Bangali	10825, 10851
LT	Launch Terminal	West of Rail Line on the North Bank of Jhinai River	7	0.713	Bangali	10811, 10812, 10813, 10818, 10819, 10821, 10822, 10823, 10824, 10851
PA	Parking Area	Between Suborno Khali river and Sharishabari-Jamalpur road	4	0.535	Simla Gopinath	1532, 1544
TT	Truck Terminal	Western part of W-7 beside proposed PR-02 and West of Railway line	7	1.024	Bangali	10345, 10779, 10780, 10786-10794
TS-01	Tempo Stand	Eastern part of W-2 beside proposed PR-01	2	0.276	Bhurarbari	704, 705, 706, 707
TS-02	Tempo Stand	Southern part of W-3 beside Chowdhuri Bazar road	3	0.261	Balar Diar	2368-2372
TS-03	Tempo Stand	North part of W-5 and east of railway line	5	0.298	Bangali	10975, 13063, 13064, 13179
TS-04	Tempo Stand	Western part of W-7 beside Sharishabari-Bhatiya road	7	0.273	Bangali	10433, 10434, 10435, 10436
TS-05	Tempo Stand	Eastern part of W-9 beside Bangali Para road	9	0.271	Bangali	5487, 5491

Tempo Stand

Tempo is now a major and cheap commuter in small towns that play important role in commuter transportation. There is no formal tempo stand in the pourashava. Thus, five tempo stands along with rickshaw/van stand are proposed in Eastern part of Ward-2 beside proposed PR-01 (TS-01), Southern part of Ward-3 beside Chowdhuri Bazar road (TS-02), East North part of Ward-5 and east of railway line (TS-03), Western part of Ward-7 beside Sharishabari-Bhatiya road (TS-04) and Eastern part of Ward-9 beside Bangali Para road (TS-05).

The location and outline of the proposed tempo stand/rickshaw stand is shown in Map-2.1. As per standard of UTIDP the required area of this facility is about 0.70 acre/one tempo stand. Proposed area of TS-01, TS-02, TS-03, TS-04 and TS-05 are 0.276, 0.261, 0.298, 0.273 and 0.271 acre respectively. The details are shown in **Table-2.9**.

2.4.2.2 Parking and Terminal Facilities

There is no parking facilities provided in Sharishabari Pourashava. People are habituated for parking beside the roads. This parking practice occupie considerable spaces and reduces the effective road width. Particularly in bazaar area, where a number of markets exist, the parking problem become acute during weekly hat days. If it is possible to integrate parking area for tempo, rickshaw, van, etc. near to bazar area, the congestion problem will be solved.

On-street parking shall be prohibited on all roads within the bazar area except at places where it is specifically permitted for parking. Adequate terminal facilities will be provided at the bus and truck terminal for the convenience and comfort of the commuters.
The bus terminal should have to accommodate the following services:

- Ticket Counter
- Passenger-shed
- Workshop
- Cleaning and washing facility
- Loading and unloading place
- Bus parking space
- Toilet facility
- Waiting room

The following facilities are proposed to accommodate in the truck terminal complex:

- Workshop
- Cleaning and washing
- Loading and unloading yard
- Truck parking space
- Toilet facility

2.4.2.3 Development of Facilities for Pedestrians, Bicycles and Rickshaws

Footpath may refer to sidewalk, which runs along vehicular roads. It is a separate lane exclusively designed for the purpose of pedestrian movement. The footpath is quite safe and free from any accident. Unfortunately, there is no footpath besides any road of Sharishabari Pourashava.

The transportation system within residential neighborhoods should favor pedestrian movement and discourage vehicular through traffic in both new and existing neighborhoods. A pedestrian system that utilizes neighborhood streets and paths to link

the residents with the commercial and school functions serving the area will be encouraged. A number of pedestrian ways (Footpath) of 5.837 km in Dhonbari road and 6.875 km beside south of small Jhenai river road is proposed for the smooth movement of pedestrian traffic. The details are illustrated in **Table-2.10** and the alignment is shown in **Figure-2.3** below.

Table-2.10: List of Proposed Footpath/ Pedestrian Way

ID	Ward No.	Length(km)	Road Type
FP-01	Ward No. 01	5.837	Primary Road
FP-02	Ward No. 02	6.875	Secondary Road
Total	**12.712**		

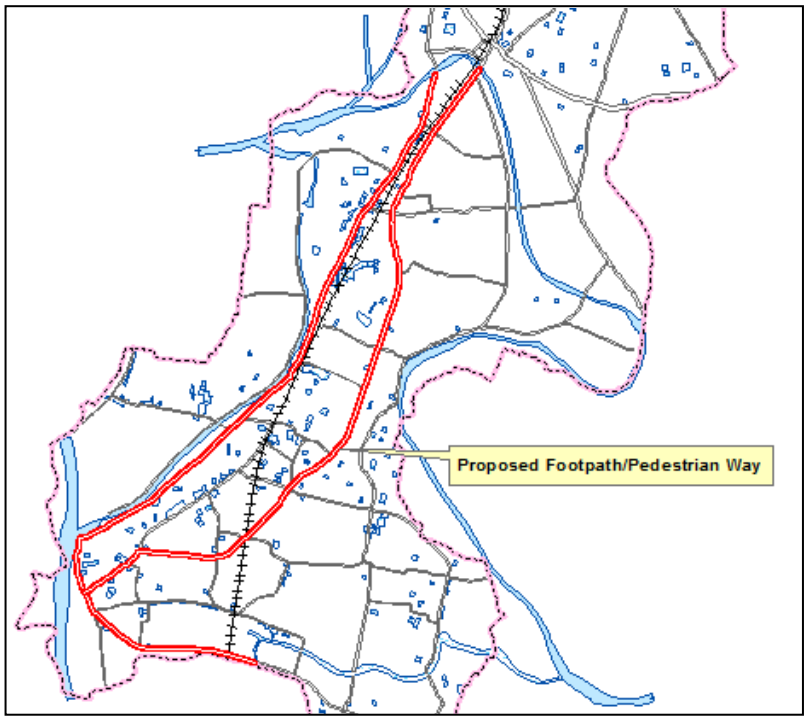


Figure-2.3: Alignment of Footpath/ Pedestrian Way

The provision of separate bicycle or rickshaw lane is not a requisite for a low level of non-motorized traffic movement pattern, which is prevalent in any upazila level small town like Sharishabari Pourashava.

2.4.2.4 Other Transportation Facilities

Roundabout

A roundabout is a type of circular intersection. Well-designed roundabouts is a safe, effective form of junction. They can handle much higher volumes of turning traffic. Their safety benefits result primarily from the control they exercise on approach speeds, and this makes them ideal for junctions at the entrance to towns and villages. They are also one of the safest ways of handling the transition between dual carriageways and single carriageways.

The presence of mixed traffic, including NMVs and pedestrians, means that roundabouts must be designed primarily for speed control. The proposed list of roundabout in Sharishabari Pourashava is given in **Table-2.11** and the locations are shown in **Figure-2.4**.

Table- 2.11: List of Proposed Roundabout in Sharishabari Pourashava

ID	Ward No.	Location
RA-1	1	Madrasa Road Mor
RA-2	2	Arman Nagar Bazar Mor
RA-3	7	Dik Pati Road Mor Near Kali Mondir
RA-4	8	Bousi Station Road Mor

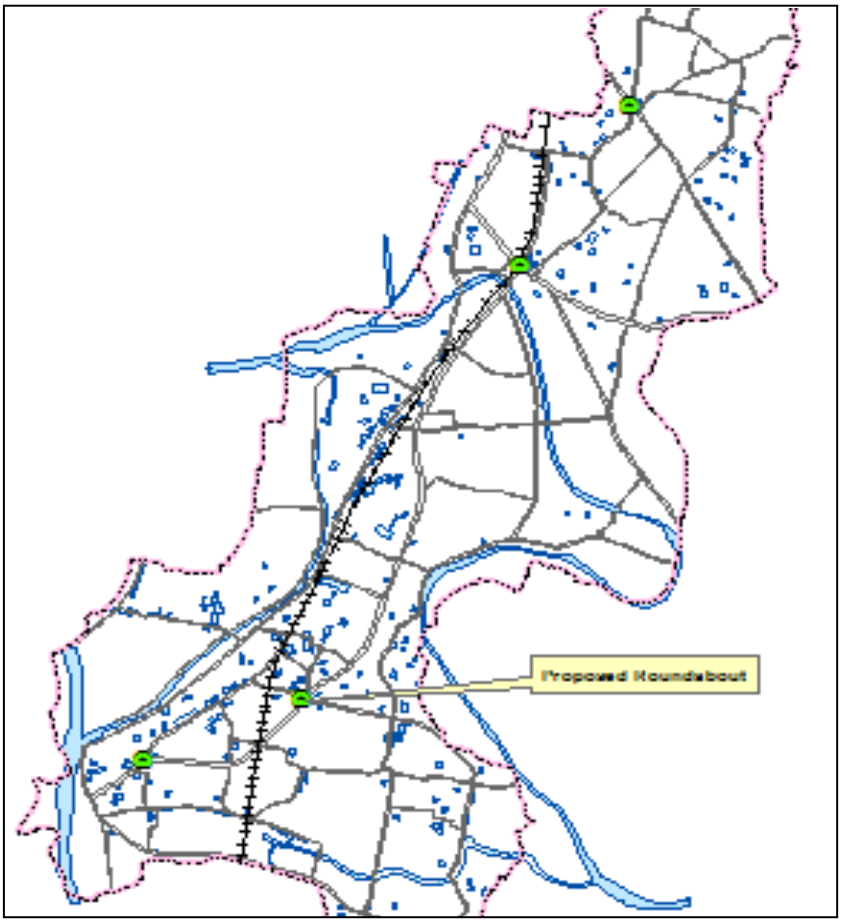


Figure-2.4: Proposed Roundabout

Central Divider

Central divider on one road is proposed with a view to avoid conflict between both-way movements of vehicular traffic on same road. Details are shown in **Table-2.12** below.

Table- 2.12: Proposal for Central Divider

ID	Ward No.	Length(km)	Road Type
CD-01	Ward No.07	3.0475	Primary Road
	Total	**3.0475**	

Traffic Signs and Signals

Traffic signs and signals are required in order to provide for the safe and orderly movement of motorized and non-motorized traffic and pedestrians. These provide information about routes, directions, destinations and points of interest. They also provide information on regulations, which apply to specific locations or at specific times, and warn of hazards, which may not be evident. When a traffic sign is correctly used, the majority of motorists

will comply with the posted regulation or warning, and drive in a safe and orderly manner. In order to minimize the rate of traffic conflict the following signs and signals should be provided at the key location considering the prevailing traffic situation and traffic management option.

- Warning signs
- Regulatory signs
- Speed limit signs
- Bus and cycle signs and road markings
- On-street parking control signs
- Road markings
- Motorway signs and signals
- Direction signs on all-purpose roads
- Information signs
- Traffic signals
- Zebra crossings
- Signs for road works and temporary situations

2.4.3 Waterway Development/Improvement Options

Although there is a river within the jurisdiction area of Sharishabari Pourashava yet it has no sufficient water all the season. Only one canal is found here, which have also insufficient water. Therefore, waterway development or improvement option is not applicable for Sharishabari Pourashava.

2.4.4 Railway Development Option

There is already an existing railway line in the Sharishabari Pourshava and there is no further proposal for its improvement. Thus, railway development option is not applicable at Sharishabari Pourashava.

2.5 TRANSPORTATION SYSTEM MANAGEMENT STRATEGY (TSM)

The strategy for street layouts must start with considering pedestrian movement rather than vehicular movement. This approach ensures greater consideration of pedestrians, cyclists and public transport users. In many instances, all users can comfortably share the same street network.

2.5.1 Strategies for Facility Operations

- Direct walking and cycling routes to local facilities such as shops, schools, public transport, and open spaces, together with lighting and landscaping of such routes
- The planting of appropriate street plantation
- Protect environment and improve health by building and investing in public transport and other types of efficient and sustainable transport which minimize emissions and consumption of resources and energy
- Strict vigilance should be in force in order that no one can cut the earth from the embankment and shoulders of the road and nothing is done to cause harm to the embankment and shoulders
- The people should be motivated to give up the use of the iron rim for the tractor, and wooden frame for the cartwheel drawn by cows or buffaloes - instead they should be encouraged to use rubber wheels
- People should be encouraged not to overload the bus and additionally, they should also be informed about the hazards of trucks loaded beyond their carrying capacity to

dissuade them from such practices
- Care should be taken to dissuade people from digging irrigation canals on the shoulder or slope

2.5.2 Strategies for Traffic Flow and Safety

- Links to the overall road network in the town, including bus services, based on an analysis of the need for such linkages
- Maximum accessibility for pedestrians and cyclists
- Circulation routes for public transport within the area
- Consideration of provision for low design speeds (such as 30 kph) and facilities for pedestrians and cyclists
- Automated traffic signals to improve traffic flow and road safety
- Introduction of temporary signs to provide information to road users to enable safe and convenient travel
- Restricting movement of heavy vehicle though the residential zone during specific periods
- Provision for prescribed shoulder on either side of the road
- The roads should be kept free from all unauthorized obstructions. In this regard, all markets, shops, Beelboards, utility lines such as telephone lines, street lights, electricity poles, gas connection lines etc. must be relocated
- Undesirable hump on the road, if exists, should be removed. In case of speed needs to be regulated, then the hump should be replaced by rumble strips
- Measures should be taken to prevent water stagnation of on the road surface
- Kilometer posts are put up on each road in accordance with the approved design, drawing and specification

2.5.3 Strategies for Traffic Management

- Enhancements to enable more effective use and management of existing physical infrastructure. These enhancements typically include better road markings, signs, traffic signals, channelization at intersections, turn restrictions and separation barriers, space for bus stops, and parking or waiting areas for public transport vehicles
- Initiatives to improve the ability of road users (motorists and pedestrians alike) to adopt behavioral patterns which lead to more efficient and safer transport services. Typically, this will involve programs to alter community attitudes and invoke a greater willingness to accept better discipline by all users and providers of the transport services
- Improved testing and licensing procedures for all drivers and re-training for offending drivers. Since most drivers work for someone else, the influence that owners exert by either condoning or reinforcing poor driving habits or insisting and demanding good driving habits is substantial and should not be under estimated
- Increased level of enforcement of traffic rules to ensure a greater compliance with community desired road user behavior. Enforcement actions can involve formal policing as well as informal pressure on individuals to adopt community norms of behavior and should include the involvement of community leaders

2.6 PLAN IMPLEMENTATION STRATEGIES

2.6.1 Regulations to implement the Transportation Plan

The Transportation Plan for Sharishabari Pourashava will be regulated and implemented by the Pourashava authority along with LGED and Roads & Highways Department. These

authorities should exercise the following Ordinance, Rules and Policy to implement the transportation plan.

The Motor Vehicles Ordinance, 1983 can be exercised by the respective authorities to control and scrutinize the movement pattern of motorized traffic in Sharishabari Pourashava. It includes licensing of conductors of stage carriage or contract carriage, registration of motor vehicles, control of transport vehicles, construction, equipment and maintenance of motor vehicles, control of traffic, and insurance of motor vehicles against third party risks, offences, penalties and procedure.

The Motor vehicle rules, 1997 is designed to ensure the road safety, which can also be exercised by the authorities. The center of attention of these rules are design and specification of the length and height of motorized vehicles and repair of break down vehicles.

Another government's policy for the transport sector is spelt out in the National Land Transport Policy approved in April 2004. The policy objectives include provision of safe and dependable transport services, and improving the regulatory and legal framework. The policy is designed to play an important role in helping reduce the transport costs of goods for export and in keeping the costs of Bangladeshi goods competitive in the world market. The policy also introduces an integrated multimodal transport system, linking road, rail and water transport. Under the last government a draft Integrated Multimodal Transport Policy was prepared but has not yet been approved. It is designed to build upon the Land Transport Policy and help in achieving more rational and balanced investments across transport modes and achieve better coordination among them.

On the other hand, the Pourashava Authority should practice the 'Local Government (Pourashava) Act, 2009' to ensure safe and sustainable transport service for the inhabitants.

The respective authorities will ensure 'Sustainable Transportation Management Plan' for Sharishabari Pourashava through exercising all of these rules, ordinance and policy frameworks.

2.6.2 Implementation, Monitoring, Evaluation and Coordination of the Plan

The implementation, monitoring and evaluation strategies of Structure Plan have been illustrated in Chapter-9 of Part-A. **The Transportation and Traffic Management Plan** should also be implemented, monitored and evaluated under the same strategy by strengthening capacity of the Pourashava and forming a Monitoring and Evaluation Committee (MEC).

As The **Transportation and Traffic Management Plan** is a mid-term plan with a period of 10 years (2011-2021), it will be implemented on phase wise according to priority. The proposals have been prioritized based on the most urgent transport needs, since Bangladesh is a least developed country and it has a very limited budget for infrastructure development. Besides, the Pourashava Authority itself is not capable of financing this huge cost.

The Transportation and Traffic Management Plan will be implemented gradually following prioritized transport proposals including roads, central divider, roundabout etc.. Phasing of proposals was done based on the priority. The Phase-I of the proposals, to be also incorporated in the Ward Action Plan, will be implemented within first 5 year (2011-2016)

of the plan period. The consultants have proposed Phase-II of the proposals to be implemented within next 5 years succeeding the recent past Ward Action Plan. The details of phasing are shown in **Table-2.13**. After each 5 years the Plan will be evaluated, updated and new Ward Action Plan will be formulated under the changing circumstances.

Table-2.13: Phasing of Proposed Roads

Phase-I (2011-2016)		
ID	**Road Type**	**Ward No.**
LWR-02	Local Road	Ward no. 01
LWR-03	Local Road	Ward no. 01
LWR-04	Local Road	Ward no. 01
LWR-07	Local Road	Ward no. 01
LWR-08	Local Road	Ward no. 01
LWR-09	Local Road	Ward no. 02
LWR-10	Local Road	Ward no. 02
LWR-11	Local Road	Ward no. 02
LWR-12	Local Road	Ward no. 02
LWR-13	Local Road	Ward no. 02
LWR-14	Local Road	Ward no. 03
LWR-18	Local Road	Ward no. 05
LWR-19	Local Road	Ward no. 06
LWR-20	Local Road	Ward no. 06
LWR-21	Local Road	Ward no. 06
LWR-22	Local Road	Ward no. 07
LWR-23	Local Road	Ward no. 08
LWR-24	Local Road	Ward no. 08
LWR-27	Local Road	Ward no. 09
SWR-01	Secondary Road	Ward no. 02
SWR-02	Secondary Road	Ward no. 02
SWR-03	Secondary Road	Ward no. 03
SWR-06	Secondary Road	Ward no. 05
SWR-07	Secondary Road	Ward no. 06
SWR-08	Secondary Road	Ward no. 07
SWR-11	Secondary Road	Ward no. 08
SWR-12	Secondary Road	Ward no. 09

Phase-II (2016-2021)		
ID	**Road Type**	**Ward No.**
LR-01	Local Road	Ward no. 02
LR-02	Local Road	Ward no. 02
LR-03	Local Road	Ward no. 05
LR-04	Local Road	Ward no. 05
LR-05	Local Road	Ward no. 06
LR-06	Local Road	Ward no. 08
LR-07	Local Road	Ward no. 08
LWR-01	Local Road	Ward no. 01
LWR-05	Local Road	Ward no. 01
LWR-06	Local Road	Ward no. 01
LWR-15	Local Road	Ward no. 03
LWR-16	Local Road	Ward no. 04
LWR-17	Local Road	Ward no. 05
LWR-25	Local Road	Ward no. 08
LWR-26	Local Road	Ward no. 08
PR-01	Primary Road	Ward no. 01
PR-02	Primary Road	Ward no. 07
SR-01	Secondary Road	Ward no. 01
SR-02	Secondary Road	Ward no. 01
SR-03	Secondary Road	Ward no. 07
SR-04	Secondary Road	Ward no. 09
SR-05	Secondary Road	Ward no. 09
SR-06	Secondary Road	Ward no. 09
SWR-04	Secondary Road	Ward no. 03
SWR-05	Secondary Road	Ward no. 03
SWR-09	Secondary Road	Ward no. 07
SWR-10	Secondary Road	Ward no. 07

Plan implementation strategy depends on Monitoring, evaluation and coordination of a plan. Monitoring checks the plan is being implemented properly or not. It also measures the level of implementation of the plan. If the plan implementation is not on track, corrective measures can be taken to put execution on the track. After expiry of any plan evaluation is made about the errors and omissions. Such evaluation helps take corrective measures in the next plan. Such monitoring and evaluation must be carried out from within the Pourashava. But Sharishabari Pourashava is not equipped with qualified manpower to make such evaluation. Monitoring and evaluation of a plan is essentially the responsibility of qualified and experienced planners. As there is no planner in Sharishabari Pourashava, the implementation, monitoring, evaluation and coordination phase of Transport Management Plan will be seriously affected. The Pourashava should have built its own capacity to ensure the 'Transportation Management Plan' properly.

CHAPTER-3: DRAINAGE AND ENVIRONMENTAL MANAGEMENT PLAN

This is the third Chapter of Part-B (Urban Area Plan) of the Draft Master Plan for Sharishabari Pourashava, which comprises **Drainage and Environmental Management Plan**. This Chapter has been further subdivided into two parts titled under **Part-I: Drainage Plan and Part-II: Environmental Management Plan**.

The Drainage Plan has been formulated with the aim of reducing drainage congestion, water logging and urban flooding. This part seeks the options for retaining the natural drainage system as well as linking the surface drains (manmade drain) to the channel network and retention ponds. An integrated drainage network is the ultimate goal of this plan.

Part-II of this Chapter comprises Environmental Management Plan that has been formulated for ensuring a sustainable living and working environment for the Pourashava dwellers. This Part entails detailed plans and proposals for protection and conservation of natural and built environment including water bodies, ecology, flora and fauna etc. and pollution control in the light of policies and guidelines set in the structure plan.

PART-I: DRAINAGE PLAN

3.1 INTRODUCTION

The purpose of the Drainage Plan is to make an assessment of the present drainage facilities and the scope for future development within 20.95 square kilometer study area of the Sharishabari Pourashava that consists of partially developed commercial, residential area and infrastructure. The purpose of the survey was to gather information available and use them at the time of the preparation of the Drainage Plan that shall act as a guiding document for designing of drains in future. This Drainage Plan shall be a planning tool and shall be used as a guideline for Sharishabari Pourashava that shall be responsible for the approval of drainage improvements. In the past, the term drainage included only the hydrologic and hydraulic aspects for discharge of storm runoff. Perhaps the most pressing challenge that now a days we face include the management of our water resources and flood hazard, maintain a continuous supply of water for industrial, agricultural, transportation, recreation, and potable water for present and future generations. The Drainage Plan aspects shall also include the flood and water resources management and pollution abatement. The Drainage Plan will propose improvements necessary to the major drainage systems to accommodate storm runoff of the Sharishabari Pourashava. This planning process will consider both structural and nonstructural techniques to reduce the effect of the storm runoff which may be summarized as follows:

i) Improvements to major drainage outfalls
ii) Improvement of the drainage network
iii) Management of available water resources
iv) Conservation of existing natural drainage channels

3.1.1 Goals and Objectives

Following are the overall objectives of the drainage plan of Gauripur Pourashava:

a. To allow smooth drainage of storm water and the waste water of the town.
b. To develop a comprehensive drainage network with area coverage and capacity.

c. To prevent encroachment to natural drainage system.
d. To create awareness about disposing of solid waste in the drainage system.

3.1.2 Methodology and Approach to Planning

Preparation of the Drainage Plan involves (I) analyzing the existing conditions related to drainage facilities and the flood management (II) identifying major drainage outfalls and on the basis of the outfalls splitting the total drainage area into a number of drainage zones (III) defining all pertinent design criteria and (IV) defining drainage facility requirements and sizing.

The drains are designed to collect excess rainfall that comes as surface runoff from urban area, convey the runoff and finally discharge them to outfalls. The design of drains involves hydrological computations of rainfall intensity, its frequency of occurrence, duration etc., and the total runoff of a particular catchment area. The US Soil Conservation Service (SCS) method shall be used as an alternative of the Modified Rational Method for larger catchment areas.

In Modified Rational Method, the overall watershed is divided into zones that contribute to hydraulically significant points of concentration. The boundary of the zones is established based upon local topographic boundaries such as streets, existing drainage systems, etc., using good engineering practice.

3.2 EXISTING DRAINAGE NETWORK

3.2.1 Introduction

For the preparation of Drainage Plan, survey started through field reconnaissance and review of available document related to the study area. The Sharishabari Pourashava and its adjacent area have been visited several times to identify the sources of flooding, existing drainage pattern, flood flow pattern and geographical position of the study area. Field trips have also been carried out to identify the infrastructures, rivers, canals, beels, ponds etc., those required to be surveyed for preparation of maps. It is investigated whether any Drainage Plan has been prepared by any other agency. The Mayor of Sharishabari Pourahava informed that no such plan has been prepared earlier.

3.2.2 Existing Drainage System/ Network

The drainage system of Sharishabari Pourashava has been surveyed and classified into two categories: (i) regional rivers, natural khals, oxbow lakes and manmade earthen canals act as primary drains and (ii) RCC and brick masonry secondary and tertiary drains. The Jhenai and Subarno khali are two regional rivers act as primary drains. The Bolerdia Khal also act as primary drains. The railway borrow pits act as reservoirs for storing rain water. The total length of the river that fall within the Pourashava is measured as 10,156.99 m and khal is measured as 467.56 m. The section of Subarno Khali river and the Bolerdia khal is silted up and in some locations they are missing. Rehabilitation of the khals may serve as good primary drains and during winter they may be used as source of irrigation water and also fish cultivation. The river and khals of the Pourashava is listed in **Table 3.1** below:

Table 3.1: List of River/Khals in the Study Area

Sl No	River/khal	Name	Length (m)	Total length (m)
1	**River**	Smaller Jhenai river	7823.29	
2		Subarno Khali river	2333.70	
		Total length:		**10,156.99**

Sl No	River/khal	Name	Length (m)	Total length (m)
	Khal			
1		Bolerdia khal	467.56	
		Total length:		**467.56**

***Source**: Field Survey, 2008-2010 by BETS*

The secondary and tertiary drains are manmade RCC or brick masonry drains, surveyed and shown in the **Map-6.1**.These drains are constructed by Pourashava from their Annual Development Programme fund. Within the Pourashava total 10.75 km brick drains so far constructed. The secondary and tertiary drains so far constructed in Pourashava are listed in **Table 3.2** below.

In Sharishabari Pourashava moderate degree of water logging problem persists. This problem is most acute in College-Thana Parishad area, Bhausi Bazaar area, Simla Bazaar area, near Aram Nagar Bazzar – Mahmuda Salam Girls College, and Upazila Parishad Dak Banglow area. One of the main causes of water logging is unplanned construction of roads, closing of road crossing culverts and constructing infrastructures there or insufficient width of bridges and culverts. This problem is more acute in buildup areas than bare land. In some cases where water logging occurs the housing are at lower elevation than the road level. During monsoon when the rainfall intensity is very high, the remaining water after infiltration and evaporation retains on the ground where water logging occurs. Due lack of drainage facility water retains there until it dries up. In some areas water logging condition prevails for weeks together. Water logging problem starts in June and continues until end of September.

Table 3.2: List of Secondary Drains in the Study Area

Sl. No.	Nature of Drain	Drain ID	Length(m)	Av. Width (mm)
1	RCC	Nil	Nil	Nil
2	Brick	1	20.64	300
3	Brick	2	141.87	300
4	Brick	3	2621.71	300
5	Brick	4	703.43	350
6	Brick	5	778.98	300
7	Brick	6	428.01	350
8	Brick	7	2136.44	300
9	Brick	8	293.41	300
10	Brick	9	2878.30	350
11	Brick	10	42.77	300
12	Brick	11	490.02	300
13	Brick	12	37.68	300
14	Brick	13	174.35	300
Total			**10747.62**	

***Source**: Field Survey, 2008-2009 by BETS*

3.2.3 Analysis on land level (Topography)

Land Levels/Spot Levels

The Total Station (TS) based surveys were conducted for measuring the spot levels/land levels of the project area (Northing, Easting, Elevation or RL). Later on these spot levels were used for generating the contour of the project area. In general the spot levels on the

land were taken approx. at 10 meter intervals.

Total 663 nos. spot values were collected for the study area. The lowest spot height is 8.01 m PWD which is located in Ward No. 2 and the highest spot height is 21.99 mPWD which is located in Ward No.05. Around 59.3% of the spot heights are between 16.01 mPWD to 18.00 mPWD and average height of land of the project area is 16.33 mPWD. Details statistical summary of land levels survey are shown in **Table-3.3 and Table-3.4** below.

Table-3.3: Spot Value and Spot Unit

Sl. No.	Spot Unit	Value
1	Total Spot Number	663
2	Mean (mPWD)	16.33
3	Maximum Height (mPWD)	21.53
4	Minimum Height (mPWD)	8.01
5	Range	13.52
6	Variance	2.96
7	Standard Deviation	1.72

***Source**: Topographic Survey by BETS, 2008-2009*

Table-3.4: Spot Interval and Frequency

Sl. No.	Spot Interval (mPWD)	Spot Number (Frequency)	%
1	8.01-10.00	6	0.9
2	10.01-12.00	20	3
3	12.01-14.00	21	3.2
4	14.01-16.00	163	24.6
5	16.01-18.00	393	59.3
6	18.01-20.00	57	8.6
7	20.01-22.00	3	0.5
Total		663	100

***Source**: Topographic Survey by BETS, 2008-2009*

GENERAL CONTOUR DESCRIPTIONS

Sharishabari Pourashava is a land of mixed topography. From the spot level readings having the x, y and z values being determinant for the study area, a contour map of the study area has been drawn(**Map-3.1**: *Contour map of the study area*). The present urbanized area is of comparatively higher elevation where minimum spot height is 8.01 mPWD and maximum spot height is 21.99 mPWD while mean spot height for this area is 16.33 mPWD. Spot value along the road side is varying between 11.34 mPWD to 19.61 mPWD. In preparing the map, the vertical interval of the contours was taken as 0.3m. Ward-wise variations of spot height are depicted in **Table-3.5**. Project area appears to be no exception as the present contour survey reveals.

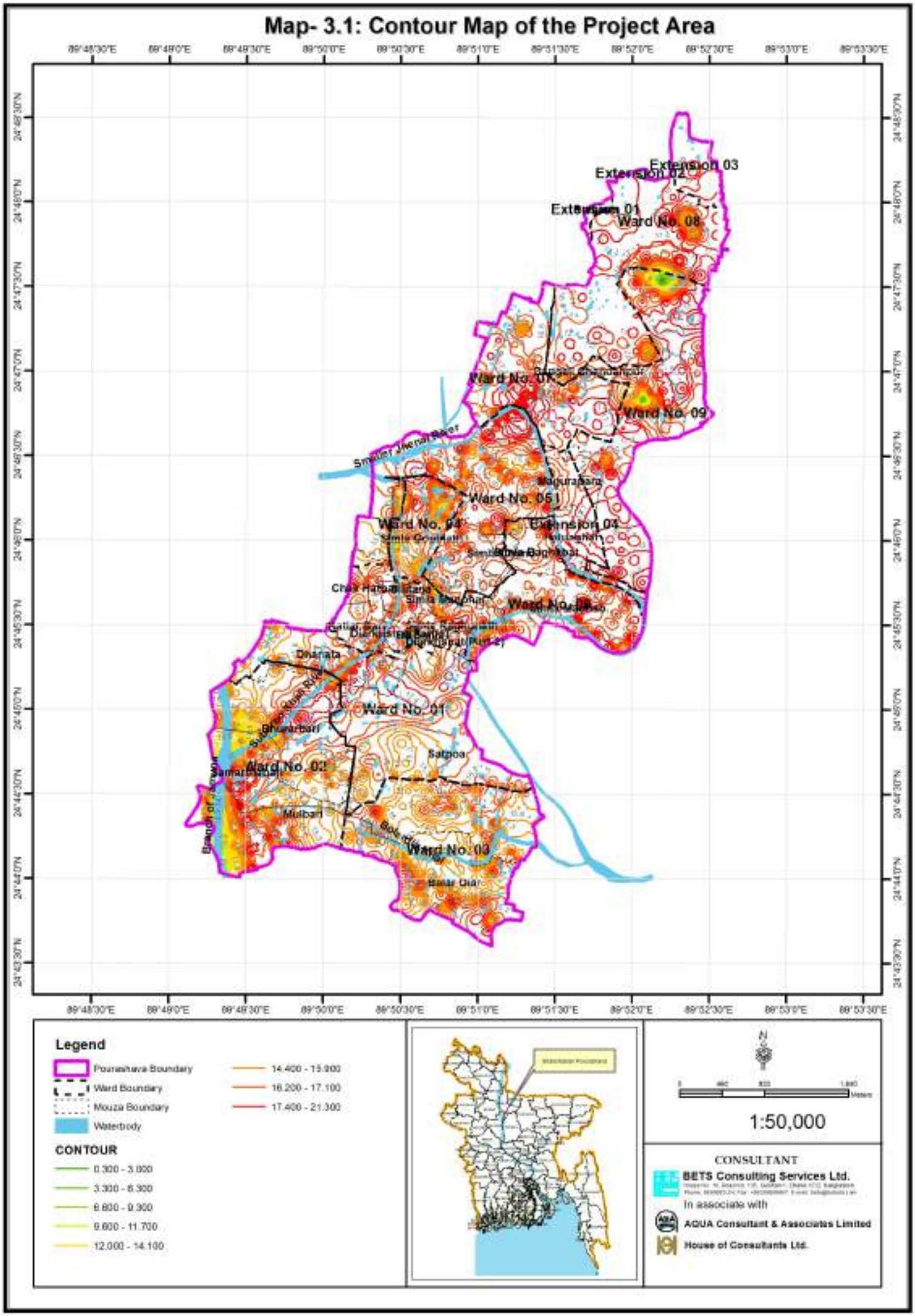
Table-3.5: Variation of Spot Height According to Ward

Ward No.	Min (in mPWD)	Max (in mPWD)	Average (in mPWD)
Ward 01	11.41	19	16.45
Ward 02	8.01	18.81	15.72
Ward 03	11.95	18.62	15.85
Ward 04	11.23	18.03	15.95
Ward 05	13.24	21.53	16.7

Ward No.	Min (in mPWD)	Max (in mPWD)	Average (in mPWD)
Ward 06	10.83	19.97	16.75
Ward 07	15.23	21.49	17.4
Ward 08	15.4	17.3	16.35

***Source**: Topographic Survey by BETS, 2008-2009*

Map- 3.1: Contour Map of the Project Area



3.2.4 Analysis of peak runoff and identification of drainage outfalls

The size and shape of the catchments or sub-catchments for each drain shall be determined by planimeter from topographic maps and by field survey. In determining the total runoff of a catchment area the following assumptions to be made:

i. The peak rate of runoff at any point is a direct function of the average rainfall intensity for the Time of Concentration to that point.
ii. The recurrence interval of the peak discharge is same as the recurrence interval of the average rainfall intensity.
iii. The Time of Concentration is the time required for the runoff to become established and flow from the most distant point of the drainage area to the point of discharge.

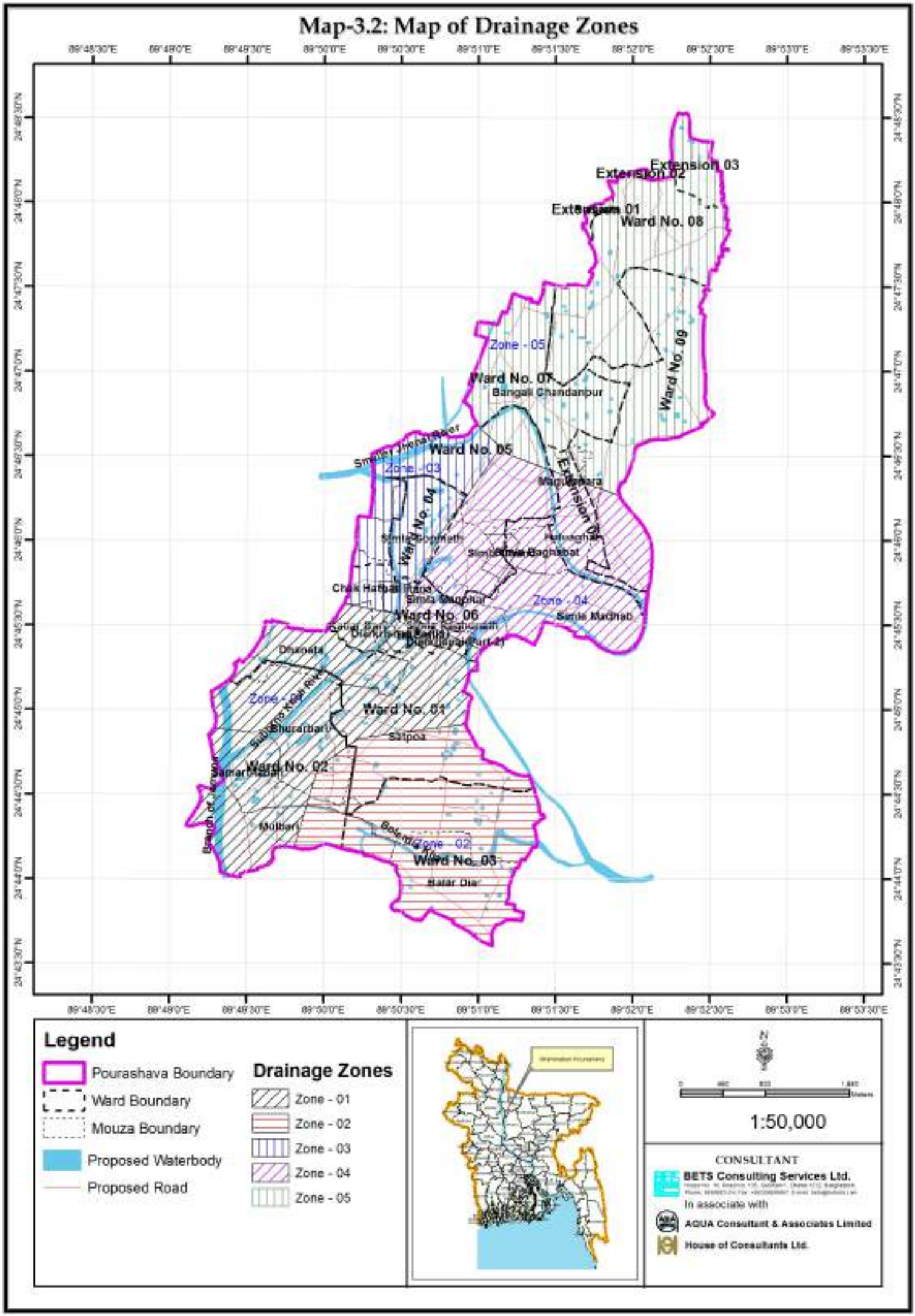
Regarding runoff discharge it has been observed that there is one khal and 2 rivers passing through the Sharishabari Pourashava. The Bolerdia Khal connection with Smaller Jhenai river passess east-west to south-eastern part of the Pourashava. Those are the only natural drainage channels which receives part of the runoff volume from part of the town.

The Total Pourashava area has been divided into 5 drainage zones based on analysis of topography, slope, natural and manmade catchment divides and the channel/detention pond (Beel/Doba). Catchment area of these drainage zones/sub-catchment is given in **Table-3.6**. Outline of these zones along with outfall name has been shown in **Map-3.2**.

Table-3.6: Drainage Zones with Outfall Location

Zone-ID	Name of Outfall	Catchment Area (Acre)
Zone-1	Suborno Khali River	1172.58
Zone-2	Bolerdia Khal	964.19
Zone-3	Subarno Khali River	453.08
Zone-4	Smaller Jhenai River	1002.85
Zone-5	Smaller Jhenai River	1584.28
Total		5176.97

Map-3.2: Map of Drainage Zones



Legend

- Pourashava Boundary
- Ward Boundary
- Mouza Boundary
- Proposed Waterbody
- Proposed Road

Drainage Zones

- Zone - 01
- Zone - 02
- Zone - 03
- Zone - 04
- Zone - 05

N

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1:50,000

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House of Consultants Ltd.

3.3 PLAN FOR DRAINAGE MANAGEMENT AND FLOOD CONTROL

3.3.1 Plan for Drain Network Development

Sustainable drainage network system, an alternative to conventional drainage is introduced to mimic natural drainage, with the aim of reducing flooding and improving the quality of water draining from urban surfaces (runoff). A comprehensive drainage network is developed leaving the existing beels and khals to remain their natural form. The entire Pourashava area is divided into several drainage zones based on topographic condition, natural and manmade drainage divide e.g. roads. The Smaller Jhenai and Suborno khali rivers are considered as the main drainage channels for taking off the runoff volume from almost the entire Pourashava due to downward sloping of the entire area towards the river. These drains would receive runoff from other primary, secondary and tertiary drains falling into them and from the land phase of the Influence area.

3.3.1.1 Drain Network Plan

Drainage network plan is intended primarily for flood mitigation, water logging and erosion control. It comprises of the proposed new drains along with improvement of existing drainage structures, embankment and sidewall. Out fall location of each existing and proposed drain were designated after assessing the flow direction of existing canal network and land slope.

3.3.1.2 Proposal for improvement of the existing drain networks

In order to drain out the anticipated future peak runoff to be generated from rainfall due to increase in impervious land cover as well as built-up areas and to mitigate the vulnerability of rainfall induced flooding and water logging, some existing secondary drains have been identified for improvement. The details of improvement of identified existing drains are shown in **Table 3.7**.

Table-3.7: List of drains for proposed improvement

ID	Existing Type	Proposed Type	Length(m)	Existing	Proposed Width
Drain-1	Tertiary Drain (Brick Drain)	Tertiary Drain	20.64	350	300
Drain-2	Tertiary Drain (Brick Drain)	Tertiary Drain	141.87	350	300
Drain-3	Tertiary Drain (Brick Drain)	Tertiary Drain	2621.71	350	300
Drain-4	Tertiary Drain (Brick Drain)	Secondary	703.43	400	350
Drain-5	Tertiary Drain (Brick Drain)	Tertiary Drain	778.98	350	300
Drain-6	Tertiary Drain (Brick Drain)	Tertiary Drain	428.01	350	350
Drain-7	Tertiary Drain (Brick Drain)	Tertiary Drain	2136.44	350	300
Drain-8	Tertiary Drain (Brick Drain)	Tertiary Drain	293.41	300	300
Drain-9	Tertiary Drain (Brick Drain)	Secondary	2878.30	350	350
Drain-10	Tertiary Drain (Brick Drain)	Secondary	42.77	350	300
Drain-11	Tertiary Drain (Brick Drain)	Tertiary Drain	490.02	300	300

3.3.1.3 List of proposed new drains

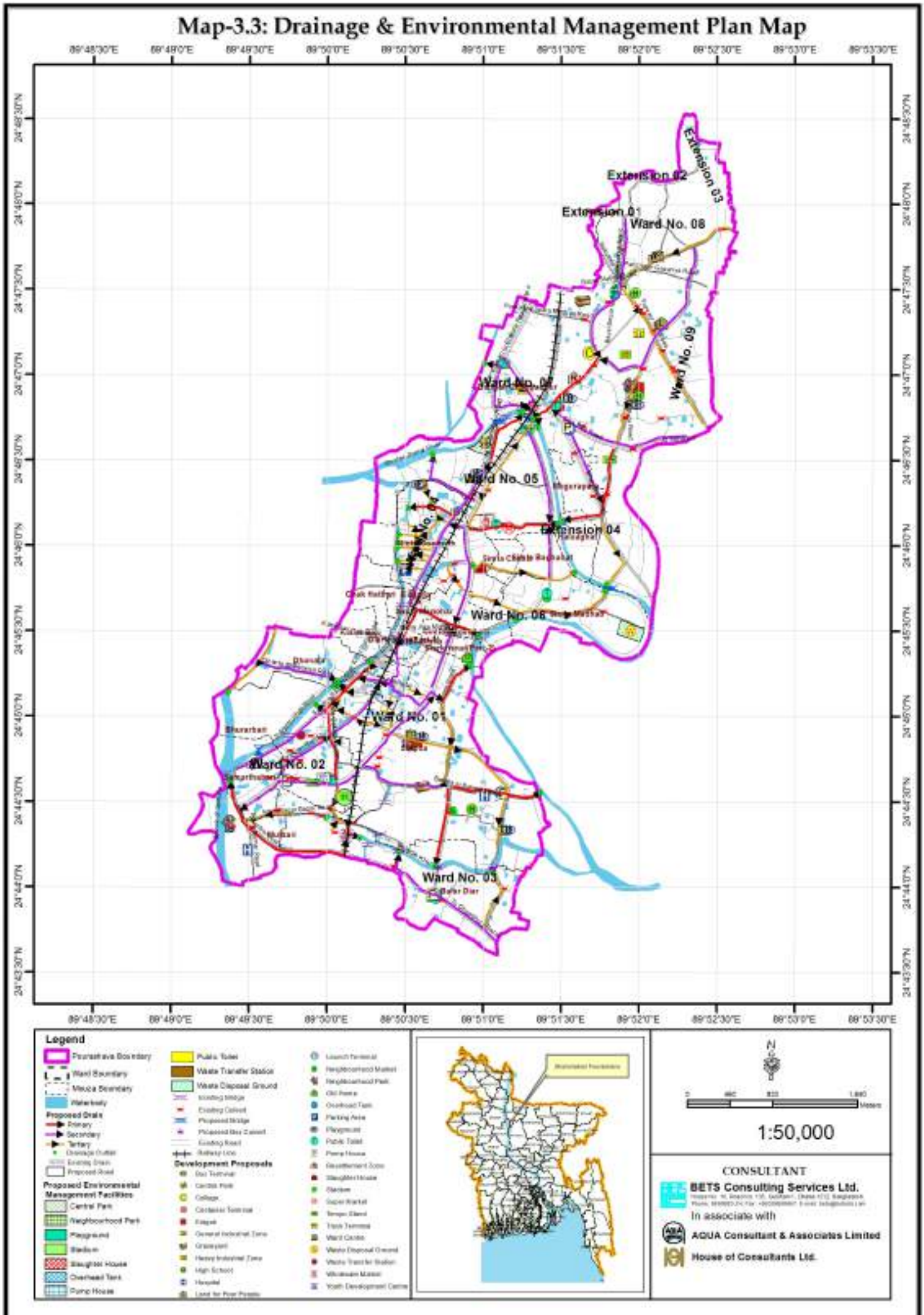
For effective functioning of existing drainage network, some new drains has been proposed in the project area which is listed in **Table-3.8**. The list has been prepared based of analysis of topographic map, existing drainage network, field visits and consultation with the Pourashava officials and local people. The proposed drains along with existing drains and other drainage infrastructures are shown in **Map-3.3**.

Table-3.8: List of proposed new drains

Drain Type	ID	Ward No.	Width (m)	Outfall	Length (km)
Primary Drain	PD-01	Ward no. 01	1.5 m	Jhinai River	0.994
	PD-02	Ward no. 01	1.5 m	Jhinai River	0.516
	PD-03	Ward no. 01	1.5 m	Suborno Khali River	0.409
	PD-04	Ward no. 02	1.5 m	Suborno Khali River	1.213
	PD-05	Ward no. 02	1.5 m	Branch of Jamuna River	1.669
	PD-06	Ward no. 03	1.5 m	Bolerdia Khal	0.845
	PD-07	Ward no. 04	1.5 m	Suborno Khali River	0.492
	PD-08	Ward no. 05	1.5 m	Jhinai River	0.668
	PD-09	Ward no. 06	1.5 m	Jhinai River	1.061
	PD-10	Ward no. 06	1.5 m	Jhinai River	0.983
	PD-11	Ward no. 08	1.5 m	Jhinai River	0.972
	PD-12	Ward no. 09	1.5 m	Jhinai River	1.147
Secondary Drain	SD-01	Ward no. 01	0.8 m	PD-06	0.998
	SD-02	Ward no. 01	0.8 m	SD-05	1.103
	SD-03	Ward no. 01	0.8 m	PD-09	0.699
	SD-04	Ward no. 01	0.8 m	SD-06	0.543
	SD-05	Ward no. 01	0.8 m	PD-02	0.329
	SD-06	Ward no. 01	0.8 m	PD-03	0.232
	SD-07	Ward no. 01	0.8 m	SD-06	0.685
	SD-08	Ward no. 01	0.8 m	SD-06	0.779
	SD-09	Ward no. 02	0.8 m	Suborno Khali River	1.261
	SD-10	Ward no. 02	0.8 m	PD-04	0.695
	SD-11	Ward no. 02	0.8 m	PD-05	1.454
	SD-12	Ward no. 03	0.8 m	Bolerdia Khal	1.542
	SD-13	Ward no. 03	0.8 m	Bolerdia Khal	0.140
	SD-14	Ward no. 04	0.8 m	PD-08	1.793
	SD-15	Ward no. 04	0.8 m	SD-14	0.167
	SD-16	Ward no. 05	0.8 m	Smaller Jhinai River	0.724
	SD-17	Ward no. 06	0.8 m	PD-09	1.049
	SD-18	Ward no. 06	0.8 m	PD-10	0.561
	SD-19	Ward no. 07	0.8 m	PD-11	1.571
	SD-20	Ward no. 07	0.8 m	PD-10	1.036
	SD-21	Ward no. 07	0.8 m	SD-22	0.371
	SD-22	Ward no. 07	0.8 m	Jhinai River	0.733
	SD-23	Ward no. 07	0.8 m	Smaller Jhinai River	0.608
	SD-24	Ward no. 08	0.8 m	PD-11	1.658
	SD-25	Ward no. 01	0.8 m	Suborno Khali River	0.866
	SD-26	Ward no. 08	0.8 m	PD-11	1.985
	SD-27	Ward no. 09	0.8 m	PD-12	0.854
Tertiary Drain	TD-01	Ward no. 01	0.5 m	SD-02	0.261
	TD-02	Ward no. 01	0.5 m	SD-08	0.117
	TD-03	Ward no. 01	0.5 m	SD-02	0.270
	TD-04	Ward no. 01	0.5 m	TD-03	0.173
	TD-05	Ward no. 01	0.5 m	SD-05	0.215
Tertiary Drain	TD-06	Ward no. 01	0.5 m	PD-04	0.121
	TD-07	Ward no. 01	0.5 m	PD-01	1.474

Drain Type	ID	Ward No.	Width (m)	Outfall	Length (km)
	TD-08	Ward no. 01	0.5 m	PD-06	0.922
	TD-09	Ward no. 01	0.5 m	Branch of Jamuna River	0.894
	TD-10	Ward no. 02	0.5 m	PD-04	0.178
	TD-11	Ward no. 02	0.5 m	PD-04	0.288
	TD-12	Ward no. 02	0.5 m	PD-04	0.090
	TD-13	Ward no. 02	0.5 m	Khal	0.376
	TD-14	Ward no. 02	0.5 m	PD-05	0.559
	TD-15	Ward no. 02	0.5 m	Khal	0.042
	TD-16	Ward no. 02	0.5 m	Khal	0.181
	TD-17	Ward no. 02	0.5 m	SD-13	0.204
	TD-18	Ward no. 02	0.5 m	SD-13	0.207
	TD-19	Ward no. 03	0.5 m	Bolerdia Khal	0.665
	TD-20	Ward no. 03	0.5 m	Bolerdia Khal	0.553
	TD-21	Ward no. 04	0.5 m	Suborno Khali River	0.321
	TD-22	Ward no. 04	0.5 m	Suborno Khali River	0.329
	TD-23	Ward no. 04	0.5 m	TD-24	0.247
	TD-24	Ward no. 04	0.5 m	Suborno Khali River	0.372
	TD-25	Ward no. 04	0.5 m	Suborno Khali River	0.393
	TD-26	Ward no. 04	0.5 m	Suborno Khali River	0.516
	TD-27	Ward no. 04	0.5 m	Suborno Khali River	0.287
	TD-28	Ward no. 04	0.5 m	PD-07	0.245
	TD-**29**	Ward no. 04	0.5 m	PD-07	0.300
	TD-30	Ward no. 05	0.5 m	Jhinai River	0.586
	TD-31	Ward no. 05	0.5 m	PD-10	0.699
	TD-32	Ward no. 05	0.5 m	SD-17	0.352
	TD-33	Ward no. 05	0.5 m	Jhinai River	1.189
	TD-34	Ward no. 06	0.5 m	Jhinai River	0.644
	TD-35	Ward no. 06	0.5 m	Jhinai River	1.025
	TD-36	Ward no. 07	0.5 m	Jhinai River	0.122
	TD-37	Ward no. 08	0.5 m	SD-24	1.390
	TD-38	Ward no. 08	0.5 m	SD-26	0.628
	TD-39	Ward no. 09	0.5 m	SD-26	1.041
	TD-40	Ward no. 09	0.5 m	SD-19	0.814
	TD-41	Ward no. 09	0.5 m	Jhinai River	0.827
Total					**55.515**

Map-3.3: Drainage & Environmental Management Plan Map



3.3.1.4 List of Infrastructure measures for Drainage and Flood Control Network

The consultant proposed some drainage structure for the purpose of uninterrupted flow of storm runoff as well as facilitating continuous and smooth traffic movement which is listed in **Table-3.9** below.

Table: 3.9: List of proposed drainage structure

Sl No.	ID	Type	Ward No.
1	BC-01	Box Culvert	Ward No. 03
2	BC-02	Box Culvert	Ward No. 03
3	BC-03	Box Culvert	Ward No. 03
4	BR-01	Bridge	Ward No. 02
5	BR-02	Bridge	Ward No. 05
6	BR-03	Bridge	Ward No. 05
7	BR-04	Bridge	Ward No. 06
8	BR-05	Bridge	Ward No. 06
9	SG-01	Sluice Gate	Ward No. 02

3.4 PLAN IMPLEMENTATION STRATEGIES

3.4.1 Regulations to implement the Drainage and Flood Plan

A common scenario in an uncontrolled urbanization is that flood plain occupation by the population takes place, in a sequence of years with small flood levels. When higher flood levels return, damage increases and the public administrations have to invest in population relief. Structural solutions have higher costs and it is feasible only when damages costs are greater than their development or due to intangible social aspects and redevelopment

The Ministry of Water Resources, through its implementing arm-the Bangladesh Water Development Board (BWDB), implements the flood control and drainage (FCD), flood control, drainage and irrigation (FCDI) and other development projects. It prepares and implements development projects relating to FCD/FCDI projects; riverbank erosion control; delta development and land reclamation; etc. and provides irrigation, drainage, flood protection, bank erosion protection, land reclamation facilities by constructing barrages, regulators, sluices, canals, cross-dams, embankments and sea-dykes along the banks of the rivers and the coast, etc.

Regulations prescribed in the National Water Policy, 1999 is proposed as the legal basis for implementing the Drainage and Flood Plan. The National water policy, promulgated in 1999 provides policy prescription for water sector. Under the NWPo, WARPO has been made secretariat to the National Water Resources Council (NWRC) and is responsible for preparing the NWMP and subsequent updates, and monitoring implementation. Agencies are responsible for preparing their own sub-regional plans within the framework established by NWMP.

Flood Action Plan was finalized in November 1989 comprising 26 components as an initial stage (1990-95) in the development of a long term comprehensive system of flood control and drainage works in Bangladesh. The Action Plan included project-oriented studies in all of the country's main regions along with supporting activities to promote better project design and execution. Thus, Flood Action Plan can be exercised as a legal framework for implementing the Drainage and Flood Plan.

The principal national institution concerned with flood management is the BWDB. The Joint River Commission (JRC) and BWDB carry out international and regional data and information exchange. BWDB disseminates all kinds of flood information to all related Government Departments and Organizations.

Flood management relating to water management at national level is co-coordinated by the National Water Council and the Ministry of Water Resources. Flood management relating to disaster management is co-coordinated by the National Disaster Management Council, particularly by the Ministry of Disaster Management and Relief. Over-all coordination during the flood event is the responsibility of the latter Ministry and the Inter-Ministerial Disaster Management Committee.

3.4.2 Implementation, monitoring, Evaluation and Coordination of the Plan

The implementation, monitoring and evaluation strategies of Structure Plan have been illustrated in Chapter-9 of Part-A. **The Drainage Plan** should also be implemented, monitored and evaluated under the same strategy by strengthening capacity of the Pourashava and forming a Monitoring and Evaluation Committee (MEC).

As **The Drainage Plan** is a mid-term plan with a period of 10 years (2011-2021), it will be implemented on phase wise according to priority. The proposals have been prioritized based on the priority needs, since Bangladesh is a least developed country and it has a very limited budget for infrastructure development. Besides, the Pourashava Authority itself is not capable of financing this huge cost.

The Drainge Plan will be implemented gradually following prioritized Drainage proposals including improvement of existing drain, proposed new drain, bridges/culvert, cross drain etc. Phasing of proposals was done based on the priority. The **Phase-I** of the proposals, to be also incorporated in the Ward Action Plan, will be implemented within first 5 year (2011-2016) of the plan period. The consultants have proposed **Phase-II** of the proposals to be implemented within next 5 years succeeding the recent past Ward Action Plan. The details of phasing are shown in **Table-3.10**. After each 5 years the Plan will be evaluated, updated and new Ward Action Plan will be formulated under the changing circumstances.

Table-3.10: Phasing of Proposed Drains

Phase-I (2011-2016)						Phase-II (2016-2021)				
Type	ID	Ward No.	Width (m)	Length (km)		Type	ID	Ward No.	Width (m)	Length (km)
Primary Drain	PD-02	Ward no. 01	1.5 m	0.516		Primary Drain	PD-01	Ward no. 01	1.5 m	0.994
	PD-03	Ward no. 01	1.5 m	0.409			PD-05	Ward no. 02	1.5 m	1.669
	PD-04	Ward no. 02	1.5 m	1.213			PD-06	Ward no. 03	1.5 m	0.845
	PD-07	Ward no. 04	1.5 m	0.492			PD-10	Ward no. 06	1.5 m	0.983
	PD-08	Ward no. 05	1.5 m	0.668			PD-12	Ward no. 09	1.5 m	1.147
	PD-09	Ward no. 06	1.5 m	1.061		Secondary Drain	SD-01	Ward no. 01	0.8 m	0.998
	PD-11	Ward no. 08	1.5 m	0.972			SD-10	Ward no. 02	0.8 m	0.695
Secondary Drain	SD-02	Ward no. 01	0.8 m	1.103			SD-11	Ward no. 02	0.8 m	1.454
	SD-03	Ward no. 01	0.8 m	0.699			SD-12	Ward no. 03	0.8 m	1.542
	SD-04	Ward no. 01	0.8 m	0.543			SD-13	Ward no. 03	0.8 m	0.140
	SD-05	Ward no. 01	0.8 m	0.329			SD-16	Ward no. 05	0.8 m	0.724
	SD-06	Ward no. 01	0.8 m	0.232			SD-18	Ward no. 06	0.8 m	0.561
	SD-07	Ward no. 01	0.8 m	0.685			SD-20	Ward no. 07	0.8 m	1.036

Phase-I (2011-2016)						Phase-II (2016-2021)				
Type	**ID**	**Ward No.**	**Width (m)**	**Length (km)**		**Type**	**ID**	**Ward No.**	**Width (m)**	**Length (km)**
Secondary Drain	SD-08	Ward no. 01	0.8 m	0.779		Secondary Drain	SD-22	Ward no. 07	0.8 m	0.733
	SD-09	Ward no. 02	0.8 m	1.261			SD-24	Ward no. 08	0.8 m	1.658
	SD-14	Ward no. 04	0.8 m	1.793			SD-25	Ward no. 01	0.8 m	0.866
	SD-15	Ward no. 04	0.8 m	0.167			SD-26	Ward no. 08	0.8 m	1.985
	SD-17	Ward no. 06	0.8 m	1.049			SD-27	Ward no. 09	0.8 m	0.854
	SD-19	Ward no. 07	0.8 m	1.571		Tertiary Drain	TD-01	Ward no. 01	0.5 m	0.261
	SD-21	Ward no. 07	0.8 m	0.371			TD-02	Ward no. 01	0.5 m	0.117
	SD-23	Ward no. 07	0.8 m	0.608			TD-07	Ward no. 01	0.5 m	1.474
Tertiary Drain	TD-03	Ward no. 01	0.5 m	0.270			TD-08	Ward no. 01	0.5 m	0.922
	TD-04	Ward no. 01	0.5 m	0.173			TD-09	Ward no. 01	0.5 m	0.894
	TD-05	Ward no. 01	0.5 m	0.215			TD-13	Ward no. 02	0.5 m	0.376
	TD-06	Ward no. 01	0.5 m	0.121			TD-14	Ward no. 02	0.5 m	0.559
	TD-10	Ward no. 02	0.5 m	0.178			TD-15	Ward no. 02	0.5 m	0.042
	TD-11	Ward no. 02	0.5 m	0.288			TD-16	Ward no. 02	0.5 m	0.181
	TD-12	Ward no. 02	0.5 m	0.090			TD-17	Ward no. 02	0.5 m	0.204
	TD-21	Ward no. 04	0.5 m	0.321			TD-18	Ward no. 02	0.5 m	0.207
	TD-22	Ward no. 04	0.5 m	0.329			TD-19	Ward no. 03	0.5 m	0.665
	TD-23	Ward no. 04	0.5 m	0.247			TD-20	Ward no. 03	0.5 m	0.553
	TD-24	Ward no. 04	0.5 m	0.372			TD-31	Ward no. 05	0.5 m	0.699
	TD-25	Ward no. 04	0.5 m	0.393			TD-33	Ward no. 05	0.5 m	1.189
	TD-26	Ward no. 04	0.5 m	0.516			TD-34	Ward no. 06	0.5 m	0.644
	TD-27	Ward no. 04	0.5 m	0.287			TD-35	Ward no. 06	0.5 m	1.025
	TD-28	Ward no. 04	0.5 m	0.245			TD-37	Ward no. 08	0.5 m	1.390
	TD-29	Ward no. 04	0.5 m	0.300			TD-38	Ward no. 08	0.5 m	0.628
	TD-30	Ward no. 05	0.5 m	0.586			TD-39	Ward no. 09	0.5 m	1.041
	TD-32	Ward no. 05	0.5 m	0.352			TD-40	Ward no. 09	0.5 m	0.814
	TD-36	Ward no. 07	0.5 m	0.122			TD-41	Ward no. 09	0.5 m	0.827
Total				**21.919**		**Total**				**33.596**

With regards to plan implementation strategy monitoring and evaluation is a very important part of plan implementation. Monitoring helps check if the plan is being implemented properly. It also measures the level of implementation of the plan. If the plan implementation is not on track, corrective measures can be taken to put execution on the track. After expiry of any plan evaluation is made about the errors and omissions. Such evaluation helps take corrective measures in the next plan. Such monitoring and evaluation must be carried out from within the Pourashava. But Sharishabari Pourashava is not equipped with qualified manpower to make such evaluation. Monitoring and evaluation of a plan is essentially, the responsibility of qualified and experienced planners. As there is no planner in the Pourashava, its monitoring of plan implementation will be seriously affected. However, plan evaluation can be accomplished by means of out-sourcing.

PART- II: ENVIRONMENTAL MANAGEMENT PLAN

3.5 INTRODUCTION

3.5.1 Goals and Objectives

Following are the overall objectives of environmental management plan:

a. To create a sustainable living environment.

b.To create awareness among citizens about livable environment.

3.5.2 Methodology and Approach to Planning

The environmental management plan consists of the Supplementary Living Environment Survey, the Comprehensive Ecological Survey and the Water Quality Survey. The Supplementary Living Environment includes water supply, land pollution, sewerage and sanitation, solid waste management, and resettlement of population due to construction of canals and primary drains. The Comprehensive Ecological Survey aims at facilitating comprehensive environmental assessment by subsequent urbanization and implementation of the drainage on the ecological elements of fauna and flora, agricultural and aqua cultural resources etc.,. The Water Quality Survey is the sampling and analysis of surface water from rivers, natural canals, ponds etc., and from ground water. These are required to be done to ensure necessary urban environment enhancement measures. Moreover, an overall evaluation of environmental condition due to urbanization with flood management and drainage is required in order to justify the necessity of the Drainage Plan. In planning process special attention required to reduce the insect breeding areas, and preserve and management of natural drainage area.

3.6 EXISTING ENVIRONMENTAL CONDITION

3.6.1 Introduction

The urban environment of the Sharishabari Pourashava includes both build and natural environment. Build environment includes waste management, water, air quality, energy usage, transport network, slum improvement, and disaster mitigation. The urbanization where the build environment overburdens the natural environment cannot be sustainable. But urbanization is vital for countries economic growth. Urban centers concentrate services, infrastructure, labour, knowledge, entrepreneurship and markets.

So in every phase of planning processes all these environmental issues will be evaluated and proper measure will be taken to minimize the adverse environmental impacts on land pollution, water and air quality, biodiversity resources and marine resources by energy usage, transport network, waste management, slum improvement, disaster mitigation etc.

3.6.2 Geo-morphology

Topographically, Sharishabari is a plain land. The plain land mainly consists of alluvial silt and clay deposited by the Brahmaputra and the Jamuna River systems. Geomorphologically, Sharishabari Pourashava falls under the Brahmaputra-Jamuna Floodplain having its distinguishing character.

3.6.3 Solid Waste and Garbage disposal

The solid waste and garbage disposal of Sharishabari Pourashava includes household waste, industrial waste, kitchen market waste, clinic/hospital waste, latrine waste, brickfield waste and fertilizer/chemical related waste.

In the Pourashava there is a 50 bed Upazila Health Complex and 1 pathological laboratory. They are producing bacteriologically contaminated wastes. The hospital has neither specific land for burry their waste nor any incinerator to burn them. The wastes are thrown along with household and kitchen wastes to the low-lying areas which bacteriologically contaminating the water of the low-lying areas and the whole surface water system which is very dangerous. The people of the Pourashava normally dump their solid waste in road side drains, open space or roads adjacent to their houses, in low lying areas, in khals within the town and into ditches adjacent to existing paddy land, thereby contaminating the living environment.

3.6.4 Waste Management System

It has been observed that the solid waste management in the Sharishabari Pourashava is not well managed. The production of solid waste in Sharishabari per person per day is around 250gm and the total Pourashava production is 12.174ton/day. But the Pourashava has neither any solid waste transfer station nor any dumping yard of its own. It normally dumps the collected solid waste to ditches. At present it is using 2 No private ditches as solid waste disposal sites. The Pourashava has 13 temporary cleaners for waste collection. The Pourashava have 2 garbage trucks of which 1 is unserviceable, it has no push cart or rickshaw van for the solid waste disposal. There are 6 No dust bins for collecting garbage and household waste. Out of total 21.35 square km Pourashava area the existing solid waste management system covers only 3.00 square kilometer and is not environmentally friendly.

3.6.5 Pollutions:

3.6.5.1 Water

In nature water is available both from the surface and underground. The sources of surface water of Sharishabari Pourashava like ponds, ditches, lake (abandoned course of the Subarno Khali River), river and khal are being contaminated from improper sanitation, solid waste disposal, improper treatment and disposal of hospital waste, use of chemical fertilizers and poisonous insecticides etc.,. The sanitation coverage is claimed 80% by the Pourashava. The rest 20% inhabitants of the Pourashava, usages katcha latrines, open latrines and hanging latrines. The human excreta from improper sanitation come in contact with sources of water and water bodies especially during rainy season. Hospital waste is another source of water contamination. In the Pourashava there is a 50 bed Upazila Health Complex (UHC), and 3 private pathological laboratories. They are producing bacteriologically contaminated hospital wastes. The UHC and others have neither specific land for burry their wastes nor any incinerator to burn them. The hospital wastes are thrown to nearby open spaces, ditches and roadside drains with other wastes and finally collected by the cleaners of the Pourashava. The Pourashava has poor solid waste disposal system. Out of 21.35 sq km area covers only 3.00 sq. km. Pourashava collect household waste, kitchen market waste and hospital waste altogether and dump them for land filling to nearby ditch, depressed land adjacent to river, khals etc., The hospital waste and decomposed house hold and kitchen market waste produce highly polluted leached where they are dumped and flows to adjacent land. During rainy season it comes in contact with rain water, some percolate into the ground and the rest flows to water bodies thus contaminates the nature's water system. Every year 50% area of the Pourashava is flooded by normal flooding. Flood water carries human excreta, bacteriologically contaminated hospital waste, house hold waste and further aggravates pollution of lakes, rivers, khals and other sources of water. Another source of water pollution is use of chemical fertilizer in

agricultural land. The pollution from agrochemicals in water bodies and river has reached alarming levels. The long-term effects of this water contamination by inorganic substances, many of them toxic, are incalculable. It is affecting the marine and aquatic ecosystems and the chemicals are entering into the food chains, which have public health implications.

Ground water is the only source for the supply of safe drinking water to the habitats of the Pourashava. The Pourashava has very good water supply network. There are 9531 No households within the Pourashava and water supply network covers only 19% of total holdings. 78.75% holdings have to depend on hand tube wells. The ground water of the Sharishabari Pourashava in shallow depth is heavily loaded with iron. Hand tube wells contain iron and other harmful minerals and are main cause for most of the chronic intestinal diseases. Another probable source of ground water pollution may be the arsenic contamination. Arsenic is mostly found in water harvested from the upper and mid aquifers. It is of natural origin coming from sedimentary materials containing the arsenic in potentially soluble forms. It is believed to be released to groundwater under reducing conditions. Arsenic was first detected in groundwater in Bangladesh in 1993. For identifying whether the extracted ground water is arsenic contaminated or not the DPHE is working for. But their present program is at Union level outside Sharishabari Pourashava. The DPHE not yet identified any tube well contaminated by arsenic in Sharishabari Pourashava.

3.6.5.2. Air

The main sources of air pollution of the Pourashava are emission of harmful gaseous matters from vehicles, railway engines, engine boats, lack of proper solid waste management system, industrial sector, construction, and wood and biomass consumption etc.,. Jute is one of the main crops in Sharishabari Upazila and there are many jute godowns, 4 jute mills and many cottage industries in Sharishabari Pourashava. Due urbanization and industrialization of the Pourashava the total number of motorized vehicles including bus, truck, tempo, three wheeler, etc., has been increased. These automobiles on the road are often very old, overloaded and poorly maintained and emit smoke far exceeding the prescribed limit. Water transport is quite significant in Sharishabari. Engines of motorized boats are very old and poorly maintained and emit black smokes. Dumping of garbage to open land and ditches allows the objectionable odor of garbage to spread in air. The Saw Mills are spreading dust in air. The smoke from the chimneys of rice mills and bakery are increasing carbon contents and polluting the air. Polluted air is harmful for human health depending on the nature of the pollutant, concentration, duration of exposure and the state of health and age group of the recipient. Apart from impact on human health, air pollution has detrimental impact on the ecosystem, vegetation and livestock. A continuous monitoring is necessary to evaluate air quality for the development plan to mitigate the health risk from air pollution. The type of industries and their number within the Pourashava is listed in **Table 6.8** below:

Table 6.8: No of Industries in Sharishabari Pourashava

Sl No	Type of Industry	Number	Pollutant	Effluent treatment plant
1	Jute Mill	2	No	Not require
2	Rice Mill	2	Harmful gases	Not require
3	Oil Mill	2	No	Not require
4	Saw Mill	17	Dust, Noise	Not require
5	Bakery & Flour Mill	2	Harmful gases	Not require
6	Engineering works	15	Noise	Not require
7	Ice factory	2	No	Not require

Sl No	Type of Industry	Number	Pollutant	Effluent treatment plant
8	Printing Press	2	Noise	Not require
10	Pop Rice Mill	2	No	Not require
Total		**46**		

***Source**: Field Survey, 2008-2009 by BETS*

3.6.5.3. Sound

Sound pollution is quite significant in Sharishabari Pourashava. There are 2 railway stations within the Pourashava. These railway stations produces high noise and is one of the main sources of noise pollution. There are 4 large Jute Mills located within the Pourashava which produces noise to its adjacent areas. There are altogether 85 number light and cottage industries which include oil mills, saw mills, husking mills, bakeries, ice factories, printing press and light engineering workshops. Out of them saw mills, printing press and engineering workshops produces noise. The moving vehicles also produce noise. Due to presence of Jute Mills and jute godowns the movement of vehicles in Sharishabari is higher than any other Pourashava. In market days traffic load increases near rice mills and bazaar areas. The population of public carrier is relatively high during bazaar days in Sharishabari and they produce moderate level of noise. Also there are carpentry shops, tailoring shops and blacksmith shops in residential areas those are producing noise.

3.6.5.4 Arsenic

A probable source of ground water pollution may be the arsenic contamination. Arsenic is mostly found in water harvested from the upper and mid aquifers. It is of natural origin coming from sedimentary materials containing the arsenic in potentially soluble forms. It is believed to be released to groundwater under reducing conditions. Arsenic was first detected in groundwater in Bangladesh in 1993. For identifying whether the extracted ground water is arsenic contaminated or not the DPHE is working for. The DPHE not yet identified any hand tubewell contaminated by arsenic in Sharishabari Pourashava.

The ground water of the Sharishabari Pourashava is heavily loaded with iron. Hand tube wells contain iron and other harmful minerals and are main cause for most of the chronic intestinal diseases. Moreover during winter the level of ground water table goes down and concentration of iron in ground water increases.

3.6.6 Natural Calamities and Localized Hazards

3.6.6.1 Cyclone

Although Bangladesh is cyclone prone area yet Sharishabari Pourashava is out of range of tropical cyclone which occur mainly the coastal areas of Bangladesh. Sharishabari Pourashava is free from Nor'werters and Tornadoes. Sharishabari Pourashava as well as Jamalpur District fall under the Tornado prone areas of Bangladesh. Yet, the Nor'werters, severe seasonal storm locally known as Kalbaishakhi occurs during pre-monsoon season. Severe Nor'westers is generally associated with tornadoes. Tornadoes are suddenly formed and are extremely localized in nature and of brief duration. The frequency of the Nor'westers are maximum in April, whereas there are a few in May and minimum in March. The Nor'westers and Tornadoes cause uproot trees, telephone and electricity lines, loss of human life and biodiversity, injury of life, damage and destruction of property, damage of cash crops, disruption in lifestyle, damage to essential services, and national economic loss.

3.6.6.2 River Erosion

Erosion of land surface is already causing a problem for Sharishabari. The increase in rainfall in summer is apprehended due to climatic change and the current deforestation in

tern increase the surface erosion of land. The erosion plays an important role in the siltation process. The river smller Jhenai and river Subarno khali are passing through the Sharishabari Pourashava. Siltation during external flood is a normal phenomenon which causes filling of the beels and khals causing reduction in water retention and carrying capacity of the channels. Heavy rainfall in Meghalaya, melting of glaciers, and sediments that washed down from Shillong Plateau of India play an important role in causing siltation of flooded area of the Upazila.

3.6.6.3 Flood

The Sharishabari is one of the Upazilas of Jamalpur district. Along the western boundary of the Pourashava flows a river locally known as branch of the Jamuna. Actually it is the combine flow of the river Chatal and Jhenai. The river Chatal is an off take of Jamuna river some 12km south of Bahadurabad while the river Jhenai is an off take of the Old Brahmaputra about 10km north-west of Jamalpur town. The two rivers join together at south-east of Madarganj Upazila and jointly flows towards south through the Sharishabari Upazila parallel to Jamalpur-Sharishabari railway line until joins to the mighty river Jamuna: one of the largest river in the world, with its basin area covering in China, Nepal, India and Bangladesh flows from north to south along the western boundary of Sharishabari Upazila. The Chatal-Jhenai river system joins the Jamuna near Jagannathganj Ghat. From the joint flow Chatal-Jhenai a small channel off takes from the main river to flow through the railway line at the Bhausi bridge (near Bhausi Railway Station) and flows as smaller Jhenai river. Another small channel known as Subarno Khali River off takes about 1km downstream of the off take of smaller Jhenai and flows from north to south within the Pourashava until it joins again to the main river near Jhalopara Ghat. The Subarno Khali River was the main cause of land erosion of the Sharishabari Pourashava until it has been closed by constructing a closer near the off take during 1980s. At present the Subrno Khali acts as an oxbow lake and water enters from the main river from south to north and drains out along the same way. Major siltation and land erosion within the Pourashava observed at the confluence near Jhalopara Ghat. Some protective work (block pitching) has done downstream of the confluence but that is not sufficient. Another channel connecting joint flow of the Chatal-Smaller Jhenai and the smaller Jhenai known as the Bolerdia khal presently closed at several locations.

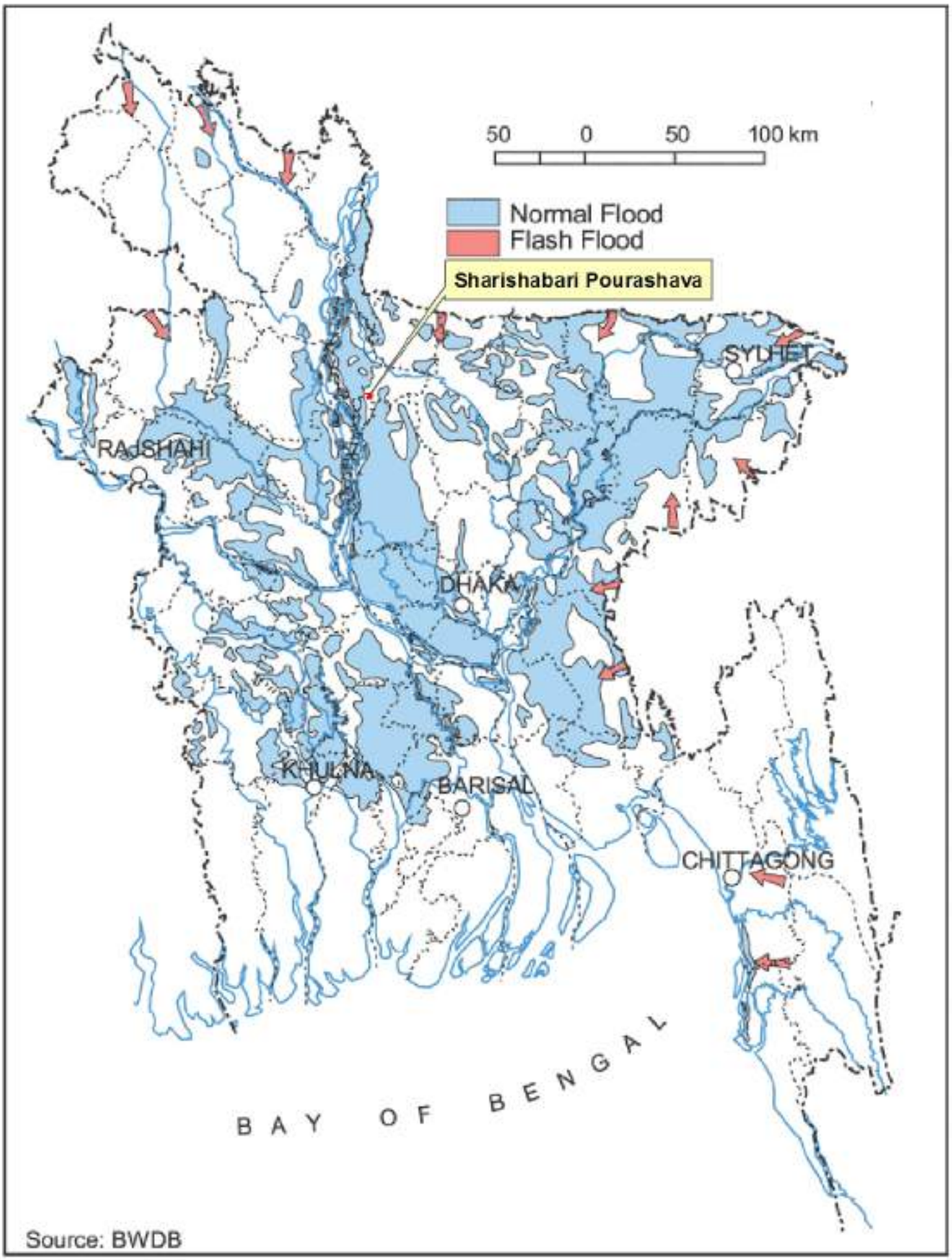
The Sharishabari Pourashava is surrounded by number of regional rivers and khals. Closer on Subarno Khali River and the Bolerdia khal reduced the intensity of flood in Sharishabari Pourashava but still about 50% its land flooded every year by normal flooding. During the flood of 1988 and 1998 100% area of the Pourashava was gone under water. The location of Sharishabari Pourashava in the Flood Zoning Map is shown in **Map-3.4**.

3.6.6.4 Earthquake

An earthquake is the result of a sudden release of energy in the Earth's crust that creates seismic waves. The seismicity or seismic activity of an area refers to the frequency, type and size of earthquakes experienced over a period of time. The north and north easterly part of Bangladesh is the most active seismic zone and had experienced earthquakes of moderate to high intensity in the past.

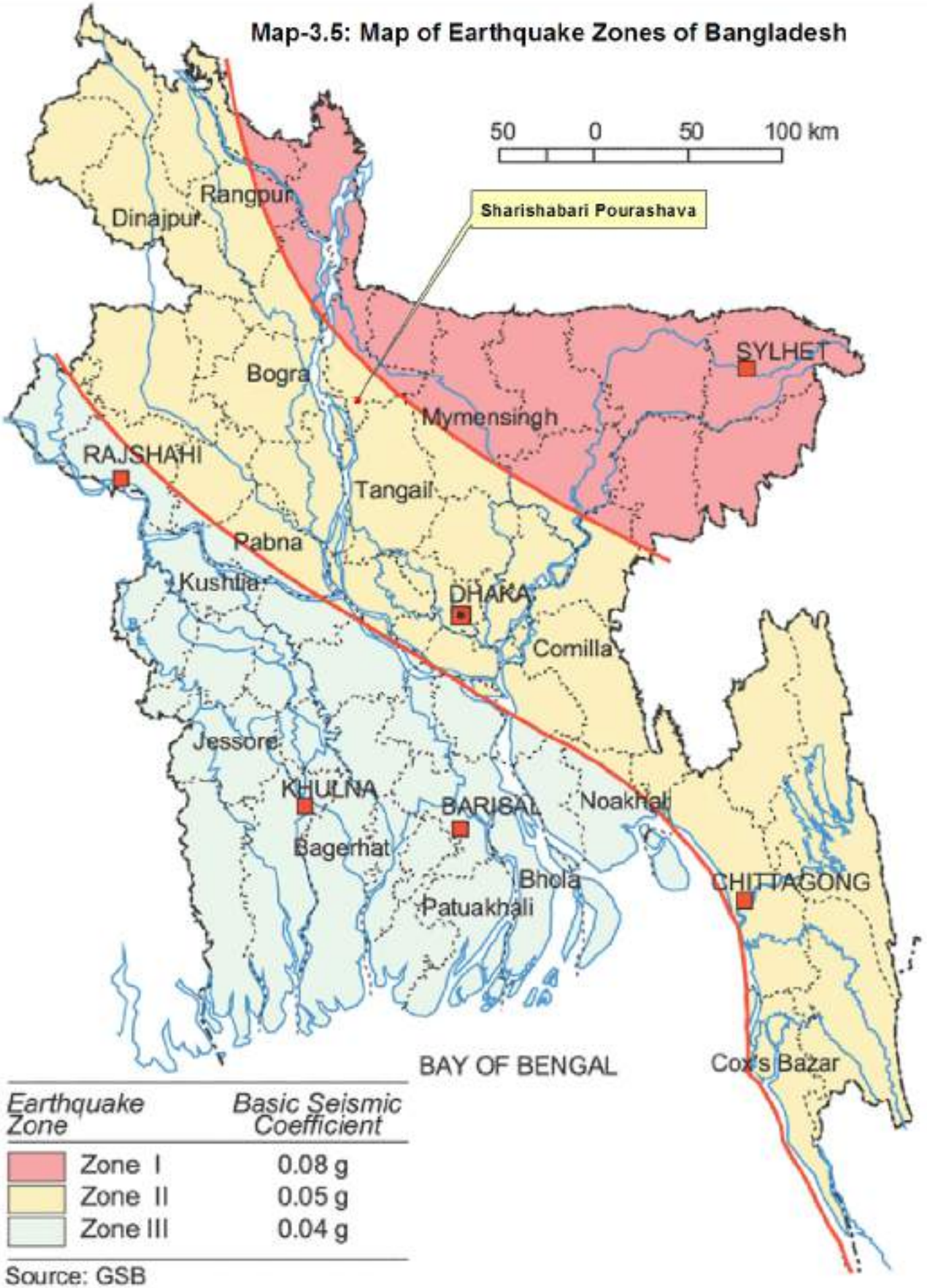
Bangladesh has been divided into three generalized seismic zones: zone-I, zone-II and zone-III. Sharishabari falls under Zone-II which is a zone of high seismic risk with a basic seismic co-efficient of 0.05. Sharishabari Pourashava falls under this zone which is considered as the most vulnerable seismic zone of Bangladesh. The location of Sharishabari Pourashava in the Seismic Zoning Map is shown in **Map-3.5**.

Map-3.4: Map of Flood Affected Areas of Bangladesh



Source: BWDB

Map-3.5: Map of Earthquake Zones of Bangladesh



Earthquake Zone	*Basic Seismic Coefficient*
Zone I	0.08 g
Zone II	0.05 g
Zone III	0.04 g

Source: GSB

3.6.6.5 Water Logging

In Sharishabari water logging is created at some of the locations of the Pourashava. One of the causes of water logging is the closing of road crossing culverts and constructing buildings there. This problem is more acute in build up areas than bare land. In most cases where water logging occurs the housing are at lower elevation than the road level. During monsoon when the rainfall intensity is very high, the remaining water after infiltration and evaporation retains on the ground where water logging occurs. Due lack of drainage facility water retains there until it dries up. In some areas water logging condition continues for weeks together. Water logging problem starts in June and continues till October.

3.6.6.6 Fire Hazard

A fire hazard is any situation in which there is a greater than normal risk of harm to people or property due to fire. Sharishabari often faces a range of disaster events including flood, drought, fires and other man-made hazards. Fire inevitably causes upheavals not only in the physical but also in the social and economic context where they occur. Although a fire disaster need not necessarily reach catastrophic proportions, it will present some of the characteristic aspects of a disaster because of the highly destructive action of fire and of the considerable number of victims.

Generally fire causes the great loss of life and property in any urban areas. Dense building concentration, narrow roads, flammable building materials, aging water supply and electrical system, as well as the lack of resources to upgrade preparedness and response skills have resulted in the growing risk of large scale, multiple structure fires.

Fire incidents in shops, industrial and commercial buildings cause heavy toll of life and property. The fire incidents are on an increase due to lack of awareness, almost no feeling for following safety measures and practicing fire fighting drills, violation of building codes and non-compliance with the fire checking and extinguishing law.

As per the record of fire brigade office of Sharishabari up till now fortunately the rate of fire hazard is very negligible in Sharishabari Pourashava. Presence of flammable building material and use of fire wood and kerosene for cooking purposes often causes danger.

3.6.6.7 Other Hazards

Cyclone, River erosion, Flood, Earthquake, Water logging, Fire etc.are the type of hazards which occasionally affect the land of Sharishabari Pourashva with minimum scale. Any hazard other than mentioned above are not yet identified at Sharishabari Pourashava Town area.

3.7 PLAN FOR ENVIRONMENTAL MANAGEMENT AND POLLUTION CONTROL

3.7.1 Proposals for Environmental Issues

3.7.1.1 Solid waste management Plan

Solid waste management is not yet an environmental problem in the town because of low density of population and low consumption rate. But in future population will rise and density will increase. So solid waste will pose a major environmental problem in future. It is better to take precautionary measures now to avoid any future hazard.

A waste disposal ground is proposed at the extreme sout-east corner of the Pourashava to the south side of Khagra Road for final dumping of solid waste in order to ensure a

habitable environment and to keep the urban environment free from pollution. To solve the solid waste management problem door to door collection program should be introduced. The Pourashava authority along with NGO's and CBO's will collect wastes from the households and storage points daily. The van will move into the wards and whistle to announce its arrival. The same vehicle will cover other institutions, societies, complexes. Thus the system will cover the whole town and will transfer the waste to the proposed waste transfer stations. After that, the Truck/Van of the Pourashava will dump the wastes to the proposed waste disposal ground. A minimum charge will be fixed by the Pourashava authority for waste collection to the inhabitants. The total process is exposed under **Figure 3.1**. The list of Waste Transfer Stations and Wasre Disposal Ground is listed in **Table-3.12**.

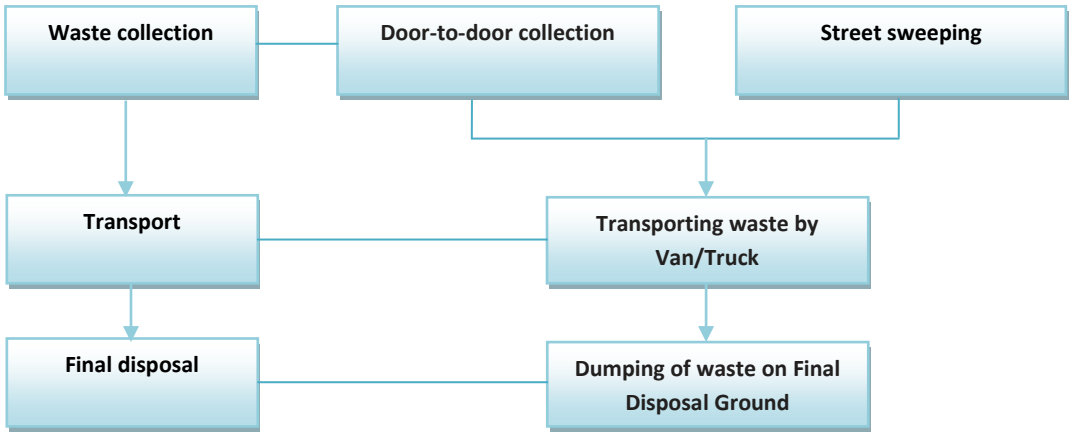


Figure 3.2: Overview of the Solid Waste Management Plan

Table 3.12: List of Proposed Waste Disposal Facilities

ID	Type of Facilities	Location	Area (Acre)	Ward No.	Mouza Schedule	
					Mouza	Plot No.
WDG	Waste Disposal Ground	Beside central boundary of W-6 and on the bank of river small Jhenai	W-6	10.1442	Simla Madhab	493, 511-539, 543-561, 589, 590, 636, 971
WTS-1	Waste Transfer Station	Central part of W-2 beside proposed PR-01	W-2	0.2617	Bhurarbari	482, 486, 494
WTS-2	Waste Transfer Station	Central part of W-7 and north of Dikpati road	W-7	0.2854	Bangali	10913, 10916-10919

Mitigation Measures:

1. Introduction home collection system.
2. Creation of solid waste transfer stations at important locations.
3. Creation of a dumping site for disposal of solid waste.
4. Use of sanitary land fill method for treatment of waste at the dumping site.

3.7.1.2 Plan for protecting open space, wet-land and relevant features

Open Space Promotion

Present open space ratio is only 3.68 acre per thousand. If the plan is implemented by the year 2021, the ratio will be 52.02 acres per thousand population. But there will be hardly

any scope to provide further open space. So, the provision of open space must be implemented in the study area for the greater interest of the future urban dwellers.

Mitigation Measures:

1. The open space provisions have to be implemented to save future town environment.
2. Adequate fund is needed to be allotted to execute open space development.
3. No plan should be allowed in locations of open space as per plan.
4. Landowners may be motivated to donate land for open space development.

Wetland Protection

Most of the natural khals flowing through the town have been encroached by land hungry people. At many places the khals have been filled up. All these activities are causing khals to get squeezed lowering their capacity to drain enough water during monsoon. If this trend continues, it will increase flood risk and water logging in the low-lying town.

Mitigation Measures:

1. Strict measures should be taken to recover state property from encroachers.
2. Wherever land fill has been done, re-excavation has to be done to recover khals.
3. Marking pillars should be set up to mark Khas lands of the khal area.
4. Vegetation may be created along the Khal creating buffer zone between khal and the private property.

3.7.1.3 Proposals for Pollution Control

3.7.1.3.1 Industrial

Industrial pollution is an important issue of the day and it is getting more and more monstrous. There is also a need to raise general awareness among common people. It is one of the aims of planning to create a physical environment that will be congenial to the individual family and community and to establish a physical environment that will effectively promote economic development. This face to the measures to tackle the pollution issue within a community is one of the targets of planning. As this leads to the safer and healthier environment.

In order to keep the residential and commercial area free from industrial pollution, two industrial zones, one at the South-east part of W-8 beside Foyezar morer road (South part) and another at South-east part of W-8 beside Foyezar morer road (North part) have been proposed. These two zones will occupy an area of 51.2704 acres and all the existing industries, incompatible with the living environment, are proposed to be rehabilitated into these zone. There will be distinct provision for general industry (Green and Orange A Category) and heavy industry (Orange B and Red Category) with proper treatment plant.

The possible means that can be adopted to minimize the pollution may include :
Proper zoning.

- Improvement of living conditions location of industrial units on proper sites.
- Protection of residents from industrial pollution by means of buffer zoning.
- Raising awareness among people.
- Arranging community programmes to take pollution issue.

For the purpose of controlling industrial pollution local level steps can be very much effective. The best way to tackle urban problems is through integrated action. The following steps can be taken:

- Encourage industrial settlements within the municipality
- Shift all industrial units outside the residential area.
- Before establishing new industrial units they should be bounded to assume that they will try to minimize the factors affecting environment.
- Pollution causing industries should be penalized.
- Repeated checking of industrial units should be made to ensure that effluents of industries are within acceptable limits.

Following are the three important ways which are adopted for controlling the location of industries:

- by developing industrial zones
- by granting concessions; and
- by imposing restrictions.

Treatment methods for industrial wastes will depend upon their characteristics and various other factors. In general, treatment recommended should be such that it recovers some useful substances from the industrial wastes. This will encourages the industry owner for the suitable treatment to the industrial wastes and it will also reduce the cost of such treatment.

3.7.1.3.2 Air/Water/Land/Sound

Air

Every day, the average person inhales about 20,000 liters of air. Every time we breathe, we risk inhaling dangerous chemicals that have found their way into the air.

Air pollution includes all contaminants found in the atmosphere. These dangerous substances can be either in the form of gases or particles.

Air pollution can be found both outdoors and indoors. Pollutants can be trapped inside buildings, causing indoor pollution that lasts for a long time.

The sources of air pollution are both natural and human-based. As one might expect, humans have been producing increasing amounts of pollution as time has progressed, and they now account for the majority of pollutants released into the air.

As there is no heavy industries releasing toxic air pollutants such as CFC, heavy metals, SPM etc. and the number of automobiles plying over the town is at a minimized level, no pollution control or regulatory measures for Sharishabari Pourashava is proposed in the plan.

Water

Water pollution is the contamination of water bodies (e.g. lakes, rivers, oceans and groundwater). Water pollution occurs when pollutants are discharged directly or indirectly into water bodies without adequate treatment to remove harmful compounds.

Water pollution affects, plants, and organisms living in these bodies of water; and, in almost all cases the effect is damaging not only to individual species and populations, but also to the natural biological communities.

Water pollution can be controlled in the multiple ways. It is best controlled by the dilution of water. The pollutants must be treated chemically and must be converted into the non

toxic substances. The low level of radioactive wastes in the water is removed by the oxidation of ponds. There are certain chemicals which act on the organic insecticide and are used in the pesticide. There are different techniques which are very helpful in the process of thermal pollution and involve the cooling, evaporation, water cooling; cooling can be wet or dry. Their main aim is to keep the water cool in rivers and streams. The shallow ponds must be used to store the domestic and industrial wastes. One must avoid the large ponds. The waste has a presence of sunlight and organic nutrients which may lead to the larger growth of bacteria which act on the waste matter. The reclaimed polluted water can be used in making fertilizers as it is rich in phosphorous, potassium and nitrogen. It can also be used for the irrigation and factories purposes. The proper sewage treatment plans play a crucial role in the reclaimed polluted water. There must be a law which ensures that the industries must treat the waste before the water is discharged into the rivers and seas. The polluted water can be treated by the use of a plant known as water hyacinth which is also referred as kaloli. It deals with the biological and chemical waste. The heavy metals are also removed by it.

Land

Land pollution is the degradation of Earth's land surfaces often caused by human activities and their misuse of land resources. It occurs when waste is not disposed properly. Urbanization and industrialization are major causes of land pollution.

Land pollution is the deposition of solid or liquid waste materials on land or underground in a manner that can contaminate the soil and groundwater, threaten public health, and cause unsightly conditions and nuisances.

The waste materials that cause land pollution are broadly classified as municipal solid waste, construction and demolition waste or debris, and hazardous waste. MSW includes nonhazardous garbage, rubbish, and trash from homes, institutions (e.g., schools), commercial establishments, and industrial facilities. Garbage contains moist and decomposable (biodegradable) food wastes (e.g., meat and vegetable scraps); rubbish comprises mostly dry materials such as paper, glass, textiles, and plastic objects; and trash includes bulky waste materials and objects that are not collected routinely for disposal (e.g., discarded mattresses, appliances, pieces of furniture). C&D waste (or debris) includes wood and metal objects, wallboard, concrete rubble, asphalt, and other inert materials produced when structures are built, renovated, or demolished. Hazardous wastes include harmful and dangerous substances generated primarily as liquids but also as solids, sludge, or gases by various chemical manufacturing companies, petroleum refineries, paper mills, smelters, machine shops, dry cleaners, automobile repair shops, and many other industries or commercial facilities.

Sound

Sound pollution is a serious issue for many companies. Although the long-term effects of sound pollution have not yet been determined as of the time of publication, the Environmental Protection Agency states that sound pollution has been linked to high blood pressure, sleep disruption and hearing loss. While some industries are noisier than others, it is generally necessary to institute at least some sound pollution controls in any workplace, particularly if the noise limits exceed the accepted decibel level.

Sound pollution reduction/controlling measures:

- Construction of sound proof rooms for noisy machines in industries.
- Use of horns with jarring sounds to be banned.

- Sound producing industries and railway stations to be shifted away from the inhabited areas.
- Proper law should be enforced to check the misuse of loudspeakers and public announcements systems.
- To enforce silence zones near schools / colleges, hospitals etc.
- Growing green plants/trees along roadside to reduce sound pollution as they absorb sound.
- Loud speakers are banned for certain time limit.

3.7.1.3.3 Other Pollution

Any pollution other than mentioned above are not yet identified at Sharishabari Pourshava Town level.

3.7.2 Natural calamities and hazard mitigation proposals

Flood, Tornado and Earthquake are the usual hazards applicable for Sharishabari Pourashva. In order to address the flood hazard the following points are to be considered carefully and protection plans are to be prepared:

- Rainfall Intensity
- Storage Coefficient
- Runoff Coefficient and
- Catchment Area

Since there is no river in the vicinity of the Pouarashava and no susceptibility to flash flood, flood control structures e. g. embankment, dam, regulator, sluice etc. are not required for this Pourashava. However, some structural and non-structural measures should be taken for preparedness and emergency response in case of seasonal flood hazard. The existing educational institutions and other government structures can be used for shelter of the affected people during flood hazard. Moreover, houses should be constructed so that the plinth level is elevated enough above a flood level for a return period of at least 10 years to safeguard flood hazard.

Regarding Tornado and Earthquake prior information to the people by means of weather forecasting and seismological information will be of helpful.

3.7.2.1 Protection plans addressing Natural Calamities (Structural and non structural measures)

Natural Calamities e.g. flood, tornado, or earthquake etc. that affects the environment, and leads to financial, environmental and/or human losses. The resulting loss depends on the capacity of the population to support or resist the disaster, and their resilience. This understanding is concentrated in the formulation: "disasters occur when hazards meet vulnerability." A natural hazard will hence never result in a natural disaster in areas without vulnerability, e.g. strong earthquakes in uninhabited areas. The term natural has consequently been disputed because the events simply are not hazards or disasters without human involvement.

3.7.2.2 Protection Plan addressing regular hazards (Structural and non structural measures)

A branch of Jamuna river (River smller Jhenai and Subarno khali passes through the pourashava. This Pourashava is affected by flood so, there is need of embankment in this Pourashava.

3.7.2.3 Protection Plan addressing encroachment leading to hazards

The term encroachment is only applicable for flood hazard. It has been observed that few people construct their houses, go-downs, stores, business premises farms or industries in an un-authorized manner by encroaching the drains, khals and river area, which make hindrance the natural flow of water. During the excessive rain the surface water become obstructed by those un-authorized encroachment and create water logging and flood. Thus, all type of un-authorized encroachment should be removed.

3.8 PLAN IMPLEMENTATION STRATEGIES

3.8.1 Regulations to implement the Drainage and Flood Plan

The first major law that has been promulgated for the specific purpose of protection of environment and conservation of nature is the Environmental Conservation Act (ECA) of 1995, which was followed by the Environmental Conservation Rules (ECR) of 1997.The Environmental Conservation Act of 1995 empowered the MOEF to formulate rules and guidelines for the management. It also designates DOE responsible for enforcing the 1997 EIA procedures air pollution, water pollution, noise. Environmental Conservation Rules of 1995 was also formulated to control air pollution, water pollution and noise. These Acts and Rules are effective instrument for combating air pollution, water pollution and noise.

Under the Environment Conservation Rules, 1997 the industrial units and projects are, in consideration of their site and impact on the environment, classified into the four categories, e.g. Green, Orange-A, Orange-B and Red for the purpose of issuance of Environmental Clearance Certificate. So the Pourashava can exercise this rule for issuance of Environmental Clearance Certificate to ensure industrial development compatible with living environment.

The Motor Vehicles Ordinance, 1983 and the Motor vehicle rules, 1997 can be exercised by the respective authorities to control emission of harmful gases and toxic metals from mechanized vehicles in Sharishabari Pourashava.

The conservancy section of the Pourashava will monitor the waste management system regularly and practice the 'Local Government (Pourashava) Act, 2009' to make sure the management of solid waste disposal for better environment.

Preparation of regulations, strategy and plan documents is a requirement in most policy documents of the government. However, there are no modalities or guidelines to be followed after adoption and/or approval of a policy document. There is also no mechanism for monitoring the progress of implementation of policies within or outside the concerned Ministries As a result, the sponsoring Ministry takes steps in their own ways of considerations.

Bangladesh is overwhelmingly dependent on environmental and natural resources, but the economic and societal forces at work coupled with other natural and technical factors, may have already seriously eroded the natural resource base of the country, which could have serious adverse impact on output, income and employment. In order to address these issues, the government has approved the National Environmental Management Action Plan in 1996. The National Environmental Management Action Plan was formulated through a massive consultative process involving grassroots workshops, regional workshops and professional and expert group workshops. The Plan has prioritized several actions on the

environmental front and the government is in the process of creating a second-order priority list for immediate implementation of National Environmental Management Action Plan.

The action plan was prepared in four steps:
Step - i. Identification of the major concerns
Step - ii. Listing and synthesis of major issues (done in 1993).
Step -iii. Recommendations for actions based upon recommendations made by the peoples themselves as well as the professional groups and the government (done in 1994).
Step-iv. Prioritization of the actions based upon the views expressed by the people, professionals and government agencies.

3.8.2 Implementation, monitoring, Evaluation and Coordination of the Plan

It should be mentioned that implementation is the carrying out or execution of a plan. So in the implementation stage we should be particular about the monitoring, Evaluation and Coordination of the plan. The progress of project, the problems it is facing, the efficiency with which it is being implemented should be properly monitored and in the evaluation stage to be assess the extent to which the project produced the intended impacts. Moreover, coordination among different organizations and authority is also necessary. A monitoring and evaluation committee headed by the Mayor of the Pourashava should be formed for effective implementation, monitoring, evaluation and coordination of the plan.

CHAPTER-4: PLAN FOR URBAN SERVICES

4.1 INTRODUCTION

4.1.1 Introduction

The Urban Services element describes how the Pourashava maintains, improves, and provides adequate public services. Public services the city provides include water supply, sanitation, solid waste, telecommunication, electricity and gas supply.

One of the most important functions of the Urban Area Plan is to assure that adequate public facilities are provided to meet the needs of all people and developed lands within the city. To ensure a high quality of life, existing facilities must be maintained and improved. In addition, expanding these public services and facilities is necessary for urban development and economic growth. A complete range of public utilities is available to support urban development.

This section of the chapter describes the urban services development proposals for future development of the Sharishabari Pourashava. The proposals have been made at the town level, that is, the area under the urban area plan. The local level development proposals will be addressed in the Ward Action Plan. The environmental conditions throughout most of the urban areas are very poor. Improvement in the delivery of these services will require significant changes in current practices, strategies and availability of investment funds.

The Plan seeks to create a resource management approach that maintains a high environmental quality while providing for the development, use, maintenance and upgrading of urban services to meet the reasonable needs of the urban population of Sharishabari Pourashava.

4.1.2 Range and Content of the Urban Services

Urban services contents a number of items which are often confused or over lapping with Public Utilities and Community services. However, the following are the Urban Services:

- Water supply
- Sanitation
- Telecommunication
- Electricity and
- Gas supply

4.2 ANALYSIS OF EXISTING CONDITION AND DEMAND FOR SERVICES

4.2.1 Introduction

One of the major challenges in the urban sector is the promotion of planned growth of individual towns irrespective of its size. It is necessary to evolve an institutional arrangement to undertake planning exercises in each urban center. The physical development of each individual town should be planned to embody efficiency, productivity, beauty and environmental sustainability. Efficiency is related to functional aspects of towns to be achieved through physical planning and providing basic urban services with emphasis on equity. Considering the total area and population, the level of urban services of Sharishabari Pourashava is unsatisfactory and do not fulfill the demand.

4.2.2 Analysis and projection on existing and proposed Urban Services

a) Analysis of existing urban services

Analysis of existing urban services such as Water supply, Sewerage, Electricity, Gas supply, Solid waste, Telephone etc. are listed below:

Water Supply

Sharishabari Pourashava has fairly good water supply network. The DPHE has constructed 3 Production Deep Tube Wells and one150,000 gallon capacity overhead tank and handed over them to the Pourashava for operation and maintenance. The Production Deep Tube Well No-1 is located adjacent to the Pourashava Office and runs 16 hours a day and used for lifting water directly to the Over Head Tank. The Production Tube Well No-2 and 3 operates 5 hours a day each and directly supplies water to distribution network. The Pourashava has 13.70 km distribution pipeline of which 8.70 km of 150 mm diameter and 5.00 km of 100 mm diameter. The Pourashava has so far given 904 No connections and that covers at least double the number of households. There are 9 street hydrants. The piped water supply covers approximately 19% of the total population of the Pourashava. The main constrain for new connections is distribution network.

The water table within Pourashava ranges from 6 ft to 20 ft and is lower during winter. The combine flow of the Chatal and Jhenai flows along the western side and crosses the Pourashava boundary twice. Another river the smaller Jhenai that originated from the Chatal –Jhenai divides the Pourashava along south and north and flows along the eastern boundary of the Pourashava. The soil is sandy in nature. In fact the whole Sharishabari Upazila was a char of the river Jamuna. Due to sandy nature of the soil, the two peripheral rivers are very good source for recharge of ground water. In Sharishabari there is no difficulty of getting drinking water from hand tube wells in winter. Outside the piped distribution network people of the Pourashava uses hand tube wells as source of drinking water. As per census of the Pourashava there are 4012 hand tube wells operating within Pourashava area.

There is no sewerage network in Sharishabari Pourashava, only there are few sanitary latrines with septic tank and soak pit. The Pourashava claims that they have achieved to bring 80% of its population under sanitation coverage. In Sharishabari there are 9531 households for which there are 5471 toilets with septic tank and soak pit that covers about 57.6% of its population, 22% usages semi pacca latrines, 12% uses kachcha latrines, 3% open area and 5% hanging latrines. The DPHE and Pourashava are the main implementing agencies for sanitation projects whereas the UNICEF, WORLD VISION, and other NGOs are their co-partners in different sanitation programmes.

Electricity

Both the Power Development Board (PDB) and Rural Electrification Board (REB) are assigned for the supply of electricity to Sharishabari Pourashava. The major fraction of the demand is met by PDB whereas REB covers only a small fraction of the total demand. The Electricity of Sharishabari is supplied from a substation of PDB located at Simla Bazar within the Pourashava. The distribution office is located at Simla Bazar headed by one Residence Engineer (Sub Assistant Engineer). The Area Office of the Pally Biddut Shamity (PBS) is located at Kamrabad, RHD Main Road headed by one Assistant General Manager. The PDB has so far connected 80 small and cottage industries, 612 commercial enterprise, 120 agricultural equipments and 3816 households. Pally Biddut Shamity has given connections to 557 households only. The supply of electricity to Pourashava during peak demand ranges from 3.50 to 4.00 Mega Watt. The main consumers of the electricity are 4 Jute Mills

located within the Pourashava. The supply of electricity is not uninterrupted. Load shading is a common problem. The main constrains for new connections are deficiency in supply and lack of distribution line.

Gas supply

Sharishabari has been brought under natural gas supply. People usages mainly firewood for cooking purpose as the fire wood is cheaper and more available in market. Some people usages rolled sticks made from paddy husk as substitute of firewood and are becoming more popular. A small percentage of the people of the Sharishabari Pourashava mostly elite class usages liquefied petroleum gas (LPG) for cooking. There is one petrol pump within Sharishabari Pourashava area. The vehicles use diesel and petrol as fuel which sold from small roadside shops other than the Petrol Pump.

Telephone

The Bangladesh Telecommunication Company Limited (BTCL) is the only land telephone service provider in the Sharishabari Pourashava. The Grameen Phone, City Cell, Bangla Link, and Actel are the mobile phone companies operating in the Sharishabari Pourashava. The BTCL has 500 line capacity digital telephone exchanges at Collage Road, Sharishabari. The BTCL has so far provided 298 connections. Less than 3% of the populations of the Pourashava have land phones.

b) Projected Urban Services

An overview on projection of urban services such as Water supply, Electric substation, Gas, Solid waste disposal site, Waste Transfer Station and Telephone exchange are given below:

For forecasting demand for utility services an appropriate method is chosen based on the nature of the data available and the desired nature and level of detail of the forecasts. An approach often used is to employ more than one method and then to compare the forecasts to arrive at a more accurate forecast. There are several methods used worldwide for forecasting utility services (e.g. water supply, electricity) demand. But these methods are not applicable due to the lack of data. There are more techniques used for forecasting demand for other utility services but not applicable to the project context. So, it is better to predict demand of utility services using planning standard.

According to 'Planning Standard' of Upazila Towns Infrastructure Development Project, provide by LGED; one acres of area is required for per 20000 populations. On the other hand, projected population of Pourashava for the year 2021 will be 55,701 persons. Maintaining the ratio of distribution according to planning standard, 2.79 acres of land will be required for water supply system to meet up the demand. Following table shows demand of utility services, which have been calculated considering both the planning standard and projected population (**Table - 4.1**).

Table 4.1: Projected Urban Services

Urban Services (utilities)	Projected Area Under Urban Services (in acre) for 2021
Water Supply	2.79
Electric Sub Station	2.79
Gas	2.79
Solid Waste Disposal Site	10
Waste Transfer Station	0.75
Telephone Exchange	1.39
Total	**20.51**

4.3 PROPOSALS FOR URBAN SERVICES AND IMPLEMENTATION STRATEGIES

4.3.1 Introduction

The purpose of urban service plan is to provide information about the actual and forecast the future development of urban services. In this section a details proposal and implementation strategies for urban services are incorporated.

4.3.2 Proposals for Urban Services

Proposal for Water Supply

According to Ground Water Zoning Map of Bangladesh, the Ground Water Level of Sharishabari Pourashava is 2.438m-7.314m during dry season (BADC, 2010).

As the Pourashava has no connections to its residents, so to meet the domestic water requirement of the inhabitants of Pourashava a deep tube well is proposed with proper surface water treatment. In this regard, the population of 2021 (56,064) is considered. The capacity of a deep tube well is assumed to be 50 liter/sec for average aquifer condition and pumping hour of Deep Tube Well to be 12 hrs/day. According to the Bangladesh Standard for Upazila Level Town, domestic water requirement is assumed to be 120 (DPHE, 2012). To forecast the daily domestic water requirement of the Pourashava, following method is used.

Calculation:

Per-capita Water Consumption	: 120 liter/capita/day
Discharge rate of DTW	: 50 liter/sec
Projected Population of Gauripur Pourashava in 2021	: 56,064 person
Amount of Water needed by projected population	: (46x56,064) liter/day
	= 67,27,713 liter/day

Deep tube well needed to meet the requirement of the projected population
= 67,27,713 / (50x3600x12) nos.
= 3.11 nos. ≈ 1 nos.

According to Pourashava, the minimum level of ground water is 6ft. - 20ft. at dry season and the ground water contains very high iron at the level up to 70-80ft. Ground water at a depth of above 80ft. is good enough in terms of both quality and quantity to meet the requirement of domestic water supply of the Pourashava. As per requirement of the projected population 3 (three) no's of Deep Tube-Well is needed to meet the domestic water demand. Since the population is distributed over a large area of 20.95 sq. km and the shape of the Pourashava is irregular, 6 (six) no's of Deep Tube-Well Station (Pump) along with space for overhead tank has been proposed. In addition to one existing pump house and overhead tank the list of newly proposed facilities has been provided in **Table-4.2** below and shown in **Map-4.1**. A tentative pipeline network of 71.10 km length for water supply is also proposed and shown in **Map-4.1**.

Table 4.2: List of Proposed Water Supply Facilities

ID	Name of Proposal	Location	Ward No.	Area (Acre)	Mouza Schedule	
					Mouza	Plot No.
PH-01	Pump House	North side of Bolerdia Road	1	0.135	Satpoa	939, 943, 944
PH-02	Pump House	East side of Salam Talukder Road	2	0.192	Bhurar Bari	683-686

ID	Name of Proposal	Location	Ward No.	Area (Acre)	Mouza Schedule	
					Mouza	Plot No.
PH-03	Pump House	Beside Chowdhury Bazar Road	3	0.110	Balardiar	2350, 2351
PH-04	Pump House	Opposite side of Fire Service Station	4	0.123	Shimla Gopinath	360, 369, 370
PH-05	Pump House	Between Grameen Bank Office and Mondir beside Dhik Pati Road	7	0.112	Bangali	5419, 5421, 13111
PH-06	Pump House	South-east of Panchpir Govt. Primary School	8	0.199	Bangali	6783
OHT-01	Overhead Tank	North side of Bolerdia Road	1	0.214	Satpoa	935, 939
OHT-02	Overhead Tank	East side of Salam Talukder Road	2	0.240	Bhurar Bari	685, 689-691
OHT-03	Overhead Tank	Beside Chowdhury Bazar Road	3	0.214	Balardiar	2350, 2351
OHT-04	Overhead Tank	Opposite side of Fire Service Station	4	0.204	Shimla Gopinath	368-370
OHT-05	Overhead Tank	Between Grameen Bank Office and Mondir beside Dhik Pati Road	7	0.300	Bangali	5419-5421, 13111-13114
OHT-06	Overhead Tank	South-east of Panchpir Govt. Primary School	8	0.349	Bangali	6783

Proposal for Sewerage

To install and maintain the sewerage network involves huge cost and it also encompass massive technical support, so the respective authorities are not capable of bearing such expenditure and it is unrealistic.

Proposal for Sanitation

Sanitation can be defined as a system for promoting sanitary health conditions. The goal of environmental sanitation should be to ensure that people lead healthy and productive lives and the natural environment is protected. Increased funding for the Pourashava may succeed in implementing effective sanitation programs.

In order to provide sanitation facilities two broad approaches can be undertaken. One approach is to focus on supply - what the providing organization can deliver. The second is to base actions on what people want, in other words on their demand for services (**Figure-4.1**).

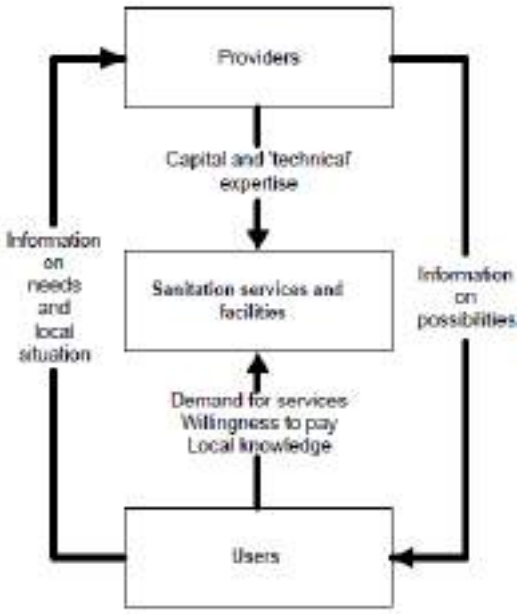


Figure 41: Strategies for Sanitation Improvement

As only 57% sanitary latrine is pucca and only 22% latrine is semi-pucca, so proper sanitation facility should be offered by the Pourashava authority along with other NGO's by following the strategies of sanitation development.

The provision of public toilet is also an important issue for ensuring sanitation facility to the people outside residence. Eight public toilets are proposed at different location of the Pourashava, listed in **Table 4.3**. Public toilet should be designed as gender friendly in order to address the gender issues along with introducing written signs or pictograms of a man and a woman.

Table 4.3: List of Proposed Public Toilet

SL No.	Ward No.	Location
PT-01	Ward no. 02	Eastern part of W-2 beside proposed PR-01
PT-02	Ward no. 03	Southern part of W-3 beside Chowdhuri Bazar road
PT-03	Ward no. 05	North part of W-5 and east of railway line
PT-04	Ward no. 05	East part of W-5 and adjacent to proposed wholesale market (WM)
PT-05	Ward no. 06	At the centre of W-6 beside proposed SR-02
PT-06	Ward no. 07	Beside Bousi Bazar road
PT-07	Ward no. 07	Western part of W-7 beside Sharishabari-Bhatiya road
PT-08	Ward no. 08	South of Panch Rasta mor of W-8

Proposal for Electricity

The Electricity of Sharishabari is supplied from a substation of PDB located at Simla Bazar within the Pourashava. The distribution office is located at Simla Bazar headed by one Residence Engineer (Sub Assistant Engineer). The Area Office of the Pally Biddut Shamity (PBS) is located at Kamrabad, RHD Main Road headed by one Assistant General Manager. The PDB has so far connected 80 small and cottage industries, 612 commercial enterprise, 120 agricultural equipments and 3816 households. Pally Biddut Shamity has given connections to 557 households only. The supply of electricity to Pourashava during peak demand ranges from 3.50 to 4.00 Mega Watt. The main consumers of the electricity are 4 Jute Mills located within the Pourashava. The supply of electricity is not uninterrupted. Load shading is a common problem.

Solar energy may be used for generating electricity from few watts to hundreds of thousands watts ignoring the presence of conventional energy and can be interlinked with the conventional system easily. Therefore, it can be generated at any location like market, bazaar, Pourashava complexes away from the grid and can be used there. Awareness building program should be introduced in this respect.

On the other hand, most of the time the inhabitants face higher load-shedding and low voltage in electricity supply, which disrupt the water demand for irrigation. By ensuring stabilized voltage and providing new connections to the developing areas, this problem should be overcome.

Improvement of electricity

For the improvement of electricity, we are suggesting the following two options:

1) Electric supply: In Sharishabari Pourashava most of the time the inhabitants face higher load-shedding and low voltage in electricity supply, which disrupt the house hold activities,industrial production and water demand for irrigation. By ensuring stabilized voltage and providing new connections to the developing areas this problem should be overcome.
2) Solar energy: To solve this particular problem the Pourashava authority can encourage the inhabitants to use solar energy as an alternative and environment friendly source

of electricity instead of grid-based electricity supply. Solar energy is of two categories, one is thermal energy used for heating, cooling, drying and refrigerating etc. and another is photovoltaic energy. This energy can be utilized in any location in Bangladesh. It depends on the availability of sun-ray. Solar energy may be used for generating electricity from few watts to hundreds of thousands watts ignoring the presence of conventional energy and can be interlinked with the conventional system easily. Therefore, it can be generated at any location like market, bazaar, Pourashava complexes away from the grid and can be used there. Awareness building program should be introduced in this respect.

Improvement of Street Light

Street light is the responsibility of Pourashava. The Pourashava should take a programme for street light on the major roads of core area and built up urban area.

Major advantages of street lighting includes: prevention of accidents and increase in safety. Furthermore, lighted intersections and highway interchanges tend to have fewer crashes than unlighted intersections and interchanges.

The major criticisms of street lighting are that it can actually cause accidents if misused, and cause light pollution. Occasionally the loss of night vision because of the accommodation reflex of drivers' eyes is the greatest danger.

It is not uncommon for street lights to be on posts which have wires strung between them, such as on telephone poles or utility poles.

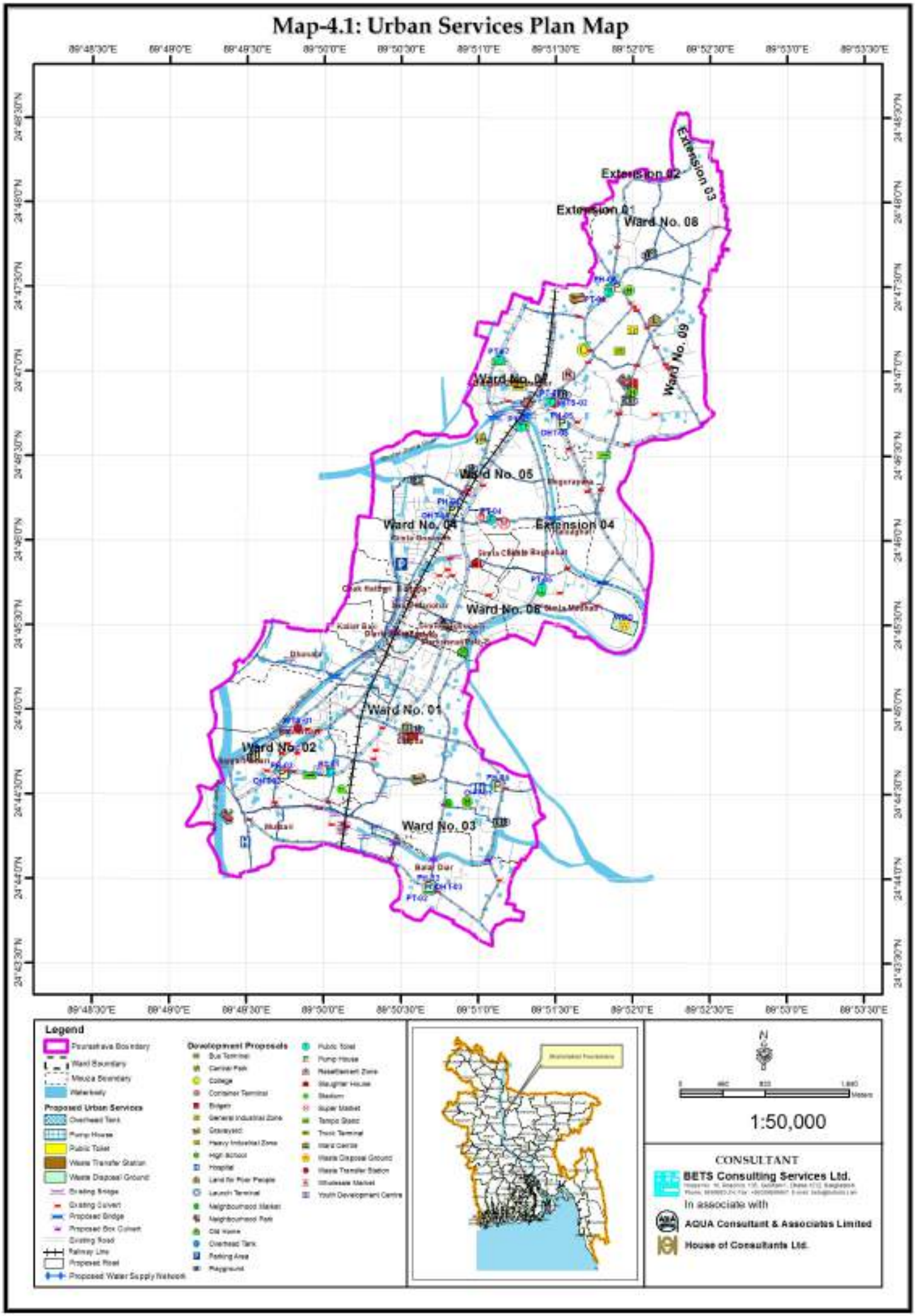
Proposal for Gas supply

There is no supply of natural gas to Sharishabari Pourashava. Thus proposal for gas supply infrastructure is not feasible for this town.

Proposal for Telephone

The demand of land telephone is decreasing in Sharishabari Pourashava due to rapid expanding of mobile phones.

Map-4.1: Urban Services Plan Map



4.3.3 Regulations to address the proposals

Water Supply and Sanitation

The Pourashava Authority should regulate the establishment of Deep Tube-well and they will ensure the water quality, surface water treatment and proper networking system through experts to meet the need of Pourashava inhabitants. The respective authority can practice 'Water Supply and Sanitation Rule, 2009' to implement the water supply network and sanitation facility, which covers both the application process for water supply and method of distribution to the inhabitants. On the other hand, the Pourashava Authority should practice the 'Local Government (Pourashava) Act, 2009' to ensure continuous water supply to its inhabitants.

To regulate the sanitation policy the following ideas should be considered.

- People from the various organizations and groups that are involved in sanitation are brought together to consider their needs and possible responses to those needs
- What people have done for themselves will be much more effective than talking about the benefits of participatory approaches.
- Disagreements on approaches and standards should be resolved by testing the various options.

Electricity

The Pourashava authority can practice 'Electricity (Amendment) Act, 1993 (Act No.XXVIII of 1993)' to meet the demand of electricity supply, which covers both the application procedure for electricity supply and the process of distribution to the inhabitants.

4.3.4 Implementation, monitoring and Evaluation of the Urban Services Plan

With regards to plan implementation strategy monitoring and evaluation is a very important part of plan implementation. Monitoring helps check if the plan is being implemented properly. It also measures the level of implementation of the plan. If the plan implementation is not on track, corrective measures can be taken to put execution on the track. After expiry of any plan evaluation is made about the errors and omissions. Such evaluation helps take corrective measures in the next plan. Such monitoring and evaluation must be carried out from within the Pourashava. But Sharishabari Pourashava is not equipped with qualified manpower to make such evaluation. For urban services plan monitoring and evaluation is essential. Qualified and experienced professionals of concerned departments should overlook the process of urban services. The Pourashava should have built its own capacity to ensure urban services to the inhabitants.

PART C: WARD ACTION PLAN

CHAPTER -1: INTRODUCTION

The third tier of the preparation of Master Plan of Sharishabari Pourashava is Ward Action Plan. The Ward Action Plan has been prepared under the framework of Structure Plan and Urban Area Plan. The Action Plans is undertaken for each of the nine wards of the Sharishabari Pourashava. This plan mainly describes the development proposals in detail as well as the prioritized schemes in the light of higher-level plan (Urban Area Plan).

1.1 BACKGROUND

Ward Action Plan is a vital part of the Master plan package as far as spatial development and development control is concerned. Absence of Ward Action Plan not only hampers undertaking development projects but also leads to uncontrolled and unwanted spatial development. The Ward Action Plan enables detailed view of proposed land use and development for Sharishabari Town for a period of 5 (five) years with keeping in view the need over a time span of 20 years.

The provision of Ward Action Plan is inherent in the Structure Plan with some specific purposes. These are:

a. Provide basic micro level infrastructure and services in the study area through systematic planning, under the framework of Structure Plan.
b. Create congenial environment to promote economic activities.
c. Improve drainage system and protect natural water channels from encroachment.
d. Create service centers to promote urban growth.

1.2 CONTENT AND FORM OF WARD ACTION PLAN

The WAP will be the smaller units of Structure Plan, expose their problems and opportunities and propose development proposals for improve of the problems as well as to promote development. Combining the areas of common use enables putting them into future uniform land use. Within the Pourashava area one ward has been considered a WAP. The WAP ensures better management of planning and development. The following indicators needed to adopt in preparation of the WAP. These are:

a) Area of Ward, b) Physical Boundary, c) Road Networks, d) Population Growth and density, e) Landuse pattern and f) Potentiality & development opportunity.

The Ward Action Plan has been contained list of priority schemes for the development of roads, drains, traffic management and other social infrastructures for implementation during the first five years of plan period. It also contains the phasing of proposals and the means of implementation. The Proposals Map show where the policies and proposals apply.

In addition to indicating the priorities, a Ward Action Plan includes proposals identified by other Agencies and bodies expected to happen within the period of the Plan. However, any dates and costs shown against proposals are liable to change as programs and the availability of resources are revising annually.

1.3 LINKAGE WITH THE STRUCTURE AND URBAN AREA PLAN

The Ward Action Plan is the third tier planning of the Master Plan project. As WAP has been prepared within the policy framework of the Structure Plan and guidelines of Urban Area Plan and aims to take immediate action up to five years.

The planning components of the current plan package are hierarchically related with each other. Structure Plan is at the apex level providing the long-term policies and strategies for urban development. The subsequent plans that is Urban Area Plan and Ward Action Plans are prepared under the strategic and visionary guidelines of the Structure Plan. Urban Area Plan is the mid-level plan meant for the main city and the potential areas in its vicinity likely to be developed in near future. Visions and strategies expressed in the Structure Plan are translated into planning proposals in the Urban Area Plan. It is also used for development control. Ward Action Plan is the lowest level in the planning hierarchy that shows the Urban Area plan proposals and beyond. It includes development proposals at the micro level reflecting the local needs and aspirations. Detailed Area Plans also follow the proposals and guide lines of the Structure Plan and Urban Area plan.

1.4 APPROACH & METHODOLOGY

The Ward Action Plan plan will be guided by the policies and proposals of upper level plans that is structure plan and urban area plan. Ward Action Plan provides guidance for development where action is expected in the term and covers individual parts of a city within a variable time frame. It comprises high priority projects and programmes that can be implemented in a relatively short time period, in an intensive manner.

Ward Action Plan Plan has been directed to the situations of local area and linked to the specific problems and issues of the area has been identified after discussion with and participatory process of all the stakeholders and beneficiaries of envisaged development in the area. A programme of prospective facilities and uses has been detailed out indicating target populations, service levels, financing mechanism and implementations schedules.

The methodology could be illustrated through tri-step process for the assessment of Ward Action Plan (**Figure-1.1**). These 3 steps are:

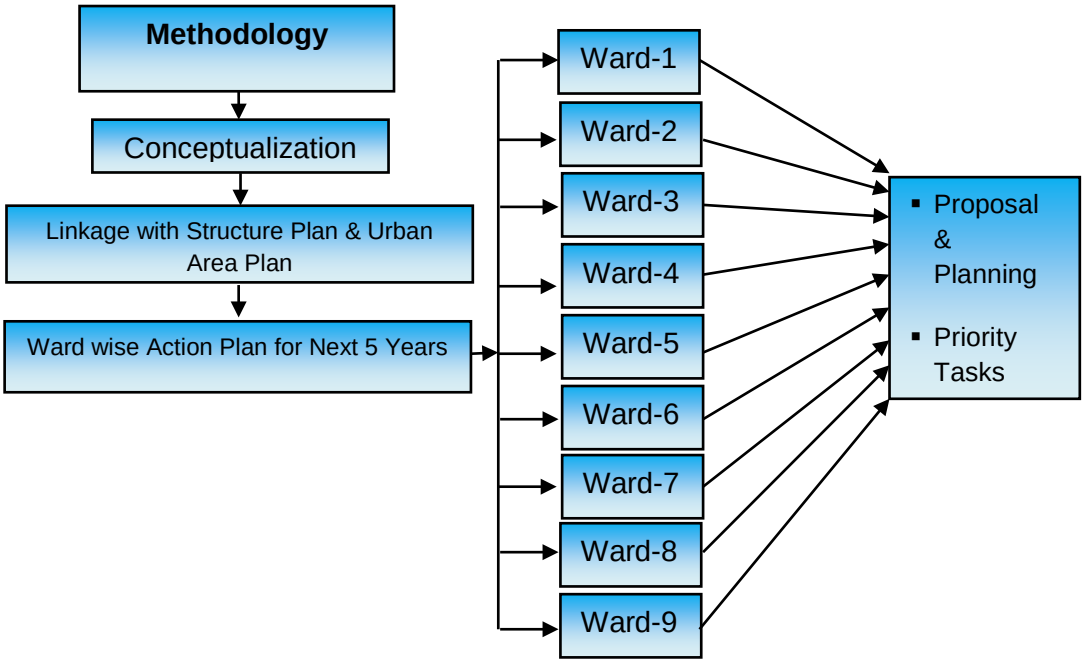


Figure-1.1: Methodology of Ward Action Plan Preparation

The first step of the methodology of Ward Action Plan is to conceptualize the content and background of the plan. In the next step, the linkage with Structure Plan & Urban Area Plan is identified. The final phase of the study is to adopt ward action plan in details. The proposal and planning, priority tasks and cost estimation are incorporated here to get a pictorial view of the Ward Action Plan.

CHAPTER - 2: DERIVATION OF WARD ACTION PLAN

2.1 REVISITING OF STRUCTURE PLAN

Structure Plan is a broad, indicative and open ended plan that contains broad policy framework for further plans and development actions. Based on the Structure Plan policy framework elaborate development proposals are prepared at subsequent lower levels.

The Structure Plan for Sharishabari Pourashava will provide a long term development strategy for 20 years up to 2031 for the development of the Pourashava area of 20.95 sq km or 5177.38 acres with an estimated population around 59,311. The Structure Plan area was subdivided into 9 Ward Action Plans (WAPs) on the basis of ward boundary which had been considered as WAP at the lowest tier plan of this plan package. **Map no. 1.1** shows in detail the proposed land use policy, demarcation of WAPs and main communication network of Structure plan area of Sharishabari Pourashava. The Structure Plan-

- Identifies the order of magnitude and the direction of anticipated urban growth and definition of a broad set of policies considered necessary to achieve the overall plan objectives,
- Identifies areas where growth is likely to take place in future and addresses the major issues.
- is an attempt to provide a longer term perspective that would cater to the long term needs of the projected population and
- To determine the land use pattern of the town. It marks the possible areas of future expansion.
- Provides a policy framework for future development trends.

The Structure Plan contains policies on the following topics:

- Urban Area Development
- Transport and Communication
- Sanitation and Drainage
- Water Supply
- Solid Waste Management
- Industrial and Commercial Development
- Housing
- Economy and Employment
- Tourism and Recreation
- Environment
- Conservation of Heritage

The issues under each of the above topics have been briefly discussed followed by policy recommendations along with justification and agencies responsible for implementation.

The Structure Plan will remain valid for a period of 20 years from 2011 to 2031. From the beginning of 2008 a project will have to be started to prepare a new Structure Plan for the next 20 year plan period.

2.2 REVISITING OF URBAN AREA PLAN

The UAP has been prepared within the policy framework of the Structure Plan and aims to attain the overall project objectives. Therefore, there is a hierarchical relationship between the two.

The concept of this plan focuses based on an urban area plan, where mid-term (up to the year 2021) development strategy is generally focused in the development planning process. Urban area Plan attempts to guide and accomplishing a coordinated , adjusted, and harmonious development of an urban center and its environs in accordance with present and future needs, best promoting health, safety, morals, order, convenience, property, general welfare, as well as efficiency and economy in the process of development; the forecast of a town's future. This plan is the second hierarchy of the current planning package and guided by the policy proposals of the structure plan. The Plan contains-

- broad spatial proposals and land use shown on map of desired scale;
- written statement about land use proposals;
- description of social-economic and environment policies;
- Sector specific plans and proposals and development standards.

2.3 PRIORITIZATION

Urban infrastructure Development Scheme for Pourashava aims at improvement in urban infrastructure in a planned manner.

The objectives of the scheme are to

a) Improve infrastructural facilities and help create durable public assets and quality oriented services in Pourashava
b) Enhance public-private-partnership in infrastructural development and
c) Promote planned integrated development of Pourashava.

The components for assistance under the scheme will include all urban infrastructure development projects. The Scheme will cover the following areas

- Construction/ Up gradation of roads, highways/expressways
- Water Supply
- Solid Waste Management
- Construction and improvement of drains/storm water drains
- Parking lots/spaces on Public Private Partnership basis
- Development of heritage areas
- Preservation of water bodies.
- Health and educational institutions

On completion of the Scheme period of five years, it is expected that Pourashava will achieve the following outcomes

(a) Modern and transparent budgeting, accounting, financial management systems, designed and adopted for all urban services and governance functions
(b) City-wide framework for planning and governance will be established and become operational
(c) All urban residents will be able to obtain access to a basic level of urban services
(d) Financially self-sustaining agencies for urban governance and service delivery will be established, through reforms to major revenue instruments
(e) Local services and governance will be conducted in a manner that is transparent and accountable to citizens
(f) e-Governance applications will be introduced in core functions of Pourashava resulting in reduced cost and time of service delivery processes.

2.4 WARD WISE ACTION PLAN FOR NEXT FIVE YEARS

The Ward Action Plan is spanning for the 5 years period. The Structure Plan paints the broad picture on the future pattern of housing, jobs, transport, services and the environment. Ward Action Plan is much more specific. They tackle the problems and opportunities associated with individual communities and show exactly where it apply.

The purpose of a Ward Action Plan is to –

- guide decisions made on planning applications to ensure that new developments are right for their location;
- help plan for the integrated development needs of an area such as new homes, factories, shops and schools;
- provide a consistent spatial framework within which both private and public sector investment decisions can be taken;
- protect important natural and man-made heritage features; and, most importantly, allow local people to become involved in the planning process

Ward Action Plans are developed to provide locally focused planning guidance for local areas. WAP aim to achieve the following:

- establish a shared vision for the local area
- address key local planning issues and capitalize on opportunities
- establish an integrated approach to local planning and
- sensibly manage future development outcomes

Generally, the WAP process will generate a number of documents, maps and posters including:

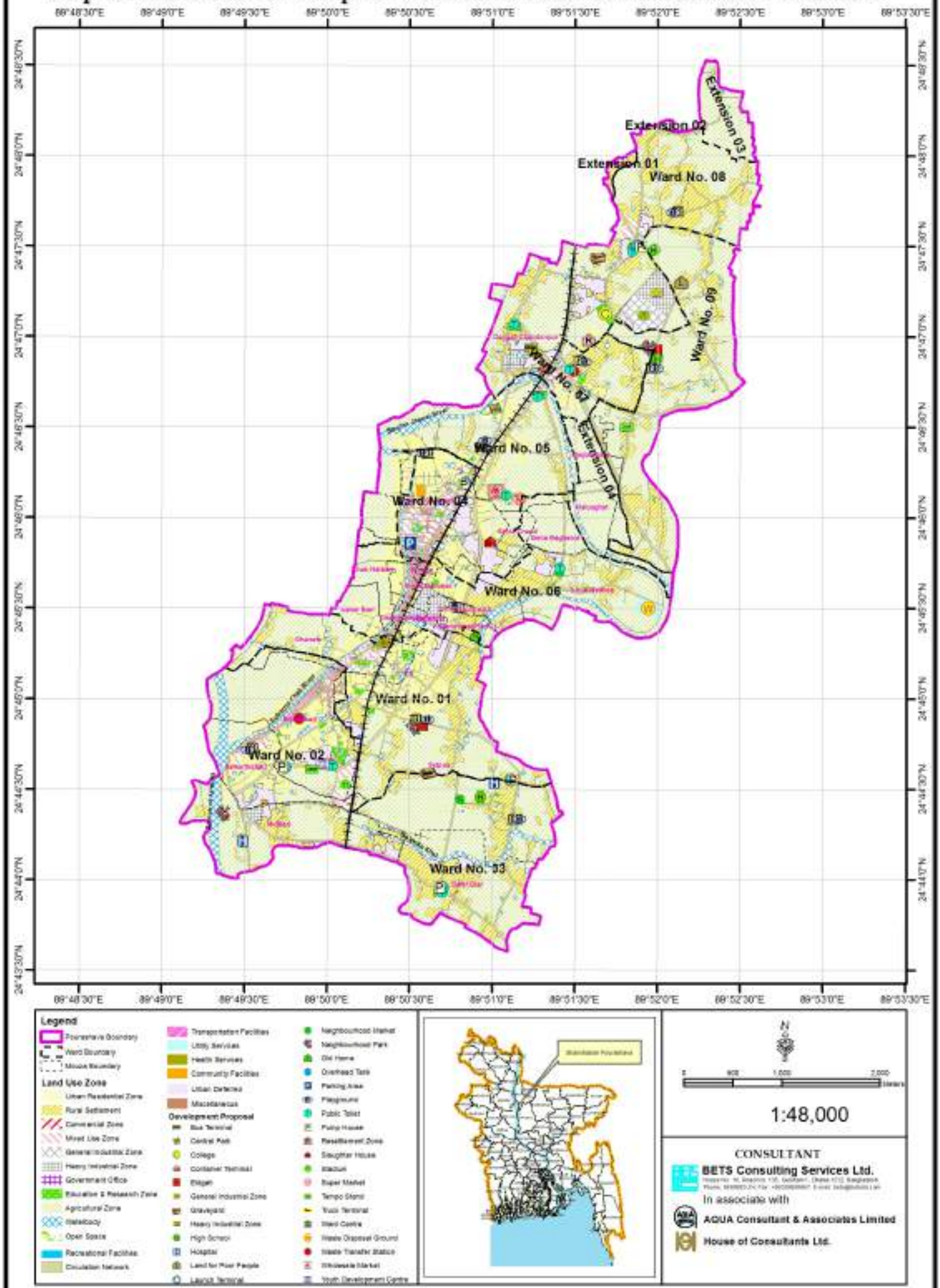
- Context and Appraisal Report
- Preliminary Visioning
- Concept Plan

A WAP can override other parts of the planning Scheme where an inconsistency exists. A Ward Action Plan is prepared with the input from many stakeholders. Some of these are:

- the local and wider community;
- prominent land owners, businesses, residents', associations, community groups and nongovernment organizations;
- elected representatives of council (councilors) and other levels of government; and
- representatives of relevant council programs and state government agencies

Public involvement is a key issue. To this end, the Pourashava has adopted a "Planning for Real" based approach which allows hands-on participation by all the residents of each local community. They help by identifying local issues and problems which the Plan can tackle; expressing their views on the Pourashava's policies; and suggesting how these could be improved. Ward Action Plan must be topical and relevant. The Pourashava's target is to ensure that they are reviewed on a 5 yearly cycle. Landuse Plan Map and Drainage & Utility Services Plan Map of Ward Action Plan is shown in **Map-2.1 and 2.2** respectively.

Map-2.1: Land Use Plan Map for Ward Action Plan of Sharishabari Pourashava



Legend

- Pourashava Boundary
- Ward Boundary
- Mouza Boundary

Land Use Zone

- Urban Residential Zone
- Rural Settlement
- Commercial Zone
- Mixed Use Zone
- General Industrial Zone
- Heavy Industrial Zone
- Government Office
- Education & Research Zone
- Agricultural Zone
- Haor/Baor
- Open Space
- Recreational Facilities
- Circulation Network
- Transportation Facilities
- Utility Services
- Health Services
- Community Facilities
- Urban Defected
- Miscellaneous

Development Proposal

- Bus Terminal
- Central Park
- College
- Container Terminal
- Ekgan
- General Industrial Zone
- Graveyard
- Heavy Industrial Zone
- High School
- Hospital
- Land for Poor People
- Launch Terminal
- Neighbourhood Market
- Neighbourhood Park
- Old Home
- Overhead Tank
- Parking Area
- Playground
- Public Toilet
- Pump House
- Resettlement Zone
- Slaughter House
- Stadium
- Super Market
- Tempo Stand
- Truck Terminal
- Ward Centre
- Waste Disposal Ground
- Waste Transfer Station
- Wholesale Market
- Youth Development Centre

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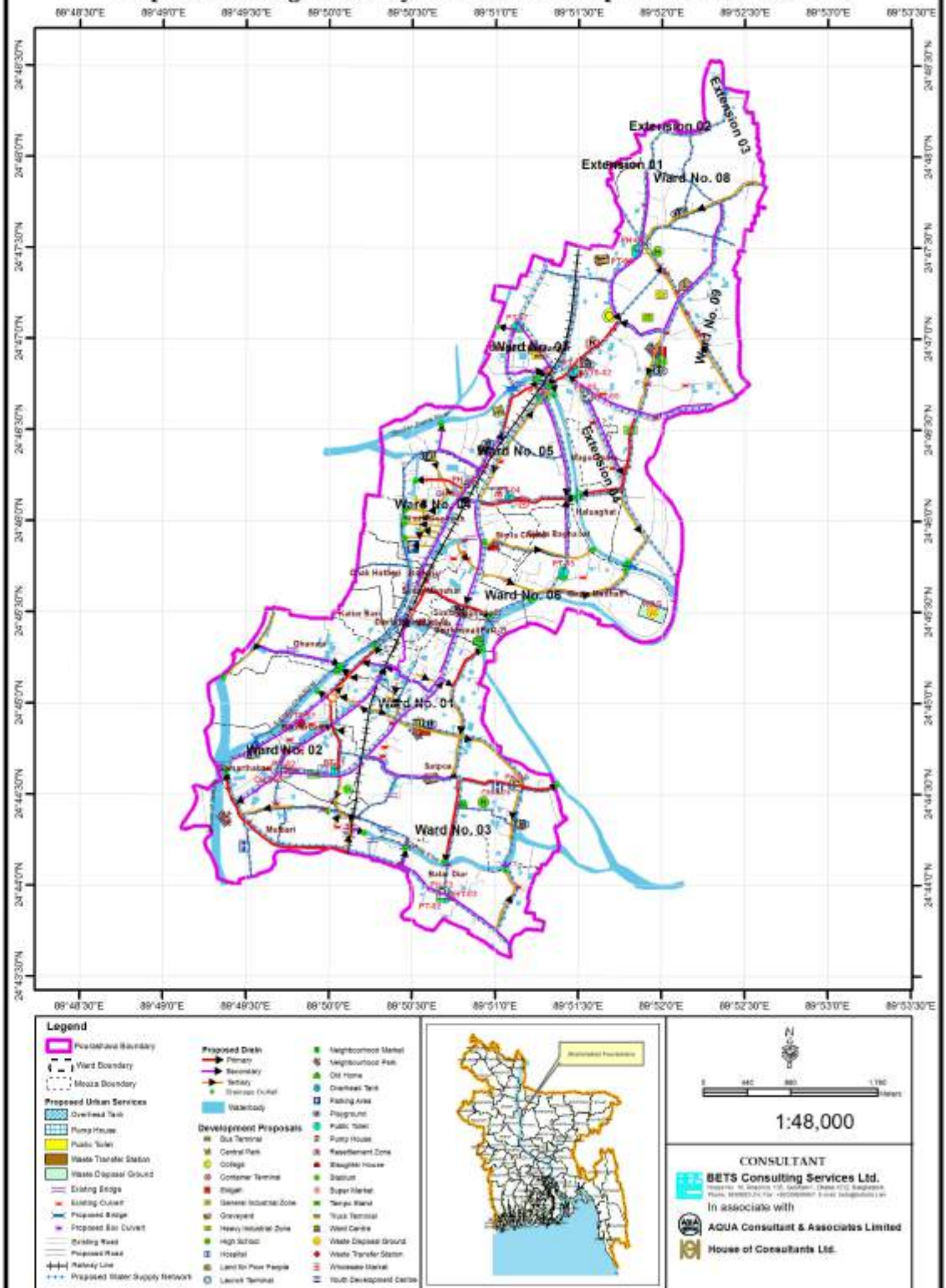
Map-2.2: Drainage & Utility Services Plan Map for Ward Action Plan



CHAPTER -3: ACTION PLAN FOR WARD-01

3.1 PROPOSALS AND PLANS FOR WARD 01

Ward No. 1 is located at the southern part of Sharishabari Pourashava covering the area of Dhanata and Satpoya mouza. The area of the Ward is 661.612 acres. After reviewing and commensuration the policies and proposals of Structure Plan and Urban Area Plan the following proposals are made in the Action Plan of **Ward 01** for implementation within next 5(five) years up to 2016. Landuse Plan Map & Utlity Services Plan Map for Ward-1 is shows in **Map-3.1 & Map-3.2** respectively.

Proposal of Roads:

Road Type	ID	Length (km)	Proposed ROW
Local Road	LWR-02	0.881	40 ft
	LWR-03	0.090	40 ft
	LWR-04	0.584	40 ft
	LWR-07	0.394	40 ft
	LWR-08	0.280	30 ft

Proposal of Drain:

Drain Type	ID	Length (km)	Av. Width (m)	Outfall
Primary Drain	PD-02	0.516	1.5 m	Jhinai River
	PD-03	0.409	1.5 m	Suborno Khali River
Secondary Drain	SD-02	1.103	0.8 m	SD-05
	SD-03	0.699	0.8 m	PD-09
	SD-04	0.543	0.8 m	SD-06
	SD-05	0.329	0.8 m	PD-02
	SD-06	0.232	0.8 m	PD-03
	SD-07	0.685	0.8 m	SD-06
	SD-08	0.779	0.8 m	SD-06
Tertiary Drain	TD-03	0.270	0.5 m	SD-02
	TD-04	0.173	0.5 m	TD-03
	TD-05	0.215	0.5 m	SD-05

Development Proposal:

Type	ID	Location	Area(acre)
Graveyard	GY-01	Southern margin of W-1 and end of satpoya mouza	0.8903
Playground	PG-01	At the centre of the Ward-1	1.0913

3.2 PRIORITY TASKS

The following priorities has identified after the Public consultation meeting at Sharishabari Pourashava.

Priority-1		Priority-2		Priority-3	
Type	**ID**	**Type**	**ID**	**Type**	**ID**
Road	LWR-02, LWR-03	Road	LWR-04, LWR-07	Road	LWR-08
Drain	PD-02, PD-03, SD-02, SD-03	Drain	SD-04, SD-05, SD-06, SD-07	Drain	SD-08, TD-03, TD-04,TD-05
Dev. Proposal	PG-01	Dev. Proposal	GY-01	Dev. Proposal	-

3.3 FINANCIAL COST OF THE PRIORITY INFRASTRUCTURE DEVELOPMENTS

This section has designed to provide a ready reference for approximate financial involvement of each and individual projects for the concerned development agencies.

In this cost estimation, a general rate for the construction work has followed, while different rates for land acquisition considered for different places corresponding to the land values.

For development of land up to 5 feet to 15 feet filling has considered depending on land level. The rate per SQ.M of filling considered Tk. 3,80/-. The rate for road and footpath construction per SQ.M considered Tk. 31,00/- and 9,00/- respectively. The construction of Brick drain and RCC drain considered Tk. 47,00.00 and Tk. 6,600/= per R.M. respectively. Te demolition cost per SQ.M considered Tk. 15,00/-. While structure compensation per Sq.m considered Tk. 8,00/=in average.

For any projects say widening of existing road, construction of any drain, market, park, playground, other services etc. a series of steps have to be taken which are as follows

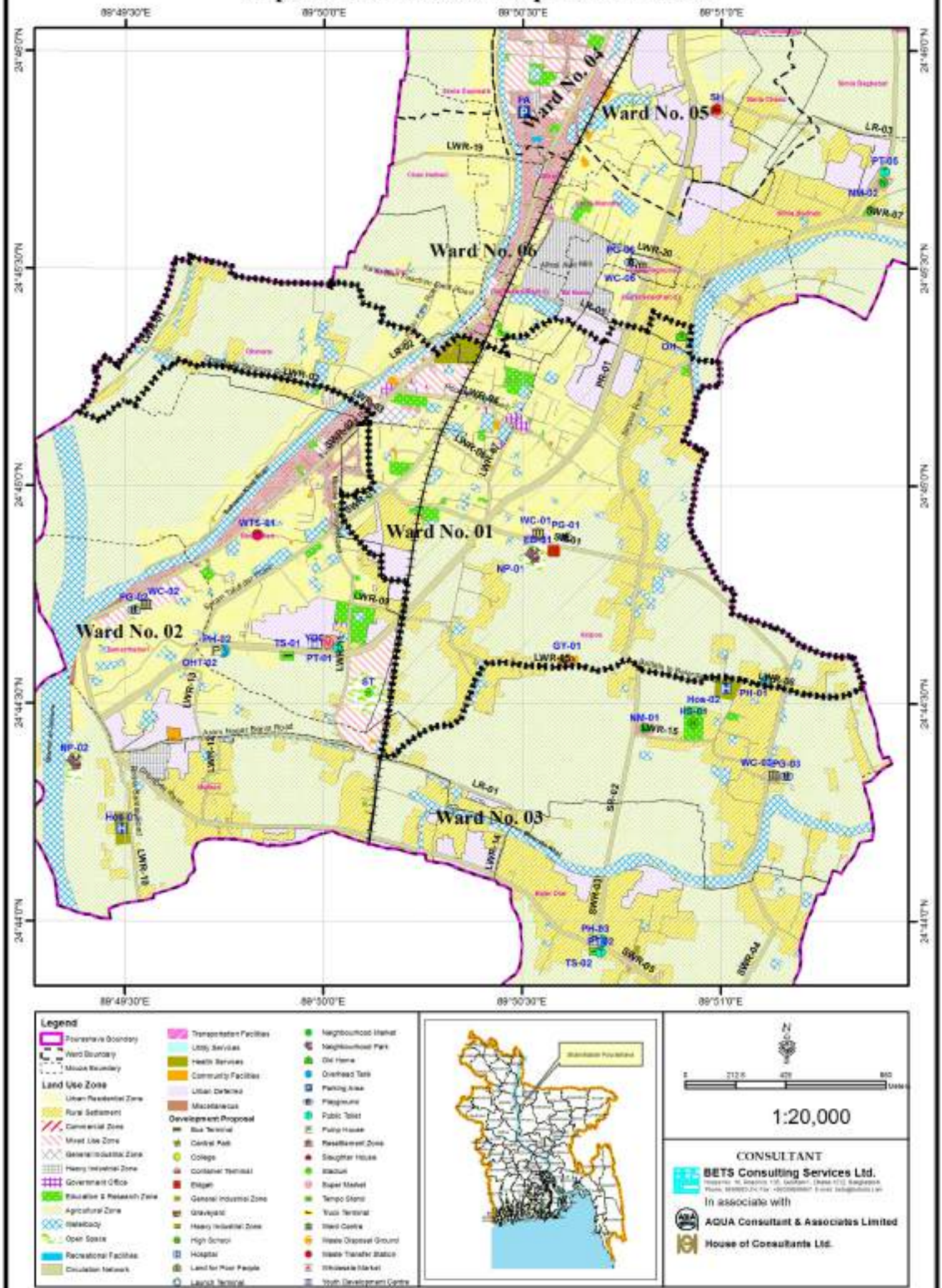
- Land demarcation on the ground
- Land acquisition
- Demolition of buildings or Structures (if any)
- Structure compensation (if any)
- Land development (if any)
- Physical construction

According to the nature of projects, the whole or part of above activities will be applicable, besides, the cost involvement for implementation will be depends on the implementation policies.

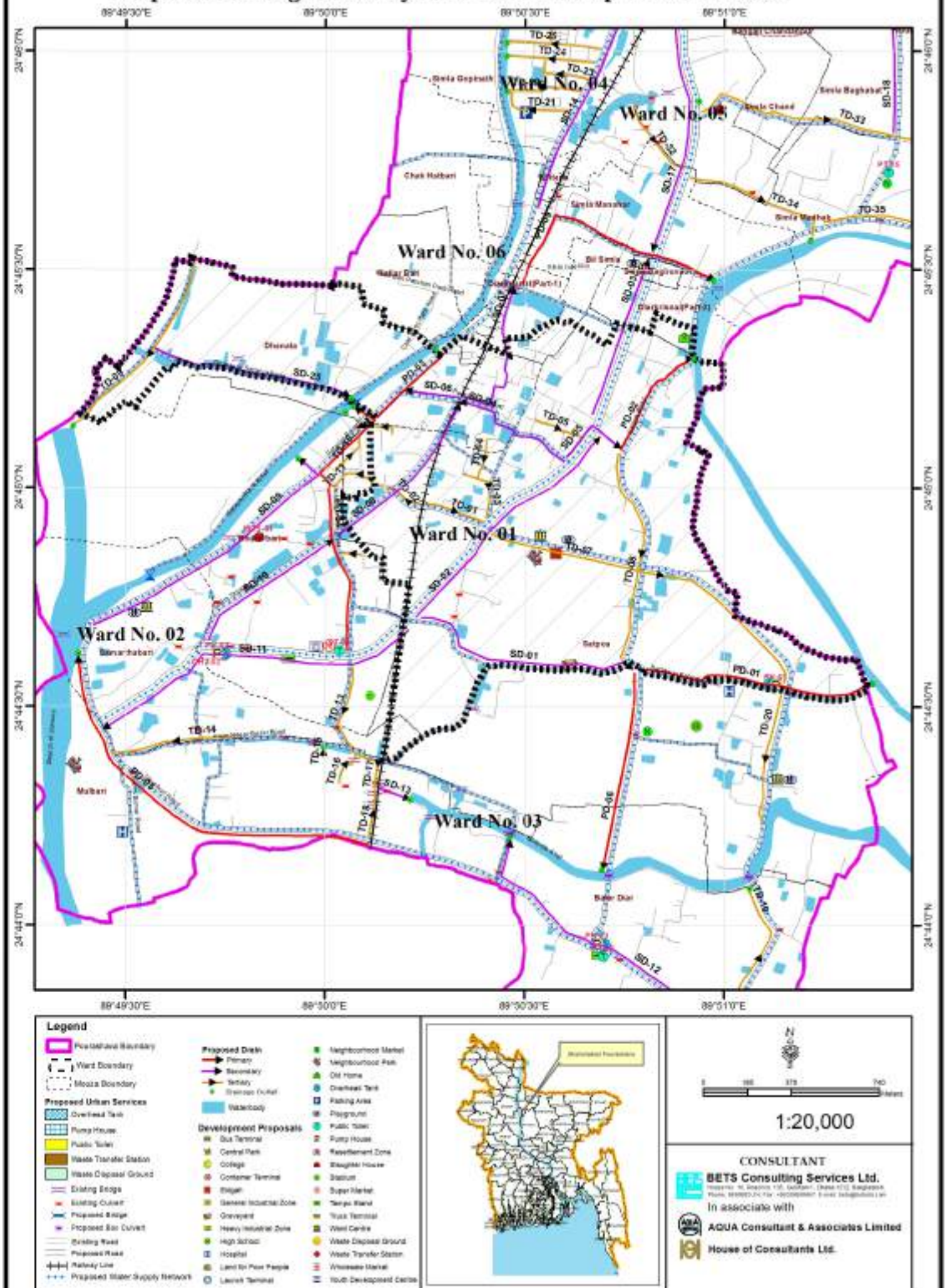
Indication of Project cost

Sl	Item	Rate
a.	Land acquisition cost	As per deed value of land according to record of sub register office
b.	Demolition cost of structure	Tk. 15,00.00 per M^3
c.	Compensation cost of structure	Tk.8,00.00 per M^3
d.	Land development cost	Tk.3,80.00 per M^3
e.	Construction of Road	Tk.31,00.00 per SQ. M
	Construction of side walk/footpath	Tk.9,00.00 per SQ. M
f.	Construction of Brick Drain	Tk.47,00.00 per R. M
	Construction of RCC Drain	Tk.6,600.00 per R.M

Map-3.1: Land Use Plan Map for Ward No.01



Map-3.2: Drainage & Utility Services Plan Map for Ward No.01



Legend

- Pourashava Boundary
- Ward Boundary
- Mouza Boundary

Proposed Urban Services

- Overhead Tank
- Pump House
- Public Toilet
- Waste Transfer Station
- Waste Disposal Ground
- Existing Bridge
- Existing Culvert
- Proposed Bridge
- Proposed Box Culvert
- Existing Road
- Proposed Road
- Railway Line
- Proposed Water Supply Network

Proposed Drain

- Primary
- Secondary
- Tertiary
- Drainage Outfall
- Waterbody

Development Proposals

- Bus Terminal
- Central Park
- College
- Container Terminal
- Ghat
- General Industrial Zone
- Graveyard
- Heavy Industrial Zone
- High School
- Hospital
- Land for Poor People
- Launch Terminal
- Neighborhood Market
- Neighbourhood Park
- Old Home
- Overhead Tank
- Parking Area
- Playground
- Public Toilet
- Pump House
- Resettlement Zone
- Slaughter House
- Stadium
- Super Market
- Tempo Stand
- Truck Terminal
- Ward Centre
- Waste Disposal Ground
- Waste Transfer Station
- Wholesale Market
- Youth Development Centre

N

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CHAPTER-4: ACTION PLAN FOR WARD-2

4.1 PROPOSALS AND PLANS FOR WARD 02

Ward No. 2 is located at the south-west corner part of SharishabariPourashava covering the area of Vurarbari, Samarthobari and Mulabari mouzas. The area of the Ward is 733.677 acres. After reviewing and commensuration the policies and proposals of Structure Plan and Urban Area Plan the following proposals are made in the Action Plan of **Ward 02** for implementation within next 5(five) years up to 2016. Landuse Plan Map & Utlity Services Plan Map for Ward-02 is shows in **Map-4.1 & Map-4.2** respectively.

Proposal of Roads:

Road Type	ID	Length (km)	Proposed ROW
Local Road	LWR-09	0.685	40 ft
	LWR-10	0.629	40 ft
	LWR-11	0.968	40 ft
	LWR-12	0.393	30 ft
	LWR-13	0.361	30 ft

Proposal of Drain:

Drain Type	ID	Length (km)	Av. Width (m)	Outfall
Primary Drain	PD-04	1.213	1.5 m	Suborno Khali River
Secondary Drain	SD-09	1.261	0.8 m	Suborno Khali River
Tertiary Drain	TD-10	0.178	0.5 m	PD-04
	TD-11	0.288	0.5 m	PD-04
	TD-12	0.090	0.5 m	PD-04

Development Proposal:

Type	ID	Location	Area(acre)
Hospital	Hos-01	South-west corner of W-2 beside Boyra Bamar road	2.063
Neighbourhood Park	NP-02	At the centre of W-6 beside proposed SR-02	3.128
Overhead Tank	OHT-02	East side of Salam Talukder Road	0.240
Playground	PG-02	Beside Dhanbari road nearer to Jute Mill office	1.088
Pump House	PH-02	East side of Salam Talukder Road	0.192
Public Toilet	PT-01	Eastern part of W-2 beside proposed PR-01	0.102
Waste Transfer Station	WTS-01	Central part of W-2 beside proposed PR-01	0.262
Youth Development Centre	YDC	Eastern part of W-2 beside proposed PR-01	0.506

4.2 PRIORITY TASKS

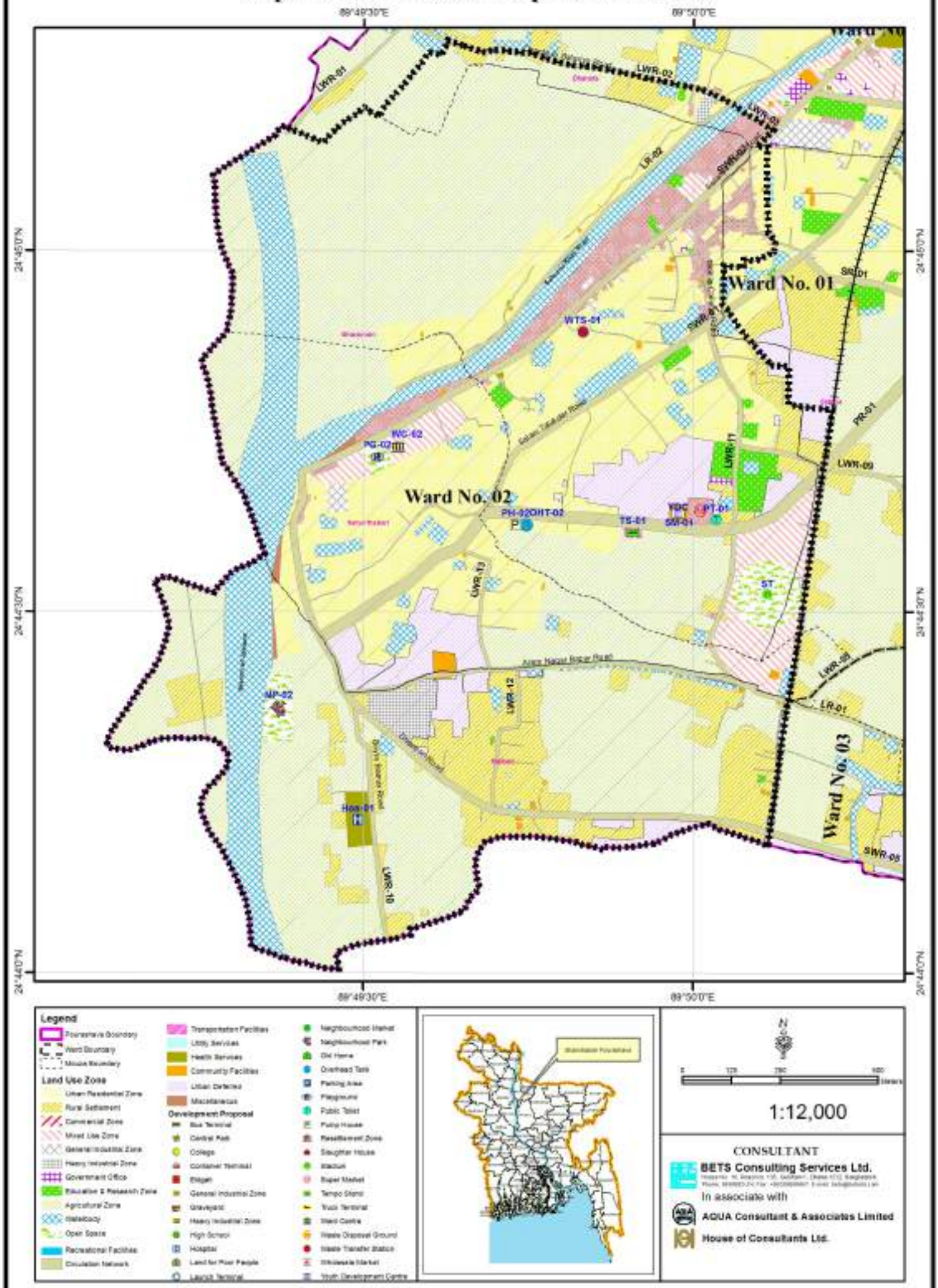
The following priorities has identified after the Public consultation meeting at Sharishabari Pourashava.

Priority-1		Priority-2		Priority-3	
Type	ID	Type	ID	Type	ID
Road	LWR-09, LWR-10	Road	LWR-11, LWR-12	Road	LWR-13
Drain	PD-04, SD-09	Drain	TD-10, TD-11	Drain	TD-12
Dev. Proposal	PH-02, PT-01, WTS-01	Dev. Proposal	Hos-01, NP-02, OHT-02	Dev. Proposal	PG-02, YDC

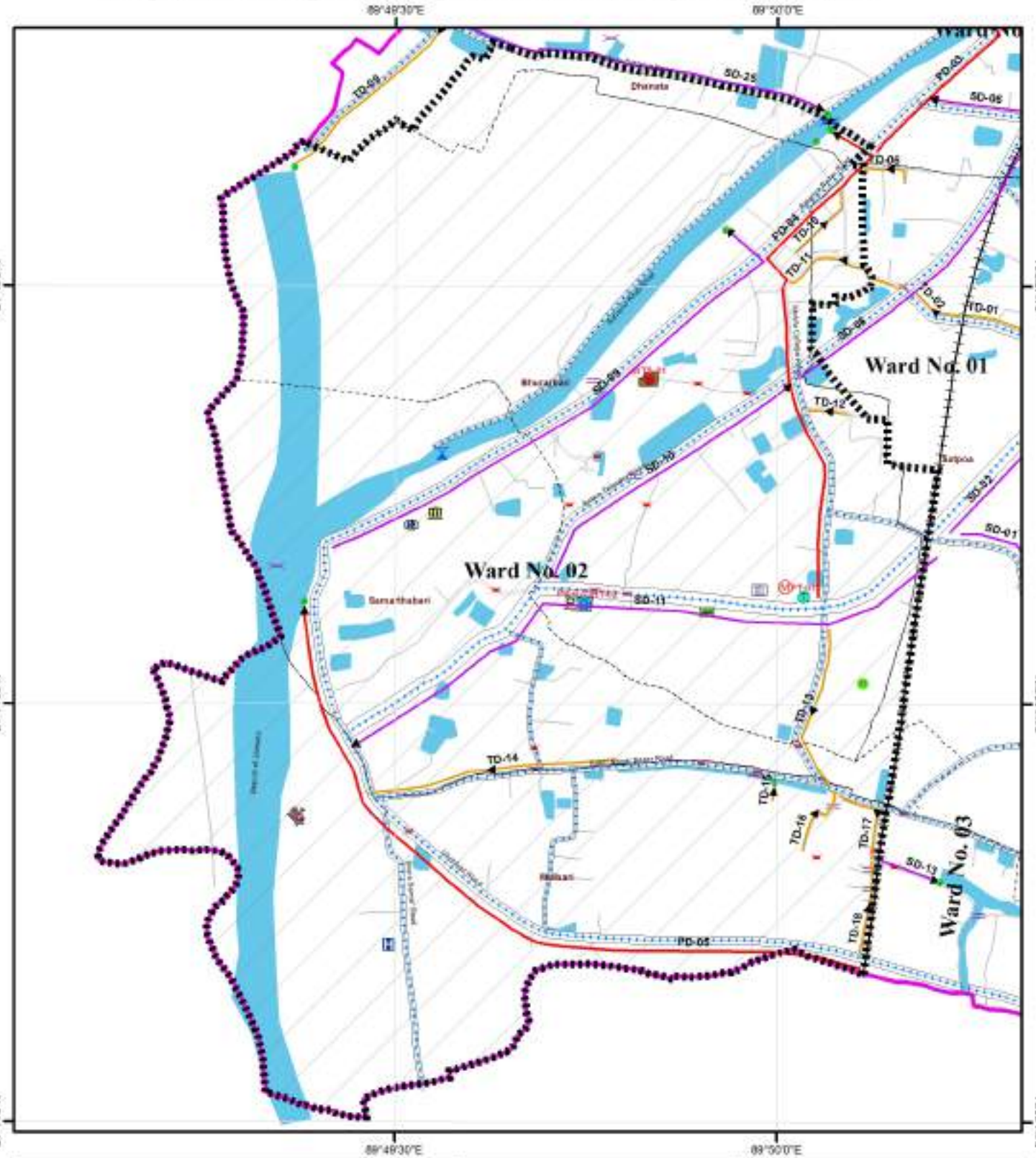
4.3 FINANCIAL COST OF THE PRIORITY INFRASTRUCTURE DEVELOPMENTS

Financial Cost of the Priority Infrastructure Developments have illustrated in Clause 3.3 above.

Map-4.1: Land Use Plan Map for Ward No.02



Map-4.2: Drainage & Utility Services Plan Map for Ward No.02



Legend

- Pouroshava Boundary
- Ward Boundary
- Mouza Boundary

Proposed Urban Services

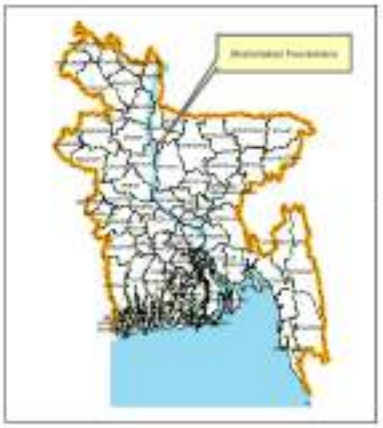
- Overhead Tank
- Pump House
- Public Toilet
- Waste Transfer Station
- Waste Disposal Ground
- Existing Bridge
- Existing Culvert
- Proposed Bridge
- Proposed Box Culvert
- Existing Road
- Proposed Road
- Railway Line
- Proposed Water Supply Network

Proposed Drain

- Primary
- Secondary
- Tertiary
- Drainage Outlet
- Waterbody

Development Proposals

- Bus Terminal
- Central Park
- College
- Container Terminal
- Ghat
- General Industrial Zone
- Graveyard
- Heavy Industrial Zone
- High School
- Hospital
- Land for Poor People
- Launch Terminal
- Neighborhood Market
- Neighbourhood Park
- Old Home
- Overhead Tank
- Parking Area
- Playground
- Public Toilet
- Pump House
- Resettlement Zone
- Slaughter House
- Stadium
- Super Market
- Tengra Stand
- Truck Terminal
- Ward Centre
- Waste Disposal Ground
- Waste Transfer Station
- Wholesale Market
- Youth Development Centre



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CHAPTER - 5: ACTION PLAN FOR WARD-3

5.1 PROPOSALS AND PLANS FOR WARD 03

Ward No. 3 is located at the south-east corner part of Sharishabari Pourashava covering Balardie mouza. The area of the Ward is 619.231 acres. After reviewing and commensuration the policies and proposals of Structure Plan and Urban Area Plan the following proposals are made in the Action Plan of **Ward-03** for implementation within next 5(five) years up to 2016. Landuse Plan Map and Drainage & Utility Services Plan Map of Ward Action Plan for Ward No.03 is shown in **Map-5.1 & Map-5.2** respectively.

Proposal of Roads:

Road Type	ID	Length (km)	Proposed ROW
Local Road	LWR-14	0.192	40 ft

Proposal of Drain: N/A

Development Proposal:

Type	ID	Location	Area(acre)
Secondary School	HS-01	Northern part of W-3 beside Bolerdia road	3.020
Neighbourhood Market	NM-01	Northern part of W-3 and at the junction of proposed SR-02 and Bolerdia road	1.012
Playground	PG-03	North of Bolerdia Khal beside Uttarpara road	1.034
Tempo Stand	TS-02	Southern part of W-3 beside Chowdhuri Bazar road	0.261

5.2 PRIORITY TASKS

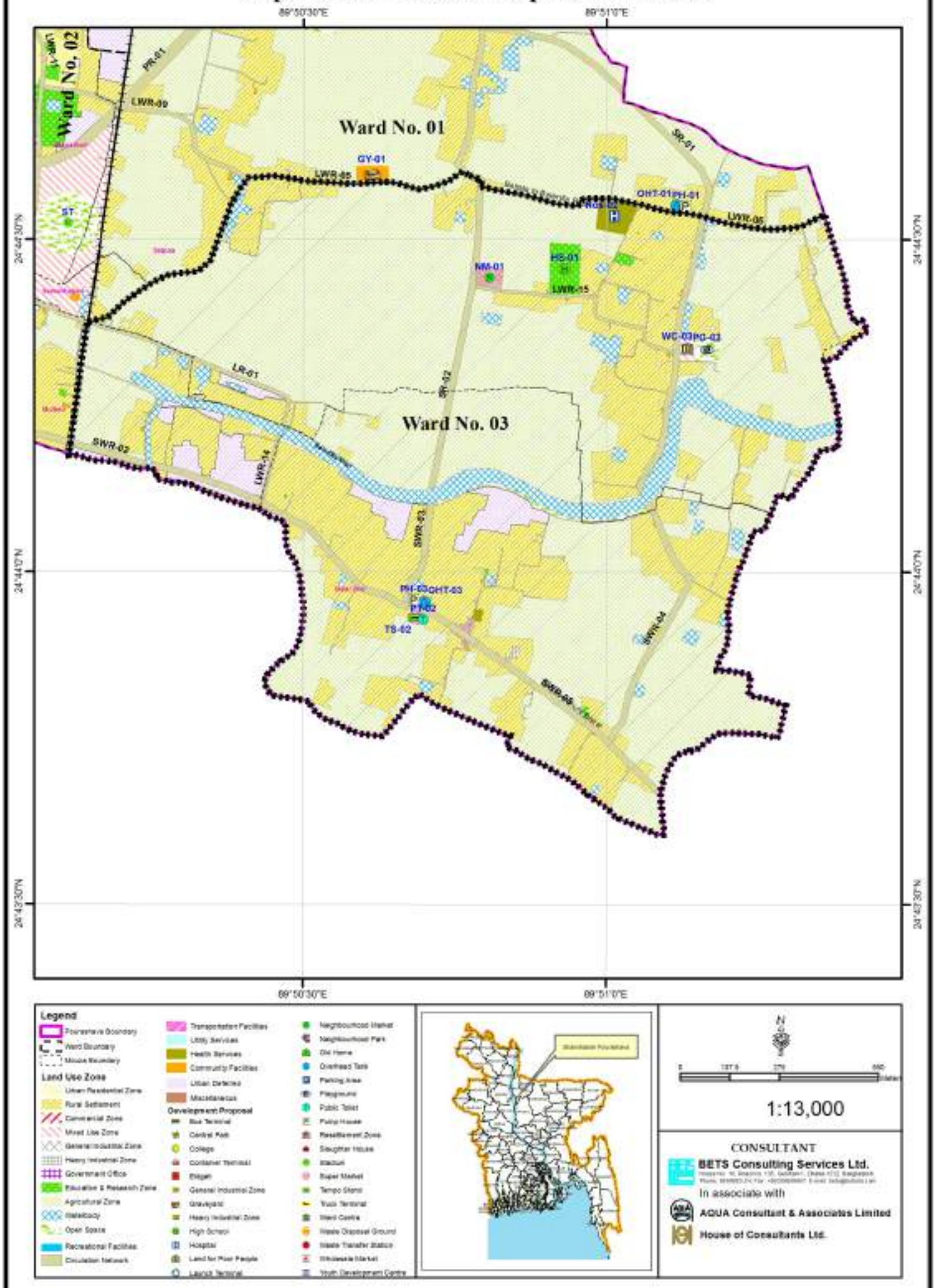
The following priorities has identified after the Public consultation meeting at Sharishabari Pourashava.

Priority-1		Priority-2		Priority-3	
Type	ID	Type	ID	Type	ID
Road	LWR-14	Road	-	Road	-
Drain	-	Drain	-	Drain	-
Dev. Proposal	NM-01, PG-03	Dev. Proposal	HS-01	Dev. Proposal	TS-02

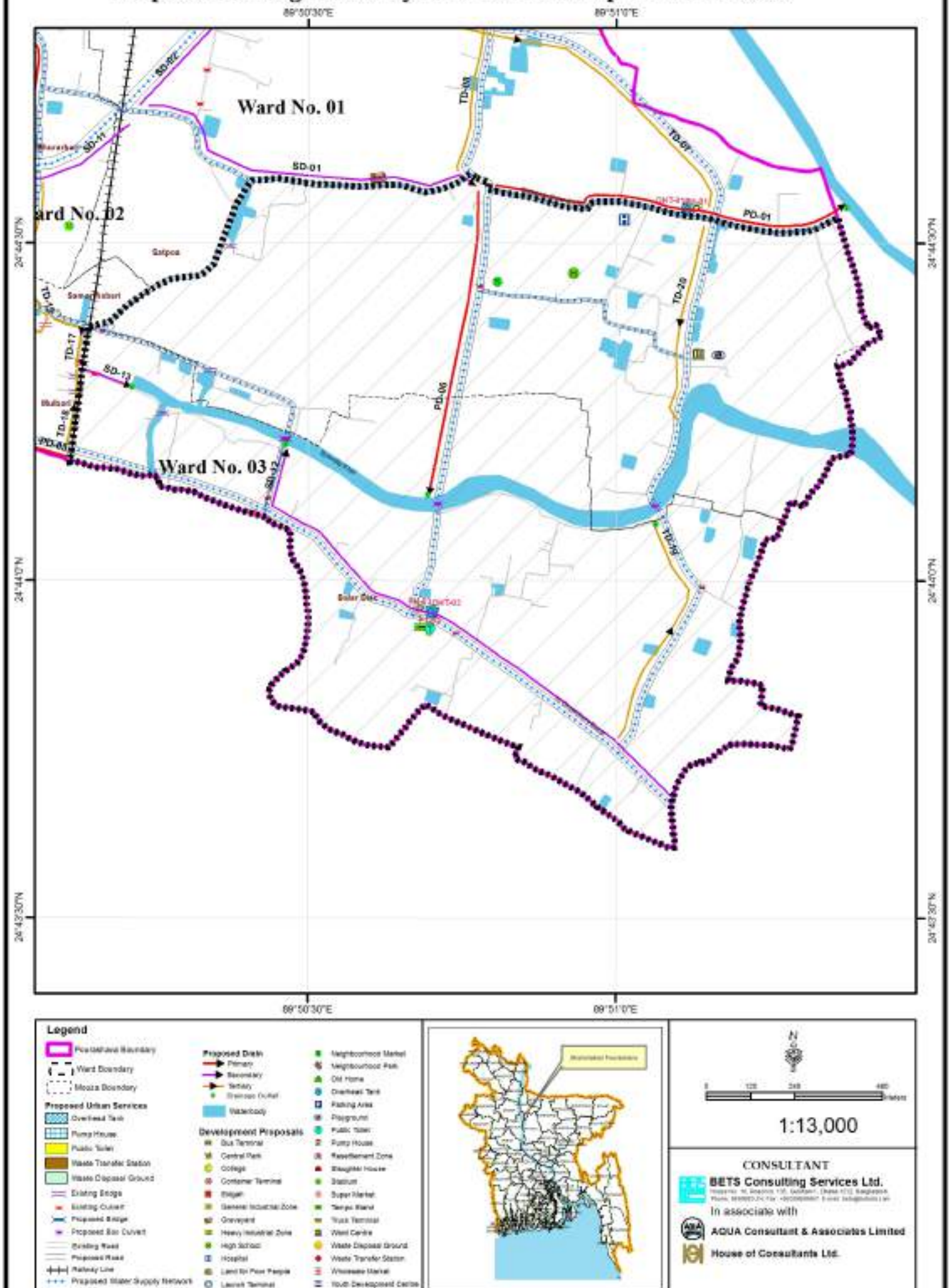
5.3 FINANCIAL COST OF THE PRIORITY INFRASTRUCTURE DEVELOPMENTS

Financial Cost of the Priority Infrastructure Developments have illustrated in Clause 3.3 above.

Map-5.1: Land Use Plan Map for Ward No.03



Map-5.2: Drainage & Utility Services Plan Map for Ward No.03



Legend

- Pourashava Boundary
- Ward Boundary
- Mouza Boundary

Proposed Urban Services

- Overhead Tank
- Pump House
- Public Toilet
- Waste Transfer Station
- Waste Disposal Ground
- Existing Bridge
- Existing Culvert
- Proposed Bridge
- Proposed Box Culvert
- Existing Road
- Proposed Road
- Railway Line
- Proposed Water Supply Network

Proposed Drain

- Primary
- Secondary
- Tertiary
- Drainage Outfall
- Waterbody

Development Proposals

- Bus Terminal
- Central Park
- College
- Container Terminal
- Ekgati
- General Industrial Zone
- Graveyard
- Heavy Industrial Zone
- High School
- Hospital
- Land for Poor People
- Launch Terminal
- Neighborhood Market
- Neighbourhood Park
- Old Home
- Overhead Tank
- Parking Area
- Playground
- Public Toilet
- Pump House
- Resettlement Zone
- Slaughter House
- Stadium
- Super Market
- Tengra Mand
- Truck Terminal
- Ward Centre
- Waste Disposal Ground
- Waste Transfer Station
- Wholesale Market
- Youth Development Centre

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CHAPTER -6: ACTION PLAN FOR WARD-4

6.1 PROPOSALS AND PLANS FOR WARD 04

Ward No. 4 is located at the central part of the Sharishabari Pourashava. The area of the Ward is 148.188 acres. After reviewing and commensuration the policies and proposals of Structure Plan and Urban Area Plan the following proposals are made in the Action Plan of **Ward 04** for implementation within next 5(five) years up to 2016. Landuse Plan Map and Drainage & Utility Services Plan Map of Ward Action Plan for Ward No.04 is shown in **Map-6.1 & Map-6.2** respectively.

Proposal of Roads: N/A

Proposal of Drain:

Drain Type	ID	Length (km)	Av. Width (m)	Outfall
Primary Drain	PD-07	0.492	1.5 m	Suborno Khali River
Secondary Drain	SD-14	1.793	0.8 m	PD-08
	SD-15	0.167	0.8 m	SD-14
Tertiary Drain	TD-21	0.321	0.5 m	Suborno Khali River
	TD-22	0.329	0.5 m	Suborno Khali River
	TD-23	0.247	0.5 m	TD-24
	TD-24	0.372	0.5 m	Suborno Khali River
	TD-25	0.393	0.5 m	Suborno Khali River
	TD-26	0.516	0.5 m	Suborno Khali River
	TD-27	0.287	0.5 m	Suborno Khali River
	TD-28	0.245	0.5 m	PD-07
	TD-29	0.300	0.5 m	PD-07

Development Proposal:

Type	ID	Location	Area(acre)
Overhead Tank	OHT-04	Opposite side of Fire Service Station	0.204
Parking Area	PA	Between Suborno Khali river and Sharishabari-Jamalpur road	0.535
Playground	PG-04	Beside rail gate road nearer to mosque and east bank of Suborno Khali river	1.060
Pump House	PH-04	Opposite side of Fire Service Station	0.123

6.2 PRIORITY TASKS

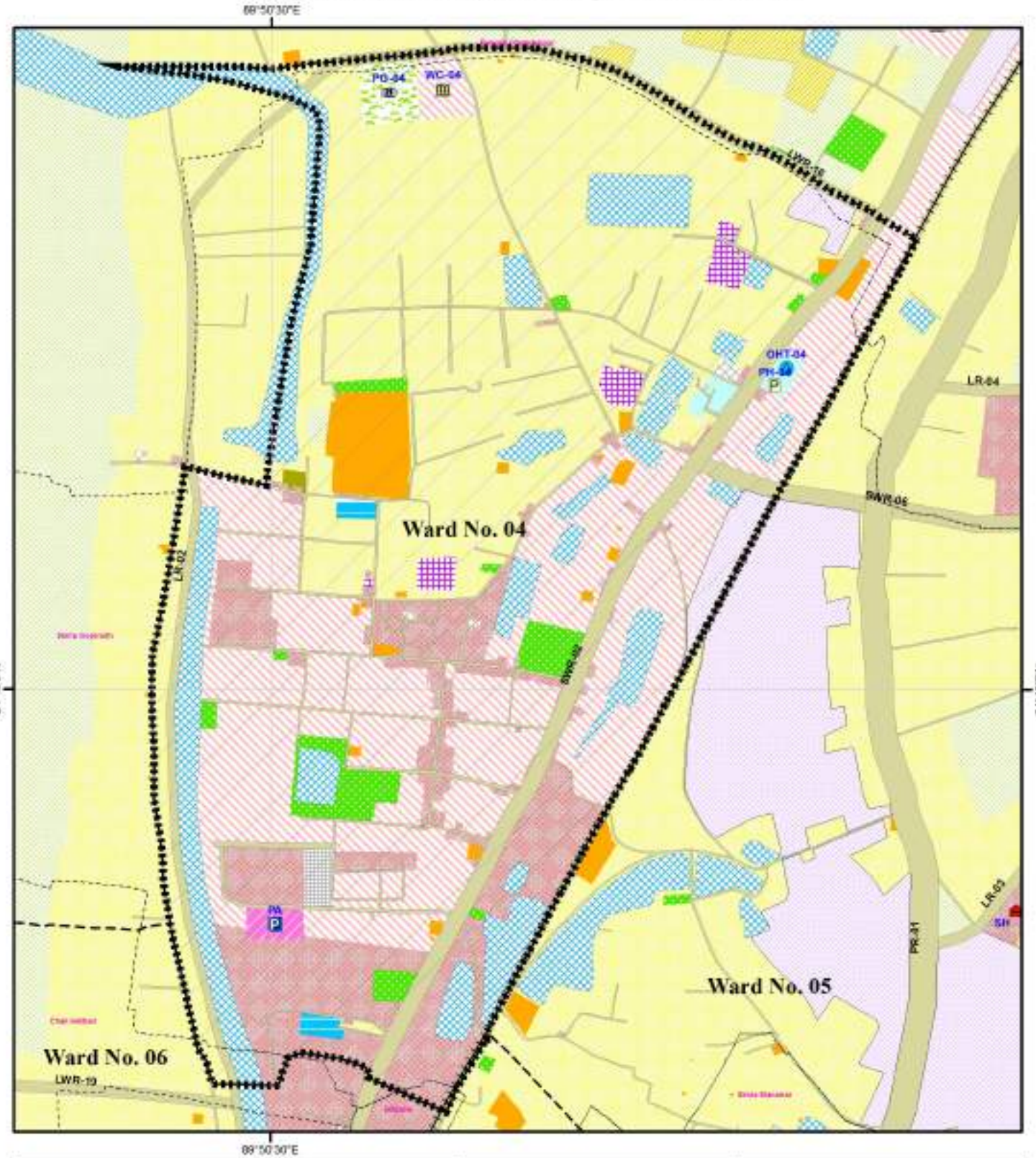
The following priorities has identified after the Public consultation meeting at Sharishabari Pourashava.

Priority-1		Priority-2		Priority-3	
Type	**ID**	**Type**	**ID**	**Type**	**ID**
Road	-	Road	-	Road	-
Drain	PD-07, SD-14, SD-15	Drain	TD-21, 22, 23, 24, 25	Drain	TD-26, 27, 28, 29
Dev. Proposal	PH-04, OHT	Dev. Proposal	PA	Dev. Proposal	PG-04

6.3 FINANCIAL COST OF THE PRIORITY INFRASTRUCTURE DEVELOPMENTS

Financial Cost of the Priority Infrastructure Developments have illustrated in Clause 3.3 above.

Map-6.1: Land Use Plan Map for Ward No.04



Legend

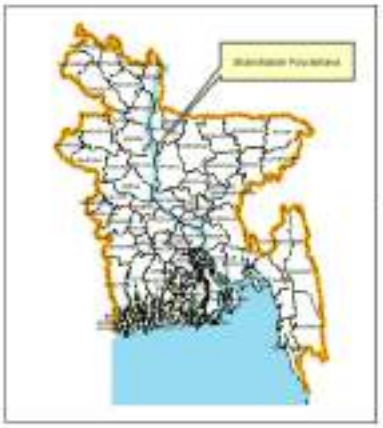
- Pourashava Boundary
- Ward Boundary
- Mouza Boundary

Land Use Zone

- Urban Residential Zone
- Rural Settlement
- Commercial Zone
- Mixed Use Zone
- General Industrial Zone
- Heavy Industrial Zone
- Government Office
- Education & Research Zone
- Agricultural Zone
- Haor/Baor
- Open Space
- Recreational Facilities
- Circulation Network
- Transportation Facilities
- Utility Services
- Health Services
- Community Facilities
- Urban Defence
- Miscellaneous

Development Proposal

- Bus Terminal
- Central Park
- College
- Container Terminal
- Ghat
- General Industrial Zone
- Graveyard
- Heavy Industrial Zone
- High School
- Hospital
- Land for Poor People
- Launch Terminal
- Neighbourhood Market
- Neighbourhood Park
- Old Home
- Overhead Tank
- Parking Area
- Playground
- Public Toilet
- Pump House
- Resettlement Zone
- Slaughter House
- Station
- Super Market
- Tempo Stand
- Truck Terminal
- Ward Centre
- Waste Disposal Ground
- Waste Transfer Station
- Wholesale Market
- Youth Development Centre



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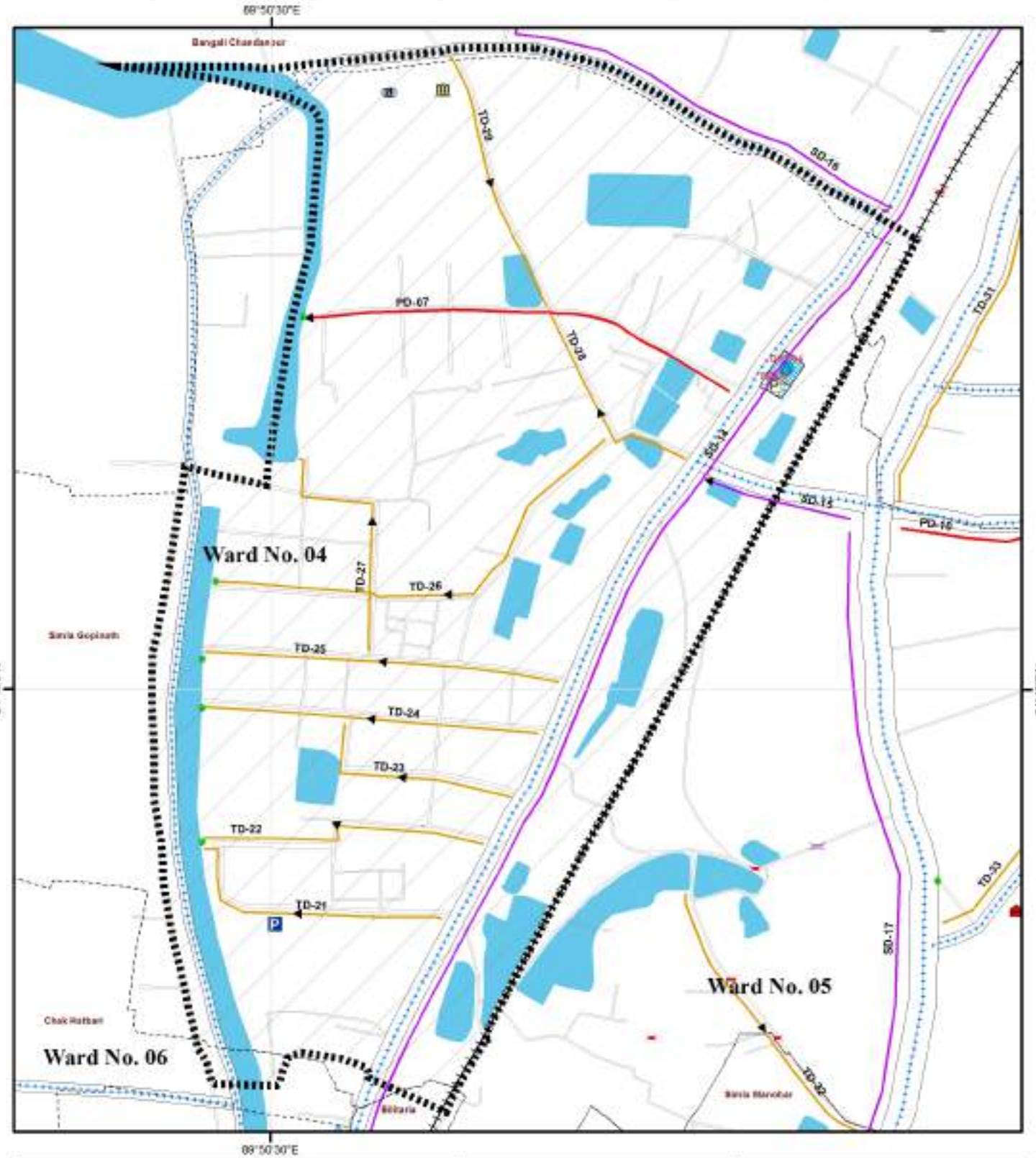
Map-6.2: Drainage & Utility Services Plan Map for Ward No.04



Legend

- Pourashava Boundary
- Ward Boundary
- Mouza Boundary

Proposed Urban Services

- Overhead Tank
- Pump House
- Public Toilet
- Waste Transfer Station
- Waste Disposal Ground
- Existing Bridge
- Existing Culvert
- Proposed Bridge
- Proposed Box Culvert
- Existing Road
- Proposed Road
- Railway Line
- Proposed Water Supply Network

Proposed Drain

- Primary
- Secondary
- Tertiary
- Drainage Outfall
- Waterbody

Development Proposals

- Bus Terminal
- Central Park
- College
- Container Terminal
- Ghat
- General Industrial Zone
- Graveyard
- Heavy Industrial Zone
- High School
- Hospital
- Land for Poor People
- Launch Terminal
- Neighborhood Market
- Neighbourhood Park
- Old Home
- Overhead Tank
- Parking Area
- Playground
- Public Toilet
- Pump House
- Resettlement Zone
- Slaughter House
- Stadium
- Super Market
- Tengra Mand
- Truck Terminal
- Ward Centre
- Waste Disposal Ground
- Waste Transfer Station
- Wholesale Market
- Youth Development Centre

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CHAPTER-7: ACTION PLAN FOR WARD-5

7.1 PROPOSALS AND PLANS FOR WARD 05

Ward No.5 is located at the central part of Sharishabari Pourashava at the south of River small Jhenai. The area of the Ward is 605.776 acres. After reviewing and commensuration the policies and proposals of Structure Plan and Urban Area Plan the following proposals are made in the Action Plan of **Ward- 05** for implementation within next 5(five) years up to 2016. Landuse Plan Map and Drainage & Utility Services Plan Map of Ward Action Plan for Ward No.04 is shown in **Map-6.1 & Map-6.2** respectively.

Proposal of Roads:

Road Type	ID	Length (km)	Proposed ROW
Local Road	LWR-18	0.069	40 ft
Secondary Road	SWR-06	1.214	60 ft

Proposal of Drain:

Drain Type	ID	Length (km)	Av. Width (m)	Outfall
Primary Drain	PD-08	0.668	1.5 m	Jhinai River
Tertiary Drain	TD-30	0.586	0.5 m	Jhinai River
	TD-32	0.352	0.5 m	SD-17

Development Proposal:

Type	ID	Location	Area(acre)
Playground	PG-05	Beside Shimla Bazar road and west of railway line	1.019
Public Toilet	PT-03	North part of W-5 and east of railway line	0.102
Slaughter House	SH	South of Shimla Palli Purbapara Jame Mosque	0.601
Super Market	SM-02	Eastern margin of W-5 beside Kamrabad road	1.020
Wholesale Market	WM	East side of rail gate and Simla Purbapara Mor at Bangali Chandanpur	5.153

7.2 PRIORITY TASKS

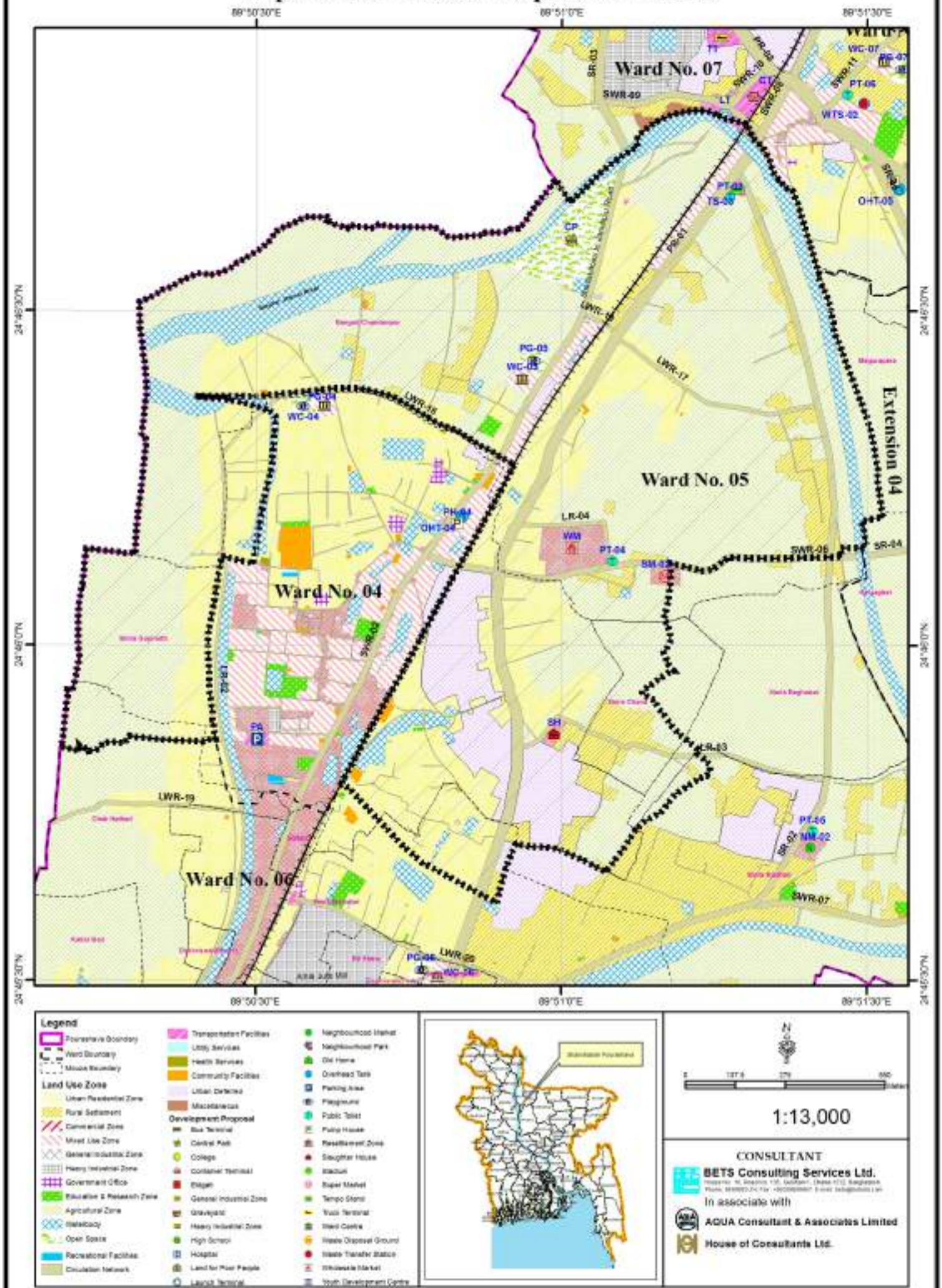
The following priorities has identified after the Public consultation meeting at Sharishabari Pourashava.

Priority-1		Priority-2		Priority-3	
Type	ID	Type	ID	Type	ID
Road	LWR-18	Road	SWR-06	Road	-
Drain	PD-08	Drain	TD-30	Drain	TD-32
Dev. Proposal	PT-03, SH	Dev. Proposal	WM	Dev. Proposal	SM-02, PG-05

7.3 FINANCIAL COST OF THE PRIORITY INFRASTRUCTURE DEVELOPMENTS

Financial Cost of the Priority Infrastructure Developments have illustrated in Clause 3.3 above.

Map-7.1: Land Use Plan Map for Ward No.05



Legend

Boundaries: Pourashava Boundary; Ward Boundary; Mouza Boundary

Land Use Zone: Urban Residential Zone; Rural Settlement; Commercial Zone; Mixed Use Zone; General Industrial Zone; Heavy Industrial Zone; Government Office; Education & Research Zone; Agricultural Zone; Haor/Baor; Open Space; Recreational Facilities; Circulation Network

Transportation Facilities; Utility Services; Health Services; Community Facilities; Urban Defence; Miscellaneous

Development Proposal: Bus Terminal; Central Park; College; Container Terminal; Ekgan; General Industrial Zone; Graveyard; Heavy Industrial Zone; High School; Hospital; Land for Poor People; Launch Terminal; Neighbourhood Market; Neighbourhood Park; Old Home; Overhead Tank; Parking Area; Playground; Public Toilet; Pump House; Resettlement Zone; Slaughter House; Stadium; Super Market; Tempo Stand; Truck Terminal; Ward Centre; Waste Disposal Ground; Waste Transfer Station; Wholesale Market; Youth Development Centre

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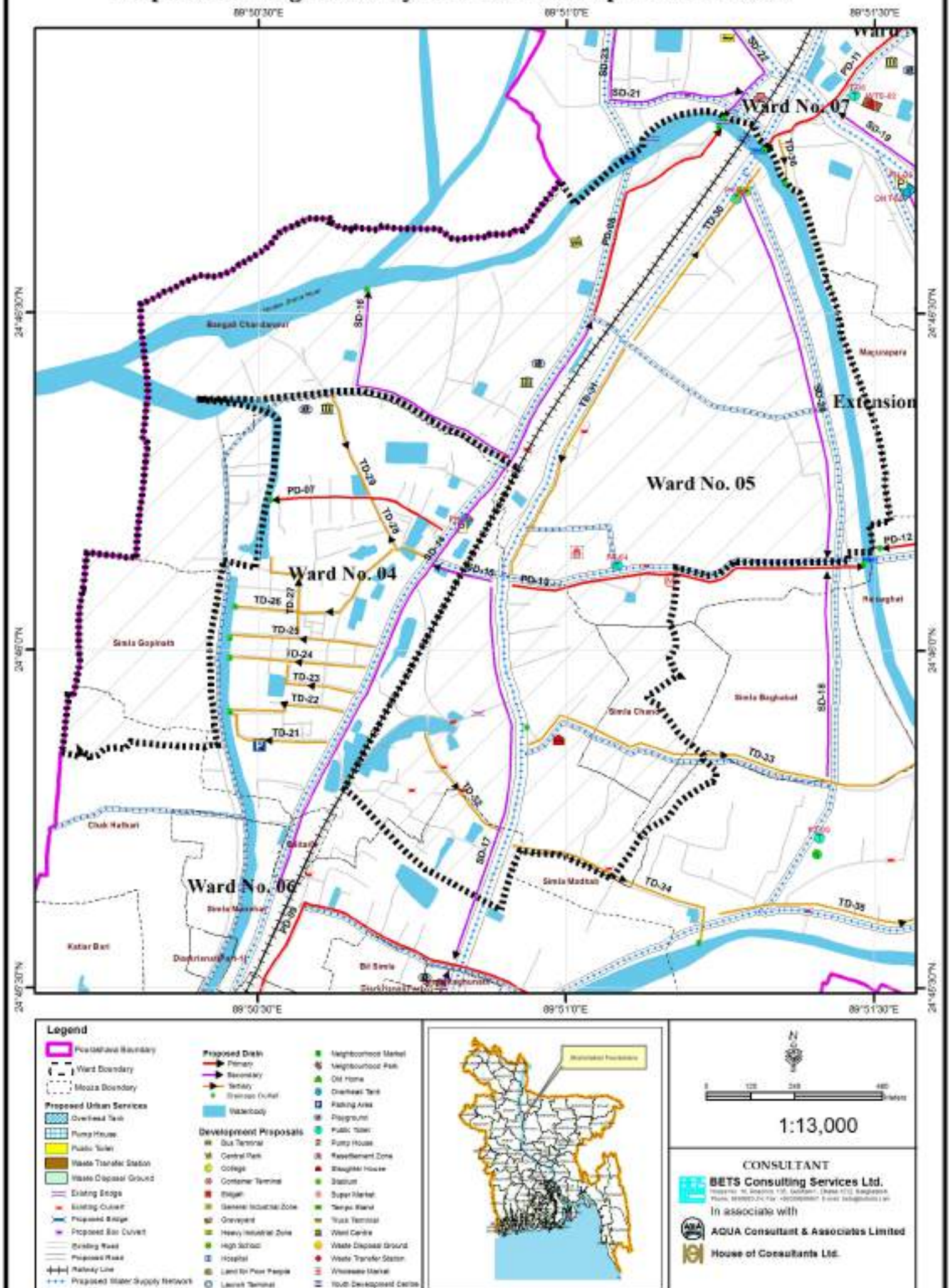
Map-7.2: Drainage & Utility Services Plan Map for Ward No.05



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CHAPTER-8: ACTION PLAN FOR WARD-6

8.1 PROPOSALS AND PLANS FOR WARD 06

Ward No. 6 is located at the central part and extended west to east margin of Sharishabari Pourashava. The area of the Ward is 645.204 acres. After Reviewing and commensuration the policies and proposals of Structure Plan and Urban Area Plan the following proposals are made in the Action Plan of **Ward 06** for implementation within next 5(five) years up to 2016. Landuse Plan Map and Drainage & Utility Services Plan Map of Ward Action Plan for Ward No.06 is shown in **Map-8.1 & Map-8.2** respectively.

Proposal of Roads:

Road Type	ID	Length (km)	Proposed ROW
Secondary Road	SWR-07	0.964	60 ft
Local Road	LWR-19	0.549	40 ft
	LWR-20	0.715	40 ft
	LWR-21	0.584	40 ft

Proposal of Drain:

Drain Type	ID	Length (km)	Av. Width (m)	Outfall
Primary Drain	PD-09	1.061	1.5 m	Jhinai River
Secondary Drain	SD-17	1.049	0.8 m	PD-09

Development Proposal:

Type	ID	Location	Area(acre)
Neighbourhood Market	NM-02	At the centre of W-6 beside proposed SR-02	1.002
Playground	PG-06	Beside the junction of proposed PR-01 & Maize Bari rd	0.930
Public Toilet	PT-05	At the centre of W-6 beside proposed SR-02	0.108
Waste Disposal Ground	WDG	Beside central boundary of W-6 and on the bank of river small Jhenai River	10.144

8.2 PRIORITY TASKS

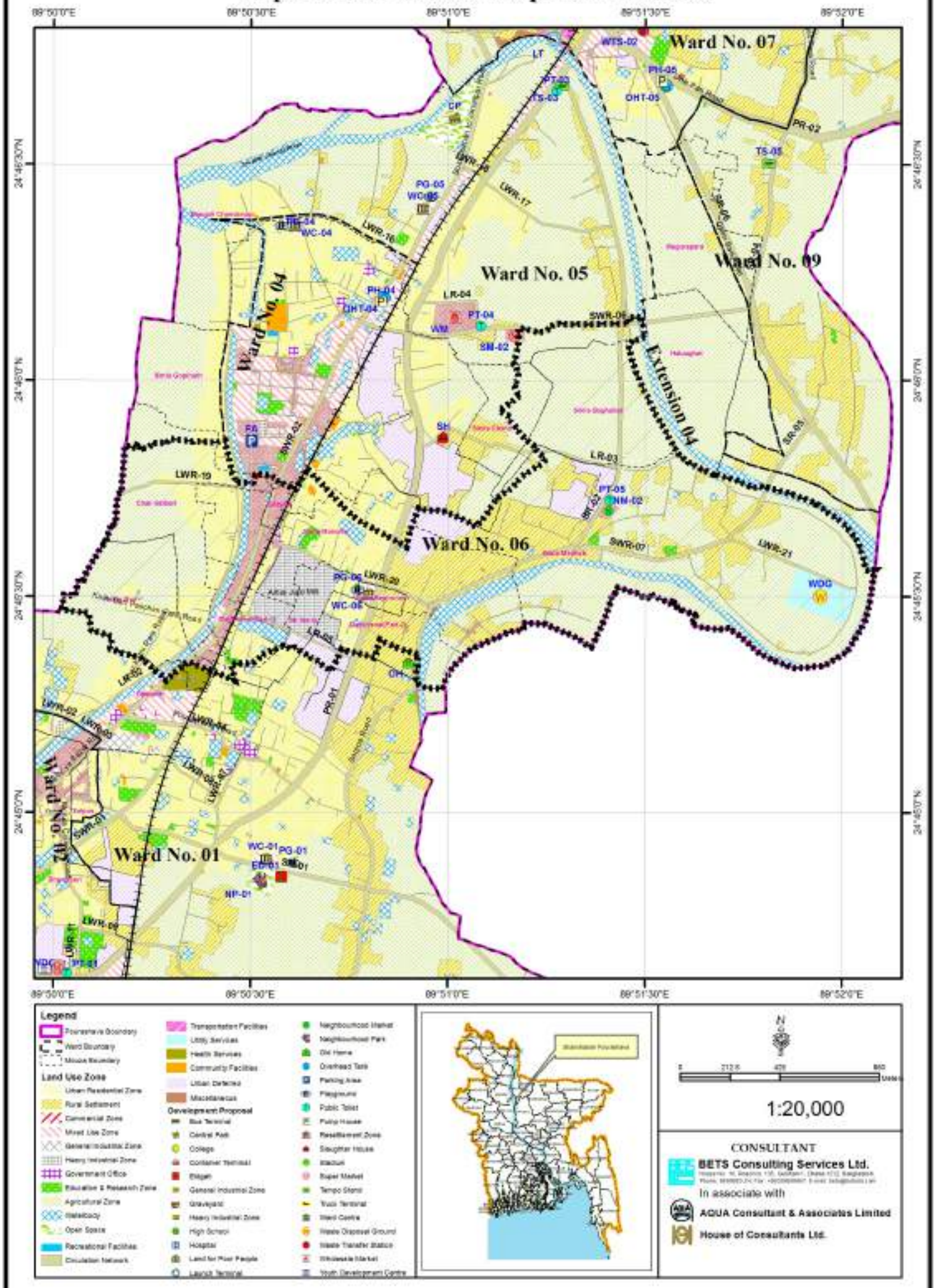
The following priorities has identified after the Public consultation meeting at Sharishabari Pourashava.

Priority-1		Priority-2		Priority-3	
Type	**ID**	**Type**	**ID**	**Type**	**ID**
Road	SWR-07	Road	LWR-19, LWR-20	Road	LWR-21
Drain	PD-09	Drain	SD-17	Drain	-
Dev. Proposal	PT-05, WDG	Dev. Proposal	PG-06	Dev. Proposal	NM-02

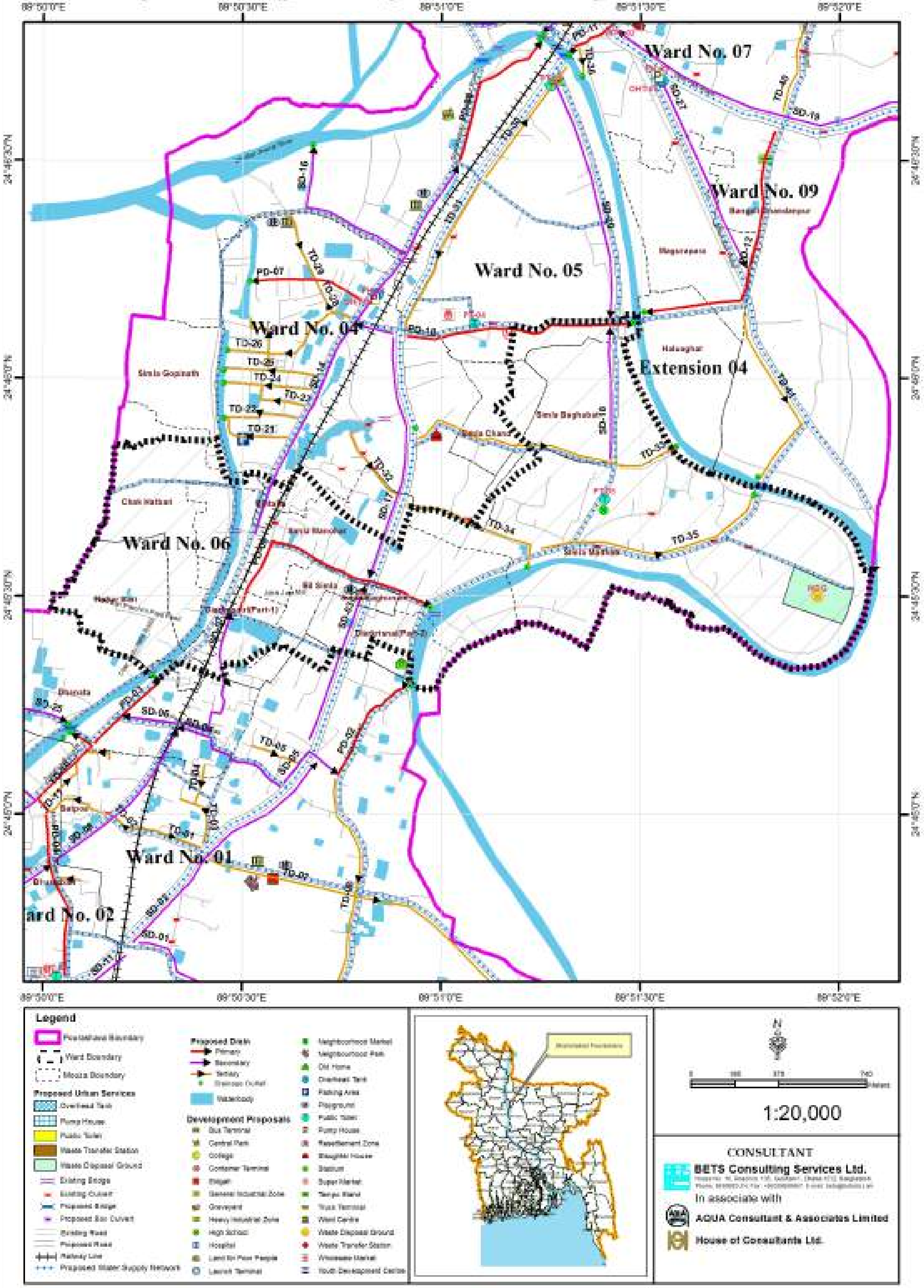
8.3 FINANCIAL COST OF THE PRIORITY INFRASTRUCTURE DEVELOPMENTS

Financial Cost of the Priority Infrastructure Developments have illustrated in Clause 3.3 above.

Map-8.1: Land Use Plan Map for Ward No.06



Map-8.2: Drainage & Utility Services Plan Map for Ward No.06



CHAPTER -9: ACTION PLAN FOR WARD-7

9.1 PROPOSALS AND PLANS FOR WARD 07

Ward No. 7 is located at the north-western part of Sharishabari Pourashava. The area of the Ward is 378.613 acres. After Reviewing and commensuration the policies and proposals of Structure Plan and Urban Area Plan the following proposals are made in the Action Plan of Ward 07 for implementation within next 5(five) years up to 2016. Landuse Plan Map and Drainage & Utility Services Plan Map of Ward Action Plan for **Ward No.07** is shown in **Map-9.1 & Map-9.2** respectively.

Proposal of Roads:

Road Type	ID	Length (km)	Proposed ROW
Local Road	LWR-22	0.692	40 ft
Secondary Road	SWR-08	1.156	80 ft

Proposal of Drain:

Drain Type	ID	Length (km)	Av. Width (m)	Outfall
Secondary Drain	SD-19	1.571	0.8 m	PD-11
	SD-21	0.371	0.8 m	SD-22
	SD-23	0.608	0.8 m	Smaller Jhinai River
Tertiary Drain	TD-36	0.122	0.5 m	Jhinai River

Development Proposal:

Type	ID	Location	Area (acre)
Bus Terminal	BT	Western part of W-7 beside proposed PR-02 and West of Railway line	1.525
Overhead Tank	OHT-05	Between Grameen Bank Office and Mondir beside Dhik Pati Road	0.300
Playground	PG-07	Beside Bousi Bazar road	1.001
Pump House	PH-05	Between Grameen Bank Office and Mondir beside Dhik Pati Road	0.112
Public Toilet	PT-06	Beside Bousi Bazar road	0.102
Tempo Stand	TS-04	Western part of W-7 beside Sharishabari-Bhatiya road	0.273
Truck Terminal	TT	Western part of W-7 beside proposed PR-02 and West of Railway line	1.024
Waste Transfer Station	WTS-02	Central part of W-7 and north of Dikpati road	0.285

9.2 PRIORITY TASKS

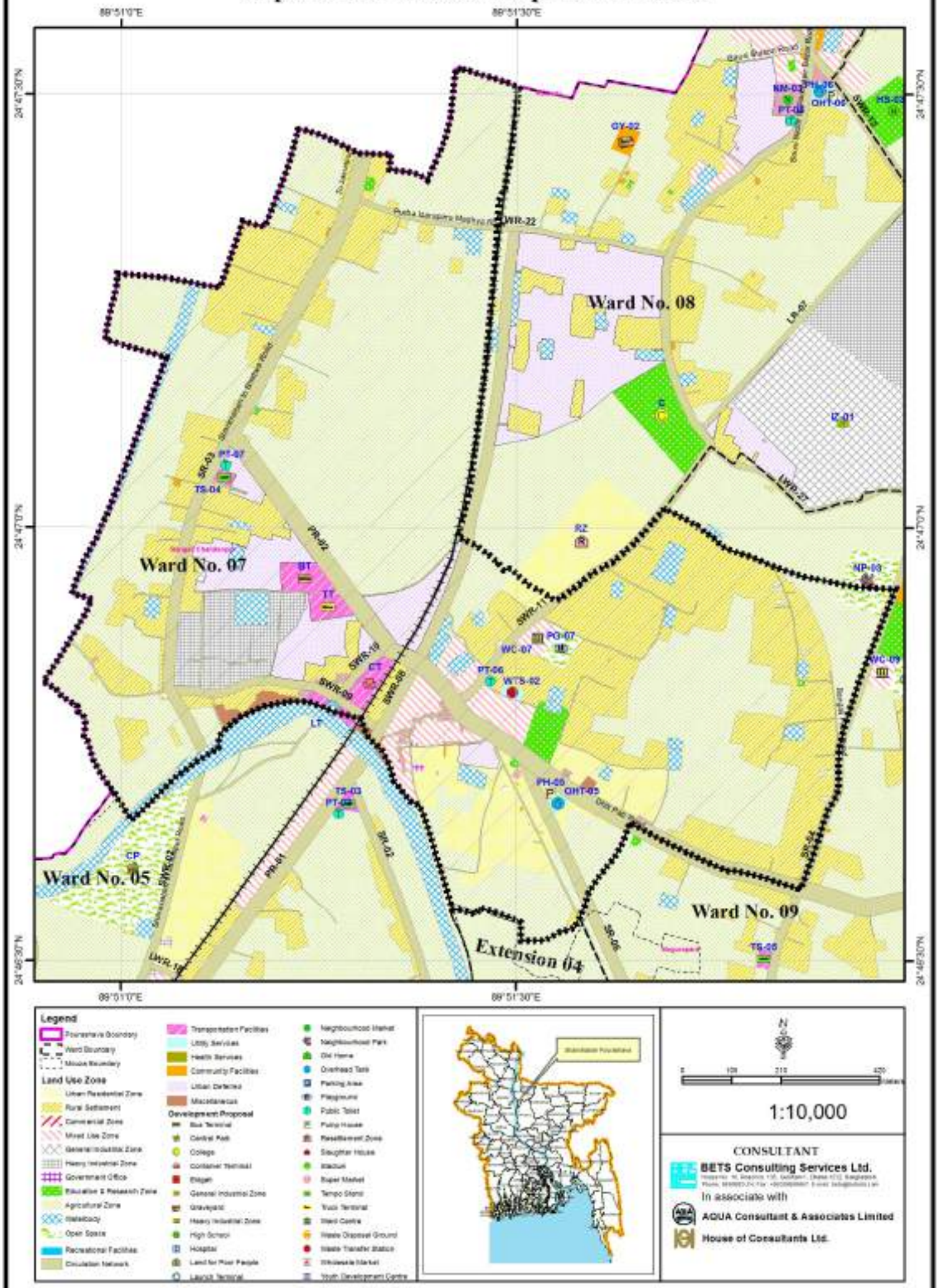
The following priorities has identified after the Public consultation meeting at Sharishabari Pourashava.

Priority-1		Priority-2		Priority-3	
Type	ID	Type	ID	Type	ID
Road	LWR-22	Road	SWR-08	Road	-
Drain	SD-19	Drain	SD-21	Drain	SD-23, TD-36
Dev. Proposal	BT, PT-06, WTS-02	Dev. Proposal	PH-05, OHT, PG-07	Dev. Proposal	TT, TS-04

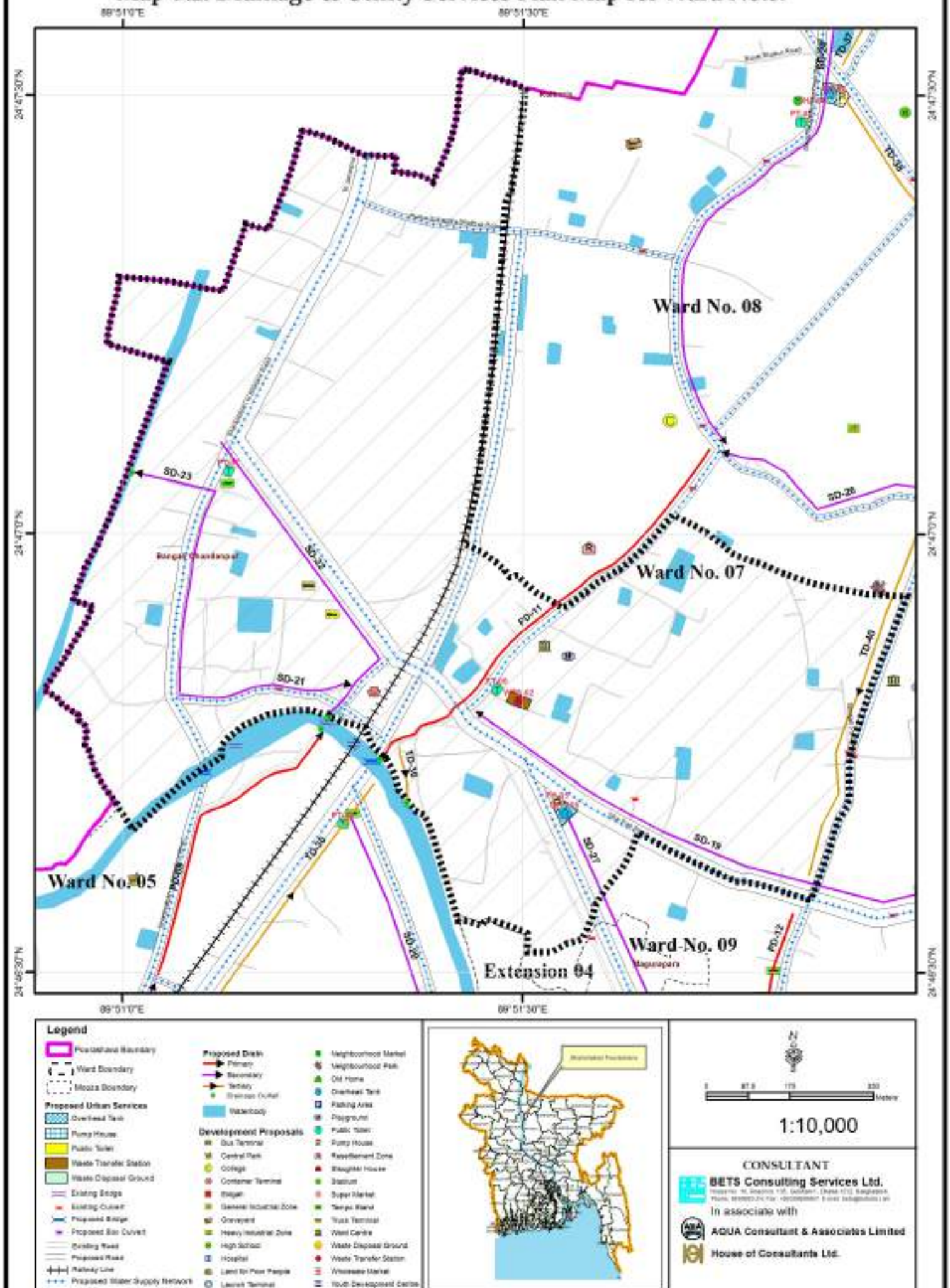
9.3 FINANCIAL COST OF THE PRIORITY INFRASTRUCTURE DEVELOPMENTS

Financial Cost of the Priority Infrastructure Developments have illustrated in Clause 3.3 above.

Map-9.1: Land Use Plan Map for Ward No.07



Map-9.2: Drainage & Utility Services Plan Map for Ward No.07



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CHAPTER-10: ACTION PLAN FOR WARD-8

10.1 PROPOSALS AND PLANS FOR WARD 08

Ward No. 8 is located at the northern part of Sharishabari Pourashava.The area of the Ward is 560.168 acres. After Reviewing and commensuration the policies and proposals of Structure Plan and Urban Area Plan the following proposals are made in the Action Plan of **Ward 08** for implementation within next 5(five) years up to 2016. Landuse Plan Map and Drainage & Utility Services Plan Map of Ward Action Plan for Ward No.08 is shown in **Map-10.1 & Map-10.2** respectively.

Proposal of Roads:

Road Type	ID	Length (km)	Proposed ROW
Secondary Road	SWR-11	3.931	60 ft
Local Road	LWR-23	1.453	40 ft
	LWR-24	0.723	40 ft

Proposal of Drain:

Drain Type	ID	Length (km)	Av. Width (m)	Outfall
Primary Drain	PD-11	0.972	1.5 m	Jhinai River

Development Proposal:

Type	ID	Location	Area(acre)
Playground	PG-08	North of Panchpir Gazariya road	1.023
Public Toilet	PT-08	South of Panch Rasta mor of W-8	0.107

10.2 PRIORITY TASKS

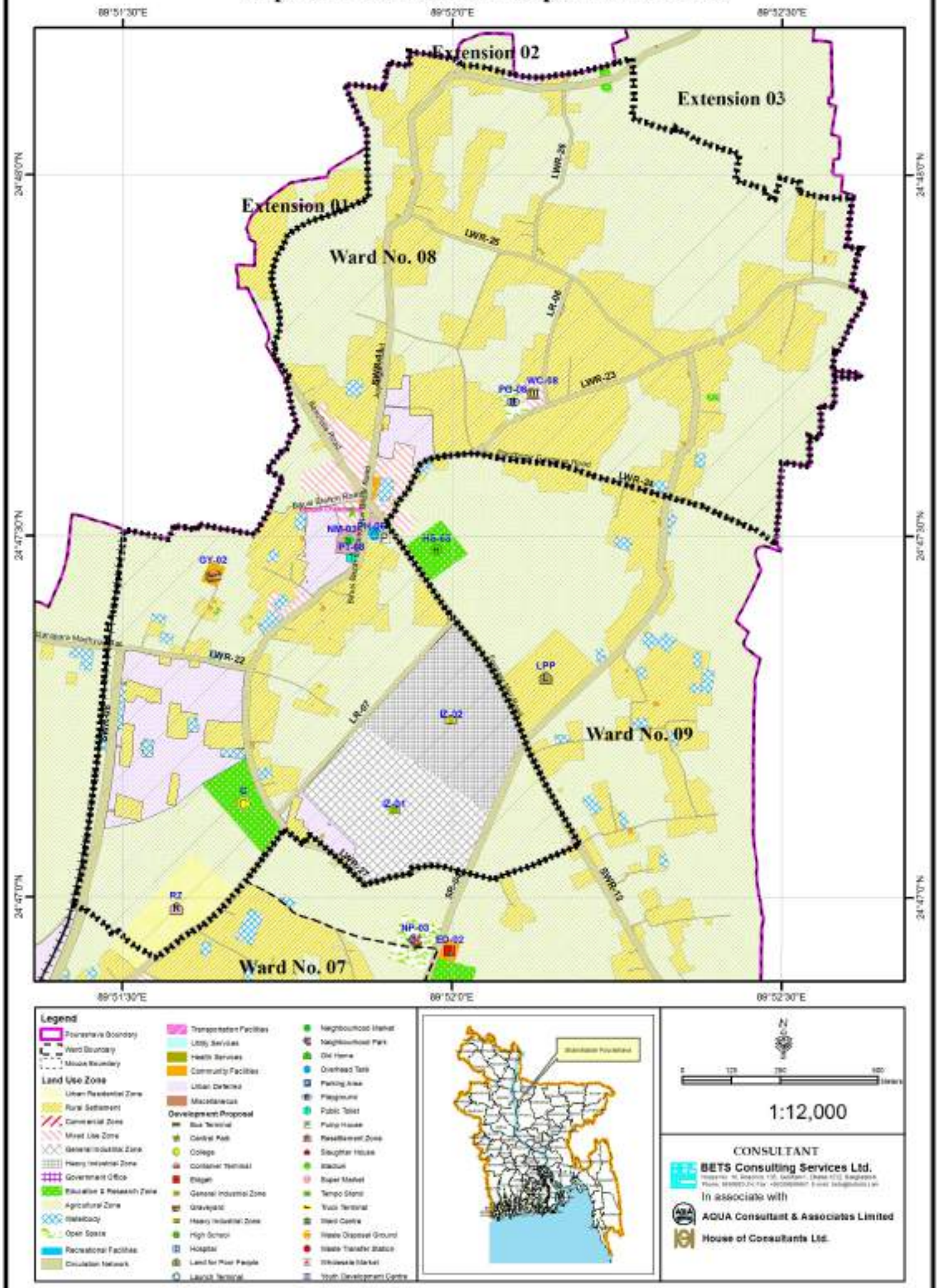
The following priorities has identified after the Public consultation meeting at Sharishabari Pourashava.

Priority-1		Priority-2		Priority-3	
Type	ID	Type	ID	Type	ID
Road	SWR-11	Road	LWR-23	Road	LWR-24
Drain	PD-11	Drain	-	Drain	-
Dev. Proposal	PT-08	Dev. Proposal	PD-08	Dev. Proposal	-

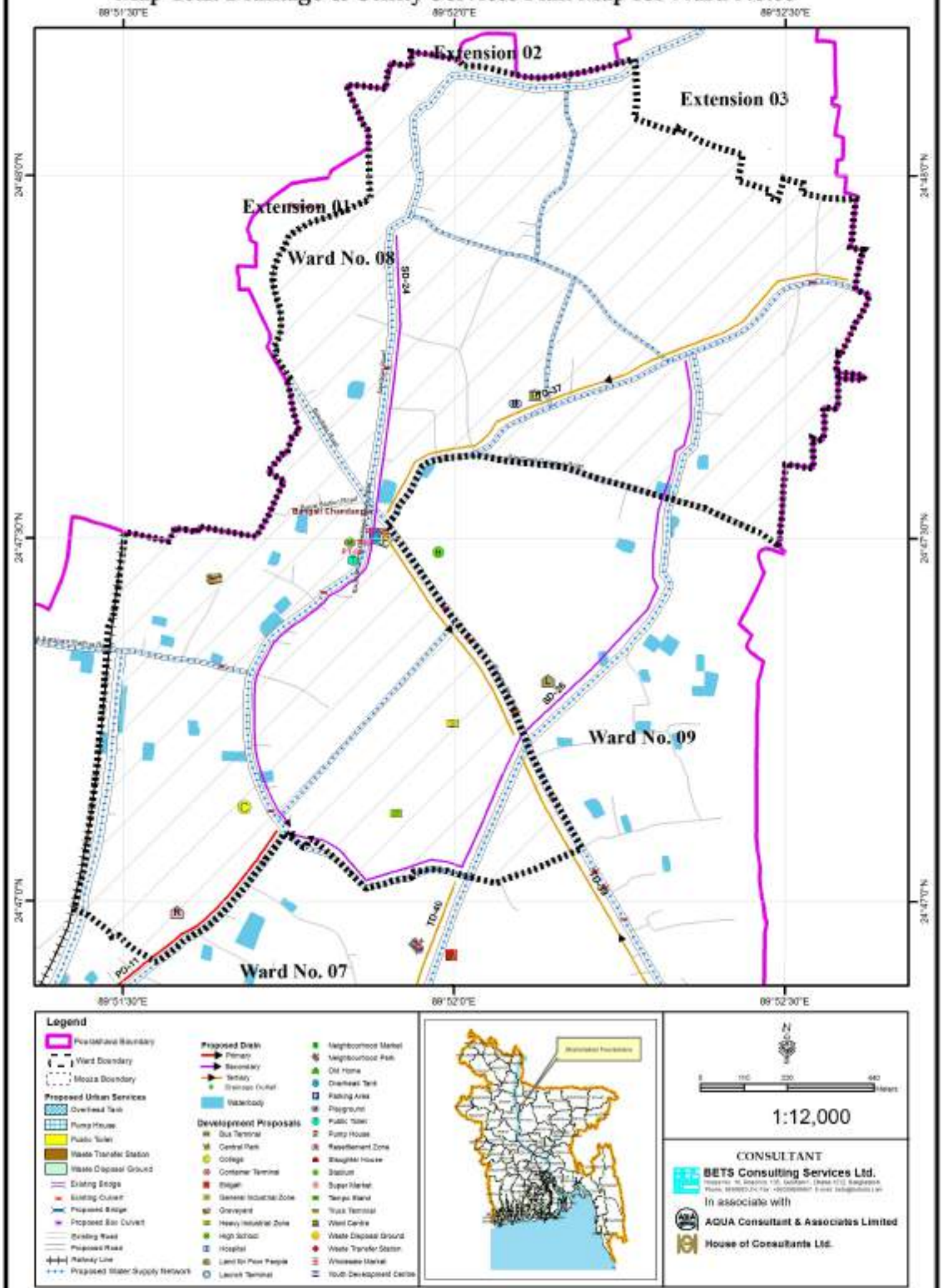
10.3 FINANCIAL COST OF THE PRIORITY INFRASTRUCTURE DEVELOPMENTS

Financial Cost of the Priority Infrastructure Developments has illustrated in Clause 3.3 above.

Map-10.1: Land Use Plan Map for Ward No.08



Map-10.2: Drainage & Utility Services Plan Map for Ward No.08



CHAPTER-11: ACTION PLAN FOR WARD-9

11.1 PROPOSALS AND PLANS FOR WARD 09

Ward No. 9 is located at the eastern part and north of small Jhenai river of Sharishabari Pourashava. The area of the Ward is 571.486 acres. After Reviewing and commensuration the policies and proposals of Structure Plan and Urban Area Plan the following proposals are made in the Action Plan of **Ward 09** for implementation within next 5 (five) years up to 2016. Landuse Plan Map and Drainage & Utility Services Plan Map of Ward Action Plan for Ward No.09 is shown in **Map-11.1 & Map-11.2** respectively.

Proposal of Roads:

Road Type	ID	Length (km)	Proposed ROW
Secondary Road	SWR-12	2.269	60 ft
Local Road	LWR-27	0.530	40 ft

Proposal of Drain: N/A

Development Proposal:

Type	ID	Location	Area(acre)
Secondary School	HS-02	South-west margin of W-9 and adjacent to Bangali Para road	3.063
Playground	PG-09	Adjacent to Bangali Para road	1.012
Tempo Stand	TS-05	Eastern part of W-9 beside Bangali Para road	0.271

11.2 PRIORITY TASKS

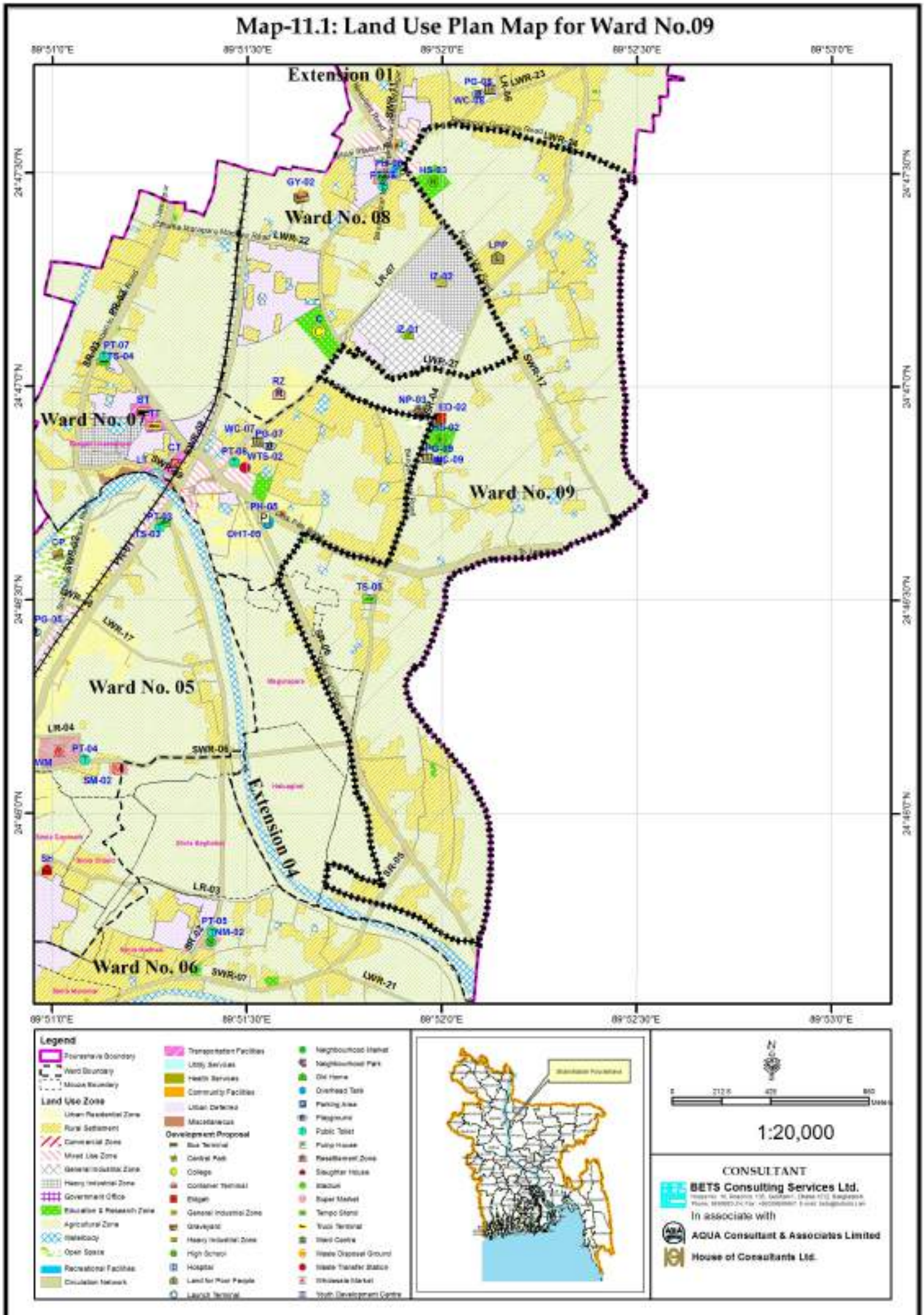
The following priorities has identified after the Public consultation meeting at Sharishabari Pourashava.

Priority-1		Priority-2		Priority-3	
Type	ID	Type	ID	Type	ID
Road	SWR-12	Road	LWR-27	Road	
Drain	-	Drain	-	Drain	-
Dev. Proposal	HS-02	Dev. Proposal	TS-05	Dev. Proposal	PG-09

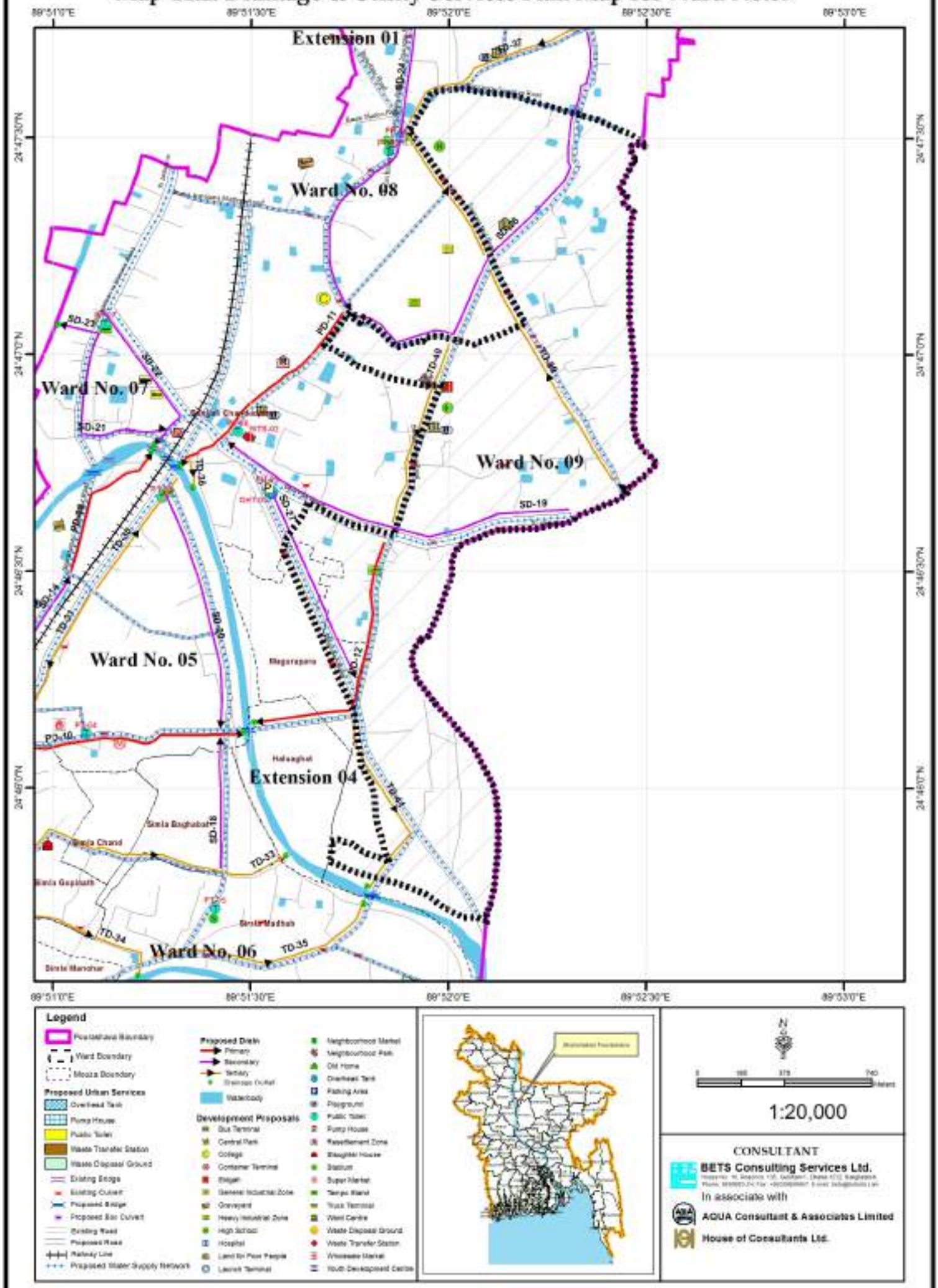
11.3 FINANCIAL COST OF THE PRIORITY INFRASTRUCTURE DEVELOPMENTS

Financial Cost of the Priority Infrastructure Developments has illustrated in Clause 3.3 above.

Map-11.1: Land Use Plan Map for Ward No.09



Map-11.2: Drainage & Utility Services Plan Map for Ward No.09



CHAPTER-12: ACTION PLAN FOR EXTENDED AREA

12.1 PROPOSALS AND PLANS FOR EXTENDED AREA

Extension Area composed of four different locations and of which 3 are adjacent to north-west part and north part of Ward No. 08. Another location is in Magurapara and Halluaghat mouzas in between W-05,06 and 09. The total area of the Extension Area is 253.019 acres (Extension Area 01-12.511 acre, Extension Area 02 - 2.939 acre Extension Area 03 - 89.818 acre and Extension Area 04 - 147.75 acre). After Reviewing and commensuration the policies and proposals of Structure Plan and Urban Area Plan the following proposals are made in the Action Plan of **Extended Area** for implementation within next 5 (five) years up to 2016. Landuse Plan Map and Drainage & Utility Services Plan Map of Ward Action Plan for Extension Area 01, 02 & 03 is shown in **Map-12.1 & Map-12.2** respectively. Another Landuse Plan Map and Drainage & Utility Services Plan Map of Ward Action Plan for Extension Area 04 is shown in **Map-13.1 & Map-13.2** respectively.

Proposal of Road: N/A

Proposal of Drain: N/A

Development Proposal: N/A

12.2 PRIORITY TASKS

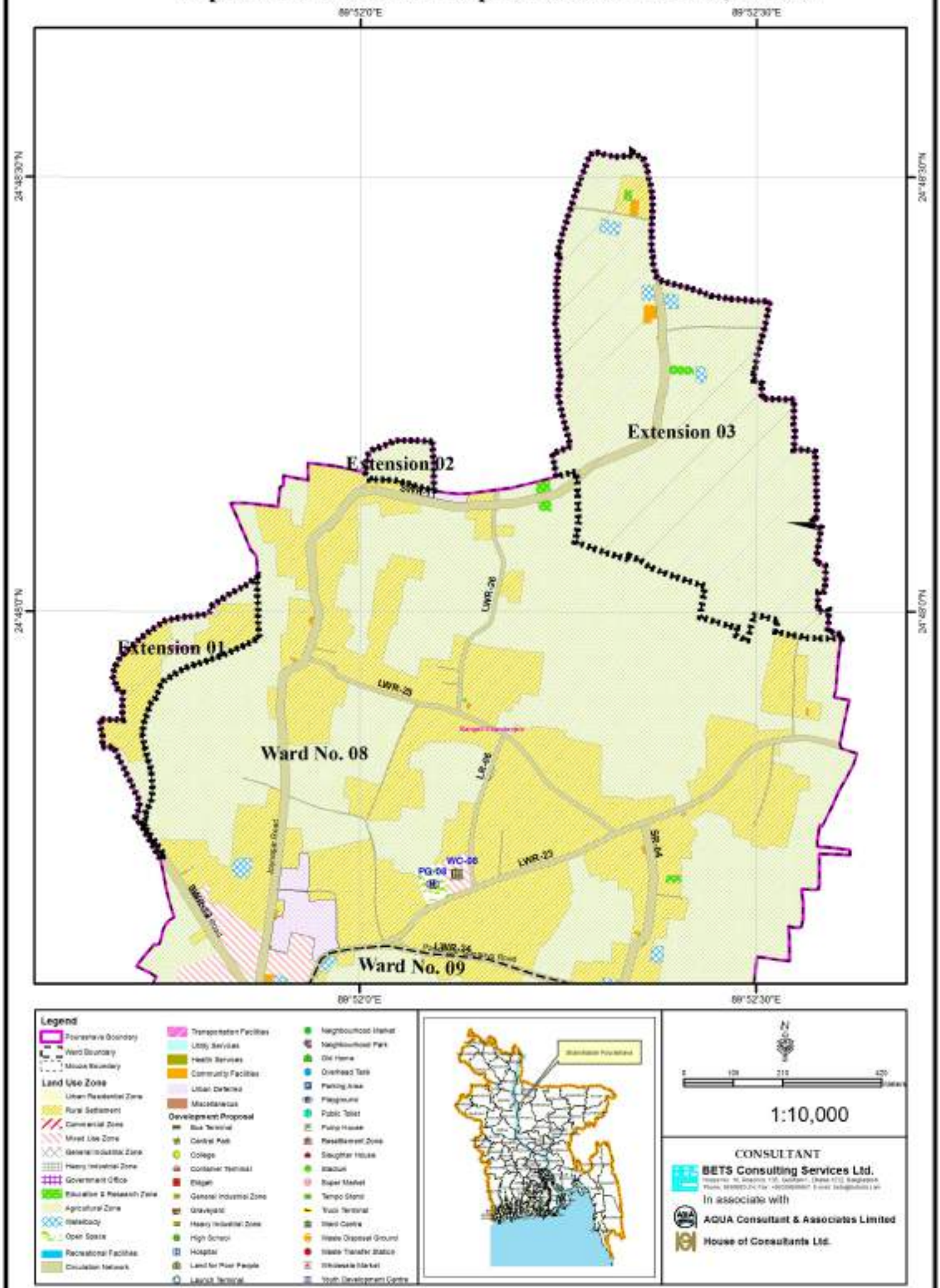
The following priorities has identified after the Public consultation meeting at Sharishabari Pourashava.

Priority-1		Priority-2		Priority-3	
Type	**ID**	**Type**	**ID**	**Type**	**ID**
Road	-	Road	-	Road	-
Drain	-	Drain	-	Drain	-
Dev. Proposal	-	Dev. Proposal	-	Dev. Proposal	-

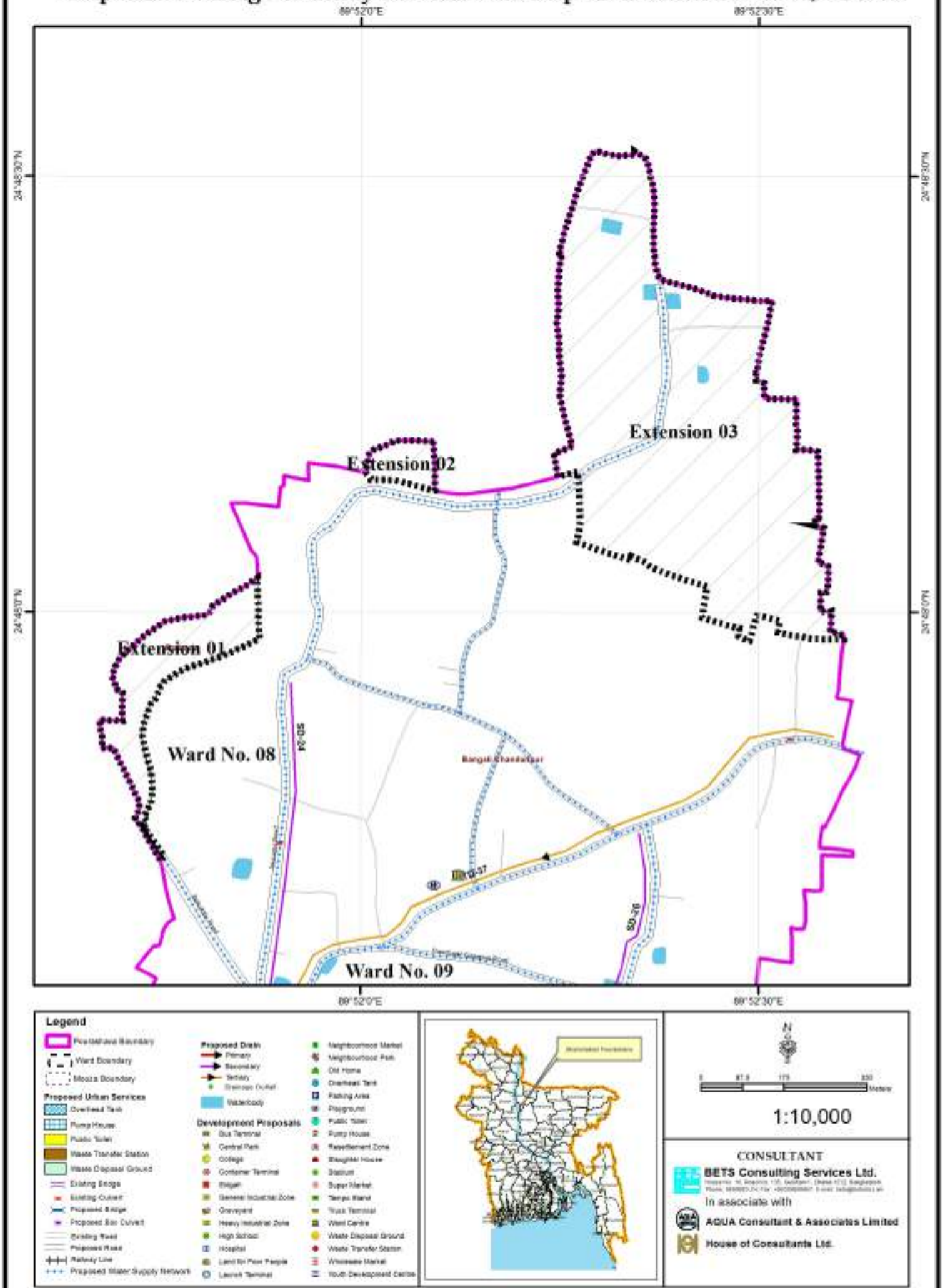
12.3 FINANCIAL COST OF THE PRIORITY INFRASTRUCTURE DEVELOPMENTS

Financial Cost of the Priority Infrastructure Developments has illustrated in Clause 3.3 above.

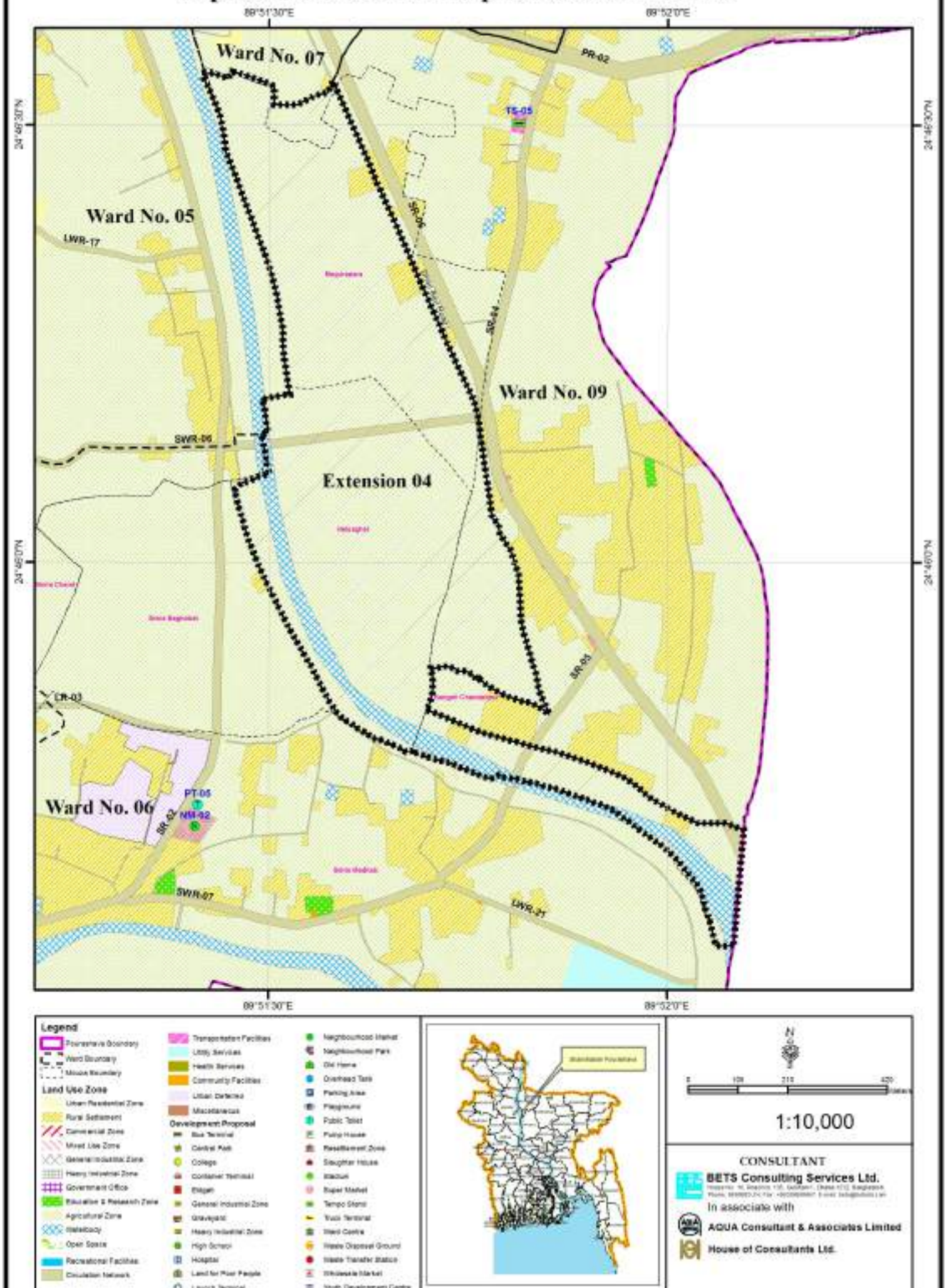
Map-12.1: Land Use Plan Map for Extension Area 01, 02 & 03



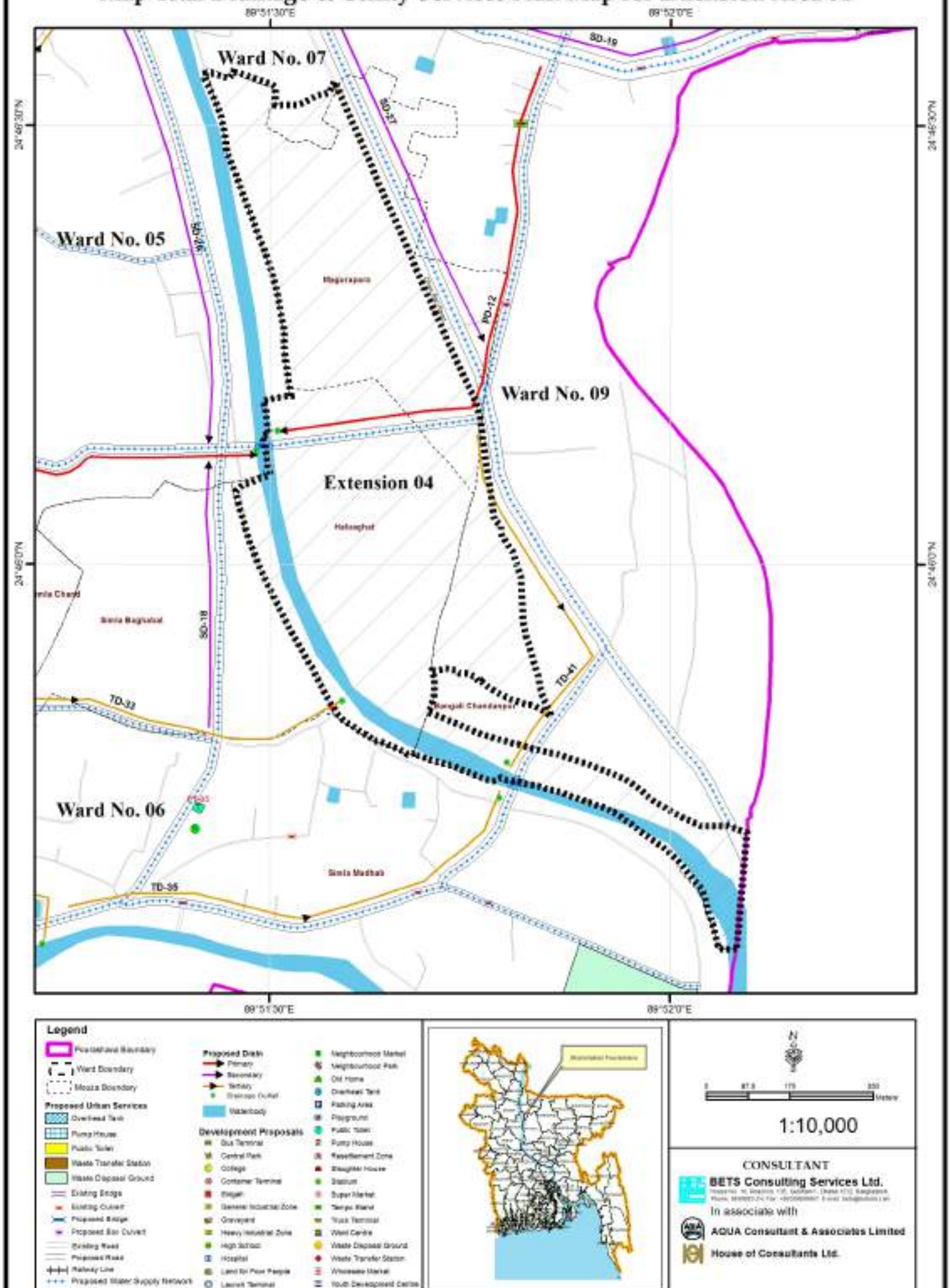
Map-12.2: Drainage & Utility Services Plan Map for Extension Area 01, 02 & 03



Map-13.1: Land Use Plan Map for Extension Area.04



Map-13.2: Drainage & Utility Services Plan Map for Extension Area 04



Legend

- Pourashava Boundary
- Ward Boundary
- Mouza Boundary

Proposed Urban Services

- Overhead Tank
- Pump House
- Public Toilet
- Waste Transfer Station
- Waste Disposal Ground
- Existing Bridge
- Existing Culvert
- Proposed Bridge
- Proposed Box Culvert
- Existing Road
- Proposed Road
- Railway Line
- Proposed Water Supply Network

Proposed Drain

- Primary
- Secondary
- Tertiary
- Drainage Outlet
- Waterbody

Development Proposals

- Bus Terminal
- Central Park
- College
- Container Terminal
- Ghat
- General Industrial Zone
- Graveyard
- Heavy Industrial Zone
- High School
- Hospital
- Land for Poor People
- Launch Terminal
- Neighborhood Market
- Neighbourhood Park
- Old Home
- Overhead Tank
- Parking Area
- Playground
- Public Toilet
- Pump House
- Resettlement Zone
- Slaughter House
- Stadium
- Super Market
- Tengra Stand
- Truck Terminal
- Ward Centre
- Waste Disposal Ground
- Waste Transfer Station
- Wholesale Market
- Youth Development Centre

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CHAPTER-13: IMPLEMENTATION GUIDELINES

Implementation Strategy

Project implementation is entirely a Governmental process. Without Land Acquisition no one project can be implemented. In Bangladesh there is no instance that the Government involved people in the implementation process. But during formulation of project and during planning stage the stake holder's participation was ensured. So, there was public participation in preparatory stage. Minutes and Attendance Sheet of the Final Consultation Meeting held at Sharishabari Pourashava on 15/05/13 is attached in **Appendix-C**.

Land Management Techniques

It is very difficult to secure land for widening of existing roads and new roads and also to provide space provision for other utilities and urban amenities.

The development control of entire Sharishabari Pourashava jurisdiction by means of Master Plan indication is the main Land Management Technique.

Prior to the acquisition, the land to be reserve by means of physical marking (pegging out) and to be kept continuous supervision to avoid any unauthorized construction until the final acquisition has completed.

Area Specific Appropriate Land Management Techniques

Under this strategy, the Sharishabari Pourashava Authority will initiate and coordinate a range of measures aimed at stimulating recognization and re-subdivision of urban area. Besides, Land Management Technique throughout the Master Plan jurisdiction will not be alike.

Areas for Action Area Plan

Areas for action area plan generally applicable for built up part of an urban area. In the project area at present there are total 9 Wards, the built up part of which might be suitable for to identify any action area for creating any infrastructural, social, recreational, educational or commercial facilities.

The action area can be identified within the Ward Action Plans as per the requirement of Government /semi govt. / autonomous bodies.

Development Control

Development Control is the most important function of Sharishabari Pourashava. Master Plan will have no bearing unless development can be channelized to its desired direction through effective control.

Land Use Permit Options

There can be three possible options for a plot seeking land use permit, namely, land use permitted, land use conditionally permitted or land use restricted.

a. Land use Permitted

Land uses that unconditionally permitted in the zone are listed in this category. When permission is sought for a residential land use on a plot earmarked as urban residential zone then it falls under this category.

b. Land use Permitted with Condition

Land use that generally not incompatible or harmful for the community but whose number, location or specific use nature may pose threat to community's lifestyle, privacy, safety or security etc. then the land use is permitted but with a condition to fulfill so that the potential threat is avoided. For example, a neighborhood can at best support two primary schools. Now if a request is made seeking land use permit for a composite textile mill with a dying unit that releases noxious effluent to the surrounding the remaining part being compatible to the land use zone, then the permit may be issued with a condition to exclude the noxious portion. If the condition is fulfilled then the permit is issued against the plot. A list of such conditional uses is maintained in this category.

c. Land use Restricted

Land use that is harmful for the community are restricted by law. Such harmful land use is listed in this category. A cinema hail in a neighborhood may be cited as an example under this category.

A detailed list of Land use Permitted, Conditionally Permitted and Restricted have been enclosed in the **Appendix-D.**

Land Use Permit Procedure

Land use permit procedure is a product of a number of interlinking activities. The whole process has been described below:

The procedure is commenced with the submission of formal application by the applicant to the Mayor of the Pourashava. The applicant must submit along with other information and documents a mouza map showing his plot including plot no, mouza name etc. The concerned official designated as Town Planner, will then check the compliance of land use zone and the permitted use with the proposed land use of the applicant. If the proposed land use does not comply with the land use zone and the permitted use, the proposed land use will be rejected with reasons. If the applicant is not satisfied with this decision he/she can appeal to the the Mayor and the decision taken by the Mayor shall be followed accordingly by the Town Planner.

If the proposed land use is permitted use then it will be permitted without raising further question. But in case of new land use or use conditionally permitted, the Town Planner can either reject the proposed land use showing adequate and reasonable causes or permit proposed land use under some specific conditions.

CHAPTER-14: CONCLUDING REMARKS

In order to make the plans sustainable through people's participation, it is now emphasized involvement of the local stakeholders in the planning development process. Such participation creates a sense of ownership of the plan among the stakeholders that brings support for the plan and helps to create favorable conditions to implement the plan provisions. Keeping this approach in mind the present Structure Plan, Urban Area Plan and Ward Action Plans for Sharishabari Pourashava has been prepared. It will shape and guide the growth of city in order to meet its social, cultural, environmental, economical, recreational and many other needs of city dwellers.

The Sharishabari Pourashava will be not only the custodian of the plan, it will also be responsible for implementing much of the development projects. Besides, it will also be responsible for monitoring implementation of the development projects by other urban development and service giving agencies. This situation calls for strengthening the existing capacity of Pourashava to handle future volume of work.

The current plan opens up a new horizon of development opportunities and land use control through policy guide lines in broad sense and detailed development proposals unto a very micro level. The land use areas have been marked indicating the mouza and dag numbers. It is expected that control of land use development contrary to the Plan can now be prevented more easily. This will require exercise of power with more vigor and sincerity.

It is not possible for the government alone to go for plot to plot development as per plan with its meager resources. This calls for involving stakeholders, particularly, the land owners in the development process. Such initiative is possible at the local level infrastructure development, where the land owners will be directly benefited. In case of wider level development the development authority can take initiatives for infrastructure cost realization from land owners though evolving innovative mechanism.

Rule of law must be established. A culture of law obedience must be created among the people in general and such practice should start with government agencies first, who often are found not following the regulations of building plan approval. It is hardly possible for the government to control all irregularities unless the people themselves become conscious and cooperative. If necessary stringent measures should be taken against the violators to make people abide by laws.

Regular monitoring of the plan implementation is necessary together with monitoring of urban development trend in new areas. Monitoring would help early detection of problems and suggesting solutions for their amelioration. An early measure in tackling problems can not only save huge public money, but also the miseries of the city dwellers. It is expected that the proper implementation of this plan with close monitoring will make this prosperous city livable, healthy and will bring overall socioeconomic development in future.

APPENDIX – A

POLICY ZONING AREAS OF STRUCTURE PLAN, PROPOSE LAND USE CATEGORIES AND SUB-CATEGORIES

Policy Zones	Illustrates	Areas (acres)	Percentage
Agriculture	Agricultural land denotes the land suitable for agricultural production, both crops and livestock. It is one of the main resources in agriculture.	2574.31	49.73
Major Circulation	Major circulation contains major road network and railways linkage with regional and national settings.	366.59	7.08
Core Area	This area is also known as built-up area. This is defined as the area which has the highest concentration of services; it also has the highest population concentration and density. It will absorb most population growth during the Landuse Plan (2011-2021) period.	406.37	7.85
New Urban Area	This zone will be the required additional area for future planned urban development as per population projection. Existing physical trend of growth and potential areas shall have to be considered in demarking for new urban land development.	175.63	3.39
Peripheral Area	This is the zone where a slow trend of urbanization is continuing in unplanned manner. The area identified in the Structure Plan as the likely choice for new urban development beyond the core area.	1393.39	26.92
Water body	Waterbody containing an area equals to or more than 0.15 acres excluding those of khal, irrigation canal and river will be treated as this category.	260.69	5.04
	Total	**5176.97**	**100.00**

APPENDIX – B

DEVELOPMENT PROPOSAL WITH PLOT SCHEDULE

List of Development Proposals

ID	Name of Proposal	Location	Ward No.	Area (Acre)	Mouza Schedule	
					Mouza	Plot No.
BT	Bus Terminal	Western part of W-7 beside proposed PR-02 and West of Railway line	7	1.525	Bangali	10362-10370, 10755, 10756, 10776, 10779
C	College	Southern part of W-8 beside Bousi Bazar road	8	5.051	Bangali	5270, 5271, 5282-5292, 5295, 5298-5303, 7379
CP	Central Park	Northern margin of W-5 and in between Sharishabari-Jamalpur road and small Jhenai river	5	10.069	Bangali	10278-10282, 12205, 12208-12210, 12287, 12288, 12291-12328
CT	Container Terminal	West of Rail Line at the opposite side of Kali Mondir	7	1.277	Bangali	10825, 10851
ED-01	Eidgah	At the centre of the Ward-1	1	0.509	Satpoa	1666, 1667, 1669, 1670
ED-02	Eidgah	South-west margin of W-9 and adjacent to Bangali Para road	9	0.536	Bangali	6244, 6245, 6247, 6310, 6311
GY-01	Graveyard	Southern margin of W-1 and end of satpoya mouza	1	0.890	Satpoa	1590-1596, 1793-1795, 1796
GY-02	Graveyard	Western part of W-8 and north of Kharizia madrasha	8	0.605	Bangali	5118-5126
Hos-01	Hospital	South-west corner of W-2 beside Boyra Bamar road	2	2.063	Mulbari	47, 90-94, 96--106
Hos-02	Hospital	Adjecent to north boundary of W-3 and beside Bat Tala to Bolerdia road	3	2.012	Satpoa	729, 770, 774-776, 778-782, 784-789
HS-01	Secondary School	Northern part of W-3 beside Bolerdia road	3	3.020	Satpoa	729, 756-762, 766, 767, 797-800, 802-804
HS-02	Secondary School	South-west margin of W-9 and adjacent to Bangali Para road	9	3.063	Bangali	6230, 6234-6244, 6247-6249, 6312-6314
HS-03	Secondary School	North-west part of W-9 beside Foyezer Morer road	9	3.092	Bangali	6850-6854, 6857-6859, 6862-6866
IZ-01	General Industrial Zone	South-east part of W-8 beside Foyezar morer road (South part)	8	26.284	Bangali	6274, 6436, 6466-6490, 6492-6496, 6506, 6507, 6551, 6554-6582, 6584, 6585, 6589, 6661-6691, 6694-6698, 6700
IZ-02	Heavy Industrial Zone	South-east part of W-8 beside Foyezar morer road (North part)	8	24.986	Bangali	6453-6457, 6581-6649, 6651-6663, 6677, 6687, 6689-6694, 6696-6747, 6753-6760
LPP	Land for Poor People	North-west part of W-9 beside Foyezer Morer road	9	7.721	Bangali	6934, 6953, 6954, 6959-6987, 6995, 6996, 7086, 7087, 7221
LT	Launch Terminal	West of Rail Line on the North Bank of Jhinai River	7	0.713	Bangali	10811, 10812,10813,10818, 10819, 10821, 10822, 10823, 10824, 10851
NM-01	Neighborhood Market	Northern part of W-3 and at the junction of proposed SR-02 and Bolerdia road	3	1.006	Satpoa	729, 731, 735-742

ID	Name of Proposal	Location	Ward No.	Area (Acre)	Mouza Schedule	
					Mouza	Plot No.
NM-02	Neighborhood Market	At the centre of W-6 beside proposed SR-02	6	1.002	Simla Madhab	197-202, 206
NM-03	Neighborhood Market	South of Panch Rasta mor of W-8	8	1.006	Bangali	5040, 5043-5046, 5049, 5078-5080
NP-01	Neighborhood Park	At the centre of the W-1 beside proposed east-west 60 ft secondary Road	1	3.020	Satpoa	1301-1319, 1652, 1653, 1665-1667
NP-02	Neighborhood Park	South-west part of W-2 on the east bank of river	2	3.128	Mulbari	30, 124-126, 141, 142, 774
NP-03	Neighborhood Park	North-east margin of W-7	9	3.076	Bangali	6209, 6214-6217, 6219, 6220, 6249-6263
OH	Old Home	North-east corner of W-1 on the west bank of river small Jhenai River	1	0.502	Diarkrisnat (2nd Part)	35, 37, 38, 39, 40, 41, 42
OHT-01	Overhead Tank	North side of Bolerdia Road	1	0.214	Satpoa	935, 939
OHT-02	Overhead Tank	East side of Salam Talukder Road	2	0.240	Bhurar Bari	685, 689-691
OHT-03	Overhead Tank	Beside Chowdhury Bazar Road	3	0.214	Balardiar	2350, 2351
OHT-04	Overhead Tank	Opposite side of Fire Service Station	4	0.204	Shimla Gopinath	368-370
OHT-05	Overhead Tank	Between Grameen Bank Office and Mondir beside Dhik Pati Road	7	0.300	Bangali	5419-5421, 13111-13114
OHT-06	Overhead Tank	South-east of Panchpir Govt. Primary School	8	0.349	Bangali	6783
PA	Parking Area	Between Suborno Khali river and Sharishabari-Jamalpur road	4	0.535	Simla Gopinath	1532, 1544
PG-01	Playground	At the centre of the Ward-1	1	1.091	Satpoa	1218-1220, 1667-1669, 1926, 1928, 1929, 99999
PG-02	Playground	Beside Dhanbari road nearer to Jute Mill office	2	1.088	Samarthabari	86, 88-96
PG-03	Playground	North of Bolerdia Khal beside Uttarpara road	3	1.034	Satpoa	1312-1322, 1333-1335, 1340
PG-04	Playground	Beside rail gate road nearer to mosque and east bank of Suborno Khali river	4	1.060	Bangali	12126, 12127, 12129, 12144
					Shimla Gopinath	286-288
PG-05	Playground	Beside Shimla Bazar road and west of railway line	5	1.019	Bangali	12249, 12250, 12257, 12261-12263
PG-06	Playground	Beside the junction of proposed PR-01 and Maize Bari road	6	0.930	Shimla Ragunath	1, 2, 6
					Bil Shimla	52
PG-07	Playground	Beside Bousi Bazar road	7	1.001	Bangali	5374-6379, 10907-10911
PG-08	Playground	North of Panchpir Gazariya road	8	1.023	Bangali	1171-1175, 1181, 1420
PG-09	Playground	Adjacent to Bangali Para road	9	1.012	Bangali	5909-5916,6236, 6239
PH-01	Pump House	North side of Bolerdia Road	1	0.135	Satpoa	939, 943, 944
PH-02	Pump House	East side of Salam Talukder Road	2	0.192	Bhurar Bari	683-686
PH-03	Pump House	Beside Chowdhury Bazar Road	3	0.110	Balardiar	2350, 2351
PH-04	Pump House	Opposite side of Fire Service Station	4	0.123	Shimla Gopinath	360, 369, 370

ID	Name of Proposal	Location	Ward No.	Area (Acre)	Mouza Schedule	
					Mouza	Plot No.
PH-05	Pump House	Between Grameen Bank Office and Mondir beside Dhik Pati Road	7	0.112	Bangali	5419, 5421, 13111
PH-06	Pump House	South-east of Panchpir Govt. Primary School	8	0.199	Bangali	6783
PT-01	Public Toilet	Eastern part of W-2 beside proposed PR-01	2	0.102	Bhurar bari	675, 677
PT-02	Public Toilet	Southern part of W-3 beside Chowdhuri Bazar road	3	0.137	Balar Diar	2365, 2368, 2371, 2372
PT-03	Public Toilet	North part of W-5 and east of railway line	5	0.102	Bangali	10975, 13179
PT-04	Public Toilet	North part of W-5 and adjacent to proposed wholesale market (WM)	5	0.017	Bangali	12566, 12569
PT-05	Public Toilet	At the centre of W-6 beside proposed SR-02	6	0.108	Simla Madhab	184, 185, 186, 198, 199
PT-06	Public Toilet	Beside Bousi Bazar road	7	0.102	Bangali	10913, 10914, 10915
PT-07	Public Toilet	Western part of W-7 beside Sharishabari-Bhatiya road	7	0.103	Bangali	10436, 10437
PT-08	Public Toilet	South of Panch Rasta mor of W-8	8	0.107	Bangali	5079, 5080
RZ	Resettlement Zone	South margin of W-8 and beside Bousi Bazar road	8	8.677	Bangali	5325-5327, 5329, 5331-5338, 5340-5346, 10880, 10881
SH	Slaughter House	South of Shimla Palli Purbapara Jame Mosque	5	0.601	Shimla Gopinath	616, 617
SM-01	Super Market	Eastern part of W-2 beside proposed PR-01	2	1.036	Bhurarbari	597, 598, 603, 672-675
SM-02	Super Market	Eastern margin of W-5 beside Kamrabad road	5	1.020	Bangali	12587, 12605-12608, 12610-12612, 12618-12620
ST	Stadium	Eastern margin of W-2 and north of Samarthabari Purbapara Jame mosque	2	5.918	Bhurarbari	831, 837-851, 854, 855, 861
					Satpoa	225-235, 239, 240, 862
TS-01	Tempo Stand	Eastern part of W-2 beside proposed PR-01	2	0.276	Bhurarbari	704, 705, 706, 707
TS-02	Tempo Stand	Southern part of W-3 beside Chowdhuri Bazar road	3	0.261	Balardiar	2368-2372
TS-03	Tempo Stand	North part of W-5 and east of railway line	5	0.298	Bangali	10975, 13063, 13064, 13179
TS-04	Tempo Stand	Western part of W-7 beside Sharishabari-Bhatiya road	7	0.273	Bangali	10433, 10434, 10435, 10436
TS-05	Tempo Stand	Eastern part of W-9 beside Bangali Para road	9	0.271	Bangali	5487, 5491
TT	Truck Terminal	Western part of W-7 beside proposed PR-02 and West of Railway line	7	1.024	Bangali	10345, 10779, 10780, 10786-10794
WC-01	Ward Center	At the centre of the Ward-1	1	1.176	Satpoa	1292-1301, 1304-1306, 1667, 1668
WC-02	Ward Center	Beside Dhanbari road nearer to Jute Mill office	2	1.031	Samarthabari	93, 94, 96, 97,103
WC-03	Ward Center	North of Bolerdia Khal beside Uttarpara road	3	0.727	Satpoa	1311-1312, 1317-1318 1321-1323
WC-04	Ward Center	Beside rail gate road nearer to mosque and east bank of Suborno Khali river	4	0.923	Bangali	12126, 12129, 12130, 12139, 12143, 12144
					Simla Gopinath	286, 288, 290, 292

ID	Name of Proposal	Location	Ward No.	Area (Acre)	Mouza Schedule	
					Mouza	Plot No.
WC-05	Ward Center	Beside Shimla Bazar road and west of railway line	5	1.023	Bangali	12248-12252
WC-06	Ward Center	Beside the junction of proposed PR-01 and Maize Bari road	6	0.818	Simla Raghunath	2, 3, 4, 5, 6
WC-07	Ward Center	Beside Bousi Bazar road	7	1.005	Bangali	5374-5376, 10905-10907, 10911
WC-08	Ward Center	North of Panchpir Gazariya road	8	1.016	Bangali	1174-1178
WC-09	Ward Center	Adjacent to Bangali Para road	9	0.822	Bangali	5911, 5916-5920, 6230, 6236
WDG	Waste Disposal Ground	Beside central boundary of W-6 and on the bank of river small Jhenai	6	10.144	Simla Madhab	493, 511-539, 543-561, 589, 590, 636, 971
WM	Wholesale Market	East side of rail gate and Simla Purbapara Mor at Bangali Chandanpur	5	5152	Bangali	12386-12390, 12392-12400,12552-12554, 12569-12575
WTS-01	Waste Transfer Station	Central part of W-2 beside proposed PR-01	2	0.262	Bhurarbari	482, 486, 494
WTS-02	Waste Transfer Station	Central part of W-7 and north of Dikpati road	7	0.285	Bangali	10913, 10916-10919
YDC	Youth Development Center	Eastern part of W-2 beside proposed PR-01	2	0.506	Bhurarbari	666-670, 672-674

List of Proposed Transport Facilities

ID	Name of Facilities	Location	Ward No.	Area (acre)	Mouza Schedule	
					Mouza	Plot No.
BT	Bus Terminal	Western part of W-7 beside proposed PR-02 and West of Railway line	7	1.525	Bangali	10362-10370, 10755, 10756, 10776, 10779
CT	Container Terminal	West of Rail Line at the opposite side of Kali Mondir	7	1.277	Bangali	10825, 10851
LT	Launch Terminal	West of Rail Line on the North Bank of Jhinai River	7	0.713	Bangali	10811, 10812, 10813, 10818, 10819, 10821, 10822, 10823, 10824, 10851
PA	Parking Area	Between Suborno Khali river and Sharishabari-Jamalpur road	4	0.535	Simla Gopinath	1532, 1544
TT	Truck Terminal	Western part of W-7 beside proposed PR-02 and West of Railway line	7	1.024	Bangali	10345, 10779, 10780, 10786-10794
TS-01	Tempo Stand	Eastern part of W-2 beside proposed PR-01	2	0.276	Bhurarbari	704, 705, 706, 707
TS-02	Tempo Stand	Southern part of W-3 beside Chowdhuri Bazar road	3	0.261	Balar Diar	2368-2372
TS-03	Tempo Stand	North part of W-5 and east of railway line	5	0.298	Bangali	10975, 13063, 13064, 13179
TS-04	Tempo Stand	Western part of W-7 beside Sharishabari-Bhatiya road	7	0.273	Bangali	10433, 10434, 10435, 10436
TS-05	Tempo Stand	Eastern part of W-9 beside Bangali Para road	9	0.271	Bangali	5487, 5491

List of Proposed Waste Disposal Facilities

ID	Type of Facilities	Location	Area (Acre)	Ward No.	Mouza Schedule	
					Mouza	Plot No.
WDG	Waste Disposal Ground	Beside central boundary of W-6 and on the bank of river small Jhenai	W-6	10.1442	Simla Madhab	493, 511-539, 543-561, 589, 590, 636, 971
WTS-1	Waste Transfer Station	Central part of W-2 beside proposed PR-01	W-2	0.2617	Bhurarbari	482, 486, 494
WTS-2	Waste Transfer Station	Central part of W-7 and north of Dikpati road	W-7	0.2854	Bangali	10913, 10916-10919

List of Proposed Water Supply Facilities

ID	Name of Proposal	Location	Ward No.	Area (Acre)	Mouza Schedule	
					Mouza	Plot No.
PH-01	Pump House	North side of Bolerdia Road	1	0.135	Satpoa	939, 943, 944
PH-02	Pump House	East side of Salam Talukder Road	2	0.192	Bhurar Bari	683-686
PH-03	Pump House	Beside Chowdhury Bazar Road	3	0.110	Balardiar	2350, 2351
PH-04	Pump House	Opposite side of Fire Service Station	4	0.123	Shimla Gopinath	360, 369, 370
PH-05	Pump House	Between Grameen Bank Office and Mondir beside Dhik Pati Road	7	0.112	Bangali	5419, 5421, 13111
PH-06	Pump House	South-east of Panchpir Govt. Primary School	8	0.199	Bangali	6783
OHT-01	Overhead Tank	North side of Bolerdia Road	1	0.214	Satpoa	935, 939
OHT-02	Overhead Tank	East side of Salam Talukder Road	2	0.240	Bhurar Bari	685, 689-691
OHT-03	Overhead Tank	Beside Chowdhury Bazar Road	3	0.214	Balardiar	2350, 2351
OHT-04	Overhead Tank	Opposite side of Fire Service Station	4	0.204	Shimla Gopinath	368-370
OHT-05	Overhead Tank	Between Grameen Bank Office and Mondir beside Dhik Pati Road	7	0.300	Bangali	5419-5421, 13111-13114
OHT-06	Overhead Tank	South-east of Panchpir Govt. Primary School	8	0.349	Bangali	6783

APPENDIX – C

PERMITTED LAND USE

Land use Permitted in Commercial Zone (Business)

Accounting, Auditing or Bookkeeping Services	Grocery Store
Agri-Business	Guest House
Agricultural Sales and Services	Hotel or Motel
Ambulance Service	Inter-City Bus Terminal
Antique Store	Jewelry and Silverware Sales
Appliance Store	Market (Bazar) Place
ATM Booth	Mosque, Place of Worship
Auction Market	Motorcycle Sales Outlet
Auditorium, Meeting Halls, and Conference Facilities, Convention Hall	Multi-Storey Car Park
Auto Leasing or Rental Office	Newspaper Stand
Auto Paint Shop	Outdoor Recreation, Commercial Outdoor Recreation
Auto Parts and Accessory Sales (Indoors)	Parking Lot (Commercial)
Auto Repair Shop (With Garage)	Pet Store
Automobile Sales	Photocopying and Duplicating Services
Automobile Wash	Photofinishing Laboratory & Studio
Bank & Financial Institution	Pipelines and Utility Lines
Barber Shop	Post Office
Beauty and Body Service	Preserved Fruits and Vegetables Facility/Cold Storage
Bicycle Shop	Printing, Publishing and Distributing House
Billboards, Advertisements & Advertising Structure	Professional Office
Billiard Parlor/Pool Hall	Project Identification Signs
Book or Stationery Store	Property Management Signs
Building Material Sales or Storage (Indoors)	Public Transport Facility
Bulk Mail and Packaging	Refrigerator or Large Appliance Repair
Bus Passenger Shelter	Resort
Cinema Hall	Restaurant
Commercial Office	Retail Shops/Facilities
Communication Service Facilities	Satellite Dish Antenna
Communication Tower Within Permitted Height	Shelter (Passers By)
Computer Maintenance and Repair Shop	Shopping Mall/ Plaza
Computer Sales & Service Shops	Slaughter House
Confectionery Shop	Social Forestry
Conference Center	Software Development Firm
Construction Company Offices	Sporting Goods and Toys Sales Centers
Courier Service	Super Store

Cyber Café	Taxi Stand
Day-care Center (Commercial or Nonprofit)	Telephone Exchanges
Department Stores, Furniture & Variety Stores	Television, Radio or Electronics Repair (No Outside Storage)
Doctor/Dentist Chamber	Theater (Indoor)
Drug Store or Pharmacy	Transmission Lines
Electrical and Electronic Equipment & Instrument	Utility Lines
Fast Food Establishment/Food Kiosk	Vehicle Sales & Service, Leasing or Rental
Freight Handling, Storage & Distribution	Veterinarian Clinics, Animal Hospitals
Freight Transport Facility	Warehousing
Freight Yard	Water Pump/Reservoir
Fruit and Vegetable Markets	Wood Products
General Store	Woodlot

Land use Conditionally Permitted in Commercial Zone (Business)

Amusement and Recreation (Indoors)	Fire/Rescue Station
Bicycle Assembly, Parts and Accessories	Grain & Feed Mills
Broadcast Studio/Recording Studio (No Audience)	Household Appliance and Furniture Repair Service
Coffee Shop/Tea Stall	Incineration Facility
Concert Hall, Stage Shows	Indoor Amusement Centers, Game Arcades
Construction, Survey, Soil Testing Firms	Indoor Theatre
Container Yard	Junk/Salvage Yard
Trade Shows	Lithographic or Print Shop
Craft Workshop	Motor Vehicle Fuelling Station/Gas Station
Plantation (Except Narcotic Plant)	Musical Instrument Sales or Repair Shop
Energy Installation	Optical Goods Sales
Re-fuelling Station	Painting and Wallpaper Sales
Firm Equipment Sales & Service	Paints and Varnishes Store
Agricultural Chemicals, Pesticides or Fertilizers Shop	Parking Lot
Fitness Centre	Patio Homes
Flowers, Nursery Stock and Florist Supplies	Private Garages
Forest Products Sales	Retail Shops Ancillary To Studio/Workshop
Fuel Dealers	Stone/Cut Stone Products Sales
Garages	Salvage Processing Activities
Garden Center or Retail Nursery	Truck/Covered Van Stand
Police Box/Barrack	

Land use Permitted in General Industrial Zone

Aluminum products	Musical instruments
Artificial Fiber Production	Motor vehicles repairing works
Assembling and manufacturing of clocks and watches	Newspaper Stand
Assembling and manufacturing of electrical and Electronic home products etc.	Packaging Industries
Assembling of motor vehicles	Perfumes, cosmetics

Assembling of telephones	Pharmaceutical Industry
ATM Booth	Photocopying and Duplicating Services
Automatic rice mill.	Photographic Film Factory
Bakery	Pipelines and Utility Lines
Bank & Financial Institution	Plantation (Except Narcotic Plant)
Bamboo and cane goods	Police Box/Barrack
Book-binding	Power Loom
Bicycle Assembly, Parts and Accessories	Printing and writing ink manufacturing Industry
Blacksmith	Printing Press
Bus Passenger Shelter	Printing, Publishing and Distributing
Carpet and mat production	Processing : fish, meat and food
Cinema Hall	Processing and bottling of drinking water and carbonated drinks
Clinic and Pathological lab	Production of artificial leather goods
Chocolate and lozenge Factory	Production of Comb, hair band, hair clip etc.
Cinema Hall	Production of gold ornaments.
Clinic and Pathological lab	Production of Pin, board pin, U Pin etc.
Cold Storage	Production of powder milk/condensed milk/dairy.
Communication Tower Within Permitted Height	Production of shoes and leather goods
Confectionery Shop	Production of spectacles frames.
Dry-cleaning	Production of utensils and souvenirs of brass and bronze.
Edible Oil	Public Transport Facility
Electric cable	Repairing of refrigerators
Engineering Works	Restaurant
Fabric Washing Plant	Retail Shops/Facilities
Factory for production of chocolate and lozenge.	Rope and coir mat production
Fast Food Establishment/Food Kiosk	Salt Industry
Fire/Rescue Station	Salt production
Flour (large) Mill	Salvage Processing
Freight Transport Facility	Salvage Yards
Furniture Manufacture of wood/iron, aluminum, etc.	Satellite Dish Antenna
Galvanizing	Sawmill, Chipping and Pallet Mill
Garments and sweater Factory	Shelter (Passers By)
Glass factory	Shoes and leather goods production
Glue (excluding animal glue)	Soap
Gold ornaments Production	Social Forestry
Grinding/husking wheat, rice, turmeric, chilly, pulses - machine above 0 Horse Power	Sodium silicate Factory
Grocery Store	Spinning mill
Hotel, multi-storied commercial building.	Sports goods Production
Household Appliance and Furniture Repair Service	Starch and glucose factory
Ice-cream	Stone grinding, cutting and polishing
Jute mill	Tea processing

Lime	Television, Radio or Electronics Repair (No Outside Storage)
Lithographic or Print Shop	Tyre re-treading
Manufacturing of Artificial flower	Transmission Lines
Machine Sheds	Truck Stop & Washing or Freight Terminal
Manufacture of Agricultural tools, equipments and small machinery.	Utensils made of clay and china clay/sanitary wares (ceramics)
Manufacture of Industrial tools, equipment and machinery.	Utility Lines
Manufacturing of wooden vessel	Water Pump/Reservoir
Match Factory	Water Purification Plant
Medical and surgical instrument production	Weaving and handloom.
Meat and Poultry (Packing & Processing)	Wood Products
Metal utensils/spoons etc	Wood treatment
Mosque, Place of Worship	Wood/iron/aluminum Furniture production
Motorcycle Sales Outlet	Woodlot

Land use Conditionally Permitted in General Industrial Zone

Amusement and Recreation (Indoors)	Musical instruments
Appliance Store	Outdoor Fruit and Vegetable Markets
Carpet and mat production	Outside Bulk Storage
Cinema Hall	Overhead Water Storage Tanks
Clinic and Pathological lab	Painting and Wallpaper Sales
Cork items Production	Paints and Varnishes
Cyber Cafe	Parking Lot
Daycare Center (Commercial or Nonprofit)	Parking Lot (Commercial)
Doctor/Dentist Chamber	Pen and ball-pen Factory
Electrical and Electronic Equipment and Instruments	Photographic Lab (except ultra violet and infra red)
Employee Housing	Plantation (Except Narcotic Plant)
Energy Installation	Plastic & rubber goods (excluding PVC)
Fast Food Establishment/Food Kiosk	Private Garages
Garages	Production of artificial leather goods
Galvanizing	Re-packing of milk powder (excluding production)
Glass factory	Retail Shops Ancillary to Studio/Workshop
Glue (excluding animal glue)	Rope and coir mat production
Grinding/husking wheat, rice, turmeric, chilly, pulses - machine above 0 Horse Power	Salt Industry
Gold ornaments Production	Salvage Processing
Grain & Feed Mills	Satellite Dish Antenna
Incineration Facility	Sawmill, Chipping and Pallet Mill
Laundry	Sodium silicate Factory
Lithographic or Print Shop	Sports goods (excluding plastic made items)
Manufacturing of Artificial flower	Super Store
Match Factory	Tea packing (excluding processing)
Medical and surgical instrument production	Tire re-treading

Motor Vehicle Fuelling Station/Gas Station	Washing Plant
Motorcycle Sales Outlet	

Land use Permitted in Mixed Use Zone (Residential-Commercial)

Accounting, Auditing or Bookkeeping Services	Employee Housing
Addiction Treatment Center	Fabric Store
Agricultural Sales and Services	Fast Food Establishment/Food Kiosk
Antique Store	Funeral Services
Apartments	General Store
Appliance Store	Grocery Store
Art Gallery, Art Studio/Workshop	Guest House
Artisan's Shop	Hospital
Assisted Living or Elderly Home	Housing Projects
ATM Booth	Individual Housing
Auditorium, Meeting Halls, and Conference Facilities, Convention	Jewelry and Silverware Sales
Auto Leasing or Rental Office	Landscape and Horticultural Services
Automobile Driving Academy	Mosque, Place of Worship
Automobile Wash	Newspaper Stand
Bakery or Confectionery Retail	Nursery School
Bank & Financial Institution	Photocopying and Duplicating Services
Barber Shop	Pipelines and Utility Lines
Bicycle Shop	Primary School
Billboards, Advertisements & Advertising Structure	Project Identification Signs
Billiard Parlor/Pool Hall	Property Management Signs
Blacksmith	Public Transport Facility
Boarding and Rooming House	Resort
Book or Stationery Store or News Stand	Rickshaw/Auto Rickshaw Stand
Bus Passenger Shelter	Satellite Dish Antenna
Child Daycare/Pre-school	Shelter (Passers By)
Children's Park	Shoe Repair or Shoeshine Shop (Small)
Cleaning/Laundry Shop	Slaughter House
Commercial Recreational Buildings	Social Forestry
Communication Service Facilities	Social organization
Communication Tower Within Permitted Height	Software Development
Community Center	Special Dwelling
Condominium or Apartment	Toys and Hobby Goods Processing and Supplies
Confectionery Shop	Training Centre
Correctional Institution	Transmission Lines
Courier Service	Utility Lines
Cyber Cafe	Vehicle Sales & Service, Leasing or Rental
Daycare Center (Commercial or Nonprofit)	Warehousing
Doctor/Dentist Chamber	Water Pump/Reservoir
Dormitory	Woodlot

Land use Conditionally Permitted in Mixed Use Zone (Residential-Commercial)

Agricultural Chemicals, Pesticides or Fertilizers Shop	Graveyard/Cemetery
Amusement and Recreation (Indoors)	Health Office, Dental Laboratory, Clinic or Lab
Beauty and Body Service	Hotel or Motel
Broadcast Studio/Recording Studio (No Audience)	Household Appliance and Furniture Repair Service
Building Maintenance/Cleaning Services, No Outside Storage	Indoor Amusement Centers, Game Arcades
Building Material Sales or Storage (Indoors)	Indoor Theatre
Coffee Shop/Tea Stall	Lithographic or Print Shop
Commercial Office	Market (Bazaar)
Computer Maintenance and Repair	Musical Instrument Sales or Repair
Computer Sales & Services	Optical Goods Sales
Concert Hall, Stage Shows	Outdoor Café
Conference Center	Outdoor Fruit and Vegetable Markets
Construction Company	Painting and Wallpaper Sales
Construction, Survey, Soil Testing Firms	Paints and Varnishes
Cottage	Patio Homes
Counseling Services	Photofinishing Laboratory & Studio
Craft Workshop	Plantation (Except Narcotic Plant)
Crematorium	Poultry
Cultural Exhibits and Libraries	Printing, Publishing and Distributing
Department Stores, Furniture & Variety Stores	Project Office
Drug Store or Pharmacy	Psychiatric Hospital
Energy Installation	Radio/Television or T&T Station With Transmitter
Fitness Centre	Refrigerator or Large Appliance Repair
Flowers, Nursery Stock and Florist Supplies	Restaurant
Freight Handling, Storage & Distribution	Retail Shops/Facilities
Freight Transport Facility	Retail Shops Ancillary To Studio/Workshop
Gaming Clubs	Sporting Goods and Toys Sales
Garages	Sports and Recreation Club, Firing Range: Indoor
Garden Center or Retail Nursery	Telephone Exchanges
Government Office	Television, Radio or Electronics Repair (No Outside Storage)
Botanical Garden & Arborium	Playing Field
Bus Passenger Shelter	Social Forestry
Carnivals and Fairs	Special Function Tent
Circus	Tennis Club/Basket Ball Court
Landscape and Horticultural Services	Transmission Lines
Memorial Structure	Urban-Nature Reserve
Open Theater	Utility Lines
Park and Recreation Facilities (General)	Zoo
Addiction Treatment Center	Newspaper Stand
Art Gallery, Art Studio/Workshop	Nursery School
ATM Booth	Outdoor Religious Events
Automobile Driving Academy	Photocopying and Duplicating Services

Beelboards, Advertisements & Advertising Structure	Post Office
Bus Passenger Shelter	Primary School
Child Daycare/Preschool	Professional Office
College, University, Technical Institute	Project Identification Signs
Communication Service Facilities	Property Management Signs
Communication Tower Within Permitted Height	Public Transport Facility
Confectionery Shop	Residential use ancillary to Institutions
Conference Center	School (Retarded)
Correctional Institution	Scientific Research Establishment
Cultural Exhibits and Libraries	Shelter (Passers by)
Cyber Cafe	Social Forestry
Dormitory	Specialized School: Dance, Art, Music & Others
Freight Transport Facility	Training Centre
General Store	Transmission Lines
Grocery Store	Utility Lines
High School	Veterinary School/College and Hospital
Hospital	Vocational, Business, Secretarial School
Lithographic or Print Shop	Water Pump/Reservoir
Mosque, Place of Worship	Woodlot
Multi-Storey Car Park	

Land use Permitted in Residential Zone

All Types of Residential House	Grocery Store
Apartment Housing	High School
Artisan's Shop	Housing Projects
Assisted Living or Elderly Home	Household Appliance and Furniture Repair Service (No Outside Storage)
ATM Booth	Landscape and Horticultural Services
Barber Shop	Memorial Structure (Ancillary)
Beel Payment Booth	Monument (Neighborhood Scale)
Boarding and Rooming House	Mosque, Place of Worship
Book Stall	Newspaper Stand
CBO Office	Nursery School
Child Daycare/Pre-school	Orphanage
Children’s Park (Must Have Parking)	Photocopying and Duplicating Services (No Outside Storage)
Cleaning/Laundry Shop	Pipelines and Utility Lines
Communication Service Facilities	Playing Field
Communication Tower Within Permitted Height	Primary School
Community Center	Private Garages (Ancillary Use)
Condominium or Apartment	Project Identification Signs
Confectionary Shop	Property Management Signs
Cottage	Public Transport Facility
Cultural Exhibits and Libraries	Retail Shops/Facilities
Cyber Cafe	Satellite Dish Antenna

Daycare Center (Commercial or Nonprofit)	Shelter (Passers By)
Departmental Stores	Shoe Repair or Shoeshine Shop (Small)
Doctor/Dentist Chamber	Special Dwelling
Dormitory	Specialized School: Dance, Art, Music, Physically Challenged & Others
Drug Store or Pharmacy	Stationery Store
Dwelling	Temporary Pandle for Permitted Function
Eidgah	Temporary Tent
Employee Housing (Guards/Drivers)/Ancillary Use	Transmission Lines
Fast Food Establishment /Food Kiosk	Urban-Nature Reserve
Fitness Centre	Uses in Neighborhood Center* (Where Neighborhood Center exists)
Flowers, Nursery Stock and Florist Supplies	Water Pump/Reservoir
Gaming Clubs	Woodlot
General Store	

Land use Conditionally Permitted in Residential Zone

Addiction Treatment Center	Graveyard/Cemetery
Amusement and Recreation (Indoors)	Guest House
Art Gallery, Art Studio/Workshop	Market (Katcha Bazaar) Place
Automobile Driving Academy	Neighborhood Co-Operative Office
Beauty and Body Service	Optical Goods Sales
Billiard Parlor/Pool Hall	Outdoor Café
Building Maintenance/Cleaning Services, No Outside Storage	Overhead Water Storage Tanks
Bus Passenger Shelter	Paints and Varnishes Store
Coffee Shop/Tea Stall	Parking Lot
Community Hall	Patio Homes
Correctional Institution	Photofinishing Laboratory
Courier Service	Plantation (Except Narcotic Plant)
Crematorium	Police Station
Electrical Sub Station	Post Office
Emergency Shelter	Postal Facilities
Energy Installation	Row House
Fire Brigade Station	Slaughter House
Flood Management Structure	Sports and Recreation Club
Fruit Markets	Static Transformer Stations
Funeral Services	Telephone Sub Station
Furniture & Variety Stores	Temporary Rescue Shed
Garages	Tennis Club
Garden Center or Retail Nursery	Tourist Home or Resort

Land use Permitted in Water Retention Area

Aquatic Recreation Facility (Without Structure)	Utility Lines
Fishing Club (Non-structural)	Water Parks

Land use Conditionally Permitted for Water Retention Area

Marina/Boating Facility	Water based Recreation

Restricted Uses:
All uses except permitted and conditionally permitted uses.

সরিষাবাড়ী পৌরসভা

সরিষাবাড়ী, জামালপুর ।

সরিষাবাড়ী পৌরসভার প্রস্তুতকৃত খসড়া মাস্টার প্ল্যান উপস্থাপন এবং মাস্টার প্ল্যান অনুযায়ী অত্র এলাকার উন্নয়নের লক্ষ্যে মত বিনিময় সভা।

সভাপতি	ঃ এ. কে. এম. ফয়জুল কবির তালুকদার (শাহীন), মেয়র, সরিষাবাড়ী পৌরসভা
সভার তারিখ	ঃ ১৫ ই মে, ২০১৩ ইং।
স্থান	ঃ পৌরসভা হলরুম, সরিষাবাড়ী, জামালপুর ।
সময়	ঃ সকাল ১১.০০ ঘটিকা।

সভায় উপস্থিতির বিবরণঃ

অদ্য ১৪ ই ফেব্রুয়ারী ২০১৩ ইং সকাল ১১.০০ ঘটিকায় হলরুমে সরিষাবাড়ী পৌর-শহরের জন্য প্রস্তুতকৃত খসড়া মাস্টার প্ল্যান উপস্থাপন এবং এর উপর মতবিনিময় সভা এ. কে. এম. ফয়জুল কবির তালুকদার (শাহীন), মেয়র, সরিষাবাড়ী পৌরসভা, এর সভাপতিত্বে অনুষ্ঠিত হয়। উক্ত মতবিনিময় সভায় মোঃ খুরশীদ আনোয়ার, সমাজ সেবক, সরিষাবাড়ী ; মোঃ হামান আলী, সমাজ সেবক, সরিষাবাড়ী ; আবদুর সাত্তার খান, সভাপতি, বণিক সমিতি, সরিষাবাড়ী; পৌরসভার সহঃ প্রকৌশলী ও সচিবসহ অন্যান্য কর্মকর্তা ও কর্মচারীবৃন্দ, উপজেলা শহর অবকাঠামো উন্নয়ন (ইউটিআইডিপি) প্রকল্পের নগর পরিকল্পনাবিদ, মাস্টার প্ল্যান প্রণয়ন প্রকল্পে নিযুক্ত পরামর্শকবৃন্দ, বিভিন্ন দপ্তরের বিভাগীয় কর্মকর্তা ও পৌরসভার কাউন্সিলরবৃন্দসহ স্থানীয় গণ্যমান্য ব্যক্তিবর্গ উপস্থিত হয়ে আলোচনায় অংশগ্রহণ করেন।

সভার আলোচনা ঃ

মেয়র, সরিষাবাড়ী পৌরসভাঃ সরিষাবাড়ী পৌরসভার মেয়র মহোদয় জনাব এ. কে. এম. ফয়জুল কবির তালুকদার (শাহীন), মেয়র, সরিষাবাড়ী পৌরসভা স্বাগত বক্তব্য রাখেন, পৌর এলাকার জন্য মাস্টার প্ল্যান প্রণয়ন এবং মাস্টার প্ল্যান অনুযায়ী অত্র পৌরসভার উন্নয়নের জন্য মতবিনিময় সভার উদ্বোধন করেন। মেয়র মহোদয় সভায় উপস্থিত সকলকে আন্তরিক অভিনন্দন ও শুভেচ্ছা জ্ঞাপন করেন। তিনি সকল বিভাগের উন্নয়নমূলক কার্যক্রম মাস্টার প্ল্যানে অন্তর্ভুক্তপূর্বক সরিষাবাড়ী পৌরসভার অনুমোদন সাপেক্ষে বাস্তবায়নের প্রয়োজনীয়তা তুলে ধরেন। মহাপরিকল্পনার বিভিন্ন দিক তুলে ধরার জন্য জনাব সৈয়দ শাহরিয়ার আমিন কে অনুরোধ করেন এবং এরপর তিনি কার্যক্রম পরিচালনা করেন।

খসড়া মাস্টার প্ল্যান উপস্থাপনঃ

প্রকল্পের আরবান প্ল্যানার জনাব সৈয়দ শাহরিয়ার আমিন খসড়া মাস্টার প্ল্যানের জিআইএস তথ্যভান্ডার, যোগাযোগ ব্যবস্থা ও পানি নিষ্কাশন ব্যবস্থার পরিকল্পনাসহ বিভিন্ন বিষয়ে আলোকপাত করেন। তিনি জানান, পরিকল্পনা প্রণয়নসহ ভবিষ্যৎ উন্নয়ন নিশ্চিতকল্পে মূল সড়কের রাইট অফ ওয়ে (ROW) এখনই নির্ধারণপূর্বক সংরক্ষণ করা জরুরী। তিনি সরিষাবাড়ী পৌরসভার আঞ্চলিক ও স্থানীয় যাতায়াত ব্যবস্থার উন্নয়নকল্পে গৃহীত প্রধান কয়েকটি সড়কের তথ্য-উপাত্ত যৌক্তিকতাসহ উপস্থাপন করেন।

মাস্টার প্ল্যান প্রণয়ন প্রকল্পে নিযুক্ত পরামর্শক প্রতিষ্ঠান (BETS Consulting Services Limited) এর পক্ষে নগর পরিকল্পনাবিদ জনাব মোঃ জামাল উদ্দীন খসড়া মাস্টার প্ল্যান মাল্টিমিডিয়া প্রজেক্টরের মাধ্যমে উপস্থাপন করেন। এছাড়া তিনি এর জিআইএস তথ্যভান্ডার, যোগাযোগ ব্যবস্থা ও পানি নিষ্কাশন ব্যবস্থার পরিকল্পনাসহ সামগ্রিক উন্নয়ন প্রস্তাবনার বিষয়ে আলোকপাত করেন। তিনি সরিষাবাড়ী পৌরবাসীর উন্নয়নকল্পে প্রস্তাবিত ও গৃহীত একাধিক উন্নয়ন প্রস্তাবনার অবস্থান উপস্থাপন করেন যার মধ্যে পৌর পার্ক, যানবাহন পার্কিং, বাস টার্মিনাল প্রভৃতি উল্লেখযোগ্য।

তিনি উল্লেখ করেন, সরিষাবাড়ী পৌরসভায় ১ম মতবিনিময় সভায় ইতোপূর্বে বিভিন্ন শ্রেণীর জনসাধারন, বিভিন্ন সরকারী ও বেসরকারী সংস্থার প্রতিনিধিবৃন্দ, ওয়ার্ড কাউন্সিলরবৃন্দ এবং মেয়র মহোদয়ের সাথে যৌথভাবে এবং সংশ্লিষ্ট ব্যক্তিবর্গের সাথে আলাদা আলাদা ভাবে বিভিন্ন উন্নয়ন প্রস্তাবনার আকার ও অবস্থান সম্পর্কে বিস্তারিত আলোচনা ও মতামত বিনিময় করা হয়। ১ম মতবিনিময় সভায় সংগৃহীত সকল মতামতের ভিত্তিতেই উন্নয়ন প্রস্তাবনা পরিবর্তন ও পরিবর্ধন করা হয়েছে। উন্নয়ন প্রস্তাবনাসমূহ চূড়ান্ত মতবিনিময় সভায় পুনরায় বর্ণনা করা হয় যা নীচে সংক্ষেপে উল্লেখ করা হল-

- প্রাইমারী রাস্তা, সেকেন্ডারী রাস্তা ও প্রয়োজনীয় সংখ্যক সংযোগ রাস্তাসহ একটি সমন্বিত পরিবহন ব্যবস্থার প্রস্তাবনা করা হয়েছে।
- শহরের অভ্যন্তরীন জলাবদ্ধতা নিরসন ও সুষ্ঠুভাবে পানি নিষ্কাশনের জন্য প্রাইমারী, সেকেন্ডারী ও টারশিয়ারী ড্রেনসহ একটি সমন্বিত ড্রেনেজ ব্যবস্থাপনা নেটওয়ার্কের প্রস্তাবনা দেওয়া হয়েছে।
- সরিষাবাড়ী পৌরসভার জনগনের অর্থনৈতিক উন্নয়নের লক্ষ্যে সাধারন ও ভারী শিল্প এলাকার প্রস্তাব রাখা হয়েছে।
- শহরের বিভিন্ন এলাকায় জনগণের নিত্য প্রয়োজনীয় দ্রব্যাদির কেনা-কাটার জন্য নেইবারহুড মার্কেট (পৌর মার্কেট) রাখা হয়েছে।
- ওয়ার্ডভিত্তিক উন্নয়ন কার্যক্রম পরিচালনার লক্ষ্যকে সামনে রেখে প্রতিটি ওয়ার্ডে একটি করে ওয়ার্ড সেন্টার/কাউন্সিলর অফিস প্রস্তাব করা হয়েছে।
- শিক্ষা ব্যবস্থা উন্নয়নের লক্ষ্যে হাইস্কুল, কলেজ এবং যুব উন্নয়ন কেন্দ্রের প্রস্তাবনা রাখা হয়েছে।
- স্বাস্থ্য সম্মত পরিবেশ নিশ্চিত করার লক্ষ্যে পরিকল্পিত বর্জ্য ব্যবস্থাপনার জন্য বর্জ্য ফেলার স্থান এবং বর্জ্য স্থানান্তরের স্থান দেখানো হয়েছে।
- স্বাস্থ্য সম্মত পয়ঃনিষ্কাশন নিশ্চিত করার লক্ষ্যে কয়েকটি গণ-শৌচাগার এর প্রস্তাব রাখা হয়েছে। যে সকল স্থানে বেশী লোকের সমাগম হয় সেই সকল স্থানকে অবস্থান দেখানো হয়েছে।
- ক্রীড়া ও খেলা-ধুলার উন্নয়নের লক্ষ্যে ১টি ষ্টেডিয়ামের প্রস্তাবনা রাখা হয়েছে।
- পৌরবাসীর কেনা-কাটার জন্য এবং বাণিজ্যিক কার্যক্রম ত্বরান্বিত করার লক্ষ্যে সুপার মার্কেট এর প্রস্তাব করা হয়েছে।
- পৌরসভার অভ্যন্তরীন যান-চলাচল এবং পরিবহন ব্যবস্থাকে সুবিধাজনক করার লক্ষ্যে বিভিন্ন গুরুত্বপূর্ণ স্থানে টেম্পোষ্ট্যান্ড এর প্রস্তাব করা হয়েছে।
- পৌরসভাকে আঞ্চলিক ও জাতীয় যোগাযোগ ব্যবস্থার সাথে সমন্বয় করার লক্ষ্যে এবং টার্মিনাল সুবিধা প্রদানের লক্ষ্যে বাস টার্মিনাল এবং ট্রাক টার্মিনাল এর প্রস্তাব করা হয়েছে।
- ধর্মীয় আচার-অনুষ্ঠান সম্পাদনের লক্ষ্যে ঈদগাহ মাঠের উন্নয়ন প্রস্তাব করা হয়েছে। এখানে উল্লেখ্য যে, উক্ত ঈদগাহ মাঠকে খেলা-ধুলার মাঠ হিসেবে ব্যবহারের জন্যও প্রস্তাব রাখা হয়েছে
- পৌরবাসীর চিত্ত বিনোদনের জন্য উন্মুক্ত জায়গা সৃষ্টির লক্ষ্যে ১টি কেন্দ্রীয় পার্কএবং বিভিন্ন মহল্লায় নেইবারহুড পার্ক এর প্রস্তাব করা হয়েছে।
- আশ্রয়হীন বয়স্কদের পূনর্বাসনের লক্ষ্যে একটি পূনর্বাসন কেন্দ্রের প্রস্তাব রাখা হয়েছে।
- পৌরসভার পরিকল্পনা বাস্তবায়ন প্রক্রিয়ায় ক্ষতিগ্রস্থ পরিবারের পূনর্বাসনের জন্য পুনর্বাসন এলাকার প্রস্তাব রাখা হয়েছে।
- ভূমিহীন, গৃহহীন, অসহায় দরিদ্রদের আবাসন সুযোগ-সুবিধা প্রদানের লক্ষ্যে Land for Poor People এর প্রস্তাব করা হয়েছে।
- পৌরসভার রাস্তার সংকটপূর্ণ সংযোগ স্থলে পরিকল্পিত ভাবে যানবাহন চলাচলের লক্ষ্যে গোলচত্বর এর প্রস্তাব রাখা হয়েছে।
- ভারী যান-বাহন দ্বিমুখী চলাচলের ক্ষেত্রে সম্ভাব্য সংঘর্ষ নিরসনের লক্ষ্যে সেন্ট্রাল ডিভাইডার এর প্রস্তাব আনা হয়েছে।
- পথচারীদের নির্বিঘ্নে চলাচলের লক্ষ্যে ফুটপাথের প্রস্তাব রাখা হয়েছে।

খসড়া মাস্টার প্ল্যান উপস্থাপনের পর স্থানীয় নেতৃবৃন্দ এবং বিভিন্ন জনগোষ্ঠীর প্রতিনিধিবৃন্দ উপস্থাপিত মাস্টার প্ল্যানের উপর আলোচনা করেন।

বিকাশ চন্দ্র সাহা, ২নং ওয়ার্ড কাউন্সিলর, সরিষাবাড়ী পৌরসভাঃ সরিষাবাড়ী পৌরসভার ২নং ওয়ার্ড কাউন্সিলর, বিকাশ চন্দ্র সাহা প্রস্তাবিত বাস টার্মিনাল বকুলতলায় না দিয়ে বাজারের পার্শ্বে ঝালোপাড়া এলাকায় "Helipad" নামক যে জায়গা সেখানে হলে ভাল হয় বলে মনে করেন।

খুরশীদ আনোয়ার, সমাজ সেবকঃ সমাজ সেবক মোঃ খুরশীদ আনোয়ার বর্তমানে ৪নং ওয়ার্ডে যে খেলার মাঠ আছে তা "Stadium" এ রূপান্তর করার প্রস্তাব দেন। তিনি পরিকল্পিত ড্রেনেজ ব্যবস্থারও প্রস্তাব দেন।

মোঃ ছামান আলী, সমাজ সেবকঃ ৬নং ওয়ার্ডের সমাজ সেবক, মোঃ ছামান আলী ঝিনাই নদীর পার্শ্বে প্রস্তাবিত পাবলিক টয়লেট প্রয়োজন নেই বলে মনে করেন। তিনি এই পাবলিক টয়লেট স্টেশনের পার্শ্বে রাখার প্রস্তাব দেন। এছাড়াও তিনি সুবর্ণখালী নদীর পাড় মেরামত, ড্রেনেজ ব্যবস্থা, স্বাস্থ্য সেবার জন্য ক্লিনিক এবং সর্বপরি উন্নত ও পরিকল্পিত সড়ক ব্যবস্থাপনার প্রস্তাব করেন।

কালাচান পাল, ৪নং ওয়ার্ড কাউন্সিলরঃ ৪নং ওয়ার্ড কাউন্সিলর কালাচান পাল ৪নং ওয়ার্ডে যে খেলার মাঠ বা 'গণময়দান' আছে তা স্টেডিয়ামে রূপান্তর করার আহবান জানান। এছাড়াও তিনি ৪নং ওয়ার্ডে একটি পৌর মার্কেট ও পাবলিক টয়লেটের প্রস্তাব করেন।

আবদুস সাত্তার খান, সভাপতি, বণিক সমিতি ৭নং ওয়ার্ড এর সমাজ সেবক ও বণিক সভাপতি আবদুস সাত্তার খান এর মতে প্রতিটি বাজারেই উন্নত ও পরিকল্পিত ড্রেনেজ ব্যবস্থা প্রয়োজন বলে মনে করেন। তিনি একটি পরিকল্পিত ড্রেনেজ ব্যবস্থা মহাপরিকল্পনার আওতাভূক্ত রাখার অনুরোধ করেন।

মোঃ সিরাজুল ইসলাম সমাজ সেবকঃ সমাজ সেবক মোঃ সিরাজুল ইসলাম প্রথমেই সকলকে ধন্যবাদ জানান সরিষাবাড়ী পৌরসভা মহাপরিকল্পনা প্রণয়নের জন্য। তিনি একটি স্বমান্বিত যোগাযোগ ব্যবস্থার জন্য সড়ক পথ ও নৌ-পথ এই দুইটির উপর প্রাধান্য দেয়ার আহবান জানান। নৌ-পথ এর জন্য একটি টার্মিনাস এর প্রস্তাব জানান।

সভাপতি মহোদয় ঃ সভাপতি ও সরিষাবাড়ী পৌরসভার মেয়র মহোদয় জনাব এ. কে. এম. ফয়জুল কবির তালুকদার (শাহীন), মেয়র, সরিষাবাড়ী পৌরসভা তার সমাপনী বক্তব্যে রাখেন, মাস্টার প্ল্যান প্রণয়ন প্রকল্পে নিযুক্ত পরামর্শক প্রতিষ্ঠান (BETS Consulting Services Limited) এর পক্ষে জনাব মোঃ জামাল উদ্দিন ও মোঃ স্বরূপ হাসনাইনকে এবং LGED এর পক্ষে সৈয়দ শাহরিয়ার আমিন, নগর পরিকল্পনাবিদ, উপজেলা শহর অবকাঠামো উন্নয়ন প্রকল্প, এলজিইডি কে ধন্যবাদ জ্ঞাপন করে এবং সরিষাবাড়ী পৌরসভার উন্নয়নের আশাবাদ ব্যক্ত করে তার বক্তব্য শেষ করেন।

সভার সিদ্ধান্তসমূহঃ

১. ৮ও ৯ নং ওয়ার্ডের মধ্যবর্তী স্থানে একটি কবরস্থানের প্রস্তাব গৃহীত হয় ।

২. বিভিন্ন নাগরিক সুবিধাদিসহ উন্নয়ন প্রস্তাবনা, যেমনঃ ষ্টেডিয়াম, কেন্দ্রীয় পার্ক, নেইবারহুড পার্ক, হাইস্কুল, কলেজ, সুপার মার্কেট, নেইবারহুড মার্কেট, গণ-শৌচাগার, বাস টার্মিনাল, ট্রাক টার্মিনাল, শিল্প এলাকা, পূর্নবাসন কেন্দ্র, ওয়ার্ড সেন্টার, ঈদগাহ মাঠ প্রভৃতির প্রস্তাব সর্বসম্মতিক্রমে গৃহীত হয় ।

৩. প্রাইমারী রাস্তা, সেকেন্ডারী রাস্তা ও প্রয়োজনীয় সংখ্যক সংযোগ রাস্তার প্রস্তাব গৃহীত হয় ।

৪. বাস টার্মিনাল, ট্রাক টার্মিনাল, ষ্টেম্পোষ্ট্যান্ড ও পার্কি এলাকার প্রস্তাবের ব্যাপারে সিদ্ধান্ত গৃহীত হয় ।

৫. সুষ্ঠুভাবে পানি নিষ্কাশনের জন্য প্রাইমারী, সেকেন্ডারী ও টারশিয়ারী ড্রেনসহ একটি সমন্বিত ড্রেনেজ ব্যবস্থাপনা নেটওয়ার্কের প্রস্তাবনা গৃহীত হলো ।

৬. এছাড়াও পৌরসভার উন্নয়নের সাথে সংশ্লিষ্ট অন্যান্য প্রস্তাবনা সর্বসম্মতিক্রমে গৃহীত হয় ।

৭. মহাপরিকল্পনা প্রণয়ন প্রকল্পে নিযুক্ত পরামর্শক প্রতিষ্ঠান (BETS Consulting Services Limited) কে মহাপরিকল্পনার বিভিন্ন উন্নয়ন মূলক প্রস্তাবনা যাচাই বাছাই পূর্বক সরিষাবাড়ী পৌরসভার চূড়ান্ত মহাপরিকল্পনা প্রণয়নের কাজ সমাপ্ত করে চূড়ান্ত মাস্টার প্ল্যান রিপোর্ট প্রকল্প অফিসে অতিসত্বর দাখিল করার জন্য অনুরোধ করেন।

সভায় আর কোন আলোচনা না থাকায় সভাপতি মহোদয় সকলকে পুনরায় ধন্যবাদ জ্ঞাপনপূর্বক সভার সমাপ্তি ঘোষণা করেন।

এ. কে. এম. ফয়জুল কবির তালুকদার (শাহীন)
মেয়র
সরিষাবাড়ী পৌরসভা
সরিষাবাড়ী, জামালপুর।

অনুলিপি সদয় অবগতির জন্য প্রেরণ করা হলোঃ

১. প্রকল্প পরিচালক, উপজেলা শহর অবকাঠামো উন্নয়ন প্রকল্প, এলজিইডি, ঢাকা।
২. নির্বাহী প্রকৌশলী, সড়ক ও জনপথ বিভাগ, জামালপুর
৩. উপবিভাগীয় প্রকৌশলী, গণপূর্ত অধিদপ্তর, জামালপুর
৪. সহকারী প্রকৌশলী, জনস্বাস্থ্য প্রকৌশল অধিদপ্তর, সরিষাবাড়ী, জামালপুর
৫. উপজেলা প্রকৌশলী, স্থানীয় সরকার প্রকৌশল অধিদপ্তর, সরিষাবাড়ী, জামালপুর
৬. ব্যবস্থাপনা পরিচালক, BETS Consulting Services Limited, ঢাকা
৭. জনাব সৈয়দ শাহরিয়ার আমিন, নগর পরিকল্পনাবিদ, উপজেলা শহর অবকাঠামো উন্নয়ন প্রকল্প, এলজিইডি, ঢাকা।

এ. কে. এম. ফয়জুল কবির তালুকদার (শাহীন)
মেয়র
সরিষাবাড়ী পৌরসভা
সরিষাবাড়ী, জামালপুর।

বাংলাদেশ গেজেট

অতিরিক্ত সংখ্যা

কর্তৃপক্ষ কর্তৃক প্রকাশিত

সোমবার, ডিসেম্বর ৩১, ১৯৯০

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

স্থানীয় সরকার, পল্লী উন্নয়ন ও সমবায় মন্ত্রণালয়

স্থানীয় সরকার বিভাগ

([illegible])

প্রজ্ঞাপন

ঢাকা, ১৪ই পৌষ, ১৩৯৭/২৮শে ডিসেম্বর, ১৯৯০

এস, আর, ও নং ৪৪০-আইন/৯০/পৌ-শোঃ-২/এম-৩২/৯০—Paurashava Ordinance, 1977 (XXVI of 1977) এর section 4(1) এ প্রদত্ত [illegible] সরকার [illegible] ১৯৭৯ তারিখের Notification নং এস, আর, ও 164-L/79/S XVI/A-11/79/545 এর মাধ্যমে [illegible] পৌরসভার [illegible] নিম্নবর্ণিত [illegible] পৌরসভা হিসাবে [illegible]

তফসিল

ক্রমিক নং	মৌজার নাম	উপজেলা	জে, এল, নং	দাগ নং
১	[illegible] (১ম খণ্ড)	[illegible]	১৬৭/৩৮	সমস্ত দাগ
২	[illegible] (২য় খণ্ড)	ঐ	১৬৮/৩৬	ঐ
৩	[illegible]	ঐ	১৬৫/৩৭	ঐ
৪	[illegible]	ঐ	১৬৬/৩৪	ঐ
৫	[illegible]	[illegible]	১০৬	৩১৭—১০৪০, ১০৫১—১০৫৭, ২২০১—৫০১৮

মূল্য : ৫০ পয়সা

ক্রমিক নং				
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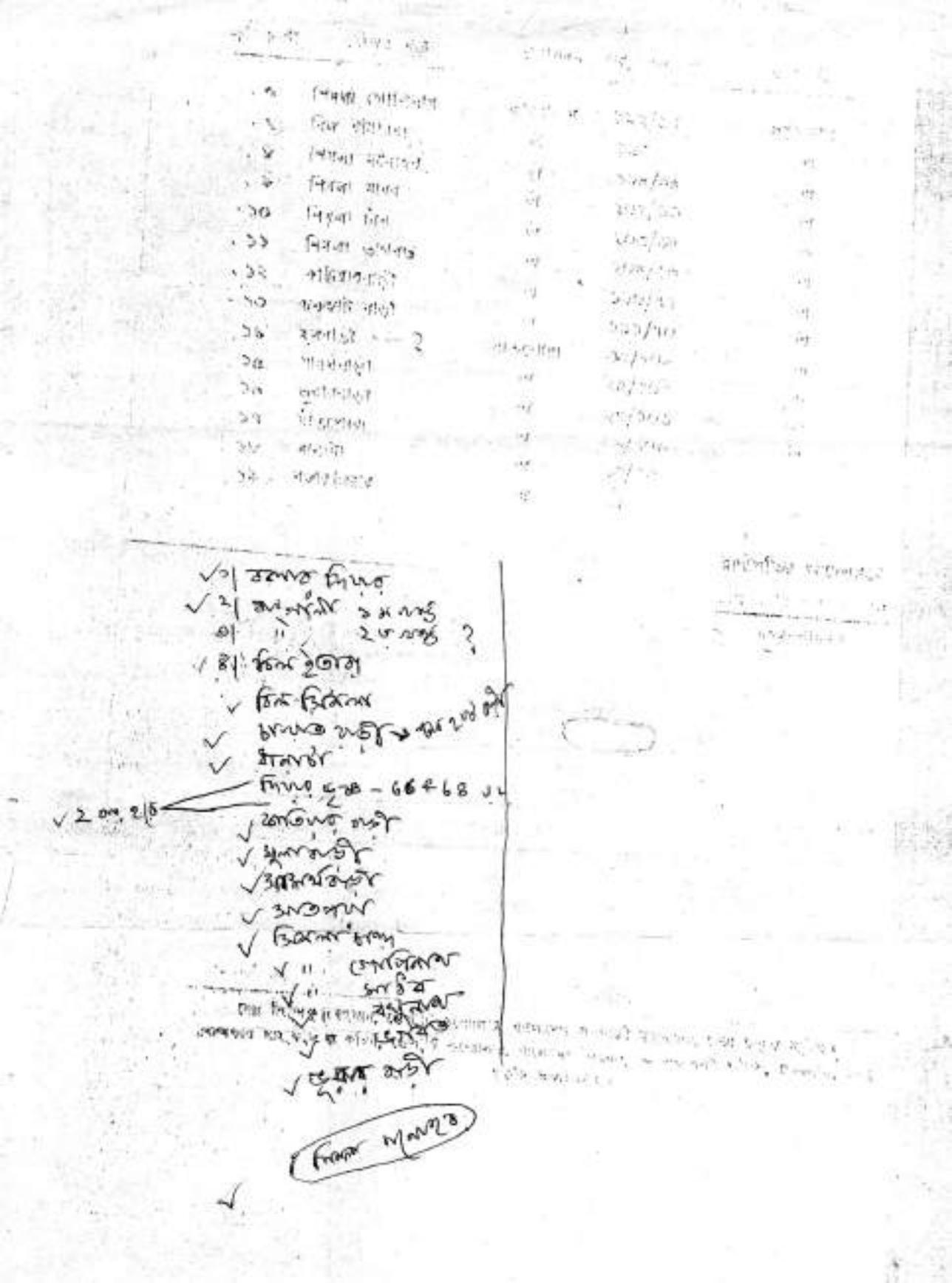

ক্রঃ নং	মৌজার নাম	জে.এল নং R.S.	শীট নং
১.	দিয়ার কৃষ্ণ (১ম খন্ড)	৬৮	০০
২.	দিয়ার কৃষ্ণ (২য় খন্ড)	৬৬	০০
৩.	বিল শিমলা	৬৭	০০
৪.	শিমলা রঘুনাথ	৬৪	০০
৫.	বাংগালী	২৮	১,৩,৪,৫,৬
৬.	শিমলা গোপিনাথ	৩৪	১,২,৩
৭.	বিল ইটারিয়া	৬৯	০০
৮.	শিমলা মনোহর	৬৫	০০
৯.	শিমলা মাধব	৬৩	০০
১০.	শিমলা চাঁদ	৩৫	০০
১১.	শিমলা ভগবত	৩৬	০০
১২.	কাটিয়ার বাড়ী	৭১	০০
১৩.	চক হাটবাড়ী	৭০	০০
১৪.	মূলবাড়ী	৮৮	০০
১৫.	সাম্মর্থ বাড়ী	৮৭	০০
১৬.	ভূরার বাড়ী	৮৬	১,২
১৭.	সাত পোয়া	৮৯	১,২
১৮.	ধান আটা	৭৩	০০
১৯.	বলারদিয়া	৯২	১,২
২০.	ফুলবাড়ীয়া	২৯	০০
২১.	মাগুরা পাড়া	৩৮	০০