Government of the Peoples Republic of Bangladesh

Ministry of Local Government, Rural Development & Cooperatives

Local Government Division

TRISHAL POURASHAVA

MASTER PLAN: 2011-2031

April, 2014

Local Government Engineering Department (LGED)

Government of the Peoples Republic of Bangladesh

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Local Government Division

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

TRISHAL 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

TRISHAL POURASHAVA

TRISHAL, MYMENSHINGH

TRISHAL POURASHAVA MASTER PLAN: 2011-2031

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Master Plan of Trishal Pourashava

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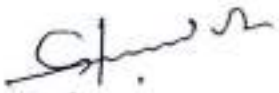
PREFACE

It is a great pleasure for all concerned that on behalf of Trishal 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 Trishal Pourashava together with land use control and effective management of service facilities. This will also ensure planned physical, social and economic development of Trishal 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 Trishal Pourashava Authority, Public Representatives, Stake-holders and Civil Societies with the deepest gratitude for accomplishment of this remarkable assignment.



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EXECUTIVE SUMMARY

Trishal Pourashava is located in the core of Trishal Upazila under Mymensingh District. Dhaka-Mymensingh highway passes through the heart of the Pourashava. It has geographical extent of 90°22´-90°26´E and 24°33´-24°35´N. Trishal Pourashava is surrounded by Mathbari union and Fulbaria Upazila at the west, Balipara union at the east, Baliar union at the north and Harirampur union at the south.

According to the BBS, 2011(Mymensingh District), the total population of Trishal Pourashava is 34,747 of which 17,943 (51.63%) is male and 16,804 (48.36%) female. The sex ratio is 107and density is 1251 per sq. kilometer. Muslim, Hindu, Christian, Buddhist and others ethnic nationals have been living in this area. The paurashava consists of full and part of 3 (three) mouzas. These are Trishal, Naodhar and Rampur mouza. It has an area of about 12.275 square kilometers (as per our GIS measurement) but it is mentioned as 15.48 sq.km.in the BBS.

Trishal thana was established in 1909 and was turned into an upazila in 1983. Trishal Pourashava was established in 5th May 1998. It's present status is **"A" Class** Pourashava.

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 Trishal Pourashava 15.89% land is kept as core area, 11.88% as peripheral area, 4.10% as new urban area, 7.878% as circulation network, 48.16% as agricultural area and the remaining 12.11% 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 52.704 km of road for widening and 18.442 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 8.90 km of pucca drain in the pourashava and the river and natural canals cover 5.331 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 9.403 km of primary drain, 11.00 km of secondary drain and 17.84 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 Trishal 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

CHAPTER-1

PREPARATION OF MASTER PLAN

1.1 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 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 Trishal 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.

1.2 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.

1.3 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 Trishal Paurashava was taken under the following sequential way.

Phase 1: Preliminary Visit to the Paurashava
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 Trishal Paurashava 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 Trishal Paurashava 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 Paurashava boundary and proposed planning area for Trishal Paurashava is as follows:

A. Collection of Paurashava Gazette to identify the Existing Paurashava Area
B. Reconnaissance survey about Paurashava 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 Paurashava 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 Paurashava in the Demarcation of Paurashava and Planning Area.
G. Preparation of GIS Map Layout.

Phase 4: Carry out Detailed Survey for Trishal Paurashava
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 Trishal Paurashava 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 Paurashava.

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 Trishal Paurashava. 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 Paurashava Gazette and detail information from the Paurashava 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 Paurashava 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 Trishal 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 Trishal 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 Trishal 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.

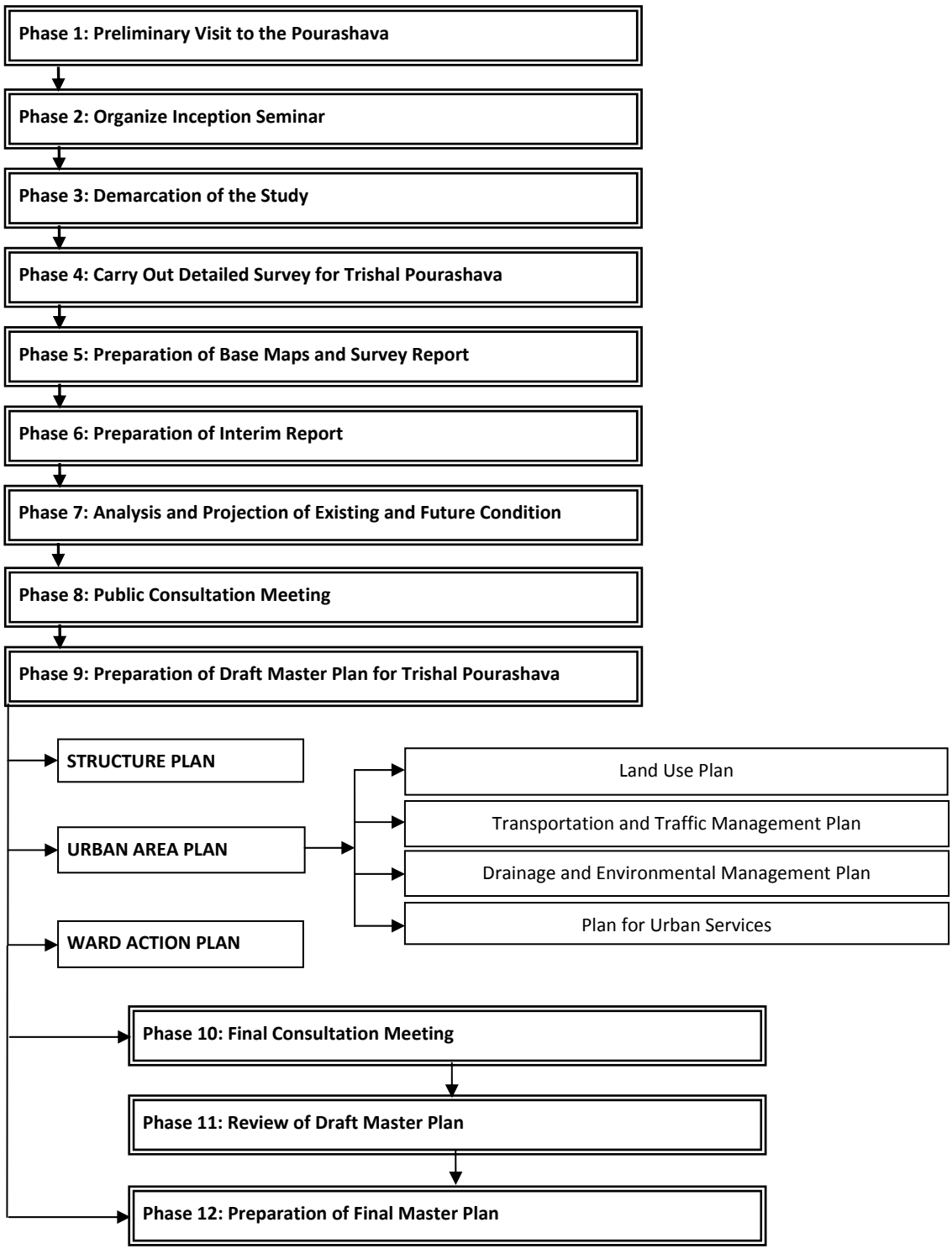
The last step of Draft Master Plan is ***Ward Action Plan***, which conceptualizes the content and background of the plan. In the next step, the linkage with Structure Plan & Urban Area Plan is identified. After that, ward action plan is adopted in details. The proposal and planning, priority tasks and 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 Trishal 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

1.4 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 Ward 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.

1.5 ORGANIZATION OF THE REPORT

The Trishal 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 Ward 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 Trishal 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-2

INTRODUCTION

2.1 BACKGROUND OF THE POURASHAVA

Trishal Pourashava is located in the core of Trishal Upazila under Mymensingh District. Dhaka-Mymensingh highway passes through the heart of the Pourashava. It has geographical extent of 90°22´-90°26´E and 24°33´-24°35´N. Trishal Pourashava is surrounded by Mathbari union and Fulbaria Upazila at the west, Balipara union at the east, Baliar union at the north and Harirampur union at the south.. Location of the Pourashava is shown in **Map-2.1** (*Location Map of the Pourashava*).

According to the BBS, 2011(Mymensingh District), the total population of Trishal Pourashava is 34,747 of which 17,943 (51.63%) is male and 16,804 (48.36%) female. The sex ratio is 107and density is 1251 per sq. kilometer. Muslim, Hindu, Christian, Buddhist and others ethnic nationals have een living in this area.

At present Trishal is “A Class” Pourashava. It has an area of about 12.275 square kilometers (as per our GIS measurement) but it is mentioned as 15.48 sq.km.in the BBS. There are twenty Mahallas within the Pourashava. The paurashava consists of full and part of 3 (three) mouzas. These are Trishal, Naodhar and Rampur mouza. According to Population Census 2001, it has a population of 25,429 of which male are 13,372 and female are 12,057; density of population is 1,642 per sq km. Male-female ratio is 111:100. (**Appendix-A:** *Pourashava Gazette Notification*).

Trishal thana was established in 1909 and was turned into an upazila in 1983. Trishal Pourashava was established in 5th May 1998.

The reminiscences of Nazrul’s boyhood are still visible at different places under Trishal upazila in Mymensingh district. Kazi Nazrul Islam was born in Burdwan district (presently in west Bengal, India) in 1899.

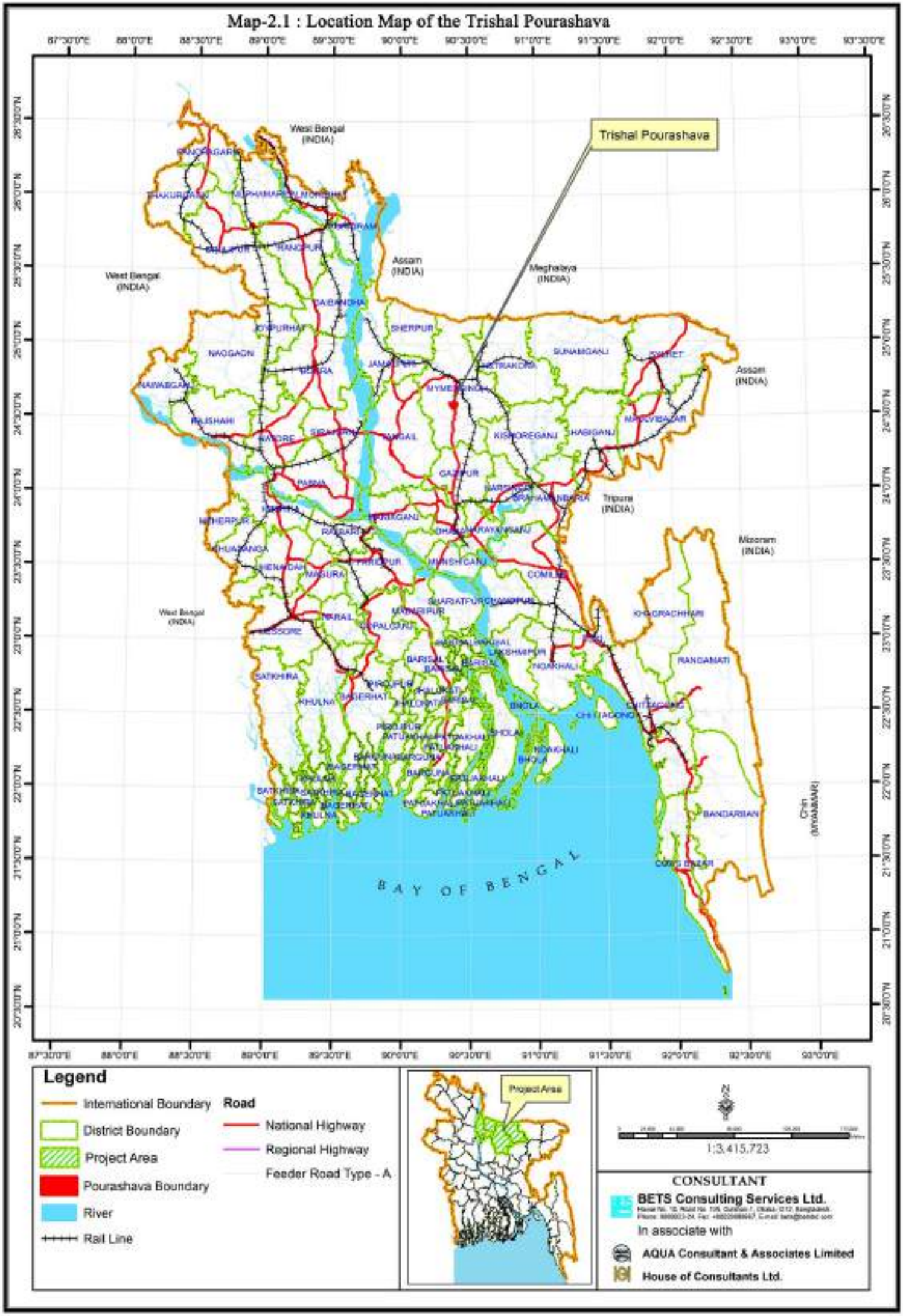
The development scenario of Trishal Pourashava shows a very grave situation. The town has been evolved as an administrative centre of Upazila Parishad. No other factor lies behind the growth of the town. The roads and other infrastructures has been developed for functioning of the Upazila Headquerters. Residential and commercial development has taken places following the road network leading to ribbon development. The houses are 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 Trishal 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-2.1 : Location Map of the Trishal Pourashava



2.2 PHILOSOPHY OF THE STRUCTURE PLAN

The Philosophy behind Trishal 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 Trishal 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;

2.3 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.

2.4 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 Trishal 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 Trishal 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, Trishal 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 Trishal 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-3

POURASHAVA'S EXISTING TREND OF GROWTH

3.1 SOCIAL DEVELOPMENT

Trishal Pourashava was established in 5th May 1998. Social structure of Trishal Pourashava has been gradually shifting from agro-based rural living to urban living since its inception. An outline of the Pourashava's existing trend of social development has been inferred from the Community Series, 1991 & 2001 of Mymensingh District and presented under the following sub-headings:

Population

According to the BBS, 2011(Mymensingh District), the total population of Trishal Pourashava is 34,747 of which 17,943 (51.63%) is male and 16,804 (48.36%) female. The sex ratio is 107and density of population in 2001 is 1643 per sq. kilometer. Muslim, Hindu, Christian, Buddhist and others ethnic nationals have een living in this area.

Household

The total no. of household of the Trishal Pourashava is 5085 in 2001 and 7202 in 2011. The decadal growth rate of household in 2001 is 39.43.The average dwelling household size is 5.30 in 2001 and 4.7 in 2011. According to census, in the period of 1991 and 2001, the annual growth rate of housedhold in the urban area ofr Trishal Upazila is 4.10.

Education

According to BBS, increasing trend of literacy observed in the Trishal Upazila over the decades. The literacy rate is 61.0 % in 2011 against 57.5% in 2001in the Trishal Upazila. It appears that the literacy rate has increased only 3.50% for both sexes in 2011 over 2001.

In the project area it is found that about 66.25% people have attained education level ranging from primary level to higher education. Out of the total population 33.75% never attended school. People with primary level education (Class I-V) accounts 14.58%. People with high school level education (Class VI-X) constitute 20.00%. About 13.75% people attained secondary level education. About 10.42% people are reported to have attained higher secondary level education and about 7.50% people are with above higher secondary education level.

At present there are in all 74 educational establishments in the project area of which 8 are colleges/University, 2 High Schools, 33 Primary Schools, 22Madrashas, 9 other institutions. Out of all educational institutes, schools (Both Primary and Secondary) comprise about 47.29%, Madrashas 10.81% and college/University 10.81%. The area is served by academic institute (e.g. University) of national importance.

Income Level

The socio-economic survey reveals that more that 6.67% household have a monthly income of Tk. 4,000 or below and may be classified as poor. The people with income ranging from

Tk. 4,100-12000 constitute 65% household. The high income people with above Tk.12000 constitute only 28.33% households. It also reveals that mean monthly income of the project area is Tk.11,705.81.

Religion

According to latest population census report (2011), 95.46% of the population of this Paurashava belongs to Muslim community, 4.06% Hindu community,0.05%, 0.008 Buddhist community and 0.44 are others of which very few are Garo.

Main Source of Household Income

Acoording to BBS 2001, the main source of household income in Trishal Pourashava are as: business 29.99%, agriculture,Livestock,Forestry 16.88%, service 14.42%, fishery 0.14%, agricultural labour 10.40%, industry 0.75%, hawker 0.18%, rent 0.16%, religious service 0.14%, non-agricultural labour 4.98%, transport 7.31%, and others 23.85%.handloom 0.08, construction 2.60%, remittance 8.83% and others 10.90%.

Ownership and value of land

The cent percent people of Trishal Pourashava are local. The occupied inherited land areas and have been changing the ownership due to sale and purchase.Average market value of habitable land is Tk. 83012.77 per decimal and medium land is Tk. 30285.71 per decimal.

Occupancy Type

Household ownership pattern indicates the socioeconomic status of the inhabitants. From the BBS 2011 it has been found that most of the houses are owner occupied and that 75.7% families live in their own houses. About 22.4% families live in the rental accommodations and ony 1.9% families live in other housing accommodates. 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.

3.2 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 Trishal 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 along both the side of Dhaka-Mymensingh Road.

3.3 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, two khals e.g. Shukneer Khal & Kulin Beeler Khal and Shutia river were identified as natural water bodies. The length of the Shutia river was measured as 3.71 km passing through the Pourashava.

In the Trishal Pourashava over the last few decades as many as 12,817 number of structures has been developed of which 11,349 residential buildings, 853 commercial buildings, 59 industrial buildings, 74 educational buildings, 4 health structures(hospitals), 89 religious structures,163 bridge & culverts, 8.79 km pucca drain and 93.13 km (58.37 acres) road has been developed.

3.4 ENVIRONMENTAL GROWTH

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 Trishal 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.

3.5 POPULATION

According to the BBS, 2011(Mymensingh District), the total population of Trishal Pourashava is 34,747 of which 17,943 (51.63%) is male and 16,804 (48.36%) female. The sex ratio is 107and density is 1251 per sq. kilometer. Muslim, Hindu, Christian, Buddhist and others ethnic nationals have een living in this area.

Table- 3.1: Ward wise Distribution of Population

Ward	Population' 2011					
	Male		Female		Total	
	No.	%	No.	%	No.	%
Ward No.01	1541	4.43	1460	4.20	3001	8.64
Ward No.02	2374	6.83	2232	6.42	4606	13.26

Ward	Population' 2011					
	Male		Female		Total	
	No.	%	No.	%	No.	%
Ward No.03	2172	6.25	2116	6.09	4288	12.34
Ward No.04	1790	5.15	1488	4.28	3278	9.43
Ward No.05	1433	4.12	1403	4.04	2836	8.16
Ward No.06	1916	5.51	1890	5.44	3806	10.95
Ward No.07	1389	4.00	1336	3.84	2725	7.84
Ward No.08	2654	7.64	2575	7.41	5229	15.05
Ward No.09	2674	7.70	2304	6.63	4978	14.33
Total	**17943**	**51.64**	**16804**	**48.36**	**34747**	**100.00**

***Source**: BBS, 2011*

Table- 3.2: Population Growth Trend

Year	1881	1991	2001	2011
Population			25,429	34,747

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

3.6 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. Trishal 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- 3.3**).

Table- 3.3: List of Existing Manpower

Designation	Existing Manpower
Asstt. Engineer (Civil)	1 Person
Sub-Asstt. Engineer	1 Person
Work Assistant	1 Person
Electrician	1 Person
Road Roller Driver	1 Person
Track/Tractor Driver	1 Person
MLSS	3 Persons
Secretary	1 Person
UDC	1 Person
LDC	1 Person
Accountant	1 Person
Acc. Assistant	1 Person
Tax Assesor	1 Person
Asstt. Tax Assesor	1 Person
Licence Inspector	1 Person
Superviser	1 Person
Night Guard	1 Person

***Source**: Trishal Pourashava*

Existing logistic support of Trishal 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 Trishal Pourashava are given in **Table-3.4** below:

Table -3.4: Logistic support/Equipment of Trishal Pourashava

Sl.No.	Type of Equipment	Number
1.	Road Roller-04 Ton	1
2.	Truck for garbage collection and disposal	1
3.	Motor cycle	1
4.	Bi-cycle	1
5.	Computer	1
6.	Fokker machine	4

***Source**: Trishal Pourashava*

The institutional capacity of the Trishal 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-3.5**. Trishal falls under A-Class Pourashava having a revenue earning of Tk.2 million by the classification of the Ministry.

The statement Holding Tax Collection for the financial year 2007-2008, 2008-2009 and 2009-2010 was Tk.5,04,326/=,Tk.15,00,000/=and Tk.20,00,000/= respectively.The total earning of the Pourashava for the fiscal year 2009-2010 is Tk. 4,72,90,000/= and expenditure Tk. 4,43,60,000/=.

Table 3.5: 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*

At present there are no Town Planning personnel in Trishal 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.

3.7 URBAN GROWTH AREA

Trishal thana was established in 1909 and was turned into an upazila in 1983. Trishal Pourashava was established in 5th May 1998. Its present status is “B” Class pourashava.

Since the inception of Pourashava people started to migrate from the neighbouring Upazilas to Trishal 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 12,817 structures have been established.

During delineation of Pourashava area and physical feature survey it is observed that, the physical growth is concentrated in the centre of existing pourashava and both the side (east & west) of Shutia river.

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

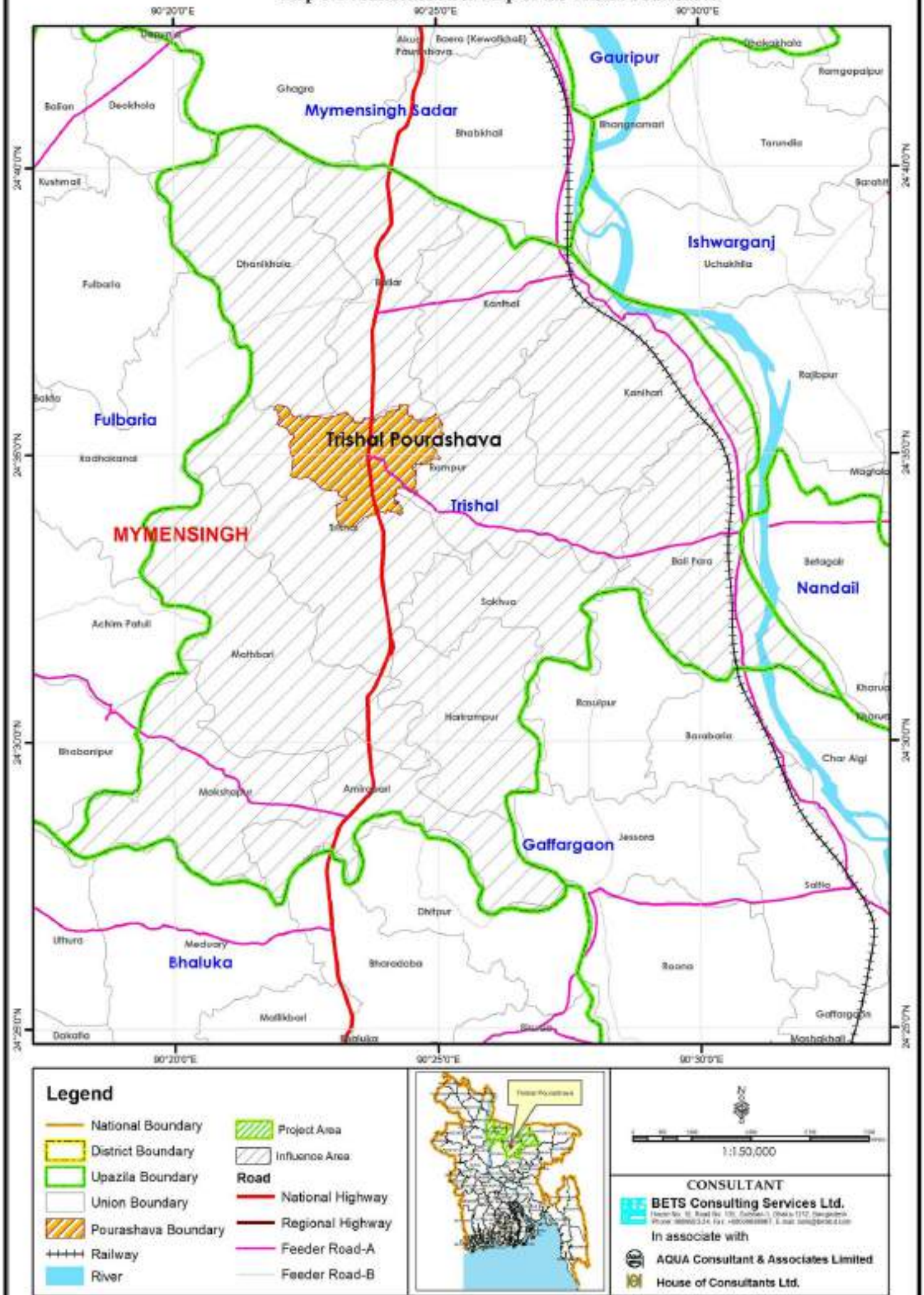
Trishal Pourashava area and its boundary have been clearly defined by the Government through gazette notification at the time of declaration of Pourashava. In the gazette notification of 5th May 1998 the covered area are shown by the full/part mouza maps together with individual plot numbers covering an area of 12.275 square kilometers (as per our GIS measurement) but it is mentioned as 15.48 sq.km.in the BBS. Therefore, Pourashava area and boundary is well defined.

3.8 CATCHMENT AREA

The favourable location has benefits Trishal in two ways: it allows people to come to Trishal to purchase goods and services, and it allows Trishal businesses, including wholesale businesses, to deliver goods and services to places outside the town. The Trishal Upazila HQ's provides govt. services for neighbouring communities of the entire Upazila including the Pourashava area. Trishal has seven colleges, one University and two high schools which draw students from the population in surrounding communities. The schools bring children and parents from surrounding villages and unions to Trishal 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 Trishal Pourashava.

However, the influence area of Trishal Pourashava is delineated along the transport routes such as Dhaka-Mymensingh Road, Asim Road, Baliapara Road, University Road and Fulbaria Road. Trishal Pourashava area and 4 Union Parishads of Trishal Upazila fall under the influence area of the town. The delineation of influence area of Trishal Pourashava is shown in **Map-3.1.**

Map-3.1 : Influence Area Map of the Trishal Pourashava



3.9 LAND USE AND URBAN SERVICES

Trishal 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 middle part of the project area along the both sides Dhaka-Mymensingh Road and Porabari roadof Trishal pourashava. 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 2040.77 acres which is 67.28% of the land. Ward No.1, Ward No.8 and Ward No.3 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 426.68 acres. As expected the second highest land use category is the residential use which occupies 14.07% 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.8, Ward No.9 and Ward No.3.

Commercial Land Use
The commercial activities have been occupied 20.53 acres of land in the project area, which is very insignificant and covers about 0.68% of the total land of the project area. Ward No.4 has the highest acreage amounting 6.59 acres in this category. On the contrary, there are very negligible commercial uses of land in Ward No. 1. The commercial activities are mostly developed along the roads i.e. Dhaka-Mymensingh road and concentrated highly on core area of the town.

Water body
The third highest land use category is water body. In all 435.93 acres of land are covered by water bodies which represents about 14.37% of the project area. Water bodies include ponds, ditches, beel, khals and river. Major water bodies of the area are the ponds which are distributed scatteredly all over the project area. Ward No.8, Ward No.1 and Ward No.3 are the three places with higher acreage of water bodies.

Circulation Network
Circulation Network occupies 1.92% land of the project area. Total area under this use amounts to 58.37 acres. Area under circulation network is too little that doesn't meet the minimum requirement of the town. The main circulation network is road.

Education and Research Land Use
Education Facility occupied 0.59% of the project area that covered 17.51 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.

Industrial Land Use

Manufacturing and Processing land use occupies 4.33 acres of land and which is only 0.14% of the total land of the project area. Among the industries rice mills cover the major part. Significant number of saw mill and bakery are also situated here. Industry is distributed scatterdly all over the Pourashava area. Ward No.6 occupied the highest (28.70%) which followed by Ward No. 9 and 3.

Transportation Facilities

A total of 0.88 acres of land are occupied by Transport & Communication category of land use. Among the Ward, Ward No.8 has the highest rank followed by Ward No.7 and Ward No.6.

Urban Green Space

The existing land under urban green space is 0.86 acres covering 0.03% of the total area.

Essential utilities

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

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

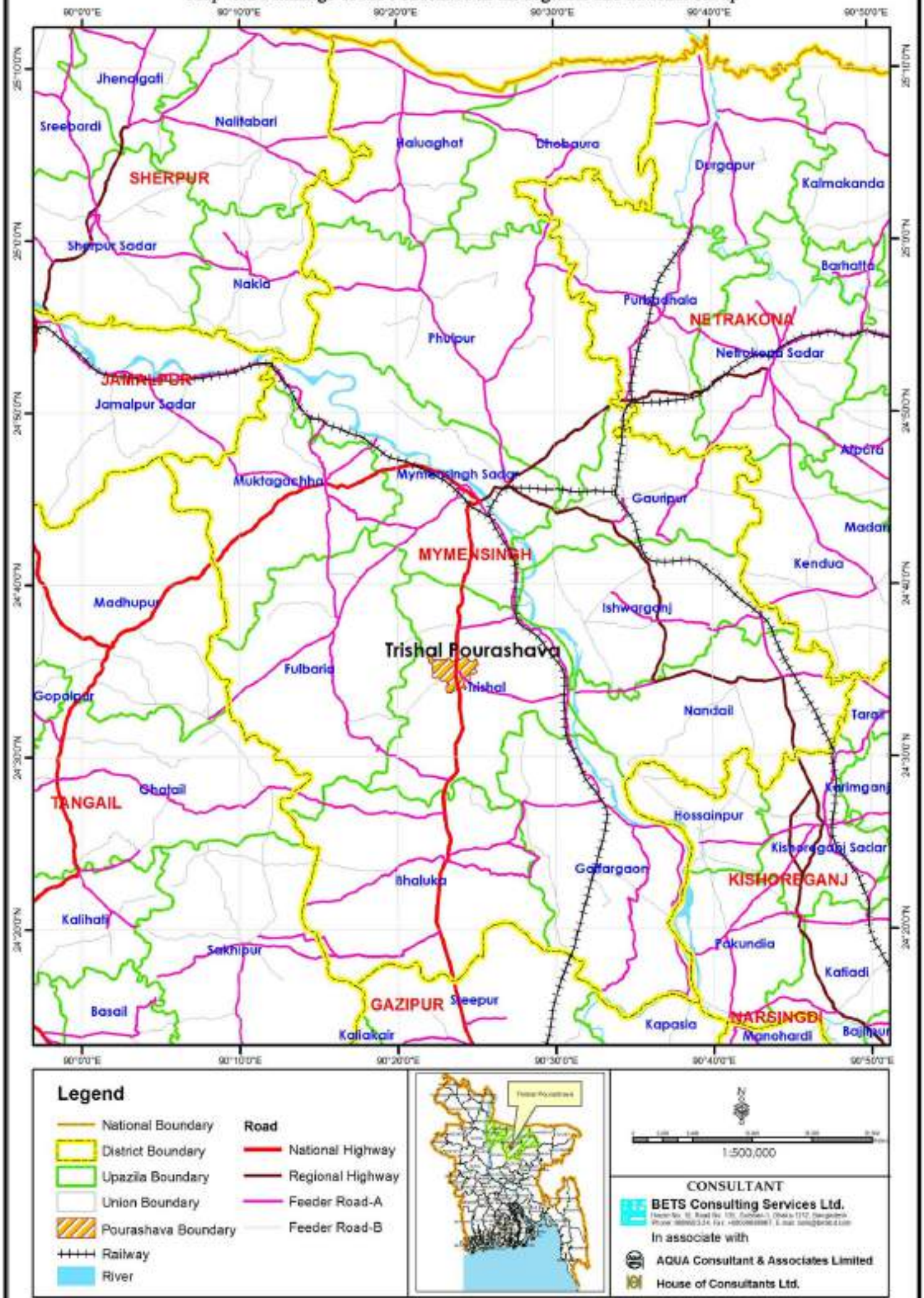
Although Trishal Pourashva is located at thern part of Bangladesh under Mymensingh District, yet the Pourashava is well - linked with the district head quarters of Mymensingh, Sherpur, Netrokoa and Dhaka by road network. This town can contribute towards transportation of agrarian economy as an industrial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

The Pourashava has also good transport linkage with Bhaluka, Fulbaria and Gaffargaon Upazilas of Mymensingh District. Therefore, the Trishal Pourashava functionally linked with the national and regional context.

Although Trishal Pourashava has good road linkage in the regional and national transport network there is no railway line or station nearby of the Pourashava. The nearest railway line extended north - south (Mymensingh-Gaffargaon) from the eastern margin of the Upazila.

Although the river Shutia is within the Trishal Pourashava is 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 Trishal Pourashava in the regional and national set up is provided in **Map-3.2** below.

Map- 3.2 : Linkage of the Pouashava in the regional and national set up



3.11 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 labor-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 Zila road network and some bridges under the Bangladesh Government. Presently Zila 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 Trishal from a substation located at Darirampur. Both the PDB and Rural Electrification Board (REB) have the responsibility for distribution of electricity to Trishal 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 Zila 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 Trishal Pourashava (**Table-3.7**)**.**

Table-3.7: **Sectoral/Sub-Sectoral Agencies of Nandail Pourashava**

Name of Agencies	Type of works done
Trishal 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
Zila 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-4

PROJECTION OF FUTURE GROWTH BY 2031

4.1 INTRODUCTION

Trishal 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.

4.2 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 2011 to 2011, the annual population growth rate of Mymensingh District was 2.55 in the urban as against 1.28 in the entire district irrespective of urban and rural area. In the urban area of Trishal Upazila the annual growth rate was 3.17 as against 1.01 for the entire Upazila during the same period. However comparative growth rates at the regional and local level is presented in **Table-4.1**.

Table- 4.1: Comparative regional and local growth rates

Administrative Unit		Growth Rate
Mymensingh District	District	1.28
	Urban	2.55
Trishal Upazila	Upazila	1.01
	Urban	**3.17**

***Source**: BBS, 2011*

The growth rate of Trishal Pourashava (3.17 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-4.2**.

Table-4.2: Projected Population of Trishal Pourashava

Year	Population
2001	25,429
2011	34,747
2016	40,617
2021	47,479
2026	55,501
2031	64,877

The population of each ward at Trishal Pourashava is estimated assuming 3.17 as annual growth rate. Details are provided in following **Table-4.3**.

Table-4.3: Ward wise Projected Population of Trishal Pourashava

Ward	Census Population			Projected Population		
	2001	2011	2016	2021	2026	2031
Ward No.01	2,032	3,001	3,508	4,101	4,793	5,603
Ward No.02	3,319	4,606	5,384	6,294	7,357	8,600
Ward No.03	3,324	4,288	5,012	5,859	6,849	8,006
Ward No.04	2,392	3,278	3,832	4,479	5,236	6,120
Ward No.05	2,198	2,836	3,315	3,875	4,530	5,295
Ward No.06	2,818	3,806	4,449	5,201	6,079	7,106
Ward No.07	2,277	2,725	3,185	3,724	4,353	5,088
Ward No.08	3,433	5,229	6,112	7,145	8,352	9,763
Ward No.09	3,636	4,978	5,819	6,802	7,951	9,295
Total	**25,429**	**34,747**	**40,617**	**47,479**	**55,501**	**64,877**

4.3 IDENTIFICATION OF FUTURE ECONOMIC OPPORTUNITIES

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

In Trishal the availability of manpower is sufficient. There are 58.86% population of the Pourashava within age group 16-57 years, 17.92% are above SSC level educated and 59.16% people's monthly income are above Tk. 8000/=.

Trishal Pourashava iswell connected with the neighbouring district headquarters namely-Mymensingh and Dhaka. 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.

4.4 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-4.4**.

Table-4.4: Projected Landuse of Trishal 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		**426.67**	**474.79**	**-**	**648.77**	**-**
General Residential	1.00 acre/ 100 pop.	426.67	474.79	-	648.77	-
Adminstration		0.16	18	17.84	18	17.84
Upazila Complex	15 acres/ Upazila HQ	0.1219	15.00	14.88	15.00	14.88
Pourashava Office	3 acres/ Upazila HQ	0.0381	3.00	2.96	3.00	2.96
Commerce		**20.65**	**57.73**	**37.08**	**76.86**	**56.21**
Wholesale Market	1.00 acre/ 10000 pop.	0	4.75	4.75	6.49	6.49
Retail sale Market	1.00 acre/1000 pop.	19.99	47.48	27.49	64.88	44.89
Neighborhood Market	1.00 acre/ Neighborhood market	0	4.00	4.00	4.00	4.00
Super Market	1.50 acres/ super market	0.659	1.50	0.84	1.50	0.84
Industry	2.00 acres/ 1000 pop.	**3.813**	**94.96**	**91.15**	**129.75**	**125.94**
Education		**20.59**	**71.47**	**52.15**	**95.83**	**76.51**
Primary School	2.00 acres/ 5000 pop.	0.9571	18.99	18.03	25.95	24.99
Secondary School	5.00 acres/ 20000 pop.	1.367	11.87	10.50	16.22	14.85
College	10.00 acres/ 20000 pop.	6.764	23.74	16.98	32.44	25.67
Vocational Inistitute	5.00 acres/upazila	6.274	5.00	-	5.00	-
Others (Madrasa)	5.00 acres/ 20000 pop.	5.228	11.87	6.64	16.22	10.99
Health Facilities		**0.80**	**19.50**	**18.70**	**22.98**	**22.18**
Upazila Health Complex/ Hospital	10 acres/ Upazila HQ	0.69	10.00	9.31	10.00	9.31
Health Center/ Maternity Clinic	1.00 acre/ 5000 pop.	0.105	9.50	9.39	12.98	12.87
Open Space/ Recreation		**0.11**	**110.27**	**111.40**	**148.11**	**147.17**
Playground	3.00 acres/ 20000 pop.	0	7.12	8.36	9.73	8.90
Park/ Open space	1.00 acre/ 1000 pop.	0	47.48	47.48	64.88	64.88
Neighborhood Park	1.00 acre/ 1000 pop.	0	47.48	47.48	64.88	64.88
Stadium	7 acres/upazila HQ	0	7.00	7.00	7.00	7.00
Cinema	0.5 acre/ 20000 pop.	0.1055	1.19	1.08	1.62	1.52
Community Facilities		**1.793**	**13.68**	**8.79**	**17.60**	**10.97**
Mosque/ Temple/ Church	0.50 acre/ 20000 pop.	1.4693	1.19	-	1.62	-
Eidgah	0.50 acre/ 20000 pop.	0.002	1.19	-	1.62	-
Graveyard	1.00 acre/ 20000 pop.	0.179	2.37	-	3.24	-
Community Center	1.00 acre/ 20000 pop.	0	2.37	2.37	3.24	3.24
Police Station	3 acres/ Upazila HQ	0.1143	3.00	2.89	3.00	2.89
Fire Service Station	1.00 acre/ 20000 pop.	0	2.37	2.37	3.24	3.24
Post Office	0.50 acre/ 20000 pop.	0.0284	1.19	1.16	1.62	1.59
Utility Services		**0.2103**	**19.06**	**18.85**	**22.10**	**21.89**
Telephone/ Telegraph Exchange	0.50 acre/ 20000 pop.	0.0539	1.19	1.13	1.62	1.57

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)
Electric sub-station	1.00 acre/ 20000 pop.	0.0479	2.37	2.33	3.24	3.20
Water Supply	1.00 acre/ 20000 pop.	0.1012	2.37	2.27	3.24	3.14
Gas	1.00 acre/ 20000 pop.	0.0073	2.37	2.37	3.24	3.24
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		**0.103**	**4.75**	**4.64**	**6.49**	**6.38**
Bus Terminal	1.00 acre/ 20000 pop.	0.103	2.37	2.27	3.24	3.14
Truck Terminal	0.50 acre/ 20000 pop.	0	1.19	1.19	1.62	1.62
Tempoo Stand	0.25 acre/ 20000 pop.	0	0.59	0.59	0.81	0.81
Rickshaw Stand	0.25 acre/ 20000 pop.	0	0.59	0.59	0.81	0.81
Roads	15% of the built-up land	**58.31**	**81.80**	**23.49**	**81.80**	**23.49**
Urban Deferred	10% of the total built-up area	**0**	**54.53**	**54.53**	**54.53**	**54.53**

CHAPTER-5

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, Zila). Trishal Pourashava is not an exception of that. As a result, some development problems are identified during conducting survey and field visits.

5.1 PHYSICAL INFRASTRUCTURE

In Trishal 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.

Two canals are located within the Pourashava area namely- Shukneer khal and Kulin Beeler Khal and 1471 ponds and ditches. These khals, ponds and beel create some problem while construction of transport network, drain, pipeline, gas line etc.

There is very little roadside drain in Trishal. 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 Trishal Pourashava. This sort of land use development also create problem.

Transport problem of Trishal 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 Trishal Pourashava. If this unplanned construction goes on unabated, it will make the environment of Trishal Pourashava unsuitable and inhabitable.

5.2 SOCIO-ECONOMIC

Development Problems of Trishal 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 33.75% 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 Trishal Pourashava is less but expenditure is comparatively high. So, it is difficult on the part of the habitant to make any surplus.

5.3 ENVIRONMENTAL

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

In Trishal 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 Trishal 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 Trishal 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-6

REVIEW OF POLICIES, LAWS AND REGULATIONS

6.1 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-6.1**.

Table-6.1: 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

SI No.	Policies/Laws/ regulations	Application	Implementation Agencies
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
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

6.2 LAWS AND REGULATIONS RELATED TO

6.2.1 Urban Development Control

The physical growth and development of Trishal Pourashava Town is subject to controlled mainly by Local Government (Pourashava) Act-2009 & Building Construction Act-1952 and 2004. But a very weak Development Control system has been implemented in Trishal 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.

6.2.2 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 27 employees in Engineering Section, 26 employees in Administration Section and 22 employees in Health Section. But in practice, there are only 07 employees in Engineering Section, 05 employees in Administration Section and 07 employees in Health, Family Planning and Conservation Section are presently employed in Trishal Pourashava. Besides, there are other reasons also which are out of development management.

CHAPTER-7

CRITICAL PLANNING ISSUES

7.1 TRANSPORT

In Trishal the existing traffic and transportation infrastructures are confined mainly with the existing road network. The project area is served by 93.13 kilometers of roads. Total area covered by road network is about 58.37 acres. Out of the total length of roads 44.47km are pucca, 10.65 km are semi-pucca and 38.01 km are Katcha.

The most critical transport issues of Trishal Pourashava identified from field visits is that the town is divided into two parts leaving in the east and west side. Shutia River acts as an impediment in channelizing traffic to the east and western 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 central part of the Pourashava.

Commercial development occurs only in the central part of the Pourashava. 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 Trishal Pourashava. The entire area of Trishal bazar along them Dhaka-Mymensingh road 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 Trishal 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 bazaar areas are the most congested areas in Trishal Pourashava. From Dhaka-Mymensingh road junction to part of Porabari road (Ashim road) can be consider as congested areas.

Among all the modes the road transport is only available in Trishal Pourashava. The transportation services are also very limited in Trishal 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 Trishal Pourashava. Unfortunately there is no footpath besides any roads of the Trishal Pourashava.

Traffic management system of Trishal 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.

7.2 ENVIRONMENT

The urban environment of the Trishal 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 16 ft to 44 ft and is lower during summer. There is no difficulty of getting drinking water from hand tube wells in rainy season when water table is high. But from March to June during dry season most of the Hand Tube Wells can rarely pump any water. The DPHE is working with other NGOs for investigating drinking water quality. They collect water samples from both newly constructed as well as in operation hand tube wells for investigating the arsenic level and other minerals of ground water.

Another critical environmental issue that can be considered in the planning process of Trishal 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.

7.3 LAND USE CONTROL

The spatial structure and land use pattern of Trishal Pourashava have been mostly the result of natural growth. Urban growth is found in mainly middle portion of the Pourashav and both the side (east & west) of Shutia River. The residential land use covers the major part (14.07%) 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 Trishal 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.

7.4. DISASTER

Trishal is not 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.

Trishal falls under the tornado-free districts of the north-central regions in Bangladesh. Thus it is not 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.

Trishal 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 Trishal is not affected by annual flood, most of the areas of Trishal 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 spillage of Shutia River flowing through the Pourashava in the north-south direction carries huge amount of silt causing decrease in drainage capacity and subsequent inundation of the adjoining areas.

7.5 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 Pourashava Ordinance 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 Trishal 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-8

LAND USE DEVELOPMENT STRATEGIES

8.1 BROAD VIEW OF THE PLAN

Trishal 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.

8.2 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 1983 and Pourashava in 1998, 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 1998 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 Trishal Upazila and other areas beyond the Pourashava.

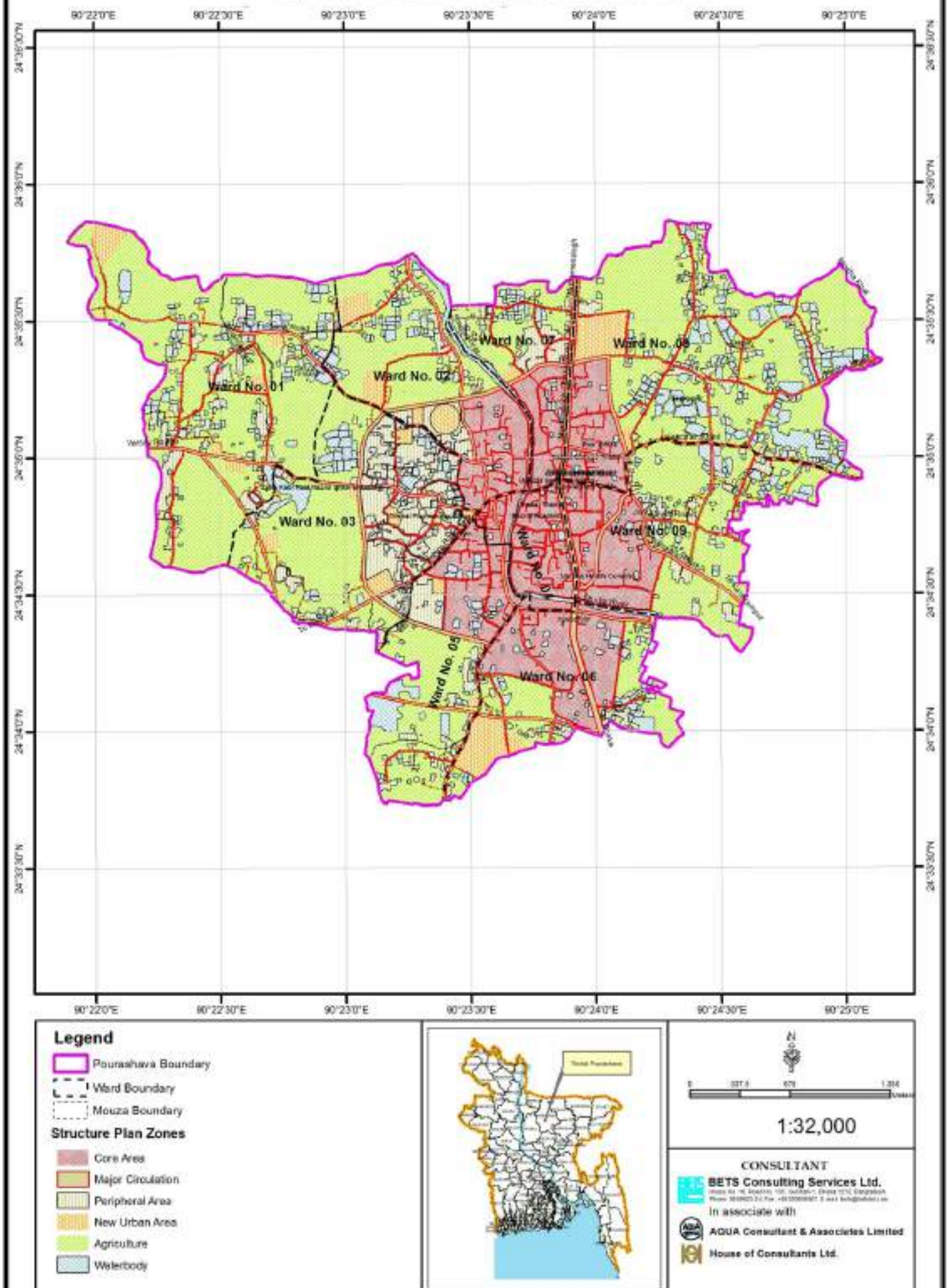
Priority will be accorded to the northern part of Ward.01, north & western part of Ward.02, western portion of Ward.03, south & western part of Ward.05, northern part of Ward.07and the northern & eastern part of Ward.08 where potential areas for accelerating development is available and provision of necessary services will be to some extent cost effective. The areas to be impacted by this strategy have been shown in **Map 8.1** (*Structure Plan Map*) and the policy options have been entailed in the Urban Area Plan. Accord

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. The following 6 (six) categories of policy zoning areas as provided by the PMO of UTIDP (The detailed list is attached in **Appendix-B:** *Policy zoning areas of structure plan*), LGED have been adopted for taking strategic measures and policy prescription which is shown in **Map-8.1** and in **Table-8.1** below.

Table-8.1: Policy Zoning Areas of Structure Plan

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.	1459.191	48.16
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.	481.352	15.89
Major Circulation	Major circulation contains major road network and railways linkage with regional and national settings.	238.413	7.87
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.	124.134	4.10
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.	360.077	11.88
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.	367.020	12.11
Total	-	**3030.187**	**100.00**

Map-8.1 : Structure Plan Map of the Trishal Pourashava



Legend

- Pourashava Boundary
- Ward Boundary
- Mouza Boundary

Structure Plan Zones

- Core Area
- Major Circulation
- Peripheral Area
- New Urban Area
- Agriculture
- Waterbody

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8.3 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-8.1**.

- ***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: Trishal Paurashava, 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.

8.4 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 Trishal 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: Paurashava, 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-9

STRATEGIES AND POLICIES FOR SECTORAL DEVELOPMENT OF THE POURASHAVA

9.1 SOCIO-ECONOMIC SECTORS

9.1.1 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 Trishal Pourashava are 34,747 and 64,877 respectively. The working population is considered as the population of 7-59 years of age. The number of population able to work at present is 17,516 and this figure is anticipated to rise at 33,733 up to year 2031. 50% of the present workforce is currently employed in various economic sectors. If the current trend continues, 50% of the total projected workforce that is 16,867 more employment should be provided for complete eradication of unemployment problem from the Pourashava. The population growth rate 3.17 and projection method of population are assumed to be same in the projection of workforce. The following table shows detail in this regard.

Table- 9.1: Projection of Workforce for the Year 2031

	Existing (2011)	Projected (2031)	Employed Population		Employment Required	
			No.	% of Workforce	No.	% of Projected Workforce (2031)
Total Population	34,747	64,877	8,758	50	16,867	50
Workforce(7-59)	17,516	33,733				

The existing population density of Trishal Pourashava is 11 persons per acre and it is expected that if the plan is implemented properly the density will rise at 21 persons per acre 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:	✓ Ministry of Planning,

Item	Executing Agency
Declare population as one of the most critical sectors of national development	✓ 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: Create well-paid and well-trained grass root level family planning workers for motivational work.	✓ Ministry of Planning, ✓ 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 ✓ Trishal Pourashava
Popu/5: Provide urban services to the peripheral area to enhance settlement in this area	✓ Trishal Pourashava

9.1.2 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 Trishal 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, Fulbaria, Bhaluka, Gaffargaon, Nandail, Ishwarganj 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:	✓Ministry of Industries

Item	Executing Agency
Take measures to channelize remittance to value adding productive sectors.	✓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.	

9.1.3 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-9.2**.

Table-9.2: Projection of Housing

	Base Year(2011)	Projected(2031)
No. of Population	34747	64861
No. of Families	7202	13447
Housing Demand	**6245**	

It is observed that 6245 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 all 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 &C ✓ Trishal 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 &C ✓ Trishal Pourashava

9.1.4 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 ✓ Trishal 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 ✓ Trishal Pourashava

9.1.5 Tourism and Recreational Facilities

Trishal Pourashava is lagging behind the sites of historical importance or recreational facilities to attract the tourists from different places of Trishal 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 theTrishal 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 ✓ Trishal 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 ✓ Trishal Pourashava
Justification: It will create interest in tourism among the people	
Policy-Tourism/3: Ensuring security of both life and assets of the tourists	✓ Trishal Thana ✓ Trishal Pourashava
Justification: The tourists will be assured of their life and belongings in visiting to the Pourashava area	

9.1.6 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 ✓ Trishal 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 ✓ Trishal 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,	✓ Trishal Thana ✓ Police Department (Traffic) ✓ Trishal Pourashava

Item	Executing Agency
arrangement of awareness building program may be an effective measures in this respect.	
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.	✓ Trishal Thana ✓ Trishal Pourashava
Justification: Improved public safety will help to maintain the character of the community	

9.2 PHYSICAL INFRASTRUCTURE SECTOR

9.2.1 Transport

By far, transport is the most important means to revitalize an urban centre. Intra 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.	
Policy-Transport/2: Promotion of efficient road transport facilities between urban centres.	✓ Bangladesh Road Transport Authority (BRTA) ✓ Deputy Commissioner, Mymensingh
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	✓ Trishal 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.	

9.2.2 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 ✓ Trishal 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.	✓ Trishal 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.	✓ Trishal 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 ✓ Trishal 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 ✓ Trishal 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.	

9.2.3 Flood Control and Drainage

The Trishal Pourashava is free from internal flood. Flood caused by overflow of river water (Shutia River) 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 Trishal 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 &C ✓ Trishal 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.	✓ LGRD &C ✓ Trishal 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	

9.3 ENVIRONMENTAL ISSUES

9.3.1 Natural Resource

The Trishal Pourashava is not endowed with many natural resources that can be conserved. Among the meager natural resources it has are, 1471 no's of ponds and ditches (405.32 acres) and 2 natural khals. 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 ✓ Trishal 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.	

9.3.2 Sanitation

There is no sewerage network, only a few sanitary latrines with septic tank and soak pit in Trishal Pourashava. There are 7202 No households within the Pourashava as per national census of 2011. With 3.17%, annual increment the present number of households in Trishal

Pourashava estimated to be 9485Nos. The Pourashava claims that they have achieved to bring 100% of its population under sanitation coverage. 17% of total population uses sanitary latrine with septic tank and soak pit. This section of the population is from government and semi-government offices, schools, colleges, educational institutes, elite residences of the Pourashava etc., 8% of the population uses sanitary latrine with soak pit that covers middle and low income group of the Pourashava. Rest 83% population of the Pourashava uses semi pacca latrines and Katcha.

Strategy:

• All households of Trishal 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 ✓ Trishal Pourashava
Justification: This will provide a proper hygienic sanitation of Trishal 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.	

9.3.3 Hazard

In Trishal 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 Trishal from year 1988 to 2007, the calculated mean annual rainfall stands 2481.09mm. Every year the Trishal Pourashava is either partly or fully inundated by flood. The flood water comes from upstream regions through the Shutia River. The heavy sediment load that carried from upstream by Shutia River 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 ✓ Trishal 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.	✓ Trishal Pourashava

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

9.3.4 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 articles) and industrial sources like brick kiln and cement factories. Fortunately, those are very minor scale in Trishal 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 ✓ Trishal Pourashava
Justification: This will reduce the amount of CO, CO_2, SPM, lead and	

Item	Executing Agency
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 ✓ Trishal 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 ✓ Trishal Pourashava
Justification: This will enhance soil fertility resulting high crop yield and reduce water pollution.	

CHAPTER-10

IMPLEMENTATION ISSUES

10.1 INSTITUTIONAL CAPACITY BUILDING OF THE POURASHAVA

In order to implement the Structure Plan of TrishalPourashava 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: 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 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
- Environmental policy-1992
- Bangladesh National Housing Policy-1993
- National Land Transport Policy-2004

The Pouarashava Authority should exercise the principles, policies and guidelines of 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 Trishal 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: Trishal is a 'A' class Pourashava. For the 'A'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 75 numbers of allocated positions only 19 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.

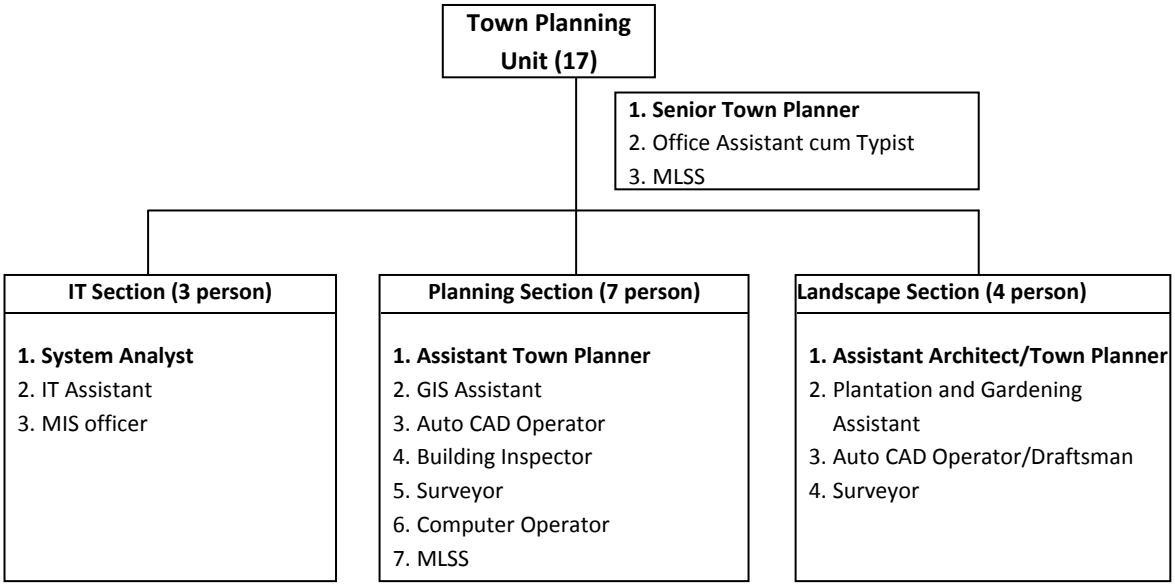


Figure 10.1: Proposed Organogram of the Town Planning Unit

Instrumental capacity: Instrumental capacity of Trishal 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-10.1** as follows.

Table-10.1: The Proposed Instrumental capacity of Trishal Pourashava

Sl.No.	Type of Instrument	Number (Existing)	Number (Required)
1.	Jeep	-	1
2.	Road Roller-10 Tons	1	-
3.	Concrete Mixer Machine	-	1
4.	Truck for garbage collection and disposal-3 Tons	1	1
5.	Leveling Machine	-	1
6.	Van (3 wheel) for garbage collection and disposal	1	4

Sl.No.	Type of Instrument	Number (Existing)	Number (Required)
7.	Hand trolley	1	5
8.	Motor Cycle	1	4
9.	Bicycle	-	4
10.	Photocopier	-	3
11.	Fax Machine	-	1
12.	Computer	1	5
13.	Printer	1	1
14.	Plotter	-	1

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-10.2**):

Table-10.2: Proposed Structure of the Monitoring & Evaluation Committee (MEC)

Sl. No.	Representatives of Different Organizations	Position
1.	Mayor of Trishal 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, Mymensingh	Member
6.	Upazila Engineer, LGED	Member
7.	Assistant Engineer, DPHE, Trishal	Member
8.	Assistant Engineer, RHD	Member
9.	All Councilors of Trishal Pourashava	Member

Trishal 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.

10.2 RESOURCE MOBILIZATION

Trishal 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 Trishal Pourashava can reliably develop a surplus that it can commit to long-term debt repayment:

- can increase own source of 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.

Trishal 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 Trishal Pourshava.

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

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

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

10.3 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

CHAPTER-11

INTRODUCTION

The second tier of UTIDP master Plan package of Trishal 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).

11.1 CONTENT AND FORM OF URBAN AREA PLAN

The Urban Area Plan covers existing urban area of Trishal 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.

11.2 AREA OF URBAN AREA PLAN

The Pourashava area of Trishal 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 Trishal Pourashava covers an area of 3030 acres (As per GIS Database) that is 12.27 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.

11.3 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.

11.4 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 Trishal 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-12

LAND USE PLAN

12.1 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.

12.1.1 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 Trishal Pourashava. Major objectives of Land Use Plan of Trishal 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.

12.1.2 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 **Trishal 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 17/06/2013 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.

12.1.3 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 5th May 1998 by gazette notification was considered. As per notification the area covered 12.27 square kilometers (as per our GIS measurement) but it is mentioned as 15.49 sq.km.in the BBS. It included 9 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 11/05/2010. It discussed in the meeting that the existing area of the Pourashava covers a huge area of 15.49 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.

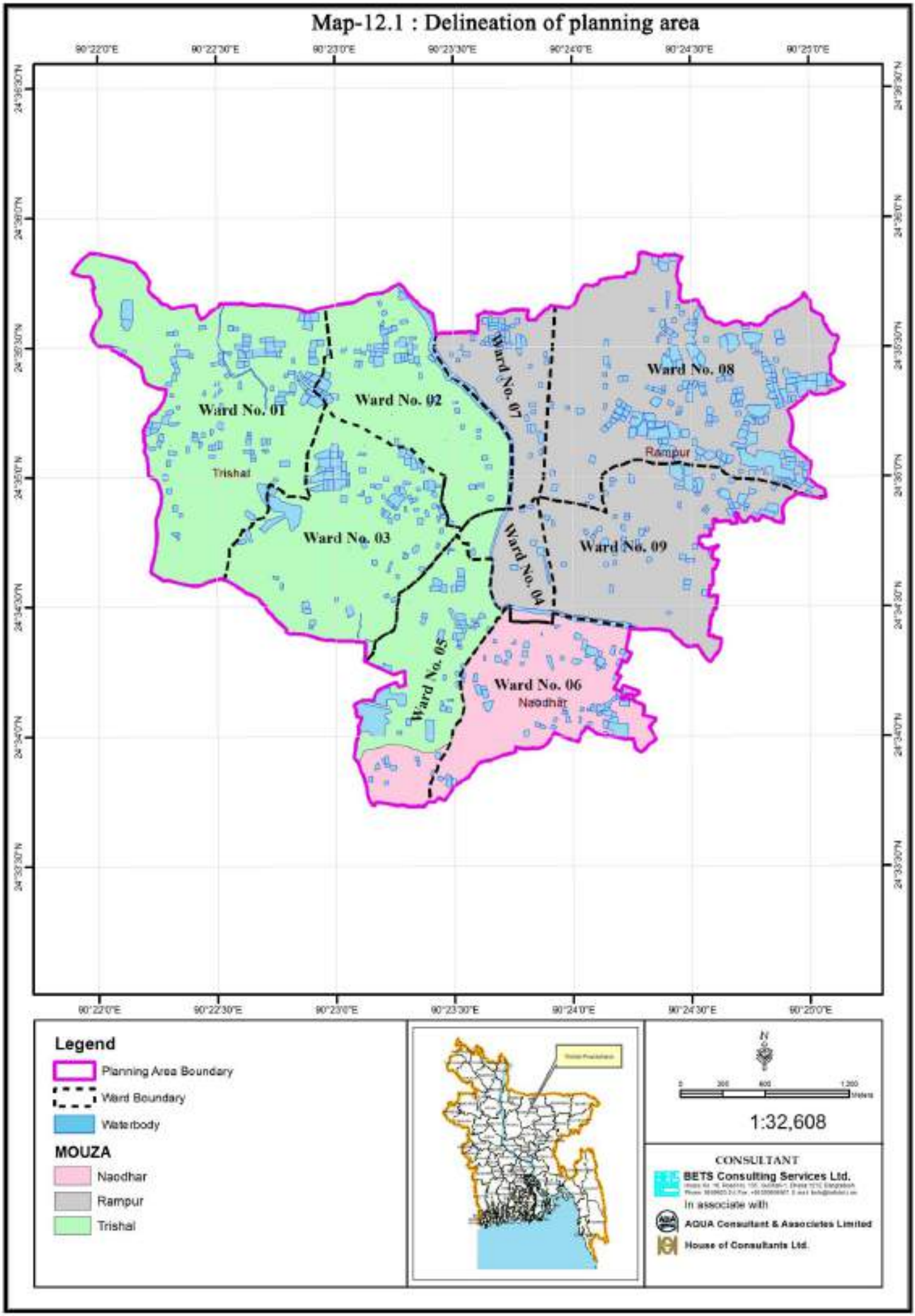
Thus the existing Pourashava area of Trishal considered as the Planning area in the formulation of Structure Plan, Urban Area Plan and Ward Action Plan. The Pourashava area and Planning area has been finalized as same as 12.27 sq.km. There is no difference between the Pourashava area and Planning area. The delineation of planning area supported by the minutes of the pourashava meeting and which shown in **Map-12.1.**

12.1.4 Content and Form of Landuse Plan

The Landuse Plan covers existing urban areas of Trishal 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-12.1 : Delineation of planning area



12.2 EXISTING AND PROJECTED LAND USE

12.2.1 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 middle part of the project area along the both sides Dhaka-Mymensingh Road of Trishal 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 (14.07%) of the project area while overwhelming portion of land of the project area is under agricultural use (67.29%). 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-12.1** and shown in **Map-12.2.**

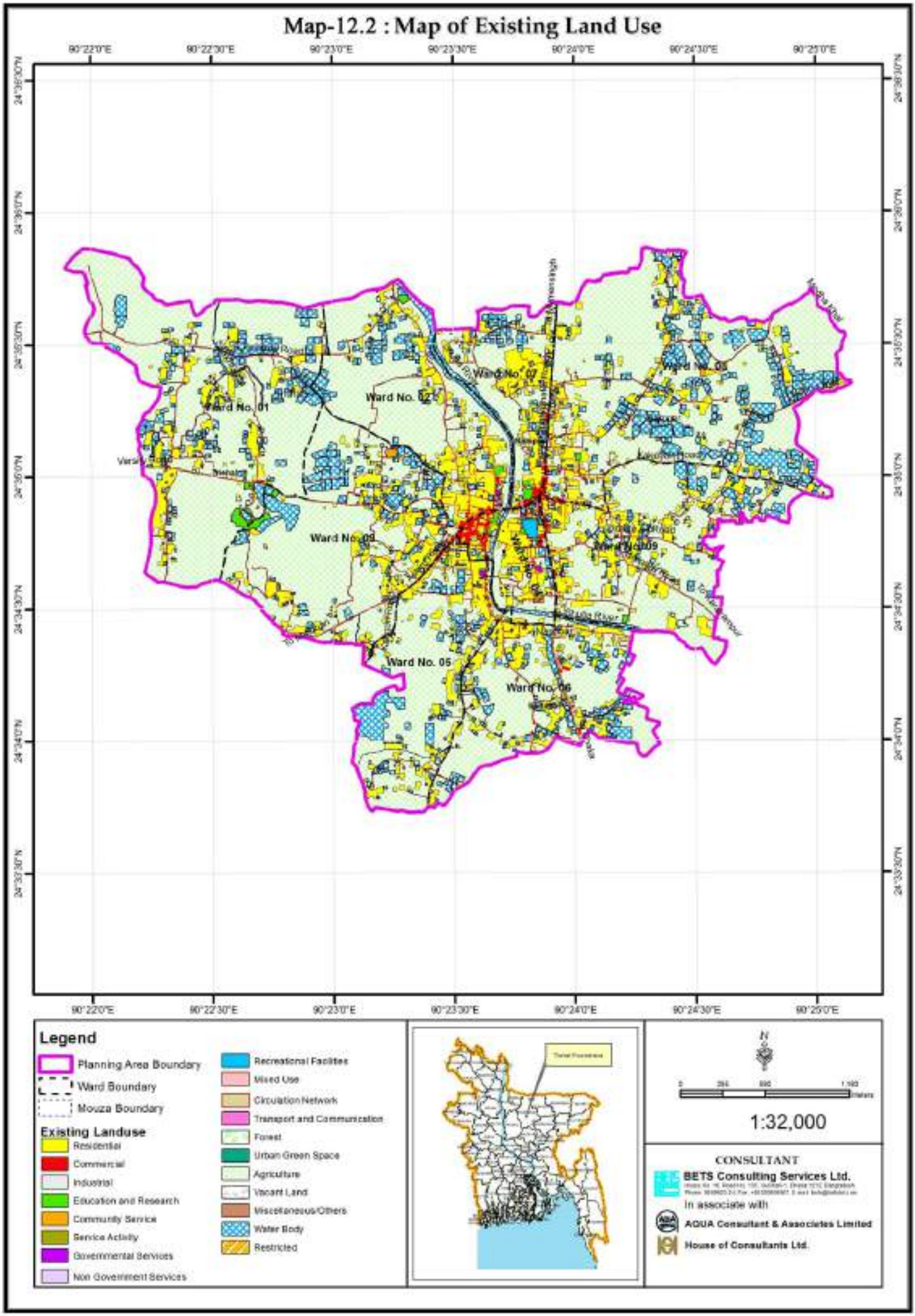
Table-12.1: Existing Landuse of Trishal Pourashava

SL. No.	Land Use	Area in Acres	% of Area
1	Residential	426.67	14.07
2	Commercial	20.65	0.68
3	Industrial/Manufacturing/Processing	4.13	0.14
4	Educational & Research	17.79	0.59
5	Community Service	5.11	0.17
6	Service Activity	2.14	0.07
7	Governmental Services	2.30	0.08
8	Non Government Services	0.62	0.02
9	Recreational Facilities	3.31	0.11
10	Mixed Use	2.72	0.09
11	Circulation Network	58.31	1.92
12	Transport & Communication	0.88	0.03
13	Urban Green Space	0.84	0.03
14	Agricultural	2040.19	67.29
15	Vacant Land	10.77	0.36
16	Miscellaneous/others	-	0
17	Water body	435.46	14.36
18	Restricted Area	0.01	0.00
19	Forest area	-	0
Total		3030.18	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 1998, 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-12.2 : Map of Existing Land Use



12.2.2 Analysis and projection on existing and proposed land uses.

Trishal 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.

Trishal 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 Trishal 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 Trishal Pourashava has been calculated and shown in **Table-12.2.**

Table-12.2: Projected Landuse of the 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		**426.67**	**474.79**	**-**	**648.77**	**-**
General Residential	1.00 acre/ 100 pop.	426.67	474.79	-	648.77	-
Adminstration		0.16	18	17.84	18	17.84
Upazila Complex	15 acres/ Upazila HQ	0.1219	15.00	14.88	15.00	14.88
Pourashava Office	3 acres/ Upazila HQ	0.0381	3.00	2.96	3.00	2.96
Commerce		**20.65**	**57.73**	**37.08**	**76.86**	**56.21**
Wholesale Market	1.00 acre/ 10000 pop.	0	4.75	4.75	6.49	6.49
Retail sale Market	1.00 acre/1000 pop.	19.99	47.48	27.49	64.88	44.89
Neighborhood Market	1.00 acre/ Neighborhood market	0	4.00	4.00	4.00	4.00
Super Market	1.50 acres/ super market	0.659	1.50	0.84	1.50	0.84
Industry	2.00 acres/ 1000 pop.	**3.813**	**94.96**	**91.15**	**129.75**	**125.94**
Education		**20.59**	**71.47**	**52.15**	**95.83**	**76.51**
Primary School	2.00 acres/ 5000 pop.	0.9571	18.99	18.03	25.95	24.99
Secondary School	5.00 acres/ 20000 pop.	1.367	11.87	10.50	16.22	14.85
College	10.00 acres/ 20000 pop.	6.764	23.74	16.98	32.44	25.67

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)
Vocational Inistitute	5.00 acres/upazila	6.274	5.00	-	5.00	-
Others (Madrasa)	5.00 acres/ 20000 pop.	5.228	11.87	6.64	16.22	10.99
Health Facilities		**0.80**	**19.50**	**18.70**	**22.98**	**22.18**
Upazila Health Complex/ Hospital	10 acres/ Upazila HQ	0.69	10.00	9.31	10.00	9.31
Health Center/ Maternity Clinic	1.00 acre/ 5000 pop.	0.105	9.50	9.39	12.98	12.87
Open Space/ Recreation		**0.11**	**110.27**	**111.40**	**148.11**	**147.17**
Playground	3.00 acres/ 20000 pop.	0	7.12	8.36	9.73	8.90
Park/ Open space	1.00 acre/ 1000 pop.	0	47.48	47.48	64.88	64.88
Neighborhood Park	1.00 acre/ 1000 pop.	0	47.48	47.48	64.88	64.88
Stadium	7 acres/upazila HQ	0	7.00	7.00	7.00	7.00
Cinema	0.5 acre/ 20000 pop.	0.1055	1.19	1.08	1.62	1.52
Community Facilities		**1.793**	**13.68**	**8.79**	**17.60**	**10.97**
Mosque/ Temple/ Church	0.50 acre/ 20000 pop.	1.4693	1.19	-	1.62	-
Eidgah	0.50 acre/ 20000 pop.	0.002	1.19	-	1.62	-
Graveyard	1.00 acre/ 20000 pop.	0.179	2.37	-	3.24	-
Community Center	1.00 acre/ 20000 pop.	0	2.37	2.37	3.24	3.24
Police Station	3 acres/ Upazila HQ	0.1143	3.00	2.89	3.00	2.89
Fire Service Station	1.00 acre/ 20000 pop.	0	2.37	2.37	3.24	3.24
Post Office	0.50 acre/ 20000 pop.	0.0284	1.19	1.16	1.62	1.59
Utility Services		**0.2103**	**19.06**	**18.85**	**22.10**	**21.89**
Telephone/ Telegraph Exchange	0.50 acre/ 20000 pop.	0.0539	1.19	1.13	1.62	1.57
Electric sub-station	1.00 acre/ 20000 pop.	0.0479	2.37	2.33	3.24	3.20
Water Supply	1.00 acre/ 20000 pop.	0.1012	2.37	2.27	3.24	3.14
Gas	1.00 acre/ 20000 pop.	0.0073	2.37	2.37	3.24	3.24
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		**0.103**	**4.75**	**4.64**	**6.49**	**6.38**
Bus Terminal	1.00 acre/ 20000 pop.	0.103	2.37	2.27	3.24	3.14
Truck Terminal	0.50 acre/ 20000 pop.	0	1.19	1.19	1.62	1.62
Tempoo Stand	0.25 acre/ 20000 pop.	0	0.59	0.59	0.81	0.81
Rickshaw Stand	0.25 acre/ 20000 pop.	0	0.59	0.59	0.81	0.81
Roads	15% of the built-up land	**58.31**	**81.80**	**23.49**	**81.80**	**23.49**
Urban Deferred	10% of the total built-up area	**0**	**54.53**	**54.53**	**54.53**	**54.53**

12.2.3 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 426.67 acres. Residential uses are mostly concentrated on central part of Pourashava area. The projected population of the Pourashava is expected to be 47,479 in the year 2021 and 64,877 in the year 2031. The net density of population is at present 11 persons/acre which is very low compared to the planning standard. If the current trend of population continues, the projected density is anticipated as 16 persons/acre in the year 2021 and 21 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 474.79 for 2021 and 648.77 for 2031 which is lower than the existing residential land. The existing residential area is proposed to be splited into two distinct type of residential uses e.g. Urban Residential Zone (250.07 acre) and Rural Settlement (260.62 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 20.65 acres of land in the project area, which is insufficient covering only about 0.68% of the total land. Considering planning standards and projected population it is notified that 76.87 acres of land is required for commercial development which is 2.54% 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.

Due to scarcity of land in the built-up part it was not possible to follow the standard and only 56.22 acres of land has been newly proposed in addition to the existing commercial land. 3 nos of neighbourhood market comprising 3.1757 acres of land, 1(one) wholesale market of 5.1803 acres land and 1 (one) Super Market of 1.1008 acres land is proposed as commercial land use.

Water body

The third highest land use category is water body. In all 435.46 acres of land are covered by water bodies which represents about 14.36% 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 proposed 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.

Agricultural Land Use

The major portion of land of the project area is under agricultural use. Total land under agricultural use is 2040.19 acres which is 67.29% of the land. These areas have distinct rural character. Agricultural land of 1539.36 acres, which is 50.77% 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 55.64 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 1.92% land of the project area. Total area under this use amounts to 58.31 acres. The main circulation network is road. The projected area for circulation network use is estimated as 85.45 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 237.72 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 0.59% of the project area that covered 17.79 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 91.84 acres comprising of about 3.03% 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 95.83 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 4.13 acres of land and which is only 0.14% of the total land of the project area. Rice mils are the main industry of Trishal Pourashava which cover almost full part of this category. As per standard (1.50acres/1000 population), 63.76 acres of land is required for industrial activity. A general industrial zone of additional 23.27 acres of land and a heavy industrial zone of 24.12 acre land is proposed for advancement of industrial activity and generation of employment opportunity for the Pourashava inhabitants.

Transportation Facilities

A total of 0.88 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 6.48 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 0.84 acres covering 0.03% of the total area. Additional 109.08 acres of land is proposed 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. It includes central park, children's park, playground and other outdoor recreational facilities.

Recreational Use (Indoor Recreation)

Presently there are 2 (two) numbers of cinema hall comprising 0.212 acres of land for indoor recreational facilities to meet the requirement of such purpose. However, 1.08 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 0.80 acres of land is used for Health services in the Pourashava. According to planning standard, total 19.50 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, Upazila HQ have sufficient land to support the Pourashava. Furthermore, two community hospitals are proposed within the Pourashava with 4.143 acres of land.

Utility Services

The existing land under utility services are 0.210 acre, which is not sufficient. According to planning standard, total 19.06 acres of land is projected for future use up to year 2021. Total 14.551 acres of land is proposed for Utility services to serve the projected population up to year 2021. It includes public toilets, waste disposal ground, waste transfer stations, fire service station, pump house and overhead tank.

Community Facilities

Currently 1.793 acres of land is used as community facilities. According to planning standard, total 13.68 acres of land is projected for future use up to year 2021. Total 2.913 acres of land is proposed for Utility services to serve the projected population up to year 2021. It includes 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. A total of 62.786 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 an Upazila Headquarters, Gaffargaon 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 inhabitants of the entire Upazila. Total land under government office use is 2.432 acres.

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 2.789 acres that is 0.09% of the total area has been designated as miscellaneous use.

12.2.4 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 -12.2**.

12.3 LAND USE PROPOSALS

12.3.1 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.

12.3.2 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-12.3** (List of Development Proposals) with detailed plot schedule and shown in **Map-12.3**. After that proposed general land use map was prepared and the details are shown in **Table-12.4** (Proposed general Land Use) and **Map-12.3 (**Land Use Plan Map) below. Detailed plot schedule of General Land Use has been listed in **Appendix-C:** *Development Proposal with plot schedule*.

Table-12.3: List of Development Proposals

ID	Name of Proposal	Location	Ward No.	Area (Acre)	Mouza Schedule	
					Mouza	Plot No.
BT	Bus Terminal	Beside Dhaka-Mymensingh Highway	Ward No. 06	1.620	Naodhar	261-268, 378, 380-382, 594, 595
CP	Central Park	West margin of Ward No. 07and on the east bank of Shutia river	Ward No. 07	10.750	Rampur	179-184, 215-220, 226-230, 934-936
ED	Eidgah	Beside Fulbaria road and north margin of Ward No.03	Ward No. 03	1.639	Trishal	1694-1696
FS	Fire Service Station	Beside Mymensingh Road	Ward No. 07	1.530	Rampur	193, 196-198
GY-1	Graveyard	Beside Fulbaria road and adjacent to proposed Eidgah	Ward No. 03	1.007	Trishal	1693-1695

ID	Name of Proposal	Location	Ward No.	Area (Acre)	Mouza Schedule	
					Mouza	Plot No.
GY-2	Graveyard	South-east corner of Ward No.08	Ward No. 08	0.267	Rampur	1576
Hos-01	Hospital	North side of Graveyard	Ward No. 02	2.015	Trishal	917-919, 954-957, 1956
Hos-02	Hospital	East side of Karigari College Road	Ward No. 05	2.126	Trishal	2166-2170, 2476, 2140-2143, 2146,
HS-1	High School	Central part of Ward No.01and west of Shukuni khal	Ward No. 01	3.026	Trishal	454-602, 612, 613, 975, 976
HS-2	High School	Southern part of Ward No.06 and west of Dhaka-Mymensingh road	Ward No. 06	3.057	Naodhar	312-314, 325-329, 344-346, 349
IZ-1	General Industrial Zone	West margin of Ward No.08	Ward No. 08	23.530	Rampur	353, 357-373, 375-382, 384, 402, 572-577, 579, 1352, 1371
IZ-2	Heavy Industrial Zone	Southern margin of Ward No.06	Ward No. 06	24.027	Naodhar	65, 67-80, 152-170, 590
LPP	Land for Poor People	Northern margin of Ward No. 02	Ward No. 02	9.222	Trishal	138, 139, 142-144, 149, 151, 182-191, 355, 356, 965
NM-1	Neighbourhood Market	Beside Varsity road and west of Varsity	Ward No. 01	1.098	Trishal	1100-1102, 1568
NM-2	Neighbourhood Market	Eastern margin of Ward No.05 beside Sekandar Ali road	Ward No. 05	1.059	Trishal	2422-2426
NM-3	Neighbourhood Market	Central part of Ward No.08	Ward No. 08	1.015	Rampur	334, 340
NP-1	Neighbourhood Park	South-western part of Ward No.03	Ward No. 03	3.172	Trishal	1350, 1353, 1355, 1372-1377, 1379
NP-2	Neighbourhood Park	Southern margin of War No.06	Ward No. 06	3.139	Naodhar	169-173
NP-3	Neighbourhood Park	South-west corner of Ward No.	Ward No. 09	3.246	Rampur	1089, 1107- 1113
					Naodhar	99999
OH	Old Home	South-west margin of Ward No.04 on the bank of Shutia river	Ward No. 04	0.531	Rampur	181
OHT-01	Overhead Tank	North side of Graveyard	Ward No. 02	0.237	Trishal	709, 710
OHT-02	Overhead Tank	Beside Sekandar Ali Road	Ward No. 06	0.213	Nowdhar	12, 13
OHT-03	Overhead Tank	West of Warid Tower	Ward No. 08	0.231	Rampur	738, 709, 737, 708
PA-01	Parking Area	Beside land office	Ward No. 03	0.885	Trishal	1915, 1917, 1918
PA-02	Parking Area	East side of Awami League Party Office	Ward No. 09	0.674	Rampur	879, 901, 906-910
PG-01	Playground	West side of Nazrul Memorial Govt. Primary School	Ward No. 01	1.280	Trishal	1570-1572, 1589
PG-02	Playground	East side of Dhani road	Ward No. 02	1.251	Trishal	869, 870, 930-932
PG-03	Playground	South side of Varsity Road	Ward No. 03	1.280	Trishal	1820, 1821, 1823, 1824
PG-04	Playground	East of Upazila Health Complex	Ward No. 04	0.998	Rampur	1089, 1108
PG-05	Playground	East side of Porabari Road	Ward No. 05	1.016	Trishal	2169, 2171, 2172, 2176
PG-06	Playground	East of Bhatipara Govt. Primary School	Ward No. 06	1.096	Nowdhar	286-291, 294, 295
PG-07	Playground	West of Mozahirul Islam Hafezia Madrasha	Ward No. 07	1.157	Rampur	175, 177-179

ID	Name of Proposal	Location	Ward No.	Area (Acre)	Mouza Schedule	
					Mouza	Plot No.
PG-08	Playground	North of Citycell Tower	Ward No. 08	1.019	Rampur	708, 710-714, 735, 781
PG-09	Playground	Beside Majhipara Road	Ward No. 09	1.040	Rampur	1007-1012
PH-01	Pump House	North side of Graveyard	Ward No. 02	0.140	Trishal	709, 710, 708, 735
PH-02	Pump House	Beside Sekandar Ali Road	Ward No. 06	0.132	Nowdhar	12
PH-03	Pump House	West of Warid Tower	Ward No. 08	0.116	Rampur	708, 709
PS	Primary School	Beside Fulbaria road and east of shukni khal	Ward No. 01	2.113	Trishal	209, 345, 428-431, 436, 437, 646
PT-1	Public Toilet	Beside Porabari roadad acent to proposed Tempo Stand	Ward No. 03	0.013	Trishal	1782
PT-2	Public Toilet	Beside Varsity road	Ward No. 03	0.013	Trishal	1892, 1894, 1902
PT-3	Public Toilet	Beside Dhaka-Mymensingh road	Ward No. 06	0.013	Naodhar	240, 272, 273, 278
PT-4	Public Toilet	Beside Dhaka-Mymensingh road	Ward No. 06	0.013	Naodhar	356, 361
PT-5	Public Toilet	East margin of Ward No.07 beside Dhaka-Mymensingh road	Ward No. 07	0.018	Rampur	200
PT-6	Public Toilet	Beside Balipara road	Ward No. 09	0.036	Rampur	873, 1183, 1183
RZ	Resettlement Zone	Beside Fulbaria road and south margin of War No.02	Ward No. 02	8.049	Trishal	419, 710-721, 723-726, 729, 733-735
SH	Slaughter House	South side of Varsity Road	Ward No. 03	0.561	Trishal	1895, 1896, 1900
SM	Super Market	Central part of Ward No.03 beside Varsity road	Ward No. 03	1.161	Trishal	1512, 1533, 1536, 1537, 1752, 1754
ST	Stadium	In between Fulbaria road and Dhani road	Ward No. 02	7.945	Trishal	921-927, 929, 951-953, 1952, 1953, 1957-1961
TS-1	Tempo Stand	Beside Porabari road	Ward No. 03	0.281	Trishal	1782
TS-2	Tempo Stand	Beside Dhaka-Mymensingh road	Ward No. 06	0.275	Naodhar	355, 356, 361, 362
TS-3	Tempo Stand	Beside Dhaka-Mymensingh road	Ward No. 07	0.297	Rampur	193, 200
TS-4	Tempo Stand	Beside the junction of Balipara road & Jummat Ali road	Ward No. 09	0.245	Rampur	1182, 1183
TT	Truck Terminal	Beside Dhaka-Mymensingh road	Ward No. 06	1.109	Naodhar	240, 266, 267, 269-273, 378
WC-01	Ward Centre	West side of Nazrul Memorial Govt. Primary School	Ward No. 01	1.362	Trishal	1103, 1105-1107, 1568, 1570, 1589
WC-02	Ward Centre	East side of Dhani road	Ward No. 02	1.019	Trishal	928, 932, 948-950
WC-03	Ward Centre	South side of Varsity Road	Ward No. 03	1.040	Trishal	1724, 1822-1825
WC-04	Ward Centre	East of Upazila Health Complex	Ward No. 04	0.857	Rampur	1089-1091
WC-05	Ward Centre	East side of Porabari Road	Ward No. 05	1.028	Trishal	2169, 2170, 2171
WC-06	Ward Centre	East of Bhatipara Govt. Primary School	Ward No. 06	0.763	Nowdhar	287, 290-294, 350
WC-07	Ward Centre	West of Mozahirul Islam Hafezia Madrasha	Ward No. 07	1.080	Rampur	121, 179
WC-08	Ward Centre	North of Citycell Tower	Ward No. 08	1.103	Rampur	714-717, 735
WC-09	Ward Centre	Beside Majhipara Road	Ward No. 09	0.753	Rampur	1000, 1011-1014

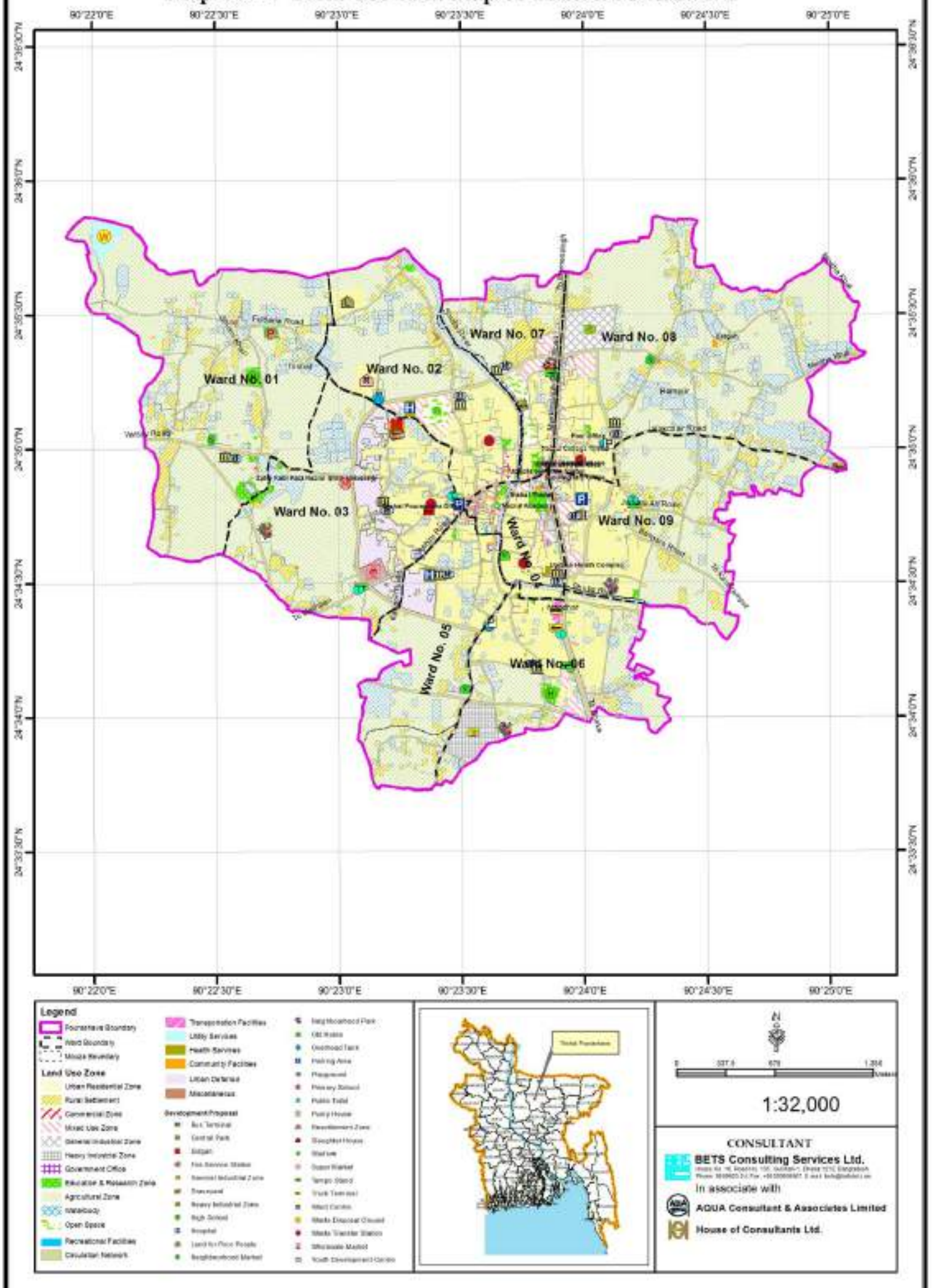
ID	Name of Proposal	Location	Ward No.	Area (Acre)	Mouza Schedule	
					Mouza	Plot No.
WDG	Waste Disposal Ground	North-west margin of Ward No. 01	Ward No. 01	10.803	Trishal	7-18, 41, 44-47, 50, 51, 979, 980
WM	Wholesale Market	South-eastern part of Ward No.03 beside Ashin road	Ward No. 03	5.209	Trishal	1778-1790
WTS-1	Waste Transfer Station	South-east part of Ward No.02 and west of Shutia river	Ward No. 02	0.259	Trishal	1984, 1985
WTS-2	Waste Transfer Station	Eastern part of Ward No.03	Ward No. 03	0.261	Trishal	1896, 1900
WTS-3	Waste Transfer Station	Southern part of Ward No. 04	Ward No. 04	0.280	Rampur	1083
WTS-4	Waste Transfer Station	South-west corner of Ward No.08	Ward No. 08	0.245	Rampur	889, 891, 892
YDC	Youth Developmen t Center	Beside Ashim road	Ward No. 03	0.509	Trishal	1852, 1853, 1854, 1855

Table-12.4: Proposed General Land Use

Sl No.	Landuse Type	Illustrates	Area (acre)	%
1	Agricultural Zone	Agricultural land denotes the land suitable for agricultural production, both crops and livestock.	1459.191	48.16
2	Circulation Network	Road and Rail communication	238.413	7.87
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.	21.765	0.72
4	Community Facilities	All community facilities including funeral places and other religious uses	7.391	0.24
5	Education & Research Zone	All kinds of educational institutes	28.510	0.94
6	General Industrial Zone	Green and Orange A categories as per The Environment Conservation Rules, 1997	27.345	0.90
7	Government Office	All Government Offices	2.432	0.08
8	Health Services	All Hospitals, clinics and diagnostic center	4.936	0.16
9	Heavy Industrial Zone	Other toxic and pollutions Industries (Orange B and Red categories as per the Environment Conservation Rules, 1997)	24.027	0.79
10	Miscellaneous	Any other categories, which are not related to other 23 categories	2.789	0.09
11	Mixed Use Zone	Mixed land use refers to the area without a dominant land use or, multiuse	62.786	2.07
12	Open Space	Playground, Botanical Garden, Stadium, Zoo etc.	38.387	1.27
13	Recreational Facilities (Indoor Recreation)	Indoor based facilities with designated building structure i.e. Cinema Hall, Theater Hall etc.	0.214	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.	0.014	0.00
15	Rural Settlement	Rural settlement includes the low dense residential area, which is scattered and rural in nature.	191.396	6.32
16	Transportation	This category includes airport, bus terminal/ stand,	5.891	0.19

SI No.	Landuse Type	Illustrates	Area (acre)	%
	Facilities	ferry ghat, filling station, garage, launch terminal, post office, passenger shed, telephone exchange, ticket counter, transport office etc.		
17	Urban Deferred	Urban reserved area for future development	63.804	2.11
18	Urban Residential Zone	It includes high dense residential area	469.010	15.48
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.	14.865	0.49
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	367.020	12.11
Grand Total			**3030.187**	**100**

Map-12.3 : Land Use Plan Map of Trishal Pourashava



12.3.3 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 Trishal 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. Trishal 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-D:** *Permitted land use*.

12.4 PLAN IMPLEMENTATION STRATEGY

12.4.1 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) Act, 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) Act, 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).

12.4.2 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-12.5**. 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-12.5: Phasing of Development Proposals

Phase-I (2011-2016)		
ID	**Name of Proposal**	**Ward No.**
BT	Bus Terminal	Ward No 06
PS	Primary School	Ward No 01
SM	Super Market	Ward No 03
HS-2	High School	Ward No 06
NM-2	Neighbourhood Market	Ward No 05
GY-1	Graveyard	Ward No 03
NP-1	Neighbourhood Park	Ward No 03
NP-3	Neighbourhood Park	Ward No 09
WDG	Waste Disposal Ground	Ward No 01
PT-01	Public Toilet	Ward No 03
PT-02	Public Toilet	Ward No 03
PT-04	Public Toilet	Ward No 06
PT-05	Public Toilet	Ward No 07
PT-06	Public Toilet	Ward No 09
WTS-1	Waste Transfer Station	Ward No 02
WTS-2	Waste Transfer Station	Ward No 03
WTS-3	Waste Transfer Station	Ward No 04
WTS-4	Waste Transfer Station	Ward No 08
TS-1	Tempo Stand	Ward No 03
TS-2	Tempo Stand	Ward No 06
TS-3	Tempo Stand	Ward No 07
WC-02	Ward Centre	Ward No 02
WC-04	Ward Centre	Ward No 04
WC-06	Ward Centre	Ward No 06
WC-07	Ward Centre	Ward No 07
WC-09	Ward Centre	Ward No 09
PG-02	Playground	Ward No 02
PG-04	Playground	Ward No 04
PG-06	Playground	Ward No 06
PG-07	Playground	Ward No 07
PG-09	Playground	Ward No 09
PH-03	Pump House	Ward No 08
OHT-03	Overhead Tank	Ward No 08
PA-02	Parking Area	Ward No 09
SH	Slaughter House	Ward No 03

Phase-II (2016-2021)		
ID	**Name of Proposal**	**Ward No.**
ST	Stadium	Ward No 02
NP-2	Neighbourhood Park	Ward No 06
PT-03	Public Toilet	Ward No 06
YDC	Youth Development	Ward No 03
ED	Eidgah	Ward No 03
CP	Central Park	Ward No 07
HS-1	High School	Ward No 01
IZ-1	Heavy Industrial Zone	Ward No 06
IZ-2	General Industrial Zone	Ward No 08
LPP	Land for Poor People	Ward No 02
NM-1	Neighbourhood Market	Ward No 01
NM-3	Neighbourhood Market	Ward No 08
OH	Old Home	Ward No 04
RZ	Resettlement Zone	Ward No 02
GY-2	Graveyard	Ward No 08
TS-4	Tempo Stand	Ward No 09
TT	Truck Terminal	Ward No 06
WM	Wholesale Market	Ward No 03
WC-01	Ward Centre	Ward No 01
WC-03	Ward Centre	Ward No 03
WC-05	Ward Centre	Ward No 05
WC-08	Ward Centre	Ward No 08
PG-01	Playground	Ward No 01
PG-03	Playground	Ward No 03
PG-05	Playground	Ward No 05
PG-08	Playground	Ward No 08
PH-01	Pump House	Ward No 02
OHT-01	Overhead Tank	Ward No 02
PH-02	Pump House	Ward No 06
OHT-02	Overhead Tank	Ward No 06
PA-01	Parking Area	Ward No 03
Hos-01	Hospital	Ward No 02
Hos-02	Hospital	Ward No 05
FS	Fire Service Station	Ward No 07

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-13

TRANSPORTATION AND TRAFFIC MANAGEMENT PLAN

13.1 INTRODUCTION

13.1.1 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, railway 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 Trishal Pourashava connects Mymensingh district head quarterand Dhaka . The Shutia river divides the Trishal Pourashava in East-West part. Most of the offices are located in the central area of the Pourashava, whereas the educational institutions are scatteredly distributed all over the Pourashava. All markets and shopping centers are placed along the road sides and especially western part of Shutia river.

The project area is served by 93.13 kilometers of roads. Total area covered by road network is about 58.37 acres. Out of the total length of roads 44.47 km are pucca, 10.65 km are semi-pucca and 38.01 km are Katcha.

There are major road e.g. Dhaka-Mymensingh road, Bus stand - Asim road, Bus stand - Baliapara road, Cattle Market – University road.Not a single rail link is situated yet. 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.

13.1.2 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:

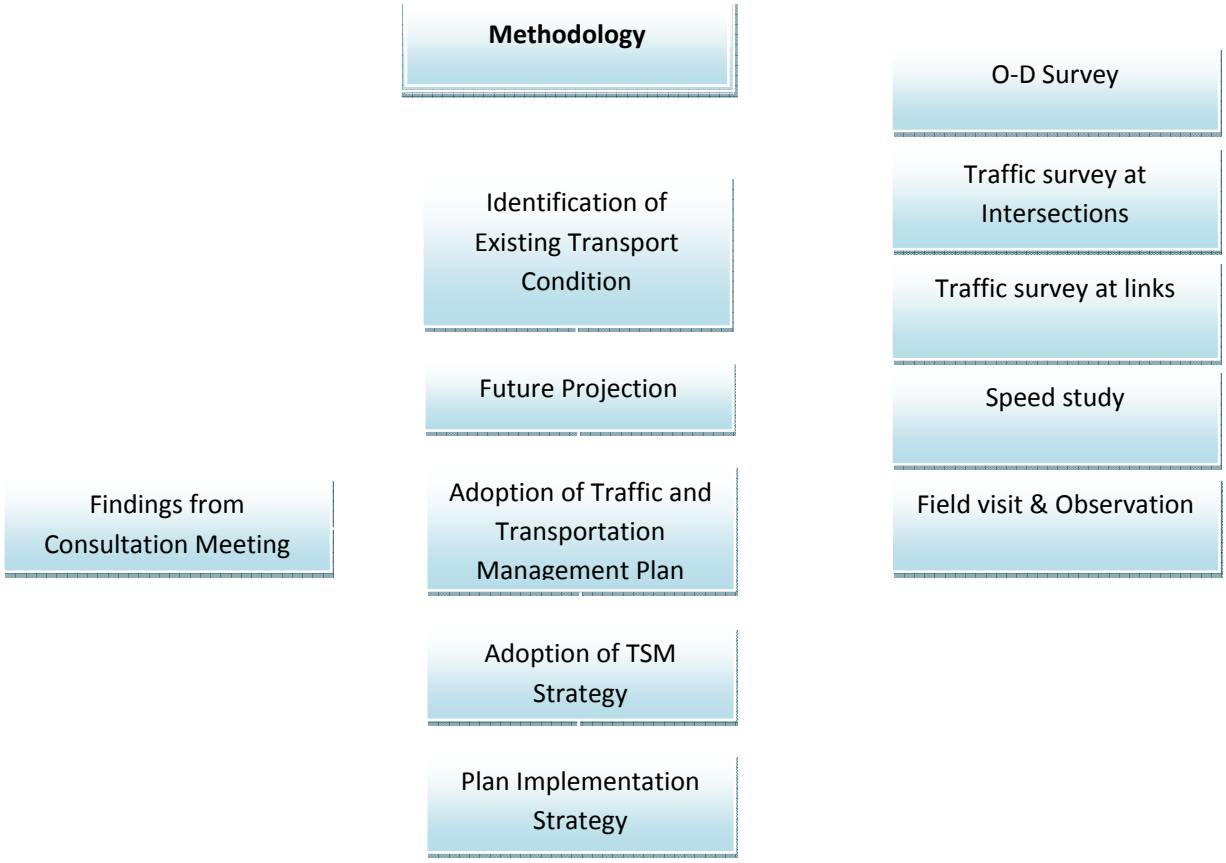


Figure- 13.1: Flow Chart of the Methodology

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.

13.2 EXISTING CONDITIONS OF TRANSPORTATION FACILITIES

13.2.1 Roadway Characteristics and Functional Classification

The road hierarchy of Trishal Pourashava is limited to National Highway, Feeder Road Type-A (District Roads), Feeder Road Type-B and Rural Roads (Category R1, R2 & R3) only.

According to the Rural Infrastructure Strategy Study '96 of World Bank & Planning Commission the Road hierarchy of Bangladesh are categorized as illustrated in in **Table 13.1**.

Table 13.1: 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;
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 Trishal 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-13.2** below:

Table 13.2: Inventory of Some Major Roads at Trishal Pourashava

Sl. No.	Name of Major Roads	Road Hierarchy	Width (m)	Total Length (km)	Classification of road as		
					Pucca	Semi-	Kutcha
1.	Dhaka-Mymensingh	National Highway	3.4	3.1	√		
2.	Balipara Road	Feeder Road Type-A	5.60	1.80	√		
3.	Karigori College Road	Rural Road Class 1 (R1)	3.30	0.61	√		
4.	Varsity Road	Rural Road Class 1 (R1)	4.00	2.35	√		
5.	Porabari Road	Feeder Road Type-B	5.80	1.98	√		

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

13.2.2 Traffic Pattern

The traffic pattern of Trishal 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

- Car/Jeep
- Bus
- Micro-bus
- Mini-bus
- Truck
- Bhodvodi
- Auto-
- Motor cycle

Non-Motorized Traffic

- Cycle Rickshaw
- Rickshaw van
- Animal/push cart
- Bi-cycle

It was revealed from traffic volume survey that non-motorized traffic comprises 57.27% of the total volume and the remaining 42.73% is composed of motorized traffic. Thus Non-

motorized traffic (NMT) should be considered as a major issue in formulating traffic and transportation management plan.

13.2.3 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.

Bus Stand Intersection at Mymensingh Link the most important intersection of the Trishal Pourashava. Almost all mode of traffic is found at this intersection. Bus Stand Intersection at Dhaka Link is another important intersection where most of the traffic including through traffic is observed to ply over.

The peak hour and off-peak hour volume of motorized (MT) and non-motorized traffic at both intersections has been presented in **Table-13.3** below.

Table-13.3: Peak and Off-Peak Hour Traffic Volume at Major Intersections

Peak/ Off-Peak	Day time	Duration	Traffic Volume			
			Bus Stand Mor		College Mor	
			MT	NMT	MT	NMT
Peak	Morning	9:00 AM-10:00	277	170	312	190
	Evening	4:00 PM-5:00 PM	379	133	414	154
off-Peak	Morning	6:00 AM-7:00 AM	450	193	485	214
	Evening	11:00 PM-12:00	229	25	264	46

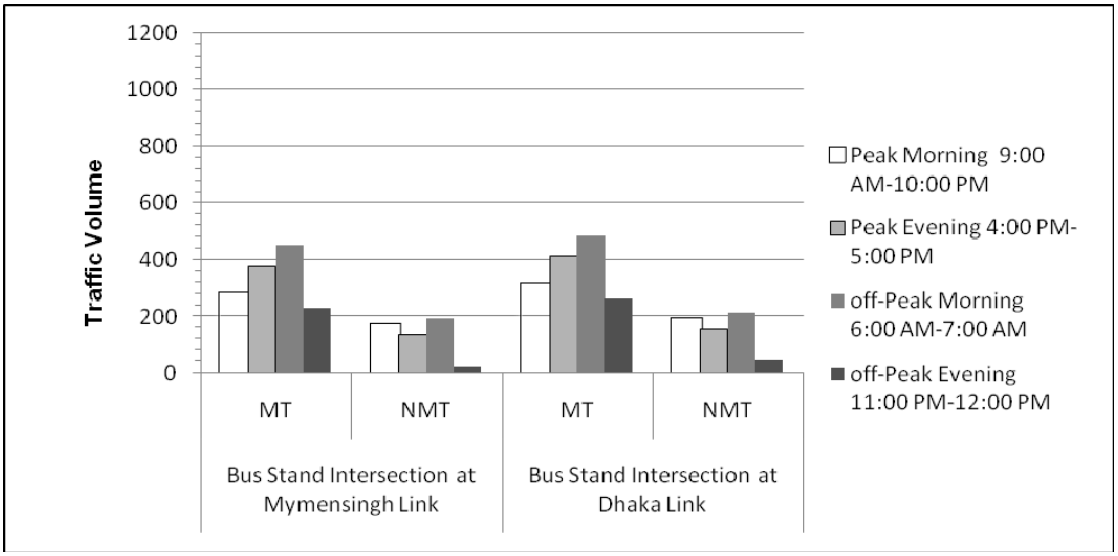


Figure-13.2: Composition of Peak/Off-Peak Traffic Volume at two Intersections

13.2.4 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.

Trishal Degree College Mor is are the most congested areas in Trishal Pourashava. The entire area from Trishal Degree College Mor to Varsity Road Mor 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 Trishal, where Non-motorized traffic comprises about sixty percent volume, assessment of Level of Service (LOS) is not requisite in the formulation of Traffic and Transportation Management Plan.

13.2.5 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 Trishal Pourashava.

13.2.6 Analysis of Existing Deficiencies

Like any other upazila town, Trishal 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.

13.2.6.1 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-13.4** below.

Table-13.4: List of Narrow Roads

Sl No.	Road Name	Road Hierarchy	Avg. Width (m)	Length (km)	Type
1	Fulbaria Road	Rural Road Class 3 (R3)	4.50	3.58	Pucca
2	Varsity Road	Rural Road Class 1 (R1)	4.00	2.35	Pucca
3	Asim Road	Feeder Road Type-B	5.80	1.98	Pucca
4	Sekandar Chairman Bari Road	Rural Road Class 3 (R3)	3.00	1.45	Pucca
5	Balipara Road	Feeder Road Type-A	5.60	1.80	Pucca
6	Karigori Road	Rural Road Class 1 (R1)	3.30	0.61	Pucca
7	Kakchair Road	Rural Road Class 3 (R3)	3.00	1.96	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. These are Bus Stand intersection and Asim Road Intersection. 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.

13.2.6.2 Operational Safety, Signal and other Deficiencies

Like any other upazila town, which is beyond the regional and national movement directly, Trishal 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.

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

There is no railway network in Trishal Pourashava. Although there is a river (Shutia) within the jurisdiction area of Trishal Pourashava yet it is not navigable throughout the year. Two numbers of canals are found here, which have also insufficient water. So, there is no water transportation within this Pourashava. There is no air transport facility in Trishal, for air travelling the people of Trishal depending upon the Capital City of Dhaka.

13.3 FUTURE PROJECTIONS

13.3.1 Travel Demand Forecasting for Next 10 Years

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- 13.5**):

Table-13.5: Recommended Planning Standard

Types of Road	Recommended width
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 Trishal 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.

13.3.2 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.

13.3.3 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 Trishal Degree College intersection and Varsity Road intersection, are the most important intersections of the Trishal 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

13.4 TRANSPORTATION DEVELOPMENT PLAN

13.4.1 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.

13.4.1.1 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-13.5**. 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-13.1** 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-13.6** and **Appendix-E** : *Road Network Proposal*.

PR-1:

The northern part of existing Dhaka-Mymensingh road has been considered as PR-1. It is a north-south elongated road. It will start from the northern margin of Pourashava and proceed up to Shutia river. The width will be 160 feet of which 20 feet + 20 feet in both the side will be service road. The PR-1will directly connects proposed Industrial Zone.

PR-2:

The southern part of existing Dhaka-Mymensingh road (south of Shutia river) has been considered as PR-2.The width will be 160 feet of which 20 feet +20 feet in both the side will be service road. The PR-2 will directly connects proposed Bus Terminal and Truck Terminal.

SR-01:

A secondaryroad notified as SR-01 is proposed from the Dhaka- Mymensingh Road located at the northern part of the Pourashava (ward no.7) to the west side through the proposed bridge and further encircling ward no. 02, 03 and 05 and connect with Sekandar Ali road. This road is mostly new construction. This road is propose with a view to connect with the western part of Shutia River and will link especially with Fulbaria road, Varsity road, Mathbari road and Sekandar Ali road. Proposed width of this road will be 24.4 meter (80 feet).

SR-02:

This is a second secondary road proposed to to serve eastern part of Shutia River. It will start from Dhaka-Mymensingh road from the point of SR-01. It will pass through the Ward No.08 and Ward No. 09 and meet with Dhaka-Mymensingh road at the north of Shutia

River. While passing through the wards it will give connection with proposed Industrial Zone, North - Eastern part of ward no.08, Kakchair road, Jomate Ali road and Balipara road. Proposed width of this road will be 24.4 meter (80 feet).

SR-03:
Existing Varsity road proposed to be widen as 18.3 meter (60feet).

SR-04:
Existing Fulbaria road proposed to be widen as 18.3 meter (60feet).

SR-05:
Existing Dhani road proposed to be widen as 18.3 meter (60feet).

SR-06:
Existing Asim road proposed to be widen as 18.3 meter (60feet).

SR-07:
Existing Chairmanbari road proposed to be widen as 18.3 meter (60feet).

SR-08:
Existing West & South bank road proposed to be widen as 18.3 meter (60feet).

SR-09:
Existing Kachkair road proposed to be widen as 18.3 meter (60feet).

SR-10:
Existing Balipara road proposed to be widen as 18.3 meter (60feet).

Table-13.6: List of Proposed Primary and Secondary Roads

ID	Type	Length(km)	Proposed RoW	Ward No	Proposed Status
PR-01	Primary Road	4.863	120 ft	W-4 & 7	Widening and Reconstruction
PR-02	Primary Road	1.987	120 ft	W-6	Widening and Reconstruction
SR-01	Secondary Road	3.759	80 ft	W-2, 3 & 5	New Construction
SR-02	Secondary Road	3.824	80 ft	W-7, 8 & 9	New Construction
SR-03	Secondary Road	4.785	60 ft	W-1, 3 & 2	Widening and Reconstruction
SR-04	Secondary Road	4.546	60 ft	W-1 & 2	Widening and Reconstruction
SR-05	Secondary Road	3.092	60 ft	W-2	Widening and Reconstruction
SR-06	Secondary Road	3.420	60 ft	W-3 & 5	Widening and Reconstruction
SR-07	Secondary Road	2.999	60 ft	W-6	Widening and Reconstruction
SR-08	Secondary Road	3.507	60 ft	W-5 & 6	Widening and Reconstruction
SR-09	Secondary Road	4.210	60 ft	W-8	Widening and Reconstruction
SR-10	Secondary Road	3.720	60 ft	W-9	Widening and Reconstruction

13.4.1.2 Proposal for improvement of the existing road networks

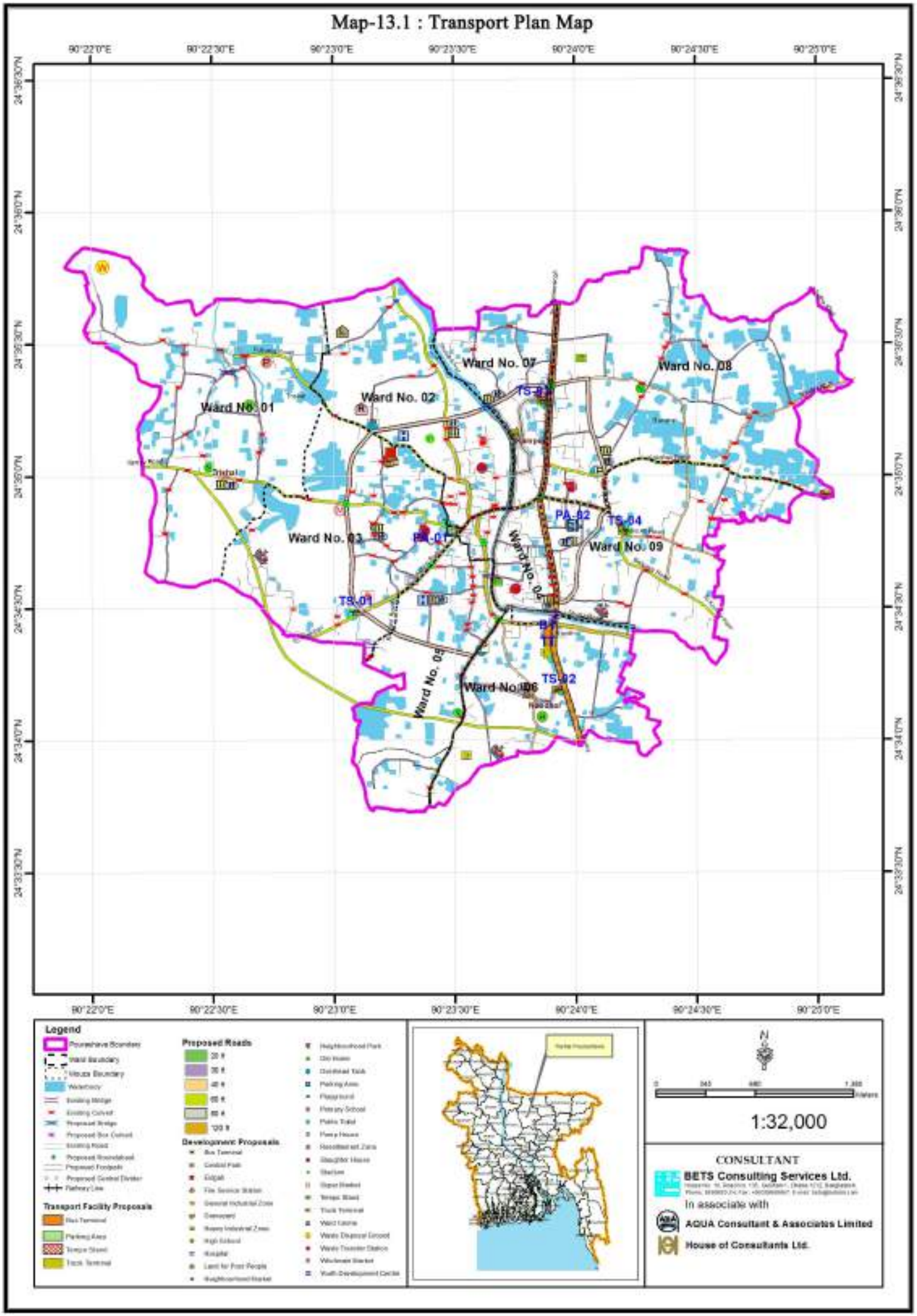
Traffic management measures may be adopted to increase traffic capacity and safety. The improvement could be done by removing the deficiencies in the existing core road network by widening and/or strengthening of selected stretches / corridors in a phased manner and improvement of road geometrics and safety provisions. The proposals for widening of roads existing roads are listed in tabular form (**Table: 13.7**) below:

Table-13.7: Road improvement proposal

ID	Type	Length(km)	Proposed RoW	Ward No	Proposed Status
LR-01	Local Road	3.497	30 ft	Ward No. 01	Widening
LR-03	Local Road	1.184	30 ft	Ward No. 01	Widening
LR-04	Local Road	0.389	30 ft	Ward No. 01	Widening
LR-06	Local Road	1.347	30 ft	Ward No. 01	Widening

ID	Type	Length(km)	Proposed RoW	Ward No	Proposed Status
LR-07	Local Road	1.638	30 ft	Ward No. 01	Widening
LR-08	Local Road	1.589	30 ft	Ward No. 02	Widening
LR-09	Local Road	1.435	30 ft	Ward No. 02	Widening
LR-11	Local Road	1.150	30 ft	Ward No. 03	Widening
LR-12	Local Road	0.441	30 ft	Ward No. 03	Widening
LR-13	Local Road	0.788	30 ft	Ward No. 03	Widening
LR-14	Local Road	1.447	30 ft	Ward No. 03	Widening
LR-15	Local Road	0.922	30 ft	Ward No. 03	Widening
LR-16	Local Road	0.678	30 ft	Ward No. 03	Widening
LR-17	Local Road	0.590	30 ft	Ward No. 03	Widening
LR-18	Local Road	0.923	30 ft	Ward No. 04	Widening
LR-19	Local Road	0.353	30 ft	Ward No. 04	Widening
LR-20	Local Road	0.691	30 ft	Ward No. 04	Widening
LR-22	Local Road	0.849	20 ft	Ward No. 04	Widening
LR-23	Local Road	1.552	30 ft	Ward No. 05	Widening
LR-25	Local Road	1.034	30 ft	Ward No. 05	Widening
LR-26	Local Road	0.565	30 ft	Ward No. 05	Widening
LR-27	Local Road	1.290	30 ft	Ward No. 06	Widening
LR-28	Local Road	0.814	30 ft	Ward No. 06	Widening
LR-31	Local Road	0.640	30 ft	Ward No. 06	Widening
LR-33	Local Road	0.950	20 ft	Ward No. 06	Widening
LR-34	Local Road	0.905	20 ft	Ward No. 06	Widening
LR-35	Local Road	2.167	30 ft	Ward No. 07	Widening
LR-37	Local Road	0.554	30 ft	Ward No. 07	Widening
LR-38	Local Road	1.422	20 ft	Ward No. 07	Widening
LR-40	Local Road	2.965	30 ft	Ward No. 08	Widening
LR-42	Local Road	1.087	30 ft	Ward No. 08	Widening
LR-43	Local Road	1.929	30 ft	Ward No. 08	Widening
LR-44	Local Road	1.009	30 ft	Ward No. 08	Widening
LR-47	Local Road	1.394	20 ft	Ward No. 08	Widening
LR-49	Local Road	0.774	30 ft	Ward No. 09	Widening
LR-50	Local Road	0.862	30 ft	Ward No. 09	Widening
LR-51	Local Road	0.446	30 ft	Ward No. 09	Widening
LR-53	Local Road	0.716	30 ft	Within Ward No. 08 & 09	Widening
LR-55	Local Road	0.841	20 ft	Ward No. 09	Widening
WR-01	Widening Road	2.029	40 ft	Ward No. 06	Widening
WR-02	Widening Road	3.110	40 ft	Within Ward No. 08 & 09	Widening
WR-03	Widening Road	2.366	40 ft	Ward No. 08	Widening
WR-04	Widening Road	1.372	40 ft	Ward No. 09	Widening
Total		**52.704**			

Map-13.1 : Transport Plan Map



13.4.1.3 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-13.8**.

Table-13.8: List of Proposed New Roads in the Project Area

ID	Type	Length(km)	Proposed RoW	Ward No	Proposed Status
LR-02	Local Road	0.265	30 ft	Ward No. 01	New Construction
LR-05	Local Road	0.390	30 ft	Ward No. 01	New Construction
LR-10	Local Road	0.754	20 ft	Ward No. 02	New Construction
LR-21	Local Road	2.384	20 ft	Within Ward No. 04, 07 & 09	New Construction
LR-24	Local Road	0.353	30 ft	Ward No. 05	New Construction
LR-29	Local Road	1.058	30 ft	Ward No. 06	New Construction
LR-30	Local Road	0.687	30 ft	Ward No. 06	New Construction
LR-32	Local Road	0.041	30 ft	Ward No. 06	New Construction
LR-36	Local Road	0.461	30 ft	Ward No. 07	New Construction
LR-39	Local Road	1.026	20 ft	Ward No. 07	New Construction
LR-41	Local Road	0.701	30 ft	Ward No. 08	New Construction
LR-45	Local Road	0.345	30 ft	Ward No. 08	New Construction
LR-46	Local Road	0.783	30 ft	Ward No. 08	New Construction
LR-48	Local Road	0.992	30 ft	Ward No. 09	New Construction
LR-52	Local Road	0.339	30 ft	Ward No. 09	New Construction
LR-54	Local Road	0.280	30 ft	Ward No. 09	New Construction
SR-01	Secondary Road	3.759	80 ft	Within Ward No. 02, 03 & 05	New Construction
SR-02	Secondary Road	3.824	80 ft	Within Ward No. 07, 08 & 09	New Construction
Total		**18.442**			

13.4.2 Plan for Transportation Facilities

13.4.2.1 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 south of Shutia river beside Dhaka-Mymensingh road at Ward No-06.

As per standard of UTIDP the required area of Bus Terminal for the Projected population of

47,479 up to year 2021 is about 2.37 acre. Thus, an area of 1.620 acres is proposed for this bus terminal. BT comprises Plot No- 261-268, 378, 380-382, 594, 595 of Naodhar Mouza. The location and outline of the proposed bus terminals is shown in **Map 13.1**. The details are given in **Table-13.9**.

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 south of Shutia river beside Dhaka-Mymensingh road at Ward No-06. As per standard of UTIDP the required area of Truck Terminal for the Projected population of 47,479 up to year 2021 is about 1.19 acre. An area of 1.109 acres is proposed for the truck terminal. TT comprises Plot No 240, 266, 267, 269-273, 378 of Naodhar Mouza. The location and outline of the proposed truck terminal is shown in **Map-13.1**. The details are given in **Table-13.9**.

Table-13.9: List of Proposed Transport Facilities

ID	Name of Proposal	Location	Ward No.	Area (Acre)	Mouza Schedule	
					Mouza	Plot No.
BT	Bus Terminal	Beside Dhaka-Mymensingh Highway	Ward No. 06	1.620	Naodhar	261-268, 378, 380-382, 594, 595
PA-01	Parking Area	Beside land office	Ward No. 03	0.885	Trishal	1915, 1917, 1918
PA-02	Parking Area	East side of Awami League Party Office	Ward No. 09	0.674	Rampur	879, 901, 906-910
TS-1	Tempo Stand	Beside Porabari road	Ward No. 03	0.281	Trishal	1782
TS-2	Tempo Stand	Beside Dhaka-Mymensingh road	Ward No. 06	0.275	Naodhar	355, 356, 361, 362
TS-3	Tempo Stand	Beside Dhaka-Mymensingh road	Ward No. 07	0.297	Rampur	193, 200
TS-4	Tempo Stand	Beside the junction of Balipara road & Jummat Ali road	Ward No. 09	0.245	Rampur	1182, 1183
TT	Truck Terminal	Beside Dhaka-Mymensingh road	Ward No. 06	1.109	Naodhar	240, 266, 267, 269-273, 378

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, four tempo stands along with rickshaw/van stand are proposed in South-west part of W-3 beside Porabari road(TS-1), South part of W-6 beside Dhaka-Mymensingh road (TS-2), East part of W-7 beside Dhaka-Mymensingh road (TS-3) and Centre part of W-9 Jummat Ali road (TS-4).

The location and outline of the proposed tempo stand/rickshaw stand is shown in **Map-13.1.** As per standard of UTIDP the required area of this facility is about 0.25 acre/one tempo stand. Proposed area of TS-1, TS-2, TS-3 and TS-4 are 0.281, 0.275, 0.297 and 0.245 acre respectively. The details are shown in **Table-13.9**.

13.4.2.2 Parking and Terminal Facilities

There is no parking facilities provided in Trishal 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

13.4.2.3 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 Trishal 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 (12 no's) of pedestrian ways (Footpath) are proposed for the smooth movement of pedestrian traffic. The details are illustrated in **Table-13.10** and the alignment is shown in **Figure-13.3** below.

Table-13.10: List of Proposed Footpath/ Pedestrian Way

Sl No.	ID	Length (km)
1	FP-11	2.1880
2	FP-07	0.9164
3	FP-04	1.7347
4	FP-09	2.4727
5	FP-02	2.9896
6	FP-06	0.7960
7	FP-09	0.7978
8	FP-08	2.4289
9	FP-12	0.7295
10	FP-05	0.5495

Sl No.	ID	Length (km)
11	FP-01	0.7646
12	FP-03	1.2729
Total		**17.6406**

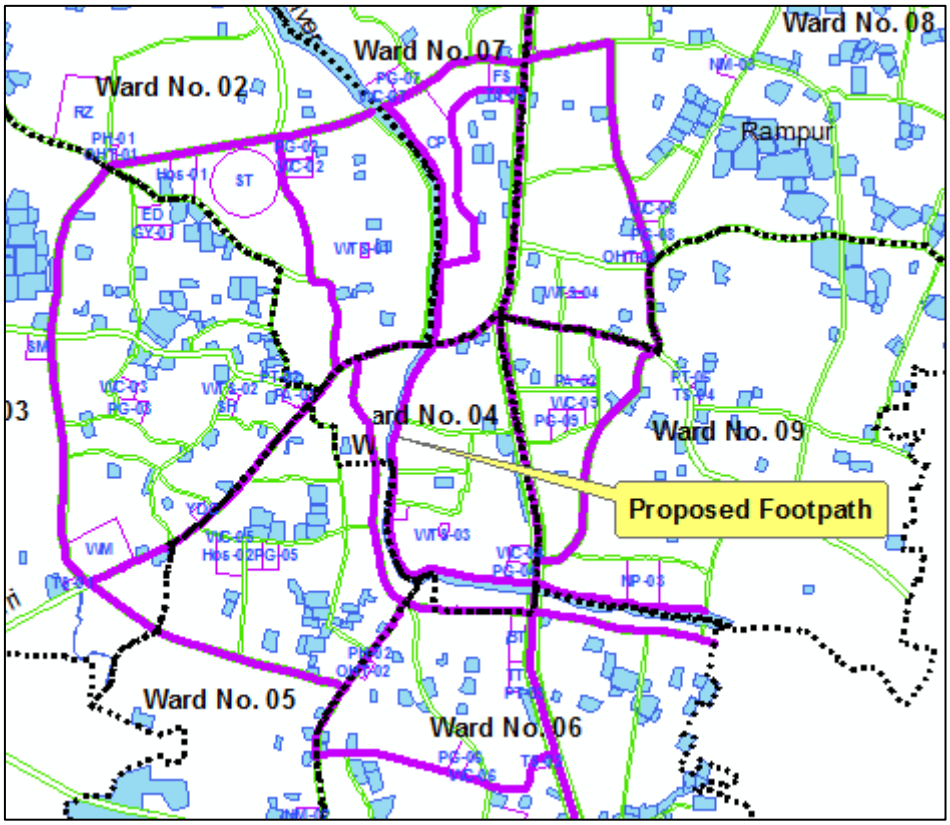


Figure-13.3: Alignment of Footpath/ Pedestrian Way

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 Trishal Pourashava.

13.4.2.4 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 Trishal Pourashava is given in **Table-13.11** and the locations are shown in **Figure-13.4**.

Table- 13.11: List of Proposed Roundabout in Nandail Pourashava

ID	Ward No.	Location
RA-1	3	Varsity Road Mor
RA-2	4	Pourashava Office Mor

ID	Ward No.	Location
RA-3	4	Trishal Degree College Mor
RA-4	5	Porabari roadMor
RA-5	5	Vatipara Manglar Mosque Mor
RA-6	7	Darirampur Madhya Para Jame Mosque Mor

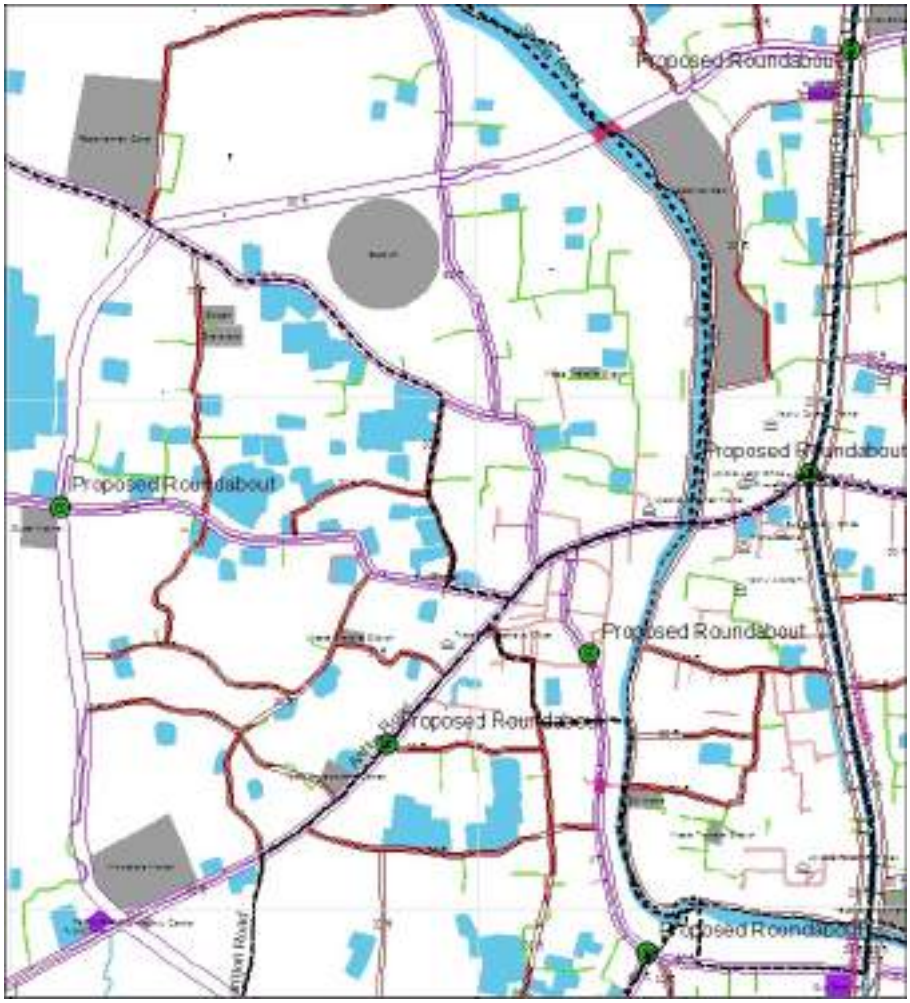


Figure-13.4: Proposed Roundabout

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-13.12** below.

Table- 13.12: Proposal for Central Divider

ID	Ward No.	Length(km)	Road Type
CD-01	Ward No.07	2.188	Primary Road
CD-02	Ward No.06	0.916	Primary Road
Total		**3.104**	

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

13.4.3 Waterway Development/Improvement Options

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

13.4.4 Railway Development Option

There is no existing railway line in the vicinity of the Trishal Pourshava and there is no proposal for its establishment from higher authority. Thus, railway development option is not applicable at Trishal Pourashava.

13.5 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.

13.5.1 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

13.5.2 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

13.5.3 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

13.6 PLAN IMPLEMENTATION STRATEGIES

13.6.1 Regulations to implement the Transportation Plan

The Transportation Plan for Trishal 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 Trishal 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 (Paurashava) (Amended) Act, 2010' to ensure safe and sustainable transport service for the inhabitants.

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

13.6.2 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 20 years (2011-2021 and 2021-2031), 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 transpoprt 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-13.13**. After each 5 years the Plan will be evaluated, updated and new Ward Action Plan will be formulated under the changing circumstances.

Table-13.13: Phasing of Proposed Roads

Phase-I (2011-2021)		
ID	**Road Type**	**Ward No.**
PR-01	Primary Road	Ward-7
PR-02	Primary Road	Ward-6
SR-01	Secondary Road	Ward-3
SR-02	Secondary Road	Ward-8
SR-03	Secondary Road	Ward-3
SR-06	Secondary Road	Ward-3
LR-01	Local Road	Ward-1
LR-06	Local Road	Ward-1
LR-07	Local Road	Ward-1
LR-08	Local Road	Ward-1
LR-09	Local Road	Ward-2
LR-10	Local Road	Ward-2
LR-11	Local Road	Ward-3
LR-14	Local Road	Ward-3
LR-21	Local Road	Ward-4
LR-22	Local Road	Ward-4
LR-23	Local Road	Ward-5
LR-25	Local Road	Ward-5
LR-29	Local Road	Ward-6
LR-30	Local Road	Ward-6
LR-33	Local Road	Ward-6
LR-34	Local Road	Ward-6
LR-35	Local Road	Ward-7
LR-38	Local Road	Ward-7
LR-39	Local Road	Ward-7
LR-40	Local Road	Ward-8
LR-41	Local Road	Ward-8
LR-42	Local Road	Ward-8
LR-43	Local Road	Ward-8
LR-44	Local Road	Ward-8
LR-46	Local Road	Ward-8
LR-47	Local Road	Ward-8
LR-48	Local Road	Ward-9

Phase-II (2021-2031)		
ID	**Road Type**	**Ward No.**
SR-04	Secondary Road	Ward-2
SR-05	Secondary Road	Ward-2
SR-07	Secondary Road	Ward-6
SR-08	Secondary Road	Ward-6
SR-09	Secondary Road	Ward-8
SR-10	Secondary Road	Ward-9
LR-02	Local Road	Ward-1
LR-03	Local Road	Ward-1
LR-04	Local Road	Ward-1
LR-05	Local Road	Ward-1
LR-12	Local Road	Ward-3
LR-13	Local Road	Ward-3
LR-15	Local Road	Ward-3
LR-16	Local Road	Ward-3
LR-17	Local Road	Ward-3
LR-18	Local Road	Ward-4
LR-19	Local Road	Ward-4
LR-20	Local Road	Ward-4
LR-24	Local Road	Ward-5
LR-26	Local Road	Ward-5
LR-27	Local Road	Ward-6
LR-28	Local Road	Ward-6
LR-31	Local Road	Ward-6
LR-32	Local Road	Ward-6
LR-36	Local Road	Ward-7
LR-37	Local Road	Ward-7
LR-45	Local Road	Ward-8
LR-51	Local Road	Ward-9
LR-52	Local Road	Ward-9
LR-53	Local Road	Ward-9
LR-54	Local Road	Ward-9

Phase-I (2011-2021)		
ID	**Road Type**	**Ward No.**
LR-49	Local Road	Ward-9
LR-50	Local Road	Ward-9
LR-55	Local Road	Ward-9
WR-01	Local Road	Ward-6
WR-03	Local Road	Ward-8
WR-02	Local Road	Ward-8
WR-04	Local Road	Ward-9

Phase-II (2021-2031)		
ID	**Road Type**	**Ward No.**

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 Trishal 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 Trishal 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-14

DRAINAGE AND ENVIRONMENTAL MANAGEMENT PLAN

This is the third Chapter of Part-B (Urban Area Plan) of the Draft Master Plan for Trishal 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

14.1 INTRODUCTION

The purpose of the Drainage Plan is to make an assessment of the present drainage facilities and the scope for future development within 15.49 square kilometer study area of the Trishal 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 Trishal 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 Trishal 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

14.1.1 Goals and Objectives

Following are the overall objectives of the drainage plan of Trishal 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.

14.1.2 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.

14.2 EXISTING DRAINAGE NETWORK

14.2.1 Introduction

For the preparation of Drainage Plan, survey started through field reconnaissance and review of available document related to the study area. The Trishal 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 Trishal Pourahava informed that no such plan has been prepared earlier.

14.2.2 Existing Drainage System/ Network

The drainage system of the Trishal Pourashava has been surveyed and classified into two categories: (i) unlined natural khals and manmade canals act as primary drains and beels act as reservoirs (ii) earthen shallow secondary drains and brick masonry secondary and tertiary drains. The primary drains of the Trishal Pourashava have emerged as a natural process following the natural slope of the ground, for the flow of storm runoff with or without human intervention. From survey data the river Shutia, 3 No khals namely Mora Beeler Khal, Kulin Beeler Khal and Shukneer Khal come out as primary drains and 3 No beels namely Jhohary Beel, Kulin Beel and Shukneer Beel come out as reservoirs within the Pourashava. There is another beel outside but adjacent to Pourashava boundary known as Batcha Mora Beel which is also very important for draining water of the Pourashava. All these river, khals and beels are shown in **(Map-14.3).** Total length of the Shutia river and khals the part that falls within the Pourashava is measured and listed in **Table 14.1** below:

Table- 14.1: List of Existing Natural Channel/khals (Primary Drain) in Study Area

Sl No	River	Name	Length (km)	Remarks
1		Shutia	3.713	
	Total		**3.713**	
Sl No	**Khal**	**Name**	**Length (km)**	
1		Shukneer Khal	1.472	
2		Kulin Beeler Khal	1.452	
	Total		**1.618**	
Sl No	**Beel**	**Name**	**Area (Acre)**	
1		Shukneer Beel	8.64	
2		Kulin Beel	**2.24**	
	Total		**10.88**	

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

The drains in Trishal Pourashava are constructed by the Pourashava and the DPHE. The DPHE after construction handed over its drains to Pourashava for maintenance. Within the Pourashava total 8.78 km brick drains so far constructed.

14.2.3 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 413 nos. spot values were collected for the study area. The **lowest** spot height is 9.78 mPWD PWD which is located in Ward No.7 and Rampur mauza at RS plot number117 and the **highest** spot height is 12.62 mPWD which is located in Ward No.4 and Rampur mauza at RS plot number 1093. Around 90.76% of the spot heights are between 10 mPWD to 12 mPWD and average height of land of the project area is 11.17 mPWD. Details statistical summary of land levels survey are shown in **Table-14.2** and **Table-14.3** below.

Table-14. 2: Spot Value and Spot Unit

Sl. No.	Spot Unit	Value
1	Total Spot Number	413
2	Mean (mPWD)	11.17
3	Maximum Height (mPWD)	12.62
4	Minimum Height (mPWD)	9.78
5	Range	6.46
6	Variance	0.33
7	Standard Deviation	0.58

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

Table-14.3: Spot Interval and Frequency

Sl. No.	Spot Interval (mPWD)	Spot Number (Frequency)	%
1	9.01-10.00	11	9.05
2	10.01 - 11.00	73	59.32
3	11.01 - 12.00	37	31.44
4	12.01 - 13.00	2	0.14
Total		**123**	**100.00**

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

General Contour Description

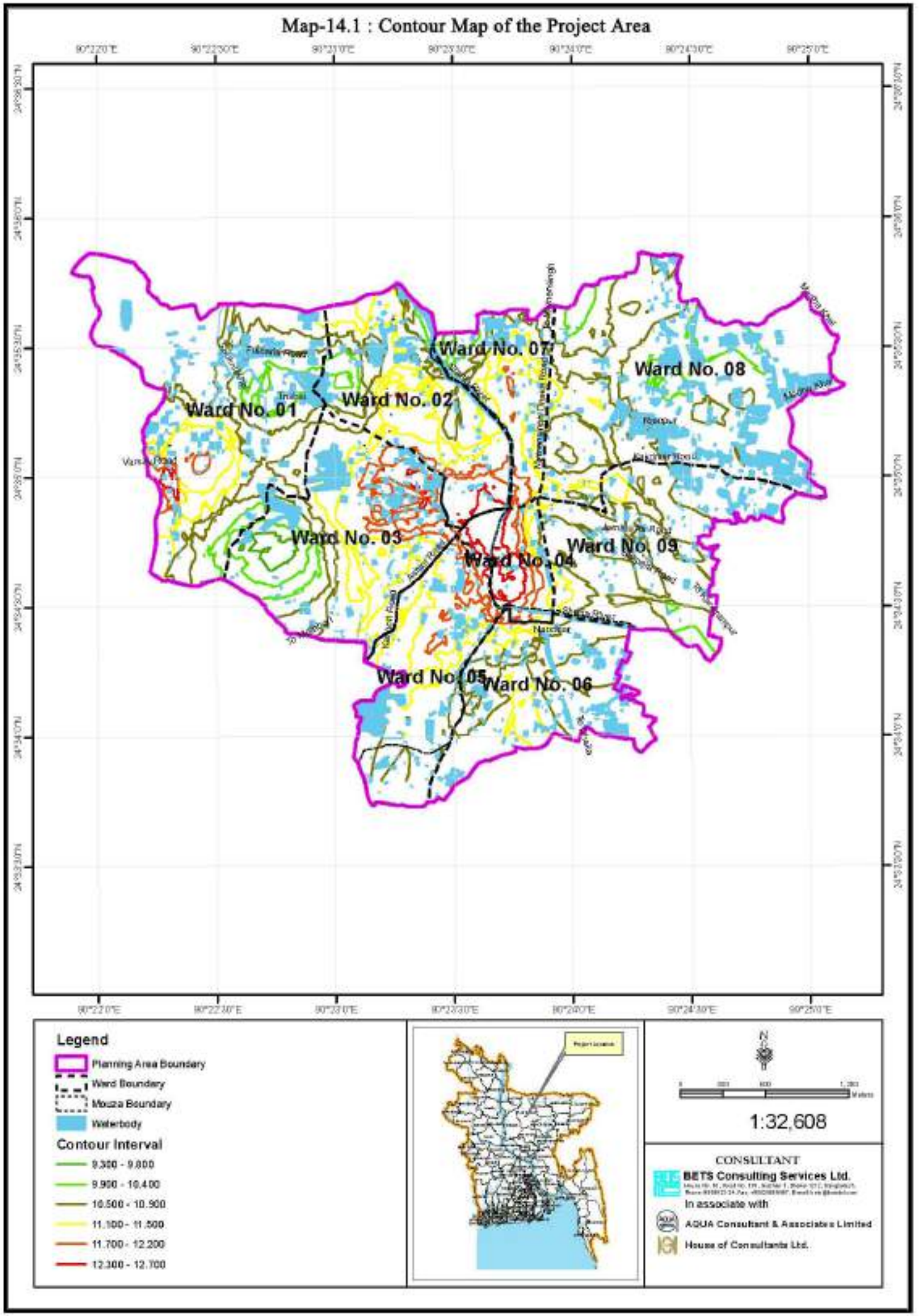
Trishal Pourashava is a land of mixed topography. From the spot level readings having the x, y and z values being determinant for the study area, a contour map of Pourashava has been drawn (**Map-14.1:** contour map of the study area). Dhaka-Mymensingh road passes through the heart of the Pourashava. Urbanization is mostly concentrated on central part. Trend of present urbanization is basically along the both side of Asim road, Dhaka-Mymensingh road and Shutia river. The present urbanized area is of comparatively higher elevation where minimum spot height is 9.78 mPWD and maximum spot height is 12.61 mPWD while mean spot height for this area is 11.29 mPWD. Spot value along the road side is varying between 9.78m PWD to 12.53 m PWD. In preparing the map, the vertical interval of the contours was taken as 0.3m. In a large flat tract of land with rivers, roads and other raised man-made structures this is the character to be expected. Mauza wise variations of spot height are depicted in **Table-14.4**. Project area appears to be no exception as the present contour survey reveals.

Table-14.4: Variation of Spot Height According to Mouza

Name of Mauza	Spot Height (mPWD)		
	Maximum	Minimum	Mean
Naodhar	12.46	10.46	11.12
Rampur	12.62	9.79	11.09
Trishal	12.46	9.96	11.26

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

Map-14.1 : Contour Map of the Project Area



14.2.4 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.

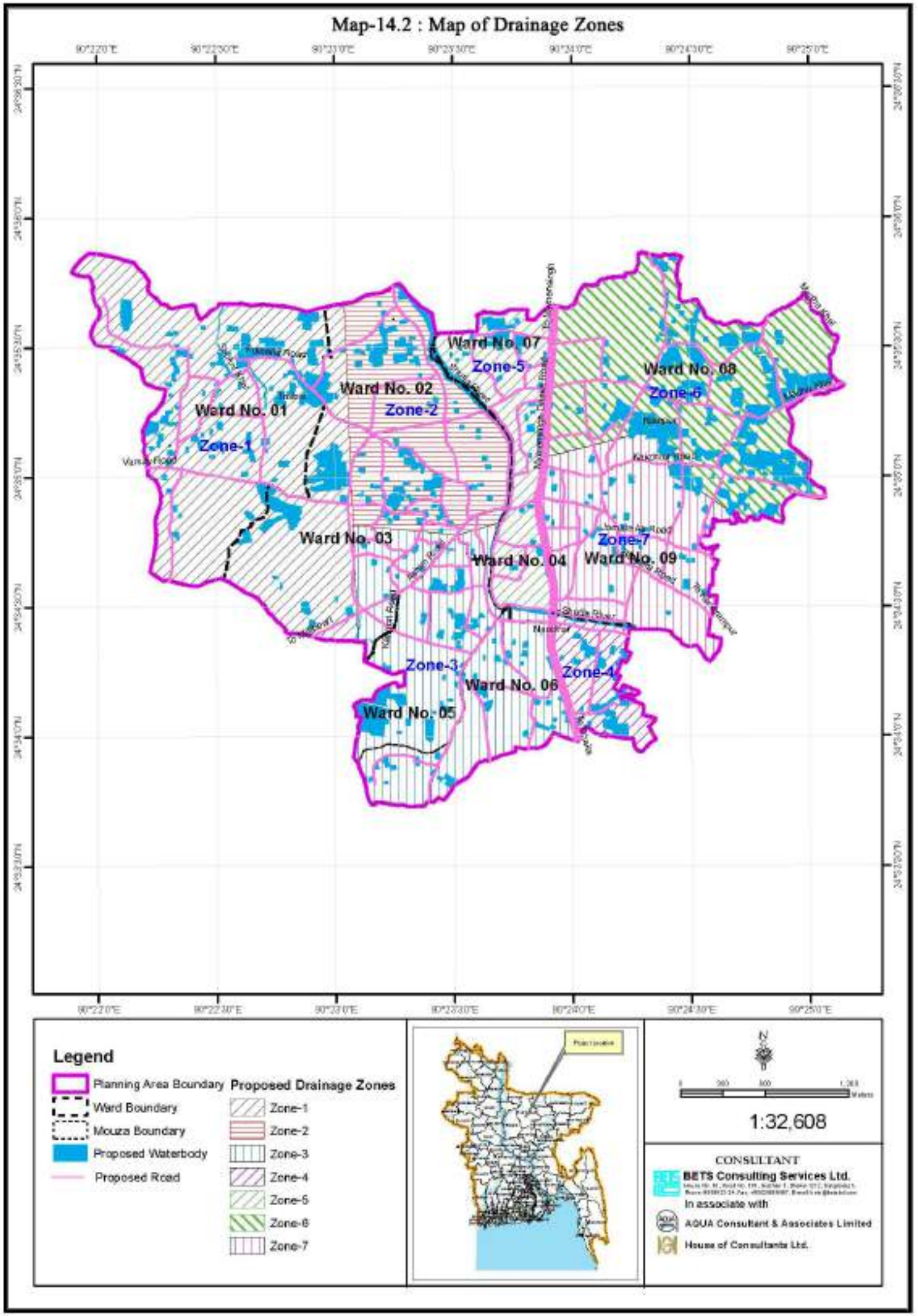
Regarding runoff discharge it has been observed that there are 3 number of khals and a river passing through the Trishal Pourashava. The Shukni Bill Khal ends at another khal outside of Trishal Pourashava and Medha Bill Khal also connection with outside.The Shutia river passess north-south from the middle 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 7 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-14.5**. Outline of these zones along with outfall name has been shown in **Map-14.2**.

Table-14. 5: Drainage Zones with Outfall Location

Zone-ID	Name of Outfall	Catchment Area (Acre)
Zone-1	Sukni Bill Khal	815.09
Zone-2	Shutia River	370.37
Zone-3	Shutia River	547.83
Zone-4	Shutia River	106.90
Zone-5	Shutia River	241.20
Zone-6	Medha Bill Khal	588.13
Zone-7	Shutia River	362.48
Total		**3032**

Map-14.2 : Map of Drainage Zones



14.3 PLAN FOR DRAINAGE MANAGEMENT AND FLOOD CONTROL

14.3.1 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 River Shutia is considered as the main drainage channel for taking off the runoff volume from almost the entire Pourashava due to downward sloping of the entire area towards the river. In north - western part of the Pourashava, Shukneer Khal and Kulin khal in the north – eastern can be treated as the drainage channels for discharging storm water runoff from that area. These drains would receive runoff from other primary, secondary and tertiary drains falling into them and from the land phase of the catchment area.

14.3.1.1 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.

14.3.1.2 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 14.6.**

Table-14.6: List of drains for proposed improvement

ID	Existing Type	Proposed Type	Length (m)	Existing Width (mm)	Proposed Width (mm)
Drain-1	Tertiary Drain (Brick Drain)	Tertiary Drain	221.87	350	800
Drain-2	Tertiary Drain (Brick Drain)	Tertiary Drain	279.75	350	800
Drain-3	Tertiary Drain (Brick Drain)	Tertiary Drain	164.03	350	800
Drain-4	Tertiary Drain (Brick Drain)	Secondary Drain	315.85	400	1520
Drain-5	Tertiary Drain (Brick Drain)	Tertiary Drain	209.78	350	800
Drain-6	Tertiary Drain (Brick Drain)	Tertiary Drain	163.50	350	800
Drain-7	Tertiary Drain (Brick Drain)	Tertiary Drain	175.37	350	800
Drain-8	Tertiary Drain (Brick Drain)	Tertiary Drain	110.15	300	800
Drain-9	Tertiary Drain (Brick Drain)	Secondary Drain	259.59	350	1520
Drain-10	Tertiary Drain (Brick Drain)	Secondary Drain	262.82	350	1520
Drain-11	Tertiary Drain (Brick Drain)	Tertiary Drain	139.55	300	800

14.3.1.3 List of proposed new drains

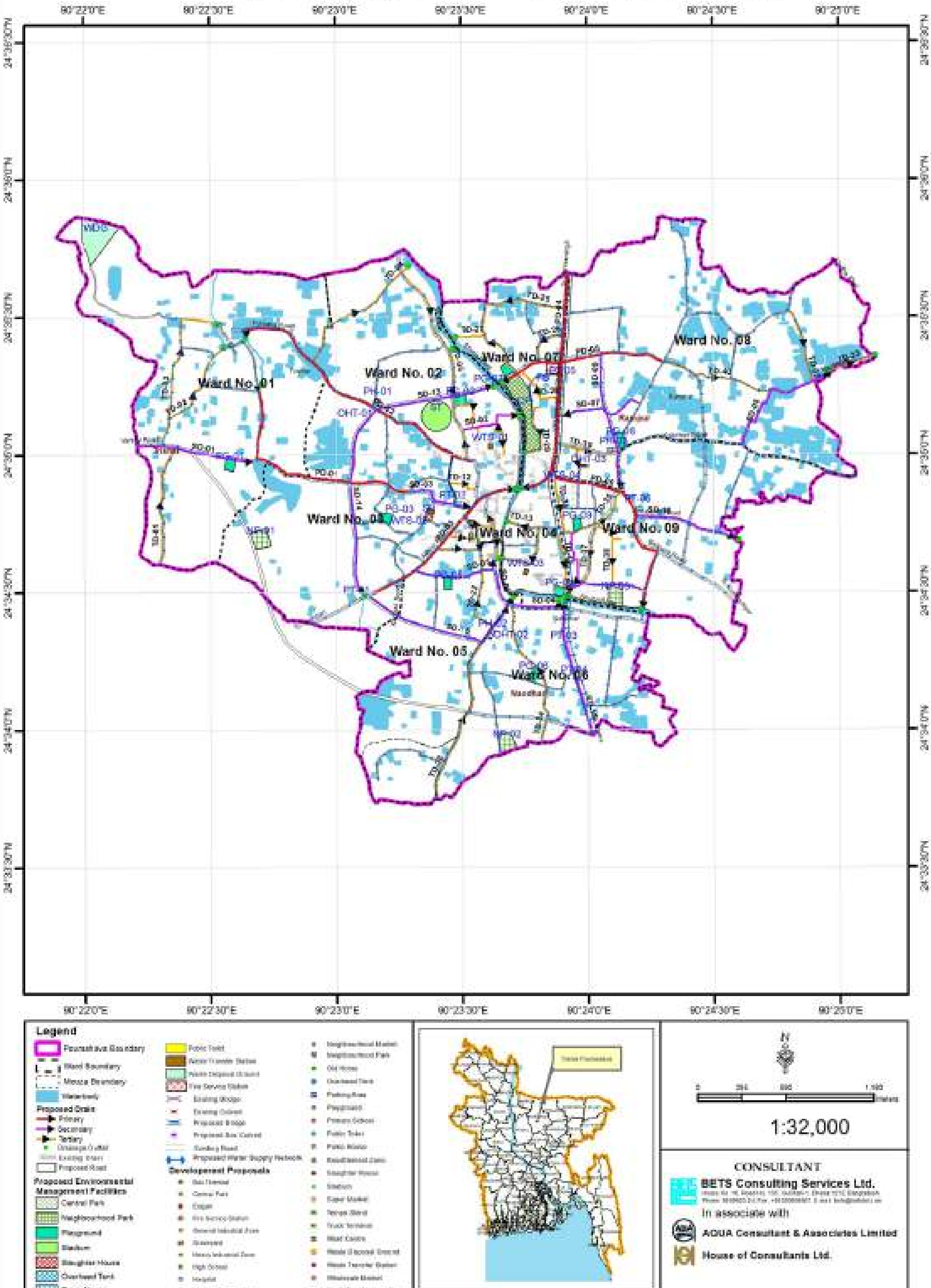
For effective functioning of existing drainage network, some new drains has been proposed in the project area which is listed in **Table-14.7**. The list has been prepared based of analysis of topographic map, existing drainage network, field visits and consultation with the Pourashava officials and local people. The proposed drains along with existing drains and other drainage infrastructures are shown in **Map-14.3.**

Table-14.7: List of proposed new drains

Drain ID	Drain Type	Ward No.	Length (km)	Width (m)	Outfall
PD-01	Primary Drain	Ward No. 01	1.5842	1.5	Shukni Bill Khal
PD-02	Primary Drain	Ward No. 01	1.9186	1.5	Shukni Bill Khal
PD-03	Primary Drain	Ward No. 04	1.2224	1.5	Shutia River
PD-04	Primary Drain	Ward No. 07	2.1660	1.5	Shutia River
PD-05	Primary Drain	Ward No. 08	1.1426	1.5	Shutia River
PD-06	Primary Drain	Ward No. 09	1.3692	1.5	Shutia River
SD-01	Secondary Drain	Ward No. 01	0.7736	0.8	PD-01
SD-02	Secondary Drain	Ward No. 02	0.4416	0.8	Shutia River
SD-03	Secondary Drain	Ward No. 03	0.4310	0.8	PD-03
SD-04	Secondary Drain	Ward No. 04	0.3615	0.8	Shutia River
SD-05	Secondary Drain	Ward No. 05	0.5957	0.8	Shutia River
SD-06	Secondary Drain	Ward No. 05	0.3005	0.8	Shutia River
SD-07	Secondary Drain	Ward No. 08	0.5720	0.8	PD-04
SD-08	Secondary Drain	Ward No. 08	0.8880	0.8	Medha Bill Khal
SD-09	Secondary Drain	Ward No. 08	0.9082	0.8	PD-06
SD-10	Secondary Drain	Ward No. 09	0.6849	0.8	PD-06
SD-11	Secondary Drain	Ward No. 09	0.3823	0.8	Morar Bill Khal
SD-12	Secondary Drain	Ward No. 09	0.5538	0.8	Morar Bill Khal
SD-13	Secondary Drain	Ward No.02	1.3322	0.8	Shutia River
SD-14	Secondary Drain	Ward No.03	0.7422	0.8	Khal
SD-15	Secondary Drain	Ward No.05	1.1239	0.8	Shutia River
SD-16	Secondary Drain	Ward No.06	0.9089	0.8	Shutia River
TD-01	Tertiary Drain	Ward No. 01	0.8144	0.5	SD-01
TD-02	Tertiary Drain	Ward No. 01	0.8246	0.5	Shukni Bill Khal
TD-03	Tertiary Drain	Ward No. 01	0.9210	0.5	Shukni Bill Khal
TD-04	Tertiary Drain	Ward No. 02	0.9479	0.5	Shutia River
TD-05	Tertiary Drain	Ward No. 02	0.6486	0.5	Shutia River
TD-06	Tertiary Drain	Ward No. 02	0.5687	0.5	Shutia River
TD-07	Tertiary Drain	Ward No. 02	0.2846	0.5	TD-06
TD-08	Tertiary Drain	Ward No. 02	0.1923	0.5	SD-02
TD-09	Tertiary Drain	Ward No. 02	0.0387	0.5	SD-02
TD-10	Tertiary Drain	Ward No. 02	0.1174	0.5	SD-02
TD-11	Tertiary Drain	Ward No. 02	0.1602	0.5	TD-10
TD-12	Tertiary Drain	Ward No. 02	0.2032	0.5	SD-03
TD-13	Tertiary Drain	Ward No. 04	0.2574	0.5	Shutia River
TD-14	Tertiary Drain	Ward No. 04	0.4487	0.5	Shutia River
TD-15	Tertiary Drain	Ward No. 04	0.4167	0.5	Shutia River
TD-16	Tertiary Drain	Ward No. 04	0.0912	0.5	PD-03
TD-17	Tertiary Drain	Ward No. 04	0.2035	0.5	TD-18
TD-18	Tertiary Drain	Ward No. 04	0.2636	0.5	Shutia River
TD-19	Tertiary Drain	Ward No. 05	0.2973	0.5	SD-05
TD-20	Tertiary Drain	Ward No. 05	0.1859	0.5	TD-19
TD-21	Tertiary Drain	Ward No. 05	0.2806	0.5	TD-19

Drain ID	Drain Type	Ward No.	Length (km)	Width (m)	Outfall
TD-22	Tertiary Drain	Ward No. 05	0.4312	0.5	SD-05
TD-23	Tertiary Drain	Ward No. 06	1.0907	0.5	Shutia River
TD-24	Tertiary Drain	Ward No. 06	1.0034	0.5	Shutia River
TD-25	Tertiary Drain	Ward No. 07	0.7468	0.5	TD-27
TD-26	Tertiary Drain	Ward No. 07	0.2632	0.5	PD-05
TD-27	Tertiary Drain	Ward No. 07	0.5490	0.5	Shutia River
TD-28	Tertiary Drain	Ward No. 07	0.3604	0.5	PD-05
TD-29	Tertiary Drain	Ward No. 07	0.4446	0.5	Shutia River
TD-30	Tertiary Drain	Ward No. 08	0.3799	0.5	SD-09
TD-31	Tertiary Drain	Ward No. 08	0.2089	0.5	PD-06
TD-32	Tertiary Drain	Ward No. 08	0.4969	0.5	SD-08
TD-33	Tertiary Drain	Ward No. 08	0.3144	0.5	Medha Bill Khal
TD-34	Tertiary Drain	Ward No. 09	0.4199	0.5	TD-35
TD-35	Tertiary Drain	Ward No. 09	0.4638	0.5	PD-06
TD-36	Tertiary Drain	Ward No. 09	0.2087	0.5	TD-35
TD-37	Tertiary Drain	Ward No. 09	0.3835	0.5	SD-11
TD-38	Tertiary Drain	Ward No. 09	0.2903	0.5	SD-12
TD-39	Tertiary Drain	Ward No. 09	0.0370	0.5	Morar Bill Khal
TD-40	Tertiary Drain	Ward No.08	1.5842	0.5	Sd-08
	Total		**37.403**		

Map-14.3 : Drainage and Environmental Management Plan Map



14.3.1.4 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-14.8** below.

Table: 14.8: List of proposed drainage structure

Sl No.	ID	Type	Ward No.
1	BC-01	Box Culvert	Ward No.01
2	BC-02	Box Culvert	Ward No.02
3	BC-03	Box Culvert	Ward No.04
4	BC-04	Box Culvert	Ward No.05
5	BC-05	Box Culvert	Ward No.05
6	BR-01	Bridge	Ward No.07

14.4 PLAN IMPLEMENTATION STRATEGIES

14.4.1 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.

14.4.2 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 20 years (2011-2021 and 2021-2031), 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-14.9**. After each 5 years the Plan will be evaluated, updated and new Ward Action Plan will be formulated under the changing circumstances.

Table-14.9: Phasing of Proposed Drains

Phase-I (2011-2021)				
Type	**ID**	**Ward No.**	**Width**	**Length (km)**
Primary Drain	PD-01	Ward No.01	0.5m	1.584
	PD-02	Ward No.01	0.5m	1.919
	PD-04	Ward No.07	0.5m	2.166
	PD-06	Ward No.09	0.5m	1.369
Secondary Drain	SD-02	Ward No.02	0.5m	0.442
	SD-03	Ward No.03	0.5m	0.431
	SD-05	Ward No.05	0.5m	0.596
	SD-07	Ward No.08	0.8m	0.572
	SD-08	Ward No.08	0.8m	0.888
	SD-10	Ward No.09	0.8m	0.685
Tertiary Drain	SD-15	Ward No.05	0.5m	1.124
	SD-16	Ward No.06	0.5m	0.909
	TD-01	Ward No.01	1.5m	0.814
	TD-02	Ward No.01	1.5m	0.825
	TD-05	Ward No.02	1.5m	0.649
	TD-06	Ward No.02	1.5m	0.569

Phase-II (2021-2031)				
Type	**ID**	**Ward No.**	**Width**	**Length (km)**
Primary Drain	PD-03	Ward No.03	0.5m	1.222
	PD-05	Ward No.08	0.8m	1.143
Secondary Drain	SD-01	Ward No.01	1.5m	0.774
	SD-04	Ward No.04	0.5m	0.362
	SD-06	Ward No.05	0.5m	0.301
	SD-09	Ward No.08	0.8m	0.908
	SD-11	Ward No.09	0.5m	0.382
	SD-12	Ward No.09	0.5m	0.554
Tertiary Drain	SD-13	Ward No.02	0.5m	1.332
	SD-14	Ward No.03	0.5m	0.742
	TD-03	Ward No.01	1.5m	0.921
	TD-04	Ward No.02	0.5m	0.948
	TD-07	Ward No.02	0.5m	0.285
	TD-08	Ward No.02	0.5m	0.192
	TD-09	Ward No.02	0.8m	0.039
	TD-10	Ward No.02	0.8m	0.117

Phase-I (2011-2021)				
Type	ID	Ward No.	Width	Length (km)
	TD-13	Ward No.04	0.5m	0.257
	TD-14	Ward No.04	0.5m	0.449
	TD-18	Ward No.04	0.5m	0.264
	TD-19	Ward No.04	0.5m	0.297
	TD-23	Ward No.06	0.5m	1.091
	TD-24	Ward No.06	0.8m	1.003
	TD-25	Ward No.07	0.8m	0.747
	TD-27	Ward No.07	0.5m	0.549
	TD-28	Ward No.07	0.8m	0.360
	TD-29	Ward No.07	0.8m	0.445
	TD-30	Ward No.08	0.8m	0.380
	TD-32	Ward No.08	0.8m	0.497
	TD-34	Ward No.09	0.5m	0.420
	TD-35	Ward No.09	0.5m	0.464
	TD-38	Ward No.09	0.5m	0.290

Phase-II (2021-2031)				
Type	ID	Ward No.	Width	Length (km)
	TD-11	Ward No.02	0.8m	0.160
	TD-12	Ward No.02	0.5m	0.203
	TD-15	Ward No.04	0.5m	0.417
	TD-16	Ward No.04	0.5m	0.091
	TD-17	Ward No.04	0.5m	0.204
	TD-20	Ward No.05	0.5m	0.186
	TD-21	Ward No.05	0.5m	0.281
	TD-22	Ward No.05	0.5m	0.431
	TD-26	Ward No.07	0.8m	0.263
	TD-31	Ward No.08	0.8m	0.209
	TD-33	Ward No.08	0.5m	0.314
	TD-36	Ward No.09	0.5m	0.209
	TD-37	Ward No.09	0.5m	0.384
	TD-39	Ward No.09	0.5m	0.037
	TD-40	Ward No.08	0.5m	0.741

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 Trishal 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

14.5 INTRODUCTION

14.5.1 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.

14.5.2 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.

14.6 EXISTING ENVIRONMENTAL CONDITION

14.6.1 Introduction

The urban environment of the Trishal 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.

14.6.2 Geo-morphology

Topographically, Trishal Pourashava is a plain land. The plain land mainly consists of fluvio-deltaic sediments deposited by the Ganges, the Brahmaputra and the Meghna river systems. Geomorphologically, Trishal Pourashava falls under the Floodplains of the Old Brahmaputra and Jamuna rivers having distinguishing character.

14.6.3 Solid Waste and Garbage disposal

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

The production of solid waste in Trishal Pourashava per person per day is about 250gm and the total Pourashava production is 9.627 ton/day. The Pourashava has no dust bin. It has 3 push cart / rickshaw van but and a garbage truck but has no waste disposal site of its own. The Pourashava has only 15 temporary cleaners. This number is very much insufficient for sweeping roads, cleaning drains, collecting garbage from kitchen markets, hospitals, and cottage industries. They can cover only 2 sq. km out of total15.49 sq. km area of the Pourashava.

In the Pourashava there is a 50 bed Upazila Health Complex and 3 pathological laboratories. 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. 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.

14.6.4 Waste Management System

It has been observed that the solid waste management in the Trishal Pourashava is not well managed. The Pourashava had a total population of 25,429 as on 2001 population census

with 3.17% annual increase. As such the present population (BBS 2011) of the Trishal Porashava is 34,747. Total 3 No's kitchen markets, one cattle market one 50 bed Upazila Health Complex, 2 fish market, 3 private pathological laboratories and many light and cottage industries are located within the Pourashava. The solid waste management coverage is only 20% of the total area. The Pourashava has no fixed dust bins, no garbage truck, 3 push cart and no waste disposal site of its own. The Pourashava has only 15 temporary cleaner for collection and disposal of solid wastes.

14.6.5 Pollutions:

14.6.5.1 Water

In nature water is available both from the surface and underground. The sources of surface water of Trishal Pourashava like ponds, ditches, and khals 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 of the Pourashava is claimed as 90% by the Mayor. The rest 10% people uses open latrine, hanging latrine and Katcha latrine. The human excreta from improper sanitation come in contact with water especially during rainy season. Hospital waste is another source of water contamination. In Trishal 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 hospital wastes nor any incinerator to burn them. The hospital wastes are thrown to nearby open spaces, ditches and roadside drains with other wastes. The Pourashava collect them along with household wastes. The Pourashava has very poor solid waste collection system and covers only 2.00 sq. km out of 15.49 sq. km total area. In most cases the solid wastes are dumped in open spaces, road side drains, ditches, near bridges and culverts etc. The decomposed market and kitchen 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. 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 drinking water to the habitats of Trishal Pourashava. People of the Pourashava use hand tube wells to get their drinking water. There are 5528 households within the Pourashava. The ground water table of the Pourashava varies from minimum 16 ft during rainy season to the maximum 44 ft during dry season. During winter hand tube wells become almost dried up. The ground water of the Trishal Pourashava at this depth contents excess iron. During dry season in hand tube wells the concentration of iron increases causing the suffering of the people of the Pourashava.

14.6.5.2 Air

The main sources of air pollution of the Trishal Pourashava are emission of harmful gaseous matters from brick field, vehicles, solid waste management site, industrial sector, construction, and wood and biomass consumption etc.,. Due to rapid urbanization of Trishal Pourashava the total number of motorized vehicles including bus, truck, tempo, three wheeler, etc., has been increased. Moreover Trishal Pourashava located on Mymenshing–Dhaka highway and traffic load is very high. Moreover the local bus, truck and other

motorized vehicles on the road of Trishal are very old, overloaded and poorly maintained and emit smoke far exceeding the prescribed limit. Dumping of garbage to open land and ditches allows the objectionable odor of garbage to spread in air. Industrial development within the Pourashava is another major source of air pollution. The Saw Mills are spreading dust in air. The smoke from the chimneys of brick field, rice mills and bakery are increasing carbon dioxide content 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-14.10** below:

Table 14.10: No of Industries in Trishal Pourashava

Sl No	Type of Industry	Number	Pollutant	Effluent treatment plant
1	Rice Mill	24	Harmful gases	Not require
2	Saw Mill	17	dust	Not require
3	Pillar Factory	1	No	Not require
4	spice grinding Factory	1	No	Not require
5	Ice Factory	2	No	Not require
6	Fish Food Factory	7	No	Not require
7	Brick Field	2	Harmful gases	Not require
8	Cotton Factory	4	No	Not require
9	Textile Mill	1	Harmful gases/Waste	required
Total		**59**		

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

14.6.5.3 Sound

Sound pollution is moderately significant in Trishal Pourashava. There are altogether 40 light and cottage industries which include brick field, oil mills, saw mills, printing press, bakeries, ice factories and light engineering workshops. Out of them saw mills and engineering workshops produces low noises. The moving vehicles also produce noise. The Upazilla is a surplus area for rice production. During market days traffic load increases near rice mills and bazar areas. The population of public carrier is relatively high during bazaar days in Trishal and they produce moderate level of noise. Also there are carpentry shops, tailoring shops and blacksmith shops in residential areas those producing noise.

14.6.5.4 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 tube well contaminated by arsenic within Trishal Pourashava.

14.6.6 Natural Calamities and Localized Hazards

14.6.6.1 Cyclone

Although Bangladesh is cyclone prone area yet Trishal Pourashava is out of range of tropical cyclone which occur mainly the coastal areas of Bangladesh. Trishal Pourashava is free from Nor'werters and Tornadoes. 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.

14.6.6.2 River Erosion

Erosion of land surface is already causing a problem for Trishal. 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 Shutia passing through the Trishal 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 and beels. 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.

14.6.6.3 Flood

Trishal is an Upazila of the Mymenshing district. The regional river Shutia that flows from southeast towards northwest divides the Trishal Pourashava area into north and south. The Shutia river is an important drainage channel and an off take of the Old Brahmaputra river. The Shutia river rises to the northwest of Mymenshing Sadar Upazilla on the right bank of the Old Brahmaputra river. There is a regulating structure built across the Shutia river but the longitudinal section of the river shows that the invert level appears to be at much higher than the average Old Brahmaputra flood level (Report: FAP-3, North Central Region Study, Supporting Report II, page-II.2-9). The structure presently acts to allow flow with Old Brahmaputra at times of high local rainfall. From off take it flows in a southerly direction for about 60 km, joining the Banar-Khiro river system close to Raona of Gafargaon Upazilla.

The monsoon in Trishal starts at late June and continues up to September. During this period the rainwater of Trishal Pourashava is collected in river Shutia, three khals and in depressed lands and it is only the end of the September when this water starts to drain out once the water levels in the downstream primary river recede. The excessive beel system and the water retained in river channels after the water level recedes provide water for low lift pump irrigation system within the Trishal Pourashava.

The Trishal Pourashava is free from external flooding. Flood caused by overflow of regional river caused due to rise of water level in major river system is called the external flood, while that caused by rain water and due to lack of the drainage facilities is called the internal flood. The topographical condition of the study area and till time the concentration of built-up areas are so scattered and lightly dense that though water logging exists in some of the areas of Trishal Pourashava, it is almost free from internal flooding also.

However, a flood zoning map and location of Trishalis provided here in **Map-14.4** where Trishalfalls under the normal flood zone.

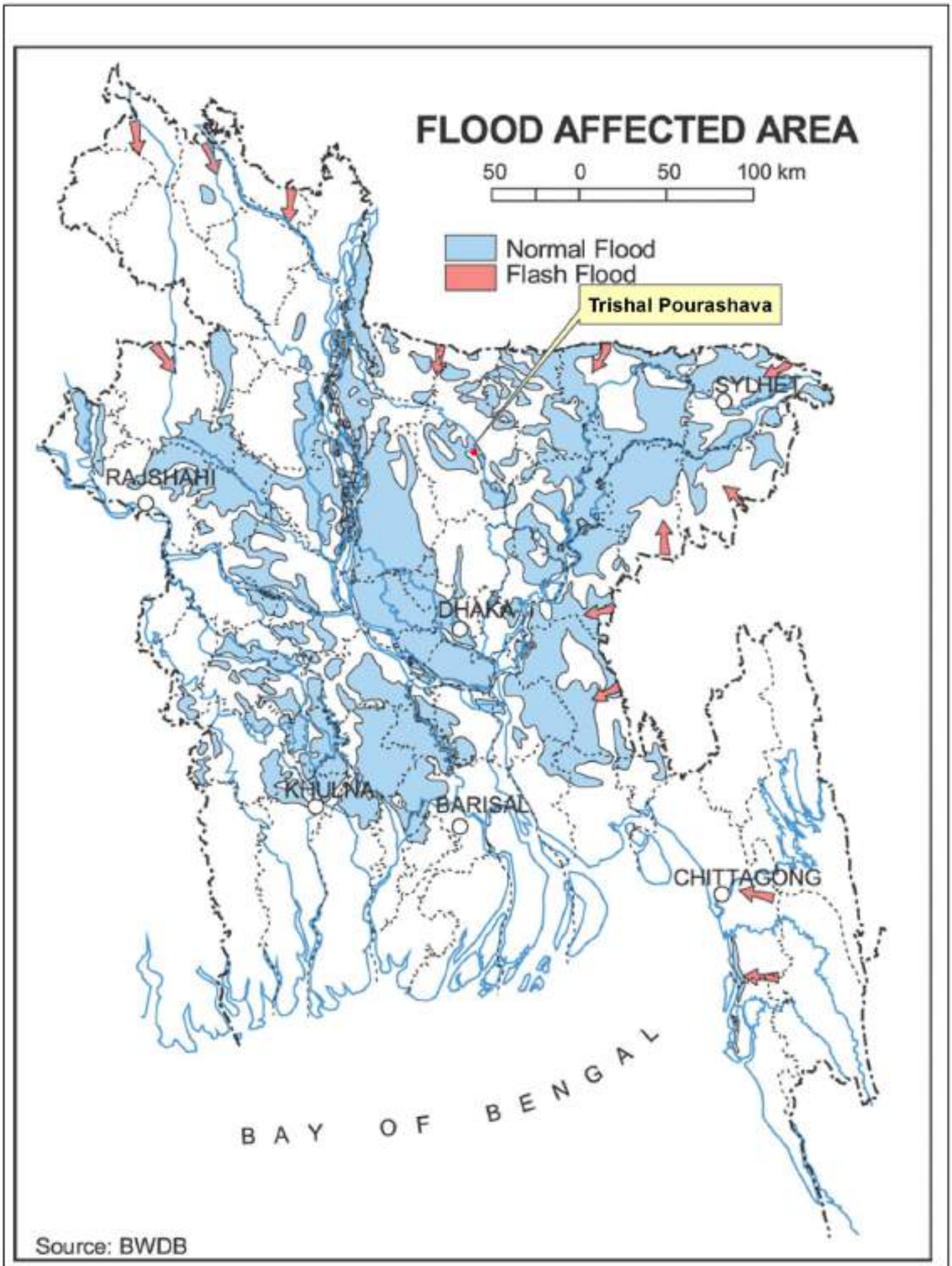
14.6.6.4 Earthquake

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

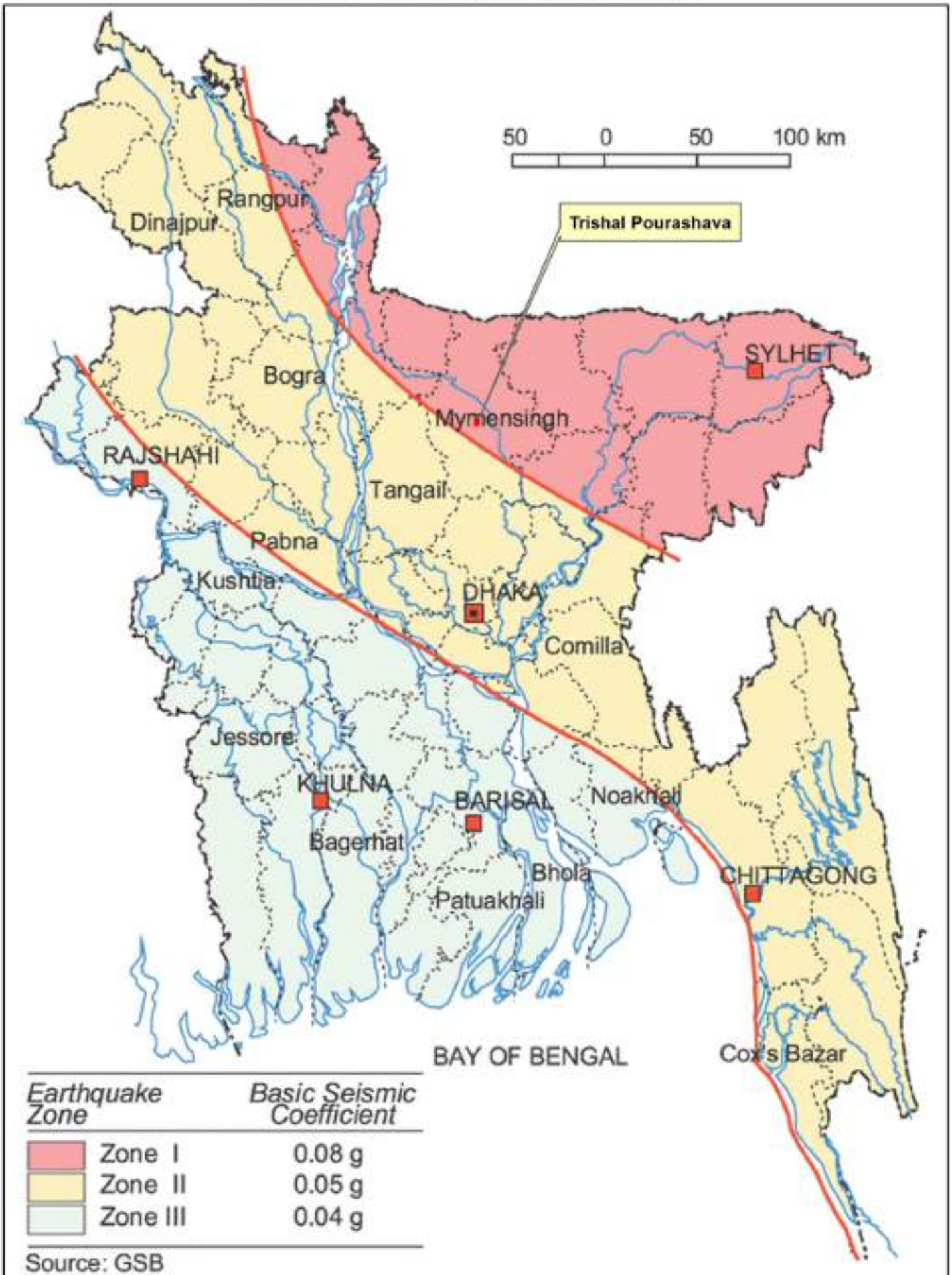
and size of earthquakes experienced over a period of time. The north and north easterly part of Bangladesh is the most active seismic zone and had experienced earthquakes of moderate to high intensity in the past.

Bangladesh has been divided into three generalized seismic zones: zone-I, zone-II and zone-III. Trishal falls under Zone-II which is a zone of high seismic risk with a basic seismic co-efficient of 0.05. Trishal Pourashava falls under this zone which is considered as the most vulnerable seismic zone of Bangladesh. The location of Trishal Pourashava in the Seismic Zoning Map is shown in **Map-14.5**.

Map-14.4 : Flood Zoning Map



Map-14.5 : Earthquake Zoning Map



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

Source: GSB

14.6.6.5 Water Logging

In Trishal 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.

14.6.6.6 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. Trishal 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 Mymensingh until now, fortunately the rate of fire hazard is very negligible in Trishal Pourashava. Presence of flammable building material and use of fire wood and kerosene for cooking purposes often causes danger.

14.6.6.7 Other Hazards

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

14.7 PLAN FOR ENVIRONMENTAL MANAGEMENT AND POLLUTION CONTROL

14.7.1 Proposals for Environmental Issues

14.7.1.1 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 14.1**. The list of Waste Transfer Stations and Wasre Disposal Ground is listed in **Table-14.11**.

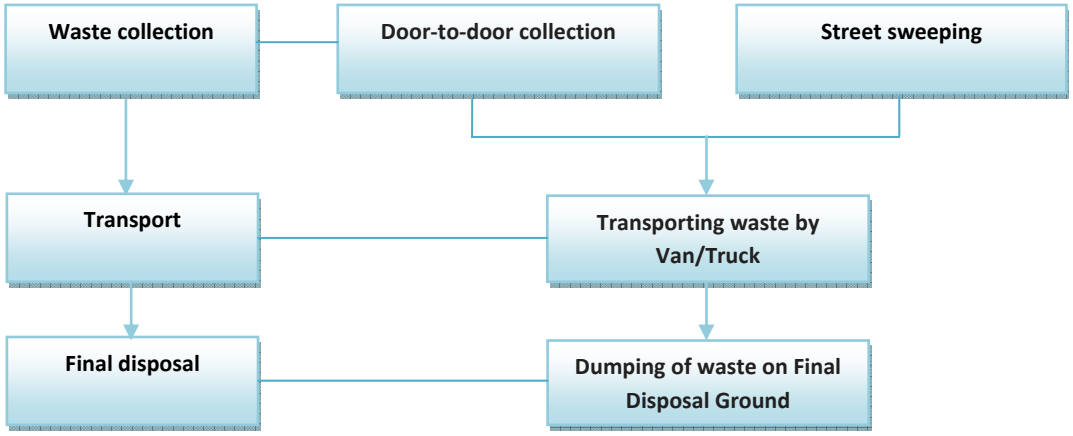


Figure 14.1: Overview of the Solid Waste Management Plan

Table - 14.12: List of Proposed Waste Disposal Facilities

ID	Type of Facilities	Location	Ward No.	Area (Acre)	Mouza Schedule	
					Mouza	Plot No.
WDG	Waste Disposal Ground	North-west margin of Ward No. 01	Ward No. 01	10.803	Trishal	7-18, 41, 44-47, 50, 51, 979, 980
WTS-1	Waste Transfer Station	South-east part of Ward No.02 and west of Shutia river	Ward No. 02	0.259	Trishal	1984, 1985
WTS-2	Waste Transfer Station	Eastern part of Ward No.03	Ward No. 03	0.261	Trishal	1896, 1900
WTS-3	Waste Transfer Station	Southern part of Ward No. 04	Ward No. 04	0.280	Rampur	1083
WTS-4	Waste Transfer Station	South-west corner of Ward No.08	Ward No. 08	0.245	Rampur	889, 891, 892

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.

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

Open Space Promotion

Present open space ratio is only 0.454acre per thousand. If the plan is implemented by the year 2021, the ratio will be 1.37acres 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.

14.7.1.3 Proposals for Pollution Control

14.7.1.3.1 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 northern part of Pourashava beside Dhaka-Mymensingh road and another at extreme south of the Pourashava (Sekandar Ali road) have been proposed. These two zones will occupy an area of 47.396 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 programs 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.

14.7.1.3.2 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 Trishal 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.

14.7.1.3.3 Other Pollution

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

14.7.2 Natural calamities and hazard mitigation proposals

Flood, Tornado and Earthquake are the usual hazards applicable for Trishal 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.

14.7.2.1 Plan for 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.

14.7.2.2 Plan for addressing hazards (Structural and non structural measures)

Shutia river passes through middle of the pourashava, but this river is almost dead. And this Pourashava is not effected by flood also. So, there is no need of any embankment in this Pourashava.

14.7.2.3 Plan for 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.

14.8 PLAN IMPLEMENTATION STRATEGIES

14.8.1 Regulations to implement the Environmental Management 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 Trishal Pourashava.

The conservancy section of the Pourashava will monitor the waste management system regularly and practice the 'Local Government (Paurashava) (Amended) Act, 2010' 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.

14.8.2 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-15

PLAN FOR URBAN SERVICES

15.1 INTRODUCTION

15.1.1 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 Trishal 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 Trishal Pourashava.

15.1.2 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

15.2 ANALYSIS OF EXISTING CONDITION AND DEMAND FOR SERVICES

15.2.1 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 Trishal Pourashava is unsatisfactory and do not fulfill the demand.

15.2.2 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

Trishal Pourashava has no water supply network of its own for distribution of safe drinking water to its inhabitants. The water supply within the Pourashava is mainly by hand tube wells by house owners. From census of the Pourashava it is revealed that there are around 2500 privately owned hand tube wells and 380 hand tube wells are supplied by the Pourashava free of cost. The water table within Pourashava ranges from 16 ft to 44 ft and is lower during summer. There is no difficulty of getting drinking water from hand tube wells in rainy season when water table is high. But from March to June during dry season most of the Hand Tube Wells can rarely pump any water. The DPHE is working with other NGOs for investigating drinking water quality. They collect water samples from both newly constructed as well as in operation hand tube wells for investigating the arsenic level and other minerals of ground water. However, within the Pourashava any arsenic contaminated hand tube well not yet identified. The poor people in urban periphery have no hand tube well of their own and collect water from neighbors' hand tube wells for drinking purpose. The Upazilla Parishad, Upazilla Health Complex and Thana Police Station have their own water supply system. They have individual Shallow Tube Wells to serve the purpose.

Sewerage and Sanitation

There is no sewerage network in Trishal Pourashava, only there are few sanitary latrines with septic tank and soak pit. The Pourashava claims that they have achieved to bring 90% of its population under sanitation coverage. The remaining 10% population still uses katcha latrine, open latrine and hanging latrines. There are 5028 households in Trishal Pourashava. Of its population 9% uses sanitary latrine with septic tank, 3% houses have sanitary latrine with soak pit, 78% population uses sami pacca latrines and the rests 2% usages katcha, 3% open 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. There is no slum within the Pourashava. There are 3 public toilets within the Pourashava of which 2 has hand tube wells and 1 has shallow tube well for water supply.

Electricity

The Power Development Board (PDB) and Rural Electrification Board are jointly assigned for the supply of electricity to Trishal Pourashava. The Electricity of Trishal by PDB is supplied from a 5 MVA sub station located at Darirampur in Trishal. The PDB Office in Trishal is also located at Darirampur headed by one Residence Engineer (Sub Assistant Engineer). The PDB has so far given 850 commercial connections to different shops, offices, services etc., 85 connections to rice mills, saw mills, ice cream factories and other cottage industries, 50 connections to shallow tube wells, deep tube wells and other agricultural equipments, 55 connections to religious, social and cultural establishments and 2550 connections to domestic holdings within the Pourashava.

The Polly Biddut Shamity (PBS) is responsible for supply of electricity of Trishal that supplied by REB. The PBS Office at Trishal is headed by one Junior Engineer. The PBS has so far given one commercial connection, 2 connections to cottage industries, one connection to agricultural equipment and 89 connections to different holdings within the Pourashava.

During winter demand of electricity is higher when cottage industries and agricultural equipments are in operation. The main constrains for new connections are deficiency in supply and lack of distribution line. Moreover the supply 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

The Trishal Pourashava has brought under natural gas supply (Titas Gas) but yet connected to any house hold. People usages mainly firewood for cooking purpose as the fire wood is cheaper and more available in market. Some people usages coiled sticks made from paddy husk as substitute of firewood and are becoming more popular. A small percentage of the people of the Trishal Pourashava mostly elite class usages liquefied petroleum gas (LPG) for cooking. The vehicles use diesel and petrol as fuel. There are 5 No petrol pumps within the Trishal Pourashava area.

Telephone

The Bangladesh Telecommunication Company Limited (BTCL) is the only land telephone service provider in the Trishal Pourashava. The Grameen Phone, City Cell, Bangla Link, and Actel are the mobile phone companies operating in the Trishal Pourashava. The BTCL has 300 line capacity digital telephone exchange at Baliapara Road, Darirampur, Trishal. The BTCL has so far provided 242 connections. Only 4.4% of the populations of the Pourashava have land phones. However with the expansion of mobile telephones the demand of BTCL telephone has decreased.

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 47,474 persons. Maintaining the ratio of distribution according to planning standard, 2.37 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 - 15.1**).

Table 15.1: Projected Urban Services

Urban Services (utilities)	Projected Area Under Urban Services (acre) for 2021
Water Supply	2.37
Electric Sub Station	2.37
Gas	2.37
Solid Waste Disposal Site	10
Waste Transfer Station	0.75
Telephone Exchange	1.19
Total	**19.05**

15.3 PROPOSALS FOR URBAN SERVICES AND IMPLEMENTATION STRATEGIES

15.3.1 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.

15.3.2 Proposals for Urban Services

Proposal for Water Supply

According to Ground Water Zoning Map of Bangladesh, the Ground Water Level of Trishal Pourashava is 5.3m-7.6m 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 (47,479 nos.) 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 Trishal Pourashava in 2031 : 47,479 person
Amount of Water needed by projected population : (120x47,479) liter/day
=56,97,480 liter/day

Deep tube well needed to meet the requirement of the projected population
=56,97,480/ (50x3600x12) nos.
= 2.64 nos. ≈ 3 nos.

According to Pourashava, the minimum level of ground water is 25ft. - 30ft. 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. Three 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-15.2** below and shown in **Map-15.1**. A tentative pipeline network of 57.3 km length for water supply is also proposed and shown in **Map-15.1**.

Table 15.2: 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 Graveyard	Ward No. 02	0.140	Trishal	709, 710, 708, 735
PH-02	Pump House	Beside Sekandar Ali Road	Ward No. 06	0.132	Nowdhar	12
PH-03	Pump House	West of Warid Tower	Ward No. 08	0.116	Rampur	708, 709
OHT-01	Overhead Tank	North side of Graveyard	Ward No. 02	0.237	Trishal	709, 710
OHT-02	Overhead Tank	Beside Sekandar Ali Road	Ward No. 06	0.213	Nowdhar	12, 13
OHT-03	Overhead Tank	West of Warid Tower	Ward No. 08	0.231	Rampur	738, 709, 737, 708

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 (F**igure-15.1**).

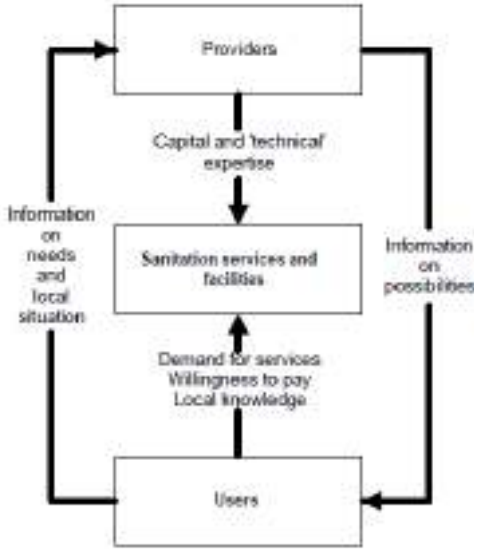


Figure-15.1 Strateges for sanitation Improvement

As only 12% sanitary latrine is pucca and only 78% 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. Seven public toilets are proposed at different location of the Pourashava, listed in **Table 15.3.** 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 15.3: List of Proposed Public Toilet

ID	Name of Proposal	Location	Ward No.	Area (Acre)	Mouza Schedule	
					Mouza	Plot No.
PT-1	Public Toilet	Beside Porabari road	Ward No. 03	0.013	Trishal	1782
PT-2	Public Toilet	Beside Varsity road	Ward No. 03	0.013	Trishal	1892, 1894, 1902
PT-3	Public Toilet	Beside Dhaka-Mymensingh road	Ward No. 06	0.013	Naodhar	240, 272, 273, 278
PT-4	Public Toilet	Beside Dhaka-Mymensingh road	Ward No. 06	0.013	Naodhar	356, 361
PT-5	Public Toilet	Beside Dhaka-Mymensingh road	Ward No. 07	0.018	Rampur	200
PT-6	Public Toilet	Beside Balipara road	Ward No. 09	0.036	Rampur	873, 1183, 1183

Proposal for Electricity

The Polly Biddut Shamity (PBS) is responsible for supply of electricity of Trishal that supplied by REB. The PBS Office at Trishal is headed by one Junior Engineer. The PBS has so far given one commercial connection, 2 connections to cottage industries, one connection to agricultural equipment and 89 connections to different holdings within the Pourashava.

During winter demand of electricity is higher when cottage industries and agricultural equipments are in operation. The main constrains for new connections are deficiency in supply and lack of distribution line. Moreover the supply is not uninterrupted. Load shading is a common problem. The main constrains for new connections are deficiency in supply and lack of distribution line.

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 Trishal 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.

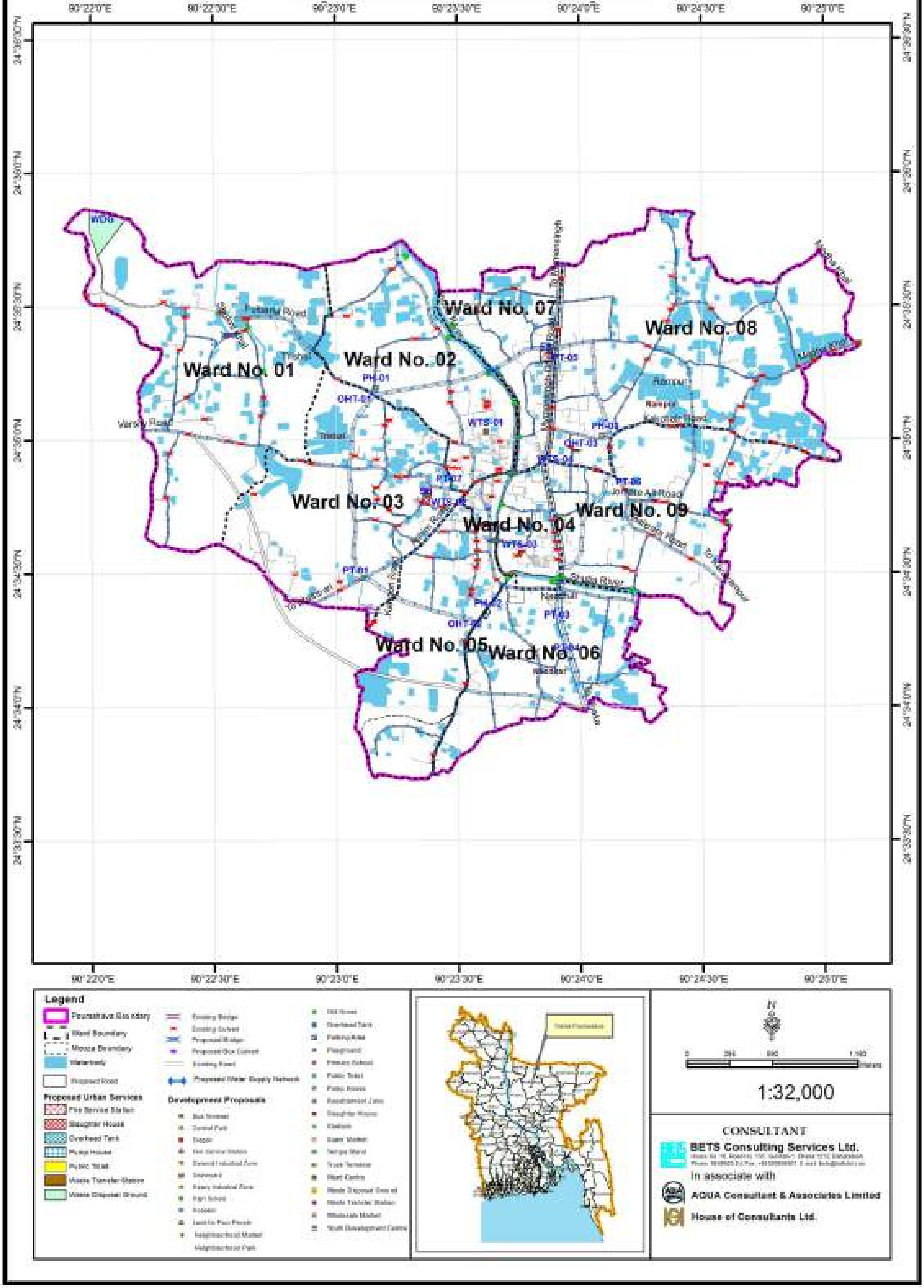
Proposal for Gas supply

There is alredy supply of natural gas to Trishal Pourashava.

Proposal for Telephone

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

Map-15.1 : Utility Services Plan Map



15.3.3 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 (Paurashava) (Amended) Act, 2010' 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.

15.3.4 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 Trishal 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-16

INTRODUCTION

The third tier of the preparation of Master Plan of Trishal 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 Trishal 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).

16.1 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 Trishal 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.

16.2 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 Paurashava 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.

16.3 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 tong 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.

16.4 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-16.1**). These three steps are:

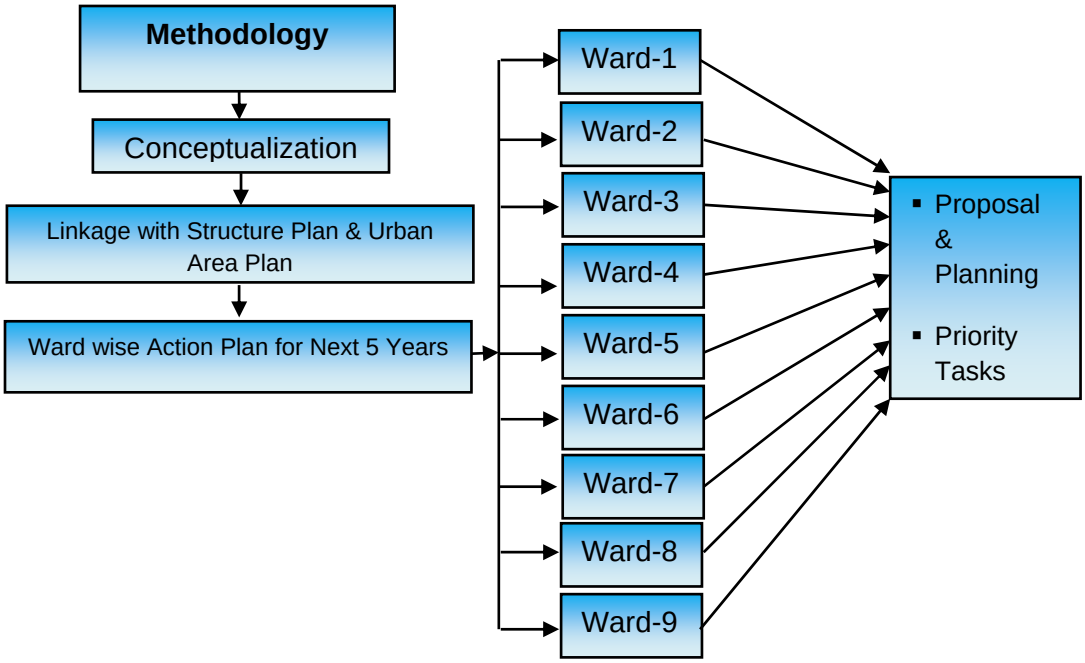


Figure-16.1: Methodology of Ward Action Plan Preparation

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-17

DERIVATION OF WARD ACTION PLAN

17.1 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 Trishal Paurashava will provide a long term development strategy for 20 years up to 2031 for the development of the Paurashava area of 15.49 sq km or 3033.4 acres with an estimated population around 64,861. 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. 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 2028 a project will have to be started to prepare a new Structure Plan for the next 20 year plan period.

17.2 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.

17.3 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) Citywide framework for planning and governance will be established & 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.

17.4 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:

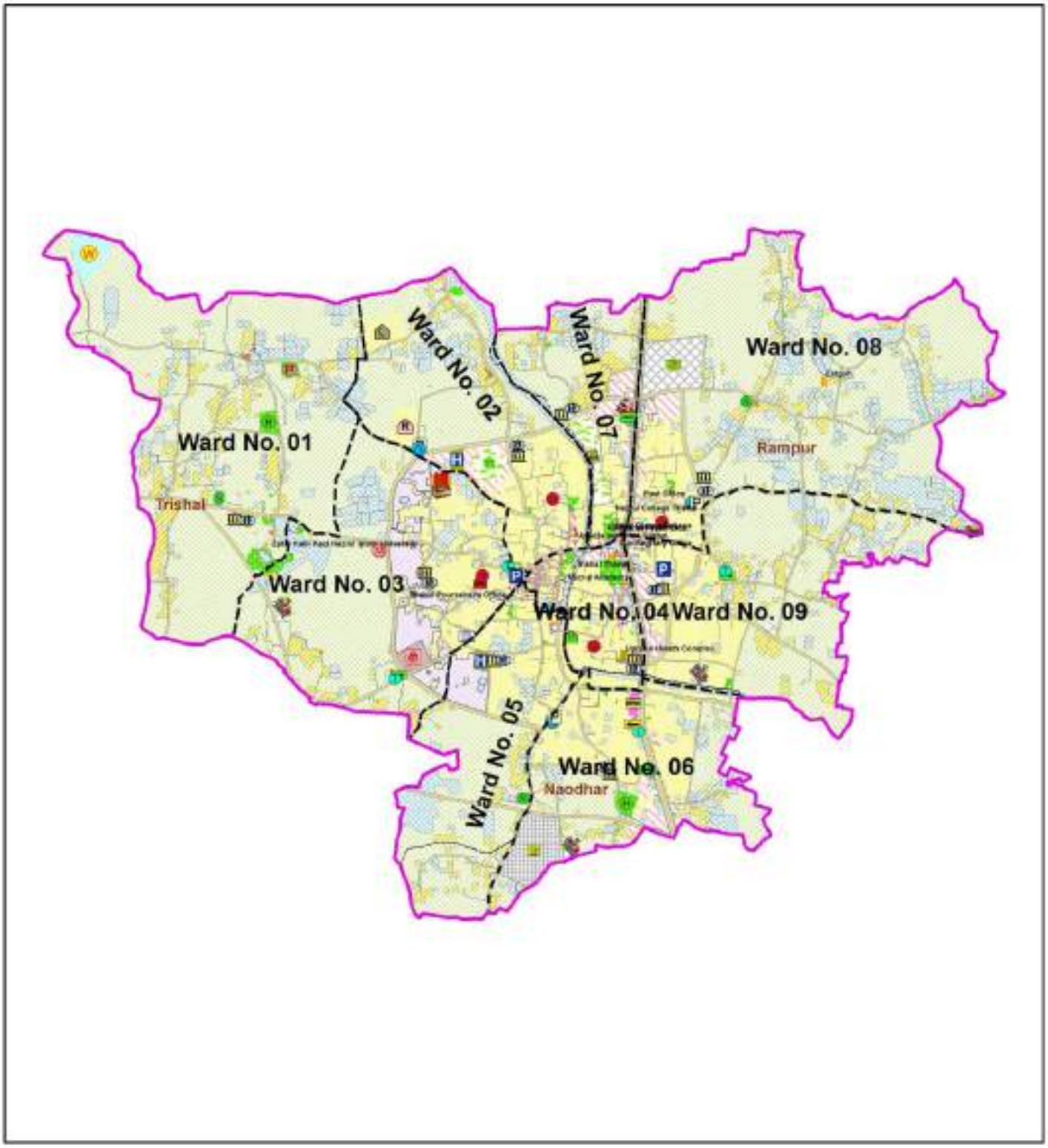
- Context and Appraisal Report
- Preliminary Visioning
- Concept Plan

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. A comprehensive Map of Ward Action Plan is shown in **Map-17.1 and 17.2** respectively.

Map-17.1 : Landuse Plan Map of Ward Action Plan of Trishal 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
Waterbody
Open Space
Recreational Facilities
Circulation Network

Transportation Facilities
Utility Services
Health Services
Community Facilities
Urban Defense
Miscellaneous

Development Proposal

Bus Terminal
Central Park
Jetty
Fire Service Station
Heavy Industrial Zone
Graveyard
Heavy Industrial Zone
High School
Hospital
Land to Face Floods
Neighbourhood Market
Neighborhood Park
Old Mosque
Overhead Tank
Parking Area
Playground
Primary School
Public Toilet
Pump House
Resettlement Zone
Slaughter House
Station
Super Market
Temple / Shed
Truck Terminal
Ward Centre
Waste Disposal Ground
Waste Transfer Station
Wholesale Market
Youth Development Centre

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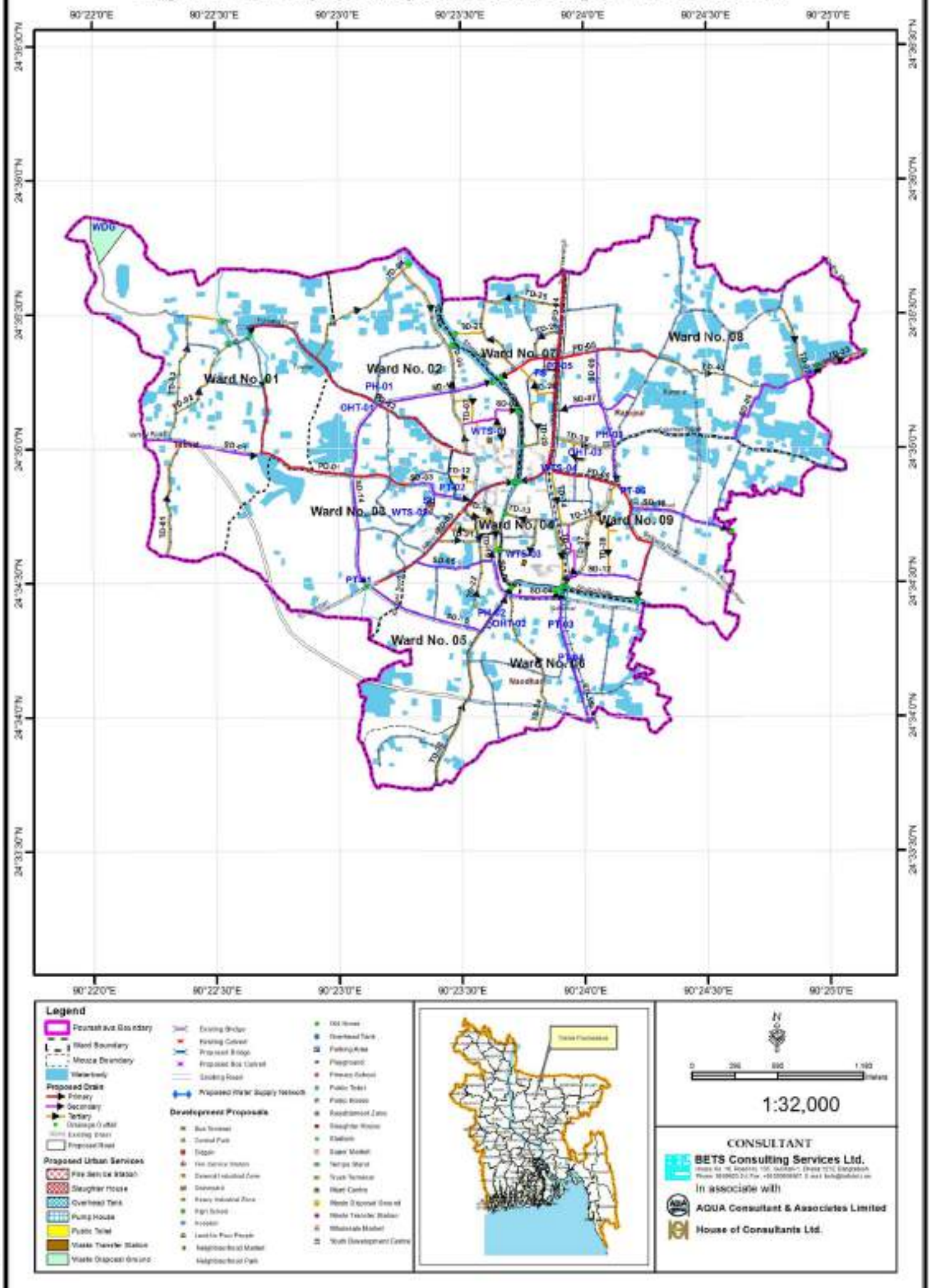
Map-17.2 : Drainage & Utility Services Plan Map of Ward Action Plan



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CHAPTER-18

ACTION PLAN FOR WARD-01

18.1 PROPOSALS AND PLANS FOR WARD 01

Ward No. 1 is located at the Western part of Trishal Pourashava. The area of the Ward is 279.467 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 No. 01** for implementation within next 5(five) years up to 2016. Action Plan Map for Ward-1 is shows in **Map-18.1 & Map-18.2** respectively.

Proposal of Roads:

Road Type	ID	Length (km)	Width (m)
Local Road	LR-1	3.497	9.14
	LR-6	1.347	9.14
	LR-7	1.638	9.14
	LR-8	1.589	9.14

Proposal of Drain:

Drain Type	ID	Construction Type	Length (km)	Av. Width (m)	Outfall
Primary Drain	PD-01	Pucca	1.520	1.5	Shukni Bill Khal
	PD-02		1.226	1.5	Shukni Bill Khal
Tertiary Drain	TD-01	Pucca	0.814	0.5	SD-01
	TD-02		0.646	0.5	Shukni Bill Khal

Development Proposals:

Name of Proposal	ID	Location	Area (acre)
Primary School	PS	Beside Fulbaria road and east of shukni khal	2.113
Waste Disposal Ground	WDG	North-west margin of Ward No. 01	10.538

18.2 PRIORITY TASKS

The following priorities has identified after the Public consultation meeting at Nandail Pourashava.

Priority-1		Priority-2		Priority-3	
Type	ID	Type	ID	Type	ID
Road Development	LR-1, LR-6	Road Development	LR-7	Road Development	LR-8
Drain	PD-01, PD-02	Drain	TD-1	Drain	TD-02
Other Facilities	WDG	Other Facilities	PS	Other Facilities	-

18.3 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

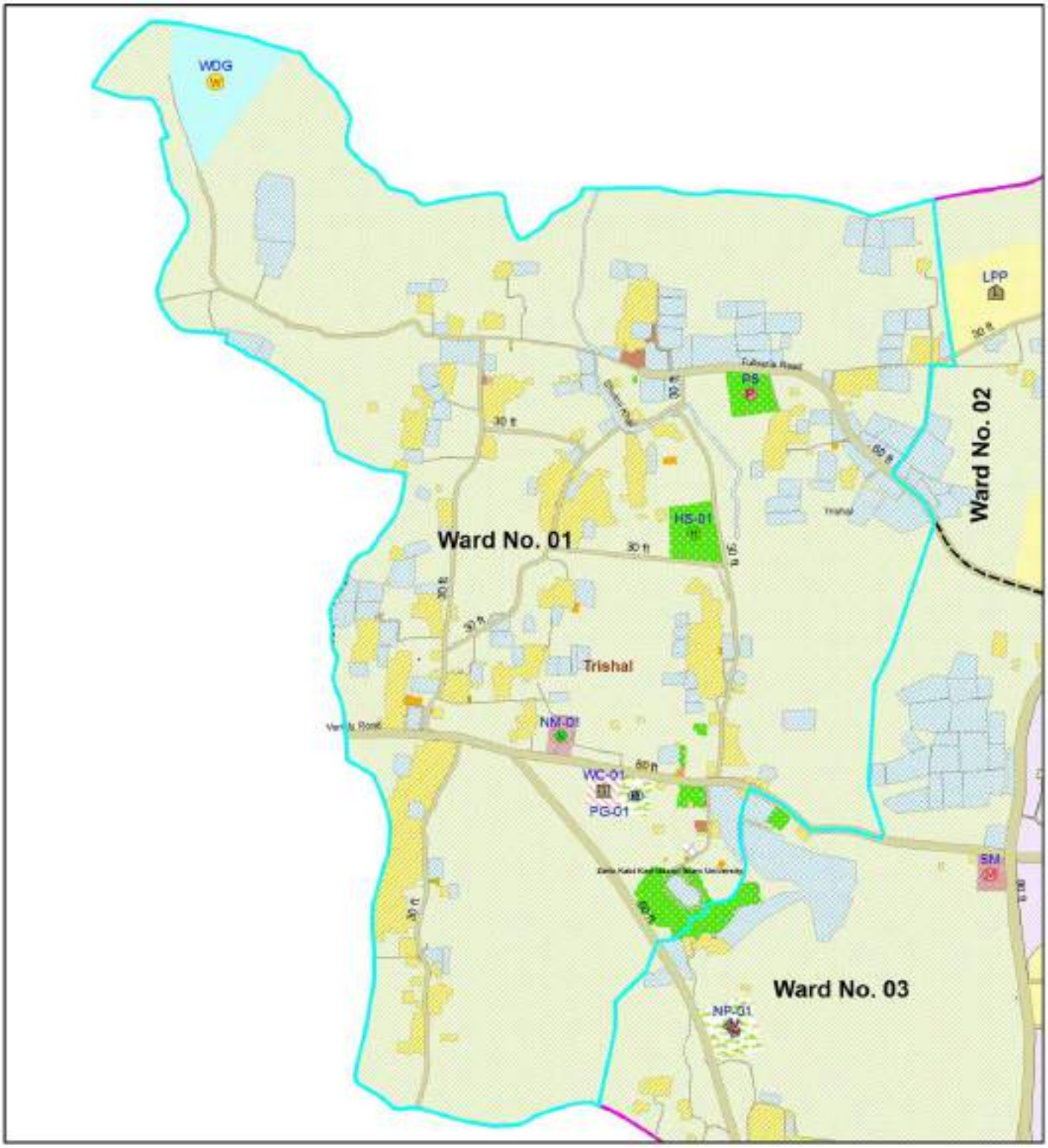
- Land demarcation on the ground
- Land acquisition
- Demolition of buildings or Structures (if any)
- Structure compensation (if any)
- Land development (if any)
- Physical construction

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 M3
c.	Compensation cost of structure	Tk.8,00.00 per M3
d.	Land development cost	Tk.3,80.00 per M3
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-18.1 : Action Plan Map for Action Plan of Ward-1

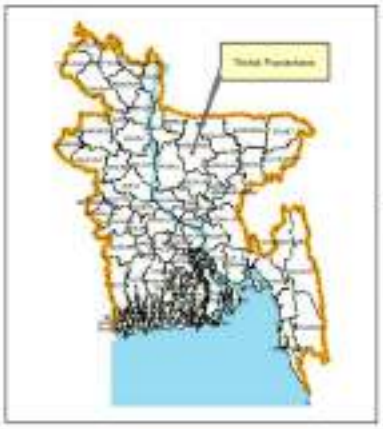


Legend

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
- Waterbody
- Open Space
- Recreational Facilities
- Circulation Network
- Transportation Facilities
- Utility Services
- Health Services
- Community Facilities
- Urban Defense
- Miscellaneous

Development Proposal
- Bus Terminal
- Central Park
- Jetty
- Fire Service Station
- Industrial Estate Zone
- Graveyard
- Heavy Industrial Zone
- High School
- Hospital
- Land to Face Floods
- Neighborhood Market
- Neighborhood Park
- Old Police
- Overhead Tank
- Parking Area
- Playground
- Primary School
- Public Toilet
- Pump House
- Resettlement Zone
- Slaughter House
- Warfare
- Super Market
- Temple Island
- Truck Terminal
- Ward Center
- Waste Disposal Ground
- Waste Transfer Station
- Wholesale Market
- Youth Development Center



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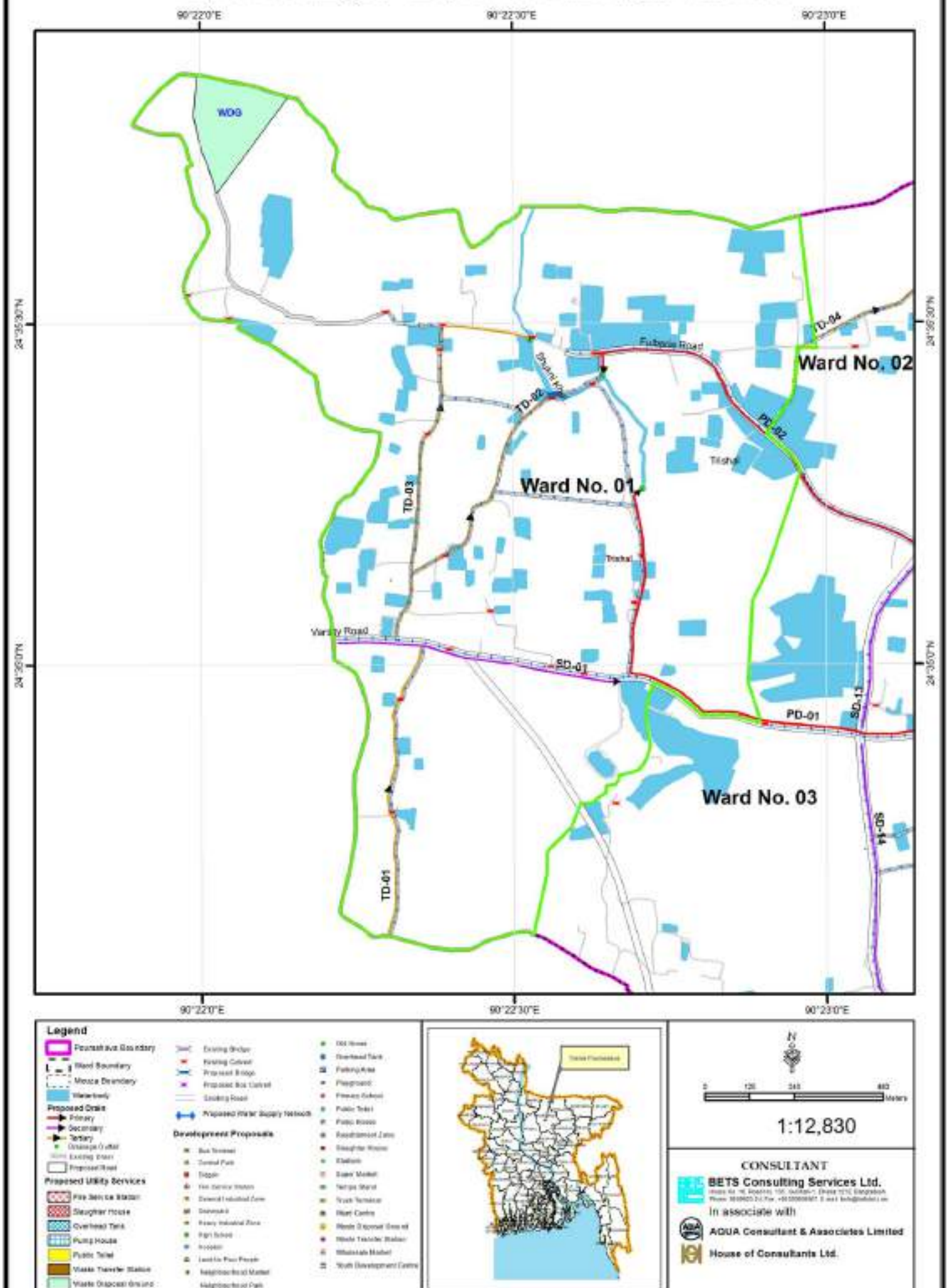
Map-18.2 : Drainage & Utility Services Plan Map for Ward No.01



Legend

- Peurashava Boundary
- Ward Boundary
- Mouza Boundary
- Waterbody

Proposed Drain

- Primary
- Secondary
- Tertiary
- Drainage Outfall
- Existing Drain
- Proposed Road

Proposed Utility Services

- Fire Service Station
- Slaughter House
- Overhead Tank
- Pump House
- Public Toilet
- Waste Transfer Station
- Waste Disposal Ground

- Existing Bridge
- Existing Culvert
- Proposed Bridge
- Proposed Box Culvert
- Existing Road
- Proposed Water Supply Network

Development Proposals

- Bus Terminal
- Central Park
- Depot
- Fire Service Station
- General Industrial Zone
- Graveyard
- Heavy Industrial Zone
- High School
- Hospital
- Land for Poor People
- Neighbourhood Market
- Neighbourhood Park
- Old Homes
- Overhead Tank
- Parking Area
- Playground
- Primary School
- Public Toilet
- Public Works
- Readymade Zone
- Slaughter House
- Stadium
- Super Market
- Temple Mandir
- Truck Terminal
- Water Centre
- Waste Disposal Ground
- Waste Transfer Station
- Wholesale Market
- Youth Development Centre

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CHAPTER-19

ACTION PLAN FOR WARD-02

19.1 PROPOSALS AND PLANS FOR WARD 02

Ward No. 2 is located at the northernpart of TrishalPourashava. The area of the Ward is 269.906 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. Action Plan Map for Ward-2 is shows in **Map-19.1 & Map-19.2** respectively.

Proposal of Roads:

Road Type	ID	Length (km)	Width (m)
Local Road	LR-09	1.435	9.14
	LR-10	0.754	6.1

Proposal of Drain:

Drain Type	ID	Construction Type	Length (km)	Av. Width (m)	Outfall
Secondary Drain	SD-02	Pucca	0.442	0.8	Shutia River
Tertiary Drain	TD-05	Pucca	0.649	0.5	Shutia River
	TD-06		0.472	0.5	Shutia River

Development Proposals:

Name of Proposal	ID	Location	Area (acre)
Waste Transfer Station	WTS-1	South-east part of Ward No.02 and west of Shutia river	0.252
Ward Centre	WC-02	East side of Dhani road	1.019
Playground	PG-02	East side of Dhani road	1.251

19.2 PRIORITY TASKS

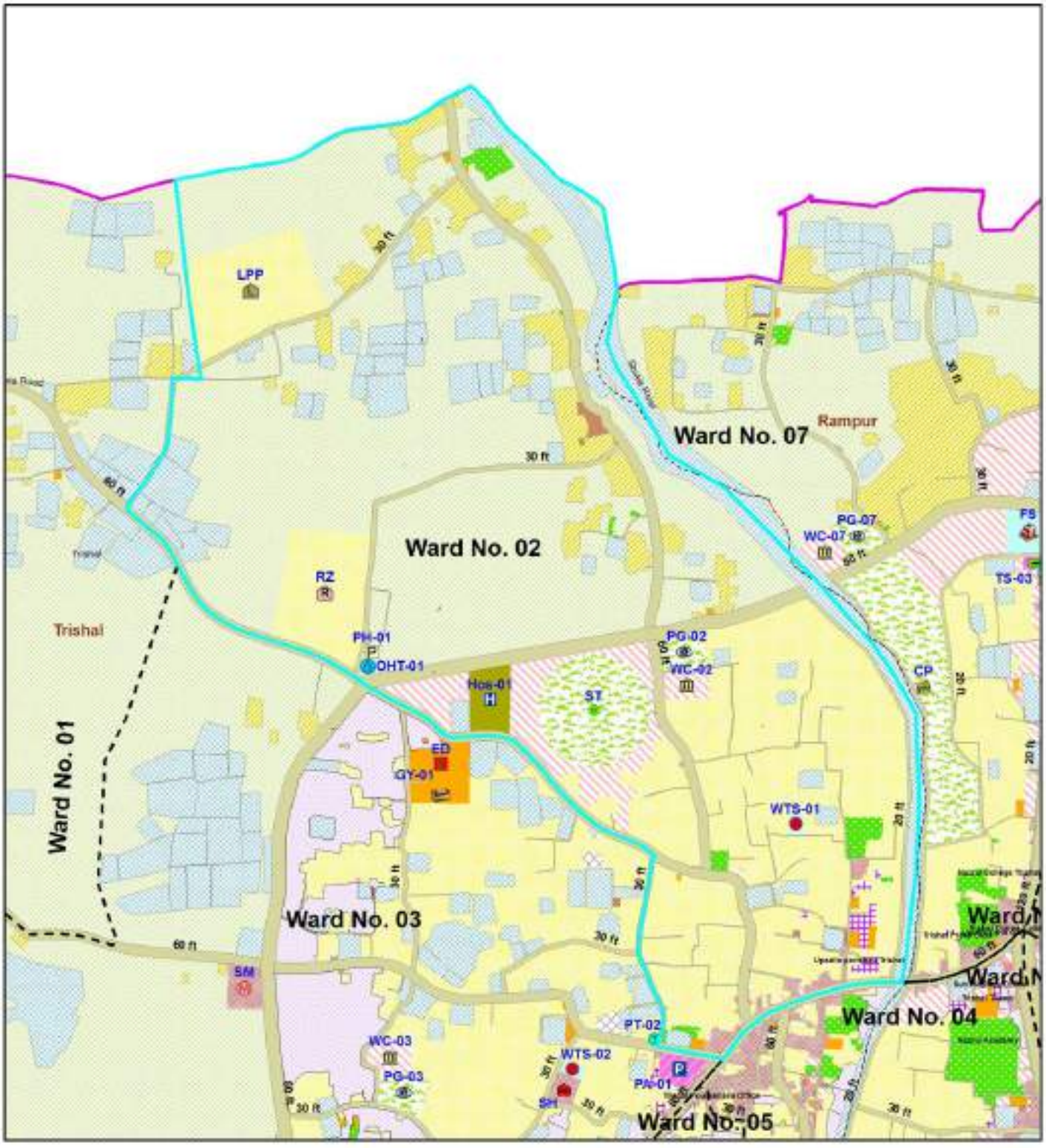
The following priorities has identified after the Public consultation meeting at Trishal Pourashava.

Priority-1		Priority-2		Priority-3	
Type	ID	Type	ID	Type	ID
Road Dev	LR-9	Road Dev	LR-10	Road Dev	-
Drain	SD-02	Drain	TD-05, TD-06,	Drain	-
Other Facilities	WTS-1, WC-2	Other Facilities	PG-2	Other Facilities	-

19.3 FINANCIAL COST OF THE PRIORITY INFRASTRUCTURE DEVELOPMENTS

Financial Cost of the Priority Infrastructure Developments have illustrated in Clause 3.3 above.

Map-19.1 : Landuse Plan Map for Action Plan of Ward-2



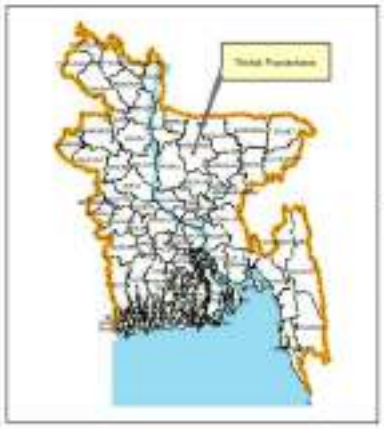
Legend

Foundation 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
Waterbody
Open Space
Recreational Facilities
Circulation Network

Transportation Facilities
Utility Services
Health Services
Community Facilities
Urban Defense
Miscellaneous

Development Proposal
Bus Terminal
Central Park
Jetty
Fire Service Station
Industrial Zone
Graveyard
Heavy Industrial Zone
High School
Hospital
Land to Face Floods
Neighbourhood Market
Neighborhood Park
Old Police
Overhead Tank
Parking Area
Playground
Primary School
Public Toilet
Pump House
Resettlement Zone
Slaughter House
Station
Super Market
Temple Stand
Truck Terminal
Ward Center
Waste Disposal Ground
Waste Transfer Station
Wholesale Market
Youth Development Center



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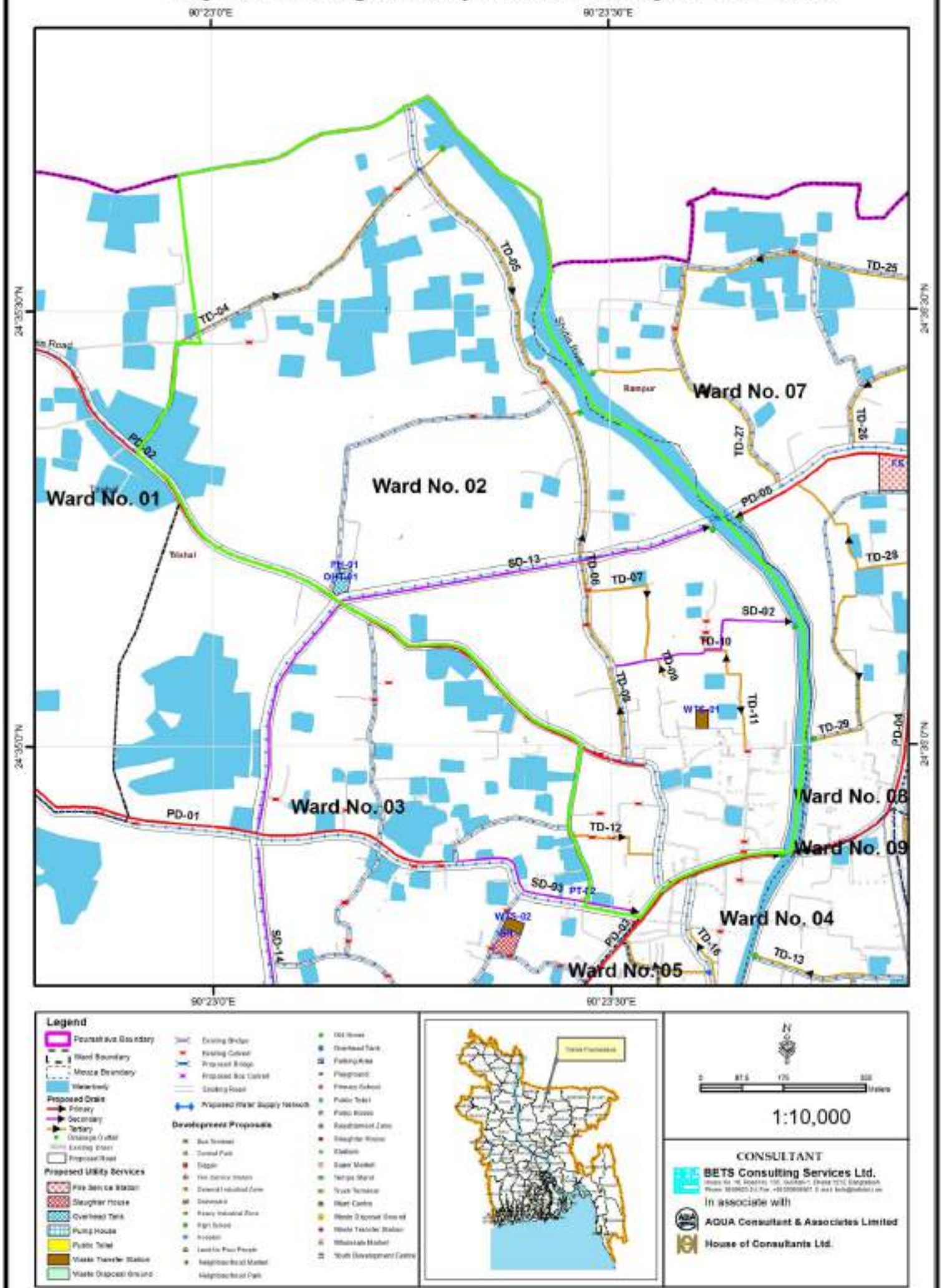
Map-19.2 : Drainage & Utility Services Plan Map for Ward No.02



CHAPTER-20

ACTION PLAN FOR WARD-03

20.1 PROPOSALS AND PLANS FOR WARD 03

Ward No. 3 is located at the South-west part of Trishal Pourashava. The area of the Ward is 93.6683 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. Action Plan Map for Ward-3 is shown in **Map-20.1 & Map-20.2** respectively.

Proposal of Roads:

Road Type	ID	Length (km)	Proposed RoW
Secondary Road	SR-01	3.759	24.5
Secondary Road	SR-03	4.785	18.3
Secondary Road	SR-06	3.420	18.3
Local Road	LR-11	1.150	9.14
Local Road	LR-14	1.447	9.14

Proposal of Drain:

Drain Type	ID	Construction Type	Length (km)	Av. Width (m)	Outfall
Secondary Drain	SD-03	Pucca	0.431	0.8	PD-03

Development Proposals

Name of Proposal	Type	Location	Area (acre)
Super Market	SM	Central part of Ward No.03 beside Varsity road	1.101
Graveyard	GY-1	Beside Fulbaria road and adjacent to proposed Eidgah	0.675
Neighbourhood Park	NP-1	South-western part of Ward No.03	3.018
Public Toilet	PT-1	Beside Porabari roadadjacent to proposed Tempo Stand	0.105
Public Toilet	PT-2	Beside Varsity road	0.101
Waste Transfer Station	WTS-2	Eastern part of Ward No.03	0.268
Tempo Stand	TS-1	Beside Porabari roadand south – eastern part of Ward No. 03	0.261
Slaughter House	SH	South side of Varsity Road	0.561

20.2 PRIORITY TASKS

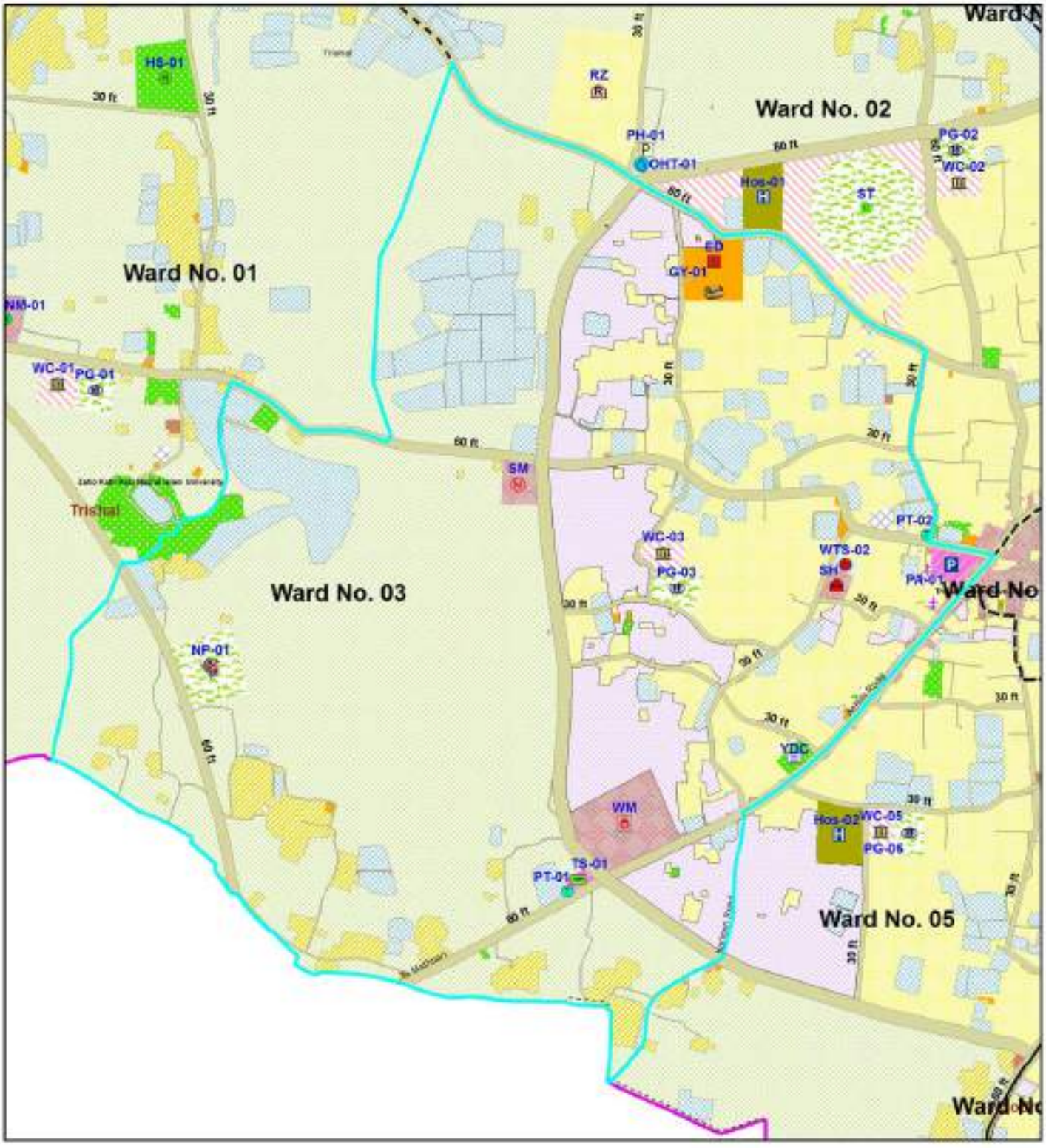
The following priorities has identified after the Public consultation meeting at Trishal Pourashava.

Priority-1		Priority-2		Priority-3	
Type	ID	Type	ID	Type	ID
Road Dev	SR-01	Road Dev	SR-03, LR-14	Road Dev	SR-06, LR-11
Drain	SD-03	Drain	-	Drain	-
Other Facilities	SM, PT-2, WTS-2	Other Facilities	NP-1, PT-1, TS-1	Other Facilities	GY-1, SH

20.3 FINANCIAL COST OF THE PRIORITY INFRASTRUCTURE DEVELOPMENTS

Financial Cost of the Priority Infrastructure Developments have illustrated in Clause 3.3 above.

Map-20.1 : Landuse Plan Map for Action Plan of Ward-3



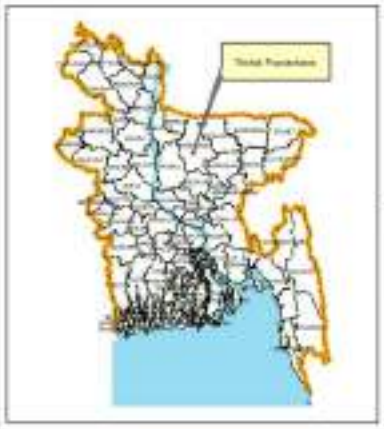
Legend

Foundation 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
Waterbody
Open Space
Recreational Facilities
Circulation Network

Transportation Facilities
Utility Services
Health Services
Community Facilities
Urban Defense
Miscellaneous

Development Proposal
Bus Terminal
Central Park
Jetty
Fire Service Station
Industrial Estate Zone
Graveyard
Heavy Industrial Zone
High School
Hospital
Land to Place Roads
Neighbourhood Market
Neighbourhood Park
Old Police
Overhead Tank
Parking Area
Playground
Primary School
Public Toilet
Pump House
Resettlement Zone
Slaughter House
Station
Super Market
Temple Stand
Truck Terminal
Water Cistern
Waste Disposal Ground
Waste Transfer Station
Wholesale Market
Youth Development Centre



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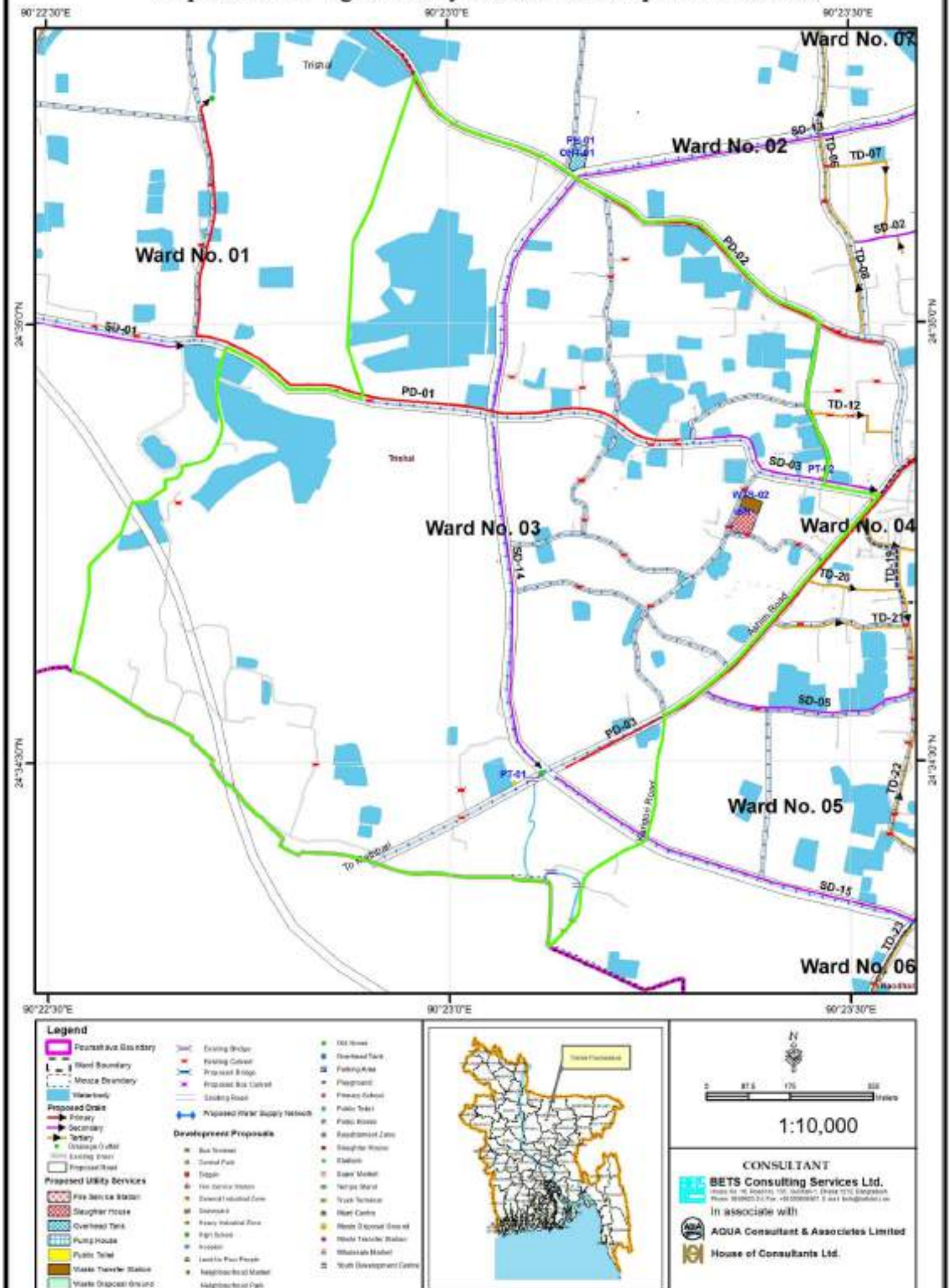
Map-20.2 : Drainage & Utility Services Plan Map for Ward No.03



CHAPTER-21

ACTION PLAN FOR WARD-04

21.1 PROPOSALS AND PLANS FOR WARD 04

Ward No. 4 is located at the central part of the Trishal Pourashava. The area of the Ward is 352.1748 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. Action Plan Map for Ward-4 is shown in **Map-21.1 & Map-21.2** respectively.

Proposal of Road:

Road Type	ID	Length (km)	Width (m)
Local Road	LR-21	2.384	6.1
	LR-22	0.849	6.1

Proposal of Drain:

Drain Type	ID	Construction Type	Length (km)	Av. Width (m)	Outfall
Tertiary Drain	TD-13	Pucca	0.257	0.5	Shutia River
	TD-14		0.449	0.5	Shutia River
	TD-18		0.264	0.5	Shutia River

Development Proposals:

Name of Proposal	Type	Location	Area(acre)
Waste Transfer Station	WTS-3	Southern part of Ward No. 04	0.264
Ward Centre	WC-04	East of Upazila Health Complex	0.857
Playground	PG-04	East of Upazila Health Complex	0.998

21.2 PRIORITY TASKS

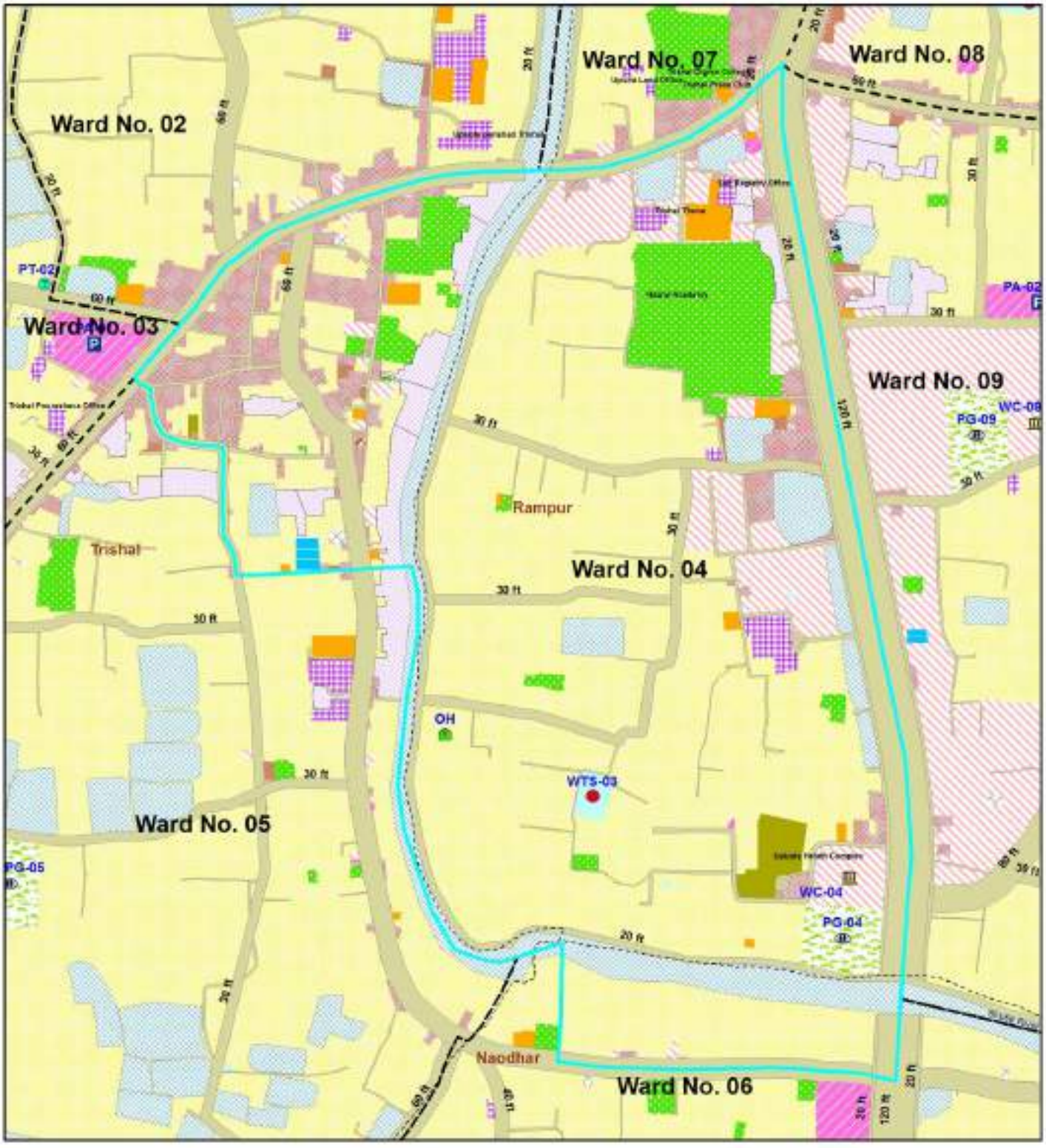
The following priorities has identified after the Public consultation meeting at Trishal Pourashava.

Priority-1		Priority-2		Priority-3	
Type	ID	Type	ID	Type	ID
Road Dev	LR-22	Road Dev	LR-21	Road Dev	-
Drain	TD-13, TD-14	Drain	TD-18	Drain	-
Other Facilities	WTS-3	Other Facilities	WC-4	Other Facilities	PG-4

21.3 FINANCIAL COST OF THE PRIORITY INFRASTRUCTURE DEVELOPMENTS

Financial Cost of the Priority Infrastructure Developments have illustrated in Clause 3.3 above.

Map-21.1 : Landuse Plan Map for Action Plan of Ward-4



Legend

Foundational 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
Waterbody
Open Space
Recreational Facilities
Circulation Network

Transportation Facilities
Utility Services
Health Services
Community Facilities
Urban Defense
Miscellaneous

Development Proposal
Bus Terminal
Central Park
Depot
Fire Service Station
Industrial Industrial Zone
Graveyard
Heavy Industrial Zone
High School
Hospital
Land to Face Floods
Neighbourhood Market
Neighborhood Park
Old Mosque
Overhead Tank
Parking Area
Playground
Primary School
Public Toilet
Pump House
Resettlement Zone
Slaughter House
Stadium
Super Market
Temple / Shed
Truck Terminal
Ward Center
Waste Disposal Ground
Waste Transfer Station
Wholesale Market
Youth Development Center

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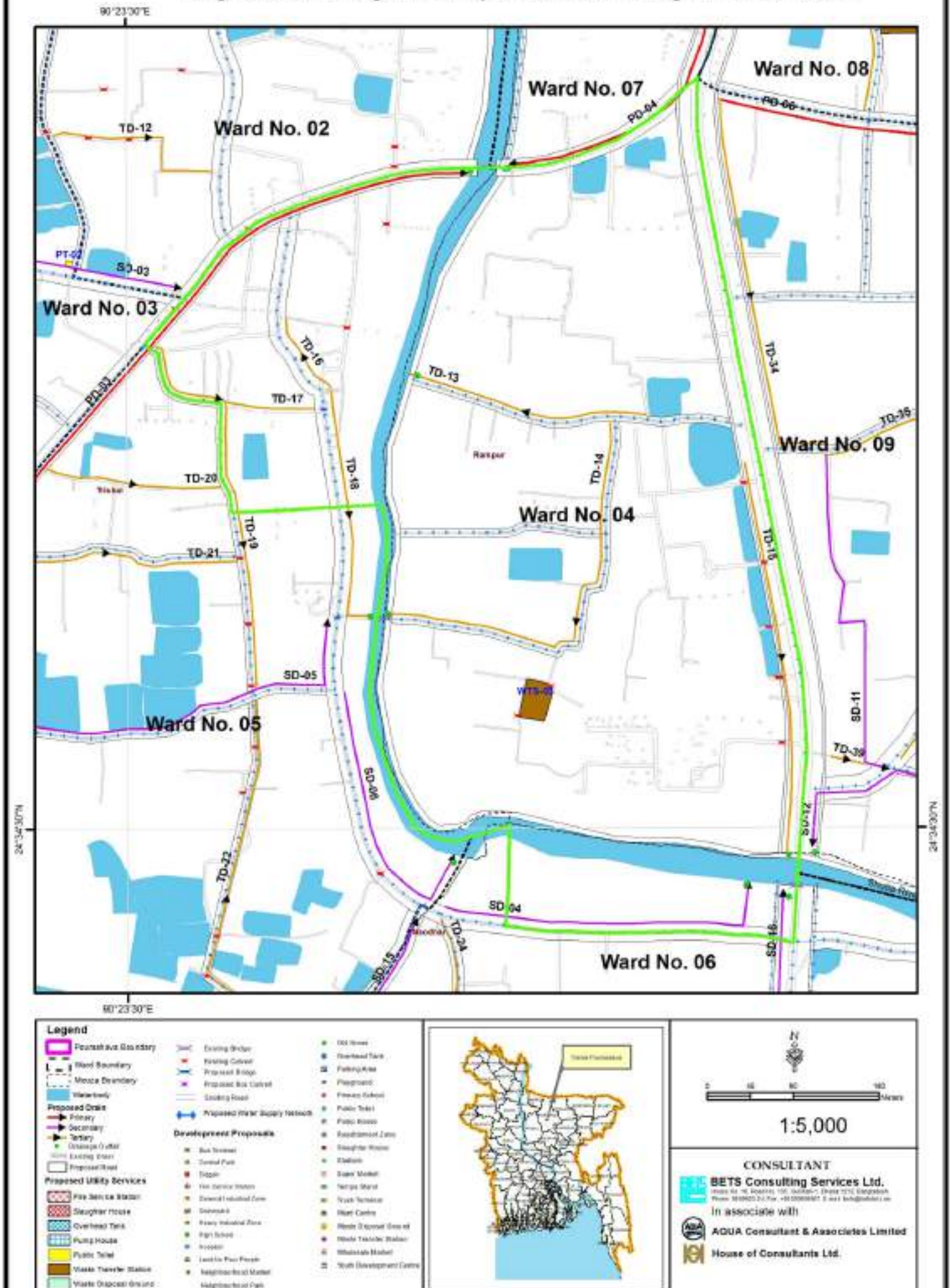
Map-21.2 : Drainage & Utility Services Plan Map for Ward No.04



Legend

- Peurashava Boundary
- Ward Boundary
- Mouza Boundary
- Waterbody

Proposed Drain

- Primary
- Secondary
- Tertiary
- Drainage Outfall
- Existing Drain
- Proposed Road

Proposed Utility Services

- Fire Service Station
- Slaughter House
- Overhead Tank
- Pump House
- Public Toilet
- Waste Transfer Station
- Waste Disposal Ground

- Existing Bridge
- Existing Culvert
- Proposed Bridge
- Proposed Box Culvert
- Existing Road
- Proposed Water Supply Network

Development Proposals

- Bus Terminal
- Central Park
- Depot
- Fire Service Station
- General Industrial Zone
- Graveyard
- Heavy Industrial Zone
- High School
- Hospital
- Land for Poor People
- Neighborhood Market
- Neighborhood Park
- Old Homes
- Overhead Tank
- Parking Area
- Playground
- Primary School
- Public Toilet
- Public Toilet
- Rajakhamot Zone
- Slaughter House
- Stadium
- Super Market
- Temple Mandir
- Truck Terminal
- Water Centre
- Waste Disposal Ground
- Waste Transfer Station
- Wholesale Market
- Youth Development Centre

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CHAPTER-22

ACTION PLAN FOR WARD-05

22.1 PROPOSALS AND PLANS FOR WARD 05

Ward No.5 is located at the Southern part of Trishal Pourashava. The area of the Ward is 406.8794 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. Action Plan Map for Ward-5 is shows in **Map-22.1 & Map-22.2** respectively.

Proposal of Road:

Road Type	ID	Length (km)	Width (m)
Local Road	LR-23	1.552	9.14
	LR-25	1.034	9.14

Proposal of Drain:

Drain Type	ID	Construction Type	Length (km)	Av. Width (m)	Outfall
Secondary Drain	SD-05	Pucca	0.596	0.8	Shutia River
Secondary Drain	SD-15	Pucca	1.124	0.8	Shutia River
Tertiary Drain	TD-19	Pucca	0.297	0.5	SD-05

Development Proposals:

Name of Proposal	Type	Location	Area (acre)
Neighbourhood Market	NM-2	Eastern margin of Ward No.05 beside Sekandar Ali road	1.059

22.2 PRIORITY TASKS

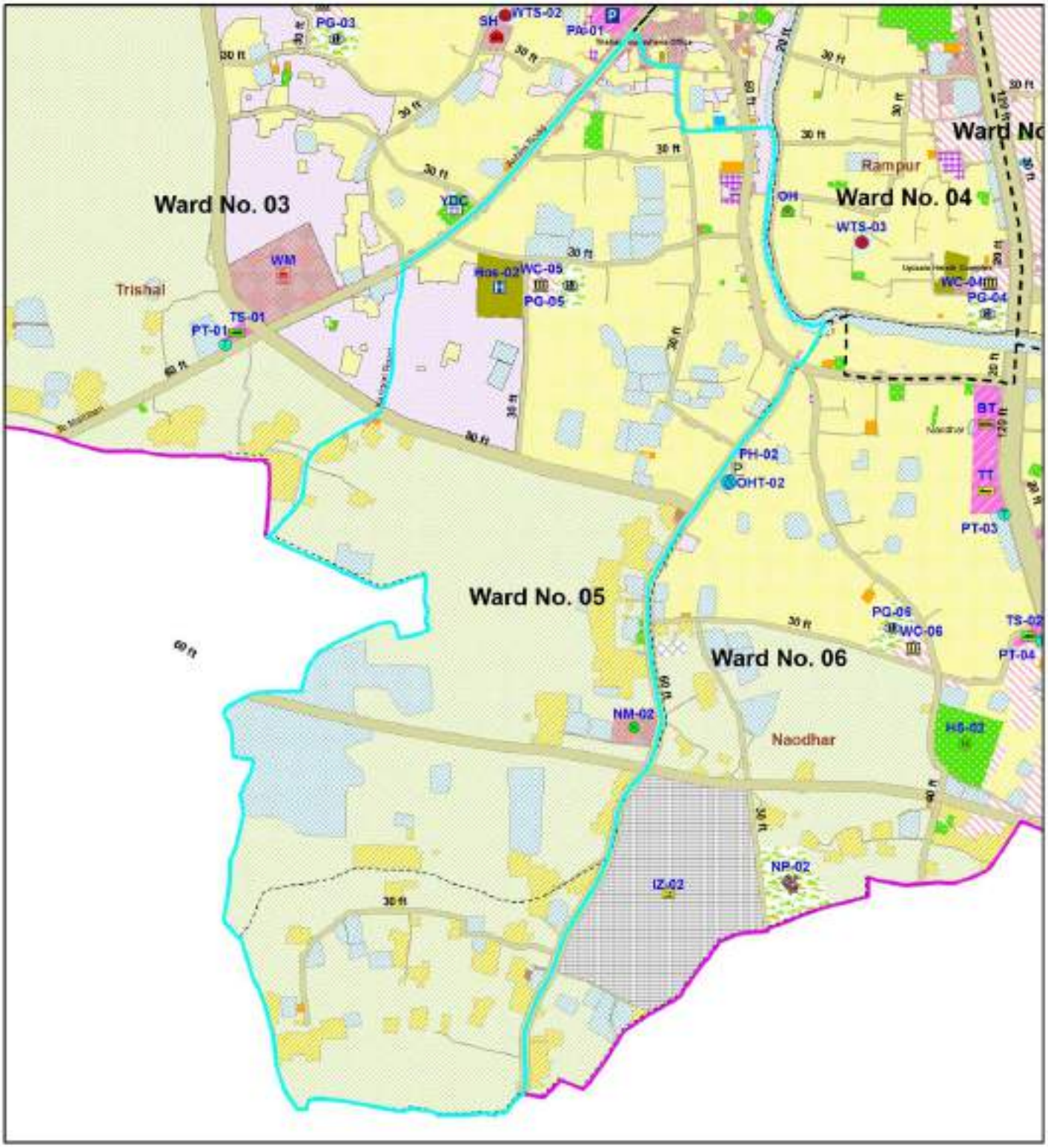
The following priorities has identified after the Public consultation meeting at Trishal Pourashava.

Priority-1		Priority-2		Priority-3	
Type	ID	Type	ID	Type	ID
Road	LR-23	Road	LR-25	Road	-
Drain	SD-05,SD-15	Drain	TD-19	Drain	SD-10
Other Facilities	NM-2	Other Facilities	-	Other Facilities	-

22.3 FINANCIAL COST OF THE PRIORITY INFRASTRUCTURE DEVELOPMENTS

Financial Cost of the Priority Infrastructure Developments have illustrated in Clause 3.3 above.

Map-22.1 : Landuse Plan Map for Action Plan of Ward-5



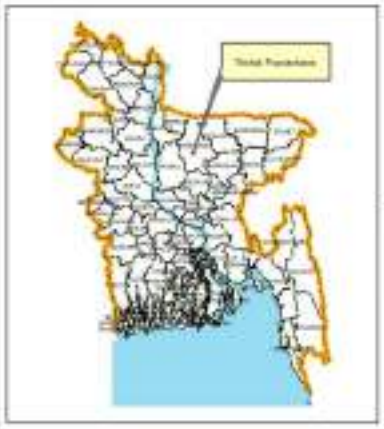
Legend

Foundation 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
Waterbody
Open Space
Recreational Facilities
Circulation Network

Transportation Facilities
Utility Services
Health Services
Community Facilities
Urban Defense
Miscellaneous

Development Proposal
Bus Terminal
Central Park
Depot
Fire Service Station
Heavy Industrial Zone
Graveyard
Heavy Industrial Zone
High School
Hospital
Land to Face Roads
Neighbourhood Market
Neighborhood Park
Old Police
Overhead Tank
Parking Area
Playground
Primary School
Public Toilet
Pump House
Resettlement Zone
Slaughter House
Station
Super Market
Temple Island
Truck Terminal
Ward Center
Waste Disposal Ground
Waste Transfer Station
Wholesale Market
Youth Development Center



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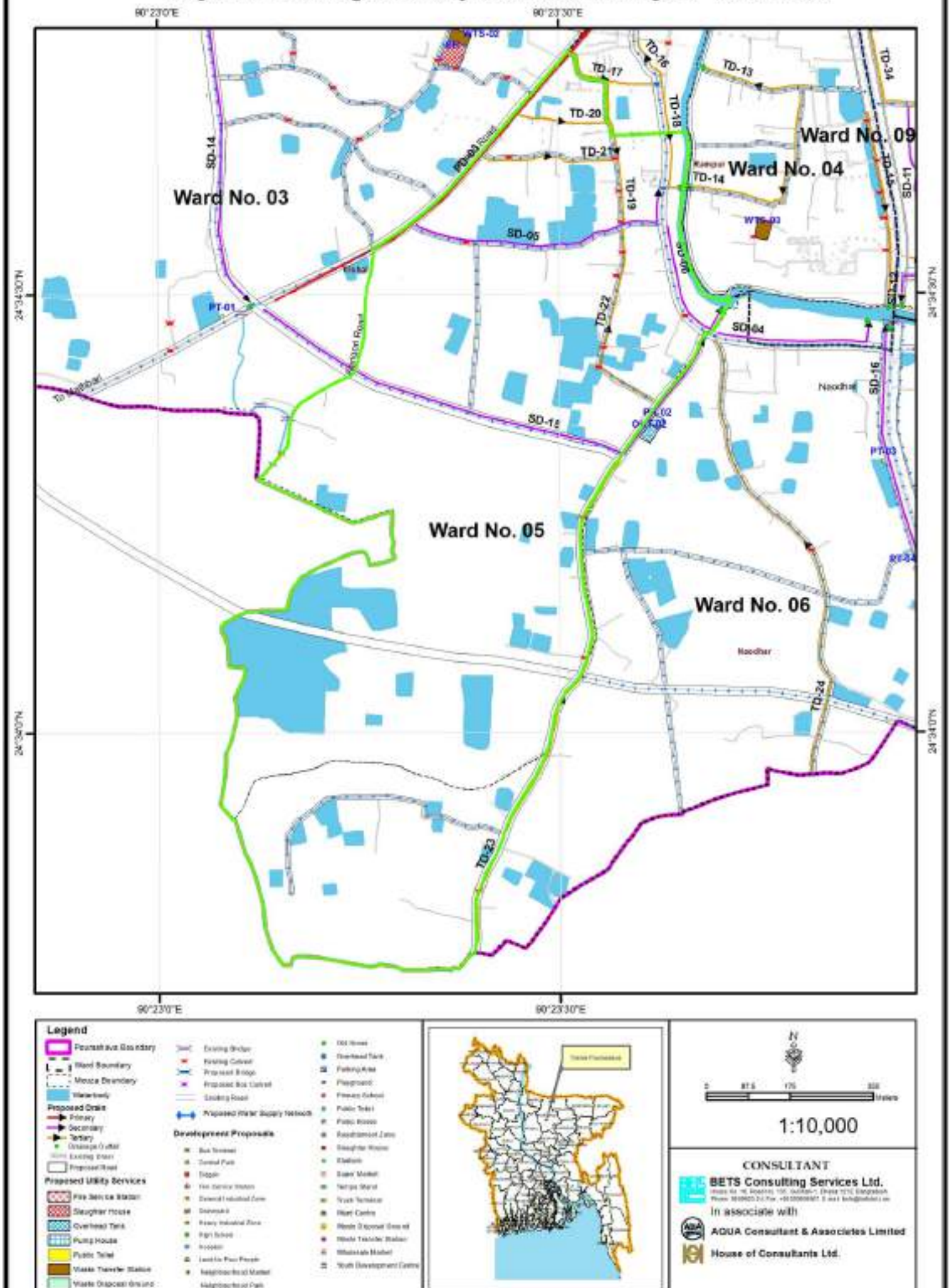
Map-22.2 : Drainage & Utility Services Plan Map for Ward No.05



CHAPTER-23

ACTION PLAN FOR WARD-06

23.1 PROPOSALS AND PLANS FOR WARD 06

Ward No. 6 is located at the Southern part of Trishal Pourashava. The area of the Ward is 157.1688 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. Action Plan Map for Ward-6 is shows in **Map-23.1 & Map-23.2** respectively.

Proposal of Road:

Road Type	ID	Length (km)	Width (m)
Primary Road	PR-2	1.987	36.58
Local Road	LR-29	1.058	9.14
	LR-30	0.687	9.14
	LR-33	0.950	6.1
	LR-34	0.905	6.1
Widening Road	WR-01	2.029	12.2

Proposal of Drain:

Drain Type	ID	Construction Type	Length (m)	Av. Width (m)	Outfall
Secondary Drain	SD-16	Pucca	0.909	1.5	Shutia River
Tertiary Drain	TD-23	Pucca	0.793	0.5	Shutia River
	TD-24		0.798	0.5	Shutia River

Development Proposals:

Name of Proposal	Type	Location	Area (acre)
Bus Terminal	BT	Beside Dhaka-Mymensingh road adjacent	1.513
High School	HS-2	Southern part of Ward No.06 and west of Dhaka-Mymensingh road	3.045
Neighborhood Park	NP-2	Southern margin of War No.06	3.132
Tempo Stand	TS-2	Beside Dhaka-Mymensingh road	0.255
Public Toilet	PT-4	Beside Dhaka-Mymensingh road and adjacent to proposed Truck Terminal	0.104
Ward Centre	WC-06	East of Bhatipara Govt. Primary School	0.763
Playground	PG-06	East of Bhatipara Govt. Primary School	1.096

23.2 PRIORITY TASKS

The following priorities has identified after the Public consultation meeting at Trishal Pourashava.

Priority-1		Priority-2		Priority-3	
Type	**ID**	**Type**	**ID**	**Type**	**ID**
Road Development	PR-2, WR-01, LR-33, LR-34	Road Development	LR-29	Road Development	LR-30
Drain	SD-16, TD-23, TD-24	Drain	-	Drain	-
Other Facilities	BT, HS-2, WC-6	Other Facilities	NP-2, TS-2	Other Facilities	PT-4, PG-6

23.3 FINANCIAL COST OF THE PRIORITY INFRASTRUCTURE DEVELOPMENTS

Financial Cost of the Priority Infrastructure Developments have illustrated in Clause 3.3 above.

Map-23.1: Land Use Plan Map for Action Plan of Ward No.06

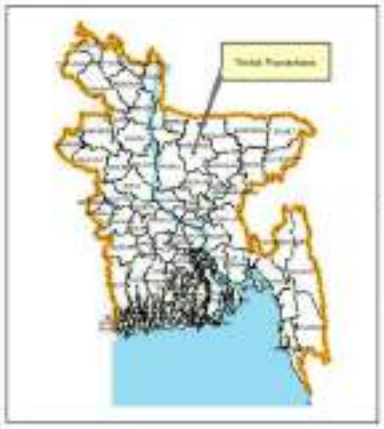
Legend

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
Waterbody
Open Space
Recreational Facilities
Circulation Network

Transportation Facilities
Utility Services
Health Services
Community Facilities
Urban Defined
Miscellaneous

Development Proposal
Bus Terminal
Central Park
Jetty
Fire Service Station
Industrial Estate Zone
Graveyard
Heavy Industrial Zone
High School
Hospital
Land to Face Portable
Neighbourhood Market
Neighbourhood Park
Old Water
Overhead Tank
Parking Area
Playground
Primary School
Public Toilet
Pump House
Resettlement Zone
Slaughter House
Station
Super Market
Temple Stand
Truck Terminal
Water Cistern
Waste Disposal Ground
Waste Transfer Station
Wholesale Market
Youth Development Centre



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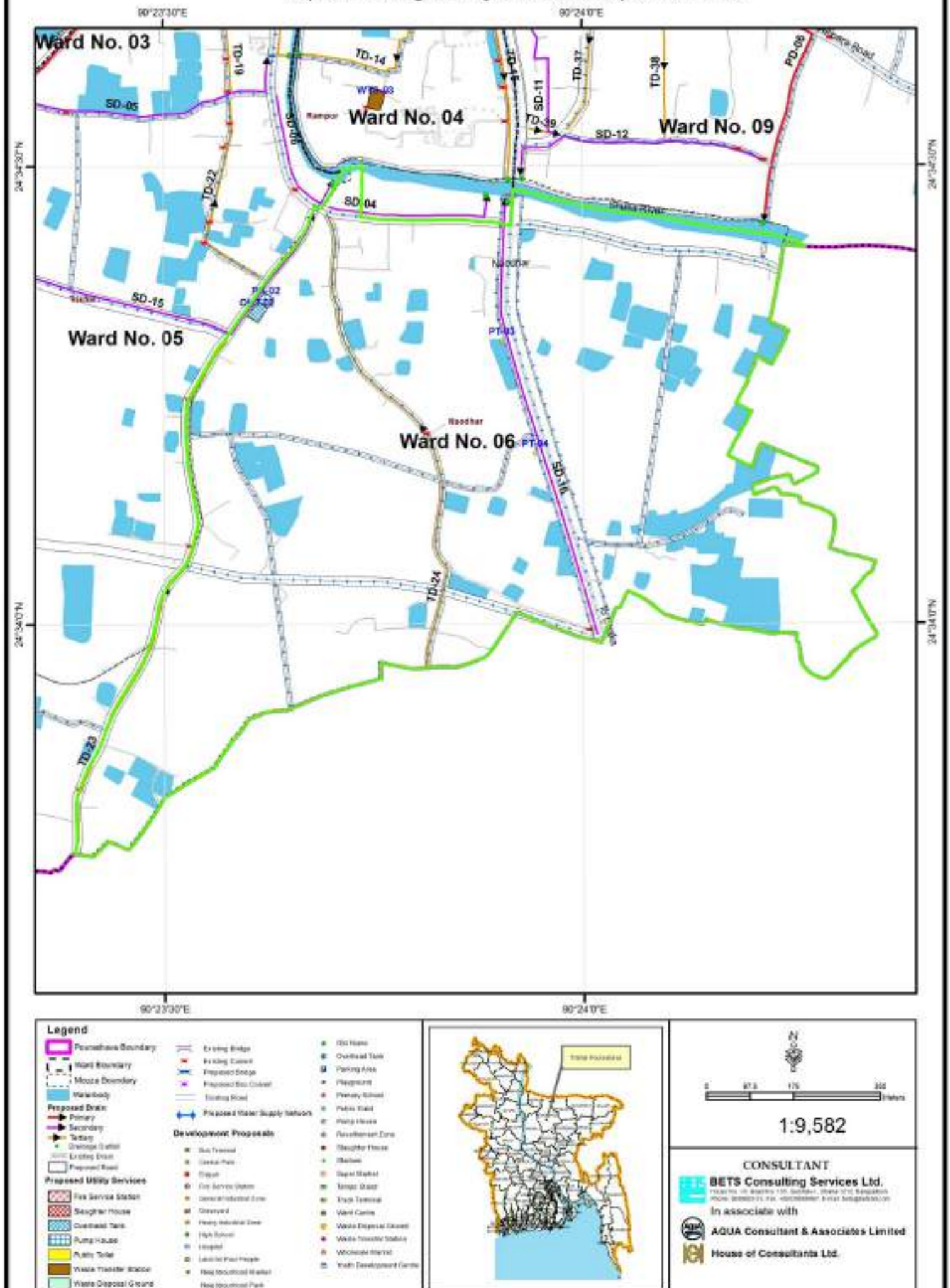
Map-23.2 : Drainage & Utility Services Plan Map for Ward No.06



CHAPTER-24

ACTION PLAN FOR WARD-07

24.1 PROPOSALS AND PLANS FOR WARD 07

Ward No. 7 is located at the Northern part of Trishal Pourashava. The area of the Ward is 612.262 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. Action Plan Map for Ward-7 is shows in **Map-24.1 & Map-24.2** respectively.

Proposal of Road:

Road Type	ID	Length (km)	Width (m)
Local Road	LR-35	2.167	9.14
	LR-38	1.422	6.1
	LR-39	1.026	6.1

Proposal of Drain:

Drain Type	ID	Construction Type	Length (km)	Av. Width (m)	Outfall
Primary Drain	PD-04	Pucca	0.956	1.5	Shutia River
Tertiary Drain	TD-25	Pucca	0.747	0.5	TD-27
	TD-27		0.549	0.5	Shutia River
	TD-28		0.360	0.5	PD-05
	TD-29		0.445	0.5	Shutia River

Development Proposals:

Name of Proposal	Type	Location	Area(acre)
Public Toilet	PT-5	East margin of Ward No.07 beside Dhaka-Mymensingh road	0.105
Tempo Stand	TS-3	East margin of Ward No.07 beside Dhaka-Mymensingh road	0.254
Ward Centre	WC-07	West of Mozahirul Islam Hafezia Madrasha	1.08
Playground	PG-07	West of Mozahirul Islam Hafezia Madrasha	1.157

24.2 PRIORITY TASKS

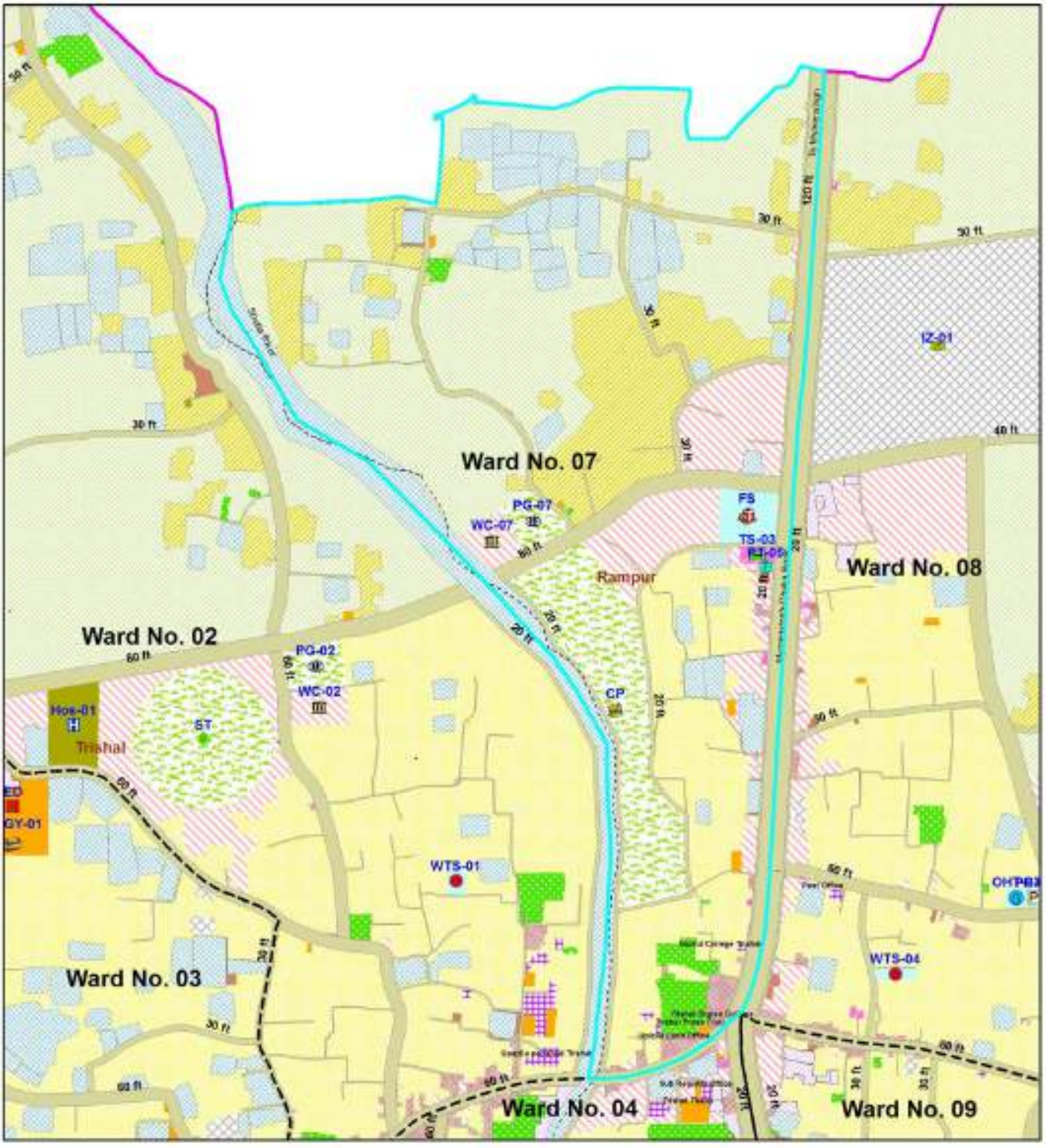
The following priorities has identified after the Public consultation meeting at Trishal Pourashava.

Priority-1		Priority-2		Priority-3	
Type	ID	Type	ID	Type	ID
Road Dev	LR-38	Road Dev	LR-35	Road Dev	LR-39
Drain	PD-04	Drain	TD-27, TD-29	Drain	TD-25, TD-28
Other Facilities	PT-5	Other Facilities	TS-3, WC-7	Other Facilities	PG-7

24.3 FINANCIAL COST OF THE PRIORITY INFRASTRUCTURE DEVELOPMENTS

Financial Cost of the Priority Infrastructure Developments have illustrated in Clause 3.3 above.

Map-24.1 : Land Use Plan Map for Action Plan Map for Ward-7



Legend

Pourashava Boundary
Ward Boundary
Mouza Boundary

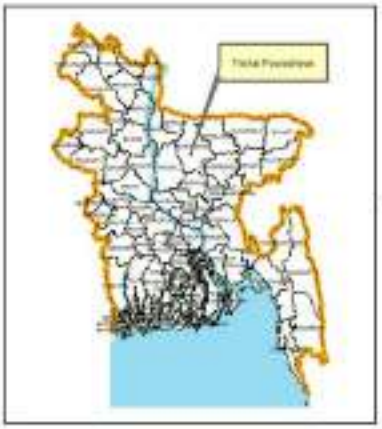
Land Use Zone

Urban Residential Zone
Rural Settlement
Commercial Zone
Mixed Use Zone
General Industrial Zone
Heavy Industrial Zone
Government Office
Education & Research Zone
Agricultural Zone
Wetland
Open Space
Recreational Facilities
Circulation Network

Transportation Facilities
Utility Services
Health Services
Community Facilities
Urban Defense
Miscellaneous

Development Proposal

Bus Terminal
Central Park
College
Fire Service Station
General Industrial Zone
Government
Heavy Industrial Zone
High School
Hospital
Land for Poor People
Neighborhood Market
Neighborhood Park
Old Home
Overhead Tank
Parking Area
Playground
Primary School
Public Toilet
Pump House
Rehabilitation Zone
Slaughter House
Stadium
Super Market
Temple Ground
Truck Terminal
Waste Centre
Waste Disposal Ground
Waste Transfer Station
Wholesale Market
Youth Development Centre



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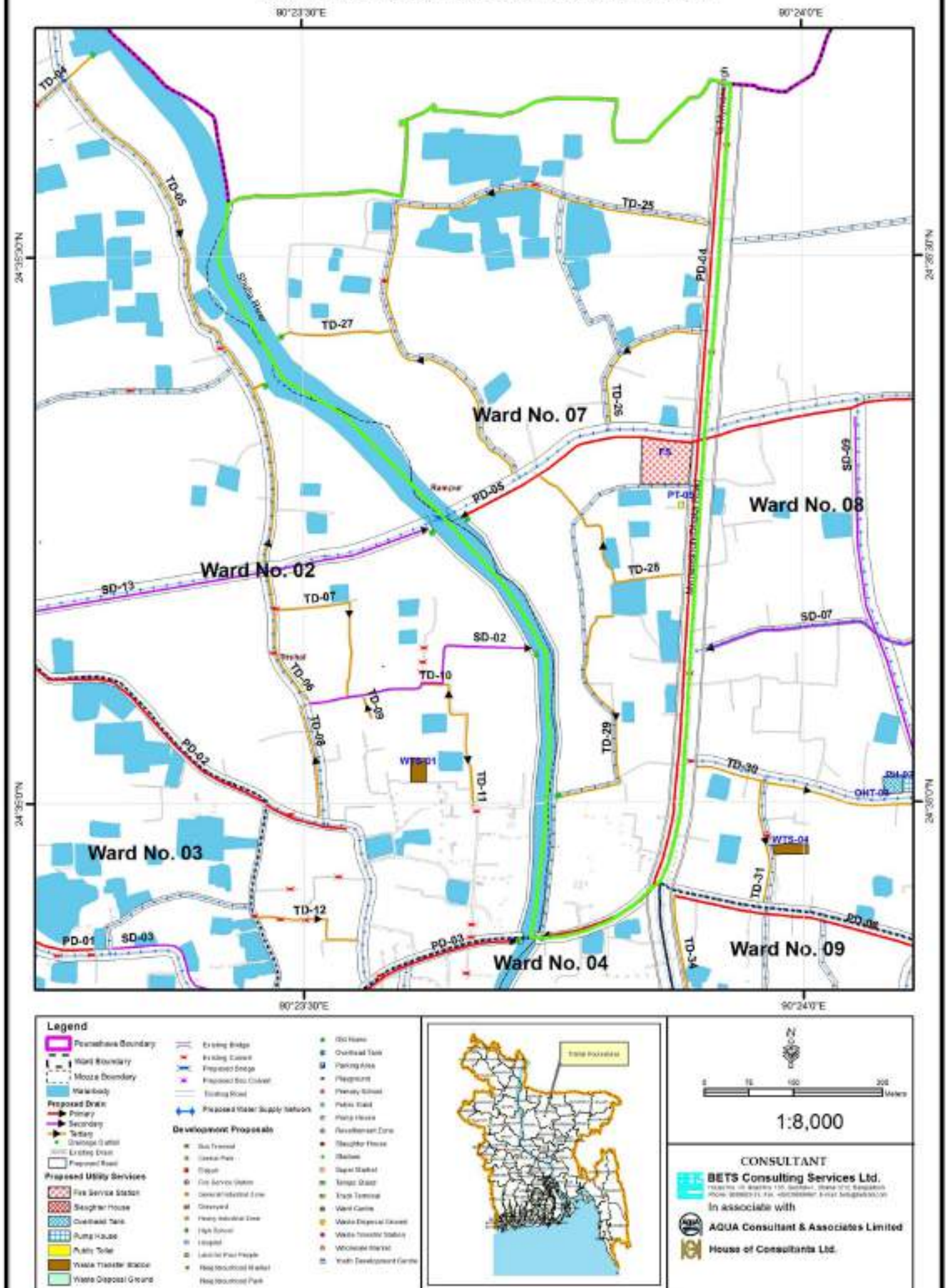
Map-24.2 : Drainage & Utility Services Plan Map for Ward No.07



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CHAPTER-25

ACTION PLAN FOR WARD-08

25.1 PROPOSALS AND PLANS FOR WARD 08

Ward No. 8 is located at the Eastern part of Trishal Pourashava.The area of the Ward is 301.8759 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. Action Plan Map for Ward-8 is shows in **Map-25.1 & Map-25.2** respectively.

Proposal of Road:

Road Type	ID	Length (km)	Width (m)
Primary Road	PR-1	4.863	36.58
Secondary Road	SR-2	3.824	24.5
Local Road	LR-40	2.965	9.14
	LR-41	0.701	9.14
	LR-42	1.087	9.14
	LR-43	1.929	9.14
	LR-44	1.009	9.14
	LR-46	0.783	9.14
	LR-47	1.394	6.1
Widening Road	WR-02	3.110	12.2
	WR-03	2.366	12.2

Proposal of Drain:

Drain Type	ID	Construction Type	Length (km)	Av. Width (m)	Outfall
Secondary Drain	SD-07	Pucca	0.541	0.8	PD-04
	SD-08		0.879	0.8	Medha Bill Khal
Tertiary Drain	TD-30	Pucca	0.384	0.5	SD-09
	TD-32		0.497	0.5	SD-08

Development Proposals:

Name of Proposal	Type	Location	Area (acre)
Waste Transfer Station	WTS-4	South-west corner of Ward No.08	0.259
Pump House	PH-03	West of Warid Tower	0.116
Overhead Tank	OHT-03	West of Warid Tower	0.231

25.2 PRIORITY TASKS

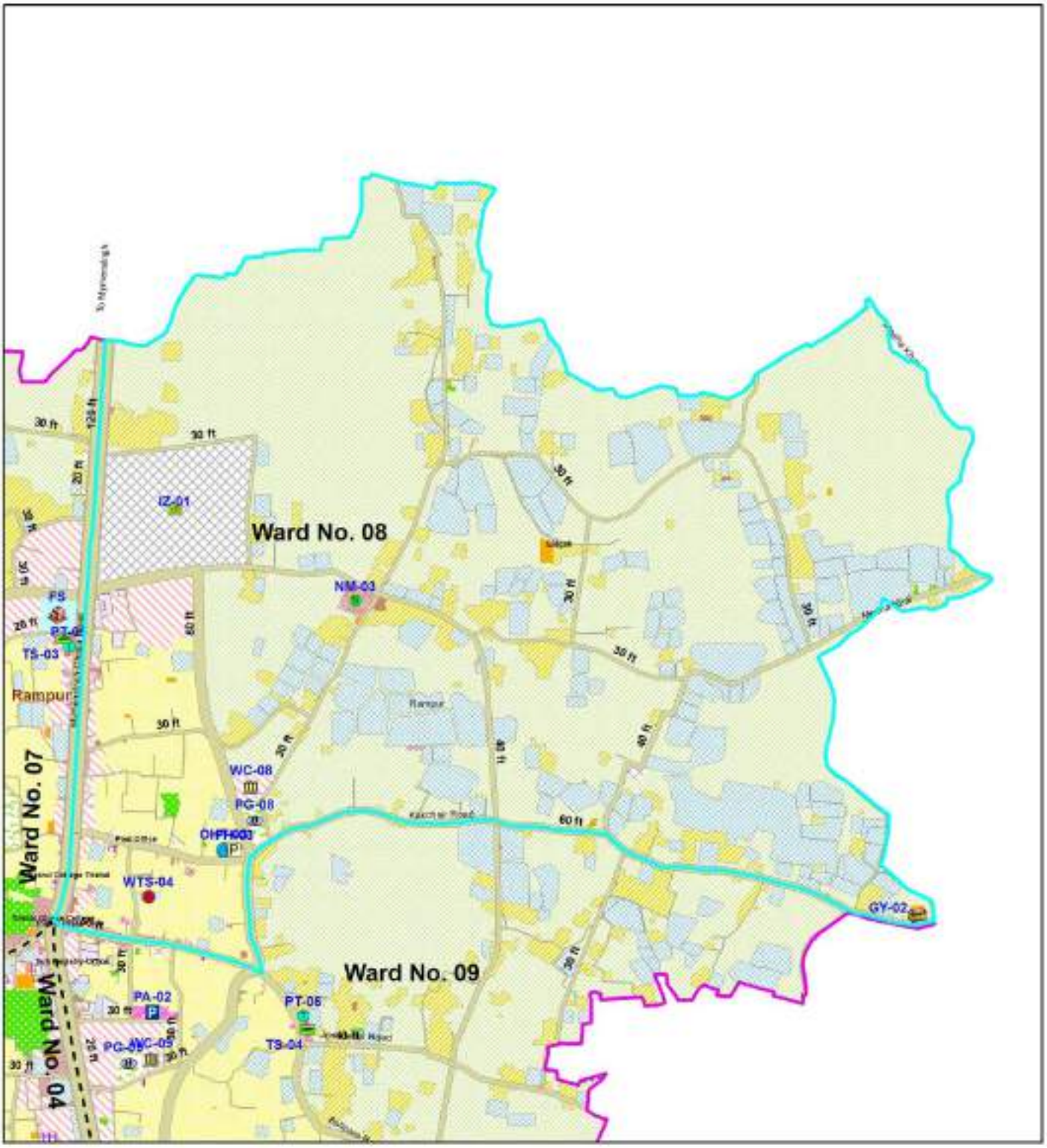
The following priorities has identified after the Public consultation meeting at Trishal Pourashava.

Priority-1		Priority-2		Priority-3	
Type	**ID**	**Type**	**ID**	**Type**	**ID**
Road Development	PR-1, SR-2, WR-02, WR-03, LR-40, LR-47	Road Development	LR-41, LR-42	Road Development	LR-43, LR-44, LR-46
Drain	SD-08	Drain	SD-07, TD-30	Drain	TD-32
Other Facilities	WTS-4	Other Facilities	PH-3	Other Facilities	OHT-3

25.3 FINANCIAL COST OF THE PRIORITY INFRASTRUCTURE DEVELOPMENTS

Financial Cost of the Priority Infrastructure Developments has illustrated in Clause 3.3 above.

Map-25.1 : Land Use Plan Map for Action Plan Map for Ward-8



Legend

Paurashava Boundary
Ward Boundary
Mouza Boundary

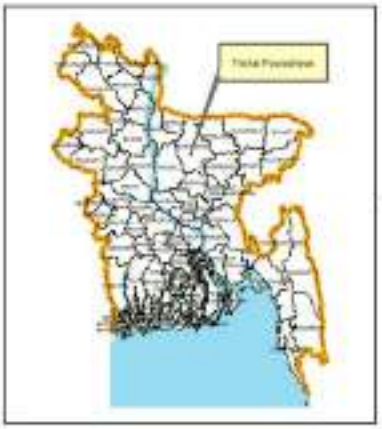
Land Use Zone

Urban Residential Zone
Rural Settlement
Commercial Zone
Mixed Use Zone
General Industrial Zone
Heavy Industrial Zone
Government Office
Education & Research Zone
Agricultural Zone
Wetland
Open Space
Recreational Facilities
Circulation Network

Transportation Facilities
Utility Services
Health Services
Community Facilities
Urban Deferred
Miscellaneous

Development Proposal

Bus Terminal
Central Park
Depot
Fire Service Station
General Industrial Zone
Graveyard
Heavy Industrial Zone
High School
Hospital
Land for Poor People
Neighbourhood Market
Neighbourhood Park
Old Home
Overhead Tank
Parking Area
Playground
Primary School
Public Toilet
Pump House
Rehabilitation Zone
Slaughter House
Stadium
Super Market
Temple Ground
Truck Terminal
Ward Centre
Waste Disposal Ground
Waste Transfer Station
Wholesale Market
Youth Development Centre



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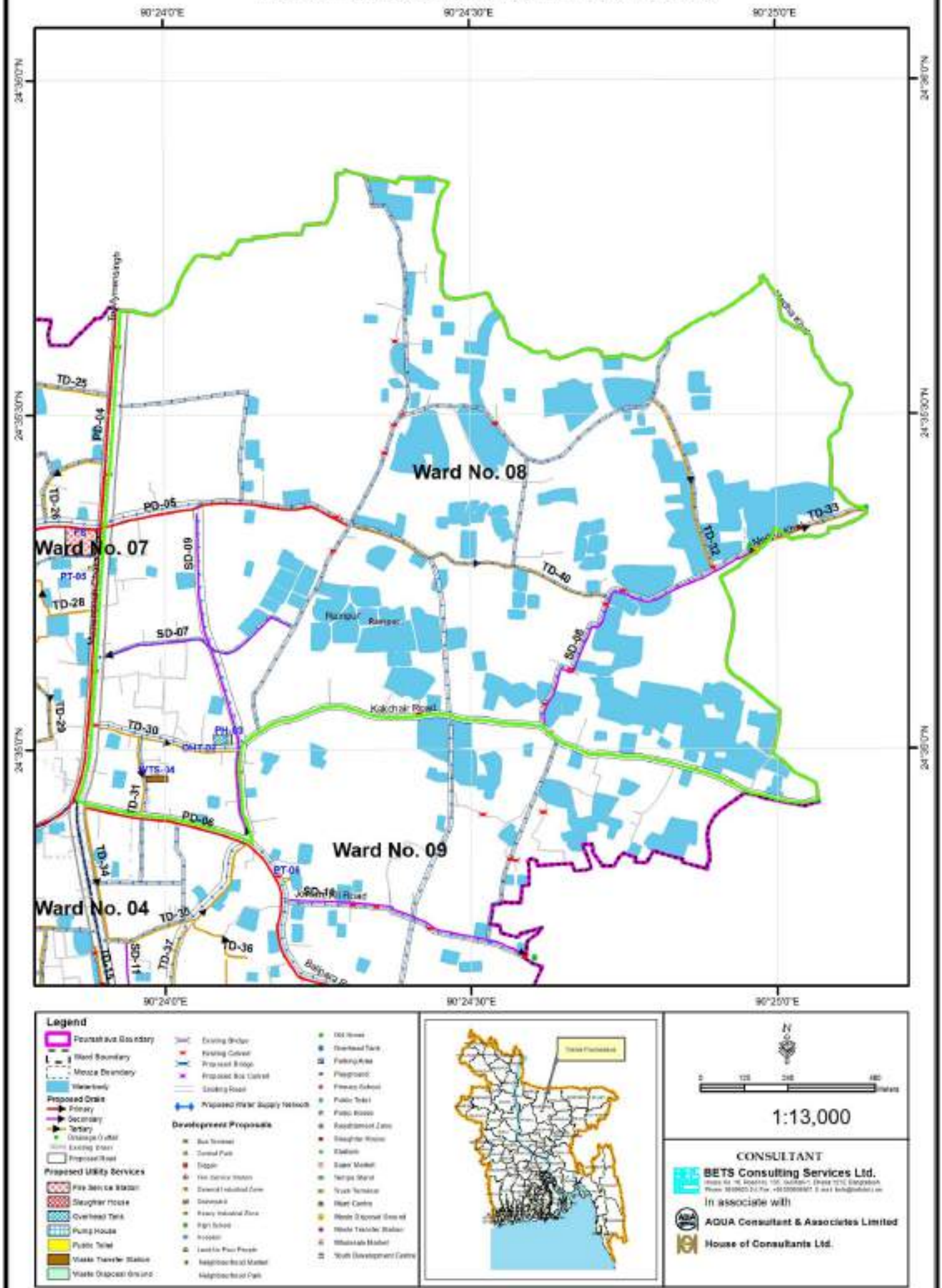
Map-25.2 : Drainage & Utility Services Plan Map for Ward No.08



CHAPTER-26

ACTION PLAN FOR WARD-9

26.1 PROPOSALS AND PLANS FOR WARD 09

Ward No. 9 is located at the Eastern part of Trishal Pourashava and west of Shomeshari river. The area of the Ward is 559.585 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. Action Plan Map for Ward-9 is shows in **Map-26.1 & Map-26.2** respectively.

Proposal of Road:

Road Type	ID	Length (km)	Width (m)
Local Road	LR-48	0.992	9.14
	LR-49	0.774	9.14
	LR-50	0.862	9.14
	LR-55	0.841	6.1
Widening Road	WR-04	1.372	12.2

Proposal of Drain:

Drain Type	ID	Construction Type	Length (km)	Av. Width (m)	Outfall
Primary Drain	PD-06	Pucca	1.369	1.5	Shutia River
Secondary Drain	SD-10	Pucca	0.685	0.8	PD-06
Tertiary Drain	TD-34	Pucca	0.420	0.5	TD-35
	TD-35		0.464	0.5	PD-06
	TD-38		0.290	0.5	SD-12

Development Proposals:

Name of Proposal	Type	Location	Area (acre)
Neighbourhood Park	NP-3	South-west corner of Ward No.09and at the margin of Ward	3.018
Public Toilet	PT-6	Central part of Ward No.09 beside Balipara road	2.113
Ward Centre	WC-09	Beside Majhipara Road	0.753
Playground	PG-09	Beside Majhipara Road	1.04
Parking Area	PA-02	East side of Awami League Party Office	0.674

26.2 PRIORITY TASKS

The following priorities has identified after the Public consultation meeting at Trishal Pourashava.

Priority-1		Priority-2		Priority-3	
Type	ID	Type	ID	Type	ID
Road	WR-04, LR-55	Road	LR-50	Road	LR-48, LR-49

Priority-1		Priority-2		Priority-3	
Type	**ID**	**Type**	**ID**	**Type**	**ID**
Development		Development		Development	
Drain	PD-06, SD-10	Drain	TD-34, TD-35	Drain	TD-38
Other Facilities	NP-3, PT-6	Other Facilities	WC-9, PA-2	Other Facilities	PG-9

26.3 FINANCIAL COST OF THE PRIORITY INFRASTRUCTURE DEVELOPMENTS

Financial Cost of the Priority Infrastructure Developments has illustrated in Clause 3.3 above.

Map-26.1 : Land Use Plan Map for Action Plan Map for Ward-9

Legend

- Peurashava Boundary
- Ward Boundary
- Mouza Boundary

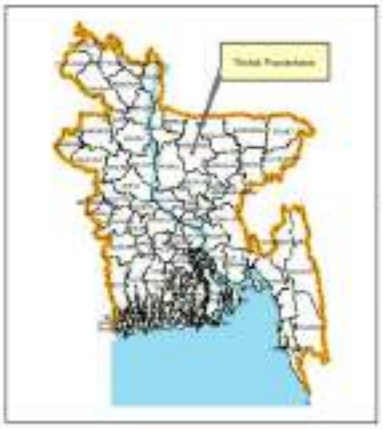
Land Use Zone

- Urban Residential Zone
- Rural Settlement
- Commercial Zone
- Mixed Use Zone
- General Industrial Zone
- Heavy Industrial Zone
- Government Office
- Education & Research Zone
- Agricultural Zone
- Waterbody
- Open Space
- Recreational Facilities
- Circulation Network

Transportation Facilities
Utility Services
Health Services
Community Facilities
Urban Defense
Miscellaneous

Development Proposal

- Bus Terminal
- Central Park
- Jetty
- Fire Service Station
- Neighborhood Park
- Old Police
- Overhead Tank
- Parking Area
- Playground
- Primary School
- Public Toilet
- Pump House
- Resettlement Zone
- Slaughter House
- Stadium
- Super Market
- Temple Stand
- Truck Terminal
- Ward Center
- Waste Disposal Ground
- Waste Transfer Station
- Wholesale Market
- Youth Development Center



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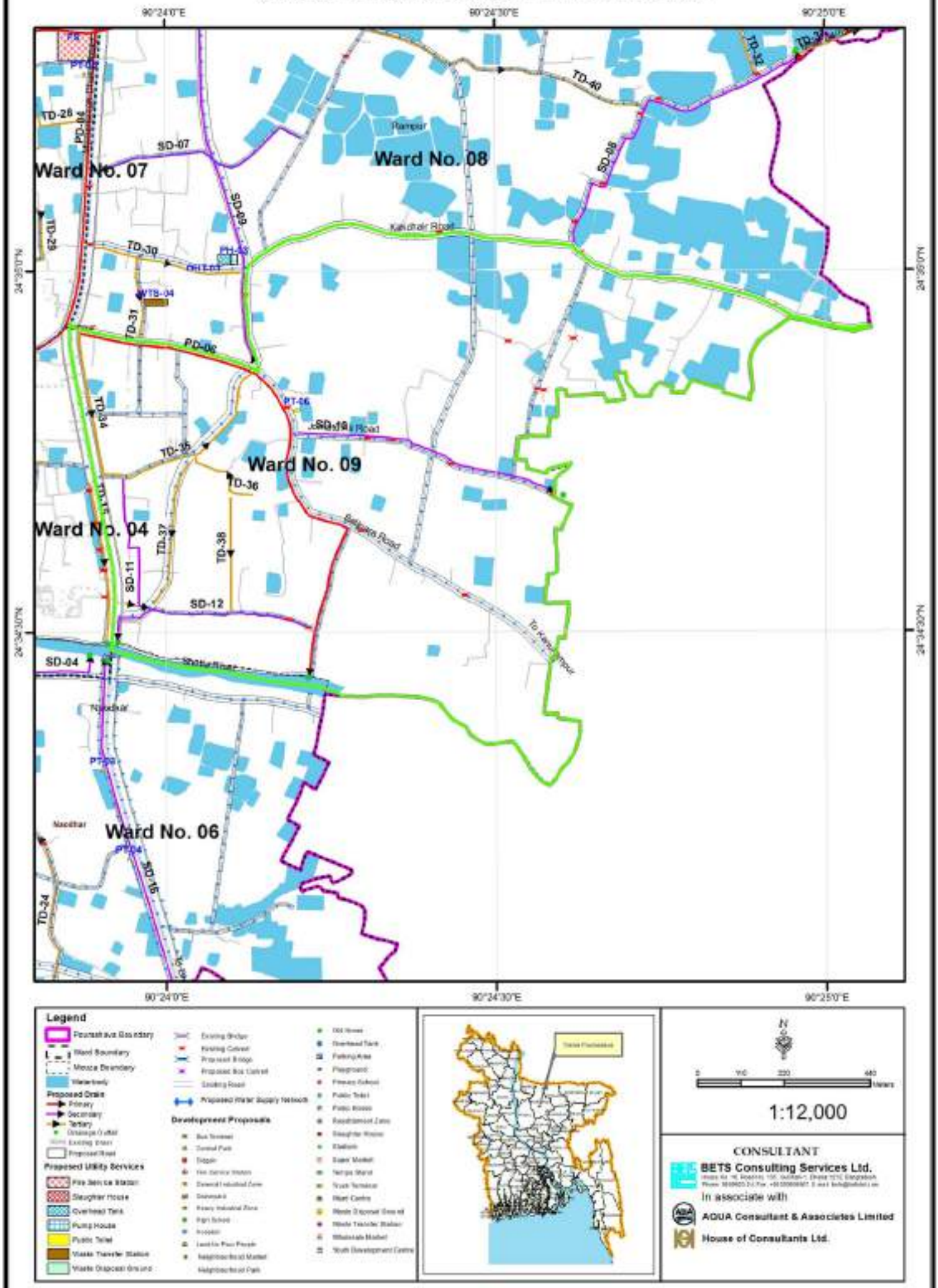
Map-26.2 : Drainage & Utility Services Plan Map for Ward No.09



CHAPTER-27

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 final Consultation Meeting held at Trishal Pourashava on17/06/13 is attached in **Appendix-D**: *Resolution of Final Consultation Meeting with Attendence*.

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 Trishal 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 Trishal 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 Trishal 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-E:** *Road Network Proposal***.**

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-28

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 Durgapur Paurashava 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 Trishal Paurashava 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 Paurashava 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.

Trishal

রেজিষ্টার্ড নং ডি এ-১

বাংলাদেশ গেজেট

অতিরিক্ত সংখ্যা
কর্তৃপক্ষ কর্তৃক প্রকাশিত

বুধবার, জুলাই ১, ১৯৯৮

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

স্থানীয় সরকার, পল্লী উন্নয়ন ও সমবায় মন্ত্রণালয়

স্থানীয় সরকার বিভাগ

(শাখা পৌর-২)

প্রজ্ঞাপন

তারিখ, ২২শে জুন ১৯৯৮/৮ই আষাঢ় ১৪০৫

নং পৌর-২/ওয়ার্ড-৬/৯৮/৯০৪—Paurashava Ordinance, 1977 (XXVI of 1977) এর section 19 এবং section 24 এ প্রদত্ত ক্ষমতাবলে সরকার এই মর্মে সিদ্ধান্ত গ্রহণ করিয়াছে যে,

(ক) নিম্নের তফসিলের কলাম ৩এ উল্লিখিত মিউনিসিপ্যালিটি একই তফসিলের কলাম ৪ এ উল্লিখিত সংখ্যক ওয়ার্ডে বিভক্ত হইবে;

(খ) উক্ত তফসিলের কলাম ৫এ উল্লিখিত সংখ্যক সংরক্ষিত মহিলা আসনে পুনর্বিন্যাস্তিত হইবে;

(গ) উক্ত তফসিলের কলাম ৬এ উল্লিখিত সংখ্যাই হইবে সংশ্লিষ্ট পৌরসভার, সংরক্ষিত মহিলা আসন ব্যতীত, কমিশনার সংখ্যা;

(ঘ) উক্ত তফসিলের কলাম ৭এ উল্লিখিত সংখ্যাই হইবে সংরক্ষিত মহিলা কমিশনারের সংখ্যা।

মূল্য: টাকা ২.০০

তফসিল

ক্রমিক নং	জেলার নাম	মিউনিসিপ্যালিটির নাম	ওয়ার্ডের সংখ্যা	সংরক্ষিত মহিলা আসন সংখ্যা	কলাম ৪এ উল্লিখিত ওয়ার্ড হতে নির্বাচিত কাউন্সিলরের সংখ্যা	কলাম ৫এ উল্লিখিত সংরক্ষিত আসন হতে নির্বাচিত মহিলা কাউন্সিলরের সংখ্যা
১	২	৩	৪	৫	৬	৭
১	যশোর	ঝিকরগাছা	৯	৩	৯	৩
২	ময়মনসিংহ	ত্রিশাল	৯	৩	৯	৩

২। অত্র প্রজ্ঞাপনের তফসিলের কলাম ৪এ উল্লেখিত ওয়ার্ডের প্রতি ওয়ার্ড হইতে একজন করিয়া কাউন্সিলর এবং কলাম ৫এ উল্লিখিত সংরক্ষিত মহিলা আসনের প্রতি আসন হইতে একজন করিয়া মহিলা কাউন্সিলর নির্বাচিত হইবেন।

রাষ্ট্রপতির আদেশক্রমে

আবদুস সাত্তার মিঞা
উপ-সচিব (পৌর)।

প্রজ্ঞাপন

তারিখ, ২২শে জুন ১৯৯৮/৮ই আষাঢ় ১৪০৫

নং পৌর-২/ওয়ার্ড-৬/৯৮/২০২—Paurashava Ordinance, 1977 (XXVI of 1977) এর section 21 এর বিধানানুসারে ডিলিমিটেশন অফিসার কর্তৃক চূড়ান্তকৃত নিম্ন তফসিলে বর্ণিত মিউনিসিপ্যালিটিসমূহের ওয়ার্ড গঠন করে সরকার আদেশ জারী করিল:

ক্রমিক নং	জেলার নাম	মিউনিসিপ্যালিটির নাম	ওয়ার্ড নং	ওয়ার্ডের সাথে অন্তর্ভুক্ত এলাকার সীমানা (পূর্বে, পশ্চিমে, উত্তরে ও দক্ষিণে শেষ প্রান্তিত রোড, গলি, নহর, খাল ইত্যাদির বর্ণনা)
১	২	৩	৪	৫
১	যশোর	ঝিকরগাছা	১	মৌজা-ঝিকরগাছা। জে, এল, নং-৩৪ সম্পূর্ণ মৌজা, দাগ নং-১-১২৫৯।
			২	মৌজা-কৃষ্ণনগর। জে, এল, নং-৬৮, উত্তরে ঝিকরগাছা চৌগাছা সড়ক রোহান স্যুইটস এর সামনে দিয়ে ইউনিয়ন পরিষদ সড়ক রেল লাইন পর্যন্ত দক্ষিণে কপোতাক্ষ নদী, পূর্বে রেল লাইন, পশ্চিমে কাটাখাল। দাগ নং ২০৯-২১৯, ২৭৫-২৯৯, ৭৫৩-৭৫৯, ৭৭৯, ৭৮০, ৭৮৪-৮৮৪, ৮৯৫-১০০০।

১	২	৩	৪	৫
			৩	মৌজা-কৃষ্ণ নগর। জে, এল, নং-৬৮। উত্তরে কাটাখাল হইতে উপজেলা মোড় সড়ক ডাকবাংলো হইয়া রেল লাইন পর্যন্ত, দক্ষিণে ঝিকরগাছা চৌগাছা সড়ক ইউনিয়ন পরিষদের সামনে দিয়ে রেল লাইন পর্যন্ত, পূর্বে রেল লাইন, পশ্চিমে কাটাখাল। দাগ নং-১৮১-২০৮, ২২০-২৭৪, ৩০০-৩৮৭, ৩৯৬, ৩৯৭, ৬৫১-৭৫২, ৭৬০-৭৭৮, ৭৮১-৭৮৩, ৮৮৫-৮৯৪।
			৪	মৌজা-কৃষ্ণ নগর। জে, এল, নং-৬৮। উত্তরে পালপাড়া, দক্ষিণে কাটাখাল হইতে উপজেলা মোড় সড়ক ডাকবাংলো হয়ে রেল লাইন পর্যন্ত, পূর্বে রেল লাইন, পশ্চিমে কাটাখাল, দাগ নং ১-১৮০, ৩৮৮-৩৯৫, ৩৯৮-৬৫০।
			৫	মৌজা-কীর্তিপুর। জে, এল, নং-৬৭। সম্পূর্ণ মৌজা। দাগ নং-১-৯৯৪।
			৬	মৌজা-মোবারকপুর, জে, এল, নং-৬৬, সম্পূর্ণ মৌজা। দাগ নং-১-৪৯০ এবং মৌজা-পারুল-ডাংগা, জে, এল, নং-৬৫। পশ্চিমে আবাদুর আমিনের চাতাল, পূর্বে লুৎফর ড্রাইভারের বাড়ী হয়ে প্রাইমারী স্কুলের রাস্তা বরাবর, উত্তরে হাফিজুর সরদারের বাড়ীর সামনের সড়ক, দক্ষিণে কপোতাক্ষ নদী। দাগ নং-১-২২৬, ৬৬৪-৭২৫।
			৭	মৌজা পুরন্দরপুর। জে, এল, নং-৬৯। পূর্বে বজলের মাষ্টারের বাড়ীর সামনে ঈদগা সড়ক বরাবর, পশ্চিমে-রেললাইন, উত্তরে-কপোতাক্ষ নদী আবদুল্লা মাষ্টারের বাড়ী পর্যন্ত। দাগ নং ৩৩৪-৩৭২, ৪৫১-১২৪৮, ১২৫১-১২৬১, ১২৬৩-১২৮৮।
			৮	মৌজা-পুরন্দরপুর। জে, এল নং-৬৯। বশোর-বেনাপোল পাকা সড়কের পশ্চিমের সমস্ত অংশ, পূর্বে রেল লাইন, দক্ষিণে-গুতেমারী বিল। দাগ নং-১-১৯৩, ২৬৫-৩১৩, ৩৭৪-৩৮১ ও মৌজা-বারবাকপুর, জে, এল, নং-৩৩, দাগ নং ১৭০১-২১৩৮।
			৯	মৌজা-পুরন্দরপুর। জে, এল, নং-৬৯। উত্তরে আছিয়া খাতুন ও আনছার আলীর বাড়ী, দক্ষিণে-নুরআখান ও বাবুরবাড়ী। পশ্চিমে

১	২	৩	৪	৫
				পাকা সড়ক, পূর্বে রেল লাইন। দাগ নং-১৯৪-২৬৪, ৩৭৩, ৩৮২-৪৫০। মৌজা-ফাউদিয়া। জে, এল, নং-৭২, দাগ নং ১-২৮, ৮৩-১৫০, ৪১৪, ৪৩৩-৪৪১, ও ৪৪৩। মৌজা হাজিরালী, জে, এল, নং-৭০, সম্পূর্ণ মৌজা। দাগ নং-১-৬১৩।
*	ময়মনসিংহে	ত্রিশাল	১	ত্রিশাল মৌজার উত্তর-পূর্ব কোনার আলহাজ্ব আঃ সামাদ এর বাড়ী (দাগ নং-৪০৮) হতে উত্তরে অন্যান্য দাগসহ পশ্চিম দিকে নতুন এদি হাজী সাহেবের বাড়ী হয়ে পূর্ব দক্ষিণ প্রান্তে আঃ সালাম (সিপাই) এর বাড়ী (দাগ নং-১৩৩০) বাদ দিয়ে পরের অংশ থেকে পশ্চিম হয়ে দক্ষিণে ত্রিশাল আমরীতলা রাস্তা পর্যন্ত সমগ্র নামা ত্রিশাল এলাকা।
			২	ত্রিশাল মৌজা ত্রিশাল-থানী থোনার শেষ সীমানার আঃ সামাদ এর বাড়ীর পর থেকে উত্তর পূর্ব সীমান্তে আঃ বারেক ও আঃ খালেকের বাড়ী থেকে সুতিয়া নদীর পশ্চিম পাড় ধরে ত্রিশাল খ্রীজ পর্যন্ত এবং ত্রিশাল-পোড়াবাড়ী রাস্তার উত্তর পাশ ধরে দক্ষিণে গরুহাটাকে হাতের বামে রেখে উত্তরে পশ্চিমে ত্রিশাল-রাধা কানাই রাস্তার কালভার্ট পর্যন্ত (আমীর আলীর বাড়ী সংলগ্ন কালভার্ট দাগ নং-৬৯৫)।
			৩	ত্রিশাল মৌজার উত্তর পশ্চিমে প্রান্তে আমীর আলীর বাড়ী হতে (দাগ নং৬৯৫) পূর্ব দিকে ঈদগাহ মাঠ হয়ে হাজী শামছুদ্দিন ও নুরুল ইসলাম এর বাড়ী হয়ে গরুহাটাসহ ত্রিশাল-পোড়াবাড়ী রাস্তা বরাবর দক্ষিণ দিকে হাং আলী মৃধা এর বাড়ী পর্যন্ত (দাগ নং ২৩৯০) দক্ষিণ পশ্চিম প্রান্তে আঃ সালাম (সিপাই) এর বাড়ী পর্যন্ত (দাগ নং ১৩৩০)।
			৪	রামপুর মৌজার মমতাজ কলেজের সম্মুখস্থ চৌরাস্তা থেকে ত্রিশাল-পোড়াবাড়ী রাস্তার দক্ষিণ-পার্শ্ব ধরে বরাবর ত্রিশাল মৌজার গরুহাটার দক্ষিণ-পূর্ব মোড় পর্যন্ত। ঐ স্থান থেকে রফাদানী মসজিদকে হাতের ডানে রেখে এবং নুপুর সিনেমা হলকে হাতের বামে রেখে দরগাহ মসজিদ বরাবর নদী পর্যন্ত। চৌরাস্তা থেকে ঢাকা-ময়মনসিংহ রোডের পশ্চিম পার্শ্বে ধরে

১	২	৩	৪	৫
				সুতিয়া নদীর ব্রীজ পার হয়ে নওধার মৌজার নওধার ত্রিশাল ধাত্তার উত্তর পাশসহ নওধার এর ১নং দাগ পর্যন্ত (যেখানে মেকিন ডাক্তারের বাড়ী অবস্থিত)।
			৫	ত্রিশাল মৌজার ত্রিশাল-ভাটিপাড়াস্থ দক্ষিণ পশ্চিম কোণে কদম আলীর বাড়ী থেকে নওধারকে হাতের ডানে রেখে সুতিয়া নদীর পশ্চিম পাড় হয়ে নুপুর সিনেমা হল হাতের ডানে রেখে রাস্তা বরাবর গরুহাটার দক্ষিণ পূর্ব মোড় পর্যন্ত।
			৬	নওধার মৌজার ঢাকা-ময়মনসিংহ মহাসড়কের পশ্চিম দিকে নওধার ত্রিশাল রাস্তার উত্তর পাশসহ বরাবর ১নং দাগে অবস্থিত নওধার ভাংতি ও হাকিম ডাক্তারের বাড়ী পর্যন্ত এলাকা বাদ দিয়ে সমগ্র নওধার মৌজা।
			৭	রামপুর মৌজার বইলর-রামপুর সীমান্তে আঃ বারেক এর বাড়ী (দাগ নং-৩৮) থেকে সুতিয়া নদীর পূর্বপাড় ধরে দক্ষিণে ত্রিশাল-পোড়াবাড়ী রাস্তার উত্তর পার্শ্ব পর্যন্ত।
			৮	রামপুর মৌজার উত্তরে বইলর এর সীমানা ইদ্রিস কবিরাজের বাড়ী (দাগ নং-৩৯৬) থেকে (খাবলা পাড়ার অংশ মেদার পাড়) ঢাকা-ময়মনসিংহ রোডের পূর্ব পার্শ্ব ধরে দক্ষিণে চৌরাস্তা থেকে ত্রিশাল-বালিপাড়া রাস্তার উত্তর পার্শ্ব ধরে আলিম বেপারীর বাড়ী পর্যন্ত এবং আলীম বেপারীর বাড়ী থেকে উত্তর দিকে পৌরসভার শেষ সীমানা পর্যন্ত।
			৯	রামপুর মৌজার চৌরাস্তা থেকে ঢাকা-ময়মনসিংহ রোডের পূর্ব পার্শ্ব ধরে দক্ষিণে সুতিয়া নদীর উত্তর পাড় পর্যন্ত এবং সুতিয়া নদীর পাড় থেকে পূর্বদিকে পৌরসভার শেষ সীমানা পর্যন্ত। ঐ শেষ সীমানা থেকে ত্রিশাল-বালিপাড়া রাস্তার দক্ষিণ পার্শ্ব ধরে পূর্ব দিকে পৌরসভার শেষ সীমানা আবুল মনসুর এর বাড়ী (দাগ নং ১২৬২) পর্যন্ত।

রাষ্ট্রপতির আদেশক্রমে
আবদুস সাত্তার মিঞা
উপ-সচিব (পৌর)।

প্রজ্ঞাপন

তারিখ, ২২শে জুন ১৯৯৮/৮ই আষাঢ় ১৪০৫

নং পৌর-২/ওয়ার্ড-৩/৯৮/৯০৬—Paurashava Ordinance, 1977 (XXVI of 1977) এর section 21A এর বিধানানুসারে ডিলিমিটেশন অফিসার কর্তৃক চূড়ান্তকৃত নিম্ন তফসিলে বর্ণিত মিউনিসিপ্যালিটিসমূহের সংরক্ষিত মহিলা আসনে নির্বাচনের লক্ষ্যে সংরক্ষিত মহিলা ওয়ার্ড গঠন করে সরকার আদেশ জারী করিল:—

ক্রমিক নং	জেলার নাম	মিউনিসিপ্যালিটির নাম	সংরক্ষিত মহিলা ওয়ার্ড নং	ওয়ার্ডের সাথে অন্তর্ভুক্ত এলাকার সীমানা (পূর্বে, পশ্চিমে, উত্তরে ও দক্ষিণে শেষ প্রান্তস্থিত রোড, গলি, মহল্লা, খাল ইত্যাদির বর্ণনা)।
১	২	৩	৪	৫
যশোর		ঝিকরগাছা	১	সাধারণ ওয়ার্ড ১, ২ ও ৩ নিয়ে গঠিত।
			২	সাধারণ ওয়ার্ড ৪, ৫ ও ৬ নিয়ে গঠিত।
			৩	সাধারণ ওয়ার্ড ৭, ৮ ও ৯ নিয়ে গঠিত।
নরসিংদী		শিবপুর	১	সাধারণ ওয়ার্ড ১, ২ ও ৩ নিয়ে গঠিত।
			২	সাধারণ ওয়ার্ড ৪, ৫ ও ৬ নিয়ে গঠিত।
			৩	সাধারণ ওয়ার্ড ৭, ৮ ও ৯ নিয়ে গঠিত।

রাষ্ট্রপতির আদেশক্রমে
আবদুস সাত্তার বিজ্ঞা
উপ-সচিব (পৌর)।

মুহাম্মদ রবিউল ইসলাম, উপ-নিয়ন্ত্রক, বাংলাদেশ সরকারী মুদ্রণালয়, ঢাকা কর্তৃক মুদ্রিত
বিমল বিহারী দাস, উপ-নিয়ন্ত্রক, বাংলাদেশ ফরমস্ ও প্রকাশনী অফিস,
তেজগাঁও, ঢাকা কর্তৃক প্রকাশিত।

APPENDIX – B

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.	1459.191	48.16
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.	481.352	15.89
Major Circulation	Major circulation contains major road network and railways linkage with regional and national settings.	238.413	7.87
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.	124.134	4.10
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.	360.077	11.88
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.	367.020	12.11
Total	-	**3030.187**	**100.00**

APPENDIX – C

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	Beside Dhaka-Mymensingh Highway	Ward No. 06	1.620	Naodhar	261-268, 378, 380-382, 594, 595
CP	Central Park	West margin of Ward No. 07and on the east bank of Shutia river	Ward No. 07	10.750	Rampur	179-184, 215-220, 226-230, 934-936
ED	Eidgah	Beside Fulbaria road and north margin of Ward No.03	Ward No. 03	1.639	Trishal	1694-1696
FS	Fire Service Station	Beside Mymensingh Road	Ward No. 07	1.530	Rampur	193, 196-198
GY-1	Graveyard	Beside Fulbaria road and adjacent to proposed Eidgah	Ward No. 03	1.007	Trishal	1693-1695
GY-2	Graveyard	South-east corner of Ward No.08	Ward No. 08	0.267	Rampur	1576
Hos-01	Hospital	North side of Graveyard	Ward No. 02	2.015	Trishal	917-919, 954-957, 1956
Hos-02	Hospital	East side of Karigari College Road	Ward No. 05	2.126	Trishal	2166-2170, 2476, 2140-2143, 2146,
HS-1	High School	Central part of Ward No.01and west of Shukuni khal	Ward No. 01	3.026	Trishal	454-602, 612, 613, 975, 976
HS-2	High School	Southern part of Ward No.06 and west of Dhaka-Mymensingh road	Ward No. 06	3.057	Naodhar	312-314, 325-329, 344-346, 349
IZ-1	General Industrial Zone	West margin of Ward No.08	Ward No. 08	23.530	Rampur	353, 357-373, 375-382, 384, 402, 572-577, 579, 1352, 1371
IZ-2	Heavy Industrial Zone	Southern margin of Ward No.06	Ward No. 06	24.027	Naodhar	65, 67-80, 152-170, 590
LPP	Land for Poor People	Northern margin of Ward No. 02	Ward No. 02	9.222	Trishal	138, 139, 142-144, 149, 151, 182-191, 355, 356, 965
NM-1	Neighbourhood Market	Beside Varsity road and west of Varsity	Ward No. 01	1.098	Trishal	1100-1102, 1568
NM-2	Neighbourhood Market	Eastern margin of Ward No.05 beside Sekandar Ali road	Ward No. 05	1.059	Trishal	2422-2426
NM-3	Neighbourhood Market	Central part of Ward No.08	Ward No. 08	1.015	Rampur	334, 340
NP-1	Neighbourhood Park	South-western part of Ward No.03	Ward No. 03	3.172	Trishal	1350, 1353, 1355, 1372-1377, 1379
NP-2	Neighbourhood Park	Southern margin of War No.06	Ward No. 06	3.139	Naodhar	169-173
NP-3	Neighbourhood Park	South-west corner of Ward No.	Ward No. 09	3.246	Rampur	1089, 1107- 1113
					Naodhar	99999
OH	Old Home	South-west margin of Ward No.04 on the bank of Shutia river	Ward No. 04	0.531	Rampur	181
OHT-01	Overhead Tank	North side of Graveyard	Ward No. 02	0.237	Trishal	709, 710

ID	Name of Proposal	Location	Ward No.	Area (Acre)	Mouza Schedule	
					Mouza	Plot No.
OHT-02	Overhead Tank	Beside Sekandar Ali Road	Ward No. 06	0.213	Nowdhar	12, 13
OHT-03	Overhead Tank	West of Warid Tower	Ward No. 08	0.231	Rampur	738, 709, 737, 708
PA-01	Parking Area	Beside land office	Ward No. 03	0.885	Trishal	1915, 1917, 1918
PA-02	Parking Area	East side of Awami League Party Office	Ward No. 09	0.674	Rampur	879, 901, 906-910
PG-01	Playground	West side of Nazrul Memorial Govt. Primary School	Ward No. 01	1.280	Trishal	1570-1572, 1589
PG-02	Playground	East side of Dhani road	Ward No. 02	1.251	Trishal	869, 870, 930-932
PG-03	Playground	South side of Varsity Road	Ward No. 03	1.280	Trishal	1820, 1821, 1823, 1824
PG-04	Playground	East of Upazila Health Complex	Ward No. 04	0.998	Rampur	1089, 1108
PG-05	Playground	East side of Porabari Road	Ward No. 05	1.016	Trishal	2169, 2171, 2172, 2176
PG-06	Playground	East of Bhatipara Govt. Primary School	Ward No. 06	1.096	Nowdhar	286-291, 294, 295
PG-07	Playground	West of Mozahirul Islam Hafezia Madrasha	Ward No. 07	1.157	Rampur	175, 177-179
PG-08	Playground	North of Citycell Tower	Ward No. 08	1.019	Rampur	708, 710-714, 735, 781
PG-09	Playground	Beside Majhipara Road	Ward No. 09	1.040	Rampur	1007-1012
PH-01	Pump House	North side of Graveyard	Ward No. 02	0.140	Trishal	709, 710, 708, 735
PH-02	Pump House	Beside Sekandar Ali Road	Ward No. 06	0.132	Nowdhar	12
PH-03	Pump House	West of Warid Tower	Ward No. 08	0.116	Rampur	708, 709
PS	Primary School	Beside Fulbaria road and east of shukni khal	Ward No. 01	2.113	Trishal	209, 345, 428-431, 436, 437, 646
PT-1	Public Toilet	Beside Porabari roadad acent to proposed Tempo Stand	Ward No. 03	0.013	Trishal	1782
PT-2	Public Toilet	Beside Varsity road	Ward No. 03	0.013	Trishal	1892, 1894, 1902
PT-3	Public Toilet	Beside Dhaka-Mymensingh road	Ward No. 06	0.013	Naodhar	240, 272, 273, 278
PT-4	Public Toilet	Beside Dhaka-Mymensingh road	Ward No. 06	0.013	Naodhar	356, 361
PT-5	Public Toilet	East margin of Ward No.07 beside Dhaka-Mymensingh road	Ward No. 07	0.018	Rampur	200
PT-6	Public Toilet	Beside Balipara road	Ward No. 09	0.036	Rampur	873, 1183, 1183
RZ	Resettlement Zone	Beside Fulbaria road and south margin of War No.02	Ward No. 02	8.049	Trishal	419, 710-721, 723-726, 729, 733-735
SH	Slaughter House	South side of Varsity Road	Ward No. 03	0.561	Trishal	1895, 1896, 1900
SM	Super Market	Central part of Ward No.03 beside Varsity road	Ward No. 03	1.161	Trishal	1512, 1533, 1536, 1537, 1752, 1754
ST	Stadium	In between Fulbaria road and Dhani road	Ward No. 02	7.945	Trishal	921-927, 929, 951-953, 1952, 1953, 1957-1961
TS-1	Tempo Stand	Beside Porabari road	Ward No. 03	0.281	Trishal	1782
TS-2	Tempo Stand	Beside Dhaka-Mymensingh road	Ward No. 06	0.275	Naodhar	355, 356, 361, 362
TS-3	Tempo Stand	Beside Dhaka-Mymensingh road	Ward No. 07	0.297	Rampur	193, 200
TS-4	Tempo Stand	Beside the junction of Balipara road & Jummat Ali road	Ward No. 09	0.245	Rampur	1182, 1183
TT	Truck Terminal	Beside Dhaka-Mymensingh road	Ward No. 06	1.109	Naodhar	240, 266, 267, 269-273, 378

ID	Name of Proposal	Location	Ward No.	Area (Acre)	Mouza Schedule	
					Mouza	Plot No.
WC-01	Ward Centre	West side of Nazrul Memorial Govt. Primary School	Ward No. 01	1.362	Trishal	1103, 1105-1107, 1568, 1570, 1589
WC-02	Ward Centre	East side of Dhani road	Ward No. 02	1.019	Trishal	928, 932, 948-950
WC-03	Ward Centre	South side of Varsity Road	Ward No. 03	1.040	Trishal	1724, 1822-1825
WC-04	Ward Centre	East of Upazila Health Complex	Ward No. 04	0.857	Rampur	1089-1091
WC-05	Ward Centre	East side of Porabari Road	Ward No. 05	1.028	Trishal	2169, 2170, 2171
WC-06	Ward Centre	East of Bhatipara Govt. Primary School	Ward No. 06	0.763	Nowdhar	287, 290-294, 350
WC-07	Ward Centre	West of Mozahirul Islam Hafezia Madrasha	Ward No. 07	1.080	Rampur	121, 179
WC-08	Ward Centre	North of Citycell Tower	Ward No. 08	1.103	Rampur	714-717, 735
WC-09	Ward Centre	Beside Majhipara Road	Ward No. 09	0.753	Rampur	1000, 1011-1014
WDG	Waste Disposal Ground	North-west margin of Ward No. 01	Ward No. 01	10.803	Trishal	7-18, 41, 44-47, 50, 51, 979, 980
WM	Wholesale Market	South-eastern part of Ward No.03 beside Ashin road	Ward No. 03	5.209	Trishal	1778-1790
WTS-1	Waste Transfer Station	South-east part of Ward No.02 and west of Shutia river	Ward No. 02	0.259	Trishal	1984, 1985
WTS-2	Waste Transfer Station	Eastern part of Ward No.03	Ward No. 03	0.261	Trishal	1896, 1900
WTS-3	Waste Transfer Station	Southern part of Ward No. 04	Ward No. 04	0.280	Rampur	1083
WTS-4	Waste Transfer Station	South-west corner of Ward No.08	Ward No. 08	0.245	Rampur	889, 891, 892
YDC	Youth Development Center	Beside Ashim road	Ward No. 03	0.509	Trishal	1852, 1853, 1854, 1855

List of Proposed Transport Facilities

ID	Name of Proposal	Location	Ward No.	Area (Acre)	Mouza Schedule	
					Mouza	Plot No.
BT	Bus Terminal	Beside Dhaka-Mymensingh Highway	Ward No. 06	1.620	Naodhar	261-268, 378, 380-382, 594, 595
PA-01	Parking Area	Beside land office	Ward No. 03	0.885	Trishal	1915, 1917, 1918
PA-02	Parking Area	East side of Awami League Party Office	Ward No. 09	0.674	Rampur	879, 901, 906-910
TS-1	Tempo Stand	Beside Porabari road	Ward No. 03	0.281	Trishal	1782
TS-2	Tempo Stand	Beside Dhaka-Mymensingh road	Ward No. 06	0.275	Naodhar	355, 356, 361, 362
TS-3	Tempo Stand	Beside Dhaka-Mymensingh road	Ward No. 07	0.297	Rampur	193, 200
TS-4	Tempo Stand	Beside the junction of Balipara road & Jummat Ali road	Ward No. 09	0.245	Rampur	1182, 1183
TT	Truck Terminal	Beside Dhaka-Mymensingh road	Ward No. 06	1.109	Naodhar	240, 266, 267, 269-273, 378

List of Proposed Waste Disposal Facilities

ID	Type of Facilities	Location	Ward No.	Area (Acre)	Mouza Schedule	
					Mouza	Plot No.
WDG	Waste Disposal Ground	North-west margin of Ward No. 01	Ward No. 01	10.803	Trishal	7-18, 41, 44-47, 50, 51, 979, 980
WTS-1	Waste Transfer Station	South-east part of Ward No.02 and west of Shutia river	Ward No. 02	0.259	Trishal	1984, 1985
WTS-2	Waste Transfer Station	Eastern part of Ward No.03	Ward No. 03	0.261	Trishal	1896, 1900
WTS-3	Waste Transfer Station	Southern part of Ward No. 04	Ward No. 04	0.280	Rampur	1083
WTS-4	Waste Transfer Station	South-west corner of Ward No.08	Ward No. 08	0.245	Rampur	889, 891, 892

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 Graveyard	Ward No. 02	0.140	Trishal	709, 710, 708, 735
PH-02	Pump House	Beside Sekandar Ali Road	Ward No. 06	0.132	Nowdhar	12
PH-03	Pump House	West of Warid Tower	Ward No. 08	0.116	Rampur	708, 709
OHT-01	Overhead Tank	North side of Graveyard	Ward No. 02	0.237	Trishal	709, 710
OHT-02	Overhead Tank	Beside Sekandar Ali Road	Ward No. 06	0.213	Nowdhar	12, 13
OHT-03	Overhead Tank	West of Warid Tower	Ward No. 08	0.231	Rampur	738, 709, 737, 708

List of Proposed Public Toilet

ID	Name of Proposal	Location	Ward No.	Area (Acre)	Mouza Schedule	
					Mouza	Plot No.
PT-1	Public Toilet	Beside Porabari road	Ward No. 03	0.013	Trishal	1782
PT-2	Public Toilet	Beside Varsity road	Ward No. 03	0.013	Trishal	1892, 1894, 1902
PT-3	Public Toilet	Beside Dhaka-Mymensingh road	Ward No. 06	0.013	Naodhar	240, 272, 273, 278
PT-4	Public Toilet	Beside Dhaka-Mymensingh road	Ward No. 06	0.013	Naodhar	356, 361
PT-5	Public Toilet	Beside Dhaka-Mymensingh road	Ward No. 07	0.018	Rampur	200
PT-6	Public Toilet	Beside Balipara road	Ward No. 09	0.036	Rampur	873, 1183, 1183

APPENDIX – D

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.

ত্রিশাল পৌরসভা

ত্রিশাল, ময়মনসিংহ ।

ত্রিশাল পৌরসভার প্রস্তুতকৃত খসড়া মাস্টার প্ল্যান উপস্থাপন এবং মাস্টার প্ল্যান অনুযায়ী অত্র এলাকার উন্নয়নের লক্ষ্যে মতবিনিময় সভা।

সভাপতি	ঃ এ. বি. এম আনিছুজ্জামান, মেয়র, ত্রিশাল পৌরসভা
সভার তারিখ	ঃ ১৭ ই জুন, ২০১৩ ইং ।
স্থান	ঃ পৌরসভা হলরুম, ত্রিশাল, ময়মনসিংহ ।
সময়	ঃ সকাল ১১.০০ ঘটিকা।

সভায় উপস্থিতির বিবরণঃ

অদ্য ১৭ ই জুন ২০১৩ ইং সকাল ১১.০০ ঘটিকায় হলরুমে ত্রিশাল পৌর-শহরের জন্য প্রস্তুতকৃত খসড়া মাস্টার প্ল্যান উপস্থাপন এবং এর উপর মতবিনিময় সভা এ. বি. এম আনিছুজ্জামান, মেয়র, ত্রিশাল পৌরসভা এর সভাপতিত্বে অনুষ্ঠিত হয়। উক্ত মতবিনিময় সভায় উপজেলা শহর অবকাঠামো উন্নয়ন প্রকল্প, এলজিইডি এর প্রকল্প পরিচালক মোঃ মোসলে উদ্দিন, টিম লিডার মোঃ আব্দুল হাকিম মন্ডল, উপজেলা চেয়ারম্যান এ. এন. এম শোভা মিয়া আকন্দ, উপজেলা প্রকৌশলী মোঃ এনায়েত কবীর; পৌরসভার নির্বাহী প্রকৌশলী, সহঃ প্রকৌশলী ও সচিবসহ অন্যান্য কর্মকর্তা ও কর্মচারীবৃন্দ, উপজেলা শহর অবকাঠামো উন্নয়ন (ইউটিআইডিপি) প্রকল্পের নগর পরিকল্পনাবিদ সৈয়দ শাহরিয়ার আমিন, মাস্টার প্ল্যান প্রণয়ন প্রকল্পে নিযুক্ত পরামর্শকবৃন্দ, ব্যবসায়ী, প্রধান শিক্ষক, ছাত্র, সাংবাদিক, বিভিন্ন দপ্তরের বিভাগীয় কর্মকর্তা ও পৌরসভার কাউন্সিলরবৃন্দসহ স্থানীয় গণ্যমান্য ব্যক্তিবর্গ উপস্থিত হয়ে আলোচনায় অংশগ্রহণ করেন।

সভার আলোচনা ঃ

মেয়র, ত্রিশাল পৌরসভাঃ ত্রিশাল পৌরসভার মেয়র মহোদয় জনাব এ. বি. এম. আনিছুজ্জামান 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 ত্রিশাল পৌরসভার অনুমোদন সাপেক্ষে বাস্তবায়নের প্রয়োজনীয়তা তুলে ধরেন। তিনি প্রকল্প পরিচালক জনাব মোঃ মোসলে উদ্দিন কে বিশেষ ধন্যবাদ জানিয়ে মহাপরিকল্পনার বিভিন্ন দিক তুলে ধরার জন্য অনুরোধ করেন এবং এরপর তিনি কার্যক্রম পরিচালনা করেন।

মোঃ মোসলে উদ্দিন, প্রকল্প পরিচালক, উপজেলা শহর অবকাঠামো উন্নয়ন প্রকল্প, এলজিইডিঃ উপজেলা শহর অবকাঠামো উন্নয়ন প্রকল্প এর প্রকল্প পরিচালক জনাব মোঃ মোসলে উদ্দিন তাঁর বক্তব্যে মহাপরিকল্পনা কি এবং কেন প্রয়োজন তা ব্যাখ্যা করেন। তিনি বিভিন্ন প্রস্তাবনার গুরুত্ব সংক্ষেপে বর্ণনা করেন। এছাড়াও অপরিকল্পিত নগরায়নের অসুবিধা সমূহের কথা উল্লেখ করেন। মহাপরিকল্পনার আওতাধীন প্রস্তাবিত সমন্বিত সড়ক ও ড্রেনেজ ব্যবস্থার প্রয়োজনীয়তা তুলে ধরে সম্পূর্ণ জিআইএস তথ্য ভান্ডার ডিজিটাল পদ্ধতিতে তৈরী করার সংক্ষিপ্ত বর্ণনা দেন। এছাড়াও বিভিন্ন সময়ে স্থানীয় ব্যক্তি বর্গের বিভিন্ন প্রশ্নের উত্তর ব্যাখ্যা করেন।

মোঃ আব্দুল হাকিম মন্ডল, টিম লিডার, প্যাকেজ-২ (বেট্‌স কনসাল্টিং সার্ভিসেস লিঃ), উপজেলা শহর অবকাঠামো উন্নয়ন প্রকল্পঃ উপজেলা শহর অবকাঠামো উন্নয়ন প্রকল্পের প্যাকেজ-২-এর টীম লিডার মোঃ আব্দুল হাকিম মন্ডল বেট্‌স কনসাল্টিং সার্ভিসেস লিঃ-এর পক্ষ থেকে সভায় উপস্থিত সকলকে আন্তরিক অভিনন্দন ও শুভেচ্ছা জ্ঞাপন করেন । তিনি মহাপরিকল্পনার গুরুত্ব ও তাৎপর্য ব্যাখ্যা করেন এবং অপরিকল্পিত নগরায়নের অসুবিধা সমূহের কথা উল্লেখ করেন। এরপর তিনি বেট্‌স কনসাল্টিং সার্ভিসেস লিঃ-এর নগর পরিকল্পনাবিদ মোঃ জামাল উদ্দিন কে খসড়া মাস্টার প্ল্যান উপস্থাপন করতে অনুরোধ করে তাঁর বক্তব্য শেষ করেন।

খসড়া মাস্টার প্ল্যান উপস্থাপনঃ

প্রকল্পের আরবান প্ল্যানার জনাব 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 ত্রিশাল পৌরসভার আঞ্চলিক ও স্থানীয় যাতায়াত ব্যবস্থার উন্নয়নকল্পে গৃহীত প্রধান কয়েকটি সড়কের তথ্য-উপাত্ত যৌক্তিকতাসহ উপস্থাপন করেন।

মাস্টার প্ল্যান প্রণয়ন প্রকল্পে নিযুক্ত পরামর্শক প্রতিষ্ঠান (বেটস্ কনসাল্টিং সার্ভিসেস লিঃ) এর পক্ষে নগর পরিকল্পনাবিদ জনাব মোঃ জামাল উদ্দিন 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 ত্রিশাল পৌরবাসীর উন্নয়নকল্পে প্রস্তাবিত ও গৃহীত একাধিক উন্নয়ন প্রস্তাবনার অবস্থান উপস্থাপন করেন যার মধ্যে পৌর পার্ক, যানবাহন পার্কিং, বাস টার্মিনাল প্রভৃতি উল্লেখযোগ্য।

তিনি উল্লেখ করেন, ত্রিশাল 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।
- ত্রিশাল 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 পয়:নিষ্কাশন নিশ্চিত করার লক্ষ্যে কয়েকটি গণ-শৌচাগার এর প্রস্তাব রাখা হয়েছে। সে 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 ট্রান্সপোর্ট্যান্ড 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 পার্ক এবং বিভিন্ন মহল্লায় নেইবারহুড পার্ক এর প্রস্তাব করা হয়েছে।
- আশ্রয়হীন বয়স্কদের পুনর্বাসনের লক্ষ্যে একটি পুনর্বাসন কেন্দ্রের প্রস্তাব রাখা হয়েছে।
- পৌরসভার পরিকল্পনা বাস্তবায়ন প্রক্রিয়ায় ক্ষতিগ্রস্থ পরিবারের পুনর্বাসনের জন্য পুনর্বাসন এলাকার প্রস্তাব রাখা হয়েছে।

- ভূমিহীন, গৃহহীন, অসহায় দরিদ্রদের আবাসন সুযোগ-সুবিধা প্রদানের লক্ষ্যে খথহফ ভড়ৎ চড়ড়ৎ চবড়ঢ়ষব এর প্রস্তাব করা হয়েছে।
- পৌরসভার রাস্তার সংকটপূর্ণ সংযোগ স্থলে পরিকল্পিত ভাবে যানবাহন চলাচলের লক্ষ্যে গোলচত্তর এর প্রস্তাব রাখা হয়েছে।
- ভারী যান-বাহন দ্বিমুখী চলাচলের ক্ষেত্রে সম্ভাব্য সংঘর্ষ নিরসনের লক্ষ্যে সেন্ট্রাল ডিভাইডার এর প্রস্তাব আনা হয়েছে।
- পথচারীদের নির্বিঘ্নে চলাচলের লক্ষ্যে ফুটপাতের প্রস্তাব রাখা হয়েছে।

খসড়া মাস্টার প্ল্যান উপস্থাপনের পর স্থানীয় নেতৃবৃন্দ এবং বিভিন্ন জনগোষ্ঠীর প্রতিনিধিবৃন্দ উপস্থাপিত মাস্টার প্ল্যানের উপর আলোচনা করেন।

এ.এন.এম শোভা মিয়া আকন্দ, চেয়ারম্যান ত্রিশার উপজেলা পরিষদঃ ত্রিশাল উপজেলা পরিষদের চেয়ারম্যান জনাব এ.এন.এম শোভা মিয়া আকন্দ পরিকল্পনার বিভিন্ন দিক তুলে ধরেন । তিনি তাঁর অভিজ্ঞতা ব্যক্ত করতে গিয়ে বলেন, যখন ট্রেনিং এর কাজে দেশের বাইরে যান তখন দেখেন যে, বাংলাদেশীরাও রাস্তায় কোন ময়লা ফেলে না কিন্তু সেই একই মানুষ দেশে ফিরে কলার খোসা সহ যে কোন কিছু রাস্তায় ফেলছে। যা মোটেও কাম্য নয়। তিনি বিশেষ করে রানা প্লাজার কথা তুলে ধরেন যা অপরিকল্পনার ফলাফল। পরিকল্পনা মাফিক চললে এই দুর্ঘটনা এড়ানো সম্ভব হতো বলে তিনি মনে করেন। এই মহাপরিকল্পনা বাস্তবায়নের জন্য তিনি সকলকে আন্তরিক হতে অনুরোধ জানান কারন একার পক্ষে যে কোন পরিকল্পনা বাস্তবায়ন সম্ভব নয়। তিনি সাংবাদিক ভাইদের গণ মাধ্যমে এই মহাপরিকল্পনার প্রয়োজনীয়তা তুলে ধরে নিয়মিত প্রতিবেদন দেয়ার অনুরোধ করেন যাতে পৌরবাসী মহাপরিকল্পনার প্রয়োজনীয়তা সম্বন্ধে বুঝতে পারেন। সর্বপরি তিনি পৌরবাসীদের উদ্দেশ্যে নিয়মিত পৌর কর প্রদান করতে অনুরোধ করেন। তিনি পরিকল্পনার প্রস্তাবনাসহ সামগ্রিক মহাপরিকল্পনা যুগোপযোগী হয়েছে বলে মনে করেন।

এ. বি. এম আনিছুজ্জামান, মেয়র, ত্রিশাল পৌরসভাঃ ত্রিশাল পৌরসভার মেয়র জনাব এ. বি. এম আনিছুজ্জামান বলেন ঢাকা-ময়মনসিংহ রাস্তার কাজ ৪ লেনে উন্নীত হলে ২ থেকে ৫ বছরের মধ্যে ত্রিশাল পৌরসভা একটা ট্রানজিট পয়েন্ট হিসাবে ব্যবহৃত হবে। এছাড়াও পুরাতন ব্রহ্মপুত্র নদীর উপর ব্রীজ এর কাজ চলছে এবং এই রাস্তাটিও ৪ লেনে পরিবর্তনের কাজ শুরু হবে। এই মহাপরিকল্পনা বাস্তবায়ন অতি দ্রুত প্রয়োজন কারন প্রতিনিয়ত অন্তত ১০-১৫ টি প্ল্যান অনুমোদনের জন্য পৌরসভার নিকট আসছে এবং প্রতিটি ওয়ার্ডেই অন্তত ৫-৭ টি বাড়ীর নির্মান কাজ চলছে। তিনি পরিকল্পনার গুরুত্ব বোঝাতে গিয়ে বলেন, যদি নিজেরা পৌরসভার আইন কানুন মেনে না চলি তা হলে আমাদের ত্রিশাল পৌরসভা বসবাসের অযোগ্য হয়ে পড়বে। তাঁর মতে, পাকিস্তান আমলে যে পরিকল্পনা হয়েছিল তা মেনে চললে উপমহাদেশের পরিকল্পিত নগর হিসাবে আমরা ঢাকাকে দেখতে পেতাম, যা শুধুমাত্র দেশপ্রেমের অভাবে সম্ভব হয়নি । তিনি পৌরবাসীদের অনুরোধ করেন দেশের প্রতি শ্রদ্ধাশীল হতে এবং আইন কানুন মেনে এই মহাপরিকল্পনা বাস্তবায়নে সকলকে এগিয়ে আসার জন্য যাতে সবাই মিলে ভবিষ্যৎ প্রজন্মকে একটি সুন্দর বাসযোগ্য শহর উপহার দিতে পারেন। পরিশেষে তিনি সকলকে ধন্যবাদ জানিয়ে তাঁর বক্তব্য শেষ করেন।

খুরশীদুল আলম, সাংবাদিক, দৈনিক যুগান্তর, ৪ নং ওয়ার্ডঃ ৪ নং ওয়ার্ডের পৌরবাসী দৈনিক যুগান্তর এর সাংবাদিক জনাব খুরশীদুল আলম বলেন, উন্নয়ন প্রস্তাবনা আরও হলে ভাল হত। তিনি ঢাকা-ময়মনসিংহ রোডের পার্শ্বে একটি ফুটওভার ব্রীজ স্থাপনের প্রস্তাব করেন।

বিপুল, ৪ নং ওয়ার্ডঃ ৪ নং ওয়ার্ড এর পৌরবাসী জনাব বিপুল এই মহাপরিকল্পনায় পরিবেশগত দিক দেখা হয়েছে কিনা তা জানতে চান। তিনি শশ্মান ঘাট রাখার প্রস্তাব করেন।

সভাপতি মহোদয় ঃ সভাপতি ও ত্রিশাল পৌরসভার মেয়র মহোদয় জনাব এ. বি. এম. আনিছুজ্জামান তাঁর সমাপনী বক্তব্য রাখেন, মাস্টার প্ল্যান প্রণয়ন প্রকল্পে নিযুক্ত পরামর্শক প্রতিষ্ঠান (**BETS Consulting Services Limited**) এর পক্ষে জনাব মোঃ স্বরূপ হাসনাইন, নগর পরিকল্পনাবিদ ও মোঃ জামাল উদ্দিন, নগর পরিকল্পনাবিদ এবং **LGED** এর পক্ষে মোঃ মোসলে উদ্দিন, প্রকল্প পরিচালক, সৈয়দ শাহরিয়ার আমিন, নগর পরিকল্পনাবিদ, উপজেলা শহর অবকাঠামো উন্নয়ন প্রকল্প, এলজিইডি কে ধন্যবাদ জ্ঞাপন করে এবং ত্রিশাল পৌরসভার উন্নয়নের আশাবাদ ব্যক্ত করে তাঁর বক্তব্য শেষ করেন।

সভার সিদ্ধান্তসমূহ:

১. প্রতিটি ওয়ার্ডে একটি করে কাউন্সিলর অফিস/ওয়ার্ড সেন্টার দেওয়ার প্রস্তাব গৃহীত হয় ।

২. ০.১৫ একরের উপর যে সকল জলাধার আছে সে গুলো সংরক্ষনের প্রস্তাব গৃহীত হয়।

৩. বিভিন্ন নাগরিক সুবিধাদিসহ উন্নয়ন প্রস্তাবনা, যেমন: 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 ।

৪. প্রাইমারী রাস্তা, সেকেন্ডারী রাস্তা ও প্রয়োজনীয় সংখ্যক সংযোগ রাস্তার প্রস্তাব গৃহীত হয় ।

৫. বাস টার্মিনাল, ট্রাক টার্মিনাল, টেম্পোষ্ট্যান্ড ও পার্কি এলাকার প্রস্তাবের ব্যাপারে সিদ্ধান্ত গৃহীত হয় ।

৬. সুষ্ঠুভাবে পানি নিষ্কাশনের জন্য প্রাইমারী, সেকেন্ডারী ও টারশিয়ারী ড্রেনসহ একটি সমন্বিত ড্রেনেজ ব্যবস্থাপনা নেটওয়ার্কের প্রস্তাবনা গৃহীত হলো ।

৭. এছাড়াও পৌরসভার উন্নয়নের সাথে সংশ্লিষ্ট অন্যান্য প্রস্তাবনা সর্বসম্মতিক্রমে গৃহীত হয় ।

৮. মহাপরিকল্পনা প্রণয়ন প্রকল্পে নিযুক্ত পরামর্শক প্রতিষ্ঠান **(BETS Consulting Services Limited)** কে মহাপরিকল্পনার বিভিন্ন উন্নয়ন মূলক প্রস্তাবনা যাচাই বাছাই পূর্বক ত্রিশাল পৌরসভার চুড়ান্ত মহাপরিকল্পনা প্রণায়নের কাজ সমাপ্ত করে চুড়ান্ত 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।

17.06.13

(এ. বি. এম আনিছুজ্জামান)
মেয়র
ত্রিশাল পৌরসভা
ত্রিশাল, ময়মনসিংহ।

অনুলিপি সদয় অবগতির জন্য প্রেরণ করা হলোঃ

১. প্রকল্প পরিচালক, উপজেলা শহর অবকাঠামো উন্নয়ন প্রকল্প, এলজিইডি, ঢাকা।
২. নির্বাহী প্রকৌশলী, সড়ক ও জনপথ বিভাগ, ময়মনসিংহ
৩. উপবিভাগীয় প্রকৌশলী, গণপূর্ত অধিদপ্তর, ময়মনসিংহ
৪. সহকারী প্রকৌশলী, জনস্বাস্থ্য প্রকৌশল অধিদপ্তর, ত্রিশাল, ময়মনসিংহ
৫. উপজেলা প্রকৌশলী, স্থানীয় সরকার প্রকৌশল অধিদপ্তর, ত্রিশাল, ময়মনসিংহ
৬. ব্যবস্থাপনা পরিচালক, **BETS Consulting Services Limited**, ঢাকা
৭. জনাব সৈয়দ শাহরিয়ার আমিন, নগর পরিকল্পনাবিদ, উপজেলা শহর অবকাঠামো উন্নয়ন প্রকল্প, এলজিইডি, ঢাকা।

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