



**Government of the People's Republic of Bangladesh**  
**Ministry of Local Government, Rural Development & Cooperatives**  
**Local Government Division**

**MEHENDIGANJ PAURASHAVA**  
**MASTER PLAN: 2011-2031**

March, 2015

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**Technical Assistance: Local Government Engineering Department (LGED)**



**Government of the People's Republic of Bangladesh**  
**Ministry of Local Government, Rural Development & Cooperatives**  
**Local Government Division**

## **MEHENDIGANJ PAURASHAVA MASTER PLAN: 2011-2031**

### **STRUCTURE PLAN**

#### **URBAN AREA PLAN:**

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

#### **WARD ACTION PLAN**

March, 2015



**MAHENDIGANJ PAURASHAVA**  
**MEHENDIGANJ, BARISAL**



# **MEHENDIGANJ PAURASHAVA MASTER PLAN: 2011-2031**

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**1/E/2 Paribagh (Mazar Road), Shahbagh, Dhaka-1000**

*in association with*

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## Preface

Bangladesh has been experiencing rapid urbanization in the last four decades where level of urbanization has reached from 7.6% to nearly 29% between 1970 and 2011. Multidimensional complex factors like; socio-economic, political, demographic and climatic are responsible for this higher growth of spatial transformation. The fast urbanization is putting pressure on the small towns' limited land, urban services and environment along with countries big cities. Whereas urbanization is also considered as an opportunity and an integral part of the development process. Proper development plans and guidelines with necessary legislative measures and appropriate institutional arrangement can help to achieve sustainable urban as well as rural development.

However, presently, the Paurashavas has the legal mandate to take initiatives of formulating development plans, providing infrastructure and other services and creating opportunities for people to initiate developments with sustainable and harmonic approach. In this regards, Mehendiganj had initiated steps to frame its' Master Plan (Physical Development Plan) by taking technical assistance from the Local Government Engineering Department (LGED). LGED under the Local Government Division of the Ministry of Local Government, Rural Development and Cooperatives initiated a project titled 'Upazila Towns Infrastructure Development Project (UTIDP)' providing all sorts of technical assistances to prepare long term physical development plan titled 'Master Plan' for Mehendiganj Paurashava.

Master Plan of Mehendiganj Paurashva has been prepared following the pre-requisite of the Local Government (Paurashva) Act, 2009. To prepare the Master Plan, LGED engaged consulting firm named Sheltech Consultants (Pvt.) Ltd in association with Design Planning and Management Consultants Ltd. and set up a Project Management Office (PMO) deploying a Project Director, Deputy Project Director, experienced Urban Planners as Individual Consultant and support staffs. Regular monitoring, evaluation and feedback from PMO had also accelerate the pace and quality of the master plan preparation tasks. During formulation of the Master Plan, the Paurashava authority along with the project & the Consultant ensure people's opinion, observation and expectation in various ways: conducting sharing meetings, Public Hearing etc. At the end of the formulation process, the Paurashava completed all procedures necessary for its approval as per the related clauses and sub-clauses of the Local Government (Paurashava) Act, 2009. Paurashava Authority has submitted this Plan to the Local Government Division of the Ministry of Local Government, Rural Development and Cooperatives for final approval and gazette notification.

This Master Plan comprises of three tier of plan in a hierarchical order, these are: Structure Plan for 20 years, Urban Area Plan for 10 years and Ward Action Plan for 5 years. Urban Area Plan also comprises of three components namely; Land use plan, Traffic & Transportation Management plan and Drainage & Environmental Management Plan. This Master plan will serve as guidelines for the future infrastructure development of Mehendiganj Paurashava together with land use control and effective management of service facilities.

The Paurashava Authority acknowledges the full support and all out cooperation from the consultant team, the Project Management office of UTIDP, LGED, Local Government Division of the Local Government, Rural Development and Cooperatives Ministry, public representatives, other stakeholders and civil society with deepest gratitude for accomplishing this remarkable assignment.

Cooperation and participation from national to local authorities, all government institutions, private entities and people of Mehendiganj Paurashava will be necessary to implement this Master Plan successfully and make this Paurashava developed and livable. I hope Mehendiganj Paurashava will be a model Paurashava in Bangladesh through building itself green and sustainable by successful implementation of this Master Plan.

(Md. Kamal Uddin Khan)  
Mayor  
Mehendiganj Paurahsava.

## EXECUTIVE SUMMARY

The term “Master Plan” is a guideline for future development. This guideline is being resulted on specific issues. The Government of Bangladesh has committed to prepare Paurashava master Plan for ensuring Paurashava environment livable. At present, development scenerios of the Paurashava shows a very grave situation. Primary and secondary drains and natural streams are not functioning as an integrated drainage system due partly to silting up and unplanned and deficient construction and lack of maintenance. Encroachment on drainage reservations causes inundation in many areas, including houses and roads, during heavy storms. There is hardly any roadside drain and if any, the roadside drains are inadequate due to insufficient capacities and incorrect gradients.

Equally, traffic and transportation problems in the Paurashavas of Bangladesh are continuously increasing as the development and management of road network has not been commensurate with the increasing demand for its usage. Traffic congestion, delay, accidents, pedestrian and parking difficulties, air and noise pollution are among the problems. Traffic congestion is one of the most important and critical problems now being identified in the Paurashavas. The situation has been steadily deteriorating over time, over large areas and for longer periods of the day. If this unplanned construction goes on unabated it will make the environment of the Paurashava unsuitable and inhabitable. At present, there is no proper Master Plan for development of Paurashava to overcome those problems. In the absence of proper Master Plan construction of all types of infrastructure like houses, roads, drains, markets are going on unabated in an unplanned manner. This situation is creating an adverse milieu in the original landscape thereby creating environmental hazards.

It appears that planned development of Paurashava is very important. In view of this grave situation it has, therefore, been contemplated that preparation of Master Plan is being followed with projection for a period of 20 years. Further, in support of the Master Plan there are separate plans named Landuse Plan, Drainage and Environmental Plan, Traffic Management Plan, Community Services Plan and Ward Action Plan to ensure operation and maintenance of the existing infrastructure along with those facilities proposed to be built up under the future investment program and above all, to suggest improvement of the management ability of the Paurashava Authority so that their revenue earning capability will be enhanced with a view to reform the Paurashava Authority as self-sustaining local government institution. The Master Plan will also suggest construction of roads and bridges / culverts, drainage facilities, streetlights, markets, bus stands, solid waste management, sanitation, water supply and other such infrastructure facilities.

This is the primary effort of planned development for the Mehendiganj Paurashava, guided by the LGED under Package-11 of the Upazila Towns Infrastructure Development Project (UTIDP). It is expected that the implementation of the plan will induce higher-level of development, ensure planned life, good community and better future of the Paurashava inhabitants.

The Mehendiganj Paurashava was established in 12<sup>th</sup> October 1998 under the jurisdiction of Mehendiganj Upazila of Barisal Zila, between 22°41' and 23°55' north latitudes and between 90°23' and 90°38' east longitudes. The Paurashava is bounded on the north by Hizla Upazila, on the east by Lakshmipur Sadar and Bhola Sadar Upazilas, on the south by Barisal Sadar upazila and on the west by Mehendiganj and Babuganj Upazilas.

The Paurashava is 'Kha' category (the term 'Kha' is the Bengali word means third category or 'B' category. The concern Ministry uses this word for fund allocation and administrative arrangement) and consists with 9 Wards and 9 mouzas. The Paurashava is located at southern part of Bangladesh and about 300 km. (through Maowa) from the Dhaka City.

For the preparation of master plan, an area of 3535.29 acres (14.30 sq. km.) consider as planning area and Structure Plan area also.

According to the Census Year 2011, 30067 populations are living in the planning area with gross density 9 persons per acre and it will be 31703 (according to the medium growth rate) in 2031 with same population density.

In the Paurashava, agriculture occupies 2555.47 acres and residential and circulation network occupy 449.53 acres and 64.20 acres of land respectively. An area of 391.71 acres is covered with water bodies.

The Paurashava is a naturally developed area. Planning effort yet not been taken by the public authority. Therefore, a mixed landuse scenario is viewed all over the Paurashava. About 10 to 12 meter earth filling will be needed for every development activities in the Paurashava. So, bulk development should not be encouraged due to the huge cost involvement.

Almost all the Wards have no sewerage system and toilets are mostly consists of sock pits. Overall garbage disposal system is poor. Garbage Dumping Ground is not available and mostly disposes on open streets. Wastes collect by the NGOs but not well organized all over the planning area.

Mehendiganj Paurashava bears rural influences and agriculture is the major source of income. Average monthly income per household is Tk.7000. No substantial saving of the income is found.

The Upazila Towns Infrastructure Development Project (UTIDP) of LGED requires that one of its outputs is a comprehensive set of plans for Mehendiganj Paurashava. The proposed set of plans consists of Structure Plan, Urban Area Plan and Ward Action Plan.

The Structure Plan sets out a long-term strategy – covering the twenty years from 2011 to 2031 for urban development and the use of land in the Paurashava Town as a whole. It extends to the entire area demarcated by the Consultant. The document sets out a series of policies to be pursued, if the broad objectives set for development of the Paurashava to be achieved.

The Urban Area Plan elaborates policies of the Structure Plan as far as they affect the area where urban development activity will be concentrated. The plan, therefore, is limited to the existing urban area and its immediate surroundings. It is for a period of twenty years, covering the period from 2011 to 2031. In providing more detailed guidance available in the Structure Plan, it gives greater precision to the spatial dimension of the Structure Plan policies. The Urban Area Plan includes landuse Plan, Traffic and Transportation Plan, Drainage and Environmental Management Plan and Plan for Community Services.

The Ward Action Plan provides guidance for areas where major change or action is expected in the short-term (5 years). According to the individual Ward of the Paurashava, this plan provide further the policies and proposals of both the Structure Plan and Urban Area Plan in more detailed and guidance for the control, promotion and coordination of development.

# Mehendiganj Paurashava Master Plan: 2011-2031

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## LIST OF ABBREVIATIONS AND ACRONYMS

ASA	Association for Social Advancement
BADC	Bangladesh Agriculture Development Corporation
BM	Bench Mark
BRDB	Bangladesh Rural Development Board
BTM	Bangladesh Transverse Mercator
CBD	Central Business District
CNG	Compressed Natural Gas
CP	Control Point
CS	Cadastral survey
dBase	Data Base
DEM	Digital Elevation Model
DGPS	Differential Global Positioning System
DLRS	Directorate of Land Records and Survey
DPA	Demarcation of Planning Area
DPHE	Department of Public Health and Engineering
GCP	Ground Control Point
GIS	Geographic Information System
GPS	Global positioning system
HQ	Head Quarter
K.P.H	Kilometers Per Hour
K.M.	Kilometer
LGED	Local Government Engineering Department
mPWD	Meter PWD
MSL	Mean Sea Level
O-D	Origin and destination Survey
PCU	Passenger Car Unit
PRSP	Poverty Reduction Strategy Paper
PWD	Public Works Department
RCC	Reinforced Cement Concrete
RDMS	Relational Data Management System
REB	Rural Electrification Board
RHD	Roads and Highway Department
RTK-GPS	Real Time Kinematics Global Positioning System
SOB	Survey of Bangladesh
SQL	Structural Query Language
TCP	Temporary Control Points
TIC	Tentative points)
TIN	Triangular Irregular Network
TS	Total Station
TVS	Traffic Volume Survey
UP	Union Parishad
UTIDP	Upazila Towns Infrastructure Development Project



### LIST OF LOCAL TERMS

Baro	Big
Bazar	Market
Char	piece of land rising from the river and sea
Chota	Small
Dighi	Tank
Ghat	Boat Terminal
Goru	Cow
Hat	Weekly and Occasional Market
Jame	Offer Prayer Five Times Daily except Jumma for Muslims
Kancha Bazar	Kitchen Market
Katcha	Fresh/earthen
Khal	Canal
Matshaya	Fish
Mondir	Temple
More	Intersection
Mouza	Land Measurement Unit
Murgi	Poultry
Nouka	Boat
Pan	Beetle Leaf
Panjegana	Offer Prayer Five Times Daily except Jumma for Muslims
Pool	Traditional Culvert/bridge
Potti	Community/Locality
Paurashava	Municipality
Pucca	Permanent Structure
Shahar	Town
Shahid Minar	Memorandum for Martyrs
Tempo	Human hawler
Thela	Push Cart

### LIST OF TECHNICAL TERMS

Acre	1 <sup>2</sup> km = 247.1044 acre
Bigha	1 Bigha = 14400 sq. ft.
Katha	1 Katha = 720 sq. ft.
Lakh	1 Lakh = 100 Thousand

## **Part A. Structure Plan**

## **Chapter- One**

### **INTRODUCTION**

---

#### **1.1 Introduction**

In Bangladesh the average urban growth rate between 1961 to 1981 was 8%, currently which is about 4.5%. According to the population census of 2001 the share of urban population was about 23.29%, presently; it would be approximately 25%. By the year 2015 the share of urban population will be about 37% of the national population. The importance of urban development is emphasized in terms of its role in the national economy. More than 60% of the national GDP is derived from the non-agricultural sectors that are based in urban areas. Again, the most foreign exchange earning sectors, like, garment and knitwear enterprises are agglomerated in urban areas. These sectors earn over 70% of the foreign exchange. Remittance is also a major sector of foreign exchange earnings and a large share of the remittance goes into the purchase of urban land. Surplus remittance is invested in business and manufacturing located in urban areas. These phenomena indicate the increasing role of urban areas being played in the national economy. The expansion of urban economy leads to the growth of urban population and concomitant haphazard urban spatial growth without planning. The rapid urbanization is also marked by creation of Paurashava, whose number presently stands at about 322. Paurashava are created not only to provide urban services to its citizens but also to create a livable environment through development of planned and environmentally sound living space.

It is very likely, as can be seen from the past trend; 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 hinter lands. Without adequate infrastructure and services provision to support the increasing population and activities the small urban centers would not be able make themselves as the focal points to attract investment. Planned development of infrastructure and services and development control through land use plan and execution of BC rules is essential to develop smaller urban centers environmentally and render them congenial places to live and work.

The present infrastructure provisions in Paurashava are in a precarious state. Drains are mostly clogged that cannot drain out excess water during heavy rains, natural drainage systems have either been filled up or occupied by land grabbers creating water logging during monsoon. Traffic in Paurashava is increasing day by day with the increase of population and consequent increase in mobility. But the sub-standard road network can hardly keep pace with the growing demand for movement. Road networks are 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 Paurashava is unorganized and unplanned, which is a major source of environment degradation. Building Construction Rules are not effectively enforced mainly for want of a well formulated master plan and qualified planning professional and additionally, due to poor governance.

Under the above circumstances it is high time to think about the criticality of the problems that might emerge in future if they are not addressed now. To overcome all the likely problems to come in future, the Paurashava should go for planned development through preparation of a master plan and move the development forward accordingly side by side strengthening its planning department. The master plan can be prepared exercising the power conferred to them by the Local Government (Paurashava) Act 2009. The Upazila Town Infrastructure Development Project aims

to prepare master plan for 218 Paurashavas / Upazilas and develop infrastructure during 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 future infrastructure development projects. There is also aim to prepare proposals to enhance Paurashava's revenue earning so that it becomes more capable to meet its own capital needs. The master plan of Mehendiganj Paurashava suggests development of new roads, drainage facilities, street lights, markets, bus stands, solid waste management, sanitation, water supply and other such infrastructure facilities in order to equip the Paurashava to face future challenges of urbanization and economic regeneration.

## **1.2 Objectives**

According to the Terms of Reference the objectives of Mehendiganj Paurashava Master Plan are:

- a. Find out development issues and potentials of the Mehendiganj Paurashava and make a 20 years development vision and prepare a Master Plan for development in line with the vision;
- b. Prepare a plan for the people of the Mehendiganj town to develop and update the provisions for transport network, housing, infrastructures for roads, 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 for all sorts of group of community to improve quality of life;
- c. Prepare multi-sector short and long term investment plans through participatory approach to improve living standards by identifying area based priority development projects in accordance with the principle of sustainability;
- d. Provide controls for private sector development and clarity and security with regard to future development;
- e. Provide guide line for development considering the opportunity and constraints of future development of Mehendiganj Paurashava as the Upazila Town; and
- f. Prepare a 20-year Master Plan to be used as a tool to ensure and promote growth of the town and control any unplanned growth by any private and public organization.

## **1.3 Approach and Methodology**

### **1.3.1 Survey and Data Collection**

Extensive Topographic and Physical Feature survey (for details please see Chapter 3 of Survey report), Landuse survey (for details, please see chapter 4 of Survey report), Drainage and Environmental Management survey (for details, please see chapter 6 of Survey report), Transportation and Traffic Management survey (for details, please see chapter 5 of Survey report) were carried out by the consultant under the close supervision of PMO and Mehendiganj Paurashava Officials using sophisticated modern technology (i.e. RTK-GPS, Total Station etc.). Special care was taken for generalized landuse survey to collect physical information and for indication of existing land use and development pattern. Questionnaire survey (for details, please see chapter 7 of Survey report) was administered for collection of socio-economic information of the local citizens. Data and information were also collected from Paurashava officials, local elites/leaders, to serve the purpose for preparation of a landuse plan. Master plan maps for Mehendiganj Paurashava has been prepared using different scales (i.e. 1:1980, 1:3960) as per ToR to indicate possible intensive development zone and development pattern thereof during successive stages of development within the project area.

### **1.3.2 Review of Existing Conditions and Plan Preparation**

After survey and analysis of existing conditions the planning phase began. Review of the planning area revealed the problems and opportunities. This was followed by a Draft Paurashava Plan with such components as Structure Plan, Urban Area Plan and Ward Action Plans. Structure Plan provided the long term planning principles, while the Urban Area Plan set down the mid level development proposals covering major infrastructure and services. The ward Action Plan made detailed local level development proposals in minor detail. The major issues covered in the Paurashava Master included the following,

- future land use;
- road infrastructure;
- drainage;
- utility and community services;
- education and health facilities.

Thematic maps on above issues were prepared and narrative description was prepared for development proposals.

### **1.3.3 Plan Consultation and Plan Revision**

The draft plan was presented in the Paurashava in presence of Mayor and Councilors and other permanent personalities and representatives of professional groups for their comment and suggestion. Threadbare discussions followed after presentation, where issues and problems were raised. Comments were recorded for incorporation in the plan. A copy of the plan was sent to LGED for their comments as well.

The comments received from the Paurashava and LGED were studied. The comments that were found feasible for accommodation were accepted and necessary corrections made in the plan and report and the final Master Plan was prepared.

The report/plan is, therefore, a detailed one to indicate the possible location of major landuse zones and the organization of internal structure of the project area in line with the existing character, depicted on the base map. It will help to guide the growth of the area in harmony with social, economic and political needs to achieve maximum practicable degree of economy, convenience and amenities. Proposals for location and layout plan for specific activities/functions, a small and cottage industry, for example, needs feasibility study and contour information for site development.

The plan has been prepared on the basis of Participatory Process where the project area will develop around existing social services facilities using available physical infrastructures. The plan further attempts to guide the growth of the internal structure of the service centre by judicious selection/location of committed/ anticipated social services/facilities in such a way that each of the proposed zones/projects will reap the benefit of others, keep the plan flexible; help minimize extra expense during successive stages of development and keep the centre functional. Due care has also been taken on such factors as economy, convenience and amenities for the Upazila populace by using existing/added advantages and adopting such policy as optimum utilization of space and available resources.

Land use proposal, in the plan, has been reflected using planning standard, legend and colour scheme supplied by Project Management Office over Mouza sheets where in location and property line of the existing use have been depicted using different shades. This helped to identify the scheme to be developed for specific project, assess the degree of change of use and the quantum of existing use to be affected for implementation of the plan.

## 1.4 Activities Undertaken

The consultant has been deployed a team of consultants and support staffs due to plan preparation as well as project completion. The team composition has been attached later in **Annexure- A**. The consultant has been undertaken the following major activities for preparation of the Mehendiganj Paurashava Master Plan.

### a. Visit to the Paurashava

The consultant team leader and or other team members of the project visited to the Paurashava on several occasions. The visits were mainly for two purposes, **first**, to acquaint themselves with the town- its problems and opportunities and **second**, to make aware the Paura people and the local stakeholders about the plan making and seeking their opinion and cooperation in this respect.

### b. Inception Seminar/Meeting and Plan Consultation with the Stakeholders in the Paurashava

The consultant has arranged an Inception Seminar/Meeting at the Paurashava level at the project inception level in cooperation with the Mehendiganj Paura Authority and disseminated the stakeholders including the Paurashava about the scope and Terms of Reference for the preparation of Master Plan. Views were exchanged with the stakeholders regarding the problems and opportunities of the Paurashava to develop a 20 year development vision for the Paurashava linking the ideas and views received. On completion of the draft final plan a consultation meeting was arranged at Paurashava Office where the plan proposals were disseminated and opinions from the stakeholders sought. Meeting minutes of the final consultation meeting with Paurashava and other stakeholders including Project Management Office (PMO) has been attached later in **Annexure- D**.

### c. Determination of Study Area

The consultant has determined the study area or the area to be covered under the current planning exercise based on existing condition, demand of the Paurashava and potential scope for future expansion. The determined Structure Plan Area is 14.30 sq. km or 3535.29 acres of land that includes existing Paurashava area. A Paurashava gazette notification of Mehendiganj Paurashava has been attached later in **Annexure- B**. **Map- 1.1** shows the location of Mehendiganj Paurashava.

### d. Assessment of Drainage System and Preparation of Drainage Master Plan

One of the important tasks of the consultant was to Identify and investigate the existing natural and man-made drains, natural river system, assess the extent and frequency of flood, determine area of intervention. The consultant has also studied the contour and topographic maps produced by the relevant agencies and also review any previous drainage Master Plan available for the Paurashava.

After assessment of current situation the consultant prepared a comprehensive (storm water) Drainage Master Plan for the Paurashava for a plan period of 20 years. In such exercise it considered all relevant issues including discharge calculation, catchment areas; design of main and secondary drains along with their size, type and gradients and retention area with preliminary cost estimates for the proposed drainage system.

### e. Transportation Planning

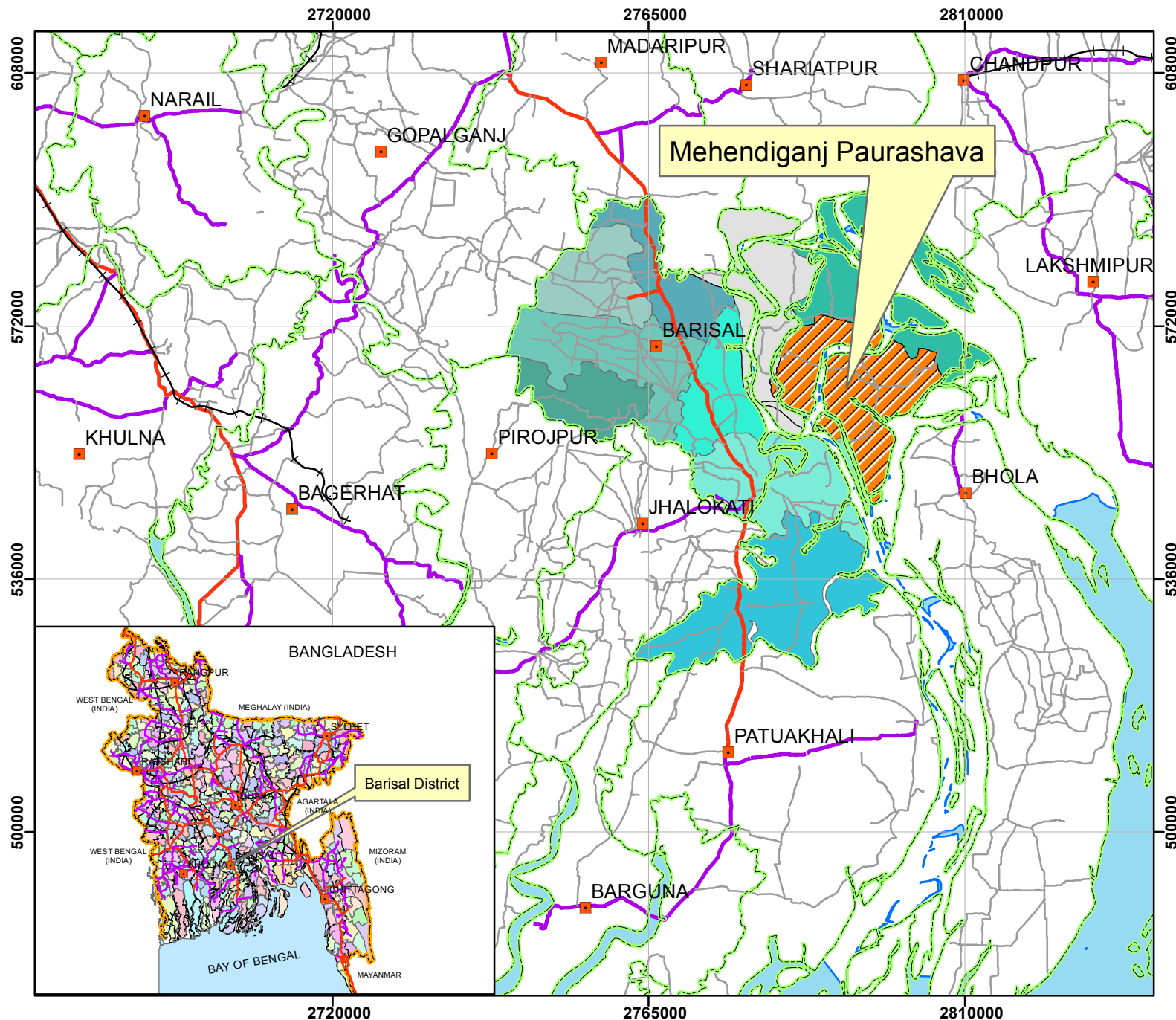
For making a comprehensive transportation plan for Mehendiganj Paurashava the consultant carried out the following tasks:

- i. Collected and assessed the essential data relating to existing transport network, relevant regional and national highway development plans, accident statistics, number and type of vehicles registered for Mehendiganj Paurashava.

- ii. Assessed requirements of critical data and collected data through reconnaissance and traffic surveys to estimate present traffic volume, forecast the future traffic growth, and identify travel patterns, areas of traffic conflicts and their underlying causes.
- iii. Studied the viability of different solutions for traffic management and developed a practical short term traffic management plan, including one way system, restricted access for large vehicles, improved signal system traffic islands, roundabouts, pedestrian crossings, deceleration lanes for turning traffic, suitable turning radius, parking policies and separation of pedestrians and rickshaws, etc.
- IV. Assessed the non-motorised traffic movement dominated by cycle rickshaws. Special recommendations were made to utilize these transports in best possible way, without causing unnecessary delays to other vehicles. Proposals were also made about pedestrians and their safety, with special attention for the children.
- V. Assessed the current land use with respect to road transportation, bus and truck stations, railway stations etc. and recommend actions to optimize this land use.
- VI. Prepared a road network plan based on topographic and base map prepared under the Mehendiganj Paurashava Master Plan Project. Recommended road development standards, which will serve as a guide for the long and short-term implementation of roads. Also suggested traffic and transportation management plan and the traffic enforcement measure to control traffic movement in a more effective way.

Map 1.1

# Location of Mehendiganj Paurashava



**SCALE**  
1:800,000

0 125 250 500 750 1,000 Meters

## LEGEND

- District Headquarter
- District Boundary
- International Boundary
- railway network
- National Highways
- Regional Highways
- Feeder Roads
- Bay of Bengal

## UPAZILA NAME

- Agailjhara
- Babuganj
- Bakerganj
- Banaripara
- Barisal
- Gaurnadi
- Hizla
- Mehendiganj
- Muladi
- Ujirpur

PREPARATION OF MASTER PLAN FOR MEHENDIGANJ PAURASHAVA  
Mehendiganj Upazila, Barisal District



Government of the People's Republic of Bangladesh  
Ministry of Local Government, Rural Development and Cooperatives  
Local Government Division

Local Government Engineering Department (LGED)  
Upazila Towns Infrastructure Development Project (UTIDP)  
Package No: 11 (Barisal Region)

**SCPL** CONSULTANT  
Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
In Association with





## **Chapter - Two**

### **PAURASHAVA'S EXISTING TREND OF GROWTH**

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#### **2.1 Social Development**

**Age-sex structure:** In Mehendiganj Paurashava, about 59% people of Mehendiganj Paurashava are male and the rest are female. About 42% household members are within the age group of 26 – 57 years followed by 27.6% within the age group of 16 – 25 years and 19.1% within the age group of 6 – 15 years. It is noticed that economically active population within the age group of 26 – 57 years.

Again, 39.3% male household members are within the age group of 26 – 57 years followed by 5.6% within the age group of above 57 years. It signifies that the economically active population within the age group of 26 – 57 years is in need of having job opportunities.

Further, 46.2% female household members are within the age group of 16 – 25 years followed by 25.3% within the age group of 26–57 years and 5.1% within the age group of above 57 years. This also illustrates economically active female population is within the age group of 26 – 57 years.

**Household size:** Household size ranges from 1-3, 4-6, 7-9, 10-12 and 12+ members, but most prevalent size is 4-6 members in the Paurashava and also in Bangladesh. There are both single and joint family systems. Lowest number of average family size in the Paurashava is 14%. Those families are living in the Ward No. 2, 3 and 5. A good number of 8-10 family members in a family prevail in the Wards except those Wards. Single or nuclear family is the prominent family size in the Paurashava, confirming the urban character. Nuclear family is highest in the Ward No. 2 (82%) and lowest in the Ward No. 1 (26%).

**Marital status:** In the Paurashava, 54.26% population of age 10 years and over was never married. In the same age-group, percentage of currently married population is 41.45% and percentage of widowed and divorced are 1.51% and 0.06% respectively.

**Migration:** In the Paurashava, 0.92% households come from other places. More than half (66.10%) of the households have come during the year 1990-2000 to Mehendiganj Paurashava followed by 33.9% after the year 2000 means the migration phenomenon is of recent. Most of those people are living in the Ward No. 2, 3 and 4. Most common reason of the in-migration is the seeking of job. It shows that 66.67% households migrate in the Ward No. 2 for business purpose. Other reason of in-migration is better educational facility (42.86% in the Ward No. 8).

**Educational status:** Literacy rate (61.2%) of Mehendiganj Paurashava is quite unsatisfactory with compared to Barisal Zila and National level for both male and female. About 34% people have passed VI to X, 35.21% Class 1 to V, 10.98% SSC and 3.85% are HSC degree holder. Illiteracy rate is 10.54%. In case of obtaining SSC degree, 12.58% are males and 8.66% females. It is impressive that 0.15% females have obtained postgraduate degree and it is 0.75% for male. In Ward-wise scenario, 20.61% of the people living in Ward No. 9 are illiterate followed by 10.37% in Ward No. 1 and 12.82% in Ward No. 3. Again, 8.28% people living in Ward No. 2 are graduates and no graduate in the Ward No. 4, 7, and 9.

**Religion:** In the Paurashava, 80.8% households' religion is Islam and 19.2% Hinduism. This information relating to the religion structure is very much important in context of providing religious

services and facilities for the households living in the Paurashava. Notably, 30% of the households at Ward No. 6 are practicing Hinduism.

### Occupational status

There are variations in the type of occupations of the people among the Wards. Small business is the dominating occupation of the people. About 40% (39.94% actually) households are involved with small business followed by farming activities (21.09%) as a secondary occupation. Some people are also pulling Rikshaw/Van and it is also 39.94%. Except these, 5.11% involve with large business, 3.51% in private service, 2.24% each with teaching and handicrafts, 1.6% in government service, 3.19% day labour and 7.67% as labour in various activities.

**Table-2.1: Occupational Status (in no.)**

Ward no.	Day Labour	Farming/Agriculture	Govt. Service	Handicrafts	Hawker/Vendor	Housewife	Labour	Large Business	Not applicable	Others	Private Service	Retired	Van puller/Dri	Small Business	Teaching	Un-employed
1	4	10	0	0	0	0	3	3	0	3	0	2	20	0	0	45
2	1	3	0	0	0	0	0	3	1	1	3	0	15	15	2	29
3	0	0	2	0	0	1	0	2	0	1	0	1	18	18	0	29
4	2	2	0	0	1	0	7	1	0	3	0	0	0	8	4	30
5	3	3	1	0	0	1	2	0	0	0	0	1	20	20	1	37
6	0	6	0	3	0	2	0	3	1	1	1	0	21	0	0	39
7	0	11	0	0	0	2	7	1	0	3	2	0	7	7	0	33
8	0	13	1	3	0	1	3	2	1	2	2	0	13	13	0	41
9	0	18	1	1	0	0	2	1	0	1	3	0	0	3	0	30
<b>Total</b>	<b>10</b>	<b>66</b>	<b>5</b>	<b>7</b>	<b>1</b>	<b>7</b>	<b>24</b>	<b>16</b>	<b>3</b>	<b>20</b>	<b>11</b>	<b>4</b>	<b>125</b>	<b>125</b>	<b>7</b>	<b>313</b>
<b>%</b>	<b>3.19</b>	<b>21.09</b>	<b>1.60</b>	<b>2.24</b>	<b>0.32</b>	<b>2.24</b>	<b>7.67</b>	<b>5.11</b>	<b>0.96</b>	<b>6.39</b>	<b>3.51</b>	<b>1.28</b>	<b>39.94</b>	<b>39.94</b>	<b>2.24</b>	<b>100</b>

Source: Socio-economic Survey, 2011.

**Income level:** Present population distribution and growth including migration shows that the area is developing significantly in terms of trade and large business and trying to get out of agriculture based activity. Income ranges basically support this concept which is evident by the ranges of income earned by households. In the Paurashava, 71.57% of the household head earns Tk 35001 – Tk.10000 per month. Further, 10.54% household head earn below than Tk. 3500 per month, 4.15% earns Tk. 10001 – Tk. 12000 and 13.74% earn above than Tk. 12,000.

Tk.35001- Tk. 10000 income-groups is dominant income-group in the Paurashava and it is found 82.22% in the Ward No. 1, 68.97% in the Ward No. 2, 75.86% in the Ward No. 3, 80% in the Ward No. 4, 70.27% in the Ward No. 5, 66.67% in the Ward No. 6, 57.58% in Ward No. 7, 70.73% in Ward No. 8 and 43% in the Ward No. 9.

**Expenditure level:** Expenditure pattern of the Paurashava conforms to the general pattern of household expenditure. There are several headings like Food, House rent, Basic utility charge, Education, Health, Transportation / vehicle charge, Recreation and Other charges, etc.

In the Paurashava, 50.48% household spends Tk.5001 – Tk.10,000 per month followed by 37.70% Tk.2500–Tk.5000 per month for fooding. It is also noticeable that about 0.96% household spends above than Tk.20,000 per month for all requirements. Level of expenditure is higher in the Ward No. 3, 5 and 9. It represents rich people are living in those Wards.

## Land Value

Land value is an important determinant for any project related to the physical development because; the development depends on project cost and the cost on land value. In recent time, a rapid change of land value is found in the Paurashava. Wealthy people of the community are investing on land and became landlord because they consider it as a safe investment. As a result, land value curve is on upward. Value of land depends on location, accessibility, height and free of natural hazards. Following paragraphs discuss on land value of the planning area.

**Official Value:** The official land value uses for calculation and collection of land revenue. In the physical planning aspects, study of land value is necessary for land acquisition. For the preparation of physical development project including cost involvement, an idea on land value is necessary. The value may be changed when development initiative will be undertaken. In this study, the official land value is being quoted from the actual value considers by the Sub-registry Office of the Mehendiganj Paurashava.

**Table-2.2: Mouza-Wise Land Value in the Paurashava, 2011**

Mouza name	Type of land (Tk. / decimal)							
	Dhani	Danga	Viti	Pond	Bastu	Garden	Doba	Bazar
Char Hogla	6050	8300	11330	3330	5720	11000	4000	
Bhuta Lakshampur	8500	11300	12070	3070	6830	13000	4000	
Sonamukhi	7050	8300	14330	8810	5940	13200		
Ambikapur	6050	8300	13330	3330	5720	12000	4000	
Mehendiganj	10500	14000	18580	7250	7120	15000	6500	30000
Durgapur	8500	11300	12070	3070	6830	15000	4000	
Kharki	7050	8300	13330	8810	5940	11200		
Gobindapur	6050	8300	11330	3330	5720	12000	4000	
Chunar Char	5000	8400	11000	3440	5160	10521	4000	

Source: Sub-Registry Office, 2011.

In this study, eight types of land in 9 mouzas are being considered. In the natural land market, land for homestead / housing construction is higher than other type of land and this scenario is prevailing in the Paurashava also. In another scenario, homestead land value is higher than all type of land value and it is found highest in Mehendiganj mouza and lowest in Chunar Char mouza. Land value is low (Tk.4000 per decimal) for Doba type of land. That type of land is under the jurisdiction of agriculture land. For development activities, in case of land cost, those lands should be emphasized, though land development cost is higher than other type of lands.

**Existing Practice/Unofficial Value:** It is clearly observed that land value increases with the height of the land. It increases from low to medium high land but the maximum mean value is found for the habitable land (Tk.30000 per decimal) and lowest for the low land (Tk.5000 per decimal). Average land value in the Paurashava is Tk.25000 per decimal. Land value is highest in Ward No. 2 (Tk.50000 per decimal) which implies the significance of core area. On the other hand land value is lowest in Ward No. 5 and 8 (Tk.15000 per decimal) which implies that this Ward has abundant agricultural low-land.

Habitable land in Ward No. 2 bears highest land value (Tk.50000 per decimal) and low land in Ward No. 8 bears the lowest land value (Tk.4000 per decimal). Medium high land is found only in Ward No. 3 and 7 and the average value is Tk.25000 per decimal.

**Land Ownership Types and Patterns:** Status of residence or ownership of dwelling units/land is a key socio-economic indicator. Residential status varies in the planning area. The land ownership pattern often determines social power and position.

Low-land ownership indicates most of the household's land property. Households almost all the Wards own low-land (90.1% individual and 8.3% joint ownership) followed by habitable land (98.4% single and 1.6% joint ownership) and very small quantity medium-high land. Since, the area is business based with considerable number of agricultural activities, presence of considerable ownership of low land and habitable land supports small business as main activity.

## 2.2 Economic Development

Two basic elements of economic development i.e. employment generation and increase of productivity are found in the cities and urban areas than the rural areas. This is a common phenomenon for the developed and developing countries. Employment opportunities act as a strong pull factor for influx of job seekers in the cities and urban areas, the centers of productivity. Special features of the Mehendiganj Paurashava are that it covers a vast rural area, besides a small urban center. Several local roads including a number of boat ghats are in the Paurashava and both the sides of the prominent local roads are being occupied by huge tracts of agriculture land and sporadic homesteads, at places showing the signs of development along with the hats, bazars indicating the dominant role of agriculture, poultry and fishery. This indicates general feature of the Paurashava as a mixture of rural and semi-urban nature.

**Industry:** Saw Mill is the most important industries in this area and there are 16 structures (64% of the total industries) devoted for this purpose. Except saw mill, bakery, rice mill and ice mill are also available in the Paurashava. About 64% industrial structures are located at Ward No. 7, 12% each in Ward No. 1 and 2, 8% in Ward No. 6 and 4% in Ward No.3.

**Commerce:** Commerce includes purchase and sale of various consumer and durable items performed by the business person. In the Paurashava, such activities are wholesale and retail trade, hotel and restaurant business, transport, storage services, hat/bazar, etc. Major part of trade and commerce of the Paurashava is conducted through hat / bazar where agriculture produces, consumer items, merchandise for household and other farm and non-farm items are transacted. The market / bazar performs significant role on the Paurashava economy. It is observed that market / bazar provide good number of employment and act as an economic centre for the area of influence of the market / bazar. This market / bazar remain open every day from morning to evening. Along with the daily business transactions, one market place is also used as hat which sits twice in a week. On the hat day farmers, traders, businessmen and many other informal professionals gather in the hats and run trades and business till evening. Actually, the market/bazar is the key supplying centres of all sorts of agro-products to the urban areas and other non-producing areas of the country and similarly this market / bazar is the major distribution centres of industrial products to the vast majority of the rural people throughout the country at consumer levels. Importance of the market / bazar cannot be ignored, rather needs to be facilitated with provision of infrastructure facilities.

There is one market/bazar named Mehendiganj bazar in the Paurashava located in the Ward No. 2. It has the potentiality to become a growth centre after implementation of master plan. Beside this, some small shops are located along with the major roads. About 28% people are engaged in small business performs in the Mehendiganj bazar.

The Paurashava is composed with 670 numbers of commercial structures. Among them 71.79% are katcha, 23.28% semi-pucca and 4.93% pucca structures. The scenario proves that the area is identified as a rural-based commercial centre and dominating the surrounding Upazilas and Zilas with its economic commodities. Daily gross economic turnover may be taka 3.50 lacs (approx. five hundred taka per shop in an average).

**Services:** The service sector consists of the hotel and restaurant business; transport and communication, storage/godown, financial intermediaries, real estate, rental activities, public administration, education, health, community service and social work including social and personal services. The service sector significantly contributes to the local economy. Most of the service structures are housed in permanent structures. There are some makeshift type structures also.

There is 1 banking establishment and 3 NGOs (located at Ward No. 1, 8 and 9) working in the Paurashava. Major investment by the bank is in the system of cash credit in the form of running capital and capital loan for setting up of business establishments, besides general banking facility. Some NGOs have also disbursed agricultural loan. The NGOs are rendering services in the fields of poverty alleviation programs, awareness building, health care, education, sanitation, micro-credit and training on income generating activities including skill development. NGOs provide services in the field of micro-credit; encourage social services, advance loan for poultry, fisheries, livestock, agriculture, house building, land purchase and capital loan for running business. NGOs also take part in various social activities like awareness building on environment, natural calamities, health and many other fields. A good number of people specially women and poverty-stricken has been getting various types of services from the NGOs for quite a long-period.

**Employment Pattern:** In the Paurashava, population age 10 years and above, recorded idle are 2131, looking for work 190, doing household work 1810 and employed the remaining. The employed people identified working in agriculture are 641, industry 10, construction 31, transportation 69, business 917, service 37 and others 824. Economically active age-group (15-59 years age-group) stands 32% of the total population.

**Table-2.3: Population 10 Years and Over by Main Activity**

Ward no.	Not working	Looking for work	Different Types of Occupation										Total	
			Household work	Agriculture	Industry	Water, electri. & gas	Construction	Transport	Hotel & rest.	Business	Service	Others	No.	%
1	219	41	160	28	0	0	1	1	0	46	0	91	587	8.77
2	232	22	125	184	2	0	5	0	0	75	12	27	684	10.22
3	305	20	373	153	1	0	8	25	0	105	7	83	1080	16.14
4	178	33	190	50	2	0	8	6	0	75	3	49	594	8.88
5	338	12	217	51	0	0	2	0	0	117	4	157	898	13.42
6	191	21	139	55	0	0	4	0	0	88	3	61	562	8.40
7	280	13	270	14	3	0	1	25	29	237	5	212	1089	16.28
8	230	14	140	50	0	0	2	5	1	82	0	98	622	9.30
9	158	14	196	56	2	1	0	7	0	92	3	46	575	8.59
<b>Tot al</b>	<b>2131</b>	<b>190</b>	<b>1810</b>	<b>641</b>	<b>10</b>	<b>1</b>	<b>31</b>	<b>69</b>	<b>30</b>	<b>917</b>	<b>37</b>	<b>824</b>	<b>6691</b>	<b>100</b>
<b>%</b>	<b>31.85</b>	<b>2.84</b>	<b>27.05</b>	<b>9.58</b>	<b>0.15</b>	<b>0.01</b>	<b>0.46</b>	<b>1.03</b>	<b>0.45</b>	<b>13.70</b>	<b>0.55</b>	<b>12.32</b>	<b>100.00</b>	

Source: BBS, Community Series, Zila: Barisal, 2006.

**Agro-based:** In total, 31 agro-based structures are devoted for agricultural purposes such as poultry farm, livestock farm, etc. Most of the structures are katcha and cover 0.32% of the total structures and 2.39% people of the Paurashava is engaged with those farming.

**Agriculture:** Agriculture dominates the economy of this Paurashava. Among agricultural produces, important items besides paddy are vegetables, local fruits, sugarcane, jute and mustards. Among the agriculture products, paddy, local fruits, mustards and vegetables are consumed locally and a considerable percent (about 66%) are using by the inhabitants of adjacent Upazilas and Dhaka City and rest 34% are using by the inhabitants of the Paurashava.

**Informal Economic Sectors:** Informal sector covers a lot of activities which may be classified as Trading and Services. Various type of mobile or fixed salable items like food, fish, nuts, coconut, vegetables, daily household items, old cloth/garment, repairing of household gadgets, electronic items repairing, hair cutting, shoe polishing, etc. are considered as informal economic activities. In Mehendiganj Planning area, some people are engaged in informal economic activities such as paper seller, vegetable/egg seller, cobbler, etc. Most of the people, who earned from informal sector, invest around Tk. 2000 per month and earned Tk. 2000 to Tk. 4000 per month.

## 2.3 Physical Infrastructure Development

There are some segmented and sporadic physical developments occurred over the years in different parts of the Mehendiganj Paurashava. At southwestern part, a small portion of Machkata River form Paurashava boundary. There are many canals connect Machkata River flows northwest to southwest. Most of the lands on both sides of canals are using as residential development and agricultural use. Commercial development is expanding along both sides of the local roads. Administrative structures are mostly developed at Ward No. 8 and 9 of the Paurashava.

Mehendiganj Planning area includes saw mill, ice factory and agro-based industries. Though the industrial development in Mehendiganj is quite low, some agro-based mills are being concentrated in the Ward No. 1, 2 and 7.

In the planning area, predominant percentage of lands is devoted for agricultural purpose. Agricultural lands are mostly developed in potential core area and fringe area. However, major concentration is observed in the Ward No. 2, 4 and 9.

Residential structures are mostly developed in core area. Every Ward is more or less developed with residential establishment and Ward No. 1, 5, 6 and 8 deserves highest concentration of residential structures. There is no public park in the Planning area except playgrounds under the jurisdiction of educational institutions.

Most of the roads in the Paurashava are pucca (38.73%) and overall condition is moderate, except access roads. All the areas are well linked with road network but some roads are narrow especially access roads which are required to be widened.

Existing river and khals are playing a vital water ways in connecting the areas with the Bay of Bengal.

Existing natural physical structure of the Mehendiganj Planning area is being interrupted by the existing built environment that are being taking place over the recent years. These developments have encroached water bodies such as river, khals and the existing fertile land. This is very much detrimental for conserving biodiversity. Further, existing physical developments are taking agricultural lands as much as possible which will create danger on the food security and also on the economic base of the planning area.

## 2.4 Environmental Growth

The plan has documented Mehendiganj Paurashava area's environmental conditions, determines potentiality for present and past site contamination (e.g. hazardous substances, petroleum products and derivatives) and identifies potential vulnerabilities (to include occupational and environmental health risks). Details of drainage and environmental components are in the following.

## 2.5 Population

**Population distribution:** In total, 6397 households are living in the Paurashava according to the Population Census, 2011. Highest number (936 and 815 households) of households and population concentration is found in the Ward No. 1 and 8. Ward No. 5 and 6 are adjacent with the Ward No. 8, as a result next highest concentration of population is found in those Wards. Ward No. 2 is predominantly agriculture village; population concentration is lower in that Ward.

**Table-2.4: Household and Population**

Ward No.	Area (acre)	Household	Population		
			Male	Female	Total
1	733.70	936	2197	2204	4401
2	182.05	579	1310	1295	2605
3	294.71	596	1410	1512	2922
4	425.29	618	1435	1594	3029
5	492.49	751	1698	1907	3605
6	415.52	774	1708	1854	3562
7	263.20	662	1434	1612	3046
8	529.79	815	1897	2013	3910
9	191.69	622	1446	1541	2987
<b>Total</b>	<b>3535.29</b>	<b>6397</b>	<b>14535</b>	<b>15532</b>	<b>30067</b>

Source: BBS 2011, Community Series, 2006 and Field Survey, 2011.

**Population density:** In the Paurashava, average population density is 8.50 persons per acre according to the Population Census, 2011. Ward No. 2, 7 and 9 seems highly population concentrated areas and density of population in those Wards are 14.20 persons, 11.58 persons and 14.54 persons per acre respectively. Medium concentration of population is found in the Ward No. 3 and 6. Population density is below than 10 persons per acre in those Wards. Ward No. 1 is lowest in the group i.e. 5.99 persons per acre.

**Table-2.5: Population and Density According to the Ward, 2011**

Ward No.	Population	Total Area		Density	
		Sq.km.	Acre	Per sq.km	Per acre
1	4401	2.97	733.70	1482	5.99
2	2605	0.74	182.05	3620	14.20
3	2922	1.20	294.71	2435	9.87
4	3029	1.72	425.29	1761	7.12
5	3605	1.99	492.49	1812	7.32
6	3562	1.68	415.52	2120	8.58
7	3046	1.06	263.20	2874	11.58
8	3910	2.10	529.79	1862	7.52
9	2987	0.83	191.69	3599	14.54
<b>Total</b>	<b>30067</b>	<b>14.31</b>	<b>3535.84</b>	<b>21565</b>	<b>8.50</b>

Source: BBS 2001, Community Series, Zila: Barisal, 2011.

## 2.6 Institutional Capacity

The Paurashava is responsible for Paurashava administration and also responsible for providing services, slum upgrading, infrastructure development and licensing of non-motorized transport within its jurisdiction. To perform the responsibilities efficiently as prescribed in the Local Government (Paurashava) Ordinance, 2009 existing capacity of the Mehendiganj Paurashava administration is not sufficient. The responsibility may be categorized as two broad heads named Revenue Collection including Budget Preparation and Delivery of Services. Three types of management system are involved with those two responsibilities and they are Top Management, Middle Management and Supervisory Management. A general scenario is found in those three category management system of the Paurashava i.e. lack of efficient manpower. Shortage of technical manpower in the Paurashava is also an administrative problem.

**Allocated Manpower:** Strength of the Paurashava can be accessed from its employment structure and budget. The employment structure indicate weakness as some of the important positions are lying vacant and development control function is unattended which is demonstrated in the absence of Town Planning Division. The manpower allocated for the Mehendiganj Paurashava by the Government except the Mayor and nine Counselors are as follows.

**Table-2.6: Allocated Manpower for Mehendiganj Paurashava**

Positions under Divisions	No. of Employees	Positions under Divisions	No. of Employees
<b>Administration</b>	<b>05</b>	<b>Health Division</b>	<b>07</b>
Secretary	01	Health Assistant	02
Head Assistant	01	Conservancy Inspector	01
Store Keeper	01	Vaccination Supervisor	01
Upper Division Clerk	01	Vaccinator	02
Lower Division Clerk	01	MLSS	01
<b>Accounts</b>	<b>05</b>	<b>Engineering Division</b>	<b>11</b>
Accountant	01	Asstt. Engineer	01
Cashier	01	Sub Asstt. Engineer (Civil)	02
MLSS	03	Sub Asstt. Engineer (Power)	01
<b>Tax Assessment</b>	<b>02</b>	Lower Division Asstt.	01
Tax Assessor	01	Work Asstt.	01
Asstt. Tax Assessor	01	Street Light Inspector	01
<b>Tax Collection and License Division</b>	<b>06</b>	Line Man	01
Tax Collector	01	Driver	01
Asstt. Tax Collector	03	Night Guard	01
License Inspector	01	Power Asstt.	01
Asstt. License Inspector	01	<b>Total</b>	<b>33</b>

Source: Local Government Ministry of Bangladesh, 2009.

Among the allocated manpower (7 employees) for general administrative division, 3 employees designated as office assistant. Accordingly, 3 persons are allocated for accounts division, 5 persons for tax section, 9 persons for engineering section and 4 employees for health division. Existing scenario deserves more involvement of employees; otherwise implementation of master plan will be difficult with the help of present manpower of the Paurashava authority.

**Existing Manpower:** Existing Manpower of the Mehendiganj Paurashava is comprised with 1 elected Mayor, 1 Chief Executive Officer and 3 Departments. These are:



1. Engineering Department
2. Administrative Department
3. Health Family Planning and Conservancy Department

On the basis of organogram, three departments should comprise with 27, 26 and 16 persons respectively but at present there are 2 and 5 persons respectively in engineering and administrative department. At present, there is one employee in health, family planning and conservancy department. It has been observed that in Engineering Department about 90% posts are vacant, in Administration Department 76% posts are vacant and 98% vacant in Health, Family Planning and Conservancy Department.

**Table-2.7: Existing Manpower**

Departments	No. of employee
1. Administrative Section	1
2. General Section	5
3. Accounts Section	1
4. Assessment Section	1
5. Tax collection section	2
6. Engineering section	2
7. Health Department	1
<b>Total</b>	<b>13</b>

Source: Mehendiganj Paurashava, 2011.

**Logistic Support:** Logistic support and necessary equipment is limited for Mehendiganj Paurashava which should be a really big concern. Only a mixture machine, a road roller and a truck are available.

**Table-2.8: Logistics in the Paurashava**

Office equipment and machinery				Transport					
Type writer	Photocopier	Duplicating Machine	Level Machine	Mixture Machine	Road Roller (5-7 ton)	Jeep	Truck (3 ton)	Motor Cycle	By-Cycle
3	1	1	1	1	1	1	2	2	2

Source: Mehendiganj Paurashava, 2011.

**Paurashava Office:** The Paurashava office is single-storied building, using as administrative building. Covered area is 0.10 acres. The building is known as Paurashava Office and located at the Ward No. 6. Surrounding lands are using for commercial purposes.

## 2.7 Urban Growth Area

As per as the physical growth directions, the Paurashava is expanding following palm and figure type of structure. Here palm means the core area of the Paurashava. Several streets are playing the role of fingers (e.g. Mehendiganj to Ulania Road, Abdul Latif Hawladar road, Patarhat to Alimganj Khal Par Road, etc. The growth is not really uni-directional.

The road network connects all parts of the Paurashava. Commercial development is already expanding along with the Badarpur Primary School Road, Cherag Ali Hawladar Road, Lalmia road and Paterhat to Lalkharabad Road. Moreover, most of the eastern and southern parts remain agriculture land.

Existing growth agglomerations along the potential core area accommodate mostly the residential areas. Specially for getting advantage of high lands, residential areas are being developed on those areas and are accelerating growth of the Paurashava on the central part.

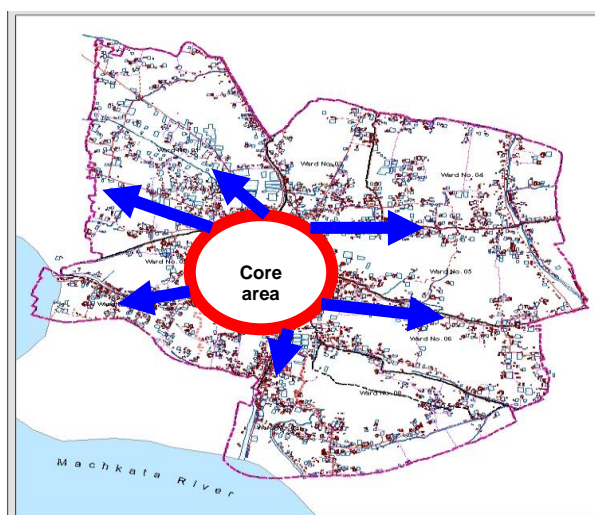
In considering the commercial and residential development on both side of the khal connected with Machkata River, is the potential area for commercial development. At Ward No. 7, administrative zone can be developed considering Upazila Parishad as a centre.

It is expected and required to concentrate industrial development in the existing rather than expanding towards other areas. The industrial development should not be mixed-up with residential development. At present, existing industrial area is mixed with the commercial area.

Educational, religious and other community facilities should be provided in considering Ward-wise population. The potentialities of zoning for important landuse can be considered in determining the present growth of Paurashava.

Moreover, present and proposed Road network would be a major determinant for growth of the Paurashava. Map 2.1 shows the physical growth directions of Mehendiganj Planning area. Besides, care should be given on undesirable encroachment of the agricultural lands which is one of the economic sources of planning area.

**Figure 2.1: Future Growth Direction**



## 2.8 Catchment Area

Catchment area of the Mehendiganj Paurashava is calculated according to the agriculture commodities and movement of dwellers for rendering services. From Mehendiganj Paurashava, agriculture commodities marketed to the Dhaka, Barisal, Kalkini and Madaripur. Rice, jute, mustard and banana are the major commodities marketed in those areas. Except agriculture production, fish and poultry productions also distributes in those areas. The Paurashava dwellers for rendering their services go to Dhaka, Barisal and Madaripur.

## 2.9 Landuse and Urban Services

### Landuse

Use of existing land categorizes on the basis of functional activities perform in Mehendiganj Paurashava. In this Paurashava, agriculture occupies 2555.47 acres (72.27%) of total land. Residential and circulation network occupy 449.53 and 64.20 acres of land respectively. An area of 391.71 acres is covered with water bodies. Other uses are less than 1%.

**Residential:** Residential landuse includes urban residences, rural homestead, mess / boarding houses and informal housing (comprising thatch, katcha and semi-pucca structures) areas. In the Paurashava, most of the residential areas are informal type means that they are not developed in a planned manner.

Residential land is occupied 449.53 acres or 12.71% of the Planning Area. The survey reveals that residential category is the second major dominated landuse. As per Ward-wise statistics, Ward No. 6 is occupied highest amount of land (73.42 acres) and Ward No. 9 is minimum (23.69 acres).

**Commercial:** One hat/bazar (named Mehendiganj Bazar) within the Paurashava premises is found in unorganized nature. The bazar is developed naturally through generations. The bazar is prominent due to its availability of agro-product and fish. People from different Upazilas and Zilas accumulate in that bazar as a buyer. A layout plan will be necessary for improvement of the bazar.

Land uses under this category are retail and wholesale shopping areas and all categories of ribbon commercial developments formed along the major roads. In the Paurashava, there are large numbers of retail shops, kitchen market including weekly hat. Extent of commercial landuse depends on the size of consumers. Most of the commercial activities are agglomerated in Ward No. 2, 3 and 7 with 8.20 acres, 4.32 acres and 3.66 acres of land respectively. All of those Wards are the core areas of Mehendiganj Paurashava. In total, 22.81 acres or 0.65% land is using for commercial purposes.

**Agricultural:** Agriculture is the predominant land use of this Paurashava. About 72% of the Paurashava area is covered with agriculture land. A total of 2555.47 acres or 72.27% land is under this category. Rural agricultural land spreads the entire Planning Area.

Every Ward is more or less occupied by the agricultural land. In Ward No. 1 agricultural land occupied 551.70 acres of the total agriculture land. Lowest amount of agriculture land is in the Ward No. 2 (108.69 acres) and 9 (129.07 acres).

**Table-2.9: Existing Landuse (in acre)**

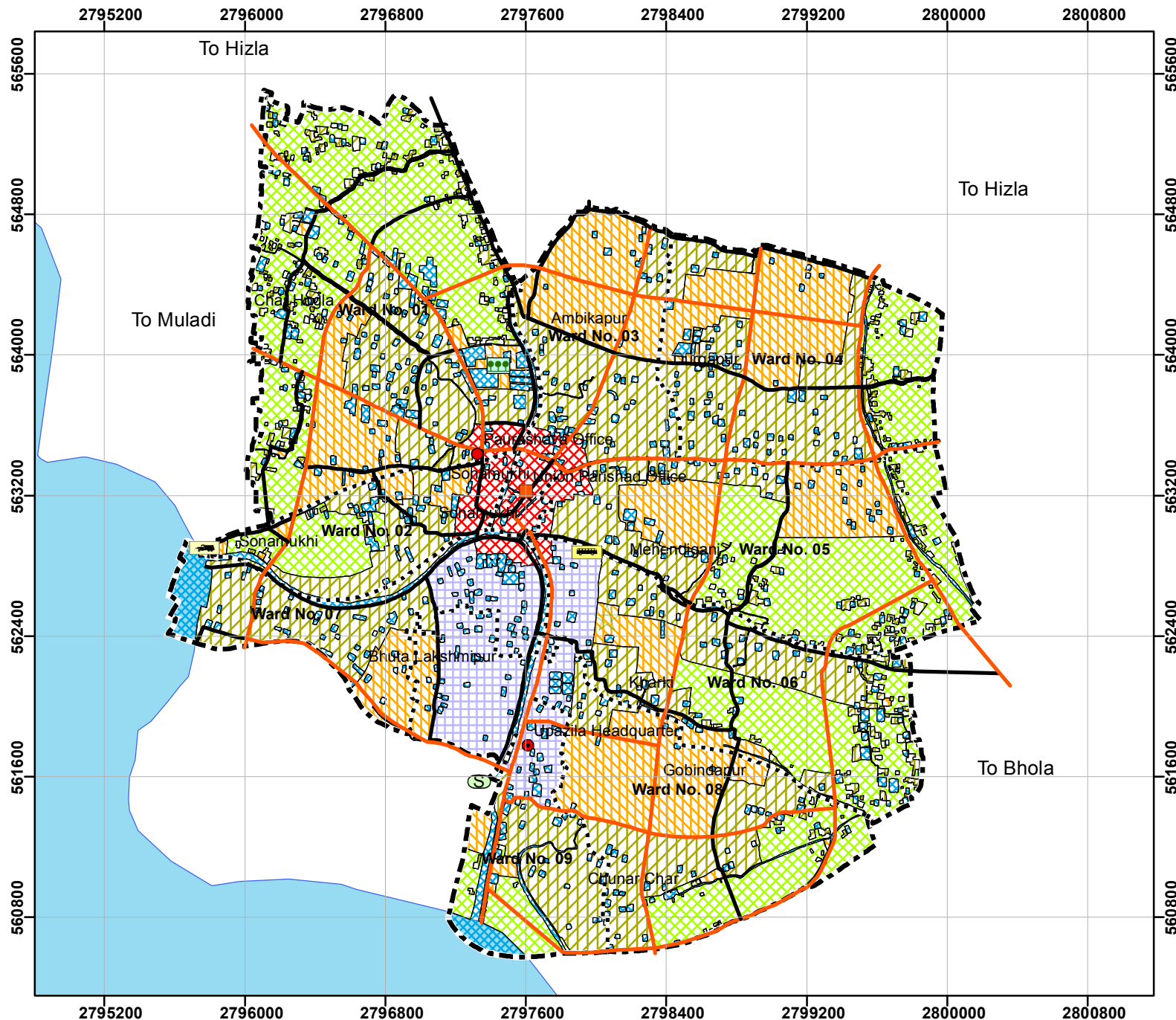
Landuse category	Ward No.									Total	%
	1	2	3	4	5	6	7	8	9		
Agriculture	551.70	108.69	203.18	344.72	400.01	289.50	130.56	398.04	129.07	2555.47	72.27
Commercial	1.27	8.20	4.32	0.57	0.52	1.55	3.66	0.86	1.86	22.81	0.65
Circulation Network	14.26	3.84	5.74	7.06	6.35	7.62	6.33	8.46	4.56	64.20	1.82
Community Facilities	0.86	0.64	1.28	0.81	0.88	0.92	0.40	0.58	0.24	6.61	0.19
Education & Research	2.05	1.72	2.64	2.09	0.41	5.15	0.29	1.18	2.08	17.63	0.50
Industrial area	0.11	0.12	0.23			0.14	1.21			1.81	0.05
Government Office			0.25			0.18	0.18	0.03	0.62	1.26	0.04
Health facilities		0.10	1.30						0.07	1.47	0.04
Mixed-Use		0.51	0.27			0.10	0.22			1.11	0.03

Landuse category	Ward No.									Total	%
	1	2	3	4	5	6	7	8	9		
NGO office	0.12							0.62	0.05	<b>0.78</b>	<b>0.02</b>
Open space	0.90	1.32	2.10	0.16	1.04	1.26	4.13	1.09	0.56	<b>12.55</b>	<b>0.35</b>
Recreation			0.25			0.18	0.18	0.03	0.62	<b>1.26</b>	<b>0.03</b>
Residential	68.82	34.46	45.40	37.65	48.90	73.42	50.30	66.88	23.69	<b>449.53</b>	<b>12.71</b>
Rural homestead	3.54							2.40		<b>5.94</b>	<b>0.17</b>
Transportation		0.10	0.36						1.25	<b>1.70</b>	<b>0.05</b>
Water Body	93.61	22.45	28.69	32.23	34.38	35.50	65.74	52.02	27.09	<b>391.71</b>	<b>11.08</b>
<b>Total</b>	<b>733.70</b>	<b>182.05</b>	<b>294.71</b>	<b>425.29</b>	<b>492.49</b>	<b>415.52</b>	<b>263.20</b>	<b>529.79</b>	<b>191.69</b>	<b>3535.84</b>	<b>100</b>

Source: Landuse Survey, 2011.

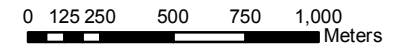
Map 2.1

# Structure Plan Policy Map of Mehendiganj Paurashava



## SCALE

1:32,000



## LEGEND

- Planning Area Boundary
- Paurashava Boundary
- Ward Boundary
- Paurashava Office
- Upazila Headquarter
- Union Parishad
- Major Services
- Central Graveyard
- Central Park
- Industrial Estate
- Neighbourhood Center
- Resettlement Zone
- Truck Terminal
- Bus Terminal
- Upazila Hospital
- Upazila Stadium

## Structure Plan Zones

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

## Major Road

- Primary Road
- Secondary Road

PREPARATION OF MASTER PLAN FOR MEHENDIGANJ PAURASHAVA  
Mehendiganj Upazila, Barisal District



Government of the People's Republic of Bangladesh  
Ministry of Local Government, Rural Development and Cooperatives  
Local Government Division

Local Government Engineering Department (LGED)  
Upazila Towns Infrastructure Development Project (UTIDP)  
Package No: 11 (Barisal Region)

CONSULTANT  
**SCPL** Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
In Association with

**Industrial:** Little amount of land (1.81 acres or 0.05%) is covered by this category of use. This category includes bakery, ice mill and saw mill. Those industries are in five Wards i.e. 1, 2, 3, 6 and 7. Highest areas are being covered by the Ward No. 7.

**Educational:** Primary school, NGO School, high school, college and madrasa has been considered as educational land use. Total area under this use is 17.63 acres or 0.5% of the Planning Area. Highest amount of educational land is in the Ward No. 6 (5.15 acres). All the Wards are more or less involved with educational facility.

**Government offices:** This category includes all types of government offices like DC office, Zila Parishad, Upazila Parishad, LGED, DPHE, Fisheries, Social Welfare, Statistical Bureau, Health office, etc. Total land under this category is 1.26 acres (0.04%). The public land or government services are located in the Ward No. 3, 6, 7, 8 and 9. Among those Wards, Ward No. 9 is conceived highest (0.62 acres) amount of land.

**Recreational:** Recreational facilities like cinema hall, auditorium, amusement park, picnic spot, etc. are included in this category and it covers an area of 1.26 acres land. Ward No. 3 and 9 is dominating areas for recreational facilities. Clubs are the local recreational centers, sometimes also use for political purposes. Indoor recreational facilities are available in those clubs.

**Health service:** There is one health establishment named Upazila Health Complex located in the Ward No. 3 (1.47 acres) in the Paurashava. Overall condition of the health complex is good.

**Community Services:** About 6.61 acres land is devoted for community services. Community services are found in all the Wards, highest concentration is in the Ward No. 3 and lowest in the Ward No. 9.

**Open Space:** A total of 12.55 acres land are using as open space. All the Wards are being involved with open space. Highest amount of open space exist at Ward No. 7 and lowest in the Ward No. 4.

**Water Bodies:** In the Paurashava, a substantial part is covered by water bodies like river; ponds, ditches and canal/khal cover 391.71 acres or 11.08% of the total land. Ditches act as water reservoir.

Mehendiganj Paurashava comprises one river named Machkata encloses about 33.62 acres land covering Ward No. 7 and 9. Canal/knal has an important role in drainage system. Total area of khal/canal is 67.72 acres. Canals are flowing in all the Wards of the Paurashava.

Again, 290.89 acres land is under ditches and ponds. There are 177 ditches covering 26.28 acres land and 1355 ponds comprising 264.61 acres of land. Ward No. 1 deserves highest number of ditches and ponds.

**Circulation:** Roads and water ways of Mehendiganj Paurashava have been considered in this category of land use. About 64.20 acres land is devoted under road network. No formal water ways is in the Paurashava but there are some launch ghats which are considered as transportation facilities.

**Transportation Facilities:** Transportation facilities include bus terminal, bus stoppage, babytaxi or tempo stand, launch or boat ghat and rickshaw or van stand. Only 1.70 acres land under the Ward No. 2, 3 and 9 is covered by the transportation facilities in the Paurashava.

**Mixed-Use:** Mixed-use areas are those where, either commerce is mixed-up with residence or residence with commerce or residence with office or admixture of all the three. Sometimes small industrial enterprises are also found co-exists with any one or all the above landuses. However, other admixture of diverse landuses is also found. Mixed landuse is a common character of all unplanned urban centers in Bangladesh. Degree of such admixture depends on specific location. If the area is closer to the urban centre than the more profitable landuse takes over the less profitable ones and co-existence of diverse landuses prevail for long till one fully takes over the other. In such areas, usually commerce gradually takes over residential use.

In the Planning area, mixed-use is not prominent, Paurashava town centre is being formed as mixed-use area. Only 1.11 acres (0.03%) land is identified as mixed-use areas. Mixed-use areas are in four Wards spatially around the main road where ground floor is using for commercial purposes and other floors are using for residential purposes. Among them, Ward No. 2 is highest (0.51 acres) concentrated mixed-use area.

**Other (Abandoned, etc.):** In the Paurashava, 3 NGOs are working with multi-disciplinary social development activities. Most of those offices are located in the residential areas and same compound in a residential building. Total areas under non-government services are 0.78 acres and those establishments are found in the Ward No. 1, 8 and 9.

**Khas land:** The Paurashava is not maintaining the khas land record. Upazila Nirbahi Officer is the custodian to maintain the khas land record and he has denied for supplying any information on khas land of Mehendiganj Paurashava.

## **2.10 Paurashava Functional Linkage with Regional and National Network**

Barisal district is located at the southern part of the country. There are ten Upazilas in this district namely Agailjhara, Babuganj, Mehendiganj, Banaripara, Gaurnadi, Hizla, Barisal Sadar, Mehendiganj, Muladi and Wazirpur. The district is bounded by Madaripuri, Shariatpur, Chandpur and Lakshmipur districts on the north, Patuakhali, Barguna and Jhalokati districts on the south, Bhola and Lakshmipur districts on the east, Jhalokati, Pirojpur and Gopalganj districts on the west

Like other districts of Bangladesh, sufficient roads are in the Barisal district where bus and other transports are common. Steamer connects Barisal with Dhaka (73 miles [117 km] north) to the north and with Chittagong to the southeast. There is an airport located just outside the city. It has frequent flight services to Dhaka via different Airlines. Due to its location and easy access to both riverine and marine navigation channels, Barisal has become a transshipment center for rice, hides and pulses. Bakery, textile, pharmaceutical products are output of a few industrial installation.

Barisal has a tropical monsoon-type climate, with a hot and rainy summer and a dry winter. January is the coldest month with temperatures averaging near 26°C (78°F) and April the warmest with temperatures from 33°C to 36°C (91°F to 96°F). The climate is one of the wettest in the world. Most places receive more than 1,525 mm of rain per year (and areas near the hills receive 5,080 mm). Most rains occur during the monsoon (June–September) and little in winter (November–February).

Ten percent land of the greater Barisal region has sandy soil. This figure is 47%, 18% and 25% respectively for sandy loam, loam and clay loam soil. With an agriculture friendly environment, Barisal is regarded as the food basket of Bangladesh. Among 158,803 hectares of cultivable land, 142,320 hectares of land is cultivated in Barisal district with a cropping intensity of 197%. T-Aman, Bitter ground, Tomato, Chili, Lentil, Mungbean are some of the major crops grown in Barisal (Agricultural Market Assessment Report Barisal and Noakhali Region Rural Enterprise

Development (RED), Market Infrastructure Development Project in Charland Region (MIDPCR), Local Government Engineering Department (LGED), International Development Enterprise-Bangladesh (IDE-B), 2009).

The district has a unique network of a large number of tidal river and their distributaries. The Meghna, Arial Khan, Kacha, Kirtonkhola, Tentulia, Naya Bhanga, Jayanti, Shwarupkathi and Amtali are some of the rivers flow through the district. All the rivers are connected with streams and tidal channels and flow down to the Bay of Bengal. Most of the rivers are navigable throughout the year. Mehendiganj Paurashava comprises a river named Machkata River adjacent to the Ward No. 7 and 9. The river passes on the eastern part of the Wards. So, the Paurashava do not cover total width of the river.

With the expansion of the road network linkages and along with other transportation facilities, road transportation network is gradually achieving higher level of importance. Mehendiganj Paurashava has no connection to Barisal by road. There is no public or private bus service available for intra-zonal movement among Mehendiganj Paurashava. Intra-zonal movement among the Paurashava area is mostly performing through the non-motorized vehicles. There is no existence of railway network at Mehendiganj Paurashava.

Moreover, most of the trading activities are concentrated in the bazar area of the Paurashava. People from different locations come here for daily necessities. A well-defined master plan for all of those Paurashavas is urgently needed to accommodate all physical developments enhancing socio-economic developmental activities so as to boost up living condition of the people living in the Paurashavas.

## 2.11 Role of Agencies for Different Sectoral Activities

Agencies responsible for utility facilities and municipal services are an important component for an area. Utility services include water supply, gas supply, electric supply, sewerage and drainage system, telecommunication system, fire services, solid waste management, etc. The concerned departments / organizations responsible for planning and development of utility services are shown in the following table.

**Table-2.10: Agencies Responsible for Sectoral Activities**

Sl. No.	Sectors	Responsible agencies
1.	Electricity Supply	Rural Electrification Board (REB)
2.	Water Supply	DPHE / Paurashava/ Private
3.	Telecommunication	BTCL / Mobile Phone Companies
4.	Sewerage and Sanitation	DPHE / Paurashava/ Private
5.	Solid Waste Disposal	Paurashava / Private
6.	Fire Service	Fire Services and Civil Defense
7.	Post office	Postal Department

Source: Physical Feature Survey, 2010.

The authorities (as presented in the Table-2.10) should perform other roles need to be carried out with the assistance and support of other relevant government agencies. Those roles are:

- Provide existing and future service areas with full complement of related services to ensure that they can function efficiently.
- Identify depressed areas in each of the Ward where no improvement is being made and provide services with ensuring benefits for the dwellers.



- Ensure that within specific time (may be project period or private sector involvement process and a guideline frame for them) services will be provided according to the demand of the Paurashava inhabitants.

## **Chapter-Three**

### **PROJECTION OF FUTURE GROWTH BY 2031**

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#### **3.1 Introduction**

The Chapter presents future growth of the Paurashava according to the population, economy and landuse. Projected period for those components has been considered for the year 2011 to 2031. In case of population and landuse, projection has been presented but in case of economy, opportunities have been considered. For the Mehendiganj Paurashava, government policy is the prime focus as economic opportunity but that is not considered here. Existing local economic strength considers as the basis of economic opportunity. Agriculture, fish, livestock and poultry, local fruits and availability of labour force considers as a basic components of the economic opportunities.

#### **3.2 Projection of Population**

No single factor is important for planning than the size and composition of a region's population and the way it will change in future. Estimating future population for a specific period for a particular area is one of the most difficult tasks in the planning process. For Bangladesh, population projection is a very difficult task as the required data are not available for particular area and same is the case for Mehendiganj.

On the other hand, difference of data from different secondary sources also makes the job more complex. The population figures collected from secondary sources especially for Paurashava were very much ambiguous. So, for the projection, several discussions were made with experts and BBS officials. Following is the annual growth rate for the planning area available from the 2011 Population Census, the projection up to the year 2031 with five years interval has been prepared.

The growth rate that has been found on the basis of population data 1991 to 2001 is considered as medium growth rate. From the medium growth rate, low and high growth rate has been assumed.

**Basic Assumptions:** Some of the assumptions as presented in the following are the being considered during preparation of population projection. Those assumptions are:

- Characteristics of the more recent periods of development in the Paurashava are expected to continue in future.
- Existing density of population, major activities i.e., Trade, Commerce and Service and higher sex ratio reveals the flourishing economic development of the Paurashava in recent years.
- Population is assumed to increase at a geometric rate; i.e. with each unit of time.
- Absolute addition of population continues to get larger and larger.
- Exponential growth can be affected by modern medicine, quality and quantity of food and overall living standard.
- If human continues to reproduce at present rate, earth's capacity for the species could be reached or possibly exceeded.
- Projected areas will experience faster growth.

**Method Used:** Population projection has been conducted on the basis of following determined methods and techniques:

- The base year for such above mentioned projection is 2011 as per available census data

- The annual growth rate is considered 1.0026% (Paurashava population growth rate; BBS, 2001 & 2011).
- Future population is estimated for the future year 2016, 2021, 2026 and 2031 considering 20 year planning period.
- Finally, Exponential Population Projection and Linear Population Projection are conducted.

### **Exponential Projection**

Exponential population growth is the growth of the population based on the cumulative things in the environment affecting the population of the area. With exponential growth the birth rate alone controls how fast (or slow) the population increases.

### **Exponential Projection Formula**

$$P_n = P_o (1+r)^n$$

$P_n$  = Population of Target year (2031)

$P_o$  = Population of Base year (2011)

$n$  = Target year (20)

$r$  = Annual Growth Rate

### **Assumptions**

- Population is assumed to grow at a geometric rate; i.e., with each unit of time.
- The absolute addition of population continues to get larger and larger.
- Exponential growth can be affected by modern medicine, quality and quantity of food and the overall standard of living for a species.
- If humans continue to reproduce at the current rate, Earth's capacity for the species could be reached, or possibly exceeded.
- Project areas will experience faster growth.

### **Projected Population**

According to BBS (2011), total number of population is 30067 whereas number of male is about 14535 and female is 15532. In order to get an idea about the population growth rate of Mehendiganj Planning area, the urban population of Mehendiganj Upazila of 2001 (29281 population) has been compared to population data of 2011 (30067 population). Urban and rural growth rate is different. But in this case difference between rural & urban growth rate is not considered due to lack of data.

According to annual growth rate, the populations are adjusted by following the year 2011. The projected population (30067 according to exponential growth) in the year 2011 has considered as base-year population.

Medium growth rate (1.0026%) has been considered and it is most appropriate for Mehendiganj Paurashava. It is revealed that the total population in the area (on the basis of exponential growth) will be 30468, 30874, 31286 and 31703 in the year 2016, 2021, 2026 and 2031. Population according to exponential growth rate has been considered as the projected population for the study. Following tables present projected population according to the low, medium and high growth rate.

**Low Growth Rate:** It is assumed that population may be reduced due to mass awareness against population control. As the population growth rate using the data of 2001 and 2011 was identified 1.0026 which is not enough high. Considering this as medium growth rate, it is quite logical to reduce that the population will either remain constant or decrease. However, for this Paurashava, low-growth rate is same as medium-growth rate.

**Medium Growth Rate:** Existing growth rate persist over the year considering fertility and mortality. Based on total Upazila population projection over the year 2001-2011, projected growth rate is assumed 1.0026. This rate is quite lower compared to national and regional growth rate. For the Preparation of Mehendiganj Master Plan medium growth rate is considered.

**Table-3.1: Projected Population Considering Medium Growth Rate (1.0026%)**

Ward No.	2011	2016	2021	2026	2031
1	4401	4460	4519	4579	4640
2	2605	2640	2675	2711	2747
3	2922	2961	3000	3040	3081
4	3029	3069	3110	3152	3194
5	3605	3653	3702	3751	3801
6	3562	3609	3658	3706	3756
7	3046	3087	3128	3169	3212
8	3910	3962	4015	4068	4123
9	2987	3027	3067	3108	3150
<b>Total</b>	<b>30067</b>	<b>30468</b>	<b>30874</b>	<b>31286</b>	<b>31703</b>

Source: Based on BBS, 2011.

**High Growth Rate:** Due to the anticipated socio-economic development mass population around the Paurashava will be attracted. Then there will be mass migration in the Paurashava. Lack of communication linkage with regional highway is the main hindrance of population growth for this Paurashava. Assuming that the physical infrastructure will continue to develop, 1.30% growth rates are anticipated as high growth rate.

**Table-3.2: Projected Population Considering High Growth Rate (1.30%)**

Ward No.	2011	2016	2021	2026	2031
1	4401	5721	7438	9669	12570
2	2605	3387	4402	5723	7440
3	2922	3799	4938	6420	8346
4	3029	3938	5119	6655	8651
5	3605	4687	6092	7920	10296
6	3562	4631	6020	7826	10173
7	3046	3960	5148	6692	8700
8	3910	5083	6608	8590	11167
9	2987	3883	5048	6562	8531
<b>Total</b>	<b>30067</b>	<b>39087</b>	<b>50813</b>	<b>66057</b>	<b>85874</b>

Source: Based on BBS, 2011.

Such population growth will certainly have far reaching effect on the functional characteristics, civic amenities, traffic requirements including other infrastructural services, social services, employment and occupation, housing demands, recreational facilities, environmental aspects, etc. Therefore, population of the Paurashava is an important indicator that is to be taken in consideration in formulating the urban planning.

However, in formulating structure plan it would be better to take into account the highest growth rate of population (1.30%) because it is very likely that many catalyst and / or unforeseen factors may influence the Paurashava's population growth. Government's adherence to decentralized economic development policy, more mobility of women due to change of social attitude, gradual elimination of gender discrimination, etc. will directly help to increase urban population.

### **3.3 Identification of Future Economic Opportunities**

Following are the opportunities related to economic activities of the Mehendiganj Paurashava:

- Agro-based, wood-based and fishery industries can be developed due to the availability of relevant raw materials.
- Mehendiganj planning area deserves road and water transportation facilities and maintaining linking with renowned market areas of the country. These will help to improve business potentiality of the area.
- Economically active labour forces are not being properly used in production sector. This labour force can be utilized with local training in handicrafts sector utilizing women labour force.

### **3.4 Projection of Landuse**

#### **Basis of projection**

Following data and analyses served as the basis for population and land use projections:

- Provides a reasonable population forecast-based on historic population growth trends considering population census data of 1974 to 2001.
- Existing economic and land use conditions provide an overview of the present economy and existing land use:
- Economy-provides a general discussion on local economy.
- Existing land use-data and maps of existing land uses.
- Anticipated the future economic and land use condition-outlines a future scenario of Mehendiganj Paurashava based on the following factors that will affect the future land uses:
- Economy-projects future economic and population characteristics.
- Development proposals-includes development proposals from other public, private sector projects.
- Agriculture land preservation.

#### **Land requirement**

In Mehendiganj Paurashava, major landuse is agricultural (72.27%). Residential landuse occupies second position (12.71%) of the category. A negligible percent (1.82%) land is using for circulation network. Though, agricultural landuse dominates the Paurashava but, after the preparation of Master Plan, more residential development will be preceded. In consideration of such concept, the Master Plan will be delighted in favour to save the agriculture land.

The Paurashava is not an ideal township due to the agriculture domination. Agriculture based township should be encouraged in the preparation of Master Plan. Growth of population is the natural trend and at the sametime, expansion of non-agricultural use on agriculture land is also natural tendency of the people. This will be controlled through the Compact Township concept with the encouragement of vertical development. In case of government services, specific building may accommodate different type of offices.

On the basis of projected population, additional demands for land will be calculated for various facilities such as residential, commercial, industrial, educational, etc. Different standards have been considered for determining the land requirements of different land uses.

**Table-3.3: Projected Population Density (population/acre)**

Ward No.	Area (acre)	Projected Population Density / acre			
		2016	2021	2026	2031
1	733.70	6.07	6.15	6.23	6.31
2	182.05	14.39	14.58	14.77	14.97
3	294.71	10.01	10.14	10.27	10.41
4	425.29	7.22	7.31	7.41	7.51

Ward No.	Area (acre)	Projected Population Density / acre			
		2016	2021	2026	2031
5	492.49	7.42	7.52	7.62	7.72
6	415.52	8.69	8.81	8.92	9.04
7	263.20	11.74	11.90	12.05	12.22
8	529.79	7.62	7.72	7.82	7.93
9	191.69	14.74	14.93	15.13	15.34
<b>Total</b>	<b>3535.29</b>	<b>8.62</b>	<b>8.73</b>	<b>8.85</b>	<b>8.97</b>

Source: Based on BBS, 2011.

### Demand analysis

In case of landuse change, the standard given by the UTIDP, LGED according to the projected population and area for the specific service is being calculated. Vertical expansion of physical development should be emphasized rather than horizontal. In case of road network plan, missing-links are being prescribed rather than new roads. For the development of pisciculture, all ponds and ditches may be preserved, in some exceptional cases; small number of ditches may be used for physical development activities. Landuse control and landuse restriction will be imposed by the Paurashava according to the prescribed plan.

**Table-3.4: Land Requirement for the Year 2031**

SI No	Land use categories	% use of total land area	Sub Categories	Planning Standard (Acre)	Projected Land Requirement, 2031 (acre)	% use of projected land area	Existing Land, 2010 (acre)
1	Residential	45-55	General Residential	Gross density 150 person/acre	211.35	0.67	449.53
2	Commercial	3-5	Wholesale Market	6 acre per town centre including services/ repairing & supplies	6.00	0.05	
			Retail sale Market	5 acre includes market square, occasional supplies & shop like use	5.00		
			Corner shop	0.2/2,500 population	2.54		
			Neighborhood Market	0.5 acre per 10,000 population	1.50		
			<b>Total</b>		<b>15.04</b>		<b>22.81</b>
3	Industrial	5-10	BSCIC Area	15 ,acres per Paurashava	15.00	0.42	1.81
4	Administrative	3-5	Youth Development centre	Minimum 2-3 acres land for establishment of youth training centre & Regional Human Development Centre	2.00	0.39	
			Police Line	10 acres	10.00		
			Circuit House	1.5 acres	1.50		

**Mehendiganj Paurashava Master Plan: 2011-2031**  
**Structure Plan**

Sl No	Land use categories	% use of total land area	Sub Categories	Planning Standard (Acre)	Projected Land Requirement, 2031 (acre)	% use of projected land area	Existing Land, 2010 (acre)
			XEN (PWD)	Office: 0.25 acre; Residence: 33 decimal	0.58		
			Others	As per concern department			
			Total		2.08		1.26
5	Educational	2-3	Nursery	0.04 acre for 5,000 Population	0.25	0.28	
			Primary School	0.30 acre per 2,000 people	4.76		
			Secondary School or high school	Minimum land within Paurashava 1 acre	1.00		
			Intermediate / Degree College	2 acres per 15,000 population	4.23		
			Total		10.23		17.63
6	Community Facility	2-3	Cyclone Shelter	30 decimal per 1000-1500 population	6.01	0.21	6.61
			Community Centre	1 acre per 20,000 population	1.50		
			Total		7.51		
7	Place of warship	5-10	Mosque/ Church/ Temple	0.1 acre per 10,000 population	0.32	0.32	
			Eidgah	0.5acre per 20,000 population	0.79		
			Graveyard	5 acre per 20,000 population	7.93		
			Total		9.03		6.61
8	Health	2-3	Hospital	4 acre per 10,000 population	12.68	0.54	
			Clinic	0.6 acre per 5,000 population	3.80		
			Health Centre/ Maternity clinic	0.6 acre per 5,000 population	3.80		
			Total		20.29		1.47
9	Public Utility	5-10	Fire Services	Minimum 50 decimal for "A" Category Minimum 30	0.50	0.42	

Sl No	Land use categories	% use of total land area	Sub Categories	Planning Standard (Acre)	Projected Land Requirement, 2031 (acre)	% use of projected land area	Existing Land, 2010 (acre)
				decimal for "B" Category			
			Post office	0.4 acres per 20,000 population	0.63		
			Solid waste transfer station	Minimum 20 decimal per ward	1.80		
			Solid waste disposal site	Minimum 5 acre per Paurashava	5.00		
			Total		7.93		0
10	Open spaces & Recreational	10-12	Play field/ground	2 acre per 25,000 population	2.53	1.74	
			Neighborhood Park / park	2 acre per 10,000 population	6.34		
			Open Space	1.75 acre per 1,000 population	55.48		
			Cinema Theatre	0.5 acre per 25,000 population	0.63		
			Total		64.99		13.81
11	Transportation	10-15	Bus terminal	3 acres per 1,00,000 population	9.51	0.11	
			Baby taxi/ tempo stand	0.5 acre per stand	0.50		
			Rickshaw stand	0.3 acre per stand	0.60		
			Water way & Landing Station	Minimum 2 acres for landing station & office	2.00		
			Total		12.61		1.70
12	Water Bodies	10-15	Must be preserve all water bodies above 0.15 acre				391.71

According to the projected population density it has been observed that even in 2031, this area will be a medium or low density area. Though ideal density of residential land is 150-200 persons per acre, gross density of Mehendiganj will be 9 persons per acre in 2031 (at present 9 persons per acre). Thus the existing spatil boundary has the capacity to contain the additional population in 2031. This means that if proper densification measures are in places, there are chances that the Paurasavha can develop spatially without putting any pressure on its valuable agriculture land and open spaces.

### 3.5 Housing

Housing areas in the Paurashava is the composition of an admixer of housing types. Mixed residential, poor dominated rural houses and semi-urban homesteads are found. Most housing



areas have been developed in a spontaneous fashion. In the rural part of the Paurashava, with its rural-agricultural character, has a different housing type. The dwellings, comprising homesteads, encompass larger areas having low density. Highest gross population density in the Paurashava is only 9 persons per acre. Residential buildings in the Paurashava are dominated by katcha structure (77.57%). No building is found approved from Paurashava. However, owners of the buildings have been found violated the setback rule by the construction. Except labour charge there is very little variation in building construction cost between Barisal and Mehendiganj Paurashava.

Problems relating to the housing are mostly concerned with the poor community. Due to their low level of income a large number of poor are squatting on public land. They are not only deprived of minimum housing but also from the personal security that endanger their health and working efficiency. Regular income can solve most of their housing problems. Apart from dwelling, pure water and transportation are real problems for the inhabitants. Utility services are highly inadequate. Drainage is major problem in rural part of the Paurashava. The Paurashava can not solve the problems due to scarcity of fund. In the Paurashava, above 98 percent housing structures are one-storied that includes semi-pucca, katcha and Jhupri type houses.

### **Basis of housing projection**

Future housing projection and demand have been estimated based on following assumptions:

- Most of the households are in permanent residence but new house or home will be required with the increasing of generation.
- Demand of housing is estimated considering the income-group and number of rental households who willing to buy a house.
- Non-permanent structures will not exist in future.
- Considering rapid growth of population, exponential population projection method is being used i.e.  $P_n = P_o (1+r)^n$

### **Housing demand analysis**

The provision of adequate housing in urban areas is necessary to attract and retain qualified and diverse labour force. Appropriate housing also plays an important role in contributing to residents' financial security, amenity and quality of life. The identification and analysis of housing demand assists Paurashavas ensuring that there is sufficient land for new housing and provides direction as to the types of housing that are likely to be needed in the future. Housing demand analysis can also be used as the basis for developing appropriate policies relating to housing mix, density and community form. Housing demand projections is an essential component to determine the associated land area required to accommodate future residents. This projection is also necessary to address national policies related to the housing provision.

The method for forecasting household number or analysis of housing demand is the aggregate method. The formula used for this projection is –

$$H = P/S$$

Where, H = Number of households

P = Forecasted population

S = Calculated average household size

At first, Ward-wise existing number of population and dwelling units in the year 2011 have been observed. Using these data, number of households has been projected for the years 2016, 2021, 2026 and 2031. This estimation will assist to estimate the need of dwelling units for future years.

**Table-3.5: Projected Number of Households**

Ward No.	Average Household Size (2011)	Number of Household			
		2016	2021	2026	2031
1	4.7	949	949	974	987
2	4.5	587	587	602	610
3	4.9	604	604	620	629
4	4.9	626	626	643	652
5	4.8	761	761	781	792
6	4.6	785	785	806	816
7	4.6	671	671	689	698
8	4.8	825	825	848	859
9	4.8	631	631	648	656
<b>Total</b>	<b>4.7</b>	<b>6439</b>	<b>6439</b>	<b>6612</b>	<b>6700</b>

Source: Estimated by the Consultant.

## ***Chapter-Four***

### **DEVELOPMENT PROBLEMS OF THE PAURASHAVA**

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#### **4.1 Physical Infrastructure**

Following are the physical development constraints for preparing the master plan for Mehendiganj Planning area:

- The Paurashava is located in a disaster prone area, its geographical location itself a constraint to develop the infrastructure.
- Low land elevation and the distribution of water bodies make it difficult to provide the utility services, road network and well-investment to encourage industrial development.
- Internal roads are being developed in an unplanned way and most of the access roads are katcha and narrow. Moreover, absence of traffic management system causes lack of planning in transport network development. This situation hinders economic development also the potentiality of physical development of the Paurashava.
- Lack of maintenance and lack of urban facilities creating negative impact on physical development.
- Gas supply and sewerage disposal facilities are absent in the Paurashava including inadequate electricity supply. These are the major hindrances in economic and physical development.
- Lack of drainage network makes it difficult to drain out the flood and rain water. As a result, water-logging problem is common in the planning area.
- The households of Mehendiganj Paurashava face some communication problems in their daily life due to narrow road width and every year, two roads called Cherag Ali Hawlader Sarak and Badarpur Primary School Road face erosion problem due to overflow of adjacent khal. During survey local people demand a permanent solution of this problem.

#### **4.2 Socio-Economic**

Overall condition of utilities / civic services in Mehendiganj Paurashava is not satisfactory. No gas supply facility available for the households. At present, no dustbin and waste disposal facility. Wastes are thrown in to the low-lands adjacent to the resident, pollute the area and create environmental problems. People also suffer with disaster problems like flood, water-logging and cyclone. Pollution problems like water pollution and noise pollution are also creating living problems. Recreational facility is the prime demand of the people due to its non-availability. Communication problem in daily life is the fundamental problem of the inhabitants. Such problem includes narrow road, undulating road surface, flood affected road, road congestion due to non-motorized vehicles and lacking of internal bus service. A considerable percent of people are involved with informal economic activities, no specific guideline and places for them. Local agricultural product mostly controlled by the middle-man. As a result actual producers never earn actual value of their product.

### **Sanitation Facility**

Toilet system in the planning area is mostly categorized as pucca and katcha. In spite of this, Paurashava has a modest development of pucca toilets in government zones. Sewerage system has not been introduced on a trial basis as to their popularity and acceptance. Ownership of toilets varies widely in most of the areas. Most of the households have their own toilets. Sanitary toilets (water-sealed or non water-sealed) or pucca toilets are comparatively moderate in all the Wards. About 32% katcha toilet (non-sanitary) is found in the Paurashava and owner of those toilets are poor people. No toilet is found in the Ward No. 1, 4, 5, 6, 8 and 9 and it is 1.4% of the total toilet facilities in the Paurashava.

### **Water supply**

About 87.8% households reported that main source of drinking water is tubewell, 1.2% households avail piped water supply and 11% households depend on other sources like pond, river, etc.

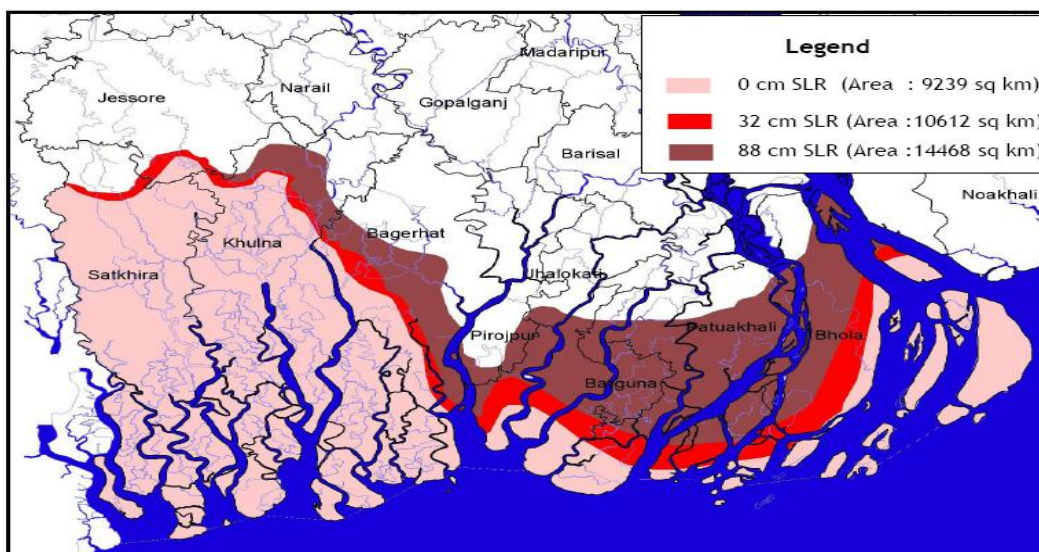
### **Electricity Connection**

In the Paurashava, 50.79% households are enjoying electricity connection. Rural Electrification Board (REB) is responsible for electricity supply in the Paurashava. According to the opinion of 44.41% households, overall condition of electricity supply is moderate, 0.64% reported in favor of good and 44.73% have no electricity facility.

## **4.3 Environmental**

Climatic and disaster condition of the Paurashava is very rough. Floods and water-logging are comparatively low in the Planning area.

Saline water intrusion is mostly seasonal in Bangladesh; in winter months the saline front begins to penetrate inland and the affected areas rise sharply from 10 percent in the monsoon to over 40 percent in the dry season. As the impact of climate change, the sealevel rise cause severe impacts on coastal areas in Satkhira, Khulna, Bagerhat, Barguna, Patuakhali and Barisal are the victims of salinity intrusion. Agricultural production, fisheries, livestock and mangrove forests are being affected by higher salinity in the dry season. Following figure shows the impact of sealevel rise and the probability of rising salinity intrusion in coastal region.



**Fig 4.1: Probability of Salinity Intrusion in Coastal Region due to Sea Level Rise**

## **Chapter-Five**

# **PAURASHAVA DEVELOPMENT RELATED POLICIES, LAWS AND REGULATIONS**

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### **5.1 Indicative Prescription of Policy for Paurashava in the Light of the Different Urban Policies, Laws, Regulations and Guidelines**

Preparation of the Structure Plan, Urban Area Plan and Ward Action Plan for the Mehendiganj Paurashava is highly depended on the policies and relevant contemporary rules and regulations prescribed by the government. In preparation of the above Plans, guidelines and strategies prescribed through the policies are considered carefully. Contemporary rules and regulations help to formulate the process and procedure for development control.

#### **Urban Land Management Policy**

It is necessary to impose control on the use and development of urban land. A range of urban planning tools including landuse planning, transportation planning and management, site planning, subdivision regulations and building regulations can be applied to minimize environmental impacts of urban development activities.

#### **Policies**

- Protect sensitive land resources by minimizing activities threatening environmentally sensitive areas.
- Manage hazard-prone lands through improvement of environmental management practices throughout the Paurashava.
- Conserve open space, as identified through a participatory planning process that will effectively preserve drainage system, provide greater opportunities for recreation and meet the minimum needs of aquifer recharge.
- Protect heritage structures and archaeological and cultural sites through appropriate schemes, projects and regulations.
- Control excessive urban sprawl and manage prime agricultural land through the implementation of regulatory reforms.
- Formulation of land information system, land market assessment regulations, efficient and transparent land record and registration system, etc.
- Increase the supply of land for the poor through reforming land transfer laws to counter trends towards land accumulation.
- Adoption of taxation policies that discourage speculative investments in land that is left undeveloped for extended periods of time.
- Implementation of land-banking and land-pooling programs that allow the government to increase its pool of land which can be exchanged for low-cost housing sites in the Paurashava;
- Undertaking land readjustment projects that include low-cost land and housing sites.
- Undertaking land-sharing schemes and tenancy reforms for establishing clear rights of tenants.
- Allocating khas land/acquired land for housing the poor.

- Allocating reasonable proportion of land in urban places for housing the poor.

### **Strategies**

The strategies necessary to implement the policies of the urban land management is the use of planning tools in land management. Those planning tools may be structure planning, local planning and action planning. Second strategy is the landuse zoning. This tool may be used to:

- Protect productive agricultural lands by limiting the intrusion of non-agricultural uses;
- Manage floodplains by controlling uses of land within hydrologically defined areas subject to floods of a designated frequency;
- Preserve wetlands by limiting permissible uses to those that do not entail significant surface disturbance or runoff and substantially restricting land-disturbing uses within the areas identified as wetland areas;
- Restore and conserves natural canals and ponds.
- Facilitate planned unit development by allowing flexible design and clustering of residential development with higher densities on one portion of a land parcel so as to allow agricultural development or to provide increased open space or natural cover elsewhere on the parcel;
- Preserve open space by designating land areas for a variety of purposes such as recreation, future use, green belt, etc.

Strategies of land development for the Paurashava according to the Urban Land Management Policy may be followed through some techniques such as land pooling / readjustment, guided land development, land sharing, sites and services schemes, etc.

### **Landuse Policy**

Bangladesh Landuse Policy was prepared and notified in the year 2001. Major aim of the policy is to prevent indiscriminate conversion of agricultural land in to non-agricultural use, because such conversion may be threatened for food security of the country. The expansion of residential, commercial, industrial and socio-economic uses will encourage the diminishing trend of agriculture land. Through the policy, government has encouraged Compact Township and vertical expansion of the different type of building rather than horizontal expansion.

### **Objectives**

The objectives of the Landuse Policy are to:

- Prohibit the recent practice on conversion of agriculture land into non-agricultural use to ensure food security for the people.
- Impose zoning provision to control the better use of land according to the nature of land located in different regions.
- Rehabilitation of landless people on the alluvion lands alluviated from river, Haor or sea.
- Preserve khas land for future physical development activities.
- Confirm landuses in relation with the existing natural environment.
- Use of land in favour of job creation, landlessness and poverty alleviation.
- Control land pollution.
- Construction of multi-storied building with accommodation of various purposes in public and private sector for ensuring minimum land coverage.

In total, 72.27% land of the Mehendiganj Paurashava is under agricultural practices. According to the Landuse Policy, those lands should be preserved as agriculture land. For such preservation, some guidelines prescribed in the Landuse Policy will be considered they are – in case of rehabilitation of the landless people, Khas land will be emphasized for distribution by the government.

### **Housing Policy**

Housing, in the context of overall improvement of human settlements, is considered by the Government of Bangladesh as an integral part of culture and planning for economic development. The Global Strategy for Shelter by the year 2000 adopted by the United Nations in November, 1988 calls upon governments to take steps for formulating a National Housing Policy, 2004 in the light of "the enabling approach" for achieving the goals of the strategy.

The housing problem in the country is of serious magnitude. In addition to the large number of homeless households; the rapid growth of slums and unauthorized squatter settlement; the increasing cost of land and construction materials; rampant speculation and the phenomenal increase in house rent, the problem is compounded by non-availability of basic civic services, including water and sanitation to the bulk of the population and acute shortage of affordable and adequate shelter for the poor and vulnerable groups. The housing shortage was estimated in 1991 to be about 3.10 million units, composed of 2.15 million units in rural areas and 0.95 million units in urban areas; with the bulk of the backlog consisting of katcha un-serviced units. The housing shortage is likely to exceed 5 million units by the year 2000 A.D. The current housing stock is deteriorating fast due to aging, general neglect, poverty and civic apathy on the part of the dwellers.

### **Objectives**

The objectives of the National Housing Policy are to:

- Make housing accessible to all strata of society and to accelerate housing production in urban and rural areas with major emphasis on needs of the low and middle-income groups, the high priority target groups will be the disadvantaged, the destitute and the shelterless poor.
- Make available suitably located land at affordable price for various target groups, especially the low and middle-income group.
- Develop effective strategies for reducing the need to seek shelter through formation of slums, unauthorized constructions, encroachments and shanty dwelling units and to improve the existing ones environmentally and, where possible, to relocate them in suitable places.
- Rehabilitate disaster affected households and houses affected by fire accidents.
- Mobilize resources for housing through personal savings and other financial input's and by developing suitable financial institutions.
- Make effective implementation of the housing programs, promote use of locally developed materials and construction techniques and increase production of forest-based building materials such as timber, bamboo or grass. Attempts will be made to develop alternative and durable materials based on locally available raw material.
- Develop institutional and legal framework to facilitate housing.
- Improve and enhance the character, quality and environment of the existing residential areas.
- Develop new strategies and undertake revision of the policy from time to time to cope with the emerging housing needs and problems in the country.

- Undertake action-oriented research in all aspects related to housing and foster minimization of cost and rent.

### **Rural Homestead**

Clause 5.9 of the Housing Policy describes about the rural housing. The Mehendiganj Paurashava is rural based urban area. Rural character is the dominating issue in the housing sector. In the Housing Policy, following measures are suggested to improve rural housing:

- Avoiding unnecessary displacement of rural settlements due to development projects and where unavoidable, makes proper rehabilitation of the households, with full community involvement.
- Encroachment on agricultural land by proliferation of homestead should be discouraged. Efforts should be made for planned densification of rural homesteads. Subject to availability of khas lands, programmes similar to 'Adarsha Gram' programme of the Ministry of land will be undertaken in rural areas.
- The coordinated provision of water supply, sanitation, electricity, roads and other basic infrastructure services to existing and new habitations.
- Providing assistance by way of providing credit, dissemination of appropriate technology and delivery system for promoting housing.
- Initiating schemes for increased employment opportunities and income generation by extending appropriate credits and advice, so that housing affordability is enhanced.
- Establishing suitable institutional structure including strengthening of existing organizations at district and local level, with the responsibility for planning, financing, implementation, supervision and monitoring of rural housing schemes, and with the full involvement of beneficiaries, NGOs and CBOs, giving special attention to the needs of the poorest segments, specially women and disadvantaged persons.
- Linking the development of housing sites and the upgradation of rural housing with the activities under the Bangladesh Rural Development Board (BRDB) and other programmes for the creation of rural assets and employment.

### **Slums and Squatter Settlements**

Clause 5.10 of the Housing Policy describes about the slums and squatter settlements.

The poor environmental condition in slums and squatter settlements create health problems for their residents and those in the adjoining areas. Those areas may be Paurashava Town. Keeping in view the policies of planned growth of urbanization, income support and poverty alleviation and together with steps to arrest the growth of new slums in urban areas, the Government would take steps to:

- Encourage in-situ upgradation, slum renovation and progressive housing development with conferment of occupancy rights, wherever feasible, and to undertake relocation of the squatter settlements from the sites that need to be cleared in public interest.
- Expand provision of water supply, sanitation and other basic services in slum and other settlements occupied by the poor.
- Ensure proper maintenance of amenities in slums and squatter settlements through community involvement and decentralized institutional arrangements.
- Integrate the provision of physical amenities slums and squatter settlements with basic services including maternal and child welfare services and health care, structured on community participation and involvement of voluntary agencies and management by local bodies.



- Provide night shelters and pay and use public toilet for the footpath dwellers and the homeless.

### **Infrastructure**

Clause 5.2 of the Housing Policy describes about the infrastructures related with the housing. Most of those infrastructures are needful for housing construction and preparation of master plan. Following measures are recommended for development and improvement of infrastructure for housing:

- Increase investment by national and local government agencies in order to meet the rapidly growing needs of serviced land and to improve the availability of services in different settlements.
- Promote a balanced pattern of urbanization through a policy of decentralization of investments and incentives for the growth of secondary, intermediate and small towns so as to reduce pressure on metropolitan cities and to control unregulated conversion of agricultural and forest land for the purpose of housing.
- Develop economically buoyant and socially attractive secondary and intermediate towns by strengthening their linkages with contiguous rural areas and market centres as part of the integrated and planned development of the region and to reduce migration to the larger cities.
- Make necessary investments to increase within a reasonable time, the coverage of entire rural and urban population for potable water supply and basic sanitation.
- Increase investments in public transport and traffic network to improve mobility of people, particularly that of the poor.
- Encourage the use of infrastructure construction technologies, which are cost effective, incrementally upgradable and environmentally appropriate.
- Provide government support for extension of infrastructure based on the participation of the people and private developers, NGOs, CBOs or on innovative systems of infrastructure leasing.
- Provide Government assistance to the local bodies for adequate cost recovery of investment on infrastructure, proper maintenance of services and upgradation of the capability of the personnel in local bodies and functional agencies.
- Provide opportunity for community participation and recognize people's initiative in the design, installation and the upkeep of services within the framework of the development programmes.

### **Strategies**

The salient features of the housing strategy are:

- Housing will be given due priority in the national development plans treating it as a separate sector by itself.
- The role of the Government in housing will primarily be that of a facilitator or enabler in order to increase access to land, infrastructure, services and credit and to ensure availability of building materials at a reasonable price, specially for the low and middle-income groups and to create and promote housing finance institutions; whereas actual construction of housing will generally be left to the private sector developers, the people themselves, and the NGOs.
- Greater emphasis will be laid on affordability, personal savings, self-help and cost recovery. Efforts would be made to enhance affordability of the disadvantaged and low-income groups, through provision of credit for income generation and income enhancement, housing loans at especially low interest, access to space for running workshops or business and such other facilities.

- Improvements and rehabilitation of the existing housing stock will be given priority by the Government alongside new housing.
- Encroachments on public land and formation of unauthorized constructions will be discouraged.
- Austerity will be maintained in building houses and efforts will be made to economize housing costs, discourage extravagant construction, facilitate incremental house building and ensure wider application of low cost technology and optimum use of resources at the individual and national levels both in public and private sectors.
- Regeneration of forest-based building materials would be planned and environmental conservation given due consideration.
- Due attention would be given to construction, protection, replacement and rehabilitation of shelter in disaster affected and fire prone areas.
- Special care would be taken for the preservation of cultural heritage and promotion of vernacular architecture in new housing projects.
- Universities, research institutes and centres will be encouraged to conduct research on housing issues.
- The National Housing Policy will be co-ordinated with other development policies e.g. land, environment, population, employment, social welfare, fiscal and monetary policies at national and local levels.

### **Population Policy, 2004**

Realizing the importance of population and development, the government prepared a Population Policy in the year 1976 and identified population problem as a national problem. Objectives of the Population Policy are to improve the status of family planning, maternal and child health including reproductive health services and to improve the living standard of the people making a desirable balance between population and development in the context of Millennium Development Goals (MDGs) and Interim Poverty Reduction Strategy (IPRS). Economic growth, poverty reduction and social development has identified as national strategy through the Population Policy of 1976. In the Policy, urgent attention should be given on the gender equity and empowerment, welfare services for elderly and poor, control on rural to urban migration, human resource development through skilled workforce and participation on NGOs and private sector in the process to control the population growth.

### **Aims**

Aims of the Population Policy as presented are:

- Aware females about family planning to reduce Total Fertility Rate (TFR) and increase to use family planning devices among the fertile groups.
- Towards stable population within the year 2060 and the net growth rate not higher than 1% within the year 2010.
- Provide importance on mother's health to reduce maternal dead.
- To aware people about HIV / AIDS and to reduce it's chronological expansion.
- To help for providing gender equity and women empowerment in the society.
- To increase personal quality of the planners, administrators and service delivery agencies and to develop the information collection system, research and presentation.
- To control immigration from rural to urban and considers effective steps.
- Provisioning environmental sustainability including safe drinking water supply.

## **Agriculture Policy**

Primary goal of the Agriculture Policy is to modernize and diversify the crop sector (including agricultural system) through initiation and implementation of a well-organized and well-coordinated Agriculture Development Plan. Overall objective of the Agriculture Policy is to make the nation self-sufficient in food increasing crop production (cereals also) and ensure a dependable food security system for all.

### **Aims**

Clause 2 of the Agriculture Policy presents aims to increase crop production and maintain food security in the country. Some of those aims are:

- To increase income of the farmers and their buying capacity through stable and benefited agricultural development.
- To develop and preservation of productivity of the land.
- Removal of dependency on specific crop as a stable food.
- Introduces biological technologies, their use and expansion among the farmers.
- To encourage farmers for introducing irrigation from secondary sources during draught and introduces stable irrigation facilities for improving cropping intensity and crop production.
- Introduction of farming as an income generating sector through farming system and agro-forestry activities.
- To produce necessary agro-product for industrial use.
- To find out new opportunities for more export and minimum import of agriculture commodities.

## **Transportation Policy**

For the country's economic and social development and for poverty alleviation, development of the road network is essential. For this reason the transport sector has been accepted as a priority sector. With the development of the economy the volume of vehicles, passengers and goods has been increasing. In the meantime a notification regarding classification, definition and responsible organizations for all roads was issued. In this context standardization and cost rationalization of the roads in the country, especially the Zila, Upazila, Union and village roads, have become very essential. For the development of Multimodal Transportation System (Road-Rail-River) such a standardization/ cost rationalization of roads and bridges / culverts is a need of the hour. Standardization including cost rationalization will provide the basis of appraisal of road / bridge projects leading to optimal development of the transport system as a whole. At present there is no standard design and national unit cost for construction and maintenance of various roads and bridges and culverts. As a result substantial cost difference has been proposed by the agencies for same type of road / bridges for the same area.

### **Summary of Issues Covered**

Following tasks of a road projects will be adopted:

- The Committee reviewed the design standards for the Union, Upazila, Zila Roads, and concluded that the key design criteria for all roads should be traffic and axle loads, and not the classification of the roads.
- The six design standards agreed by the Committee to form a logical progression in terms of road width and pavement thickness, all based on traffic considerations. They are not directly related to road classification.
- The agreed design standards are to be used by all road agencies. Road agencies will be required to use appropriate standards for roads according to traffic criteria.

- Reconstruction- full pavement reconstruction on an existing embankment
- New road Construction - completely new embankment and road pavement, including bridges, culverts and any necessary slope protection. This is likely to prove a rare category of road project in Bangladesh
- Widening- road widening and upgrading, including full re-construction of the existing pavement
- Strengthening- removing existing road surfacing and providing a new base layer of Base Type-1 and surfacing.

A passenger car is 1.0 pcu. Larger vehicles have higher values. Conversion factors for vehicles to pcu's are shown in the following table.

**Table-5.1: Passenger Car Unit (pcu) Conversion Factors for Non-urban Roads**

Vehicle Type	PCU factor	Vehicle Type	PCU factor
Car	1.0	Bicycle	0.3
Bus	3.0	Rickshaw	1.0
Truck	3.0	Motor Cycle	0.3
Autorickshaw	0.5	Tempo	1.0
		Bullock Cart	4.0

Source: Transport Research Laboratory (UK) Overseas Road Note 13.

Road design will henceforth be based on traffic criteria, as opposed to road classification, then in theory a road could take any of considerations mean that the typical applications of the designs will be as listed in the following table.

**Table-5.2: Design Applications**

Roads class	Typical design applications
Zila	Types 5,4,3*
Upazila	Types 6,5,4*
Union	Types 8,7

\* Special type to be used under special circumstances.

The design lives, based on the pavement thicknesses for each existing design and each recommended design are set out in Table-5.3 in terms of the cumulative number of equivalent standard axles (ESA's). Given typical traffic levels and a growth rate of 5% per year the expected design life for each type of existing road is provided. For each of the recommended designs the forecast ESA's have been calculated from the traffic capacity in the design year, to allow the design life to be estimated. Again, traffic growth of 5% on all roads is assumed.

**Table-5.3: Existing and Recommended Design Lives**

Road Class	Existing Design		New Class	Recommended Design		
	Cumulative Million ESA's	Typical Expected Design Life (Years)		Design Type	Design Life (Million ESA's)	Expected Design Life (years)
Rural Road/ union Road	0.5	10	Union	8	1.0	10
				7	1.0	10
Feeder Road B/ Upazila Road	1.0	10	Upazila	6	1.0	10
				5	1.6	10
Feeder Road A/ Zila Road	1.0	10	Zila	4*	2.0	10
				5	1.6	10
				4	5.0	20
				3	6.5	20

\*\* Overlaying of 25-40mm BC will be required after every 7-8 yrs. \* Special type to used under special circumstances.

### Environment Policy

Bangladesh National Environment Policy was approved and published in 1992. Key elements of the Policy are –

- Maintain ecological balance and overall physical development progress of the country through protection and development of different sectors. Protection from natural disaster is one of them.
- Identification and regulation all type of activities which pollutes and degrade the environment.
- Ensuring proper Environment Impact Assessment prior to undertaking of industrial and other development projects.
- Ensuring sustainable use of natural resources.

### Proposed Sectors

For the fulfillment of every component of Environment Policy, it has divided in to 15 sectors. Those sectors are – Agriculture, Industry, Health, Energy, Water Development, Flood Control and Irrigation, Land, Forest including flora and fauna, Fish and Livestock, Food, Seashore and Maritime, Transport and Communication, Housing and Urbanization, Population, Literacy and awareness, Science, Technology and Research, Legal framework and Institutional framework.

### Strategies

For the implementation of policies, a large number of strategies have been framed according to the sector. Some of those strategies are:

**Agriculture** – Conduct field survey for imposing sustainable farming system and increase soil fertility. Necessary steps should be taken based on that survey. Control on the use of chemical insecticides and pesticides and encourage farmers using bio-chemical fertilizer. Such strategy may be implemented by the Agriculture Ministry, Bangladesh Agriculture Research Council, Directorate of Agriculture Extension, Bangladesh Rice Research Institute, Jute Research Institute, Bangladesh Agriculture Research Institute, Bangladesh Sugar and Food Industries Corporation.

**Industry:** The industries identified by the Directorate of Environment in the group of polluting industries, measures should be taken against them as early as possible. The strategy should be imposed by the Agriculture Ministry, Directorate of Forest, Commerce Ministry, Controller of Export

Import, Plant Protection Wing, Directorate of Agriculture Extension, Bangladesh Sugar and Food Industries Corporation.

**Health:** Pure drinking water supply and sanitary latrine in urban and rural areas should be introduced. Industrial and agricultural wastes which are harmful for the health should not be dumped in the river, pond, canal and ditches. This should be controlled through the imposition of appropriate regulations. Those strategies will be maintained by the Local Government Division, Directorate of Public Health Engineering, Paurashava Authority and Directorate of Environment.

**Water Development, Flood Control and Irrigation:** For the expansion of the project on Water Development, Flood Control and Irrigation, environmental audit is necessary. Based on that audit, environmental degradation areas will be identified and appropriate measures will be undertaken. Roads and Highways Department, Bangladesh Road Transport Authority, Directorate of Environment, Water Development, Flood Control and Irrigation Ministry and Bangladesh Water Development Board will responsible for implementation of those strategies.

**Land:** Landuse regulations should be prepared and their effective use will be confirmed for planned use of land. Land Ministry, Agriculture Ministry, Industrial and other relevant Ministries, Local Government Division, Works Ministry, Directorate of Forest and Zila Parishad will responsible for such strategies.

### **Industrial Policy**

At first, in the year 1999, government of Bangladesh has approved and notified the Industrial Policy. Again, in the year 2005, Industrial Policy of Bangladesh was published by the government. Both the Policies are synonyms and foremost objective is to setup planned industries considering the domestic demand, prospect of exporting goods and discouraging unplanned industrial growth in the light of past experience.

### **Objectives**

Objective of the industrial policy is –

- To expand the production base of the economy by accelerating the level of industrial investment.
- To promote the private sector to lead the growth of industrial production and investment.
- To focus the role of the government as a facilitator in creating an enabling environment for expanding private investment.
- To permit public undertaking only in those industrial activities where public sector involvement is essential to facilitate the growth of the private sector and / or where there are overriding social concerns to be accommodated.
- To attract foreign direct investment in both export and domestic market-oriented industries to make up for the deficient domestic investment resources and to acquire evolving technology and gain access to export markets.
- To ensure rapid growth of industrial employment by encouraging investment in labour intensive manufacturing industries including investment in efficient small and cottage industries.
- To generate female employment in higher skill categories through special emphasis on skill development.
- To raise industrial productivity and to move progressively to higher value added products through skill and technology up gradation.
- To enhance operational efficiency in all remaining public manufacturing enterprises through appropriate management restructuring and pursuit of market-oriented policies.
- To diversify and rapidly increase export of manufactures.

## Strategies

All regulatory barriers will be removed within the quickest possible time to facilitate easy and rapid flow of domestic private and foreign direct investment. Appropriate legal framework will be put in place to protect both investor and consumer rights to ensure proper market operation and consequently, for lowering cost of doing business.

- There will be no discrimination between domestic and foreign investment. Due emphasis will be given to promotion of regional and sub-regional cooperation.
- Existing public sector enterprises will be progressively privatized and public industrial investment will be limited to only those cases where there is special need to complement private investment or where there is an overriding social and national objective to be achieved.
- The capital market will be developed and strengthened to mobilize domestic savings and to attract foreign investment.
- Development of the infrastructure including port facilities, energy, transport and communication and human resource development will receive high priority. Private investment including "Build, Operate and Own" (BOO) and "Build Operate and Transfer" (BOT) methods will be particularly encouraged in these sectors.
- Intensive industrial zones development will be undertaken together with balanced geographical dispersal of the zones in areas with growing potential to the utilization of local resources as more infrastructural and other facilities are put in place.
- Consistent with the charter of World Trade Organization (WTO), protection to domestic industries from external competition will be rationalized.
- To retain the competitive edge of domestic products, wage increases will be linked to productivity trends, and appropriate labour laws will be put in place to ensure congenial industrial relations.
- The industrial investment will be encouraged through tariff rationalization and (appropriate fiscal measures. The import and export policies will also be made supportive of and consistent with the Industrial Policy.

The Mehendiganj Paurashava is agro-based urban area. To reduce poverty and generate employment opportunities, more efforts are needed to establish agro-based industries in the light of Industrial Policy, 2005. This effort will ensure protection and fair price of agro-products and employment opportunities for unemployed people. In order to create further employment opportunities beyond the agricultural sector, initiatives should be taken to setup small, medium and large industries across the country. A well organized linking among those industries in case of raw materials and supply of labour will be needed. If these types of industries setup in a planned way, unemployment rate will decline and poverty alleviation will be accelerated.

## Health Policy

National Health Policy was approved and published by the government in the year 2000. Aim of the Health Policy is –

- To develop a system to ensure easy and availability of health services for the people living in urban and rural areas.
- To ensure optimum quality, acceptance and availability of primary health care including government medical services at the Upazila and Union level.
- To adopt satisfactory measures for ensuring improved maternal and child health at the Union level and install facilities for safe child delivery in each village.

- To improve overall reproductive health resources and services.
- To ensure the presence of full-time doctors, nurses and other officers / staffs, provide and maintain necessary equipment and supplies at each of the Upazila Health Complexes and Union Health and Family Welfare Centres.
- To formulate specific policies for medical colleges and private clinics, and to introduce appropriate laws and regulations for the control and management of such institutions including maintenance of service quality.
- To explore ways to make the family planning program more acceptable, easily available and effective among the extremely poor and low-income communities.
- To arrange special health services for mentally retarded, physical disabled and for elderly population.

### **Strategies**

Some of the strategies of health policy are:

- The aim “health for all” will be implemented through awareness building strategies. Cost-effective procedures to deliver health services will be the prime consideration.
- A specific organization will perform responsibility for Epidemiological Surveillance to control the spread of epidemic diseases. Such concept will be included with different programs.
- The services delivering by the health centers to the patient should be standard and a printed guideline on standard, monitoring and evaluation will be given to those health centers.
- A Health Services Reforms Body will be formed based on the Health and Population Sector Strategy. This Body will be responsible for infrastructural reformation, employment, development planning and implementation of human resources relevant with the health activities and development of carrier of workforces.

### **National Urban Policy**

National urban policy aims to strengthen the aspects of urbanization and at the same time effectively deal with its negative consequences in order to achieve sustainable urbanization. Diffusion of urbanization and rural-urban linkages is an important issue in this regard. There is need for decentralization of power from central to local government. The major objectives of national urban policy will aim to:

- Ensure regionally balanced urbanization through diffused development and hierarchically structured urban system.
- Facilitate economic development, employment generation, reduction of inequality and poverty eradication through appropriate regulatory frameworks and infrastructure provisions.
- Ensure optimum utilization of land resources and meet increased demand for housing and urban services through public-private partnerships.
- Protect, preserve and enhance urban environment, especially water bodies.
- Devolve authority at the local urban level and strengthen local governments through appropriate powers, resources and capabilities so that these can take effective responsibility for a wide range of planning, infrastructure provision, service delivery and regulatory functions.



- Involve all sectors of the community, in participatory decision-making and implementation processes.
- Ensure social justice and inclusion by measures designed to increase the security of poor people through their access to varied livelihood opportunities, secure tenure and basic affordable services.
- Take in to account, particular needs of women, men, children, youth, elderly and the disabled in developing policy responses and implementation.
- Assure health, safety and security of all citizens through multifaceted initiatives to reduce crime and violence.
- Protect, preserve and enhance the historical and cultural heritage of cities and enhance their aesthetic beauty.
- Develop and implement urban management strategies and governance arrangements for enhancing complementary roles of urban and rural areas in sustainable development.
- Ensure good governance by enhancing transparency and establishing accountability.

### **Rural Development Policy**

From the year 1987 to 2011, government has framed and implemented different projects and programs for the betterment of rural people. Those projects and programs as mentioned in the Rural Development Policy of Bangladesh are:

- Food for Works Program
- G.R Program (Gratuitous Relief Program)
- T.R Program (Test Relief Program)
- V.G.D Program (Vulnerable Group Development Program)
- V.G.F Program (Vulnerable Group Feeding Program)
- Single-House Single-Farm Program
- Back to home Program
- Food for Education Program
- Rural Occupational Project
- Poverty Reduction Project
- Self-employment Program for Women
- Women Empowerment Program
- Coordinated Women Development Program
- Peace Home Program
- Shelter Support Program
- Educational Allowance Program
- Aged-allowance Program
- Micro-credit Program
- Allowances for Widowed, Poor and Husband-renouncement Women Program

### **Aims and objectives**

Some of the aims and objectives of the Rural Development Policy is presented here.

- To increase the income and provision of jobs for the Villagers, especially for women and people under low-living standard in the rural areas.
- To confirm sustainable economic and social development through poverty reduction.
- To encourage self-employment opportunities in the rural areas.

- To emphasize for the development of rural wealth according to the equal distribution of economy and national development as prescribed in the Constitution of Bangladesh.
- To give confirmation to the rural people about infrastructural development, equal distribution of wealth and marketing of the agricultural production.
- To produce technologically efficient people about education, technical education and trainings in rural areas.
- Identification of demand and their fulfillment for socio-economic development of rural poor, persons involved with the production, especially small farmers and landless people.
- To reduce distances between towns and villages about services prevail through collective efforts and develop gradually.

## Programs

Programs for the rural development may be framed on Involvement of people with the decision-making and development activities, Poverty reduction, Rural infrastructural development, Agro-based rural economy, Rural educational system, Village health service and development of foodstuffs, Village population control, Development of village settlement, Landuse and development, Village industrial expansion, Increase of capital and financing, Women empowerment, Development of village child and youth, Development of village backward population, Area-based special development program, Self-employment for self-dependent, Cooperative system for rural development and Conservation of rural environment.

## 5.2 Laws and Regulations Related to -

### 5.2.1 Urban Development Control

The President of Bangladesh is empowered through the Constitution (called constitutional Wright) to establish, control and removal of any government office. This is a part of national administration. The President of Pakistan, in the year 1960 was enacted the Municipal Administration Ordinance, 1960. In the year 1977, some of the Municipalities were upgraded and re-named as Paurashava and administered through the Paurashava Ordinance, 1977. Again, in the year 2009, Paurashava Ordinance, 1977 is re-named as Local Government (Paurashava) Act, 2009 but the name remains same.

The Local Government (Paurashava) Act, 2009 was enacted in 6<sup>th</sup> October 2009 and this is the only regulation executes by the Paurashava authority. The Paurashava authority may provide the functions as prescribed in the Ordinance, no provision is being outlined to control and manage those functions. The jurisdiction of this Ordinance on other regulations includes following Acts and Ordinances. The Paurashava may enforce those regulations according to their capacity.

1. আর্থিক প্রতিষ্ঠান আইন, ১৯৯৩ (১৯৯৩ সনের ২৭ নং আইন)
2. অর্থ ঋণ আদালত আইন, ২০০৩ (২০০৩ সনের ৮নং আইন)
3. স্থানীয় সরকার কমিশন অধ্যাদেশ, ২০০৮
4. বাংলাদেশ শ্রম আইন, ২০০৬ (২০০৬ সনের ৪২ নং আইন)
5. Cantonments Act, 1924 (Act No. II of 1924)
6. District Act, 1836 (Act No. I of 1836)
7. The Penal Code, 1890 (Act No. XLV of 1890);
8. Prevention of Corruption Act, 1947 (Act No. II of 1947)
9. ব্যাংক কোম্পানী আইন, ১৯৯১ (১৯৯১ সনের ১৪ নং আইন)
10. The Bangladesh Shilpa Rin Sangstha Order, 1972 (P.O. No. 128 of 1972)
11. The Bangladesh Shilpa Bank Order, 1972 (P.O. No. 129 of 1972)

12. The Bangladesh House Building Finance Corporation Order, 1973 (P.O. No. 17 of 1973)
13. The Bangladesh Krishi Bank Order, 1973 (P.O. No. 27 of 1973)
14. The Investment Corporation of Bangladesh Ordinance, 1976 (Ordinance No. XL of 1976)
15. The Rajshahi Krishi Unnayan Bank Ordinance, 1986 (Ordinance No. LV III of 1986)
16. কোম্পানী আইন, ১৯৯৪ (১৯৯৪ সালের ১৮ নং আইন)
17. Local Government (Paurashava) Act, 2009
18. জন্ম ও মৃত্যু নিবন্ধন আইন, ২০০৪ (২০০৪ সালের ২৯ নং আইন) (see section 53(2)(Q))
19. Evidence Act, 1872 (Act No. I of 1872) (see section 131)
20. পশু রোগ আইন, ২০০৫

On the other hand, the Paurashava is empowered for delivery urban services, collection of taxes and tolls, preparation of budget, control development and other physical activities provide health and social services and electoral role. All of those activities are guided through this Ordinance. In case of regulatory involvement, the Ordinance is wide enough than other authorities. The Ordinance proves that the Paurashava is independent and self regulatory body, but due to the absence of necessary manpower, technological support and government initiative in financial matter, the Paurashava is dependent on central government.

### **Building Construction Rules, 1996**

**Building Construction:** The Paurashava Authority is the custodian and enforcement authority of the Building Construction Act, 1952 and Building Construction Rules, 1996 for any construction in the Paurashava premises. Section 3(1) of the Act presents control on building construction in the country. Mostly approval system of the building plan prescribed in the Rules and punishment for the breach of regulation presented in the Act. But the approval system is lengthy and volume of punishment is poor.

**Density Control:** Section 12(1) of Building Construction Rules, 1996 sets a formula for building height determination based on the width of the front road. This rule imposes a limit on the building height as long as the front road is less than 75 ft. (22.87 meter). Indirectly this limits the number of family or the size of population in a building. Setback rule of the building and approval system of the building plan also prescribed in the Building Construction Rules.

**Excavation of Tank:** Section 3(2) of the Act presents control on the excavation of Tank in the urban area. Approval for such excavation will be needed from the concerned authority. The regulation mostly enforces by the Development Authority and the Deputy Commissioner enforces on the areas other than the jurisdiction of Development Authority.

**Raging of Hill:** Section 3(3) of the Act presents regulation on the raging of hill. In the Act it is prescribed that anybody is not authorized for raging of hill without approval from the concerned authority. Development Authority and Deputy Commissioner is the concerned authority.

### **National Reservoir Protection Act, 2000**

Playfield, Open space, Garden and Natural Tank in Urban Areas Preservation Act, 2000 (Act No. XXXVI of 2000), enacted in 18<sup>th</sup> September 2000. In short, this Act may be called as National Reservoir Protection Act. The jurisdiction of this Act is covered Metropolitan City, Divisional and District level Cities and all urban areas including Paurashava area. Aim of the Act is to preserve play field, open space, park / garden and natural water reservoir. For the Paurashava premises, Paurashava Authority is empowered for enforcement of the said Act.

According to the section 5 of this Act, any area demarcated as Playfield, Open space, Garden and Natural Tank should not be changed with other use or it is prohibited for rent, leasing or any other procedure followed by, or handover to anybody for such changes. Again, according to the section 6, approval from concerned authority through application within stipulated time will be needed for any change of the area identified as play field, open space and natural tank. Punishment for such changes without approval from concerned authority is presented in the section 8. For such unlawful activities, punishment may be 5 years imprisonment or Tk 50,000 as a penalty or both. For preservation of natural water bodies in the Paurashava, this Act will be the important tool of the Paurashava authority.

### **Acquisition and Requisition of Immovable Property Ordinance, 1982**

For any physical development activities, acquisition of land is needed primarily. In the Paurashava premises, for acquisition of land, the Paurashava Authority will request to the Deputy Commissioner to acquire the land needed. It is said in the section 3 of the Acquisition and Requisition of Immovable Property Ordinance, 1982, whenever it appears to the Deputy Commissioner that any property in any locality is needed or is likely to be needed for any public purpose or in the public interest, he shall cause a notice to be published at convenient places on or near the property in the prescribed form and manner stating that the property is proposed to be acquired.

### **Conservation of Environment Act, 1995**

Directorate of Environment is the enforcement authority of the Conservation of Environment Act, 1995. According to the Act, government can declare ecologically critical area through Gazette Notification (section 5(1)). Such critical environment may be created through human activities or climatic disturbances. Control on motorized vehicles who exhausts smoke dangerous for human health has prescribed in the section 6. Punishment for violation of any order presented in the Act may be 5 years imprisonment or fine with Tk. 1, 00, 000 or with both.

### **Rural Electrification Board Ordinance, 1977**

Government of Bangladesh has enacted the Rural Electrification Board Ordinance on 29<sup>th</sup> October 1977. Section 8 of the Ordinance has presented functions of the Board and among them two functions are -

- (a) To establish electricity generation transmission, transformation and distributionsystems in the rural areas of Bangladesh.
- (b) To take measures for effective use of electricity to foster rural development with special emphasis on increase of use of electric power for economic pursuits such as development of agriculture and establishment of rural industries and assisting the advantaged sections of the community for augmenting their income and standard of living.

### **Brick Burning (Control) Ordinance, 1989**

Chairman of the Upazila Parishad is the enforcement authority of the Brick Burning (Control) Ordinance, 1989. In this Ordinance, control imposes only on the brick burning and said that no person should use wood for such purposes (section 5). For the violation of this regulation, the accused person may be punished with 6 months imprisonment or punished with a fine Tk. 10,000 or with both.

### **Public Health (Emergency Provisions) Ordinance, 1944**

Department of Public Health Engineering is the enforcement authority of the Public Health (Emergency Provisions) Ordinance, 1944. The Department is responsible for supply of drinking

water also in the Paurashava premises. According to the section 7(1), “a local authority may supply water to any local authority or to any other authority or person within or without its local area upon such terms as may be agreed, notwithstanding any provision prohibiting or restricting such supply contained in any other law.” Based on such regulation, the Department is performing his duty in the Paurashavas.

### **Land Development for Private Housing Project Act, 2004**

The Act was enacted on 1<sup>st</sup> March 2004 to control land under private housing and develop accordingly. The authority who has prepared master plan, the Act will be enforced on those areas. It is said in the section 1(2) of this Act that, this Act will be enforced under the jurisdiction of the master plan areas prepared under the guidance of The Town Improvement Act, 1953 (E.B.Act XIII of 1953) and The Building Construction Act, 1952 (E.B.Act II of 1952).” According to the regulation prescribed above, the private housing construction in the Paurashava area may be controlled through this Act but, an amendment will be necessary to include the name of Paurashava Act, 2009 under which the Master Plan (Structure Plan, Urban Area Plan and Ward Action Plan) is being prepared.

### **5.2.2 Paurashava Development Management**

After the independence (1971), all local government systems were abolished by the Presidential Order No. 7 in the year 1972 and appointed an administrator in each of the Municipality. After this Order, name of the Local Governments were changed as Town Panchayat instead of Union Committee, Shahar Committee instead of Town Committee and Paurashava instead of Municipal Committee. Shahar Committee was renamed as Paurashava in the year 1973 with a Presidential Order No. 22 and introduced election procedure for the Chairman and Vice-chairman. Thana Parishad Ordinance, 1976 (Ordinance No. XXXII of 1976) was enacted in 21<sup>st</sup> May 1976 to provide for the constitution of Thana Parishad. Paurashava Ordinance was enacted and notified in the year 1977. Nine Commissioner and selection of female Commissioner in every Paurashava was provisioned in the Ordinance. According to the Paurashava (amendment) Ordinance, 1998, re-distribution of Paurashava Wards was introduced and the Paurashava belongs with 3 Wards proposed for 9 Wards and 12 Wards instead of 4 Wards. One Commissioner for every Ward and one-third Ward of every Paurashava was reserved for female Commissioner who was elected by the general election of the country. Local Government (Paurashava) Act, 2009 was provisioned 9 Wards, one Mayor and 3 female Councilors for every Paurashava. Mayor and Councilors will be elected through general election. The provision remains in the Local Government (Paurashava) Act, 2009.

From the year 1977 to 2009, Paurashava Ordinance, 1977 enforces by the Paurashava authority and the name of the statute was Paurashava Ordinance, 1977. After promulgation of the same statute, name of the Ordinance has changed as Local Government (Paurashava) Act, 2009. Generally, people call it Paurashava Act, 2009.

For the management of all physical development activities, a wide range of functions have been prescribed in the Second Schedule of the Ordinance. For efficient management of development, three major activities are prescribed and they are – Town Planning, Building Construction and Development. According to the Second Schedule, functions in brief are presented in the following table.

**Table-5.4: Functions in Brief Prescribed in the Local Government (Paurashava) Act, 2009**

Major activity	Specific functions	Functions in brief
Town planning	Master plan	The Paurashava shall draw up a master plan for the city which shall provide for a survey of the Paurashava including its history,

Major activity	Specific functions	Functions in brief
		statistics, public services and other prescribed particulars. Development, expansion and improvement of any area within the city; and restrictions; regulation and prohibitions to be imposed with regard to the development of sites, and the erection and re-erection of buildings within the Paurashava.
	Site development schemes	Where a master plan has been drawn up and approved by the government, no owner of lands exceeding such area as may be specified in this behalf in the master plan, shall develop the site or erect a building or any plot of land covered by the provisions of a site development scheme sanctioned to area in the prescribed manner. Among other matters, a site development scheme may provide for- (a) the division of the site into plots; (b) the street, drains and open spaces to be provided; (c) the land to be reserved for public purposes and to be transferred to the Paurashava; (d) the land to be acquired by the Paurashava; (e) the price of plots; (f) the works that shall be executed at the cost of the owner or owners of the site or sites; and (g) the period during which the area shall be developed.
	Execution of Site Development Schemes	If any area is developed or otherwise dealt with in contravention of the provisions of the sanctioned Site Development Scheme, the Paurashava may by notice require the owner of such area or the person who has contravened the provisions to make such alteration in the site may be specified in the notice as where such alteration is not made or for any reason cannot be carried out, the Paurashava may, in the prescribed manner require and enforce the demolition of the offending structure; and notwithstanding anything to the contrary contained in any law, no compensation shall be payable for such demolition.
<b>Building construction</b>	Building construction and re-construction	Without approval of the building site and plan by the Paurashava, nobody can construct, re-construct any building in the Paurashava area. The Paurashava will approve the plan within sixty days or refund it within that specified time frame; otherwise the plan will be considered as approved.
	Completion of construction and change, etc.	After completion of the approved building, the owner will notify to the Paurashava within 15 days. The Paurashava may inspect the building and if found any violation of the provision prescribed in the Master Plan or in the Site Development Scheme, the Paurashava may demolish the building and the demolishing cost may be incurred from the building owner.
	Building control	If any building or anything fixed thereon, be deemed by the Paurashava to be in a ruinous state or likely to fall or in any way dangerous to any inhabitant of such building or any neighboring building or to any occupier thereof or to passers-by, the Paurashava may by notice require the owner or occupier of

Major activity	Specific functions	Functions in brief
		such building to take such action in regard to the building as may be specified in the notice, and if there is default, the Paurashava may take the necessary steps itself and the cost incurred thereon by the Paurashava shall be deemed to be a tax levied on the owner or occupier of the building. If a building is in dangerous condition, or otherwise unfit for human habitation, the Paurashava may prohibit the occupation of such building till it has been suitable repaired to the satisfaction of the Paurashava.
<b>Development</b>	Development plans	The Paurashava shall prepare and implement development plans for specific time. Such Plans shall provide for- (a) the promotion, improvement and development of such function or functions of the Paurashava as may be specified; (b) the manner in which the plans shall be financed, executed, implemented and supervised; (c) the agency through which the plans shall be executed and implemented; and (d) such other matters as may be necessary.
	Community Development Projects	The Paurashava may, sponsor or promote community development projects for the Paurashava or any part thereof and may in this behalf perform such functions as may be prescribed.
	Commercial schemes	The Paurashava may, with the previous sanction of the Government, promote, administer, execute and implement schemes for undertaking any commercial or business enterprise.
<b>Street</b>	Public streets	The Paurashava shall provide and maintain such public street and other means of public commutation as may be necessary for the comfort and convenience of the inhabitants of the Paurashava and of the visitors thereto.
	Streets	No new street shall be laid out except with the previous sanction of the Paurashava. The Paurashava may by notice required that any street may be paved, matalled, drained, channeled, improved or lighted in such manner as may be specified in the notice, and in the event of default, the Paurashava may have the necessary work done through its agency, and the cost incurred thereon by the Paurashava shall be deemed to be a tax levied on the person concerned.
	General provisions about streets	The Paurashava may assign names to streets and paint the names or fix the nameplates on or at conspicuous places at or near the end corner or entrance of the street. No person shall destroy, deface or in any way injure any street, name or name plate, or without the previous permission of the Paurashava, remove the same.
	Street lighting	The Paurashava shall take such measures as may be necessary for the proper lighting of the public streets and other public places vesting in the Paurashava.
	Street watering	The Paurashava shall take such measures as may be

Major activity	Specific functions	Functions in brief
		necessary for the watering of public streets for the comfort and convenience of the public, and for this purpose, maintain such vehicles, staff and other apparatus necessary.
	Traffic control	The Paurashava shall make such arrangements for the control and regulation of traffic necessary to prevent danger and ensure the safety, convenience and comfort of the public.
	Public vehicles	No person shall keep or let for hire or drive or propel within the limits of the Paurashava any public vehicle other than a motor vehicle except under a license granted by the Paurashava, and in conformity with the conditions of such license. No horse or other animal shall be used for drawing a public vehicle within the limits of the Paurashava except under a license granted by the Paurashava.
<b>Water supply and drainage</b>	Water supply	The Paurashava may provide supply of wholesome water sufficient for public and private purposes. Frame and execute water supply scheme for the construction and maintenance of such works for storage and distribution of water.
	Private sources of water supply	All private sources of water supply within the Paurashava shall be subject to control, regulation and inspection by the Paurashava. No new well, water pump or any other source of water for drinking purposes shall be dug, constructed or provided except with the sanction of the Paurashava.
	Drainage	The Paurashava shall provide an adequate system of public drains in the and all such drains shall be constructed, maintained, kept, cleared and emptied with due regard to the heal and convenience of the public. All private drains shall be subject to control, regulation and inspection by the Paurashava
	Drainage scheme	The Paurashava may prepare a drainage scheme in the prescribed manner of the construction of drains at public and private expense. The drainage scheme as approved by the government shall be executed and implemented within specified period.
	Bathing and washing place	The Paurashava may from time to time set a suitable place for use by the public for bathing, washing cloths, or for drying cloth. Specify the time at which and the sex of persons by whom such places may be used. No person shall establish, maintain or run a bath for public use except under a license granted by the Paurashava.
	Dhobi ghat and washer men	The Paurashava may provide dhobi ghats for the exercise of their calling by washer men, and may regulate the use of dhobi ghats and levy fees for their use.
	Public water-course	The Paurashava may declare any source of water, spring, river, tank, pond, or public stream, or any part thereof within the Paurashava, which is not private property, to be a public watercourse.
	Public ferries	The Paurashava may by by-laws provide for the licensing of boats and other vassals plying for hire in a public water-course to be a public ferry and may entrust the management thereof to the Paurashava, and there upon the Paurashava shall manage



Major activity	Specific functions	Functions in brief
		and operate the public ferry in such manner and levy such tolls as prescribed.
	Public fisheries	The Paurashava may declare any public watercourse as a public fishery, and there upon the right of fishing in such water course shall vest in the Paurashava which may exercise such right in such manner as may be prescribed.

### 5.3 Strength and Weaknesses of the Existing Policies

The Consultant has identified following weaknesses in the existing policies. These are – accommodation of future thrust of growth likely to arise due to supply of safe drinking water, providing safe and easy accessibility, use of agriculture production in income generating activities and create provision for further investment.

The primary motive is to exercise control over unorganized development and promotion of planned infrastructure development to accommodate future urban growth. The Paurashava will be developed as a self-contained town in rural environs.

To increase the agro-product and use them in income generating activities, a vast agriculture land will be used and at the sametime, the existing agriculture land should be preserved. Further residential expansion should be controlled through the imposition of development control. In this context, concept of cluster development and compact township approach should be provisioned in the plan. Vertical development will be encouraged rather than horizontal to save the agriculture land.

## **Chapter-Six**

### **CRITICAL PLANNING ISSUE**

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#### **6.0 Introduction**

Chapter 6 of the planning report introduces the critical planning issues of Mehendiganj Paurashava. The discussion has been carried out on sectoral basis.

#### **6.1 Transport**

Van and rickshaw are two major transport vehicles in the planning area. Bicycle is the main mode for private users. Movement of motorcycle is also identified as major private mode. Inadequacy of bus service found normal scenario in the Paurashava. The peak hour traffic movement is found in morning from 9am to 10am and in the afternoon from 4pm to 5pm in general. Overall traffic congestion is low, let it should not be increased. The movements of Nosimon which is very risky need to restrict to keep the urban area risk free, clean and sound. Establishment of bus route within the planning area is another prior demand of the people.

The hat / bazar in the planning area serves by bituminous and brick soling roads. But the area is not served by well defined road hierarchy, nor is required now due to sparse use of roads by motorized vehicles. However, the induced activities due to the prospects of upward economic change may need to provide road network befitting with the need.

Highway traffic is comparatively low dominated by mixed type of vehicles including non-motorized. Generally, surface of the highways excepting for a larger part is excellent. The road network is not facilitated by designated parking area, bus terminal and bus bay. As a result, sometimes congestions and chaotic situation occurs for a little while. In spite of this situation, present road network is functioning well. But it has to be upgraded to accommodate the future increase of traffic volume that is expected to increase due to the implementation of master plan.

#### **6.2 Environment**

In Mehendiganj Paurashava, noise pollution occurs by three wheelers and sound generated from saw mills and rice husking mills. Water contamination is observed as “Arsenic” threat. Air pollution is caused by dust emitted from saw mill, rice hushing mills and furniture shops. Also flood water and water-logging creates health hazards. Dysentery, diarrhea, etc. diseases occurs due to flood and Water-logging. Habitual inundations, especially in monsoon, due to external floods from canals are another threat to environment. Above causes are extremely important for the concern of the Paurashava. Pragmatic planning / solution and proper Drainage Master Plan are very pertinent issues in planning the Mehendiganj Paurashava.

However, implementations of activities like roads, drainage, bridge / culverts, housing, industrial establishments and bazars will radically change the natural topography and landuse pattern if natural development remains. Agriculture land will be converted into urban and semi-urban areas. Existing scenic beauty will disappear; water bodies will lost and general slope will be diminished for earth filling due to urbanization. Therefore, in the process of preparation of Structure Plan, Urban Area Plan and Ward Action Plan, consideration of those factors have been made for keeping the natural environment livable.

For a better living environment all environmental phenomenon should be considered with the systematic planning principles and regulatory measures. With these views, people's awareness

should be increased about the fair living environment through different public activities. Arrangement of landuses should be provisioned for all the public and private organizations as their necessities.

### **6.3 Landuse Control**

Accommodation of future thrust of growth likely to arise after supply of safe drinking water, providing safe and easy accessibility, use of agriculture production in income generating activities and create provision for further investment.

The primary motive is to exercise control over unorganized development and promotion of planned infrastructure development to accommodate future urban growth. The Paurashava should be developed as a self-contained town in rural environs.

Implementation of master plan will change many factors of the Paurashava. Those factors are rapid change of landuse from agriculture to non-agricultural activities, rural homesteads will change their character by the urban dwellers, land value will increase and the farmers will sold their farming land and shift elsewhere where low land value exists, spotted industrial development emerges and a mixed urbanization character will be formed, low lands adjacent to the communication network will be filled and will create drainage congestion.

To increase the agro-product and use them in income generating activities, a vast agriculture land will be needed and therefore, existing agriculture land should be preserved. Further residential expansion should be controlled through the imposition of development control. In this context, concept of cluster development and compact township approach should be provisioned in the plan. Vertical development should be encouraged rather than horizontal to save the agriculture land.

Major aim of the Landuse Policy 2001 was to prevent indiscriminate conversion of agricultural land in to non-agricultural use, because such conversion may be threatened for food security of the country. Such conversion should be prohibited with the multi-sectoral use of land. During implementation of Urban Area Plan and Ward Action Plan, necessary control should be imposed according to the following manner.

1. High value agriculture land should be preserved only for agriculture purposes. The land produces three crops in a year are under this category. Any physical development activities should be prohibited by the Paurashava authority. In the Paurashava, high value agriculture land is found in the Ward No. 1, 2, 4 and 5.
2. Drainage congestion due to the indiscriminate development activities is another critical issue. With the increase of population and commercial activities, lands of the Paurashava town are being converted for habitation. Natural development of those settlements somewhere creates drainage congestions. Southern part of the Ward No. 2, northern part of the Ward No. 5 and southwestern part of the Ward No. 1 are the drainage congestion areas.
3. Missing links in road transportation creates accessibility problem. In the intersections, lands are using by commercial activities including daily bazar and saw mill. Most of those are government lands. Vehicular accessibility became zero in those areas.
4. Easy accessibility with neighbouring Upazilas and a regional linkage is needed. Those linkages will grave huge amount of agriculture land. The single crop land may be used for this purpose.

## **6.4 Disaster**

Disaster is the tragedy of a natural or man-made hazard that negatively affects society or environment. Disaster can be classified into two categories: natural disaster and man-made disaster. Natural disaster is the effect of flood, volcanic eruption, earthquake or landslide, draught, epidemic, etc. that affects environment and leads to financial, environmental or human losses. Man-made disasters is resulting from human intent, negligence or error, or involving a failure of a man-made system.

The Paurashava including the Mehendiganj Upazila has affected by the several major natural disasters ranging from Cyclone, Flood to Water-logging and Draughts, etc. The periods of those disasters are 1998, 2000, 2004, 2007 and 2008. Very scanty attempt has been made by the government to rehabilitate people after the natural disaster.

Urbanization is converting lands for residential use. Agricultural lands and water bodies are being chosen most frequently and the lands are being converted into urban settlement. In the Mehendiganj Paurashava, wet lands are being filled up and agricultural lands are being converted. This has been identified as the major man-made disaster accelerating the degree of conversion year to year. Use of poisonous insecticides on the agricultural land is another man-made disaster which will affect in the long-run.

## **6.5 Laws and Regulations**

The regulations prescribed (mentioned in the Chapter-5.2.1, Sl. No. 1 to 20) in the Local Government (Paurashava) Act, 2009 are not directly related with the physical development activities and their control. The East Bengal Building Construction Act, 1952 is called the mother regulation to control all type of physical development but no instruction is being included in the Local Government (Paurashava) Act, 2009 regarding EBBC Act, 1952. The Paurashava authority approves the building plan and excavation of tank without any regulatory control.

The regulation prescribed in the Local Government (Paurashava) Act, 2009 on the preparation of master plan is called traditional regulation. In the modern world, the concept of master plan became obsolete. In this project, the so called master plan, as mentioned in the Local Government (Paurashava) Act, 2009 considered as a package and the plan included in this package named Structure Plan, Urban Area Plan and Ward Action Plan, though there is no regulation in the country on the preparation and implementation of those plans.

In the Paurashava, 72.27% (except water bodies) land is under agriculture use. Most of those lands are private. Different type of help is necessary for the farmers involved with those agriculture lands. Section 13(1a) of the Agricultural Development Corporation Ordinance, 1961 prescribed regulation on the function of the Corporation and said that “the Corporation shall make suitable arrangements throughout East Pakistan, on a commercial basis, for the procurement, transport, storage and distribution to agriculturists of essential supplies such as seed, fertilizers, plant protection equipment, pesticides and agricultural machinery and implements.” Where the Corporation is absent, how the farmers will get benefit prescribed in the section 13(1a). To increase the agricultural commodities such type of help is necessary.

Except the Paurashava Town (Township development areas), other areas are rural. To generate rural-based township environment, those rural areas should be preserved. Rural development components as prescribed in the section 7(1a) of the Bangladesh Rural Development Board Ordinance, 1982 should be provisioned to control those rural areas. As prescribed in the section 7(1a), functions of the Board shall be “to promote village-based primary co-operative societies and Thana Central Cooperative Association (TCCA) with a view to enabling them to be autonomous, self-managed and financially viable vehicles for increasing production, employment generation and rural development.”

## **Chapter-Seven**

### **LANDUSE ZONING POLICIES AND DEVELOPMENT STRATEGIES**

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#### **7.1 Strategies for Optimum Use of Urban Land Resources**

Inhabitants of the Paurashava are not aware about the land level and slope direction of the Paurashava. Without knowing this information they are raising their land up to a mark and constructing permanent structure. As a result, water-logging problem during rainy season is all over the residential areas.

Due to the absence of development control, core area of the Paurashava is already developed as mixed-use area. Commercial, residential, administrative, educational uses are admixture in the core area. Zoning provision, landuse control should not be enforced in such type of the core area.

The Paurashava is a natural developed area. Rearrangement of the existing use is not possible. Land acquisition for expansion of road (to increase the width of road) will create socio-political hazards. As a result, roads in the core area remain as today.

For water supply network, construction of sewerage facilities and removal of fire hazards, at least 24 feet width road is necessary. In the Paurashava, except Regional Highway, such type of road is absent. New road will form new township on agriculture land. These processes will washout agriculture domination from the Paurashava. Compact Township and cluster development will be effective for new formation, not for the mixed-use areas where most of the roads are 8 to 10 feet width.

At present, except 72.27% (say 72%) agriculture land, 12.71% (say 13%) residential development and 11.08% (say 11%) water bodies, rest 4% land are using for various purposes. Again, among 13% residential and 4% other developments, 5.33% (say 6%) land is covered with pucca structures (called permanent structure). For rearrangement and enforcement of new provision those 11% ( $13\% + 4\% - 6\% = 11\%$ ) land will generate planning scope. Due to the absence of airport and helipad, vertical expansion of the building will be encouraged in anywhere of the Paurashava. New innovation for increase the agriculture production may be encouraged.

The Paurashava seems barren land. People are not aware about the modern facilities available to their door step. It is easier to inject guiding principles, modern facilities and long-run development control for the Paurashava as well as for the inhabitants.

#### **Policies and Strategies**

In relation to the landuses, the expected cluster development policies are:

**Review the selected clusters and prepare guidelines for their development:** In carrying out this task, Paurashava will pay particular attention to the scale of growth to be accommodated in each cluster. This will be influenced by the local pressures for growth and capacity of each cluster to absorb such growth. In relation to the tentative list of clusters identified in the Chapter-3, following comments need to be made:

**First priority cluster** is the market area (Mehendiganj Bazar in the Ward No. 2 and 3). Variations between the scales of growth to be accommodated in the market will be found. **Second priority clusters** are located on the fringes of the existing Paurashava town centre. They are areas where

pressure for growth is already strong. Their inclusion in the list is therefore almost inevitability. However, the long-term costs associated with large-scale development in all two of these clusters - southeastern part of the Ward No. 4 and northern part of the Ward No. 8 – suggest that the policy should be provided for growth whilst containing it as much as possible.

Those clusters are in rural character, objective of the Paurashava will be to ensure that the use of land is appropriate to this character.

**Limit industrial use outside the existing town centre and the proposed extensions to the town centre:** Location of manufacturing activity may have benefits to the local communities in which the manufacturing activity is located – through provision of direct or indirect employment and benefits to the entrepreneur in terms of reduced costs. However, it may also have disadvantages, say, for example, if the infrastructure is not available to deal with the effluent (whether it be air borne, water borne or in the form of solid waste) of the manufacturing processes being undertaken in these relatively remote locations.

Encourage the development of non-urban uses such as agriculture and forestry on land on the periphery of the Town centre which is unsuitable for urban development.

### **Optimization of the Existing Urban Land Resources**

Jurisdiction of the Mehendiganj Paurashava is 3535.29 acres (14.30 sq. km.); population is 30067 with gross density 9 persons per acre. In the year 2031, the population will be 31703 with gross density 9 persons per acre if growth rate remain.

At present, agriculture and water body includes 72.27% and 11.08% land respectively. Some important landuse determining factors like government policy, industrial establishment, construction of road including embankment and availability of services may change the agriculture domination in next 20 years. Question raises that how much this change will affect the present land resources?

During last ten years, the landuse scenarios remain. A stagnant character of landuse change still stand due to the existence of river named Machkata. Rapid change of landuse will be viewed after implementation of master plan. Except this, present population distribution and growth including migration shows that the area is developing significantly in terms of trade and large business and trying to get out of agriculture based activity.

After preparation and implementation of master plan / urban area plan changes in the physical character of the Paurashava will be viewed. These changes will be provided by the infrastructural and community services development. According to the master plan / urban area plan and Ward Action Plan this change should not exceed 5% to 10% from the total land of the Paurashava for next 20 years. Conversion of agriculture land in to infrastructural development may be considerable only for construction of embankment and road.

### **Zoning Policies and Strategies**

Zoning is an effective guideline for the preparation of landuse plan. According to this guideline, specific use should be in specific area; height of the building will be controlled for easy access of sunlight and wind flow and ensuring availability of open spaces in every lot with the controlling of building density. For the sake of zoning provision in the Paurashava, core area, fringe area, peripheral area and new urban area is being demarcated accordingly.

### Urban 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 Land use Plan (2011-2031) period.

**Policies:** Existing town centre will be defined as core area. Mostly mixed-use areas are the important characteristics of the core area. Size of the core area is 97.59 acres. With the increasing of density, this area will lost living environment. Further expansion of the core area will be discouraged in the plan.

**Strategies:** Let the core area remain up to the plan period. No physical development provision will be initiated by the Paurashava. Vertical and horizontal expansion of the structure or establishment may be approved by the Paurashava with high rate.

**Table-7.1: Proposed Zoning Areas**

Landuse Type	Area (acre)	%
Urban Core Area	97.59	2.76
Urban Fringe Area	222.50	6.29
Peripheral Urban Area	1140.97	32.27
New Urban Area	722.42	20.43
Agricultural Zone	1037.06	29.25
Water Body	317.75	8.99
<b>Total</b>	<b>3535.29</b>	<b>100</b>

### Urban Fringe area

This zone is identified as developing areas which will take further decades to reach the population densities of the urban core area. Low initial densities in these areas do not justify supply of a full range of services as they will initially be underused. However, it is essential that planning and reservation of rights of way, at least for primary networks, be undertaken soon to enable provision when justified by increased density levels and allowed by resources.

**Policies:** The area, adjacent with the core area, ideal for rapid urbanization is considered as fringe area. Total area is 222.50 acres. Important community facilities, utility services and residential development will be the basic components of the fringe area. Improved transportation and communication linkages, better water supply and drainage facilities including rain water reservoirs will be the planning components.

**Strategies:** The guidelines set in the policy may be implemented by the different public authorities. A close coordination among those authorities should be maintained during implementation of the planning component. Any change of the planning should instantly be resolved with the involvement of the Paurashava authority.

### Peripheral Urban 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. Ideally, it might be reasonable to provide primary infrastructure networks in this area to foster development and encouraged to enable a more rapid urbanization in a planned way.

**Policies:** Agriculture domination will be the prime characteristic of the peripheral area. Rural homesteads, spotted important development like park, dumping ground, stadium and agro-industries are the important planning components of this area. Total area is 1140.97 acres. Any contrast regarding the implementation of those planning components should not be encouraged.

**Strategies:** Phase-wise development will be encouraged. Individual authority may implement individual component. Coordination among the authorities is not mandatory. Locational change of the proposed components should be discouraged.

### **New Urban Area**

This zone will be the required additional area for future planned urban development as per population projection. New facilities and services like road, drains, footpath, waste transfer station and other civic services will be provided. This area is being proposed to be developed within the year 2031.

**Policies:** Planned development will be the prime characteristic of the new urban area. Housing with greeneries, important development like park, commercial centre, educational institute, improved health facilities, community centre, road with footpath including drainage facilities, water supply and fire service are the important planning components of this area. No new urban area is being proposed. Any contrast regarding the implementation of those planning components should not be encouraged.

**Strategies:** Phase-wise development will be encouraged. Individual authority may implement individual component. Coordination among the authorities is not mandatory. Locational change of the proposed components should be discouraged.

### **Agricultural Zone**

Agricultural land (also agricultural area) denotes the land suitable for agricultural production, both crops and livestock. It is one of the main resources in agriculture. The land under annual crops, such as cereals, sugarcane, jute, vegetables and melons; also includes land left temporarily fallow; land under permanent crops (e.g., fruit plantations); areas for natural grasses and grazing of livestock.

**Policies:** Agricultural domination will be the prime characteristic of the Agriculture zone. Agricultural commodities as mentioned earlier are the important components of this area. Total area is 1037.06 acres. Any cropping combination may be encouraged.

**Strategies:** Any agricultural practice will be encouraged. Individual authority may supervise and subsidize agricultural inputs to the farmers for increasing the production. Coordination among the authorities is not mandatory. Any physical development should be controlled by the Paurashava (except bridge, culvert, drain and road).

### **Waterbody**

Water body contains 317.75 acres includes khal, pond, irrigation canal and river.

**Policies:** Rainwater harvesting and pisciculture will be the prime characteristic of the pond and river will be preserved for outfall of the drainage system including irrigation purposes and water ways. Any contrast regarding the implementation of those components should not be encouraged.

**Strategies:** Individual authority may control individual component such as pond by the Paurashava and river by the Water Development Board. Coordination among the authorities is not mandatory. Any change of the components should be discouraged.

## **7.2 Plans for New Area Development**

The Paurashava is not an ideal township due to the agriculture domination. Agriculture based township should be encouraged in the preparation of Urban Area Plan. 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 will be controlled through the Compact Township concept with the encouragement of vertical development. In case of government services, specific building may accommodate different type of offices.



Future landuse will be calculated according to the development control for the masses. In case of public land, existing use and khas land will be emphasized. Willingness and participation of the people in development activities will be the key factor for future landuse demarcation. Slow change of landuse will be emphasized rather than rapid change. Let the people do whatever he likes on own land – such concept should not be considered for future projection of landuses. Three parts of the projection are landuse change, landuse control and landuse restriction will be included in the Master Plan. In any case, river front areas should be restricted for human habitation. As a result, river water will be safe from contamination.

The agriculture land should be preserved (according to the Agriculture Policy) from any type of physical development. It should not be decreased with the expansion of habitable area or formation of new settlement, may be increased with the formation of char lands. In case of road, embankment, drainage and new urban area, the agriculture land may be used but such use should be guided according to this plan. For the development of pisciculture, all ponds (not lower than 0.15 acres) and ditches may be preserved, in some exceptional cases; small number of ditches and ponds may be used for physical development activities.

People's willingness will be considered as important base for the projection because the Master Plan is for the inhabitants of the Paurashava. They will be the beneficiary group of that Master Plan. Their willingness in case of use and land allocation, location, expansion provision will be the important consideration. On the basis of fulfillment of their demand, they will like to involve them willingly in the implementation procedure of the Master Plan.

## Policies and Strategies

A large number of constraints are involved with the development of new area. Following strategies are involved with the development of new areas:

- Low incomes;
- Difficulties associated with assembling parcels of land which are large enough to make viable development sites;
- Disputes over ownership;
- Absence of private sector land developers;
- Lack of access (capable of resolution often only by works on land under the control of others); and
- The need in most cases for land to be prepared in some way prior development either by filling where it is subject to flooding or by earth moving where it is too steep to develop. In both cases, drainage works have to form an essential part of the land preparation task.

The policies and strategies of the Paurashava related to new area development are –

**Explore and Implement means of increasing the number and pace of public sector land development projects:** This is one area where government can have a direct influence on accelerating the rate of conversion of non-urban to urban land.

Explore and Implement, with the private sector, means of increasing the number and pace of private sector land development projects: In moving towards realization of the objective of government supporting the private sector in its development role (i.e. acting as an enabler rather than a provider), the Paurashava will examine, with the private sector, the means of overcoming the constraints to new area development.

Realization of the above two strategies is likely to require changes in legislation and administrative procedures at the national level. The other strategies of the Paurashava relating to new area development are set out below.

**Promote upgrading of the existing urban area:** As densities within the existing Paurashava Town increase, there will be growing pressure for upgrading to ensure that infrastructure provision is adequate and that living conditions are acceptable.

Most of the parts of the Paurashava are in agriculture practice and few parts are in urban area will require no upgrading at all. Accordingly the Paurashava will set priorities throughout the Planning area and ensure, through its own efforts or the efforts of others, that upgrading projects are necessary. Obvious areas for early consideration will be slum and squatter settlements. Local community and NGOs may involve with the upgrading projects.

**Assist the transition of areas on the fringes of the extension urban areas from non-urban to urban use:** The main priority here seems to be space for adequate access and drainage. Once this space is available, the roads, drains and other services can be installed as and when the resources are available to provide them. But without this space, rational development of such areas is impossibility, environmental problems occur and the pace of development is often seriously impeded.

If the Paurashava has the resources and to achieve this by acquiring land (either through negotiation or compulsory purchase) and ensuring that it remains free from development until needed, then the Paurashava will purchase this as a policy. If not, then a potential alternative approach is to work with the local community, particularly the landowners, to see if the space can be made available by readjustment of existing ownerships. Given the importance of this task the Paurashava will pursue an active policy of assisting the rational development of the fringe areas, by whatever means proves workable.

**Ensure that land is available for all income groups:** In accordance with Government's commitment to poverty alleviation, as expressed in the Poverty Reduction Strategy and the objectives of the National Housing Policy, a further major task facing the Paurashava is to ensure that land is made available for all income groups.

**Reconsider the role that development control plays in the planning and management of new area:** Where development control is institutionally well-established (with adequate legislation, administrative resources and enforcement power) it can be a very effective 'tool' in restricting new area development where it is considered unsuitable; encouraging it in areas where it is considered suitable; and influencing the type of development that takes place in any particular location. It can attempt to strengthen development control institutionally to enable it to perform its role more adequately. On the other hand, it can consider restricting the role of development control to those functions which it considers critical such as ensuring that development does not take place in corridors required for new road construction or road widening, or ensuring that polluting industry takes place only in areas which are suitable for it.

**Encourage the development of unused or underutilized land rather than new areas:** The Paurashava is characterized by having much unused or underutilized land within the heart of the town. This land represents a wasting asset. If maximum use is to be made of the existing investment in infrastructure and if journey times are to be kept short, then fuller utilization of this land is essential. The Paurashava will examine the reasons why such land remains unused or underutilized and will endeavor to overcome the constraints to its development.

### 7.3 Areas for Conservation and Protection

Type of area and structure which will conserve and protect is presented here.

- Historical building, monument, sculpture or any other related articles.
- Park, important playfield or any other active recreational areas.
- Government buildings like Dakbanglow, Court Building, Circuit House, D.C office, Paurashava office and official residence of the Paurashava Mayor.
- Riverfront areas where people spent their leisure time.
- Any other public establishment like Zoo, Museum, Flood shelter, etc.
- BM Pillars.
- Bus Terminal and Launch / boat ghat.

### Policies and strategies

For the conservation and protection areas, following policies and strategies are considered:

**Take environmental issues into account in all decisions related to the future development:**

By considering environmental issues in its entire decision making, the Paurashava aims to ensure that progress is made towards resolving the environmental problems exist and towards resisting the further deterioration of conditions beyond their present level.

The issue of polluting manufacturing processes is best dealt with by legislation at the national level. However, the Paurashava has a valid and important role to play in deciding the location of industry. It can confine polluting industry to a single or a limited number of locations, where prevailing winds will not carry airborne pollution over the Paurashava Town and where facilities for dealing with water borne effluent and solid waste disposal have a greater chance of being provided.

**Impose restrictions on the location of new polluting manufacturing processes and identify suitable locations for their establishment:** A long-term program of controlling the emission of pollutants from existing industrial activities and removing chronic polluting industry from unsuitable locations can also be pursued in association with the appropriate authorities. To be effective, this will need the force of law. One case is break-making. It is of value to the economy but is understood to have adverse environmental consequences. This is carried out in two locations throughout the planning area.

**Monitor adverse environmental impacts of existing manufacturing processes and take measures to reduce such impacts to acceptable levels:** The issues of the health hazard caused by current methods of solid waste disposal and sewage disposal can be addressed by improving the existing methods of providing these services.

**Reduce noise levels from the worst noise nuisances:** The issue of pollution from vehicles is unfortunately likely to get worse – as the rates of vehicle ownership and usage increase – before it gets better. Some relief may however be afforded by improvements in the quality of emissions, as older vehicles are replaced by newer ones, and as technological developments continue to be made in emission control.

**Identify and protect areas of ecological significance:** It is important that such areas are protected before they are inadvertently destroyed. This policy will extend to areas of forest / bushes and areas of un-spoilt river line. Once the initial priority of protection is successfully achieved, measures can be taken to enhance the quality of these areas.

**Conserve buildings and monuments of cultural, architectural and historic interest:** Such buildings and monuments are an important legacy of the past, reflecting different historical, cultural and national influences. The Paurashava will arrange for such buildings and monuments to be identified and listed. Following this, it will be necessary to draw up a program for their conservation. This program will need to consider the scope for enhancing the settings of the buildings and monuments, as well as ensuring preservation of their fabrics.

**Protect and enhance significant areas of open space within the Paurashava Town:** The open spaces create character of Paurashava, distinguishing it from other Paurashavas in the country. Unless such spaces are protected, there is a strong likelihood that they will be gradually converted to urban uses and thus lost for the benefit of the community as a whole.

## *Chapter-Eight*

# **STRATEGIES AND POLICIES FOR SECTORAL DEVELOPMENT OF THE PAURASHAVA**

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### **8.1 Socio-economic Sectors**

#### **8.1.1 Population**

The policies in relation to population are set out below.

**Expected growth of population and changes of socio-economic characteristics:** The population projection will need to be reviewed time to time in the light of new evidence. At a minimum this will need to be done at ten years intervals, as the results of Censuses become available. The Paurashava authority will need to monitor the factors affecting population growth – namely fertility, mortality and net inward migration and the factors reflecting changes in its socio-economic characteristics.

**Rational distribution of population within the Paurashava:** One of the main purposes of a master plan is to provide for the rational distribution of population, in relation to other urban activities and suitability of land for urban purposes. The Paurashava will pursue the policies required to achieve the spatial development strategy. It will also monitor change, assess the effectiveness of the policies being pursued and review the strategy as and when necessary.

**Ensure availability of land, services and facilities according to the needs of the population:** As the body responsible for planning and managing urban development, the Paurashava will ensure that land, services and facilities reflect the buildup of population and changes in its requirements. This is a task for which it will require the co-operation of many agencies involved in urban development in the Paurashava.

#### **8.1.2 Economic Development**

The prospect related to economic activities summarizes in the following discussions:

A considerable number of pisciculture is located in the Mehendiganj Paurashava. About 443 households are involved with such pisciculture. The production mostly uses in the Dhaka City, Barisal Zila and Pirojpur Zila. Investment in this field will bring huge prospects of the Paurashava. Other economic prospect summarizes in the following discussions:

- Availability of unskilled and cheap manpower.
  - Availability of agriculture land. The land may be used for different agricultural production and those productions may be used for the input of agro-based industries.
  - Due to the nearness of Barisal Zila, the Paurashava may be developed as the fringe area of Barisal. This fringe area with its agriculture production will support to the Barisal where marketing for those productions are available.
  - The Paurashava has been developed as growth centre concept. Some cluster development is found around this growth centre. Planned development through this master plan will initiate to arrange the growth component in a systematic manner. At the sametime, economic development parallel to the physical and social development will be encouraged.
- Most of the entrepreneurs expressed their desire of implementing future development plan. A major portion mentioned that their development plan is the expansion of their enterprises (96%) and others intend to increase their production (4%). Expansion of existing industries and establishment of new industries will create more jobs and thus have multiplier effect in the overall economy leading to create more consumption capacity, investment opportunities in diversified economic fields and thus push the economy upward.

If the standard of living of the people of the Paurashava is not to deteriorate as the additional population discussed before, then the economy of the Paurashava must expand at least in step with the growth of population. For unless the population have the financial resources (through employment of business) to pay for the urban services and facilities they want, they will either have to rely on Government subsidy or they will go without.

### **Policies and Strategies**

Given emphasize on the above situation following policies have been identified. These are all additional to the general requirement to ensure that land and infrastructure are available to support the wealth generating elements of urban development.

**Encourage national business to locate in Mehendiganj Upazila:** If national business can be encouraged to locate in promoting Paurashava / Upazila / Zila, they will provide not only earning capacity for their locally recruited employees but the opportunity for services to be provided to support the business. The Paurashava will, therefore, assist central government in promoting Paurashava as a potential location for inward investment of this type.

**Encourage central government to decentralize facilities from Barisal:** Central Government has control over the location of many facilities which are currently located in Barisal, such as Government departments, the headquarters of nationalized or Government banks and quasi Government bodies. The Paurashava will encourage Central Government to offset the current strong tendency towards centralization of facilities in the Zila by relocating some of these facilities to Paurashava / Upazila.

**Overcome the constraints on compatible landuse:** Where established agricultural, industrial and commercial operations are compatible with the objectives of the Structure Plan, the Paurashava will work with these operations to overcome the constraints to their expansion. Where wealth generating activities are constrained in their desire for expansion by lack of land, access or infrastructure provision, the Paurashava will, in conjunction with the other relevant authorities, endeavour to overcome these constraints.

### **8.1.3 Employment Generation**

Two basic elements of economic development i.e. employment generation and increase of productivity are found in the cities and urban areas than the rural areas. This is a common phenomenon for the developed and developing countries. Employment opportunities act as a strong pull factor for influx of job seekers in the cities and urban areas, the centers of productivity. Special features of the Mehendiganj Paurashava are that it covers a vast rural area, besides a small urban center. One Regional Highway passes through the Paurashava including boat ghats and both the sides of the highway occupied by huge tracts of agriculture land and sporadic homesteads, at places showing the signs of development along with the hat, bazar indicating the dominant role of agriculture, poultry and fishery. This indicates general feature of the Paurashava as a mixture of rural and semi-urban nature.

It is found from the study that the entrepreneurs of the planning area generally suffer from the following common problems:

- Lack of cheap and dependable source of energy (gas supply).
- Unreliable electricity supply.
- Absence of better access facilities with the capital city.
- Absence of railway connection with the capital city and with surrounding Zilas.
- Insufficient communication infrastructure.
- Shortage of skilled manpower.

- Complex official procedures in setting up a new industry (cumbersome processes of getting infrastructural and utility services connections, lack of manufacturing-investment-friendly banking / credit system).
- Lack of government initiatives.

Once the area developed as a trade centre based on the river communication. The traders who bring their commodities through the river the market of the Paurashava acted as a boat ghat after loading and unloading of commodities from the boat. From then, development activities started along the riverside. This trend has been continued up to the recent years.

## **Policies and Strategies**

**Improve industrial areas and ensure their full utilization:** Conditions in the existing industrial areas of the Paurashava especially environmental ones associated with the disposal of effluent and waste are currently poor. It is the policy of the Paurashava to improve these conditions and to reduce pollution from the worst offenders to acceptable levels. In certain cases this may require cessation of an existing activity or removal to another location.

Within each of the existing industrial areas there are vacant and underutilized areas. It is the policy of the Paurashava to ensure that the spare capacity available within these is utilized to the full. In the short and medium term these represents a better use of resources than identify new areas.

**Locations for new industrial areas:** For the longer term it is expected that new industrial areas will be required. Given the fact that the Paurashava wishes to encourage inward investment to the Paurashava, it will identify suitable locations for such industrial areas, will reserve them for industrial use and will plan for provision of the required infrastructure.

**Provide assistance to small-scale industrial and commercial operations:** Considerable potential for growth of the economy rests with small-scale industrial and commercial operations. The Paurashava will, in conjunction with other relevant authorities, provide assistance to such operations by promoting the establishment of estates specifically suited to their needs. These will probably need to be small in size and located within or close to residential areas.

The Paurashava will also consider the other needs of small-scale industrial and commercial operations and endeavour, through others, to ensure that these needs such as for credit are available.

### **8.1.4 Housing and Slum Improvement**

Housing is one of the vital components of urban life. It is a source of security, safety and everyday comfort. Rural housing components are prevailing in the Paurashava. In most cases, housing in growth centre is appropriate for the study of housing in the Paurashava. Housing in rural environment (called rural homestead) according to the trend of primitive society mix with available agriculture land is the suitable word for identification of Paurashava housing. Amalgamation of pucca, semi-pucca and katcha housing or semi-pucca and katcha housing in a house is viewed in most of the Wards.

Residential areas in Mehendiganj Paurashava have been developed sparsely following some degree of uniformity. According to the number of residential buildings Ward No. 6, 1 and 8 dominate the highest number but according to the density Ward No. 6 deserves highly congested area. Most of the pucca residential buildings are developed on and around the commercial hub of Ward No. 2 and 3. About 36% dwellings in the Paurashava are in good condition, 13% need to be demolished due to their dilapidated conditions and 2% is new construction.

## **Building materials used**

The Paurashava is dominated by rural environment; as a result about 31.3% residential structures are found katcha, constructed with temporary materials like bamboo thatch, C.I. Sheet and wood. Again, 52.7% are semi-pucca structures that are wall made with brick and the roof with C.I. Sheet. On the other hand, 16% houses are pucca that is constructed with bricks and concretes. The building materials used for the construction of houses reflects poor economic condition of the owners.

## **Floor area**

In total, 318 residential structures are pucca and among them, 162 are one-storied, 140 two-storied, 12 three-storied and 4 four-storied. Floor areas of those pucca structures are varied from 1000 sq. ft. to 1800 sq. ft. The semi-pucca structures are preserving two characters according to the location; where semi-pucca structures are in rural areas deserve large floor area rather than semi-pucca structures in urban area. In rural area, floor area of the semi-pucca structures are varied between 1500 sq. ft. to 2200 sq. ft. but in urban area it is within 1200 sq. ft. to 1500 sq. ft. Comparatively, floor area of the katcha structures are larger than the floor area of the pucca and semi-pucca structures. In an average, floor area of the katcha structures is between 2000 sq. ft. to 2400 sq. ft. Most of those structures are living room and located in the rural environment of the Paurashava.

## **Housing finance**

Housing finance is one of the most important problems of housing promotion. Besides, the Paurashava also suffers from the problems of utility services like, waste management, sanitation and drainage. Road development cannot keep pace with population and urban physical growth. Most man-made drains are clogged, causing waste water overflow at many points. There is no program for slum rehabilitation.

Overwhelming majority of the land owners are depended on self-financing for housing construction. Low house rent is a major cause for small number of constructions.

Over 98 percent of the housing supply comes from informal private sources. The formal organized private commercial housing is yet to emerge in the Paurashava. The NGOs usually operate in low-income areas where they provide services and cash finance instead of complete housing units.

## **Problems concerning housing**

Housing areas in the Paurashava is the composition of an admixer of housing types. Mixed residential, poor dominated rural houses and semi-urban homesteads are found. Most housing areas have developed in a spontaneous fashion. In the rural part of the Paurashava, with its rural-agricultural character, has a different housing type. The dwellings, comprising homesteads, encompass larger areas having low density. The highest gross population density in the Paurashava is only about 9 persons per acre. Residential buildings in the Paurashava are dominated by semi-pucca structure (52.7%). No building is found approved from Paurashava. However, owners of the buildings have been found violated the setback rule by the construction. Except labour charge there is very little variation in building construction cost between Barisal and Mehendiganj.

Problems relating to the housing are mostly concerned with the poor community. Due to their low-level of income a vast number of poor are squatting in public land. They are not only deprived of minimum housing but also from the personal security that endanger their health and working efficiency. Regular income can solve most of their housing problems. Apart from dwelling, pure



water and transportation are real problems for the inhabitants. Utility services are highly inadequate. Drainage is major problem in rural part of the Paurashava. The Paurashava can not solve the problems due to scarcity of fund. In the Paurashava, above 98 percent housing structures are one-storied that includes semi-pucca, katcha and Jhupri type houses.

### **Prospects concerning housing**

In the Paurashava, above 95 percent households became landowners through inheritance, while about 5 percent by way of purchase. Land value in the Paurashava is very low compared with Barisal and Mehendiganj. In spontaneous housing areas of the core area, habitable land sells between Tk. 40,000 to Tk. 50,000 per decimal.

For effective promotion of housing the government should change its role to a facilitator instead of a provider. Government agencies should provide infrastructure and finance on soft terms and the rest should be left with the private sector. To realize the development and service costs of public sector infrastructure projects from the beneficiaries it is necessary to evolve new mechanism. If real estate developers encourage to come up with housing projects the Paurashava should maintain some control over them to safeguard public interest. Public sector may take up innovative cost recovery housing programs for the rural poor.

### **Policies and Strategies**

The National Housing Policy, 2004 could have a major impact on the quality of life for Paurashava inhabitants. In this context, the Paurashava will pursue the following four policies. These are all geared to lessening the gap between need and provision of housing.

**Identification and development of sites for government housing schemes:** Where, as part of National Housing Policy, the Government embarks on further housing schemes either for the construction of completed units or for the provision of serviced plots, the Paurashava will assist the relevant body with the identification and development of appropriate sites.

**Identification and development of sites for private sector housing schemes:** Where housing is to be provided by the private sector, the Paurashava will ensure that, either by its own efforts or by the efforts of others, the legal, technical and financial support required by the private sector is available – to enable it to assemble sites, to carry out the earthworks and drainage works needed for the development of the sites, to provide the necessary tertiary infrastructure, and to provide the units of accommodation required. The Paurashava would, in this instance, be acting as an enable to the private sector.

**Provision of sites and services schemes for the low and lowest income groups:** In line with National Housing Policy, greater priority needs to be given to the low and lowest income groups. Accordingly, the Paurashava will, therefore promote, either by its own efforts or by the efforts of others, the provision of sites and services schemes for these income groups.

**Upgrading of slum and squatter settlements:** The most disadvantaged people, in terms of access to housing, live in slum and squatters. Modest investment in terms of provision of facilities such as water supply, drainage, sanitation facilities, electricity and dry access-ways can make a considerable improvement to the living conditions of a large number of people. The Paurashava will, therefore promote, either by its own efforts or by the efforts of others, the upgrading of slum and squatter areas.

An important contribution that the Paurashava can make to meet housing, as well as other urban needs, is in exploring ways by which the process of converting land from an unimproved agricultural state to an improved state on which individuals can build their homes – can be

speeded up. Because, housing is such an important landuse both in terms of the total area of land it occupies in urban and in terms of being a major determinant of the quality of life of its inhabitants, the Paurashava may pursue a further policy.

### **8.1.5 Social Amenities and Community Facilities**

Regional Highway makes a link with the Paurashava through middle, in north-south direction. The activities around the Mehendiganj bus stand will generate employment in commercial sector. This effort will be faster with the implementation of master plan. New investment will gear up in to the Paurashava and will create new jobs. This will enhance income of the local people and raise their standard of living. Investment and employment will take place in transport, industry, construction, trade and service sectors. Besides, there is a large scope for agro-based industrial development in the Paurashava. This will also generate new employment.

### **Policies and Strategies**

A most important initial role of the Paurashava will be to appraise itself of the situation with regard to both the need for and supply of community facilities in the Paurashava. With this in mind, the Paurashava will pursue following policies.

**Monitoring the principal aspects of community facility provision in the Paurashava:** The organizations responsible for the provision of community facilities in the Paurashava will co-operate with the Paurashava in supplying information needs to pursue the policy. At a later stage, according to the needs of the population, the Paurashava can extend this policy to include contributions to meeting the needs such as identifying areas where demand is higher, identifying appropriate targets for provision, identifying sites and assisting in ensuring that any obstacles to the development of a site can be overcome.

Until the Paurashava is in a position to devise policies which will make a positive contribution to ensuring that the supply of community facility provision is geared to the areas and the groups of the population most in need, it is recommended that the Paurashava pursue only two further policies, such as –

Assist with the identification and development of sites for public community facilities: Where needed, the Paurashava will work with the public agency responsible for the provision of community facilities to ensure that a suitable site is chosen and developed. In some instances the Paurashava will play the lead role in the establishment of a public community facility. As an example, establishment of wholesale or retail markets to serve local communities.

Assist with the identification and development of sites for private sector community facilities: Where a private sector sponsor is encountering difficulties in providing a community facility, the Paurashava will also work with the sponsor to ensure that a suitable site is chosen and developed.

### **8.1.6 Tourism and Recreation Facilities**

Recreational facilities like Cinema Hall, Theater, Shishu Park, Picnic spot, etc. are included in this category. No recreational facility is found in the Paurashava (except cinema hall). Policy for tourism and recreational facilities may follow the policies prescribed before on the social and community facilities.

### **8.1.7 Safety and Security**

Cantonment, however, is governed by its own Act, BDR, Police, etc. areas have to be safeguarded from any possible incompatible development. The key point installations including radio, television, water treatment and pump station and power station sites, Circuit House will have to be

safeguarded from any possible undesirable development around these areas that can endanger their security.

## **8.2 Physical Infrastructure Sectors**

### **8.2.1 Transport**

Transportation infrastructure is a very important element to make an urban area livable. For transportation of agro-products efficient road network is also of prime importance. The planning area is a centre of agro-product and pisciculture, need good transportation linkages for their transportation in time. Potential economic activities due to agro-product oriented industry. Potential economic (including agriculture) development envisages improvement of the transportation network to facilitate development that can meet the demand on regional basis. Actually, the area is served by one Regional Highway which may become inadequate due to induced activities of the Paurashava. Several new roads will be needed for efficient movement of man and goods towards regional centres.

### **Policies and Strategies**

Following strategies will be adopted to promote circulation network:

- A comprehensive road network will be prepared for the Paurashava using a hierarchy of road network.
- In case of local roads, a participatory approach will be developed to realize at least a part of the cost of development from the beneficiaries. This will also help to reduce delay and cost involved in land acquisition procedure.
- Proposed roads in those areas will be chosen for immediate developments that deserves growth potentiality.
- Incremental development approach will be adopted to get rid of unnecessary costs in development of roads (the road remain underutilized).
- Service roads will be created along with major roads to allow free flow of long distance traffic.
- A restricted buffer zone will be proposed along primary roads passing through agriculture and discourage roadside development.

### **Role of Bangladesh Inland Water Transport Authority**

The Machkata River is flowing on the southwestern corner of the Paurashava from north to south. Bangladesh Inland Water Transport Authority (BIWTA) is responsible for maintaining its navigable character. Unauthorized encroachment in different locations of this river is performing by the dwellers. At present, the BIWTA is not performing any responsibility regarding this river. Apparently no major problem in the area of water transport services is found.

### **8.2.2 Utility Services**

Utility services found through topographic and physical feature indicates that the Paurashava is too poor in development of those services. With the development of physical condition of the Paurashava, substantial development will be needed for utility services. Drinking water supply, sewerage and sanitation facilities and dumping of solid wastes should be emphasized as primary consideration. A substantial percent (87.63%) people are dependent on tubewell and 11.34% on other sources for drinking water. In the Paurashava there are 2570 tubewells and a substantial number of them are contaminated with iron and arsenic. Absence of solid waste dumping ground creates health hazards. Absence of covered drain and sewerage system creates sanitation problem in the Paurashava. Those problems should be removed through the proper planning and design.

## **Policies**

In the Mehendiganj Paurashava, average height of the Wards is 3.22 meter and differences among the Wards are 0.46 meter to 4.43 meter, but outside the Paurashava boundary lowest land level value is lower than -1 meter. It means a steep slope from -1 meter to 4 meter prevails in the Paurashava and its surrounding areas. Such type of land level is ideal for construction of drain and sewerage facilities.

Due to the presence of vast agriculture land (about 72%), township should not be expanded on those lands because height of those lands are 2 meter to 4 meter lower than the habitable land and 4 to 6 meter lower than the regional highway. Substantial earth filling will be needed for creating living construction on those agriculture lands.

## **Strategies**

Based on the above understandings, following strategies follows for planning of utility services:

- Low-cost development will be promoted in phases, based on comprehensive plan for the demarcated areas.
- Only those areas will be targeted as new urban areas where urbanization is likely to be rapid and imminent.
- Except waste disposal, all other services will deliver by the concerned service giving agencies.

### **8.2.3 Flood Control and Drainage**

A wider scope for construction of a drainage system may be provisioned in the Paurashava. At least central areas are open for such development immediately and other areas may be followed for projected period as designed in the plan. The Paurashava is a barren field for imposing drainage system. The principles required for drainage plan are available in the area. Land slope, nearness of the natural drainage, sparse population density and soil condition are in favour of drainage construction.

### **Projection of Drains**

At present, 3.79 km. pucca drain is in the Paurashava. Maximum pucca drains are in the Ward No. 3 and 5. Existing drains in the Paurashava have not formed any network; only household centered construction to drainout waste water. Existing canal is trying to manage the drainage requirements. The canal is not well linked with man-made drain and river. No pond / ditch have been found to be connected with existing drains / canals. Lack of drainage network is causing water-logging for 4 months in the Paurashava when it rains. The entire drainage network is required to be developed with primary, secondary and tertiary drains to mitigate the present water-logging problem.

Further development of drain will follow bulk density and establishment is being proposed in the Drainage Master Plan. Length, width and depth of the drain are being considered according to the density of population, road width and out falls. Slope of the drain maintain according to the slope of the area and the level of river water according to the seasons.

## **8.3 Environment Issues**

### **8.3.1 Natural Resources**

Specific natural resources is absent in the Paurashava. Furthermore, in long-run, if question rises for the use and preservation of natural resources, policies prescribed here on the environmental issues will be followed. In special case, the Paurashava may frame new policies with the help of the government and particular department / authority relevant with the issue.

### **8.3.2 Sanitation**

Almost all the areas in the Paurashava are devoid of sanitation facilities. There exists a minor process of development in certain selected Wards but limited to government quarter only. Regarding ownership of toilets it varies widely in most of the Paurashava area. Most of the households have their own toilets.

Toilet system of the planning area is mostly categorized as pucca and katcha. In spite of this, Paurashava has a modest development of pucca toilets in government zones. Sewerage system has not been introduced on a trial basis as to their popularity and acceptance. Ownership of toilets varies widely in most of the areas. Most of the households have their own toilets. Sanitary toilets or pucca toilets are comparatively good (75.40%) in all the Wards. About 8.63% katcha toilet is found in the Paurashava and owner of those toilets are poor people. A good percent (15.97%) of household have no toilet, uses open air. A scenario is vulnerable for water-borne diseases.

### **Policies**

Policies regarding sanitation facilities are -

- The organization responsible for the provision of sanitation facilities in the Paurashava should co-operate with the Paurashava authority in supplying the information needs to pursue this policy.
- According to the priorities and needs of the population, the authority (including Paurashava) can extend this policy to include contributions to meeting the needs – such as identifying areas where demand is greatest, identifying appropriate targets for provision, identifying sites and assisting in ensuring that any obstacles to the development of a site can be overcome.
- Where needed, the Paurashava will work with the government agency responsible for the provision of sanitation facilities to ensure that a suitable plan have been prepared and implemented.
- Where a private sector sponsor is encountering difficulties in providing sanitation facilities, the Paurashava will work with the sponsor to ensure that a suitable plan have been prepared based on the population demand and implemented.

### **Strategies**

Following strategies have been followed for designing sanitation plan:

- To protect drainage system most of the natural canals and water courses will be preserved.
- As a measure of protection from encroachment restrictive buffer zone will be created on both sides of natural canals, rivers and other watercourses. Road and plantation will be created on those buffer zones.
- Cost of primary drainage system development in housing estates by public sector agencies will be realized from the developers.

### **8.3.3 Hazards**

A disaster is the tragedy of a natural or human-made hazard (a hazard is a situation which poses a level of threat to life, health, property or environment) that negatively affects society or environment. Disaster can be classified into two categories: natural disaster and man-made disaster. A natural disaster is the effect of a natural hazard (e.g. flood, volcanic eruption, earthquake or landslide) that affects the environment and leads to financial, environmental or human losses. Man-made disasters are disasters resulting from an element of human intent, negligence, or error, or involving a failure of a man-made system.

The Paurashava including the Mehendiganj Upazila has affected by the several major natural disasters ranging from Cyclone, Flood to Water-logging and Draughts, etc. The periods of those disasters are 1998, 2000, 2004, 2007 and 2008. Very scanty attempt has been made by government to rehabilitate people after the natural disaster.

Urbanization is taking the lands of other uses to residential use. For this purpose agricultural lands and water bodies are being chosen most frequently and the lands are being converted into urban settlement. In the Paurashava, wet lands are being filled-up and converts agricultural land in to physical development. This has been identified as the major man-made disaster accelerating the degree of conversion year to year. Use of poisonous insecticides on the agricultural land is another man-made disaster which will affect in the long-run.

### **8.3.4 Environment Aspects**

In Mehendiganj Paurashava, noise pollution is occurring by three wheelers and sound generated from saw mills and rice husking mills. Water contamination is observed as “Arsenic” threat. Air pollution is caused by dust emitted from saw mill, rice hushing mills and furniture shops. Also flood water and water-logging creates health hazards. Dysentery, diarrhea, etc. diseases occurs due to flood and water-logging. Habitual inundations, especially in monsoon, due to external floods from canals are another threat to environment. These above varies are extremely important uses of concern for the Paurashava. Pragmatic planning / solution and proper Drainage Plan are very pertinent issues which will be of utmost importance for planning the Paurashava.

However, implementation of activities like roads, drainage, bridge / culverts, housing and industrial establishments and bazars will radically change the natural topography and landuse pattern. The agricultural land will be converted into urban and semi-urban area. Existing scenic beauty will disappear; water bodies will lost and general slope will be diminished for earth filling due to urbanization. Therefore, in the process of preparation of Structure Plan, Urban Area Plan and Ward Action Plan, consideration of those factors will be made for keeping the natural environment livable.

For a better living environment above environmental phenomenon should be considered with the systematic planning principles and regulatory measures. With these views, people’s awareness should be increased about the fair living environment through different public activities. Arrangement of landuses should be provisioned for all the public and private organizations as their necessities.

### **Policies on Solid waste Management**

In order to improve the solid waste problem and to improve the environmental condition of the Paurashava, following Macro and Micro-level policy measures will be needed:

- Formation of legislation regarding solid waste management.
- Formation of standards for collection and disposal of waste.

- Incentives for introduction of environmentally clean and efficient technology for waste disposal which would help to reduce the volume of waste and facilities more recycling.
- Construction of waste as an unutilized resource and assisting in recycling of waste for conservation of resources and protection of environment.
- Introduction of environmental education especially sanitary habits in school curriculum.

## **Environmental Issues in Agriculture Practice**

The so-called Green Revolution package was introduced into Bangladesh agriculture system in mid 1960s. It promised to increase production of cereal crops, particularly rice by the introduction of HYV seeds, application of chemical fertilizer and pesticide and irrigation. HYVs rice has contributed significantly to the progress towards the food self sufficiency in Bangladesh on the contrary increased to the environmental degradation due to the intensive use of agrochemical and other modern technology. The use of pesticide has been increased 400% per acre and its cost increased 600% during the last couple of decades. Between 1985 and 1990 the sales of pesticide became double. At present, 84 pesticides active ingredients belonging to 242 trade names have been registered in Bangladesh. Out of the total pesticide use, over 80% are used in rice fields. The rapid increase of pesticide use is causing detrimental effect on environment and health of farm workers and consumers. Pesticides are contaminating ground and surface water, which is causing depletion of inland fishing resources and ecosystem.

Pesticide use in crop production has been suspected of being a major contribution to environmental pollution. There are widespread and growing concerns of pesticide over-use, relating to a number of dimensions such as contamination of ground water, surface water, soils and food and the consequent impacts on wildlife and human health. Farmers often spray hazardous insecticides like organophosphates and organochlorine insecticides (such as DDT, lindane and toxaphene) up to five to six times in one cropping season while only two applications may be sufficient. The usual practice of draining paddy water into irrigation canals may cause river and lake contamination. Residues carried by the water can be taken up by non-target flora and fauna, leach in to soil and possibly contaminate groundwater or potable water. A greater problem lies in the bioaccumulation of pesticides in beneficial organisms like fish.

Pesticide as agricultural input was introduced in Bangladesh in 1957 and mainly DDT and BHC was distributed by the Government to the farmers free of cost until 1973. The pesticides become very popular to the farmers for two reasons; firstly quick and visible effect on pest and secondly, no cost involvement. In 1974, the subsidy was reduced to 50% and in 1979 it was withdrawn completely. Currently, 14,340.40 metric tons of commercial pesticides are used annually, primarily in the cultivation of rice, tea, jute, sugarcane and vegetables. About 70% of pesticides are used on rice. Pesticides used on rice consist almost exclusively of insecticides, but fungicides are used occasionally. In 1989-90 almost 90% of pesticides were used on rice.

Increased use of pesticides leads to two primary concerns:

- 1) Adverse effects on the health of farm workers as well as others exposed to the pesticides
- 2) Polluted ground water and surface water, causing harm to the water users as well as inland fisheries and other aquatic animals.

Biodiversity is declining due to the effect of pesticide and fertilizer use. Population of native fish species is now endangered and the traditional rice-fish systems have disappeared. The bird and other small wild animals are in threat of wide spread because of the use of pesticides in rice and vegetables. Most of the rice farmers are dependent on insecticides for pest control.

Most of the farmers of Bangladesh are not capable of taking decisions on pest management and pesticide application. Often they apply pesticides when there is no real need or they use wrong

chemicals at wrong doses, methods and times. As a result they kill the beneficial organisms easily and create pest resistance causing the greater problems and crop losses.

There is a suspicion that pesticide residues are common in surface water system, especially in irrigation drains, which ultimately pollute the pond and river water. There are many undocumented cases of chronic health effect of pesticides on farmers and other people. Several factors are supposed to be responsible for chronic health effect such as; improper handling, lack of protective measure, improper storage, use of obsolete pesticides, etc.

### **Chemical pesticides use in crop production**

A total of 15 active ingredients with 21 trade names, farmers of Bangladesh uses in their winter rice crop. Among 15 ingredients, 3 are fungicides and 12 insecticides. Most of the insecticides use to kill the stem borer, green leafhopper and some of grasshopper and gall midge. The fungicide uses to control the sheath blight and blast diseases. The frequency of pesticide use is varied from 1 to 4 sprays per crop season. Rate of application is not so high. The rate varies from about 1 kg/liter to 10 kg or liter per hectare of land. They had the knowledge about rate and frequency of pesticide application from the dealer and also they had considered the cost of the pesticides.

The farmers use an equal number of Organophosphates and Carbonates pesticides and parathyroid. Fortunately no organochlorines have been found to be used by the farmers. Bangladeshi rice farmers used mostly category Ia, Ib and II pesticides that the WHO classifies, respectively extremely, highly and moderately hazardous. Almost all of the carbamate insecticides they used are of extremely or highly hazardous category having wide spectrum toxicity to the environment. The farmers used WHO category Insecticides named Stem borer, Agrifuran, Carbofuran, Leaf hopper, Biesterin, Defoliator, Sunfuran, Grass hopper, Furadan, Rice bug, Gall midge, Bashudin, Dioxathion, Plant hopper, Green leaf hopper, Karate, Cyhalothrin, Defoliators, Cymbush, Cypermethrin, Rice hispa, Ripcord, Diazinon, Diazinon Thrips, Nogo, Leaf roller, Sumithion, Fenitrothion, Monotaf, Monocrotophos, Thrips, Malathion, Brown grass, Faifanon, Dimecron, Phosphamidon, Cartap, Fungicide, Blast, Hinosan, Edifenfos, Sheath blight, Carbendazim and Propiconazole.

Frequency of application in a crop season by the farmers is in 1<sup>st</sup> time = 11%, in 2<sup>nd</sup> time = 11%, in 3<sup>rd</sup> time = 59% and in 4<sup>th</sup> time = 19%.

The insecticide Bashudin 10G and Organophosphates was used by the largest proportion of the farmers (44%) followed by the Dimecron (34%) and Baycarb 500 EC (26%). Fungicide Knowin was used by 44% of farmers. Bashudin is an obsolete insecticide which had been used by the largest number of farmers of Bangladesh and the average application rate was also high among the pesticides used. Monocrotophos and DDVP are also known as their wide spectrum toxicity. The mostly used fungicide Knowin 50 WP is a carbonate type and it is categorized as unlikely to present acute hazard in normal use.

### **Crop stage of pesticide use**

Largest number of farmers used pesticides in the early tillering stage (30%) followed by the late tillering and booting stages. Vegetative growth stage is the most susceptible to the pest attack, that's why farmers applied mostly in early and late tillering stages than the booting, flowering and milky stages. Major insect pests such as stem borer, leaf hopper and plant hopper attacks are prevalent in these stages. Rice hispa is one of the major insect pests of rice attacks in the mature stage like soft dough. In Bangladesh, rice hispa infestation is common and more than 12% of farmers applied insecticides in the soft dough stage. Ten percent farmers applied insecticides at the nursery stage which is susceptible to thrip, defoliator, stem borer, green leaf hopper and plant hopper.



## **Application methods**

About 57% farmers of Bangladesh use hand sprayer and 8% Knapsack sprayer to apply the pesticides on the crop field. Remaining 18% farmers use broadcast methods and 16% use other traditional methods. The sprayers they use are not in a good condition. The hand sprayer they use includes a container with broom and sprinkled the pesticide with broom. Most of the farmers don't have any sprayer of their own; they borrowed it from relatively richer farmers. They didn't have any training about the sprayer use and precaution. Therefore, the spray is always associated with high risk of exposure. The farmers broadcast the granular insecticide keeping in an open bowl or basket and broadcast by bare hands and feet. The traditional methods they used are very unscientific. For example they brush the crop field. In this method, usually the insecticide is mixed with water in an open bowl or a big can then date palm leaf is soaked in it and the standing crop plant is brushed. During the mixing and brushing the farmers as well as the environment are exposed to pollution. No farmers use any protective measure such as mask or gloves. According to the pesticide agent and leaflet provided by the Department of Agricultural Extension, the measuring unit is being used as spoonful, handful or lawful.

## **Alternative methods use for pest control**

Because of late introduction of pesticide in Bangladesh agriculture the farmers are used to control pest using other traditional methods besides insecticide. In these cases they use indigenous knowledge to control pest not to avoid the hazard of pesticide, mainly to minimize the production cost. Among the other methods, 40% of the farmers use crop rotation as an alternative to chemical pesticides use, 19% use timely planting and 15% use resistant varieties. Only 2% of the farmers use Integrated Pest Management (IPM) technique to control pest of rice. Bio-controls mean that they use bird to feed the insect. Remaining 12% farmers use other methods such as, soap, kerosene oil, light and net trap to control insect. In certain extent they pull the insect larvae by hand also.

## **Ecological impact**

- Many types of birds, fish and plant become extinct by the effect of highly toxic pesticide.
- Unbalance use of pesticide make the ecosystem worst.
- Many species of herbaceous plant of medicinal value extinct by the continuous use of highly toxic pesticides.
- Many fishes are caused by diseases by the pesticidal effect.

## **Impact on soil**

- Application of toxic chemicals in the crop field harms the earthworms, soil microbes which deteriorated soil fertility.
- Use of excessive pesticide accumulates in the soil which is responsible for soil toxicity.
- Many pesticides (such as, DDT, aldrin, heptachlor, dieldrin and chlordane) remain unchanged in the soil.

## **Impact on water**

- Long-term and heavy use of pesticides may pollute the aquatic environment through the contamination of unused portions of pesticides.
- Through irrigation water pesticides runoff to the rivers, canals, etc. and many fishes have been extinct by the effect of pesticides used in the crop field.
- Ground water is being polluted by pesticide leaching from crop field.

### **Impact on air and health hazard**

- It is very dangerous for the applicator to be affected by the poisonous pesticides if not properly handled.
- Several diseases may be observed to be caused by pesticide used.
- During the pesticide spray the air is being polluted by spray drift which causes health hazard to the applicator neighbours.
- The granular insecticide used in the paddy field exposed to the air and pollute the surroundings.

### **Policies and Strategies**

According to The Pesticide Rules, 1985, all pesticide either manufactured or imported should be registered to the Authority. After submission for registration to the authority for approval, it is required to know by the authority about physical and chemical properties, efficacy data, toxicological data, residues and their fate in the environment. But in practice the assessment of environmental impacts or residue analysis is hardly undertaken due to the lack of expertise in the field as well as laboratory facilities.

In chapter II, section 8 of the Pesticide Rules, it is said that the certificate of registration may be cancelled but not mentioned when the certificate will be cancelled. Regarding import in chapter IV it is mentioned that 'No pesticide shall be imported through a route other than the recognized custom frontier stations of Bangladesh'. But huge amount of banned and highly toxic pesticides are being smuggled from India through the border. It has been reported by the Institute of Development Policy Analysis that the pesticide like Eldrin and Endrin are sold with different labels in Bangladesh. The suppliers continue to sell many chemical pesticides pro-scribed by the government, and 12 particularly controversial pesticides dubbed the 'dirty dozen' by activists campaigning worldwide to stop its manufacture.

There is a provision of licensing of the pesticide dealers for sale but it is not clearly stated what will be required for the qualification of the license holder, so anyone may get license. Therefore, it is found that the registered dealer also does not have any knowledge about the pesticide handling. The regulation said it could be duplicated and transferred to anybody. It is not said in the regulation that the sales dealer might have training on pesticide. The main drawback of this regulation is in chapter VII section 33 sub-sections I (a) which gives the provision to state the name of the manufacturer, formulate or repacked in the label even he/she is not the person in whose name the pesticide is registered. For this reason it is very difficult to identify the respective person for punishment. Therefore, taking the advantage of the weak point of regulation the illegal business of pesticide is going on and it is not uncommon that the violation of rules is taking place.

The environmental degradation linked to agriculture is the impact of toxicity from improper pesticide use. Pesticides are responsible for health hazard or food poisoning. Unjudicial use of pesticide makes the ecosystem vulnerable. It is not possible to produce crop without using pesticide in modern agriculture of competitive market. Therefore, crop pests can be controlled with the timely and balanced application of pesticides.

Considering the cropping intensity and toxicity of the pesticide, the environment and farmers health are at high risk under the pesticides contamination. Among the insecticides used by the farmers, Bashudin 10 G, Diazinon 60 EC, Sumithion 60 EC and Padan 50 SP have already been banned for use on rice in other developing countries. The use and availability of Bashudin, an obsolete pesticide indicates that existing pesticide laws and regulations are not strictly enforced in relation to import, formulation, repackaging, distribution, advertising and use of pesticides. Therefore, in Bangladesh the laws and regulations of pesticide should be enforced more strictly.

## **Chapter-Nine**

### **IMPLEMENTATION ISSUES**

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This chapter deals with the issues of implementation of the Master Plan. Here, recommendations have been made about capacity building and resource mobilization for the implementation of the plan.

#### **9.1 Institutional Capacity Building of the Paurashava**

In the present context of spatial and legal jurisdiction of the Paurashava for planned development of its area, some recommendations are made here. Also, observing the financial and Institutional strength of individual stakeholders in relation to their liabilities and identifying their shortages and absence of any perfect coordinating body, some suggestions have been made as remedial measures as a whole.

- All urban local governments including Upazila level Paurashavas must be given more independence and autonomy to perform their responsibilities. At the same time, their accountability to the government and people regarding their performance has to be ensured. For this purpose the legal framework of the urban local governments has to be reviewed and updated. The legal provisions have to be consolidated and simplified and make them compatible to changing circumstances. Opportunities must be created in the Act allowing scope for privatization of service providing activities.
- To avoid duplication of development functions, there should be clear line of separation between central government and the urban local government.
- A double entry cash accounting system has to be introduced to modernize the accounting system. For this purpose, massive training programme has to be arranged for the relevant municipal staff.
- To improve revenue collection, the urban local governments should be given more power and responsibilities. Measures should be taken for strengthening the Paurashava administration for municipal development.
- Section-50 of the Local Government (Paurashava) Act, 2009 needs to be revised and more power should be given to the Executive Officer for appointment of employees.

It cannot virtually function effectively as a Paurashava under such a stringent financial condition. To function, effectively, it must raise its revenue earning. But it is reported that the Paurashava cannot collect all its holding tax from the citizens. Holding tax is the most important source of its own revenue earning. It must take care to ensure 100% recovery of holding tax. The Paurashava cannot function effectively depending upon government grant only. The existing manpower position of the Engineering, Development control and Accounts should be substantially raised to handle future volume of work. Moreover, additional staff especially for the implementation of Master Plan will soon be required.

The present plan package imposes a large number of development projects on Mehendiganj Paurashava for implementation. Paurashava will not only be the custodian of the plan, it will also directly implement much of the development projects. Besides, it will also be responsible for

monitoring and implementation of the development projects by other urban development and service giving agencies. This situation calls for strengthening of the existing capability of Paurashava.

### **9.1.1 Staffing and Training**

As a traditional system of the Paurashava, engineer and secretary are appointed directly by the Ministry of Local Government and other staffs are appointed locally through the approval of the Ministry after the advertisement on the newspapers. In Mehendiganj Paurashava, the revenue income is too low. That's why it is not capable to pay the salary of all the officials and staffs. The salary is recovered from the government grant and BMDF allocation. This is the main reason for under staffing of the Paurashava.

There is no proper arrangement for staff training. As a result, the staffs are mostly unskilled. They cannot deliver proper service to the citizens. Besides, most of them are not qualified enough to render proper services.

### **9.1.2 Lack of Automation**

Most works in the Paurashava are done manually. Such practice delays works and deprives the citizens from services. This is also a source of mal-practice and corruption. Modern office and working equipment should be installed. Use of modern technology will increase efficiency in planning and record keeping, finally expedite decision making process.

### **9.1.3 Town Planning Capacity**

#### **9.1.3.1 Institutional Framework**

To rearrange the institutional framework for the Paurashavas recently the government has made a committee for the categorization of all the Paurashavas of Bangladesh. According to the clause no. 72-78 (Paurashava Officer & staff, provident fund etc) of Local Government (Paurashava) Act 2009 and on the basis of the type and category of works, the committee suggested 5 divisions within the Paurashava framework. Afterward on the basis of the type of works, similarities and technicalities each division is further subdivided into some sections accordingly. The planning unit/division may have some sections that are as follows:

Planning unit/Division: a) IT Section  
b) Planning Section  
c) Beautification and recreation Section

According to the division and it's relevant sections, what so ever appropriate with the necessity and capacity over time, it is recommended to set up necessary manpower for each category of Paurashava. Possible scope of proposed planning unit/division is given bellow:

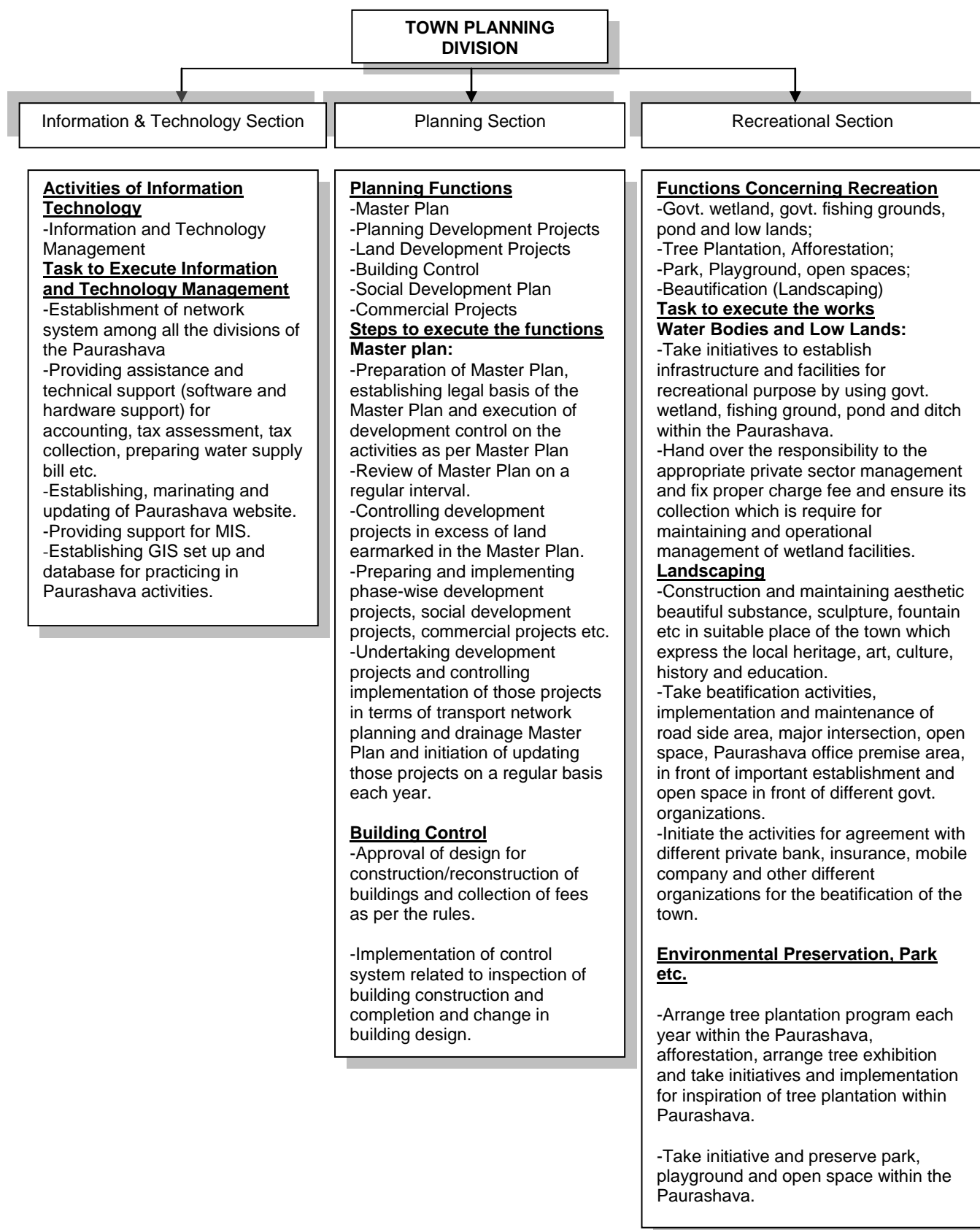


Fig 9.1: Scope of Work for Planning Division

### **9.1.3.2 Lack of Paurashava Town Planning Capacity**

At present, the Paurashava has no town planning section or any appropriate manpower to prepare and implement the Master Plan. For proper implementation of the Master Plan for each Paurashava under UTIDP, establishment of a separate planning unit is indispensable. The Paurashava must strengthen its capacity to implement its Master Plan when it will be completed. It will otherwise be in trouble for implementation, monitoring and updating the Master Plan.

Mehendiganj is a 'B' class Paurashava. For the 'B' class Paurashava Government approved an organogram/ manpower requirement. If we compare the existing manpower with the approved organogram we find that there is a huge gap between the two. Many positions have been vacant since the inception of Paurashava. However, strengthening of the Town Planning Division is a pre-requisite for successful implementation of the Structure Plan.

### **9.1.4 Legal Aspects**

The drive to establish strong urban local governance in the Paurashava is yet to be legalized. The governance programs at present are operated project wise based on the formulated policies of the implementing agencies of the national government. The Laws that the country inherited are mostly prepared during the colonial rule to serve its own interests. Even after independence from the British, the issue of good governance was not infused into the new Acts formulated.

### **9.1.5 Good Governance in Legal Provisions**

There is hardly any Act where the elements of good governance are clearly visible. The consultant has identified some Acts, where some elements of good governance can be traced.

The Paurashava/Municipal Act/Ordinances prepared at different times since 1960's have iterated for the preparation of Master Plan by the Paurashava/Municipality for its planned development. So far urban local government Ordinances/Acts made in 1967, 1977, 2008 and 2009, all suggested for planned development. The Local Government (Paurashava) Act, 2009 has made the provision of having a Master Plan prepared by a Paurashava within five years of its inception. The function of the Paurashava also includes that it ensures planned development following the rules of the Ordinance. But there is no provision for public participation in the Local Government (Paurashava) Act, 2009. In all these legal documents, people's role has been ignored which is the violation of the norms of good governance.

The constitution of the Peoples' republic of Bangladesh clearly spells out that the Government should work to minimize the gap between urban and rural areas. A planned Paurashava development in that pursuit can provide necessary services to improve quality of life in both urban and rural areas within the Upazila.

### **9.1.6 Financial Issues**

#### ***Governance in Mehendiganj Paurashava***

Financial governance refers to transparency and accountability of financial matters. All financial matters must be transparent to all. People must know about the policies and programs of the Paurashava, how much revenue is collected each year and the amount of expenditure made on annual development. They must also be answerable to the people on how the public money is being spent and accounts being maintained.

The Ministry of LGRD and Cooperative has undertaken a number of projects in respect of establishing governance in upgrading Paurashava accounts system, like, UGIIP, STIFPP. Computer and accessories are supplied under these projects for automation of the accounts system. Besides, trainings are also offered to the Paurashava accounts staff for enabling

introduction of automation in accounts system. But all these services have not yet reached Mehendiganj Paurashava.

### ***Revenue Management***

The Paurashava still follows a traditional management system in tax collection and revenue management though a scheme of computerized automotive financial system has already been introduced in this Paurashava. Assessment section is responsible to assess the tax of the Paurashava and tax collection, and license and bazar section are responsible to collect the tax of the Paurashava. The public is mainly informed about tax collection during the presentation of annual budget. They may, however, get information from the councilor or Paurashava accounts office.

### ***Paurashava's Financial Capacity and Plan Execution***

The main focus of Paurashava financial governance is to establish automation in entire financial management. This includes computerization of accounts system, holding tax management, and billing of different service charges. Software for above functions have been supplied and installed

in the Paurashavas covered by financial automotive projects. The projects also provided training to the relevant staffs for functioning of the systems. With the implementation of these projects people can now instantly know about the status of their tax payment, bill payment, and licensing. This has not only made the functions of the Paurashava easy, but also has freed the citizens for paying bribe, and experiencing hassle.

The size of annual budgets of the Paurashavas indicates the poor financial status of the Paurashavas. With low income, Mehendiganj Paurashava will have to depend substantially on the government funding for implementing the development projects. But the government has limitations of its resources. In such a situation, if the Paurashava cannot raise its own revenue adequately, it will not be able to execute much of the development projects under the Master Plan.

The Paurashava should frame and implement commercial area development project to raise their income. Site and Services and Specialized Development Projects as well as participatory type of development can be undertaken. The former will generate direct revenue while the latter will be a cost saving approach to development.

The most important aspect of such development decision is that the plans are very much time bound. If the proposals are not implemented in time they will lose their viability in future. Over the time the proposals will turn in to obsolete nature. Besides it would be very difficult to find vacant land for physical development in future (if preserve agriculture land), which would mean continuation of unplanned and haphazard development deterioration urban physical and social environment. More liberal policies should be adopted by the government to allow agencies like Paurashava (with strengthening administrative and financial capability) to use its own resources for implementation development schemes.

Following table recommends project-wise implementation responsibility and possible sources of funding.



**Table-9.1: Project-wise implementation responsibility and possible sources of fund**

Type of Project	Implementation Agencies	Sources of Fund
Residential Site and services projects Public Housing  Participatory housing area development Private Housing Co-operative Housing	Paurashava, NHA Any Public Sector  Public-Private Partnership, Private-Private Partnership Private owner, Real Estate Company Co-operative Body	Self Finance, Government Finance Community, Public Sector (for Infrastructure development), Public Sector, Real Estate Company, Co-operative Body Private owner, Real Estate Company Co-operative Body
Commerce Private Business Enterprise In Town Centre Shopping Centre	Company/Proprietor Paurashava Paurashava	Company/Proprietor Paurashava Paurashava
Industry Industrial Area	Paurashava, BCIC	Paurashava, BCIC
Education School, College, Distance Learning	Ministry of Education, Ministry of Science & Technology	Government, Community, Public-Private Partnership
Community Facility Park, Stadium, Playground, Graveyard, religious, Cultural and Heritage	Private, Community, Paurashava, Sports Council, Archeological Department	Private, Community, Paurashava, Sports Council, Archeological Department
Utility Services Water supply and Drainage Electricity Supply Solid Waste Disposal Telecommunication Post Office Fire Station	Paurashava, Public Health Rural Electrification Board Paurashava BTTB, Private Sector Postal Department Civil Defiance Authority	Paurashava, Public Health Rural Electrification Board Paurashava BTTB, Private Sector Postal Department Civil Defiance Authority

### 9.1.7 Monitoring, Evaluation and Updating

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 Paurashava. But Mehendiganj Paurashava 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 Paurashava, monitoring of plan implementation will be seriously affected. However, plan evaluation can be accomplished by means of out sourcing as and when it is required.

### 9.1.8 Periodic Review and Updating

The plan package needs to be updated regularly to make it respond to the spatial changes over time. But such updating would require relevant technical professionals and requisite fund that are highly lacking in Mehendiganj Paurashava. As there is no planner or planning section in the

Paurashava, review and updating of the Master Plan will require service of senior level planners that Paurashava might not be able to provide. This service will have to be procured by out sourcing and the Paurashava is not even capable to accomplish this financially either. This will create problem when the plans or its components gets obsolete or need to be changed. Another problem would arise when the duration of plans ends. It is necessary that the entire plan document (including all planning and land use proposals) should be reviewed every 4th year of the plan period and will come into execution from the 5th year. The aim of the review will be to analyze the status of implementation of plan provisions, the changing physical growth pattern, infrastructure development, and the trend of public and private physical development including growth direction.

A new set of plans will have to be prepared replacing the old ones. This problem, however, can be overcome by undertaking another planning project by LGED. So, for regular updating and changes, and plan implementation monitoring, the Paurashava should immediately set up a planning section with a number of planners and other staff. The section will not only look after planning, but will also be responsible for development control, estate management, and project preparation. Since the planners would be qualified and skilled in computer operation, they can also help achieving automation of the Paurashava functions.

#### **9.1.9 People's Participation in Plan Implementation Process**

Not to have any scope for people's participation in development planning is against the democratic norms of a modern society. The involved people must be allowed to express their opinions on the proposals of the plan. They must be allowed to lodge their grievances. The authority must hear the grievances and aspirations of the people and the plan must try to reflect their expectations. This vital aspect of participation should be incorporated in the Local Government (Paurashava) Act, 2009 through its revision.

#### **9.1.10 Involvement of Public Sector Agencies in Implementation**

The actual implementation of the planning proposals will be the responsibilities of many different agencies belonging to different Ministries. Many projects will be implemented by Paurashava and many others will rest on private agencies or individuals. However, the speed and extent of implementation of proposals by public sector agencies including Paurashava will depend on the amount of fund made available for development schemes and approval of using their own resources for project implementation. It would be extremely difficult to procure this fund. Therefore, Paurashava should try to emphasize on participatory approach. The government must recognize that planning is an integral part of government administration. It should not be expected that planned development would highly remunerative in the immediate future, but it is sure that implementation of development proposals, in the long-run, handsome dividends in the form of improved health and happiness of the citizens and increased efficiency in living and working.

### **9.2 Resource Mobilization**

Resource mobilization will be one of the most challenging tasks in implementing the current plan package. Though the development proposals are said to be executed by a large number of development agencies, but it is beyond doubt that the heaviest burdens will have to be shouldered by the Paurashava. As a local government agency, it suffers from resource constraint due to low level of urbanization and investment by both public and private sectors. The land value will maintain perpetually low growth rate in the town. Therefore, prospect of mobilization of substantial resource from sale of serviced land is extremely meager. For the same reason, revenue earning from betterment fee, planning permission and other sources may also remain low. Paurashava is heavily dependent on the government for executing its development projects as it is unable to collect sufficient revenue from its tax and non-tax sources. Therefore, it is clear that execution of development projects under the current plan will depend heavily on the government response to supply adequate fund. This situation calls for increasing revenue earning by generating new revenue sources.

### **9.3 Concluding Remarks**

From the past experience, it has been observed that plans are prepared for organized development, but development control has been subject to negligence. In most cases, execution has been piece-meal. It is unfortunate that town planning has not yet become a part of our urban development culture. Individuals develop lands and construct buildings with a little respect for planned development, and the concerned authority is also unable to exercise full control on development. Some strict measures are necessary to make stakeholders follow up plans and development rules. Awareness is to be built among the people to follow the Master Plan provisions and plan. Government agencies must be compelled to follow plans. Existing laws in this regard must be updated incorporating provisions of plan execution.

## **Part B. Urban Area Plan**

## ***Chapter-Ten***

### **LAND USE PLAN**

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#### **10.0 Urban Area Plan**

Urban Area Plan is aimed to guide physical development of Mehendiganj Paurashava including its economic and social activities. The plan adhere policy directives spelled out in the Structure Plan. The Urban Area Plan is akin to the traditional Master Plan approach prevalent in the country that designates plot-to-plot use of land apart from infrastructure development proposals. Thus it will also serve as a development control mechanism/instrument. Preparing landuse plan on a cadastral map, the Urban Area Plan considers more rigid. Once the plan on a cadastral map is drawn and accepted by the government and formalized, it gains a formal status and thus becomes a binding for all concerned.

The Terms of Reference (TOR) specify (Pg. 6. Article 4) that the Urban Area Plan (UAP) / Multi-sector Investment Plan (MSIP) will consist of the following plans:

- Landuse Plan
- Transportation and Traffic Management Plan
- Drainage and Environmental Management Plan
- Plan for Urban Services

The Urban Area Plan is presented in both, map and textual format. The plan map is presented in 1:1980 scale, super imposed on latest cadastral/revenue map having plot boundaries within mouzas. The plan is accompanied by an explanatory report supported by necessary figures, maps and data.

Urban area plan is broadly divided into two parts, plan map and explanatory report. The plan map depicts future landuse zoning, infrastructure development and other development proposals. Report elaborates all proposals proposed in the plan, including rules, regulations and recommendations for implementation of the plan.

The outline of the Urban Area Plan gives guidance to the Paurashava 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.

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.

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 part and environment part. 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. 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.

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.

The Urban Area Plan of the Mehendiganj Paurashava covers an area of 3535.29 acres (14.30 sq km.). The reason behind choosing such area lies in fact that this is the most urbanized part of the Paurashava, where there is still scope and possibility of urban development in near future. Paurashava operates all parts where it provides basic urban services and facilities. Considering future urbanization trend and potential development projected population is assumed 30874 for the year 2021 and 31703 for 2031.

The Urban Area Plan covers nine Ward Action Plans also.

## 10.1 Landuse Plan

Landuse Plan is one of the four components of Urban Area Plan. The Landuse Plan is the first element of the Mehendiganj Paurashava Urban Area Plan. The Plan is being prepared for managing and promoting development over medium-term on the basis of the strategies set by the longer-term Structure Plan. Basically the Landuse Plan is an interpretation of the Urban Area Plan over 20 years. The coverage of the Landuse Plan considers existing urban areas and their immediate surroundings with the purpose of providing development guidance in the areas where most of the urban development activities are expected to take place over the next 20 years. Delineation of the Landuse Plan area is based on the urban growth area identified as the planning area. It contains more details about specific programs and policies that require to be implemented over the medium-term.

## 10.2 Existing and Projected Landuse

### 10.2.1 Existing Landuse

Details of landuse include structures and uses of land in multi-dimensions. Every individual structure and its details were surveyed during the survey period and find out the uses of land. Most of the landuse information was collected through physical feature survey. Later on, landuse map is prepared showing different use categories.

In Mehendiganj Paurashava, major landuse is agriculture (72.27%). Residential land is 12.71% and only 1.82% land is under circulation network. Though, agriculture land dominates the Paurashava but, after preparation of Master Plan, a radical change in physical development will proceed. In consideration of such concept, the Master Plan will be delighted in favour to save the agriculture land.

**Table-10.1: Existing Landuse of the Mehendiganj Paurashava**

Sl. No.	Landuse Category	Area (acre)	%
1.	Residential	449.53	12.71
2.	Commercial	22.81	0.65
3.	Industrial/ Processing and Manufacturing	1.81	0.05
4.	Education and Research	17.63	0.50
5.	Community Services	6.61	0.19

Sl. No.	Landuse Category	Area (acre)	%
6.	Health	1.47	0.04
7.	Recreational Facility	1.26	0.04
8.	Government Services	1.26	0.04
9.	Non Government Services	0.78	0.02
10.	Open Space	12.55	0.35
11.	Transportation and Communication	1.70	0.05
12.	Agricultural	2555.47	72.27
13.	Mixed Use	1.11	0.03
14.	Circulation Network	64.20	1.82
15.	Water Body	391.71	11.08
16.	Rural homestead	5.94	0.16
<b>Total</b>		<b>3535.29</b>	<b>100</b>

Source: Land Use Survey, 2010.

Determining factors of landuse change is the income of the people, government policy, and new establishment like industry, higher level educational institute, construction of road and embankment and availability of services. The Paurashava was developed as a growth centre long before, than a police station. In the year 1998, it is notified as Paurashava. Radical change of landuse in the Paurashava is not found. Before it known as Paurashava, agricultural domination was the key landuse. During last ten years, the landuse scenarios remain. A stagnant character of landuse change still stand due to the existence of river named Machkata. Rapid change of landuse will be viewed after implementation of master plan.

### 10.2.2 An Estimate on the Requirement of Land

The Paurashava is not an ideal township due to the agriculture domination. Agriculture based township should be encouraged in the preparation of Master Plan. Growth of population is the natural trend and at the sametime, expansion of non-agricultural use on agriculture land is also natural tendency of the people. This will be controlled through the Compact Township concept with the encouragement of vertical development. In case of government services, specific building may accommodate different type of offices.

The projection of landuse depends on the growth of population. After population projection it is found that, population of this Paurashava will be 31703 in the year 2031 and 30874 in the year 2021.

In case of landuse change, the standard given by the LGED according to the projected population and area for the specific service is being calculated. Minimum use of agriculture land for physical development is emphasized in the plan. The vertical expansion will be emphasized rather than horizontal. In case of road network planning, missing-links will get priority rather than new roads. For the development of pisciculture, most of the ponds and ditches may be preserved, in some exceptional cases; small number of ditches may be used for physical development activities. Landuse control and landuse restriction will be imposed by the Paurashava according to the prescribed plan.

The standards presented in the Table-10.2 are fairly generous and considered for the Paurashava. Adjustments have to be made in the core areas and a time line may be set to gradually achieve these standards over a five, ten and twenty years period.

### Commerce

At present, 22.81 acres commercial land is in the Paurashava.

**Determination of Standard:** According to the standard on wholesale market / bazar, 1 acre land is to be provided for every 10,000 populations and 1 acre land for every 1000 population for retail sale market. Again, 0.25 acre of land is being standardized for per corner shop, 1 acre per neighbourhood market, 1.5 to 2.5 acre per super market and 1 acre per 25,000 populations for bank, hotel, garage and godown. The Consultant has considered 31703 populations for the

planning area up to the year 2031. For this population total land required for wholesale market/bazar stands 3.17 acres up to the year 2031 and 31.70 acres for retail sale market.

**Recommendation / Forecast:** The Consultant proposes a fish market on 5.20 acres of land. Necessary planning permission and design criteria will be provided by the Paurashava. The lands may be allowed to use for other commercial purposes like bank, hotel and godown.

### **Industry**

In the Paurashava, 1.81 acres land is under industrial development.

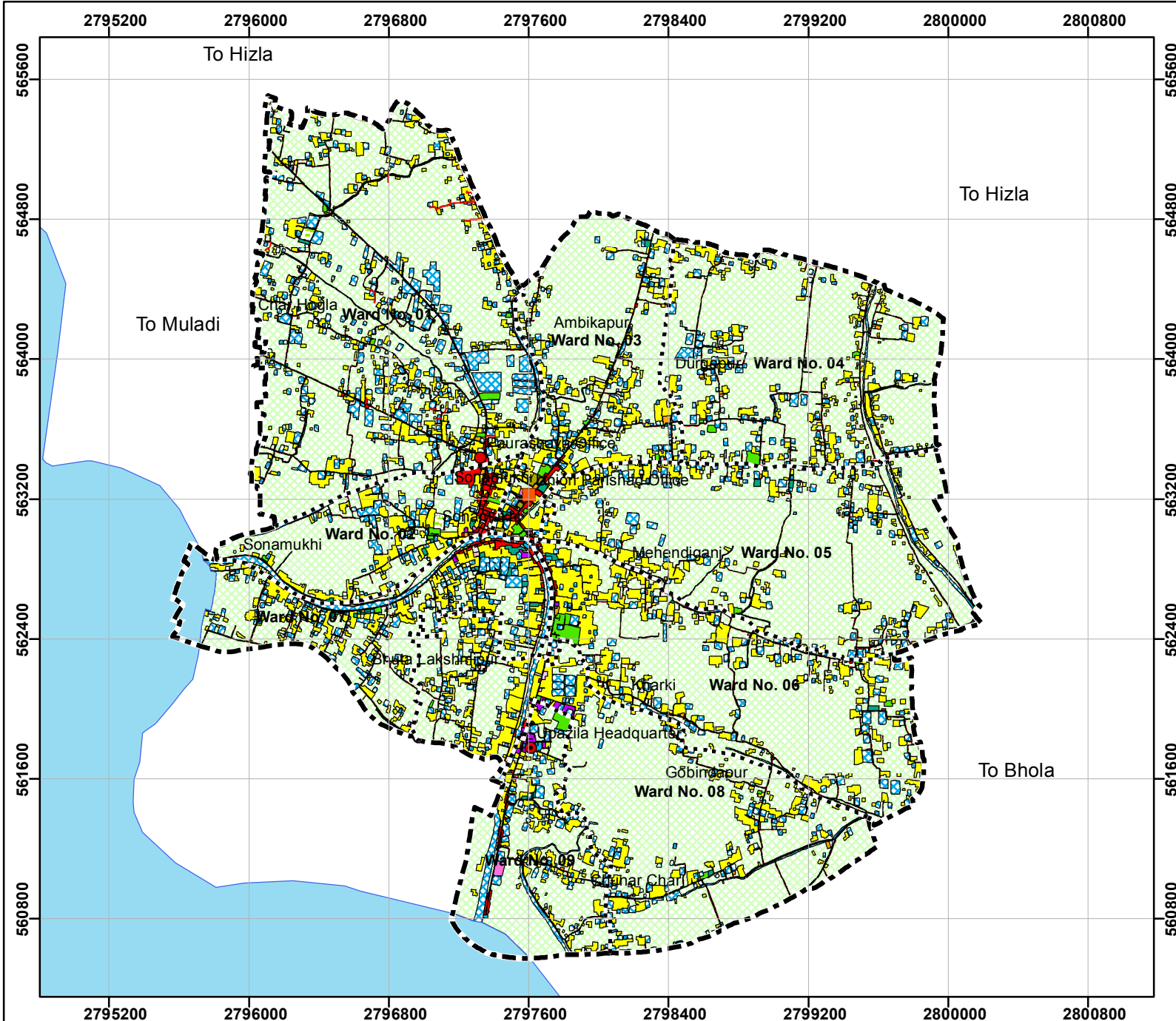
**Determination of Standard:** According to the standard, land is being allocated as 1.5 acres for every 1000 populations in case of small-scale industry, 5 acres per 10000 populations for heavy industry and service industry and 1 acre per 1000 population for cottage / agro-based industry. The Consultant has estimated 31703 populations for the planning area up to the year 2031. For this population total required land for industry stands 110.95 acres up to the year 2031.

**Recommendation / Forecast:** The Consultant recommends 12.02 acres land for small-scale/agro-based industry within the Paurashava. Necessary planning permission will be followed by the Paurashava. The lands, however, should not be allowed to use other than industry. The industries which are located dispersely should be accommodated within the prescribed industrial areas.



Map 10.1

Urban area map with existing landuse pattern of Mehendiganj Paurashava



SCALE

1:32,000

0 125 250 500 750 1,000  
Meters

LEGEND

Admin Point

- Paurashava Office
- Union Parishad Office
- Upazila Headquarter

Boundary Line

- Paurashava Boundary
- Ward Boundary

Existing Landuse

- Residential
- Agriculture
- Waterbody
- Educational Facilities
- Commercial
- Industrial
- Education and Research
- Community Service
- Service Activity
- Governmental Services
- Non Government Services
- Recreational Facilities
- Mixed Use
- Circulation Network
- Transport and Communication
- Forest
- Urban Green Space
- Vacant Land
- Miscellaneous/Others
- Restricted

PREPARATION OF MASTER PLAN FOR MEHENDIGANJ PAURASHAVA  
Mehendiganj Upazila, Barisal District



Government of the People's Republic of Bangladesh  
Ministry of Local Government, Rural Development and Cooperatives  
Local Government Division

Local Government Engineering Department (LGED)  
Upazila Towns Infrastructure Development Project (UTIDP)  
Package No: 11 (Barisal Region)

CONSULTANT  
**SCPL** Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
In Association with

### Primary School

There are 18 primary schools with 28 structures and 5 NGO schools with 9 structures in the planning area covering together 5.10 acres of land. Average area of a primary school is 0.22 acres.

**Determination of Standard:** According to the standard on primary school, 1 school with 2 acres of land is to be provided for every 5,000 population. The Consultant has estimated 31703 populations for the planning area up to the year 2031. For this population total area required for primary school stands 12.68 acres up to the year 2031.

**Recommendation / Forecast:** According to the standard, no proposal is being furnished for new primary school. Considering the enrolment, the Consultant suggests to expand the primary schools vertically.

### Secondary School

There are 8 secondary schools with 16 structures in the planning area covering together 6.24 acres of land. Average area of a secondary school is 0.78 acres.

**Determination of Standard:** According to the standard, 5 acres of land may be provided for every 20,000 population for one secondary school. The projected population of the planning area is 31703 persons up to the year 2031. Therefore, as per standard the planning area needs 7.93 acres of land up to the year 2031.

**Forecast / Recommendation:** As per above standard, no secondary school is needed but the existing areas of the school may expand vertically.

### College / Higher Secondary School

There are two colleges with 12 structures in the planning area, located on 3.80 acres of land.

**Determination of Standard:** *The standard for college is 10 acres per 20000 populations.*

**Recommendation / Forecast:** The planning area already has one degree level college apart from higher secondary level education with high schools. Therefore, no recommendation for new college is prescribed but, vertical expansion of the existing college is required.

### Vocational Training Centre

In the Paurashava, one institute named Art & Cultural Institute and four Technical College/Institutes exist. Covered area of those institutes is about 0.67 acres.

An important component for the rural masses is vocational training. Multi-dimensional training may be offered through the centre. People are being benefited directly and prepare him as a technical person enjoying training from vocational centre. At present, no vocational training centre in the Paurashava.

**Determination of Standard:** The prescribed standard for vocational training centre is 5 to 10 acres for Upazila.

**Recommendation / Forecast:** The study team recommends a vocational training centre on 5.11 acres of land. Necessary planning permission will be offered by the Paurashava. The lands, however, should not be allowed to use other than vocational training centre.

## Health Facilities

At present, health establishments under Ward No. 2, 3 and 9 is covered 1.47 acres of land.

**Determination of Standard:** The prescribed standard for health facilities are 10 to 20 acres for Upazila Hospital and 1 acre per 5000 population for Health centre / Maternity clinic. According to the standard, up to the year 2031, 6.34 acres land will be needed for Health centre / Maternity clinic.

**Recommendation / Forecast:** The Consultant is not recommended any health service. Proposed Ward Centre may be established with the composition of health/maternity centre.

## Open Space

At present, 12.55 acres land is under open space in the Paurashava.

**Determination of Standard:** The standard recommends 3 acres per 20000 populations for playground, 1 acre per 1000 population for park and 1 acre per 1000 population for Neighbourhood Park. As per standard, 68.16 acres land will be needed for open spaces up to the year 2031.

**Recommendation / Forecast:** The Consultant is not recommended play field. At least one park is being recommended on 7.48 acres of land. Park with restaurant may be constructed on the land.

## Community Facilities

Community facilities include Community centre, Graveyard / Burial ground, Electric sub-station, Water supply pump, Post office, T&T office, Public library, Eidgah, Mosque/Church/Temple, Police station, Police box/outpost, Fire service station, Waste disposal site, club, etc. Existing land under community facilities is 6.61 acres.

**Determination of Standard:** The standard suggests 1 acre per 20000 for the community centre, Graveyard/ Burial ground and Eidgah. Again, 0.5 acre per 20,000 populations prescribed for Mosque/Church/Temple, Post office and T&T, 1 acre per 20,000 populations for Fire service station and 3–5 acres per Upazila Headquarters and police station. In total, 26.22 acres of land will be needed for community facilities up to the year 2031.

**Recommendation / Forecast:** The study team recommends a waste dumping ground on 6.12 acres of land and a graveyard on 4.74 acres of land. Areas for Mosque/Church/Temple, Post office, Fire service station and T&T remain with existing areas.

## Administration

In the Paurashava, 1.26 acres land is under administrative use.

**Determination of Standard:** According to the standard for administrative land, 15 acres land may be provided for every Upazila, 3 to 5 acres per Paurashava office, 0.10 acres per Union Parishad Office and 10 acres for jail/sub-jail. Total required land for administration stands 30.57 acres.

**Recommendation / Forecast:** The planning area already has Upazila office, Paurashava office and other govt. offices. Therefore, no recommendation for new administrative area is prescribed.

## Recreation

In total, 1.26 acres and is under recreational facility in the Paurashava.

**Determination of Standard:** According to the standard for recreational facilities, 1 acre of land may be provided for every 20,000 population for cinema / theatre, 5 to 10 acres land for stadium /

sports complex and 1.75 acres land per 10,000 populations for a shishu park. The study team has estimated 31703 populations for the planning area up to the year 2031. For this population, 1.59 acres land is required for cinema / theatre up to the year 2031, 6 acres for stadium and 5.55 acres for shishu park.

**Recommendation / Forecast:** The study team recommends a stadium / sports complex on 8.41 acres of land and a Shishu park on 1.89 acres of land.

## Residential

Existing residential areas of the Paurashava is 449.53 acres. All type of residential lands is included with such amount of land. About 20% residential land belongs with the rural homestead. Therefore, rural environment will be considered for creating better living areas.

**Determination of Standard:** The standard recommends 100 persons per acre (gross). Again, it is recommended 200 persons per acre for real estate or housing areas both for public and private. No standard is being recommended for low-income group.

**Recommendation / Forecast:** According to the standard (70 persons per acre), about 453 acres land will be needed up to the year 2031 for general homestead. Existing residential area is about 3 acres lower than the projected areas. The Consultant recommends one row housing area for flood victims. The row houses may be constructed at the southwestern part of the Paurashava. Mostly khas land will be preferred for such development and it should not be above 5 acres. Rural environment should be confirmed in the row housing areas.

**Table-10.2: Existing and Proposed Landuses According to the Standard**

Name of Landuse	Provision of Standard	Existin g use of land (acre)	Land Requireme nt upto 2031 (acre)	Proposed area including existing (acre)	
				Acre	%
<b>Commerce</b>		<b>22.81</b>	<b>43.20</b>	<b>28.01</b>	<b>0.79</b>
- Wholesale Market/bazar	1 acre/10000 population		3.17	5.20	
- Retail sale market	1 acre/1000 population		31.70		
- Corner Shop	0.25 acre/corner shop		0.25		
- Neighborhood market	1 acre/ market		1.00		
- Super market	1.50 – 2.50 acre/ market		2.00		
- Bank	1 acre/25000 population		1.27		
- Hotel	1 acre/25000 population		1.27		
- Garage	1 acre/25000 population		1.27		
- Godown	1 acre/25000 population		1.27		
<b>Industry</b>		<b>1.81</b>	<b>110.95</b>	<b>13.83</b>	<b>0.39</b>
- Small-scale	1.50 acres /1000 Pop		47.55	1.81	
- Cottage/agro-based	1 acre /1000 population		31.70	12.02	
- Heavy industry	5 acre/10000 population		15.85		
- Service industry	5 acre/10000 population		15.85		
<b>Education</b>		<b>17.63</b>	<b>50.98</b>	<b>22.74</b>	<b>0.64</b>
- Kindergarten/Nursery	0.5 acre/10,000 pop		1.59		
- Primary school	2 acres/5000 population		12.68		
- Secondary school	5 acres /20,000 pop		7.93		
- College	10 acres/20,000 pop		15.85		
- Vocational training centre	5 - 10 acres / Upazila		5.00	5.11	
- Others	5 acres / 20,000 pop		7.93		
<b>Health</b>		<b>1.47</b>	<b>18.34</b>	<b>1.47</b>	<b>0.05</b>
- Upazila Health Complex / Hospital	10-20 acres/Upazila HQ		12.00		

Name of Landuse	Provision of Standard	Existin g use of land (acre)	Land Requireme nt upto 2031 (acre)	Proposed area including existing (acre)	
				Acre	%
- Health centre/Maternity cl	1 acre/ 5,000 population		6.34		
<b>Administration</b>		<b>1.47</b>	<b>34.57</b>	<b>1.26</b>	<b>0.04</b>
- Upazila Complex	15 acres per Upazila		15.00		
- Paurashava office	3 – 5 acres		3.00		
- Union Parishad	0.10/Union		0.10		
- Government offices		1.47	1.47		
- Magistrate Court			5.00		
- Jail/Sub-jail	10 acres/Upazila HQ		10.00		
<b>Recreation</b>		<b>1.26</b>	<b>13.14</b>	<b>11.56</b>	<b>0.33</b>
- Cinema/theatre	1 acre /20,000 pop	1.26	1.59	1.26	
- Stadium/sports complex	5 – 10 acres/Upazila HQ		6.00	8.41	
- Shishu park	1.75 acres/10000 pop		5.55	1.89	
<b>Open Space</b>		<b>12.55</b>	<b>68.16</b>	<b>20.03</b>	<b>0.57</b>
- Play field/ground	3 acres/20,000 pop		4.76		
- Park	1 acre /1000 population		31.70	7.48	
- Neighborhood park	1 acre /1000 population		31.70		
<b>Community facilities</b>		<b>6.61</b>	<b>20.41</b>	<b>17.47</b>	<b>0.49</b>
- Community centre	1 acre /20,000 pop		1.59		
- Graveyard/ Burial ground	1 acre /20,000 pop		1.59	4.74	
- Public library	1 acre/20,000 pop		1.59		
- Eidgah	1 acre/20,000 pop		1.59		
- Mosque/Church/Temple	0.5 acre /20,000 pop		0.79		
- Police station	3–5 acres/Upazila HQ		3.00		
- Police box/outpost	0.5 acre/ police box		0.50		
- Post office	0.5 acre /20,000 pop		0.79		
- T&T	0.5 acre /20000 pop		0.79		
- Fire service station	1 acre /20,000 pop		1.59		
- Electric sub-station	1 acre/20,000 pop		1.59		
- Waste disposal site	4–10 acres/Upazila HQ		5.00	6.12	
<b>Utility services</b>		<b>0</b>	<b>5.81</b>	<b>2.61</b>	<b>0.07</b>
- Water supply	1 acre /20,000 pop		1.59		
- Gas	1 acre /20,000 pop		1.59		
- Drainage	1 acre /20,000 pop		1.59		
- Waste transfer station	0.25 acre/waste transfer station		0.25		
- Fuel Station	0.5 acre/20,000 pop		0.79		
- Surface water treatment plant				2.61	
<b>Transportation</b>		<b>1.70</b>	<b>4.72</b>	<b>9.57</b>	<b>0.27</b>
- Bus terminal	1acre /20000 population	1.00	1.59	3.55	
- Truck terminal	0.5 acre /20,000 pop		0.79	1.91	
- Launch / boat ghat	1 acre /20,000 pop	0.70	1.59	0.70	
- Baby taxi/tempo stand	0.25 acre /baby taxi/tempo stand		0.25	1.96	
- Rickshaw/van stand	0.25 acre /rickshaw/van stand		0.25	1.45	
- Passenger Shade	0.25 acre / shed		0.25	0	
<b>Residential</b>		<b>455.47</b>	<b>627.36</b>	<b>465.17</b>	<b>13.15</b>
- General homestead / Residential area	70 persons /acre (Gross) Total pop. = 31703 (2031)	449.53	452.90	362.32	10.21
- Rural homestead		5.94	5.94	90.58	2.56
- Staff quarters			5.00	7.27	0.21

Name of Landuse	Provision of Standard	Existin g use of land (acre)	Land Requireme nt upto 2031 (acre)	Proposed area including existing (acre)	
				Acre	%
- Real Estate—public/ private	200 persons / acre		158.52		
- Low-income housing			5.00	5.00	0.14
<b>Mixed-use</b>		<b>1.11</b>	<b>1.11</b>	<b>4.09</b>	<b>0.12</b>
<b>NGO office</b>		<b>0.78</b>	<b>0.78</b>	<b>0.78</b>	<b>0.03</b>
<b>Road</b>	5% of the planning area	<b>64.20</b>	<b>176.79</b>	<b>149.35</b>	<b>4.22</b>
- Primary	150-100 (ROW)				
- Secondary	100-60 (ROW)				
- Local	40-20 (ROW)				
<b>Water body</b>	10% of the planning area	<b>391.71</b>	<b>353.58</b>	<b>380.54</b>	<b>10.76</b>
<b>Agriculture</b>		<b>2555.47</b>		<b>2406.43</b>	<b>68.06</b>
<b>Total</b>		<b>3535.29</b>		<b>3535.29</b>	<b>100</b>

Conservation and harvesting of rain water in Government Blocks, Commercial Buildings and Institutional Buildings. They should provide required facilities and infrastructure for conservation and harvesting of rain water available to them.

The paved surface around the building shall have percolation pits of 4'x4' covering at least 30% of such areas. Such pits shall be filled with small pebbles or such absorbing materials or river sand and covered with perforated concrete slabs.

Following requirements are optional and should be provided in residences depending on site conditions and as per case to case basis.

**Terrace Water Collection:** The terrace shall be connected to a sump or well through filtering tank by PVC pipes. A valve system shall be incorporated to enable the first part of the rain water collected to be discharged to the soil if it is dirty and make arrangements to collect subsequent discharge.

**Open Ground:** Whenever there is open ground a portion of top soil should be removed and replaced with sand to allow percolation of rain water.

### 10.3 Landuse Proposals

Basically, landuse proposal involves with the existing conflicting landuses. Those conflicts may be raised due to different causes. Inhabitants of the Paurashava are not aware about the land level and slope direction of the Paurashava. Without knowing this information they are raising their land up to a mark and constructing permanent structure. As a result, water-logging problem during rainy season is all over the residential areas.

Due to the absence of development control, the core area of the Paurashava is already developed as mixed-use area. Commercial, residential, administrative, educational uses are admixture in the core area. Zoning provision, landuse control should not be enforced in such type of the core area.

At present, the Paurashava is a natural developed area. Rearrangement of the existing use is not possible. Land acquisition for expansion of road (to increase the width of road) will create socio-political hazards. As a result, the roads in the core area remain same as today.

For water supply network, construction of sewerage facilities and removal of fire hazards, at least 20 feet width road is necessary. In the Paurashava, except Regional Highway, such type of road is absent. New road will form new township on agriculture land. These processes will washout agriculture domination from the Paurashava. Compact Township will be effective for new formation, not for the mixed-use areas where most of the roads are 8 to 10 feet width.

**Residential:** Present residential development is covered 449.53 acres of land. According to the calculated housing demand, 627.36 acres land will be needed up to the year 2031. The Consultant emphasizes to save agriculture land according to the Agriculture Policy of Bangladesh and honored compact township development. According to this concept, 1568.48 acres land is being proposed for residential purposes (1475.80 acres for urban residential areas and 92.68 acres for rural settlement). Existing form of residential development is being emphasizes for demarcating proposed residential development.

**Commercial:** Present commercial development is covered 22.81 acres of land. According to the standard, 43.20 acres land will be needed up to the year 2031. In the plan, commercial zone includes mixed-use development also. As a result, 159.69 acres land for mixed-use and 12.64 acres for commercial use is being proposed. Ward No. 2, 3 and 7 is the major commercial zone considered in the plan.

**Industrial:** Present industrial development is covered 1.81 acres of land. According to the standard, 110.95 acres of land will be needed up to the year 2031. In the landuse plan, more 39.39 acres land is being proposed for industrial development.

**Education:** Present educational development is covered 17.63 acres of land. According to the standard, 50.98 acres of land will be needed up to the year 2031. In the landuse plan, 3.31 acres of land is being proposed for a vocational training institute. Existing educational areas will remain up to the year 2031. If needed, existing educational facilities may be expanded vertically according to the enrolment.

**Health:** Present health facilities cover 1.47 acres of land. According to the standard, 18.34 acres of land will be needed up to the year 2031. In the landuse plan, about 3.75 acres of land is being proposed for health facilities.

**Community facilities:** Present community facilities cover 6.61 acres of land. According to the standard, 26.22 acres of land will be needed up to the year 2031. In the landuse plan, 12.65 acres land is being proposed for community facilities. Those facilities are dumping site and graveyard.

**Recreational facilities:** Present recreational facilities cover 1.26 acres of land. According to the standard, 13.14 acres of land will be needed for recreational facilities up to the year 2031. In the landuse plan, more 0.35 acres land is being proposed for recreational facilities

**Open space:** At present, 12.55 acres of land is under open spaces. According to the standard, 68.16 acres of land will be needed as open spaces up to the year 2031. About 42.56 acres of land is being proposed as open space.

**Transportation facilities:** At present, 1.70 acres land is under transportation facilities. According to the standard, 4.72 acres of land will be needed for these purposes up to the year 2031. In the plan, 9.92 acres of land is being proposed for transportation facilities. Bus terminal, truck terminal, rickshaw stand and CNG stand are those facilities.

**Government services:** At present, 1.47 acres of land is under government services. According to the standard, 34.57 acres of land will be needed for these purposes up to the year 2031. In the plan, about 52.89 acres of land is being proposed for government services.

**Table-10.3: Proposed Landuse (including existing)**

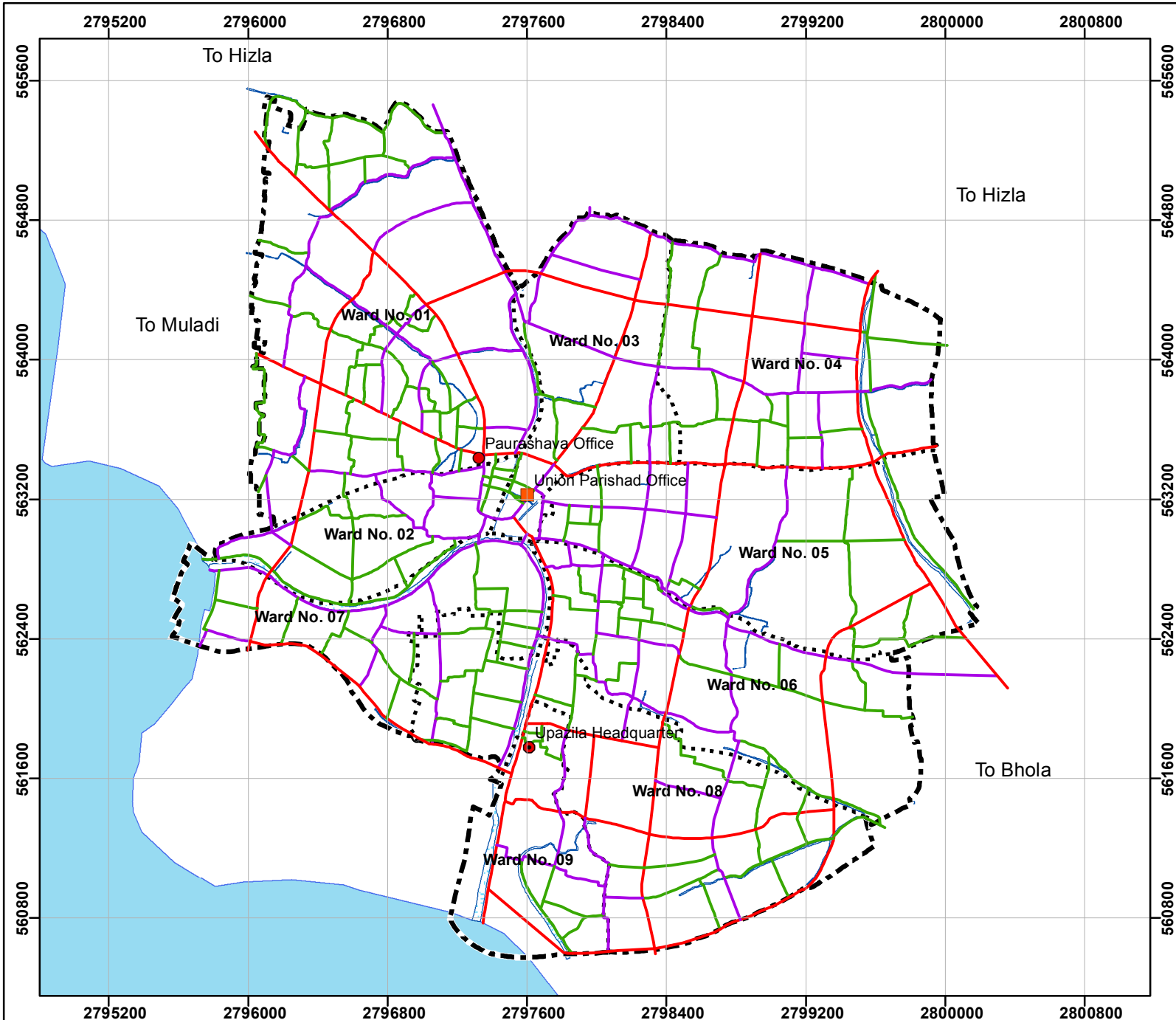
Landuse Type	Area in acre		% (Proposed)
	Existing	Proposed	
Agricultural	2555.47	957.34	27.08
Urban Residential	449.53	1475.80	41.74
Rural Settlement	5.94	92.68	2.62
Circulation Network	64.20	330.28	9.34
Commercial	22.81	12.64	0.36
Community Facilities	6.61	12.65	0.36
Utility services	0	2.71	0.08
Education & Research	17.63	32.89	0.93
Government Office	1.26	52.89	1.50
Health Services	1.47	3.75	0.11
General Industrial area	1.81	39.39	1.11
Mixed-use	1.11	159.69	4.52
Open Space	12.55	42.56	1.20
Recreational Facilities	1.26	0.35	0.01
Transport & Communication	1.70	9.92	0.28
Water Body	391.71	307.84	8.71
Non-Government Service	0.78	0	0
Restricted Area	0	1.91	0.05
<b>Total</b>	<b>3535.29</b>	<b>3535.29</b>	<b>100</b>

Source: Landuse Survey, 2010 and proposed by the Consultant.



Map 10.2

# Location of proposed Ward/Neighbourhood Centre Complexes in Mehendiganj Paurashava



## SCALE

1:32,000

0 125 250 500 750 1,000 Meters

## LEGEND

### Service Point

- Paurashava Office
- Union Parishad Office
- Upazila Headquarter
- Ward/Neighbourhood Center

### Boundary Line

- Paurashava Boundary
- Ward Boundary

### Proposed Road

- Primary Road
- Secondary Road
- Tertiary Road

Canal

River

PREPARATION OF MASTER PLAN FOR MEHENDIGANJ PAURASHAVA  
Mehendiganj Upazila, Barisal District



Government of the People's Republic of Bangladesh  
Ministry of Local Government, Rural Development and Cooperatives  
Local Government Division

Local Government Engineering Department (LGED)  
Upazila Towns Infrastructure Development Project (UTIDP)  
Package No: 11 (Barisal Region)

**SCPL** CONSULTANT  
Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
In Association with



### 10.3.1 Designation of Future Landuse

- Identification and development of sites for government housing. After preparation and implementation of the master plan, different types of government activities will be increased. Residential accommodation will be needed for those government employees. A site for government housing should be reserved. National Housing Authority is appropriate for performing this responsibility.
- Encourage central government to decentralize industrial development from Dhaka. Those facilities may be relevant with specific agro-product such as jute for jute industry, cane and bamboo for handicrafts, poultry and horticulture farming, export-oriented vegetation, etc. Different authorities such as Agriculture Development Corporation, Small and Cottage Industries Corporation, Directorate of Livestock and Poultry may be the responsible authority.
- Provision of sites and services schemes for the low and lowest income groups. The Paurashava authority and Schedule Bank may be appropriate for performing these responsibilities. Housing for low-income group, distribution of khas land among the lowest-income group and loan with low-interest for house construction may be the appropriate schemes.
- Upgrading of slum and squatter settlements. Mostly, the vulnerable groups are affected by river erosion, form slum and squatters on public land. If possible, those formations should be upgraded providing basic utility services. It is better, in Paurashava context, the people are living in the slum and squatters, rehabilitate them with the provisioning of housing for lowest-income group. The Paurashava and NGOs can perform such role.
- Monitoring the principal aspects of community facility provision in the Paurashava. Wholesale or retail market, specialized clinic, etc. are under this community facility. When any difficulties will be encountered in case of suitable site selection considering demand of the inhabitants, the Paurashava will perform the lead role.
- Location for new industrial development. The industrial area prescribed in the Landuse Plan will be developed provisioning all utility services. The authorities relevant with those utility services will perform the responsibilities. At first, the polluting industries (water and noise) from their original location should shift to the new location. Imposition of taxes, tax holiday and subsidized taxes may be imposed by the Paurashava for such rearrangement.

### 10.3.2 Landuse Zoning

Zoning is a classification of landuses that limits what activities can or cannot take place on a parcel of land by establishing a range of development options. Zoning has been defined as an action through legislation provided to a development authority / Paurashava to control a) heights to which buildings may be erected; b) the area of lots that must be left un-built upon; and c) the uses to which buildings may be constructed.

#### **Area / Use Zoning**

Objective of area/use zoning is to specify which types of landuse are considered appropriate for different areas or 'zones', and it therefore indicates the planning control objectives of the authority or Paurashava for its administrative area. The authority is obliged under the planning acts to designate in its development plan objectives for the use solely and primarily of particular areas for particular purposes.

According to the landuse table, area zoning is divided as agriculture, residential, commercial, industrial, administrative and institutional. The zone has further segmented and detailed in the

Ward Action Plan. A detailed scenario as plot-to-plot basis is also presented with the calculation of covered area in the landuse plan.

### Density / Bulk Zoning

Aim of the density zoning is to provide an acceptable density which is related to the designed facilities and amenities especially for the residential areas. This will ensure a healthy community and enjoyable community life. In a particular area, how much number of buildings will be permitted and constructed, the decision is under the density zoning. Provisioning of setback rule and percent of land uses for different purposes is the prime consideration of density zoning. The proposed percentage mentioned in the landuse table is the only tool to control building density in the Paurashava.

### Height Zoning

This 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. For effective development control, in addition landuse zoning individual facility and the structures therein is complied certain regulations imposed to ensure desirable end. 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 among many other details, are controlled by Building Construction Rules, 1996. Besides, Bangladesh National Building Code focuses on the appropriate materials, construction method, building safety and associated issues. In absence of Paurashava Master Plan the above rules did not have scope for area specific rules and hence were common for the whole development process.

According to the Building Construction Rule, 1996, minimum permissible road width for obtaining plan permission is to shown, construction is allowed on plots connected by narrow roads provided the plot owner leaves formally half of the addition area needed to make the road 6 meter for widening the road to the permitted minimum. Perhaps the intension behind this was that gradually the whole road would rise up to 6 meter in short time and it is true for new areas. Congested unplanned area represents an alarming picture. In commercial area, most of the plots are occupied almost entirely by pucca structures covering the property line connected by the narrow pathways. Those owners did not bother for Paurashava's plan permission and a handful of those who obtained plan permission did not care to follow them. It is suggested that existing rules need to be modified to tackle the environmental problems created by illegal building construction.

### 10.3.3 Classification of Land Use Zoning

After a detailed consultation with the LGED counter-part, the land use classification for the Paurashava Master Plan is being finalized as shown in the Table-10.3. Map 10.2 shows Land Use Plan of the Mehendiganj Paurashava.

**Table-10.4: Land Allocated According to the Zone**

SL.	Land use Category	Remarks	Area (acre)	%
1	Urban Residential Zone	Urban Residential area is a land use in which housing predominates. These include single family housing, multi-family residential, or mobile homes. Zoning for residential use may permit some services or work opportunities or may totally exclude business and industry. It may permit high density land use.	1475.80	41.74
2		Rural settlement includes the low dense residential area which is scattered and rural in nature. It may	92.68	2.62

SL.	Land use Category	Remarks	Area (acre)	%
	Rural Settlement	permit only low density uses. Aiming to control the growth in this zone, less service and facilities will be provided.		
3	Commercial Zone	The land used for commercial activities is considered as commercial land use. These activities include the buying and selling of goods and services in retail businesses, wholesale buying and selling, financial establishments, and wide variety of services that are broadly classified as "business". Even though these commercial activities use only a small amount of land, they are extremely important to a community's economy. Commercial land includes established markets and areas earmarked for markets.	12.64	0.36
4	Mixed Use Zone	Mixed land use refers to the area without a dominant land use (Residential, commercial, industrial etc.).	159.69	4.52
5	General Industrial Zone	Green and Orange A categories as per The Environment Conservation Rules, 1997	39.39	1.11
6	Heavy Industrial Zone	Other toxic and pollutions Industries (Orange B and Red categories as per The Environment Conservation Rules, 1997)	0	0
7	Government Services	All Government Offices except large scale service based offices as Civil Surgeon Office, DC Office, Police Box, Police Fari, Police Station, LGED Office, Paurashava Office, Settlement Office, Union Parishad Office, Upazila Headquarter, BADC Office, Fisheries Office, Ansar/VDP Office, Agriculture Office, Zila Parishad Office, Post Office ,Telephone Exchange Office and Other Government Offices.	52.89	1.50
8	Education & Research Zone	All kinds of educational institutes like Primary/secondary/other Schools/ Colleges etc are mentioned to calculate the land use for education and research purpose.	32.89	0.93
9	Agricultural Zone	Agricultural land denotes the land suitable for agricultural production, both crops and livestock. It is one of the main resources in agriculture. It includes productive land (single, double and triple cropped), seed bed, fisheries, poultry farm, dairy farm, nursery, horticulture etc.	957.34	27.08
10	Water body	Equal or More than 0.15 acre and justification by the consultant and wet land will merge with water body	307.84	8.71
11	Open Space	Playground, Botanical Garden, Stadium, Zoo etc. (Facilities without or with minimum building structure)	42.56	1.20
12	Recreational Facilities	Facilities other than those mentioned to Open Space and indoor based facilities with designated building structure i.e. Cinema Hall, Theater Hall etc.	0.35	0.01
13	Circulation Network	Road communication	330.28	9.34
14	Transportation Facilities	Under transport and communication land use both transport and communication services are considered. This category includes airport, bus terminal/ stand, ferry ghat, filling station, garage, launch terminal, post office, passenger shed, telephone exchange, ticket counter, transport office etc.	9.92	0.28
15		Utility services include Overhead Tank ,Power Office/Control Room, Public Toilet, Sewerage Office,	2.71	0.08

SL.	Land use Category	Remarks	Area (acre)	%
	Utility Services	Waste Disposal, Fire Service, Water Pump House, Water Reservoir, Water Treatment Plant, etc.		
16	Health Services	This land will be used to provide health facility.	3.75	0.11
17	Community Facilities	All community facilities including funeral places and other religious uses	12.65	0.36
18	Historical and Heritage Site	The entire mentionable historical and heritage site.	0	0
19	Restricted Area	A Restricted Area is an area where no one but certain people can enter. Here the areas which are not accessible for the general public except some high ranked personnel are considered as restricted area.	1.91	0.05
20	Miscellaneous	Any other categories which are not related to above 23 categories.	0	0
<b>Total</b>			<b>3535.29</b>	<b>100</b>

In the paragraphs below, general definition of the use and description of associated permitted and conditionally permitted uses under each land use zone have been provided. The uses that are not listed here in any of the categories shall be treated as Restricted Use for the corresponding land use category and shall not be permitted only except unanimously decided otherwise by the appropriate authority. In such situations, the use shall get permission in the category of New Use. Following is a short description of recommended land use zones.

### Urban Residential Zone

Urban residential zone refers to all categories of urban residential areas, including exiting and proposed residential land. In total, this zone covers 1475.80 (41.74%) acres of land delineated up to the year 2031, considering standard provided by LGED. Urban residential zone refers to all categories of urban residential areas, including exiting ones and the residential land use proposed under the present Master Plan. Potential area for high dense residential area near to urban core area (influences of close proximity to commercial hub, administrative, educational facilities, road way network, service facilities and flood free suitable land for development). This zone will allow commercial uses as listed in **Table-A.1, ANNEX-C**, and conditional uses as listed in **Table-A.2, ANNEX-C**. Following table shows the plot schedule for special proposal for housing area.

**Table- 10.5: New Development Proposal for Urban Residential**

Type of Facilities	Mouza Name	Plot No.	Area (acre)
Housing Estate- 01	Ambikapur_045_00 Durgapur_047_00	21-37, 75-90, 153 1-94,107,108,114-162,186- 205,214-228,803,1025,1052,1054	98.17
Housing Estate- 02	Char Hogla_041_03 Ambikapur_045_00	3186-3188, 3287 1-66,131-168,171-173,292	74.46
Housing Estate- 03	Durgapur_047_00	92-224,249,427- 563,565,575,576,593-637,726- 728,733-751,775-799,803,1021- 1024,1053	89.09
Low Cost Housing Estate	Chunar Char_081_00 Gobindapur_080_00	188-220,225-227,230 19,20,23-25	16.03
Resettlement Zone	Chunar Char_081_00 Gobindapur_080_00	572-622,691-725,1163 163	22.59
<b>Total</b>			<b>300.34</b>

## Rural Settlement

Mehendiganj Paurashava includes some rural characteristics. The Land use category supplied by LGED for identification of residential settlements in the agricultural belt is categorized as rural settlements. These settlements usually constructed with temporary building materials. Mehendiganj Paurashava is mostly rural in character. About 72% existing land is under agriculture practice and most of the settlement situated surrounding or within the agricultural land. In planning consideration, to save agriculture land according to the Agriculture Policy of Bangladesh, a portion of land declares as rural settlement. This settlement occupies 92.68 acres of land (2.62% of the total land). The areas of rural settlement have some restrictions for non-agricultural development. This zone will allow rural residential uses as listed in **Table-A.7, ANNEX-C**, and conditional uses as listed in **Table-A.8, ANNEX-C**.

## Commercial Zone

The commercial zone is intended to provide locations, where commercial activities including retail and wholesale can be set up and function without creating hazards to surrounding land uses. This zone comprises with an area of 12.64 acres (0.36%) and will allow commercial uses; further expansion is not proposed to fulfill needs of the resident of economic potentiality of Mehendiganj Paurashava. This zone will allow commercial uses as listed in **Table-A.5, ANNEX-C**, and conditional uses as listed in **Table-A.6, ANNEX-C**. Following table shows the plot schedule for commercial activities.

**Table- 10.6: New Development Proposal for Commercial Activities**

Type of Facilities	Ward No.	Mouza Name	Plot No.	Area (acre)
Wholesale Market	01	Char Hogla_041_03	3283- 3286	5.95
Slaughtering House	01	Char Hogla_041_03	3128	0.04
Super Market	03	Ambikapur_045_00	243, 292	1.24
Fish Market	07	Bhuta Laksmipur_043_00	944-953	5.41
<b>Total</b>				<b>12.64</b>

## Mixed-Use Zone

Mixed-use zone is recommended to allow some flexibility in development. In a small urban area like Mehendiganj, as the trend shows, an exclusive commercial land use is unlikely to function. Admixture of land uses will allow flexibility of development, instead of restricting development. Total proposed area for mixed-use is 159.69 acres (4.52% of total area) including existing and proposed use. This zone will allow residential structures together with commercial uses. This zone will allow residential structures together with commercial uses as listed in **Table-A.11, ANNEX-C**, and conditional uses as listed in **Table-A.12, ANNEX-C**.

## General Industrial Zone

Industrial/Manufacturing/Processing Zone intends to provide locations, where Orange B and Red categories (as per Environmental Conservation Rule, 1997) industrial, manufacturing and processing.

Establishments can be setup and function without creating hazards to surrounding landuses. Due to the well road connection by Mehendiganj -Barisal and Mehendiganj - Pirojpur Roads and availability of land creates scope industrial development in the Paurashava. Total land is being proposed for this purpose is 39.39 acres (1.11% of the total land). Since there is no industrial agglomeration in the Paurashava, the industrial zone will mean for new industries. In this zone, a complex line of industrial and supporting non-industrial land uses will be permitted. In this zone a

complex line of industrial and supporting non-industrial land uses will be permitted as per **Table-A.3, ANNEX-C** and conditional permission will be given to a number of other land uses as specified in **Table-A.4, ANNEX-C**. Following table shows the plot schedule for proposed mini industrial park.

**Table- 10.7: New Development Proposal for Industry**

Type of Facilities	Mouza Name	Plot No.	Area (acre)
Small and Cottage Industrial Zone	Chunar Char_081_00	204-207,211-213,227-268,563-568,571,572,574,1163	27.68
	Gobindapur_080_00	24,26,30,41-54,89-92,251	11.15
<b>Total</b>			<b>38.84</b>

### Government Services

Administrative zone covers all kinds of government and non-government offices. Total area under this use has been estimated as 52.89 acres that include existing and proposed land. This land will be used for established Paurashava office and other administrative uses as prescribed in the plan. For proper decentralization of facilities, more employment opportunity and inspiring local community bounding consultant has been proposed **Ward Centre Complex** in each and every ward. The center may be three storied and accommodate various facilities in the ward. **Map 10.2** shows the location of proposed **Ward Centre Complexes** in Mehendiganj Paurashava. The following proposed facilities can accommodate in the **Ward Center Complex**:

- Ward Councilor Office (1<sup>st</sup> Floor)
- Club/ Political Office (1<sup>st</sup> Floor)
- Police Box/Outpost (1<sup>st</sup> Floor)
- Community/Maternity/ Local emergency health facility (Ground Floor)
- Car Parking (Ground Floor)
- Katcha Bazar (Ground Floor)
- Community Center and Theater Hall (2<sup>nd</sup> Floor)

**Table-10.8: Proposed location of the Ward Center Complex/ Neighborhood Center**

SI No.	Ward No.	Mouza Name	J. L. No	Sheet No.	Plot No.	Area (Acre)
01	Ward no. 01	Char Hogla	041	03	3125-3130,3211,3215,3216	2.28
02	Ward no. 02	Sonamukhi	044	01,02,03	208-216,1001,1012	2.85
03	Ward no. 03	Ambikapur	045	00	6-13,38,39,45	5.66
04	Ward no. 04	Durgapur	047	00	556-591,606,607	5.81
05	Ward no. 05	Mehendiganj	046	00	292,293,1361-1363,1366	2.05
06	Ward no. 06	Khakri	079	00	190-195,222-225,248,251,252,262,264,265,271,272,274	7.15
07	Ward no. 07	Bhuta Laksmipur	043	00	386-388,489-497,499	2.86
08	Ward no. 08	Gobindapur	080	00	40-41,55-57,66-74,87,88	6.15
09	Ward no. 09	Chunar Char	081	00	382-286,288-396,401-404,1162	2.01
<b>Total</b>						<b>36.82</b>

## Education and Research Zone

Education and Research zone refers to mainly education, health and other social services. Total area under this use has been estimated as 32.89 acres that include existing and proposed lands. Following table shows the plot schedule for proposed education & research use zone only.

**Table- 10.9: New Development Proposal for Education & Research**

Type of Facilities	Ward No.	Mouza Name	Plot No.	Area (acre)
Primary School	09	Chunar Char_081_00	330,340-343	0.92
High School	01	Char Hogla_041_03	3108,3109	1.46
	04	Durgapur_047_00	71-73,77,121-126,131	1.23
	06	Khakri_079_00	402-410	1.40
	07	Bhuta Laksmipur_043_00	315,316,339-346	0.92
	09	Chunar Char_081_00	498,499,503-506,515	1.35
Vocational Institute	07	Bhuta Laksmipur_043_00	266,268,322-329,412,414,416-421	3.32
	<b>Total</b>			<b>10.63</b>

## Agricultural Zone

The Paurashava has a vast area of agricultural land that demands formation of a separate zone like agriculture. Agriculture zone primarily mean for agriculture and agriculture-related functions. Total area under this use has been estimated as 957.34 acres (27.08% of the total land). Details of land uses is presented in **Table-A.17, ANNEX-C** and conditional uses as listed in **Table-A.18, ANNEX-C**.

## Water Body and Water Retention Area

Total 307.84 acres water body (8.71% of total land) has earmarked as retention area. The plan suggests preserving most of those water bodies for two purposes, first, to serve as source of water, second, to serve as water retention area during monsoon. The ponds with an area equal to or more than 0.15 acres will be preserved as the water retention ponds. There will be permitted uses in this zone. There will be permitted uses in this zone as stated in **Table-A.23, ANNEX-C** and allow some other uses conditionally as stated in **Table-A.24, ANNEX-C**.

Water courses are the water flow paths or the existing natural water courses that carry storm water and waste water. These are the existing khals. These facilities should not be allowed to such that endanger their existence and use. In order to preserve them and keep them functional only the uses as suggested in **Table-A.21, ANNEX-C** will be permitted. Some other uses will be permitted on conditions as suggested in the list put in **Table-A.22, ANNEX-C**.

## Open Space

This zone has been provided to meet the active and passive recreational facility needs of the people and at the same time, conserve the natural resources. Total area estimated for this zone is 42.56 acres (1.20%). Stadium, Playgrounds, Neighbourhood Park and Central Park will be newly established to fulfill the recreational need of the people. The details of permitted and conditional permits have been presented in **Table-A.19, ANNEX-C** and conditional uses as listed in **Table-A.20, ANNEX-C**. Following table shows the plot schedule for Open Space zone.

**Table- 10.10: New Development Proposal for Open Space**

Type of Facilities	Ward No.	Mouza Name	Plot No.	Area (acre)
Central park	01	Char Hogla_041_03	3216,3229-3262,3272,3287	9.63
Neighbourhood Park	01	Char Hogla_041_03	3279,3280,3303	1.58
	02	Sonamukhi_044_01	122,124-129,148,149	1.05



	03	Ambikapur_045_00	180,184- 189,194,195,198,199,203	1.14
	04	Durgapur_047_00	669,676- 682,699,700,709,710,1009	1.19
	05	Mehendiganj_046_00	62-65,68,441,4016,1366	1.40
	06	Khakri_079_00	1,3	0.74
	07	Bhuta Laksmipur_043_00	848-451	1.29
	08	Chunar Char_081_00	645,647,676,785,786	1.36
	09	Chunar Char_081_00	410,1111- 1115,1143,1144,1169- 1172,1176	7.30
Playground	01	Char Hogla_041_03	2265,2266	1.02
	02	Sonamukhi_044_01	230-232,234-235,239,240,242	1.27
	04	Durgapur_047_00	302,310,313-316,322	1.23
	05	Mehendiganj_046_00	294-296,301,1362,1366	1.53
	06	Khakri_079_00	201,206-208,215,221,222	2.43
	07	Bhuta Laksmipur_043_00	320,333-337,339,340	0.92
	08	Chunar Char_081_00 Gobindopur_080_00	669,671,675,681-683 130,135-138,163	1.55
	09	Chunar Char_081_00	221-222,330,340-343,1135	1.00
Public Gathering Place	01	Char Hogla_041_03	2971,2972,2977- 2981,3279,3303	1.80
Muktijoddha Park	07	Bhuta Laksmipur_043_00	786,787,791	0.30
Shisu Park	08	Chunar Char_081_00	127-129,131,179,182	0.44
	09	Chunar Char_081_00	182,183	
<b>Total</b>				<b>40.27</b>

### Recreational Facilities

This zone has been provided to meet the active and passive recreational needs of the people. Total area is being proposed for this zone is 0.35 acres (0.01% of the total land). Cinema hall, Shishu park, auditorium, gymnasium, etc. is being considered as recreational facilities.

### Circulation Network

The road network is considered as circulation network. National highway, regional highway, local road whether pucca/semi-pucca/katcha, footpath, flyover, over-bridge, underpass, bridge, culvert, etc. are being included in circulation network. In total, 330.28 acres land (9.34% of total planning area) covers as circulation network. Details are given in Chapter 11, Part B of this report. At present, 64.20 acres land is under circulation network.

### Transportation Facilities

Transportation facilities incorporate transport and communication services. For an example airport, bus terminal/stand, ferry ghat, filling station, garage, launch terminal, passenger shed, ticket counter, transport office, etc. Total 9.92 acres land has been provisioned for this purpose.

**Table- 10.11: New Development Proposal for Transportation Facilities**

Type of Facilities	Ward No.	Mouza Name	Plot No.	Area (acre)
Bus Terminal	05	Mehendiganj_046_00	64,66-68,179,180,1016	2.84
	06	Khakri_079_00	1,3,5,93,96	
Truck Terminal	07	Bhuta Laksmipur_043_00	8,9,11,12	0.31
CNG/Rickshaw Stand	01	Char Hogla_041_03	2296,2297,2521,2522,2524	0.17
	02	Sonamukhi_044_01	1-4,208-210,1001	2.53
	03	Ambikapur_045_00	173,174	0.52
	04	Durgapur_047_00	774,775	0.11

	05	Mehendiganj_046_00	65, 532,533,842-846,954-957	0.69
	06	Khakri_079_00	460,464,512-514	0.59
	09	Chunar Char_046_00	416,419	0.38
<b>Total</b>				<b>8.18</b>

### Utility Services

It incorporated all utilities and service facilities except health services. Utility services include water treatment plant, water reservoir, water pump house, public toilet, fire service, waste disposal centre, sewerage facilities including office, electricity supply including office or control room and overhead water tank. In survey stage this type of land use was defined as service activity. Total 2.71 acres land has been provisioned for this purpose.

**Table- 10.12: New Development Proposal for Utility Services**

Type of Facilities	Ward No.	Mouza Name	Plot No.	Area (acre)
Dumping Station	01	Char Hogla_041_03	2852,2853,2855-2861	0.72
	02	Sonamukhi_044_01	1,17,18	
Waste Transfer Station	01	Char Hogla_041_03	3122	0.05
	02	Sonamukhi_044_01	205,237	0.12
	03	Ambikapur_045_00	37	0.05
	04	Durgapur_047_00	607,608	0.06
	05	Mehendiganj_046_00	291,1360,1364	0.11
	06	Khakri_079_00	225	0.06
	07	Bhuta Laksmipur_043_00	491-492	0.08
	08	Gobindapur_080_00	40,41	0.06
	09	Chunar Char_081_00	407,408,1147	0.06
Water Supply Station	01	Char Hogla_041_03	3280, 3303	0.42
<b>Total</b>				<b>1.79</b>

### Health Services

This land will be used to provide health facilities. In total, 3.75 acres land (0.11% of the planning area) is being proposed for this purpose. A community-based health centre will be provided at Ward Councillor's Office.

### Community Facilities

Community services include community centre, club house, fire service, civic centre, family planning facilities, religious centres, etc. Additionally, all funeral places and other religious uses incorporated in this category. In total, 12.65 acres land (0.36% of the planning area) will be used for this purpose.

**Table- 10.13: New Development Proposal for Community Facilities**

Type of Facilities	Ward No.	Mouza Name	Plot No.	Area (acre)
Central Cremation Ground	01	Char Hogla_041_03	2840,2841,2877,2878	0.63
Central Graveyard	06	Khakri_079_00	105-118,120-127	4.18
Central Mosque and Eidgah	05	Mehendiganj_046_00	70-78,83-85	2.76
Cyclone Center	09	Chunar Char_081_00	419,435,436,1150-1152	2.49
Muktijoddha Complex	03	Ambikapur_045_00	243-245	0.20
<b>Total</b>				<b>10.26</b>

## 10.4 Plan Implementation Strategy

### 10.4.1 Land Development Regulations to Implement the Landuse Plan

Effective implementation of a plan is the most important part of the planning process. The process of Implementation needs to be carried out with care and efficiency in order to produce best outcomes. This chapter highlights various measures needed in order to implement the landuse plan proposals.

Implementation of the Landuse 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 Paurashava area. However, at present no authority is responsible for planning and managing physical development activities in the Paurashava and no regulation except Local Government (Paurashava) Ordinance, 2009 for controlling physical development. This poses a serious constraint to the implementation of the Landuse Plan and in fact any other form of development plans.

The factors that have been taken into account in deciding the priority include such things as – the importance of the issue that the policy addresses, its potential impact on the lives of the population, the ease with which it can be implemented, its urgency and its interdependence with other policies.

Prior to introduction of the regulations to implement the landuse plan, legislative involvement is recommended here.

1. Impose control on all type of buildings in the Paurashava according to the setback rule 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 landuse 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 Paurashava, there is no authority for enforcing the provisions prescribed in the said Act. The pollution related with the implementation of landuse component may be controlled with this Act.
3. Haphazard development of commercial activities is the general scenario of the Paurashava. 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 Paurashava 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 Paurashava 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 Paurashava authority may execute the Ordinance with the authorization of government.

8. The Paurashava will have to exercise strictly Playfield, Open space, Garden and Natural Tank in Urban Areas Preservation Act, 2000 (Act No. XXXVI 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 safeguard 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 Paurashava authority is also empowered establishing hat and bazar in his jurisdiction through the Local Government (Paurashava) Ordinance, 2009. Coordination may be framed among the government (Upazila Parishad), Paurashava and private owner for the establishment, development and management of the hat and bazar located in the Paurashava premises.
10. In the Paurashava 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 Paurashava authority. A joint coordination cell among those four authorities may control the establishment of factories and industries in the Paurashava.
11. In the Paurashava, 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 Paurashava is regulatory aspects.
12. Except Khas land, a considerable amount of public land in the Paurashava 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).
13. The Paurashava should raise its efforts on the imposition and realization of betterment fees to raise its income. In this case, East Bengal Betterment Fees Act, 1953 may be enforced.

#### **10.4.2 Implementation, Monitoring and Evaluation of the Landuse Plan**

**Implementation through Multi-Sectoral Investment Programme:** Major infrastructure development works such as primary roads, water supply, drainage, etc., will largely be controlled by Government. Public works requires efficient co-ordination through the Multi-Sectoral Investment Programme (MSIP).

Objective of a Multi-Sectoral Investment Programme (MSIP) will match a list of the development projects with the funding stream necessary to implement them. There are two basic activities that would determine the contents of MSIP. One activity would be to prioritize and schedule the investment projects of all public agencies so they will collectively help to achieve the development

goals and objectives of the Landuse Plan. Second activity would be to analyze the source and availability of fund for the prioritized list of development projects.

**Implementation through Action Plans and Projects:** Action Plans and Projects will be the implementation plans to solve problems at the local level. Action plans will take a direct approach toward plan implementation with a minimum of research, reports or elaborate planning methods. These projects will be easily identifiable and will require minimum resource.

**Implementation through Development Control:** Landuse zoning is one of several methods of plan implementation to be considered. In all cases where some form of development, landuse control may be applied; careful consideration requires the following ideologies:

- the purpose to be achieved by the development controls;
- where controls should be applied;
- what aspect of development needs to be controlled;
- what type of development controls are required;
- what degree or level of development control is required;
- who will be affected by the required control;
- who will be affected by the controls and in what manner;
- when the controls should be applied;
- what will be the likely impact of the controls;
- how and by whom will the controls be administered and enforced.

Development control as an instrument of plan implementation may be selectively applied within the Landuse Plan. Development controls would also be varied in intensity and detail to suit the particular circumstances. It is important that they should be clear and easily understood by all parties concerned. Since the entire Paurashava Master Plan 'package' has become statutory, development controls associated with its component plans would also be statutory.

**Implementation by Facilitating Private Investment:** Another approach that would be taken by government toward plan implementation will be to guide and facilitate investments made by the private sector. Government can achieve this with relative ease and at very low cost by setting up a legal and operational framework, coupled with suitable incentives, to facilitate land consolidation, plot boundary readjustment, efficient lay out of plots and provision of local infrastructure by the private sector. The benefits of this approach would be:

- increased efficiency of the urban land market would make, more private land available to urban households;
- would pass much of the development costs for local infrastructure to the private sector and land market mechanisms;
- would increase in land for development without large cash outlays by government to purchase land for development schemes; and
- would keep provision of land for community facilities virtually no cost to government.

### **Plan Monitoring**

The Landuse Plan would simply be tools for guiding and encouraging the growth and development of the Paurashava in a preferred manner. In a rapidly changing urban environment, the Landuse Plan would require to keep up to date. If this is not done, within a few years it will be obsolete. Therefore, it is imperative that the requirement for regular updating of the Landuse Plan be made a legal requirement.

For implementation of the various programme components of the Landuse Plan appropriate administrative measures will have to be undertaken. This will essentially include project preparation and monitoring of their execution and evaluation. For carrying out all these activities appropriate institutional measures are also be needed.

### **Evaluation**

Monitoring and evaluation of ongoing and implemented projects is essential to keep the future course of action on the right track. An ongoing project should be regularly monitored and handicaps identified to enable taking appropriate measures at the right time.

Post implementation evaluation is also needed to take appropriate measures correcting past errors-from project preparation to implementation.

The top level supervision has to be done by a high level supervisory committee headed by Paurashava Mayor, LGED representative and Local Government Ministry. Other members of the committee will be local Ward Councilors, local community leader/social workers and the Town Planner of the Paurashava. The committee will supervise implementation works regularly and issue necessary instructions to expedite the works of implementation.

### **Co-ordination**

A Planning Section of Paurashava should have close interaction with the citizen of Paurashava at large in order to make people aware of the benefits of a good plan and, therefore, their social responsibility to promote plan implementation in one hand and also resist contraventions on the other. A specific interactive cell is recommended to operate in this regard with following responsibilities:

- Provide pre-application advice to residents, consultants and developers about landuse management issues and application procedures for the submission of development applications.
- Enforce planning and landuse management related legislation and zoning scheme regulations.
- Issue of property zoning certificates.
- Investigate and resolve landuse management complaints, illegal landuse and prosecuting contraventions.

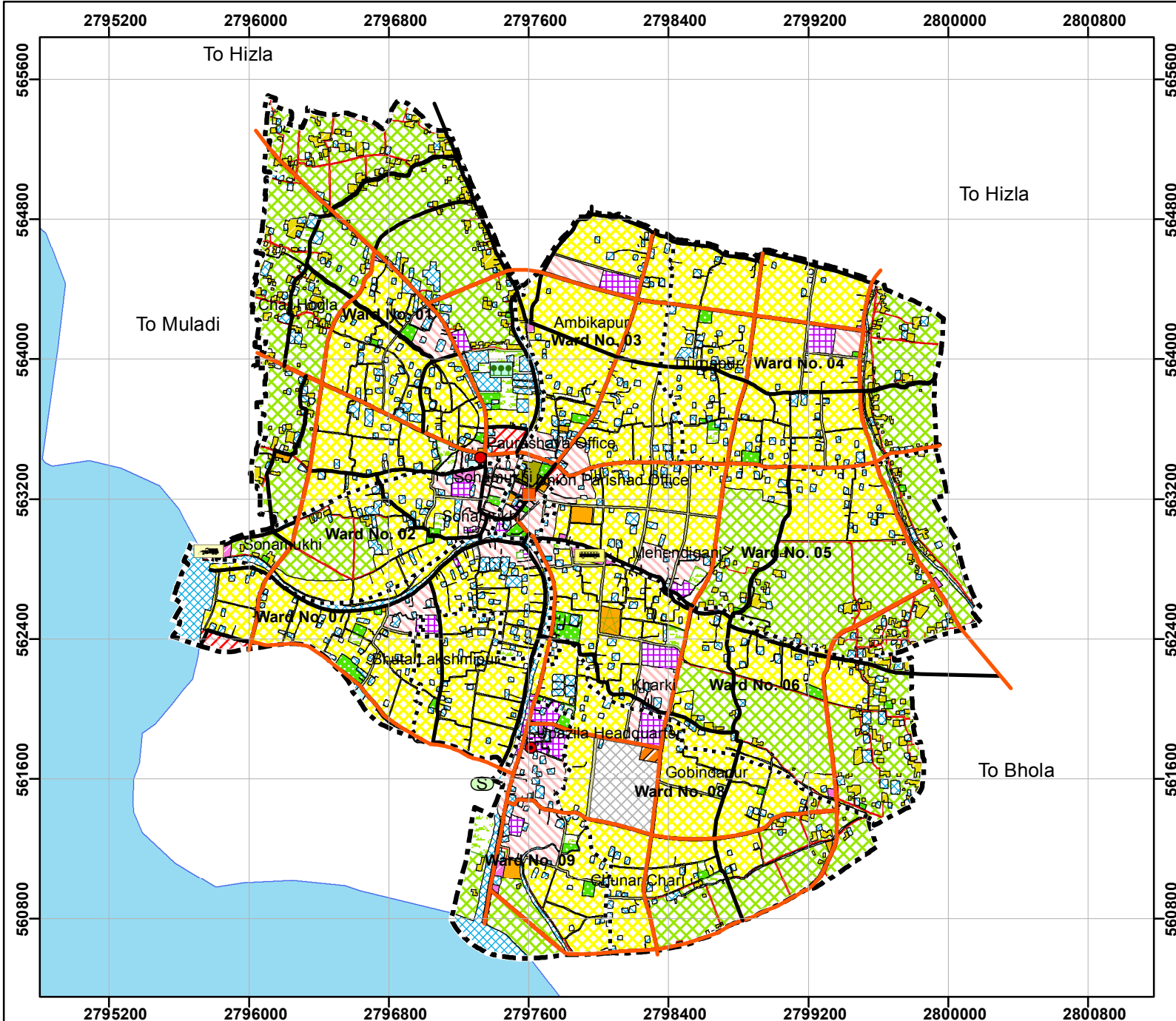
Such interactive windows may be opened in various convenient locations to ensure ease of the answers to commonly asked questions may be shown in the internet. Besides, those may be shown in the print and electronic media time to time.

In spontaneous areas, while all out people's co-operation is needed for project implementation; there will also be some elements of negotiation. Negotiation will be particularly needed in case of road widening projects. It will be a crucial task for Paurashava to convince the affected people to give up their land for road use. Efforts should be made to convince the land owners on the ground of enhancement of property value due to road widening. In case people refuse to offer land free of cost necessary arrangements may have to be made for payment of compensation. This process of negotiation will be very critical, cumbersome and time consuming, and therefore, has to be

handled with utmost care and patience. The best results can be accrued only by winning people's confidence. In case the authority fails to get peoples co-operation they should exercise power of compulsory acquisition of land. Attempts may be made to engage NGOs / CBOs to work as catalysts in negotiation.

Map 10.3

Urban area map with proposed landuse pattern of Mehendiganj Paurashava



# SCALE

1:32,000

0 125 250 500 750 1,000  
Meters

## LEGEND

- Planning Area Boundary
- - - Paurashava Boundary
- ... Ward Boundary
- Paurashava Office
- Union Parishad Office
- Upazila Headquarter
- Bus Terminal
- ☆ Central Graveyard
- Central Park
- Industrial Estate
- Neighbourhood Center
- Resettlement Zone
- Truck Terminal
- Upazila Hospital
- Upazila Stadium

## Major Services

## Proposed Landuse Plan

- Urban Residential Zone
- Rural Settlement
- Commercial Zone
- Mixed Use Zone
- General Industrial Zone
- Heavy Industrial Zone
- Government Office
- Education & Research
- Agricultural Zone
- Waterbody
- Open Space
- Recreational Facilities
- Circulation Network
- Transportation Facilities
- Utility Services
- Health Services
- Community Facilities
- Historical & Heritage Site
- Restricted Area
- Overlay Zone
- Urban Deferred
- Forest
- Beach
- Miscellaneous

## Major Road

- Primary Road
- Secondary Road

PREPARATION OF MASTER PLAN FOR MEHENDIGANJ PAURASHAVA  
Mehendiganj Upazila, Barisal District



Government of the People's Republic of Bangladesh  
Ministry of Local Government, Rural Development and Cooperatives  
Local Government Division

Local Government Engineering Department (LGED)  
Upazila Towns Infrastructure Development Project (UTIDP)  
Package No: 11 (Barisal Region)

CONSULTANT  
SCPL Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
In Association with



## **Chapter-Eleven**

### **TRANSPORTATION AND TRAFFIC MANAGEMENT PLAN**

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#### **11.1 Introduction**

Transportation system directs the urban development pattern. Performance of the transportation system largely influences the economy and social progress of an area. It provides mobility of people, goods and services to their destination and maintains linkages with other sections of development for sustainable development. This chapter of the report is on Transportation and Traffic Management Plan covering scope of improvement of the existing network and system and plan proposals for new development. The proposals on improvement and new development are being prepared for the planning area up to the year 2031. The report also provides purpose and rule of Transportation and Traffic Management Plan and its relation with Structure Plan and Land Use Plan.

#### **11.2 Approach and Methodology**

In order to identify major causes of the congestion and nature of the problem of transportation networks, a number of tasks were undertaken. Those tasks include traffic volume counting at both directions, speed and delay studies, Origin - Destination (O-D) survey at major traffic generating intersections and consultation with the stakeholders regarding the generated problems. Volume and movement pattern of people and goods within the planning area were collected through a series of surveys and O-D survey.

In addition, to collect information on volume and pattern of traffic movement by traffic survey, the certain important questions regarding people's attitude and preferences were accommodated.

Two intersections are in the center of Mehendiganj Paurashava, selected for traffic count survey. These locations were considered as the key locations of the Paurashava. Those intersections are Hospital Mor and Paurashava Mor. Details is presented in the following table.

**Table-11.1: Major Road Intersections**

SI no.	Name of intersection	Number of links	Name of the links
1	Hospital Mor	3	Babul Road
			Shahid Manik Road
			Sayed Kadom Ali Road
2	Paurashava Mor	3	Patarhat to Lalkharabad Road (north)
			Kala Mia's Dighi Road
			Patarhat to Lalkharabad Road (south)

Source: Traffic and Transport Management Survey, 15<sup>th</sup> January 2010.

#### **11.2 Existing Conditions of Transportation Facilities**

This section describes existing transportation facilities namely roadway characteristics, modal share of vehicular traffic, level of service which incorporate degree of traffic congestion and delay analysis and existing deficiencies in transport sector of Mehendiganj Paurashava.

### 11.2.1 Roadway Characteristics and Functional Classification

The planning area covers 14.30 sq. km. (3535.29 acres) and road length is 108.65 km. Among total road, 41.61 km. road is katcha, 31.62 km. semi-pucca and 35.42 km. pucca. One Regional Highway runs through the Paurashava and links a number of Connector Roads and Access Roads. Regional Highway is the major arterial road of the Paurashava. It provides connection with Barisal and Gaurnadi. There are two important road intersections named Hospital Mor and Paurashava Mor providing linkages with other access roads. Those access roads are Hospital Mor to Babul Road, Hospital Mor to Shahid Manik Road, Hospital Mor to Sayed Kadom Ali Road, Paurashava Mor to Patarhat to Lalkharabad Road (north), Paurashava Mor to Kala Mia's Dighi Road and Paurashava Mor to Patarhat to Lalkharabad Road (south).

Some of the major roads are Patar Hat to Lalkharabad Road, Patar Hat to Ulania Road, Patar Hat to Alimganj Khal Par Road, Mehendiganj to Ulania Road, Shahid Manik Road, Hospital Road, Paurashava Road, Cherag Ali Hawlader Road and Badarpur Primary School Road.

Roads of the Paurashava belonging to number of agencies named Roads and Highways Department (RHD) responsible for Regional Highway, Local Government Engineering Department (LGED) responsible for construction and maintenance of Upazila and Union roads and Mehendiganj Paurashava is responsible for construction and maintenance of roads within the Paurashava.

**Table-11.2: Existing Roads (in meter)**

Ward No.	Katcha	Pucca	Semi-pucca	Total
1	9926.51	9328.57	4811.25	24066.33
2	2116.11	2693.78	1280.19	6090.08
3	1501.31	5169.71	2751.65	9422.67
4	6558.36	2596.16	3505.61	12660.13
5	3942.38	2383.66	4110.10	10436.14
6	4171.00	4015.02	4454.64	12640.66
7	2630.89	3723.00	4318.03	10671.92
8	9954.53	3120.89	1061.46	14136.88
9	855.59	2382.75	5365.16	8603.50
<b>Total</b>	<b>41656.68</b>	<b>35413.53</b>	<b>31658.09</b>	<b>108728.30</b>

Source: Physical Feature Survey, 2010.

Existing transportation system is dominated by road network catering to the passenger service and freight transport. The Paurashava is covered with 108.73 km. various types of roads. Among total roads, 41.66 km. is katcha, 31.66 km. semi-pucca and 35.41 km. pucca. The Inland Water Transport system also meets the local needs as passenger and goods transport through launch services at different points within the jurisdiction of Mehendiganj Paurashava. Those Ghats are the most vibrant one used mostly as passenger ghats.

The road network provides access to various places within the planning area and connects various parts of the country following bus routes. Major trips of vehicles are generated from bus stand, Kaliganj, Patuakhali, Sabujbagh and Barisal. All inter-district vehicles towards and from Mehendiganj runs through the Regional Highway.

Motorized and non-motorized vehicles are operated in all the nodes of the planning area. The non-motorized vehicles are mainly operated within short distance and meet the local needs. The motorized vehicles are mostly intercity passenger buses and trucks; mainly carry agro-product from the Mehendiganj towards Nazirpur, Mathbaria, Barisal and Dhaka. Locally modified motorized transport vehicle named *Tomtom* (as like *Nosimon*) also uses for short distance passenger and goods transportation.

**Table-11.3: Inventory of Important Roads**

Road Name	Type	Ward No.	Total Length (m.)	Average Width	Width Range	Segment	Level of Road (in ft)
<b>Roads Above Flood Level</b>							
Chinama Hall Road	Semipucca	6	418.64	8	8-12	1	7.59
Dawn Kathi Road	Katcha,Pucca	1	1860.05	10	6-12	11	4.16
Fakir Bari Road	Semipucca	1,6,7,8,9	1828.21	9	8-9	14	5.12
Fatema School Road	Semipucca	1	354.27	8.5	6-9	2	5.75
Grils College Road	Semipucca	6	232.48	7.5	6-9	1	7.58
Hazi Bari Road	Semipucca	1,7,8	1498.64	6	4-8	11	4.68
Highway Link Road	Pucca,Semipucca	1,2,3,4,6,7,9	6000.03	9.5	5-14	12	5.74
Higway Road	Pucca	1,2,4,6,7,9	3227.97	21	21	41	6.48
Hospital Road	Pucca	5	227.04	8.8	8.2-10	3	6.25
Kaligong Road	Pucca	1	1293.96	16.5	14-19	5	5.15
Khal Par Link Road	Katcha	1,7	145.25	10	10	1	4.35
Molla Bari Road	Pucca,Semipucca, Katcha	7,8	1470.48	8	6-10	2	4.12
Post Office Road	Pucca	5	179.62	10	10	1	4.36
Potukhali Link Road	Pucca	3,4,6	1043.24	15	15	7	4.16
River Side Road	Semipucca	6	40.70	10	10	2	6.13
Sabuj Bagh Road	Pucca	4,5,6	1093.31	12	12	19	4.15
Shabegonj Road	Pucca	5	418.36	12	12	1	4.5
Shampur Road	Semipucca	1.2	773.15	8	8	1	6.5
Sangita Cinema Hall Road	Pucca	6	465.55	12	12	2	4.5
T&T Road	Semipucca	6	190.12	6	6	2	5.12
Upzila Road	Pucca	5	139.53	12	12	2	4.25
Vip Road	Semipucca	1	704.32	8	8	2	4.25
<b>Roads Bellow Flood Level</b>							
Access Raod	Pucca,Semipucca,Kutcha	1,2,3,4,5,6,7,8,9	28194.4	8.25	1.5-15	-	3.25-3.85

Source: Topographic Survey, 2010.

### 11.2.2 Mode of Transport

Road and water way are the modes of transport in the Paurashava. The road is using for efficient movement and multi-dimensional purposes. As a result, transportation survey includes road transportation and water way and the outcome of the survey is presented in the following paragraphs.

### 11.2.3 Intensity of Traffic Volume

Traffic volume studies are conducted to determine the number, movements and classifications of roadway vehicles at a given location. These data help to identify critical flow time periods and determine the influence of large vehicles on vehicular traffic flow, or document traffic volume trends. Traffic volume survey shows that average traffic movement through the intersections per hour is 218.5 at hat day and 182.92 at non-hat day. Among the total traffic, 18% MV and 82% NMV both in hat day and non-hat day.

### 11.2.4 Level of Service: Degree of Traffic Congestion and Delay

**Level of Service A:** Zone of Free flow, with low volumes and high speeds. Traffic density is low and little or no restriction in maneuverability. The V/C ratio for this level of Service should not exceed 0.33.

**Level of Service B:** Zone of stable flow, with operating speeds beginning to be restricted somewhat by traffic conditions. The V/C ratio for this level of Service should not exceed 0.50.

**Level of service C:** Still in the zone of stable flow, but speeds and maneuverability are more closely controlled by higher volumes. The V/C ratio for this level of Service should not exceed 0.65.

**Level of Service D:** Approaches unstable flow, with tolerable operating speeds being maintained though considerably affected by changes in operating conditions. The V/C ratio for this level of Service should not exceed 0.80.

**Level of Service E:** Flow is unstable with volumes at or near the capacity of the road. The V/C ratio for this level of service should not exceed 1.0.

**Level of Service F:** Forced flow operations at low speeds, where volume is more than the capacity, speeds are reduced substantially and stoppages may occur for short or long period of time.

All the surveyed roads of Patharghata Paurashava have free flow and transport density is low. Following table exhibits that all road sections enjoy level of service A.

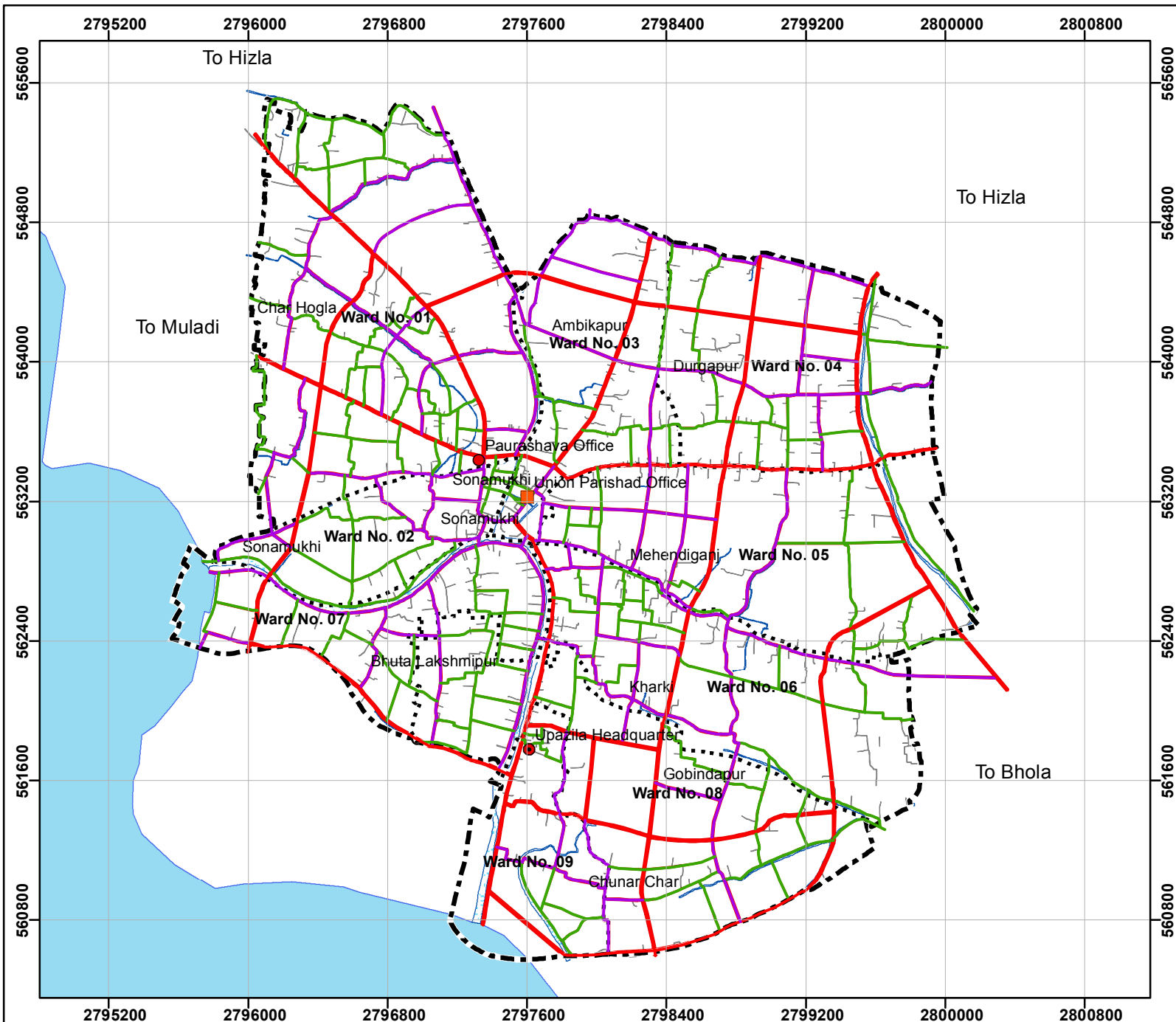
**Table-11.4: Level of Service of Road Sections**

Sl. No	Name of the Intersections/ Road Section	Type of Lane	Peak Hour Traffic Volume (PCUs per hour)	V/C Ratio	Level of Service
1	Shahid Manik Road	Single lane	97.9	0.24	A
2	Sayed Kodom Ali Road	Single lane	108.5	0.27	A
3	Paurashava Road	Single lane	105.4	0.26	A
4	Patar hat to Ulania Road	Single lane	135.5	0.34	B
5	Patar hat to Lalkharabad Road	Single lane	112.1	0.28	A
6	Patar hat to Alimganj Khal Par Road	Single lane	105.8	0.26	A
7	Patar hat to Alimganj Road	Single lane	158.6	0.40	B
8	Naiya Kandi Road	Single lane	141.5	0.35	B
9	Mehendiganj to Ulania Road	Single lane	108.9	0.27	A
10	Madha Badarpur Road	Single lane	133.6	0.33	A
11	Lalmia Road	Single lane	96.9	0.24	B
12	Kharki Road	Single lane	98.2	0.24	B
13	Kala Mayer Ditchi Road	Single lane	97.4	0.24	B
14	Hospital Road	Single lane	100.2	0.28	B
15	Hamid Kha Road	Single lane	100.8	0.27	B
16	Gandhi Babu Road	Single lane	89.7	0.20	B
17	Cherag Ali Hawlader Road	Single lane	88.2	0.20	B
18	Badarpur Primary School Road	Single lane	85.6	0.21	B
19	Babul Road	Single lane	102.2	0.26	B
20	Abdul Latif Hawlader Road	Single lane	58.5	0.16	C

Source: Traffic and Transport Management Survey, 2010.

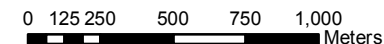
Map 11.1

# Proposed and Existing Road Network of Mehendiganj Paurashava



## SCALE

1:32,000



## LEGEND

- Planning Area Boundary
- Paurashava Boundary
- Ward Boundary

## Admin Point

- Paurashava Office
- Union Parishad Office
- Upazila Headquarter

- Existing Road
- Proposed Road
- Canal

- Primary Road
- Secondary Road
- Tertiary Road

PREPARATION OF MASTER PLAN FOR MEHENDIGANJ PAURASHAVA  
Mehendiganj Upazila, Barisal District



Government of the People's Republic of Bangladesh  
Ministry of Local Government, Rural Development and Cooperatives  
Local Government Division

Local Government Engineering Department (LGED)  
Upazila Towns Infrastructure Development Project (UTIDP)  
Package No: 11 (Barisal Region)

CONSULTANT  
SCPL Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
In Association with

#### **11.2.4.1 Traffic Congestion**

Traffic conflict is common and frequent in the planning area, where there is combination of transport vehicles-slow and fast-on the streets. Major conflict and congestions occur in the places, where intensity of traffic movement is high, on-street parking is made and on-street loading or unloading of goods are taken place. The consultant surveyed the traffic movement all over the Paurashava and has identified two main points, where traffic congestion is highest. Those areas are bus stand intersection and Sangita Cinema Hall intersection. At these points, slow moving vehicles like, rickshaws and vans come in conflict with motorized vehicles, creating traffic congestion, as the number of slow moving vehicles is higher and the conflicts are usually frequent.

#### **11.2.4.2 Delay**

The traffic delays in Mehendiganj Paurashava is caused by the interaction of various factors, such as congestion, inadequacy of carriageway widths, mixed traffic conditions, parked vehicles and heavy pedestrian flow and such delays are called congestion delays or operational delays are difficult to measure precisely. It is observed that peak hour period takes on an average 6%-10% excess time than off-peak hour period due to congestion, narrow road and improper design of intersections.

#### **11.2.5 Facilities for Pedestrians**

During field survey, it was observed that people move in both directions, going in and out of the both sides of the roads. It is noted that the planning area is without any footpath for pedestrian movement. Pedestrian movements take place mostly on carriageway and right of way of the roads.

#### **11.2.6 Analysis of Existing Deficiencies**

##### **11.2.6.1 Roadway Capacity Deficiencies**

As like other small towns in Bangladesh, Mehendiganj has also its own road and transportation deficiencies. The physical feature survey and traffic survey of major intersections revealed that none of roads and transportation facilities is properly designed. Traffic level is far behind the actual capacity of the intersections. Congestion is created by large number of slow moving vehicles waiting for passengers at the intersections.

**Table-11.5: Hierarchy of Roads**

Road Name	Road Type	Ward No.	Total	Average	Hierarchy
Patar hat to Lalkharabad Road	Pucca	1, 2	2849.56	4.0	Primary
Lalmia Road	Pucca	2,7	188.55	4.0	Primary
Kala Mayer Ditchi Road	Pucca	1	397.48	4.0	Primary
Hospital Road	Pucca	3	1511.83	4.0	Primary
Cherag Ali Hawlader Road	Pucca	6,8,9	2228.27	4.0	Primary
Shahid Manik Road	Pucca	3	226.91	3.5	Secondary
Sayed Kodom Ali Road	Pucca	3	174.24	3.5	Secondary
Patar hat to Alimganj Road	Semi pucca	3	428.32	3.5	Secondary
Naiya Kandi Road	Pucca	1,3	474.92	3.5	Secondary
Babul Road	Pucca	2,3	152.01	3.5	Secondary
Abdul Latif Hawlader Road	Pucca	5	797.09	3.0	Tertiary
Patar hat to Ulania Road	Pucca	4	312.71	3.0	Tertiary
Mehendiganj to Ulania Road	Pucca	3,4	1948.03	3.0	Tertiary
Madha Badarpur Road	Pucca	7,8	983.63	2.5	Access
Kharki Road	Pucca	6	368.51	2.0	Access
Hamid Kha Road	Pucca	1	586.84	2.5	Access
Gandhi Babu Road	Pucca	2	854.79	2.5	Access
Badarpur Primary School Road	Pucca	7,8	3305.28	2.5	Access
Paurashava Road	Pucca	1	25.32	2.0	Access
Patar hat to Alimganj Khal Par Road	Pucca	1	1412.51	2.5	Access

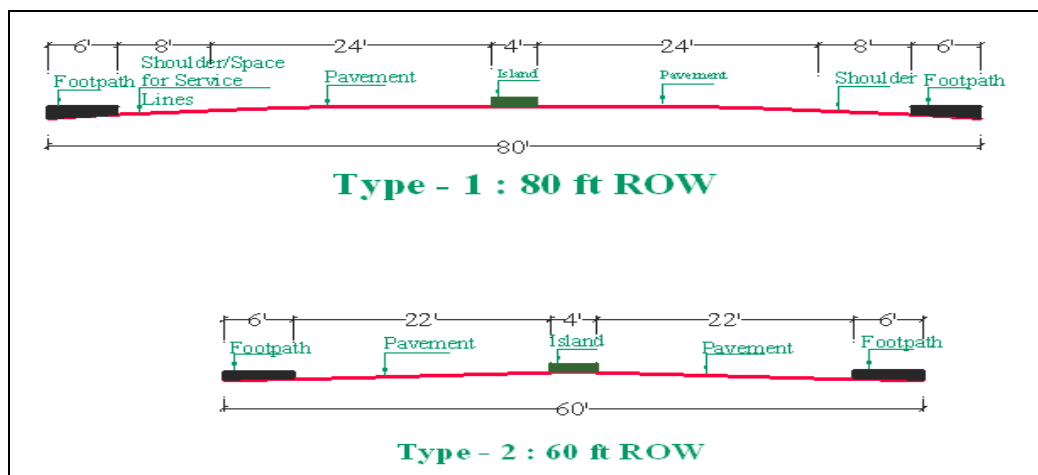
Source: Physical Feature Survey, 2010.

### Narrow Road Width

Narrow width of roads and poor maintenance of roads has been mentioned by most respondents as the major road problems in the Paurashava. About 67% respondents have pointed the misery of road movement during monsoon when unpaved roads get muddy. Narrow width of roads is likely to become a major problem of traffic movement when the Paurashava will expand and density of population will increase in future with consequent increase of road traffic. The field survey shows, 96% households reported that the road widths in front of their houses are 8 ft. or less. This is alarming as this condition will become a source of traffic problem, when road traffic will increase. At present, no traffic problem regarding road width is in the Paurashava. Specific example on road width for creating traffic problem is presented below:

**Primary Road (Regional Road):** The Highway is considered as primary road. Length is 2849.56 meter and average width 4 meter. Road standard (ROW) recommended in the Table-11.5 is 60 feet to 80 feet, proves that the standard (ROW) of the existing primary road in the Paurashava is lower than the standard (ROW) recommended. Moreover, in hat day and non-hat day, highest volume of traffic flows on the primary road is about 250 PCU/hour. No deficiencies regarding the capacity of primary road exists.

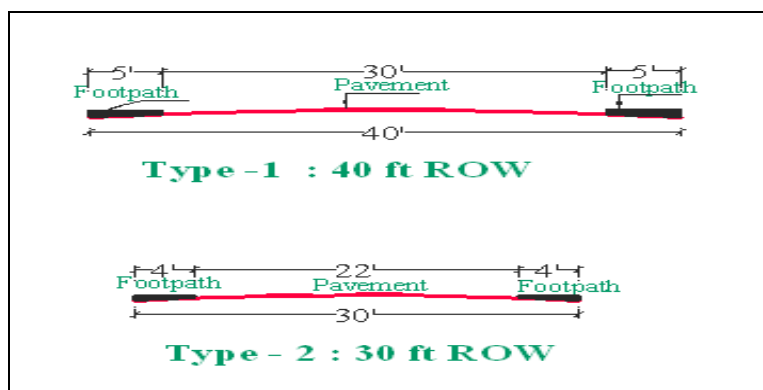
**Figure 11.1: Cross-section of Primary Road**



**Secondary Road:** Five secondary roads are in the Paurashava. Average width of the secondary road is 3.5 meter. The Naiya Kandi Road is the longest secondary road among all. Road standard (ROW) recommended in the Table-11.5 is 30 feet to 40 feet, proves that the standard (ROW) of the existing secondary roads in the Paurashava is lower than the standard (ROW) recommended. Moreover, in hat day and non-hat day, highest volume of traffic flows on those secondary roads is about 188 PCU/hour. No deficiencies regarding the capacity of those secondary road exits.

**Tertiary Road:** In the Paurashava, 3 tertiary road exits. Average width of those roads is 3 meter. Road standard (ROW) recommended in the Table-11.5 for tertiary road is 25 feet, proves that the standard (ROW) of the existing tertiary roads in the Paurashava is lower than the standard (ROW) recommended. Moreover, in hat day and non-hat day, volume of traffic flows on those tertiary roads is about 200 PCU/hour. No deficiencies regarding the capacity of those tertiary road exits.

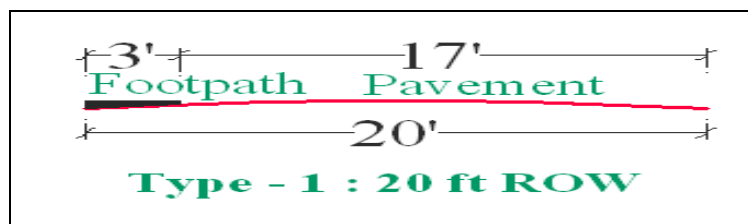
**Figure 11.2: Cross Section of Secondary and Tertiary Road**



**Access road:** Road standard (ROW) recommended in the Table-11.5 may be imposed on access road and it is 20 feet. In the Paurashava, all access roads are less than 12 feet and most of them are using as footway. Non-motorized vehicles named Van sometimes use those walkways. No deficiencies regarding the capacity of those access road exits.



**Figure 11.3: Cross Section of Access Road**



#### **Tortuous Road and Missing Link**

A major characteristic of spontaneously developed roads is that they are tortuous in their shapes. This is because land owners allow roads to follow the alignment of the edges of the tortuous plot boundaries. Another problem of community initiated roads is that they are not in a well linked network. Sometimes links to nearby roads are missing. This causes people to travel comparatively longer distances to reach a nearby destination. In the Paurashava, though, such type of problems is not in scenarios but with the increase of physical growth this type of problem will specific.

#### **11.2.6.2 Operational, Safety, Signal and Other Deficiencies**

- Traffic management system is absent in the Paurashava. No operational system yet being imposed on traffic movement.
- Due to the minimum PCU/hr. both in hat and non-hat day, availability of non-motorized vehicles and absent of available built-up area, road safety exists naturally in the Paurashava.
- Traffic signaling system is totally absent in the Paurashava. Generally, traffic signaling system will not be needed up to the limit of the planning period. On some specific point of primary and secondary roads, traffic signaling will be needed.

#### **11.2.7 Condition of Other Mode of Transport (Rail/Water/Air)**

No railway and air way facilities in the Paurashava.

### **11.3 Future Projections**

This section presents future projection on transportation requirement of Mehendiganj Paurashava up to the year 2031. The chapter also provides information on transport network and future traffic volume and level of service.

#### **11.3.1 Travel Demand Forecasting for Next 20 Years**

Existing road network is quite enough for accommodating present volume of traffic. The Planning area is rural in nature. Most of the roads are katcha and needs to be constructed as pucca or at least semi-pucca. Katcha roads become clayey in the rainy season and bring immense sufferings for the users. As a result, social, cultural and economic activities are disrupted significantly at that time. A very limited uses of small boats are found for transportation of goods within the short distance particularly on hat day. Due to the absence of effective alternatives, passengers and goods movement of the planning area is largely dependent on road transportation. This dependency is being calculated according to the increase of accessibility, consideration of the missing links, volume of traffic movement, bulk density of the area and economic importance of the area. Growth direction is also a considerable component for the demand analysis of the road. Accordingly different standards have been suggested for different types of Paurashava roads.

Present population of the Paurashava is 30067 (2011) and after 20 years it will be 31703 (2031). Highest PCU/hr. at hat day is 250 and non-hat day is 188. The scenario proves that traffic congestion is not alarming. At the sametime, highest road width at present is 4 meter and it will be saturated with the traffic if the PCU/hr. increases above 800. It is expected that gradual implementation of the components prescribed in the Master Plan will increase traffic volume.

About 72% people's income of the Paurashava is between Tk. 3500 to Tk. 10000. On the other hand, 40% are involved with small business and 21% with agriculture. Housing condition is 19% semi-pucca and 78% katcha structures. The scenario proves that the Paurashava dwellers have no capability to increase traffic volume provisioning motorized vehicles. They will increase non-motorized vehicles and Nosimon.

After construction of road cum embankment, a large amount of single-crop land will turn into double-crop land. As a result, agro-product will be increased. With the increase of agriculture production, non-motorized vehicles will be increased for marketing of agro-product.

With the expansion of administrative services, motorized public vehicles will be increased and at the sametime, traffic volume also.

At present, about 98% traffic is under the private sector and 90% of them are enjoying by the non-motorized vehicles. It is expecting that the scenario remain stable for next 20 years.

**Table-11.6: Geometric Design Standards of Roads Proposed by LGED**

Class of Roads	Standards recommended	Modified by Consultant
Primary roads	150 – 100 Feet	60 Feet
Secondary roads	100 – 60 Feet	40 – 30 Feet
Local roads	40 – 20 Feet	20 Feet

Source: UTIDP, LGED, 2010 & Recommended by consultant.

#### **Method Used**

First phase of the transport planning deals with surveys, data collection and inventory. Next phase is the analysis of collected data and prepare models to describe the mathematical relationship that can be discerned in the trip-making behavior. Transportation analysis and model have four steps. The analysis and model building phase starts with the step called Trip Generation and ends with Modal Split.

**Trip Generation:** Trip generation is used to calculate the number of trip ends in a given area. Objective of the trip generation stage is to understand the reasons behind the trip making behavior and to produce mathematical relationships to synthesis the trip making pattern on the basis of observed trips, land use data and household characteristics. A trip is one-way person movement by a mechanized mode of transport, having two trip ends. The trip ends are classified into generations and attractions. A number of factors govern the trip generation rates, such as income of the households, car ownership, family size and composition, landuse characteristics, distance of zone from town centre, accessibility to public transport and its efficiency and employment opportunity. Trip Generation required a strong secondary data support, which is absent in our country. As a result, trip generation is not applicable for the preparation of master plan for Mehendiganj Paurashava.

**Trip Distribution:** Second step of transport model is Trip Distribution. After estimation of the Trips generated from and attracted to the various zones, it is necessary to determine the direction of travel. Number of trips generated in every zone of the area under study has to be apportioned to the various zones to which these trips are attracted. Growth factor methods and Synthetic methods are the two major types of trip distribution methods. For growth factor method a large-scale O-D studies with high sample size is required to estimate smaller zone-to-zone movement accurately

which is very much time consuming and costly in respect of Bangladesh. The O-D survey completed for preparation of this master plan is being considered to know the trips distributed among the roads.

**Trip Assignment:** Traffic assignment is the stage in the transport planning process wherein the trip interchanges are allocated to different parts of the network forming in transportation system. In this stage the route to be traveled is determined and the inter-zonal flows are assigned to the selected routes. Choice of the route is selected on the basis of journey time, length, cost, comfort, convenience and safety. Time is often considered as the sole criterion. In respect of Bangladesh, time is not constant for same zone-to-zone movement as there are different types of vehicles. Besides, route selection is being selected manually for small jobs but large jobs make use of an electronic computer for its analysis.

**Modal Split:** Modal is the process of separating person-trips by the mode of travel. It is expressed as a fraction; ratio or percentage of the total number of trips. It refers to the trips generated by private car as opposed to public transport. Transportation pattern can only be accurately forecasted if the motivations that guide the traveler in his choice of the mode can be analyzed. The factors that affect choice among alternative modes are heterogeneous and numerous such as characteristics of the trip, household characteristics, zonal characteristics, network characteristics, etc. Modal split is not applicable in the preparation of master plan for Mehendiganj Paurashava as it requires strong secondary data support, which is absent in Bangladesh.

### 11.3.2 Transportation Network Considered

The transportation survey has identified a number of problems constraining the development of the Paurashava, such as:

- Lack of a hierarchy of roads within the Paurashava with many of the roads unable to fulfill their intended functions adequately;
- Scarcity of reserves of land for future roads; and
- A tradition of encroachment in those areas where road reserves have been made.

To establish a rational hierarchy of roads in the Paurashava, it will be needed to use development control to ensure that reserves of land, once established are maintained.

In the Transportation Plan, north, south, east and west direction links with the Paurashava have been considered. To maintain an effective linkage, the plan proposes one primary road and others are secondary and tertiary roads.

## 11.4 Transportation Development Plan

### 11.4.1 Plan for Road Network Development

The overall road condition of Mehendiganj Paurashava is moderate. Most of the roads are pucca and semi-pucca. Some of the major roads of this Paurashava are Patar hat to Lalkharabad Road, Lalmia Road, Kala Mayer Ditchi Road, Hospital Road and Cherag Ali Hawlader Road. Those roads are RCC made and conditions are moderate.

For an efficient road network development, implementation of some of the recommendations made by the Roads and Highways in 2008 would be essential. In order to serve the Paurashava, as well as the local traffic around Paurashava, an analysis will present in the proposals. It is found that many of the road links are not recommended by the Roads and Highways Department. Further analysis under the Transportation Plan will be revealed that most of the links suggested by this study are infect required to be developed in a phased manner. Under the Transportation Plan, an attempt is being made to promote six major link roads in the Paurashava. At present, from west to

eastern part and from north to southern part, all vehicles movement is through two major roads. The proposed roads will be developed as local link roads.

The standard considers here is given by the UTIDP, LGED to draw the transportation development plan. Following are the suggested planning standards for road network development. These road hierarchies are proposed based on the functional linkage of the road of Mehendiganj Paurashava.

**Table-11.7: Proposed Road Standard**

<b>Class of Roads</b>	<b>Right of Way</b>
Paurashava Primary roads	60 ft.
Paurashava Secondary roads	30-40 ft.
Tertiary Road	20 ft.

### **Neighbourhood and Local Road**

The right of way (RoW) of neighborhood (mahallah) roads may be in between 20ft. to 25ft wide depending on their functions.

### **Road Design Standard**

All urban roads should have flexible pavements. The road intersection should be designed to allow easy movement of vehicles. At bridge, the road design should provide for an adequate sight distance and a smooth riding.

### **Functions of Road**

Each category of road has its particular function to perform. Access road carries traffic from buildings to the collector road and collector road carries traffic to the major road and vice versa. In reality, however, it is almost impossible to maintain this hierarchical use of roads except in an entirely planned area. However, functions will not be dependent on the road width, rather on the location of the road, surrounding land use and the link it is providing or the volume of traffic it is carrying. Thus a 40 feet wide secondary road can become a major road due to its strategic location and the purpose it is serving.

### **Link Roads**

The proposed Link Roads will serve Paurashava traffics and will reduce traffic congestion on the central areas. It will help in distributing traffic around the Paurashava and thereby reduce traffic congestion. The missing-links of those link roads naturally deserve priority in terms of resource allocation and emphasis on their early implementation.

The link roads which deserve priority attention and could contribute a lot in reducing pressure on the central part of the Paurashava are as follows:

1. Widening and improvement of local road from Patar hat to Lalkharabad Road.
2. Widening and improvement of Lalmia Road.
3. Widening and improvement of Kala Mayer Dighi Road.
4. Widening and improvement of Hospital Road.
5. Widening and improvement of Cherag Ali Hawlader Road.
6. Widening and improvement of Shahid Manik Road.
7. Widening and improvement of Sayed Kodom Ali Road.
8. Widening and improvement of the road from Patar hat to Alimganj Road.
9. Widening and improvement of the Naiya Kandi Road.
10. Widening and improvement of the Babul Road.

An initiative should be taken to develop an effective and efficient arterial road network, which could provide a gridiron system with lots of alternative links for movement in different directions.

#### 11.4.1.1 Proposal for Improvement of the Existing Road Networks

Use of road reserve is the initial stage for improvement of existing **primary road**. The maximum recommended reserve width for a primary road that will be adopted and maintained is 48 meters; with an initial basis the extremities of the reserve being 24 meters on either side of the road centre line. This may vary, especially on existing roads, due to localized circumstances.

Alternative cross-sections for the primary road is –

- a primary road with no collector roads (22 meters);
- a primary road with a collector road on one side only (32 or 35 meter);
- a primary road with collector roads on both sides (42, 45 or 48 meters).

Regardless of which option is required, initially the full 48 meter reserve will be applied, although not necessarily purchased in the first instance, until such time as more detailed site investigations have been undertaken.

For new road, the 48 meter reserve will be adopted in the short-term to prevent development encroaching in to it before construction of the road.

Within the established reserve, no further non-road related development will be permitted, with the exception of utility networks. The utilities should not fall under the main carriageways due to the disruption to traffic flows when the system requires repair or maintenance. Localized drainage channels should, where possible, also fall within the road reserve, preferably under the footpath or hard shoulder to reduce land requirements. If, however, this is not possible an additional reserve to cover the drainage channel will be required, increasing the overall width of the reserve.

Permanent structures that currently fall within the reserve should be permitted to remain until such time as they are redeveloped. Redevelopment of existing properties should fall wholly outside the reserve. Temporary structures should not be permitted even on a short-term basis. Existing structures should be removed as and when feasible.

For new roads, where reserves have been identified but implementation is unlikely to commence for a number of years, agricultural use of the land within the reserve should be permitted until such time as the land is required for construction. No structures, of whatever materials, will be permitted within the road reserve.

No direct access should be allowed onto the main carriageways (of primary road). Access should be gained only at controlled junctions—roundabouts or traffic-lights. The number of junctions or intersections should be minimized with desired spacing being not less than 500 meters.

Primary road with secondary roads should be provided in areas where there is considerable roadside development. These should generally be two-way service roads and will be used by non-motorized vehicles like rickshaw, van, pushcart and bullock carts including pedestrians. Controlled parking will be permitted where necessary.

Where secondary roads will not be required either immediately or in the long-term, the full reserve should be maintained (for utilities, etc.) unless there is clear reason why these reserves should be decreased.

Functions of the **secondary roads** is to act as –

- Links between the Paurashava and primary roads;
- Links between various important nodes of activity within the Paurashava.

The secondary roads are also intended to be high capacity routes, although their design speed will be significantly less than primary roads due to their being a far higher percentage local, inter-Paurashava traffic movements rather than intra-Paurashava. On many occasions within the Paurashava, existing routes will require the provision of tertiary roads to provide access to shop frontages and on-street parking for those shops. The tertiary roads also serve to collect traffic which currently enters at random from side streets.

The maximum recommended reserve that will be adopted and maintained for secondary road is 48 meters, preferably with the extremities of the reserve being 24 meters either side of the road centre line, although this may vary especially on existing roads due to localized circumstances.

Regardless of which option is required ultimately, initially the full 48 meter reserve should be applied until such time as a more detailed site investigation has been undertaken and the actual reserve required has been defined.

No non-road related development will be permitted within the road reserve. For new roads which will not be constructed in the foreseeable future, agricultural use of the reserve will be permitted until such times as the road is constructed. No permanent or temporary structure will be permitted.

In general, no direct access will be permitted onto the main carriageways (of secondary roads) with access gained only at controlled junctions. Occasionally, due to existing situations, access from a side road may be entertained. The number of junctions should be minimized with desired spacing being at 200 meter intervals.

Limited direct access will be allowed from major traffic generators such as Paurashava Office complexes, factories and shopping centres where no other alternative access arrangement is feasible. Car parking arrangements for those large landuses must be provided on off-street.

Functions of the **tertiary road** are:

- collect and distribute traffic to and from access roads from predominantly residential areas to other parts of the hierarchy;
- provide direct access to roadside landuses.

The recommended reserve for tertiary road is 18 meters, 9 meters either side of the centre line. On-street parking may be permitted.

No development will be permitted within the 18 meter reserve.

Direct access will be permitted although major generators should be required to have off-street parking areas. Junctions should be a minimum of 150 meters apart.

**Access roads** provide access to residential areas and properties therein. On-street parking is permitted providing that this will not block the access road.

Recommended reserve for access is 10 meter, although in existing situations, a minimum reserve of 6 meter will be entertained.

Junctions and access roads should be a minimum of 50 meters apart, although deviation to this will need to be accommodated in existing areas.

Direct access from residential properties will be permitted.

The process that the Paurashava/RHD can undertake to establish new road reserves for each of the proposed roads shown on the Transportation and Traffic Management Plan is described below:

- Initial step will be to determine two points between which the new road will be required. In certain instances, the precise intersection or connection point will be obvious, whilst in other cases only a generalized location is identifiable in the first

instance. Determination of the exact connection points can only be made once further steps in the process have been undertaken.

- Having identified two connection points (either known or vague), next step will be to conduct a search of a wide area to identify a number of alternative routes. Width of the area subjected to this search will vary according to individual circumstances, with the area being relatively narrow in dense Paurashava locations (say 80 to 100 meters), but wider in more rural settings (say 200 to 300 meters).
- The number of alternative alignments to be identified will also vary, but as a general rule, a maximum of five alignments will be chosen. When identifying each of the different alignments, care will be taken to ensure that they are realistic and capable of accommodating the width of reserve required for the standard of road envisaged.

During this stage of the process, number of buildings, other structures or natural environment affected by the proposal should be seen as a constraint, but not yet as a major constraint. That being said, following the rule for realism stated above, the alignments will need to respect as much existing permanent development as possible, aiming instead, in dense situations, to target gaps between developments rather than through them. Only where the avoidance of specific buildings or groups of buildings is unavoidable, to produce a worthwhile alignment, should their removal be seen as part of that alternative's cost.

Similarly, in rural locations or in areas of high natural environmental quality, extreme care should be exercised when choosing the alternatives to respect the natural environment and choose options that are going to minimize the visual impact of a new road or avoid destruction of areas of the highest environmental quality.

Having established the alternative alignments, these will now be assessed, against set criteria to enable the Paurashava to choose a preferred option. The criteria that must be taken into account during this exercise include:

**The impact of the alternative on existing properties:** whether these are permanent or temporary and the type of development that is being affected. This, in part, will identify the general scale of compensation that will accrue with each of the alignments and therefore the viability of a route to be chosen as the preferred option.

**The impact that each alignment will have on the general and natural environment:** routes which have a high visual impact in an area of natural beauty will, for example, score badly on this criteria.

**Amount of vacant public land available along each route:** more land the government owns, the easier the project will be to implement and equally the lower the cost of an option, as the need to compensate landowners will be reduced.

**The ease of construction:** each alignment will need to be considered with again easier solutions not requiring major development items – bridges – for example, being preferred to more difficult proposals which will increase the cost of construction.

**The severance of landuses and communities:** need to be assessed, with preference been given to those routes that minimize severance.

**Table-11.8: Proposed Roads (1<sup>st</sup> Phase)**

Road ID	Road type	Proposed Width (ft)	Proposal	Length (m)
PRdT 1	Tertiary Road	20	Widening	753.87
PRdS 2	Secondary Road	40	Widening	1019.98
PRdS 3	Secondary Road	40	Widening	693.63
PRdP 4	Primary Road	60	Widening	633.48

Road ID	Road type	Proposed Width (ft)	Proposal	Length (m)
PRdP 6	Primary Road	60	Widening	1944.83
PRdT 7	Tertiary Road	20	Widening	95.59
PRdS 8	Secondary Road	40	Widening	752.04
PRdT 9	Tertiary Road	20	Widening	557.21
PRdS 10	Secondary Road	40	Widening	273.22
PRdS 11	Secondary Road	40	Widening	379.03
PRdT 12	Tertiary Road	20	Widening	79.88
PRdS 14	Secondary Road	40	Widening	787.52
PRdP 15	Primary Road	60	Widening	1041.37
PRdT 16	Tertiary Road	20	Widening	292.56
PRdT 17	Tertiary Road	20	Widening	945.55
PRdP 18	Primary Road	60	Widening	610.92
PRdP 19	Primary Road	60	Widening	1033.21
PRdS 20	Secondary Road	40	Widening	589.12
PRdT 21	Tertiary Road	20	Widening	431.42
PRdS 22	Secondary Road	40	Widening	194.52
PRdP 23	Primary Road	60	Widening	160.93
PRdS 24	Secondary Road	40	Widening	75.22
PRdS 25	Secondary Road	40	Widening	309.04
PRdT 26	Tertiary Road	20	Widening	326.05
PRdS 27	Secondary Road	40	Widening	2658.00
PRdP 28	Primary Road	60	Widening	592.16
PRdT 30	Tertiary Road	20	Widening	454.13
PRdT 31	Tertiary Road	20	Widening	201.81
PRdT 32	Tertiary Road	20	Widening	388.23
PRdT 33	Tertiary Road	20	Widening	156.39
PRdS 41	Secondary Road	40	Widening	673.65
PRdT 46	Tertiary Road	20	Widening	513.48
PRdP 47	Primary Road	60	Widening	1430.32
PRdS 49	Secondary Road	40	Widening	126.09
PRdT 50	Tertiary Road	20	Widening	222.38
PRdS 51	Secondary Road	40	Widening	136.94
PRdT 52	Tertiary Road	20	Widening	268.33
PRdS 53	Secondary Road	40	Widening	622.07
PRdS 54	Secondary Road	40	Widening	459.40
PRdT 55	Tertiary Road	20	Widening	312.63
PRdT 58	Tertiary Road	20	Widening	386.71
PRdP 60	Primary Road	60	Widening	642.31
PRdS 64	Secondary Road	40	Widening	435.14
PRdT 65	Tertiary Road	20	Widening	231.31
PRdS 66	Secondary Road	40	Widening	178.58
PRdS 67	Secondary Road	40	Widening	430.33
PRdS 68	Secondary Road	40	Widening	116.38



Road ID	Road type	Proposed Width (ft)	Proposal	Length (m)
PRdT 71	Tertiary Road	20	Widening	204.57
PRdS 72	Secondary Road	40	Widening	538.02
PRdS 73	Secondary Road	40	Widening	599.60
PRdS 74	Secondary Road	40	Widening	989.35
PRdS 75	Secondary Road	40	Widening	61.37
PRdT 76	Tertiary Road	20	Widening	469.38
PRdT 78	Tertiary Road	20	Widening	237.78
PRdT 79	Tertiary Road	20	Widening	730.75
PRdT 80	Tertiary Road	20	Widening	286.28
PRdT 81	Tertiary Road	20	Widening	877.30
PRdP 82	Primary Road	60	Widening	414.47
PRdT 83	Tertiary Road	20	Widening	128.04
PRdS 84	Secondary Road	40	Widening	67.92
PRdT 85	Tertiary Road	20	Widening	474.01
PRdT 86	Tertiary Road	20	Widening	99.77
PRdT 87	Tertiary Road	20	Widening	93.89
PRdT 88	Tertiary Road	20	Widening	789.97
PRdT 89	Tertiary Road	20	Widening	228.93
PRdT 90	Tertiary Road	20	Widening	141.76
PRdS 91	Secondary Road	40	Widening	209.17
PRdS 92	Secondary Road	30	Widening	423.26
PRdP 93	Primary Road	60	Widening	312.71
PRdS 94	Secondary Road	40	Widening	817.93
PRdS 95	Secondary Road	40	Widening	350.96
PRdS 96	Secondary Road	40	Widening	163.68
PRdS 97	Secondary Road	40	Widening	219.92
PRdT 99	Tertiary Road	20	Widening	343.38
PRdT 100	Tertiary Road	20	Widening	377.25
PRdT 101	Tertiary Road	20	Widening	249.29
PRdT 102	Tertiary Road	20	Widening	356.85
PRdT 103	Tertiary Road	20	Widening	400.54
PRdT 104	Tertiary Road	20	Widening	192.30
PRdT 105	Tertiary Road	20	Widening	467.49
PRdT 106	Tertiary Road	20	Widening	158.36
PRdT 110	Tertiary Road	20	Widening	746.69
PRdT 113	Tertiary Road	20	Widening	79.32
PRdS 114	Secondary Road	40	Widening	236.89
PRdT 116	Tertiary Road	20	Widening	103.41
PRdT 117	Tertiary Road	20	Widening	40.41
PRdT 120	Tertiary Road	20	Widening	72.04
PRdT 121	Tertiary Road	20	Widening	155.06
PRdS 122	Secondary Road	40	Widening	286.91
PRdS 123	Secondary Road	40	Widening	101.70

Road ID	Road type	Proposed Width (ft)	Proposal	Length (m)
PRdT 125	Tertiary Road	20	Widening	273.60
PRdT 126	Tertiary Road	20	Widening	142.68
PRdT 128	Tertiary Road	20	Widening	516.74
PRdP 129	Primary Road	60	Widening	353.22
PRdT 131	Tertiary Road	20	Widening	590.87
PRdS 132	Secondary Road	40	Widening	125.13
PRdS 133	Secondary Road	40	Widening	146.78
PRdS 134	Secondary Road	40	Widening	246.04
PRdT 135	Tertiary Road	20	Widening	80.92
PRdT 136	Tertiary Road	20	Widening	107.85
PRdT 137	Tertiary Road	20	Widening	289.63
PRdT 138	Tertiary Road	20	Widening	234.38
PRdT 139	Tertiary Road	20	Widening	251.68
PRdT 141	Tertiary Road	20	Widening	66.98
PRdT 142	Tertiary Road	20	Widening	100.36
PRdT 145	Tertiary Road	20	Widening	211.39
PRdT 146	Tertiary Road	20	Widening	69.22
PRdT 147	Tertiary Road	20	Widening	101.13
PRdT 148	Tertiary Road	20	Widening	101.11
PRdT 149	Tertiary Road	20	Widening	125.11
PRdT 155	Tertiary Road	20	Widening	207.77
PRdS 162	Secondary Road	40	Widening	1192.89
PRdS 164	Secondary Road	40	Widening	397.53
PRdS 169	Secondary Road	40	Widening	379.23
PRdS 180	Secondary Road	30	Widening	273.20
PRdS 181	Secondary Road	30	Widening	74.13
PRdT 183	Tertiary Road	20	Widening	43.25
PRdT 193	Tertiary Road	20	Widening	111.63
PRdT 203	Tertiary Road	20	Widening	160.64
PRdT 205	Tertiary Road	20	Widening	101.60
PRdT 206	Tertiary Road	20	Widening	90.30
PRdT 207	Tertiary Road	20	Widening	83.19
PRdS 208	Secondary Road	40	Widening	197.37
PRdP 219	Primary Road	60	Widening	449.67
PRdP 235	Primary Road	60	Widening	122.55
PRdP 237	Primary Road	60	Widening	124.36
PRdT 238	Tertiary Road	20	Widening	140.84
PRdS 239	Secondary Road	40	Widening	113.42
PRdT 245	Tertiary Road	20	Widening	140.19
PRdP 246	Primary Road	60	Widening	59.67
PRdS 256	Secondary Road	40	Widening	614.45
PRdS 257	Secondary Road	40	Widening	221.89
PRdS 258	Secondary Road	40	Widening	554.45

Road ID	Road type	Proposed Width (ft)	Proposal	Length (m)
PRdS 289	Secondary Road	40	New Road	610.81
PRdP 290	Primary Road	60	Widening	2223.67
PRdS 291	Secondary Road	40	Widening	160.50
PRdS 292	Secondary Road	40	Widening	342.05
PRdS 69	Secondary Road	40	Widening	1013.36
PRdT 107	Tertiary Road	20	Widening	341.35
PRdS 31	Secondary Road	40	Widening	95.94
PRdS 45	Secondary Road	40	Widening	508.02
PRdS 43	Secondary Road	40	Widening	94.83
<b>TOTAL</b>				<b>55295.25</b>

Source: Based on Physical feature survey, 2010.

Other more localized criteria may be included at the time of assessment.

The result of this assessment exercise will identify for the Paurashava the route that should be considered as its preferred alignment. The reserve for this alignment will then become the area within which no development, other than for agricultural use, will be permitted.

A number of new roads including improvement of existing roads are presented in the above table. In the Paurashava, one primary road named highway (as a regional highway) lying with length 2.85 km. under the Paurashava jurisdiction.

All the roads may be constructed under the road development scheme approved by the government for the authorities named RHD, LGED and Paurashava. In total, 108.73 km. existing roads are in the Paurashava and more 19.10 km. roads have been proposed for efficient accessibility of the Paurashava. Details of proposed major new roads and widening of roads is presented in following table while a detailed road inventory (proposed) has been enclosed in **Annexure- E** later.

## 11.4.2 Plan for Transportation Facilities

### 11.4.2.1 Transportation Facilities Plan

Transportation facilities and services include Bus Terminal, Bus Stoppage with Shade, Ticket Counter, Waiting Place for Travelers, Parking Space for Motorized and Non-motorized Vehicles, Service Centre and Washing / Toilet Facilities. At present, no formal transportation facilities and services are available in the Paurashava.

#### Rickshaw, Tempo and CNG Stand

Tempo is now a major and a cheaper motorized vehicle in small urban area and perform important role in commuter transportation. No formal tempos stand in the Paurashava. As per the growth trend, total 07 CNG/ rickshaw & tempo stand is being proposed in the Ward No. 01,02,03,04,05,06 and 09. Detail is presented in the following table.

**Table-11.9: Proposed Rickshaw, Tempo and CNG Stand**

Name of use	Ward No.	Mouza	Plot No.	Area (acre)
CNG/Rickshaw/Tempo Stand	01	Char Hogla_41_3	2296,2297,2521,2522,2524	0.18
	02	Sonamukhi_44_1	1-4,208-210,208-210,1001	2.54
	03	Ambikapur_45_0	173,174	0.53
	04	Durgapur_47_0	774,775	0.12
	05	Mehendiganj_46_0	65.532,533,842-846,954-957	0.43
	06	Kharki_79_0	460,464,512-514	0.59
	09	Chunar Char_81_0	416,419	0.39
	<b>Total</b>			<b>8.19</b>

Source: Based on Physical feature survey, 2010.

### **Bus, Truck and Launch terminal**

A bus terminal and a truck terminal are being proposed as per demand of the Paurashava. The bus terminal proposed in the plan will accommodate all type of transportation facilities. The proposed area for bus terminal is 2.85 acres and truck terminal is 0.31 acres. Both the terminals are located in three mouzas and three Wards. Detail is presented in the following table.

**Table-11.10: Proposed Bus, Truck and Launch Terminal**

Name of use	Ward No.	Mouza	Plot No.	Area (acre)
Bus terminal	05	Mehendiganj_46_0	64,66-68,179,180,1016	0.10
	06	Kharki_79_0	1,3,5,93,96	2.75
Truck terminal	07	Bhuta Lakshmipur_43_0	9,8,11,12	0.31
Launch terminal	09	Chunar Char_81_0	893-895	0.32

Source: Based on Physical feature survey, 2010.

## **11.4.3 Waterway Development/Improvement Options**

Water transport network of Mehendiganj Paurashava has significant importance in carrying both people and goods. According to the demand of the Paurashava and Launch Owners Association, improvement of landing facilities at the Ghats and approach road is needed. The Paurashava authority may be the custodian for such activities.

### **11.4.3.1 Proposal for Improvement of the Existing Waterway**

The existing Machkata River should be re-excavated to improve the waterway throughout the year.

### **11.4.3.2 Proposal for New Waterway Development**

- Encourage private sector to involve with the construction of water ways. BOT (Build Operate and Transfer to the Government) system for private sector will appropriate.
- The Paurashava may, in collaboration with the Inland Water Transport Authority (IWTA), develop the water ways using the Machkata River.

#### **11.4.4 Railway Development Options**

No railway development is possible in the Mehendiganj Paurashava.

### **11.5 Transportation System Management Strategy (TSMS)**

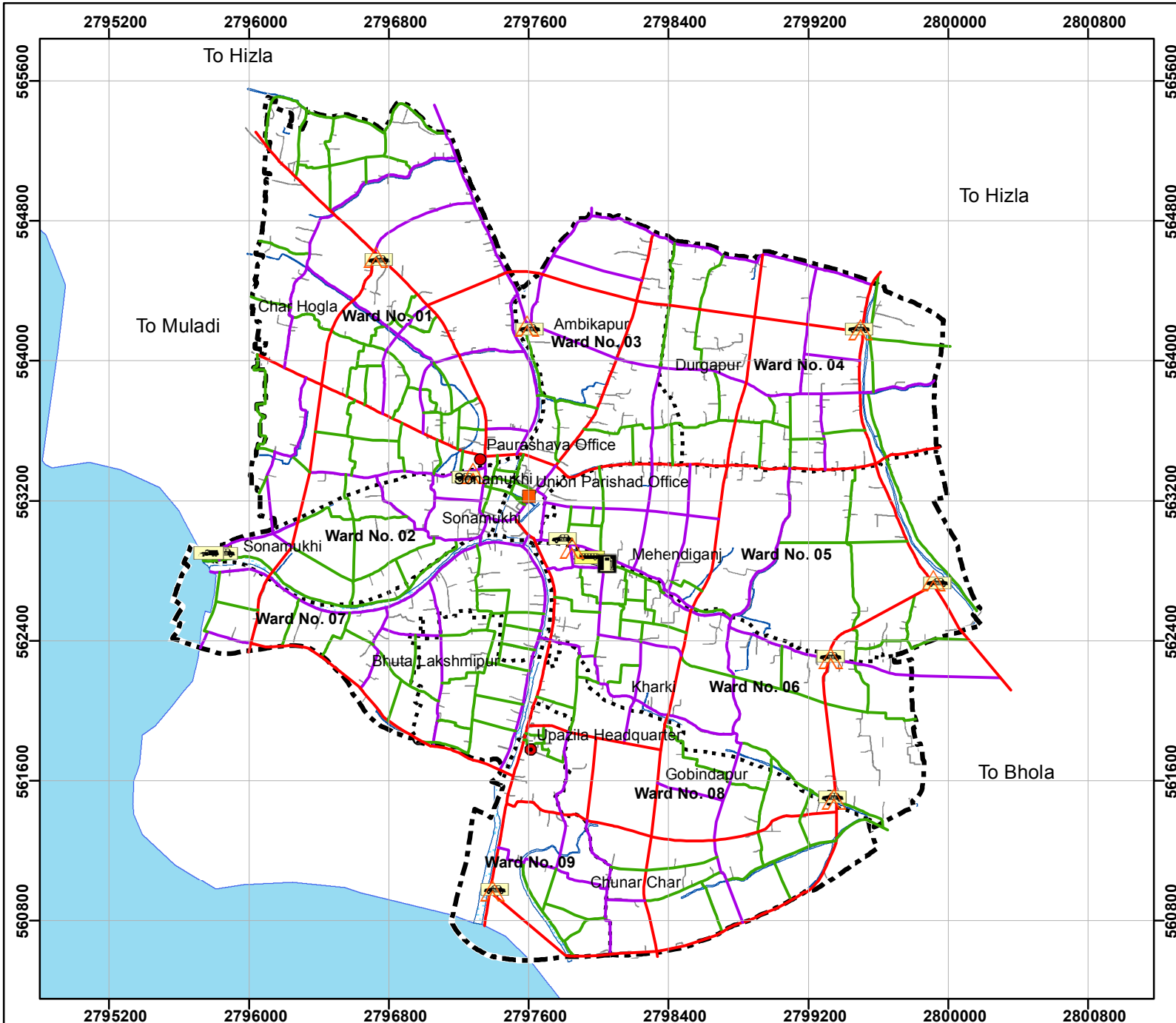
#### **11.5.1 Strategies for Facility Operations**

Following strategies will be adopted to operate the facilities related with the provisioning of suitable transportation system.

- An improved traffic management system should be imposed. All facilities involved with this system should be provisioned.
- The land uses at the intersections should be controlled with the provisioning of passenger shade, public toilet, ticket counter, tea stall and other necessary facilities.
- Parking facilities for motorized and non-motorized vehicles should be provisioned during construction of roads.

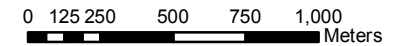
Map 11.2

Proposed and existing terminals, stands/stoppages of Mehendiganj Paurashava



SCALE

1:32,000



LEGEND

- Planning Area Boundary
- Paurashava Boundary
- Ward Boundary

Admin Point

- Paurashava Office
- Union Parishad Office
- Upazila Headquarter

- Primary Road
- Secondary Road
- Tertiary Road

Transport Facilities

- Bus Stop
- Bus Terminal
- CNG/Rickshaw Stand
- Car Parking
- Filling Station
- Helipad
- Passenger Shed
- Truck Terminal

PREPARATION OF MASTER PLAN FOR MEHENDIGANJ PAURASHAVA  
Mehendiganj Upazila, Barisal District



Government of the People's Republic of Bangladesh  
Ministry of Local Government, Rural Development and Cooperatives  
Local Government Division

Local Government Engineering Department (LGED)  
Upazila Towns Infrastructure Development Project (UTIDP)  
Package No: 11 (Barisal Region)

CONSULTANT  
**SCPL** Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
In Association with

### 11.5.2 Strategies for Traffic Flow and Safety

Following strategies will be adopted to implement circulation network in the planning area:

- A comprehensive road network plan has been prepared for the Paurashava using a hierarchy of road network. Implementation will also be followed following this hierarchy.
- In case of local roads a participatory approach will be developed to realize at least a part of the development cost bears by the beneficiaries. This will also help to reduce delay and cost involved in land acquisition for road construction.
- Proposed roads in those areas will be chosen for immediate construction that is needed to promote growth in that area.
- Incremental Road Construction Approach will be adopted to get rid of unnecessary construction costs, where roads remain underutilized.
- Service roads will be constructed along with the major roads to allow free flow of long distance traffic.
- A restricted buffer zone will be created along primary roads passing through agriculture to discourage roadside development.

### 11.5.3 Strategies for Traffic Management

- Linking the missing links of primary, secondary and tertiary roads on priority, and widen some tertiary roads to make networks for efficient circulation.
- Provide adequate pedestrian facilities and off-street parking wherever needed.
- Not to allow any development within the right of way (ROW).
- Separate lane for non-motorized vehicles should be provisioned on the primary and secondary roads.

## 11.6 Plan Implementation Strategies

### 11.6.1 Regulations to Implement the Transportation Plan

Following regulations will be needed for implementation of the plan.

**Public Roads Act, 2004:** Objectives of the Public Roads Act, 2004 is prescribed in the section 2. Those objectives are to:

- a) establish ownership and responsibilities for roads;
- b) establish the framework for managing the road network;
- c) establish general principles for road management;
- d) provide for general design and planning principles for roads;
- e) confer powers and responsibilities on road authorities;
- f) commit road authorities to provide and maintain safe roads, and to do so using resources efficiently;
- g) provide for the establishment and classification of public roads;
- h) provide for data bases of public roads, and public access to them;
- i) set out rights and duties of road users;
- j) control activities on roads;

- k) make special provision for restriction on access to roads;
- l) identify characteristics of new road types;
- m) provide a legal framework for private sector participation in road construction, operation and maintenance, including tolling of roads;
- n) establish defenses for civil liabilities; and
- o) create offences and provide for penalties.

Section 5 has defined public roads as-

- 1) The Government may declare a public road.
- 2) The declaration may be made in relation to land, whether or not it is currently used for passage by members of the public.
- 3) In the declaration, the Government shall classify the public road as:
  - (a) a national road; (b) a regional road; (c) a Zila road; (d) an urban road;
  - (e) an Upazila road; (f) a union road; (g) a village road.

**Motor Vehicles Ordinance, 1983 (Ordinance No. LV of 1983) was enacted in 22<sup>nd</sup> September, 1983:** The Ordinance will be needed mostly for the registration of motor vehicles and issuing of driving license.

**Stage Carriages Act, 1861 (Act No. XVI of 1861)** was enacted in 7<sup>th</sup> July 1861. Section 1 of the Act has defined the term Stage Carriage and said, “every carriage drawn by one or more horses which shall ordinarily be used for the purpose of conveying passengers for hire to or from any place in Bangladesh shall, without regard to the form or construction of such carriage, be deemed to be a Stage Carriages within the meaning of this Act.” Again, according to the section 2, no carriage shall be used as a Stage Carriage unless licensed by a Magistrate.

The Paurashava may, in communication with the RHD and LGED and with the prime approval from the Government may enforce the regulations as mentioned above. Again, some of the relevant regulations of developed countries may be enforced by the appropriate authority for the betterment of accessibility, road safety and road management. In connection with this concept, **Highways Act of England and Wales** may be followed.

According to the section 70(1a) of the **Highways Act of England and Wales**, the owner or occupier of any structure and the owner or occupier of any land on which a structure is situated shall take all reasonable steps to ensure that the structure or the use of the structure is not a hazard or potential hazard to persons using a public road and that it does not obstruct or interfere with the safe use of a public road or the maintenance of a public road.

(b) Where a structure or the use of a structure is a hazard or potential hazard to persons using a public road or where it obstructs or interferes with the safe use of a public road or with the maintenance of a public road, a road authority may serve a notice in writing on the owner or occupier of the structure or on the owner or occupier of any land on which the structure is situated to remove, modify or carry out specified works in relation to the structure within the period stated in the notice.

(2 a) The owner or occupier of land shall take all reasonable steps to ensure that a tree, shrub, hedge or other vegetation on the land is not a hazard or potential hazard to persons using a public road and that it does not obstruct or interfere with the safe use of a public road or the maintenance of a public road.

(b) Where a tree, shrub, hedge or other vegetation is a hazard or potential hazard to persons using a public road or where it obstructs or interferes with the safe use of a public road or with the maintenance of a public road, a road authority may serve a notice in writing on the owner or



occupier of the land on which such tree, shrub, hedge or other vegetation is situated requiring the preservation, felling, cutting, lopping, trimming or removal of such tree, shrub, hedge or other vegetation within the period stated in the notice.

Again, section 71(1a) said that, any person who, without lawful authority or the consent of a road authority-

- erects, places or retains a sign on a public road, or
- erects, places or retains on a public road any caravan, vehicle or other structure or thing (whether on wheels or not) used for the purposes of advertising, the sale of goods, the provision of services or other similar purpose, shall be guilty of an offence.

Section 76(1) of the **Highways Act of England and Wales** have provisioned regulations for a road authority and said, a road authority may-

- construct and maintain drains in, on, under, through or to any land for the purpose of draining water from, or preventing water flowing onto, a public road,
- use any land for the temporary storage or the preparation of any gravel, stone, sand, earth or other material required for the construction or maintenance of a public road.

### **11.6.2 Implementation, Monitoring, Evaluation and Coordination of the Plan**

**Implementation through Multi-Sectoral Investment Programme:** Major infrastructure development works such as primary roads, secondary roads, transportation facilities etc., will largely be controlled by Government. Public works requires efficient co-ordination through the Multi-Sectoral Investment Programme (MSIP).

Objective of a Multi-Sectoral Investment Programme (MSIP) will match a list of the development projects with the funding stream necessary to implement them. There are two basic activities that would determine the contents of MSIP. One activity would be to prioritize and schedule the investment projects of all public agencies so they will collectively help to achieve the development goals and objectives of the Transportation and Traffic Management Plan. Second activity would be to analyze the source and availability of fund for the prioritized list of development projects.

**Implementation through Action Plans and Projects:** Action Plans and Projects will be the implementation plans to solve problems at the local level. Action plans will take a direct approach toward plan implementation with a minimum of research, reports or elaborate planning methods. These projects will be easily identifiable and will require minimum resource.

**Implementation through Development Control:** Landuse zoning is one of several methods of plan implementation to be considered. In all cases, where some form of development, landuse control may be applied; careful consideration requires the following ideologies:

- the purpose to be achieved by the development controls;
- where controls should be applied;
- what aspect of development needs to be controlled;
- what type of development controls are required;
- what degree or level of development control is required;
- who will be affected by the required control;
- who will be affected by the controls and in what manner;
- when the controls should be applied;

- what will be the likely impact of the controls;
- how and by whom will the controls be administered and enforced.

Development control as an instrument of plan implementation may be selectively applied within the Urban Area Plans. Development controls would also be varied in intensity and detail to suit the particular circumstances. It is important that they should be clear and easily understood by all parties concerned. Since the entire Paurashava Master Plan 'package' has become statutory, development controls associated with its component plans would also be statutory.

**Implementation by Facilitating Private Investment:** Another approach that would be taken by government toward plan implementation will be to guide and facilitate investments made by the private sector. Government can achieve this with relative ease and at very low cost by setting up a legal and operational framework, coupled with suitable incentives, to facilitate land consolidation, plot boundary readjustment, efficient lay out of plots and provision of local infrastructure by the private sector. The benefits of this approach would be:

- increased efficiency of the urban land market would make, more private land available to urban households;
- would pass much of the development costs for local infrastructure to the private sector and land market mechanisms;
- would increase in land for development without large cash outlays by government to purchase land for development schemes; and
- would keep provision of land for community facilities virtually no cost to government.

## Plan Monitoring

The Transportation and Traffic Management Plan would simply be tools for guiding and encouraging the growth and development of an urban area in a preferred manner. In a rapidly changing urban environment, the Transportation and Traffic Management Plan would require to keep up to date. If this is not done, within a few years it will be obsolete. Therefore, it is imperative that the requirement for regular updating of the Transportation and Traffic Management Plan be made a legal requirement.

For implementation of the various programme components of the Transportation and Traffic Management Plan appropriate administrative measures will have to be undertaken. This will essentially include project preparation and monitoring of their execution and evaluation. For carrying out all these activities appropriate institutional measures are also needed.

## Evaluation

Monitoring and evaluation of ongoing and implemented projects is essential to keep the future course of action on the right track. An ongoing project should be regularly monitored and handicaps identified to enable taking appropriate measures at the right time.

Post implementation evaluation is also needed to take appropriate measures correcting past errors-from project preparation to implementation.

The top level supervision has to be done by a high level supervisory committee headed by the Paurashava Mayor, LGED representative, RHD and Local Government Ministry. Other members of the committee will be local Ward Councilors, local community leader/social workers and the Town Planner of the Paurashava. The committee will supervise implementation works regularly and issue necessary instructions to expedite the works of implementation.

## Co-ordination

A Planning Section of Paurashava should have close interaction with the citizen of Paurashava at large in order to make people aware of the benefits of a good plan and, therefore, their social responsibility to promote plan implementation in one hand and also resist contraventions on the other. A specific interactive cell is recommended to operate in this regard with following responsibilities:

- Provide pre-application advice to residents, consultants and developers about landuse management issues and application procedures for the submission of development applications.
- Enforce planning and landuse management related legislation and zoning scheme regulations.
- Issue of property zoning certificates.
- Investigate and resolve landuse management complaints, illegal landuse and prosecuting contraventions.

Such interactive windows may be opened in various convenient locations to ensure ease of the answers to commonly asked questions may be shown in the internet. Besides, those may be shown in the print and electronic media time to time.

In spontaneous areas, while all out people's co-operation is needed for project implementation; there will also be some elements of negotiation. Negotiation will be particularly needed in case of road widening projects. It will be a crucial task for Paurashava to convince the affected people to give up their land for road use. Efforts should be made to convince the land owners on the ground of enhancement of property value due to road widening. In case people refuse to offer land free of cost necessary arrangements may have to be made for payment of compensation. This process of negotiation will be very critical, cumbersome and time consuming, and therefore, has to be handled with utmost care and patience. The best results can be accrued only by winning people's confidence. In case the authority fails to get peoples co-operation they should exercise power of compulsory acquisition of land through Acquisition of Requisition of Immovable Property Ordinance, 1982. Attempts may be made to engage NGOs / CBOs / RHD / LGED to work as catalysts in negotiation.

## ***Chapter-Twelve***

### **DRAINAGE AND ENVIRONMENTAL MANAGEMENT PLAN**

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#### **12.1 Drainage Management Plan**

The consultant has made an extensive drainage network study in Mehendiganj Paurashava to improve the living standard of urban dwellers. Major activities of drainage study include:

- Survey for the alignment of drains/drainage channels by using DGPS, Data Logger and Path Finder software;
- Survey for the cross sections of drains by using optical level;
- Survey for the bottom level and area of local depressions;
- Identification of outfalls and drainage structures with their conditions;
- Development of Maps showing drains (with drainage direction).

The study has conducted with the concern of Paurashava Mayor, Councilors and other Paurashava representatives as well as PMO, LGED as per ToR in concentrating on following major issues:

- Information regarding type of man-made drains.
- Alignment and crest level of embankments, dykes and other drainage divides.
- Identification of missing links.
- Direction, depth of flow, maximum and minimum tidal level of river, flooding condition, condition of river side settlements during high tide and flood.
- Location, number and condition of pump station, sluice gates, drainage structures.
- Location and area of outfalls, ponds, tanks, ditches; condition in dry and wet season.

##### **12.1.1 Goals and Objectives**

Objective of Drainage Plan is to find out the present functions of main and secondary drains and natural streams within the Mehendiganj Paurashava. Secondly, to find out, level of encroachment over drainage reservations responsible for flooding, water-logging of neighbourhoods during heavy rains. Thirdly, to find out, the existing roadside drainage pattern including capacities and collected gradients. Since planned development of Paurashava is very much desirable, Drainage Master Plan is necessary to ensure operation and maintenance of the present facilities including new proposal for future. For this, both short and long term project improvement plan involving area based drainage master plan is necessary to ensure proper drainage of the Paurashava.

##### **12.1.2 Methodology and Approach to Planning**

In implementing various infrastructural developments, drainage is generally given less priority and is normally considered to be the last or final steps for development. Such scenario is particularly true for Bangladesh; although different types of drainage infrastructures are among others by far the heaviest impact on physical infrastructure network. As a result, physical environment, health, hygiene and standard of living suffer seriously. In development projects, Government, Semi-government and Public sector allocated funds are mostly spend on buildings, roads and other more visible infrastructures and drainage comes as the last item of development. By the time, drainage development begins to start, there appears shortage of fund, consequently as a matter of policy-do little or do-nothing situation appears and as eyewash very little is done for drainage

development. In case of urban development, if drainage is not given priority, sufferings of the inhabitants will continuously increase with the passage of time.

Drainage development for urbanization should start with drains. Drains can be classified as Plot drains, Block drains, Tertiary drains, Secondary drains and Primary drains. Other natural drainage infrastructure is lowland, outfall areas, khals and rivers. Man-made drains are Plot, Block, Tertiary, Secondary and Primary drains and others are natural drainage infrastructures. In planning for drainage network, care has given on road network in terms of conflict of drainage and waterways with roads. Drainage and environmental survey was followed the proto-type questionnaire supplied and suggested by the LGED.

## 12.2 Existing Drainage Network

### 12.2.1 Natural Drainage System

The natural drainage network composed of 1 river, 2 khals/canals and 12 irrigation canals. Generally, those khals are flowing towards north to south. Those natural canals cover 67.72 acres of land. The river flows on the eastern part of the Paurashava. Generally, over the year this river came about to calm. During monsoon season all drainage water release to this river and becomes flooded almost every year.

**Table-12.1: Water Bodies in the Paurashava (area in acre)**

Ward No.	Canal	Pond & ditch	River	Total
1	9.81	83.80		93.61
2	6.77	15.68		22.45
3	5.31	23.38		28.69
4	4.64	27.59		32.23
5	5.53	28.85		34.38
6	5.40	30.10		35.50
7	12.48	31.16	22.10	65.74
8	7.45	33.57	11.00	52.02
9	10.33	16.76		27.09
<b>Total</b>	<b>67.72</b>	<b>290.89</b>	<b>33.10</b>	<b>391.71</b>

Source: Land Use Survey, 2010.

There are linkages between natural and man-made drains. But how much effective and active the linkage is with the poorly maintained man-made drains is a question. Almost half of the depth of the man-made drain is filled with solid garbages; as a result, the channel is not functioning properly.

Two important khals and the Machkata River is playing important role in the natural drainage system of the Paurashava. Those canals should be preserved from any type of development activity. All type of river encroachment will be controlled for the sake of smooth flow of rain and flood water. Average width of the river is about 200 feet and average width of the canal is 16 feet. Length of the canal is varied from 115.32 meter to 6589.66 meter.

**Table-12.2: Inventory of Natural Canals in the Mehendiganj Paurashava**

Name	Width (in m)	Length (in m)	Starting Point	End Point
Canal-1	2.41	181.11	Ward no. 02	Varanir Khal
Canal-2	10.86	827.21	Ward no. 02	Varanir Khal
Canal-3	5.29	555.80	Ward no. 01	Ward no. 01
Canal-4	5.99	842.42	Ward no. 07	Varanir Khal
Canal-5	3.52	191.31	Ward no. 01	Ward no. 01
Canal-6	11.48	1616.05	Ward no. 06	Ward no. 08
Canal-7	7.50	333.72	Ward no. 06	Ward no. 06
Canal-8	1.00	296.13	Ward no. 03	Varanir Khal

Name	Width (in m)	Length (in m)	Starting Point	End Point
Canal-9	12.82	1238.59	Ward no. 09	Ward no. 08
Canal-10	1.46	115.32	Ward no. 01	Varanir Khal
Canal-11	6.61	995.56	Ward no. 01	Varanir Khal
Canal-12	3.53	349.50	Ward no. 01	Ward no. 01
Khejurtali Khal	8.06	2816.77	Ward no. 05	Varanir Khal
Varanir Khal	29.84	6589.66	Ward no. 07, 09	Khejurtali Khal

Source: Physical Feature Survey, 2011.

## 12.2.2 Man-made Drains

In the Paurashava, 36 man-made drains were identified covering all the Wards except Ward No. 1. Total length of those drains is 3573.79 meter. All drains are pucca with 0.61 meter to 0.91 meter width and open. Open drains are mostly in existence with poor condition. Highest part of the drain is in the Ward No. 5 (1531.33 meter). All drains in the Paurashava are privately constructed. Status of the drains is uncovered.

**Table-12.3: Inventory of Man-made Drains**

Drain ID	Type	Width (in m)	Length (in m)	Depth (in m.)	Start Point	End Point
Drain-33	Pucca	0.61	94.89	0.30	Ward-02	Varanir Khal
Drain-34	Pucca	0.61	85.43	0.30	Ward-02	Ward-02
Drain-31	Pucca	0.61	56.74	0.30	Ward-02	Drain-30
Drain-26	Pucca	0.61	177.71	0.30	Ward-02	Drain-5
Drain-23	Pucca	0.91	29.47	0.30	Ward-02	Varanir Khal
Drain-6	Pucca	0.61	46.04	0.30	Ward-02	Ward-02
Drain-7	Pucca	0.61	107.06	0.30	Ward-02	Ward-02
Drain-8	Pucca	0.61	27.35	0.30	Ward-02	Drain-7
	<b>Total</b>		<b>624.69</b>			
Drain-15	Pucca	0.61	278.92	0.30	Ward-03	Ward-03
Drain-18	Pucca	0.61	90.84	0.30	Ward-03	Ward-03
Drain-19	Pucca	0.61	50.64	0.30	Ward-03	Ward-03
Drain-36	Pucca	0.61	183.90	0.30	Ward-03	Varanir Khal
	<b>Total</b>		<b>604.30</b>			
Drain-25	Pucca	0.61	61.03	0.30	Ward-04	Drain-5
	<b>Total</b>		<b>61.03</b>			
Drain-24	Pucca	0.91	112.16	0.30	Ward-05	Khejurtali Khal
Drain-1	Pucca	0.91	203.93	0.30	Ward-05	Ward-05
Drain-2	Pucca	0.91	124.88	0.30	Ward-05	Varanir Khal
Drain-3	Pucca	0.91	125.26	0.30	Ward-05	Varanir Khal
Drain-4	Pucca	0.61	51.78	0.30	Ward-05	Drain-25
Drain-5	Pucca	0.61	79.15	0.30	Ward-05	Drain-5
Drain-16	Pucca	0.61	59.51	0.30	Ward-05	Ward-03
Drain-17	Pucca	0.61	94.48	0.30	Ward-05	Varanir Khal
Drain-27	Pucca	0.61	334.04	0.30	Ward-05	Varanir Khal
Drain-28	Pucca	0.91	89.13	0.30	Ward-05	Ward-05
Drain-35	Pucca	0.61	104.02	0.30	Ward-05	Varanir Khal
Drain-37	Pucca	0.91	152.99	0.30	Ward-05	Varanir Khal
	<b>Total</b>		<b>1531.33</b>			
Drain-14	Pucca	0.61	87.42	0.30	Ward-06	Varanir Khal
	<b>Total</b>		<b>87.42</b>			
Drain-12	Pucca	0.61	27.37	0.30	Ward-07	Ward-07
Drain-13	Pucca	0.61	27.47	0.30	Ward-07	Ward-07
Drain-21	Pucca	0.61	62.86	0.30	Ward-07	Ward-07
Drain-22	Pucca	0.61	46.48	0.30	Ward-07	Varanir Khal
Drain-29	Pucca	0.61	61.08	0.30	Ward-07	Drain-27
Drain-30	Pucca	0.61	84.92	0.30	Ward-07	Varanir Khal
Drain-32	Pucca	0.61	71.08	0.30	Ward-07	Drain-27
	<b>Total</b>		<b>381.26</b>			
Drain-9	Pucca	0.91	112.23	0.30	Ward-08	Varanir Khal

Drain ID	Type	Width (in m)	Length (in m)	Depth (in m.)	Start Point	End Point
	<b>Total</b>		<b>112.23</b>			
Drain-10	Pucca	0.91	111.04	0.30	Ward-09	Varanir Khal
Drain-11	Pucca	0.91	60.49	0.30	Ward-09	Ward-09
	<b>Total</b>		<b>171.53</b>			
<b>Total Length (in meter)</b>			<b>3573.79</b>			

Source: Drainage Survey, 2011.

The drains are poorly managed. Uncovered drains are common feature and the result of uncovering is ultimately filling and losing the drain. Necessity of covering the drains are not only from environmental and safety perspective but also it is a local need. The adjacent river is using as a part of natural drainage system.

The drainage condition, serviceability, structural condition, obstruction, situation, blockage are found in those drains. Water drained irregularly through those drains and they are also using as solid waste dumping ground.

### 12.2.3 Analysis on Land Level Topographic Contour

The Paurashava is mainly medium-high land except some low-lying strips, canals and river. A small part of it is urban, sign of very slow urbanization process is visible in few isolated locations and generally it is an agricultural area characterized by crop production. In the Paurashava, it has found that usually roads are not very high than the surrounding area except Regional Highway. The height varies from 0.46 meter to 4.43 meter among the adjacent lands and roads. A total of 116628 measurements have taken in the Paurashava to ascertain the topographic condition. Lowest land elevation is found in the Ward No. 9 and highest in the Ward No. 2.

**Table-12.4: Spot Value and their Unit (Number of Spot (Z) Value and their Statistics)**

SL. No	Spot Unit	Value
1	Total Spot Number	116628
2	Average Height (Meter)	3.22
3	Maximum Height (Meter)	4.43
4	Minimum Height (Meter)	0.46
6	Standard Deviation	0.46
7	Total No of Contour Line	297

Source: Topographic Survey, 2011.

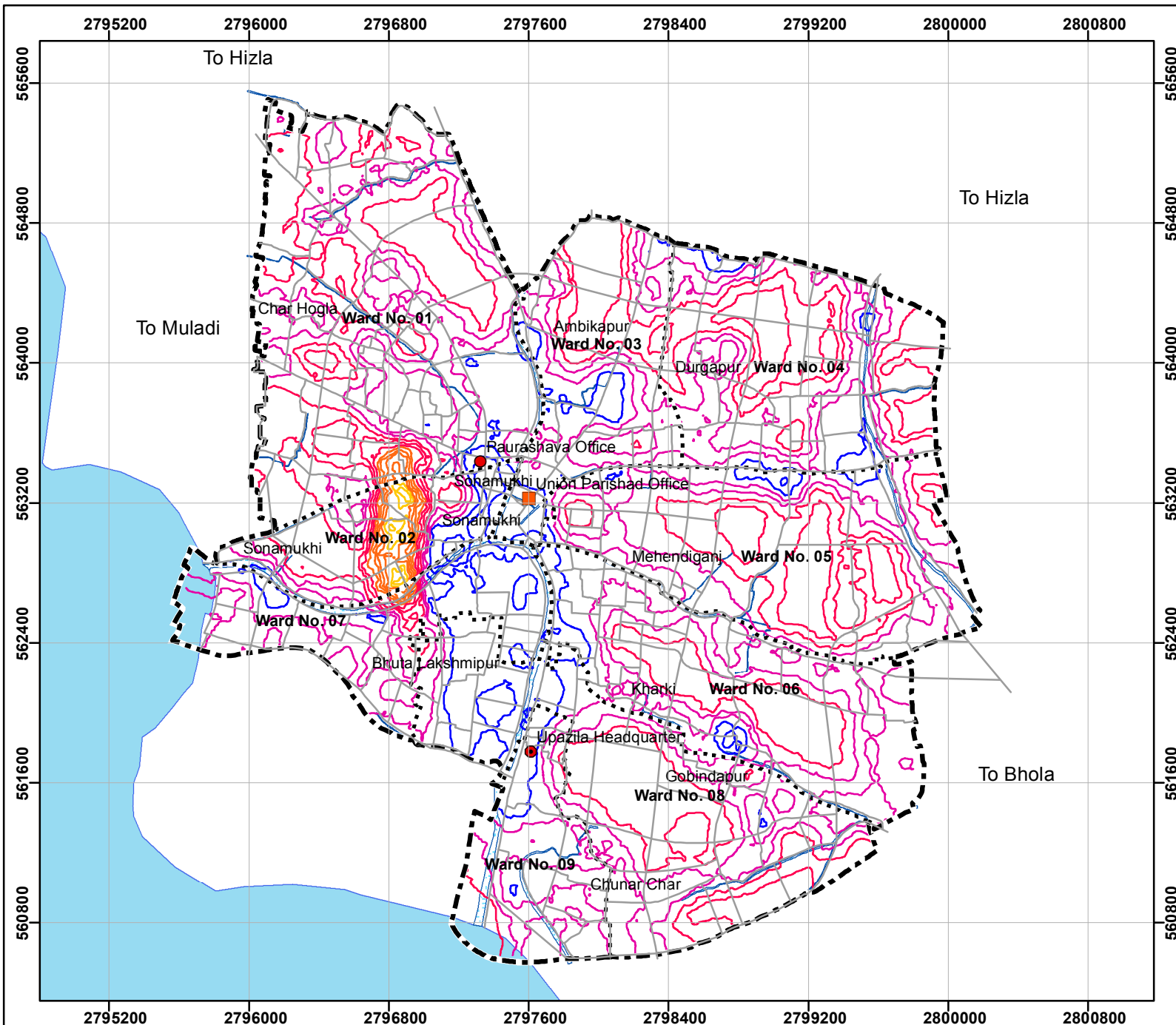
It is quite true that there would be some similarity between contour description and appearance with land level. Wherever, the contour map showed very few contours, its appearance was then white or blank and these were flat land areas. The flat lands may be medium-high, medium-low and lowland. Medium high lands exist with medium spacing of contours in all over the planning area.

**Table-12.5: Spot Interval and Frequency**

Ward No.	Height Interval					Total	
	Less than 1.00	1.00-1.50	1.51 - 2.0	2.01 - 3.50	3.50 +	Nos.	%
1	0	0	0	8604	15889	24493	21.00
2	0	0	0	5439	0	5439	4.66
3	0	0	0	3880	5722	9602	8.23
4	0	0	0	7244	7741	14985	12.85
5	0	0	0	17352	0	17352	14.88
6	0	0	0	13997	0	13997	12.00
7	0	0	0	6754	0	6754	5.79
8	100	364	189	17365	0	18018	15.45
9	173	423	208	5184	0	5988	5.13
<b>Total</b>	<b>273</b>	<b>787</b>	<b>397</b>	<b>85819</b>	<b>29352</b>	<b>116628</b>	<b>100</b>

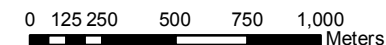
Source: Topographic Survey, 2011.

**Map 12.1 Topographic Map of Mehendiganj Paurashava**



**SCALE**

1:32,000



**LEGEND**

**Service Point**

- Paurashava Office
- Union Parishad Office
- Upazila Headquarter

**Boundary Line**

- Paurashava Boundary
- ..... Ward Boundary

**Proposed Road**

- Proposed Road

**Contour (mPWD)**

- 0.600000 - 0.900000
- 0.900001 - 2.100000
- 2.100001 - 3.000000
- 3.000001 - 3.600000
- 3.600001 - 4.200000

- ▨ Canal
- River

PREPARATION OF MASTER PLAN FOR MEHENDIGANJ PAURASHAVA  
Mehendiganj Upazila, Barisal District



Government of the People's Republic of Bangladesh  
Ministry of Local Government, Rural Development and Cooperatives  
Local Government Division

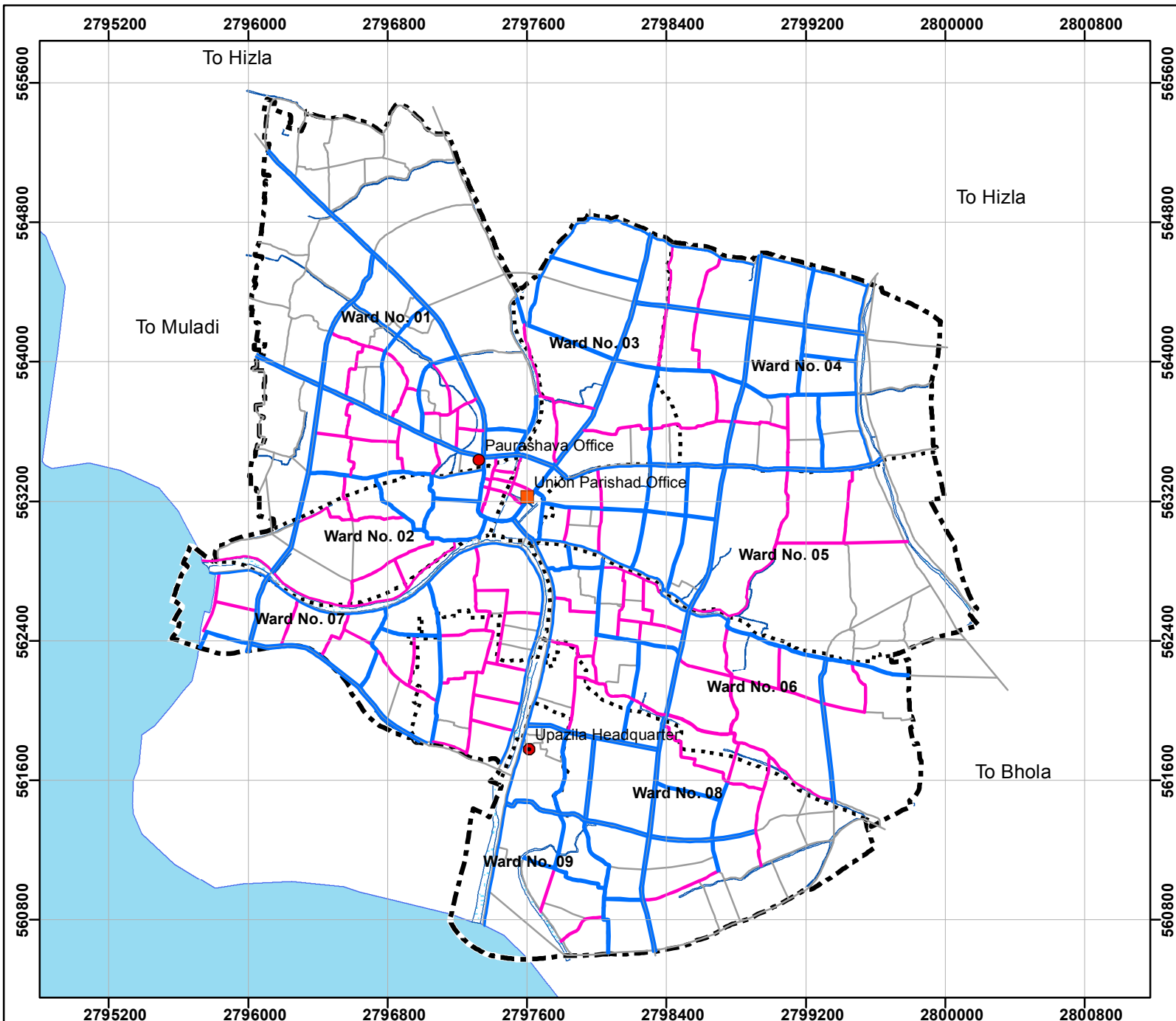
Local Government Engineering Department (LGED)  
Upazila Towns Infrastructure Development Project (UTIDP)  
Package No: 11 (Barisal Region)

**SCPL** CONSULTANT  
Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
In Association with



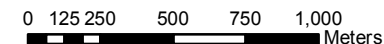
Map 12.2

# Detailed Drainage Network Plan in Mehendiganj Paurashava



## SCALE

1:32,000



## LEGEND

### Service Point

- Paurashava Office
- Union Parishad Office
- Upazila Headquarter

### Boundary Line

- Paurashava Boundary
- Ward Boundary

### Proposed Drain

- Secondary Drain
- Tertiary Drain
- Proposed Road
- Canal
- River

PREPARATION OF MASTER PLAN FOR MEHENDIGANJ PAURASHAVA  
Mehendiganj Upazila, Barisal District



Government of the People's Republic of Bangladesh  
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**SCPL** CONSULTANT  
Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
In Association with



The river named Machkata is flowing from north to south on the eastern part of the Paurashava. A sharp meandering is being formed on the southwestern part of the Paurashava and it is outside the Paurashava boundary adjacent to the Ward No. 7. The land elevation of the Ward No. 7, adjacent to the river is varied within 2 meter to 3.5 meter. Steep slope (about 90° angle) of the side wall of the river adjacent to the Ward No. 7 is prominent. Alignment of khals and natural channels are in somewhere 0.4 meter to 2.5 meter high than the normal river water.

#### 12.2.4 Peak Hour Run-off Discharge and Identification of Drainage Outfalls

Mehendiganj Paurashava lies in the tropical monsoon climatic region and more specially, represents the climate of Barisal district. It has a normal rainfall of 380 mm in the month of June which is highest among all other months. In September, it falls to 262.5 mm; again falling to 155.8 mm in October. The rainy season begins with April/May and usually ends in the end of October. The highest number of normal rainy day is in July, which is the highest rainfall month. About 18 rainy days at an average in July, followed by 16 rainy days in August, 14 in June, 11 in May and September has been the characteristics of rainy day as the data reveals.

No peak hour run-off storm water discharge is found. During rainy season, rainwater is being drained through the man-made drains. All pucca drains are linked with the natural water bodies like canal and river as an outfall. As a result, waters of the river and canals are polluting through those discharging elements. The river named Machkata is the outfall of all natural and man-made drained water.

##### 12.2.4.1 Method Used

**Storm and used water:** 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 run off of a particular area. The modified rational method shall be used for calculation of peak runoff for a definite frequency and duration from particular drainage basin. One limitation of this method is that it cannot be used for catchment area greater than 320 acres. The Natural Resources Conservation Service (NRCS) method formerly the US Soil Conservation Service (SCS) method shall be used.

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. The design flow rate by Modified Rational Formula is –

$$Q = C_s C_r I A$$

Where:

- Q = Design runoff flow rate (cfs)
- I = Rainfall intensity (in/hr)
- C<sub>s</sub> = Storage coefficient
- C<sub>r</sub> = Runoff coefficient
- A = Drainage area (acres)

**Rainfall Intensity (I):** The rainfall intensity is the average rainfall rate for a particular drainage basin or sub-basin. The intensity is selected on the basis of the design rainfall duration and return period. The return period is established by design standards as a design parameter. Rainfall intensity with 5 years return period is generally employed for design of primary drains and canal improvement. Rainfall intensity with 3 years return period is employed for design of secondary drains. The design duration is equal to the time of concentration for the drainage area under consideration. Time of concentration is a critical parameter both for the Modified Rational Equation and SCS method. Time of concentration is generally defined as the longest runoff travel time for

contributing flow to reach the outlet or design point, or other point of interest. It is frequently calculated along the longest flow path physically.

Estimating the time of concentration involves identification of an appropriate flow path or paths and estimating runoff travel times along the flow paths. Where post-development conditions include significant pervious surfaces, the time of concentration for just impervious portions of the basin may be required to calculate and compare peak flow response for the basin as a whole against that of the more rapidly-draining impervious surfaces alone. The Time of Concentration composed of the Initial Time of Concentration, sometimes referred to as the Inlet Time or Time of Entry and the Travel Time. Initial Time of Concentration is that time required for runoff to travel from the most remote point in the drainage area to the first point of concentration. This can be determined using the Kirpich equation. The Initial Time of Concentration must be five minutes or longer. In instances where Initial Times of Concentration are estimated to be shorter than five minutes, five minutes shall be applied.

The second part of the Time of Concentration is the Travel Time that takes the flow to travel along the drain. Channel flow occurs in channels carrying integrated flows, pipes (flowing partially), and streams. Where storage is not significant, Travel Times can be estimated by applying Manning's Equation, and using estimates of channel characteristics and appropriate roughness values for pipe, channel, or stream features as tabulated in Table-12.6.

<b><math>V = [1.49/n] [R^{2/3}] [S^{1/2}]</math></b>			
Where			
	V	=	Velocity of flow, feet/second
	N	=	Manning's roughness coefficient for channel flow
	S	=	Slope, feet/foot
	R	=	Hydraulic radius, feet
And			
<b><math>T_t = V / (60L)</math></b>			
Where			
	T <sub>t</sub>	=	Travel time, minutes
	V	=	Velocity, feet/second
	L	=	Length, feet

Manning's roughness coefficient for channel flow is listed in Table-12.6.

**Table-12.6: Manning's "N" Values for Channel Flow**

Conduit Material	Manning's "n"	Conduit Material	Manning's "n"
<b>Closed conduits</b>		Pipes	0.011-0.015
Asbestos-cement pipe	0.011-0.015	Liner plates	0.013-0.017
Brick	0.013-0.017	<b>Open Channels</b>	
Cement-lined & seal coated	0.011-0.015	<b>Lined channels</b>	
Concrete pipe	0.011-0.015	a. Asphalt	0.013-0.017
Helically corrugated metal pipe (12" – 48")	0.013-0.023	b. Brick	0.012-0.018
Plain annular	0.022-0.027	c. Concrete	0.011-0.020
Plan helical	0.011-0.023	d. Rubble or riprap	0.020-0.035
Paved invert	0.018-0.022	e. Vegetation	0.030-0.400
Spun asphalt lined	0.011-0.015	Earth, straight and uniform	0.020-0.030
Spiral metal pipe (smooth)	0.012-0.015	Earth, winding, fairly uniform	0.025-0.040
3 – 8 in. diameter	0.014-0.016	Rock	0.030-0.045
10 – 12 in. diameter	0.016-0.018	Un maintained	0.050-0.140
Larger than 12 in. diameter	0.019-0.021	Fairly regular section	0.030-0.070
Plastic pipe (smooth interior)	0.01-0.015	Irregular section with pools	0.040-0.100

Source: Municipality of Anchorage. Drainage Design Guideline, March 2007 ver.4.08 pp-62.

**Storage Coefficient ( $C_s$ ):** Due to very flat topography of Bangladesh, the runoff is significantly slow. The rainfall after evaporation and infiltration accumulates first in the depressions, until these have been reached their capacity and then runoff. To take these effects a storage coefficient is used. The value of the storage coefficient is based on average ground slope and the nature of the ground surface. Some of the storage coefficients are listed in Table-12.7.

**Table-12.7: Storage Coefficients for Flat Land**

Characteristics of surface	Storage Coefficient		
	Slope < 1: 1000	Slope < 1: 500	Slope < 1: 500
Residential urban	0.70	0.80	0.90
Commercial	0.80	0.90	1.00
Industrial	0.70	0.80	0.90
Residential Rural nature	0.60	0.70	0.80
Agricultural	0.50	0.60	0.70
Forest/woodland	0.30	0.40	0.50
Aquatic land	0.30	0.40	0.50
Paved area/road	0.80	0.90	1.00

Source: Countywide Comprehensive Plan (Master Drainage Plan) Exhibit-VIII.

**Runoff Coefficient ( $C_r$ ):** The runoff coefficient ( $C_r$ ) values shall be assigned to the various land use zoning classifications. The runoff coefficient values are based on the slope of the land surface, degree of imperviousness and the infiltration capacity of the land surface. The type of land use can greatly affect the amount of runoff. The quantity of runoff and peak flow rates are increased when the land is developed because the impervious surface area increases with the addition of roads, driveways, roofs, etc. The values of the runoff coefficient ( $C_r$ ) for each land use classification are listed in Table-12.8.

**Table-12.8: Modified Rational Method Runoff Coefficients**

Land use designation	Runoff Coefficient $C_r$
Residential rural	0.30
Residential semi urban	0.40
Residential urban	0.50~0.60
Apartment professional	0.70
Neighborhood Commercial	0.85
Community Commercial	0.85
Industrial	0.70~0.75
Slum area	0.50~0.55
Agricultural exclusive	0.25
Forest and watershed	0.20~0.25
Public facilities	0.3~0.60
Forest/ woodland	0.25
Paved area/road	0.99

Source: Countywide Comprehensive Plan (Master Drainage Plan) Exhibit-VIII.

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

- The peak rate of runoff at any point is a direct function of the average rainfall for the time of concentration to that point.
- The recurrence interval of the peak discharge is same as the recurrence interval of the average rainfall intensity.

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.

## 12.3 Plans for Drainage Management and Flood Control

### 12.3.1 Plan for Drain Network Development

#### Drain Network Plan

The activity for the relevant authority will be assisted by the preparation of the drainage master plan for the Paurashava which details the necessary corridors, plot sizes and generalized locations for:

- Primary canal/khal (new and improved).
- Secondary and tertiary canal / khal (new and improved).
- Storage ponds.
- Silt traps.
- River embankment.

Initially, the Paurashava will encourage implementation of the first phase recommendation of the drainage master plan. A brief summary of the proposals to be undertaken in Phase-1 is given below. Reference should be made to the Map for identification of the drainage areas referred in the text.

#### Phase-1 (Storm water drainage)

Local improvements and the removal of obstacles from existing canals in drainage areas. Works to include:

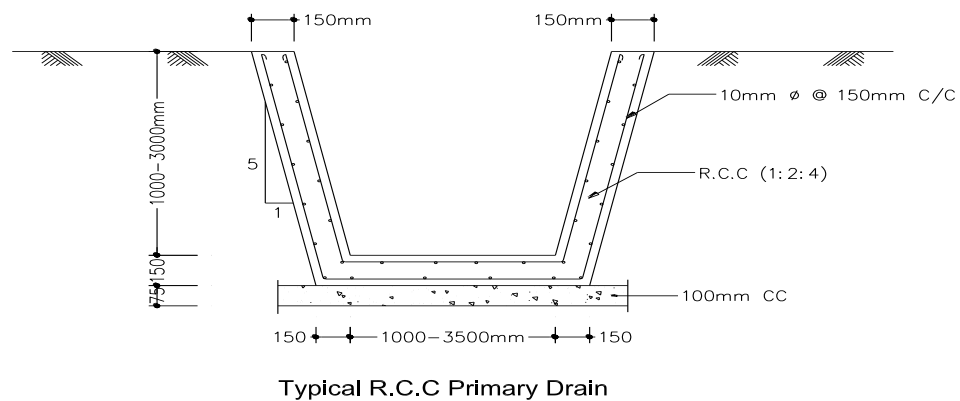
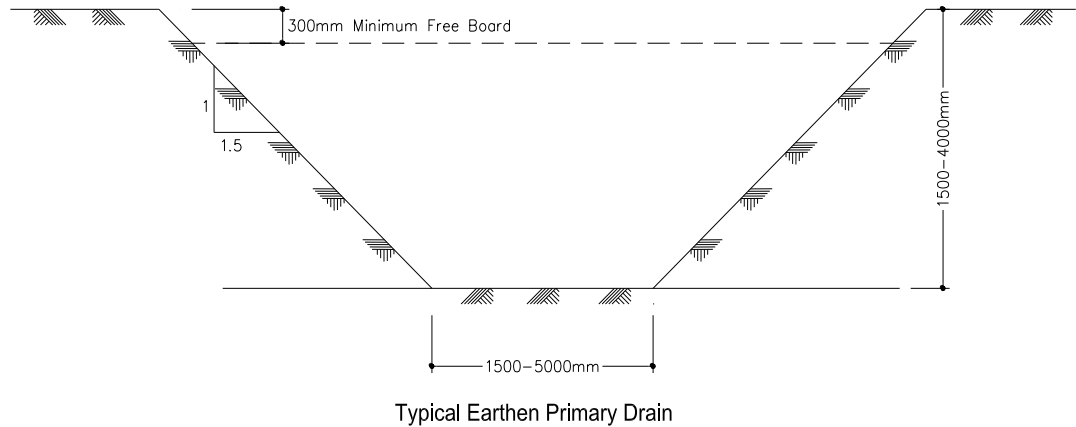
- Redesign of hydraulically inefficient bends, entrances and exists.
- Rising and / or widening of bridges and culverts to give unobstructed flows.
- Returning the channels to a uniform cross-section by removal of encroaching properties and structures.
- Raising crossings over roadside channels to adjacent properties above the flood level of the waterway.

#### Phase-2 (Rain water and household drainage)

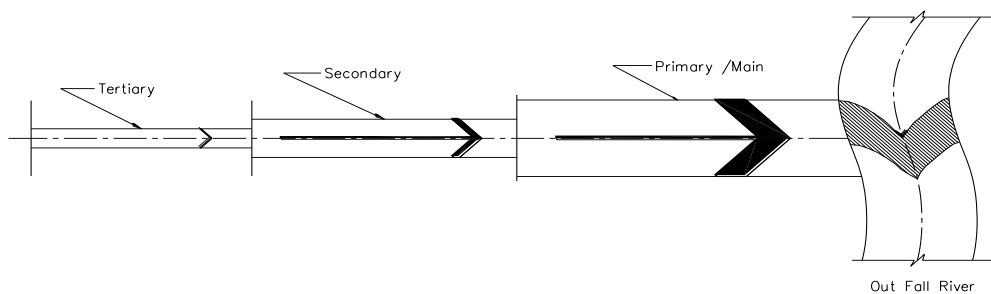
Construction of surface drain linked with the residences, may be covered or uncovered.

- Provide linkages with secondary and tertiary drains.
- Out-fall of such drains may be nearby canals and low-lands.
- For discharging of rainwater from commercial areas, covered surface drain may be constructed and they will be linked with the secondary and tertiary canals.

**Primary Drain:** Primary drains are also called main drains. Primary drains cover larger storm drainage area than tertiary and secondary drains. Sometimes primary drain bears local name. In ascending order its position is third. Its cross-section is larger than other types; carrying capacity is high and is constructed of brick, cement concrete and sometimes reinforced concrete. Primary drains may be of earthen structure provided sufficient land is available and land value is low. Contributing drainage water comes from tertiary and secondary drains. Primary drains discharge its drainage water to outfall, natural khal, river or large lowland area / Beels. Sketch below shows the typical cross-section of the primary drain.

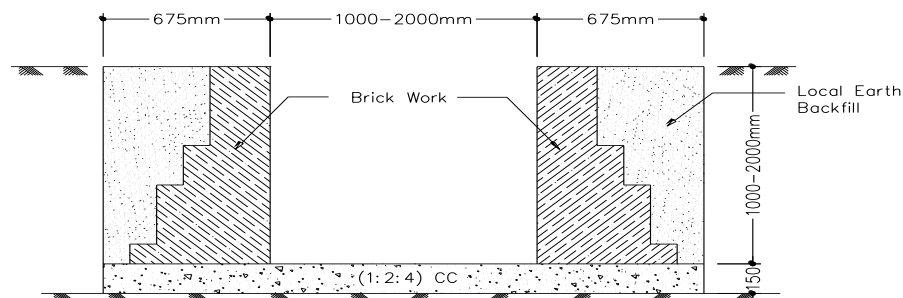


A schematic diagram showing the origin of Tertiary, Secondary and Primary drains and their destinations to the outfall river, presented above, are also presented here.



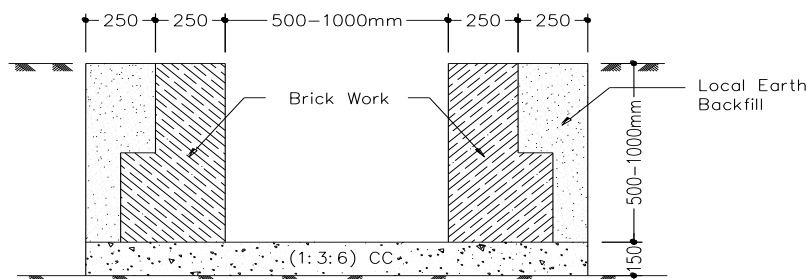
Schematic diagram of Tertiary, Secondary and Primary drains

**Secondary Drain:** Secondary drains collect discharge from tertiary drains. One secondary drain may receive drainage discharges from several tertiary drains in its course. Size and capacity of secondary drain is much bigger than tertiary drains; its catchment area is much bigger than tertiary drain. Like tertiary drain, it may run parallel to bigger roads. Secondary drains may run along and through the middle of its storm water contributing area. The typical cross-section, size and shape, and its construction material are shown below.



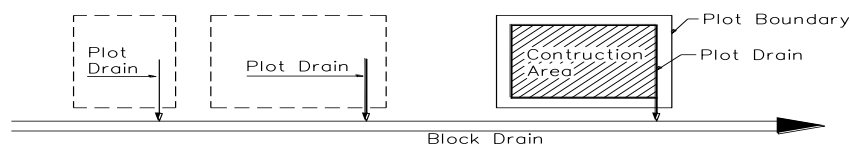
Typical Secondary Drain (Dimensions in mm)

**Tertiary Drain:** Tertiary drain carry run-off or storm water received from the above mentioned plot drains and block or Mohallah drains. Their catchment area or storm water contributing area is bigger than Mohallah drains. In most Paurashava areas it is difficult to find such naming or classifications. However, such classifications can be seen in references. Tertiary drains generally are the under jurisdiction of Paurashava. Those drains or drainage networks are constructed and maintained directly by the Paurashava. These drains are constructed by bricks, cement concrete and sometimes by excavating earth in their alignments. These drains may run parallel to road or across the catchments area. Sometimes borrow pits of the road serves as drains provided borrow pits are uniformly and continuously excavated. Borrow pits that serve as drains may be lined or channeled by brick works. Tertiary drains deliver its discharge usually to secondary drains. A typical tertiary drain is shown below.



Typical Tertiary Drain (Dimensions in mm)

**Plot Drains:** Plot drains are provided around a building on a plot. In most cases, the drain is made of bricks and is rectangular in shape that can carry storm water generated in the plot and from the building. Plot drain is connected to the Block or Mohallah drain. The sketch below gives an impression of plot drain usually constructed in a plot and block drains that follow plot drain.

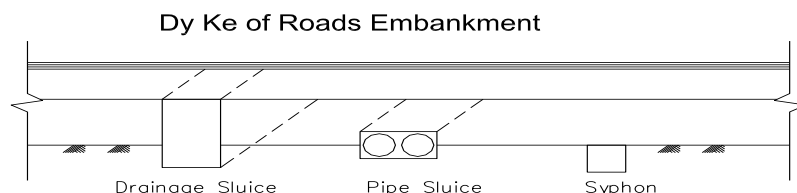


A Sketch Showing Plot Drain and Block Drain

**Block Drain:** Block drain is provided at the outside of a block that accommodates several buildings of the block. The block drains are made of bricks like plot drains but bigger in size so that it can serve the storm water generated within the block and the buildings and open areas within the block. Sometimes the block drain may serve few neighboring blocks or Mohallahs. Block drains carry storm water coming from the plot drains. Shape of the block drain is also rectangular, bigger than plot drains and its bottom is lower than plot drain. Sketch of the plot drain also shows the block or Mohallah drain under plot drain.

**Drainage sluices, pipe sluices and siphons:** Drainage sluices, pipe sluices and siphons are provided on the embankments. Embankments protect the area from floods coming from outside rivers and make the Planning area free from flood.

However, storm water from rainfall-runoff within the area causes localized flood, drainage congestion and submergence. Sketch below shows a few of such structures. A schematic view of drainage sluice, pipe sluice and siphon on embankment, which relieve drainage congestion presents below.



Rainfall is the source of storm drainage water irrespective of urban or rural catchments. Average annual rainfall in Mehendiganj is about 2200mm. After infiltration, deep percolation and evaporation is about 50% of this rainfall water takes the form of drainage water for semi-urban and urban areas.

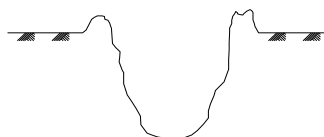
**Sluice gates, Regulators and Navigation locks:** These types of structures are provided on the flood control embankments. Sluice gates are functioning to vent out water from the countryside to the river. Flap gates are generally installed in the riverside so that river water cannot enter into the main land. On the other hand whenever the river water level becomes low and countryside water level is high, countryside water drains out through sluice.

Regulators also serve the similar purpose as sluice gates; however the size of regulators is much bigger than sluice gates. Regulators may have control gates in the countryside and in the riverside. Drainage of water to the river or flashing of water into countryside are possible by operating simultaneously countryside and riverside mechanical gates. Navigation lock sometimes is provided on the flood embankment to allow boat and ferry passages from the river and from the countryside. It is a simple structure with bigger chamber and large lift gates both at riverside and countryside. By operating these gates, boats and river crafts can be transferred from the river to countryside and vice versa.

**Reservoirs:** Large tanks, ponds, Dighis, lakes, etc. serve as immediate detention areas for storm water. Those structures are man-made and also natural; may be privately owned or government-owned or khas land. These structures function as drainage relief and source of water for emergency use, fisheries, duckeries, environment and nature preservation. For every mouza such reservoir is available. Physical feature survey maps and field survey maps (tank, pond and reservoir) show the existence of reservoirs and database shows their dimensions. Those structures should not be disturbed or removed by physical interventions by fillings or other means rather should be properly maintained and preserved.

**Drainage Khals and Waterways:** Khals and waterways are natural channels and act as drainage elements. In every mouza more or less such natural channel, khals and waterways carry the excess storm water to the connecting river lying further in the down stream. Sometimes old and silted-up khals are re-excavated to improve drainage efficiency. Most of the natural khals carry the local storm water particularly runoff from the Mouza / Mouzas those it passes through. Khals are narrow and deep in cross-sections; on the other hand waterways are shallow and wider. Physical feature survey maps, field survey maps (river, khal / drainage) show the drainage khals and waterways and their database shows the dimensions. The sketches below show the sectional view of khals and waterways.





X-Sectional Sketch of Khal



X-Sectional Sketch of Waterways

### 12.3.2 Proposal for Improvement of the Existing Drain Networks

A wider scope for construction of a drainage system may be provisioned in the Paurashava. At least central areas are open for such development immediately and other areas may be followed for projected period as designed in the plan. The Paurashava is a barren field for imposing drainage system. The principles required for drainage plan are available in the area. Land slope, nearness of the natural drainage, sparse population density and soil condition are in favour of drainage construction.

**Drainage corridors:** If a drainage network has to be installed, the drainage originating throughout the Paurashava would be carried by means of surface drains and culverts. These should be accommodated within road reserves.

**General location required:** For sewerage treatment plant, large plot will be needed, preferably on outskirts of the Paurashava. For sewerage pumping station, small plots throughout the Paurashava will be needed and a system should be introduced.

**Maintaining of land slope:** Important component of the drainage network is land slope, which was not maintained during the construction of existing drains. The slope of the Paurashava is found towards east and southeast. Slope of all drains should maintain this direction.

#### 12.3.2.1 List of Proposed New Drains

For removal of existing drainage congestion and provisioning of effective drainage system, a number of new drains have been proposed. Those drains are a part of drainage system and another part is the natural canals and river. In the Paurashava, existing length of the drain is 3.57 km and more 145.29 km. drain is being added as a proposal. At present, no drain is found in the Ward No. 6 and 9. To develop a network, all Wards have been considered and in some places emphasize has given providing on missing links rather than new. Detail drain inventory gives in **ANNEX- F** later.

**Table-12.9: List of Proposed New Secondary and Tertiary drains (1<sup>st</sup> phase)**

Proposed ID	Proposed Type	Proposed Width (m)	Proposed Depth (m)	Length (m)
PDrT 2	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	1137.59
PDrT 3	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	347.42
PDrT 4	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	301.39
PDrT 5	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	421.51
PDrT 6	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	308.03
PDrT 7	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	454.83
PDrT 8	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	366.23
PDrT 9	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	279.40
PDrT 10	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	485.57
PDrT 11	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	395.28

Proposed ID	Proposed Type	Proposed Width (m)	Proposed Depth (m)	Length (m)
PDrT 12	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	186.32
PDrT 13	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	812.19
PDrT 14	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	139.97
PDrT 15	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	569.63
PDrT 16	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	286.70
PDrT 17	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	64.29
PDrT 18	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	92.43
PDrT 20	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	172.42
PDrT 42	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	273.19
PDrT 44	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	784.93
PDrT 45	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	346.30
PDrT 46	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	935.08
PDrT 47	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	300.81
PDrT 48	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	303.12
PDrT 50	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	466.17
PDrT 51	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	365.70
PDrT 52	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	276.97
PDrT 53	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	484.45
PDrT 54	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	400.60
PDrT 55	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	186.63
PDrT 56	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	810.66
PDrT 57	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	141.55
PDrT 58	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	584.30
PDrT 59	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	281.33
PDrT 60	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	64.55
PDrT 61	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	94.93
PDrT 62	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	169.03
PDrT 87	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	271.73
PDrS 88	Secondary Drain	2.35 - 3.35	1.124 - 2.124	303.17
PDrS 89	Secondary Drain	2.35 - 3.35	1.124 - 2.124	75.51
PDrS 92	Secondary Drain	2.35 - 3.35	1.124 - 2.124	299.04
PDrS 93	Secondary Drain	2.35 - 3.35	1.124 - 2.124	72.71
PDrS 96	Secondary Drain	2.35 - 3.35	1.124 - 2.124	784.70
PDrS 97	Secondary Drain	2.35 - 3.35	1.124 - 2.124	112.32
PDrS 98	Secondary Drain	2.35 - 3.35	1.124 - 2.124	125.85
PDrS 99	Secondary Drain	2.35 - 3.35	1.124 - 2.124	421.15
PDrS 100	Secondary Drain	2.35 - 3.35	1.124 - 2.124	383.12
PDrS 101	Secondary Drain	2.35 - 3.35	1.124 - 2.124	529.62
PDrS 102	Secondary Drain	2.35 - 3.35	1.124 - 2.124	336.75
PDrS 103	Secondary Drain	2.35 - 3.35	1.124 - 2.124	841.61
PDrS 104	Secondary Drain	2.35 - 3.35	1.124 - 2.124	482.50
PDrS 105	Secondary Drain	2.35 - 3.35	1.124 - 2.124	139.16
PDrS 106	Secondary Drain	2.35 - 3.35	1.124 - 2.124	228.93

Proposed ID	Proposed Type	Proposed Width (m)	Proposed Depth (m)	Length (m)
PDrS 108	Secondary Drain	2.35 - 3.35	1.124 - 2.124	312.10
PDrS 113	Secondary Drain	2.35 - 3.35	1.124 - 2.124	206.22
PDrS 118	Secondary Drain	2.35 - 3.35	1.124 - 2.124	149.66
PDrS 121	Secondary Drain	2.35 - 3.35	1.124 - 2.124	127.28
PDrS 122	Secondary Drain	2.35 - 3.35	1.124 - 2.124	126.32
PDrS 123	Secondary Drain	2.35 - 3.35	1.124 - 2.124	420.62
PDrS 124	Secondary Drain	2.35 - 3.35	1.124 - 2.124	385.35
PDrS 125	Secondary Drain	2.35 - 3.35	1.124 - 2.124	797.51
PDrS 126	Secondary Drain	2.35 - 3.35	1.124 - 2.124	340.34
PDrS 127	Secondary Drain	2.35 - 3.35	1.124 - 2.124	483.59
PDrS 128	Secondary Drain	2.35 - 3.35	1.124 - 2.124	154.40
PDrS 129	Secondary Drain	2.35 - 3.35	1.124 - 2.124	246.37
PDrS 133	Secondary Drain	2.35 - 3.35	1.124 - 2.124	318.29
PDrS 138	Secondary Drain	2.35 - 3.35	1.124 - 2.124	209.29
PDrS 143	Secondary Drain	2.35 - 3.35	1.124 - 2.124	151.34
PDrS 147	Secondary Drain	2.35 - 3.35	1.124 - 2.124	1455.33
PDrS 148	Secondary Drain	2.35 - 3.35	1.124 - 2.124	580.94
PDrS 149	Secondary Drain	2.35 - 3.35	1.124 - 2.124	1676.72
PDrS 150	Secondary Drain	2.35 - 3.35	1.124 - 2.124	173.45
PDrS 157	Secondary Drain	2.35 - 3.35	1.124 - 2.124	1455.93
PDrS 158	Secondary Drain	2.35 - 3.35	1.124 - 2.124	185.11
PDrS 159	Secondary Drain	2.35 - 3.35	1.124 - 2.124	752.60
PDrS 166	Secondary Drain	2.35 - 3.35	1.124 - 2.124	116.93
PDrS 167	Secondary Drain	2.35 - 3.35	1.124 - 2.124	118.62
PDrT 168	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	200.24
PDrT 177	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	1354.94
PDrT 178	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	1350.58
PDrT 179	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	452.22
PDrT 180	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	449.12
PDrT 181	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	243.99
PDrT 182	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	243.41
PDrS 187	Secondary Drain	2.35 - 3.35	1.124 - 2.124	693.31
PDrS 188	Secondary Drain	2.35 - 3.35	1.124 - 2.124	682.04
PDrS 189	Secondary Drain	2.35 - 3.35	1.124 - 2.124	123.92
PDrS 190	Secondary Drain	2.35 - 3.35	1.124 - 2.124	115.13
PDrT 191	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	330.64
PDrT 192	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	327.49
PDrT 203	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	366.58
PDrT 204	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	184.28
PDrS 205	Secondary Drain	2.35 - 3.35	1.124 - 2.124	1007.34
PDrS 206	Secondary Drain	2.35 - 3.35	1.124 - 2.124	720.82
PDrS 211	Secondary Drain	2.35 - 3.35	1.124 - 2.124	460.35
PDrS 212	Secondary Drain	2.35 - 3.35	1.124 - 2.124	463.87

Proposed ID	Proposed Type	Proposed Width (m)	Proposed Depth (m)	Length (m)
PDrT 213	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	197.21
PDrT 214	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	196.60
PDrT 215	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	97.79
PDrT 216	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	100.47
PDrT 217	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	458.01
PDrT 218	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	449.50
PDrS 219	Secondary Drain	2.35 - 3.35	1.124 - 2.124	266.53
PDrS 220	Secondary Drain	2.35 - 3.35	1.124 - 2.124	261.85
PDrT 221	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	501.97
PDrT 222	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	502.88
PDrT 223	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	345.65
PDrT 224	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	345.20
PDrT 227	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	67.59
PDrT 228	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	66.87
PDrS 233	Secondary Drain	2.35 - 3.35	1.124 - 2.124	324.34
PDrS 234	Secondary Drain	2.35 - 3.35	1.124 - 2.124	326.18
PDrS 235	Secondary Drain	2.35 - 3.35	1.124 - 2.124	277.53
PDrT 239	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	413.11
PDrT 240	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	417.06
PDrT 241	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	141.06
PDrT 242	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	147.30
PDrS 243	Secondary Drain	2.35 - 3.35	1.124 - 2.124	195.52
PDrS 244	Secondary Drain	2.35 - 3.35	1.124 - 2.124	525.20
PDrT 247	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	381.16
PDrT 248	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	382.14
PDrT 251	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	290.79
PDrT 252	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	292.72
PDrT 253	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	314.42
PDrS 254	Secondary Drain	2.35 - 3.35	1.124 - 2.124	330.73
PDrS 265	Secondary Drain	2.35 - 3.35	1.124 - 2.124	401.17
PDrS 266	Secondary Drain	2.35 - 3.35	1.124 - 2.124	395.49
PDrT 269	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	322.63
PDrT 270	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	322.06
PDrT 273	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	335.23
PDrT 274	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	337.21
PDrS 275	Secondary Drain	2.35 - 3.35	1.124 - 2.124	52.37
PDrS 278	Secondary Drain	2.35 - 3.35	1.124 - 2.124	91.11
PDrS 279	Secondary Drain	2.35 - 3.35	1.124 - 2.124	104.30
PDrT 280	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	102.00
PDrT 281	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	69.05
PDrT 282	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	320.20
PDrT 283	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	0.10
PDrT 284	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	0.10

Proposed ID	Proposed Type	Proposed Width (m)	Proposed Depth (m)	Length (m)
PDrT 285	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	86.82
PDrT 286	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	39.30
PDrT 287	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	40.64
PDrT 288	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	378.11
PDrT 289	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	84.82
PDrT 290	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	350.45
PDrT 299	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	338.38
PDrT 300	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	79.51
PDrT 301	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	320.43
PDrT 302	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	86.88
PDrT 303	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	92.40
PDrT 304	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	346.74
PDrS 313	Secondary Drain	2.35 - 3.35	1.124 - 2.124	51.21
PDrS 314	Secondary Drain	2.35 - 3.35	1.124 - 2.124	229.94
PDrS 315	Secondary Drain	2.35 - 3.35	1.124 - 2.124	179.36
PDrS 316	Secondary Drain	2.35 - 3.35	1.124 - 2.124	946.90
PDrS 317	Secondary Drain	2.35 - 3.35	1.124 - 2.124	769.80
PDrS 318	Secondary Drain	2.35 - 3.35	1.124 - 2.124	90.81
PDrS 319	Secondary Drain	2.35 - 3.35	1.124 - 2.124	122.49
PDrS 324	Secondary Drain	2.35 - 3.35	1.124 - 2.124	47.79
PDrS 325	Secondary Drain	2.35 - 3.35	1.124 - 2.124	247.79
PDrS 328	Secondary Drain	2.35 - 3.35	1.124 - 2.124	50.86
PDrS 329	Secondary Drain	2.35 - 3.35	1.124 - 2.124	242.41
PDrS 330	Secondary Drain	2.35 - 3.35	1.124 - 2.124	2933.09
PDrS 331	Secondary Drain	2.35 - 3.35	1.124 - 2.124	404.56
PDrS 332	Secondary Drain	2.35 - 3.35	1.124 - 2.124	951.72
PDrS 333	Secondary Drain	2.35 - 3.35	1.124 - 2.124	90.54
PDrS 334	Secondary Drain	2.35 - 3.35	1.124 - 2.124	123.02
PDrS 335	Secondary Drain	2.35 - 3.35	1.124 - 2.124	46.36
PDrS 336	Secondary Drain	2.35 - 3.35	1.124 - 2.124	792.62
PDrS 341	Secondary Drain	2.35 - 3.35	1.124 - 2.124	45.62
PDrS 342	Secondary Drain	2.35 - 3.35	1.124 - 2.124	251.40
PDrS 343	Secondary Drain	2.35 - 3.35	1.124 - 2.124	1349.56
PDrS 344	Secondary Drain	2.35 - 3.35	1.124 - 2.124	97.67
PDrS 345	Secondary Drain	2.35 - 3.35	1.124 - 2.124	856.11
PDrS 346	Secondary Drain	2.35 - 3.35	1.124 - 2.124	154.22
PDrS 349	Secondary Drain	2.35 - 3.35	1.124 - 2.124	512.33
PDrS 350	Secondary Drain	2.35 - 3.35	1.124 - 2.124	1686.82
PDrS 351	Secondary Drain	2.35 - 3.35	1.124 - 2.124	1352.58
PDrS 352	Secondary Drain	2.35 - 3.35	1.124 - 2.124	500.58
PDrS 353	Secondary Drain	2.35 - 3.35	1.124 - 2.124	74.22
PDrS 354	Secondary Drain	2.35 - 3.35	1.124 - 2.124	870.47
PDrS 355	Secondary Drain	2.35 - 3.35	1.124 - 2.124	134.40

Proposed ID	Proposed Type	Proposed Width (m)	Proposed Depth (m)	Length (m)
PDrS 360	Secondary Drain	2.35 - 3.35	1.124 - 2.124	512.24
PDrS 361	Secondary Drain	2.35 - 3.35	1.124 - 2.124	1703.24
PDrS 362	Secondary Drain	2.35 - 3.35	1.124 - 2.124	120.41
PDrS 363	Secondary Drain	2.35 - 3.35	1.124 - 2.124	120.61
PDrT 380	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	103.80
PDrT 381	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	38.65
PDrT 382	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	105.00
PDrT 383	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	37.55
PDrS 387	Secondary Drain	2.35 - 3.35	1.124 - 2.124	5.37
PDrS 388	Secondary Drain	2.35 - 3.35	1.124 - 2.124	0.06
PDrS 389	Secondary Drain	2.35 - 3.35	1.124 - 2.124	0.06
PDrS 390	Secondary Drain	2.35 - 3.35	1.124 - 2.124	104.90
PDrT 391	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	111.79
PDrT 400	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	587.77
PDrT 401	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	83.72
PDrT 402	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	199.87
PDrT 403	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	199.05
PDrT 407	Tertiary Drain	1.50 - 2.50	0.64 - 1.00	200.89
PDrS 103	Secondary Drain	2.35 - 3.35	1.124 - 2.124	841.61
<b>Total</b>				<b>75212.58</b>

Source: Drainage Survey, 2011 and proposed by the Consultant.

### 12.3.2.2 List of Infrastructure Measures for Drainage and Flood Control Network

There are altogether 20 bridges (RCC), 53 box-culverts (RCC) and 5 pipe-culverts in the Paurashava. Bridges are in all the Wards except Ward No. 2. Ward No. 4, 5 and 9 is preserved 1 bridge each. Six bridges are in the Ward No. 3 and four in Ward No. 7. Highest number of RCC Box-culvert is in the Ward No. 3 (13 culverts). Those bridges and culverts are located on the irrigation canals and drainage channels. The planning area is flood prone low-land. Water-logging is common, dyke is an important issue for this Paurashava, but there is no dyke or embankment in the Paurashava.

**Table-12.10: Existing and Proposed Infrastructures for Drainage and Flood Control**

Name of infrastructure	Existing (No.)	Proposed (No.)
Bridge	20	04
Box Culvert	53	08
Pipe Culvert	5	0
Sluice Gate	0	02
Flood Wall	0	0
Road cum Embankment	0	04 km.
Flood Embankment	0	0

Except the above infrastructure, more 4 bridges, 8 culverts and 4 km. road cum embankment will be needed on different proposed roads.

## 12.4 Plan Implementation Strategies

### 12.4.1 Regulations to Implement the Drainage and Flood Plan

The regulations which will be needed for the implement of drainage and flood plan are:

1. Section 3 of the **Acquisition and Requisition of Immovable Property Ordinance, 1982** is needed for acquisition of land in view to construct drainage and flood control components. The Water Development Board, according to the demand, will apply to the Deputy Commissioner for such acquisition.
2. **Water Development Board Ordinance, 1976** delegate power to the Water Development Board for construction of embankment. To control intrusion of flood water and improvement of drainage facilities, the Board is empowered to take necessary actions according to the regulations prescribed in the Ordinance.
3. **Irrigation Act, 1876** has prescribed regulations for the improvement of irrigation facilities through the improvement of drainage facilities in view to increase agriculture production. Deputy Commissioner may enforce any regulations prescribed in the Act necessary for irrigation facilities.
4. **Canal and Drainage Act, 1872** has enacted for excavation of canal and removal of drainage congestion from agriculture land. The Deputy Commissioner may authorize any person, through a written approval, for excavation of canal in view to improve irrigation facilities for agriculture practices.
5. **Public Health (Emergency Provision) Ordinance, 1944** has enacted for the improvement of drainage and sanitation facilities. Department of Public Health Engineering (DPHE) is authorized to enforce the regulations prescribed in the Ordinance. The government approves project for DPHE mostly for the improvement of drainage and sanitation facilities in urban areas.

### 12.4.2 Implementation, Monitoring, Evaluation and Coordination of the Plan

**Implementation through Multi-Sectoral Investment Programme:** Major infrastructure development works such as primary roads, water supply, drainage, etc., will largely be controlled by Government. Public works requires efficient co-ordination through the Multi-Sectoral Investment Programme (MSIP).

Objective of a Multi-Sectoral Investment Programme (MSIP) will match a list of the development projects with the funding stream necessary to implement them. There are two basic activities that would determine the contents of MSIP. One activity would be to prioritize and schedule the investment projects of all public agencies so they will collectively help to achieve the development goals and objectives of the Urban Area Plan. Second activity would be to analyze the source and availability of fund for the prioritized list of development projects.

**Implementation through Action Plans and Projects:** Action Plans and Projects will be the implementation plans to solve problems at the local level. Action plans will take a direct approach toward plan implementation with a minimum of research, reports or elaborate planning methods. These projects will be easily identifiable and will require minimum resource.

**Implementation through Development Control:** Landuse zoning is one of several methods of plan implementation to be considered. In all cases where some form of development, landuse control may be applied; careful consideration requires the following ideologies:

- the purpose to be achieved by the development controls;
- where controls should be applied;

- what aspect of development needs to be controlled;
- what type of development controls are required;
- what degree or level of development control is required;
- who will be affected by the required control;
- who will be affected by the controls and in what manner;
- when the controls should be applied;
- what will be the likely impact of the controls;
- how and by whom will the controls be administered and enforced.

Development control as an instrument of plan implementation may be selectively applied within the Urban Area Plans. Development controls would also be varied in intensity and detail to suit the particular circumstances. It is important that they should be clear and easily understood by all parties concerned. Since the entire Paurashava Master Plan 'package' has become statutory, development controls associated with its component plans would also be statutory.

**Implementation by Facilitating Private Investment:** Another approach that would be taken by government toward plan implementation will be to guide and facilitate investments made by the private sector. Government can achieve this with relative ease and at very low cost by setting up a legal and operational framework, coupled with suitable incentives, to facilitate land consolidation, plot boundary readjustment, efficient lay out of plots and provision of local infrastructure by the private sector. The benefits of this approach would be:

- increased efficiency of the urban land market would make more private land available to urban households;
- would pass much of the development costs for local infrastructure to the private sector and land market mechanisms;
- would increase in land for development without large cash outlays by government to purchase land for development schemes; and
- would keep provision of land for community facilities virtually no cost to government.

### **Plan Monitoring**

The Urban Area Plan would simply be tools for guiding and encouraging the growth and development of an urban area in a preferred manner. In a rapidly changing urban environment, the Urban Area Plan would require to keep up to date. If this is not done, within a few years it will be obsolete. Therefore, it is imperative that the requirement for regular updating of the Urban Area Plan be made a legal requirement.

For implementation of the various programme components of the Urban Area Plan appropriate administrative measures will have to be undertaken. This will essentially include project preparation and monitoring of their execution and evaluation. For carrying out all these activities appropriate institutional measures are also needed.

### **Evaluation**

Monitoring and evaluation of ongoing and implemented projects is essential to keep the future course of action on the right track. An ongoing project should be regularly monitored and handicaps identified to enable taking appropriate measures at the right time.



Post implementation evaluation is also needed to take appropriate measures correcting past errors-from project preparation to implementation.

The top level supervision has to be done by a high level supervisory committee headed by Paurashava Mayor, LGED representative and Local Government Ministry. Other members of the committee will be local Ward Councilors, local community leader/social workers and the Town Planner of the Paurashava. The committee will supervise implementation works regularly and issue necessary instructions to expedite the works of implementation.

### **Co-ordination**

A Planning Section of Paurashava should have close interaction with the citizen of Paurashava at large in order to make people aware of the benefits of a good plan and, therefore, their social responsibility to promote plan implementation in one hand and also resist contraventions on the other. A specific interactive cell is recommended to operate in this regard with following responsibilities:

- Provide pre-application advice to residents, consultants and developers about landuse management issues and application procedures for the submission of development applications.
- Enforce planning and landuse management related legislation and zoning scheme regulations.
- Issue of property zoning certificates.
- Investigate and resolve landuse management complaints, illegal landuse and prosecuting contraventions.

Such interactive windows may be opened in various convenient locations to ensure ease of the answers to commonly asked questions may be shown in the internet. Besides, those may be shown in the print and electronic media time to time.

In spontaneous areas, while all out people's co-operation is needed for project implementation; there will also be some elements of negotiation. Negotiation will be particularly needed in case of road widening projects. It will be a crucial task for Paurashava to convince the affected people to give up their land for road use. Efforts should be made to convince the land owners on the ground of enhancement of property value due to road widening. In case people refuse to offer land free of cost necessary arrangements may have to be made for payment of compensation. This process of negotiation will be very critical, cumbersome and time consuming, and therefore, has to be handled with utmost care and patience. The best results can be accrued only by winning people's confidence. In case the authority fails to get peoples co-operation they should exercise power of compulsory acquisition of land. Attempts may be made to engage NGOs / CBOs to work as catalysts in negotiation.

## **12.5 Environmental Management**

The plan has documented Mehendiganj Paurashava area's environmental conditions, determines potentiality for present and past site contamination (e.g., hazardous substances, petroleum products and derivatives) and identifies potential vulnerabilities (to include occupational and environmental health risks).

### **12.5.1 Goals and Objectives**

Based on the information and data on the air, water, noise, soil, drainage congestion, river erosion, garbage disposal and industrial and clinical wastes an effective and action oriented plan is

required as prescribed in the ToR. Preparation of environmental management plan is the ultimate goal of this study.

## 12.5.2 Methodology and Approach to Planning

Environmental survey has conducted following the standard methods and procedures to determine environmental pollutions. Elements of pollutions of environment are air, water, land and noise for the development of urban areas. The Consultants have taken necessary assistance and information from the Paurashava Mayor, Councilors, Engineers and other concerned officials as well as the general inhabitants to determine pollution in air, water, land and noise. Based on the information and data collected from the field and secondary sources, detailed report has been prepared. Data collection format and questionnaire was approved by the PD of UTIDP, LGED. The data collection procedure incorporates discussion meeting with the Paurashava Mayor, Councilors and other Paurashava representatives. Discussions were also made with other GOs like DPHE, BADC, etc. and NGOs representatives working in the Paurashava.

### 12.6.1 Existing Environmental Condition

The Paurashava is a part of Barisal district. Some information has collected from secondary materials and they are on geology, soil and sub-soil condition, climate, temperature, humidity, rainfall, wind direction and hydrology. Other relevant information is being collected from field survey and they are mostly on the environment pollution. Those information presents sequentially in the following paragraphs.

### 12.6.2 Geo-morphology

**Geology, Soil and Sub-soil Conditions:** Mehendiganj Paurashava is being formed with five types of soils in different qualities such as non-calcareous alluvium, peat, non-calcareous and calcareous grey floodplain and non-calcareous dark grey floodplain soils. Non-calcareous alluvium soils are raw sandy and silty alluvial deposits and generally neutral to alkaline in reaction. Peat soils are highly organic dark coloured soils. Non-calcareous grey floodplain soils are prismatic and/or blocky structured whereas calcareous grey floodplain soils are structured grey silt loams to silty clays, calcareous from the surface or at shallow depths. Generally, non-calcareous dark grey floodplain soils are structured dark grey loamy soils on old flood plain ridges and clay in basins. The basin clays have heavy consistence.

**Climate:** The Climate of an area is comprised of its Temperature, Average Humidity, Rainfall, Wind Speed and Hydrology. This Zila bears a hot summer and a mild-winter. But almost all the area of the Zila is occasionally affected by cyclonic storm surges and tidal bores that originate over the Bay of Bengal during monsoon.

**Temperature:** Temperature rises steadily from January to April, remains fairly steady from April to October and then falls to reach the lowest in January. The maximum average monthly temperature is 29.5°C in August and minimum average monthly temperature is 7.4 °C in January. The monsoon starts from June and maximum rainfall is experienced from July to September.

**Humidity:** Weather of Mehendiganj Planning area is not more contradictory from the natural weather of Bangladesh. Due to coastal characteristics, weather of this area has few special characteristics. Humidity is comparatively high in the coastal region rather than other districts of Bangladesh.

**Rainfall:** The monsoon starts from June and maximum rainfall is experienced in 2004 and lowest in 2003. Annual rainfall as recorded from 2003 to 2010, maximum was 180.72 mm in 2004 and

lowest 122.04 mm in 2003. It is recorded that during June to October there are high volume of rainfall.

**Wind Direction:** Monthly prevailing wind speed in knots and direction of Mehendiganj Planning area for the years of 1977 to 2007 is considered here. It shows that, wind direction mainly flows towards south and most of the time wind is calm (61.5 %) which is followed by 1-2.5 m/s wind speed (21.9%) and 2.5-5 m/s wind speed (14.7%).

**Hydrology:** Hydrology can be defined as the scientific study of the waters of the earth, especially with relation to the effects of precipitation and evaporation upon the occurrence and character of water in streams, lakes and on or below the land surface. Hydrological condition of the planning area is getting of inferior quality day by day.

### **12.6.3 Solid Waste and Garbage disposal**

#### **12.6.3.1 Household Waste**

Dustbin is the only system for solid waste disposal from residence of the Paurashava but no dustbin in the Paurashava. In most cases, people throw their household wastes on the adjacent low lands.

#### **12.6.3.2 Industrial waste**

Industrial waste is being dumped on adjacent low-lands.

#### **12.6.3.3 Kitchen market waste**

Kitchen market waste is being dumped on the low-lands available around the market.

#### **12.6.3.4 Clinical/Hospital waste**

There is one hospital (called Upazila Health Complex) in the Paurashava located in the Ward No. 2. There is no arrangement for clinical waste management in the Paurashava. The hospital dumps solid wastes here and there or nearby ditches. This activity may bring serious health hazard to the inhabitants specially the nearby dwellers.

#### **12.6.3.5 Waste Management System**

Solid waste collection and disposal in Mehendiganj Paurashava is the responsibility of Paurashava authority. The logistics for collection and disposal of solid wastes include 13 sweepers for collection and 2 garbage trucks (capacity 3 tons each) for transportation. Solid waste from the point of generation to the final disposal can be grouped into three functioned elements -

- Waste generation and storage
- Collection
- Final disposal

**Waste Generation and storage:** Households within the area are producing 2.5 tons of domestic solid wastes per day.

**Collection:** The waste collection is done in the following three stages:

- The residents themselves take domestic refuses from households to the intermediate dumping points.
- Street and drain wastes are collected and dumped at intermediate disposal points by the municipal sweepers and cleaners.
- Final collection from the intermediate points and its disposal to the dumping yard by the conservancy worker.

**Final disposal:** The authority used to dump in low lands on the basis of land owner's interest or nearest ditches.

#### **12.6.3.6 Latrine**

Toilet system of the planning area is mostly categorized as pucca and katcha. In spite of this, Paurashava has a modest development of pucca toilets in government zones. Sewerage system has not been introduced on a trial basis as to their popularity and acceptance. Ownership of toilets varies widely in most of the Planning areas. Most of the households have their own toilets. Sanitary toilets or pucca toilets (66.6%) are comparatively good in all the Wards. About 32% katcha toilet is found in the Paurashava and owner of those toilets are poor people.

#### **12.6.3.7 Industry**

Wood-based industry is one of the most important industries in this area and there are 16 saw mills, 4 Bakery, 4 rice mills and 1 ice factory. It reflects the general agrarian character of the Planning area. All of those enterprises are proprietorship units meaning that private sector dominates the industrial sector of the Paurashava.

Most of the industries depend on raw materials available within the Paurashava. The industrial output produces in the local market. It is also found that those establishments have problems and potentialities. Careful consideration will help to resolve those problems and adoption of necessary policy initiatives to flourish the existing units and draw more investors and entrepreneurs to set up new manufacturing industries, which will be based mainly on local raw materials.

#### **12.6.4 Brick Field**

No brickfield is in the Paurashava.

#### **12.6.5 Fertilizer and Other Chemical Use**

Fertilizer and chemical uses in the agriculture field for increasing agriculture production are Urea, Potash, Gypsum and Nitrogen Sulphate, Bashudin, Diazinon, Sumithion and Padan. Those chemicals are being contaminated with the surface water and create water pollution. Those chemicals and insecticides are creating water pollution of the Machkata River. For more details Chapter-8 of the Structure Plan (Environmental Issues in Agriculture Practice).

#### **12.6.6 Pollutions**

##### **12.6.6.1 Water**

Water is considered polluted when it altered from the natural state in its physical condition or chemical and microbiological composition, so that it becomes unsuitable or less suitable for any safe and beneficial consumption. The used water of a community is called wastewater or sewage. If it is not treated before being discharged into waterways, serious pollution is the result. Water pollution also occurs when rain water runoff from urban and industrial areas and from agricultural land and mining operations makes its way back to receiving waters (river, lake or ocean) and into the ground.

In Mehendiganj Paurashava, there are 1355 ponds, 177 ditches and 14 canals as sources of surface water. Surface water pollution is originating from the use of insecticide and chemical fertilizers in crop fields. Wash out by rain water from crop fields to nearest water sources with chemicals is causing water pollution. Cattle bathing and flow of waste water from domestic use discharge into the ponds, khals and river have also identified as reasons for surface water contamination. The Paurashava authority has yet not taken any initiatives to control surface water pollution.

Ground water pollution also exists in the Mehendiganj Paurashava. Presence of salinity and iron as pollutants in ground water are the reasons for such pollution. Not any initiative has been made by any local authority/ GOs/ NGOs to reduce arsenic problem.

#### **12.6.6.2 Air**

Air pollution is the introduction of chemicals, particulate matter, or biological materials that cause harm or discomfort to humans or other living organisms, or damages the natural environment, into the atmosphere.

Operations of shallow engine driven vehicles (*Nochiman*) that are unfriendly to the environment are responsible for air pollution. Those vehicles use diesel as fuel. Diesel Particulate Matter (DPM) includes diesel soot and aerosols such as ash particulates, metallic abrasion particles, sulfates and silicates. The small size inhaled particles may easily penetrate deep into the lungs with acute short-term symptoms such as headache, dizziness, light-headedness, nausea, coughing, difficult or labored breathing, tightness of chest, and irritation of the eyes and nose and throat. Long-term exposures can lead to chronic, more serious health problems such as cardiovascular disease, cardiopulmonary disease and lung cancer.

A large number of commercial / business establishments including small industrial establishment are found in the Paurashava premises. Those establishments are releasing different types of effluent into the air and polluting the surroundings. The Paurashava authority has yet not taken any initiative to install treatment plant in that industrial establishment.

Air pollution also occurs by the odor from the open municipal garbage. There are two dustbins in the Paurashava but people are not aware to dispose their solid garbages in to those dustbins rather than open ground. As a result open garbage disposal is common and it creates serious odor which ultimately affects the surrounding air.

#### **12.6.6.3 Sound**

Noise pollution is basically consists of unpleasant displeasing human, animal or machine created sound that disrupts the activity or balance of human or animal life. A common form of noise pollution is from transportation, principally motor vehicles. Other sources are car alarms, office equipment, factory machinery, construction work, audio entertainment systems, loudspeakers and noisy people.

In the Paurashava, shallow engine driven vehicles like Nochimon / Tomtom are playing on roads as a mean of local transport. They are making above 80 trips throughout the Paurashava in a day. Engine generated sounds in their operational time on roads is a matter of nuisance as well as a source of noise pollution. The Paurashava authority has already noticed them to restrict their movements. Generated sounds from industry at their operational time are also a source of sound pollution existing in the Paurashava.

#### **12.6.6.4 Land Pollution**

Soil pollution is basically about contaminating the land surface of the earth through dumping urban wastages indiscriminately, dumping of industrial waste, mineral exploitation and misusing the soil by harmful agricultural practices.

Soil pollution is occurring from extensive use of fertilizer in the agriculture lands and water-logging. Extensive use of fertilizer is changing the bio-chemical composition and the lands are losing their productivity day by day. At the same way, water-logging for four months in a year is

settling non-decomposable materials on lands and the lands are being polluted. Water-logging, over time leads to the soaking of soils, impeding agricultural production. The water applied in excess as a stock pollutant accumulates in the underground hydrological system and causes damage to production.

#### **12.6.6.5 Arsenic**

Ground water quality in the planning area is influenced by salinity and iron. Water in most shallow aquifer is somewhere arsenic/salinity and all are contaminated with iron, not suitable for drinking purposes. Water collects from river and ponds for irrigation purposes. The lower deep aquifer is found at a depth of 80 m to 100 m. Deep aquifers with fresh water in the Paurashava are exploited to meet the demand of water for inhabitants but that is small.

#### **12.6.6.6 Other Pollution**

In the Paurashava, sub-soils are being eroded naturally and the soil varies from place to place and composed of clay to fine sand from 0-10 ft depth, fine sand to very fine sand 20-80 ft, fine sand to medium sand 80-100 ft. Medium sand to coarse sand is available from 300 ft to 400 ft depth and in rest of the depth are hard clay, fine sand and coarse sand formed entirely by the deltaic action of the Ganges, which brought mud and limestone from Himalayas.

### **12.6.7 Natural Calamities and Localized Hazards**

#### **12.6.7.1 Cyclone**

Cyclone is another common disaster at Mehendiganj Paurashava. Every year Mehendiganj Paurashava is affected by cyclone. Among them the identifiable disaster was cyclone SIDR in 2007 and Aila in 2009. The disaster SIDR and Aila were a big hazard for their natural climatic condition. It also damages many lives, forests, agricultures and infrastructures. For the help of cyclone affected peoples and livestock during and after cyclone there are cyclone centers at Mehendiganj Paurashava. Mainly primary schools are serving as cyclone centers.

#### **12.6.7.2 River Erosion**

The Machkata River sides are erosion prone caused by seepage of water from countryside towards the river along the banks during post-monsoon period and during high flood period. Water waves created during the storm surge, cyclone and heavy rainfall are causes of erosion. The seepage of water may create unbalanced pore pressure producing severe bank scouring in loose sandy riverbank resulting river erosion. Vulnerable river erosion is resulting in the southern (Ward No. 9) part of the Paurashava.

#### **12.6.7.3 Flood**

Mehendiganj Paurashava has experienced several remarkable floods as 1998, 2000, 2004, 2007 and 2008. During heavy rain there happening some water-logging in specific low laying areas for a long-time. The river and riverside area turns to run of full water all through the monsoon season. In the Paurashava, flood prone areas are being distributed in all the Wards.

#### **12.6.7.4 Earth Quake**

The Paurashava is not in earth quake zone.

### **12.6.7.5 Water-Logging**

Inundation within Paurashava areas is experienced in the months of Srabon to Ashwin. Due to influences of rainfall during monsoon, usually most of the Wards suffer with water-logging. Rainy season is the season when problems of water-logging begin. Generally, during rainy season, the water overflows on the both sides of the canals up to 6.0 feet. In the months of Srabon to Ashwin, the water rises with a height of 5-6 feet. This internal flood or water-logging is experienced in the central area during peak monsoon time with high rainfall for long-duration. The water-logged areas are found along roads, ditches and ponds within Paurashava. Water-logging situation is a major issue for this Paurashava which requires be resolved immediately through Drainage Master Plan.

### **12.6.7.6 Fire Hazard**

No fire hazard record is found in the Mehendiganj Paurashava. With the increase of population, chances of fire incidence may increase for offices, institutions, market places and industries. Electric short-circuit is mainly responsible for fire hazards in urban area. Human error may also cause incidence of fire hazard sometimes.

### **12.6.7.7 Other Hazards**

Urbanization is taking the lands of other uses to residential use. For this purpose agricultural lands and water bodies are being chosen most frequently and the lands are being converted into urban settlement. In Mehendiganj Paurashava wet lands are being filled up and agricultural land is being converted. This has been identified as the major man-made disaster which is accelerating the degree of conversion year to year. Use of poisonous insecticides on the agricultural land is another man-made disaster which will affect in the long-run.

## **12.7 Plans for Environmental Management and Pollution Control**

### **12.7.1 Proposals for Environmental Issues**

In Mehendiganj Paurashava, noise pollution is occurring by three wheelers and sound generated from saw mills and rice husking mills. Water contamination is observed as “salinity and iron” threat. Air pollution is caused by dust emitted from saw mill, rice husking mills and factories. Also flood water and water-logging are creating health hazards. Dysentery, diarrhea, etc. diseases occurs due to flood and water-logging. Habitual inundations, especially in monsoon, due to external floods from canals are another threat to environment. These above varies are extremely important issues of concern for the Paurashava. Pragmatic planning/solution and proper Drainage Master Plan are very pertinent issues which will be of utmost importance in planning the Paurashava.

However, implementation of activities like roads, drainage, bridge / culverts, housing and industrial establishments and bazars will radically change the natural topography and landuse pattern. The agricultural land will be converted into urban and semi-urban area. Existing scenic beauty will disappear; water bodies will lost and general slope will be diminished for earth filling due to urbanization. Therefore, in the process of preparation of Structure Plan, Urban Area Plan and Ward Action Plan, consideration of those factors have been considered for keeping the natural environment.

For a better living environment, above environmental phenomenon is considered with the systematic planning principles and regulatory measures. With these views, people’s awareness should be increased about the fair living environment through different public activities. Arrangement of landuses has been provisioned for all the public and private organizations as their necessities.

### **12.7.1.1 Solid Waste Management Plan**

The Mehendiganj Paurashava have not sufficient capability to handle huge waste generated by the residents due to narrowness of roads, lack of local collection sites stand as impediments to waste management. Particularly in informal/spontaneous areas due to existence of narrow roads the garbage trucks cannot enter for removal and transshipment of the garbage. In most places there is no road side open space for locating garbage bins. Garbage is often found to be disposed off on low lands. As a result rotten garbage spoils the local environment of the area posing health hazard of the local residents. Only two dustbins are in the Paurashava whereas the daily waste produced is about 1.5 tons and throws it to the nearby low lands.

For an efficient solid waste management system, it is recommended to engage, CBOs, NGOs and micro enterprises on contract basis for collection and disposal of solid waste and street sweeping.

### **12.7.1.2 Open space, Wet-land and Relevant Features Protection Plan**

- The authority named Bangladesh Sports Council in collaboration with the Paurashava authority may construct the stadium. The stadium should use regularly with various programs.
- The land prescribed for tourism/recreational development, Bangladesh Parjatan Corporation should be the responsible authority to implement those tourism components. Domestic tourists should be emphasized rather than international in considering establishment of tourism components. Rainwater harvesting will be the major component of this tourism site. This sector can improve economic capability of the Paurashava dwellers rapidly.
- The embankment cum road proposed on the western part of the Ward No. 1 along the Machkata River and two sluice gates will control flood water intrusion. As a result, single-crop land (remain wet land in nine months of a year) available in the southern part of the Paurashava will be turned into triple-crop land.

### **12.7.1.3 Pollution Protection Proposals**

#### **12.7.1.3.1 Industrial / Brickfield**

In total, 25 industrial structures and 31 agro-based structures (poultry farm and livestock farm) are in the Paurashava. Among the total industrial structures, 16 are saw mills and 4 rice mills. The industrial activities cover 1.81 acres of land. Local woods are being processed in the saw mills and locally produced paddy are using in the rice mills. Those industries are located in some selected Wards. Location of those industries will be rearranged and grouped in some selected areas. No brickfield in the Paurashava. The steps will be taken to protect pollution through industries are:

- All the industries are in mixed-use areas. Some of them will be re-arranged and shifted to the proposed industrial site.
- A green buffer will create around the proposed industrial site; it will separate the area from adjacent landuses and at the same time, environment will be livable.
- In future, the proposed industrial site will also be identified as a site for polluting industry (as identified by the Directorate of Environment). In that, provision of recycling plant should be attached with the individual industry.

#### **12.7.1.3.2 Air / Water / Land / Sound**

For a better living environment above environmental phenomenon should be considered with the systematic planning principles and regulatory measures. With these views, people's awareness should be increased about the fair living environment through different public activities.



Arrangement of landuses should be provisioned for all the public and private organizations as their necessities.

The Paurashava is rural based urban area. River, canal and pond water are still below the danger level of pollution. Let it should not be increased. Still people awareness is possible for reducing contamination of ground water. People may aware about the use of pesticides in agriculture field, solid waste disposal in a systematic manner and improved sanitation facilities should be imposed.

### **12.7.1.3.3 Other Pollution**

At present, control of urbanization and dumping of clinical wastes are the major concern of environment pollution of the Paurashava. Controlled urbanization according to this plan may remove the pollution through urbanization. Control on area / use density, height density and bulk density are the means of pollution protection through urbanization. A specific site within the compound of health services should be provisioned, thus pollution through clinical wastes will be controlled.

## **12.8 Natural Calamities and Regular Hazard Mitigation Proposals**

### **12.8.1 Protection Plans Addressing Natural Calamities**

**Change in Topography and Mitigation:** The main ground slope of the planning area is southeast and southwest direction. Natural topography of the Paurashava has already been changed for urbanization. Implementation of Master Plan activities like roads, drainage, bridge/culvert, housing and industrial estates, bazars and growth centers will radically change the natural topography and landuse pattern of the planning area. Agricultural area will be converted into urban and semi-urban area. Present green scenic beauty will disappear, water bodies will be lost and general slope will be diminished for earth filling due to urbanization.

1. Careful planning will be needed to minimize the change of topography.
2. Avoid water bodies during planning of roads, housing and industrial estates.
3. Practice good architectural/engineering design during planning of housing estates, buildings and the intersections of main roads.
4. Enhancement of plantation and gardening to increase the scenic beauty of the Paurashava.
5. Preserve the Beels, khals as lakes with demarking buffer distance.

**Landuse Change and Mitigation:** Major portion of the planning area is rural setup, with predominance of agricultural landuse. However, urban and semi-urban landuses are observed in the Paurashava and its surrounding areas. With implementation of the Master Plan, rural setup and agricultural landuse pattern will be changed radically into urban landuse type.

1. Careful planning is necessary to reduce change of agricultural landuse and rural setup.
2. Keep water bodies and productive agricultural land free from urban development as long as possible. Vertical development may be encouraged rather than horizontal.
3. Economic use of land should be emphasized.

**Drainage Congestion and Mitigation:** Drainage congestion may increase further with urban sprawl development. Faulty design, solid waste and rubbish dumping, encroachment and unauthorized structures, siltation, lack of renovation and re-excavation are the main causes of drainage congestion. Drainage system that exists in the planning area is not well enough to carry the surface run-off properly. The outlets of these drainage networks are mostly connected with the natural channels or khals. These khals will be silted due to siltation; as a result, drainage congestion generates. And thus many areas are subjected to water-logging during the heavy rainfall causing inconvenience to the people of the area.

1. Make proper drainage network in new area considering the slope and local topographical condition.
2. Remove all unauthorized structures, which developed on drainage structures.
3. Prohibit the people in dumping of rubbish and solid waste in drain.
4. Regular cleaning and maintenance by the concerned authorities.
5. Demarcation of water bodies, which can act as retention pond to avoid water logging from heavy rainfall.
6. Demarcation of Right of Way to preserve the natural channels.

**Groundwater Table Declination and Mitigation:** Fall of groundwater table is a common phenomenon in the planning area during dry period (February-May). With expansion of urbanization and industrialization through the Ward Action Plan, the groundwater table may further fall if present tradition of using groundwater is continued.

1. Introduce rainwater harvesting system and use in the planning area.
2. Stop land filling of ponds and water bodies to maintain the groundwater level through recharge and leaching process.

**Groundwater Pollution and Mitigation:** Groundwater pollution due to manganese, iron and hardness is a major problem of the planning area. With expansion of urban area, more dependency on groundwater sources may increase the pollution level of sub-surface water.

1. Use surface water of Machkata River for supply water.
2. Introduce rainwater-harvesting system.
3. Reduce dependency on groundwater.
4. Preserve surface water in ponds, khals, Beels, ditches and rivers for irrigation.

**Noise Pollution and Mitigation:** Although there is no data available on noise pollution of the planning area, however, it seems that present noise level does not exceed the Bangladesh Standard. More noisy area may be the Bus Terminal area and Industrial and Market area. Hydraulic horn of buses and rickshaw bells are the main noise sources in the planning area. However, some noises also generate during piling and construction works. Besides, welding workshops, saw mills, musical instruments and blacksmiths are also common sources of noise pollution in urban areas. With expansion of urban area, the noise pollution will be increased for increasing number of motor vehicles, market places, industries, etc.

1. Stop using hydraulic horn in buses, trucks and other motor vehicles.
2. Declare some areas like hospitals, schools, parks, etc. as silent zone.
3. Control abnormally high noise from saw mill, old machines should be repaired or replaced.
4. Foundation of machines should be specially prepared to reduce noise.
5. Special type of silencer may be attached with the machines to reduce noise.
6. Welding and blacksmith workshops can be fenced with glasses to protect the passersby from possible pollution effects.
7. People constantly working in welding and blacksmith workshops should wear earplugs and glasses. Regular medical checkups can be carried out to identify possible health problems.

**Air Pollution and Mitigation:** Present climatic condition of the planning area is sub-tropical monsoon. With the implementation of Master Plan this climatic condition is expected to continue if further global climatic change does not occur. However, rainfall may slightly decrease in the planning area for cutting of trees and diminishing of green vegetation for urban development. Trees and green vegetation keep environment cool and enhance precipitation and rainfall. Temperature may remain same as present. Urban development keeping vegetation, plants, water

bodies and new social forestation in homesteads, educational organizations, roads, embankment and parks will help maintain the climatic condition same as present.

Air-pollution is not a serious problem in the planning area. Vehicular emission is also insignificant in the area. Industries are the main sources of air pollution. However, the air pollution will be increased in near future with increase of motor vehicles and industries. With the implementation of Master Plan more industrial zones will be developed which will also induce air pollution in the planning area.

1. Use catalytic converter in buses, trucks, taxis and tempos.
2. Use CNG instead of petrol and diesel.
3. Impose ban on movement of sand carrying trucks and conservancy vehicles during office period.

**Loss of Biodiversity and Mitigation:** Urbanization like roads, infrastructure development, housing, commercial places, industrialization, etc. will replace the existing natural green environment to manmade environment. Trees will be cut down, water bodies will be filled up and polluted; sugarcane, paddy, banana, papaya and vegetable production will be reduced and mango garden and bush will disappear for urban expansion in new area. Wild animals, birds and fishes will lose their habitats and as a result a big loss of biodiversity will happen for urban expansion.

1. Avoid critical ecological area and refugee sites from development activities.
2. Aware people for keeping some trees and bushes around the homesteads.
3. Increase tree plantation in roadsides and homesteads.
4. Preserve the Beels for aquatic birds and fishes and some bush areas as wildlife preservation sites.

**Parasitic Diseases and Mitigation:** Parasitic diseases like dengue, malaria and filaria are not common in the planning area. However, with the expansion of urban area, the prevalence of these diseases may increase in the project area. During last 3 to 4 years, the country faces dengue problem although this problem was negligible. This problem may happen also in the Paurashava for increasing urbanization and industrialization.

1. Regular mosquito eradication program in the planning area.
2. Dengue carrying mosquitoes live in fresh water of tire, cans, bottles and flower tubs. Segregation of old tires; cans and bottles are required before dumping.
3. Remove additional water of flower-tubs and refrigerator cans regularly.
4. Improve drainage system and remove waterlogged areas in the Paurashava.
5. Regular cleaning of drain and removal of water hyacinth and other aquatic plants are required from ponds, ditches, khals and Beels.
6. Use mosquito net during sleeping at both night and daytime.
7. Increase people's awareness on parasitic diseases and mosquito control.

### 12.8.2 Protection Plan Addressing Regular Hazards

- Most of the natural canals and water courses will be preserved and maintained. The ponds larger than 0.15 acres should be preserved as a water reservoir.
- To protect northern and eastern part from annual flood, a road cum embankment including two sluice gates will be needed and these will be controlled by the Water Development Board.
- For the removal of drainage congestion, sufficient number of bridges and culverts should be provisioned during construction of roads.

- Indiscriminate land filling for expansion and construction of residential areas and buildings should be controlled with the imposition of agriculture policy.

### 12.8.3 Protection Plan Addressing Encroachment and Other Relevant Issues

- As a measure of protection from encroachment restrictive buffer zone will be created on both sides of natural canals, rivers and other watercourses (if necessary). Walkways and plantation will be needed for the protection of those buffer zones.
- Formation of appropriate legislation on solid waste management will be necessary. People encroaches canal and river through dumping of solid wastes. Encroachment on road, canal and river should be removed as early as possible with the formation of joined collaboration committee. This committee may be formed with the members from Paurashava, LGED, RHD and WDB.
- Using of waste as an unutilized resource and assisting in recycling of waste for conservation of resources and protection of environment.
- Introduces environmental education especially sanitary habits in school curriculum.

## 12.9 Plan Implementation Strategies

### 12.9.1 Regulations to Implement the Drainage and Flood Plan

The regulations which will be needed for the implement of drainage and flood plan are:

1. Section 3 of the **Acquisition and Requisition of Immovable Property Ordinance, 1982** is needed for acquisition of land in view to construct environmental components. The authority, according to the demand, will apply to the Deputy Commissioner for such acquisition.
2. Section 4 of the **Conservation of Environment Act, 1995** have prescribed duties and responsibilities of the Director. Most of those responsibilities are on the control of pollution.
3. Section 28 (1, 2 and 3) of the **Forest Act, 1927** has prescribed regulations on village forest, which is necessary for the formation of village / Paurashava forest.
4. Section 5 of the **Playfield, Open space, Garden and Natural Tank in Urban Areas Preservation Act, 2000** will be needed for the preservation of playfield, garden, open space and natural tank of the Paurashava.
5. **Water Hyacinth Act, 1936** was enacted for preventing the spread of water hyacinth in Bangladesh and for its destruction. It is said in the section 5 that, no person shall grow or cultivate water hyacinth in any garden or in any ornamental water or receptacle. Again, according to the section 8(1) said, with a view to facilitating the discovery or destruction of water hyacinth, an Authorized Officer may, subject to any rules made under this Act, by a notice served in the prescribed manner, direct an occupier of any land, premises or water within a notified area to cause-
  - a) any branches of trees or shrubs on any such land or premises which overhang the edge of any river, stream, waterway, ditch, marsh, bil, lake, tank, pond, pool or pit to be cut back and any undergrowth or jungle thereon to be removed from such edge, within a distance specified in the notice, or
  - b) any vegetation appearing above the surface of any such water to be removed from the water, within such period as may be specified in the notice.
6. Section 7 of the **Water Resources Planning Ordinance, 1992** will be needed for the development of water resources available in the Paurashava.

## 12.9.2 Implementation, Monitoring, Evaluation and Coordination of the Plan

**Implementation through Multi-Sectoral Investment Programme:** Major infrastructure development works such as primary roads, water supply, drainage, etc., will largely be controlled by the Government. Public works requires efficient co-ordination through the Multi-Sectoral Investment Programme (MSIP).

Objective of a Multi-Sectoral Investment Programme (MSIP) will match a list of the development projects with the funding stream necessary to implement them. There are two basic activities that would determine the contents of MSIP. One activity would be to prioritize and schedule the investment projects of all public agencies so they will collectively help to achieve the development goals and objectives of the Urban Area Plan. Second activity would be to analyze the source and availability of fund for the prioritized list of development projects.

**Implementation through Action Plans and Projects:** Action Plans and Projects will be the implementation plans to solve problems at the local level. Action plans will take a direct approach toward plan implementation with a minimum of research, reports or elaborate planning methods. These projects will be easily identifiable and will require minimum resource.

**Implementation through Development Control:** Landuse zoning is one of several methods of plan implementation to be considered. In all cases where some form of development, landuse control may be applied; careful consideration requires the following ideologies:

- the purpose to be achieved by the development controls;
- where controls should be applied;
- what aspect of development needs to be controlled;
- what type of development controls are required;
- what degree or level of development control is required;
- who will be affected by the required control;
- who will be affected by the controls and in what manner;
- when the controls should be applied;
- what will be the likely impact of the controls;
- how and by whom will the controls be administered and enforced.

Development control as an instrument of plan implementation may be selectively applied within the Urban Area Plans. Development controls would also be varied in intensity and detail to suit the particular circumstances. It is important that they should be clear and easily understood by all parties concerned. Since the entire Paurashava Master Plan 'package' has become statutory, development controls associated with its component plans would also be statutory.

**Implementation by Facilitating Private Investment:** Another approach that would be taken by government toward plan implementation will be to guide and facilitate investments made by the private sector. Government can achieve this with relative ease and at very low cost by setting up a legal and operational framework, coupled with suitable incentives, to facilitate land consolidation, plot boundary readjustment, efficient lay out of plots and provision of local infrastructure by the private sector. The benefits of this approach would be:

- increased efficiency of the urban land market would make, more private land available to urban households;

- would pass much of the development costs for local infrastructure to the private sector and land market mechanisms;
- would increase in land for development without large cash outlays by government to purchase land for development schemes; and
- would keep provision of land for community facilities virtually no cost to government.

### **Plan Monitoring**

The Urban Area Plan would simply be tools for guiding and encouraging the growth and development of an urban area in a preferred manner. In a rapidly changing urban environment, the Urban Area Plan would require to keep up to date. If this is not done, within a few years it will be obsolete. Therefore, it is imperative that the requirement for regular updating of the Urban Area Plan be made a legal requirement.

For implementation of the various programme components of the Urban Area Plan appropriate administrative measures will have to be undertaken. This will essentially include project preparation and monitoring of their execution and evaluation. For carrying out all these activities appropriate institutional measures are also be needed.

### **Evaluation**

Monitoring and evaluation of ongoing and implemented projects is essential to keep the future course of action on the right track. An ongoing project should be regularly monitored and handicaps identified to enable taking appropriate measures at the right time.

Post implementation evaluation is also needed to take appropriate measures correcting past errors-from project preparation to implementation.

The top level supervision has to be done by a high level supervisory committee headed by Paurashava Mayor, LGED representative and Local Government Ministry. Other members of the committee will be local Ward Councilors, local community leader/social workers and the Town Planner of the Paurashava. The committee will supervise implementation works regularly and issue necessary instructions to expedite the works of implementation.

### **Co-ordination**

A Planning Section of Paurashava should have close interaction with the citizen of Paurashava at large in order to make people aware of the benefits of a good plan and, therefore, their social responsibility to promote plan implementation in one hand and also resist contraventions on the other. A specific interactive cell is recommended to operate in this regard with following responsibilities:

- Provide pre-application advice to residents, consultants and developers about landuse management issues and application procedures for the submission of development applications.
- Enforce planning and landuse management related legislation and zoning scheme regulations.
- Issue of property zoning certificates.
- Investigate and resolve landuse management complaints, illegal landuse and prosecuting contraventions.

Such interactive windows may be opened in various convenient locations to ensure ease of the answers to commonly asked questions may be shown in the internet. Besides, those may be shown in the print and electronic media time to time.

In spontaneous areas, while all out people's co-operation is needed for project implementation; there will also be some elements of negotiation. Negotiation will be particularly needed in case of road widening projects. It will be a crucial task for Paurashava to convince the affected people to give up their land for road use. Efforts should be made to convince the land owners on the ground of enhancement of property value due to road widening. In case people refuse to offer land free of cost necessary arrangements may have to be made for payment of compensation. This process of negotiation will be very critical, cumbersome and time consuming, and therefore, has to be handled with utmost care and patience. The best results can be accrued only by winning people's confidence. In case the authority fails to get peoples co-operation they should exercise power of compulsory acquisition of land. Attempts may be made to engage NGOs / CBOs to work as catalysts in negotiation.

## **Chapter-Thirteen**

### **URBAN BASIC SERVICE DEVELOPMENT PLAN**

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#### **13.1 Introduction**

Sensible urban planning is critical to the healthy growth of cities. Unplanned growth leads a number of problems, create misery for urban dwellers and make remedying of those difficulties. Yet flawed urban planning is little better, or perhaps worse, than no urban planning at all. It is thus important, when taking on such an enormous task as the drafting of an Urban Area Plan for a Paurashava, to ensure that the plan is well considered and likely to be conducive to good health and well-being of the urban dwellers.

During the year 1984 to 2003, Urban Development Directorate (UDD) was prepared a series of Landuse/Master Plans for Upazila and Zila Shahars of Bangladesh as a part of decentralization effort of the government. But the project area considered in the UDD plan was far away from the planning area considered in the Paurashava Town Infrastructure Development Project.

#### **13.2 Analysis of Existing Condition and Demand of the Services**

The Paurashava is too poor in urban services. With the development of physical condition of the Paurashava, substantial involvement will be needed for those services. Drinking water supply, sewerage and sanitation facilities and dumping of solid wastes should be emphasized as primary consideration. Absence of solid waste dumping ground creates health hazards. Absence of covered drain and sewerage system creates sanitation problem. Those problems should be removed through proper planning and design.

**Water Supply:** About 88% households are using well as main source of drinking water and cooking purposes. In total, 2539 wells are in the Paurashava. At least 9.21% households are using hand tubewell, 1.63% river water and 1.11% pond water for washing and bathing purposes. A good number of hand tubewell is contaminated with iron and salinity. Ground water level during dry and wet seasons are 28ft and 15ft respectively.

**Electricity:** At present, Rural Electrification Board (REB) is providing electricity facility within the Paurashava. There is no substation in the Paurashava. In total, 508 electricity poles of different sizes exist in the planning area to carry power network and 110 streets light. They cover almost every Ward. High voltage towers are distributed evenly and transformers are used to transform the high voltage to low voltage for distributing to the clients. High voltage line (33KV) passed beside the link road. There are HT/LT transformer stations which step down high voltages into low voltages, reach various Mohallah and Community areas through this electric supply line.

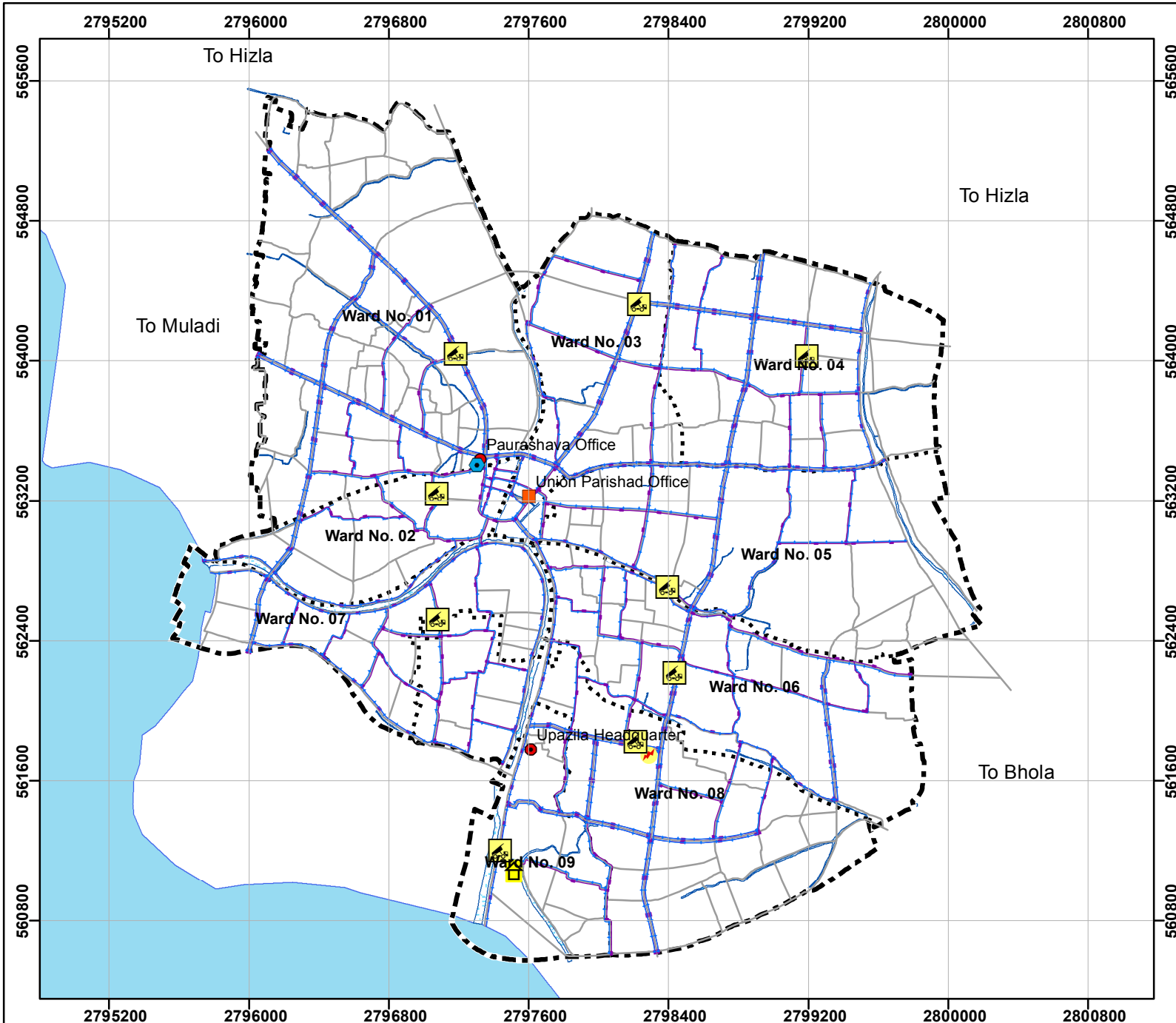
**Telecommunication:** There is a telephone exchange having a capacity of 250 lines maintained by Bangladesh Telecommunication Company Limited (BTCL) in the Paurashava. At present, there are 210 land telephone users supplying by 7 telephone poles. There are also mobile phone networks of GrameenPhone, Robi, Citycell, Banglalink and Airtel cover the entire planning area.

**Gas supply:** Gas supply is not available in the Paurashava.



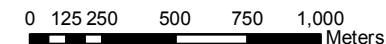
Map 13.1

# Proposed Linear Service Network in Mehendiganj Paurashava



## SCALE

1:32,000



## LEGEND

- Planning Area Boundary
- Paurashava Boundary
- Ward Boundary
- Utility Services**
  - Cyclone Shelter
  - Dumping Station
  - Electric Sub-station
  - Overhead Tank/Reservoir
  - Slaughtering House
  - Waste Transfer Station
  - Water Supply Station
- Paurashava Office
- Union Parishad Office
- Upazila Headquarter
- Utility Network**
  - Water Supply Network
  - Gas Supply Network
  - Proposed Road
  - Canal
  - Tulatuli River

PREPARATION OF MASTER PLAN FOR MEHENDIGANJ PAURASHAVA  
Mehendiganj Upazila, Barisal District



Government of the People's Republic of Bangladesh  
Ministry of Local Government, Rural Development and Cooperatives  
Local Government Division

Local Government Engineering Department (LGED)  
Upazila Towns Infrastructure Development Project (UTIDP)  
Package No: 11 (Barisal Region)

**SCPL** CONSULTANT  
Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
In Association with

### Projection

The projection of utility service depends on the growth of population and the need assessment of the Paurashava inhabitants. After population projection it is calculated that, population of this area will be 30874 in the year 2021 and 31703 in the year 2031 (according to the medium growth rate). Projection on utility services also depends on present condition of urban services and facilities and future demand of those services.

**Demand analysis:** Existing utility facilities of the Paurashava are not sufficient and established without following any standard. Therefore, Team Leaders of all packages and urban planners from Project Management Office (PMO) have worked out and prepared different standards for projection of future facilities as per the requirement of Paurashava. Following of those standards have considered for the future demand with ensuring the quality and quantity of utility facilities.

**Table-13.1: Standard of Utility Facilities and Future Need**

Facility	Standard	Existing Facility (acre)	Existing & Proposed Facility (acre) (2031)
Drainage	1.00 acre /20,000 population	0	1.59
Water supply	1.00 acre /20,000 population	0	1.59
Gas	1.00 acre /20,000 population	0	1.59
Electric sub-station	1.00 acre/20,000 population	0	1.59
Solid waste disposal site	4–10 acres/Upazila HQ	0	5.00
Waste transfer station	0.25 acres/waste transfer station	0	0.25
Telephone exchange	0.5 acre/20,000 population	0	0.79

### 13.3 Proposals for Addressing Urban Services and Implementation Strategies

**Water supply:** The consultant proposes a pipe line network to operate piped water supply system that will be implemented over 20 years. The total length of proposed water supply network is 84.77 km.

All water is carried by underground pipes of various diameters. The closer they are to the original source of treated water, the larger the pipe and therefore, trench to accommodate it must be. These pipes should be contained within road reserves.

As an alternative to drinking water supply harvesting of rain water may be explored. The idea of rainwater harvesting is unknown to the local people. NGOs working in rain water harvesting training and motivation may be engaged for this purpose. Paurashava may take initiative to prepare a programme for popularizing rain water harvesting among the Paurashava people. Following **Table-13.2** shows the inventory of proposed water supply network in Mehendiganj Paurashava.

**Table-13.2: Proposed water supply network in Mehendiganj**

Proposed US ID	Length (m)	Phasing	Proposed US Type
PWS 1	695.32	Phase 01	Water Supply Network
PWS 4	793.93	Phase 01	Water Supply Network
PWS 5	1017.95	Phase 01	Water Supply Network
PWS 7	427.20	Phase 02	Water Supply Network
PWS 11	640.09	Phase 01	Water Supply Network

Proposed US ID	Length (m)	Phasing	Proposed US Type
PWS 13	305.87	Phase 01	Water Supply Network
PWS 16	155.17	Phase 01	Water Supply Network
PWS 17	343.86	Phase 03	Water Supply Network
PWS 18	850.77	Phase 02	Water Supply Network
PWS 20	239.30	Phase 03	Water Supply Network
PWS 22	303.87	Phase 03	Water Supply Network
PWS 26	131.28	Phase 02	Water Supply Network
PWS 27	300.90	Phase 01	Water Supply Network
PWS 28	510.39	Phase 03	Water Supply Network
PWS 30	121.08	Phase 01	Water Supply Network
PWS 31	302.43	Phase 01	Water Supply Network
PWS 32	238.20	Phase 01	Water Supply Network
PWS 33	431.40	Phase 01	Water Supply Network
PWS 34	379.97	Phase 01	Water Supply Network
PWS 38	219.63	Phase 01	Water Supply Network
PWS 39	478.28	Phase 01	Water Supply Network
PWS 42	308.46	Phase 01	Water Supply Network
PWS 43	574.18	Phase 02	Water Supply Network
PWS 44	330.83	Phase 03	Water Supply Network
PWS 47	551.76	Phase 03	Water Supply Network
PWS 48	359.04	Phase 03	Water Supply Network
PWS 50	147.23	Phase 01	Water Supply Network
PWS 66	235.24	Phase 02	Water Supply Network
PWS 69	464.62	Phase 01	Water Supply Network
PWS 71	340.72	Phase 03	Water Supply Network
PWS 72	281.67	Phase 03	Water Supply Network
PWS 73	678.90	Phase 01	Water Supply Network
PWS 78	698.79	Phase 03	Water Supply Network
PWS 79	554.93	Phase 03	Water Supply Network
PWS 84	209.31	Phase 01	Water Supply Network
PWS 85	388.74	Phase 01	Water Supply Network
PWS 86	236.31	Phase 02	Water Supply Network
PWS 89	596.01	Phase 03	Water Supply Network
PWS 95	90.17	Phase 01	Water Supply Network
PWS 97	433.75	Phase 01	Water Supply Network
PWS 100	349.64	Phase 01	Water Supply Network
PWS 104	362.60	Phase 03	Water Supply Network
PWS 105	430.40	Phase 01	Water Supply Network
PWS 107	340.38	Phase 01	Water Supply Network
PWS 113	739.05	Phase 03	Water Supply Network
PWS 115	410.07	Phase 03	Water Supply Network
PWS 117	119.99	Phase 02	Water Supply Network

Proposed US ID	Length (m)	Phasing	Proposed US Type
PWS 118	42.26	Phase 02	Water Supply Network
PWS 129	338.35	Phase 01	Water Supply Network
PWS 132	380.61	Phase 01	Water Supply Network
PWS 133	736.43	Phase 03	Water Supply Network
PWS 137	384.01	Phase 03	Water Supply Network
PWS 138	995.28	Phase 03	Water Supply Network
PWS 141	524.42	Phase 03	Water Supply Network
PWS 143	298.98	Phase 01	Water Supply Network
PWS 157	243.86	Phase 03	Water Supply Network
PWS 159	182.86	Phase 01	Water Supply Network
PWS 160	1344.77	Phase 01	Water Supply Network
PWS 162	262.71	Phase 01	Water Supply Network
PWS 166	112.34	Phase 01	Water Supply Network
PWS 167	322.94	Phase 01	Water Supply Network
PWS 168	270.29	Phase 02	Water Supply Network
PWS 173	95.24	Phase 01	Water Supply Network
PWS 174	511.97	Phase 01	Water Supply Network
PWS 178	541.46	Phase 03	Water Supply Network
PWS 180	741.90	Phase 01	Water Supply Network
PWS 184	288.02	Phase 01	Water Supply Network
PWS 187	126.42	Phase 02	Water Supply Network
PWS 189	649.67	Phase 03	Water Supply Network
PWS 192	332.81	Phase 03	Water Supply Network
PWS 194	432.08	Phase 02	Water Supply Network
PWS 197	198.67	Phase 01	Water Supply Network
PWS 198	432.63	Phase 01	Water Supply Network
PWS 199	343.82	Phase 03	Water Supply Network
PWS 200	749.30	Phase 01	Water Supply Network
PWS 201	234.46	Phase 02	Water Supply Network
PWS 202	821.01	Phase 01	Water Supply Network
PWS 203	394.72	Phase 03	Water Supply Network
PWS 204	582.19	Phase 01	Water Supply Network
PWS 205	1132.84	Phase 01	Water Supply Network
PWS 207	842.70	Phase 01	Water Supply Network
PWS 208	1676.56	Phase 01	Water Supply Network
PWS 209	187.84	Phase 01	Water Supply Network
PWS 210	229.89	Phase 02	Water Supply Network
PWS 211	590.19	Phase 03	Water Supply Network
PWS 212	276.23	Phase 01	Water Supply Network
PWS 213	2926.85	Phase 01	Water Supply Network
PWS 214	206.83	Phase 01	Water Supply Network
PWS 215	1243.54	Phase 02	Water Supply Network

Proposed US ID	Length (m)	Phasing	Proposed US Type
PWS 216	1255.25	Phase 01	Water Supply Network
PWS 217	330.27	Phase 01	Water Supply Network
PWS 218	421.71	Phase 01	Water Supply Network
PWS 219	100.20	Phase 01	Water Supply Network
PWS 222	183.03	Phase 02	Water Supply Network
PWS 224	757.88	Phase 03	Water Supply Network
PWS 225	755.20	Phase 03	Water Supply Network
PWS 226	451.98	Phase 03	Water Supply Network
PWS 227	455.42	Phase 03	Water Supply Network
PWS 228	1996.95	Phase 03	Water Supply Network
PWS 229	2007.85	Phase 03	Water Supply Network
PWS 230	838.16	Phase 03	Water Supply Network
PWS 231	847.64	Phase 03	Water Supply Network
PWS 232	1855.77	Phase 01	Water Supply Network
PWS 233	1942.72	Phase 01	Water Supply Network
PWS 234	1220.53	Phase 03	Water Supply Network
PWS 235	1217.03	Phase 03	Water Supply Network
PWS 236	604.20	Phase 03	Water Supply Network
PWS 237	605.94	Phase 03	Water Supply Network
PWS 238	657.56	Phase 03	Water Supply Network
PWS 239	660.54	Phase 03	Water Supply Network
PWS 240	1455.04	Phase 01	Water Supply Network
PWS 241	1453.05	Phase 01	Water Supply Network
PWS 242	392.74	Phase 01	Water Supply Network
PWS 243	399.73	Phase 01	Water Supply Network
PWS 244	207.69	Phase 01	Water Supply Network
PWS 245	192.55	Phase 01	Water Supply Network
PWS 246	830.36	Phase 03	Water Supply Network
PWS 247	809.50	Phase 03	Water Supply Network
PWS 248	629.19	Phase 03	Water Supply Network
PWS 249	601.99	Phase 03	Water Supply Network
PWS 250	866.25	Phase 03	Water Supply Network
PWS 251	864.00	Phase 03	Water Supply Network
PWS 252	1422.90	Phase 01	Water Supply Network
PWS 253	1429.74	Phase 01	Water Supply Network
PWS 254	2221.50	Phase 01	Water Supply Network
PWS 255	2200.55	Phase 01	Water Supply Network
PWS 256	2436.74	Phase 03	Water Supply Network
PWS 257	2447.81	Phase 03	Water Supply Network
PWS 259	120.08	Phase 01	Water Supply Network
PWS 260	84.79	Phase 01	Water Supply Network
PWS 261	0.14	Phase 01	Water Supply Network

Proposed US ID	Length (m)	Phasing	Proposed US Type
PWS 262	332.35	Phase 01	Water Supply Network
PWS 264	545.61	Phase 02	Water Supply Network
PWS 265	1358.09	Phase 01	Water Supply Network

Source: Based on Physical feature Survey, 2011 and proposed by the Consultant.

**Electricity:** **Electricity power station** will be established on ward no 08 (on 1.91 acres of land) on the edge of the Paurashava with good accessibility. About **33/11KV switching stations** may be established on medium sized plots in a small number of key locations throughout the Paurashava. **Electricity sub-station** may be constructed on small plots throughout the Paurashava. These can be accommodated on the plots they serve (industries) or in road corridors.

**Primary networks;** principally 132KV, pylon supported power lines from the existing power stations which will enter the Paurashava at purpose built switching stations. The switching stations will usually be located at the fringe of the Paurashava. **Secondary networks;** 33KV or 11KV pole mounted power lines, although in cases the 33KV lines can also be pylon mounted. The 33KV lines will originate at the above mentioned switching station and supply power around the Paurashava to smaller switching stations at key locations around the Paurashava where they will be down-sized to 11KV. These, in turn, will supply power to more localized electricity sub-stations. The pole mounted lines can be located within principle road corridors (primary and district distributors). Pylon mounted lines should be allocated their own reserve. **Tertiary networks;** at the localized sub-stations, the 11KV power will be down-sized for distribution to individual premises. Power leaving these sub-stations is usually carried by 415V pole mounted lines. These can be accommodated within road corridors.

**Telephone:** An additional **telephone exchange** is unnecessary for the Paurashava. If required, it will need a medium size plot (on 0.79 acres of land), unless it also has to accommodate a transmission / reception tower, in which case it will require a fairly large plot. Medium sized plot will be needed for **local exchange**, central to its catchment area. **Street exchange** may be located on small plot in road corridor

Telephone exchange lines can be either overhead, pole mounted or underground using newer Optical Fiber Cables. Both of these are carried to localized exchanges and then onto small roadside exchanges. From these connections are carried on poles to individual premises. All networks can be accommodated within road reserves.

**Gas supply:** Presently Mehendiganj Paurashava has no piped gas facility. People are still dependent on LP cylinder gas, kerosene, straws, dry leaves, cow dung, fire wood and other traditional fuel materials for day to day cooking.

Recent government has suspended gas connection for domestic purpose. Networks have been shown only along major roads. During the installation of gas network, Paurashava will consider some necessary steps. They are, in case of gas manifold station, may be located on small to medium sized plot on the main ring, at the fringe of the Paurashava. Upazila regulator station may be located on small plots throughout the Paurashava. These will be located at the break-off point on the main line, where smaller diameter spurs extend into the area that the gas will serve.

The consultant proposes a pipe line network to operate piped gas supply system that will be implemented over 20 years. The total length of proposed gas supply network is 85.01 km. **Table-13.3** and **Table 13.4** shows the inventory of proposed water supply network and proposed urban services in Mehendiganj Paurashava.

**Table-13.3: Proposed Gas supply Network in Mehendiganj**

Proposed US ID	Length (m)	Phasing	Proposed US Type
PGS 2	666.35	Phase 02	Gas Supply Network
PGS 3	841.46	Phase 02	Gas Supply Network
PGS 6	1002.09	Phase 02	Gas Supply Network
PGS 8	1135.22	Phase 02	Gas Supply Network
PGS 9	452.58	Phase 02	Gas Supply Network
PGS 10	351.83	Phase 02	Gas Supply Network
PGS 12	441.56	Phase 02	Gas Supply Network
PGS 14	377.54	Phase 03	Gas Supply Network
PGS 15	425.33	Phase 02	Gas Supply Network
PGS 19	740.50	Phase 03	Gas Supply Network
PGS 21	394.14	Phase 03	Gas Supply Network
PGS 23	134.33	Phase 03	Gas Supply Network
PGS 24	48.97	Phase 03	Gas Supply Network
PGS 25	229.68	Phase 03	Gas Supply Network
PGS 29	820.57	Phase 02	Gas Supply Network
PGS 35	1125.29	Phase 02	Gas Supply Network
PGS 36	759.08	Phase 02	Gas Supply Network
PGS 37	362.78	Phase 02	Gas Supply Network
PGS 40	385.36	Phase 02	Gas Supply Network
PGS 41	740.56	Phase 03	Gas Supply Network
PGS 45	369.13	Phase 03	Gas Supply Network
PGS 46	983.02	Phase 03	Gas Supply Network
PGS 49	513.66	Phase 03	Gas Supply Network
PGS 51	298.94	Phase 02	Gas Supply Network
PGS 52	1857.45	Phase 02	Gas Supply Network
PGS 53	590.45	Phase 02	Gas Supply Network
PGS 54	1424.36	Phase 02	Gas Supply Network
PGS 55	1221.67	Phase 03	Gas Supply Network
PGS 56	866.27	Phase 03	Gas Supply Network
PGS 57	757.38	Phase 03	Gas Supply Network
PGS 58	607.89	Phase 03	Gas Supply Network
PGS 59	844.12	Phase 03	Gas Supply Network
PGS 60	457.41	Phase 03	Gas Supply Network
PGS 61	2202.71	Phase 02	Gas Supply Network
PGS 62	1455.48	Phase 02	Gas Supply Network
PGS 63	184.79	Phase 02	Gas Supply Network
PGS 64	659.70	Phase 03	Gas Supply Network
PGS 65	253.74	Phase 03	Gas Supply Network
PGS 67	159.71	Phase 02	Gas Supply Network
PGS 68	1340.94	Phase 02	Gas Supply Network
PGS 70	242.09	Phase 02	Gas Supply Network
PGS 74	123.70	Phase 02	Gas Supply Network

Proposed US ID	Length (m)	Phasing	Proposed US Type
PGS 75	329.25	Phase 02	Gas Supply Network
PGS 76	267.48	Phase 03	Gas Supply Network
PGS 77	2438.36	Phase 03	Gas Supply Network
PGS 80	99.99	Phase 02	Gas Supply Network
PGS 81	501.02	Phase 02	Gas Supply Network
PGS 82	577.38	Phase 03	Gas Supply Network
PGS 83	542.14	Phase 03	Gas Supply Network
PGS 87	305.77	Phase 02	Gas Supply Network
PGS 88	135.32	Phase 03	Gas Supply Network
PGS 90	655.64	Phase 03	Gas Supply Network
PGS 91	400.45	Phase 02	Gas Supply Network
PGS 92	610.51	Phase 03	Gas Supply Network
PGS 93	336.63	Phase 03	Gas Supply Network
PGS 94	848.20	Phase 03	Gas Supply Network
PGS 96	107.47	Phase 02	Gas Supply Network
PGS 98	422.10	Phase 02	Gas Supply Network
PGS 99	434.41	Phase 03	Gas Supply Network
PGS 101	653.33	Phase 02	Gas Supply Network
PGS 102	314.82	Phase 02	Gas Supply Network
PGS 103	980.07	Phase 03	Gas Supply Network
PGS 106	176.10	Phase 02	Gas Supply Network
PGS 108	344.78	Phase 03	Gas Supply Network
PGS 109	358.00	Phase 03	Gas Supply Network
PGS 110	236.33	Phase 03	Gas Supply Network
PGS 111	382.03	Phase 03	Gas Supply Network
PGS 112	855.21	Phase 03	Gas Supply Network
PGS 114	235.54	Phase 03	Gas Supply Network
PGS 116	317.03	Phase 03	Gas Supply Network
PGS 119	350.55	Phase 03	Gas Supply Network
PGS 120	137.06	Phase 03	Gas Supply Network
PGS 121	309.07	Phase 02	Gas Supply Network
PGS 122	515.40	Phase 03	Gas Supply Network
PGS 123	128.82	Phase 02	Gas Supply Network
PGS 124	301.41	Phase 02	Gas Supply Network
PGS 125	2930.20	Phase 02	Gas Supply Network
PGS 126	235.70	Phase 02	Gas Supply Network
PGS 127	418.63	Phase 02	Gas Supply Network
PGS 128	396.97	Phase 02	Gas Supply Network
PGS 130	220.21	Phase 02	Gas Supply Network
PGS 131	481.53	Phase 02	Gas Supply Network
PGS 134	330.19	Phase 02	Gas Supply Network
PGS 135	588.08	Phase 03	Gas Supply Network
PGS 136	338.52	Phase 03	Gas Supply Network



Proposed US ID	Length (m)	Phasing	Proposed US Type
PGS 139	541.61	Phase 03	Gas Supply Network
PGS 140	356.95	Phase 03	Gas Supply Network
PGS 142	150.25	Phase 02	Gas Supply Network
PGS 144	1454.19	Phase 02	Gas Supply Network
PGS 145	1676.64	Phase 02	Gas Supply Network
PGS 146	175.83	Phase 02	Gas Supply Network
PGS 147	1941.56	Phase 02	Gas Supply Network
PGS 148	1430.56	Phase 02	Gas Supply Network
PGS 149	750.95	Phase 02	Gas Supply Network
PGS 150	1217.92	Phase 03	Gas Supply Network
PGS 151	868.16	Phase 03	Gas Supply Network
PGS 152	759.82	Phase 03	Gas Supply Network
PGS 153	824.79	Phase 03	Gas Supply Network
PGS 154	454.34	Phase 03	Gas Supply Network
PGS 155	2221.71	Phase 02	Gas Supply Network
PGS 156	199.33	Phase 02	Gas Supply Network
PGS 158	243.15	Phase 03	Gas Supply Network
PGS 161	460.18	Phase 02	Gas Supply Network
PGS 163	348.21	Phase 03	Gas Supply Network
PGS 164	263.52	Phase 03	Gas Supply Network
PGS 165	693.26	Phase 02	Gas Supply Network
PGS 169	1244.86	Phase 03	Gas Supply Network
PGS 170	2448.40	Phase 03	Gas Supply Network
PGS 171	704.90	Phase 03	Gas Supply Network
PGS 172	565.72	Phase 03	Gas Supply Network
PGS 175	662.39	Phase 03	Gas Supply Network
PGS 176	276.88	Phase 02	Gas Supply Network
PGS 177	606.30	Phase 03	Gas Supply Network
PGS 179	188.20	Phase 02	Gas Supply Network
PGS 181	197.84	Phase 02	Gas Supply Network
PGS 182	390.95	Phase 02	Gas Supply Network
PGS 183	231.61	Phase 03	Gas Supply Network
PGS 185	1245.25	Phase 02	Gas Supply Network
PGS 186	331.65	Phase 02	Gas Supply Network
PGS 188	592.82	Phase 03	Gas Supply Network
PGS 190	394.12	Phase 02	Gas Supply Network
PGS 191	608.23	Phase 03	Gas Supply Network
PGS 193	839.74	Phase 03	Gas Supply Network
PGS 195	115.97	Phase 02	Gas Supply Network
PGS 196	184.93	Phase 02	Gas Supply Network
PGS 206	839.25	Phase 02	Gas Supply Network
PGS 220	1997.56	Phase 03	Gas Supply Network
PGS 221	2007.24	Phase 03	Gas Supply Network

Proposed US ID	Length (m)	Phasing	Proposed US Type
PGS 223	184.77	Phase 02	Gas Supply Network
PGS 258	109.41	Phase 02	Gas Supply Network
PGS 263	405.58	Phase 02	Gas Supply Network
PGS 266	223.47	Phase 02	Gas Supply Network

Source: Based on Physical feature Survey, 2011 and proposed by the Consultant.

**Table-13.4: Proposed Urban Services**

Name of use	Ward No.	Mouza	Plot No.	Area (acre)
Central graveyard	06	Kharki_79_0	105-116,118,120-127	4.18
Central Cremation Ground	01	Char Hogla_41_3	2840,2841,2877,2878	0.72
Central Mosque & Eidgah	05	Mehendiganj_46_0	70-78,83-85	2.76
Central Park	01	Char Hogla_41_3	3216,3229-3241,3243-3245,3248-3253,3255-3262,3272,3287	9.64
Dumping Station	01	Char Hogla_41_3	2852,2853,2855-2861	0.80
Fire Service	03	Ambikapur_45_0	265,292	0.49
Surface Water Treatment Plant	07	Bhuta Lakshmipur_43_0	421,422,967	0.77
Vocational Institute	07	Bhuta Lakshmipur_43_0	266,268,322-329,412,414,416-421	3.33
Water Supply Station	01	Char Hogla_41_3	3280,3303	0.42
Wholesale Market	01	Char Hogla_41_3	3283-3286	6.01
Slaughtering House	01	Char Hogla_41_3	3128	0.04
Super Market	03	Ambikapur_45_0	243,292	1.24

## 13.4 Regulations to Address the Proposals

**Local Government (Paurashava) Act, 2009** was enacted in 6<sup>th</sup> October 2009. According to the 2<sup>nd</sup> Schedule, Sl. No. 10, the Paurashava may provide supply of wholesome water sufficient for public and private purposes. Frame and execute water supply scheme for the construction and maintenance of such works for storage and distribution of water. In case of private sources of water supply, it is said that, all private sources of water supply within the Paurashava shall be subject to control, regulation and inspection by the Paurashava. No new well, water pump or any other source of water for drinking purposes shall be dug, constructed or provided except with the sanction of the Paurashava.

The regulations, as discussed above, will be needed for provisioning of drinking water supply both Paurashava and private sources in the Paurashava.

The sewerage facilities may be provided by the Paurashava and Directorate of Public Health Engineering (DPHE). According to the 2<sup>nd</sup> Schedule, Sl. No. 12, of the Local Government (Paurashava) Ordinance, 2009, Paurashava may provide an adequate system of public drains and all such drains shall be constructed, maintained, kept, cleared and emptied with due regard to the health and convenience of the public. All private drains shall be subject to control, regulation and inspection by the Paurashava.

**Public Health (Emergency Provisions) Ordinance, 1944 (Ordinance No. XXI of 1944)** was enacted in 20<sup>th</sup> May 1944. According to the section 2(e) “public health services” and “public health establishment” include respectively sanitary, water-supply, vaccination, sewage disposal, drainage and conservancy services and establishment maintained for the purposes of such services, and any other service or establishment of a local authority which the Government may by notification in the Official Gazette declare to be a public health service or public health establishment for any purpose of this Ordinance.

Based on the regulation, the Directorate of Public Health Engineering (DPHE) is performing activities for drinking water supply. If DPHE likes to render their service according to the water supply network as presented in this plan, the regulation will be the safeguard for them.

**East Pakistan Water and Power Development Authority Rules, 1965 (No. 4-1(E))** was prepared and notified in 12<sup>th</sup> July 1965. The Power Development Board (PDB) is empowered for power generation under the guidance of Electricity Act, 1910. At present, PDB and Rural Electrification Board (under the Rural Electrification Board Ordinance, 1977) is performing the role relevant with the electrification of the Paurashava. The existing authorities will be needed for electrification of the Paurashava according to the guidelines presented in the plan.

**Telegraph and Telephone Board Ordinance, 1975 (Ordinance No. XLVII of 1975)** was enacted in 30<sup>th</sup> August 1975. A Telegraph and Telephone Board (T&T Board) was composed through this Ordinance. Section 6(1) of the Ordinance has prescribed the functions of the Board and said, it shall be the function of the Board to provide efficient telegraph and telephone services and to do all acts and things necessary for the development of telegraphs and telephones. In the Paurashava, at present, a T & T Board is performing the functions prescribed in the section 6(1). T & T Board is the sole authority for performing the same and it will be continued in future also. But, the Mobile telephone system generates a revolution in the society. Most of the people are depended on the Mobile phone system. The plan does not consider this system.

## **13.5 Implementation, Monitoring and Evaluation of the Urban Services**

### **Plan**

**Implementation through Multi-Sectoral Investment Programme:** Major infrastructure development works such as primary roads, water supply, drainage, etc., will largely be controlled by Government. Public works requires efficient co-ordination through the Multi-Sectoral Investment Programme (MSIP).

Objective of a Multi-Sectoral Investment Programme (MSIP) will match a list of the development projects with the funding stream necessary to implement them. There are two basic activities that would determine the contents of MSIP. One activity would be to prioritize and schedule the investment projects of all public agencies so they will collectively help to achieve the development goals and objectives of the Urban Services Plan. Second activity would be to analyze the source and availability of fund for the prioritized list of development projects.

**Implementation through Action Plans and Projects:** Action Plans and Projects will be the implementation plans to solve problems at the local level. Action plans will take a direct approach toward plan implementation with a minimum of research, reports or elaborate planning methods. These projects will be easily identifiable and will require minimum resource.

**Implementation through Development Control:** Landuse zoning is one of several methods of plan implementation to be considered. In all cases where some form of development, landuse control may be applied; careful consideration requires the following ideologies:

- the purpose to be achieved by the development controls;
- where controls should be applied;

- what aspect of development needs to be controlled;
- what type of development controls are required;
- what degree or level of development control is required;
- who will be affected by the required control;
- who will be affected by the controls and in what manner;
- when the controls should be applied;
- what will be the likely impact of the controls;
- how and by whom will the controls be administered and enforced.

Development control as an instrument of plan implementation may be selectively applied within the Urban Services Plans. Development controls would also be varied in intensity and detail to suit the particular circumstances. It is important that they should be clear and easily understood by all parties concerned. Since the entire Paurashava Master Plan 'package' has become statutory, development controls associated with its component plans would also be statutory.

**Implementation by Facilitating Private Investment:** Another approach that would be taken by government toward plan implementation will be to guide and facilitate investments made by the private sector. Government can achieve this with relative ease and at very low cost by setting up a legal and operational framework, coupled with suitable incentives, to facilitate land consolidation, plot boundary readjustment, efficient lay out of plots and provision of local infrastructure by the private sector. The benefits of this approach would be:

- increased efficiency of the urban land market would make more private land available to urban households;
- would pass much of the development costs for local infrastructure to the private sector and land market mechanisms;
- would increase in land for development without large cash outlays by government to purchase land for development schemes; and
- would keep provision of land for community facilities virtually no cost to government.

### **Plan Monitoring**

The Urban Services Plan would simply be tools for guiding and encouraging the growth and development of an urban area in a preferred manner. In a rapidly changing urban environment, the Urban Services Plan would require to keep up to date. If this is not done, within a few years it will be obsolete. Therefore, it is imperative that the requirement for regular updating of the Urban Services Plan be made a legal requirement.

For implementation of the various programme components of the Urban Services Plan appropriate administrative measures will have to be undertaken. This will essentially include project preparation and monitoring of their execution and evaluation. For carrying out all these activities appropriate institutional measures are also needed.

### **Evaluation**

Monitoring and evaluation of ongoing and implemented projects is essential to keep the future course of action on the right track. An ongoing project should be regularly monitored and handicaps identified to enable taking appropriate measures at the right time.

Post implementation evaluation is also needed to take appropriate measures correcting past errors-from project preparation to implementation.

The top level supervision has to be done by a high level supervisory committee headed by the Paurashava Mayor, representatives of the service giving agencies and Local Government Ministry. Other members of the committee will be local Ward Councilors, local community leader/social workers and the Town Planner of the Paurashava. The committee will supervise implementation works regularly and issue necessary instructions to expedite the works of implementation.

## **Part C. Ward Action Plan**

## **Chapter-Fourteen**

### **WARD ACTION PLAN**

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#### **14.1 Introduction**

This chapter presents Part-C of the report which contains Ward Action Plan of each individual ward. First, the issues prevailing in different wards have been briefly described followed by description of Development Proposals in first Ward Action Plan (1<sup>st</sup> to 5<sup>th</sup> year of planning period) for each Ward.

##### **14.1.1 Background**

There are several patches of land in the Paurashava area where planned development can be achieved through use of different land development techniques. One of those techniques is Land Readjustment Technique, may be practiced for the development of Ward as a Ward Action Plan. The plan prepared for designated areas in conforming to the land development techniques is known as Action Area Plan.

It is also expected that following successful implementation of the Ward Action Plan in one side, management would be more efficient in handling projects and in another people residing in unplanned areas would feel the benefit of such Action Plan ensuring more effective community participation.

##### **14.1.2 Content and Form of Ward Action Plan**

The report has been divided in to five main parts. These are preceded by introductory chapters which explain the approach of the report and provide background with the linkage of Structure Plan and Urban Area Plan. Part two of the report identifies strategies and policies prescribed in the Structure Plan and Urban Area Plan and their uses for the preparation of Ward Action Plan. The chapter also covers prioritization in case of development needs and Ward-wise Action Plan for next five years. Ward-wise Action Plan is being presented in the next part of the report. Proposal, priority tasks and financial involvement with the infrastructural development as a priority basis are the outcome of this part. Implementation guidelines are the key issues of part four. Comparative Advantage of Master Plan and proposals for mitigation of identified issues are the components of last part of this report.

##### **14.1.3 Linkage with the Structure and Urban Area Plan**

The Ward Action Plan for the Paurashava has been prepared on the basis of following principles relevant with the Structure Plan and Urban Area Plan:

- Environment friendly sustainable development of the area.
- Town functions to develop as per major landuse zones.
- Effective drainage system through minimum hindrance to Flood Flow zones.
- Safe residential areas at proximity to place of work or major communication routes.
- Smooth and effective functioning of industries, specially agro-based industries.
- Safe yet faster connectivity.
- Develop to serve the surrounding hinterlands.

##### **14.1.4 Approach and Methodology**

For the preparation of Ward Action Plan the planning area has been sub-divided into Nine Planning Zones according to the individual Ward. Immediate necessary action will be required for

Ward Action Plan and this is the key outcome of Ward Action Plan. Where, what type of action will be required and how the action will be performed prescribed in the plan.

### **Pro-people Urban Planning**

The Ward Action Planning approach utilizes in the Paurashava Master Plan concentrating mainly on the building of infrastructure and roads to facilitate the movements of vehicles. In this scenario, Paurashava society would become steadily more privatized with private homes, offices and commercial activities, while all-important public component of urban life is likely to slowly disappear.

The landuse and transport interaction for a modern city should be directed toward “Planning for people, not for vehicles, roads or buildings”. Given the problems of alienation, crime, fear of strangers and the breakdown of civic life, it is increasingly important to make cities inviting so that people can meet their fellow citizens face-to-face and experience human contact with those unknown to and different from them directly through their senses. Public life in high quality public spaces is an important part of a democratic society and full life.

### **Evidence-based vs. Arbitrary Planning Approach**

In the era of globalization, where information on any number of issues and about any number of places is readily accessible, there is no need for localities to continue making the same mistakes as they did when operating in an information and experience vacuum. While urban planning is of course a complicated process, it is also true that some universals exist in terms of what works and what does not. The experiences of urban areas adopting commercial-based and people-based approaches make clear the effects of either method, and many guides are now available on implementing planning approaches that are good for the natural environment and for urban dwellers.

Given the widespread availability of such information, it is highly regrettable that important landuse and transport policy-decisions should adopt either any knowledge-based or scientific analysis. Instead, arbitrary or so-called “common sense” approaches should not be utilized which may favour the rich, including bureaucrats and developers with little concern for the betterment of society overall.

Although, it is a demanding task to represent the complex dynamics of urban landuse changes that are consistent with observable data, significant progress has been made in recent years in the country in forecasting and evaluating landuse change on the basis of dynamic and causal relationships between such factors as transport and landuse, and built environment and socio-economic processes.

With the advance of the knowledge-base and technology-base, detailed and extensive urban form and function data is becoming increasingly available, with great potential to provide new insights for sustainable urban planning which preserves the eco-system and maintains or even increases social equity.

Yet no attempt was made in the preparation of Upazila Master Plan / Landuse Plan (in 1980s) to conduct any analytical or empirical analysis using data related to interactions between the built environment, transport, landuse and other socio-economic processes.

Again, in Paurashava Master Plan, the Geographic Information System (GIS)-based technology is mainly used for mapping and visual displays, which are limited to static displays of past and current data sets. That is, the displays only portray the current state of the system, with neither the reasons given for its condition nor possible alternate futures provided. As a result, policymakers and planners are now facing tremendous difficulties, lacking as they do any insight into future urban growth and the potential impacts of various models.

Hypothetical Planning Approach under Upazila Master Plan/Landuse Plan, no comprehensive data collection exercise was undertaken to estimate landuse requirements for the Paurashava. As a



result, all the landuse proposals of that plan were hypothetical in nature, providing no insight into how the actual landuse demand for various purposes will meet in future.

Yet it is not logical to develop a Ward Action Plan, which represents the lowest tier of the planning hierarchy, without providing precise landuse allocations for different functional purposes.

Furthermore, in the Paurashava Plan, a significant portion of existing open space and agriculture land have been allocated for private developers required as per the 2031 population projection. This excess land for property developers is likely not only to create landuse speculation but also indiscipline in future landuse development. More importantly, the preservation of land for open space and agriculture is vital for the health and viability of the Paurashava and its inhabitants.

## **14.2 Derivation of Ward Action Plan**

### **14.2.1 Revisit Structure Plan**

All the studies carried out at varying point of time converged to the same conclusion that the vital contribution of the Paurashava areas are Machkata River as main flood flow zone allowing excess flood water to pass over it during rainy season, must not be obstructed by any development. Despite this unanimous expert cautions, the area will experience a tremendous development pressure. The Consultant has tried to work out an effective strategy to address the later with acceptably low obstruction to the flood water to pass through. The strategies are as follows under some basic heads:

#### **Drainage**

- Non-continuous smaller rural settlements above flood level surrounded by ample low lying areas (agriculture, sub-flood flow, main flood flow, etc.) allowing uninterrupted flow of water to pass through.
- Minimize obstruction of flood water as is practicable.
- Appropriate connectivity by roads having sufficient openings to ensure needful flow of water across them as well as uninterrupted traditional water-based connectivity by keeping appropriate navigation clearance at the bridges. This would help to maintain the biodiversity of the area and contribute to sustainable environment in turn.

#### **Residential Development**

- Residential Landuse Zone is based on the potentiality, trend and opportunity.
- Adaptation of neighbourhood concept for new residential developments and for need assessment of community facilities.
- Prohibition of through traffic and heavy vehicles within the neighbourhoods.
- Provide adequate safe and easy to move footpaths.
- Ensure community facilities and services of appropriate scale at neighbourhood level.

#### **Industrial Development**

- Ensure provision of central effluent treatment plant in case of industrial clusters.
- Ensure own treatment plant in case of individual facilities.
- Prohibit high hazard industries within the residential area.
- Relocate industries from predominantly residential zones in phases.
- Provide essential support facilities for effective functioning of the industries.

#### **Mixed-Use Development**

- Relocate noxious and heavy industries [red category as per DoE] to Heavy Industrial Area within as soon as practicable.
- Ensure adequate utility services to ensure uninterrupted production.
- Allow the red industries to maintain their status under strict abiding conditions until shifting.
- Ensure adequate safety and security of the people especially of the families residing in such mixed-areas.
- Provide sufficient quantity of wide, easy to use and safe footpaths.
- Provide Zebra Crossing at road crossings to ease the lives of major portion of low-income workers likely to traverse on foot to reach their likely abode in the busy area.

#### **Transport and Communication**

- Provide safe, adequate and comfortable pedestrian ways.
- Provide appropriate and effective public transport routes with sufficient number of quality public transport to carry passenger.
- Grade separation of National and Regional Highways from the local roads, latter being at grade and other two above grades.

#### **Flood Flow Zones**

- Strictly preserve the riverfront area as per the area demarcated by the Water Development Board.
- Promote agricultural and passive recreational use of the area during dry season.

#### **Non-urban Areas**

- Promote traditional waterways (if any) in the low-lying areas by constructing submerged road for dry season connectivity.
- Strictly preserve agriculture land from conversion into non-agricultural use.
- Promote rural characteristics in the isolated homesteads keeping mandatory buffer to make way for the flood water intrusion.

#### **Water body and Open Spaces**

- Strictly protect canal networks providing the missing links.
- Make provision for open spaces and water body at the neighbourhood level.
- Strictly protect the river fronts and open it for the dwellers as a passive recreation.
- Make town-scale open space with easy accessibility especially for people of densely populated areas with meager scope for open space.

#### **Amenities and Community Facilities**

- Consider neighbourhood concept of residential development for estimating community facilities and amenities requirement.
- Prohibit construction of religious structure unless built on its own land.
- Relocate unauthorized religious structures from road Right of Way to safeguard greater interest of the people specially the Paurashava dwellers.

- Close/relocate existing schools with highly inadequate class rooms, play field and essential facilities and gradually replace with standard considered in the Urban Area Plan.
- Evacuate unauthorized structures and uses from road's Right of Way to safeguard greater interest of the people specially the Paurashava dwellers.

#### **Solid Waste Management**

- No more conventional disposal through dumping.
- Solid Waste Processing to ensure recycling.
- Conversion of traditional solid waste in to fertilizer.
- Door to door collection instead of road side bin disposal.
- Disposal of hospital and other hazardous waste in the proposed disposal site.

#### **Water Supply**

- Harness surface water source instead of ground water.
- Explore possibility of processing Machkata River water.
- Continuous monitoring of tubewell water to check arsenic contamination.
- Create scope of rain water harvesting.

#### **Electricity**

- Priority for supplying electricity will be given to industry and irrigation pumps.
- Gradually coverage of the whole Paurashava with the increase of power generation.
- Gradually electricity network will be concealed through underground system.
- Explore the possibility of using renewable energy source in order to minimize cost of distribution network.
- Introduce solar energy in every establishment.

#### **Environmental Management**

- Grouping of hazardous industries.
- Establishment of Common Effluent Treatment Plant.
- Adoption of neighbourhood concepts for new residential development.
- Generate waste water treatment plant.

#### **Gas Supply**

- Explore possibility of use of gas in cylinder for domestic purposes.

#### **Supporting the Surrounding Hinterland**

- Easy accessibility from the surrounding hinterlands especially growth centers.
- Ensure facilities such as cold storage, wholesale/retail market facilities for needful commodities (fertilizer, insecticide, agro-machineries, etc.) and shopping centers of regional standards to support population living in the surrounding hinterlands.

#### **Conservation of Monument and Heritage**

- Identify and record all historical sites and monuments.
- Conserve and restore with standard procedure all historical sites and monuments.

- Evict illegal occupants of the historical sites.

### 14.2.2 Prioritization

The prioritization of project proposals in Ward wise Action Plan are made on the basis of urgency for development depending on the needs of people and the town's requirement for infrastructure development.

## 14.3 Ward-wise Action Plan for Next Five Years

The Ward Action Plan is prepared for each of the nine Wards and is presented in order of their serial number. The Ward Action Plans are a series of detailed spatial development plans of different use and facilities. The plans comprise maps of appropriate scale supported by explanatory report. The Ward Action Plans have been prepared for implementation within a period of 5 years. They do not initially cover the entire Structure Plan Area. While all sub-areas will eventually require Ward Action Plan, only priority areas are to be dealt initially. Aim of a Ward Action Plan is to prevent haphazard urban development and create livable environment.

### 14.3.1 Action Plan for Ward No. 01

#### Demography

Ward No. 1 consists of the mouza named Char Hogla. It is situated on the northwestern part of the Paurashava and Upazila area is surrounded the Ward on northern and western part, Ward No. 2 on the south and Ward No. 3 on the eastern part of the Ward. Present population of the Ward is 4401 (2011) and it will be 4460 in the year 2016, 4519 in 2021, 4579 in 2026 and 4640 in 2031. Density of population is 6 persons per acre and it will remain up to the year 2031.

**Table-14.1: Population, area and density**

Type	Population 2011	Projected population			
		2016	2021	2026	2031
Population	4401	4460	4519	4579	4640
Area (acre)	733.70	733.70	733.70	733.70	733.70
Density/acre	6	6	6	6	6

Source: BBS 2011

### Proposals and Plans for Ward No. 01

#### Landuse Proposal

Ward No. 1 is important for agriculture land and educational establishments. Total planning area of the Ward is 733.70 acres. In the total planning area, 336.27 acres land is under agriculture use, 5.98 acres commercial use, 4.41 acres educational use, 72.69 acres water body, 40.90 acres rural homestead, 70.35 acres circulation network and 168.62 acres residential use. Other uses are negligible.

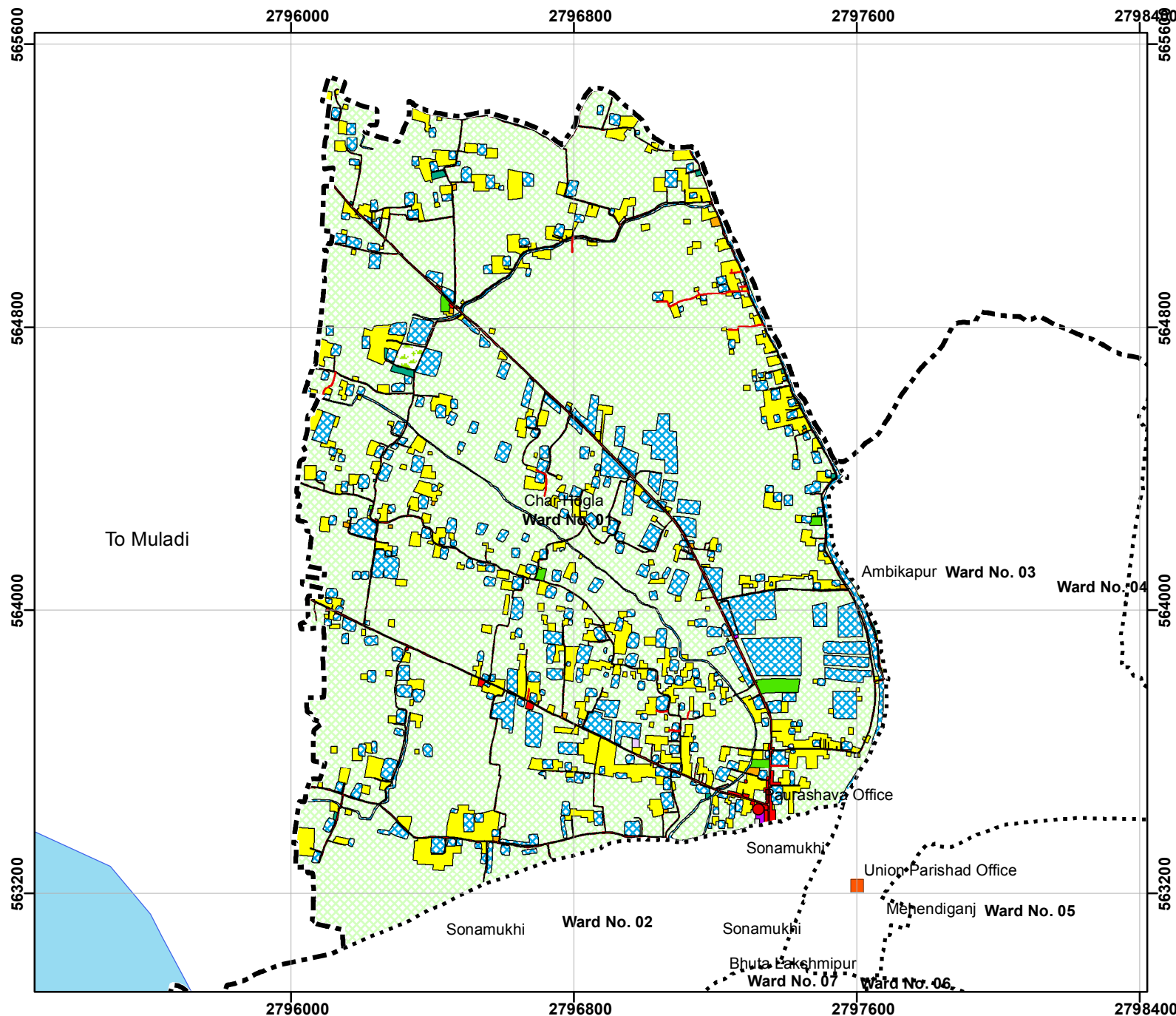
**Table-14.2: Existing and proposed landuse**

Landuse category	Area in acre			
	Existing	%	Proposed	%
Agriculture	551.7	75.19	336.27	45.76
Commercial	1.27	0.17	5.98	0.81
Circulation Network	14.26	1.94	70.35	9.57
Community Facilities	0.86	0.12	0.81	0.11
Education & Research	2.05	0.28	4.41	0.60
Industrial area	0.11	0.01	0.00	0.00
Mixed Use	0.00	0.00	14.14	1.92

Landuse category	Area in acre			
	Existing	%	Proposed	%
NGO office	0.12	0.02	0.00	0.00
Open space	0.90	0.12	16.37	2.23
Recreation	0.00	0.00	0.00	0.00
Residential area	68.82	9.38	168.62	22.95
Rural homestead	3.54	0.48	40.90	5.57
Water Body	93.61	12.76	72.69	9.89
Government Office	0.00	0.00	2.82	0.38
Utility Services	0.00	0.00	1.32	0.18
Transportation Facilities	0.00	0.00	0.18	0.02
<b>Total</b>	<b>733.7</b>	<b>100.00</b>	<b>733.7</b>	<b>100.00</b>

Map 14.1

Existing land use of Ward No.01



SCALE

1:15,800

0 125 250 500 750 1,000 Meters

LEGEND

Admin Point

- Paurashava Office
- Union Parishad Office
- Upazila Headquarter

Boundary Line

- Paurashava Boundary
- Ward Boundary

Existing Landuse

- Residential
- Agriculture
- Waterbody
- Educational Facilities
- Commercial
- Industrial
- Education and Research
- Community Service
- Service Activity
- Governmental Services
- Non Government Services
- Recreational Facilities
- Mixed Use
- Circulation Network
- Transport and Communication
- Forest
- Urban Green Space
- Vacant Land
- Miscellaneous/Others
- Restricted

PREPARATION OF MASTER PLAN FOR MEHENDIGANJ PAURASHAVA  
Mehendiganj Upazila, Barisal District



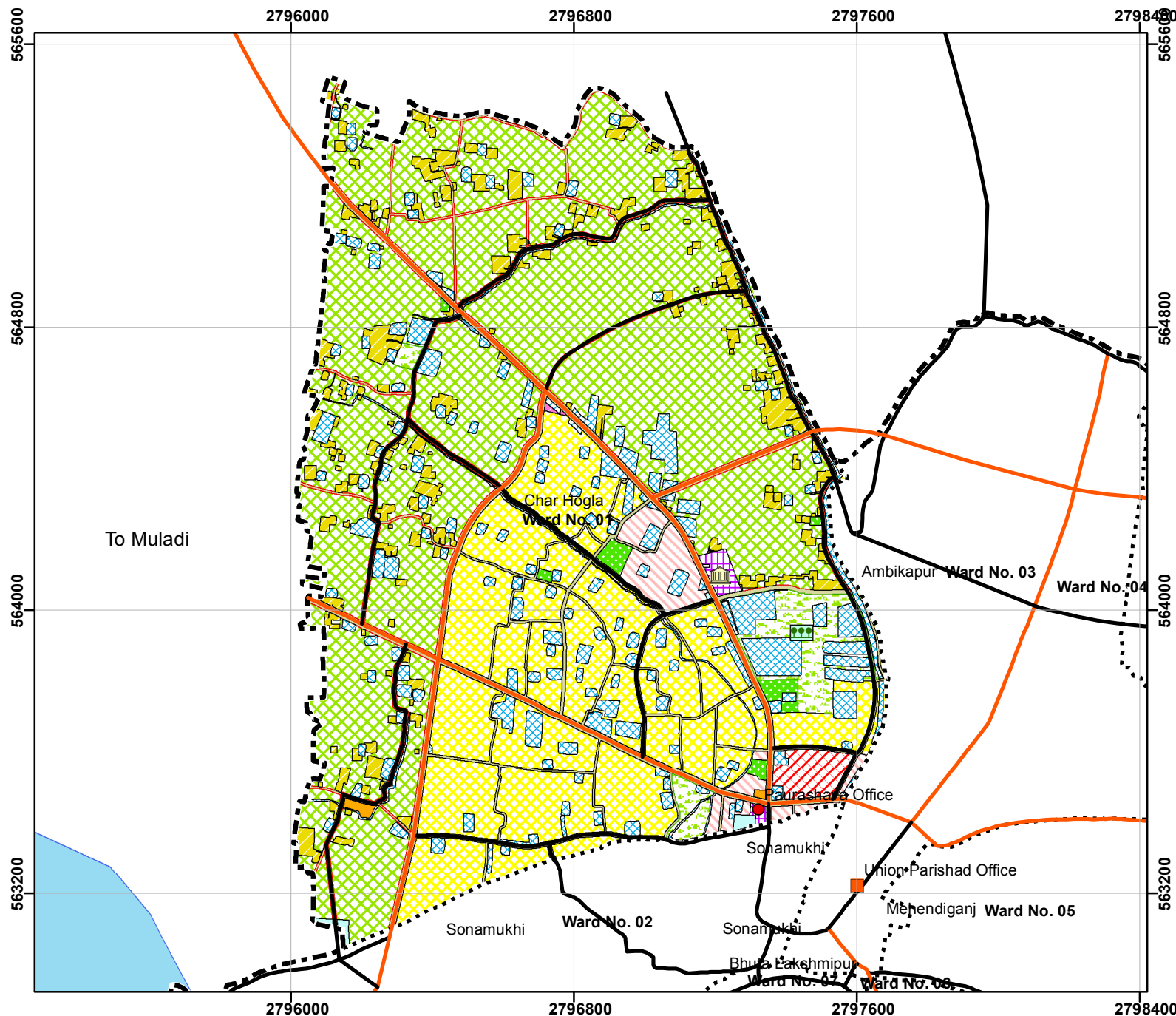
Government of the People's Republic of Bangladesh  
Ministry of Local Government, Rural Development and Cooperatives  
Local Government Division

Local Government Engineering Department (LGED)  
Upazila Towns Infrastructure Development Project (UTIDP)  
Package No: 11 (Barisal Region)

CONSULTANT  
**SCPL** Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
In Association with

Map 14.2

Proposed land use of Ward No.01



## SCALE

1:15,800

0 125 250 500 750 1,000 Meters

## LEGEND

- Planning Area Boundary
- Paurashava Boundary
- Ward Boundary
- Paurashava Office
- Union Parishad Office
- Upazila Headquarter
- Bus Terminal
- ☆ Central Graveyard
- Central Park
- Industrial Estate
- Neighbourhood Center
- Resettlement Zone
- Truck Terminal
- Upazila Hospital
- Upazila Stadium

## Major Services

## Proposed Landuse

- Urban Residential Zone
- Rural Settlement
- Commercial Zone
- Mixed Use Zone
- General Industrial Zone
- Heavy Industrial Zone
- Government Office
- Education & Research
- Agricultural Zone
- Waterbody
- Open Space
- Recreational Facilities
- Circulation Network
- Transportation Facilities
- Utility Services
- Health Services
- Community Facilities
- Historical & Heritage Site
- Restricted Area
- Overlay Zone
- Urban Deferred
- Forest
- Beach
- Miscellaneous

## Major Road

- Primary Road
- Secondary Road

PREPARATION OF MASTER PLAN FOR MEHENDIGANJ PAURASHAVA  
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**SCPL** CONSULTANT  
Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
In Association with



### Proposed Circulation Network

At present, 24.07 km. roads are in the Ward No. 1. Among total length, 9.93 km. katcha, 4.81 km. semi-pucca and 9.33 km. pucca roads. In the plan, 60-20 feet width roads are being proposed. Total length of the proposed road is 25634.64 meter (25.63 km.).

**Table-14.3: Proposed road**

Road ID	Road Proposal	Road type	Road Width (ft)	Length (m)	Phasing
PRdT 127	Widening	Tertiary Road	20	30.38	Phase 02
PRdS 2	Widening	Secondary Road	40	727.47	Phase 01
PRdT 21	Widening	Tertiary Road	20	245.37	Phase 01
PRdT 32	Widening	Tertiary Road	20	388.23	Phase 01
PRdT 33	Widening	Tertiary Road	20	156.39	Phase 01
PRdT 34	Widening	Tertiary Road	20	138.76	Phase 02
PRdT 35	Widening	Tertiary Road	20	522.95	Phase 02
PRdT 36	Widening	Tertiary Road	20	80.07	Phase 02
PRdT 37	Widening	Tertiary Road	20	106.59	Phase 02
PRdT 38	Widening	Tertiary Road	20	263.00	Phase 02
PRdT 39	Widening	Tertiary Road	20	215.33	Phase 02
PRdT 40	Widening	Tertiary Road	20	342.25	Phase 02
PRdT 43	Widening	Tertiary Road	20	103.31	Phase 02
PRdT 44	Widening	Tertiary Road	20	291.45	Phase 02
PRdT 46	Widening	Tertiary Road	20	513.48	Phase 01
PRdP 47	Widening	Primary Road	60	1430.32	Phase 01
PRdS 53	Widening	Secondary Road	40	622.07	Phase 01
PRdS 54	Widening	Secondary Road	40	459.40	Phase 01
PRdT 85	Widening	Tertiary Road	20	40.92	Phase 01
PRdS 94	Widening	Secondary Road	40	51.88	Phase 01
PRdS 95	Widening	Secondary Road	40	3.14	Phase 01
PRdT 101	Widening	Tertiary Road	20	249.29	Phase 01
PRdT 102	Widening	Tertiary Road	20	356.85	Phase 01
PRdT 104	Widening	Tertiary Road	20	192.30	Phase 01
PRdT 106	Widening	Tertiary Road	20	158.36	Phase 01
PRdT 126	Widening	Tertiary Road	20	142.68	Phase 01
PRdT 127	Widening	Tertiary Road	20	354.95	Phase 02
PRdT 128	Widening	Tertiary Road	20	516.74	Phase 01
PRdT 130	Widening	Tertiary Road	20	302.21	Phase 02
PRdT 131	Widening	Tertiary Road	20	124.25	Phase 01
PRdT 135	Widening	Tertiary Road	20	80.92	Phase 01
PRdT 136	Widening	Tertiary Road	20	107.85	Phase 01
PRdT 138	Widening	Tertiary Road	20	234.38	Phase 01
PRdT 145	Widening	Tertiary Road	20	211.39	Phase 01
PRdT 150	New Road	Tertiary Road	20	238.14	Phase 02
PRdT 151	New Road	Tertiary Road	20	234.59	Phase 02
PRdT 152	Widening	Tertiary Road	20	89.51	Phase 02
PRdT 153	New Road	Tertiary Road	20	150.19	Phase 02
PRdT 154	Widening	Tertiary Road	20	134.22	Phase 02
PRdT 155	Widening	Tertiary Road	20	207.77	Phase 01
PRdS 156	New Road	Secondary Road	40	581.54	Phase 03
PRdS 157	New Road	Secondary Road	30	252.40	Phase 02
PRdS 158	New Road	Secondary Road	40	922.77	Phase 03
PRdS 159	Widening	Secondary Road	40	994.32	Phase 02
PRdS 160	Widening	Secondary Road	40	370.86	Phase 02
PRdS 161	Widening	Secondary Road	40	464.98	Phase 02
PRdS 162	Widening	Secondary Road	40	1028.74	Phase 01



Road ID	Road Proposal	Road type	Road Width (ft)	Length (m)	Phasing
PRdS 163	New Road	Secondary Road	40	17.44	Phase 03
PRdT 167	New Road	Tertiary Road	20	73.94	Phase 03
PRdT 168	New Road	Tertiary Road	20	312.02	Phase 02
PRdS 169	Widening	Secondary Road	40	379.23	Phase 01
PRdT 170	New Road	Tertiary Road	20	187.96	Phase 03
PRdT 171	Widening	Tertiary Road	20	315.42	Phase 02
PRdT 172	Widening	Tertiary Road	20	151.38	Phase 02
PRdT 173	New Road	Tertiary Road	20	78.00	Phase 03
PRdT 174	New Road	Tertiary Road	20	317.01	Phase 03
PRdT 175	New Road	Tertiary Road	20	141.63	Phase 03
PRdP 176	New Road	Primary Road	60	634.21	Phase 03
PRdP 177	Widening	Primary Road	60	210.98	Phase 02
PRdS 178	New Road	Secondary Road	30	436.58	Phase 03
PRdS 179	New Road	Secondary Road	30	229.44	Phase 03
PRdS 180	Widening	Secondary Road	30	273.20	Phase 01
PRdS 181	Widening	Secondary Road	30	74.13	Phase 01
PRdS 182	New Road	Secondary Road	30	122.96	Phase 03
PRdT 183	Widening	Tertiary Road	20	43.25	Phase 01
PRdP 184	New Road	Primary Road	60	510.56	Phase 03
PRdP 218	New Road	Primary Road	60	772.38	Phase 03
PRdP 243	New Road	Primary Road	60	13.00	Phase 03
PRdP 244	New Road	Primary Road	60	202.91	Phase 03
PRdS 252	New Road	Secondary Road	40	147.91	Phase 03
PRdT 277	New Road	Tertiary Road	20	269.08	Phase 03
PRdT 278	New Road	Tertiary Road	20	186.77	Phase 03
PRdT 279	New Road	Tertiary Road	20	207.55	Phase 03
PRdT 288	New Road	Tertiary Road	20	229.40	Phase 03
PRdS 289	New Road	Secondary Road	40	388.13	Phase 01
PRdP 290	Widening	Primary Road	60	2223.67	Phase 01
PRdS 292	Widening	Secondary Road	40	54.99	Phase 01
PRdT 295	New Road	Tertiary Road	20	40.50	Phase 02
PRdT 298	New Road	Tertiary Road	20	116.23	Phase 02
PRdT 43	Widening	Tertiary Road	20	142.46	Phase 02
PRdT 289	New Road	Tertiary Road	20	92.51	Phase 03
PRdS 45	Widening	Secondary Road	40	508.02	Phase 01
PRdS 43	Widening	Secondary Road	40	94.83	Phase 01
<b>Total</b>				<b>25634.64</b>	

### Proposed Drain

At present, no man-made drain but, 2207.49 meter natural canals are flowing in this Ward. Total length 24.37 km drains has been proposed for this ward.

### Proposed Water and Gas Supply Line

It is proposed to install a network based water supply system by exploring fresh water aquifers. There is no existing water supply network in ward no. 01 and so consultant proposed 14.50 km water supply network in this ward.

It is proposed to install a piped gas supply network to facilitate the households. There is no existing gas supply network in this ward and the plan proposes 14.78 km gas network to develop during the project period and the whole network will be developed during second phase.

### Proposed Services

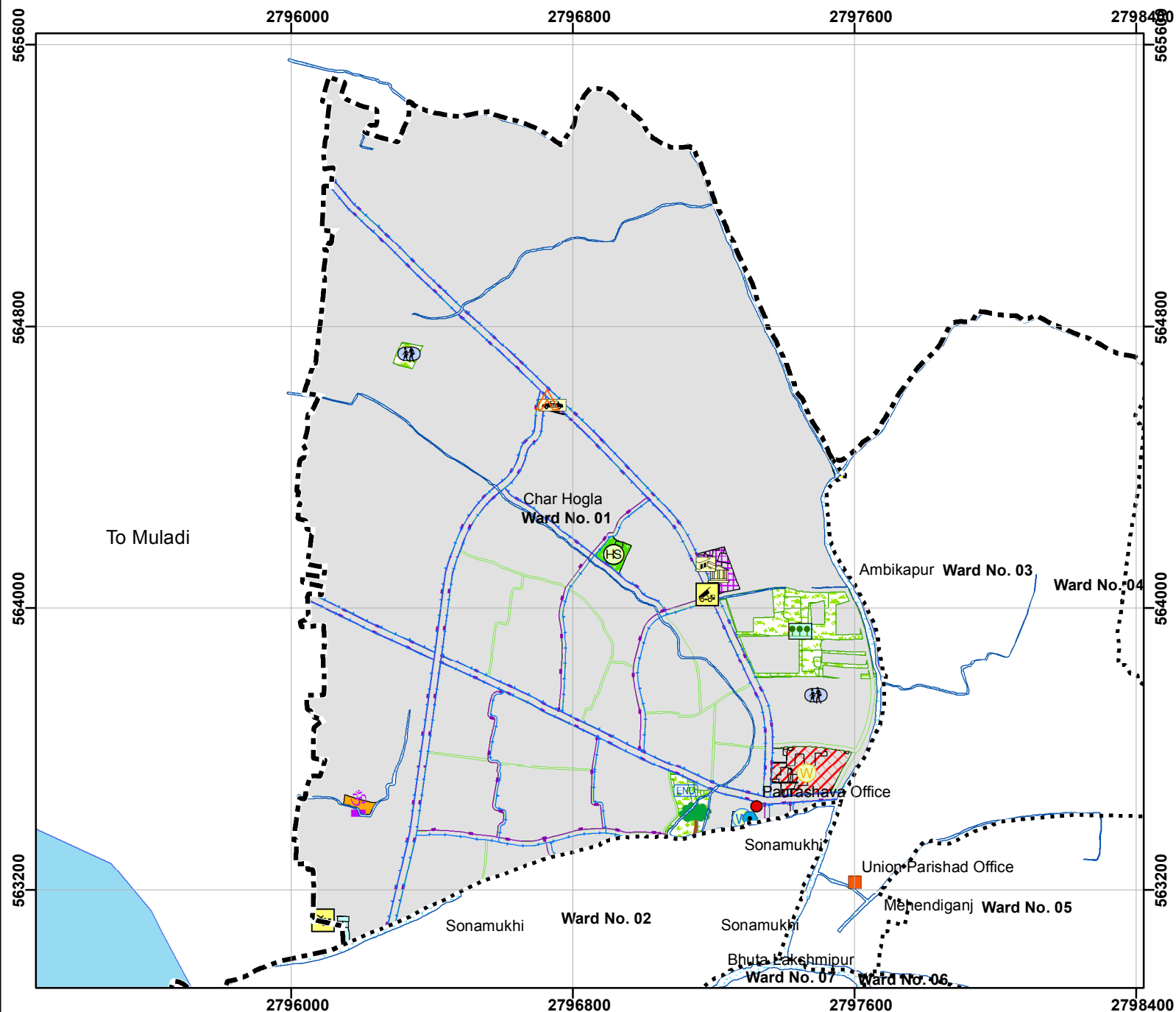
Though the Ward is undeveloped and it will take time to develop properly. Different types of urban services are being proposed in the Ward. The Ward Centre is a mixed-use building will be constructed providing Ward Councilor's office, health/maternity clinic, community centre, political offices, bank and other commercial establishment. Except this, no new service is being proposed rather the existing services encouraged to develop.

**Table-14.4: Proposed Specific urban services (with Plot Schedule)**

Name of use	Mouza	Plot No.	Area (acre)
Central Cremation Ground	Char Hogla_41_3	2840,2841,2877,2878	0.72
Housing Estate- 02	Char Hogla_041_03	3186-3188, 3287	74.45
	Ambikapur_045_00	1-66,131-168,171-173,292	
Central Park	Char Hogla_41_3	3216,3229-3241,3243-3245,3248-3253,3255-3262,3272,3287	9.63
Dumping Station	Char Hogla_41_3	2852,2853,2855-2861	0.72
Water Supply Station	Char Hogla_41_3	3280,3303	0.42
Wholesale Market	Char Hogla_41_3	3283-3286	5.95
Slaughtering House	Char Hogla_41_3	3128	0.04

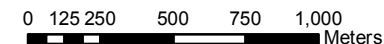
Map 14.3

# Proposed Urban Services, Drainage, Water and Gas Supply Networks of Ward No. 01



## SCALE

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## LEGEND

Boundary Line		Proposed Utility Network	
—	Paurashava Boundary	—	Water Supply Network
...	Ward Boundary	—	Gas Supply Network
—		—	Proposed Drain
<b>Proposed Services</b>			
Bus Terminal	Neighbourhood Market	Neighbourhood Park	Muktijoddha Park
CNG/Rickshaw Stand	Shishu Park	Muktijoddha Complex	Overhead Tank
Central Cremation	Passenger Shed	Playground	Police Box/Outpost
Central Graveyard	Police Station	Post Office	Primary School
Central Park	Public Gathering	Public Library	Resettlement Zone
Cinema/Theater Hall	Slaughtering House	Super Market	Sweepers Colony
College	Telephone Exchange	Truck Terminal	Upazila Hospital
Cyclone Shelter	Upazila Stadium	Vocational Institute	Water Supply Station
Dumping Station	Wholesale Market		
Electric Sub-station			
Waste Transfer Station			
Filling Station			
Fire Service			
Helipad			
High School			
Housing Estate			
Industrial Estate			
Low Cost Housing			
Central Eidgah			
Central Mosque			
Neighbourhood Center			

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CONSULTANT  
SCPL Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
In Association with

### 14.3.2 Action Plan for Ward No. 02

#### Demography

Ward No. 2 consists of the mouza named Bhuta Lakshampur. It is situated on the middlewestern part of the Paurashava and Ward No. 1 is on the north, Ward No. 7 on the south, Ward No. 3 on the east and Upazila area including Machkata River on the west.

**Table-14.5: Population, area and density**

Type	Population 2011	Projected population			
		2016	2021	2026	2031
Population	2605	2640	2675	2711	2747
Area (acre)	182.05	182.05	182.05	182.05	182.05
Density/acre	14	15	15	15	15

Source: BBS 2011

Present population of the Ward is 2605 (2011) and it will be 1640 in the year 2016, 2675 in 2021, 2711 in 2026 and 2747 in 2031. Density of population is 14 persons per acre and it will be 15 persons per acre in the year 2031.

#### Proposals and Plans for Ward No. 02

##### Landuse Proposal

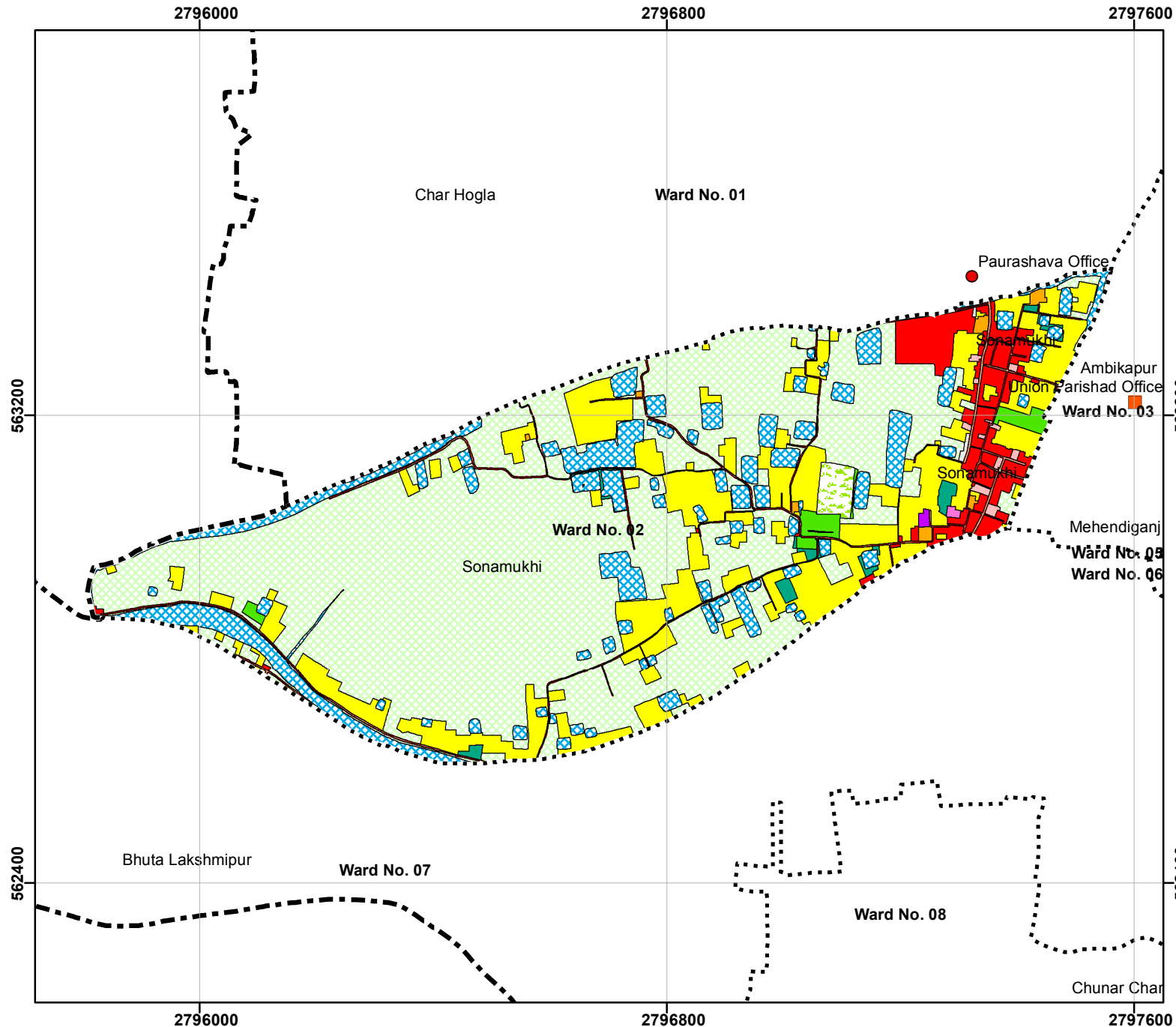
Ward No. 2 is important for commercial establishment, educational institutions and transportation facilities. Total planning area of the Ward is 182.05 acres. In the total area, agriculture use is 50.19 acres, residential 67.10 acres, education and research 2.22 acres, circulation network 17.23 acres, open space 2.30 acres, transportation services 2.54 acres and water body 17.50 acres. Other uses are negligible.

**Table-14.6: Existing and proposed landuse**

Landuse category	Area in acre			
	Existing	%	Proposed	%
Agriculture	108.59	59.65	50.19	27.36
Commercial	8.2	4.50	0.00	0.00
Circulation Network	3.84	2.11	17.23	9.39
Community Facilities	0.64	0.35	0.00	0.00
Education & Research	1.72	0.94	2.22	1.21
Industrial area	0.12	0.07	0.00	0.00
Mixed Use	0.51	0.28	18.82	10.26
Health Facilities	0.1	0.05	0.01	0.01
Open space	1.32	0.73	2.30	1.26
Recreation	0.00	0.00	0.00	0.00
Residential area	34.46	18.93	67.10	36.58
Rural homestead	0.00	0.00	2.06	1.12
Water Body	22.45	12.33	17.50	9.54
Government Office	0.00	0.00	3.32	1.81
Utility Services	0.00	0.00	0.14	0.07
Transportation Facilities	0.10	0.05	2.54	1.38
<b>Total</b>	<b>182.05</b>	<b>100.00</b>	<b>182.05</b>	<b>100.00</b>

Map 14.4

Existing land use of Ward No.02



### SCALE

1:9,700

0 125 250 500 750 1,000 Meters

### LEGEND

#### Admin Point

- Paurashava Office
- Union Parishad Office
- Upazila Headquarter

#### Boundary Line

- Paurashava Boundary
- ... Ward Boundary

#### Existing Landuse

- Residential
- Agriculture
- Waterbody
- Educational Facilities
- Commercial
- Industrial
- Education and Research
- Community Service
- Service Activity
- Governmental Services
- Non Government Services
- Recreational Facilities
- Mixed Use
- Circulation Network
- Transport and Communication
- Forest
- Urban Green Space
- Vacant Land
- Miscellaneous/Others
- Restricted

PREPARATION OF MASTER PLAN FOR MEHENDIGANJ PAURASHAVA  
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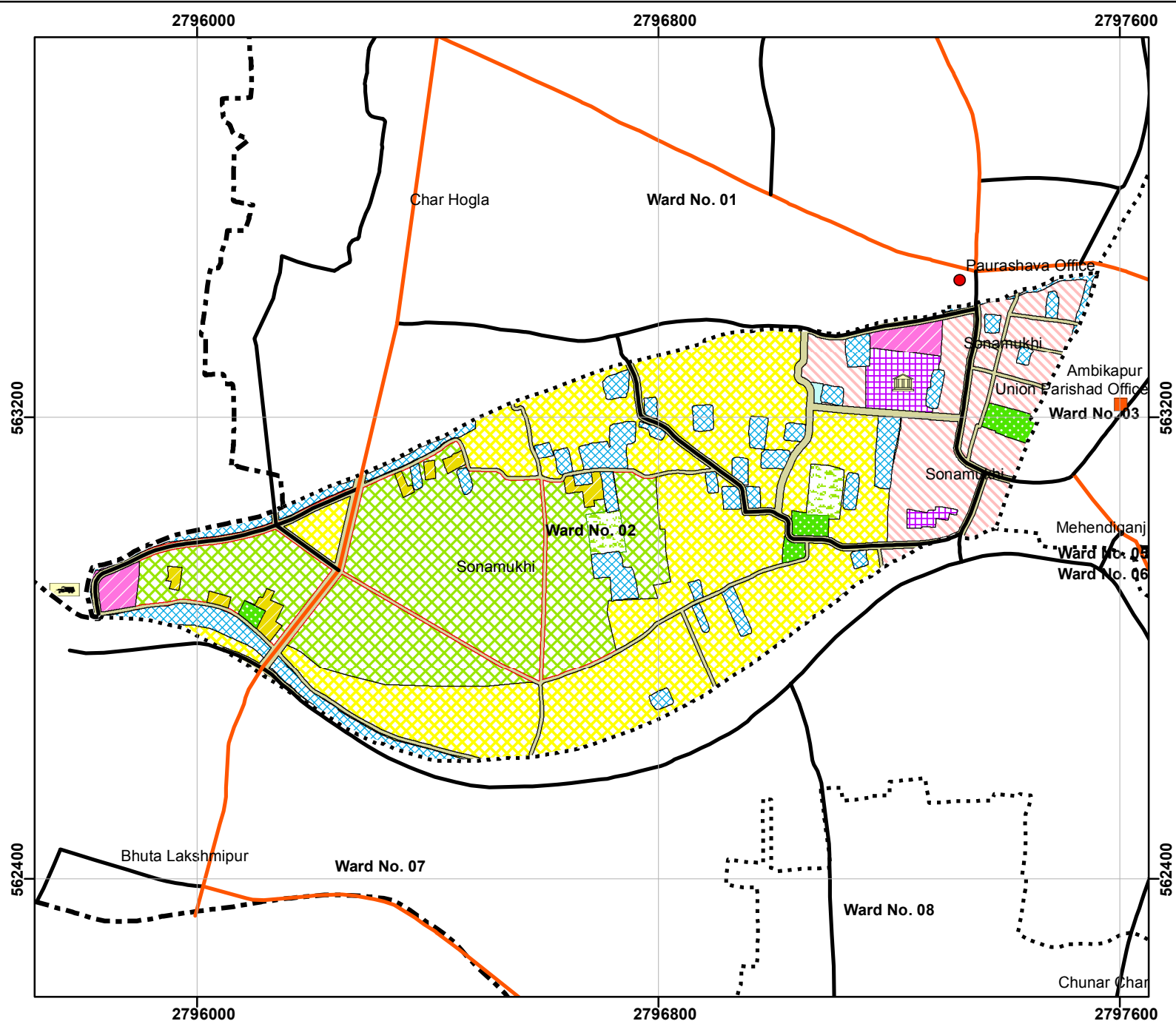
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Local Government Engineering Department (LGED)  
Upazila Towns Infrastructure Development Project (UTIDP)  
Package No: 11 (Barisal Region)

CONSULTANT  
**SCPL** Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
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Map 14.5

Proposed land use of Ward No.02



### SCALE

1:9,700

0 125 250 500 750 1,000 Meters

### LEGEND

- Planning Area Boundary
- Paurashava Boundary
- Ward Boundary
- Paurashava Office
- Union Parishad Office
- Upazila Headquarter
- Bus Terminal
- ☆ Central Graveyard
- Central Park
- Industrial Estate
- Neighbourhood Center
- Resettlement Zone
- Truck Terminal
- Upazila Hospital
- Upazila Stadium

### Major Services

### Proposed Landuse

- Urban Residential Zone
- Rural Settlement
- Commercial Zone
- Mixed Use Zone
- General Industrial Zone
- Heavy Industrial Zone
- Government Office
- Education & Research
- Agricultural Zone
- Waterbody
- Open Space
- Recreational Facilities
- Circulation Network
- Transportation Facilities
- Utility Services
- Health Services
- Community Facilities
- Historical & Heritage Site
- Restricted Area
- Overlay Zone
- Urban Deferred
- Forest
- Beach
- Miscellaneous

### Major Road

- Primary Road
- Secondary Road

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CONSULTANT  
**SCPL** Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
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### Proposed Circulation Network

At present, 6.09 km. roads are in the Ward No. 2. Total length of the proposed road is 7426.81 meter (7.42 km.).

**Table-14.7: Proposed road**

Road ID	Road Proposal	Road type	Road Width (ft)	Length (m)	Phasing
PRdT 1	Widening	Tertiary Road	20	673.71	Phase 01
PRdS 2	Widening	Secondary Road	40	292.51	Phase 01
PRdT 17	Widening	Tertiary Road	20	172.73	Phase 01
PRdS 22	Widening	Secondary Road	40	86.46	Phase 01
PRdS 27	Widening	Secondary Road	40	150.52	Phase 01
PRdS 94	Widening	Secondary Road	40	726.00	Phase 01
PRdS 95	Widening	Secondary Road	40	347.82	Phase 01
PRdS 96	Widening	Secondary Road	40	118.70	Phase 01
PRdT 100	Widening	Tertiary Road	20	377.25	Phase 01
PRdT 103	Widening	Tertiary Road	20	386.93	Phase 01
PRdT 125	Widening	Tertiary Road	20	140.13	Phase 01
PRdT 131	Widening	Tertiary Road	20	466.62	Phase 01
PRdT 137	Widening	Tertiary Road	20	289.63	Phase 01
PRdT 141	Widening	Tertiary Road	20	66.98	Phase 01
PRdT 142	Widening	Tertiary Road	20	100.36	Phase 01
PRdT 198	New Road	Tertiary Road	20	359.78	Phase 03
PRdS 199	New Road	Secondary Road	40	544.57	Phase 02
PRdT 200	New Road	Tertiary Road	20	402.41	Phase 03
PRdP 218	New Road	Primary Road	60	386.85	Phase 03
PRdP 219	Widening	Primary Road	60	8.99	Phase 01
PRdT 268	New Road	Tertiary Road	20	147.73	Phase 03
PRdS 289	New Road	Secondary Road	40	158.91	Phase 01
PRdS 292	Widening	Secondary Road	40	287.06	Phase 01
PRdT 293	New Road	Tertiary Road	20	168.35	Phase 02
PRdT 294	New Road	Tertiary Road	20	45.62	Phase 02
PRdT 295	New Road	Tertiary Road	20	90.39	Phase 02
PRdT 296	New Road	Tertiary Road	20	32.08	Phase 02
PRdT 297	New Road	Tertiary Road	20	124.85	Phase 02
PRdT 298	New Road	Tertiary Road	20	8.37	Phase 02
PRdS 303	New Road	Secondary Road	40	264.52	Phase 03
<b>Total</b>				<b>7426.81</b>	

### Proposed Drain

At present, 0.18 km. pucca man-made drain and 1008.32 meter natural canal is in this Ward. Total 10.16 km drains have been proposed in this ward.

### Proposed Water and Gas Supply Line

It is proposed to install a network based water supply system by exploring fresh water aquifers. There is no existing water supply network in ward no. 02 and the consultant proposed 5.28 km water supply network in this ward.

It is proposed to install a piped gas supply network to facilitate the households. There is no existing gas supply network in this ward and the plan proposes 4.95 km network to develop during the project period and the whole network will be developed during second phase.

### Proposed Services

A CNG stand on 2.53 acres of land, neighborhood park 1.05 acres of land is being proposed in the plan. Three mouzas have been selected for those purposes. Detail is presented in the following table.

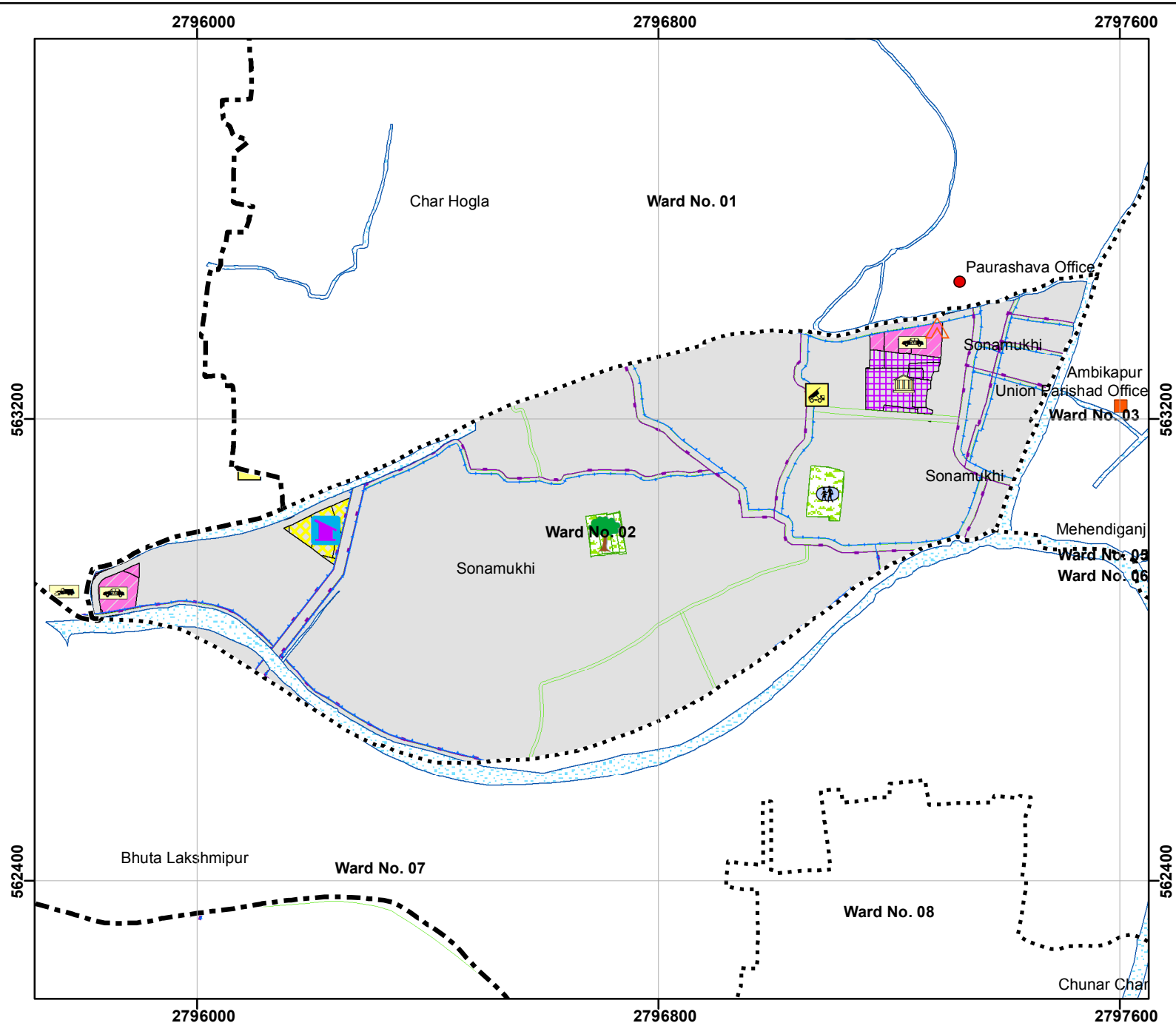
**Table-14.8: Proposed Specific urban services (with Plot Schedule)**

Type of Facilities	Mouza Name	Plot No.	Area (acre)
Ward Center Complex/ Neighborhood Center	Sonamukhi_044_01 Sonamukhi_044_02 Sonamukhi_044_03	208-216,1001,1012	2.85
Neighbourhood Park	Sonamukhi_044_01	122,124-129,148,149	1.05
Playground	Sonamukhi_044_01	230-232,234-235,239,240,242	1.27
Rickshaw/ CNG Stand	Sonamukhi_044_01	1-4,208-210,1001	2.53
Waste Transfer Station	Sonamukhi_044_01	205,237	0.12



Map 14.6

## Proposed Urban Services, Drainage, Water and Gas Supply Networks of Ward No. 02



SCALE

1:9,700

0 125 250 500 750 1,000  
Meters

## LEGEND

Boundary Line  
 ■ Paurashava Boundary  
 ■ Ward Boundary

## Proposed Utility Network

Water Supply Network  
 Gas Supply Network  
 Proposed Drain

## Proposed Services

- |                        |                      |
|------------------------|----------------------|
| Bus Terminal           | Neighbourhood Market |
| CNG/Rickshaw Stand     | Neighbourhood Park   |
| Central Cremation      | Muktijoddha Park     |
| Central Graveyard      | Shishu Park          |
| Central Park           | Muktijoddha Complex  |
| Cinema/Theater Hall    | Overhead Tank        |
| College                | Passenger Shed       |
| Cyclone Shelter        | Playground           |
| Dumping Station        | Police Box/Outpost   |
| Electric Sub-station   | Police Station       |
| Waste Transfer Station | Post Office          |
| Filling Station        | Primary School       |
| Fire Service           | Public Gathering     |
| Helipad                | Public Library       |
| High School            | Resettlement Zone    |
| Housing Estate         | Slaughtering House   |
| Industrial Estate      | Super Market         |
| Low Cost Housing       | Sweepers Colony      |
| Central Eidgah         | Telephone Exchange   |
| Central Mosque         | Truck Terminal       |
| Neighbourhood Center   | Upazila Hospital     |
|                        | Upazila Stadium      |
|                        | Vocational Institute |
|                        | Water Supply Station |
|                        | Wholesale Market     |

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CONSULTANT  
**SCPL** Sheltech Consultants (Pvt.) Ltd.  
 1/E/2, Paribagh (Mazar Road), Shahbagh,  
 Dhaka - 1000  
 scpl.mail@gmail.com  
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### 14.3.3 Action Plan for Ward No. 03

#### Demography

Ward No. 3 consists of the mouza named Sonamukhi. It is situated on the middle of the northern part of the Paurashava and Upazila area is on the north, Ward No. 5 on the south, Ward No. 4 on the east and Ward No. 1 and 2 on the west.

**Table-14.9: Population, area and density**

Type	Population 2011	Projected population			
		2016	2021	2026	2031
Population	2922	2961	3000	3040	3081
Area (acre)	294.71	294.71	294.71	294.71	294.71
Density/acre	10	10	10	10	10

Source: BBS 2011.

Present population of the Ward is 2922 (2011) and it will be 2961 in the year 2016, 3000 in 2021, 3040 in 2026 and 3081 in 2031. Density of population is 10 persons per acre and it will remain up to the year 2031.

#### Proposals and Plans for Ward No. 03

##### Landuse Proposal

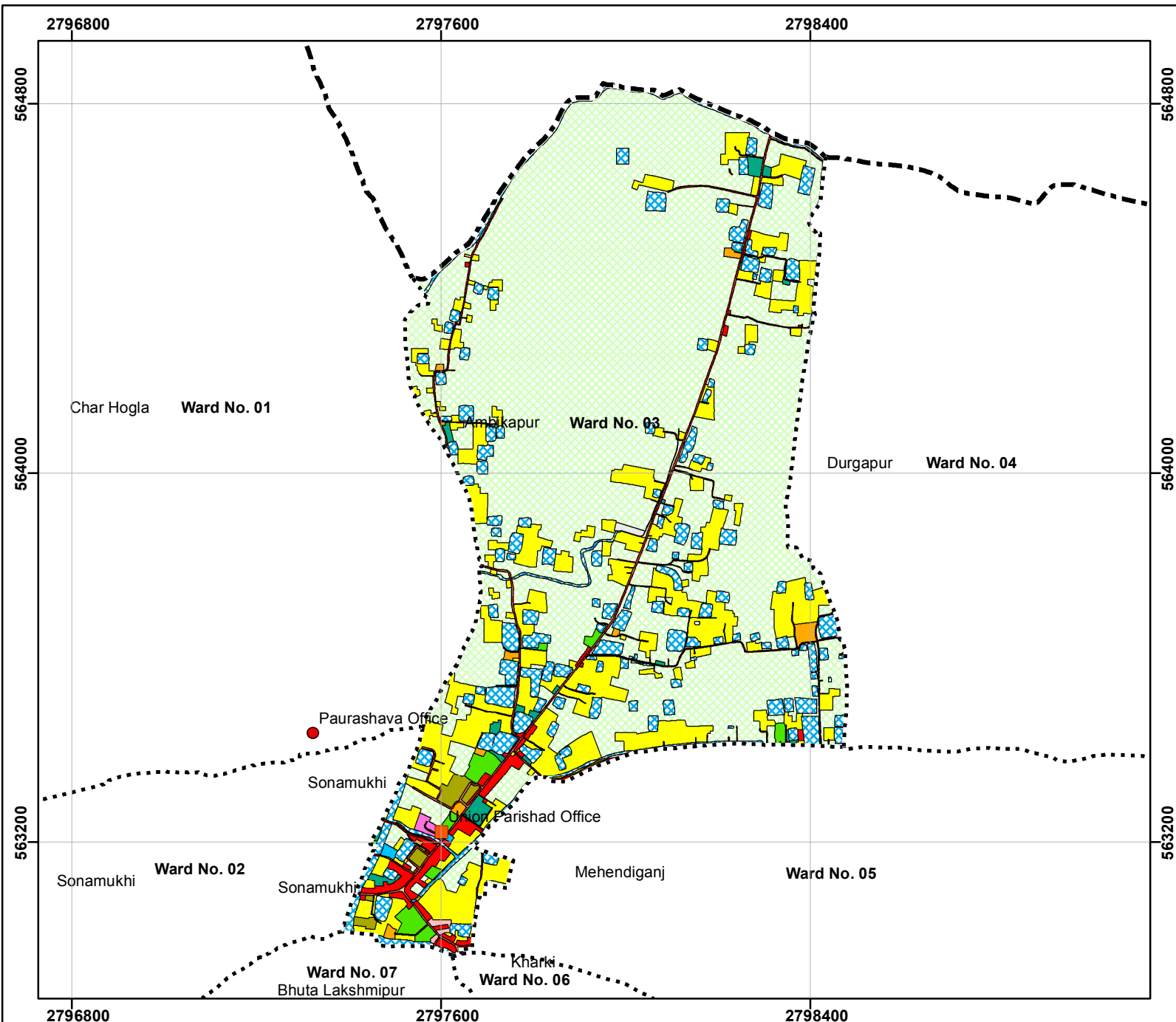
Ward No. 3 is important for commercial use, educational facilities, health facilities and transportation services. Total planning area of the Ward is 294.71 acres. In the total area, circulation network is 29.86 acres, commercial use 1.24 acres; residential 196.54 acres, community facility 1.60 acres, educational facilities 4.38 acres, health services 3.74 acres, open space 1.14 acres, transportation services 0.53 acres and water body 19.75 acres. Other use is negligible.

**Table-14.10: Existing and proposed landuse**

Landuse category	Area in acre			
	Existing	%	Proposed	%
Agriculture	203.18	68.94	0.00	0.00
Commercial	4.32	1.47	1.24	0.42
Circulation Network	5.74	1.95	29.86	10.09
Community Facilities	1.28	0.43	1.60	0.54
Education & Research	2.64	0.90	4.38	1.48
Industrial area	0.23	0.08	0.00	0.00
Mixed Use	0.27	0.09	28.30	9.57
Health Facilities	1.3	0.44	3.74	1.26
Open space	2.10	0.71	1.14	0.39
Recreation	0.00	0.00	0.00	0.00
Residential area	45.4	15.40	196.54	66.43
Rural homestead	0.00	0.00	1.06	0.36
Water Body	27.89	9.46	19.75	6.67
Government Office	0.00	0.00	7.67	2.59
Utility Services	0.00	0.00	0.06	0.02
Transportation Facilities	0.36	0.12	0.53	0.18
<b>Total</b>	<b>294.71</b>	<b>100.00</b>	<b>294.71</b>	<b>100.00</b>

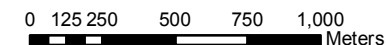
Map 14.7

Existing land use of Ward No.03



SCALE

1:12,100



LEGEND

Admin Point

- Paurashava Office
- Union Parishad Office
- Upazila Headquarter

Boundary Line

- Paurashava Boundary
- .... Ward Boundary

Existing Landuse

- Residential
- Agriculture
- Waterbody
- Educational Facilities
- Commercial
- Industrial
- Education and Research
- Community Service
- Service Activity
- Governmental Services
- Non Government Services
- Recreational Facilities
- Mixed Use
- Circulation Network
- Transport and Communication
- Forest
- Urban Green Space
- Vacant Land
- Miscellaneous/Others
- Restricted

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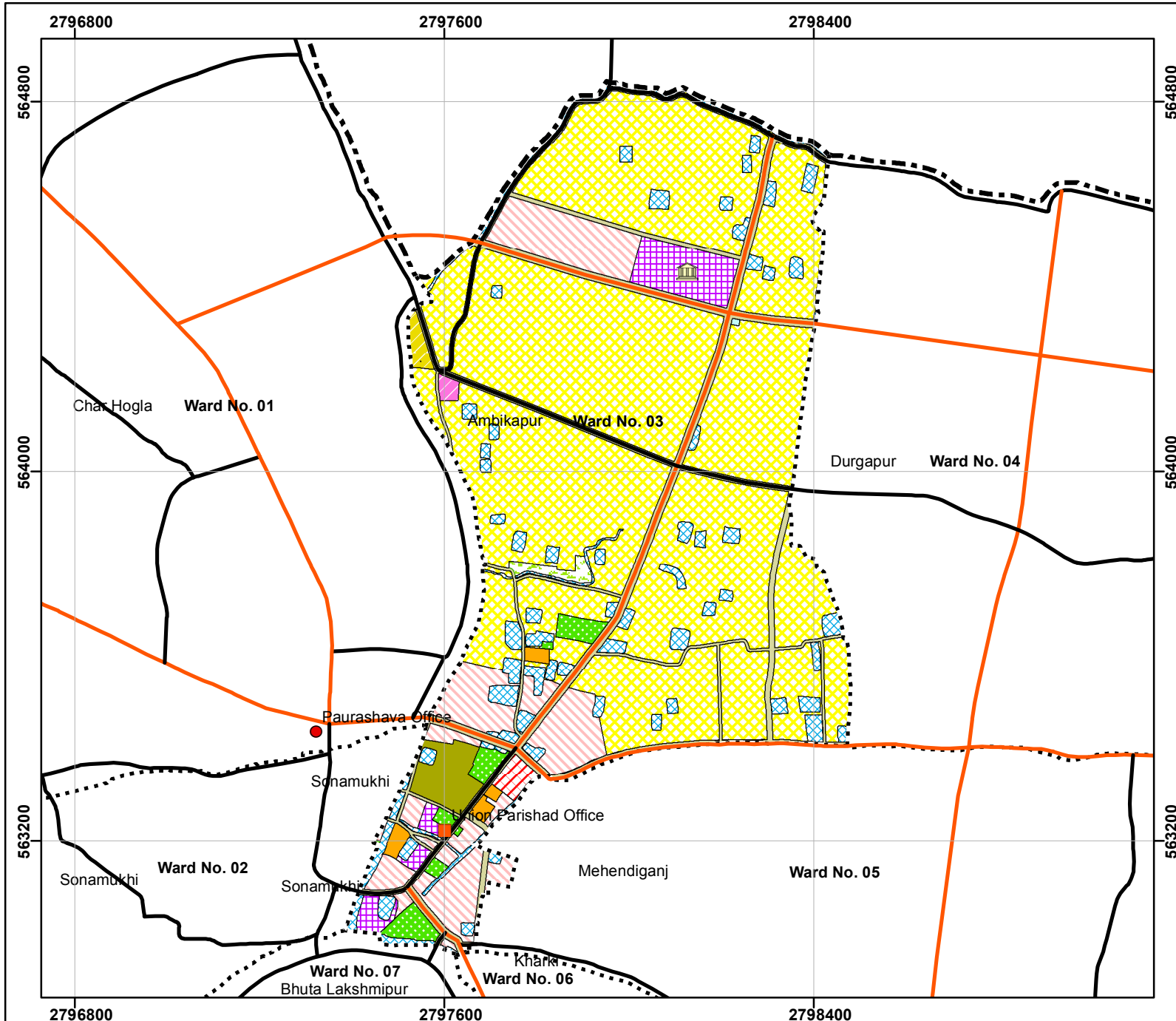
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CONSULTANT  
**SCPL** Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
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Map 14.8

# Proposed land use of Ward No.03



## SCALE

1:12,100

0 125 250 500 750 1,000 Meters

## LEGEND

- Planning Area Boundary
- Paurashava Boundary
- Ward Boundary
- Paurashava Office
- Union Parishad Office
- Upazila Headquarter
- Bus Terminal
- Central Graveyard
- Central Park
- Industrial Estate
- Neighbourhood Center
- Resettlement Zone
- Truck Terminal
- Upazila Hospital
- Upazila Stadium

## Major Services

## Proposed Landuse

- Urban Residential Zone
- Rural Settlement
- Commercial Zone
- Mixed Use Zone
- General Industrial Zone
- Heavy Industrial Zone
- Government Office
- Education & Research
- Agricultural Zone
- Waterbody
- Open Space
- Recreational Facilities
- Circulation Network
- Transportation Facilities
- Utility Services
- Health Services
- Community Facilities
- Historical & Heritage Site
- Restricted Area
- Overlay Zone
- Urban Deferred
- Forest
- Beach
- Miscellaneous

## Major Road

- Primary Road
- Secondary Road

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SCPL Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
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### Proposed Circulation Network

At present, 9.42 km. roads are in the Ward No. 3. Among total length, 1.50 km. katcha, 2.75 km. semi-pucca and 5.17 km. pucca roads. In the plan, about 9694.33 meter (9.69 km.) roads have been proposed.

**Table-14.11: Proposed road**

Road ID	Road Proposal	Road type	Road Width (ft)	Length (m)	Phasing
PRdP 6	Widening	Primary Road	60	430.25	Phase 01
PRdS 13	Widening	Secondary Road	40	135.10	Phase 02
PRdS 14	Widening	Secondary Road	40	36.07	Phase 01
PRdP 15	Widening	Primary Road	60	1041.37	Phase 01
PRdP 18	Widening	Primary Road	60	29.28	Phase 01
PRdT 21	Widening	Tertiary Road	20	186.05	Phase 01
PRdS 22	Widening	Secondary Road	40	108.06	Phase 01
PRdP 23	Widening	Primary Road	60	160.93	Phase 01
PRdS 24	Widening	Secondary Road	40	35.51	Phase 01
PRdS 25	Widening	Secondary Road	40	210.49	Phase 01
PRdT 81	Widening	Tertiary Road	20	591.22	Phase 01
PRdP 82	Widening	Primary Road	60	414.47	Phase 01
PRdT 85	Widening	Tertiary Road	20	433.09	Phase 01
PRdS 92	Widening	Secondary Road	30	423.26	Phase 01
PRdS 97	Widening	Secondary Road	40	219.92	Phase 01
PRdT 112	Widening	Tertiary Road	20	229.15	Phase 02
PRdT 120	Widening	Tertiary Road	20	72.04	Phase 01
PRdT 125	Widening	Tertiary Road	20	133.46	Phase 01
PRdS 163	New Road	Secondary Road	40	955.84	Phase 03
PRdP 184	New Road	Primary Road	60	18.73	Phase 03
PRdS 187	New Road	Secondary Road	30	382.14	Phase 03
PRdT 188	New Road	Tertiary Road	20	246.22	Phase 02
PRdT 189	New Road	Tertiary Road	20	216.97	Phase 02
PRdT 194	Widening	Tertiary Road	20	6.51	Phase 02
PRdT 195	New Road	Tertiary Road	20	73.69	Phase 03
PRdS 222	New Road	Secondary Road	30	351.45	Phase 03
PRdP 233	New Road	Primary Road	60	188.10	Phase 03
PRdP 234	New Road	Primary Road	60	559.11	Phase 03
PRdP 243	New Road	Primary Road	60	199.67	Phase 03
PRdS 264	New Road	Secondary Road	40	206.31	Phase 03
PRdT 275	New Road	Tertiary Road	20	4.87	Phase 03
PRdS 291	Widening	Secondary Road	40	160.50	Phase 01
PRdT 293	New Road	Tertiary Road	20	147.20	Phase 02
PRdT 296	New Road	Tertiary Road	20	203.20	Phase 02
PRdT 297	New Road	Tertiary Road	20	5.45	Phase 02
PRdS 301	New Road	Secondary Road	30	528.56	Phase 03
PRdS 305	New Road	Secondary Road	40	350.07	Phase 03
<b>Total</b>				<b>9694.33</b>	

### Proposed Drain and Water Supply Line

At present, 0.28 km. man-made pucca drain and 296.13 meter natural canal is in this Ward. Total 14.82 km drains have been proposed in this ward.

### Proposed Water and Gas Supply Line

It is proposed to install a network based water supply system by exploring fresh water aquifers. There is no existing water supply network in ward no. 03 and the consultant proposed 9.00 km water supply network in this ward.

It is proposed to install a piped gas supply network to facilitate the households. There is no existing gas supply network in this ward and the plan proposes 9.32 km network to develop during the project period and the whole network will be developed during second phase.

### Proposed Services

The Ward is developed and is considered as the part of core areas. Most of the services are available in the Ward. It is encouraged that existing services should make usable as their best practices. A Ward Centre, CNG/ Rickshaw stand, neighborhood park is being proposed in the plan.

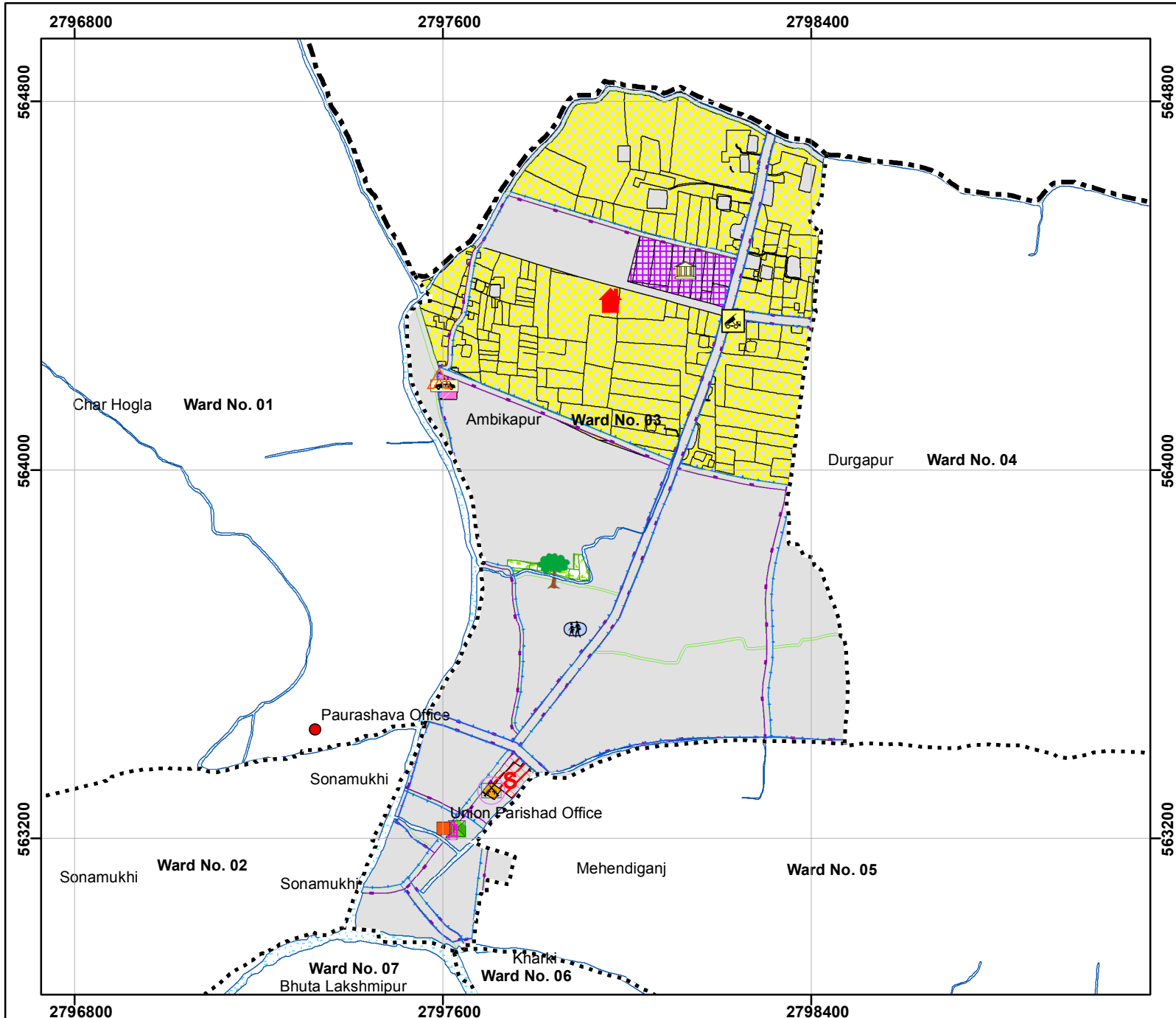
**Table-14.12: Proposed Specific urban services (with Plot Schedule)**

Type of Facilities	Mouza Name	Plot No.	Area (acre)
Ward Center Complex/ Neighborhood Center	Ambikapur_045_00	6-13,38,39,45	5.66
Housing Estate 2	Char Hogla_041_03	3186-3188, 3287	74.46
	Ambikapur_045_00	1-66,131-168,171-173,292	
Neighbourhood Park	Ambikapur_045_00	180,184-189,194,195,198,199,203	1.14
Super Market	Ambikapur_045_00	243, 292	1.24
Muktijoddha Complex	Ambikapur_045_00	243-245	0.20
Rickshaw/ CNG Stand	Sonamukhi_044_01	1-4,208-210,1001	0.52
Waste Transfer Station	Ambikapur_045_00	37	0.05



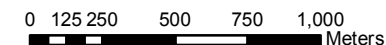
Map 14.9

# Proposed Urban Services, Drainage, Water and Gas Supply Networks of Ward No. 03



## SCALE

1:12,100



## LEGEND

Boundary Line		Proposed Utility Network	
—	Paurashava Boundary	—	Water Supply Network
- - -	Ward Boundary	—	Gas Supply Network
- - -		—	Proposed Drain
<b>Proposed Services</b>		<b>Proposed Services</b>	
	Bus Terminal		Neighbourhood Market
	CNG/Rickshaw Stand		Neighbourhood Park
	Central Cremation		Muktijoddha Park
	Central Graveyard		Shishu Park
	Central Park		Muktijoddha Complex
	Cinema/Theater Hall		Overhead Tank
	College		Passenger Shed
	Cyclone Shelter		Playground
	Dumping Station		Police Box/Outpost
	Electric Sub-station		Police Station
	Waste Transfer Station		Post Office
	Filling Station		Primary School
	Fire Service		Public Gathering
	Helipad		Public Library
	High School		Resettlement Zone
	Housing Estate		Slaughtering House
	Industrial Estate		Super Market
	Low Cost Housing		Sweepers Colony
	Central Eidgah		Telephone Exchange
	Central Mosque		Truck Terminal
	Neighbourhood Center		Upazila Hospital
			Upazila Stadium
			Vocational Institute
			Water Supply Station
			Wholesale Market

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Local Government Engineering Department (LGED)  
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CONSULTANT  
SCPL Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
In Association with

### 14.3.4 Action Plan for Ward No. 04

#### Demography

Ward No. 4 consists of the mouza named Ambikapur. It is situated on the northeastern part of the Paurashava and Upazila area is on the north and east, Ward No. 5 on the south and Ward No. 3 on the east.

**Table-14.13: Population, area and density**

Type	Population 2011	Projected population			
		2016	2021	2026	2031
Population	3029	3069	3110	3152	3194
Area (acre)	425.29	425.29	425.29	425.29	425.29
Density/acre	7	7	7	7	8

Source: BBS 2011.

Present population of the Ward is 3029 (2011) and it will be 3069 in the year 2016, 3110 in 2021, 3152 in 2026 and 3194 in 2031. Density of population is 7 persons per acre and it will be 8 persons per acre in the year 2031.

### Proposals and Plans for Ward No. 04

#### Land use Proposal

Ward No. 4 is important for educational establishment and agriculture land. Total planning area of the Ward is 425.29 acres. In the total area, agriculture use is 72.86 acres, education and research 4.02 acres; residential area 259.73 acres, circulation network 41.98 and water body 24.08 acres. Other uses are negligible.

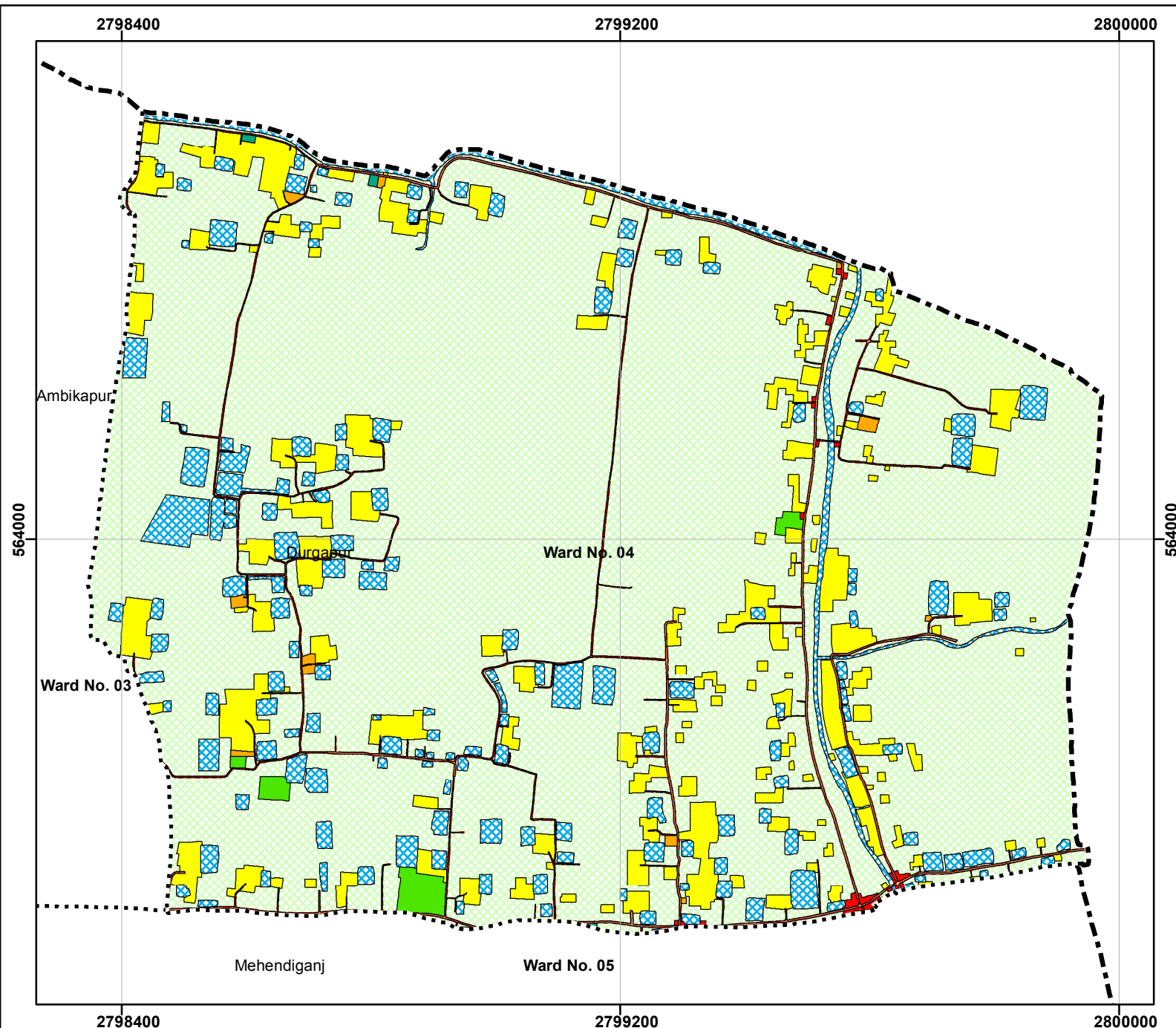
**Table-14.14: Existing and proposed landuse**

Landuse category	Area in acre			
	Existing	%	Proposed	%
Agriculture	344.72	81.06	72.86	17.14
Commercial	0.57	0.13	0.00	0.00
Circulation Network	7.06	1.66	41.98	9.87
Community Facilities	0.81	0.19	0.00	0.00
Education & Research	2.09	0.49	4.02	0.95
Industrial area	0	0.00	0.00	0.00
Mixed Use	0.00	0.00	5.28	1.24
Health Facilities	0	0.00	0.00	0.00
Open space	0.16	0.04	2.43	0.57
Recreation	0.00	0.00	0.00	0.00
Residential area	37.65	8.85	259.73	61.08
Rural Settlement	0.00	0.00	8.84	2.08
Water Body	32.23	7.58	24.08	5.66
Government Office	0.00	0.00	5.81	1.37
Utility Services	0.00	0.00	0.06	0.01
Transportation Facilities	0.00	0.00	0.12	0.03
<b>Total</b>	<b>425.29</b>	<b>100.00</b>	<b>425.29</b>	<b>100.00</b>



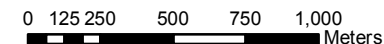
Map 14.10

Existing land use of Ward No.04



# SCALE

1:9,000



## LEGEND

### Admin Point

- Paurashava Office
- Union Parishad Office
- Upazila Headquarter

### Boundary Line

- Paurashava Boundary
- Ward Boundary

### Existing Landuse

- Residential
- Agriculture
- Waterbody
- Educational Facilities
- Commercial
- Industrial
- Education and Research
- Community Service
- Service Activity
- Governmental Services
- Non Government Services
- Recreational Facilities
- Mixed Use
- Circulation Network
- Transport and Communication
- Forest
- Urban Green Space
- Vacant Land
- Miscellaneous/Others
- Restricted

PREPARATION OF MASTER PLAN FOR MEHENDIGANJ PAURASHAVA  
Mehendiganj Upazila, Barisal District

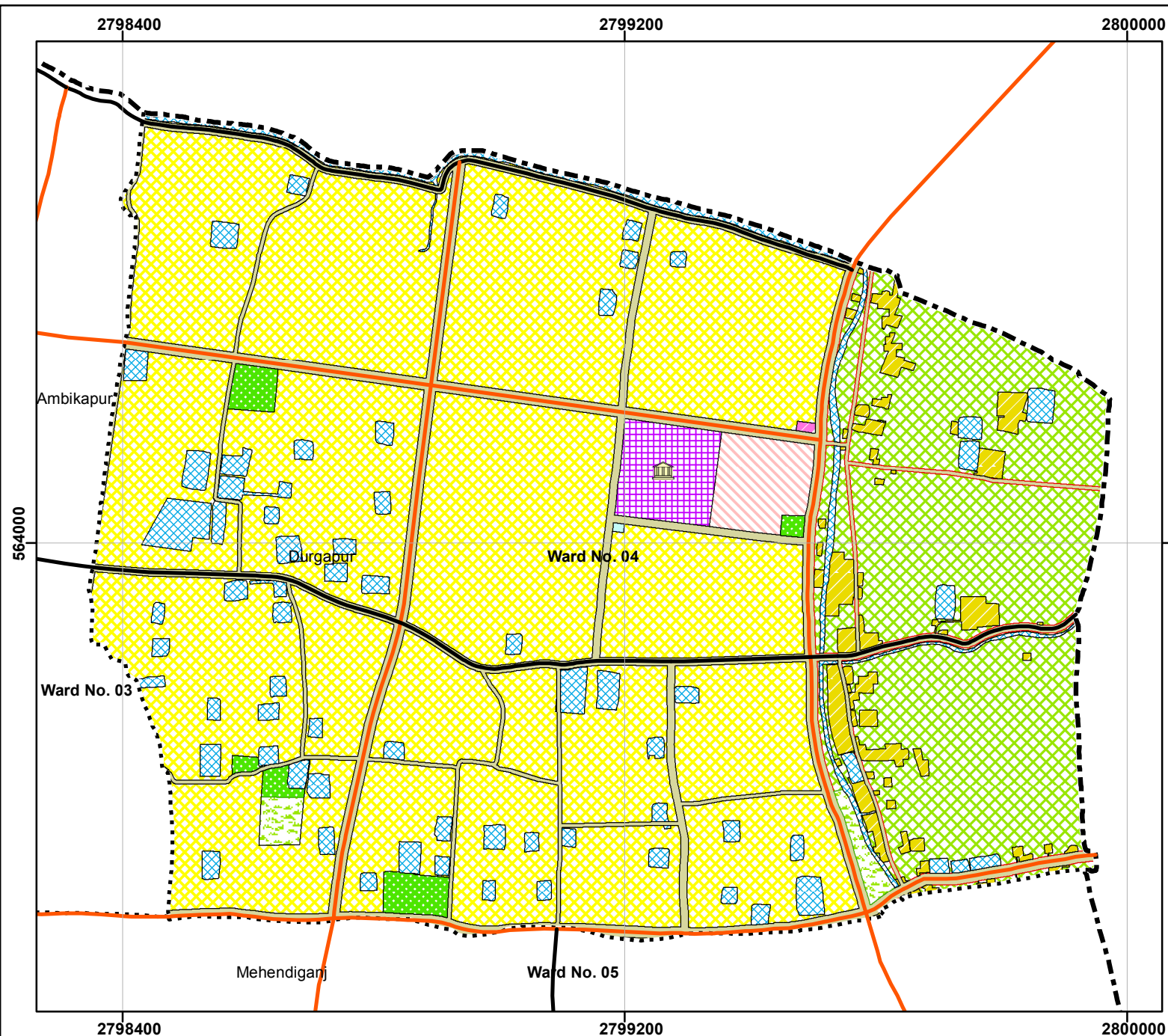


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Local Government Division

Local Government Engineering Department (LGED)  
Upazila Towns Infrastructure Development Project (UTIDP)  
Package No: 11 (Barisal Region)

CONSULTANT  
**SCPL** Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
In Association with

Map 14.11 Proposed land use of Ward No.04



SCALE

1:9,000

0 125 250 500 750 1,000 Meters

### LEGEND

- Planning Area Boundary
- Paurashava Boundary
- Ward Boundary
- Paurashava Office
- Union Parishad Office
- Upazila Headquarter
- Bus Terminal
- Central Graveyard
- Central Park
- Industrial Estate
- Neighbourhood Center
- Resettlement Zone
- Truck Terminal
- Upazila Hospital
- Upazila Stadium

### Major Services

### Proposed Landuse

- Urban Residential Zone
- Rural Settlement
- Commercial Zone
- Mixed Use Zone
- General Industrial Zone
- Heavy Industrial Zone
- Government Office
- Education & Research
- Agricultural Zone
- Waterbody
- Open Space
- Recreational Facilities
- Central Park
- Industrial Estate
- Neighbourhood Center
- Resettlement Zone
- Truck Terminal
- Upazila Hospital
- Upazila Stadium
- Circulation Network
- Transportation Facilities
- Utility Services
- Health Services
- Community Facilities
- Historical & Heritage Site
- Restricted Area
- Overlay Zone
- Urban Deferred
- Forest
- Beach
- Miscellaneous

### Major Road

- Primary Road
- Secondary Road

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**SCPL** Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
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### Proposed Circulation Network

At present, 12.66 km. roads are in the Ward No. 4. Among total length, 6.56 km. katcha, 3.51 km. semi-pucca and 2.60 km. pucca roads. In the plan, 60-20 feet width roads are being proposed and total length of the proposed road is 14045.21 meter (14.05 km.).

**Table-14.15: Proposed road**

Road ID	Road Proposal	Road type	Road Width (ft)	Length (m)	Phasing
PRdP 4	Widening	Primary Road	60	10.89	Phase 01
PRdT 5	Widening	Tertiary Road	20	5.93	Phase 02
PRdP 6	Widening	Primary Road	60	946.95	Phase 01
PRdT 7	Widening	Tertiary Road	20	93.25	Phase 01
PRdS 13	Widening	Secondary Road	40	479.97	Phase 02
PRdT 26	Widening	Tertiary Road	20	326.05	Phase 01
PRdT 57	Widening	Tertiary Road	20	13.03	Phase 02
PRdT 58	Widening	Tertiary Road	20	386.71	Phase 01
PRdP 60	Widening	Primary Road	60	642.31	Phase 01
PRdP 61	Widening	Primary Road	60	414.24	Phase 02
PRdS 64	Widening	Secondary Road	40	435.14	Phase 01
PRdT 65	Widening	Tertiary Road	20	231.31	Phase 01
PRdS 66	Widening	Secondary Road	40	178.58	Phase 01
PRdS 67	Widening	Secondary Road	40	430.33	Phase 01
PRdS 68	Widening	Secondary Road	40	116.38	Phase 01
PRdT 71	Widening	Tertiary Road	20	204.57	Phase 01
PRdT 79	Widening	Tertiary Road	20	730.75	Phase 01
PRdT 80	Widening	Tertiary Road	20	286.28	Phase 01
PRdT 81	Widening	Tertiary Road	20	286.09	Phase 01
PRdP 93	Widening	Primary Road	60	312.71	Phase 01
PRdT 144	Widening	Tertiary Road	20	249.60	Phase 02
PRdS 163	New Road	Secondary Road	40	650.90	Phase 03
PRdS 164	Widening	Secondary Road	40	397.53	Phase 01
PRdS 165	Widening	Secondary Road	40	304.68	Phase 02
PRdS 166	New Road	Secondary Road	40	265.05	Phase 02
PRdS 185	Widening	Secondary Road	40	388.08	Phase 02
PRdS 186	Widening	Secondary Road	40	332.37	Phase 02
PRdP 190	New Road	Primary Road	60	1222.56	Phase 03
PRdT 191	New Road	Tertiary Road	20	239.73	Phase 02
PRdT 192	New Road	Tertiary Road	20	193.50	Phase 02
PRdT 193	Widening	Tertiary Road	20	111.63	Phase 01
PRdT 194	Widening	Tertiary Road	20	354.16	Phase 02
PRdT 195	New Road	Tertiary Road	20	287.58	Phase 03
PRdT 196	New Road	Tertiary Road	20	412.76	Phase 03
PRdT 197	New Road	Tertiary Road	20	617.80	Phase 02
PRdP 217	New Road	Primary Road	60	2.94	Phase 03
PRdP 220	New Road	Primary Road	60	1118.91	Phase 03
PRdT 232	New Road	Tertiary Road	20	43.17	Phase 03

Road ID	Road Proposal	Road type	Road Width (ft)	Length (m)	Phasing
PRdP 233	New Road	Primary Road	60	0.37	Phase 03
PRdS 276	New Road	Secondary Road	40	1.93	Phase 03
PRdS 302	New Road	Secondary Road	40	318.49	Phase 03
<b>Total</b>				<b>14045.21</b>	

### Proposed Drain

At present, 0.06 km. man-made pucca drain is in this Ward. Total 18.27 km drains have been proposed in this ward.

### Proposed Water and Gas Supply Line

It is proposed to install a network based water supply system by exploring fresh water aquifers. The consultant proposed 10.63 km water supply network in this ward.

It is proposed to install a piped gas supply network to facilitate the households. There is no existing gas supply network in this ward and the plan proposes 10.34 km network to develop during the project period and the whole network will be developed during second phase.

### Proposed Services

The Ward is undeveloped and it will take time to develop properly. A Ward Centre, a neighborhood park, a CNG/ rickshaw stand is being proposed and no new service is being included in the plan.

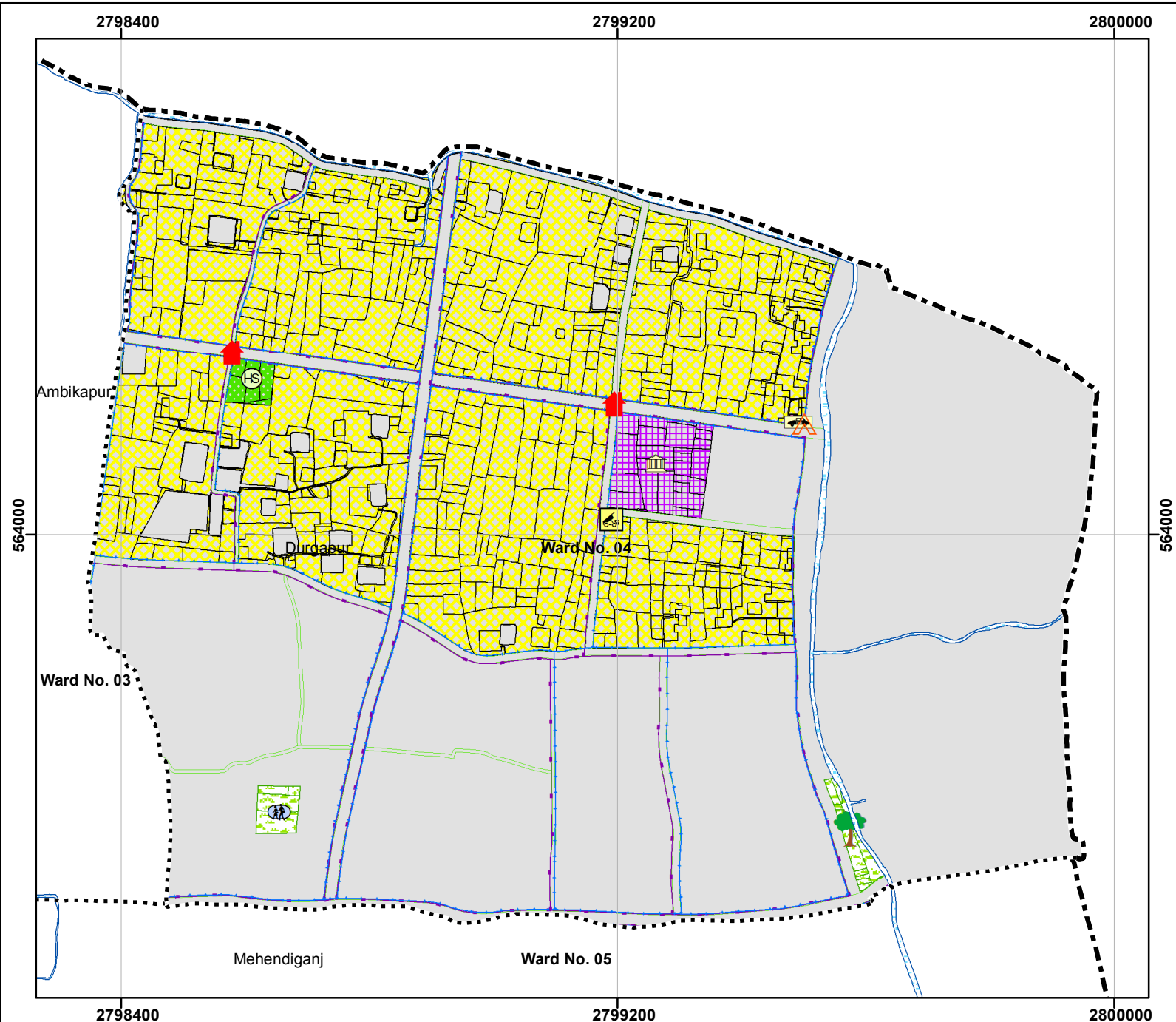
**Table-14.16: Proposed Specific urban services (with Plot Schedule)**

Type of Facilities	Mouza Name	Plot No.	Area (acre)
Ward Center Complex/ Neighborhood Center	Durgapur_047_00	556-591,606,607	5.81
Housing Estate- 03	Durgapur_047_00	92-224,249,427-563,565,575,576,593-637,726-728,733-751,775-799,803,1021-1024,1053	89.09
High School	Durgapur_047_00	71-73,77,121-126,131	1.23
Neighbourhood Park	Durgapur_047_00	669,676-682,699,700,709,710,1009	1.19
Play Ground	Durgapur_047_00	302,310,313-316,322	1.23
Rickshaw/ CNG Stand	Durgapur_047_00	774,775	0.11
Waste Transfer Station	Durgapur_047_00	607,608	0.06



Map 14.12

## Proposed Urban Services, Drainage, Water and Gas Supply Networks of Ward No. 04



SCALE

1:9,000

0 125 250 500 750 1,000 Meters

## LEGEND

- |                       |                                 |
|-----------------------|---------------------------------|
| <b>Boundary Line</b>  | <b>Proposed Utility Network</b> |
| — Paurashava Boundary | — Water Supply Network          |
| --- Ward Boundary     | — Gas Supply Network            |
|                       | — Proposed Drain                |
- 
- Proposed Services**
- |                        |                      |
|------------------------|----------------------|
| Bus Terminal           | Neighbourhood Market |
| CNG/Rickshaw Stand     | Neighbourhood Park   |
| Central Cremation      | Muktijoddha Park     |
| Central Graveyard      | Shishu Park          |
| Central Park           | Muktijoddha Complex  |
| Cinema/Theater Hall    | Overhead Tank        |
| College                | Passenger Shed       |
| Cyclone Shelter        | Playground           |
| Dumping Station        | Police Box/Outpost   |
| Electric Sub-station   | Police Station       |
| Waste Transfer Station | Post Office          |
| Filling Station        | Primary School       |
| Fire Service           | Public Gathering     |
| Helipad                | Public Library       |
| High School            | Resettlement Zone    |
| Housing Estate         | Slaughtering House   |
| Industrial Estate      | Super Market         |
| Low Cost Housing       | Sweepers Colony      |
| Central Eidgah         | Telephone Exchange   |
| Central Mosque         | Truck Terminal       |
| Neighbourhood Center   | Upazila Hospital     |
|                        | Upazila Stadium      |
|                        | Vocational Institute |
|                        | Water Supply Station |
|                        | Wholesale Market     |

PREPARATION OF MASTER PLAN FOR MEHENDIGANJ PAURASHAVA  
Mehendiganj Upazila, Barisal District



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**SCPL** CONSULTANT  
Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
In Association with

### 14.3.5 Action Plan for Ward No. 05

#### Demography

Ward No. 5 consists of the mouza named Mehendiganj. It is situated on the middleeastern part of the Paurashava and Ward No. 3 and 4 is on the north, Ward No. 6 on the south, Upazila area on the east and Ward No. 3 and 7 on the west.

**Table-14.17: Population, area and density**

Type	Population 2011	Projected population			
		2016	2021	2026	2031
Population	3605	3653	3702	3751	3801
Area (acre)	492.49	492.49	492.49	492.49	492.49
Density/acre	7	7	8	8	8

Source: BBS 2011.

Present population of the Ward is 3605 (2011) and it will be 3653 in the year 2016, 3702 in 2021, 3751 in 2026 and 3801 in 2031. Density of population is 7 persons per acre and it will be 8 persons per acre in the year 2031.

### Proposals and Plans for Ward No. 05

#### Land use Proposal

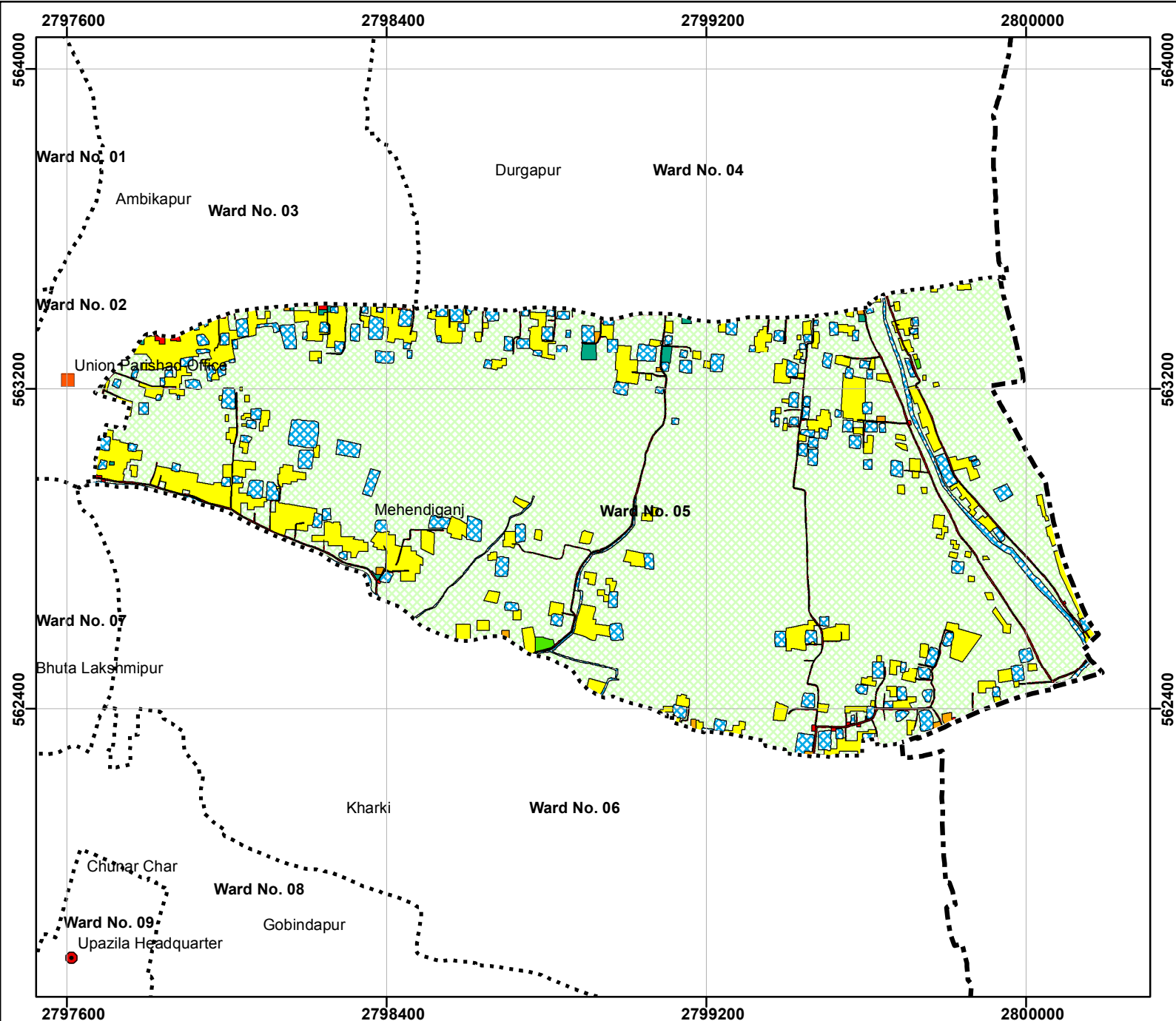
Ward No. 5 is agriculture village. Total planning area of the Ward is 492.49 acres. In the total area, agriculture use is 225.33 acres, open space 2.95 acres; residential 152.24 acres, rural settlement 18.89 acres, 36.70 circulation network and water body 26.11 acres. Other uses are negligible.

**Table-14.18: Existing and proposed landuse**

Landuse category	Area in acre			
	Existing	%	Proposed	%
Agriculture	400.01	81.22	225.33	45.76
Commercial	0.52	0.11	0.00	0.00
Circulation Network	6.35	1.29	36.70	7.45
Community Facilities	0.88	0.18	3.03	0.61
Education & Research	0.41	0.08	0.54	0.11
Industrial area	0.00	0.00	0.00	0.00
Mixed Use	0.00	0.00	23.60	4.79
Health Facilities	0.00	0.00	0.00	0.00
Open space	1.04	0.21	2.95	0.60
Recreation	0.00	0.00	0.00	0.00
Residential area	48.9	9.93	152.24	30.92
Rural Settlement	0.00	0.00	18.89	3.84
Water Body	34.38	6.98	26.11	5.30
Government Office	0.00	0.00	2.05	0.42
Utility Services	0.00	0.00	0.11	0.02
Transportation Facilities	0.00	0.00	0.83	0.17
<b>Total</b>	<b>492.49</b>	<b>100.00</b>	<b>492.49</b>	<b>100.00</b>

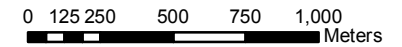
Map 14.13

# Existing land use of Ward No.05



## SCALE

1:14,000



## LEGEND

### Admin Point

- Paurashava Office
- Union Parishad Office
- Upazila Headquarter

### Boundary Line

- Paurashava Boundary
- ... Ward Boundary

### Existing Landuse

- Residential
- Agriculture
- Waterbody
- Educational Facilities
- Commercial
- Industrial
- Education and Research
- Community Service
- Service Activity
- Governmental Services
- Non Government Services
- Recreational Facilities
- Mixed Use
- Circulation Network
- Transport and Communication
- Forest
- Urban Green Space
- Vacant Land
- Miscellaneous/Others
- Restricted

PREPARATION OF MASTER PLAN FOR MEHENDIGANJ PAURASHAVA  
Mehendiganj Upazila, Barisal District



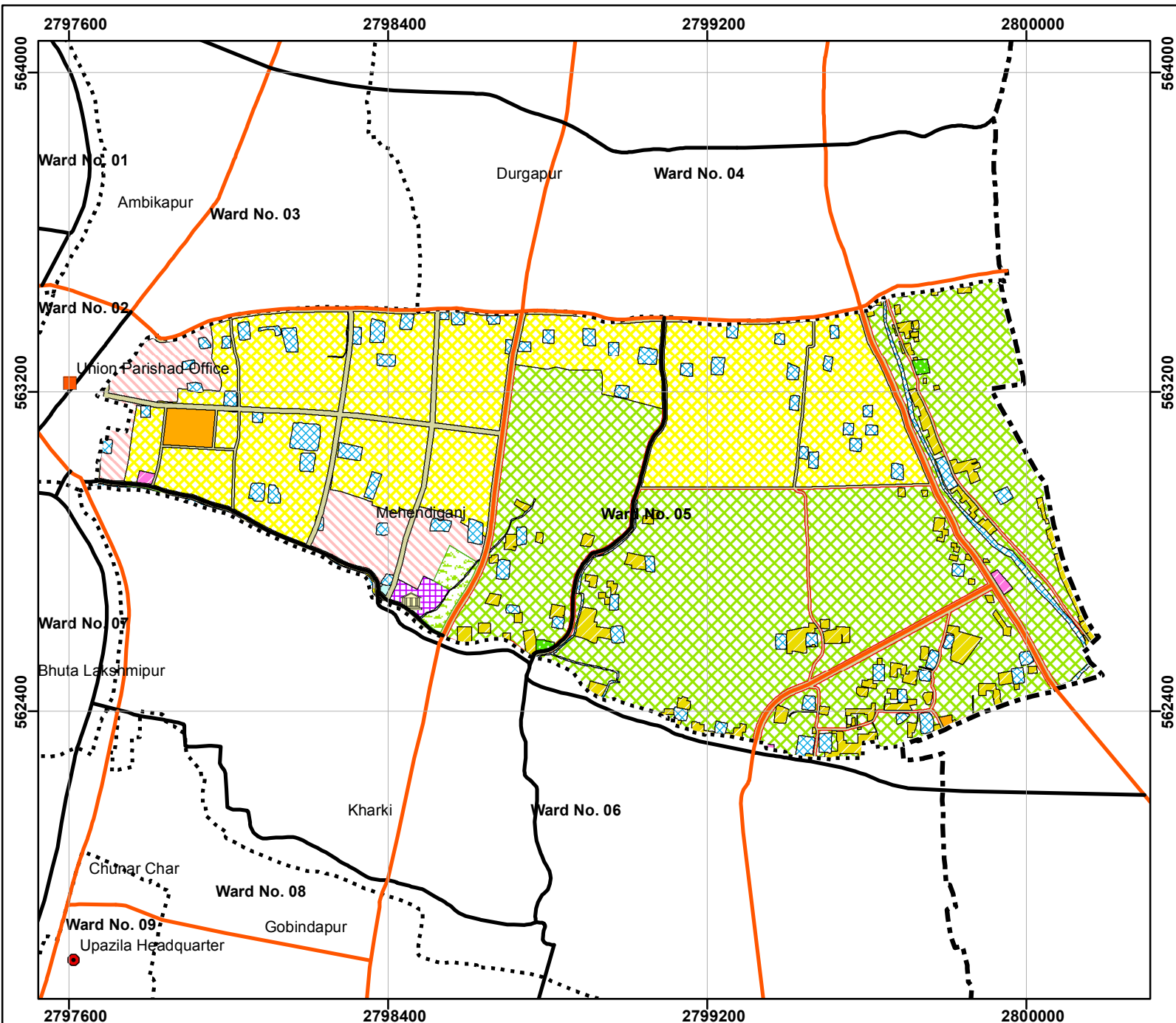
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CONSULTANT  
**SCPL** Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
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Map 14.14

## Proposed land use of Ward No.05



## SCALE

1:14,000

0 125 250 500 750 1,000  
Meters

## LEGEND

- Planning Area Boundary
- Paurashava Boundary
- Ward Boundary
- Paurashava Office
- Union Parishad Office
- Upazila Headquarter
- Bus Terminal
- ☆ Central Graveyard
- Central Park
- Industrial Estate
- Neighbourhood Center
- Resettlement Zone
- Truck Terminal
- Upazila Hospital
- Upazila Stadium

## Major Services

## Proposed Landuse

- Urban Residential Zone
- Rural Settlement
- Commercial Zone
- Mixed Use Zone
- General Industrial Zone
- Heavy Industrial Zone
- Government Office
- Education & Research
- Agricultural Zone
- Waterbody
- Open Space
- Recreational Facilities
- Circulation Network
- Transportation Facilities
- Utility Services
- Health Services
- Community Facilities
- Historical & Heritage Site
- Restricted Area
- Overlay Zone
- Urban Deferred
- Forest
- Beach
- Miscellaneous

## Major Road

- Primary Road
- Secondary Road

PREPARATION OF MASTER PLAN FOR MEHENDIGANJ PAURASHAVA  
Mehendiganj Upazila, Barisal District



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CONSULTANT  
SCPL Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
In Association with



## Proposed Circulation Network

At present, 10.44 km. roads are in the Ward No. 5. Among total length, 3.94 km. katcha, 4.11 km. semi-pucca and 2.38 km. pucca roads. In the plan, total length of the proposed road is 12535.12 meter (12.54 km.).

**Table-14.19: Proposed road**

Road ID	Road Proposal	Road type	Road Width (ft)	Length (m)	Phasing
PRdP 4	Widening	Primary Road	60	622.59	Phase 01
PRdT 5	Widening	Tertiary Road	20	280.23	Phase 02
PRdP 6	Widening	Primary Road	60	567.63	Phase 01
PRdT 7	Widening	Tertiary Road	20	2.33	Phase 01
PRdS 14	Widening	Secondary Road	40	751.45	Phase 01
PRdS 25	Widening	Secondary Road	40	98.55	Phase 01
PRdP 48	Widening	Primary Road	60	445.88	Phase 03
PRdT 57	Widening	Tertiary Road	20	1026.16	Phase 02
PRdT 59	Widening	Tertiary Road	20	584.36	Phase 02
PRdT 62	Widening	Tertiary Road	20	302.97	Phase 02
PRdS 72	Widening	Secondary Road	40	55.53	Phase 01
PRdT 109	Widening	Tertiary Road	20	516.18	Phase 02
PRdT 112	Widening	Tertiary Road	20	3.31	Phase 02
PRdT 140	Widening	Tertiary Road	20	268.75	Phase 02
PRdT 189	New Road	Tertiary Road	20	2.08	Phase 02
PRdT 201	New Road	Tertiary Road	20	130.96	Phase 02
PRdS 209	New Road	Secondary Road	40	12.26	Phase 03
PRdP 217	New Road	Primary Road	60	848.36	Phase 03
PRdP 223	New Road	Primary Road	60	732.19	Phase 03
PRdT 253	New Road	Tertiary Road	20	738.67	Phase 03
PRdS 263	New Road	Secondary Road	40	999.30	Phase 03
PRdS 264	New Road	Secondary Road	40	612.04	Phase 03
PRdS 273	New Road	Secondary Road	40	13.71	Phase 03
PRdT 275	New Road	Tertiary Road	20	490.10	Phase 03
PRdS 276	New Road	Secondary Road	40	744.38	Phase 03
PRdT 285	New Road	Tertiary Road	20	208.21	Phase 03
PRdT 286	New Road	Tertiary Road	20	184.90	Phase 03
PRdT 287	New Road	Tertiary Road	20	101.67	Phase 03
PRdS 300	New Road	Secondary Road	40	199.39	Phase 02
PRdS 69	Widening	Secondary Road	40	991.00	Phase 01
<b>Total</b>				<b>12535.12</b>	

## Proposed Drain

At present, 0.02 km. man-made pucca drain and 2816.77 meter natural canal (called Khejurtali khal) is in this Ward. Total 14.24 km drains have been proposed in this ward.

### Proposed Water and Gas Supply Line

It is proposed to install a network based water supply system by exploring fresh water aquifers. The consultant proposed 8.38 km of water supply network in this ward.

It is proposed to install a piped gas supply network to facilitate the households. There is no existing gas supply network in this ward and the plan proposes 8.45 km network to develop during the project period and the whole network will be developed during second phase.

### Proposed Services

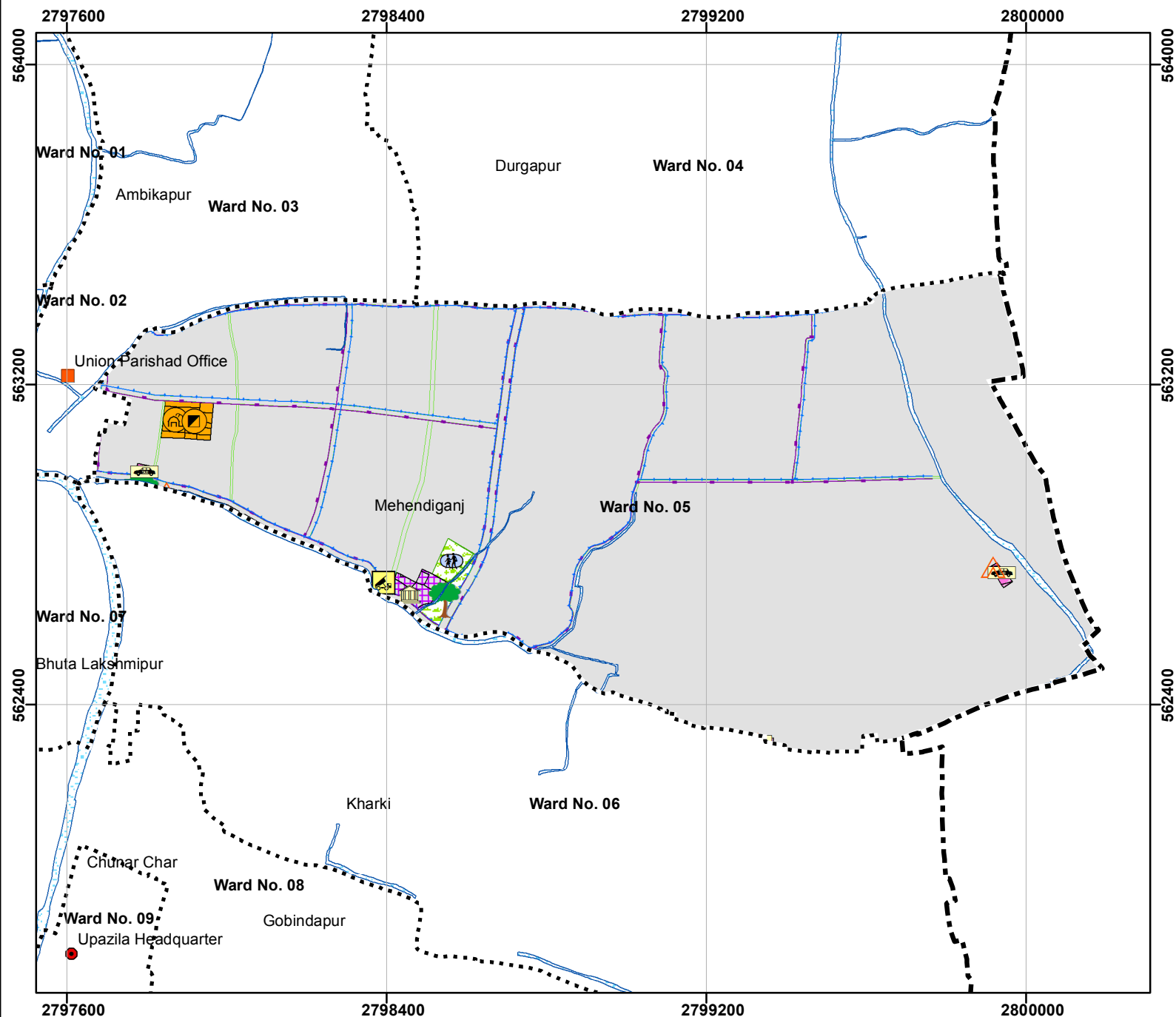
The Ward is undeveloped and it will take time to develop properly. Detail gives in the following table.

**Table-14.20: Proposed Specific urban services (with Plot Schedule)**

Type of Facilities	Mouza Name	Plot No.	Area (acre)
Ward Center Complex/ Neighborhood Center	Mehendiganj_046_00	292,293,1361-1363,1366	2.05
Bus Terminal	Mehendiganj_046_00	64,66-68,179,180,1016	2.84
Central Mosque and Eidgah	Mehendiganj_046_00	70-78,83-85	2.76
Neighbourhood Park	Mehendiganj_046_00	62-65,68,441,4016,1366	1.40
Play Ground	Mehendiganj_046_00	294-296,301,1362,1366	1.53
Rickshaw/ CNG Stand	Mehendiganj_046_00	65, 532,533,842-846,954-957	0.69
Waste Transfer Station	Mehendiganj_046_00	291,1360,1364	0.11

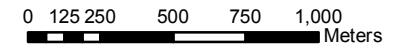
Map 14.15

# Proposed Urban Services, Drainage, Water and Gas Supply Networks of Ward No. 05



SCALE

1:14,000



## LEGEND

- |                       |                        |                                 |                  |
|-----------------------|------------------------|---------------------------------|------------------|
| <b>Boundary Line</b>  |                        | <b>Proposed Utility Network</b> |                  |
| — Paurashava Boundary | — Water Supply Network | — Gas Supply Network            | — Proposed Drain |
| ... Ward Boundary     |                        |                                 |                  |
- 
- Proposed Services**
- |                        |                      |
|------------------------|----------------------|
| Bus Terminal           | Neighbourhood Market |
| CNG/Rickshaw Stand     | Neighbourhood Park   |
| Central Cremation      | Muktijoddha Park     |
| Central Graveyard      | Shishu Park          |
| Central Park           | Muktijoddha Complex  |
| Cinema/Theater Hall    | Overhead Tank        |
| College                | Passenger Shed       |
| Cyclone Shelter        | Playground           |
| Dumping Station        | Police Box/Outpost   |
| Electric Sub-station   | Police Station       |
| Waste Transfer Station | Post Office          |
| Filling Station        | Primary School       |
| Fire Service           | Public Gathering     |
| Helipad                | Public Library       |
| High School            | Resettlement Zone    |
| Housing Estate         | Slaughtering House   |
| Industrial Estate      | Super Market         |
| Low Cost Housing       | Sweepers Colony      |
| Central Eidgah         | Telephone Exchange   |
| Central Mosque         | Truck Terminal       |
| Neighbourhood Center   | Upazila Hospital     |
|                        | Upazila Stadium      |
|                        | Vocational Institute |
|                        | Water Supply Station |
|                        | Wholesale Market     |

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Mehendiganj Upazila, Barisal District



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CONSULTANT  
**SCPL** Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
In Association with

### 14.3.6 Action Plan for Ward No. 06

#### Demography

Ward No. 6 consists of the mouza named Durgapur. It is situated on the southeastern part of the Paurashava and Ward No. 5 is on the north, Ward No. 8 on the south, Upazila area on the east and Ward No. 7 on the west.

Present population of the Ward is 3562 (2011) and it will be 3609 in the year 2016, 3658 in 2021, 3706 in 2026 and 3756 in 2031. Density of population is 9 persons per acre and it will remain till 2031.

**Table-14.21: Population, area and density**

Type	Population 2011	Projected population			
		2016	2021	2026	2031
Population	3562	3609	3658	3706	3756
Area (acre)	415.52	415.52	415.52	415.52	415.52
Density/acre	9	9	9	9	9

Source: BBS 2011.

### Proposals and Plans for Ward No. 06

#### Land use Proposal

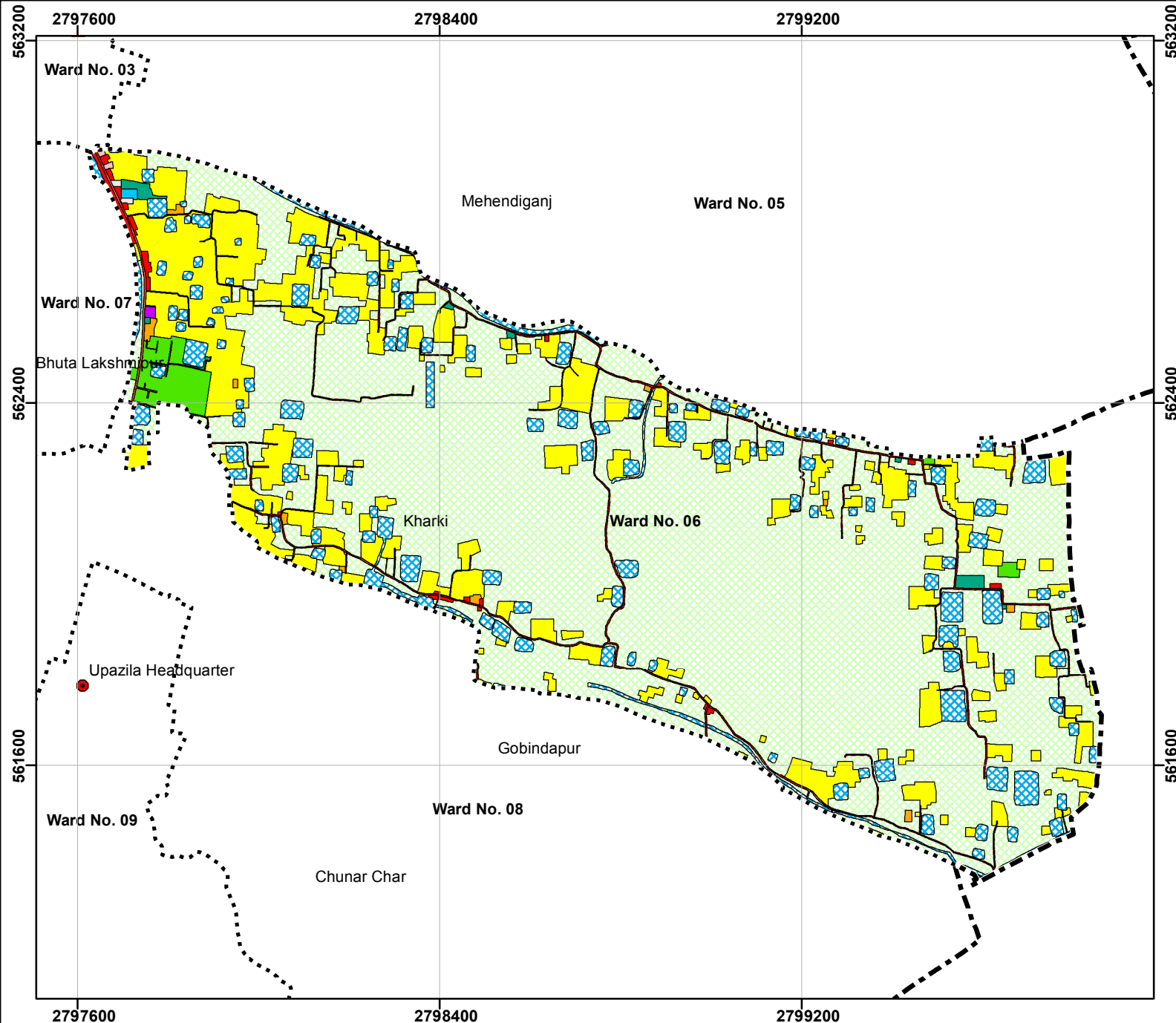
Ward No. 6 is important for agriculture land, commercial establishment, educational facilities and residential development. Total planning area of the Ward is 415.52 acres. In the total area, agriculture use is 142.56 acres and residential 151.44 acres. Area under circulation network is 37.09 acres; educational facilities 7.41 acres, open space 3.17 acres, mixed use 12.11 and water body 29.99 acres.

**Table-14.22: Existing and proposed land use**

Land use category	Area in acre			
	Existing	%	Proposed	%
Agriculture	289.5	69.67	142.56	34.33
Commercial	1.55	0.37	0.00	0.00
Circulation Network	7.62	1.83	37.09	8.93
Community Facilities	0.92	0.22	4.18	1.01
Education & Research	5.15	1.24	7.41	1.79
Industrial area	0.14	0.03	0.00	0.00
Mixed Use	0.10	0.02	12.11	2.92
Health Facilities	0.00	0.00	0.00	0.00
Open space	1.26	0.30	3.17	0.76
Recreation	0.18	0.04	0.22	0.05
Residential area	73.42	17.67	151.44	36.47
Rural Settlement	0.00	0.00	16.19	3.90
Water Body	35.5	8.54	29.99	7.22
Government Office	0.18	0.04	7.15	1.72
Utility Services	0.00	0.00	0.06	0.01
Transportation Facilities	0.00	0.00	3.66	0.88
<b>Total</b>	<b>415.52</b>	<b>100.00</b>	<b>415.52</b>	<b>100.00</b>

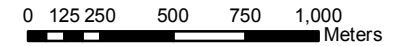
Map 14.16

Existing land use of Ward No.06



**SCALE**

1:12,400



**LEGEND**

**Admin Point**

- Paurashava Office
- Union Parishad Office
- Upazila Headquarter

**Boundary Line**

- Paurashava Boundary
- Ward Boundary

**Existing Landuse**

- Residential
- Agriculture
- Waterbody
- Educational Facilities
- Commercial
- Industrial
- Education and Research
- Community Service
- Service Activity
- Governmental Services
- Non Government Services
- Recreational Facilities
- Mixed Use
- Circulation Network
- Transport and Communication
- Forest
- Urban Green Space
- Vacant Land
- Miscellaneous/Others
- Restricted

PREPARATION OF MASTER PLAN FOR MEHENDIGANJ PAURASHAVA  
Mehendiganj Upazila, Barisal District



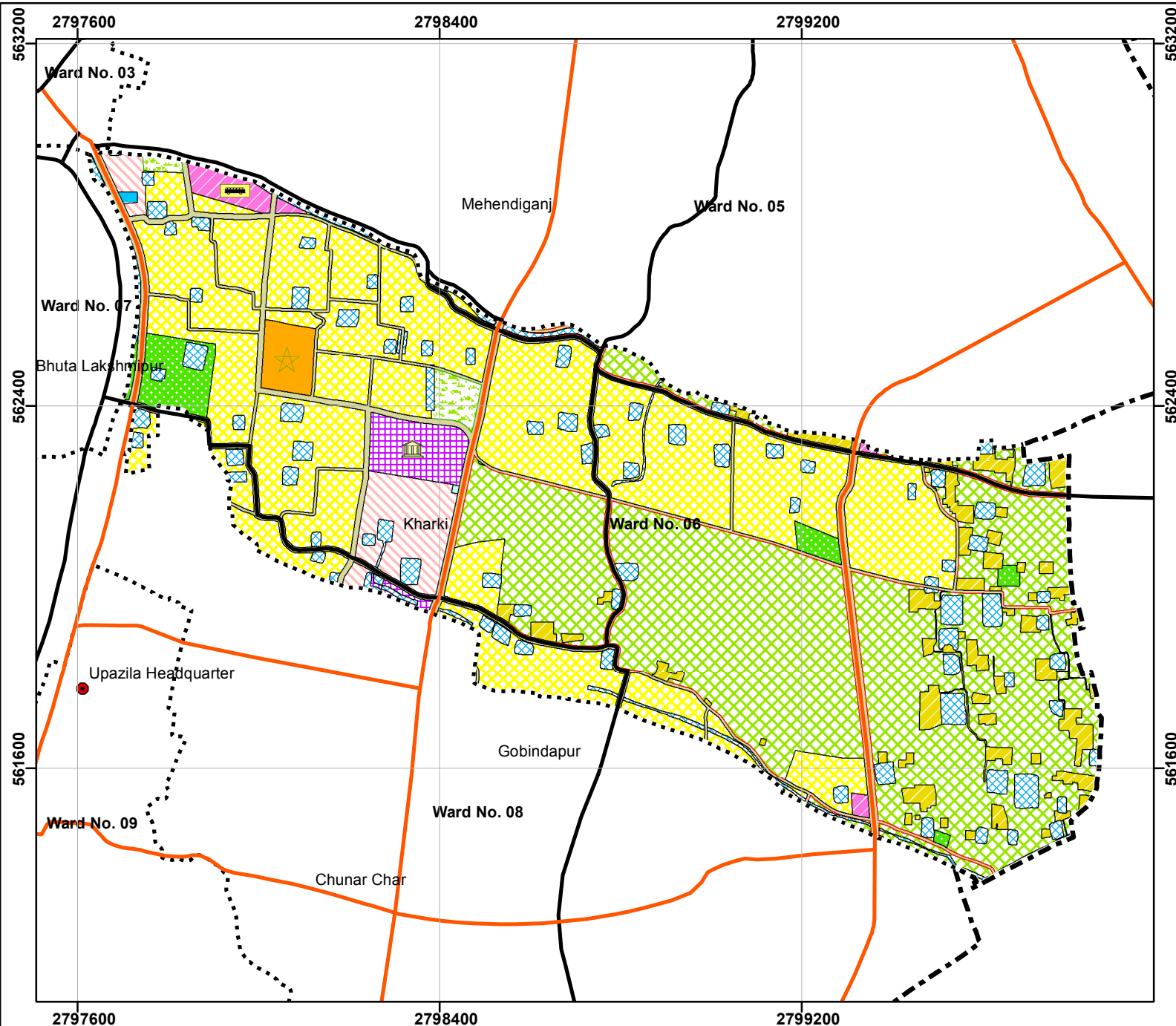
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Local Government Division

Local Government Engineering Department (LGED)  
Upazila Towns Infrastructure Development Project (UTIDP)  
Package No: 11 (Barisal Region)

CONSULTANT  
**SCPL** Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
In Association with

Map 14.17

Proposed land use of Ward No.06



## SCALE

1:12,400

0 125 250 500 750 1,000  
Meters

## LEGEND

- Planning Area Boundary
- Paurashava Boundary
- Ward Boundary
- Paurashava Office
- Union Parishad Office
- Upazila Headquarter
- Bus Terminal
- ☆ Central Graveyard
- Central Park
- Industrial Estate
- Neighbourhood Center
- Resettlement Zone
- Truck Terminal
- Upazila Hospital
- Upazila Stadium

## Major Services

## Proposed Landuse

- Urban Residential Zone
- Rural Settlement
- Commercial Zone
- Mixed Use Zone
- General Industrial Zone
- Heavy Industrial Zone
- Government Office
- Education & Research
- Agricultural Zone
- Waterbody
- Open Space
- Recreational Facilities
- Circulation Network
- Transportation Facilities
- Utility Services
- Health Services
- Community Facilities
- Historical & Heritage Site
- Restricted Area
- Overlay Zone
- Urban Deferred
- Forest
- Beach
- Miscellaneous

## Major Road

- Primary Road
- Secondary Road

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CONSULTANT  
**SCPL** Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
In Association with

## Proposed Circulation Network

At present, 12.64 km. roads are in the Ward No. 6. Among total length, 4.17 km. katcha, 4.45 km. semi-pucca and 4.02 km. pucca roads. In the plan, total length of the proposed road is 13837.19 meter (13.83 km.).

**Table-14.23: Proposed road**

Road ID	Road Proposal	Road type	Road Width (ft)	Length (m)	Phasing
PRdS 8	Widening	Secondary Road	40	752.04	Phase 01
PRdT 9	Widening	Tertiary Road	20	75.73	Phase 01
PRdS 10	Widening	Secondary Road	40	273.22	Phase 01
PRdS 11	Widening	Secondary Road	40	379.03	Phase 01
PRdT 16	Widening	Tertiary Road	20	292.56	Phase 01
PRdP 18	Widening	Primary Road	60	581.64	Phase 01
PRdS 20	Widening	Secondary Road	40	454.08	Phase 01
PRdT 30	Widening	Tertiary Road	20	454.13	Phase 01
PRdT 31	Widening	Tertiary Road	20	201.81	Phase 01
PRdT 55	Widening	Tertiary Road	20	312.63	Phase 01
PRdT 56	Widening	Tertiary Road	20	312.09	Phase 02
PRdT 62	Widening	Tertiary Road	20	7.24	Phase 02
PRdT 63	Widening	Tertiary Road	20	302.35	Phase 03
PRdS 72	Widening	Secondary Road	40	482.49	Phase 01
PRdS 73	Widening	Secondary Road	40	599.61	Phase 01
PRdS 74	Widening	Secondary Road	40	482.23	Phase 01
PRdT 83	Widening	Tertiary Road	20	67.87	Phase 01
PRdS 84	Widening	Secondary Road	40	67.92	Phase 01
PRdT 110	Widening	Tertiary Road	20	43.73	Phase 01
PRdT 201	New Road	Tertiary Road	20	114.95	Phase 02
PRdT 202	New Road	Tertiary Road	20	395.29	Phase 03
PRdT 203	Widening	Tertiary Road	20	160.65	Phase 01
PRdT 204	Widening	Tertiary Road	20	1131.40	Phase 02
PRdT 205	Widening	Tertiary Road	20	101.60	Phase 01
PRdT 206	Widening	Tertiary Road	20	90.30	Phase 01
PRdT 207	Widening	Tertiary Road	20	83.19	Phase 01
PRdS 208	Widening	Secondary Road	40	197.37	Phase 01
PRdS 209	New Road	Secondary Road	40	119.01	Phase 03
PRdT 210	New Road	Tertiary Road	20	0.74	Phase 02
PRdS 211	New Road	Secondary Road	40	399.03	Phase 02
PRdP 217	New Road	Primary Road	60	625.59	Phase 03
PRdP 223	New Road	Primary Road	60	885.42	Phase 03
PRdT 228	Widening	Tertiary Road	20	15.01	Phase 03
PRdP 246	Widening	Primary Road	60	37.62	Phase 01
PRdS 262	New Road	Secondary Road	40	85.93	Phase 03
PRdT 269	New Road	Tertiary Road	20	247.93	Phase 02
PRdT 270	Widening	Tertiary Road	20	183.20	Phase 03

Road ID	Road Proposal	Road type	Road Width (ft)	Length (m)	Phasing
PRdT 271	New Road	Tertiary Road	20	124.82	Phase 03
PRdS 272	Widening	Secondary Road	40	376.01	Phase 03
PRdS 273	New Road	Secondary Road	40	570.03	Phase 03
PRdS 274	New Road	Secondary Road	40	132.45	Phase 03
PRdT 280	New Road	Tertiary Road	20	385.13	Phase 03
PRdT 281	New Road	Tertiary Road	20	304.53	Phase 02
PRdT 282	New Road	Tertiary Road	20	238.95	Phase 02
PRdT 283	New Road	Tertiary Road	20	111.76	Phase 02
PRdT 284	New Road	Tertiary Road	20	320.71	Phase 03
PRdT 299	New Road	Tertiary Road	20	113.08	Phase 03
PRdS 69	Widening	Secondary Road	40	22.36	Phase 01
PRdT 107	Widening	Tertiary Road	20	24.81	Phase 01
PRdS 31	Widening	Secondary Road	40	95.94	Phase 01
<b>Total</b>				<b>13837.19</b>	

### Proposed Drain

At present, no man-made drain but 1949.77 meter natural canal is in this Ward. Total 22.08 km drains have been proposed in this ward.

### Proposed Water and Gas Supply Line

It is proposed to install a network based water supply system by exploring fresh water aquifers. So the consultant proposed 11.92 km of water supply network in this ward.

It is proposed to install a piped gas supply network to facilitate the households. There is no existing gas supply network in this ward and the plan proposes 11.97 km network to develop during the project period and the whole network will be developed during second phase.

### Proposed Services

The Ward is moderately developed. Except Ward Centre, a graveyard on 4.18 acres of land, bus terminal is being proposed in the plan. Location of bus terminal is covered two Wards. Detail is presented in the following table.

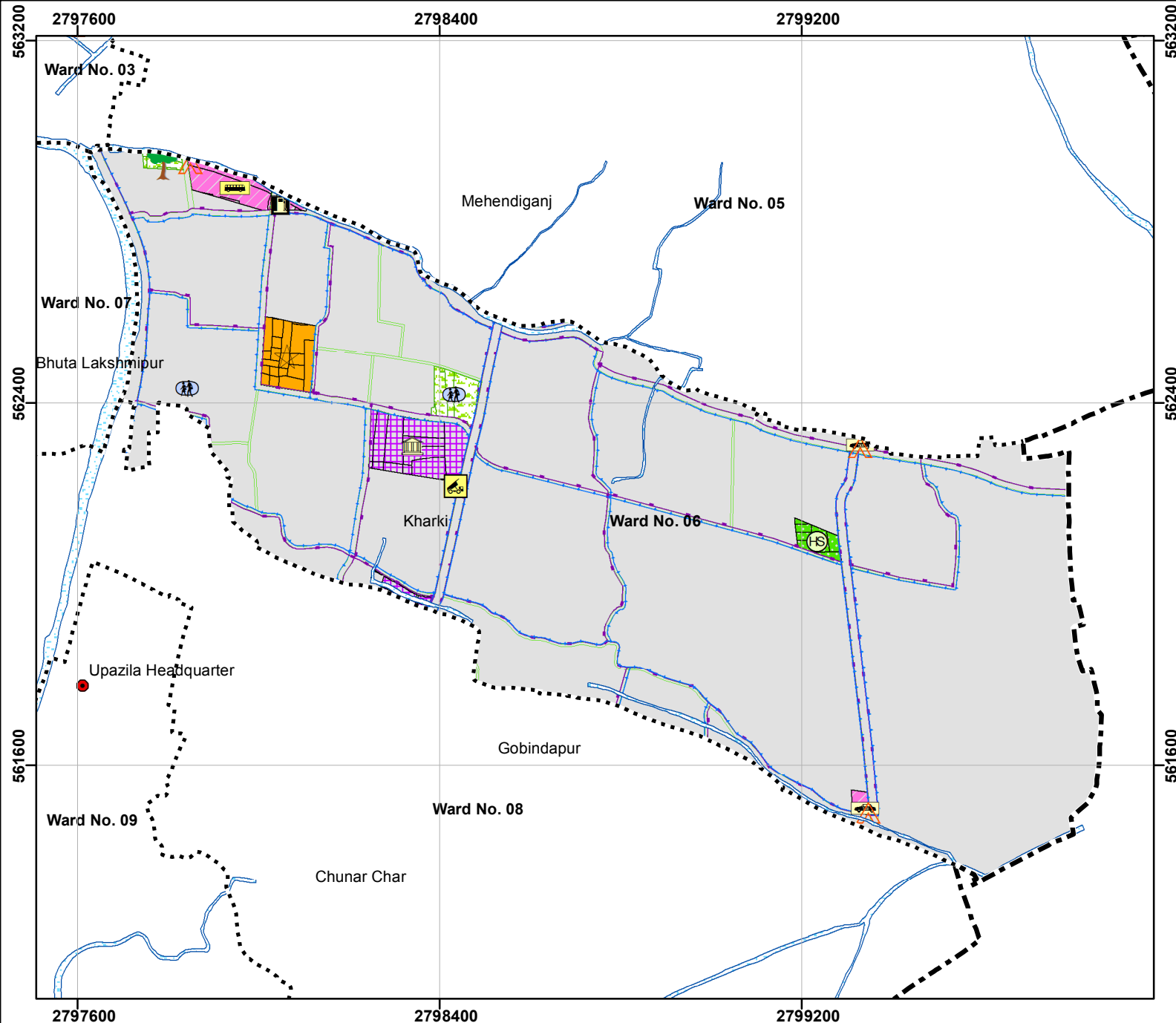
**Table-14.24: Proposed Specific urban services (with Plot Schedule)**

Type of Facilities	Mouza Name	Plot No.	Area (acre)
Ward Center Complex/ Neighborhood Center	Khakri_079_00	190-195,222-225,248,251,252,262,264,265,271,272,274	7.15
Central Graveyard	Khakri_079_00	105-118,120-127	4.18
Bus Terminal	Khakri_079_00	1,3,5,93,96	2.84
Neighbourhood Park	Khakri_079_00	1,3	0.74
High School	Khakri_079_00	402-410	1.40
Play Ground	Khakri_079_00	201,206-208,215,221,222	2.43
Rickshaw/ CNG Stand	Khakri_079_00	460,464,512-514	0.59
Waste Transfer Station	Khakri_079_00	225	0.06



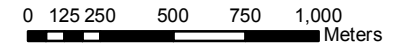
Map 14.18

# Proposed Urban Services, Drainage, Water and Gas Supply Networks of Ward No. 06



SCALE

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## LEGEND

- |  |   |
|--|---|
| <p><b>Boundary Line</b></p> <ul style="list-style-type: none"> <li>— Paurashava Boundary</li> <li>- - - Ward Boundary</li> </ul> | <p><b>Proposed Utility Network</b></p> <ul style="list-style-type: none"> <li>— Water Supply Network</li> <li>— Gas Supply Network</li> <li>— Proposed Drain</li> </ul> |
|--|---|
- 
- Proposed Services**
- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>Bus Terminal</li> <li>CNG/Rickshaw Stand</li> <li>Central Cremation</li> <li>Central Graveyard</li> <li>Central Park</li> <li>Cinema/Theater Hall</li> <li>College</li> <li>Cyclone Shelter</li> <li>Dumping Station</li> <li>Electric Sub-station</li> <li>Waste Transfer Station</li> <li>Filling Station</li> <li>Fire Service</li> <li>Helipad</li> <li>High School</li> <li>Housing Estate</li> <li>Industrial Estate</li> <li>Low Cost Housing</li> <li>Central Eidgah</li> <li>Central Mosque</li> <li>Neighbourhood Center</li> </ul> | <ul style="list-style-type: none"> <li>Neighbourhood Market</li> <li>Neighbourhood Park</li> <li>Muktijoddha Park</li> <li>Shishu Park</li> <li>Muktijoddha Complex</li> <li>Overhead Tank</li> <li>Passenger Shed</li> <li>Playground</li> <li>Police Box/Outpost</li> <li>Police Station</li> <li>Post Office</li> <li>Primary School</li> <li>Public Gathering</li> <li>Public Library</li> <li>Resettlement Zone</li> <li>Slaughtering House</li> <li>Super Market</li> <li>Sweepers Colony</li> <li>Telephone Exchange</li> <li>Truck Terminal</li> <li>Upazila Hospital</li> <li>Upazila Stadium</li> <li>Vocational Institute</li> <li>Water Supply Station</li> <li>Wholesale Market</li> </ul> |
|--|---|

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Mehendiganj Upazila, Barisal District



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Ministry of Local Government, Rural Development and Cooperatives  
Local Government Division

Local Government Engineering Department (LGED)  
Upazila Towns Infrastructure Development Project (UTIDP)  
Package No: 11 (Barisal Region)

CONSULTANT  
**SCPL** Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
In Association with

### 14.3.7 Action Plan for Ward No. 07

#### Demography

Ward No. 7 consists of the mouza named Kharki. It is situated on the southwestern part of the Paurashava and Ward No. 2 is on the north, Machkata River on the south and west and Ward No. 6, 8 and 9 on the east.

Present population of the Ward is 3046 (2011) and it will be 3087 in the year 2016, 3128 in 2021, 3169 in 2026 and 3212 in 2031. Density of population is 12 persons per acre and it will remain till 2031.

**Table-14.25: Population, area and density**

Type	Population 2011	Projected population			
		2016	2021	2026	2031
Population	3046	3087	3128	3169	3212
Area (acre)	263.20	263.20	263.20	263.20	263.20
Density/acre	12	12	12	12	12

Source: BBS 2011.

### Proposals and Plans for Ward No. 07

#### Land use Proposal

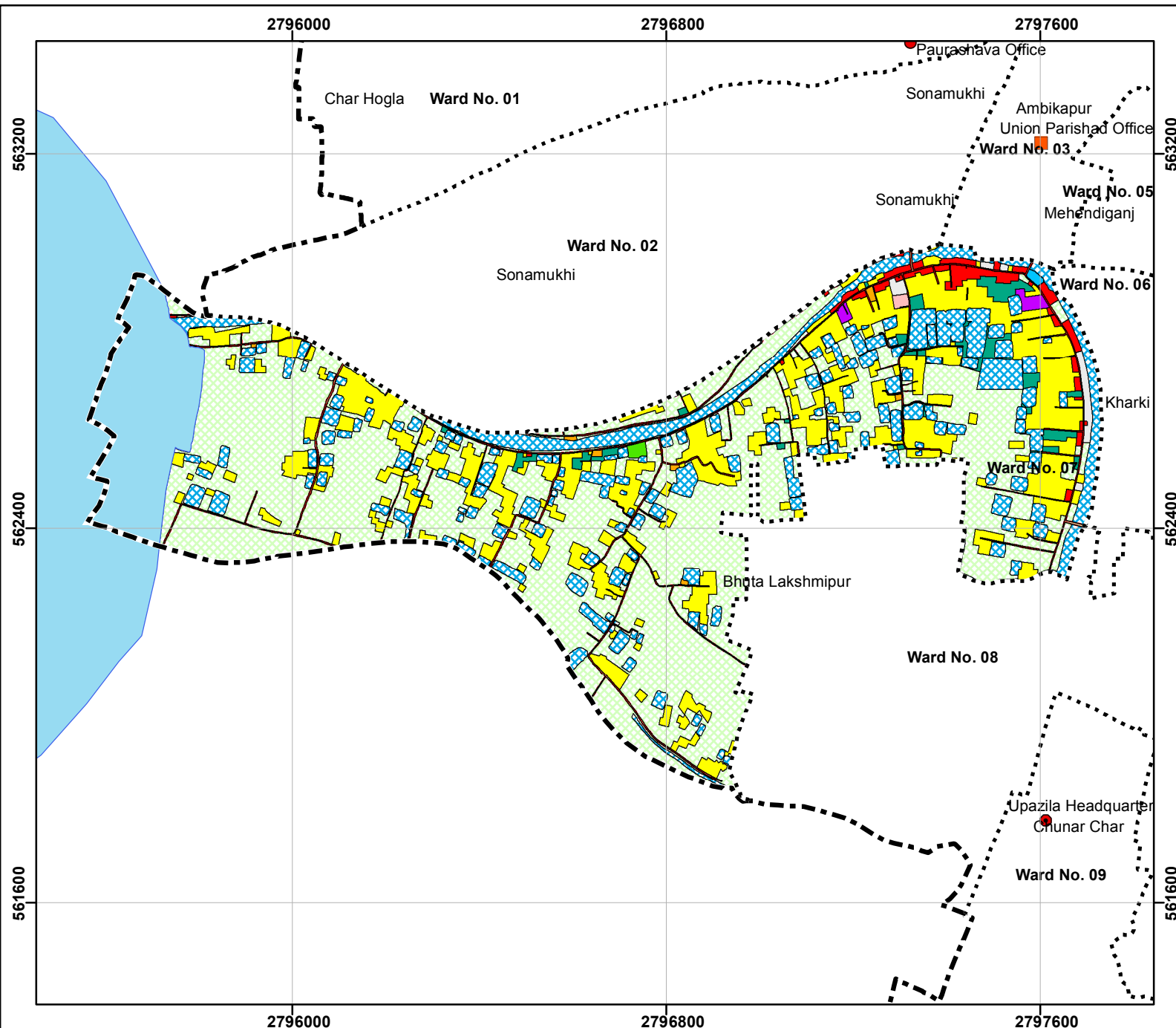
Ward No. 7 is important for agriculture land, commercial establishment, industrial development, open space and residential area. Total planning area of the Ward is 263.20 acres. In the total area, agriculture use is 0.03 acres, residential 145.38 acres, commercial establishment 5.41 acres; industrial area 0.55 acres and water body 55.17 acres. Other uses are negligible.

**Table-14.26: Existing and proposed landuse**

Landuse category	Area in acre			
	Existing	%	Proposed	%
Agriculture	130.56	49.60	0.03	0.01
Commercial	3.66	1.39	5.41	2.06
Circulation Network	6.33	2.41	26.58	10.11
Community Facilities	0.4	0.15	0.14	0.05
Education & Research	0.29	0.11	4.54	1.73
Industrial area	1.21	0.46	0.55	0.21
Mixed Use	0.22	0.08	17.69	6.73
Open space	4.13	1.57	2.52	0.96
Recreation	0.18	0.07	0.14	0.05
Residential area	50.3	19.11	145.38	55.30
Water Body	65.74	24.98	55.17	20.99
Government Office	0.18	0.07	3.59	1.37
Utility Services	0.00	0.00	0.83	0.32
Transportation Facilities	0.00	0.00	0.31	0.12
<b>Total</b>	<b>263.20</b>	<b>100.00</b>	<b>263.20</b>	<b>100.00</b>

Map 14.19

Existing land use of Ward No.07



# SCALE

1:12,000

0 125 250 500 750 1,000 Meters

## LEGEND

### Admin Point

- Paurashava Office
- Union Parishad Office
- Upazila Headquarter

### Boundary Line

- Paurashava Boundary
- Ward Boundary

### Existing Landuse

- Residential
- Agriculture
- Waterbody
- Educational Facilities
- Commercial
- Industrial
- Education and Research
- Community Service
- Service Activity
- Governmental Services
- Non Government Services
- Recreational Facilities
- Mixed Use
- Circulation Network
- Transport and Communication
- Forest
- Urban Green Space
- Vacant Land
- Miscellaneous/Others
- Restricted

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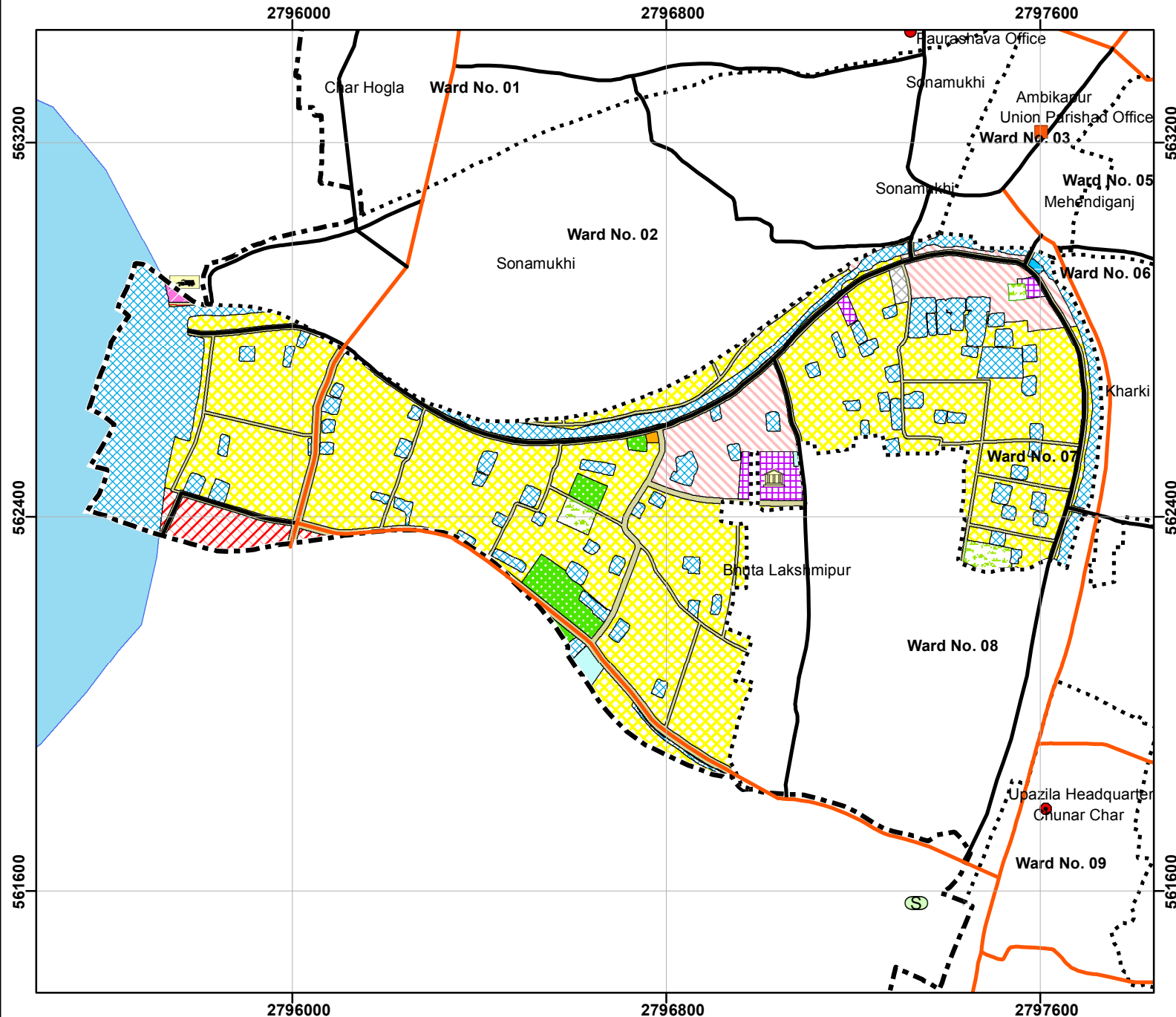
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Local Government Engineering Department (LGED)  
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Package No: 11 (Barisal Region)

CONSULTANT  
SCPL Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
In Association with

Map 14.20

Proposed land use of Ward No.07



## SCALE

1:12,000

0 125 250 500 750 1,000  
Meters

## LEGEND

- Planning Area Boundary
- Paurashava Boundary
- Ward Boundary
- Paurashava Office
- Union Parishad Office
- Upazila Headquarter
- Bus Terminal
- ☆ Central Graveyard
- Central Park
- Industrial Estate
- Neighbourhood Center
- Resettlement Zone
- Truck Terminal
- Upazila Hospital
- Upazila Stadium

## Major Services

## Proposed Landuse

- Urban Residential Zone
- Rural Settlement
- Commercial Zone
- Mixed Use Zone
- General Industrial Zone
- Heavy Industrial Zone
- Government Office
- Education & Research
- Agricultural Zone
- Waterbody
- Open Space
- Recreational Facilities
- Circulation Network
- Transportation Facilities
- Utility Services
- Health Services
- Community Facilities
- Historical & Heritage Site
- Restricted Area
- Overlay Zone
- Urban Deferred
- Forest
- Beach
- Miscellaneous

## Major Road

- Primary Road
- Secondary Road

PREPARATION OF MASTER PLAN FOR MEHENDIGANJ PAURASHAVA  
Mehendiganj Upazila, Barisal District



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CONSULTANT  
SCPL Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
In Association with

### Proposed Circulation Network

At present, 10.67 km. roads are in the Ward No. 7. Among total length, 2.63 km. katcha, 4.32 km. semi-pucca and 3.72 km. pucca roads. In the plan, total length of the proposed road is 10305.10 meter (10.30 km.).

**Table-14.25: Proposed road**

Road ID	Road Proposal	Road type	Road Width (ft)	Length (m)	Phasing
PRdT 1	Widening	Tertiary Road	20	60.57	Phase 01
PRdS 3	Widening	Secondary Road	40	211.77	Phase 01
PRdT 17	Widening	Tertiary Road	20	772.82	Phase 01
PRdS 20	Widening	Secondary Road	40	40.77	Phase 01
PRdS 24	Widening	Secondary Road	40	39.71	Phase 01
PRdS 27	Widening	Secondary Road	40	2507.49	Phase 01
PRdS 41	Widening	Secondary Road	40	0.65	Phase 01
PRdS 42	Widening	Secondary Road	40	356.34	Phase 02
PRdT 88	Widening	Tertiary Road	20	476.61	Phase 01
PRdS 94	Widening	Secondary Road	40	40.05	Phase 01
PRdS 96	Widening	Secondary Road	40	44.98	Phase 01
PRdT 98	Widening	Tertiary Road	20	286.95	Phase 02
PRdT 99	Widening	Tertiary Road	20	337.25	Phase 01
PRdT 103	Widening	Tertiary Road	20	13.61	Phase 01
PRdT 105	Widening	Tertiary Road	20	343.51	Phase 01
PRdT 118	Widening	Tertiary Road	20	192.48	Phase 02
PRdT 119	Widening	Tertiary Road	20	207.43	Phase 02
PRdS 132	Widening	Secondary Road	40	125.13	Phase 01
PRdS 133	Widening	Secondary Road	40	146.78	Phase 01
PRdS 134	Widening	Secondary Road	40	246.04	Phase 01
PRdP 219	Widening	Primary Road	60	432.70	Phase 01
PRdP 229	Widening	Primary Road	60	225.67	Phase 02
PRdP 230	Widening	Primary Road	60	652.53	Phase 02
PRdT 249	New Road	Tertiary Road	20	300.66	Phase 03
PRdS 250	New Road	Secondary Road	40	330.39	Phase 03
PRdT 251	New Road	Tertiary Road	20	578.16	Phase 03
PRdT 255	New Road	Tertiary Road	20	185.04	Phase 02
PRdT 265	New Road	Tertiary Road	20	243.34	Phase 03
PRdT 266	New Road	Tertiary Road	20	369.78	Phase 03
PRdT 267	New Road	Tertiary Road	20	246.27	Phase 03
PRdT 268	New Road	Tertiary Road	20	39.15	Phase 03
PRdT 304	New Road	Tertiary Road	20	1.03	Phase 03
PRdT 306	New Road	Tertiary Road	20	249.46	Phase 03
<b>Total</b>				<b>10305.10</b>	

## Proposed Drain

At present, 27.37 km. man-made pucca drain and 7432.08 meter natural canal (called Varanir khal) is in this Ward. Total 15.20 km drains have been proposed in this ward.

## Proposed Water and Gas Supply Line

It is proposed to install a network based water supply system by exploring fresh water aquifers. As a result, the consultant proposes 7.77 km of water supply network in this ward.

It is proposed to install a piped gas supply network to facilitate the households. There is no existing gas supply network in this ward and the plan proposes 7.71 km network to develop during the project period and the whole network will be developed during second phase.

## Proposed Services

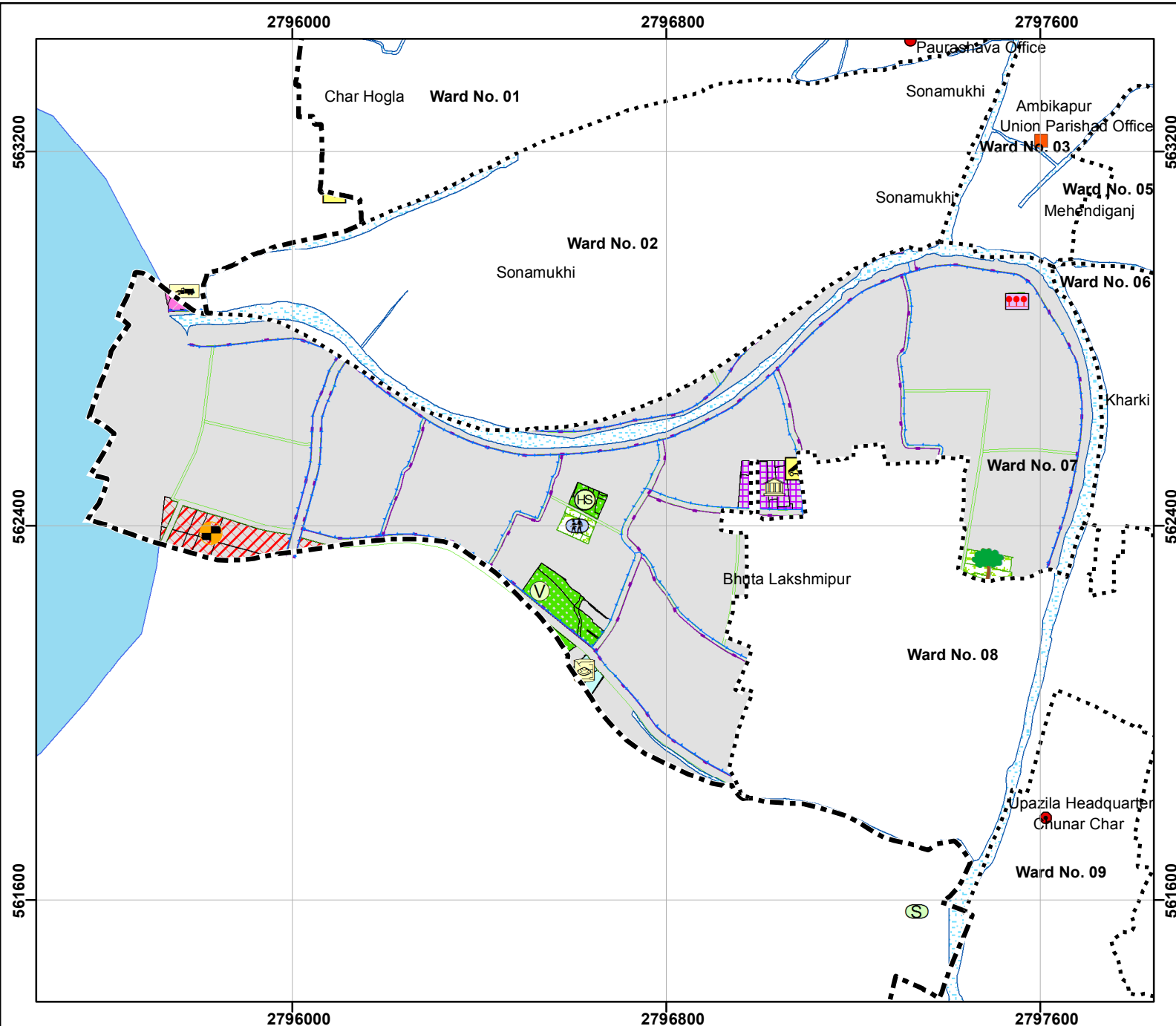
The Ward will be new urban area in future. Important facilities like fish market, vocational training institute and surface water treatment plant are being proposed in this Ward. Truck will cover 0.31 acres of land; vocational training institute 3.32 acres and surface water treatment plant 0.76 acres of land. A commercial complex including Ward Councilors office is being proposed in the Ward.

**Table-14.27: Proposed Specific urban services (with Plot Schedule)**

Type of Facilities	Mouza Name	Plot No.	Area (acre)
Ward Center Complex/ Neighborhood Center	Bhuta Laksmipur_043_00	386-388,489-497,499	2.85
Fish Market	Bhuta Laksmipur_043_00	944-953	5.41
Vocational Institute	Bhuta Laksmipur_043_00	266,268,322-329,412,414,416-421	3.32
Neighbourhood Park	Bhuta Laksmipur_043_00	848-451	1.29
High School	Bhuta Laksmipur_043_00	315,316,339-346	0.92
Play Ground	Bhuta Laksmipur_043_00	320,333-337,339,340	0.92
Muktijoddha Park	Bhuta Laksmipur_043_00	786,787,791	0.30
Truck terminal	Bhuta Laksmipur_043_00	8,9,11,12	0.31
Waste Transfer Station	Bhuta Laksmipur_043_00	491-492	0.08

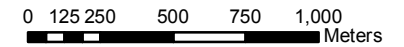
Map 14.21

# Proposed Urban Services, Drainage, Water and Gas Supply Networks of Ward No. 07



SCALE

1:12,000



## LEGEND

Boundary Line		Proposed Utility Network	
—	Paurashava Boundary	—	Water Supply Network
...	Ward Boundary	—	Gas Supply Network
—		—	Proposed Drain
<b>Proposed Services</b>		<b>Proposed Services</b>	
	Bus Terminal		Neighbourhood Market
	CNG/Rickshaw Stand		Neighbourhood Park
	Central Cremation		Muktijoddha Park
	Central Graveyard		Shishu Park
	Central Park		Muktijoddha Complex
	Cinema/Theater Hall		Overhead Tank
	College		Passenger Shed
	Cyclone Shelter		Playground
	Dumping Station		Police Box/Outpost
	Electric Sub-station		Police Station
	Waste Transfer Station		Post Office
	Filling Station		Primary School
	Fire Service		Public Gathering
	Helipad		Public Library
	High School		Resettlement Zone
	Housing Estate		Slaughtering House
	Industrial Estate		Super Market
	Low Cost Housing		Sweepers Colony
	Central Eidgah		Telephone Exchange
	Central Mosque		Truck Terminal
	Neighbourhood Center		Upazila Hospital
			Upazila Stadium
			Vocational Institute
			Water Supply Station
			Wholesale Market

PREPARATION OF MASTER PLAN FOR MEHENDIGANJ PAURASHAVA  
Mehendiganj Upazila, Barisal District

Government of the People's Republic of Bangladesh  
Ministry of Local Government, Rural Development and Cooperatives  
Local Government Division

Local Government Engineering Department (LGED)  
Upazila Towns Infrastructure Development Project (UTIDP)  
Package No: 11 (Barisal Region)

CONSULTANT  
SCPL Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
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### 14.3.8 Action Plan for Ward No. 08

#### Demography

Ward No. 8 consists of the mouza named Gobindapur. It is situated on the southern part of the Paurashava and Ward No. 6 is on the north and east, Ward No. 9 on the south and Ward No. 9 on the west.

**Table-14.28: Population, area and density**

Type	Population 2011	Projected population			
		2016	2021	2026	2031
Population	3910	3962	4015	4068	4123
Area (acre)	529.79	529.79	529.79	529.79	529.79
Density/acre	7	7	8	8	8

Source: BBS 2011.

Present population of the Ward is 3910 (2011) and it will be 3962 in the year 2016, 4015 in 2021, 4068 in 2026 and 4123 in 2031. Density of population is 7 persons per acre and it will be 8 persons per acre in the year 2031.

### Proposals and Plans for Ward No. 08

#### Land use Proposal

Ward No. 8 is important for agricultural development, educational facilities, NGO activities and rural settlements. Total planning area of the Ward is 529.79 acres. In the total area, agriculture use is 93.01 acres; residential area 287.40 acres, educational facilities 1.82 acres, industrial area 38.84 acres, rural settlement 3.65 acres and water body 29.19 acres. Other uses are negligible.

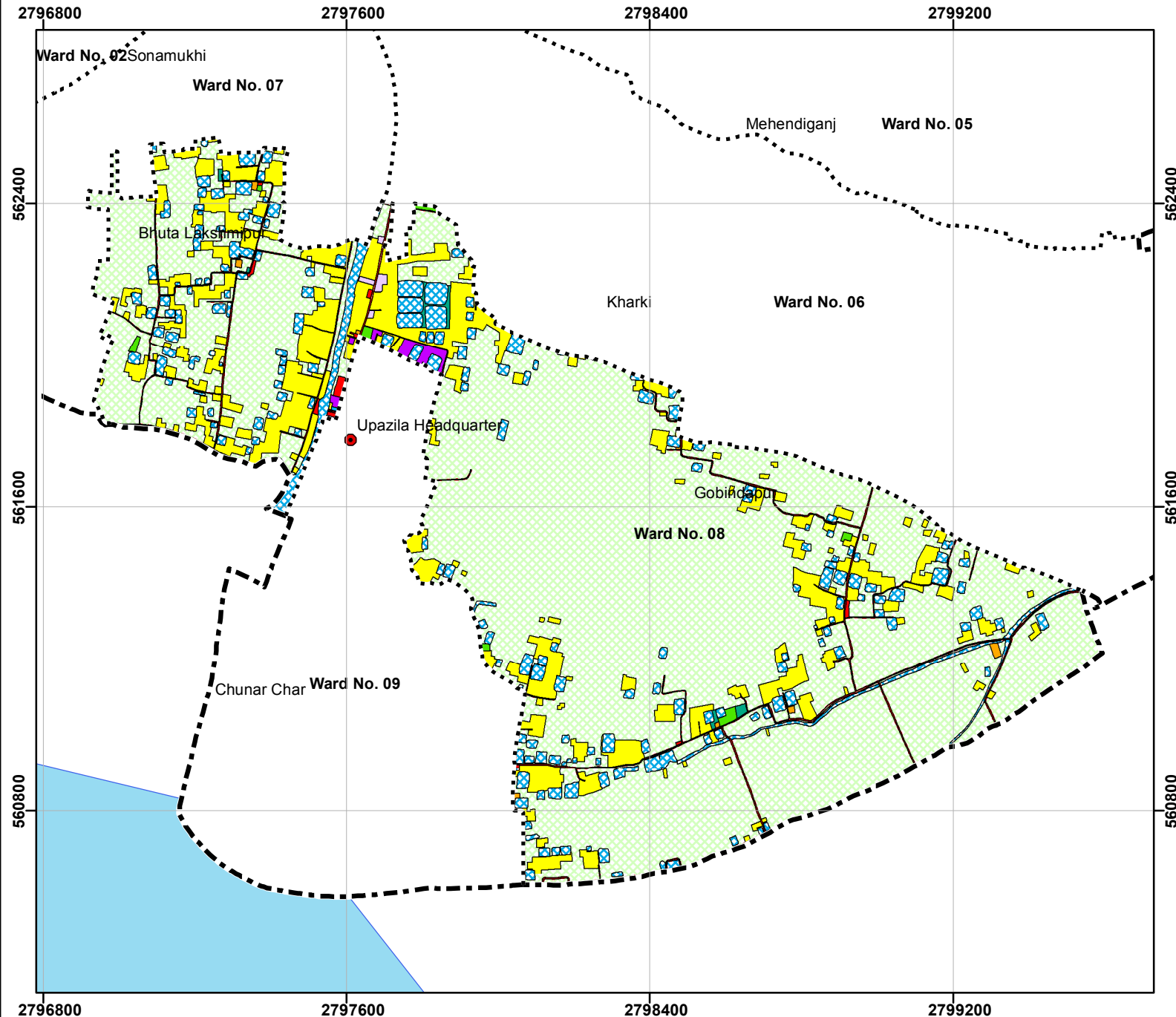
**Table-14.29: Existing and proposed landuse**

Landuse category	Area in acre			
	Existing	%	Proposed	%
Agriculture	395.64	74.68	93.01	17.88
Commercial	0.86	0.16	00	00
Circulation Network	8.46	1.60	50.23	9.66
Community Facilities	0.58	0.11	0.39	0.07
Education & Research	1.18	0.22	1.82	0.35
Industrial area	0.00	0.00	38.84	7.47
Mixed Use	0.00	0.00	2.78	0.54
Non government Office	0.62	0.12	0	0
Open space	1.09	0.21	3.36	0.64
Recreation	0.03	0.01	0	0
Residential area	66.88	12.62	287.40	55.26
Rural Settlement	2.40	0.45	3.65	0.70
Water Body	52.02	9.82	29.19	5.42
Government Office	0.03	0.01	8.40	1.62
Restricted area	0.00	0.00	1.91	0.37
Utility Services	0.00	0.00	0.07	0.01
<b>Total</b>	<b>529.79</b>	<b>100.00</b>	<b>529.79</b>	<b>100.00</b>



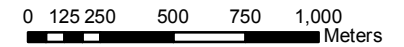
Map 14.22

Existing land use of Ward No.08



**SCALE**

1:14,800



**LEGEND**

**Admin Point**

- Paurashava Office
- Union Parishad Office
- Upazila Headquarter

**Boundary Line**

- Paurashava Boundary
- .... Ward Boundary

**Existing Landuse**

- Residential
- Agriculture
- Waterbody
- Educational Facilities
- Commercial
- Industrial
- Education and Research
- Community Service
- Service Activity
- Governmental Services
- Non Government Services
- Recreational Facilities
- Mixed Use
- Circulation Network
- Transport and Communication
- Forest
- Urban Green Space
- Vacant Land
- Miscellaneous/Others
- Restricted

PREPARATION OF MASTER PLAN FOR MEHENDIGANJ PAURASHAVA  
Mehendiganj Upazila, Barisal District



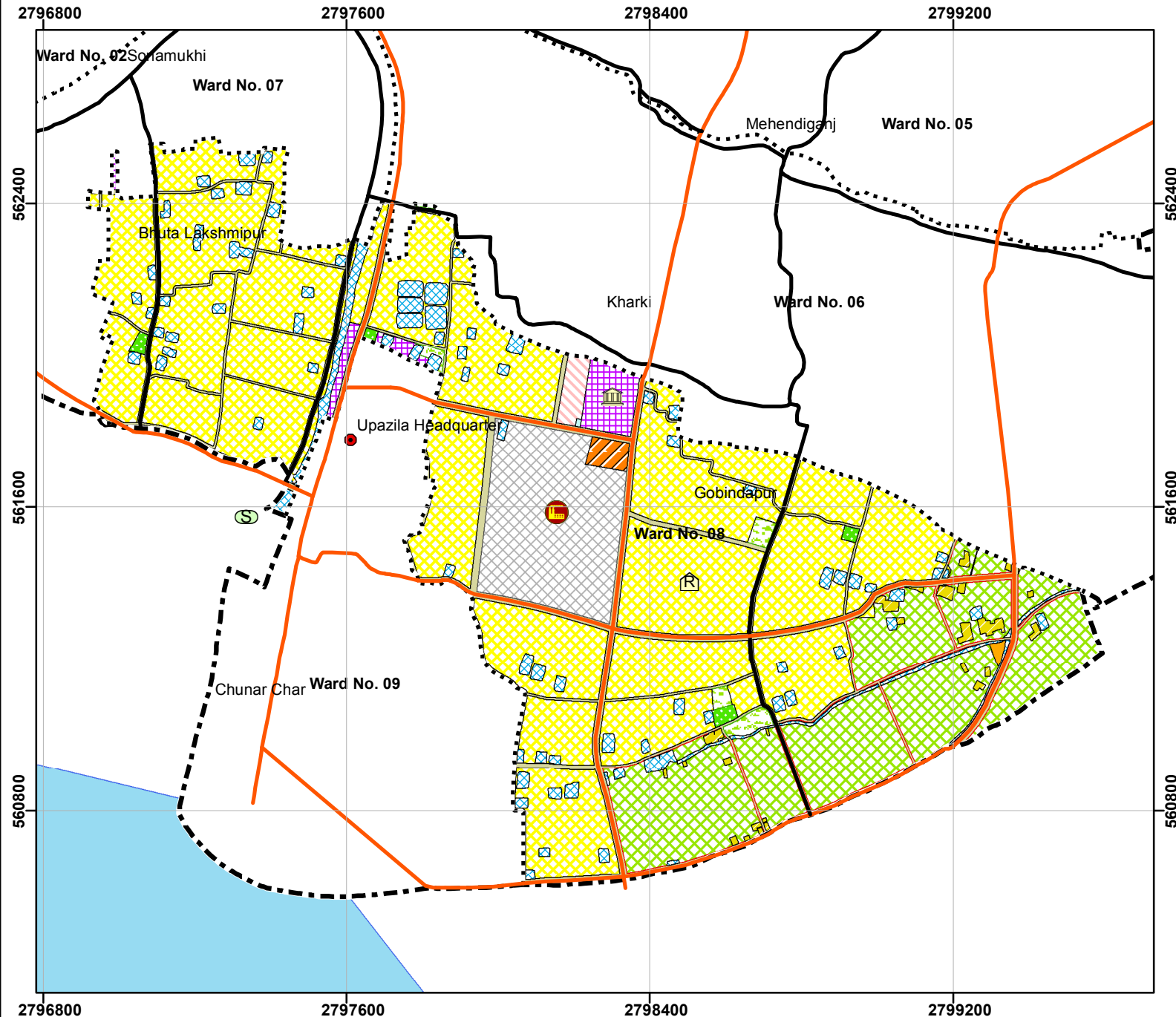
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Local Government Division

Local Government Engineering Department (LGED)  
Upazila Towns Infrastructure Development Project (UTIDP)  
Package No: 11 (Barisal Region)

**SCPL** CONSULTANT  
Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
In Association with

Map 14.23

Proposed land use of Ward No.08



## SCALE

1:14,800

0 125 250 500 750 1,000  
Meters

## LEGEND

- Planning Area Boundary
- Paurashava Boundary
- Ward Boundary
- Paurashava Office
- Union Parishad Office
- Upazila Headquarter
- Bus Terminal
- ☆ Central Graveyard
- Central Park
- Industrial Estate
- Neighbourhood Center
- Resettlement Zone
- Truck Terminal
- Upazila Hospital
- Upazila Stadium

## Major Services

## Proposed Landuse

- Urban Residential Zone
- Rural Settlement
- Commercial Zone
- Mixed Use Zone
- General Industrial Zone
- Heavy Industrial Zone
- Government Office
- Education & Research
- Agricultural Zone
- Waterbody
- Open Space
- Recreational Facilities
- Circulation Network
- Transportation Facilities
- Utility Services
- Health Services
- Community Facilities
- Historical & Heritage Site
- Restricted Area
- Overlay Zone
- Urban Deferred
- Forest
- Beach
- Miscellaneous

## Major Road

- Primary Road
- Secondary Road

PREPARATION OF MASTER PLAN FOR MEHENDIGANJ PAURASHAVA  
Mehendiganj Upazila, Barisal District



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SCPL Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
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### Proposed Circulation Network

At present, 14.14 km. roads are in the Ward No. 8. Among total length, 9.95 km. katcha, 1.06 km. semi-pucca and 3.12 km. pucca roads. In the plan, total length of the proposed road is 17868.31 meter (17.86 km.).

**Table-14.30: Proposed road**

Road ID	Road Proposal	Road type	Road Width (ft)	Length (m)	Phasing
PRdS 3	Widening	Secondary Road	40	481.87	Phase 01
PRdT 9	Widening	Tertiary Road	20	481.48	Phase 01
PRdT 12	Widening	Tertiary Road	20	79.88	Phase 01
PRdS 20	Widening	Secondary Road	40	94.27	Phase 01
PRdP 28	Widening	Primary Road	60	592.16	Phase 01
PRdP 29	Widening	Primary Road	60	347.19	Phase 03
PRdS 41	Widening	Secondary Road	40	646.43	Phase 01
PRdS 49	Widening	Secondary Road	40	126.09	Phase 01
PRdT 50	Widening	Tertiary Road	20	222.38	Phase 01
PRdS 51	Widening	Secondary Road	40	126.67	Phase 01
PRdT 52	Widening	Tertiary Road	20	268.33	Phase 01
PRdT 70	Widening	Tertiary Road	20	379.14	Phase 02
PRdS 75	Widening	Secondary Road	40	61.37	Phase 01
PRdT 76	Widening	Tertiary Road	20	469.38	Phase 01
PRdT 77	Widening	Tertiary Road	20	64.54	Phase 02
PRdT 78	Widening	Tertiary Road	20	237.78	Phase 01
PRdT 83	Widening	Tertiary Road	20	60.17	Phase 01
PRdT 86	Widening	Tertiary Road	20	99.77	Phase 01
PRdT 87	Widening	Tertiary Road	20	93.89	Phase 01
PRdT 88	Widening	Tertiary Road	20	313.36	Phase 01
PRdT 89	Widening	Tertiary Road	20	228.93	Phase 01
PRdT 90	Widening	Tertiary Road	20	141.76	Phase 01
PRdT 105	Widening	Tertiary Road	20	123.98	Phase 01
PRdT 108	Widening	Tertiary Road	20	244.22	Phase 03
PRdT 110	Widening	Tertiary Road	20	702.96	Phase 01
PRdT 111	Widening	Tertiary Road	20	312.26	Phase 03
PRdT 113	Widening	Tertiary Road	20	79.32	Phase 01
PRdS 114	Widening	Secondary Road	40	220.31	Phase 01
PRdS 114	Widening	Secondary Road	40	0.02	Phase 01
PRdT 115	Widening	Tertiary Road	20	246.29	Phase 02
PRdT 116	Widening	Tertiary Road	20	0.38	Phase 01
PRdS 122	Widening	Secondary Road	40	132.22	Phase 01
PRdS 123	Widening	Secondary Road	40	59.48	Phase 01
PRdT 124	Widening	Tertiary Road	20	0.34	Phase 03
PRdT 139	Widening	Tertiary Road	20	251.68	Phase 01
PRdT 148	Widening	Tertiary Road	20	101.11	Phase 01
PRdT 149	Widening	Tertiary Road	20	125.11	Phase 01

Road ID	Road Proposal	Road type	Road Width (ft)	Length (m)	Phasing
PRdT 210	New Road	Tertiary Road	20	302.95	Phase 02
PRdS 211	New Road	Secondary Road	40	192.32	Phase 02
PRdS 213	New Road	Secondary Road	40	527.67	Phase 03
PRdP 214	New Road	Primary Road	60	1508.25	Phase 03
PRdP 215	New Road	Primary Road	60	532.37	Phase 03
PRdP 216	New Road	Primary Road	60	1319.60	Phase 03
PRdP 223	New Road	Primary Road	60	179.73	Phase 03
PRdP 225	Widening	Primary Road	60	834.20	Phase 03
PRdT 228	Widening	Tertiary Road	20	217.24	Phase 03
PRdP 230	Widening	Primary Road	60	74.45	Phase 02
PRdP 231	New Road	Primary Road	60	29.85	Phase 03
PRdP 235	Widening	Primary Road	60	0.11	Phase 01
PRdP 236	New Road	Primary Road	60	2.57	Phase 03
PRdP 237	Widening	Primary Road	60	106.47	Phase 01
PRdT 238	Widening	Tertiary Road	20	140.85	Phase 01
PRdP 240	New Road	Primary Road	60	476.12	Phase 03
PRdS 241	New Road	Secondary Road	40	256.44	Phase 03
PRdS 242	New Road	Secondary Road	40	387.02	Phase 03
PRdT 245	Widening	Tertiary Road	20	0.15	Phase 01
PRdP 246	Widening	Primary Road	60	22.05	Phase 01
PRdT 247	New Road	Tertiary Road	20	255.93	Phase 03
PRdT 248	New Road	Tertiary Road	20	277.82	Phase 03
PRdS 250	New Road	Secondary Road	40	14.01	Phase 03
PRdT 251	New Road	Tertiary Road	20	35.00	Phase 03
PRdS 254	New Road	Secondary Road	40	1.59	Phase 03
PRdS 256	Widening	Secondary Road	40	330.14	Phase 01
PRdS 257	Widening	Secondary Road	40	220.78	Phase 01
PRdS 258	Widening	Secondary Road	40	0.05	Phase 01
PRdT 261	New Road	Tertiary Road	20	617.38	Phase 03
PRdS 262	New Road	Secondary Road	40	150.24	Phase 03
PRdT 304	New Road	Tertiary Road	20	270.83	Phase 03
PRdT 306	New Road	Tertiary Road	20	44.10	Phase 03
PRdT 107	Widening	Tertiary Road	20	316.54	Phase 01
<b>Total</b>				<b>17861.31</b>	

### Proposed Drain

At present, 1.12 km. man-made pucca drain is in this Ward. Total 22.92 km drains have been proposed in this ward.

### Proposed Water and Gas Supply Line

It is proposed to install a network based water supply system by exploring fresh water aquifers and the consultant proposed 12.99 km of water supply network in this ward.

It is proposed to install a piped gas supply network to facilitate the households. There is no existing gas supply network in this ward and the plan proposes 13.66 km network to develop during the project period and the whole network will be developed during second phase.

### Proposed Services

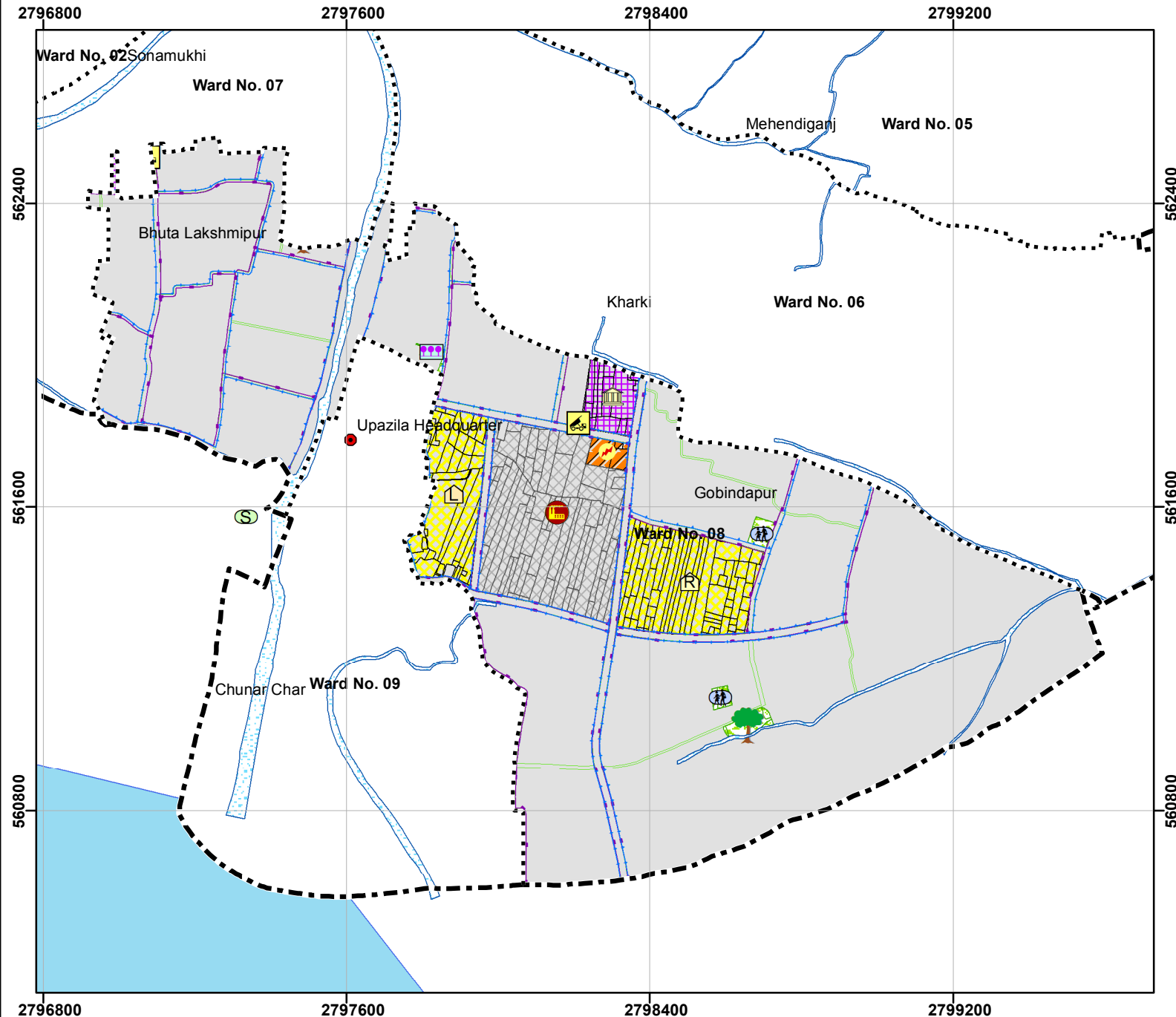
The Ward is moderately developed. Except Ward Centre, an industrial area on 38.84 acres of land, 1.91 for electric substation and 16.03 acres of land for low cost housing area is being proposed in the plan. Detail is presented in the following table.

**Table-14.31: Proposed Specific urban services (with Plot Schedule)**

Type of Facilities	Mouza Name	Plot No.	Area (acre)
Ward Center Complex/ Neighborhood Center	Gobindopur_080_00	40-41,55-57,66-74,87,88	6.15
Low Cost Housing Estate	Chunar Char_081_00 Gobindapur_080_00	188-220,225-227,230 19,20,23-25	16.03
Shishu Park	Chunar Char_081_00	127-129,131,179,182	0.44
Neighbourhood Park	Chunar Char_081_00	645,647,676,785,786	1.36
Resettlement Zone	Chunar Char_081_00 Gobindapur_080_00	572-622,691-725,1163 163	22.59
Play Ground	Chunar Char_081_00 Gobindopur_080_00	669,671,675,681-683 130,135-138,163	1.55
Waste Transfer Station	Gobindapur_080_00	40,41	0.06

Map 14.24

## Proposed Urban Services, Drainage, Water and Gas Supply Networks of Ward No. 08



SCALE

1:14,800

0 125 250 500 750 1,000  
Meters

## LEGEND

Boundary Line		Proposed Utility Network	
—	Paurashava Boundary	—	Water Supply Network
- - -	Ward Boundary	—	Gas Supply Network
- - -		—	Proposed Drain
<b>Proposed Services</b>			
	Bus Terminal		Neighbourhood Market
	CNG/Rickshaw Stand		Neighbourhood Park
	Central Cremation		Muktiyoddha Park
	Central Graveyard		Shishu Park
	Central Park		Muktiyoddha Complex
	Cinema/Theater Hall		Overhead Tank
	College		Passenger Shed
	Cyclone Shelter		Playground
	Dumping Station		Police Box/Outpost
	Electric Sub-station		Police Station
	Waste Transfer Station		Post Office
	Filling Station		Primary School
	Fire Service		Public Gathering
	Helipad		Public Library
	High School		Resettlement Zone
	Housing Estate		Slaughtering House
	Industrial Estate		Super Market
	Low Cost Housing		Sweepers Colony
	Central Eidgah		Telephone Exchange
	Central Mosque		Truck Terminal
	Neighbourhood Center		Upazila Hospital
			Upazila Stadium
			Vocational Institute
			Water Supply Station
			Wholesale Market

PREPARATION OF MASTER PLAN FOR MEHENDIGANJ PAURASHAVA  
Mehendiganj Upazila, Barisal District



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Local Government Engineering Department (LGED)  
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CONSULTANT  
SCPL Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
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### 14.3.9 Action Plan for Ward No. 09

#### Demography

Ward No. 9 consists of the mouza named Chunar Char. It is situated on the southern part of the Paurashava and Ward No. 6 and 8 is on the north, Machkata River on the south, Ward No. 8 on the east and Ward No. 7 on the west.

**Table-14.32: Population, area and density**

Type	Population 2011	Projected population			
		2016	2021	2026	2031
Population	2987	3027	3067	3108	3150
Area (acre)	191.69	191.69	191.69	191.69	191.69
Density/acre	16	16	16	16	16

Source: BBS 2011.

Present population of the Ward is 2987 (2011) and it will be 3027 in the year 2016, 3067 in 2021, 3108 in 2026 and 3150 in 2031. Density of population is 16 persons per acre and it will remain till 2031.

#### Proposals and Plans for Ward No. 09

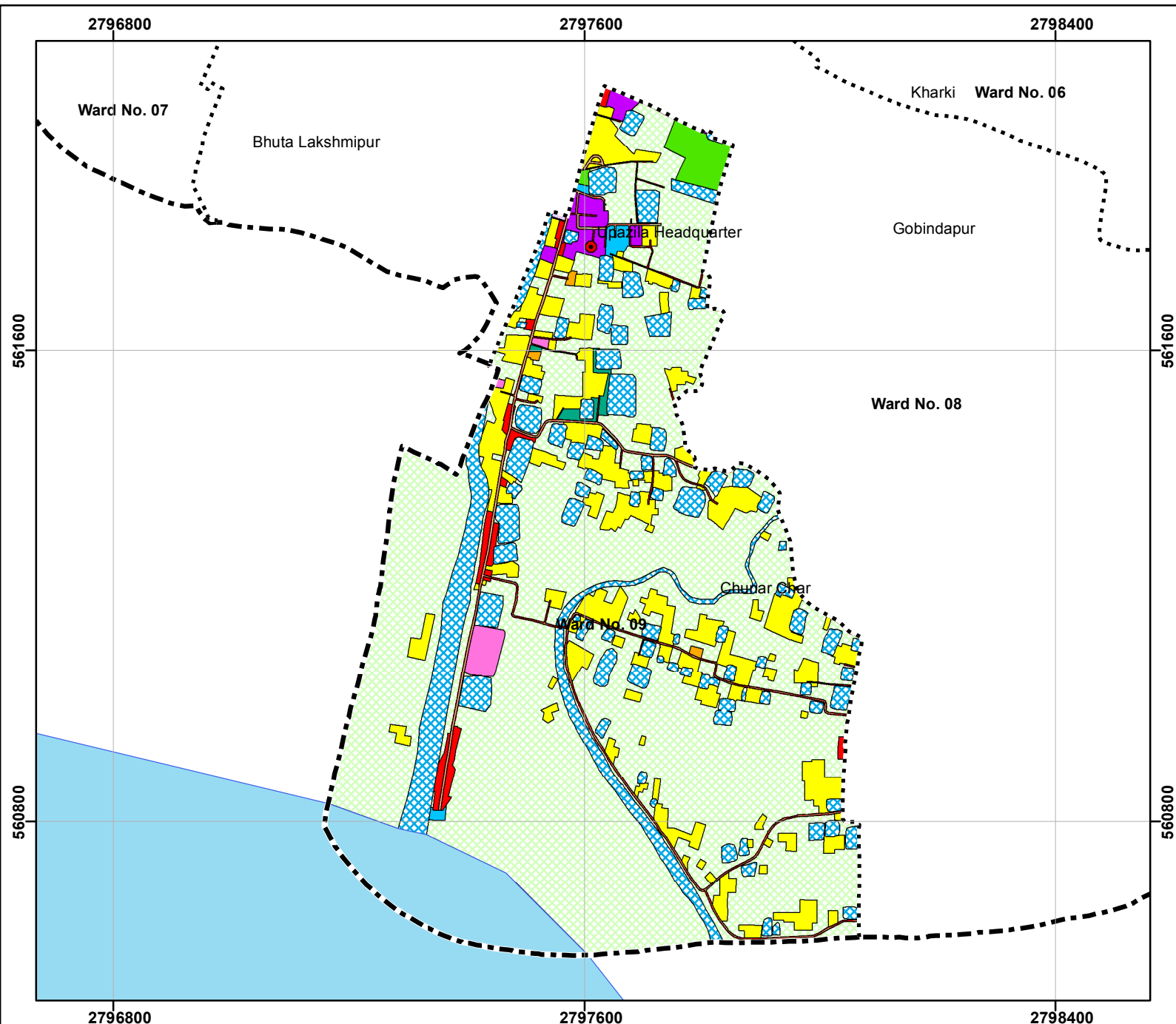
Ward No. 9 is important for poultry farms, agriculture land, commercial establishment, educational facilities, transportation services and residential development. Total planning area of the Ward is 191.69 acres. In the total area, agriculture use is 37.09 acres; residential development 47.36 acres, education and research 3.54 acres, circulation network 20.27 acres, transportation services 1.76 acres and water body 34.36 acres. Other uses are negligible.

**Table-14.33: Existing and proposed landuse**

Landuse category	Area in acre			
	Existing	%	Proposed	%
Agriculture	129.07	67.33	37.09	18.06
Commercial	1.86	0.97	0	0
Circulation Network	4.56	2.38	20.27	9.87
Community Facilities	0.24	0.13	2.50	1.22
Education & Research	2.08	1.09	3.54	1.72
Industrial area	0.00	0.00	0	0
Mixed Use	0.00	0.00	36.96	18.00
Non government Office	0.05	0.03	0	0
Open space	0.56	0.29	8.30	4.04
Recreation	0.62	0.32	0	0
Residential area	23.69	12.36	47.36	23.06
Rural Settlement	0.00	0.00	1.08	0.53
Water Body	27.09	14.13	34.36	16.73
Government Office	0.62	0.32	12.07	5.88
Transportation Facilities	1.25	0.65	1.76	0.85
Utility Services	0	0	0.06	0.03
<b>Total</b>	<b>191.69</b>	<b>100.00</b>	<b>191.69</b>	<b>100.00</b>

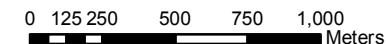


**Map 14.25 Existing land use of Ward No.09**



**SCALE**

1:9,500



**LEGEND**

**Admin Point**

- Paurashava Office
- Union Parishad Office
- Upazila Headquarter

**Boundary Line**

- Paurashava Boundary
- Ward Boundary

**Existing Landuse**

- Residential
- Agriculture
- Waterbody
- Educational Facilities
- Commercial
- Industrial
- Education and Research
- Community Service
- Service Activity
- Governmental Services
- Non Government Services
- Recreational Facilities
- Mixed Use
- Circulation Network
- Transport and Communication
- Forest
- Urban Green Space
- Vacant Land
- Miscellaneous/Others
- Restricted

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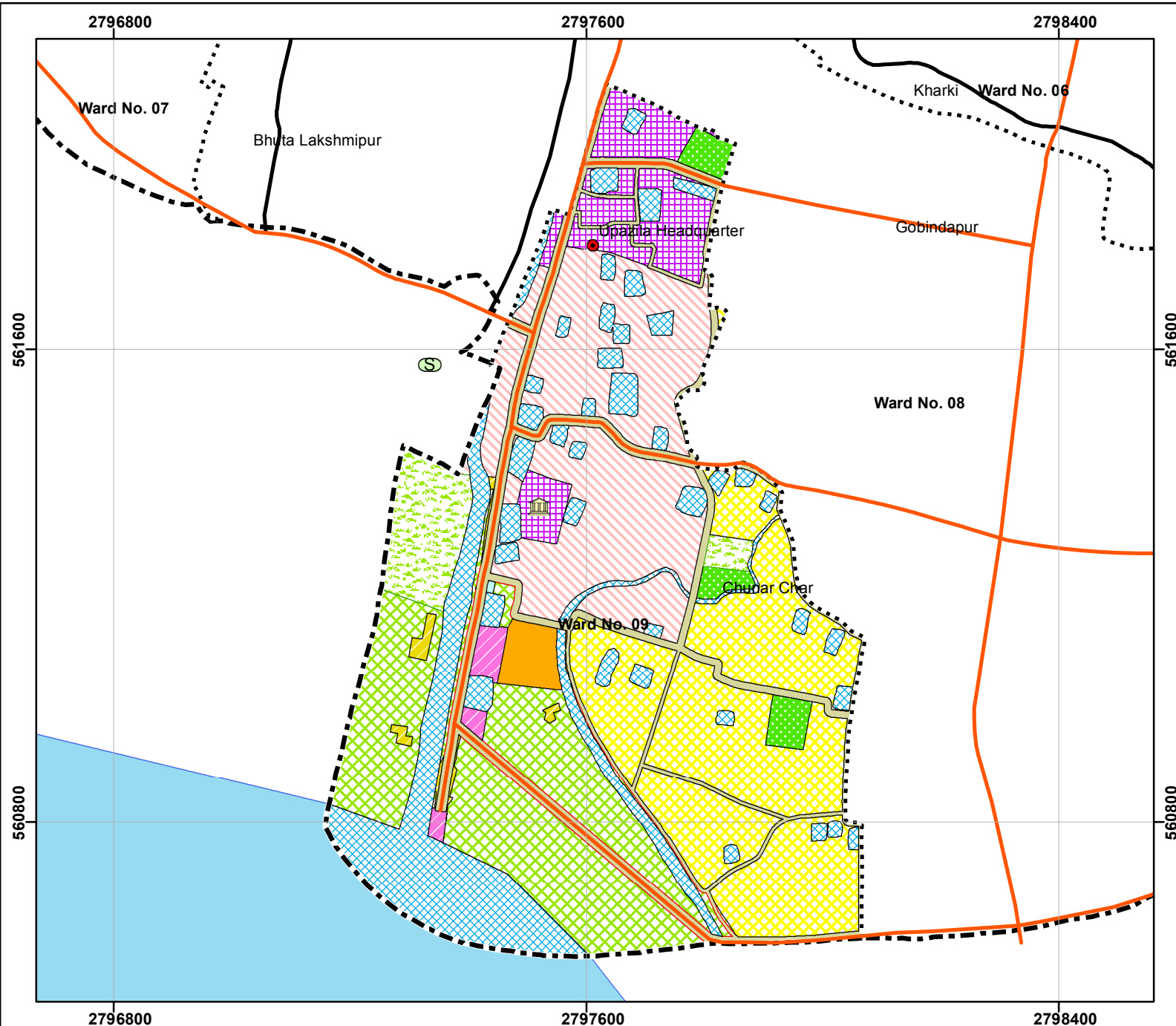
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Package No: 11 (Barisal Region)

**SCPL** CONSULTANT  
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1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
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Map 14.26

Proposed land use of Ward No.09



## SCALE

1:9,500

0 125 250 500 750 1,000  
Meters

## LEGEND

- Planning Area Boundary
- Paurashava Boundary
- Ward Boundary
- Paurashava Office
- Union Parishad Office
- Upazila Headquarter
- Bus Terminal
- ☆ Central Graveyard
- Central Park
- Industrial Estate
- Neighbourhood Center
- Resettlement Zone
- Truck Terminal
- Upazila Hospital
- Upazila Stadium

## Major Services

## Proposed Landuse

- Urban Residential Zone
- Rural Settlement
- Commercial Zone
- Mixed Use Zone
- General Industrial Zone
- Heavy Industrial Zone
- Government Office
- Education & Research
- Agricultural Zone
- Waterbody
- Open Space
- Recreational Facilities
- Circulation Network
- Transportation Facilities
- Utility Services
- Health Services
- Community Facilities
- Historical & Heritage Site
- Restricted Area
- Overlay Zone
- Urban Deferred
- Forest
- Beach
- Miscellaneous

## Major Road

- Primary Road
- Secondary Road

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Mehendiganj Upazila, Barisal District



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CONSULTANT  
SCPL Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
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### Proposed Circulation Network

At present, 8.60 km. roads are in the Ward No. 9. Among total length, 0.86 km. katcha, 5.37 km. semi-pucca and 2.38 km. pucca roads. In the plan, total length of the proposed road is 6259.30 meter (6.26 km.).

**Table-14.341: Proposed Road**

Road ID	Road Proposal	Road type	Road Width (ft)	Length (m)	Phasing
PRdP 19	Widening	Primary Road	60	1033.21	Phase 01
PRdS 91	Widening	Secondary Road	40	209.17	Phase 01
PRdS 114	Widening	Secondary Road	40	0.02	Phase 01
PRdS 114	Widening	Secondary Road	40	16.56	Phase 01
PRdT 116	Widening	Tertiary Road	20	103.03	Phase 01
PRdT 117	Widening	Tertiary Road	20	40.41	Phase 01
PRdT 121	Widening	Tertiary Road	20	155.06	Phase 01
PRdS 122	Widening	Secondary Road	40	154.69	Phase 01
PRdS 123	Widening	Secondary Road	40	42.23	Phase 01
PRdT 124	Widening	Tertiary Road	20	807.19	Phase 03
PRdP 129	Widening	Primary Road	60	353.22	Phase 01
PRdT 146	Widening	Tertiary Road	20	69.22	Phase 01
PRdT 147	Widening	Tertiary Road	20	101.14	Phase 01
PRdT 224	Widening	Tertiary Road	20	105.29	Phase 03
PRdP 225	Widening	Primary Road	60	0.05	Phase 03
PRdP 226	Widening	Primary Road	60	206.05	Phase 03
PRdP 227	New Road	Primary Road	60	618.00	Phase 03
PRdP 231	New Road	Primary Road	60	47.25	Phase 03
PRdP 235	Widening	Primary Road	60	122.44	Phase 01
PRdP 236	New Road	Primary Road	60	121.14	Phase 03
PRdP 237	Widening	Primary Road	60	17.89	Phase 01
PRdS 239	Widening	Secondary Road	40	113.42	Phase 01
PRdT 245	Widening	Tertiary Road	20	140.04	Phase 01
PRdS 254	New Road	Secondary Road	40	321.96	Phase 03
PRdS 256	Widening	Secondary Road	40	284.31	Phase 01
PRdS 257	Widening	Secondary Road	40	1.11	Phase 01
PRdS 258	Widening	Secondary Road	40	554.39	Phase 01
PRdT 259	New Road	Tertiary Road	20	255.14	Phase 03
PRdT 260	New Road	Tertiary Road	20	266.00	Phase 03
<b>Total</b>				<b>6259.63</b>	

### Proposed Drain

At present, 0.11 km. man-made pucca drain and 8670.67 meter natural canal (called Varanir khal) is in this Ward. Total 6.79 km drains have been proposed in this ward.

### Proposed Water and Gas Supply Line

It is proposed to install a network based water supply system by exploring fresh water aquifers and the consultant proposed 4.30 km water supply network in this ward.

It is proposed to install a piped gas supply network to facilitate the households. There is no existing gas supply network in this ward and the plan proposes 3.83 km network to develop during the project period and the whole network will be developed during second phase.

### Proposed Services

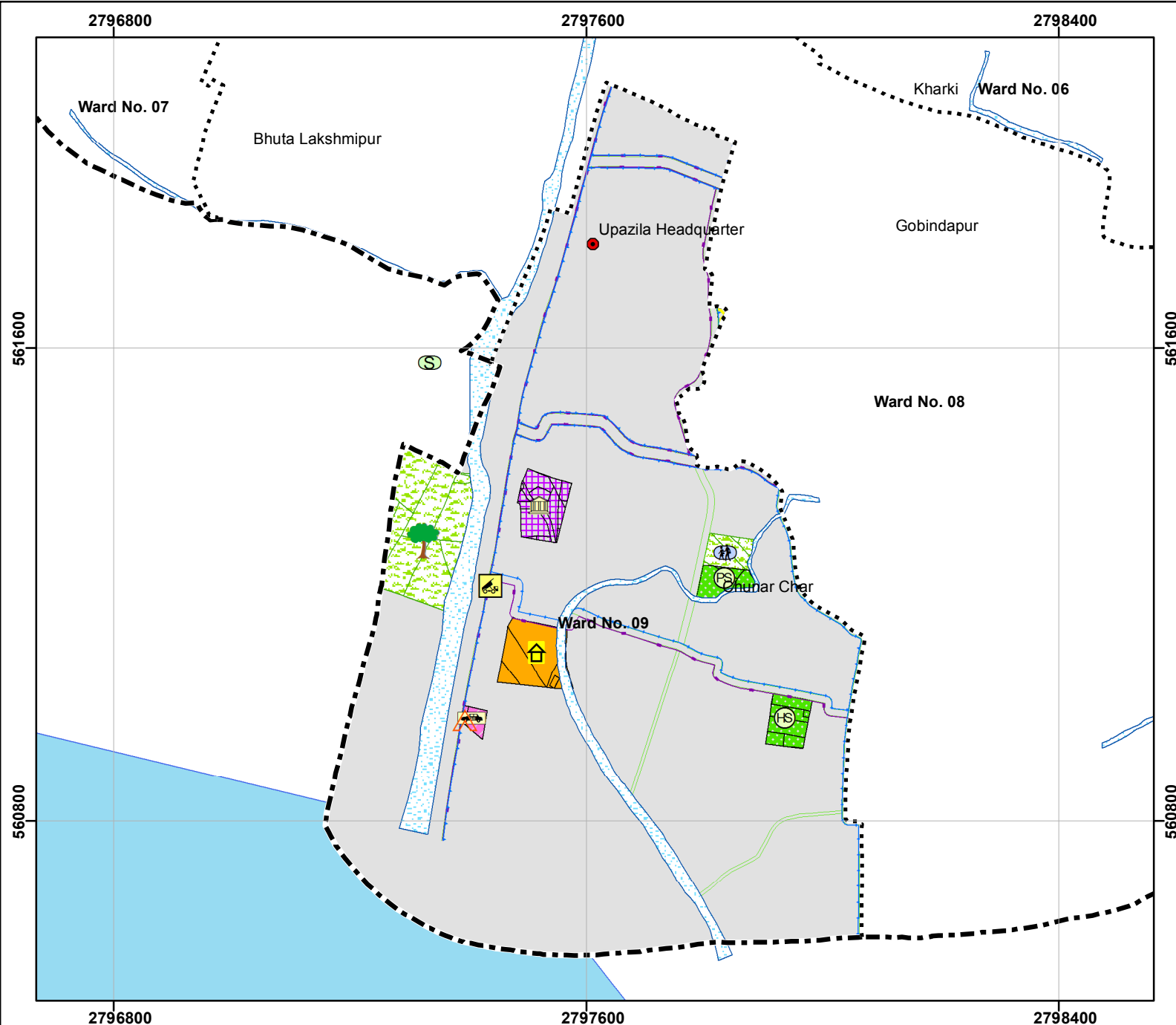
The Ward will be new urban area in future. Important facilities like playground and park are being proposed in this Ward. Cyclone center will cover 2.49 acres of land and park 7.30 acres of land. Detail is presented in the following table.

**Table-14.35: Proposed Specific urban services (with Plot Schedule)**

Type of Facilities	Mouza Name	Plot No.	Area (acre)
Ward Center Complex/ Neighborhood Center	Chunar Char_081_00	382-286,288-396,401-404,1162	2.01
Cyclone Center	Chunar Char_081_00	419,435,436,1150-1152	2.49
Neighbourhood Park	Chunar Char_081_00	410,1111-1115,1143,1144,1169-1172,1176	7.30
Shishu Park	Chunar Char_081_00	182,183	0.44
High School	Chunar Char_081_00	498,499,503-506,515	1.35
Primary School	Chunar Char_081_00	330,340-343	0.92
Play Ground	Chunar Char_081_00	221-222,330,340-343,1135	1.00
Rickshaw/ CNG Stand	Chunar Char_046_00	416,419	0.38
Waste Transfer Station	Chunar Char_081_00	407,408,1147	0.06

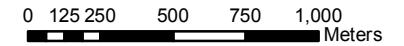
Map 14.27

# Proposed Urban Services, Drainage, Water and Gas Supply Networks of Ward No. 09



SCALE

1:9,500



## LEGEND

- |  |   |
|--|---|
| <p><b>Boundary Line</b></p> <ul style="list-style-type: none"> <li>— Paurashava Boundary</li> <li>- - - Ward Boundary</li> </ul> | <p><b>Proposed Utility Network</b></p> <ul style="list-style-type: none"> <li>— Water Supply Network</li> <li>— Gas Supply Network</li> <li>— Proposed Drain</li> </ul> |
|--|---|
- 
- Proposed Services**
- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>Bus Terminal</li> <li>CNG/Rickshaw Stand</li> <li>Central Cremation</li> <li>Central Graveyard</li> <li>Central Park</li> <li>Cinema/Theater Hall</li> <li>College</li> <li>Cyclone Shelter</li> <li>Dumping Station</li> <li>Electric Sub-station</li> <li>Waste Transfer Station</li> <li>Filling Station</li> <li>Fire Service</li> <li>Helipad</li> <li>High School</li> <li>Housing Estate</li> <li>Industrial Estate</li> <li>Low Cost Housing</li> <li>Central Eidgah</li> <li>Central Mosque</li> <li>Neighbourhood Center</li> </ul> | <ul style="list-style-type: none"> <li>Neighbourhood Market</li> <li>Neighbourhood Park</li> <li>Muktijoddha Park</li> <li>Shishu Park</li> <li>Muktijoddha Complex</li> <li>Overhead Tank</li> <li>Passenger Shed</li> <li>Playground</li> <li>Police Box/Outpost</li> <li>Police Station</li> <li>Post Office</li> <li>Primary School</li> <li>Public Gathering</li> <li>Public Library</li> <li>Resettlement Zone</li> <li>Slaughtering House</li> <li>Super Market</li> <li>Sweepers Colony</li> <li>Telephone Exchange</li> <li>Truck Terminal</li> <li>Upazila Hospital</li> <li>Upazila Stadium</li> <li>Vocational Institute</li> <li>Water Supply Station</li> <li>Wholesale Market</li> </ul> |
|--|---|

PREPARATION OF MASTER PLAN FOR MEHENDIGANJ PAURASHAVA  
Mehendiganj Upazila, Barisal District



Government of the People's Republic of Bangladesh  
Ministry of Local Government, Rural Development and Cooperatives  
Local Government Division

Local Government Engineering Department (LGED)  
Upazila Towns Infrastructure Development Project (UTIDP)  
Package No: 11 (Barisal Region)

CONSULTANT  
**SCPL** Sheltech Consultants (Pvt.) Ltd.  
1/E/2, Paribagh (Mazar Road), Shahbagh,  
Dhaka - 1000  
scpl.mail@gmail.com  
In Association with

#### 14.4 Implementation Guidelines

Implementation of the Ward Action Plan should follow the development control procedures for determining planning applications by using simple and standard planning application procedures. A simple application will be assessed quickly against a given set of criteria, essentially consisting of the following:

1. The proposed development confirms all respects mentioned in the policies of the Structure Plan and Urban Area Plan.
2. The usage identified in the application is being considered appropriate for inclusion in an area demarcated in the Ward Action Plan. An indicative list of uses considered appropriate is below:
  - buildings are a maximum of four-storied;
  - no single building or related group of buildings is 1000 sq. m. of gross floor area; and
  - access and utility corridors are not impinged.

Provided that the planning application meets above criteria and the application will be approved and planning permission is given.

Planning applications that do not meet the above criteria or are considered marginal cases (to be known as an invalid simple application) will be subjected to a more detailed examination in considering standard procedure.

Following development and landuses are indicative of those appropriate in the Ward Action Plan:

1. Residential development up to four-storied.
2. Small-scale shops.
3. Primary schools / kindergartens.
4. Mosques (or other religious facilities) servicing a local area plus small graveyard if required.
5. Recreational development.
6. Local health facilities (clinics rather than hospital).
7. Small-scale office (may be public or private) development.
8. Workshops (small-scale workshops with operations only) in daylight hours and low traffic generators.
9. Open space (playgrounds, parks, etc.)
10. Access roads.
11. Utilities; and
12. Drainage channels.

When considering a standard planning application within areas zoned for Ward Action Plan, the Paurashava will need to undertake a two-stage process. **First**, before considering site specific issues, the Paurashava will need, on receipt of the planning application, to consider the wider context and determine issues relating to the overall area into which the application falls. The Paurashava will need to:

1. Determine the boundaries of the wider area. These will usually be formed by some distinctive natural or man-made feature, for example a khal, river or road which provides access into the area. Such areas will vary in shape and size.

2. Identify and assess the existing access and circulation arrangements of the area. Preferably, the area should be served by 10 meter access roads which run through the entire area providing access to all Wards. These access roads should be linked to local roads. If this is not the case and access roads of sufficient width, are not available, the Paurashava shall consider whether or not further development is appropriate. New development may result in increased vehicular congestion and increased demand for utility services, where this could be difficult to supply.
3. Identify the existing landuses within these boundaries. In Ward Action Plan, the predominant use will be residential but other uses will present in the vicinity of the application.

In these instances, the Paurashava will consider refusal of application or at least a delay until access and utility provision can be made. This may require acquisition of land.

4. Identify the need for community facilities (schools, clinics, religious facilities, open spaces, etc.) or plots for utility services. Do sufficient already exist or should more land be sought for increased provision to the existing population? In this latter instance, the Paurashava will again need to consider acquisition of land including the land, either in part or in full, under consideration for development.
5. Consider areas of high landscape quality in the locality which should be preserved and the potential impact of the proposed development on those areas.

If there is doubt in the mind of the Paurashava as to the answers to the above questions, the planning application will require a more detailed assessment.

**Secondly**, the Paurashava will need to consider issues relating to the individual site and application. These can only be determined once the overall context of the area has been established. The questions the Paurashava will need to ask are:

1. Can the proposed use of land be considered a “good neighbour”, defined in this situation as a use which can be carried out in any residential area without detriment to the amenities of the area by reason of noise, vibration, smell, fumes, smoke, soot, ash, dust or grit?
  - Is the use likely to generate excessive volumes of traffic which either cannot be accommodated on the existing road system or which are likely to disturb, its neighbours?
  - Will the working hours of the use (if non-residential) cause a disturbance to residential neighbours (with working late in to the evening or night or 24-hours operations likely to cause a nuisance and therefore not being permitted)?
  - If yes to any of the above, the application should be rejected and directed to a more suitable location.
2. Is the use in conformity with the surrounding uses or with those that are compatible with a site in a predominantly residential area?
3. Does the proposed boundary of the application impinge upon a road corridor, utility reserve or drainage channel reserve? If it does, it should be relocated outside such a reserve, even if this constitutes a reduction in the overall size of the plot. If excessive land will be lost as a result, implying that the development can no longer proceed, the application will need to be rejected.
4. Does the application provide for adequate site access from, preferably as minimum, a 6 meter access road? Does it have sufficient on-site or off-site parking facilities to

cater for the potential demand? If it does not, the plans should be amended or the application refused.

5. Will the development destroy landscape unique to the location? If it does, its design will need to be altered to protect the landscape, or the application will need to be refused.
6. Is the scale of development proposed in keeping with its neighbours? If too large, it should be reduced. Does it impinge up on the privacy of others? If it does, the design / layout / size should be changed. If it cannot be appropriately modified, it should be refused.
7. Will the proposed development negatively impact upon utility provision in the area i.e. will it overload the system for some reason (like high electricity demand or high water consumption)? Will pollution from the proposed activities cause a problem in the neighbourhood? If this is likely to occur, the application should be refused.

If the application is for a major development, have the utility authorities being contacted to give their assessment and approval for the infrastructure works that will be required?

Given the existing situation in some of the Ward Action Plan, where for example, access is already poor or there is insufficient space available to provide adequate infrastructure, the Paurashava will aim to ensure that its decision will not make the situation worse.

The Paurashava will need to process each application within one month, at the end of which time they will either need to:

- approve the application unconditionally;
- approve the application subject to a number of conditions; or
- refuse the application.

## **14.5 Concluding Remarks**

### **14.5.1 Introduction**

The Master 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 structure of sub-system in space over the medium term and identifies broad programs of direct action especially related to infrastructural development, institutional issues as well as broad financing strategies. The plan also outlines more specific Ward-wise development policies to guide development over the medium terms. One major objective of preparing Master 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 anticipated volume of growth. Other purpose of preparing Master Plan is to facilitate the development control function. It shows the broad landuse zones on a more detailed scale of maps as derived from Structure Plan. The plan provides details of landuse zoning and building controls, the development control function becomes easier to implement with a Master Plan. It also shows land reservations required for essential uses and major infrastructure development.

### **14.5.2 Comparative Advantage of Master Plan**

Comparative advantages of Master Plan rather than Ward Action Plan are:

- The term Master Plan deserves wider sense than the term Ward Action Plan. Policies and strategies are being prescribed in the Master Plan based on the existing trend of development and growth potentiality. The Ward Action Plan only emphasizes on those components immediate action is being necessary.

- The Master Plan is for the Paurashava as a whole but the Ward Action Plan is only for individual Ward. All studies relevant and guided by the ToR is being followed for the preparation of Master Plan at first and based on those studies and findings the Ward Action Plan is being designed.
- The Ward Action Plan is mostly relevant with the implementation criteria; it is called the implementation of Master Plan. The micro-component which is going to be implemented according to the Ward Action Plan is guided by the Master Plan. Therefore, any problem arises during the implementation phase of Ward Action Plan will be resolved through the guideline prescribed in the Master Plan.

### **14.5.3 Addressing Proposals for Mitigation of Identified Issues**

- For improvement, construction and re-construction of local roads, bridge and culvert and box culvert, a close coordination among the authorities named Paurashava, LGED, PDB, REB and WDB will be maintained. This coordination is necessary from the preparation of budget to implementation of the component.
- In plan implementation phase, people's participation will be encouraged. The process as prescribed in the Structure Plan will be initiated for this purpose.
- A buffer will be needed for every important development especially for housing area, stadium and Bus terminal.

In preparing the proposed construction program priorities have been assigned to the works mostly in the various drainage areas taking the following factors into account:

- the severity of flooding in terms of depth, duration and frequency;
- the views of Paurashava officials on the relative needs of different areas;
- The engineering relationship of the proposed phase of construction to the preceding and subsequent phases;
- the estimated time required to execute the proposed works having regard to the capacity and capability of contractors and the availability of materials;
- the estimated amount of the capital investment required.

In general, aim should be to implement the Master Plan at a continuous steady rate throughout the 20 years period and based upon the above considerations, the works have been grouped broadly into four main stages:

- The first stage accords priority to improve the Traffic Management and alleviation of flooding in the central area of the Paurashava.
- The second stage in general covers less densely developed areas with the improvement of transport services.
- The third stage covers drainage congestion areas for improvement.
- The fourth stage will be the rain water harvesting for supplying drinking water to the Paurashava dwellers when scarcity will be generated.

### **14.5.4 Conclusion**

To ensure that the procedures are being followed, the Paurashava will need to monitor the situation. This monitoring is required to ensure that:



- no illegal development is taking place i.e. no-one is attempting to develop without submitting an application; and
- approved developments are built in accordance with the approved plans.
- development will take places according to the Master Plan.

## *Annexure*

## Team Composition of Master Plan Preparation

### A.1 Personnel of the Project Management Office (UTIDP, LGED)

SI No.	Name	Position
1	Md. Moslah Uddin	Project Director
2	Md. Manzurul Islam	Deputy Project Director
3	Syed Shahriar Amin	Urban Planner
4	Ziaul Hoque	Urban Planner
5		Urban Planner

### A.2 Personnel of the Consultancy Firm Sheltech Consultants (Pvt.) Ltd.

#### A. Key Personnel:

SI No.	Name	Position
1	Sultana Dilruba Aziz	Team Leader
2	Afsana M Kamal	Deputy Team Leader
3	Rukhsana Parveen	Urban Planner
4	Dr. Md. Altaf Hossain	Urban Planner
5	A.K.M. Mahfuzul Kabir	Demographer/Statistician
6	Dr. Santi Ranjan Hawlader	Urban Development Economist
7	Lipika Khan	Transport Planning Expert
8	Mohammed Iqbal Hossain	Municipal Engineer
9	Mohammad Ferozuddin	Architect Planner
10	Mohammad Quadiruzzaman	Environmental Analyst
11	Tripal Kumar Sen	GIS Specialist
12	Md. Hefzul Bari	Legal Expert

#### B. Supporting Stuff:

SI No.	Name	Position
1	Mohammad Helal	Office Manager
2	M.A. Quayum	Computer Operator
3	Md. Jhangir Hossain	Computer Operator
4	Raihanul Islam	CAD Operator
5	Zakaria Ahmed	CAD Operator
6	ANM Shafiqul Alam	Surveyor
7	Aolad Hossain	Surveyor

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার  
স্থানীয় সরকার, পল্লী উন্নয়ন ও সমবায় মন্ত্রণালয়  
স্থানীয় সরকার বিভাগ  
(গৌর-৩ শাখা)

"প্ৰজ্ঞাপন"  
=====

১২/১০/১৯৯৮ইং।  
তারিখ: ১৭/১০/১৯৯৮ইং।

এস, আর, ড, নং ১১৮-এস/১৮-মেহেতু সরকারবিশাল জেলার মেহেন্দিগঞ্জ থানার নিম্ন তফসিলে  
উল্লিখিত শহর এলাকা সমূহকে মিউনিসিপ্যালিটি ঘোষণা করার প্রস্তাব করিলেনঃ

এবং মেহেতু সরকার *Declaration and Alteration of Municipalities*  
১৯৭০ অচঃপঃ উত্তম *Rule* বলিয়া উল্লিখিত এর *Rule-১* এর অধীন প্রস্তাবিত

মিউনিসিপ্যালিটি ঘোষণার ব্যাপারে পরামর্শ বা আগতি গ্রহণ করা হয়।  
সংশ্লিষ্ট ডেপুটি কমিশনারকে নির্দেশ প্রদান করা হয়।  
বিষয়ে প্রয়োজনীয় ব্যবস্থা গ্রহণ করা হয়।

এবং মেহেতু প্রস্তাবিত মিউনিসিপ্যালিটি ঘোষণার ব্যাপারে ডেপুটি কমিশনারের  
বিবেচনা করা হয়।  
সংশ্লিষ্ট ডেপুটি কমিশনারকে নির্দেশ প্রদান করা হয়।

অতঃপঃ মেহেতু উত্তম *Rule* এর *Rule-১* এ প্রদত্ত ক্ষমতা বলে সরকার ১১।

অতঃপঃ ১১।  
১৯৯৮ইং তারিখ ১১।

মোতাশ্রয়ঃ ১১।  
১৯৯৮ইং তারিখ ১১।

উল্লিখিত			
ক্রমিক নং	ই. বি. নং	থানার নাম	পাশ নং
১।	১১।	চন্দ্রপুর	৮১
"	"	গোবিন্দপুর	৮০
"	"	কালিকাপুর মেহেন্দিগঞ্জ	৮৩
"	"	বরহাগলা (এং)	৮১
"	"	খয়রা	৮১
"	"	দুর্গাপুর	৮১
"	"	সোনারখী	৮৬
"	"	আম্বিকাপুর	৮৬
"	"	ভূতালখিপুর	৮৬

রাষ্ট্রপতির আদেশক্রমে  
স্বাক্ষর:-

আবদুস সাভার মিত্র  
উপ-সচিব (গৌর)

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার  
স্থানীয় সরকার, পল্লী উন্নয়ন ও সমবায় মন্ত্রণালয়  
স্থানীয় সরকার বিভাগ  
(গৌর-৩ পথ)  
পুণ্ড্রপদ

১২/১০/১৯৯৮ ইং ।  
তারিখ: ---২৭/০৬/১৯০০ বঙ্গাব্দ।

এস, আর, ড, নং ২২৮-আইন/৯৮-মেহেতু পরবর্তীকালে জেলার মেহেন্দিগঞ্জ থানার বিদ্যুৎ তরঙ্গিত  
উল্লিখিত শহর এলাকা সমূহকে মিউনিসিপ্যালিটি ঘোষণা করার প্রস্তাব করিলেন:

এবং মেহেতু সরকার *Declaration and Alteration of Municipality rules*  
১৭৭৫ অর্ডার উত্তর *Rules* বলিয়া উল্লিখিত এর *rule-3* এর অধীন প্রস্তুত  
মিউনিসিপ্যালিটি ঘোষণার ব্যাপারে পরামর্শ বা আপত্তি আহবান করিয়া পাবলিক নোটিশ জারীর জন্য  
সংশ্লিষ্ট ডেপুটি কমিশনারকে নির্দেশ প্রদান করিয়াছিল এবং তদানুযায়ী ডেপুটি কমিশনার উক্ত  
বিষয়ে প্রয়োজনীয় ব্যবস্থা গ্রহণ করিয়া প্রতিবেদন দাখিল করিলেন:

এবং মেহেতু প্রস্তুত মিউনিসিপ্যালিটি ঘোষণার ব্যাপারে ডেপুটি কমিশনারের প্রতিবেদন  
বিশ্লেষণ করিয়া সরকার উক্ত *Rules* এর *rule-4(a)* এর অধীন উল্লিখিত শহর এলাকা  
সমূহকে মিউনিসিপ্যালিটি ঘোষণার জন্য চূড়ান্ত সিদ্ধান্ত গ্রহণ করিয়াছেন:

অতএব, মেহেতু উক্ত *Rules* এর *rule-5* এ প্রদত্ত ক্ষমতা বলে সরকার প্রজ্ঞা

এতদ্বারা বিদ্যুৎ তরঙ্গিত জুও শহর এলাকা সমূহ সমন্বয়ে আগামী ৩০শে আশ্বিন ১৪০০ বাংলা  
মোতাবেক ১৪ অক্টোবর ১৯৯৮ ইং তারিখ হইতে মেহেন্দিগঞ্জ মিউনিসিপ্যালিটি গঠনের ঘোষণা  
করিল।

ক্রমিক নং	ইউনিটের নাম	দোজার নাম	জে, এল, নং	দাগ নং
১।	মেহেন্দিগঞ্জ।	চুনারচর	৮১	সকল
"	"	গোবিন্দপুর	৮০	"
"	"	কালিকাপুর মেহেন্দিগঞ্জ	৮৬	২০০৭-০২৮৬
"	"	চরহোগলা (অংশ)	৮১	সকল
"	"	খরকী	৭৯	"
"	"	দুর্গাপুর	৮৭	"
"	"	সোনিমুখী	৮৮	"
"	"	আম্বিকাপুর	৮৯	"
"	"	ভুতলিখাপুর	৮৩	"

রাষ্ট্রপতির আদেশক্রমে  
স্বাক্ষর/-  
(আবদুস সাভার মিল্লা )  
উপ-সচিব (গৌর)

পাতা নং - ২			
ক্র.সং.	সংক্ষেপিত	ক	১
১		৬	১৬ নং মেহেন্দিগঞ্জ (কালিকাপুর) মৌজার আংশিক। কুটারের সীমানা :- উত্তরে- কালিকাপুর ও দুর্গাপুর মৌজা। দক্ষিণে- খরলী মৌজার সীমানা। পূর্বে- চান্দপুর ইউনিয়নের বাগমারী দক্ষিণের চর মৌজার এবং মেহেন্দিগঞ্জ ইউনিয়নের রত্নাক্ষী মৌজার সীমানা। পশ্চিমে-মেহেন্দিগঞ্জ মৌজার বাগী অংশ এবং কৈতুননদী দ্বারা।
২	২	৬	১৭, ১৮-১৯ নং খরলী মৌজা সম্পর্কিত। কুটারের সীমানা :- উত্তরে মেহেন্দিগঞ্জ ও কালিকাপুর মৌজা বাগমারী, পশ্চিমে- কালিকাপুর মৌজা বাগমারী, দক্ষিণে- চান্দপুর ও গোবিন্দপুর মৌজা বাগমারী এবং পূর্বে- রত্নাক্ষী ও সান্দকপুর মৌজা বাগমারী।
৩	৩	৬	১৭, ১৮-২০ নং কালিকাপুর মৌজার আংশিক। ১৭, ১৮- ৪০৮, ৪০৯, ৪১০, ৪১১ নং দাগের পূর্ব সীমানা, ৪০৮, ৪০৯, ৪১০ দাগের দক্ষিণ সীমানা, ৪০০, ৪০১, ৪০২, ৪০৩ নং দাগের পশ্চিম সীমানা, ৪০৯, ৪১০ নং দাগের দক্ষিণ সীমানা দ্বারা মৌজা আংশিক সীমানা বিভক্ত। কুটারের সীমানা :- উত্তরে গোবিন্দপুর ও মেহেন্দিগঞ্জ (কালিকাপুর) মৌজা বাগমারী। দক্ষিণে- চান্দপুর মৌজার চর মৌজা ও কালিকাপুর মৌজার আংশিক এবং খরলী মৌজার বাগী ও খলিল সরদারের বাগীর উত্তর পার্শ্ব হইয়া কালিকাপুর বেগমারী বাগীর দক্ষিণ হইয়া আংশিক কালিকাপুর মৌজার উত্তর হইয়া সান্দকপুর বাগীর উত্তর হইয়া খলিল সরদারের বাগীর দক্ষিণের দ্বারা। পশ্চিমে- পরগরিয়া নদী।
৪	৪	৬	১৭, ১৮-২০ নং গোবিন্দপুর মৌজা সম্পর্কিত। ১৭, ১৮-২০ নং কালিকাপুর মৌজার আংশিক। ১৭, ১৮- ৪০৮, ৪০৯, ৪১০, ৪১১ নং দাগের পূর্ব সীমানা, ৪০৮, ৪০৯, ৪১০ দাগের দক্ষিণ সীমানা, ৪০০, ৪০১, ৪০২, ৪০৩ নং দাগের পশ্চিম সীমানা, ৪০৯, ৪১০ নং দাগের দক্ষিণ সীমানা দ্বারা মৌজা আংশিক সীমানা বিভক্ত। কুটারের সীমানা :- উত্তরে গোবিন্দপুর ও মেহেন্দিগঞ্জ (কালিকাপুর) মৌজা বাগমারী। দক্ষিণে- চান্দপুর মৌজার চর মৌজা ও কালিকাপুর মৌজার আংশিক এবং খরলী মৌজার বাগী ও খলিল সরদারের বাগীর উত্তর পার্শ্ব হইয়া কালিকাপুর বেগমারী বাগীর দক্ষিণ হইয়া আংশিক কালিকাপুর মৌজার উত্তর হইয়া সান্দকপুর বাগীর উত্তর হইয়া খলিল সরদারের বাগীর দক্ষিণের দ্বারা। পশ্চিমে- পরগরিয়া নদী।

B-4

ସେହିଭଳି ଗାନ୍ଧୀ

[illegible]

ওয়ার্ডের পরিচালনা :- উল্লেখ- কলকাতা বিশ্ব বৌদ্ধ পরিষদ এবং ওয়ার্ডের বৌদ্ধ টি. টি. ডি. মি - ২৪

সাদেবপুর বৌদ্ধার সিংহা পর্বত : এই ভ্রমের পরিণতি - সুনিষ্ঠা বনে রি চর : বৌদ্ধার সিংহা ।  
দক্ষিণে - সাদেবপুর বৌদ্ধার সিংহা পর্বত ।

সহকারী ডিনিমিটেশন লকিনার  
মেম্বেরি পত্র বোম্বাই

সহকারী কমিশনার হুগলি  
মে ২৫/৫/১৯৩৬, বরিশাদ।

জিনিফিটেশন অফিসার  
মেম্বারগণের পৌরপতা

৩  
 দ্বাবা নির্বাহী অফিসার  
 মেহেন্নিগঞ্জ, বরিশাল।



# Annexure- C

## a. Urban Residential Landuse

### Landuse Permitted

The following uses in the tables are proposed to be applicable for this zone only.

**Table No. C.1: Landuse Permitted**

Permitted
Artisan's Shop
Assisted Living or Elderly Home
Confectionery Shop
Barber Shop
Child Daycare \ Preschool
Cleaning \ Laundry Shop
Communication Service Facilities
Communication Tower Within Permitted Height
Condominium or Apartment
Cottage
Cyber Café
Daycare Center (Commercial or Nonprofit)
Drug Store or Pharmacy
Employee Housing (Guards \ Drivers) \ Ancillary Use
General Store
Grocery Store
High School
Household Appliance and Furniture Repair Service (No Outside Storage)
Housing For Seasonal Firm Labor
Landscape and Horticultural Services
Mosque, Place Of Worship
Newspaper Stand
Nursery School
Orphanage
Eidgah
Photocopying and Duplicating Services (No Outside Storage)
Pipelines and Utility Lines
Playing Field
Primary School
Private Garages (Ancillary Use)
Project Identification Signs
Property Management Signs
Public Transport Facility

Source: Compiled by the Consultants

### Landuse Conditionally Permitted

Satellite Dish Antenna
Shelter (Passers By)
Shoe Repair or Shoeshine Shop (Small)
CBO Office
Special Dwelling
Temporary Tent
Temporary Pandle for Permitted Function
Newspaper Stand
Specialized School: Dance, Art, Music, Physically Challenged & Others
Transmission Lines
Urban-Nature Reserve
Utility Lines
Woodlot
Children's Park (Must Have Parking)
ATM Booth
Water Pump \ Reservoir
Monument (Neighborhood Scale)
Bill Payment Booth
Boarding and Rooming House
Dormitory
Memorial Structure (Ancillary)
<b>Neighborhood Center*</b> (Where Neighborhood Center exists)
<b>Permitted</b>
Community Center
Doctor \ Dentist Chamber
Cultural Exhibits and Libraries
Fast Food Establishment \ Food Kiosk
Flowers, Nursery Stock and Florist Supplies
Fitness Centre
Gaming Clubs
Departmental Stores
Retail Shops \ Facilities

\*Permission of Neighborhood Center Facilities in absence of formal neighborhood should be subject to Landuse Permit Committee

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The following uses may be permitted or disallowed in this zone after review and approval by the authority/committee following appropriate procedure while the application meets the criteria mentioned in the requirement.

**Table No. C.2: Landuse Conditionally Permitted**

Conditional	
Addiction Treatment Center	Temporary Rescue Shed
Amusement and Recreation (Indoors)	Guest House
Funeral Services	Slaughter House
Art Gallery, Art Studio \ Workshop	Static Transformer Stations
Automobile Driving Academy	Tourist Home or Resort
Beauty and Body Service	Market (Bazar)
Billiard Parlor \ Pool Hall	Optical Goods Sales
Book or Stationery Store or Newsstand	Outdoor Café
Building Maintenance \ Cleaning Services, No Outside Storage	Outdoor Fruit and Vegetable Markets
Bus Passenger Shelter	Community Hall
Graveyard \ Cemetery	Neighborhood Co-Operative Office
Coffee Shop \ Tea Stall	Overhead Water Storage Tanks
Correctional Institution	Row House
Courier Service	Paints and Varnishes Store
Crematorium	Parking Lot
Plantation (Except Narcotic Plant)	Patio Homes
Furniture & Variety Stores	Photofinishing Laboratory
Emergency Shelter	Post Office
Energy Installation	Postal Facilities
Garages	Sports and Recreation Club
Garden Center or Retail Nursery	Tennis Club
Fire Brigade Station	Flood Management Structure
Police Station	Telephone Sub Station
	Electrical Sub Station

Source: Compiled by the Consultants

**Restricted Uses**

All uses except permitted and conditionally permitted uses are restricted in this zone.

**b. General Industrial Zone****Landuse Permitted**

The following uses in the tables are proposed to be applicable for this zone only.

**Table No. C.3: Landuse Permitted**

Permitted	
Confectionery Shop	Police Box \ Barrack
Bank & Financial Institution	Fire \ Rescue Station
Bicycle Assembly, Parts and Accessories	Grocery Store
Blacksmith	Household Appliance and Furniture Repair Service
Bus Passenger Shelter	Machine Sheds
Communication Tower Within Permitted Height	Meat and Poultry (Packing & Processing)
Freight Transport Facility	Mosque, Place Of Worship
	Newspaper Stand

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Photocopying and Duplicating Services	Television, Radio or Electronics Repair (No Outside Storage)
Pipelines and Utility Lines	Transmission Lines
Printing, Publishing and Distributing	Truck Stop & Washing or Freight Terminal
Public Transport Facility	Utility Lines
Restaurant	Wood Products
Retail Shops \ Facilities	Woodlot
Salvage Processing	ATM Booth
Salvage Yards	Water Pump \ Reservoir
Satellite Dish Antenna	Effluent Treatment Plant
Sawmill, Chipping and Pallet Mill	Social Forestry
Shelter (Passers By)	

*Source: Compiled by the Consultants***Landuse Conditionally Permitted**

The following uses may be permitted or denied in this zone after review and approval by the authority/committee following appropriate procedure.

**Table No. C.4: Landuse Conditionally Permitted**

Conditional	
Amusement and Recreation (Indoors)	Lithographic or Print Shop
Appliance Store	Motor Vehicle Fuelling Station \ Gas Station
Plantation (Except Narcotic Plant)	Motorcycle Sales Outlet
Cyber Café	Outdoor Fruit and Vegetable Markets
Daycare Center (Commercial or Nonprofit)	Outside Bulk Storage
Doctor \ Dentist Chamber	Overhead Water Storage Tanks
Electrical and Electronic Equipment and Instruments Sales	Painting and Wallpaper Sales
Employee Housing	Paints and Varnishes
Energy Installation	Parking Lot
Fast Food Establishment \ Food Kiosk	Parking Lot (Commercial)
Garages	Private Garages
Grain & Feed Mills	Retail Shops Ancillary To Studio \ Workshop
Incineration Facility	Jute Mill
Super Store	

*Source: Compiled by the Consultants***Restricted Uses**

All uses except permitted and conditionally permitted uses.

**c. Commercial Zone (Business)**

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**Landuse Permitted**

Commercial office zone is mainly intended for supporting the official works. There are several functions that are permitted in this zone.

**Table No. C.5: Landuse Permitted**

Permitted	
Accounting, Auditing or Bookkeeping Services	Doctor \ Dentist Chamber
Billboards, Advertisements & Advertising Structure	Drug Store or Pharmacy
Agri-Business	Electrical and Electronic Equipment and Instruments Sales
Agricultural Sales and Services	Fast Food Establishment \ Food Kiosk
Ambulance Service	Freight Handling, Storage & Distribution
Antique Shop	Freight Transport Facility
Appliance Store	Freight Yard
Auction Market	General Store
Auditorium, Coliseum, Meeting Halls, and Conference Facilities, Convention	Grocery Store
Auto Leasing or Rental Office	Guest House
Auto Paint Shop	Hotel or Motel
Auto Parts and Accessory Sales (Indoors)	Inter-City Bus Terminal
Auto Repair Shop (With Garage)	Jewelry and Silverware Sales
Automobile Wash	Junk \ Salvage Yard
Automobile Sales	Super Store
Confectionery Shop	Market (Bazar)
Bakery or Confectionery Retail	Mosque, Place Of Worship
Bank & Financial Institution	Motorcycle Sales Outlet
Bar (Licensed)	Multi-Storey Car Park
Barber Shop	Newspaper Stand
Beauty and Body Service	Outdoor Fruit and Vegetable Markets
Bicycle Shop	Outdoor Recreation, Commercial
Billiard Parlor \ Pool Hall	Parking Lot (Commercial)
Book or Stationery Store or Newsstand	Pet Store
Building Material Sales or Storage (Indoors)	Photocopying and Duplicating Services
Bulk Mail and Packaging	Photofinishing Laboratory & Studio
Bus Passenger Shelter	Pipelines and Utility Lines
Cinema Hall	Post Office
Communication Service Facilities	Preserved Fruits and Vegetables Facility \ Cold Storage
Communication Tower Within Permitted Height	Printing, Publishing and Distributing
Computer Maintenance and Repair	Project Identification Signs
Computer Sales & Services	Property Management Signs
Conference Center	Public Transport Facility
Construction Company	Refrigerator or Large Appliance Repair
Courier Service	Resort
Cyber Café	Restaurant
Daycare Center (Commercial or Nonprofit)	Retail Shops \ Facilities
Department Stores, Furniture & Variety Stores	Salvage Processing
	Salvage Yards
	Satellite Dish Antenna
	Sawmill, Chipping and Pallet Mill
	Shelter (Passers By)

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Shopping Mall \ Plaza	Vehicle Sales & Service, Leasing or Rental
Slaughter House	Veterinarian Clinics, Animal Hospitals, Kennels and Boarding Facilities
Software Development	Warehousing
Sporting Goods and Toys Sales	Wood Products
Taxi Stand	Woodlot
Telephone Exchanges	ATM Booth
Television, Radio or Electronics Repair (No Outside Storage)	Water Pump \ Reservoir
Theater (Indoor)	Agro-Based Industry (Rice Mill, Saw Mill, Cold Storage)
Transmission Lines	Social Forestry
Utility Lines	

*Source: Compiled by the Consultants***Landuse Conditionally Permitted**

Some functions are permitted with some condition in this zone.

**Table No. C.6: Landuse Conditionally Permitted**

Conditional	
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
Trade Shows	Lithographic or Print Shop
Craft Workshop	Motor Vehicle Fuelling Station \ Gas Station
Plantation (Except Narcotic Plant)	Musical Instrument Sales or Repair
Energy Installation	Optical Goods Sales
Firm Equipment Sales & Service	Painting and Wallpaper Sales
Agricultural Chemicals, Pesticides or Fertilizers Shop	Paints and Varnishes
Fitness Centre	Parking Lot
Flowers, Nursery Stock and Florist Supplies	Patio Homes
Forest Products Sales	Postal Facilities
Fuel and Ice Dealers	Poultry
Garages	Private Garages
Garden Center or Retail Nursery	Professional Office
Police Box \ Barrack	Retail Shops Ancillary To Studio \ Workshop
	Stone \ Cut Stone Products Sales

**Restricted Uses**

All uses except permitted and conditionally permitted uses.

**d. Rural Settlement Zone****Landuse Permitted**

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The following uses in the tables are proposed to be applicable for this zone only.

**Table No. C.7: Landuse Permitted**

<b>Permitted</b>
Agricultural Dwellings
Animal Husbandry
Animal Shelter
Graveyard \ Cemetery
Child Daycare \ Preschool
Primary School
Communication Tower Within Permitted Height
Cottage
Crematorium
Dairy Farming
General Store
Grocery Store
Handloom (Cottage Industry)
Housing For Seasonal Firm Labor
Mosque, Place Of Worship
Newspaper Stand

Nursery School
orphanage
Outdoor Religious Events (Eidgah)
Playing Field
Satellite Dish Antenna
NGO \ CBO Facilities
Special Dwelling (E.G. Dorm For Physically Challenged Etc.)
Temporary Shed \ Tent
Specialized School: Dance, Art, Music, Physically Challenged & Others
Static Electrical Sub Stations
Transmission Lines
Utility Lines
Woodlot
Plantation (Except Narcotic Plant)
Social Forestry
Memorial Structure

Source: Compiled by the Consultants

**Landuse Conditionally Permitted**

The following uses may be permitted or disallowed in this zone after review and approval by the authority/committee following appropriate procedure while the application meets the criteria mentioned in the requirement.

**Table No. C.8: Landuse Conditionally Permitted**

<b>Conditional</b>
Artisan's Shop (Potter, Blacksmith, and Goldsmith Etc.)
Research organization (Agriculture \ Fisheries)
Energy Installation

Fish Hatchery
Garden Center or Retail Nursery
Emergency Shelter
Sports and Recreation Club, Firing Range: Indoor

Source: Compiled by the Consultants

**Restricted Uses**

All uses except permitted and conditionally permitted uses are restricted in this zone.

**e. Mixed use zone****Landuse Permitted**

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The following uses in the tables are proposed to be applicable for this zone only.

**Table No. C.9: Landuse Permitted**

Permitted
Accounting, Auditing or Bookkeeping Services
Addiction Treatment Center
Billboards, Advertisements & Advertising Structure
Agricultural Sales and Services
Antique Store
Appliance Store
Art Gallery, Art Studio \ Workshop
Artisan's Shop
Assisted Living or Elderly Home
Auditorium, Coliseum, Meeting Halls, and Conference Facilities, Convention
Auto Leasing or Rental Office
Automobile Wash
Automobile Driving Academy
Confectionery Shop
Bakery or Confectionery Retail
Bank & Financial Institution
Barber Shop
Bicycle Shop
Billiard Parlor \ Pool Hall
Blacksmith
Boarding and Rooming House
Book or Stationery Store or Newsstand
Bus Passenger Shelter
Child Daycare \ Preschool
Cleaning \ Laundry Shop
Commercial Recreational Buildings
Communication Service Facilities
Communication Tower Within Permitted Height
Community Center
Condominium or Apartment
Correctional Institution
Courier Service
Cyber Café
Daycare Center (Commercial or Nonprofit)
Doctor \ Dentist Chamber
Employee Housing

Fabric Store
Fast Food Establishment \ Food Kiosk
Funeral Services
General Store
Grocery Store
Guest House
Hospital
Jewelry and Silverware Sales
Landscape and Horticultural Services
Mosque, Place Of Worship
Newspaper Stand
Nursery School
Photocopying and Duplicating Services
Pipelines and Utility Lines
Primary School
Project Identification Signs
Property Management Signs
Public Transport Facility
Resort
Satellite Dish Antenna
Shelter (Passers By)
Shoe Repair or Shoeshine Shop (Small)
Slaughter House
Social organization
Software Development
Special Dwelling
Toys and Hobby Goods Processing and Supplies
Training Centre
Transmission Lines
Utility Lines
Vehicle Sales & Service, Leasing or Rental
Warehousing
Woodlot
Children's Park
ATM Booth
Water Pump \ Reservoir
Social Forestry
Dormitory
Rickshaw \ Auto Rickshaw Stand

*Source: Compiled by the Consultants***Landuse Conditionally Permitted**

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The following uses may be permitted or disallowed in this zone after review and approval by the authority/committee.

**Table No. C.10: Landuse Conditionally Permitted**

Conditional	
Agricultural Chemicals, Pesticides or Fertilizers Shop	Project Office
Amusement and Recreation (Indoors)	Government Office
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
Graveyard \ Cemetery	Lithographic or Print Shop
Coffee Shop \ Tea Stall	Market (Bazar)
Computer Maintenance and Repair	Health Office, Dental Laboratory, Clinic or Lab
Computer Sales & Services	Musical Instrument Sales or Repair
Concert Hall, Stage Shows	Optical Goods Sales
Conference Center	Outdoor Café
Construction Company	Outdoor Fruit and Vegetable Markets
Construction, Survey, Soil Testing Firms	Painting and Wallpaper Sales
Cottage	Paints and Varnishes
Counseling Services	Patio Homes
Craft Workshop	Photofinishing Laboratory & Studio
Crematorium	Poultry
Plantation (Except Narcotic Plant)	Printing, Publishing and Distributing
Cultural Exhibits and Libraries	Psychiatric Hospital
Department Stores, Furniture & Variety Stores	Retail Shops Ancillary To Studio \ Workshop
Drug Store or Pharmacy	Radio \ Television or T&T Station With Transmitter Tower
Energy Installation	Refrigerator or Large Appliance Repair
Fitness Centre	Restaurant
Flowers, Nursery Stock and Florist Supplies	Retail Shops \ Facilities
Freight Handling, Storage & Distribution	Sporting Goods and Toys Sales
Freight Transport Facility	Sports and Recreation Club, Firing Range: Indoor
Gaming Clubs	Telephone Exchanges
Garages	Television, Radio or Electronics Repair (No Outside Storage)
Garden Center or Retail Nursery	
Commercial Office	

Source: Compiled by the Consultants

**Restricted Uses**

All uses except permitted and conditionally permitted uses are restricted in this zone.



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**f. Institutional Zone****Landuse Permitted**

The following uses in the tables are proposed to be applicable for this zone only.

**Table No. C.11: Landuse Permitted**

<b>Permitted</b>
Addiction Treatment Center
Billboards, Advertisements & Advertising Structure
Art Gallery, Art Studio \ Workshop
Automobile Driving Academy
Confectionery Shop
Bus Passenger Shelter
Child Daycare \ Preschool
College, University, Technical Institute
Communication Service Facilities
Communication Tower Within Permitted Height
Conference Center
Correctional Institution
Cultural Exhibits and Libraries
Cyber Café
Freight Transport Facility
General Store
Grocery Store
High School
Hospital
Lithographic or Print Shop
Mosque, Place Of Worship
Multi-Storey Car Park
Newspaper Stand

Nursery School
Outdoor Religious Events
Photocopying and Duplicating Services
Post Office
Primary School
Professional Office
Project Identification Signs
Property Management Signs
Public Transport Facility
Satellite Dish Antenna
School (Retarded)
Scientific Research Establishment
Shelter (Passers By)
Specialized School: Dance, Art, Music & Others
Training Centre
Transmission Lines
Utility Lines
Vocational, Business, Secretarial School
Woodlot
ATM Booth
Water Pump \ Reservoir
Social Forestry
Dormitory
Veterinary School \ College and Hospital

Source: Compiled by the Consultants

**Landuse Conditionally Permitted**

The following uses may be permitted or denied in this zone after review and approval by the authority/committee.

**Table No. C.12: Landuse Conditionally Permitted**

<b>Conditional</b>
Auditorium, Coliseum, Meeting Halls, and Conference Facilities, Convention
Bank & Financial Institution
Barber Shop
Boarding and Rooming House
Book or Stationery Store or Newsstand
Coffee Shop \ Tea Stall
Counseling Services
Courier Service
Plantation (Except Narcotic Plant)
Daycare Center (Commercial or Nonprofit)
Doctor \ Dentist Chamber

Drug Store or Pharmacy
Fast Food Establishment \ Food Kiosk
Flowers, Nursery Stock and Florist Supplies
Gallery \ Museum
Garages
Indoor Theatre
orphanage
Outdoor Café
Parking Lot
Pipelines and Utility Lines
Postal Facilities
Psychiatric Hospital

Source: Compiled by the Consultants

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**Restricted Uses**

All uses except permitted and conditionally permitted uses are restricted in this zone.

**g. Administrative Zone****Landuse Permitted**

The following uses in the tables are proposed to be applicable for this zone only.

**Table No. C.13: Landuse Permitted**

Permitted	
Accounting, Auditing or Bookkeeping Services	Grocery Store
Billboards, Advertisements & Advertising Structure	Guest House
Confectionery Shop	Multi-Storey Car Park
Bus Passenger Shelter	Newspaper Stand
Civic Administration	Outdoor Religious Events
Communication Service Facilities	Photocopying and Duplicating Services
Communication Tower Within Permitted Height	Post Office
Construction, Survey, Soil Testing Firms	Professional Office
Cultural Exhibits and Libraries	Public Transport Facility
Cyber Café	Satellite Dish Antenna
Emergency Shelter	Scientific Research Establishment
Freight Transport Facility	Shelter (Passers By)
General Store	Training Centre
Project Office	Transmission Lines
Government Office	Utility Lines
	Woodlot
	ATM Booth
	Water Pump \ Reservoir
	Social Forestry

*Source: Compiled by the Consultants***Landuse Conditionally Permitted**

The following uses may be permitted or denied in this zone after review and approval by the authority/committee.

**Table No. C.14: Landuse Conditionally Permitted**

Conditional	
Amusement and Recreation (Indoors)	Detention Facilities
Auditorium, Coliseum, Meeting Halls, and Conference Facilities, Convention	Doctor \ Dentist Chamber
Bank & Financial Institution	Energy Installation
Boarding and Rooming House	Fast Food Establishment \ Food Kiosk
Book or Stationery Store or Newsstand	Flowers, Nursery Stock and Florist Supplies
Coffee Shop \ Tea Stall	Freight Handling, Storage & Distribution
Conference Center	Freight Yard
Courier Service	Gallery \ Museum
Plantation (Except Narcotic Plant)	Garages
Daycare Center (Commercial or Nonprofit)	Police Box \ Barrack
	Fire \ Rescue Station
	Lithographic or Print Shop

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Mosque, Place Of Worship	Parking Lot (Commercial)
Outdoor Café	Pipelines and Utility Lines
Parking Lot	Postal Facilities

*Source: Compiled by the Consultants***Restricted Uses**

All uses except permitted and conditionally permitted uses are restricted in this zone.

**h. Agricultural Zone****Landuse Permitted**

The following uses in the tables are proposed to be applicable for this zone only.

**Table No. C.15: Landuse Permitted**

Permitted	
Food Grain Cultivation	Animal Shelter
Vegetable Cultivation	Duckery
Cash Crop Cultivation	Aquatic Recreation Facility (Without Structure)
Horticulture	Tree Plantation (Except Narcotic Plant)
Arboriculture	Aquaculture
Dairy Farming	Static Transformer Stations
Deep Tube Well	Transmission Lines
Shallow Tube Well	Utility Lines
Irrigation Facilities (Irrigation Canal, Culvert, Flood Wall etc)	Woodlot
Temporary Structure (Agricultural)	Social Forestry

*Source: Compiled by the Consultants***Landuse Conditionally Permitted****Table No. C.16: Landuse Conditionally Permitted**

Conditional	
Graveyard \ Cemetery	Crematorium
Communication Tower Within Permitted Height	Fish Hatchery
	Garden Center or Retail Nursery
	Poultry

*Source: Compiled by the Consultants***Restricted Uses**

All uses except permitted and conditionally permitted uses are restricted in this zone.

**i. Open Space****Landuse Permitted**

The following uses in the tables are proposed to be applicable for this zone only.

**Table No. C.17: Landuse Permitted**

Permitted	
Botanical Garden & Arboretum	Circus
Bus Passenger Shelter	Plantation (Except Narcotic Plant)
Caravan Park \ Camping Ground	Landscape and Horticultural Services
Carnivals and Fairs	Open Theater
	Park and Recreation Facilities (General)

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Pipelines and Utility Lines	Utility Lines
Playing Field	Woodlot
Special Function Tent	Zoo
Tennis Club	Roadside Parking
Transmission Lines	Social Forestry
Urban-Nature Reserve	Memorial Structure

*Source: Compiled by the Consultants***Landuse Conditionally Permitted****Table No. C.18: Landuse Conditionally Permitted**

<b>Conditional</b>	Outdoor Recreation Facilities
Communication Tower Within Permitted Height	Outdoor Recreation, Commercial
Trade Shows	Outdoor Sports and Recreation
Fitness Centre	Park Maintenance Facility
Flowers, Nursery Stock and Florist Supplies	Retreat Center
Golf Course	Sports and Recreation Club, Firing Range: Indoor
Motorized Recreation	

*Source: Compiled by the Consultants***Restricted Uses**

All uses except permitted and conditionally permitted uses are restricted.

**j. Water Retention Area**

Retaining water is the main purpose of this type of Landuse.

**Landuse Permitted**

The following uses in the tables are proposed to be applicable for this zone only.

**Table No. C.19: Landuse Permitted**

<b>Permitted</b>	Utility Lines
Aquatic Recreation Facility (Without Structure)	Water Parks
Fishing Club	Memorial Structure

*Source: Compiled by the Consultants***Landuse Conditionally Permitted**

The following uses may be permitted or denied in this zone after review and approval by the authority/committee.

**Table No. C.20: Landuse Conditionally Permitted**

<b>Conditional</b>
Plantation (Except Narcotic Plant)
Marina \ Boating Facility
Motorized Recreation

*Source: Compiled by the Consultants*

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**k. Water body****Landuse Permitted**

The following uses in the tables are proposed to be applicable for this zone only.

**Table No. C.21: Landuse Permitted**

<b>Permitted</b>
Aquatic Recreation Facility (Without Structure)
Fishing Club
Utility Lines
Water Parks
Memorial Structure

*Source: Compiled by the Consultants*

**Landuse Conditionally Permitted**

The following uses may be permitted or denied in this zone after review and approval by the authority/committee.

**Table No. C.22: Landuse Conditionally Permitted**

<b>Conditional</b>
Plantation (Except Narcotic Plant)
Marina \ Boating Facility
Motorized Recreation

*Source: Compiled by the Consultants*

**Restricted Uses**

All uses except permitted and conditionally permitted uses are restricted.

## মেহেন্দিগঞ্জ পৌরসভার মহাপরিকল্পনার উপর চূড়ান্তমতবিনিময় সভার কার্যবিবরণী

তারিখ: ২৯/১০/২০১৪

স্থান: মেহেন্দিগঞ্জ পৌরসভা

সময়: সকাল ১১:০০ ঘটিকায়

স্থানীয় সরকার প্রকৌশল অধিদপ্তর, মেহেন্দিগঞ্জ পৌরসভা ও পরামর্শক প্রতিষ্ঠানের যৌথ উদ্যোগে মেহেন্দিগঞ্জ পৌরসভার মহাপরিকল্পনার উপর মাননীয় মেয়র জনাব আলহাজ্ব কামাল উদ্দিন খান এর সভাপতিত্বে চূড়ান্ত মতবিনিময় সভা অনুষ্ঠিত হয়। উক্ত মতবিনিময় সভায় মেহেন্দিগঞ্জ উপজেলা পরিষদের চেয়ারম্যান, ভাইস চেয়ারম্যান, মহিলা ভাইস চেয়ারম্যান, পৌরসভার কাউন্সিলরবৃন্দ সহ স্থানীয় গণ্যমাণ্য ব্যক্তি বর্গ, বিভিন্ন সরকারি-বেসরকারি অধিদপ্তরের কর্মকর্তাবৃন্দ, শিক্ষক, সাংবাদিকসহ সমাজের বিভিন্ন শ্রেণি ও পেশার মানুষ, স্থানীয় সরকার প্রকৌশল অধিদপ্তরের প্রতিনিধি এবং মহাপরিকল্পনা প্রণয়ণ প্রকল্পে নিযুক্ত পরামর্শকবৃন্দ উপস্থিত হয়ে আলোচনায় অংশগ্রহণ করেন।

সভার শুরুতে মাননীয় মেয়র মহোদয় জনাব কামাল উদ্দিন খান উপস্থিত সকলকে শুভেচ্ছা জানিয়ে আনুষ্ঠানিকভাবে সভার কার্যক্রম শুরু করেন এবং স্বাগত বক্তব্যে উল্লেখ করেন যে, আগামী (২০) বিশ বছরের জন্য এই মহাপরিকল্পনা। উক্ত পরিকল্পনায় উপস্থিত সকলকে সুচিন্তিত মতামত প্রদানের জন্য আহ্বান করেন যাতে করে পরিকল্পনাটি আরও গঠনমূলক ও বাস্তবসম্মত হয়।

উপজেলা শহর অবকাঠামো উন্নয়ন প্রকল্পের পরিকল্পনাবিদ মোঃ স্বরূপ হাসনাইন মহাপরিকল্পনার উদ্দেশ্য সম্পর্কে উপস্থিত সকলকে বিস্তারিতভাবে বলেন। তিনি এর মহাপরিকল্পনার গুরুত্ব বোঝাতে বিভিন্ন উদাহরণ দিয়ে বলেন মহাপরিকল্পনার সঠিক বাস্তবায়ন হলে শহরে সুন্দর পরিবেশে যেমন সবাই বসবাস করতে পারবে পাশাপাশি বিভিন্ন প্রকার দুর্ঘটনা বা দুর্যোগ সহজে মোকাবেলা করা যাবে। তিনি স্বয়ংসম্পূর্ণ ও যথাযথ বাস্তবায়নের জন্য সকলের সহযোগীতা কামনা করেন এবং তিনি বলেন যে সকলের মূল্যবান মতামত পরিকল্পনাকে আরো গঠনমূলক ও সময়োপযোগী করে তুলবে।

পরামর্শক প্রতিষ্ঠানের পক্ষ থেকে আল মুবিন রহমান, উপস্থিত সকলকে স্বাগত জানিয়ে মহাপরিকল্পনার উপর Power Point Presentation এর মাধ্যমে তার বক্তব্য তুলে ধরেন। তিনি কার্যক্রমসমূহ, উন্নয়নের সম্ভাবনাসমূহ ধাপে ধাপে বর্ণনা করেন। এরপর মহাপরিকল্পনার কোথায় কিভাবে প্রস্তাবনা সমূহ ওয়ার্ড ভিত্তিক দেওয়া হয়েছে সেসব বিষয় আলোচনা করেন। তিনি আরও উল্লেখ করেন যে, সকলের মতামতের ভিত্তিতে যে প্রস্তাবসমূহ দেওয়া হয়েছিল তা নিম্নরূপ:

### New Development proposal for Urban Residential

Type of Facilities	Mouza Name	Plot No.	Area (acre)
Housing Estate- 01	Ambikapur_045_00 Durgapur_047_00	21-37, 75-90, 153 1-94,107,108,114-162,186- 205,214-228,803,1025,1052,1054	98.84
Housing Estate- 02	Char Hogla_041_03 Ambikapur_045_00	3186-3188, 3287 1-66,131-168,171-173,292	74.65
Housing Estate- 03	Durgapur_047_00	92-224,249,427- 563,565,575,576,593-637,726- 728,733-751,775-799,803,1021- 1024,1053	89.03
Low Cost Housing Estate	Chunar Char_081_00 Gobindapur_080_00	188-220,225-227,230 19,20,23-25	16.13

Type of Facilities	Mouza Name	Plot No.	Area (acre)
Resettlement Zone	Chunar Char_081_00 Gobindapur_080_00	572-622,691-725,1163 163	22.59
<b>Total</b>			<b>301.52</b>

**New Development proposal for Commercial Activities**

Type of Facilities	Ward No.	Mouza Name	Plot No.	Area (acre)
Wholesale Market	01	Char Hogla_041_03	3283- 3286	6.00
Slaughtering House	01	Char Hogla_041_03	3128	0.04
Super Market	03	Ambikapur_045_00	243, 292	1.24
Fish Market	07	Bhuta Laksmipur_043_00	944-953	5.41
<b>Total</b>				<b>12.69</b>

**New Development proposal for Industry**

Type of Facilities	Mouza Name	Plot No.	Area (acre)
Small and Cottage Industrial Zone	Chunar Char_081_00	204-207,211-213,227-268,563-568,571,572,574,1163	27.68
	Gobindapur_080_00	24,26,30,41-54,89-92,251	11.15
<b>Total</b>			<b>38.83</b>

**New Proposed location of the Ward Center Complex in the project area**

SI No.	Ward No.	Mouza Name	J. L. No	Sheet No.	Plot No.	Area (Acre)
01	01	Char Hogla	041	03	3125-3130,3211,3215,3216	2.27
02	02	Sonamukhi	044	01,02,03	208-216,1001,1012	2.84
03	03	Ambikapur	045	00	6-13,38,39,45	5.65
04	04	Durgapur	047	00	556-591,606,607	5.81
05	05	Mehendiganj	046	00	292,293,1361-1363,1366	2.05
06	06	Khakri	079	00	190-195,222-225,248,251,252,262,264,265,271,272, 274	7.14
07	07	Bhuta Laksmipur	043	00	386-388,489-497,499	2.85
08	08	Gobindapur	080	00	40-41,55-57,66-74,87,88	6.15
09	09	Chunar Char	081	00	382-286,288-396,401-404,1162	2.00
<b>Total</b>						<b>36.80</b>

**New Development proposal for Education & Research**

Type of Facilities	Ward No.	Mouza Name	Plot No.	Area (acre)
Primary School	09	Chunar Char_081_00	330,340-343	0.92
High School	01	Char Hogla_041_03	3108,3109	1.46
	04	Durgapur_047_00	71-73,77,121-126,131	1.23
	06	Khakri_079_00	402-410	1.40
	07	Bhuta Laksmipur_043_00	315,316,339-346	0.92
	09	Chunar Char_081_00	498,499,503-506,515	1.35
Vocational Institute	07	Bhuta Laksmipur_043_00	266,268,322-329,412,414,416-421	3.32
	<b>Total</b>			<b>10.63</b>

**New Development Proposal for Open Space**

Type of Facilities	Ward No.	Mouza Name	Plot No.	Area (acre)
Central park	01	Char Hogla _041_03	3216,3229-3262,3272,3287	9.63
Neighbourhood Park	01	Char Hogla _041_03	3279,3280,3303	1.58
	02	Sonamukhi _044_01	122,124-129,148,149	1.05
	03	Ambikapur _045_00	180,184-189, 194, 195, 198, 199, 203	1.14
	04	Durgapur _047_00	669,676-682, 699, 700, 709, 710, 1009	1.19
	05	Mehendiganj _046_00	62-65,68,441,4016,1366	1.40
	06	Khakri _079_00	1,3	0.74
	07	Bhuta Laksmipur _043_00	848-451	1.29
	08	Chunar Char _081_00	645,647,676,785,786	1.36
	09	Chunar Char _081_00	410,1111, 1115, 1143, 1144, 1169-1172, 1176	7.30
Playground	01	Char Hogla _041_03	2265,2266	1.02
	02	Sonamukhi _044_01	230-232,234-235,239,240,242	1.27
	04	Durgapur _047_00	302,310,313-316,322	1.23
	05	Mehendiganj _046_00	294-296,301,1362,1366	1.53
	06	Khakri _079_00	201,206-208,215,221,222	2.43
	07	Bhuta Laksmipur _043_00	320,333-337,339,340	0.92
	08	Chunar Char _081_00 Gobindopur _080_00	669,671,675,681-683 130, 135-138, 163	1.55
	09	Chunar Char _081_00	221-222,330,340-343,1135	1.00
Public Gathering Place	01	Char Hogla _041_03	2971,2972,2977-2981, 3279, 3303	1.80
Muktijoddha Park	07	Bhuta Laksmipur _043_00	786,787,791	0.30
Shisu Park	08	Chunar Char _081_00	127-129,131,179,182	0.44
	09	Chunar Char _081_00	182,183	
<b>Total</b>				<b>40.27</b>

**New Development proposal for Transportation Facilities**

Type of Facilities	Ward No.	Mouza Name	Plot No.	Area (acre)
Bus Terminal	05	Mehendiganj _046_00	64,66-68,179,180,1016	2.84
	06	Khakri _079_00	1,3,5,93,96	
Truck Terminal	07	Bhuta Laksmipur _043_00	8,9,11,12	0.31
CNG/Rickshaw Stand	01	Char Hogla _041_03	2296,2297,2521,2522,2524	0.17
	02	Sonamukhi _044_01	1-4,208-210,1001	2.53
	03	Ambikapur _045_00	173,174	0.52
	04	Durgapur _047_00	774,775	0.11
	05	Mehendiganj _046_00	65, 532,533,842-846,954-957	0.69
	06	Khakri _079_00	460,464,512-514	0.59
	09	Chunar Char _046_00	416,419	0.38
<b>Total</b>				<b>8.18</b>

**New Development proposal for Utility Services**

Type of Facilities	Ward No.	Mouza Name	Plot No.	Area (acre)
Dumping Station	01	Char Hogla _041_03	2852,2853,2855-2861	0.72
	02	Sonamukhi _044_01	1,17,18	
Waste Transfer Station	01	Char Hogla _041_03	3122	0.05
	02	Sonamukhi _044_01	205,237	0.12
	03	Ambikapur _045_00	37	0.05
	04	Durgapur _047_00	607,608	0.06
	05	Mehendiganj _046_00	291,1360,1364	0.11
	06	Khakri _079_00	225	0.06
	07	Bhuta Laksmipur _043_00	491-492	0.08
	08	Gobindapur _080_00	40,41	0.06



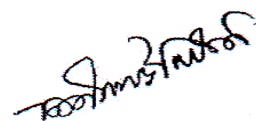
	09	Chunar Char_081_00	407,408,1147	0.06
Water Supply Station	01	Char Hogla_041_03	3280, 3303	0.42
<b>Total</b>				<b>4.64</b>

#### New Development proposal for Community Facilities

Type of Facilities	Ward No.	Mouza Name	Plot No.	Area (acre)
Central Cremation Ground	01	Char Hogla_041_03	2840,2841,2877,2878	0.63
Central Graveyard	06	Khakri_079_00	105-118,120-127	4.18
Central Mosque and Eidgah	05	Mehendiganj_046_00	70-78,83-85	2.76
Cyclone Center	09	Chunar Char_081_00	419,435,436,1150-1152	2.49
Muktijoddha Complex	03	Ambikapur_045_00	243-245	0.20
<b>Total</b>				<b>10.28</b>

অনুষ্ঠানের এ পর্যায়ে মাননীয় উপজেলা চেয়ারম্যান সকলকে ধন্যবাদ জানিয়ে বলেন, মাস্টারপ্ল্যান সঠিকভাবে বাস্তবায়ন করা গেলে সুন্দর মেহেন্দিগঞ্জ পাওয়া যাবে। তিনি বরিশাল সিটি কর্পোরেশনের সাবেক মেয়র শওকত হোসেন হীরণ এর উদাহরণ দিয়ে বলেন, তাঁর প্রচেষ্টায় এবং সকলের সহযোগিতায় বরিশাল সিটি কর্পোরেশন পরিষ্কার, ময়লামুক্ত একটি নগরিতে পরিণত হয়েছে। তিনি মাস্টার প্ল্যান বাস্তবায়নে সকলের সম্মিলিত প্রচেষ্টার কথা বলেন। এছাড়া তিনি ডিজিটাল বাংলাদেশের স্বপ্ন নিয়ে সকলকে এগিয়ে যেতে অনুরোধ করেন।

সমাপনি বক্তব্যে মেয়র মহোদয় পরামর্শক প্রতিষ্ঠানের পরিকল্পণাবিদগণকে এবং স্থানীয় সরকার প্রকৌশল অধিদপ্তরকে পৌরসভার মহাপরিকল্পণা প্রণয়নের জন্য পুনরায় ধন্যবাদ জ্ঞাপন করেন এবং সম্ভাব্য সকল দিকনির্দেশনাগুলি সন্নিবেশিত করে যথাশীঘ্রসম্ভব চূড়ান্ত মহাপরিকল্পণা প্রণয়ন করার জন্য অনুরোধ করেন। সভায় আর কোন আলোচনা না থাকায় সকলকে ধন্যবাদ জানিয়ে পৌরসভার স্বপ্ন বাস্তবায়নের আশা ব্যক্ত করে সভার কার্যক্রম সমাপ্তি ঘোষণা করেন।



(জনাব আলহাজ্ব কামাল উদ্দিন খান)

মেয়র,  
মেহেন্দিগঞ্জ পৌরসভা

স্থানীয় সরকার প্রকৌশল অধিদপ্তর, ঢাকা-১২০৭  
উপজেলা শহর অবকাঠামো উন্নয়ন প্রকল্প, প্যাকেজ-১১

মেহেন্দিগঞ্জ পৌরসভার মহাপরিকল্পনার উপর চূড়ান্ত মতবিনিময় সভা

মেহেন্দিগঞ্জ পৌরসভা।

স্থান: মেহেন্দিগঞ্জ পৌরসভা। তারিখ: ২৯ অক্টোবর, ২০১৪ খ্রিঃ; সকাল ১১:০০ ঘটিকা



অংশগ্রহনকারীর তালিকা

ক্রমিক নং	নাম	প্রতিষ্ঠান ও পদবী	ফোন নম্বর	স্বাক্ষর
১	হাজি মোহাম্মদ আলী	মেম্বর - মেহেন্দিগঞ্জ পৌরসভা	০১৭২৬৩৮৬৩	হাজি মোহাম্মদ আলী
২	মুহাম্মদ আব্দুল হামিদ	মেম্বর - ৩	০১৭২৬৩৮৬৩	মুহাম্মদ আব্দুল হামিদ
৩	মাহমুদ আলী	" " ২	০১৭১৭৬৩১২৭	মাহমুদ আলী
৪	দেলোয়ার হোসেন	" " ৬	০১৭৩৩৭৭২.২৭১	দেলোয়ার হোসেন
৫	দ্রুতী কান্তারী	সহস্রিক - ৩	০১৭৫৭৩৬১২০২	দ্রুতী কান্তারী
৬	বিজিৎ হোসেন	" ৬	০১৭১৫২২৭৪৩৩	বিজিৎ হোসেন
৭	আব্দুল হামিদ	সহস্রিক - ৩	০১৭১২২৩০৭২	আব্দুল হামিদ
৮	মুহাম্মদ আলী	"		
৯	মোঃ মোহাম্মদ হোসেন	"	০১৭১৮-৩৩০৭২	মোঃ মোহাম্মদ হোসেন
১০	মাহমুদ আলী	"	০১৭১২-২৮৫৭৪৭	মাহমুদ আলী
১১	বিজিৎ হোসেন	"	০১৭১১৭০৭৫৭	বিজিৎ হোসেন

ক্রমিক নং	নাম	প্রতিষ্ঠান ও পদবী	ফোন নম্বর	স্বাক্ষর
১২	ড. হারুন	ড. হারুন (সচিব)	০১৭১৩-৭৫১২২২	
১৩	ড. মুহাম্মদ আলী	" "	০১৭৭৮৩০২৮ ৬৬	
১৪	ড. মোঃ মাহমুদুল আলম	ড. মোঃ মাহমুদুল আলম	০১৭১১৩৭ ২৫১	
১৫	ড. মোঃ মাহমুদুল আলম	ড. মোঃ মাহমুদুল আলম	০১৮১৮২৫৭৮৫৫	
১৬	ড. মোঃ মাহমুদুল আলম	ড. মোঃ মাহমুদুল আলম	০১৭১৫৬৪৮৫৫	
১৭	ড. মোঃ মাহমুদুল আলম	ড. মোঃ মাহমুদুল আলম	০১৭৬৭৪০২০২৫	
১৮	ড. মোঃ মাহমুদুল আলম	ড. মোঃ মাহমুদুল আলম	০১৭১৭৬৭৫১৭	
১৯	ড. মোঃ মাহমুদুল আলম	ড. মোঃ মাহমুদুল আলম	০১৭১২৫০৫৮ ৬৬	
২০	ড. মোঃ মাহমুদুল আলম	ড. মোঃ মাহমুদুল আলম	০১৭১৮৭৭৮৬ -০৫	
২১	ড. মোঃ মাহমুদুল আলম	ড. মোঃ মাহমুদুল আলম	০১৭১৩৭৬৩৭ ৭৮	
২২	ড. মোঃ মাহমুদুল আলম	ড. মোঃ মাহমুদুল আলম	০১৭১৫৫৪৪০ ৮৩	
২৩	ড. মোঃ মাহমুদুল আলম	ড. মোঃ মাহমুদুল আলম	০১৭১৭৭৮৭৫	
২৪	ড. মোঃ মাহমুদুল আলম	ড. মোঃ মাহমুদুল আলম	০১৭২৫১৮২০৬	
২৫	ড. মোঃ মাহমুদুল আলম	ড. মোঃ মাহমুদুল আলম	০১৭১৭৭৮৭৫	



ক্রমিক নং	নাম	প্রতিষ্ঠান ও পদবী	ফোন নম্বর	স্বাক্ষর
২৬	শ্রী. (মোঃ) মাহবুবুল হক	ফেডারেশন আই. ই. সি	০১৭২১৩৬৫৯৫৭	স্বাক্ষর
২৭	শ্রী. মাহবুবুল হক	শ্রী. মাহবুবুল হক	০১৭১৮১২১৬৫৮	স্বাক্ষর
২৮	শ্রী. মাহবুবুল হক			স্বাক্ষর
২৯	শ্রী. মাহবুবুল হক	আমিরিকাপুর মন্ডল সি. পি. ডি. সি		স্বাক্ষর
৩০	শ্রী. মাহবুবুল হক	সহকারী কমিশনার মহালাসার সি. পি. ডি.	০১৭১৮১৫৫০৮৭	স্বাক্ষর
৩১	শ্রী. মাহবুবুল হক	সহকারী কমিশনার	০১৭১৩৫৫৫৫	স্বাক্ষর
৩২	শ্রী. মাহবুবুল হক	সি. পি. ডি. সি	০১৭১৫৫৫৫৫৫	স্বাক্ষর
৩৩	শ্রী. মাহবুবুল হক	সহকারী কমিশনার	০১৭২৫২৫৩৭৫	স্বাক্ষর
৩৪	শ্রী. মাহবুবুল হক		০১৭১৭৫৫৫৫৫	স্বাক্ষর
৩৫	শ্রী. মাহবুবুল হক	সি. পি. ডি. সি	০১৭১৫৫৫৫৫৫	স্বাক্ষর
৩৬	শ্রী. মাহবুবুল হক	সি. পি. ডি. সি		স্বাক্ষর
৩৭	শ্রী. মাহবুবুল হক	সহকারী কমিশনার	০১৭১১৭৭০৩৫৭	স্বাক্ষর
৩৮	শ্রী. মাহবুবুল হক	সি. পি. ডি. সি	০১৭১৫৫৫৫৫৫	স্বাক্ষর
৩৯	শ্রী. মাহবুবুল হক	LGED HQ, URBAN PLANNER	০১৭১৭০৪১০০	স্বাক্ষর

ক্রমিক নং	নাম	প্রতিষ্ঠান ও পদবী	ফোন নম্বর	স্বাক্ষর
৪০	আল মুবিন রহমান	Urban Planner sheltee consultant	01931206700	
৪১	মদীনাতুল হক্কিন	Urban Planner sheltee consultant (Pvt.) Ltd	01737920586	
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**Annexure- E: Proposed Road Inventory**

Proposed Road ID	Existing ID	Road Name	Existing Type	Existing Width (Ft)	Proposed RoW (Ft)	Phasing	Proposed Road Type	Proposed Status	Length (m)
PRdT 1	1		Katcha	8	20	Phase 01	Tertiary Road	Widening	753.87
PRdS 2	2		Pucca	7	40	Phase 01	Secondary Road	Widening	1019.98
PRdS 3	3		Katcha	10	40	Phase 01	Secondary Road	Widening	693.63
PRdP 4	4		Semipucca	8	60	Phase 01	Primary Road	Widening	633.48
PRdP 6	6	Mehendiganj to Ulania Road	Pucca	10	60	Phase 01	Primary Road	Widening	1944.83
PRdT 7	7		Semipucca	7	20	Phase 01	Tertiary Road	Widening	95.59
PRdS 8	8		Semipucca	10	40	Phase 01	Secondary Road	Widening	752.04
PRdT 9	9		Katcha	10	20	Phase 01	Tertiary Road	Widening	557.21
PRdS 10	10		Semipucca	7	40	Phase 01	Secondary Road	Widening	273.22
PRdS 11	11		Katcha	10	40	Phase 01	Secondary Road	Widening	379.03
PRdT 12	12		Katcha	10	20	Phase 01	Tertiary Road	Widening	79.88
PRdS 14	14	Abdul Latif Hawlader Road	Pucca	10	40	Phase 01	Secondary Road	Widening	787.52
PRdP 15	15	Hospital Road	Pucca	11	60	Phase 01	Primary Road	Widening	1041.37
PRdT 16	16		Pucca	7	20	Phase 01	Tertiary Road	Widening	292.56
PRdT 17	17		Pucca	7	20	Phase 01	Tertiary Road	Widening	945.55
PRdP 18	18	Cherag Ali Hawlader Road	Pucca	13	60	Phase 01	Primary Road	Widening	610.92
PRdP 19	19	Cherag Ali Hawlader Road	Pucca	13	60	Phase 01	Primary Road	Widening	1033.21
PRdS 20	20	Kharki Road	Pucca	7	40	Phase 01	Secondary Road	Widening	589.12
PRdT 21	21		Semipucca	9	20	Phase 01	Tertiary Road	Widening	431.42

Proposed Road ID	Existing ID	Road Name	Existing Type	Existing Width (Ft)	Proposed RoW (Ft)	Phasing	Proposed Road Type	Proposed Status	Length (m)
PRdS 22	22	Babul Road	Pucca	11	40	Phase 01	Secondary Road	Widening	194.52
PRdP 23	23	Sayed Kodom Ali Road	Pucca	11	60	Phase 01	Primary Road	Widening	160.93
PRdS 24	24		Pucca	10	40	Phase 01	Secondary Road	Widening	75.22
PRdS 25	25	Hospital Road	Pucca	8	40	Phase 01	Secondary Road	Widening	309.04
PRdT 26	26		Semipucca	7	20	Phase 01	Tertiary Road	Widening	326.05
PRdS 27	27	Badarpur Primary School Road	Pucca	8	40	Phase 01	Secondary Road	Widening	2658.00
PRdP 28	28	Cherag Ali Hawlader Road	Pucca	13	60	Phase 01	Primary Road	Widening	592.16
PRdT 30	30		Semipucca	10	20	Phase 01	Tertiary Road	Widening	454.13
PRdT 31	31		Semipucca	10	20	Phase 01	Tertiary Road	Widening	201.81
PRdT 32	32		Semipucca	7	20	Phase 01	Tertiary Road	Widening	388.23
PRdT 33	33		Semipucca	7	20	Phase 01	Tertiary Road	Widening	156.39
PRdS 41	41	Badarpur Primary School Road	Pucca	8	40	Phase 01	Secondary Road	Widening	673.65
PRdT 46	46		Katcha	7	20	Phase 01	Tertiary Road	Widening	513.48
PRdP 47	47	Kala Mayer Ditchi Road	Pucca	13	60	Phase 01	Primary Road	Widening	1430.32
PRdS 49	49		Katcha	7	40	Phase 01	Secondary Road	Widening	126.09
PRdT 50	50		Katcha	7	20	Phase 01	Tertiary Road	Widening	222.38
PRdS 51	51		Katcha	7	40	Phase 01	Secondary Road	Widening	136.94
PRdT 52	52		Semipucca	7	20	Phase 01	Tertiary Road	Widening	268.33
PRdS 53	53	Patar Hat to Alimganj Khal Par Road	Pucca	8	40	Phase 01	Secondary Road	Widening	622.07
PRdS 54	54	Patar Hat to Alimganj Khal Par Road	Pucca	8	40	Phase 01	Secondary Road	Widening	459.40
PRdT 55	55		Pucca	10	20	Phase 01	Tertiary Road	Widening	312.63

Proposed Road ID	Existing ID	Road Name	Existing Type	Existing Width (Ft)	Proposed RoW (Ft)	Phasing	Proposed Road Type	Proposed Status	Length (m)
PRdT 58	58		Katcha	10	20	Phase 01	Tertiary Road	Widening	386.71
PRdP 60	60		Pucca	10	60	Phase 01	Primary Road	Widening	642.31
PRdS 64	64		Semipucca	10	40	Phase 01	Secondary Road	Widening	435.14
PRdT 65	65		Katcha	7	20	Phase 01	Tertiary Road	Widening	231.31
PRdS 66	66		Katcha	7	40	Phase 01	Secondary Road	Widening	178.58
PRdS 67	67		Katcha	7	40	Phase 01	Secondary Road	Widening	430.33
PRdS 68	68		Katcha	7	40	Phase 01	Secondary Road	Widening	116.38
PRdT 71	71		Semipucca	10	20	Phase 01	Tertiary Road	Widening	204.57
PRdS 72	72		Pucca	10	40	Phase 01	Secondary Road	Widening	538.02
PRdS 73	73		Pucca	10	40	Phase 01	Secondary Road	Widening	599.60
PRdS 74	74		Pucca	10	40	Phase 01	Secondary Road	Widening	989.35
PRdS 75	75		Pucca	8	40	Phase 01	Secondary Road	Widening	61.37
PRdT 76	76		Pucca	8	20	Phase 01	Tertiary Road	Widening	469.38
PRdT 78	78		Katcha	13	20	Phase 01	Tertiary Road	Widening	237.78
PRdT 79	79		Katcha	7	20	Phase 01	Tertiary Road	Widening	730.75
PRdT 80	80		Semipucca	7	20	Phase 01	Tertiary Road	Widening	286.28
PRdT 81	81		Pucca	7	20	Phase 01	Tertiary Road	Widening	877.30
PRdP 82	82	Patar Hat to Alamganj Road	Semipucca	11	60	Phase 01	Primary Road	Widening	414.47
PRdT 83	83		Pucca	10	20	Phase 01	Tertiary Road	Widening	128.04
PRdS 84	84		Pucca	10	40	Phase 01	Secondary Road	Widening	67.92



Proposed Road ID	Existing ID	Road Name	Existing Type	Existing Width (Ft)	Proposed RoW (Ft)	Phasing	Proposed Road Type	Proposed Status	Length (m)
PRdT 85	85	Naiya Kandi Road	Pucca	11	20	Phase 01	Tertiary Road	Widening	474.01
PRdT 86	86	Madha Badarpur Road	Pucca	8	20	Phase 01	Tertiary Road	Widening	99.77
PRdT 87	87	Madha Badarpur Road	Pucca	8	20	Phase 01	Tertiary Road	Widening	93.89
PRdT 88	88	Madha Badarpur Road	Pucca	8	20	Phase 01	Tertiary Road	Widening	789.97
PRdT 89	89		Katcha	10	20	Phase 01	Tertiary Road	Widening	228.93
PRdT 90	90		Katcha	10	20	Phase 01	Tertiary Road	Widening	141.76
PRdS 91	91		Semipucca	10	40	Phase 01	Secondary Road	Widening	209.17
PRdS 92	92		Semipucca	9	30	Phase 01	Secondary Road	Widening	423.26
PRdP 93	93	Patar Hat to Ulania Road	Pucca	10	60	Phase 01	Primary Road	Widening	312.71
PRdS 94	94	Gandhi Babu Road	Pucca	8	40	Phase 01	Secondary Road	Widening	817.93
PRdS 95	95		Semipucca	7	40	Phase 01	Secondary Road	Widening	350.96
PRdS 96	96	Lalmia Road	Pucca	13	40	Phase 01	Secondary Road	Widening	163.68
PRdS 97	97	Shahid Manik Road	Pucca	11	40	Phase 01	Secondary Road	Widening	219.92
PRdT 99	99		Semipucca	10	20	Phase 01	Tertiary Road	Widening	343.38
PRdT 100	100		Katcha	10	20	Phase 01	Tertiary Road	Widening	377.25
PRdT 101	101		Katcha	7	20	Phase 01	Tertiary Road	Widening	249.29
PRdT 102	102		Katcha	5	20	Phase 01	Tertiary Road	Widening	356.85
PRdT 103	103		Katcha	7	20	Phase 01	Tertiary Road	Widening	400.54
PRdT 104	104		Semipucca	5	20	Phase 01	Tertiary Road	Widening	192.30
PRdT 105	105		Katcha	7	20	Phase 01	Tertiary Road	Widening	467.49
PRdT 106	106		Semipucca	7	20	Phase 01	Tertiary Road	Widening	158.36
PRdT 110	110		Katcha	10	20	Phase 01	Tertiary Road	Widening	746.69

Proposed Road ID	Existing ID	Road Name	Existing Type	Existing Width (Ft)	Proposed RoW (Ft)	Phasing	Proposed Road Type	Proposed Status	Length (m)
PRdT 113	113		Semipucca	7	20	Phase 01	Tertiary Road	Widening	79.32
PRdS 114	114		Semipucca	11	40	Phase 01	Secondary Road	Widening	236.89
PRdT 116	116		Pucca	11	20	Phase 01	Tertiary Road	Widening	103.41
PRdT 117	117		Pucca	7	20	Phase 01	Tertiary Road	Widening	40.41
PRdT 120	120		Katcha	5	20	Phase 01	Tertiary Road	Widening	72.04
PRdT 121	121		Semipucca	8	20	Phase 01	Tertiary Road	Widening	155.06
PRdS 122	122		Semipucca	8	40	Phase 01	Secondary Road	Widening	286.91
PRdS 123	123		Semipucca	8	40	Phase 01	Secondary Road	Widening	101.70
PRdT 125	125		Pucca	10	20	Phase 01	Tertiary Road	Widening	273.60
PRdT 126	126		Katcha	6	20	Phase 01	Tertiary Road	Widening	142.68
PRdT 128	128		Katcha	7	20	Phase 01	Tertiary Road	Widening	516.74
PRdP 129	129		Semipucca	11	60	Phase 01	Primary Road	Widening	353.22
PRdT 131	131		Semipucca	5	20	Phase 01	Tertiary Road	Widening	590.87
PRdS 132	132		Semipucca	8	40	Phase 01	Secondary Road	Widening	125.13
PRdS 133	133		Semipucca	7	40	Phase 01	Secondary Road	Widening	146.78
PRdS 134	134		Semipucca	7	40	Phase 01	Secondary Road	Widening	246.04
PRdT 135	135		Katcha	7	20	Phase 01	Tertiary Road	Widening	80.92
PRdT 136	136		Semipucca	5	20	Phase 01	Tertiary Road	Widening	107.85
PRdT 137	137		Semipucca	7	20	Phase 01	Tertiary Road	Widening	289.63
PRdT 138	138		Semipucca	5	20	Phase 01	Tertiary Road	Widening	234.38
PRdT 139	139		Semipucca	8	20	Phase 01	Tertiary Road	Widening	251.68
PRdT 141	141		Pucca	8	20	Phase 01	Tertiary Road	Widening	66.98

Proposed Road ID	Existing ID	Road Name	Existing Type	Existing Width (Ft)	Proposed RoW (Ft)	Phasing	Proposed Road Type	Proposed Status	Length (m)
PRdT 142	142		Pucca	8	20	Phase 01	Tertiary Road	Widening	100.36
PRdT 145	145		Katcha	7	20	Phase 01	Tertiary Road	Widening	211.39
PRdT 146	146		Pucca	8	20	Phase 01	Tertiary Road	Widening	69.22
PRdT 147	147		Pucca	5	20	Phase 01	Tertiary Road	Widening	101.13
PRdT 148	148		Semipucca	5	20	Phase 01	Tertiary Road	Widening	101.11
PRdT 149	149		Semipucca	5	20	Phase 01	Tertiary Road	Widening	125.11
PRdT 155	155		Katcha	7	20	Phase 01	Tertiary Road	Widening	207.77
PRdS 162	162	Patar Hat to Alimganj Khal Par Road	Pucca	8	40	Phase 01	Secondary Road	Widening	1192.89
PRdS 164	164		Katcha	10	40	Phase 01	Secondary Road	Widening	397.53
PRdS 169	169		Katcha	7	40	Phase 01	Secondary Road	Widening	379.23
PRdS 180	180		Katcha	8	30	Phase 01	Secondary Road	Widening	273.20
PRdS 181	181		Semipucca	7	30	Phase 01	Secondary Road	Widening	74.13
PRdT 183	183		Semipucca	6	20	Phase 01	Tertiary Road	Widening	43.25
PRdT 193	193		Semipucca	7	20	Phase 01	Tertiary Road	Widening	111.63
PRdT 203	203		Katcha	6	20	Phase 01	Tertiary Road	Widening	160.64
PRdT 205	205		Pucca	7	20	Phase 01	Tertiary Road	Widening	101.60
PRdT 206	206		Pucca	7	20	Phase 01	Tertiary Road	Widening	90.30
PRdT 207	207		Pucca	7	20	Phase 01	Tertiary Road	Widening	83.19
PRdS 208	208		Pucca	7	40	Phase 01	Secondary Road	Widening	197.37
PRdP 219	219		Semipucca	8	60	Phase 01	Primary Road	Widening	449.67
PRdP 235	235		Pucca	5	60	Phase 01	Primary Road	Widening	122.55
PRdP 237	237		Semipucca	11	60	Phase 01	Primary Road	Widening	124.36

Proposed Road ID	Existing ID	Road Name	Existing Type	Existing Width (Ft)	Proposed RoW (Ft)	Phasing	Proposed Road Type	Proposed Status	Length (m)
PRdT 238	238		Semipucca	8	20	Phase 01	Tertiary Road	Widening	140.84
PRdS 239	239		Semipucca	8	40	Phase 01	Secondary Road	Widening	113.42
PRdT 245	245		Pucca	8	20	Phase 01	Tertiary Road	Widening	140.19
PRdP 246	246		Semipucca	7	60	Phase 01	Primary Road	Widening	59.67
PRdS 256	256		Semipucca	11	40	Phase 01	Secondary Road	Widening	614.45
PRdS 257	257		Pucca	8	40	Phase 01	Secondary Road	Widening	221.89
PRdS 258	258		Semipucca	10	40	Phase 01	Secondary Road	Widening	554.45
PRdS 289	0			0	40	Phase 01	Secondary Road	New Road	610.81
PRdP 290	290	Patar Hat to Lalkharabad Road	Pucca	13	60	Phase 01	Primary Road	Widening	2223.67
PRdS 291	291	Hospital Road	Pucca	11	40	Phase 01	Secondary Road	Widening	160.50
PRdS 292	292	Patar Hat to Lalkharabad Road	Pucca	13	40	Phase 01	Secondary Road	Widening	342.05
PRdS 69	69		Semipucca	8	40	Phase 01	Secondary Road	Widening	1013.36
PRdT 107	107		Katcha	7	20	Phase 01	Tertiary Road	Widening	341.35
PRdS 31	31		Semipucca	10	40	Phase 01	Secondary Road	Widening	95.94
PRdS 45	45		Semipucca	5	40	Phase 01	Secondary Road	Widening	508.02
PRdS 43	43		Katcha	10	40	Phase 01	Secondary Road	Widening	94.83
PRdT 5	5		Semipucca	7	20	Phase 02	Tertiary Road	Widening	286.16
PRdS 13	13		Semipucca	7	40	Phase 02	Secondary Road	Widening	615.07
PRdT 34	34		Katcha	10	20	Phase 02	Tertiary Road	Widening	138.76

Proposed Road ID	Existing ID	Road Name	Existing Type	Existing Width (Ft)	Proposed RoW (Ft)	Phasing	Proposed Road Type	Proposed Status	Length (m)
PRdT 35	35		Katcha	8	20	Phase 02	Tertiary Road	Widening	522.95
PRdT 36	36		Katcha	10	20	Phase 02	Tertiary Road	Widening	80.07
PRdT 37	37		Katcha	10	20	Phase 02	Tertiary Road	Widening	106.59
PRdT 38	38		Katcha	7	20	Phase 02	Tertiary Road	Widening	263.00
PRdT 39	39		Katcha	7	20	Phase 02	Tertiary Road	Widening	215.33
PRdT 40	40		Semipucca	8	20	Phase 02	Tertiary Road	Widening	342.25
PRdS 42	42		Semipucca	8	40	Phase 02	Secondary Road	Widening	356.34
PRdT 43	43		Katcha	10	20	Phase 02	Tertiary Road	Widening	103.31
PRdT 44	44		Katcha	10	20	Phase 02	Tertiary Road	Widening	291.45
PRdT 56	56		Pucca	10	20	Phase 02	Tertiary Road	Widening	312.09
PRdT 57	57		Katcha	10	20	Phase 02	Tertiary Road	Widening	1039.20
PRdT 59	59		Katcha	10	20	Phase 02	Tertiary Road	Widening	584.36
PRdP 61	61		Semipucca	10	60	Phase 02	Primary Road	Widening	1963.31
PRdT 62	62		Semipucca	7	20	Phase 02	Tertiary Road	Widening	310.21
PRdT 70	70		Katcha	8	20	Phase 02	Tertiary Road	Widening	379.14
PRdT 77	77		Katcha	13	20	Phase 02	Tertiary Road	Widening	64.54
PRdT 98	98		Semipucca	5	20	Phase 02	Tertiary Road	Widening	287.23
PRdT 109	109		Pucca	11	20	Phase 02	Tertiary Road	Widening	699.33
PRdT 112	112		Katcha	7	20	Phase 02	Tertiary Road	Widening	232.46
PRdT 115	115		Pucca	8	20	Phase 02	Tertiary Road	Widening	246.29
PRdT 118	118		Katcha	8	20	Phase 02	Tertiary Road	Widening	192.48
PRdT 119	119		Katcha	5	20	Phase 02	Tertiary Road	Widening	207.43
PRdT 127	127		Katcha	7	20	Phase 02	Tertiary Road	Widening	737.59
PRdT 130	130		Katcha	10	20	Phase 02	Tertiary Road	Widening	302.21
PRdT 140	140		Semipucca	7	20	Phase 02	Tertiary Road	Widening	268.75

Proposed Road ID	Existing ID	Road Name	Existing Type	Existing Width (Ft)	Proposed RoW (Ft)	Phasing	Proposed Road Type	Proposed Status	Length (m)
PRdT 144	144		Semipucca	7	20	Phase 02	Tertiary Road	Widening	249.60
PRdT 150	0			0	20	Phase 02	Tertiary Road	New Road	238.13
PRdT 151	0			0	20	Phase 02	Tertiary Road	New Road	234.59
PRdT 152	152		Semipucca	5	20	Phase 02	Tertiary Road	Widening	89.51
PRdT 153	0			0	20	Phase 02	Tertiary Road	New Road	150.19
PRdT 154	154		Katcha	5	20	Phase 02	Tertiary Road	Widening	134.22
PRdS 157	0			0	30	Phase 02	Secondary Road	New Road	252.40
PRdS 159	159	Hamid Kha Road	Pucca	8	40	Phase 02	Secondary Road	Widening	994.32
PRdS 160	160		Semipucca	8	40	Phase 02	Secondary Road	Widening	370.86
PRdS 161	161		Pucca	10	40	Phase 02	Secondary Road	Widening	464.98
PRdS 165	165		Katcha	7	40	Phase 02	Secondary Road	Widening	304.68
PRdS 166	0			0	40	Phase 02	Secondary Road	New Road	265.05
PRdT 168	0			0	20	Phase 02	Tertiary Road	New Road	312.02
PRdT 171	171		Katcha	7	20	Phase 02	Tertiary Road	Widening	315.42
PRdT 172	172		Semipucca	7	20	Phase 02	Tertiary Road	Widening	192.12
PRdP 177	177		Katcha	6	60	Phase 02	Primary Road	Widening	210.98
PRdS 185	185		Katcha	10	40	Phase 02	Secondary Road	Widening	388.08
PRdS 186	186		Katcha	10	40	Phase 02	Secondary Road	Widening	332.37
PRdT 188	0			0	20	Phase 02	Tertiary Road	New Road	246.21
PRdT 189	0			0	20	Phase 02	Tertiary Road	New Road	219.05
PRdT 191	0			0	20	Phase 02	Tertiary Road	New Road	239.73

Proposed Road ID	Existing ID	Road Name	Existing Type	Existing Width (Ft)	Proposed RoW (Ft)	Phasing	Proposed Road Type	Proposed Status	Length (m)
PRdT 192	0			0	20	Phase 02	Tertiary Road	New Road	193.50
PRdT 194	194		Katcha	7	20	Phase 02	Tertiary Road	Widening	360.67
PRdT 197	0			0	20	Phase 02	Tertiary Road	New Road	672.34
PRdS 199	0			0	40	Phase 02	Secondary Road	New Road	544.57
PRdT 201	0			0	20	Phase 02	Tertiary Road	New Road	245.91
PRdT 204	204		Katcha	6	20	Phase 02	Tertiary Road	Widening	1131.40
PRdT 210	0			0	20	Phase 02	Tertiary Road	New Road	303.68
PRdS 211	0			0	40	Phase 02	Secondary Road	New Road	591.35
PRdP 229	229		Semipucca	10	60	Phase 02	Primary Road	Widening	425.01
PRdP 230	230		Katcha	10	60	Phase 02	Primary Road	Widening	812.81
PRdT 255	0			0	20	Phase 02	Tertiary Road	New Road	185.04
PRdT 269	0			0	20	Phase 02	Tertiary Road	New Road	247.93
PRdT 281	0			0	20	Phase 02	Tertiary Road	New Road	304.53
PRdT 282	0			0	20	Phase 02	Tertiary Road	New Road	238.95
PRdT 283	0			0	20	Phase 02	Tertiary Road	New Road	111.76
PRdT 293	0			0	20	Phase 02	Tertiary Road	New Road	315.55
PRdT 294	0			0	20	Phase 02	Tertiary Road	New Road	45.62
PRdT 295	0			0	20	Phase 02	Tertiary Road	New Road	130.89
PRdT 296	0			0	20	Phase 02	Tertiary Road	New Road	235.28
PRdT 297	0			0	20	Phase 02	Tertiary Road	New Road	130.30
PRdT 298	0			0	20	Phase 02	Tertiary Road	New Road	124.60
PRdS 300	0			0	40	Phase 02	Secondary Road	New Road	199.39
PRdT 43	43		Katcha	10	20	Phase 02	Tertiary Road	Widening	142.46
PRdP 29	29		Katcha	10	60	Phase 03	Primary Road	Widening	360.45

Proposed Road ID	Existing ID	Road Name	Existing Type	Existing Width (Ft)	Proposed RoW (Ft)	Phasing	Proposed Road Type	Proposed Status	Length (m)
PRdP 48	48		Pucca	10	60	Phase 03	Primary Road	Widening	3003.08
PRdT 63	63		Semipucca	7	20	Phase 03	Tertiary Road	Widening	331.36
PRdT 108	108		Katcha	10	20	Phase 03	Tertiary Road	Widening	244.51
PRdT 111	111		Katcha	11	20	Phase 03	Tertiary Road	Widening	313.98
PRdT 124	124		Semipucca	11	20	Phase 03	Tertiary Road	Widening	807.53
PRdS 156	0			0	40	Phase 03	Secondary Road	New Road	581.54
PRdS 158	0			0	40	Phase 03	Secondary Road	New Road	922.77
PRdS 163	0			0	40	Phase 03	Secondary Road	New Road	1624.18
PRdT 167	0			0	20	Phase 03	Tertiary Road	New Road	73.94
PRdT 170	0			0	20	Phase 03	Tertiary Road	New Road	412.61
PRdT 173	0			0	20	Phase 03	Tertiary Road	New Road	78.00
PRdT 174	0			0	20	Phase 03	Tertiary Road	New Road	317.01
PRdT 175	0			0	20	Phase 03	Tertiary Road	New Road	141.62
PRdP 176	0			0	60	Phase 03	Primary Road	New Road	634.21
PRdS 178	0			0	30	Phase 03	Secondary Road	New Road	436.58
PRdS 179	0			0	30	Phase 03	Secondary Road	New Road	229.44
PRdS 182	0			0	30	Phase 03	Secondary Road	New Road	122.96
PRdP 184	0			0	60	Phase 03	Primary Road	New Road	697.32
PRdS 187	0			0	30	Phase 03	Secondary Road	New Road	382.14
PRdP 190	0			0	60	Phase 03	Primary Road	New Road	1222.56
PRdT 195	0			0	20	Phase 03	Tertiary Road	New Road	361.28
PRdT 196	0			0	20	Phase 03	Tertiary Road	New Road	460.60



Proposed Road ID	Existing ID	Road Name	Existing Type	Existing Width (Ft)	Proposed RoW (Ft)	Phasing	Proposed Road Type	Proposed Status	Length (m)
PRdT 198	0			0	20	Phase 03	Tertiary Road	New Road	359.78
PRdT 200	0			0	20	Phase 03	Tertiary Road	New Road	402.41
PRdT 202	0			0	20	Phase 03	Tertiary Road	New Road	395.29
PRdS 209	0			0	40	Phase 03	Secondary Road	New Road	131.26
PRdS 213	0			0	40	Phase 03	Secondary Road	New Road	527.67
PRdP 214	0			0	60	Phase 03	Primary Road	New Road	1508.25
PRdP 215	0			0	60	Phase 03	Primary Road	New Road	532.37
PRdP 216	0			0	60	Phase 03	Primary Road	New Road	1341.97
PRdP 217	0			0	60	Phase 03	Primary Road	New Road	1476.89
PRdP 218	0			0	60	Phase 03	Primary Road	New Road	1159.23
PRdP 220	0			0	60	Phase 03	Primary Road	New Road	1118.91
PRdP 221	0			0	60	Phase 03	Primary Road	New Road	1877.25
PRdS 222	0			0	30	Phase 03	Secondary Road	New Road	1339.05
PRdP 223	0			0	60	Phase 03	Primary Road	New Road	1797.34
PRdT 224	224		Katcha	10	20	Phase 03	Tertiary Road	Widening	105.29
PRdP 225	225		Katcha	10	60	Phase 03	Primary Road	Widening	1193.47
PRdP 226	226		Katcha	10	60	Phase 03	Primary Road	Widening	206.05
PRdP 227	0			0	60	Phase 03	Primary Road	New Road	618.00
PRdT 228	228		Katcha	10	20	Phase 03	Tertiary Road	Widening	343.11
PRdP 231	0			0	60	Phase 03	Primary Road	New Road	505.57
PRdT 232	0			0	20	Phase 03	Tertiary Road	New Road	43.17
PRdP 233	0			0	60	Phase 03	Primary Road	New Road	188.48
PRdP 234	0			0	60	Phase 03	Primary Road	New Road	559.11
PRdP 236	0			0	60	Phase 03	Primary Road	New Road	123.71

Proposed Road ID	Existing ID	Road Name	Existing Type	Existing Width (Ft)	Proposed RoW (Ft)	Phasing	Proposed Road Type	Proposed Status	Length (m)
PRdP 240	0			0	60	Phase 03	Primary Road	New Road	476.12
PRdS 241	0			0	40	Phase 03	Secondary Road	New Road	256.44
PRdS 242	0			0	40	Phase 03	Secondary Road	New Road	387.02
PRdP 243	0			0	60	Phase 03	Primary Road	New Road	212.67
PRdP 244	0			0	60	Phase 03	Primary Road	New Road	202.91
PRdT 247	0			0	20	Phase 03	Tertiary Road	New Road	255.93
PRdT 248	0			0	20	Phase 03	Tertiary Road	New Road	277.82
PRdT 249	0			0	20	Phase 03	Tertiary Road	New Road	300.66
PRdS 250	0			0	40	Phase 03	Secondary Road	New Road	344.39
PRdT 251	0			0	20	Phase 03	Tertiary Road	New Road	613.16
PRdS 252	0			0	40	Phase 03	Secondary Road	New Road	147.91
PRdT 253	0			0	20	Phase 03	Tertiary Road	New Road	738.67
PRdS 254	0			0	40	Phase 03	Secondary Road	New Road	323.55
PRdT 259	0			0	20	Phase 03	Tertiary Road	New Road	255.14
PRdT 260	0			0	20	Phase 03	Tertiary Road	New Road	266.00
PRdT 261	0			0	20	Phase 03	Tertiary Road	New Road	617.38
PRdS 262	0			0	40	Phase 03	Secondary Road	New Road	236.17
PRdS 263	0			0	40	Phase 03	Secondary Road	New Road	999.30
PRdS 264	0			0	40	Phase 03	Secondary Road	New Road	818.36
PRdT 265	0			0	20	Phase 03	Tertiary Road	New Road	243.34
PRdT 266	0			0	20	Phase 03	Tertiary Road	New Road	369.78

Proposed Road ID	Existing ID	Road Name	Existing Type	Existing Width (Ft)	Proposed RoW (Ft)	Phasing	Proposed Road Type	Proposed Status	Length (m)
PRdT 267	0			0	20	Phase 03	Tertiary Road	New Road	246.27
PRdT 268	0			0	20	Phase 03	Tertiary Road	New Road	186.88
PRdT 270	270		Katcha	6	20	Phase 03	Tertiary Road	Widening	183.20
PRdT 271	0			0	20	Phase 03	Tertiary Road	New Road	124.82
PRdS 272	272		Katcha	6	40	Phase 03	Secondary Road	Widening	376.01
PRdS 273	0			0	40	Phase 03	Secondary Road	New Road	583.74
PRdS 274	0			0	40	Phase 03	Secondary Road	New Road	132.45
PRdT 275	0			0	20	Phase 03	Tertiary Road	New Road	494.97
PRdS 276	0			0	40	Phase 03	Secondary Road	New Road	746.31
PRdT 277	0			0	20	Phase 03	Tertiary Road	New Road	269.08
PRdT 278	0			0	20	Phase 03	Tertiary Road	New Road	186.77
PRdT 279	0			0	20	Phase 03	Tertiary Road	New Road	320.39
PRdT 280	0			0	20	Phase 03	Tertiary Road	New Road	385.13
PRdT 284	0			0	20	Phase 03	Tertiary Road	New Road	320.71
PRdT 285	0			0	20	Phase 03	Tertiary Road	New Road	208.21
PRdT 286	0			0	20	Phase 03	Tertiary Road	New Road	184.90
PRdT 287	0			0	20	Phase 03	Tertiary Road	New Road	101.67
PRdT 288	0			0	20	Phase 03	Tertiary Road	New Road	238.24
PRdT 299	0			0	20	Phase 03	Tertiary Road	New Road	113.08
PRdS 301	0			0	30	Phase 03	Secondary Road	New Road	528.55
PRdS 302	0			0	40	Phase 03	Secondary Road	New Road	318.49
PRdS 303	0			0	40	Phase 03	Secondary Road	New Road	264.52

Proposed Road ID	Existing ID	Road Name	Existing Type	Existing Width (Ft)	Proposed RoW (Ft)	Phasing	Proposed Road Type	Proposed Status	Length (m)
PRdT 304	0			0	20	Phase 03	Tertiary Road	New Road	271.86
PRdS 305	0			0	40	Phase 03	Secondary Road	New Road	350.07
PRdT 306	0			0	20	Phase 03	Tertiary Road	New Road	293.56
PRdT 289	0			0	20	Phase 03	Tertiary Road	New Road	102.67

## Annexure- F: Proposed Road Inventory

**Table: Proposals of New Tertiary Drains in Mehendiganj Paurashava**

Proposed ID	Proposed Type	Phasing	Proposed Width (m)	Proposed Depth (m)	Length (m)
PDrT 1	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	430.09
PDrT 2	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	1137.59
PDrT 3	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	347.42
PDrT 4	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	301.39
PDrT 5	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	421.51
PDrT 6	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	308.03
PDrT 7	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	454.83
PDrT 8	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	366.23
PDrT 9	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	279.40
PDrT 10	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	485.57
PDrT 11	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	395.28
PDrT 12	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	186.32
PDrT 13	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	812.19
PDrT 14	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	139.97
PDrT 15	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	569.63
PDrT 16	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	286.70
PDrT 17	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	64.29
PDrT 18	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	92.43
PDrT 19	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	233.53
PDrT 20	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	172.42
PDrT 21	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	346.88
PDrT 22	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	857.02
PDrT 23	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	432.08
PDrT 24	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	204.87
PDrT 25	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	753.12
PDrT 26	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	175.91
PDrT 27	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	254.77
PDrT 28	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	185.12
PDrT 29	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	239.56
PDrT 30	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	396.67
PDrT 31	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	245.80
PDrT 32	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	265.62
PDrT 33	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	373.48
PDrT 34	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	298.26
PDrT 35	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	306.75
PDrT 36	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	197.57
PDrT 37	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	37.68
PDrT 38	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	218.96
PDrT 39	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	104.67

Proposed ID	Proposed Type	Phasing	Proposed Width (m)	Proposed Depth (m)	Length (m)
PDrT 40	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	286.62
PDrT 41	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	294.24
PDrT 42	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	273.19
PDrT 43	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	429.32
PDrT 44	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	784.93
PDrT 45	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	346.30
PDrT 46	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	935.08
PDrT 47	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	300.81
PDrT 48	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	303.12
PDrT 49	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	982.20
PDrT 50	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	466.17
PDrT 51	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	365.70
PDrT 52	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	276.97
PDrT 53	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	484.45
PDrT 54	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	400.60
PDrT 55	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	186.63
PDrT 56	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	810.66
PDrT 57	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	141.55
PDrT 58	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	584.30
PDrT 59	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	281.33
PDrT 60	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	64.55
PDrT 61	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	94.93
PDrT 62	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	169.03
PDrT 63	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	345.75
PDrT 64	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	346.83
PDrT 65	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	238.21
PDrT 66	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	383.96
PDrT 67	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	858.04
PDrT 68	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	434.92
PDrT 69	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	205.00
PDrT 70	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	749.66
PDrT 71	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	173.88
PDrT 72	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	257.97
PDrT 73	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	182.90
PDrT 74	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	239.55
PDrT 75	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	399.40
PDrT 76	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	243.51
PDrT 77	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	262.68
PDrT 78	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	374.17
PDrT 79	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	299.76
PDrT 80	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	306.11
PDrT 81	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	196.53
PDrT 82	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	121.25

Proposed ID	Proposed Type	Phasing	Proposed Width (m)	Proposed Depth (m)	Length (m)
PDrT 83	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	37.20
PDrT 84	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	105.15
PDrT 85	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	283.92
PDrT 86	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	296.84
PDrT 87	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	271.73
PDrT 168	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	200.24
PDrT 169	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	247.12
PDrT 170	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	248.32
PDrT 171	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	269.29
PDrT 172	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	270.01
PDrT 173	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	238.21
PDrT 174	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	238.07
PDrT 175	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	602.03
PDrT 176	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	614.09
PDrT 177	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	1354.94
PDrT 178	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	1350.58
PDrT 179	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	452.22
PDrT 180	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	449.12
PDrT 181	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	243.99
PDrT 182	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	243.41
PDrT 185	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	263.14
PDrT 186	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	264.95
PDrT 191	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	330.64
PDrT 192	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	327.49
PDrT 193	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	270.30
PDrT 194	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	273.80
PDrT 195	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	354.53
PDrT 196	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	362.48
PDrT 201	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	238.05
PDrT 202	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	237.12
PDrT 203	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	366.58
PDrT 204	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	184.28
PDrT 207	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	177.30
PDrT 208	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	173.76
PDrT 213	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	197.21
PDrT 214	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	196.60
PDrT 215	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	97.79
PDrT 216	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	100.47
PDrT 217	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	458.01
PDrT 218	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	449.50
PDrT 221	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	501.97
PDrT 222	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	502.88
PDrT 223	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	345.65

Proposed ID	Proposed Type	Phasing	Proposed Width (m)	Proposed Depth (m)	Length (m)
PDrT 224	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	345.20
PDrT 225	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	103.77
PDrT 226	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	106.21
PDrT 227	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	67.59
PDrT 228	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	66.87
PDrT 230	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	225.08
PDrT 231	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	219.48
PDrT 239	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	413.11
PDrT 240	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	417.06
PDrT 241	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	141.06
PDrT 242	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	147.30
PDrT 247	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	381.16
PDrT 248	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	382.14
PDrT 249	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	237.36
PDrT 250	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	233.58
PDrT 251	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	290.79
PDrT 252	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	292.72
PDrT 253	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	314.42
PDrT 255	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	122.85
PDrT 260	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	222.48
PDrT 261	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	221.22
PDrT 269	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	322.63
PDrT 270	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	322.06
PDrT 273	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	335.23
PDrT 274	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	337.21
PDrT 277	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	468.64
PDrT 280	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	102.00
PDrT 281	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	69.05
PDrT 282	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	320.20
PDrT 283	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	0.10
PDrT 284	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	0.10
PDrT 285	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	86.82
PDrT 286	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	39.30
PDrT 287	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	40.64
PDrT 288	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	378.11
PDrT 289	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	84.82
PDrT 290	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	350.45
PDrT 291	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	54.32
PDrT 292	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	170.72
PDrT 293	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	108.93
PDrT 294	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	1.50
PDrT 295	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	36.22
PDrT 296	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	138.20



Proposed ID	Proposed Type	Phasing	Proposed Width (m)	Proposed Depth (m)	Length (m)
PDrT 297	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	111.65
PDrT 299	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	338.38
PDrT 300	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	79.51
PDrT 301	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	320.43
PDrT 302	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	86.88
PDrT 303	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	92.40
PDrT 304	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	346.74
PDrT 305	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	52.68
PDrT 306	Tertiary Drain	Phase 03	1.50 - 2.50	0.64 - 1.00	170.12
PDrT 307	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	37.74
PDrT 308	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	134.32
PDrT 309	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	111.05
PDrT 372	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	51.80
PDrT 373	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	175.01
PDrT 374	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	52.73
PDrT 375	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	169.80
PDrT 380	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	103.80
PDrT 381	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	38.65
PDrT 382	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	105.00
PDrT 383	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	37.55
PDrT 384	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	145.00
PDrT 385	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	152.40
PDrT 386	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	155.86
PDrT 391	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	111.79
PDrT 392	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	108.27
PDrT 393	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	1.50
PDrT 400	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	587.77
PDrT 401	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	83.72
PDrT 402	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	199.87
PDrT 403	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	199.05
PDrT 406	Tertiary Drain	Phase 02	1.50 - 2.50	0.64 - 1.00	80.89
PDrT 407	Tertiary Drain	Phase 01	1.50 - 2.50	0.64 - 1.00	200.89
<b>Total</b>					<b>57315.21</b>

**Table: Proposals of New Secondary Drains in Mehendiganj Paurashava**

<b>Proposed ID</b>	<b>Proposed Type</b>	<b>Phasing</b>	<b>Proposed Width (m)</b>	<b>Proposed Depth (m)</b>	<b>Length (m)</b>
PDrS 88	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	303.17
PDrS 89	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	75.51
PDrS 90	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	524.23
PDrS 91	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	318.66
PDrS 92	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	299.04
PDrS 93	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	72.71
PDrS 94	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	378.99
PDrS 95	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	527.08
PDrS 96	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	784.70
PDrS 97	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	112.32
PDrS 98	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	125.85
PDrS 99	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	421.15
PDrS 100	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	383.12
PDrS 101	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	529.62
PDrS 102	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	336.75
PDrS 103	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	841.61
PDrS 104	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	482.50
PDrS 105	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	139.16
PDrS 106	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	228.93
PDrS 107	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	742.42
PDrS 108	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	312.10
PDrS 109	Secondary Drain	Phase 02	2.35 - 3.35	1.124 - 2.124	577.17
PDrS 110	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	327.33
PDrS 111	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	371.36
PDrS 112	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	133.10
PDrS 113	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	206.22
PDrS 114	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	985.02
PDrS 115	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	541.71
PDrS 116	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	362.36
PDrS 117	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	445.68
PDrS 118	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	149.66
PDrS 119	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	303.78
PDrS 120	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	252.64
PDrS 121	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	127.28
PDrS 122	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	126.32
PDrS 123	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	420.62
PDrS 124	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	385.35
PDrS 125	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	797.51
PDrS 126	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	340.34
PDrS 127	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	483.59
PDrS 128	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	154.40
PDrS 129	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	246.37

Proposed ID	Proposed Type	Phasing	Proposed Width (m)	Proposed Depth (m)	Length (m)
PDrS 130	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	740.62
PDrS 131	Secondary Drain	Phase 02	2.35 - 3.35	1.124 - 2.124	302.82
PDrS 132	Secondary Drain	Phase 02	2.35 - 3.35	1.124 - 2.124	316.94
PDrS 133	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	318.29
PDrS 134	Secondary Drain	Phase 02	2.35 - 3.35	1.124 - 2.124	576.69
PDrS 135	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	333.79
PDrS 136	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	373.67
PDrS 137	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	131.80
PDrS 138	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	209.29
PDrS 139	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	985.06
PDrS 140	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	543.45
PDrS 141	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	358.47
PDrS 142	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	440.43
PDrS 143	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	151.34
PDrS 144	Secondary Drain	Phase 02	2.35 - 3.35	1.124 - 2.124	120.91
PDrS 145	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	304.78
PDrS 146	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	253.89
PDrS 147	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	1455.33
PDrS 148	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	580.94
PDrS 149	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	1676.72
PDrS 150	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	173.45
PDrS 151	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	1222.80
PDrS 152	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	868.54
PDrS 153	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	759.56
PDrS 154	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	640.15
PDrS 155	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	831.03
PDrS 156	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	459.39
PDrS 157	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	1455.93
PDrS 158	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	185.11
PDrS 159	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	752.60
PDrS 160	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	1218.82
PDrS 161	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	870.04
PDrS 162	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	761.76
PDrS 163	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	1997.95
PDrS 164	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	825.32
PDrS 165	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	456.70
PDrS 166	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	116.93
PDrS 167	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	118.62
PDrS 183	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	336.44
PDrS 184	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	329.93
PDrS 187	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	693.31
PDrS 188	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	682.04
PDrS 189	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	123.92

Proposed ID	Proposed Type	Phasing	Proposed Width (m)	Proposed Depth (m)	Length (m)
PDrS 190	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	115.13
PDrS 197	Secondary Drain	Phase 02	2.35 - 3.35	1.124 - 2.124	338.19
PDrS 198	Secondary Drain	Phase 02	2.35 - 3.35	1.124 - 2.124	355.72
PDrS 199	Secondary Drain	Phase 02	2.35 - 3.35	1.124 - 2.124	1211.24
PDrS 200	Secondary Drain	Phase 02	2.35 - 3.35	1.124 - 2.124	1164.88
PDrS 205	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	1007.34
PDrS 206	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	720.82
PDrS 209	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	112.63
PDrS 210	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	115.87
PDrS 211	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	460.35
PDrS 212	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	463.87
PDrS 219	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	266.53
PDrS 220	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	261.85
PDrS 229	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	313.04
PDrS 232	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	664.12
PDrS 233	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	324.34
PDrS 234	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	326.18
PDrS 235	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	277.53
PDrS 236	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	636.65
PDrS 237	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	695.98
PDrS 238	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	701.53
PDrS 243	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	195.52
PDrS 244	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	525.20
PDrS 245	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	177.24
PDrS 246	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	176.78
PDrS 254	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	330.73
PDrS 256	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	277.90
PDrS 257	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	276.08
PDrS 258	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	333.62
PDrS 259	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	330.52
PDrS 262	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	254.78
PDrS 263	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	654.02
PDrS 264	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	657.37
PDrS 265	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	401.17
PDrS 266	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	395.49
PDrS 267	Secondary Drain	Phase 02	2.35 - 3.35	1.124 - 2.124	58.64
PDrS 268	Secondary Drain	Phase 02	2.35 - 3.35	1.124 - 2.124	58.08
PDrS 271	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	605.26
PDrS 272	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	608.82
PDrS 275	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	52.37
PDrS 276	Secondary Drain	Phase 02	2.35 - 3.35	1.124 - 2.124	61.43
PDrS 278	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	91.11
PDrS 279	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	104.30

Proposed ID	Proposed Type	Phasing	Proposed Width (m)	Proposed Depth (m)	Length (m)
PDrS 311	Secondary Drain	Phase 02	2.35 - 3.35	1.124 - 2.124	187.20
PDrS 312	Secondary Drain	Phase 02	2.35 - 3.35	1.124 - 2.124	194.47
PDrS 313	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	51.21
PDrS 314	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	229.94
PDrS 315	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	179.36
PDrS 316	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	946.90
PDrS 317	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	769.80
PDrS 318	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	90.81
PDrS 319	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	122.49
PDrS 320	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	110.90
PDrS 321	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	225.77
PDrS 322	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	75.63
PDrS 323	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	548.52
PDrS 324	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	47.79
PDrS 325	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	247.79
PDrS 326	Secondary Drain	Phase 02	2.35 - 3.35	1.124 - 2.124	120.56
PDrS 327	Secondary Drain	Phase 02	2.35 - 3.35	1.124 - 2.124	489.35
PDrS 328	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	50.86
PDrS 329	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	242.41
PDrS 330	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	2933.09
PDrS 331	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	404.56
PDrS 332	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	951.72
PDrS 333	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	90.54
PDrS 334	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	123.02
PDrS 335	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	46.36
PDrS 336	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	792.62
PDrS 337	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	117.70
PDrS 338	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	222.86
PDrS 339	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	78.15
PDrS 340	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	574.12
PDrS 341	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	45.62
PDrS 342	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	251.40
PDrS 343	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	1349.56
PDrS 344	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	97.67
PDrS 345	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	856.11
PDrS 346	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	154.22
PDrS 347	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	198.64
PDrS 348	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	199.65
PDrS 349	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	512.33
PDrS 350	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	1686.82
PDrS 351	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	1352.58
PDrS 352	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	500.58
PDrS 353	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	74.22

Proposed ID	Proposed Type	Phasing	Proposed Width (m)	Proposed Depth (m)	Length (m)
PDrS 354	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	870.47
PDrS 355	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	134.40
PDrS 356	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	171.93
PDrS 357	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	486.69
PDrS 358	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	206.93
PDrS 359	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	199.43
PDrS 360	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	512.24
PDrS 361	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	1703.24
PDrS 362	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	120.41
PDrS 363	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	120.61
PDrS 364	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	312.23
PDrS 365	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	1284.39
PDrS 366	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	343.18
PDrS 367	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	457.66
PDrS 368	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	310.52
PDrS 369	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	1306.48
PDrS 370	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	320.10
PDrS 371	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	470.06
PDrS 376	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	152.49
PDrS 377	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	402.30
PDrS 378	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	150.77
PDrS 379	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	409.87
PDrS 387	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	5.37
PDrS 388	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	0.06
PDrS 389	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	0.06
PDrS 390	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	104.90
PDrS 394	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	2.32
PDrS 395	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	618.52
PDrS 396	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	218.44
PDrS 397	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	597.94
PDrS 398	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	242.29
PDrS 399	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	159.99
PDrS 404	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	1987.64
PDrS 405	Secondary Drain	Phase 03	2.35 - 3.35	1.124 - 2.124	257.87
PDrS 103	Secondary Drain	Phase 01	2.35 - 3.35	1.124 - 2.124	841.61
<b>Total</b>					<b>92922.46</b>

**Annexure- G: Plot Scheduling of Water Retention Area**

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Bhuta Lakshmipur	043	00	94	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	106	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	109	Ward No. 07	0.26
Pond	Bhuta Lakshmipur	043	00	89	Ward No. 07	0.06
Pond	Bhuta Lakshmipur	043	00	92	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	93	Ward No. 07	0.09
Pond	Bhuta Lakshmipur	043	00	94	Ward No. 07	0.07
Pond	Bhuta Lakshmipur	043	00	95	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	962	Ward No. 07	0.36
Pond	Bhuta Lakshmipur	043	00	963	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	963	Ward No. 07	0.05
Pond	Bhuta Lakshmipur	043	00	964	Ward No. 07	0.33
Pond	Bhuta Lakshmipur	043	00	965	Ward No. 07	0.00
Pond	Char Hogla	041	03	2022	Ward No. 01	0.17
Pond	Char Hogla	041	03	2014	Ward No. 01	0.07
Pond	Char Hogla	041	03	2015	Ward No. 01	0.13
Pond	Char Hogla	041	03	2013	Ward No. 01	0.25
Pond	Char Hogla	041	03	2218	Ward No. 01	0.00
Pond	Char Hogla	041	03	2224	Ward No. 01	0.00
Pond	Char Hogla	041	03	2225	Ward No. 01	0.00
Pond	Char Hogla	041	03	2226	Ward No. 01	0.07
Pond	Char Hogla	041	03	2227	Ward No. 01	0.07
Pond	Char Hogla	041	03	2228	Ward No. 01	0.12
Pond	Char Hogla	041	03	2209	Ward No. 01	0.00
Pond	Char Hogla	041	03	2210	Ward No. 01	0.00
Pond	Char Hogla	041	03	2215	Ward No. 01	0.03
Pond	Char Hogla	041	03	2216	Ward No. 01	0.08
Pond	Char Hogla	041	03	2217	Ward No. 01	0.07
Pond	Char Hogla	041	03	2218	Ward No. 01	0.12
Pond	Char Hogla	041	03	2219	Ward No. 01	0.00
Pond	Char Hogla	041	03	2231	Ward No. 01	0.00
Pond	Char Hogla	041	03	2206	Ward No. 01	0.05
Pond	Char Hogla	041	03	2207	Ward No. 01	0.12
Pond	Char Hogla	041	03	2208	Ward No. 01	0.00
Pond	Char Hogla	041	03	2210	Ward No. 01	0.00
Pond	Char Hogla	041	03	2231	Ward No. 01	0.00
Pond	Char Hogla	041	03	2199	Ward No. 01	0.00
Pond	Char Hogla	041	03	2231	Ward No. 01	0.00
Pond	Char Hogla	041	03	2232	Ward No. 01	0.30
Pond	Char Hogla	041	03	2233	Ward No. 01	0.02
Pond	Char Hogla	041	03	2250	Ward No. 01	0.00
Pond	Char Hogla	041	03	2264	Ward No. 01	0.20
Pond	Char Hogla	041	03	2260	Ward No. 01	0.00

## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Char Hogla	041	03	2262	Ward No. 01	0.21
Pond	Char Hogla	041	03	2263	Ward No. 01	0.00
Pond	Char Hogla	041	03	2568	Ward No. 01	0.02
Pond	Char Hogla	041	03	2569	Ward No. 01	0.14
Pond	Char Hogla	041	03	2570	Ward No. 01	0.00
Pond	Char Hogla	041	03	2574	Ward No. 01	0.05
Pond	Char Hogla	041	03	2575	Ward No. 01	0.48
Pond	Char Hogla	041	03	2576	Ward No. 01	0.02
Pond	Char Hogla	041	03	2577	Ward No. 01	0.32
Pond	Char Hogla	041	03	2588	Ward No. 01	0.17
Pond	Char Hogla	041	03	2585	Ward No. 01	0.27
Pond	Char Hogla	041	03	2586	Ward No. 01	0.00
Ditch	Char Hogla	041	03	2594	Ward No. 01	0.00
Ditch	Char Hogla	041	03	2599	Ward No. 01	0.11
Ditch	Char Hogla	041	03	2600	Ward No. 01	0.57
Ditch	Char Hogla	041	03	2621	Ward No. 01	0.00
Ditch	Char Hogla	041	03	2598	Ward No. 01	0.07
Ditch	Char Hogla	041	03	3293	Ward No. 01	0.00
Pond	Char Hogla	041	03	2816	Ward No. 01	0.03
Pond	Char Hogla	041	03	2817	Ward No. 01	0.00
Pond	Char Hogla	041	03	2818	Ward No. 01	0.18
Pond	Char Hogla	041	03	2821	Ward No. 01	0.01
Pond	Char Hogla	041	03	2614	Ward No. 01	0.19
Pond	Char Hogla	041	03	2616	Ward No. 01	0.00
Pond	Char Hogla	041	03	2814	Ward No. 01	0.00
Pond	Char Hogla	041	03	2815	Ward No. 01	0.00
Pond	Char Hogla	041	03	2816	Ward No. 01	0.23
Pond	Char Hogla	041	03	2806	Ward No. 01	0.00
Pond	Char Hogla	041	03	2809	Ward No. 01	0.00
Pond	Char Hogla	041	03	2826	Ward No. 01	0.18
Pond	Char Hogla	041	03	2827	Ward No. 01	0.00
Pond	Char Hogla	041	03	2830	Ward No. 01	0.06
Pond	Char Hogla	041	03	2831	Ward No. 01	0.09
Pond	Char Hogla	041	03	2832	Ward No. 01	0.01
Pond	Char Hogla	041	03	2840	Ward No. 01	0.21
Pond	Char Hogla	041	03	2842	Ward No. 01	0.20
Pond	Bhuta Lakshmipur	043	00	123	Ward No. 07	0.17
Pond	Bhuta Lakshmipur	043	00	125	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	109	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	124	Ward No. 07	0.20
Pond	Bhuta Lakshmipur	043	00	125	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	171	Ward No. 07	0.18
Pond	Bhuta Lakshmipur	043	00	174	Ward No. 07	0.04



## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Bhuta Lakshmipur	043	00	175	Ward No. 07	0.06
Pond	Bhuta Lakshmipur	043	00	176	Ward No. 07	0.05
Pond	Bhuta Lakshmipur	043	00	172	Ward No. 07	0.23
Pond	Bhuta Lakshmipur	043	00	174	Ward No. 07	0.07
Pond	Bhuta Lakshmipur	043	00	160	Ward No. 07	0.16
Pond	Bhuta Lakshmipur	043	00	161	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	148	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	151	Ward No. 07	0.06
Pond	Bhuta Lakshmipur	043	00	151	Ward No. 07	0.14
Pond	Bhuta Lakshmipur	043	00	156	Ward No. 07	0.04
Pond	Bhuta Lakshmipur	043	00	170	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	203	Ward No. 07	0.27
Pond	Bhuta Lakshmipur	043	00	244	Ward No. 07	0.02
Pond	Bhuta Lakshmipur	043	00	245	Ward No. 07	0.28
Pond	Bhuta Lakshmipur	043	00	247	Ward No. 07	0.01
Pond	Bhuta Lakshmipur	043	00	254	Ward No. 07	0.07
Pond	Bhuta Lakshmipur	043	00	244	Ward No. 07	0.16
Pond	Bhuta Lakshmipur	043	00	255	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	270	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	271	Ward No. 07	0.03
Pond	Bhuta Lakshmipur	043	00	272	Ward No. 07	0.05
Pond	Bhuta Lakshmipur	043	00	273	Ward No. 07	0.04
Pond	Bhuta Lakshmipur	043	00	293	Ward No. 07	0.04
Pond	Bhuta Lakshmipur	043	00	266	Ward No. 07	0.38
Pond	Bhuta Lakshmipur	043	00	263	Ward No. 07	0.15
Pond	Bhuta Lakshmipur	043	00	161	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	214	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	215	Ward No. 07	0.28
Pond	Bhuta Lakshmipur	043	00	186	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	196	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	204	Ward No. 07	0.16
Pond	Sonamukhi	044	01	63	Ward No. 02	0.17
Pond	Sonamukhi	044	01	64	Ward No. 02	0.20
Pond	Sonamukhi	044	01	67	Ward No. 02	0.00
Pond	Sonamukhi	044	01	138	Ward No. 02	0.00
Pond	Char Hogla	041	03	2039	Ward No. 01	0.22
Pond	Char Hogla	041	03	2040	Ward No. 01	0.01
Pond	Char Hogla	041	03	2040	Ward No. 01	0.00
Pond	Char Hogla	041	03	2041	Ward No. 01	0.17
Pond	Char Hogla	041	03	2067	Ward No. 01	0.00
Pond	Char Hogla	041	03	2068	Ward No. 01	0.00
Pond	Char Hogla	041	03	2254	Ward No. 01	0.00
Pond	Char Hogla	041	03	2264	Ward No. 01	0.00

## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Char Hogla	041	03	2265	Ward No. 01	0.37
Pond	Char Hogla	041	03	2266	Ward No. 01	0.97
Pond	Char Hogla	041	03	2267	Ward No. 01	0.00
Ditch	Char Hogla	041	03	2056	Ward No. 01	0.08
Ditch	Char Hogla	041	03	2057	Ward No. 01	0.00
Ditch	Char Hogla	041	03	2058	Ward No. 01	0.01
Ditch	Char Hogla	041	03	2059	Ward No. 01	0.06
Ditch	Char Hogla	041	03	2060	Ward No. 01	0.00
Pond	Char Hogla	041	03	2269	Ward No. 01	0.90
Pond	Char Hogla	041	03	2563	Ward No. 01	0.00
Pond	Char Hogla	041	03	2566	Ward No. 01	0.01
Pond	Char Hogla	041	03	2265	Ward No. 01	0.20
Pond	Char Hogla	041	03	2266	Ward No. 01	0.00
Pond	Char Hogla	041	03	2567	Ward No. 01	0.20
Pond	Char Hogla	041	03	2562	Ward No. 01	0.24
Pond	Char Hogla	041	03	2560	Ward No. 01	0.18
Pond	Char Hogla	041	03	2562	Ward No. 01	0.01
Pond	Char Hogla	041	03	2558	Ward No. 01	0.00
Pond	Char Hogla	041	03	2551	Ward No. 01	0.36
Pond	Char Hogla	041	03	2553	Ward No. 01	0.00
Pond	Char Hogla	041	03	2550	Ward No. 01	0.00
Pond	Char Hogla	041	03	2552	Ward No. 01	0.00
Pond	Char Hogla	041	03	2585	Ward No. 01	0.31
Pond	Char Hogla	041	03	2584	Ward No. 01	0.00
Pond	Char Hogla	041	03	2584	Ward No. 01	0.14
Pond	Char Hogla	041	03	2581	Ward No. 01	0.20
Pond	Char Hogla	041	03	2582	Ward No. 01	0.01
Pond	Char Hogla	041	03	2545	Ward No. 01	0.24
Pond	Char Hogla	041	03	2548	Ward No. 01	0.00
Pond	Char Hogla	041	03	2537	Ward No. 01	0.00
Pond	Char Hogla	041	03	2538	Ward No. 01	0.16
Pond	Char Hogla	041	03	2537	Ward No. 01	0.01
Pond	Char Hogla	041	03	2667	Ward No. 01	0.03
Pond	Char Hogla	041	03	2668	Ward No. 01	0.12
Pond	Char Hogla	041	03	2534	Ward No. 01	0.04
Pond	Char Hogla	041	03	2535	Ward No. 01	0.14
Pond	Char Hogla	041	03	2536	Ward No. 01	0.07
Pond	Char Hogla	041	03	2532	Ward No. 01	0.00
Pond	Char Hogla	041	03	3293	Ward No. 01	0.03
Pond	Char Hogla	041	03	2809	Ward No. 01	0.04
Pond	Char Hogla	041	03	2810	Ward No. 01	0.09
Pond	Char Hogla	041	03	2811	Ward No. 01	0.06
Pond	Char Hogla	041	03	2812	Ward No. 01	0.03

## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Char Hogla	041	03	2800	Ward No. 01	0.00
Pond	Char Hogla	041	03	2804	Ward No. 01	0.00
Pond	Char Hogla	041	03	2806	Ward No. 01	0.00
Pond	Char Hogla	041	03	2807	Ward No. 01	0.15
Pond	Char Hogla	041	03	2808	Ward No. 01	0.19
Pond	Char Hogla	041	03	2809	Ward No. 01	0.00
Pond	Char Hogla	041	03	2805	Ward No. 01	0.29
Pond	Char Hogla	041	03	2806	Ward No. 01	0.05
Pond	Char Hogla	041	03	2832	Ward No. 01	0.00
Pond	Char Hogla	041	03	2801	Ward No. 01	0.00
Pond	Char Hogla	041	03	2802	Ward No. 01	0.00
Pond	Char Hogla	041	03	2803	Ward No. 01	0.23
Pond	Char Hogla	041	03	2804	Ward No. 01	0.00
Pond	Char Hogla	041	03	2832	Ward No. 01	0.00
Pond	Char Hogla	041	03	2832	Ward No. 01	0.15
Pond	Char Hogla	041	03	2837	Ward No. 01	0.00
Pond	Char Hogla	041	03	2838	Ward No. 01	0.38
Pond	Char Hogla	041	03	2839	Ward No. 01	0.02
Pond	Char Hogla	041	03	2884	Ward No. 01	0.06
Pond	Char Hogla	041	03	2883	Ward No. 01	0.00
Pond	Char Hogla	041	03	2898	Ward No. 01	0.36
Pond	Char Hogla	041	03	3295	Ward No. 01	0.01
Pond	Char Hogla	041	03	2918	Ward No. 01	0.03
Pond	Char Hogla	041	03	2875	Ward No. 01	0.03
Pond	Char Hogla	041	03	2897	Ward No. 01	0.32
Pond	Char Hogla	041	03	2901	Ward No. 01	0.00
Pond	Char Hogla	041	03	2098	Ward No. 01	0.20
Pond	Char Hogla	041	03	2097	Ward No. 01	0.01
Pond	Char Hogla	041	03	2099	Ward No. 01	0.28
Pond	Char Hogla	041	03	2099	Ward No. 01	0.22
Pond	Char Hogla	041	03	2102	Ward No. 01	0.00
Pond	Char Hogla	041	03	2170	Ward No. 01	0.00
Pond	Char Hogla	041	03	2104	Ward No. 01	0.28
Pond	Char Hogla	041	03	2097	Ward No. 01	0.00
Pond	Char Hogla	041	03	2284	Ward No. 01	0.30
Pond	Char Hogla	041	03	2559	Ward No. 01	0.17
Pond	Char Hogla	041	03	2558	Ward No. 01	0.00
Pond	Char Hogla	041	03	2531	Ward No. 01	0.45
Pond	Char Hogla	041	03	2530	Ward No. 01	0.02
Pond	Char Hogla	041	03	2524	Ward No. 01	0.03
Pond	Char Hogla	041	03	2525	Ward No. 01	0.17
Pond	Char Hogla	041	03	2526	Ward No. 01	0.01
Pond	Char Hogla	041	03	2528	Ward No. 01	0.16

## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Char Hogla	041	03	2523	Ward No. 01	0.00
Pond	Char Hogla	041	03	2526	Ward No. 01	0.00
Pond	Char Hogla	041	03	2527	Ward No. 01	0.22
Pond	Char Hogla	041	03	2523	Ward No. 01	0.21
Pond	Char Hogla	041	03	2672	Ward No. 01	0.19
Pond	Char Hogla	041	03	2671	Ward No. 01	0.01
Pond	Char Hogla	041	03	2674	Ward No. 01	0.18
Pond	Char Hogla	041	03	2673	Ward No. 01	0.01
Pond	Char Hogla	041	03	2688	Ward No. 01	0.18
Pond	Char Hogla	041	03	2677	Ward No. 01	0.00
Pond	Char Hogla	041	03	2678	Ward No. 01	0.00
Pond	Char Hogla	041	03	2679	Ward No. 01	0.00
Pond	Char Hogla	041	03	2680	Ward No. 01	0.22
Pond	Char Hogla	041	03	2681	Ward No. 01	0.00
Pond	Char Hogla	041	03	2695	Ward No. 01	0.00
Pond	Char Hogla	041	03	2696	Ward No. 01	0.00
Pond	Char Hogla	041	03	2697	Ward No. 01	0.01
Pond	Char Hogla	041	03	2661	Ward No. 01	0.19
Pond	Char Hogla	041	03	2679	Ward No. 01	0.00
Pond	Char Hogla	041	03	2695	Ward No. 01	0.03
Pond	Char Hogla	041	03	2698	Ward No. 01	0.04
Pond	Char Hogla	041	03	2699	Ward No. 01	0.31
Pond	Char Hogla	041	03	2716	Ward No. 01	0.08
Pond	Char Hogla	041	03	2712	Ward No. 01	0.41
Pond	Char Hogla	041	03	2713	Ward No. 01	0.00
Pond	Char Hogla	041	03	2743	Ward No. 01	0.00
Pond	Char Hogla	041	03	2745	Ward No. 01	0.21
Pond	Char Hogla	041	03	2746	Ward No. 01	0.03
Pond	Char Hogla	041	03	2768	Ward No. 01	0.60
Pond	Char Hogla	041	03	2769	Ward No. 01	0.26
Pond	Char Hogla	041	03	2770	Ward No. 01	0.00
Pond	Char Hogla	041	03	2786	Ward No. 01	0.18
Pond	Char Hogla	041	03	2787	Ward No. 01	0.01
Pond	Char Hogla	041	03	2765	Ward No. 01	0.95
Pond	Char Hogla	041	03	2766	Ward No. 01	0.14
Pond	Char Hogla	041	03	2931	Ward No. 01	0.15
Pond	Char Hogla	041	03	2911	Ward No. 01	0.27
Pond	Char Hogla	041	03	2933	Ward No. 01	0.00
Ditch	Char Hogla	041	03	2930	Ward No. 01	0.31
Ditch	Char Hogla	041	03	2931	Ward No. 01	0.00
Pond	Char Hogla	041	03	2921	Ward No. 01	0.36
Pond	Char Hogla	041	03	2762	Ward No. 01	0.20
Pond	Sonamukhi	044	01	143	Ward No. 02	0.16

## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Sonamukhi	044	01	143	Ward No. 02	0.27
Pond	Sonamukhi	044	01	146	Ward No. 02	0.17
Pond	Sonamukhi	044	01	146	Ward No. 02	0.36
Pond	Sonamukhi	044	01	147	Ward No. 02	0.01
Pond	Sonamukhi	044	01	192	Ward No. 02	0.00
Pond	Sonamukhi	044	01	147	Ward No. 02	0.00
Pond	Sonamukhi	044	01	191	Ward No. 02	0.42
Pond	Sonamukhi	044	01	1	Ward No. 02	0.02
Pond	Sonamukhi	044	01	192	Ward No. 02	0.06
Pond	Sonamukhi	044	01	193	Ward No. 02	0.35
Pond	Sonamukhi	044	01	144	Ward No. 02	0.10
Pond	Sonamukhi	044	01	145	Ward No. 02	0.05
Pond	Sonamukhi	044	01	125	Ward No. 02	0.17
Pond	Sonamukhi	044	01	126	Ward No. 02	0.00
Pond	Sonamukhi	044	01	125	Ward No. 02	0.00
Pond	Sonamukhi	044	01	126	Ward No. 02	0.20
Pond	Sonamukhi	044	01	123	Ward No. 02	0.00
Pond	Sonamukhi	044	01	124	Ward No. 02	0.41
Pond	Sonamukhi	044	01	128	Ward No. 02	0.13
Pond	Bhuta Lakshmipur	043	00	324	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	325	Ward No. 07	0.01
Pond	Bhuta Lakshmipur	043	00	328	Ward No. 07	0.04
Pond	Bhuta Lakshmipur	043	00	329	Ward No. 07	0.31
Pond	Bhuta Lakshmipur	043	00	416	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	408	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	413	Ward No. 07	0.01
Pond	Bhuta Lakshmipur	043	00	414	Ward No. 07	0.23
Pond	Bhuta Lakshmipur	043	00	415	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	416	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	329	Ward No. 07	0.17
Pond	Bhuta Lakshmipur	043	00	393	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	395	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	396	Ward No. 07	0.15
Pond	Bhuta Lakshmipur	043	00	313	Ward No. 07	0.42
Pond	Bhuta Lakshmipur	043	00	314	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	343	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	345	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	346	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	354	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	358	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	359	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	291	Ward No. 07	0.35
Pond	Bhuta Lakshmipur	043	00	300	Ward No. 07	0.00

## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Bhuta Lakshmipur	043	00	294	Ward No. 07	0.04
Pond	Bhuta Lakshmipur	043	00	296	Ward No. 07	0.12
Pond	Bhuta Lakshmipur	043	00	328	Ward No. 07	0.01
Pond	Bhuta Lakshmipur	043	00	412	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	417	Ward No. 07	0.14
Pond	Bhuta Lakshmipur	043	00	418	Ward No. 07	0.04
Pond	Bhuta Lakshmipur	043	00	419	Ward No. 07	0.19
Pond	Bhuta Lakshmipur	043	00	420	Ward No. 07	0.04
Pond	Bhuta Lakshmipur	043	00	326	Ward No. 07	0.01
Pond	Bhuta Lakshmipur	043	00	327	Ward No. 07	0.06
Pond	Bhuta Lakshmipur	043	00	421	Ward No. 07	0.19
Pond	Bhuta Lakshmipur	043	00	419	Ward No. 07	0.04
Pond	Bhuta Lakshmipur	043	00	420	Ward No. 07	0.01
Pond	Bhuta Lakshmipur	043	00	422	Ward No. 07	0.11
Pond	Bhuta Lakshmipur	043	00	423	Ward No. 07	0.07
Pond	Bhuta Lakshmipur	043	00	425	Ward No. 07	0.09
Pond	Bhuta Lakshmipur	043	00	427	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	978	Ward No. 07	0.01
Pond	Char Hogla	041	03	2120	Ward No. 01	0.20
Pond	Char Hogla	041	03	2121	Ward No. 01	0.02
Pond	Char Hogla	041	03	2163	Ward No. 01	0.21
Pond	Char Hogla	041	03	2106	Ward No. 01	0.28
Pond	Char Hogla	041	03	2105	Ward No. 01	0.02
Pond	Char Hogla	041	03	2296	Ward No. 01	0.17
Pond	Char Hogla	041	03	2524	Ward No. 01	0.00
Pond	Char Hogla	041	03	2520	Ward No. 01	0.03
Pond	Char Hogla	041	03	2521	Ward No. 01	0.11
Pond	Char Hogla	041	03	2518	Ward No. 01	0.00
Pond	Char Hogla	041	03	2519	Ward No. 01	0.14
Pond	Char Hogla	041	03	2520	Ward No. 01	0.07
Pond	Char Hogla	041	03	2504	Ward No. 01	0.05
Pond	Char Hogla	041	03	2505	Ward No. 01	0.10
Pond	Char Hogla	041	03	2506	Ward No. 01	0.01
Pond	Char Hogla	041	03	2506	Ward No. 01	0.00
Pond	Char Hogla	041	03	2515	Ward No. 01	0.19
Pond	Char Hogla	041	03	2504	Ward No. 01	0.75
Pond	Char Hogla	041	03	2494	Ward No. 01	0.00
Pond	Char Hogla	041	03	2495	Ward No. 01	0.00
Pond	Char Hogla	041	03	2503	Ward No. 01	0.55
Pond	Char Hogla	041	03	2504	Ward No. 01	0.03
Pond	Char Hogla	041	03	2689	Ward No. 01	0.00
Pond	Char Hogla	041	03	2690	Ward No. 01	0.18
Pond	Char Hogla	041	03	2691	Ward No. 01	0.00

## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Char Hogla	041	03	2692	Ward No. 01	0.13
Pond	Char Hogla	041	03	2693	Ward No. 01	0.09
Pond	Char Hogla	041	03	2718	Ward No. 01	0.01
Pond	Char Hogla	041	03	2719	Ward No. 01	0.00
Pond	Char Hogla	041	03	2720	Ward No. 01	0.15
Pond	Char Hogla	041	03	2721	Ward No. 01	0.00
Pond	Char Hogla	041	03	3300	Ward No. 01	0.00
Pond	Char Hogla	041	03	2500	Ward No. 01	0.00
Pond	Char Hogla	041	03	2507	Ward No. 01	0.27
Pond	Char Hogla	041	03	2500	Ward No. 01	0.23
Pond	Char Hogla	041	03	2728	Ward No. 01	0.25
Pond	Char Hogla	041	03	2727	Ward No. 01	0.03
Pond	Char Hogla	041	03	3035	Ward No. 01	0.00
Pond	Char Hogla	041	03	3036	Ward No. 01	0.13
Pond	Char Hogla	041	03	3037	Ward No. 01	0.00
Pond	Char Hogla	041	03	3038	Ward No. 01	0.04
Pond	Char Hogla	041	03	2733	Ward No. 01	0.14
Pond	Char Hogla	041	03	3033	Ward No. 01	0.09
Pond	Char Hogla	041	03	3037	Ward No. 01	0.01
Pond	Char Hogla	041	03	3034	Ward No. 01	0.32
Pond	Char Hogla	041	03	3035	Ward No. 01	0.00
Pond	Char Hogla	041	03	3030	Ward No. 01	0.17
Pond	Char Hogla	041	03	3031	Ward No. 01	0.08
Pond	Char Hogla	041	03	3029	Ward No. 01	0.03
Pond	Char Hogla	041	03	2736	Ward No. 01	0.00
Pond	Char Hogla	041	03	2737	Ward No. 01	0.44
Pond	Char Hogla	041	03	2738	Ward No. 01	0.03
Pond	Char Hogla	041	03	2737	Ward No. 01	0.08
Pond	Char Hogla	041	03	2743	Ward No. 01	0.10
Pond	Char Hogla	041	03	2742	Ward No. 01	0.07
Pond	Char Hogla	041	03	2743	Ward No. 01	0.25
Pond	Char Hogla	041	03	2750	Ward No. 01	0.00
Pond	Char Hogla	041	03	2738	Ward No. 01	0.01
Pond	Char Hogla	041	03	2739	Ward No. 01	0.46
Pond	Char Hogla	041	03	2740	Ward No. 01	0.00
Pond	Char Hogla	041	03	2741	Ward No. 01	0.17
Pond	Char Hogla	041	03	2751	Ward No. 01	0.00
Pond	Char Hogla	041	03	2751	Ward No. 01	0.00
Pond	Char Hogla	041	03	3023	Ward No. 01	0.01
Pond	Char Hogla	041	03	3024	Ward No. 01	0.00
Pond	Char Hogla	041	03	3025	Ward No. 01	0.12
Pond	Char Hogla	041	03	3026	Ward No. 01	0.04
Pond	Char Hogla	041	03	3023	Ward No. 01	0.00

## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Char Hogla	041	03	3028	Ward No. 01	0.16
Pond	Char Hogla	041	03	3046	Ward No. 01	0.01
Pond	Char Hogla	041	03	3029	Ward No. 01	0.01
Pond	Char Hogla	041	03	3022	Ward No. 01	0.51
Pond	Char Hogla	041	03	3023	Ward No. 01	0.07
Pond	Char Hogla	041	03	3046	Ward No. 01	0.04
Pond	Char Hogla	041	03	2754	Ward No. 01	0.35
Pond	Char Hogla	041	03	3020	Ward No. 01	0.01
Pond	Char Hogla	041	03	3021	Ward No. 01	0.37
Pond	Char Hogla	041	03	3022	Ward No. 01	0.11
Pond	Char Hogla	041	03	3021	Ward No. 01	0.65
Pond	Char Hogla	041	03	3046	Ward No. 01	0.04
Pond	Char Hogla	041	03	3047	Ward No. 01	0.04
Pond	Char Hogla	041	03	2759	Ward No. 01	0.44
Pond	Char Hogla	041	03	2760	Ward No. 01	0.00
Pond	Char Hogla	041	03	2763	Ward No. 01	0.00
Pond	Char Hogla	041	03	2765	Ward No. 01	0.00
Pond	Char Hogla	041	03	2944	Ward No. 01	0.00
Pond	Char Hogla	041	03	2945	Ward No. 01	0.16
Pond	Char Hogla	041	03	2943	Ward No. 01	0.00
Pond	Char Hogla	041	03	2948	Ward No. 01	0.21
Pond	Char Hogla	041	03	2939	Ward No. 01	0.00
Pond	Char Hogla	041	03	2948	Ward No. 01	0.14
Pond	Char Hogla	041	03	2949	Ward No. 01	0.01
Pond	Char Hogla	041	03	2950	Ward No. 01	0.22
Pond	Sonamukhi	044	01	188	Ward No. 02	0.00
Pond	Sonamukhi	044	01	189	Ward No. 02	0.18
Pond	Sonamukhi	044	01	190	Ward No. 02	0.00
Ditch	Sonamukhi	044	01	172	Ward No. 02	0.16
Pond	Sonamukhi	044	01	146	Ward No. 02	0.00
Pond	Sonamukhi	044	01	147	Ward No. 02	0.30
Pond	Sonamukhi	044	01	191	Ward No. 02	0.00
Pond	Sonamukhi	044	01	182	Ward No. 02	0.16
Pond	Sonamukhi	044	01	185	Ward No. 02	0.00
Pond	Sonamukhi	044	01	186	Ward No. 02	0.22
Pond	Sonamukhi	044	01	187	Ward No. 02	0.00
Pond	Sonamukhi	044	01	174	Ward No. 02	0.17
Pond	Sonamukhi	044	01	174	Ward No. 02	0.00
Pond	Sonamukhi	044	01	175	Ward No. 02	0.05
Pond	Sonamukhi	044	01	176	Ward No. 02	0.24
Pond	Sonamukhi	044	01	180	Ward No. 02	0.00
Pond	Sonamukhi	044	01	177	Ward No. 02	0.21
Pond	Sonamukhi	044	01	178	Ward No. 02	0.00



## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Sonamukhi	044	01	179	Ward No. 02	0.15
Pond	Sonamukhi	044	01	181	Ward No. 02	0.13
Pond	Sonamukhi	044	01	183	Ward No. 02	0.39
Pond	Sonamukhi	044	01	185	Ward No. 02	0.01
Pond	Sonamukhi	044	01	124	Ward No. 02	0.51
Pond	Sonamukhi	044	01	153	Ward No. 02	0.00
Pond	Sonamukhi	044	01	101	Ward No. 02	0.25
Pond	Sonamukhi	044	01	102	Ward No. 02	0.00
Pond	Sonamukhi	044	01	279	Ward No. 02	0.00
Pond	Bhuta Lakshmipur	043	00	379	Ward No. 07	0.02
Pond	Bhuta Lakshmipur	043	00	384	Ward No. 07	0.12
Pond	Sonamukhi	044	01	157	Ward No. 02	0.17
Pond	Sonamukhi	044	01	161	Ward No. 02	0.47
Pond	Sonamukhi	044	01	165	Ward No. 02	0.15
Pond	Sonamukhi	044	01	167	Ward No. 02	0.00
Pond	Bhuta Lakshmipur	043	00	385	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	386	Ward No. 07	0.20
Pond	Bhuta Lakshmipur	043	00	387	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	499	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	375	Ward No. 07	0.04
Pond	Bhuta Lakshmipur	043	00	376	Ward No. 07	0.41
Pond	Bhuta Lakshmipur	043	00	375	Ward No. 07	0.24
Pond	Bhuta Lakshmipur	043	00	376	Ward No. 07	0.01
Pond	Bhuta Lakshmipur	043	00	393	Ward No. 07	0.20
Pond	Bhuta Lakshmipur	043	00	400	Ward No. 07	0.29
Pond	Bhuta Lakshmipur	043	00	435	Ward No. 07	0.22
Pond	Bhuta Lakshmipur	043	00	402	Ward No. 07	0.17
Pond	Bhuta Lakshmipur	043	00	402	Ward No. 07	0.20
Pond	Bhuta Lakshmipur	043	00	454	Ward No. 07	0.00
Pond	Char Hogla	041	03	2133	Ward No. 01	0.40
Pond	Char Hogla	041	03	2380	Ward No. 01	0.17
Pond	Char Hogla	041	03	2494	Ward No. 01	0.09
Ditch	Char Hogla	041	03	2487	Ward No. 01	0.00
Ditch	Char Hogla	041	03	2490	Ward No. 01	0.38
Ditch	Char Hogla	041	03	2489	Ward No. 01	0.32
Ditch	Char Hogla	041	03	2490	Ward No. 01	0.02
Ditch	Char Hogla	041	03	2462	Ward No. 01	0.01
Ditch	Char Hogla	041	03	2476	Ward No. 01	0.09
Ditch	Char Hogla	041	03	2488	Ward No. 01	2.33
Ditch	Char Hogla	041	03	2489	Ward No. 01	0.02
Ditch	Char Hogla	041	03	3158	Ward No. 01	0.00
Ditch	Char Hogla	041	03	2492	Ward No. 01	0.01
Ditch	Char Hogla	041	03	2493	Ward No. 01	0.09

## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Ditch	Char Hogla	041	03	2494	Ward No. 01	0.00
Pond	Char Hogla	041	03	3137	Ward No. 01	0.18
Pond	Char Hogla	041	03	3141	Ward No. 01	0.41
Pond	Char Hogla	041	03	2495	Ward No. 01	0.03
Pond	Char Hogla	041	03	2496	Ward No. 01	0.59
Pond	Char Hogla	041	03	2497	Ward No. 01	0.06
Pond	Char Hogla	041	03	3110	Ward No. 01	0.23
Pond	Char Hogla	041	03	3109	Ward No. 01	0.01
Pond	Char Hogla	041	03	3118	Ward No. 01	0.67
Pond	Char Hogla	041	03	3119	Ward No. 01	0.03
Ditch	Char Hogla	041	03	3122	Ward No. 01	0.11
Pond	Char Hogla	041	03	3040	Ward No. 01	0.13
Pond	Char Hogla	041	03	3041	Ward No. 01	0.23
Pond	Char Hogla	041	03	3043	Ward No. 01	0.04
Pond	Char Hogla	041	03	3044	Ward No. 01	0.16
Pond	Char Hogla	041	03	3045	Ward No. 01	0.16
Pond	Char Hogla	041	03	3029	Ward No. 01	0.01
Pond	Char Hogla	041	03	3046	Ward No. 01	0.32
Pond	Char Hogla	041	03	3100	Ward No. 01	0.00
Pond	Char Hogla	041	03	3101	Ward No. 01	0.00
Pond	Char Hogla	041	03	3103	Ward No. 01	0.17
Pond	Char Hogla	041	03	3100	Ward No. 01	0.01
Pond	Char Hogla	041	03	3103	Ward No. 01	0.26
Pond	Char Hogla	041	03	3098	Ward No. 01	0.19
Pond	Char Hogla	041	03	3099	Ward No. 01	0.00
Pond	Char Hogla	041	03	3103	Ward No. 01	0.00
Pond	Char Hogla	041	03	3005	Ward No. 01	0.00
Pond	Char Hogla	041	03	3014	Ward No. 01	0.07
Pond	Char Hogla	041	03	3015	Ward No. 01	0.08
Pond	Char Hogla	041	03	3016	Ward No. 01	0.00
Pond	Char Hogla	041	03	2975	Ward No. 01	0.16
Pond	Char Hogla	041	03	2976	Ward No. 01	0.00
Pond	Char Hogla	041	03	2972	Ward No. 01	0.00
Pond	Char Hogla	041	03	2984	Ward No. 01	0.09
Pond	Char Hogla	041	03	2985	Ward No. 01	0.00
Pond	Char Hogla	041	03	2988	Ward No. 01	0.00
Pond	Char Hogla	041	03	2989	Ward No. 01	0.24
Pond	Char Hogla	041	03	2990	Ward No. 01	0.00
Pond	Char Hogla	041	03	2997	Ward No. 01	0.00
Pond	Char Hogla	041	03	2979	Ward No. 01	0.00
Pond	Char Hogla	041	03	2980	Ward No. 01	0.08
Pond	Char Hogla	041	03	2981	Ward No. 01	0.07
Pond	Char Hogla	041	03	2974	Ward No. 01	0.36

## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Char Hogla	041	03	2972	Ward No. 01	0.00
Khal/Canal	Chunar Char	081	00	1	Ward No. 08	0.00
Khal/Canal	Char Hogla	041	03	2157	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2160	Ward No. 01	0.00
Pond	Kharki	079	00	561	Ward No. 06	0.24
Pond	Kharki	079	00	562	Ward No. 06	0.00
Pond	Kharki	079	00	564	Ward No. 06	0.00
Pond	Bhuta Lakshmipur	043	00	547	Ward No. 08	0.00
Pond	Bhuta Lakshmipur	043	00	548	Ward No. 08	0.00
Pond	Bhuta Lakshmipur	043	00	555	Ward No. 08	0.20
Pond	Bhuta Lakshmipur	043	00	556	Ward No. 08	0.00
Pond	Bhuta Lakshmipur	043	00	558	Ward No. 08	0.00
Pond	Bhuta Lakshmipur	043	00	559	Ward No. 08	0.24
Pond	Bhuta Lakshmipur	043	00	560	Ward No. 08	0.01
Pond	Bhuta Lakshmipur	043	00	561	Ward No. 08	0.10
Pond	Bhuta Lakshmipur	043	00	568	Ward No. 08	0.00
Pond	Bhuta Lakshmipur	043	00	543	Ward No. 08	0.00
Pond	Bhuta Lakshmipur	043	00	544	Ward No. 08	0.00
Pond	Bhuta Lakshmipur	043	00	670	Ward No. 08	0.16
Pond	Bhuta Lakshmipur	043	00	671	Ward No. 08	0.08
Pond	Bhuta Lakshmipur	043	00	465	Ward No. 08	0.00
Pond	Bhuta Lakshmipur	043	00	467	Ward No. 08	0.17
Pond	Bhuta Lakshmipur	043	00	468	Ward No. 08	0.00
Pond	Bhuta Lakshmipur	043	00	577	Ward No. 08	0.00
Pond	Bhuta Lakshmipur	043	00	578	Ward No. 08	0.16
Pond	Bhuta Lakshmipur	043	00	582	Ward No. 08	0.17
Pond	Bhuta Lakshmipur	043	00	580	Ward No. 08	0.12
Pond	Bhuta Lakshmipur	043	00	577	Ward No. 08	0.16
Pond	Bhuta Lakshmipur	043	00	577	Ward No. 08	0.20
Pond	Bhuta Lakshmipur	043	00	577	Ward No. 08	0.18
Pond	Bhuta Lakshmipur	043	00	598	Ward No. 08	0.00
Pond	Bhuta Lakshmipur	043	00	599	Ward No. 08	0.23
Pond	Bhuta Lakshmipur	043	00	603	Ward No. 08	0.23
Pond	Char Hogla	041	03	2439	Ward No. 01	0.01
Pond	Char Hogla	041	03	2443	Ward No. 01	0.22
Pond	Char Hogla	041	03	2444	Ward No. 01	0.18
Pond	Char Hogla	041	03	3163	Ward No. 01	0.09
Pond	Char Hogla	041	03	3169	Ward No. 01	0.06
Pond	Char Hogla	041	03	3170	Ward No. 01	0.00
Pond	Char Hogla	041	03	3198	Ward No. 01	0.17
Pond	Char Hogla	041	03	3189	Ward No. 01	0.00
Pond	Char Hogla	041	03	3190	Ward No. 01	0.16
Pond	Char Hogla	041	03	3237	Ward No. 01	0.56

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Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Char Hogla	041	03	3238	Ward No. 01	0.01
Pond	Char Hogla	041	03	3239	Ward No. 01	2.10
Khal/Canal	Char Hogla	041	03	3233	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	3237	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	3238	Ward No. 01	0.17
Khal/Canal	Char Hogla	041	03	3239	Ward No. 01	0.00
Ditch	Char Hogla	041	03	3230	Ward No. 01	0.26
Ditch	Char Hogla	041	03	3234	Ward No. 01	0.01
Ditch	Char Hogla	041	03	3239	Ward No. 01	0.04
Ditch	Char Hogla	041	03	3240	Ward No. 01	0.80
Ditch	Char Hogla	041	03	3241	Ward No. 01	0.06
Ditch	Char Hogla	041	03	3242	Ward No. 01	0.10
Ditch	Char Hogla	041	03	3243	Ward No. 01	0.33
Ditch	Char Hogla	041	03	3244	Ward No. 01	0.54
Ditch	Char Hogla	041	03	3253	Ward No. 01	1.22
Ditch	Char Hogla	041	03	3254	Ward No. 01	0.10
Ditch	Char Hogla	041	03	3255	Ward No. 01	0.51
Pond	Char Hogla	041	03	3246	Ward No. 01	0.23
Pond	Char Hogla	041	03	3086	Ward No. 01	0.17
Pond	Char Hogla	041	03	2184	Ward No. 01	0.00
Pond	Char Hogla	041	03	3246	Ward No. 01	0.10
Pond	Char Hogla	041	03	3247	Ward No. 01	0.17
Pond	Char Hogla	041	03	3270	Ward No. 01	0.00
Pond	Kharki	079	00	549	Ward No. 06	0.28
Pond	Kharki	079	00	554	Ward No. 06	0.21
Pond	Kharki	079	00	554	Ward No. 06	0.00
Pond	Kharki	079	00	556	Ward No. 06	0.12
Pond	Kharki	079	00	557	Ward No. 06	0.09
Pond	Kharki	079	00	560	Ward No. 06	0.10
Pond	Kharki	079	00	561	Ward No. 06	0.07
Pond	Kharki	079	00	547	Ward No. 06	0.20
Pond	Kharki	079	00	544	Ward No. 06	0.17
Pond	Kharki	079	00	497	Ward No. 06	0.00
Pond	Mehendiganj	046	00	935	Ward No. 05	0.00
Pond	Mehendiganj	046	00	936	Ward No. 05	0.00
Pond	Mehendiganj	046	00	937	Ward No. 05	0.28
Pond	Mehendiganj	046	00	907	Ward No. 05	0.39
Pond	Mehendiganj	046	00	913	Ward No. 05	0.20
Pond	Mehendiganj	046	00	917	Ward No. 05	0.27
Pond	Mehendiganj	046	00	830	Ward No. 05	0.01
Pond	Mehendiganj	046	00	832	Ward No. 05	0.01
Pond	Mehendiganj	046	00	833	Ward No. 05	0.10
Pond	Mehendiganj	046	00	834	Ward No. 05	0.08

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Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Mehendiganj	046	00	852	Ward No. 05	0.02
Pond	Mehendiganj	046	00	853	Ward No. 05	0.01
Pond	Mehendiganj	046	00	856	Ward No. 05	0.00
Pond	Mehendiganj	046	00	925	Ward No. 05	0.17
Pond	Mehendiganj	046	00	951	Ward No. 05	0.54
Pond	Durgapur	047	00	1003	Ward No. 04	0.00
Pond	Durgapur	047	00	1008	Ward No. 04	0.03
Pond	Durgapur	047	00	1012	Ward No. 04	0.11
Ditch	Durgapur	047	00	1003	Ward No. 04	0.00
Ditch	Durgapur	047	00	1008	Ward No. 04	0.05
Ditch	Durgapur	047	00	1012	Ward No. 04	0.18
Pond	Durgapur	047	00	813	Ward No. 04	0.55
Pond	Durgapur	047	00	814	Ward No. 04	0.00
Pond	Durgapur	047	00	815	Ward No. 04	0.11
Pond	Durgapur	047	00	837	Ward No. 04	0.02
Pond	Durgapur	047	00	838	Ward No. 04	0.19
Pond	Durgapur	047	00	839	Ward No. 04	0.01
Pond	Durgapur	047	00	842	Ward No. 04	0.00
Pond	Durgapur	047	00	838	Ward No. 04	0.31
Pond	Durgapur	047	00	842	Ward No. 04	0.00
Pond	Durgapur	047	00	843	Ward No. 04	0.01
Pond	Durgapur	047	00	844	Ward No. 04	0.01
Pond	Mehendiganj	046	00	695	Ward No. 05	0.00
Pond	Mehendiganj	046	00	720	Ward No. 05	0.00
Pond	Mehendiganj	046	00	721	Ward No. 05	0.00
Pond	Mehendiganj	046	00	722	Ward No. 05	0.18
Pond	Mehendiganj	046	00	723	Ward No. 05	0.00
Pond	Mehendiganj	046	00	724	Ward No. 05	0.16
Pond	Mehendiganj	046	00	758	Ward No. 05	0.09
Pond	Mehendiganj	046	00	759	Ward No. 05	0.09
Pond	Mehendiganj	046	00	720	Ward No. 05	0.22
Pond	Mehendiganj	046	00	776	Ward No. 05	0.00
Pond	Mehendiganj	046	00	777	Ward No. 05	0.28
Pond	Mehendiganj	046	00	1230	Ward No. 05	0.00
Pond	Mehendiganj	046	00	1231	Ward No. 05	0.03
Pond	Mehendiganj	046	00	1232	Ward No. 05	0.04
Pond	Mehendiganj	046	00	1233	Ward No. 05	0.00
Pond	Mehendiganj	046	00	1234	Ward No. 05	0.05
Pond	Mehendiganj	046	00	1235	Ward No. 05	0.06
Pond	Mehendiganj	046	00	1241	Ward No. 05	0.09
Pond	Mehendiganj	046	00	1243	Ward No. 05	0.08
Pond	Durgapur	047	00	666	Ward No. 04	0.04
Pond	Durgapur	047	00	667	Ward No. 04	0.07

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Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Durgapur	047	00	668	Ward No. 04	0.51
Pond	Durgapur	047	00	669	Ward No. 04	0.02
Pond	Durgapur	047	00	1004	Ward No. 04	0.05
Pond	Durgapur	047	00	1008	Ward No. 04	0.03
Pond	Durgapur	047	00	1011	Ward No. 04	0.10
Pond	Durgapur	047	00	1007	Ward No. 04	0.24
Pond	Durgapur	047	00	905	Ward No. 04	0.40
Pond	Mehendiganj	046	00	544	Ward No. 05	0.00
Pond	Mehendiganj	046	00	562	Ward No. 05	0.02
Pond	Mehendiganj	046	00	563	Ward No. 05	0.23
Pond	Mehendiganj	046	00	566	Ward No. 05	0.21
Pond	Mehendiganj	046	00	1331	Ward No. 05	0.01
Pond	Mehendiganj	046	00	1333	Ward No. 05	0.00
Pond	Mehendiganj	046	00	902	Ward No. 05	0.28
Pond	Mehendiganj	046	00	912	Ward No. 05	0.01
Pond	Mehendiganj	046	00	910	Ward No. 05	0.00
Pond	Mehendiganj	046	00	911	Ward No. 05	0.18
Pond	Mehendiganj	046	00	912	Ward No. 05	0.00
Pond	Mehendiganj	046	00	906	Ward No. 05	0.15
Pond	Kharki	079	00	527	Ward No. 06	0.10
Pond	Kharki	079	00	528	Ward No. 06	0.12
Pond	Mehendiganj	046	00	897	Ward No. 06	0.00
Pond	Mehendiganj	046	00	897	Ward No. 05	0.37
Pond	Kharki	079	00	520	Ward No. 06	0.27
Pond	Kharki	079	00	521	Ward No. 06	0.00
Pond	Kharki	079	00	529	Ward No. 06	0.58
Pond	Kharki	079	00	495	Ward No. 06	0.16
Pond	Kharki	079	00	497	Ward No. 06	0.26
Pond	Kharki	079	00	496	Ward No. 06	0.68
Pond	Kharki	079	00	497	Ward No. 06	0.08
Pond	Kharki	079	00	541	Ward No. 06	0.03
Pond	Kharki	079	00	497	Ward No. 06	0.18
Pond	Kharki	079	00	540	Ward No. 06	0.05
Pond	Kharki	079	00	541	Ward No. 06	0.10
Pond	Kharki	079	00	542	Ward No. 06	0.03
Pond	Kharki	079	00	535	Ward No. 06	0.39
Pond	Kharki	079	00	535	Ward No. 06	0.16
Pond	Kharki	079	00	536	Ward No. 06	0.17
Pond	Kharki	079	00	544	Ward No. 06	0.02
Pond	Kharki	079	00	545	Ward No. 06	0.71
Pond	Kharki	079	00	546	Ward No. 06	0.01
Pond	Kharki	079	00	475	Ward No. 06	0.22
Pond	Kharki	079	00	494	Ward No. 06	0.12

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Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Kharki	079	00	497	Ward No. 06	0.05
Pond	Kharki	079	00	476	Ward No. 06	0.91
Pond	Kharki	079	00	488	Ward No. 06	0.52
Pond	Kharki	079	00	555	Ward No. 06	0.07
Pond	Kharki	079	00	551	Ward No. 06	0.16
Pond	Kharki	079	00	488	Ward No. 06	0.45
Pond	Kharki	079	00	555	Ward No. 06	0.39
Pond	Kharki	079	00	561	Ward No. 06	0.15
Pond	Kharki	079	00	563	Ward No. 06	0.17
Ditch	Kharki	079	00	484	Ward No. 06	0.21
Ditch	Kharki	079	00	485	Ward No. 06	0.00
Pond	Mehendiganj	046	00	678	Ward No. 05	0.25
Pond	Mehendiganj	046	00	1225	Ward No. 05	0.00
Pond	Mehendiganj	046	00	633	Ward No. 05	0.20
Pond	Mehendiganj	046	00	699	Ward No. 05	0.16
Pond	Mehendiganj	046	00	695	Ward No. 05	0.00
Pond	Mehendiganj	046	00	696	Ward No. 05	0.04
Pond	Mehendiganj	046	00	700	Ward No. 05	0.20
Pond	Mehendiganj	046	00	701	Ward No. 05	0.00
Pond	Durgapur	047	00	687	Ward No. 04	0.02
Pond	Durgapur	047	00	688	Ward No. 04	0.18
Pond	Mehendiganj	046	00	1209	Ward No. 05	0.01
Pond	Mehendiganj	046	00	1212	Ward No. 05	0.15
Pond	Mehendiganj	046	00	1213	Ward No. 05	0.00
Pond	Durgapur	047	00	669	Ward No. 04	0.05
Pond	Durgapur	047	00	657	Ward No. 04	0.17
Pond	Durgapur	047	00	650	Ward No. 04	0.20
Pond	Durgapur	047	00	661	Ward No. 04	0.00
Pond	Durgapur	047	00	662	Ward No. 04	0.01
Pond	Durgapur	047	00	658	Ward No. 04	0.15
Pond	Durgapur	047	00	657	Ward No. 04	0.01
Pond	Durgapur	047	00	392	Ward No. 04	0.00
Pond	Durgapur	047	00	396	Ward No. 04	0.00
Pond	Durgapur	047	00	397	Ward No. 04	0.04
Pond	Durgapur	047	00	399	Ward No. 04	0.14
Pond	Durgapur	047	00	400	Ward No. 04	0.00
Pond	Durgapur	047	00	392	Ward No. 04	0.08
Pond	Durgapur	047	00	394	Ward No. 04	0.09
Pond	Durgapur	047	00	395	Ward No. 04	0.06
Pond	Mehendiganj	046	00	1206	Ward No. 05	0.23
Pond	Durgapur	047	00	637	Ward No. 04	0.24
Pond	Durgapur	047	00	403	Ward No. 04	0.01
Pond	Durgapur	047	00	405	Ward No. 04	0.20

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Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Durgapur	047	00	524	Ward No. 04	0.00
Pond	Durgapur	047	00	525	Ward No. 04	0.12
Pond	Durgapur	047	00	526	Ward No. 04	0.03
Pond	Durgapur	047	00	527	Ward No. 04	0.01
Pond	Mehendiganj	046	00	895	Ward No. 05	0.22
Pond	Mehendiganj	046	00	896	Ward No. 05	0.09
Pond	Mehendiganj	046	00	894	Ward No. 05	0.20
Pond	Mehendiganj	046	00	887	Ward No. 05	0.01
Pond	Mehendiganj	046	00	888	Ward No. 05	0.18
Pond	Mehendiganj	046	00	889	Ward No. 05	0.07
Pond	Mehendiganj	046	00	527	Ward No. 05	0.20
Pond	Kharki	079	00	517	Ward No. 06	0.03
Pond	Kharki	079	00	518	Ward No. 06	0.12
Pond	Kharki	079	00	478	Ward No. 06	0.50
Pond	Kharki	079	00	460	Ward No. 06	0.23
Pond	Kharki	079	00	464	Ward No. 06	0.04
Pond	Chunar Char	081	00	1098	Ward No. 08	0.24
Pond	Chunar Char	081	00	1099	Ward No. 08	0.00
Pond	Chunar Char	081	00	1100	Ward No. 08	0.00
Pond	Kharki	079	00	479	Ward No. 06	0.28
Pond	Kharki	079	00	487	Ward No. 06	0.00
Pond	Gobindapur	080	00	235	Ward No. 08	0.00
Pond	Gobindapur	080	00	236	Ward No. 08	0.01
Pond	Gobindapur	080	00	243	Ward No. 08	0.23
Pond	Gobindapur	080	00	247	Ward No. 08	0.00
Pond	Mehendiganj	046	00	466	Ward No. 05	0.12
Pond	Mehendiganj	046	00	467	Ward No. 05	0.10
Pond	Mehendiganj	046	00	665	Ward No. 05	0.33
Pond	Mehendiganj	046	00	397	Ward No. 05	0.00
Pond	Mehendiganj	046	00	402	Ward No. 05	0.01
Pond	Mehendiganj	046	00	403	Ward No. 05	0.04
Pond	Mehendiganj	046	00	398	Ward No. 05	0.20
Pond	Mehendiganj	046	00	659	Ward No. 05	0.23
Pond	Char Hogla	041	03	2993	Ward No. 01	0.13
Pond	Char Hogla	041	03	2997	Ward No. 01	0.06
Pond	Char Hogla	041	03	3284	Ward No. 01	0.36
Pond	Sonamukhi	044	02	396	Ward No. 02	0.00
Pond	Sonamukhi	044	02	397	Ward No. 02	0.19
Pond	Sonamukhi	044	02	402	Ward No. 02	0.00
Pond	Sonamukhi	044	02	604	Ward No. 02	0.00
Pond	Sonamukhi	044	02	605	Ward No. 02	0.00
Pond	Sonamukhi	044	02	606	Ward No. 02	0.00
Pond	Sonamukhi	044	02	607	Ward No. 02	0.00



## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Sonamukhi	044	02	561	Ward No. 02	0.02
Pond	Sonamukhi	044	02	564	Ward No. 02	0.09
Pond	Sonamukhi	044	02	565	Ward No. 02	0.00
Pond	Sonamukhi	044	02	566	Ward No. 02	0.00
Pond	Sonamukhi	044	02	572	Ward No. 02	0.05
Pond	Char Hogla	041	03	3283	Ward No. 01	0.25
Pond	Char Hogla	041	03	3285	Ward No. 01	0.00
Pond	Char Hogla	041	03	3286	Ward No. 01	0.04
Pond	Char Hogla	041	03	3280	Ward No. 01	0.15
Pond	Char Hogla	041	03	3280	Ward No. 01	0.17
Pond	Sonamukhi	044	02	535	Ward No. 02	0.00
Pond	Sonamukhi	044	02	536	Ward No. 02	0.02
Pond	Sonamukhi	044	02	540	Ward No. 02	0.04
Pond	Sonamukhi	044	02	541	Ward No. 02	0.04
Pond	Sonamukhi	044	02	542	Ward No. 02	0.04
Pond	Sonamukhi	044	02	543	Ward No. 02	0.04
Pond	Sonamukhi	044	02	544	Ward No. 02	0.03
Pond	Sonamukhi	044	02	545	Ward No. 02	0.02
Pond	Durgapur	047	00	359	Ward No. 04	0.32
Pond	Durgapur	047	00	364	Ward No. 04	0.16
Pond	Durgapur	047	00	378	Ward No. 04	0.15
Pond	Durgapur	047	00	361	Ward No. 04	0.16
Pond	Durgapur	047	00	363	Ward No. 04	0.16
Pond	Durgapur	047	00	362	Ward No. 04	0.02
Pond	Mehendiganj	046	00	399	Ward No. 05	0.47
Pond	Durgapur	047	00	430	Ward No. 04	0.19
Pond	Durgapur	047	00	431	Ward No. 04	0.00
Pond	Durgapur	047	00	420	Ward No. 04	0.00
Pond	Durgapur	047	00	422	Ward No. 04	0.28
Pond	Durgapur	047	00	423	Ward No. 04	0.13
Pond	Durgapur	047	00	425	Ward No. 04	0.02
Pond	Durgapur	047	00	641	Ward No. 04	0.01
Pond	Durgapur	047	00	642	Ward No. 04	0.19
Pond	Durgapur	047	00	643	Ward No. 04	0.01
Pond	Durgapur	047	00	645	Ward No. 04	0.07
Pond	Durgapur	047	00	641	Ward No. 04	0.37
Pond	Durgapur	047	00	645	Ward No. 04	0.15
Pond	Durgapur	047	00	96	Ward No. 04	0.16
Pond	Durgapur	047	00	95	Ward No. 04	0.04
Pond	Durgapur	047	00	500	Ward No. 04	0.07
Pond	Durgapur	047	00	501	Ward No. 04	0.12
Pond	Durgapur	047	00	502	Ward No. 04	0.00
Pond	Durgapur	047	00	504	Ward No. 04	0.18

## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Durgapur	047	00	505	Ward No. 04	0.00
Pond	Durgapur	047	00	509	Ward No. 04	0.00
Pond	Durgapur	047	00	512	Ward No. 04	0.15
Pond	Durgapur	047	00	513	Ward No. 04	0.10
Pond	Durgapur	047	00	516	Ward No. 04	0.00
Pond	Kharki	079	00	387	Ward No. 06	0.20
Pond	Kharki	079	00	388	Ward No. 06	0.00
Pond	Kharki	079	00	387	Ward No. 06	0.28
Pond	Kharki	079	00	348	Ward No. 06	0.00
Pond	Kharki	079	00	378	Ward No. 06	0.34
Pond	Kharki	079	00	382	Ward No. 06	0.07
Pond	Mehendiganj	046	00	486	Ward No. 05	0.01
Pond	Mehendiganj	046	00	487	Ward No. 05	0.00
Pond	Mehendiganj	046	00	515	Ward No. 05	0.00
Pond	Mehendiganj	046	00	516	Ward No. 05	0.13
Pond	Mehendiganj	046	00	517	Ward No. 05	0.01
Pond	Mehendiganj	046	00	518	Ward No. 05	0.08
Pond	Kharki	079	00	379	Ward No. 06	0.21
Pond	Kharki	079	00	390	Ward No. 06	0.09
Pond	Kharki	079	00	391	Ward No. 06	0.03
Pond	Kharki	079	00	392	Ward No. 06	0.02
Pond	Kharki	079	00	404	Ward No. 06	0.03
Pond	Gobindapur	080	00	216	Ward No. 08	0.18
Pond	Gobindapur	080	00	214	Ward No. 08	0.02
Pond	Gobindapur	080	00	215	Ward No. 08	0.14
Pond	Gobindapur	080	00	229	Ward No. 08	0.07
Pond	Gobindapur	080	00	202	Ward No. 08	0.01
Pond	Gobindapur	080	00	203	Ward No. 08	0.13
Pond	Chunar Char	081	00	751	Ward No. 08	0.29
Pond	Gobindapur	080	00	752	Ward No. 08	0.01
Pond	Chunar Char	081	00	745	Ward No. 08	0.15
Pond	Chunar Char	081	00	746	Ward No. 08	0.05
Pond	Durgapur	047	00	199	Ward No. 04	0.00
Pond	Durgapur	047	00	201	Ward No. 04	0.03
Pond	Durgapur	047	00	202	Ward No. 04	0.19
Pond	Durgapur	047	00	204	Ward No. 04	0.13
Pond	Durgapur	047	00	203	Ward No. 04	0.09
Pond	Durgapur	047	00	115	Ward No. 04	0.20
Pond	Durgapur	047	00	116	Ward No. 04	0.04
Pond	Durgapur	047	00	228	Ward No. 04	0.26
Pond	Durgapur	047	00	226	Ward No. 04	0.14
Pond	Durgapur	047	00	227	Ward No. 04	0.16
Pond	Durgapur	047	00	264	Ward No. 04	0.15

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Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Durgapur	047	00	265	Ward No. 04	0.07
Pond	Durgapur	047	00	266	Ward No. 04	0.00
Pond	Durgapur	047	00	351	Ward No. 04	0.00
Pond	Durgapur	047	00	352	Ward No. 04	0.09
Pond	Durgapur	047	00	353	Ward No. 04	0.13
Pond	Durgapur	047	00	425	Ward No. 04	0.00
Pond	Durgapur	047	00	348	Ward No. 04	0.17
Pond	Durgapur	047	00	337	Ward No. 04	0.07
Pond	Durgapur	047	00	338	Ward No. 04	0.18
Pond	Durgapur	047	00	339	Ward No. 04	0.00
Pond	Durgapur	047	00	344	Ward No. 04	0.00
Pond	Durgapur	047	00	345	Ward No. 04	0.00
Pond	Durgapur	047	00	348	Ward No. 04	0.00
Pond	Durgapur	047	00	349	Ward No. 04	0.17
Pond	Mehendiganj	046	00	399	Ward No. 05	0.21
Pond	Mehendiganj	046	00	368	Ward No. 05	0.30
Pond	Mehendiganj	046	00	369	Ward No. 05	0.01
Pond	Mehendiganj	046	00	365	Ward No. 05	0.21
Pond	Mehendiganj	046	00	364	Ward No. 05	0.01
Pond	Durgapur	047	00	340	Ward No. 04	0.00
Pond	Durgapur	047	00	341	Ward No. 04	0.18
Pond	Durgapur	047	00	342	Ward No. 04	0.00
Pond	Mehendiganj	046	00	364	Ward No. 05	0.18
Pond	Mehendiganj	046	00	436	Ward No. 05	0.04
Pond	Mehendiganj	046	00	437	Ward No. 05	0.00
Pond	Mehendiganj	046	00	438	Ward No. 05	0.23
Pond	Mehendiganj	046	00	469	Ward No. 05	0.07
Pond	Mehendiganj	046	00	495	Ward No. 05	0.14
Pond	Mehendiganj	046	00	469	Ward No. 05	0.09
Pond	Mehendiganj	046	00	492	Ward No. 05	0.00
Pond	Mehendiganj	046	00	493	Ward No. 05	0.23
Pond	Mehendiganj	046	00	494	Ward No. 05	0.01
Pond	Mehendiganj	046	00	445	Ward No. 05	0.20
Pond	Kharki	079	00	362	Ward No. 06	0.26
Pond	Kharki	079	00	363	Ward No. 06	0.00
Pond	Kharki	079	00	352	Ward No. 06	0.01
Pond	Kharki	079	00	364	Ward No. 06	0.16
Pond	Kharki	079	00	368	Ward No. 06	0.03
Pond	Kharki	079	00	352	Ward No. 06	0.27
Pond	Kharki	079	00	352	Ward No. 06	0.29
Pond	Kharki	079	00	372	Ward No. 06	0.40
Pond	Kharki	079	00	378	Ward No. 06	0.00
Pond	Kharki	079	00	320	Ward No. 06	0.00

## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Kharki	079	00	323	Ward No. 06	0.32
Pond	Kharki	079	00	324	Ward No. 06	0.09
Pond	Kharki	079	00	325	Ward No. 06	0.00
Pond	Kharki	079	00	326	Ward No. 06	0.00
Pond	Kharki	079	00	311	Ward No. 06	0.01
Pond	Kharki	079	00	318	Ward No. 06	0.19
Pond	Kharki	079	00	319	Ward No. 06	0.00
Pond	Kharki	079	00	303	Ward No. 06	0.28
Pond	Kharki	079	00	307	Ward No. 06	0.00
Pond	Chunar Char	081	00	728	Ward No. 08	0.17
Pond	Gobindapur	080	00	163	Ward No. 08	0.06
Pond	Gobindapur	080	00	170	Ward No. 08	0.12
Pond	Gobindapur	080	00	172	Ward No. 08	0.24
Pond	Gobindapur	080	00	177	Ward No. 08	0.00
Pond	Gobindapur	080	00	752	Ward No. 08	0.03
Pond	Gobindapur	080	00	177	Ward No. 08	0.28
Pond	Chunar Char	081	00	741	Ward No. 08	0.18
Pond	Chunar Char	081	00	652	Ward No. 08	0.17
Pond	Chunar Char	081	00	648	Ward No. 08	0.08
Pond	Chunar Char	081	00	649	Ward No. 08	0.11
Pond	Chunar Char	081	00	658	Ward No. 08	0.05
Pond	Chunar Char	081	00	659	Ward No. 08	0.04
Pond	Chunar Char	081	00	782	Ward No. 08	0.00
Pond	Chunar Char	081	00	650	Ward No. 08	0.20
Pond	Chunar Char	081	00	781	Ward No. 08	0.04
Pond	Durgapur	047	00	37	Ward No. 04	0.14
Pond	Durgapur	047	00	38	Ward No. 04	0.08
Pond	Durgapur	047	00	28	Ward No. 04	0.42
Pond	Durgapur	047	00	134	Ward No. 04	0.02
Pond	Durgapur	047	00	135	Ward No. 04	0.56
Pond	Durgapur	047	00	132	Ward No. 04	0.37
Pond	Durgapur	047	00	120	Ward No. 04	0.22
Pond	Durgapur	047	00	119	Ward No. 04	0.00
Pond	Durgapur	047	00	134	Ward No. 04	0.00
Pond	Durgapur	047	00	151	Ward No. 04	0.00
Pond	Durgapur	047	00	152	Ward No. 04	0.20
Pond	Durgapur	047	00	153	Ward No. 04	0.35
Pond	Durgapur	047	00	154	Ward No. 04	0.53
Pond	Durgapur	047	00	155	Ward No. 04	0.24
Pond	Durgapur	047	00	158	Ward No. 04	0.27
Pond	Durgapur	047	00	156	Ward No. 04	0.19
Pond	Durgapur	047	00	157	Ward No. 04	0.14
Pond	Durgapur	047	00	194	Ward No. 04	0.00

## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Durgapur	047	00	196	Ward No. 04	0.15
Pond	Durgapur	047	00	195	Ward No. 04	0.00
Pond	Durgapur	047	00	189	Ward No. 04	0.28
Pond	Durgapur	047	00	190	Ward No. 04	0.06
Pond	Durgapur	047	00	197	Ward No. 04	0.01
Pond	Durgapur	047	00	202	Ward No. 04	0.04
Pond	Durgapur	047	00	133	Ward No. 04	0.34
Ditch	Durgapur	047	00	133	Ward No. 04	0.00
Ditch	Durgapur	047	00	119	Ward No. 04	0.18
Pond	Durgapur	047	00	179	Ward No. 04	0.00
Pond	Durgapur	047	00	180	Ward No. 04	0.16
Pond	Durgapur	047	00	181	Ward No. 04	0.11
Pond	Durgapur	047	00	182	Ward No. 04	0.04
Pond	Durgapur	047	00	183	Ward No. 04	0.00
Pond	Durgapur	047	00	185	Ward No. 04	0.12
Pond	Durgapur	047	00	183	Ward No. 04	0.01
Pond	Durgapur	047	00	184	Ward No. 04	0.22
Pond	Durgapur	047	00	275	Ward No. 04	0.20
Pond	Durgapur	047	00	276	Ward No. 04	0.01
Pond	Durgapur	047	00	274	Ward No. 04	0.00
Pond	Durgapur	047	00	273	Ward No. 04	0.21
Pond	Durgapur	047	00	234	Ward No. 04	0.16
Pond	Durgapur	047	00	289	Ward No. 04	0.17
Pond	Durgapur	047	00	283	Ward No. 04	0.01
Pond	Durgapur	047	00	284	Ward No. 04	0.00
Pond	Durgapur	047	00	285	Ward No. 04	0.28
Pond	Durgapur	047	00	286	Ward No. 04	0.06
Pond	Durgapur	047	00	292	Ward No. 04	0.00
Pond	Durgapur	047	00	293	Ward No. 04	0.04
Pond	Durgapur	047	00	294	Ward No. 04	0.01
Pond	Durgapur	047	00	272	Ward No. 04	0.16
Pond	Durgapur	047	00	278	Ward No. 04	0.01
Pond	Durgapur	047	00	279	Ward No. 04	0.04
Pond	Durgapur	047	00	281	Ward No. 04	0.01
Pond	Durgapur	047	00	317	Ward No. 04	0.01
Pond	Durgapur	047	00	319	Ward No. 04	0.07
Pond	Durgapur	047	00	320	Ward No. 04	0.24
Pond	Durgapur	047	00	321	Ward No. 04	0.34
Pond	Mehendiganj	046	00	362	Ward No. 05	0.11
Pond	Durgapur	047	00	313	Ward No. 04	0.26
Pond	Durgapur	047	00	305	Ward No. 04	0.30
Pond	Mehendiganj	046	00	227	Ward No. 05	0.08
Pond	Mehendiganj	046	00	228	Ward No. 05	0.03

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Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Mehendiganj	046	00	227	Ward No. 05	0.17
Pond	Mehendiganj	046	00	232	Ward No. 05	0.09
Pond	Mehendiganj	046	00	361	Ward No. 05	0.16
Pond	Mehendiganj	046	00	301	Ward No. 05	0.01
Pond	Mehendiganj	046	00	307	Ward No. 05	0.01
Pond	Mehendiganj	046	00	1349	Ward No. 05	0.33
Pond	Mehendiganj	046	00	296	Ward No. 05	0.00
Pond	Mehendiganj	046	00	297	Ward No. 05	0.28
Pond	Mehendiganj	046	00	298	Ward No. 05	0.23
Pond	Mehendiganj	046	00	300	Ward No. 05	0.00
Pond	Mehendiganj	046	00	440	Ward No. 05	0.11
Pond	Mehendiganj	046	00	439	Ward No. 05	0.27
Pond	Mehendiganj	046	00	441	Ward No. 05	0.09
Pond	Mehendiganj	046	00	442	Ward No. 05	0.08
Pond	Kharki	079	00	353	Ward No. 06	0.01
Pond	Kharki	079	00	355	Ward No. 06	0.04
Pond	Kharki	079	00	366	Ward No. 06	0.15
Pond	Kharki	079	00	367	Ward No. 06	0.19
Pond	Kharki	079	00	358	Ward No. 06	0.32
Pond	Kharki	079	00	359	Ward No. 06	0.03
Pond	Kharki	079	00	217	Ward No. 06	0.11
Pond	Kharki	079	00	218	Ward No. 06	0.13
Pond	Kharki	079	00	285	Ward No. 06	0.01
Pond	Kharki	079	00	298	Ward No. 06	0.07
Pond	Kharki	079	00	299	Ward No. 06	0.19
Pond	Kharki	079	00	279	Ward No. 06	0.01
Pond	Kharki	079	00	281	Ward No. 06	0.00
Pond	Kharki	079	00	284	Ward No. 06	0.13
Pond	Kharki	079	00	285	Ward No. 06	0.18
Pond	Kharki	079	00	279	Ward No. 06	0.19
Pond	Kharki	079	00	285	Ward No. 06	0.00
Pond	Kharki	079	00	286	Ward No. 06	0.23
Pond	Kharki	079	00	287	Ward No. 06	0.00
Pond	Kharki	079	00	276	Ward No. 06	0.31
Pond	Kharki	079	00	289	Ward No. 06	0.00
Pond	Kharki	079	00	290	Ward No. 06	0.00
Pond	Gobindapur	080	00	130	Ward No. 08	0.17
Pond	Gobindapur	080	00	131	Ward No. 08	0.00
Pond	Chunar Char	081	00	677	Ward No. 08	0.00
Pond	Chunar Char	081	00	679	Ward No. 08	0.00
Pond	Chunar Char	081	00	680	Ward No. 08	0.01
Pond	Chunar Char	081	00	681	Ward No. 08	0.00
Pond	Chunar Char	081	00	1138	Ward No. 08	0.07

## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Chunar Char	081	00	1139	Ward No. 08	0.09
Pond	Chunar Char	081	00	1140	Ward No. 08	0.00
Pond	Ambikapur	045	00	20	Ward No. 03	0.20
Pond	Ambikapur	045	00	20	Ward No. 03	0.18
Pond	Ambikapur	045	00	21	Ward No. 03	0.38
Pond	Ambikapur	045	00	27	Ward No. 03	0.32
Pond	Ambikapur	045	00	28	Ward No. 03	0.00
Pond	Ambikapur	045	00	21	Ward No. 03	0.29
Pond	Ambikapur	045	00	22	Ward No. 03	0.00
Ditch	Ambikapur	045	00	13	Ward No. 03	0.22
Ditch	Ambikapur	045	00	14	Ward No. 03	0.06
Pond	Ambikapur	045	00	24	Ward No. 03	0.24
Pond	Ambikapur	045	00	25	Ward No. 03	0.17
Pond	Durgapur	047	00	21	Ward No. 04	0.44
Pond	Durgapur	047	00	170	Ward No. 04	0.00
Pond	Durgapur	047	00	171	Ward No. 04	0.14
Pond	Durgapur	047	00	172	Ward No. 04	0.00
Pond	Durgapur	047	00	173	Ward No. 04	0.00
Pond	Durgapur	047	00	169	Ward No. 04	0.17
Pond	Durgapur	047	00	168	Ward No. 04	0.02
Ditch	Durgapur	047	00	291	Ward No. 04	0.18
Pond	Ambikapur	045	00	96	Ward No. 03	0.22
Pond	Ambikapur	045	00	477	Ward No. 03	0.24
Pond	Mehendiganj	046	00	224	Ward No. 05	0.22
Pond	Ambikapur	045	00	455	Ward No. 03	0.21
Pond	Ambikapur	045	00	459	Ward No. 03	0.07
Pond	Ambikapur	045	00	417	Ward No. 03	0.05
Pond	Ambikapur	045	00	467	Ward No. 03	0.15
Pond	Ambikapur	045	00	468	Ward No. 03	0.05
Pond	Ambikapur	045	00	457	Ward No. 03	0.00
Pond	Ambikapur	045	00	460	Ward No. 03	0.25
Pond	Ambikapur	045	00	463	Ward No. 03	0.11
Pond	Ambikapur	045	00	464	Ward No. 03	0.01
Pond	Ambikapur	045	00	465	Ward No. 03	0.00
Pond	Ambikapur	045	00	460	Ward No. 03	0.36
Pond	Ambikapur	045	00	462	Ward No. 03	0.12
Pond	Ambikapur	045	00	226	Ward No. 03	0.01
Pond	Mehendiganj	046	00	224	Ward No. 05	0.49
Pond	Mehendiganj	046	00	222	Ward No. 05	0.35
Pond	Mehendiganj	046	00	225	Ward No. 05	0.26
Pond	Mehendiganj	046	00	224	Ward No. 05	0.05
Pond	Ambikapur	045	00	483	Ward No. 03	0.15
Pond	Ambikapur	045	00	226	Ward No. 03	0.00

Mehendiganj Paurashava Master Plan: 2011-2031

Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Mehendiganj	046	00	187	Ward No. 05	0.00
Pond	Mehendiganj	046	00	198	Ward No. 05	0.22
Pond	Mehendiganj	046	00	199	Ward No. 05	0.24
Pond	Mehendiganj	046	00	200	Ward No. 05	0.05
Pond	Mehendiganj	046	00	210	Ward No. 05	0.41
Pond	Mehendiganj	046	00	284	Ward No. 05	0.01
Pond	Mehendiganj	046	00	1352	Ward No. 05	0.16
Pond	Mehendiganj	046	00	1354	Ward No. 05	0.05
Pond	Mehendiganj	046	00	291	Ward No. 05	0.11
Pond	Mehendiganj	046	00	308	Ward No. 05	0.01
Pond	Mehendiganj	046	00	1356	Ward No. 05	0.04
Pond	Mehendiganj	046	00	1364	Ward No. 05	0.00
Pond	Kharki	079	00	180	Ward No. 06	0.05
Pond	Kharki	079	00	181	Ward No. 06	0.12
Pond	Kharki	079	00	182	Ward No. 06	0.23
Pond	Kharki	079	00	184	Ward No. 06	0.11
Pond	Kharki	079	00	186	Ward No. 06	0.09
Pond	Kharki	079	00	183	Ward No. 06	0.16
Pond	Kharki	079	00	201	Ward No. 06	0.21
Pond	Kharki	079	00	206	Ward No. 06	0.00
Pond	Kharki	079	00	204	Ward No. 06	0.13
Pond	Kharki	079	00	210	Ward No. 06	0.02
Pond	Kharki	079	00	586	Ward No. 06	0.04
Pond	Kharki	079	00	201	Ward No. 06	0.37
Pond	Kharki	079	00	206	Ward No. 06	0.06
Pond	Gobindapur	080	00	73	Ward No. 08	0.01
Pond	Gobindapur	080	00	76	Ward No. 08	0.03
Pond	Gobindapur	080	00	77	Ward No. 08	0.12
Pond	Gobindapur	080	00	78	Ward No. 08	0.04
Pond	Kharki	079	00	267	Ward No. 06	0.59
Pond	Kharki	079	00	259	Ward No. 06	0.07
Pond	Kharki	079	00	260	Ward No. 06	0.10
Pond	Kharki	079	00	245	Ward No. 06	0.05
Pond	Kharki	079	00	246	Ward No. 06	0.07
Pond	Kharki	079	00	260	Ward No. 06	0.11
Pond	Kharki	079	00	266	Ward No. 06	0.04
Pond	Kharki	079	00	267	Ward No. 06	0.11
Pond	Gobindapur	080	00	82	Ward No. 08	0.15
Pond	Gobindapur	080	00	83	Ward No. 08	0.11
Pond	Gobindapur	080	00	84	Ward No. 08	0.00
Pond	Gobindapur	080	00	101	Ward No. 08	0.23
Pond	Chunar Char	081	00	628	Ward No. 08	0.17
Pond	Chunar Char	081	00	678	Ward No. 08	0.10



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Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Chunar Char	081	00	642	Ward No. 08	0.00
Pond	Chunar Char	081	00	643	Ward No. 08	0.40
Pond	Chunar Char	081	00	644	Ward No. 08	0.00
Pond	Chunar Char	081	00	676	Ward No. 08	0.00
Pond	Chunar Char	081	00	644	Ward No. 08	0.31
Pond	Chunar Char	081	00	786	Ward No. 08	0.00
Pond	Chunar Char	081	00	634	Ward No. 08	0.38
Pond	Chunar Char	081	00	628	Ward No. 08	0.17
Pond	Chunar Char	081	00	635	Ward No. 08	0.07
Pond	Chunar Char	081	00	797	Ward No. 08	0.00
Pond	Chunar Char	081	00	798	Ward No. 08	0.00
Pond	Chunar Char	081	00	801	Ward No. 08	0.24
Pond	Chunar Char	081	00	963	Ward No. 08	0.08
Pond	Ambikapur	045	00	1	Ward No. 03	0.20
Pond	Ambikapur	045	00	19	Ward No. 03	0.02
Pond	Ambikapur	045	00	12	Ward No. 03	0.00
Pond	Ambikapur	045	00	15	Ward No. 03	0.19
Pond	Ambikapur	045	00	17	Ward No. 03	0.42
Ditch	Ambikapur	045	00	75	Ward No. 03	0.18
Pond	Ambikapur	045	00	89	Ward No. 03	0.08
Pond	Ambikapur	045	00	92	Ward No. 03	0.21
Pond	Ambikapur	045	00	92	Ward No. 03	0.20
Pond	Ambikapur	045	00	92	Ward No. 03	0.00
Pond	Ambikapur	045	00	107	Ward No. 03	0.30
Ditch	Ambikapur	045	00	106	Ward No. 03	0.28
Ditch	Ambikapur	045	00	496	Ward No. 03	0.02
Pond	Ambikapur	045	00	210	Ward No. 03	0.05
Pond	Ambikapur	045	00	493	Ward No. 03	0.19
Pond	Ambikapur	045	00	102	Ward No. 03	0.18
Pond	Ambikapur	045	00	100	Ward No. 03	0.16
Pond	Ambikapur	045	00	210	Ward No. 03	0.43
Pond	Ambikapur	045	00	429	Ward No. 03	0.17
Pond	Ambikapur	045	00	428	Ward No. 03	0.17
Pond	Mehendiganj	046	00	120	Ward No. 05	0.38
Pond	Mehendiganj	046	00	121	Ward No. 05	0.12
Ditch	Mehendiganj	046	00	115	Ward No. 05	0.09
Ditch	Mehendiganj	046	00	119	Ward No. 05	0.06
Pond	Mehendiganj	046	00	1330	Ward No. 05	0.10
Pond	Mehendiganj	046	00	113	Ward No. 05	0.20
Pond	Mehendiganj	046	00	110	Ward No. 05	0.16
Pond	Mehendiganj	046	00	80	Ward No. 05	0.00
Pond	Mehendiganj	046	00	81	Ward No. 05	0.30
Pond	Mehendiganj	046	00	158	Ward No. 05	0.16

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Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Mehendiganj	046	00	179	Ward No. 05	0.38
Pond	Mehendiganj	046	00	173	Ward No. 05	0.00
Pond	Mehendiganj	046	00	174	Ward No. 05	0.10
Pond	Mehendiganj	046	00	175	Ward No. 05	0.09
Pond	Mehendiganj	046	00	179	Ward No. 05	0.10
Pond	Mehendiganj	046	00	166	Ward No. 05	0.00
Pond	Mehendiganj	046	00	167	Ward No. 05	0.00
Pond	Mehendiganj	046	00	169	Ward No. 05	0.30
Pond	Mehendiganj	046	00	170	Ward No. 05	0.08
Pond	Mehendiganj	046	00	185	Ward No. 05	0.39
Pond	Mehendiganj	046	00	187	Ward No. 05	0.01
Pond	Mehendiganj	046	00	188	Ward No. 05	0.35
Pond	Mehendiganj	046	00	184	Ward No. 05	0.00
Pond	Mehendiganj	046	00	185	Ward No. 05	0.41
Pond	Mehendiganj	046	00	183	Ward No. 05	0.07
Pond	Mehendiganj	046	00	182	Ward No. 05	0.01
Pond	Kharki	079	00	100	Ward No. 06	0.10
Pond	Kharki	079	00	101	Ward No. 06	0.10
Pond	Kharki	079	00	99	Ward No. 06	0.00
Pond	Kharki	079	00	102	Ward No. 06	0.00
Pond	Kharki	079	00	104	Ward No. 06	0.41
Pond	Kharki	079	00	117	Ward No. 06	0.00
Pond	Kharki	079	00	178	Ward No. 06	0.42
Pond	Kharki	079	00	131	Ward No. 06	0.02
Pond	Kharki	079	00	132	Ward No. 06	0.04
Pond	Kharki	079	00	165	Ward No. 06	0.17
Pond	Kharki	079	00	166	Ward No. 06	0.20
Pond	Kharki	079	00	128	Ward No. 06	0.23
Pond	Kharki	079	00	129	Ward No. 06	0.24
Pond	Kharki	079	00	132	Ward No. 06	0.00
Pond	Kharki	079	00	161	Ward No. 06	0.13
Pond	Kharki	079	00	165	Ward No. 06	0.00
Pond	Kharki	079	00	138	Ward No. 06	0.19
Pond	Kharki	079	00	147	Ward No. 06	0.11
Pond	Kharki	079	00	155	Ward No. 06	0.06
Pond	Kharki	079	00	149	Ward No. 06	0.00
Pond	Kharki	079	00	152	Ward No. 06	0.15
Pond	Kharki	079	00	153	Ward No. 06	0.00
Pond	Gobindapur	080	00	3	Ward No. 08	0.10
Pond	Gobindapur	080	00	4	Ward No. 08	0.38
Pond	Gobindapur	080	00	10	Ward No. 08	0.00
Pond	Gobindapur	080	00	30	Ward No. 08	0.00
Pond	Kharki	079	00	152	Ward No. 06	0.00

## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Kharki	079	00	261	Ward No. 06	0.08
Pond	Kharki	079	00	263	Ward No. 06	0.02
Pond	Gobindapur	080	00	9	Ward No. 08	0.08
Pond	Gobindapur	080	00	11	Ward No. 08	0.12
Pond	Gobindapur	080	00	26	Ward No. 08	0.13
Pond	Gobindapur	080	00	30	Ward No. 08	0.06
Pond	Gobindapur	080	00	43	Ward No. 08	0.06
Pond	Chunar Char	081	00	298	Ward No. 08	0.38
Pond	Chunar Char	081	00	259	Ward No. 08	0.00
Pond	Chunar Char	081	00	260	Ward No. 08	0.00
Pond	Chunar Char	081	00	273	Ward No. 08	0.00
Pond	Chunar Char	081	00	274	Ward No. 08	0.32
Pond	Chunar Char	081	00	269	Ward No. 08	0.00
Pond	Chunar Char	081	00	270	Ward No. 08	0.17
Pond	Chunar Char	081	00	271	Ward No. 08	0.08
Pond	Chunar Char	081	00	272	Ward No. 08	0.01
Pond	Chunar Char	081	00	273	Ward No. 08	0.00
Pond	Chunar Char	081	00	295	Ward No. 09	0.08
Pond	Chunar Char	081	00	296	Ward No. 09	0.07
Pond	Chunar Char	081	00	297	Ward No. 09	0.03
Pond	Chunar Char	081	00	299	Ward No. 09	0.07
Pond	Chunar Char	081	00	284	Ward No. 09	0.26
Pond	Chunar Char	081	00	293	Ward No. 09	0.01
Pond	Chunar Char	081	00	526	Ward No. 08	0.16
Pond	Chunar Char	081	00	527	Ward No. 08	0.00
Pond	Chunar Char	081	00	528	Ward No. 08	0.10
Pond	Chunar Char	081	00	529	Ward No. 08	0.11
Pond	Chunar Char	081	00	540	Ward No. 08	0.14
Pond	Chunar Char	081	00	541	Ward No. 08	0.02
Pond	Chunar Char	081	00	524	Ward No. 08	0.29
Pond	Chunar Char	081	00	525	Ward No. 08	0.03
Pond	Chunar Char	081	00	524	Ward No. 08	0.08
Pond	Chunar Char	081	00	838	Ward No. 08	0.03
Pond	Chunar Char	081	00	1136	Ward No. 08	0.11
Pond	Chunar Char	081	00	543	Ward No. 08	0.13
Pond	Chunar Char	081	00	823	Ward No. 08	0.06
Pond	Chunar Char	081	00	824	Ward No. 08	0.05
Pond	Chunar Char	081	00	550	Ward No. 08	0.34
Pond	Chunar Char	081	00	843	Ward No. 09	0.09
Pond	Chunar Char	081	00	845	Ward No. 09	0.09
Pond	Chunar Char	081	00	850	Ward No. 09	0.00
Pond	Chunar Char	081	00	839	Ward No. 09	0.03
Pond	Chunar Char	081	00	842	Ward No. 09	0.08

## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Chunar Char	081	00	850	Ward No. 09	0.04
Pond	Chunar Char	081	00	837	Ward No. 09	0.16
Pond	Chunar Char	081	00	952	Ward No. 08	0.16
Pond	Chunar Char	081	00	953	Ward No. 08	0.00
Pond	Chunar Char	081	00	954	Ward No. 08	0.00
Pond	Chunar Char	081	00	949	Ward No. 08	0.12
Pond	Chunar Char	081	00	951	Ward No. 08	0.02
Pond	Chunar Char	081	00	952	Ward No. 08	0.01
Pond	Sonamukhi	044	01	205	Ward No. 02	0.29
Pond	Sonamukhi	044	01	216	Ward No. 02	0.00
Pond	Sonamukhi	044	01	184	Ward No. 02	0.25
Pond	Sonamukhi	044	01	181	Ward No. 02	0.27
Pond	Sonamukhi	044	01	184	Ward No. 02	0.09
Pond	Sonamukhi	044	01	251	Ward No. 02	0.18
Pond	Sonamukhi	044	01	225	Ward No. 02	0.28
Pond	Sonamukhi	044	01	230	Ward No. 02	0.07
Pond	Sonamukhi	044	01	217	Ward No. 02	0.00
Pond	Sonamukhi	044	01	218	Ward No. 02	0.38
Pond	Sonamukhi	044	01	220	Ward No. 02	0.22
Pond	Sonamukhi	044	01	221	Ward No. 02	0.19
Pond	Sonamukhi	044	01	222	Ward No. 02	0.22
Pond	Sonamukhi	044	01	226	Ward No. 02	0.00
Pond	Ambikapur	045	00	197	Ward No. 03	0.29
Pond	Ambikapur	045	00	190	Ward No. 03	0.24
Pond	Ambikapur	045	00	113	Ward No. 03	0.00
Pond	Ambikapur	045	00	114	Ward No. 03	0.17
Pond	Ambikapur	045	00	208	Ward No. 03	0.15
Pond	Ambikapur	045	00	209	Ward No. 03	0.01
Pond	Ambikapur	045	00	203	Ward No. 03	0.15
Pond	Ambikapur	045	00	204	Ward No. 03	0.09
Pond	Ambikapur	045	00	229	Ward No. 03	0.04
Pond	Ambikapur	045	00	230	Ward No. 03	0.45
Pond	Ambikapur	045	00	220	Ward No. 03	0.37
Pond	Ambikapur	045	00	501	Ward No. 03	0.00
Pond	Ambikapur	045	00	227	Ward No. 03	0.51
Pond	Ambikapur	045	00	231	Ward No. 03	0.11
Pond	Ambikapur	045	00	501	Ward No. 03	0.00
Pond	Ambikapur	045	00	219	Ward No. 03	0.01
Pond	Ambikapur	045	00	220	Ward No. 03	0.20
Pond	Ambikapur	045	00	220	Ward No. 03	0.21
Pond	Ambikapur	045	00	221	Ward No. 03	0.00
Pond	Ambikapur	045	00	221	Ward No. 03	0.00
Pond	Ambikapur	045	00	222	Ward No. 03	0.44

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Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Ambikapur	045	00	223	Ward No. 03	0.14
Pond	Ambikapur	045	00	224	Ward No. 03	0.15
Pond	Ambikapur	045	00	501	Ward No. 03	0.01
Pond	Ambikapur	045	00	237	Ward No. 03	0.17
Pond	Ambikapur	045	00	238	Ward No. 03	0.09
Pond	Ambikapur	045	00	241	Ward No. 03	0.25
Pond	Ambikapur	045	00	218	Ward No. 03	0.23
Pond	Mehendiganj	046	00	97	Ward No. 05	0.09
Pond	Mehendiganj	046	00	98	Ward No. 05	0.03
Pond	Mehendiganj	046	00	100	Ward No. 05	0.04
Pond	Mehendiganj	046	00	101	Ward No. 05	0.00
Pond	Ambikapur	045	00	210	Ward No. 03	0.00
Pond	Ambikapur	045	00	211	Ward No. 03	0.00
Pond	Ambikapur	045	00	212	Ward No. 03	0.27
Pond	Ambikapur	045	00	213	Ward No. 03	0.03
Pond	Ambikapur	045	00	214	Ward No. 03	0.05
Pond	Mehendiganj	046	00	13	Ward No. 05	0.06
Pond	Mehendiganj	046	00	14	Ward No. 05	0.07
Pond	Mehendiganj	046	00	15	Ward No. 05	0.03
Pond	Mehendiganj	046	00	11	Ward No. 05	0.00
Pond	Chunar Char	081	00	861	Ward No. 09	0.05
Pond	Chunar Char	081	00	863	Ward No. 09	0.01
Pond	Chunar Char	081	00	930	Ward No. 09	0.12
Pond	Chunar Char	081	00	308	Ward No. 09	0.23
Pond	Chunar Char	081	00	309	Ward No. 09	0.00
Pond	Chunar Char	081	00	504	Ward No. 09	0.17
Pond	Chunar Char	081	00	507	Ward No. 09	0.00
Pond	Bhuta Lakshmipur	043	00	718	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	719	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	751	Ward No. 07	0.09
Pond	Bhuta Lakshmipur	043	00	752	Ward No. 07	0.08
Pond	Bhuta Lakshmipur	043	00	720	Ward No. 07	0.28
Pond	Bhuta Lakshmipur	043	00	715	Ward No. 07	0.26
Pond	Bhuta Lakshmipur	043	00	716	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	685	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	686	Ward No. 07	0.10
Pond	Bhuta Lakshmipur	043	00	687	Ward No. 07	0.11
Pond	Bhuta Lakshmipur	043	00	715	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	686	Ward No. 07	0.01
Pond	Bhuta Lakshmipur	043	00	687	Ward No. 07	0.17
Pond	Bhuta Lakshmipur	043	00	688	Ward No. 07	0.19
Pond	Bhuta Lakshmipur	043	00	692	Ward No. 07	0.13
Pond	Bhuta Lakshmipur	043	00	711	Ward No. 07	0.19

## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Bhuta Lakshmipur	043	00	712	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	713	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	680	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	685	Ward No. 07	0.15
Pond	Bhuta Lakshmipur	043	00	694	Ward No. 07	0.02
Pond	Bhuta Lakshmipur	043	00	809	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	693	Ward No. 07	0.14
Pond	Bhuta Lakshmipur	043	00	809	Ward No. 07	0.21
Pond	Bhuta Lakshmipur	043	00	799	Ward No. 07	0.18
Pond	Bhuta Lakshmipur	043	00	779	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	798	Ward No. 07	0.57
Pond	Bhuta Lakshmipur	043	00	799	Ward No. 07	0.18
Pond	Bhuta Lakshmipur	043	00	779	Ward No. 07	0.36
Pond	Bhuta Lakshmipur	043	00	798	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	787	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	701	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	777	Ward No. 07	0.29
Pond	Bhuta Lakshmipur	043	00	779	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	798	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	701	Ward No. 07	0.25
Pond	Bhuta Lakshmipur	043	00	777	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	703	Ward No. 07	0.01
Pond	Bhuta Lakshmipur	043	00	768	Ward No. 07	0.14
Pond	Bhuta Lakshmipur	043	00	777	Ward No. 07	0.01
Pond	Bhuta Lakshmipur	043	00	701	Ward No. 07	0.02
Pond	Bhuta Lakshmipur	043	00	702	Ward No. 07	0.07
Pond	Bhuta Lakshmipur	043	00	703	Ward No. 07	0.24
Pond	Bhuta Lakshmipur	043	00	704	Ward No. 07	0.01
Pond	Bhuta Lakshmipur	043	00	767	Ward No. 07	0.16
Pond	Bhuta Lakshmipur	043	00	768	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	669	Ward No. 08	0.35
Pond	Bhuta Lakshmipur	043	00	665	Ward No. 08	0.19
Pond	Bhuta Lakshmipur	043	00	658	Ward No. 08	0.33
Pond	Bhuta Lakshmipur	043	00	660	Ward No. 08	0.20
Pond	Bhuta Lakshmipur	043	00	641	Ward No. 08	0.00
Pond	Bhuta Lakshmipur	043	00	642	Ward No. 08	0.20
Pond	Bhuta Lakshmipur	043	00	641	Ward No. 08	0.27
Pond	Bhuta Lakshmipur	043	00	642	Ward No. 08	0.00
Pond	Bhuta Lakshmipur	043	00	831	Ward No. 08	0.05
Pond	Bhuta Lakshmipur	043	00	832	Ward No. 08	0.05
Pond	Bhuta Lakshmipur	043	00	844	Ward No. 08	0.00
Pond	Bhuta Lakshmipur	043	00	845	Ward No. 08	0.18
Pond	Bhuta Lakshmipur	043	00	630	Ward No. 08	0.00

## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Bhuta Lakshmipur	043	00	631	Ward No. 08	0.07
Pond	Bhuta Lakshmipur	043	00	634	Ward No. 08	0.14
Pond	Bhuta Lakshmipur	043	00	918	Ward No. 08	0.14
Pond	Bhuta Lakshmipur	043	00	919	Ward No. 08	0.03
Pond	Bhuta Lakshmipur	043	00	926	Ward No. 08	0.00
Pond	Bhuta Lakshmipur	043	00	927	Ward No. 08	0.00
Pond	Bhuta Lakshmipur	043	00	928	Ward No. 08	0.00
Pond	Bhuta Lakshmipur	043	00	931	Ward No. 08	0.00
Pond	Chunar Char	081	00	52	Ward No. 09	0.37
Pond	Chunar Char	081	00	408	Ward No. 09	0.18
Pond	Chunar Char	081	00	1118	Ward No. 09	0.11
Pond	Chunar Char	081	00	1147	Ward No. 09	0.03
Pond	Chunar Char	081	00	1149	Ward No. 09	0.02
Pond	Chunar Char	081	00	1150	Ward No. 09	0.01
Pond	Chunar Char	081	00	1151	Ward No. 09	0.12
Pond	Chunar Char	081	00	404	Ward No. 09	0.28
Pond	Chunar Char	081	00	405	Ward No. 09	0.01
Pond	Chunar Char	081	00	401	Ward No. 09	0.07
Pond	Chunar Char	081	00	402	Ward No. 09	0.47
Pond	Chunar Char	081	00	28	Ward No. 09	0.00
Pond	Chunar Char	081	00	29	Ward No. 09	0.04
Pond	Chunar Char	081	00	387	Ward No. 09	0.02
Pond	Chunar Char	081	00	393	Ward No. 09	0.00
Pond	Chunar Char	081	00	395	Ward No. 09	0.21
Pond	Chunar Char	081	00	396	Ward No. 09	0.12
Pond	Chunar Char	081	00	397	Ward No. 09	0.11
Pond	Chunar Char	081	00	1160	Ward No. 09	0.03
Pond	Chunar Char	081	00	1161	Ward No. 09	0.03
Pond	Chunar Char	081	00	415	Ward No. 09	0.08
Pond	Chunar Char	081	00	416	Ward No. 09	0.06
Pond	Chunar Char	081	00	419	Ward No. 09	0.46
Pond	Chunar Char	081	00	338	Ward No. 09	0.11
Pond	Chunar Char	081	00	444	Ward No. 09	0.03
Pond	Chunar Char	081	00	434	Ward No. 09	0.00
Pond	Chunar Char	081	00	435	Ward No. 09	0.10
Pond	Chunar Char	081	00	445	Ward No. 09	0.28
Pond	Chunar Char	081	00	451	Ward No. 09	0.29
Pond	Chunar Char	081	00	42	Ward No. 09	0.04
Pond	Chunar Char	081	00	50	Ward No. 09	0.12
Ditch	Chunar Char	081	00	38	Ward No. 09	0.23
Pond	Chunar Char	081	00	381	Ward No. 09	0.17
Pond	Chunar Char	081	00	382	Ward No. 09	0.04
Pond	Chunar Char	081	00	383	Ward No. 09	0.02

## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Chunar Char	081	00	391	Ward No. 09	0.06
Pond	Chunar Char	081	00	32	Ward No. 09	0.17
Pond	Chunar Char	081	00	1119	Ward No. 09	0.00
Pond	Chunar Char	081	00	30	Ward No. 09	0.00
Pond	Chunar Char	081	00	31	Ward No. 09	0.00
Pond	Chunar Char	081	00	47	Ward No. 09	0.12
Pond	Chunar Char	081	00	48	Ward No. 09	0.06
Pond	Chunar Char	081	00	49	Ward No. 09	0.03
Pond	Chunar Char	081	00	51	Ward No. 09	0.00
Pond	Chunar Char	081	00	54	Ward No. 09	0.03
Pond	Chunar Char	081	00	55	Ward No. 09	0.04
Pond	Chunar Char	081	00	56	Ward No. 09	0.05
Pond	Chunar Char	081	00	57	Ward No. 09	0.06
Pond	Chunar Char	081	00	59	Ward No. 09	0.00
Pond	Chunar Char	081	00	65	Ward No. 09	0.22
Pond	Chunar Char	081	00	66	Ward No. 09	0.13
Pond	Chunar Char	081	00	69	Ward No. 09	0.22
Pond	Chunar Char	081	00	72	Ward No. 09	0.00
Pond	Chunar Char	081	00	69	Ward No. 09	0.01
Pond	Chunar Char	081	00	71	Ward No. 09	0.00
Pond	Chunar Char	081	00	72	Ward No. 09	0.00
Pond	Chunar Char	081	00	75	Ward No. 09	0.23
Pond	Chunar Char	081	00	87	Ward No. 09	0.02
Pond	Chunar Char	081	00	85	Ward No. 09	0.02
Pond	Chunar Char	081	00	86	Ward No. 09	0.12
Pond	Chunar Char	081	00	87	Ward No. 09	0.11
Pond	Chunar Char	081	00	70	Ward No. 09	0.01
Pond	Chunar Char	081	00	87	Ward No. 09	0.00
Pond	Chunar Char	081	00	88	Ward No. 09	0.32
Pond	Chunar Char	081	00	92	Ward No. 09	0.00
Pond	Chunar Char	081	00	101	Ward No. 09	0.00
Pond	Chunar Char	081	00	102	Ward No. 09	0.01
Pond	Chunar Char	081	00	103	Ward No. 09	0.04
Pond	Chunar Char	081	00	104	Ward No. 09	0.37
Pond	Chunar Char	081	00	105	Ward No. 09	0.03
Pond	Chunar Char	081	00	106	Ward No. 09	0.01
Pond	Chunar Char	081	00	75	Ward No. 09	0.16
Pond	Chunar Char	081	00	76	Ward No. 09	0.01
Pond	Chunar Char	081	00	77	Ward No. 09	0.00
Pond	Chunar Char	081	00	95	Ward No. 09	0.30
Pond	Chunar Char	081	00	106	Ward No. 09	0.00
Pond	Chunar Char	081	00	107	Ward No. 09	0.00
Pond	Chunar Char	081	00	108	Ward No. 09	0.13



## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Chunar Char	081	00	109	Ward No. 09	0.06
Pond	Chunar Char	081	00	1116	Ward No. 09	0.00
Pond	Bhuta Lakshmipur	043	00	861	Ward No. 08	0.21
Pond	Bhuta Lakshmipur	043	00	874	Ward No. 08	0.31
Pond	Bhuta Lakshmipur	043	00	888	Ward No. 08	0.08
Pond	Bhuta Lakshmipur	043	00	889	Ward No. 08	0.00
Pond	Bhuta Lakshmipur	043	00	890	Ward No. 08	0.00
Pond	Bhuta Lakshmipur	043	00	891	Ward No. 08	0.08
Pond	Chunar Char	081	00	112	Ward No. 09	0.12
Pond	Chunar Char	081	00	113	Ward No. 09	0.03
Pond	Chunar Char	081	00	114	Ward No. 09	0.13
Pond	Chunar Char	081	00	123	Ward No. 09	0.01
Pond	Chunar Char	081	00	112	Ward No. 08	0.02
Pond	Chunar Char	081	00	123	Ward No. 08	0.01
Pond	Chunar Char	081	00	124	Ward No. 08	0.01
Pond	Chunar Char	081	00	125	Ward No. 08	0.13
Pond	Chunar Char	081	00	130	Ward No. 08	0.02
Pond	Bhuta Lakshmipur	043	00	809	Ward No. 07	0.21
Pond	Bhuta Lakshmipur	043	00	816	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	808	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	809	Ward No. 07	0.23
Pond	Bhuta Lakshmipur	043	00	816	Ward No. 07	0.25
Pond	Bhuta Lakshmipur	043	00	818	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	818	Ward No. 07	0.38
Pond	Bhuta Lakshmipur	043	00	828	Ward No. 07	0.01
Pond	Bhuta Lakshmipur	043	00	828	Ward No. 07	0.20
Pond	Bhuta Lakshmipur	043	00	829	Ward No. 07	0.01
Pond	Bhuta Lakshmipur	043	00	818	Ward No. 07	0.28
Pond	Bhuta Lakshmipur	043	00	827	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	825	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	826	Ward No. 07	0.06
Pond	Bhuta Lakshmipur	043	00	827	Ward No. 07	0.15
Pond	Bhuta Lakshmipur	043	00	843	Ward No. 07	0.22
Pond	Bhuta Lakshmipur	043	00	843	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	848	Ward No. 07	0.15
Pond	Bhuta Lakshmipur	043	00	850	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	854	Ward No. 08	0.19
Pond	Bhuta Lakshmipur	043	00	855	Ward No. 08	0.00
Pond	Kharki	079	00	49	Ward No. 06	0.22
Pond	Kharki	079	00	50	Ward No. 06	0.04
Pond	Kharki	079	00	52	Ward No. 06	0.09
Pond	Kharki	079	00	49	Ward No. 06	0.20
Pond	Bhuta Lakshmipur	043	00	789	Ward No. 07	0.17

## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Bhuta Lakshmipur	043	00	797	Ward No. 07	0.06
Pond	Bhuta Lakshmipur	043	00	797	Ward No. 07	0.35
Pond	Bhuta Lakshmipur	043	00	795	Ward No. 07	0.01
Pond	Bhuta Lakshmipur	043	00	797	Ward No. 07	0.63
Pond	Bhuta Lakshmipur	043	00	799	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	801	Ward No. 07	0.84
Pond	Bhuta Lakshmipur	043	00	801	Ward No. 07	0.09
Pond	Bhuta Lakshmipur	043	00	802	Ward No. 07	0.20
Pond	Bhuta Lakshmipur	043	00	808	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	795	Ward No. 07	0.27
Pond	Bhuta Lakshmipur	043	00	801	Ward No. 07	0.00
Pond	Ambikapur	045	00	237	Ward No. 03	0.14
Pond	Ambikapur	045	00	259	Ward No. 03	0.26
Pond	Char Hogla	041	03	3248	Ward No. 01	1.08
Pond	Char Hogla	041	03	3266	Ward No. 01	0.19
Ditch	Char Hogla	041	03	3248	Ward No. 01	0.06
Ditch	Char Hogla	041	03	3249	Ward No. 01	0.57
Ditch	Char Hogla	041	03	3250	Ward No. 01	0.32
Ditch	Char Hogla	041	03	3249	Ward No. 01	0.23
Ditch	Char Hogla	041	03	3252	Ward No. 01	0.00
Ditch	Char Hogla	041	03	3257	Ward No. 01	0.06
Ditch	Char Hogla	041	03	3258	Ward No. 01	0.65
Pond	Char Hogla	041	03	3265	Ward No. 01	0.14
Ditch	Char Hogla	041	03	3230	Ward No. 01	0.03
Ditch	Char Hogla	041	03	3256	Ward No. 01	0.96
Ditch	Char Hogla	041	03	3257	Ward No. 01	0.00
Ditch	Char Hogla	041	03	3258	Ward No. 01	0.03
Pond	Char Hogla	041	03	3230	Ward No. 01	0.02
Pond	Char Hogla	041	03	3231	Ward No. 01	0.42
Pond	Char Hogla	041	03	3232	Ward No. 01	0.16
Pond	Char Hogla	041	03	3233	Ward No. 01	0.02
Ditch	Char Hogla	041	03	3230	Ward No. 01	1.29
Pond	Ambikapur	045	00	179	Ward No. 03	0.15
Pond	Ambikapur	045	00	180	Ward No. 03	0.00
Pond	Ambikapur	045	00	126	Ward No. 03	0.00
Pond	Ambikapur	045	00	176	Ward No. 03	0.10
Pond	Ambikapur	045	00	177	Ward No. 03	0.05
Pond	Ambikapur	045	00	66	Ward No. 03	0.17
Pond	Ambikapur	045	00	128	Ward No. 03	0.00
Pond	Ambikapur	045	00	176	Ward No. 03	0.16
Pond	Ambikapur	045	00	175	Ward No. 03	0.26
Pond	Char Hogla	041	03	3166	Ward No. 01	0.18
Pond	Char Hogla	041	03	3184	Ward No. 01	0.00

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Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Ambikapur	045	00	151	Ward No. 03	0.15
Pond	Ambikapur	045	00	265	Ward No. 03	0.28
Pond	Mehendiganj	046	00	43	Ward No. 03	0.06
Pond	Mehendiganj	046	00	44	Ward No. 03	0.07
Pond	Mehendiganj	046	00	45	Ward No. 03	0.04
Pond	Mehendiganj	046	00	50	Ward No. 05	0.01
Pond	Mehendiganj	046	00	56	Ward No. 05	0.20
Pond	Mehendiganj	046	00	58	Ward No. 05	0.00
Pond	Kharki	079	00	3	Ward No. 06	0.01
Pond	Kharki	079	00	575	Ward No. 06	0.17
Pond	Kharki	079	00	576	Ward No. 06	0.00
Pond	Kharki	079	00	5	Ward No. 06	0.08
Pond	Kharki	079	00	6	Ward No. 06	0.13
Pond	Kharki	079	00	7	Ward No. 06	0.02
Pond	Kharki	079	00	11	Ward No. 06	0.03
Pond	Kharki	079	00	12	Ward No. 06	0.14
Pond	Kharki	079	00	13	Ward No. 06	0.00
Pond	Kharki	079	00	11	Ward No. 06	0.00
Pond	Kharki	079	00	13	Ward No. 06	0.03
Pond	Kharki	079	00	18	Ward No. 06	0.14
Pond	Kharki	079	00	14	Ward No. 06	0.14
Pond	Kharki	079	00	15	Ward No. 06	0.01
Pond	Kharki	079	00	16	Ward No. 06	0.10
Pond	Kharki	079	00	24	Ward No. 06	0.00
Pond	Kharki	079	00	28	Ward No. 06	0.07
Pond	Kharki	079	00	29	Ward No. 06	0.07
Pond	Kharki	079	00	30	Ward No. 06	0.05
Pond	Kharki	079	00	80	Ward No. 06	0.00
Pond	Kharki	079	00	42	Ward No. 06	0.06
Pond	Kharki	079	00	43	Ward No. 06	0.14
Pond	Chunar Char	081	00	170	Ward No. 08	0.04
Pond	Chunar Char	081	00	171	Ward No. 08	0.11
Pond	Kharki	079	00	137	Ward No. 06	0.00
Pond	Kharki	079	00	583	Ward No. 06	0.00
Pond	Kharki	079	00	584	Ward No. 06	0.00
Pond	Kharki	079	00	585	Ward No. 06	0.02
Pond	Kharki	079	00	138	Ward No. 06	0.20
Pond	Kharki	079	00	136	Ward No. 06	0.06
Pond	Kharki	079	00	137	Ward No. 06	0.26
Pond	Kharki	079	00	57	Ward No. 06	0.08
Pond	Kharki	079	00	131	Ward No. 06	0.08
Pond	Kharki	079	00	133	Ward No. 06	0.05
Pond	Kharki	079	00	38	Ward No. 06	0.30

## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Kharki	079	00	59	Ward No. 06	0.03
Pond	Kharki	079	00	62	Ward No. 06	0.09
Pond	Kharki	079	00	63	Ward No. 06	0.12
Pond	Kharki	079	00	64	Ward No. 06	0.11
Pond	Chunar Char	081	00	138	Ward No. 08	0.01
Pond	Chunar Char	081	00	142	Ward No. 08	0.03
Pond	Chunar Char	081	00	143	Ward No. 08	0.22
Pond	Chunar Char	081	00	147	Ward No. 08	0.39
Pond	Chunar Char	081	00	148	Ward No. 08	0.03
Pond	Chunar Char	081	00	135	Ward No. 08	0.04
Pond	Chunar Char	081	00	136	Ward No. 08	0.11
Pond	Chunar Char	081	00	137	Ward No. 08	0.05
Pond	Chunar Char	081	00	138	Ward No. 08	0.14
Pond	Chunar Char	081	00	143	Ward No. 08	0.04
Pond	Chunar Char	081	00	144	Ward No. 08	0.03
Pond	Chunar Char	081	00	145	Ward No. 08	0.05
Pond	Chunar Char	081	00	146	Ward No. 08	0.08
Pond	Chunar Char	081	00	147	Ward No. 08	0.08
Pond	Chunar Char	081	00	174	Ward No. 08	0.01
Pond	Chunar Char	081	00	126	Ward No. 08	0.06
Pond	Chunar Char	081	00	132	Ward No. 08	0.00
Pond	Chunar Char	081	00	134	Ward No. 08	0.00
Pond	Chunar Char	081	00	135	Ward No. 08	0.12
Pond	Chunar Char	081	00	136	Ward No. 08	0.27
Pond	Chunar Char	081	00	137	Ward No. 08	0.14
Pond	Chunar Char	081	00	174	Ward No. 08	0.01
Pond	Chunar Char	081	00	147	Ward No. 08	0.62
Pond	Chunar Char	081	00	148	Ward No. 08	0.08
Pond	Chunar Char	081	00	174	Ward No. 08	0.10
Pond	Chunar Char	081	00	132	Ward No. 08	0.12
Pond	Chunar Char	081	00	175	Ward No. 08	0.26
Pond	Chunar Char	081	00	178	Ward No. 08	0.04
Pond	Chunar Char	081	00	174	Ward No. 08	0.39
Pond	Chunar Char	081	00	131	Ward No. 08	0.00
Pond	Chunar Char	081	00	132	Ward No. 08	0.13
Pond	Chunar Char	081	00	178	Ward No. 08	0.04
Pond	Chunar Char	081	00	179	Ward No. 08	0.02
Pond	Chunar Char	081	00	112	Ward No. 08	0.05
Pond	Chunar Char	081	00	127	Ward No. 08	0.02
Pond	Chunar Char	081	00	128	Ward No. 08	0.17
Pond	Chunar Char	081	00	130	Ward No. 08	0.02
Pond	Chunar Char	081	00	129	Ward No. 08	0.08
Pond	Chunar Char	081	00	130	Ward No. 08	0.03

## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Chunar Char	081	00	131	Ward No. 08	0.00
Pond	Chunar Char	081	00	179	Ward No. 08	0.08
Pond	Chunar Char	081	00	182	Ward No. 08	0.13
Pond	Chunar Char	081	00	183	Ward No. 08	0.00
Pond	Chunar Char	081	00	94	Ward No. 09	0.11
Pond	Chunar Char	081	00	109	Ward No. 09	0.00
Pond	Chunar Char	081	00	110	Ward No. 09	0.15
Pond	Chunar Char	081	00	111	Ward No. 09	0.02
Pond	Chunar Char	081	00	190	Ward No. 09	0.07
Pond	Chunar Char	081	00	191	Ward No. 09	0.03
Pond	Chunar Char	081	00	178	Ward No. 08	0.15
Pond	Chunar Char	081	00	179	Ward No. 08	0.19
Pond	Chunar Char	081	00	179	Ward No. 08	0.00
Pond	Chunar Char	081	00	180	Ward No. 08	0.16
Pond	Chunar Char	081	00	181	Ward No. 08	0.00
Pond	Chunar Char	081	00	66	Ward No. 09	0.12
Pond	Chunar Char	081	00	67	Ward No. 09	0.16
Pond	Chunar Char	081	00	68	Ward No. 09	0.06
Pond	Chunar Char	081	00	70	Ward No. 09	0.02
Pond	Chunar Char	081	00	1133	Ward No. 09	0.01
Pond	Chunar Char	081	00	358	Ward No. 09	0.00
Pond	Chunar Char	081	00	361	Ward No. 09	0.50
Pond	Chunar Char	081	00	362	Ward No. 09	0.00
Pond	Chunar Char	081	00	220	Ward No. 09	0.21
Pond	Chunar Char	081	00	222	Ward No. 09	0.00
Pond	Chunar Char	081	00	224	Ward No. 09	0.00
Pond	Chunar Char	081	00	222	Ward No. 09	0.14
Pond	Chunar Char	081	00	223	Ward No. 09	0.01
Pond	Chunar Char	081	00	224	Ward No. 09	0.00
Pond	Chunar Char	081	00	225	Ward No. 09	0.01
Pond	Chunar Char	081	00	211	Ward No. 08	0.09
Pond	Chunar Char	081	00	213	Ward No. 08	0.10
Pond	Sonamukhi	044	01	211	Ward No. 02	0.03
Pond	Sonamukhi	044	01	213	Ward No. 02	0.13
Pond	Sonamukhi	044	01	214	Ward No. 02	0.01
Pond	Sonamukhi	044	02	1001	Ward No. 02	0.10
Pond	Sonamukhi	044	03	1007	Ward No. 02	0.09
Pond	Sonamukhi	044	03	1008	Ward No. 02	0.00
Pond	Sonamukhi	044	03	1009	Ward No. 02	0.00
Pond	Ambikapur	045	00	309	Ward No. 03	0.38
Pond	Bhuta Lakshmipur	043	00	520	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	521	Ward No. 07	0.19
Pond	Bhuta Lakshmipur	043	00	522	Ward No. 07	0.00

## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Bhuta Lakshmipur	043	00	523	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	720	Ward No. 07	0.25
Pond	Bhuta Lakshmipur	043	00	720	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	721	Ward No. 07	0.20
Pond	Bhuta Lakshmipur	043	00	680	Ward No. 07	0.16
Pond	Bhuta Lakshmipur	043	00	685	Ward No. 07	0.01
Pond	Bhuta Lakshmipur	043	00	499	Ward No. 07	0.28
River	Chunar Char	081	00	877	Ward No. 09	0.48
River	Chunar Char	081	00	887	Ward No. 09	0.18
River	Chunar Char	081	00	888	Ward No. 09	0.24
River	Chunar Char	081	00	889	Ward No. 09	0.53
River	Chunar Char	081	00	890	Ward No. 09	0.38
River	Chunar Char	081	00	891	Ward No. 09	0.39
River	Chunar Char	081	00	892	Ward No. 09	0.83
River	Chunar Char	081	00	893	Ward No. 09	0.75
River	Chunar Char	081	00	894	Ward No. 09	0.36
River	Chunar Char	081	00	895	Ward No. 09	1.00
River	Chunar Char	081	00	896	Ward No. 09	0.46
River	Chunar Char	081	00	897	Ward No. 09	0.52
River	Chunar Char	081	00	898	Ward No. 09	0.54
River	Chunar Char	081	00	899	Ward No. 09	0.90
River	Chunar Char	081	00	900	Ward No. 09	0.86
River	Chunar Char	081	00	901	Ward No. 09	0.39
River	Chunar Char	081	00	902	Ward No. 09	0.37
River	Chunar Char	081	00	903	Ward No. 09	0.41
River	Chunar Char	081	00	904	Ward No. 09	0.35
River	Chunar Char	081	00	905	Ward No. 09	0.22
River	Chunar Char	081	00	906	Ward No. 09	0.17
River	Chunar Char	081	00	907	Ward No. 09	0.20
River	Chunar Char	081	00	908	Ward No. 09	0.34
River	Chunar Char	081	00	909	Ward No. 09	0.07
River	Chunar Char	081	00	910	Ward No. 09	0.07
River	Chunar Char	081	00	911	Ward No. 09	0.22
River	Chunar Char	081	00	912	Ward No. 09	0.16
River	Chunar Char	081	00	914	Ward No. 09	0.20
River	Chunar Char	081	00	915	Ward No. 09	0.16
River	Chunar Char	081	00	916	Ward No. 09	0.20
River	Chunar Char	081	00	917	Ward No. 09	0.10
River	Chunar Char	081	00	918	Ward No. 09	0.08
River	Chunar Char	081	00	919	Ward No. 09	0.00
River	Chunar Char	081	00	1166	Ward No. 09	0.01
River	Chunar Char	081	00	1167	Ward No. 09	0.02
River	Chunar Char	081	00	1168	Ward No. 09	0.04

## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
River	Bhuta Lakshmipur	043	00	1	Ward No. 07	0.25
River	Bhuta Lakshmipur	043	00	2	Ward No. 07	0.13
River	Bhuta Lakshmipur	043	00	3	Ward No. 07	0.21
River	Bhuta Lakshmipur	043	00	5	Ward No. 07	0.18
River	Bhuta Lakshmipur	043	00	6	Ward No. 07	0.19
River	Bhuta Lakshmipur	043	00	7	Ward No. 07	0.19
River	Bhuta Lakshmipur	043	00	8	Ward No. 07	0.16
River	Bhuta Lakshmipur	043	00	9	Ward No. 07	0.10
River	Bhuta Lakshmipur	043	00	10	Ward No. 07	0.21
River	Bhuta Lakshmipur	043	00	11	Ward No. 07	0.01
River	Bhuta Lakshmipur	043	00	12	Ward No. 07	0.05
River	Bhuta Lakshmipur	043	00	13	Ward No. 07	0.12
River	Bhuta Lakshmipur	043	00	16	Ward No. 07	0.02
River	Bhuta Lakshmipur	043	00	17	Ward No. 07	0.01
River	Bhuta Lakshmipur	043	00	18	Ward No. 07	0.02
River	Bhuta Lakshmipur	043	00	19	Ward No. 07	0.02
River	Bhuta Lakshmipur	043	00	20	Ward No. 07	0.21
River	Bhuta Lakshmipur	043	00	21	Ward No. 07	0.01
River	Bhuta Lakshmipur	043	00	22	Ward No. 07	0.01
River	Bhuta Lakshmipur	043	00	23	Ward No. 07	0.03
River	Bhuta Lakshmipur	043	00	24	Ward No. 07	0.04
River	Bhuta Lakshmipur	043	00	25	Ward No. 07	0.07
River	Bhuta Lakshmipur	043	00	26	Ward No. 07	0.02
River	Bhuta Lakshmipur	043	00	27	Ward No. 07	0.01
River	Bhuta Lakshmipur	043	00	28	Ward No. 07	0.12
River	Bhuta Lakshmipur	043	00	29	Ward No. 07	0.03
River	Bhuta Lakshmipur	043	00	30	Ward No. 07	0.03
River	Bhuta Lakshmipur	043	00	31	Ward No. 07	0.04
River	Bhuta Lakshmipur	043	00	32	Ward No. 07	0.04
River	Bhuta Lakshmipur	043	00	33	Ward No. 07	0.08
River	Bhuta Lakshmipur	043	00	34	Ward No. 07	0.03
River	Bhuta Lakshmipur	043	00	35	Ward No. 07	0.05
River	Bhuta Lakshmipur	043	00	36	Ward No. 07	0.05
River	Bhuta Lakshmipur	043	00	37	Ward No. 07	0.03
River	Bhuta Lakshmipur	043	00	38	Ward No. 07	0.03
River	Bhuta Lakshmipur	043	00	39	Ward No. 07	0.07
River	Bhuta Lakshmipur	043	00	40	Ward No. 07	0.05
River	Bhuta Lakshmipur	043	00	41	Ward No. 07	0.22
River	Bhuta Lakshmipur	043	00	42	Ward No. 07	0.43
River	Bhuta Lakshmipur	043	00	43	Ward No. 07	0.39
River	Bhuta Lakshmipur	043	00	44	Ward No. 07	0.39
River	Bhuta Lakshmipur	043	00	45	Ward No. 07	0.45
River	Bhuta Lakshmipur	043	00	46	Ward No. 07	0.65

## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
River	Bhuta Lakshmipur	043	00	47	Ward No. 07	0.15
River	Bhuta Lakshmipur	043	00	48	Ward No. 07	0.13
River	Bhuta Lakshmipur	043	00	49	Ward No. 07	0.29
River	Bhuta Lakshmipur	043	00	50	Ward No. 07	0.32
River	Bhuta Lakshmipur	043	00	51	Ward No. 07	0.10
River	Bhuta Lakshmipur	043	00	52	Ward No. 07	0.16
River	Bhuta Lakshmipur	043	00	53	Ward No. 07	0.21
River	Bhuta Lakshmipur	043	00	54	Ward No. 07	0.14
River	Bhuta Lakshmipur	043	00	55	Ward No. 07	0.12
River	Bhuta Lakshmipur	043	00	56	Ward No. 07	0.19
River	Bhuta Lakshmipur	043	00	57	Ward No. 07	0.18
River	Bhuta Lakshmipur	043	00	58	Ward No. 07	0.03
River	Bhuta Lakshmipur	043	00	59	Ward No. 07	2.83
River	Bhuta Lakshmipur	043	00	60	Ward No. 07	0.36
River	Bhuta Lakshmipur	043	00	68	Ward No. 07	0.42
River	Bhuta Lakshmipur	043	00	69	Ward No. 07	0.37
River	Bhuta Lakshmipur	043	00	70	Ward No. 07	0.32
River	Bhuta Lakshmipur	043	00	71	Ward No. 07	0.10
River	Bhuta Lakshmipur	043	00	72	Ward No. 07	0.11
River	Bhuta Lakshmipur	043	00	73	Ward No. 07	0.30
River	Bhuta Lakshmipur	043	00	74	Ward No. 07	0.28
River	Bhuta Lakshmipur	043	00	75	Ward No. 07	0.13
River	Bhuta Lakshmipur	043	00	76	Ward No. 07	0.17
River	Bhuta Lakshmipur	043	00	77	Ward No. 07	0.10
River	Bhuta Lakshmipur	043	00	80	Ward No. 07	0.01
River	Bhuta Lakshmipur	043	00	939	Ward No. 07	0.59
River	Bhuta Lakshmipur	043	00	940	Ward No. 07	0.51
River	Bhuta Lakshmipur	043	00	941	Ward No. 07	0.54
River	Bhuta Lakshmipur	043	00	942	Ward No. 07	0.26
River	Bhuta Lakshmipur	043	00	943	Ward No. 07	0.29
River	Bhuta Lakshmipur	043	00	944	Ward No. 07	0.58
River	Bhuta Lakshmipur	043	00	945	Ward No. 07	0.47
River	Bhuta Lakshmipur	043	00	954	Ward No. 07	0.22
River	Bhuta Lakshmipur	043	00	955	Ward No. 07	0.16
River	Bhuta Lakshmipur	043	00	956	Ward No. 07	0.22
River	Bhuta Lakshmipur	043	00	957	Ward No. 07	1.04
River	Bhuta Lakshmipur	043	00	958	Ward No. 07	0.76
River	Bhuta Lakshmipur	043	00	959	Ward No. 07	0.66
River	Bhuta Lakshmipur	043	00	960	Ward No. 07	0.79
River	Bhuta Lakshmipur	043	00	961	Ward No. 07	0.29
River	Bhuta Lakshmipur	043	00	15	Ward No. 07	0.21
River	Bhuta Lakshmipur	043	00	15	Ward No. 07	0.67
River	Bhuta Lakshmipur	043	00	112	Ward No. 07	0.18



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Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Mehendiganj	046	00	984	Ward No. 05	0.02
Pond	Mehendiganj	046	00	985	Ward No. 05	0.27
Pond	Mehendiganj	046	00	986	Ward No. 05	0.02
Pond	Chunar Char	081	00	40	Ward No. 09	0.80
Pond	Chunar Char	081	00	43	Ward No. 09	0.00
Pond	Chunar Char	081	00	219	Ward No. 09	0.00
Pond	Chunar Char	081	00	220	Ward No. 09	0.23
Pond	Chunar Char	081	00	638	Ward No. 08	0.00
Pond	Chunar Char	081	00	639	Ward No. 08	0.13
Pond	Chunar Char	081	00	640	Ward No. 08	0.05
Pond	Char Hogla	041	03	2964	Ward No. 01	0.11
Pond	Char Hogla	041	03	2976	Ward No. 01	0.08
Pond	Mehendiganj	046	00	928	Ward No. 05	0.17
Pond	Mehendiganj	046	00	929	Ward No. 05	0.04
Pond	Mehendiganj	046	00	935	Ward No. 05	0.02
Pond	Mehendiganj	046	00	939	Ward No. 05	0.02
Pond	Char Hogla	041	03	2951	Ward No. 01	0.01
Pond	Char Hogla	041	03	2969	Ward No. 01	0.13
Pond	Char Hogla	041	03	2970	Ward No. 01	0.29
Pond	Sonamukhi	044	01	208	Ward No. 02	0.56
Pond	Bhuta Lakshmipur	043	00	689	Ward No. 07	0.27
Pond	Bhuta Lakshmipur	043	00	704	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	705	Ward No. 07	0.73
Pond	Bhuta Lakshmipur	043	00	765	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	767	Ward No. 07	0.01
Pond	Char Hogla	041	03	2052	Ward No. 01	0.02
Pond	Char Hogla	041	03	2054	Ward No. 01	0.00
Pond	Char Hogla	041	03	2055	Ward No. 01	0.28
Pond	Char Hogla	041	03	2060	Ward No. 01	0.00
Pond	Char Hogla	041	03	2272	Ward No. 01	0.03
Pond	Char Hogla	041	03	2275	Ward No. 01	0.06
Pond	Char Hogla	041	03	2276	Ward No. 01	0.03
Pond	Char Hogla	041	03	2282	Ward No. 01	0.17
Pond	Char Hogla	041	03	2291	Ward No. 01	0.00
Pond	Char Hogla	041	03	2292	Ward No. 01	0.00
Pond	Char Hogla	041	03	2293	Ward No. 01	0.37
Pond	Char Hogla	041	03	2294	Ward No. 01	0.00
Pond	Char Hogla	041	03	2633	Ward No. 01	0.01
Pond	Char Hogla	041	03	2634	Ward No. 01	0.58
Pond	Char Hogla	041	03	2632	Ward No. 01	0.00
Pond	Char Hogla	041	03	2634	Ward No. 01	0.00
Pond	Char Hogla	041	03	2635	Ward No. 01	0.59
Pond	Char Hogla	041	03	2637	Ward No. 01	0.00

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Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Char Hogla	041	03	2638	Ward No. 01	0.00
Pond	Char Hogla	041	03	3092	Ward No. 01	0.05
Pond	Char Hogla	041	03	3093	Ward No. 01	0.37
Pond	Char Hogla	041	03	3099	Ward No. 01	0.15
Ditch	Char Hogla	041	03	3239	Ward No. 01	0.30
Pond	Char Hogla	041	03	3130	Ward No. 01	0.00
Pond	Char Hogla	041	03	3131	Ward No. 01	0.19
Pond	Char Hogla	041	03	3134	Ward No. 01	0.01
Pond	Char Hogla	041	03	3135	Ward No. 01	0.30
Pond	Char Hogla	041	03	3136	Ward No. 01	0.02
Pond	Char Hogla	041	03	2486	Ward No. 01	0.63
Pond	Char Hogla	041	03	2487	Ward No. 01	0.00
Pond	Char Hogla	041	03	2485	Ward No. 01	0.35
Pond	Char Hogla	041	03	2486	Ward No. 01	0.00
Pond	Char Hogla	041	03	2481	Ward No. 01	0.51
Pond	Char Hogla	041	03	2482	Ward No. 01	0.08
Pond	Char Hogla	041	03	2483	Ward No. 01	0.12
Pond	Char Hogla	041	03	2484	Ward No. 01	0.00
Pond	Ambikapur	045	00	228	Ward No. 03	0.44
Pond	Ambikapur	045	00	230	Ward No. 03	0.00
Pond	Ambikapur	045	00	501	Ward No. 03	0.00
Pond	Mehendiganj	046	00	19	Ward No. 03	0.00
Pond	Mehendiganj	046	00	20	Ward No. 03	0.03
Pond	Mehendiganj	046	00	21	Ward No. 03	0.13
Pond	Mehendiganj	046	00	95	Ward No. 05	0.16
Pond	Mehendiganj	046	00	96	Ward No. 05	0.00
Pond	Mehendiganj	046	00	90	Ward No. 05	0.05
Pond	Mehendiganj	046	00	91	Ward No. 05	0.15
Pond	Bhuta Lakshmipur	043	00	704	Ward No. 07	0.21
Khal/Canal	Char Hogla	041	03	2020	Ward No. 01	0.00
Khal/Canal	Mehendiganj	046	00	949	Ward No. 05	0.00
Khal/Canal	Sonamukhi	044	01	1	Ward No. 02	2.09
Khal/Canal	Sonamukhi	044	01	2	Ward No. 02	0.00
Khal/Canal	Sonamukhi	044	01	10	Ward No. 02	0.00
Khal/Canal	Sonamukhi	044	01	17	Ward No. 02	0.00
Khal/Canal	Sonamukhi	044	01	18	Ward No. 02	0.00
Khal/Canal	Sonamukhi	044	01	64	Ward No. 02	0.00
Khal/Canal	Sonamukhi	044	01	139	Ward No. 02	0.00
Khal/Canal	Sonamukhi	044	01	1	Ward No. 02	0.00
Khal/Canal	Sonamukhi	044	01	2	Ward No. 02	0.00
Khal/Canal	Char Hogla	041	03	2832	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2833	Ward No. 01	0.04
Khal/Canal	Char Hogla	041	03	2834	Ward No. 01	0.22

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Khal/Canal	Char Hogla	041	03	2836	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	2839	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	2878	Ward No. 01	0.03
Khal/Canal	Char Hogla	041	03	2879	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	2882	Ward No. 01	0.02
Khal/Canal	Char Hogla	041	03	2880	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	2883	Ward No. 01	0.04
Khal/Canal	Char Hogla	041	03	2840	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	2841	Ward No. 01	0.11
Khal/Canal	Char Hogla	041	03	2842	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2840	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2841	Ward No. 01	0.05
Khal/Canal	Char Hogla	041	03	2876	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2877	Ward No. 01	0.03
Khal/Canal	Char Hogla	041	03	2878	Ward No. 01	0.05
Khal/Canal	Char Hogla	041	03	2879	Ward No. 01	0.01
Khal/Canal	Bhuta Lakshmipur	043	00	596	Ward No. 08	0.00
Khal/Canal	Bhuta Lakshmipur	043	00	601	Ward No. 08	0.00
Khal/Canal	Bhuta Lakshmipur	043	00	608	Ward No. 08	0.00
Khal/Canal	Bhuta Lakshmipur	043	00	609	Ward No. 08	0.00
Khal/Canal	Bhuta Lakshmipur	043	00	610	Ward No. 08	0.00
Khal/Canal	Bhuta Lakshmipur	043	00	930	Ward No. 08	0.00
Khal/Canal	Bhuta Lakshmipur	043	00	935	Ward No. 08	0.64
Khal/Canal	Bhuta Lakshmipur	043	00	930	Ward No. 08	0.00
Khal/Canal	Bhuta Lakshmipur	043	00	935	Ward No. 08	0.00
Khal/Canal	Bhuta Lakshmipur	043	00	15	Ward No. 08	0.00
Khal/Canal	Bhuta Lakshmipur	043	00	22222	Ward No. 08	0.00
Khal/Canal	Bhuta Lakshmipur	043	00	435	Ward No. 07	0.14
Khal/Canal	Bhuta Lakshmipur	043	00	436	Ward No. 07	0.16
Khal/Canal	Bhuta Lakshmipur	043	00	593	Ward No. 07	0.06
Khal/Canal	Bhuta Lakshmipur	043	00	594	Ward No. 07	0.01
Khal/Canal	Bhuta Lakshmipur	043	00	595	Ward No. 07	0.02
Khal/Canal	Bhuta Lakshmipur	043	00	935	Ward No. 07	0.01
Khal/Canal	Bhuta Lakshmipur	043	00	851	Ward No. 08	0.01
Khal/Canal	Bhuta Lakshmipur	043	00	856	Ward No. 08	0.05
Khal/Canal	Bhuta Lakshmipur	043	00	857	Ward No. 08	0.06
Khal/Canal	Bhuta Lakshmipur	043	00	867	Ward No. 08	0.00
Khal/Canal	Bhuta Lakshmipur	043	00	907	Ward No. 08	0.01
Khal/Canal	Bhuta Lakshmipur	043	00	908	Ward No. 08	0.06
Khal/Canal	Bhuta Lakshmipur	043	00	930	Ward No. 08	0.00
Khal/Canal	Bhuta Lakshmipur	043	00	932	Ward No. 08	0.00
Khal/Canal	Bhuta Lakshmipur	043	00	933	Ward No. 08	0.03
Khal/Canal	Bhuta Lakshmipur	043	00	934	Ward No. 08	0.07

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Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Khal/Canal	Bhuta Lakshmipur	043	00	15	Ward No. 08	3.15
Khal/Canal	Bhuta Lakshmipur	043	00	22222	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	1	Ward No. 08	0.13
Khal/Canal	Chunar Char	081	00	1122	Ward No. 08	0.01
Khal/Canal	Chunar Char	081	00	1123	Ward No. 08	0.03
Khal/Canal	Chunar Char	081	00	1126	Ward No. 08	0.03
Khal/Canal	Chunar Char	081	00	1127	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	1128	Ward No. 08	0.02
Khal/Canal	Chunar Char	081	00	1129	Ward No. 08	0.07
Khal/Canal	Kharki	079	00	1	Ward No. 06	0.00
Khal/Canal	Kharki	079	00	47	Ward No. 06	0.00
Khal/Canal	Kharki	079	00	1	Ward No. 06	0.08
Khal/Canal	Kharki	079	00	1	Ward No. 06	0.02
Khal/Canal	Kharki	079	00	34	Ward No. 06	0.00
Khal/Canal	Kharki	079	00	35	Ward No. 06	0.00
Khal/Canal	Kharki	079	00	36	Ward No. 06	0.03
Khal/Canal	Kharki	079	00	39	Ward No. 06	0.00
Khal/Canal	Kharki	079	00	40	Ward No. 06	0.00
Khal/Canal	Kharki	079	00	41	Ward No. 06	0.03
Khal/Canal	Kharki	079	00	46	Ward No. 06	0.00
Khal/Canal	Kharki	079	00	48	Ward No. 06	0.01
Khal/Canal	Kharki	079	00	565	Ward No. 06	0.17
Khal/Canal	Kharki	079	00	566	Ward No. 06	0.08
Khal/Canal	Kharki	079	00	567	Ward No. 06	0.06
Khal/Canal	Kharki	079	00	568	Ward No. 06	0.03
Khal/Canal	Kharki	079	00	569	Ward No. 06	0.09
Khal/Canal	Kharki	079	00	570	Ward No. 06	0.03
Khal/Canal	Kharki	079	00	571	Ward No. 06	0.04
Khal/Canal	Kharki	079	00	572	Ward No. 06	0.10
Khal/Canal	Kharki	079	00	573	Ward No. 06	0.09
Khal/Canal	Kharki	079	00	574	Ward No. 06	0.01
Khal/Canal	Kharki	079	00	1	Ward No. 06	0.00
Khal/Canal	Kharki	079	00	1	Ward No. 06	0.02
Khal/Canal	Kharki	079	00	1	Ward No. 06	0.32
Khal/Canal	Kharki	079	00	1	Ward No. 06	0.32
Khal/Canal	Kharki	079	00	1	Ward No. 06	0.00
Khal/Canal	Kharki	079	00	1	Ward No. 06	0.80
Khal/Canal	Kharki	079	00	589	Ward No. 06	0.00
Khal/Canal	Kharki	079	00	591	Ward No. 06	0.01
Khal/Canal	Kharki	079	00	1	Ward No. 06	0.04
Khal/Canal	Kharki	079	00	374	Ward No. 06	0.00
Khal/Canal	Kharki	079	00	579	Ward No. 06	0.01
Khal/Canal	Kharki	079	00	46	Ward No. 06	0.00

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Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Khal/Canal	Kharki	079	00	350	Ward No. 06	0.07
Khal/Canal	Kharki	079	00	351	Ward No. 06	0.21
Khal/Canal	Kharki	079	00	46	Ward No. 06	0.00
Khal/Canal	Kharki	079	00	47	Ward No. 06	0.00
Khal/Canal	Kharki	079	00	47	Ward No. 06	0.00
Khal/Canal	Mehendiganj	046	00	181	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	127	Ward No. 05	0.01
Khal/Canal	Mehendiganj	046	00	133	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	134	Ward No. 05	0.02
Khal/Canal	Mehendiganj	046	00	221	Ward No. 05	0.01
Khal/Canal	Mehendiganj	046	00	224	Ward No. 05	0.03
Khal/Canal	Mehendiganj	046	00	1	Ward No. 05	0.05
Khal/Canal	Mehendiganj	046	00	1	Ward No. 05	0.02
Khal/Canal	Mehendiganj	046	00	1	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	13	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	11	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	47	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	48	Ward No. 05	0.01
Khal/Canal	Mehendiganj	046	00	50	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	62	Ward No. 05	0.01
Khal/Canal	Mehendiganj	046	00	63	Ward No. 05	0.03
Khal/Canal	Mehendiganj	046	00	64	Ward No. 05	0.07
Khal/Canal	Mehendiganj	046	00	65	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	66	Ward No. 05	0.11
Khal/Canal	Mehendiganj	046	00	68	Ward No. 05	0.02
Khal/Canal	Mehendiganj	046	00	180	Ward No. 05	0.07
Khal/Canal	Mehendiganj	046	00	181	Ward No. 05	0.02
Khal/Canal	Mehendiganj	046	00	1016	Ward No. 05	0.25
Khal/Canal	Mehendiganj	046	00	1017	Ward No. 05	0.05
Khal/Canal	Mehendiganj	046	00	1018	Ward No. 05	0.03
Khal/Canal	Mehendiganj	046	00	292	Ward No. 05	0.02
Khal/Canal	Mehendiganj	046	00	333	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	334	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	438	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	441	Ward No. 05	0.02
Khal/Canal	Mehendiganj	046	00	1360	Ward No. 05	0.01
Khal/Canal	Mehendiganj	046	00	1363	Ward No. 05	0.04
Khal/Canal	Mehendiganj	046	00	1366	Ward No. 05	0.30
Khal/Canal	Mehendiganj	046	00	439	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	1364	Ward No. 05	0.01
Khal/Canal	Mehendiganj	046	00	443	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	444	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	445	Ward No. 05	0.01

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Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Khal/Canal	Mehendiganj	046	00	447	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	453	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	459	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	461	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	468	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	469	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	470	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	471	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	472	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	473	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	475	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	476	Ward No. 05	0.02
Khal/Canal	Mehendiganj	046	00	477	Ward No. 05	0.51
Khal/Canal	Mehendiganj	046	00	479	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	480	Ward No. 05	0.02
Khal/Canal	Mehendiganj	046	00	481	Ward No. 05	0.15
Khal/Canal	Mehendiganj	046	00	489	Ward No. 05	0.09
Khal/Canal	Mehendiganj	046	00	491	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	181	Ward No. 05	0.04
Khal/Canal	Mehendiganj	046	00	286	Ward No. 05	0.05
Khal/Canal	Mehendiganj	046	00	287	Ward No. 05	0.10
Khal/Canal	Mehendiganj	046	00	288	Ward No. 05	0.03
Khal/Canal	Mehendiganj	046	00	289	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	290	Ward No. 05	0.02
Khal/Canal	Mehendiganj	046	00	1016	Ward No. 05	0.09
Khal/Canal	Mehendiganj	046	00	1358	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	1359	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	1360	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	443	Ward No. 05	0.00
Khal/Canal	Sonamukhi	041	03	3288	Ward No. 02	0.19
Khal/Canal	Sonamukhi	044	02	395	Ward No. 02	0.01
Khal/Canal	Sonamukhi	044	02	529	Ward No. 02	0.00
Khal/Canal	Sonamukhi	044	02	530	Ward No. 02	0.01
Khal/Canal	Sonamukhi	044	02	531	Ward No. 02	0.00
Khal/Canal	Sonamukhi	044	02	534	Ward No. 02	0.01
Khal/Canal	Sonamukhi	044	02	536	Ward No. 02	0.00
Khal/Canal	Sonamukhi	044	02	537	Ward No. 02	0.02
Khal/Canal	Sonamukhi	044	02	538	Ward No. 02	0.08
Khal/Canal	Sonamukhi	044	02	539	Ward No. 02	0.02
Khal/Canal	Sonamukhi	044	02	540	Ward No. 02	0.02
Khal/Canal	Sonamukhi	044	02	541	Ward No. 02	0.02
Khal/Canal	Sonamukhi	044	02	542	Ward No. 02	0.02
Khal/Canal	Sonamukhi	044	02	543	Ward No. 02	0.02

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Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Khal/Canal	Sonamukhi	044	02	544	Ward No. 02	0.02
Khal/Canal	Sonamukhi	044	02	548	Ward No. 02	0.01
Khal/Canal	Sonamukhi	044	02	563	Ward No. 02	0.04
Khal/Canal	Sonamukhi	044	02	351	Ward No. 02	0.02
Khal/Canal	Sonamukhi	044	02	394	Ward No. 02	0.00
Khal/Canal	Sonamukhi	044	02	351	Ward No. 02	0.06
Khal/Canal	Sonamukhi	044	01	209	Ward No. 02	0.01
Khal/Canal	Sonamukhi	044	03	1116	Ward No. 02	0.01
Khal/Canal	Sonamukhi	044	03	1118	Ward No. 02	0.00
Khal/Canal	Sonamukhi	044	03	1292	Ward No. 02	0.02
Khal/Canal	Sonamukhi	044	03	1254	Ward No. 02	0.00
Khal/Canal	Sonamukhi	044	03	1277	Ward No. 02	0.00
Khal/Canal	Sonamukhi	044	01	2	Ward No. 02	0.00
Khal/Canal	Sonamukhi	044	01	3	Ward No. 02	0.13
Khal/Canal	Sonamukhi	044	01	4	Ward No. 02	0.43
Khal/Canal	Sonamukhi	044	01	5	Ward No. 02	0.00
Khal/Canal	Sonamukhi	044	01	12	Ward No. 02	0.94
Khal/Canal	Sonamukhi	044	01	14	Ward No. 02	0.02
Khal/Canal	Sonamukhi	044	01	15	Ward No. 02	0.38
Khal/Canal	Sonamukhi	044	01	26	Ward No. 02	0.08
Khal/Canal	Sonamukhi	044	01	27	Ward No. 02	0.26
Khal/Canal	Sonamukhi	044	01	28	Ward No. 02	0.34
Khal/Canal	Sonamukhi	044	01	29	Ward No. 02	0.05
Khal/Canal	Sonamukhi	044	01	31	Ward No. 02	0.06
Khal/Canal	Sonamukhi	044	01	32	Ward No. 02	0.12
Khal/Canal	Sonamukhi	044	01	33	Ward No. 02	0.09
Khal/Canal	Sonamukhi	044	01	37	Ward No. 02	0.19
Khal/Canal	Sonamukhi	044	01	39	Ward No. 02	0.19
Khal/Canal	Sonamukhi	044	01	40	Ward No. 02	0.09
Khal/Canal	Sonamukhi	044	01	265	Ward No. 02	0.30
Khal/Canal	Ambikapur	045	00	153	Ward No. 03	0.00
Khal/Canal	Ambikapur	045	00	484	Ward No. 03	0.00
Khal/Canal	Ambikapur	045	00	265	Ward No. 03	0.01
Khal/Canal	Ambikapur	045	00	153	Ward No. 03	1.07
Khal/Canal	Ambikapur	045	00	154	Ward No. 03	0.03
Khal/Canal	Ambikapur	045	00	168	Ward No. 03	0.04
Khal/Canal	Ambikapur	045	00	153	Ward No. 03	0.15
Khal/Canal	Ambikapur	045	00	21	Ward No. 03	0.07
Khal/Canal	Ambikapur	045	00	29	Ward No. 03	0.10
Khal/Canal	Ambikapur	045	00	30	Ward No. 03	0.01
Khal/Canal	Ambikapur	045	00	111	Ward No. 03	0.00
Khal/Canal	Ambikapur	045	00	199	Ward No. 03	0.38
Khal/Canal	Ambikapur	045	00	203	Ward No. 03	0.02

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Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Khal/Canal	Ambikapur	045	00	199	Ward No. 03	0.00
Khal/Canal	Ambikapur	045	00	200	Ward No. 03	0.07
Khal/Canal	Ambikapur	045	00	230	Ward No. 03	0.01
Khal/Canal	Ambikapur	045	00	230	Ward No. 03	0.00
Khal/Canal	Ambikapur	045	00	231	Ward No. 03	0.00
Khal/Canal	Ambikapur	045	00	234	Ward No. 03	0.00
Khal/Canal	Ambikapur	045	00	484	Ward No. 03	0.01
Khal/Canal	Ambikapur	045	00	484	Ward No. 03	0.01
Khal/Canal	Ambikapur	045	00	484	Ward No. 03	0.00
Khal/Canal	Ambikapur	045	00	426	Ward No. 03	0.01
Khal/Canal	Ambikapur	045	00	484	Ward No. 03	0.02
Khal/Canal	Ambikapur	045	00	259	Ward No. 03	0.02
Khal/Canal	Ambikapur	045	00	261	Ward No. 03	0.06
Khal/Canal	Ambikapur	045	00	262	Ward No. 03	0.21
Khal/Canal	Ambikapur	045	00	263	Ward No. 03	0.13
Khal/Canal	Ambikapur	045	00	265	Ward No. 03	0.04
Khal/Canal	Ambikapur	045	00	243	Ward No. 03	0.13
Khal/Canal	Ambikapur	045	00	244	Ward No. 03	0.08
Khal/Canal	Ambikapur	045	00	305	Ward No. 03	0.02
Khal/Canal	Ambikapur	045	00	265	Ward No. 03	0.29
Khal/Canal	Ambikapur	045	00	247	Ward No. 03	0.05
Khal/Canal	Ambikapur	045	00	252	Ward No. 03	0.00
Khal/Canal	Ambikapur	045	00	294	Ward No. 03	0.00
Khal/Canal	Ambikapur	045	00	304	Ward No. 03	0.00
Khal/Canal	Ambikapur	045	00	305	Ward No. 03	0.37
Khal/Canal	Mehendiganj	046	00	19	Ward No. 03	0.00
Khal/Canal	Mehendiganj	046	00	25	Ward No. 03	0.00
Khal/Canal	Mehendiganj	046	00	26	Ward No. 03	0.00
Khal/Canal	Mehendiganj	046	00	1013	Ward No. 03	0.00
Khal/Canal	Mehendiganj	046	00	1014	Ward No. 03	0.00
Khal/Canal	Ambikapur	045	00	265	Ward No. 03	0.01
Khal/Canal	Ambikapur	045	00	266	Ward No. 03	0.12
Khal/Canal	Ambikapur	045	00	267	Ward No. 03	0.02
Khal/Canal	Ambikapur	045	00	271	Ward No. 03	0.05
Khal/Canal	Ambikapur	045	00	272	Ward No. 03	0.03
Khal/Canal	Ambikapur	045	00	274	Ward No. 03	0.02
Khal/Canal	Ambikapur	045	00	489	Ward No. 03	0.02
Khal/Canal	Ambikapur	045	00	498	Ward No. 03	0.01
Khal/Canal	Ambikapur	045	00	309	Ward No. 03	0.34
Khal/Canal	Ambikapur	045	00	309	Ward No. 03	0.00
Khal/Canal	Ambikapur	045	00	309	Ward No. 03	0.00
Khal/Canal	Mehendiganj	046	00	35	Ward No. 03	0.04
Khal/Canal	Mehendiganj	046	00	36	Ward No. 03	0.26



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Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Khal/Canal	Mehendiganj	046	00	37	Ward No. 03	0.08
Khal/Canal	Mehendiganj	046	00	38	Ward No. 03	0.03
Khal/Canal	Mehendiganj	046	00	39	Ward No. 03	0.00
Khal/Canal	Mehendiganj	046	00	39	Ward No. 03	0.08
Khal/Canal	Char Hogla	041	03	2992	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2133	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2389	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	2390	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	2391	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2420	Ward No. 01	1.06
Khal/Canal	Char Hogla	041	03	2421	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2422	Ward No. 01	0.02
Khal/Canal	Char Hogla	041	03	2423	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2424	Ward No. 01	0.02
Khal/Canal	Char Hogla	041	03	2425	Ward No. 01	0.03
Khal/Canal	Char Hogla	041	03	2429	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	3165	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	3185	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	3186	Ward No. 01	0.04
Khal/Canal	Char Hogla	041	03	3187	Ward No. 01	0.08
Khal/Canal	Char Hogla	041	03	3188	Ward No. 01	0.03
Khal/Canal	Char Hogla	041	03	3189	Ward No. 01	0.05
Khal/Canal	Char Hogla	041	03	3199	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	3200	Ward No. 01	0.12
Khal/Canal	Char Hogla	041	03	3201	Ward No. 01	0.11
Khal/Canal	Char Hogla	041	03	3225	Ward No. 01	0.07
Khal/Canal	Char Hogla	041	03	3226	Ward No. 01	0.07
Khal/Canal	Char Hogla	041	03	3227	Ward No. 01	0.19
Khal/Canal	Char Hogla	041	03	3228	Ward No. 01	0.11
Khal/Canal	Char Hogla	041	03	3229	Ward No. 01	0.53
Khal/Canal	Char Hogla	041	03	3259	Ward No. 01	0.12
Khal/Canal	Char Hogla	041	03	3260	Ward No. 01	0.10
Khal/Canal	Char Hogla	041	03	3261	Ward No. 01	0.03
Khal/Canal	Char Hogla	041	03	3262	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	3272	Ward No. 01	0.03
Khal/Canal	Char Hogla	041	03	3287	Ward No. 01	0.24
Khal/Canal	Char Hogla	041	03	3289	Ward No. 01	0.06
Khal/Canal	Char Hogla	041	03	2132	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2133	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2134	Ward No. 01	0.09
Khal/Canal	Char Hogla	041	03	2135	Ward No. 01	0.02
Khal/Canal	Char Hogla	041	03	2136	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	2137	Ward No. 01	0.00

## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Khal/Canal	Char Hogla	041	03	2140	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	2142	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2143	Ward No. 01	0.04
Khal/Canal	Char Hogla	041	03	2144	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	2146	Ward No. 01	0.05
Khal/Canal	Char Hogla	041	03	2147	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	2155	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2157	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2160	Ward No. 01	0.09
Khal/Canal	Char Hogla	041	03	2385	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	2386	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2387	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	2388	Ward No. 01	0.07
Khal/Canal	Char Hogla	041	03	2389	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2155	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2160	Ward No. 01	0.04
Khal/Canal	Char Hogla	041	03	2164	Ward No. 01	0.06
Khal/Canal	Char Hogla	041	03	2165	Ward No. 01	0.08
Khal/Canal	Char Hogla	041	03	2166	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2177	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2179	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2180	Ward No. 01	0.09
Khal/Canal	Char Hogla	041	03	2181	Ward No. 01	0.13
Khal/Canal	Char Hogla	041	03	2182	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	2320	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	2324	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2325	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	2326	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2327	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2328	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2330	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2332	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	2333	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2334	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2339	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2254	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2267	Ward No. 01	0.11
Khal/Canal	Char Hogla	041	03	2567	Ward No. 01	0.03
Khal/Canal	Char Hogla	041	03	2568	Ward No. 01	0.03
Khal/Canal	Char Hogla	041	03	2574	Ward No. 01	0.05
Khal/Canal	Char Hogla	041	03	2578	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2579	Ward No. 01	0.06
Khal/Canal	Char Hogla	041	03	2580	Ward No. 01	0.05

## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Khal/Canal	Char Hogla	041	03	2566	Ward No. 01	0.02
Khal/Canal	Char Hogla	041	03	2582	Ward No. 01	0.04
Khal/Canal	Char Hogla	041	03	2507	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2510	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2511	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	2512	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	2513	Ward No. 01	0.09
Khal/Canal	Char Hogla	041	03	2514	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	2528	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	2529	Ward No. 01	0.11
Khal/Canal	Char Hogla	041	03	2552	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	2553	Ward No. 01	0.05
Khal/Canal	Char Hogla	041	03	2555	Ward No. 01	0.03
Khal/Canal	Char Hogla	041	03	2556	Ward No. 01	0.02
Khal/Canal	Char Hogla	041	03	2562	Ward No. 01	0.03
Khal/Canal	Char Hogla	041	03	2687	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2530	Ward No. 01	0.02
Khal/Canal	Char Hogla	041	03	2532	Ward No. 01	0.04
Khal/Canal	Char Hogla	041	03	2558	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2566	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	2582	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	2671	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2673	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	2685	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	2507	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2508	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	2509	Ward No. 01	0.02
Khal/Canal	Char Hogla	041	03	2510	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	2687	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2691	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2725	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2726	Ward No. 01	0.03
Khal/Canal	Char Hogla	041	03	2730	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	3038	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	3040	Ward No. 01	0.03
Khal/Canal	Char Hogla	041	03	3094	Ward No. 01	0.02
Khal/Canal	Char Hogla	041	03	3095	Ward No. 01	0.11
Khal/Canal	Char Hogla	041	03	3096	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	3104	Ward No. 01	0.02
Khal/Canal	Char Hogla	041	03	3105	Ward No. 01	0.04
Khal/Canal	Char Hogla	041	03	3106	Ward No. 01	0.05
Khal/Canal	Char Hogla	041	03	3107	Ward No. 01	0.06
Khal/Canal	Char Hogla	041	03	2727	Ward No. 01	0.00

## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Khal/Canal	Char Hogla	041	03	3041	Ward No. 01	0.12
Khal/Canal	Char Hogla	041	03	3044	Ward No. 01	0.09
Khal/Canal	Char Hogla	041	03	3109	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	3119	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	3262	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	3263	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	3264	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	3286	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	3287	Ward No. 01	0.86
Khal/Canal	Char Hogla	041	03	3066	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	3067	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	3071	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	3083	Ward No. 01	0.08
Khal/Canal	Char Hogla	041	03	3088	Ward No. 01	0.05
Khal/Canal	Char Hogla	041	03	3089	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	2992	Ward No. 01	0.04
Khal/Canal	Char Hogla	041	03	2993	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2994	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	3083	Ward No. 01	0.02
Khal/Canal	Char Hogla	041	03	2982	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2991	Ward No. 01	0.04
Khal/Canal	Char Hogla	041	03	2992	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	3277	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	3278	Ward No. 01	0.03
Khal/Canal	Char Hogla	041	03	3286	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	3286	Ward No. 01	0.02
Khal/Canal	Char Hogla	041	03	2184	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	3280	Ward No. 01	0.01
Khal/Canal	Durgapur	047	00	1	Ward No. 04	0.01
Khal/Canal	Durgapur	047	00	94	Ward No. 04	0.00
Khal/Canal	Durgapur	047	00	803	Ward No. 04	1.95
Khal/Canal	Durgapur	047	00	43	Ward No. 04	0.01
Khal/Canal	Durgapur	047	00	47	Ward No. 04	0.00
Khal/Canal	Durgapur	047	00	93	Ward No. 04	0.05
Khal/Canal	Durgapur	047	00	94	Ward No. 04	0.00
Khal/Canal	Durgapur	047	00	43	Ward No. 04	0.01
Khal/Canal	Durgapur	047	00	46	Ward No. 04	0.01
Khal/Canal	Durgapur	047	00	1	Ward No. 04	0.01
Khal/Canal	Chunar Char	081	00	18	Ward No. 09	0.01
Khal/Canal	Chunar Char	081	00	1129	Ward No. 09	0.08
Khal/Canal	Chunar Char	081	00	1130	Ward No. 09	0.40
Khal/Canal	Chunar Char	081	00	1131	Ward No. 09	0.00
Khal/Canal	Chunar Char	081	00	1132	Ward No. 09	0.01

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Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Khal/Canal	Chunar Char	081	00	393	Ward No. 09	0.04
Khal/Canal	Chunar Char	081	00	399	Ward No. 09	0.01
Khal/Canal	Chunar Char	081	00	400	Ward No. 09	0.66
Khal/Canal	Chunar Char	081	00	409	Ward No. 09	0.00
Khal/Canal	Chunar Char	081	00	410	Ward No. 09	0.60
Khal/Canal	Chunar Char	081	00	414	Ward No. 09	0.83
Khal/Canal	Chunar Char	081	00	880	Ward No. 09	0.08
Khal/Canal	Chunar Char	081	00	881	Ward No. 09	0.08
Khal/Canal	Chunar Char	081	00	882	Ward No. 09	0.67
Khal/Canal	Chunar Char	081	00	884	Ward No. 09	0.07
Khal/Canal	Chunar Char	081	00	885	Ward No. 09	0.26
Khal/Canal	Chunar Char	081	00	891	Ward No. 09	0.06
Khal/Canal	Chunar Char	081	00	892	Ward No. 09	0.81
Khal/Canal	Chunar Char	081	00	893	Ward No. 09	0.46
Khal/Canal	Chunar Char	081	00	894	Ward No. 09	0.04
Khal/Canal	Chunar Char	081	00	1109	Ward No. 09	0.01
Khal/Canal	Chunar Char	081	00	1110	Ward No. 09	0.26
Khal/Canal	Chunar Char	081	00	1111	Ward No. 09	0.28
Khal/Canal	Chunar Char	081	00	1112	Ward No. 09	0.04
Khal/Canal	Chunar Char	081	00	1113	Ward No. 09	0.11
Khal/Canal	Chunar Char	081	00	1114	Ward No. 09	0.01
Khal/Canal	Chunar Char	081	00	1115	Ward No. 09	0.02
Khal/Canal	Chunar Char	081	00	1143	Ward No. 09	0.29
Khal/Canal	Chunar Char	081	00	1144	Ward No. 09	0.51
Khal/Canal	Bhuta Lakshmipur	043	00	15	Ward No. 07	0.02
Khal/Canal	Bhuta Lakshmipur	043	00	780	Ward No. 07	0.00
Khal/Canal	Bhuta Lakshmipur	043	00	782	Ward No. 07	0.04
Khal/Canal	Bhuta Lakshmipur	043	00	783	Ward No. 07	0.01
Khal/Canal	Bhuta Lakshmipur	043	00	15	Ward No. 07	0.99
Khal/Canal	Bhuta Lakshmipur	043	00	231	Ward No. 07	0.00
Khal/Canal	Bhuta Lakshmipur	043	00	232	Ward No. 07	0.00
Khal/Canal	Bhuta Lakshmipur	043	00	233	Ward No. 07	0.00
Khal/Canal	Bhuta Lakshmipur	043	00	234	Ward No. 07	0.00
Khal/Canal	Bhuta Lakshmipur	043	00	235	Ward No. 07	0.02
Khal/Canal	Bhuta Lakshmipur	043	00	250	Ward No. 07	0.02
Khal/Canal	Bhuta Lakshmipur	043	00	251	Ward No. 07	0.03
Khal/Canal	Bhuta Lakshmipur	043	00	284	Ward No. 07	0.04
Khal/Canal	Bhuta Lakshmipur	043	00	285	Ward No. 07	0.03
Khal/Canal	Bhuta Lakshmipur	043	00	286	Ward No. 07	0.02
Khal/Canal	Bhuta Lakshmipur	043	00	307	Ward No. 07	0.05
Khal/Canal	Bhuta Lakshmipur	043	00	308	Ward No. 07	0.05
Khal/Canal	Bhuta Lakshmipur	043	00	309	Ward No. 07	0.30
Khal/Canal	Bhuta Lakshmipur	043	00	361	Ward No. 07	0.09

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Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Khal/Canal	Bhuta Lakshmipur	043	00	362	Ward No. 07	0.05
Khal/Canal	Bhuta Lakshmipur	043	00	363	Ward No. 07	0.09
Khal/Canal	Bhuta Lakshmipur	043	00	367	Ward No. 07	0.07
Khal/Canal	Bhuta Lakshmipur	043	00	368	Ward No. 07	0.24
Khal/Canal	Bhuta Lakshmipur	043	00	380	Ward No. 07	0.28
Khal/Canal	Bhuta Lakshmipur	043	00	381	Ward No. 07	0.25
Khal/Canal	Bhuta Lakshmipur	043	00	382	Ward No. 07	0.29
Khal/Canal	Bhuta Lakshmipur	043	00	500	Ward No. 07	0.04
Khal/Canal	Bhuta Lakshmipur	043	00	502	Ward No. 07	0.00
Khal/Canal	Bhuta Lakshmipur	043	00	503	Ward No. 07	0.04
Khal/Canal	Bhuta Lakshmipur	043	00	504	Ward No. 07	0.13
Khal/Canal	Bhuta Lakshmipur	043	00	505	Ward No. 07	0.12
Khal/Canal	Bhuta Lakshmipur	043	00	515	Ward No. 07	0.16
Khal/Canal	Bhuta Lakshmipur	043	00	516	Ward No. 07	0.07
Khal/Canal	Bhuta Lakshmipur	043	00	517	Ward No. 07	0.06
Khal/Canal	Bhuta Lakshmipur	043	00	518	Ward No. 07	0.13
Khal/Canal	Bhuta Lakshmipur	043	00	724	Ward No. 07	0.07
Khal/Canal	Bhuta Lakshmipur	043	00	725	Ward No. 07	0.00
Khal/Canal	Bhuta Lakshmipur	043	00	729	Ward No. 07	0.00
Khal/Canal	Bhuta Lakshmipur	043	00	730	Ward No. 07	0.01
Khal/Canal	Bhuta Lakshmipur	043	00	731	Ward No. 07	0.01
Khal/Canal	Bhuta Lakshmipur	043	00	735	Ward No. 07	0.00
Khal/Canal	Bhuta Lakshmipur	043	00	746	Ward No. 07	0.00
Khal/Canal	Bhuta Lakshmipur	043	00	15	Ward No. 07	2.98
Khal/Canal	Bhuta Lakshmipur	043	00	22222	Ward No. 07	0.07
Khal/Canal	Bhuta Lakshmipur	043	00	783	Ward No. 07	0.00
Khal/Canal	Bhuta Lakshmipur	043	00	794	Ward No. 07	0.00
Khal/Canal	Bhuta Lakshmipur	043	00	804	Ward No. 07	0.00
Khal/Canal	Bhuta Lakshmipur	043	00	15	Ward No. 07	3.25
Khal/Canal	Bhuta Lakshmipur	043	00	12	Ward No. 07	0.13
Khal/Canal	Bhuta Lakshmipur	043	00	13	Ward No. 07	0.44
Khal/Canal	Bhuta Lakshmipur	043	00	14	Ward No. 07	0.05
Khal/Canal	Bhuta Lakshmipur	043	00	115	Ward No. 07	0.00
Khal/Canal	Bhuta Lakshmipur	043	00	15	Ward No. 07	0.30
Khal/Canal	Bhuta Lakshmipur	043	00	822	Ward No. 07	0.03
Khal/Canal	Bhuta Lakshmipur	043	00	836	Ward No. 07	0.02
Khal/Canal	Bhuta Lakshmipur	043	00	837	Ward No. 07	0.02
Khal/Canal	Bhuta Lakshmipur	043	00	838	Ward No. 07	0.02
Khal/Canal	Bhuta Lakshmipur	043	00	851	Ward No. 07	0.00
Khal/Canal	Bhuta Lakshmipur	043	00	15	Ward No. 07	0.68
Khal/Canal	Chunar Char	081	00	1062	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	1073	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	1062	Ward No. 08	0.00

## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Khal/Canal	Chunar Char	081	00	786	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	1101	Ward No. 08	0.02
Khal/Canal	Chunar Char	081	00	1107	Ward No. 08	0.08
Khal/Canal	Chunar Char	081	00	1108	Ward No. 08	0.02
Khal/Canal	Chunar Char	081	00	248	Ward No. 08	0.12
Khal/Canal	Gobindapur	080	00	241	Ward No. 08	0.09
Khal/Canal	Gobindapur	080	00	247	Ward No. 08	0.00
Khal/Canal	Gobindapur	080	00	249	Ward No. 08	0.02
Khal/Canal	Chunar Char	081	00	784	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	786	Ward No. 08	0.61
Khal/Canal	Chunar Char	081	00	1027	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	1035	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	1037	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	1038	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	1046	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	1048	Ward No. 08	0.01
Khal/Canal	Chunar Char	081	00	1049	Ward No. 08	0.05
Khal/Canal	Chunar Char	081	00	1050	Ward No. 08	0.02
Khal/Canal	Chunar Char	081	00	1051	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	1055	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	1057	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	1059	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	1060	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	1061	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	1062	Ward No. 08	0.32
Khal/Canal	Chunar Char	081	00	1065	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	1067	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	1068	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	1069	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	1070	Ward No. 08	0.01
Khal/Canal	Chunar Char	081	00	1073	Ward No. 08	0.05
Khal/Canal	Chunar Char	081	00	1083	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	645	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	647	Ward No. 08	0.02
Khal/Canal	Chunar Char	081	00	784	Ward No. 08	0.02
Khal/Canal	Chunar Char	081	00	785	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	786	Ward No. 08	0.60
Khal/Canal	Chunar Char	081	00	987	Ward No. 08	0.01
Khal/Canal	Chunar Char	081	00	988	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	989	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	990	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	991	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	992	Ward No. 08	0.01

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Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Khal/Canal	Chunar Char	081	00	993	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	994	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	995	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	996	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	997	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	998	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	999	Ward No. 08	0.01
Khal/Canal	Chunar Char	081	00	1000	Ward No. 08	0.01
Khal/Canal	Chunar Char	081	00	1001	Ward No. 08	0.01
Khal/Canal	Chunar Char	081	00	1002	Ward No. 08	0.01
Khal/Canal	Chunar Char	081	00	1003	Ward No. 08	0.01
Khal/Canal	Chunar Char	081	00	1005	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	1006	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	1007	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	644	Ward No. 08	0.03
Khal/Canal	Chunar Char	081	00	645	Ward No. 08	0.01
Khal/Canal	Chunar Char	081	00	786	Ward No. 08	0.23
Khal/Canal	Chunar Char	081	00	983	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	984	Ward No. 08	0.00
Khal/Canal	Chunar Char	081	00	985	Ward No. 08	0.01
Khal/Canal	Kharki	079	00	592	Ward No. 06	0.00
Khal/Canal	Kharki	079	00	302	Ward No. 06	0.10
Khal/Canal	Kharki	079	00	304	Ward No. 06	0.08
Khal/Canal	Kharki	079	00	449	Ward No. 06	0.12
Khal/Canal	Kharki	079	00	450	Ward No. 06	0.10
Khal/Canal	Kharki	079	00	452	Ward No. 06	0.02
Khal/Canal	Kharki	079	00	451	Ward No. 06	0.02
Khal/Canal	Kharki	079	00	452	Ward No. 06	0.08
Khal/Canal	Kharki	079	00	453	Ward No. 06	0.15
Khal/Canal	Kharki	079	00	454	Ward No. 06	0.07
Khal/Canal	Kharki	079	00	457	Ward No. 06	0.00
Khal/Canal	Kharki	079	00	460	Ward No. 06	0.00
Khal/Canal	Kharki	079	00	592	Ward No. 06	0.06
Khal/Canal	Kharki	079	00	454	Ward No. 06	0.01
Khal/Canal	Kharki	079	00	460	Ward No. 06	0.00
Khal/Canal	Kharki	079	00	592	Ward No. 06	0.07
Khal/Canal	Kharki	079	00	454	Ward No. 06	0.04
Khal/Canal	Kharki	079	00	460	Ward No. 06	0.00
Khal/Canal	Kharki	079	00	461	Ward No. 06	0.02
Khal/Canal	Kharki	079	00	462	Ward No. 06	0.00
Khal/Canal	Kharki	079	00	463	Ward No. 06	0.00
Khal/Canal	Kharki	079	00	479	Ward No. 06	0.01
Khal/Canal	Kharki	079	00	480	Ward No. 06	0.00



Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Khal/Canal	Kharki	079	00	481	Ward No. 06	0.00
Khal/Canal	Kharki	079	00	482	Ward No. 06	0.05
Khal/Canal	Kharki	079	00	483	Ward No. 06	0.05
Khal/Canal	Kharki	079	00	564	Ward No. 06	0.05
Khal/Canal	Kharki	079	00	592	Ward No. 06	0.24
Khal/Canal	Kharki	079	00	562	Ward No. 06	0.00
Khal/Canal	Kharki	079	00	564	Ward No. 06	0.44
Pond	Kharki	079	00	262	Ward No. 06	0.10
Pond	Kharki	079	00	263	Ward No. 06	0.04
Pond	Kharki	079	00	264	Ward No. 06	0.01
Pond	Kharki	079	00	265	Ward No. 06	0.00
Pond	Kharki	079	00	272	Ward No. 06	0.03
Pond	Kharki	079	00	264	Ward No. 06	0.00
Pond	Kharki	079	00	265	Ward No. 06	0.08
Khal/Canal	Kharki	079	00	260	Ward No. 06	0.01
Khal/Canal	Kharki	079	00	266	Ward No. 06	0.07
Khal/Canal	Kharki	079	00	267	Ward No. 06	0.00
Khal/Canal	Kharki	079	00	264	Ward No. 06	0.00
Khal/Canal	Kharki	079	00	265	Ward No. 06	0.19
Khal/Canal	Kharki	079	00	271	Ward No. 06	0.01
Khal/Canal	Kharki	079	00	272	Ward No. 06	0.00
Khal/Canal	Kharki	079	00	271	Ward No. 06	0.02
Khal/Canal	Kharki	079	00	272	Ward No. 06	0.01
Khal/Canal	Kharki	079	00	273	Ward No. 06	0.10
Khal/Canal	Kharki	079	00	278	Ward No. 06	0.01
Khal/Canal	Kharki	079	00	279	Ward No. 06	0.01
Khal/Canal	Chunar Char	081	00	222	Ward No. 09	0.01
Khal/Canal	Chunar Char	081	00	223	Ward No. 09	0.00
Khal/Canal	Chunar Char	081	00	327	Ward No. 09	0.00
Khal/Canal	Chunar Char	081	00	328	Ward No. 09	0.01
Khal/Canal	Chunar Char	081	00	329	Ward No. 09	0.00
Khal/Canal	Chunar Char	081	00	330	Ward No. 09	0.02
Khal/Canal	Chunar Char	081	00	331	Ward No. 09	0.01
Khal/Canal	Chunar Char	081	00	338	Ward No. 09	0.02
Khal/Canal	Chunar Char	081	00	339	Ward No. 09	0.02
Khal/Canal	Chunar Char	081	00	340	Ward No. 09	0.46
Khal/Canal	Chunar Char	081	00	341	Ward No. 09	0.03
Khal/Canal	Chunar Char	081	00	343	Ward No. 09	0.00
Khal/Canal	Chunar Char	081	00	352	Ward No. 09	0.00
Khal/Canal	Chunar Char	081	00	436	Ward No. 09	0.04
Khal/Canal	Chunar Char	081	00	437	Ward No. 09	0.04
Khal/Canal	Chunar Char	081	00	438	Ward No. 09	0.00
Khal/Canal	Chunar Char	081	00	439	Ward No. 09	0.25

## Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Khal/Canal	Chunar Char	081	00	441	Ward No. 09	0.00
Khal/Canal	Chunar Char	081	00	442	Ward No. 09	0.04
Khal/Canal	Chunar Char	081	00	1135	Ward No. 09	0.00
Khal/Canal	Chunar Char	081	00	433	Ward No. 09	0.19
Khal/Canal	Chunar Char	081	00	434	Ward No. 09	0.07
Khal/Canal	Chunar Char	081	00	435	Ward No. 09	0.20
Khal/Canal	Chunar Char	081	00	436	Ward No. 09	0.07
Khal/Canal	Chunar Char	081	00	445	Ward No. 09	0.06
Khal/Canal	Chunar Char	081	00	446	Ward No. 09	0.18
Khal/Canal	Chunar Char	081	00	447	Ward No. 09	0.22
Khal/Canal	Chunar Char	081	00	465	Ward No. 09	0.06
Khal/Canal	Chunar Char	081	00	466	Ward No. 09	0.01
Khal/Canal	Chunar Char	081	00	865	Ward No. 09	0.01
Khal/Canal	Chunar Char	081	00	866	Ward No. 09	0.30
Khal/Canal	Chunar Char	081	00	867	Ward No. 09	0.27
Khal/Canal	Chunar Char	081	00	868	Ward No. 09	0.05
Khal/Canal	Chunar Char	081	00	869	Ward No. 09	0.05
Khal/Canal	Chunar Char	081	00	870	Ward No. 09	0.07
Khal/Canal	Chunar Char	081	00	871	Ward No. 09	0.03
Khal/Canal	Chunar Char	081	00	872	Ward No. 09	0.00
Khal/Canal	Chunar Char	081	00	924	Ward No. 09	0.00
Khal/Canal	Chunar Char	081	00	925	Ward No. 09	0.11
Khal/Canal	Chunar Char	081	00	926	Ward No. 09	0.05
Khal/Canal	Chunar Char	081	00	927	Ward No. 09	0.14
Khal/Canal	Chunar Char	081	00	928	Ward No. 09	0.13
Khal/Canal	Chunar Char	081	00	932	Ward No. 09	0.00
Khal/Canal	Chunar Char	081	00	1150	Ward No. 09	0.18
Khal/Canal	Chunar Char	081	00	1152	Ward No. 09	0.09
Pond	Bhuta Lakshmipur	043	00	816	Ward No. 08	0.00
Pond	Bhuta Lakshmipur	043	00	851	Ward No. 08	0.01
Pond	Bhuta Lakshmipur	043	00	829	Ward No. 08	0.00
Pond	Bhuta Lakshmipur	043	00	831	Ward No. 08	0.00
Pond	Bhuta Lakshmipur	043	00	844	Ward No. 08	0.00
Pond	Bhuta Lakshmipur	043	00	851	Ward No. 08	0.03
Pond	Bhuta Lakshmipur	043	00	850	Ward No. 08	0.00
Pond	Bhuta Lakshmipur	043	00	851	Ward No. 08	0.17
Pond	Bhuta Lakshmipur	043	00	852	Ward No. 08	0.00
Pond	Bhuta Lakshmipur	043	00	853	Ward No. 08	0.00
Pond	Bhuta Lakshmipur	043	00	854	Ward No. 08	0.00
Pond	Bhuta Lakshmipur	043	00	851	Ward No. 08	0.00
Pond	Bhuta Lakshmipur	043	00	856	Ward No. 08	0.00
Pond	Bhuta Lakshmipur	043	00	816	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	818	Ward No. 07	0.01

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Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Pond	Bhuta Lakshmipur	043	00	828	Ward No. 07	0.01
Pond	Bhuta Lakshmipur	043	00	829	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	833	Ward No. 07	0.01
Pond	Bhuta Lakshmipur	043	00	843	Ward No. 07	0.01
Pond	Bhuta Lakshmipur	043	00	848	Ward No. 07	0.01
Pond	Bhuta Lakshmipur	043	00	849	Ward No. 07	0.01
Pond	Bhuta Lakshmipur	043	00	850	Ward No. 07	0.01
Pond	Bhuta Lakshmipur	043	00	851	Ward No. 07	0.18
Pond	Bhuta Lakshmipur	043	00	838	Ward No. 07	0.00
Pond	Bhuta Lakshmipur	043	00	851	Ward No. 07	0.01
Khal/Canal	Char Hogla	041	03	2117	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2119	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2420	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2085	Ward No. 01	0.02
Khal/Canal	Char Hogla	041	03	2093	Ward No. 01	0.25
Khal/Canal	Char Hogla	041	03	2094	Ward No. 01	0.02
Khal/Canal	Char Hogla	041	03	2095	Ward No. 01	0.13
Khal/Canal	Char Hogla	041	03	2096	Ward No. 01	0.13
Khal/Canal	Char Hogla	041	03	2112	Ward No. 01	0.09
Khal/Canal	Char Hogla	041	03	2117	Ward No. 01	0.05
Khal/Canal	Char Hogla	041	03	2119	Ward No. 01	0.11
Khal/Canal	Char Hogla	041	03	2133	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	2097	Ward No. 01	0.08
Khal/Canal	Char Hogla	041	03	2121	Ward No. 01	0.08
Khal/Canal	Char Hogla	041	03	2420	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2020	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	2021	Ward No. 01	0.04
Khal/Canal	Char Hogla	041	03	2022	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2010	Ward No. 01	0.01
Khal/Canal	Char Hogla	041	03	2011	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2012	Ward No. 01	0.05
Khal/Canal	Char Hogla	041	03	2013	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2016	Ward No. 01	0.08
Khal/Canal	Char Hogla	041	03	2017	Ward No. 01	0.03
Khal/Canal	Char Hogla	041	03	2018	Ward No. 01	0.04
Khal/Canal	Char Hogla	041	03	2019	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2020	Ward No. 01	0.03
Khal/Canal	Char Hogla	041	03	2015	Ward No. 01	0.00
Khal/Canal	Mehendiganj	046	00	951	Ward No. 05	2.21
Khal/Canal	Mehendiganj	046	00	1276	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	1309	Ward No. 05	0.05
Khal/Canal	Mehendiganj	046	00	1310	Ward No. 05	0.37
Khal/Canal	Mehendiganj	046	00	934	Ward No. 05	0.00

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Annexure- G: Plot Scheduling of Water Retention Area

Type	Mouza Name	JL No	Sheet No	Plot No	Ward No	Acre
Khal/Canal	Mehendiganj	046	00	935	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	938	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	939	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	940	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	944	Ward No. 05	0.13
Khal/Canal	Mehendiganj	046	00	948	Ward No. 05	0.00
Khal/Canal	Mehendiganj	046	00	949	Ward No. 05	0.20
Khal/Canal	Mehendiganj	046	00	950	Ward No. 05	0.01
Khal/Canal	Durgapur	047	00	932	Ward No. 04	0.00
Khal/Canal	Durgapur	047	00	800	Ward No. 04	0.19
Khal/Canal	Durgapur	047	00	801	Ward No. 04	0.17
Khal/Canal	Durgapur	047	00	803	Ward No. 04	0.01
Khal/Canal	Durgapur	047	00	824	Ward No. 04	0.00
Khal/Canal	Durgapur	047	00	825	Ward No. 04	0.07
Khal/Canal	Durgapur	047	00	826	Ward No. 04	0.12
Khal/Canal	Durgapur	047	00	827	Ward No. 04	0.07
Khal/Canal	Durgapur	047	00	710	Ward No. 04	0.12
Khal/Canal	Durgapur	047	00	711	Ward No. 04	0.06
Khal/Canal	Durgapur	047	00	723	Ward No. 04	0.12
Khal/Canal	Durgapur	047	00	724	Ward No. 04	0.06
Khal/Canal	Durgapur	047	00	730	Ward No. 04	0.08
Khal/Canal	Durgapur	047	00	731	Ward No. 04	0.13
Khal/Canal	Durgapur	047	00	747	Ward No. 04	0.26
Khal/Canal	Durgapur	047	00	827	Ward No. 04	0.02
Khal/Canal	Durgapur	047	00	866	Ward No. 04	0.13
Khal/Canal	Durgapur	047	00	868	Ward No. 04	0.10
Khal/Canal	Durgapur	047	00	932	Ward No. 04	0.02
Khal/Canal	Durgapur	047	00	1007	Ward No. 04	0.04
Khal/Canal	Durgapur	047	00	1009	Ward No. 04	0.27
Khal/Canal	Durgapur	047	00	932	Ward No. 04	0.44
Khal/Canal	Durgapur	047	00	933	Ward No. 04	0.00
Khal/Canal	Durgapur	047	00	1008	Ward No. 04	0.00
Khal/Canal	Durgapur	047	00	1009	Ward No. 04	0.00
Khal/Canal	Char Hogla	041	03	2971	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2978	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2979	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	2981	Ward No. 01	0.00
Khal/Canal	Char Hogla	041	03	3279	Ward No. 01	0.21
Khal/Canal	Char Hogla	041	03	3280	Ward No. 01	0.14
Khal/Canal	Char Hogla	041	03	3303	Ward No. 01	0.25
Khal/Canal	Char Hogla	041	03	2972	Ward No. 01	0.00