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Ministry of Local Government, Rural Development & Cooperatives
Local Government Division

AMTALI PAURASHAVA
MASTER PLAN: 2011-2031

March, 2015

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

AMTALI 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



AMTALI PAURASHAVA
AMTALI, BARGUNA

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Sheltech Consultants (Pvt.) Ltd.

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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, Amtali 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 Amtali Paurashava.

Master Plan of Amtali 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 Amtali 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 Amtali Paurashava will be necessary to implement this Master Plan successfully and make this Paurashava developed and livable. I hope Amtali Paurashava will be a model Paurashava in Bangladesh through building itself green and sustainable by successful implementation of this Master Plan.

(Md. Motiar Rahman)
Mayor
Amtali Paurahsava.

EXECUTIVE SUMMARY

The Plan package prepared under the Project titled “Preparation of Master Plan for Paurashava under *Upazila* Town Infrastructure Development Project”. The aim of preparing the master plans for the Paurashava located at the *Upazila* Headquarters is to identify the infrastructural facilities needed for overall socio-economic and physical development and activities of the people living in the respective Paurashava as well as to improve their living conditions.

The main purpose of preparing Master Plan of Amtali Paurashava is to prepare Land use plan as envisaged in the term of Reference (ToR). The Amtali Paurashava is located in the South region. The Paurashava consists of 9 wards which comprise around 10.81 sq.km. This is B Category Paurashava.

The plan included in the package is Structure Plan, Urban Area Plan and Ward Action Plan. **Structure Plan** basically concerned with development of broad strategies for managing and promoting efficient urban development over the long term (2011-2031) and attempts to integrate economic, physical and environmental objectives. The process includes studies on future growth potentials of the areas/regions. It also identifies the basic strategic options available to accommodate the anticipated growth. After evaluation, 'the preferred strategic option is accepted. This preferred strategy then identifies spatial and other structural issues relating to the overall development of the Paurashava. The Structure Plan also outlines major sector wise policies to guide development in the desired manner over a longer period of time (for 20 years).

Second Component is **Urban Area** Plan which is synthesized with upper tier of the Plan, the Structure Plan. The Urban Area plan provide an interim mid-term strategy for 10 years (2011-2021) for the development, of the Paurashava following the broad guidelines set by the longer term structure plan. The plans can be prepared for specific sections of the urban area identified in the structure plan for rapid development or for special projects and improvements. It gives detailed information on the preferred development pattern, showing location of roads, infrastructure, community facilities and land use zones. Considering the development growth trends, an estimated growth rate for Amtali Paurashava has been fixed at 3.65 % using Exponential formula. According to this growth rate, population of Amtali Paurashava would be about 28559 by the year 2031. Urban Area Plan is comprised of four components that is Land use Plan, Transportation and Traffic Management Plan, Drainage and Environmental Management Plan and Plan for Urban Services.

Land Use Plan is mainly confined to the land use zoning of Amtali Paurashava. Total 17 categories of landuse zones have been identified in Amtali. About 22.22% lands are preserved for agricultural lands and 8% of total built up area reserved as Urban deferred. Relevant land development control regulations and necessary implementation guidelines have also been incorporated.

Transportation and Traffic Management Plan identifies the location for new major transport corridors within Paurashava area considering Regional and local need. Traffic Volume Projection up to 2031 is the main basis of all plan proposals. Four types of Road Hierarchy, Space allocation at ROW, Provision of Service lane, Pedestrian facilities and others relevant proposals are accommodated in this plan. Total 11.42% lands are proposed under road circulation.

Drainage and Environmental Management Plan is comprised of Drainage Network and Environment Management of the Paurashava. Preservation of the natural drainage is also undertaken. Besides, Landfill System for Solid Waste Management System is proposed to be

developed for ensuring environmental sensitivity. Considering the risk of Amtali Paurashava against cyclonic hazards separate Committee will be developed as persuaded direction of National Plan for Disaster Management, 2007-15.

The Third component is **Ward Action Plan (WAP)** where ward wise priority schemes, phasing of the schemes is made. Prioritization of no. of wards based on existing development pattern and need of development is also identified. Considering population, distance and suitable land, most of the urban social services will be available to citizens within 1-2 km range.

It is suggested that to follow up the plan proposals and recommendations of different sectors to keep balance with demand and supply of citizens' requirements. The Master Plan will facilitate the agglomeration of people with the view to provide all facilities that will be help full for boosting up their socioeconomic condition. It should be kept in mind that master plan is a guideline for development and control of growth in a systematic manner. Without proper regulation or rules it would not be possible to manage the Master Plan. However appropriate authority must be obligatory for the execution of the Master Plan.

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List of Abbreviations and Acronyms

BBS	: Bangladesh Bureau of Statistics
BDT	: Bangladeshi Taka (Currency)
BM	: Bench Mark
BTCL	: Bangladesh Telecommunication Company Limited
BWDB	: Bangladesh Water Development Board
CBO	: Community Based organization
CS	: Cadastral Survey
DGPS	: Differential Global Positioning System
EMP	: Environmental Management Plan
EPA	: Environment Protection Authority
GCP	: Ground Control Points
GIS	: Geographic information System
Govt.	: Government
GPS	: Global Positioning System
H.Q.	: Head Quarter
H/hold	: Household
JICA	: Japan International Cooperative Agency
KM/ km	: Kilometer
LAN	: Local Area Network
LCC	: Lambert Conformal Conic
LGED	: Local Government Engineering Department
LPG	: Liquid Petroleum Gas
MV	: Motorized Vehicle
NGO	: Non-Government Organizations
NMV	: Non Motorized Vehicle
O-D	: Origin – Destination
Orgs.	: Organizations
PCU	: Passenger Car Unit
PD	: Project Director
PMO	: Project Management Office
R.F.	: Representative Fraction
RHD	: Roads and Highways Department
RoW	: Right of Way
RS	: Revenue Survey
RTK-GPS	: Real Time Kinematics Global Positioning System
SoB	: Survey of Bangladesh
SPSS	: Statistical Package for Social Science
TCP	: Temporary Control Point
TIN	: Triangulated Irregular Network
ToR	: Terms of Reference

Part A. Structure Plan

Chapter-1

INTRODUCTION

1.1 Introduction

Local Government Engineering Department (LGED), Ministry of Local Government, Rural Development and Cooperatives, Government of the People's Republic of Bangladesh has taken a massive program to prepare master plan of 218 Paurashavas under the project titled 'Upazila Towns Infrastructure Development Project' (UTIDP) funded by the Government of Bangladesh. The aim of master plans for the Paurashavas is to identify the infrastructural facilities needed for overall socio-economic and physical development and activities of the people living in the respective Paurashava so as to improve their living conditions.

However, the main purpose of preparing master plan of Amtali Paurashava is to prepare Land Use Plan and related Infrastructural Plans as envisaged in the Terms of Reference (TOR). The Master Plan of Amtali Paurashava is to be prepared based on the topography survey, physical feature survey, land use survey, socio-economic survey and other different types of sector surveys/studies. However, the plan consists of three volumes known as Master Plan. These are:

- **Structure plan**
- **Urban Area Plan**
 - Landuse Plan
 - Traffic and Transportation Plan
 - Drainage and Environmental Management Plan
 - Plan for Urban Services
- **Ward Action Plan**

The following aspects have been addressed in preparing the master plan for Amtali Paurashava:

- Guide/regulate planned development of infrastructure and facilities
- Facilitate socio-economic development activities
- Ensure conservation of natural streams and addressing properly environmental concerns
- Arrest existing unplanned growth
- Stop further encroachment of the fertile agricultural lands and potential beach areas
- Proper and optimal use of land
- Facilitate provision of utilities, services and facilities for the resident population
- Spatial layout for public sector, private sector and public- private sector investments
- Facilitate conservation of bio-diversity

1.2 Philosophy of the Master Plan

The master plan will facilitate the agglomeration of people of a defined place with the view to provide all supportive facilities for them that will be helpful for boosting up their socio-economic condition. Moreover, considerable care has to be given to improve their quality of life through providing some other facilities such as recreational, municipal facilities etc. But it should be kept in mind that master plan is a guideline for development and control of growth in a systematic manner. Without proper regulation or rules it would not be possible to manage the master plan. However, appropriate authority will be obligatory for the execution of the master plan.

1.3 Objectives of the Master Plan

According to the Terms of Reference (TOR) the objectives of the Master Plan are as follows:

- Find out problems and potentialities of developing various sectors
- Facilitating the provision for all types of infrastructure and service facilities needed for development as well as socio-economic facilities and infrastructure for the local people
- Supporting protection of the local environment/ecology
- Preparing a 20-year Master Plan used as tool to guide and regulate planned physical growth and development
- Facilitating job opportunities for the local people so as to address the issue of poverty reduction in line with the national policy of poverty reduction
- Keeping provision for short, medium and long-term investment plans by the public sector, the private sector and the PPP in implementing the Amtali Paurashava plan.

1.4 Conceptualization

Structure Plan

The term Structure Plan includes a full analysis of the existing scenarios, highlight the existing condition of different sectoral infrastructures, identification of sectoral issues and interventions, prescription of solution for each sector and setting proposal and recommendations for the future action to be taken within the mentioned period, say 20 years. This is a longer-term plan.

Urban Area Plan

The term Urban Area Plan (UAP) is prepared for managing and promoting development over medium term on the basis of the strategies set by the longer-term structure plan. Basically the UAP is an interpretation of the Structure Plan over the medium term (10 years). The coverage of the UAP is existing urban areas and their immediate surroundings with the purpose of providing development guidance in these areas where most of the urban development activities are expected to take place over the next 10 years. Delineation of the Urban Area Plan should be based on the urban growth area as identified in the Structure Plan. It will contain more details about specific programs and policies that require to be implemented over the medium term. The UAP is consisted with the Land Use plan, Transportation and traffic Management plan, Drainage and Environmental Management Plan and Community Services Plan.

Ward Action Plan

This is called short-term plan, say 5 years. Individual Ward of the Paurashava is deserved scope of this plan. In the Paurashava, 9 Ward Action Plan is being prepared. The plan includes review of the existing situation of the Ward with respect to land use, community facilities, public services, utilities, infrastructures, etc. Problems need immediate attention and scope of development is the basis of this plan. The problems and their recommendations as prescribed in the Urban Area Plan are being emphasized for immediate implementation with the help of ward Action Plan

1.5 Approach and Methodology

The project is aimed for development of infrastructure and services for the Paurashava with optimum provision of opportunities for local people and extending services to surrounding areas.

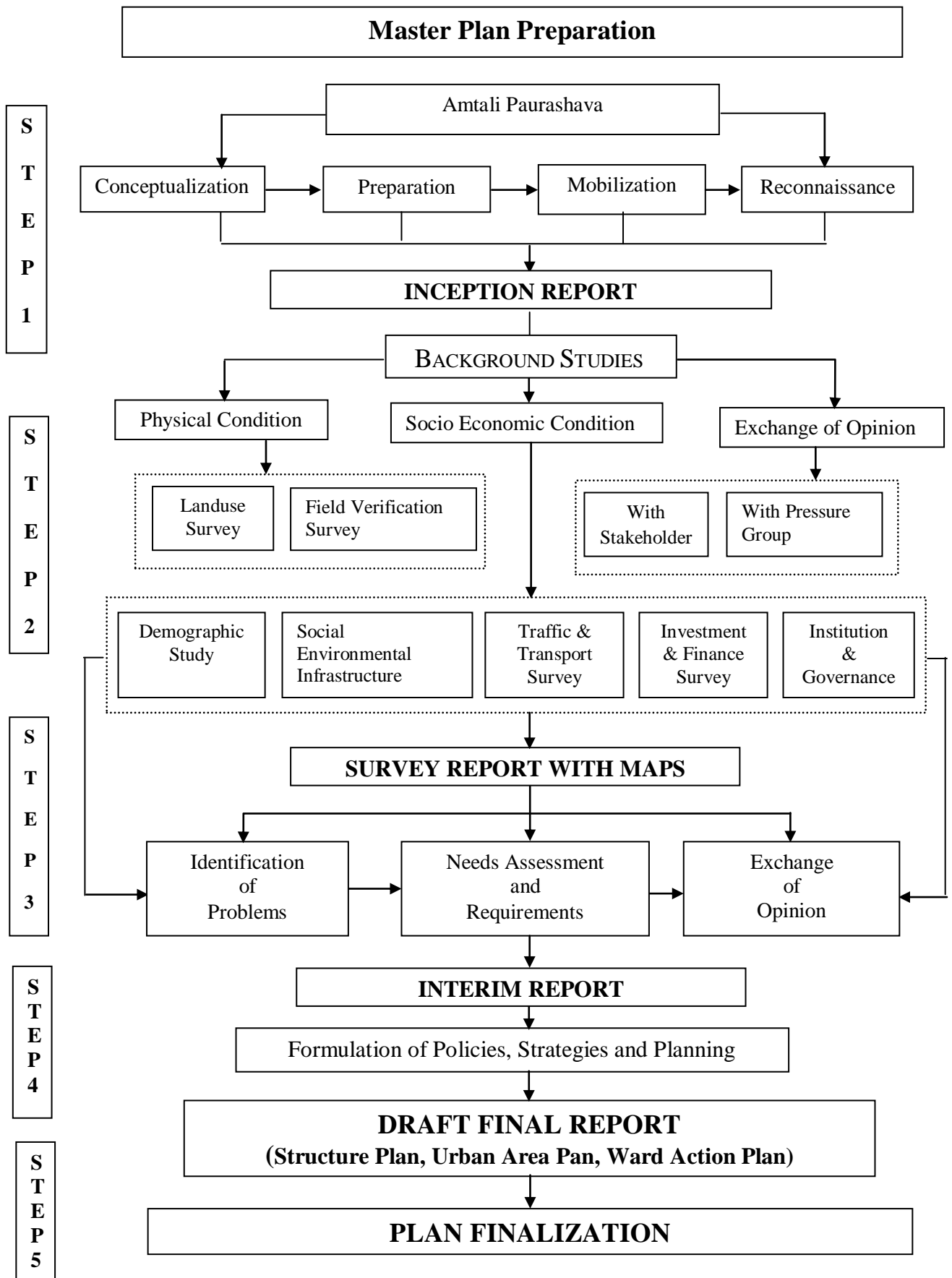


Fig 1.1: Diagram of Master Plan Preparation

1.5.1 Demarcation of the Planning Area

The demarcation of the study area is an important task in order to gather information and data. As per TOR, the study area or the planning area should be determined by the consultants reviewing its growth potential, geographical and geological context, tourism aspects and other relevant issues. Determining the planning area for Amtali Paurashava, the consultants had exercised above issues and fixed the area of the Paurashava. The total area of the Amtali Planning Area is 2208.80 acres (8.94 sqkm) and there is no extended area in the structure plan. However, in demarcating the study area, the following aspects have been considered:

- the existing and future road linkages
- physical growth directions
- physical features of the area and the surrounding areas

1.5.2 Preparation of the Base Map

The following steps have been followed to prepare the base map:

- Collection of RS Mouza Maps
- Identification of GCP (TIC) on Digitized Maps
- Scanning of Mouza Maps
- Edge Matching and Preparation of Study Area Map
- Digitization of RS Mouza Maps
- Edit Plot Check of Digitized Coverage
- Geo-referencing of Mouza Maps

1.5.3 Surveys

1.5.3.1 Topographic Survey

Topography survey was conducted by using RTK-GPS and Total Station (TS) survey technique. Topographic survey has included the following features:

- Land levels/spot levels for contours at 50m intervals with denser intervals for undulations;
- Alignment and crest levels (not exceeding 50m) of roads, embankments, dykes and other drainage divides;
- Alignment of rivers, lake, canal, drainage channels etc;
- Outline of bazars, water body, swamps and forest, etc;
- Type, width, length and name of road above flood level;
- For closed boundary/outline of homestead, water bodies, swamps, forest etc. junctions, spot heights or land levels will be taken roughly at 10m intervals in normal cases and contour will be at 0.3 meter interval;
- Crest levels will not exceed 50m along all dyke, roads and drainage divide.

1.5.3.2 Physical Feature Survey

Physical feature surveys provided the basis for understanding many planning problems. To know existing information about physical features of Amtali Paurashava, physical feature survey was carried out. The physical features map was prepared on RS/CS map on 1''=165' scale showing the following features:

- Cross Section, long section, type, width, length and name of road, road level above datum,

slopes, flooding lands, slopes, borrow pit;

- Identification of any bridge or culvert on the road with their length & width and span of the bridge, condition of abutments, condition of the deck, wing walls abutments;
- Type, size, inlet and outlet location of drain along with flow direction, width of the canal, place of encroachment;
- Type of sewer system, size, type and location of sewerage line, location of bins, identification of any other sewerage collection system;
- Identification of the water supply system, location of overhead water tank and its capacity, catchments area of overhead tank;
- Identification, location and capacity of electricity, telephone service;
- If any, new items identified during the survey period will also be surveyed;

1.5.3.3 Land use Survey

Utilizing the Base Map, (physical features survey overlay on survey map) the land use map was prepared indicating the broad categories of land uses. And it described using a suitable land use code reference. The characteristics of each land use area were described in the survey report. The Land Use Maps were prepared on the Base Map.

1.5.3.4 Socio-economic Survey

The planning is principally directed towards people and their needs concerning housing, shopping, recreational, employment, education, and health services, etc. The detailed information on population is, therefore, essential for deciding land requirement for these needs as well as allocating land between various competing uses.

A socio-economic survey for collection of primary data was conducted at Amtali Paurashava. The sample size of socio-economic survey was 5% as per ToR. It is clearly understood that the purpose of this socio-economic survey is to obtain the project related socio-economic data on households in the project area. All data were collected from the primary sources through a specially designed socio-economic questionnaire survey.

1.5.3.5 Drainage and Environmental Study

The consultants have undertaken a drainage survey and environmental study at Amtali Paurashava. The preparation of master plan for the next 20 years for the Paurashava seeks environmental investigation of development activities that will be undertaken in next 20 years. The issues/aspects that were investigated as per the TOR are as follows,

Existing Infrastructure

- Drainage
 - Man-made (drainage network, gradient, attachment area, out let)
 - Natural (flow direction, hydrology, usability)
- Water supply (network, coverage)
- Sewerage (location/network, condition)
- Solid waste management-existing system, location of garbage disposal, management aspect

Environmental Aspects

- Humidity, rainfall and temperature of the study area.
- Climatic and Disaster Condition, Soil and topographic Condition.

- Environmental Pollution (air, water and noise pollution).
- Identification of hazards.
- Existing mitigation/coping measures, if any.
- Identification of environmental protection laws/regulations.

1.5.4 Data and Information Management

All the data and information collected from the primary and secondary sources have been sorted/edited and computerized and analyzed. Projections were done in the case of populations so as to estimate the spatial requirements of different services and facilities for the resident population. All these were accomplished in line with the objectives of the plan so as to estimate the land requirements for different service and facilities. Elaborate information regarding projection and estimation of land requirements are available in the following concern chapters.

1.5.5 Adopted Planning Standards

The planning standard provided by the PMO office of UTIDP has followed to prepare the Master Plan.

1.5.6 Stakeholders' Consultations

After preparation of a draft plan, a consultation meeting has conducted with the concerned authority and local people of Amtali Paurashava to acquire aspirations, demand, problem and prospects of the area and community as well as the views of service providing agencies and local administration and share the master plan with them. After incorporating their views and demands, the master plan has prepared.

1.6 Scope of the Work

The scope of the work is to cover all aspects related to the preparation of Master Plan / Urban Area Plan which include Land Use Plan, Traffic Management Plan, Drainage and Environment Plan and Ward Action Plan. Prepare a plan to set out proposed Master Plan at three levels namely Structural Plan, Master Plan / Urban Area Plan and Ward Action Plan. In order to prepare these plans following activities has been conducted:

- Visits to the Amtali Paurashava have been made in different stages for the preparation of Master plan
- A copy of list of Paurashava feasible for preparation of Master Plan has been submitted to the office of the PMO, UTIDP
- An inception meeting at the Paurashava level has been conducted to inform Paurashava about the scope of work for the preparation of Master Plan for 20years development vision.
- The study area has been determined on the basis of existing condition demand of the Paurashava and the potentiality for future development.
- Different types of survey activities have been conducted from primary and secondary source.
- A comprehensive drainage master plan for a period of 20 years has been prepared.
- Assessing existing condition an integrated transportation plan is proposed for next 20 years
- Ward action plan with list of priority schemes for the development of roads parks and other social facilities are proposed which need to implement during the first five years of the plan period.
- Two consultation meeting have been organized with the help of concerned Paurashava and local stakeholders.
- Master plan and report with required standard have been prepared and submitted as required TOR.

Chapter-2

STRUCTURE PLAN

2.1 Background of the Paurashava

Local Government Engineering Department (LGED) has taken a massive program to prepare master plan of 218 Paurashavas including Kuakata Tourism Centre located at the *Upazila* headquarters under *Upazila* Towns Infrastructure Development Project (UTIDP) funded by the Government of Bangladesh. The Master Plan has three components namely: Structure Plan, Urban Area Plan and Ward Action Plan. Part-A consists of Structure Plan.

Amtali, a Paurashava of Barguna district, is located at the southern part of the country. Amtali became police station in 1904. It was upgraded to an *upazila* on the November, 1982. Amtali *Upazila* consists of 9 wards, 10 Unions, 66 mauzas, 15 mahallas and 181 villages. The Paurashava was established 23rd August, 1998, as a C category Paurashava. However, Amtali Paurashava consists of 9 wards with an area 8.94 sq.km (Field Survey, 2010).

2.2 Vision of the Structure Plan

The vision of the Structure Plan is oriented with the policy development for the project area in relation with national and regional policies or framework through close liaison between planning authority and government departments. In a word, it will provide the basis of Co-coordinating decisions. It will be considered as the upper level planning guideline component for next two levels of planning i.e. Urban Area Plan and Ward Action Plan. Structure Plan will identify the urban growth area based on which the Master Plan area will be delineated. It will set policy framework which will be more detailed in Urban Area Plan. Moreover, it will provide the basis of development control in pursuing the Urban Area Plan. Subsequently, the indication of action areas and the nature of treatment in different sectors will also be considered here. It will define the location of action areas but not the boundaries, also the priority, possible effect of actions proposed. Pertaining with Action Area Plan, the combination of Public and Private Agency or individuals' involvement to implement the proposed actions will be stated here.

2.3 Objectives of the Structure Plan

The main objectives of preparing master plan of Amtali Paurashava are to prepare Structure Plan, Urban Area Plan and Ward Action Plan as envisaged in the Terms of Reference (TOR). The structure plan has the following objectives:

- To identify the main development issues facing the Paurashava (town) with major opportunities and constraints
- To identify the growth and possible physical expansion of the city as foreseen considering economic base and Trend
- To provide a view of required and suitable lands for future physical expansion
- To develop the sector wise strategies pursuing the future development control in a desirable direction
- To identify the resources which are needed to strengthen the financial resources of the town
 - Establishment of inter sectoral goals, policies and general proposals for urban spatial development
 - Provide framework for the next hierarchy of Amtali Paurashava Master plan and Ward action plan

2.4 Content and Format of Structure Plan

As per Terms of References (TORs) the Structure Plan of Amtali Paurashava has been prepared for 20 years in long term. The Urban Area Plan (UAP) will be an interpretation of Structure Plan in Medium Term and Ward Action Plan in Short Term. Figure 2.1 shows the content of structure plan.

Demarcation of Structure Plan Area

The issues have been adopted for demarcating the study area for Amtali Paurashava comprises the following:

- Study the existing Paurashava boundary with existing growth trend and pattern Analysis of the physical development constraints and potentialities
- Study of the existing and future national, regional and local linkages with Amtali
- Consultation with local governments
- Consultation with local people, members of civil societies and other stakeholders

According to the gazette notification, the Amtali Paurashava comprises three mouzas (5 sheets) namely– Amtali, Chaora and Ghatkhali. The total Paurashava area is about 2671.17 acre (about 10.81 sq.km). The Paurashava area has considered enough to accommodate the future growth of the area and all the 9 wards of the paurashava are covered. The following table shows mouza wise area of Amtali Paurashava.

Table 2.1: Mouza Wise Area of Amtali Paurashava

Mouza Name	JL No	Sheet No	Area (Acre)	Area (sq km)
Amtali	31	3	1838.26	7.44
Chaora	30	1	635.06	2.57
Ghatkhali	29	1	197.85	0.80
Total		5	2671.17	10.81

Source: Amtali Paurashava, 2012

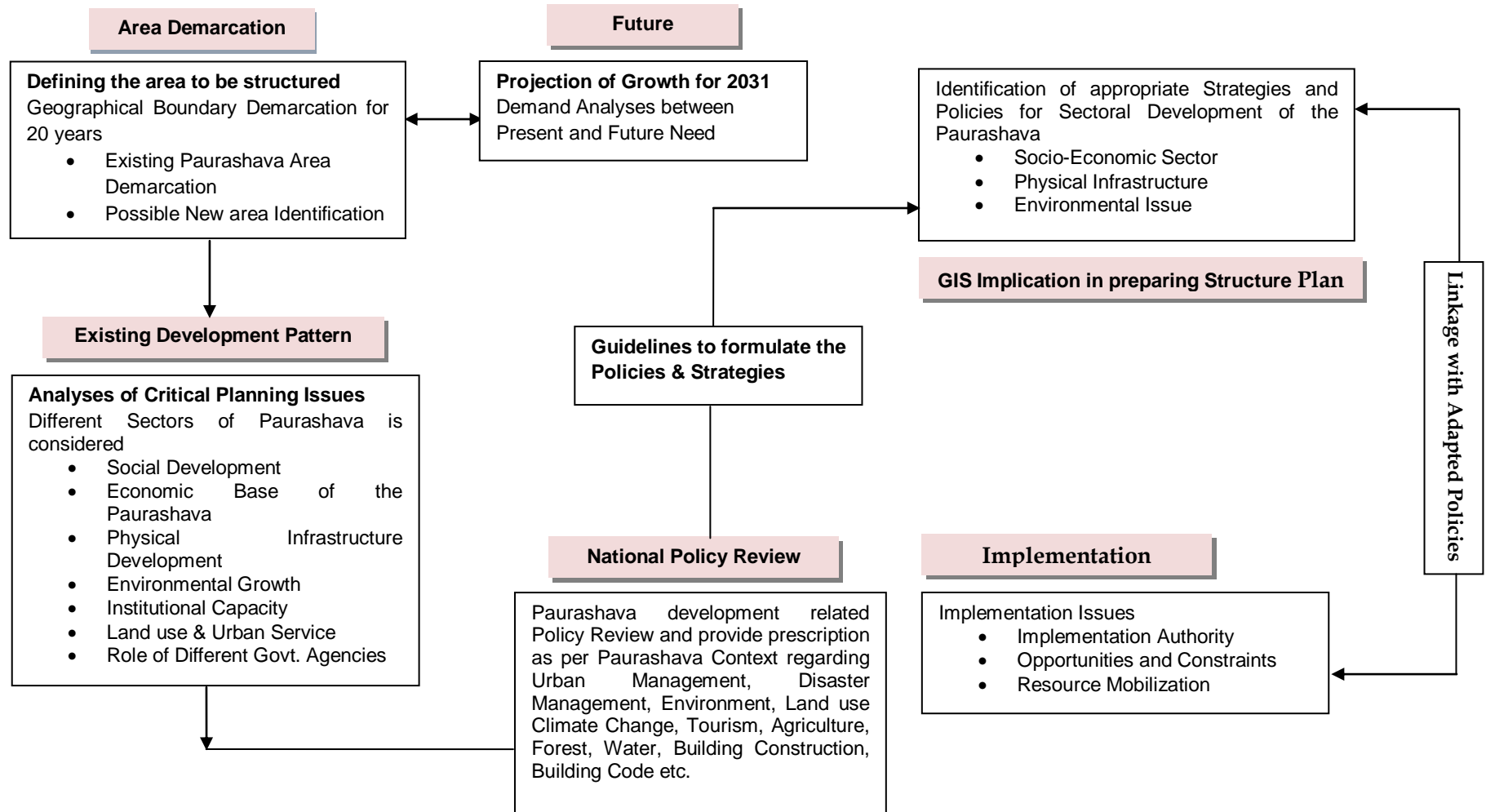


Fig 2.1: Content of Structure Plan

Chapter-3

EXISTING TREND AND GROWTH

3.1 Social Development

In Amtali Paurashava, about 66.4% households concentrated in potential core area and 22.9% households concentrated in fringe area. This indicates that Amtali is a semi-urban area, commercial development concentrated on core area, influential or affluent people live in the potential core area and the urban poor those are always likely to live in fringe area.

The educational status of an area is the major determinant of society building. As per BBS 2011, in Amtali Paurashava the literacy rate is about 68.7% where the national level the literacy rate is about 53.3%.

It is seen that almost all the wards have similarity in occupation and agriculture is dominant in every ward which is followed by small business.

About 89.3% of the households at Amtali Paurashava have their own housing structures. Considering other assets it has been observed that according to BBS 2011, about 54.7% households own agricultural lands.

There are different types of income groups of people living at Amtali Paurashava area. About 40% of the households' incomes are within the range of Tk 5001.00 – Tk.10, 000.00 per month. Further, 20.7% of the household have income per month Tk. 10,001.00 – Tk. 15,000.00; 17.9% Tk. 2,501.00 - Tk. 5,000.00 and 9.3% Tk. 15,001.00 – Tk. 20,000.00.

About 87 % of the populations are Muslims, and the rest 13% of the people are practicing Hinduism at Amtali Paurashava.

Survey report depict at Amtali Paurashava about 11.43% of the total households come from other places. Majority of the migratory (68.8%) of the households have come after 2000 to Amtali Paurashava area which means the migration phenomenon is of recent and the rest 31.3 % have come during 1990 -2000. The most common reason of the in-migration of the households to Amtali Paurashava is the workplace. Moreover, better education facilities and business have also significant contribution behind migration. All these issues have been given emphasis for attaining social development of the area.

3.2 Economic Development

In Bangladesh, the economy is composed of formal and informal sectors. But statistics on the size of the informal economy in Bangladesh are difficult to find out. Formal economic activities sector of Amtali Paurashava mainly comprises Trade and Commerce, Agriculture, Service Sector, Industry, Transport and so on. The major occupational group is involved in agricultural activity (Socio-economic Survey, 2010). About 61.8% of all the households' members irrespective of sexes of Amtali Paurashava are within the age group of 16-57 years. This indicates majority of the household members are economically active group. People of this area are mainly involved in agriculture and business activities. Amtali *upazila* has great agricultural potentiality. At present from Amtali Paurashava; various products are supplied to different district by water way and road. Also, various types of fishes especially shrimp are also available here. So, agro-based and fishing based industries can be developed for fostering economic development of the area.

3.3 Physical Infrastructure Development

As Barisal region is mainly dependent on agriculture, the Paurashava activities are still oriented with agriculture sector and the physical infrastructure development is hindered due to natural calamities. Some segmented and sporadic physical developments have been occurred over the

years in different parts of the Amtali Paurashava. Most of the infrastructures have developed without maintaining any regulations or standards.

Physical feature survey depict that there are total 4304 structures at Amtali Paurashava. About 70.42% of the structures are kutcha which is followed by 21.35% semi-pucca. Pucca structure is very low percentage (8.22%).

At present, the road network of Amtali Paurashava area shows lack of planning principles. From the physical feature survey it has been observed that about 77.33 % of the roads are pucca which is followed by 12.35 % kutcha roads. So, it might be possible to develop the planning area considering the ward wise development to some extent.

At Amtali Paurashava, about 1.85 kilometers pucca drainage and 19.33 kilometers kutcha drainage network have observed. Maximum pucca drains have observed at ward no 4. Most of these drains are connected with the river and khals.

3.4 Environmental Growth

Amtali Paurashava is located in the southern part of Bangladesh. It is very close to the Bay of Bengal. Morphological condition of this Paurashava is quite similar compared to the other district located in south-west region of the Bay of Bengal. The climate has hot summer and a mild winter. 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 30.1°C in April and minimum average monthly temperature is 17.5 °C in January in 2010. The monsoon starts from June and maximum rainfall is experienced in 2007 and lowest in 2003. Annual rainfall as recorded from 2000 to 2010, the maximum was 938.8 mm in 2008 and lowest in 2003 about 469.4 mm. Drinking water of the Paurashava is quite saline and also contaminated by iron. So, the establishment of Water Treatment Plant will be required for ensuring the good drinking water. In addition, it is possible to preserve the environment before any advanced development as industrial development is very low.

3.5 Population

Amtali Paurashava comprises around 17311 numbers of people (male 8701 and female 8610). Highest number of population has observed at ward no 3. The average population density of Amtali Planning area is 1936.35 person /sq.km. This indicates that Amtali is a high density area with respect to both national and district density. Average size of households of Amtali Paurashava is 4.3. This indicates the culture of having small nuclear families which shows urban life characteristics.

Table 3.1: Population Distribution of Amtali Paurashava Area

Ward	Population at 2011	Area (acre)	Density (person per acre)
Ward 1	1011	141.65	7.14
Ward 2	1800	269.21	6.69
Ward 3	2718	164.11	16.56
Ward 4	2662	362.87	7.34
Ward 5	2441	59.55	40.99
Ward 6	1901	91.71	20.73
Ward 7	2018	598.87	3.37
Ward 8	1648	316.26	5.21
Ward 9	1112	204.56	5.44
Total	17311	2208.80	7.84

Source: BBS, Zila: Barguna, 2011

3.6 Institutional Capacity

In Amtali Paurashava, the plan implementation and main power executing authority will be the Paurashava itself. Therefore, effective execution capacity in terms of revenue generation, manpower capacity of the Paurashava is required to evaluate to implement the plan. There are four major component of income generation. These are: 1) Revenue, 2) Development, 3) Capital and 4) Project.

Most of the income of Amtali Paurashava in the recent years has been generated from development section. It has been analyzed that in last 5 years the development sector has contributed about 59.52% on an average to the overall income of Paurashava. Besides, revenue sector contributes about 25.64%, capital 10.12% and project 4.73% on an average to the overall income of Paurashava.

Moreover, in last 5 years the development sector has consumed about 42.97% whereas revenue sector has consumed about 31.80% and capital 8.39% on an average of overall income of Paurashava.

Analyses reveal that in the last four years the income was greater than expenditure but in 2010-11, the expenditure was greater than income.

Existing Manpower of Amtali Paurashava is comprised with is comprised with 1 elected Mayor, 1 Chief Nirbahi Officer and 3 Departments. These are:

1. Engineering Department
2. Administrative Department
3. Health, Family Planning & Conservancy Department

On the basis of organogram, these three departments should comprise of 32, 35 and 22 persons respectively but at present there are 9, 10 and 1 persons respectively. The manpower of Amtali Paurashava is not so much capable to implement the Paurashava Master Plan. The Existing posts are not fulfilled by the required manpower. Besides, it may require more efficient, technical and experienced manpower to implement the master plan. It has been observed that in Engineering Department about 72% posts are vacant, in Administration Department about 71% posts are vacant and in Health, Family Planning and Conservancy Department the percentage of vacant posts are about 95%.

Moreover at present, there is no town planning unit at Amtali Paurashava. Engineering Department is responsible for monitoring the development control issues of this Paurashava.

3.7 Urban Growth Area

The Paurashava is expanding along the big khal on West to north direction. There is a major road network which is connecting north and south part of Paurashava that also links the Paurashava with other areas of Amtali *Upazila*. Commercial development is already expanding along with the major roads. Moreover, a major portion of western part is remained agricultural land. Commercial activities are developed along the both side of major roads such as Amtali to Patuakhali road, Amtali to Kalapara Road and Nasiruddin road. Administrative structures are mostly developed at ward no 4, 5 and 6 of the Paurashava.

Industrial development is mainly concentrated in ward no. 3. So, it is expected and required to concentrate the development in the existing rather than expanding towards other areas. The industrial development should not be mixed up with residential development. On the other hand, existing industrial area is mixed with the residential and commercial area of the Paurashava. So, it is important to consider these features.

Residential structures are mostly developed in core and potential core area. Specially for getting advantage of high lands, residential areas developed on the areas which is bounded by a bid canal that are accelerating growth of the Paurashava on the south and east side.

In the planning area, predominant percentage of lands is devoted for agricultural purpose. From the landuse map, it depicts that agricultural lands are mostly developed in periphery area. However, major concentration is observed in ward no 1, 2, 4, 7, 8 and 9. As the main economy of Amtali Paurashava depends on business and agricultural sector, road and waterway network have significant importance for the economic development of the country.

Most of the roads of all wards are pucca and the overall condition is moderate except access roads. All these areas have been well linked up with functional road network but some roads are narrow especially access roads which are required to be more widened. The existing natural features having khals are playing a vital water ways in connecting the area with that Bay of Bengal.

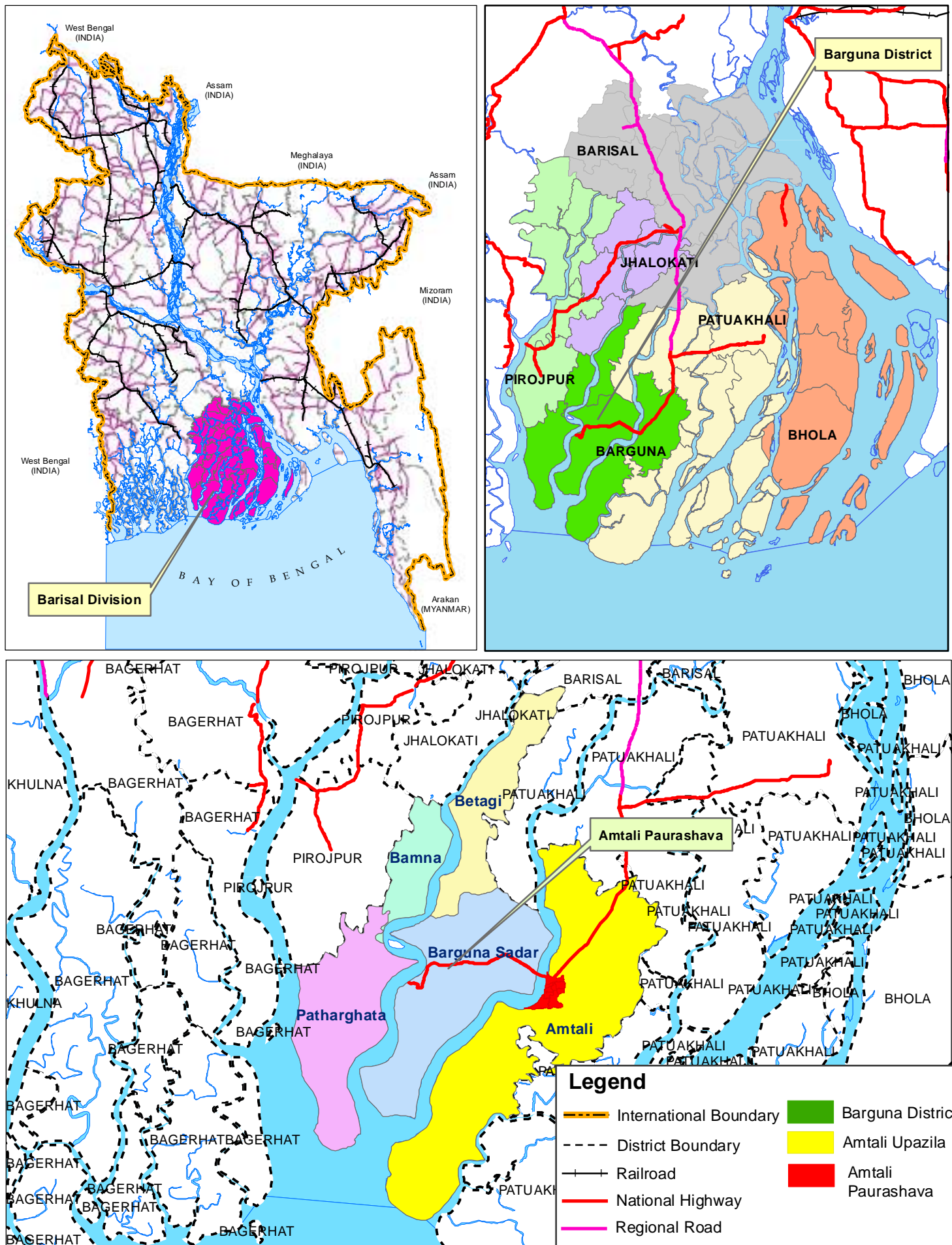
Map 3.1 shows the future growth direction of Amtali Paurashava.

3.8 Catchments Area

Catchments area of the Amtali Paurashava is calculated according to the agriculture commodities and movement of dwellers for rendering services. From Amtali Paurashava, agriculture commodities marketed to the Barguna Zila and other adjacent areas. At present from Amtali Paurashava, paddy, pulse, peanut, mustard, chilli, betel leaf and potato etc, products are supplied to different district by water way through Launch or trawler. Also, various types of fishes are also available here which are caught from Amtali River which is adjacent to Amtali Paurashava. These fishes especially shrimp are also distributed to all over the country. Thus, this upazila is contributing to national economy.

Moreover, most of these trading activities of this Paurashava are conducted through some prominent bazaars of the Paurashava. People from different locations including Paurashava people, outside from Amtali Paurashava come here for daily bazaar. However, these opportunities have to be properly linked up and optimized for enhancing socio-economic developmental activities so as to boost up living condition of the people living in the urban area.

Map 3.1: Regional Linkage Map of Amtali Paurashava



3.9 Land Use and Urban Services

Land use is one of major determinant of planning especially in a developing country where technical component is being upgraded still. Suitable land use planning not only controls the development but also it can affect the traffic generation and degeneration of a particular area. At Amtali Paurashava, there is dominance of agricultural land (about 68.44% of the total) followed by residential landuse (about 13.13%).

About 290.05 acres areas are used for residential purposes. Ward no 4 has highest amount of residential land. About 19.78 acre lands are in commercial use at Amtali Paurashava and ward no 4 and 7 are the commercial zone of the planning area. From the land use survey it has been observed that about 3.08 acres areas are used for industrial/ processing and manufacturing purposes and ward no. 3 and 7 are the main industrial zone. About 26.82 acre land at Amtali Paurashava is devoted for government services and most of the government services are located at ward no. 6. About 1.93 acre lands are devoted for recreational facility and highest concentration of recreational facility is at ward no. 2. Moreover, about 3.40 acre lands are devoted for community service and 5.36 acre lands are used for service activities. At Amtali Paurashava, about 40 structures are devoted for community service and 15 structures are devoted for service activity. Most of these structures are located at ward no. 7.

The landuse pattern clearly indicates that land use pattern does not reveal much urbanized oriented land uses rather a semi-urbanized land use structures. Moreover, existing land proportions of different land uses is not in consistent with the principle of land allocation/distribution of an ideal town.

3.10 Paurashava Functional Linkage with Regional and National Network

Amtali Paurashava is located at Barguna District. The district is bounded on the north by Jhalokati, and Barisal districts, on the east by Patuakhali district, on the south by the Bay of Bengal, on the west by Pirojpur and Bagerhat districts. Noted rivers are Payra, Bishkhali and Baleshwar.

Barguna is a district in the south-western Bangladesh and a part of the Barisal Division. Communication system of Barguna district is quite satisfactory. A regional highway is gone through Barguna district. Amtali Paurashava is the largest Paurashava of Barguna district. A highway Barguna –Barisal –Dhaka is gone through Amtali Paurashava. This highway is also used to reach Barguna, Barisal, Pirojpur, Jhalokathi and Patuakhali and Dhaka which are situated in the north side of Amtali. Moreover, among five *upazilas* of Barguna district, almost all are connected by water ways. So in case of Barguna district water ways improvement should be given high priority. Regional Linkage map of Amtali Paurashava has presented on **Map 3.2**.

Map 3.2: Regional Linkage Map of Amtali Paurashava

3.11 Role of Agencies for Different Sectoral Activities

Amtali is an A Class Paurashava. The collaboration among different agencies is essential to execute the plan and make a linkage with national plan and investment. Therefore, the role of different agencies or organizations is required to identify and understand.

LGED

The major functions of LGED can be broadly categorized as follows:

- Rural infrastructure development
- Urban infrastructure development
- Small scale water resources development

Urban Infrastructure Development consists of Planning and implementation of integrated town centre (bus terminals, markets etc.), municipal roads, bridge/culverts, drainage, water supply and sanitation projects, solid waste management projects, slum upgrading projects, development of Land use plan, improve planning & management capacity and resources mobilization & management, Institutional development of municipalities through training and computerizations, preparation of district and *upazila* town master plan, Development of technical specifications and manuals for construction of urban infrastructures.

RHD

RHD is responsible for the construction and the maintenance of the major road and bridge network of Bangladesh. It has a sustainable capacity to plan, manage and deliver its full range of responsibilities in respect of the main road and bridge network and to be accountable for these duties.

PWD

Public Works Department (PWD) plays a pivotal role in the implementation of government construction projects. It also undertakes projects for autonomous bodies as deposit works. The specific functions are:

- Construction of Buildings for Other Agencies on a Deposit Work Basis
- Maintenance of Public Parks
- Design and Construction of Public Buildings except those of RHD, T&T, Postal Department
- Construction of National Monuments
- Repair and Maintenance of Public Buildings
- Preparation of Book of Specifications and Code of Practice
- Acquisition and Requisition of Land for construction Work
- Procurement of Materials & Equipment Required for Construction Work
- Valuation of Land and Property and Fixing of Standard Rent

BWDB

Bangladesh Water Development Board (BWDB) is the principal agency of the government for managing water resources of the country. It was given the responsibility of accomplishing the tasks of executing flood control, drainage and irrigation projects to increase productivity in agriculture and fisheries.

DPHE

The Department of Public Health Engineering (DPHE) with its development partners is trying to ameliorate the sufferings caused by the lack of safe water. Alternative options for safe water

supply are being catered in worse affected areas. Similarly for excreta and other waste management DPHE is implementing different projects to achieve an improved environment. Besides, ensuring water supply and sanitation services/ facilities during and after the natural disasters/ calamities is another major function of DPHE.

PDB

Major roles of Bangladesh Power Development Board (BPDB) are

- To deliver quality electricity at reasonable and affordable prices with professional service excellence.
- To make electricity available to all citizens on demand by the year 2020.
- To provide specialized skilled services in Operation and Maintenance with outstanding performance in Generation, Transmission and
- Distribution for promoting competition among various power sector entities
- To reach self sufficiency by increasing of its income and reduction of expenditure

BIWTA

An advisory committee has subsequently been constituted to advise the authority in respect of all matters related to development, maintenance and operation of inland water transport and of inland waterways in Bangladesh.

- Draw up programmers of dredging requirements and priorities for efficient maintenance of existing navigable waterways and for resuscitation of dead or dying rivers, channels, or canals, including development of new channels and canals for navigation
- Develop, maintain and operate inland river ports, landing/ferry ghats and terminal facilities in such ports or ghats
- Carry out removal of wrecks and obstruction in inland navigable waterways.
- Ensure co-ordination of Inland Water Transport with other forms of transport, with major sea ports, and with trade and agricultural interests for the optimum utilization of the available transport capacity

Regulatory functions

- a) Fixation of maximum and minimum fares and freight rates for Inland Water Transport on behalf of the Government
- b) Approve time tables for passenger launch services
- c) Act as the Competent Authority of Bangladesh for the protocol on Inland Water Transit and Trade, looking after the use of waterways of Bangladesh on behalf of the Govt. of Bangladesh for the purpose of trade and transit between Bangladesh and India as provided in the Protocol

Land Registration Department

Land Registration Committee responsible for land registration. This Registration department records land mutations arising through sale, inheritance or other forms of transfer, reports changes to the Ministry of Land and collects the Immovable Property Transfer Tax.

Chapter- 4

CRITICAL PLANNING ISSUES

4.1 Physical Infrastructure

The physical developments of Amtali Paurashava have encroached water bodies such as khals, ponds, ditches and the existing fertile land. This is very much detrimental for conserving biodiversity. Further, the 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.

The Paurashava is a naturally developed area. Planning effort yet not been taken by the public authority. Therefore, there are some segmented and sporadic physical developments that have been occurred over the years in different parts of the Amtali Paurashava.

The internal roads are developed in an unplanned way and also most of the access roads are katcha and narrow. These roads are not capable to accommodate the future growth of this area. Moreover, there is no traffic management system and footpath facility which cause lack of planning in transport network development. This situation hinder the economic development but also the potentiality of physical development of Paurashava

The overall condition of utility / municipal services is unsatisfactory. Water supply network and electricity facility is not adequate for residents of this area. Moreover, there is no solid waste disposal facilities, sewerage facilities and gas supply facility. Low land elevation and the distribution of water bodies make it difficult to provide the utility services, road network development over the Paurashava and also hinder well investment to encourage any industrial development.

4.2 Socio-Economic

The overall condition of different available urban utilities/civic services at Amtali Paurashava area is not satisfactory. No gas supply facility is available for the households of Amtali Paurashava. At present there is no dustbin and waste disposal facility at Amtali Paurashava. It appears that wastes are thrown here and there which pollute the area and create environmental problems. The people of this area also suffer for disaster problems such as flood, water logging, cyclone, etc. people also face some pollution problems like water pollution, noise pollution, beach pollution, etc. There is also lack of recreational facility at the Amtali Paurashava. The households of Amtali Paurashava face some communication problems in their daily life such as narrow road problem, flood erosion problem, road jam problem and lacking of town bus service. However, this aspect needs vital consideration.

Most of the economic activities in Amtali area are rudimentary in nature. Poor technology, unskilled labor force, low investment makes such economic activities uncompetitive with other cities and towns. Public investment in Amtali area is not enough to generate growth impulses. Public investment in appropriate areas is a must for revitalizing its economy. The local people, particularly those who are rich usually apathetic toward investment. The main reason can be explained in two points: first, the investment is not safe and the second the rich must in big cities where there investments are safe. Lack of availability of funding sources/agencies viz. bank, etc is also acting as hindrance for economic development.

4.3 Environment

As the area is in coastal region, saline and iron have been contaminated the water. Agricultural production, fisheries and livestock are affected by higher salinity in the dry season. At present, there is no solid waste management system at Amtali Paurashava. Most of the people throw garbage here and there, which causes serious environmental pollution and also sometimes clogged the existing drainage network.

In preparing the master plan for Amtali Paurashava, the above issues have dully been considered and proper steps have been taken to mitigate those effects.

4.4 Transport and Communication

Amtali Paurashava is connected with Barguna, Patuakhali, Kuakata, and Pirojpur with diverse regional roads. The inter-district movement is mostly done through motorized vehicles. Moreover, water transport network of Amtali Paurashava has significant importance for the movement of both people and commodity.

There is no public or private bus service available for intra-zonal movement among Amtali Paurashava. Intra-zonal movement among the Paurashava area is mostly done through the non-motorized vehicles such as rickshaw, bi-cycle, van, etc. People also use some motorized vehicles such as motorcycle, noohimon, etc. Rickshaw is the most dominant transport for intra zonal movement. Peak Hour traffic has been observed from 8.00 to 12.00 and 16.00 to 20.00 because most of the educational and commercial movement has been accomplished within the time periods.

There is two bus stand at Amtali Paurashava one is located at Ak School more adjacent to Patuakhali to Kuakata highway in Ward no. 2 and the other is situated Chow rasta more of the Paurashava. There is two rickshaw stands at Amtali Paurashava one is adjacent to Ak school bus stand, which is also used as motor cycle stand and other is adjacent to Narisuddin Road in ward no 6. At present, there is no designated space for truck terminal.

The area is not served by well defined road hierarchy and most of the roads are narrow. At present, the roads of Amtali Paurashava have free flow and transport density is low. But it is important to design a planned network with designated width to accommodate the future pressure of traffic.

4.5 Landuse Control

At the present time, there is no control over land development at Amtali Paurashava. The master plan is intended to prove a broad guideline to control the future development and to organize all types of development in a planned manner.

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. But for providing necessary services to the Paurashava agricultural land need to use which should be as small amount as possible. During implementation of Urban Area Plan / Ward Action Plan, necessary control should be imposed according to the following manner.

- High value agriculture land should be preserved only for agriculture purposes.
- Water body should be preserved to maintain the natural drainage system of the area.
- Easy accessibility with the surrounding *upazila* and regional linkage has to be ensured.
- Rural characteristics of the rural settlement have to be strictly maintained.
- All the municipal services have to be designed covering all the residents of the planning area.
- Land encroachment should be strictly outlawed.
- Agricultural lands can be used for other purposes considering the importance of the use and considering the quality of land in terms of its production.

4.6 Disaster

Amtali Paurashava is located on the coastal belt, as a result the people of this area face cyclone almost every year. Devastating cyclones hit the area usually accompanied by high-speed winds, sometimes reaching 220 km/hr or more and 5-6m high waves, causing extensive damage to life, property and livestock. It has observed that Cyclone hit Amtali Paurashava in different years. But, in 1937, 1985, 2007 and 2009 year the extreme cyclone track is passed over the Amtali. The cyclone SIDR and Aila were a big hazard for their natural climatic condition. It also damaged many lives, forests, agricultures and infrastructures.

4.7 Laws and Regulations

The laws and regulations prescribed (mentioned in Chapter 5 section 5.2) 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 Paurashava Ordinance, 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 Paurashava Ordinance, 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 Paurashava and Surrounding Area Ordinance, 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. However, eligible development authority will be required to exercise proper rules and regulations for controlling the development considering various related issues.

Chapter- 5

PAURASHAVA DEVELOPMENT RELATED POLICIES, LAWS AND REGULATIONS

5.1 General

Planning law must clearly define the extent and content of the rights of the Government and the people. Thus, legislative measures can help to frame policies for best use of land and its policies to control. Law should aim at a clear definition of the responsibilities and functions of various Government departments and its respective powers. For urban development, law has profound implications. It defines the system of urban Government, establishes the system of urban planning and regulation of urban development.

5.1.1 Local Government (Paurashava) Act, 2009

According to the Section 95, Paurashava, and if so required by the prescribed authority, shall draw up a Master Plan for the Municipality which shall, among other matters, provide for:

- A survey for the municipality including its history, statistics, public services and other prescribed particulars
- Development, expansion and improvement of any area within the municipality and
- Restrictions, regulations and prohibitions to be imposed with regard to the development of sites, and the erection and re-erection of buildings within the municipality

5.1.2 Urban Management Policy, 1999

The adopted policies under the policy statement are:

- Paurashavas shall provide and maintain the following services to their constituents: (i) Water supply, (ii) storm water drainage (iii) solid waste disposal, (iv) public sanitation, (v) roads and traffic control systems, (vi) public markets, (vii) public transport terminals, (viii) recreational parks and reserves, (ix) community centres, (x) street lighting, etc.
- Municipalities shall develop Public Investment Programs (PIP) which will reflect the priority infrastructure needs and appropriate fiscal practices needed to accomplish these.
- The capital budgeting process by municipalities and project selection shall be made transparent.
- Land use plans shall be prepared by Paurashavas in consultations with local communities and shall be periodically updated. Such plan shall form the basis for all property and land development and the assessment of taxes. Each Paurashava and Surrounding Area shall endeavor to appoint a full time qualified Urban Planner to its staff for this purpose, and until such appointment is executed; such services shall be contracted out.
- All external financing extended either directly to Paurashavas by multilateral or bilateral sources or on-lent via the MDF for municipal investments shall be provided on comparable terms.
- Paurashava and Surrounding Area will adopt as early as possible a double entry accounting system on a cash basis. Training and technical assistance shall be provided on a priority basis to facilitate computerization in the transition to double entry accounting.
- Paurashavas shall generate sufficient revenues from their own sources to meet, at a minimum, all of their operating expenses.
- The Government shall review in consultation with municipalities the current intergovernmental revenue transfer system and make appropriate changes to make it transparent, rational, and predictable and to some extent performance based.
- Paurashavas shall endeavor to contract out service provision in whole or in part to private providers in areas such as solid waste disposal, public sanitation, and road maintenance.

- Paurashavas shall conduct periodic public meetings to advise their constituents regarding their activities as well as to engage the public in consultations regarding investment choices, decisions and priorities. As part of this increased transparency.
- Maximizing the participation of women shall be accorded high priority.

5.1.3 National Housing Policy, 2008

The salient features of the housing strategy envisaged in the National Housing Policy are:

- The role of the government in housing will be to supply serviced land at reasonable price and to help create and promote housing financing institution
- Efforts will be made to increase affordability of the disadvantaged and the low income groups through providing credit for income generation
- Improvement and rehabilitation of the existing housing stock will be given priority by the government alongside new housing
- Encroachment on public land and unauthorized constructions will be discouraged
- Facilitate incremental house building and ensure wider application resources
- Conservation of the natural environment and preservation of cultural heritage in new housing projects

In this policy, there are some specifications are illustrated for Urban and Rural Housing. As the urban and rural context in Bangladesh is different, so the strategies and policies of these sectors are also different. Though the context is different but rural area and urban area are economically, socially and environmentally dependent on each other.

Rural Housing

Clause 5.9 of the Housing Policy describes about the rural housing. 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 up gradation of rural housing with the activities under the Bangladesh Rural Development Board (BRDB) and other programmes for the creation of rural assets and employment.

5.1.4 Population Policy, 2004

The following strategies will be adopted to slow down the growth of urban population:

- Satellite towns and growth centers should be established with adequate facilities to provide alternative destinations to rural migrants. Roads and communication systems should be linked with the growth centers; along with health, education housing and other welfare services created in those places. Headquarters of important Government and non- Government Organizations, educational institutions and industrial units may also be shifted or relocated to other cities
- Relax rules relating to going abroad of skilled workers and make provision for dual citizenship
- Impart education and skill training to the young men and women to become competent and skillful to handle many new and emerging fields in the cities and towns
- Create skilled manpower for overseas employment

5.1.5 National Land Use Policy, 2001

Main Components of the Policy

- use as much as required for agriculture purposes and land use cannot be changed with permission of the appropriate authority
- ensure use of land owned by the land lord absentee
- keep limit the process of division of agricultural land into small pieces
- identification of zones for land uses by Paurashavas and other places of *Upazilas*
- provision of assistance by the Revenue Office of District Administration in preparing zoning maps by the local government organizations
- existence of zoning law in the country; Abide this law to implement the zoning map prepared by the local government organizations
- encouragement to construct multi-storied buildings instead of single storied in the rural and urban areas so as to ensure optimum use land for residential purposes
- identification of the forest land by the Ministry of Forest and Environment
- undertake measures for protection, maintenance and expansion of the existing forest land
- encouragement for development of the social forestry
- keep open the exiting water bodies and those are not to be filled in. Entrust the responsibility of maintaining small ponds by the owners and large water bodies such as river, channels, haor, baor and beel by the community people and the Government. To this effect, these water bodies are to be re-excavated regularly
- use of embankments for controlling flood as roads as far as possible
- planned tree plantation on the embankments
- use ditches and other water bodies for fish production and rearing ducks created during cutting of earth for constructing embankments. Not to dig new land as much as possible during constructing embankments rather re-excavate the existing filled in water bodies
- ensure not to create water-logging by constructing embankments

- no acquisition of land for the purpose of road construction other than/except national highways, regional and district to *Upazila* roads, *Upazila* to *Upazila* connecting roads. Avoid human settlements and fertile agricultural land to acquire land wherever land acquisition is of utmost need. Construct inter and intra village roads in planned manner
- construct/establish industries in the designated places keeping view on the availability of support services for industrialization
- not to pollute/infect land or environment through discharging waste from the industries and follow strictly to treat industrial waste
- construct service roads along the main roads of the country so as to ensure safe movement of traffic as well as set aside 10 feet to 20 feet of land for plantation trees on the both sides of roads
- discourage construction of small and cottage industries within 10 kilometers of radius if industries are accommodated within the BSCIC industrial area
- protection of social rights of possessing land by the indigenous people living in the different parts of the country following their traditional laws

5.1.6 National Agriculture Policy, 1999

The following steps will be taken to ensure planned utilization of land for crop production:

- Land zoning programme will be taken up by the Soil Resources Development Institute (SRDI) on a priority basis. Integrated approach of SRDI will be further strengthened for this purpose
- To ensure maximum utilization of land, bottom up planning through people's participation and its implementation will be started from the mouza or village level
- In most areas the same land is suitable for more than one crop. Therefore, farmers will be encouraged to grow more profitable crops as an alternative to only rice-rice cropping pattern
- Fertile agricultural land is going out of cultivation due to its use for non-agricultural purposes such as private construction, house building, brickfield, etc. Appropriate measures will be taken to stop this trend in the light of the Land Policy of the government
- Maximum utilization of land will be ensured through promotion of inter-cropping with the main crops
- Acquisition of land in excess of requirement for non-agricultural purposes will be discouraged
- Programmes will be taken up to motivate the landowners not to keep their land unused without any acceptable reason

5.1.7 Transportation Policy

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. 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.

5.1.8 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.

5.1.9 Coastal Zone Policy, 2005

The following are the broad components of the policy:

Economic growth

- Efforts shall be made to enhance annual growth rate to a level required to achieve national goal for poverty reduction and economic growth;
- Available opportunities of the coastal zone will be used through sustainable management to enhance standard of living of coastal communities by investing in different sectors;
- A strategy shall be formulated covering all routes to development taking multidimensional nature of poverty.
- Emphasis will be given on building efficient power, transportation and telecommunication links, particularly with islands;
- Special emphasis will be given to utilize gas-based power, manufacturing and processing industries;
- Settled isolated chars and islands will be brought under 'special rural development programs';
- Necessary measures will be taken to increase the flow of investments in the coastal zone including direct foreign investment (DFI), especially by setting up more export processing zones (EPZ);
- Steps will be taken for medium and small private investments for coastal development.

Basic needs and opportunities for livelihoods

To meet basic needs of the coastal people and enhance livelihood opportunities, the Government policy will be as follows:

- Alleviation of poverty through creation of job opportunities and finding options for diversified livelihoods would be the major principles of all economic activities. Economic opportunities based on local resources will be explored to enhance income of the people;
- The intensity of coverage of primary education, health care, sanitation and safe drinking water facilities will be increased;
- Food production will be continued at the self-sufficiency level and of higher production of diversified high-value export goods;
- Private sector and the non-governmental organizations (NGO) will be encouraged to implement activities for the poor people;
- Collateral-free credit under easy terms will be arranged as part of all livelihood enhancement programs and activities;
- No alteration or stoppage of an existing employment opportunity shall be made without creating opportunities for alternative employment;
- Special measures will be taken during the period of disaster;
- *Khas* land will be distributed among the landless and a more transparent process of land settlement will be ensured;
- An effective program for land reclamation will be developed;
- Provide facilitate for the coastal navigation;
- An integrated network of communication including roads and waterways will be developed;
- The law and order situation will be improved by setting up police outposts in remote and far flung areas;
- Free flow of information for the people will be ensured.

Reduction of vulnerabilities

In order to reduce the vulnerabilities of the coastal poor from disasters like cyclone, drainage congestion, land erosion, drought, etc, the Government policy is as follows:

- Reduction to vulnerability to natural disasters would be an integral aspect of the national strategies for poverty reduction;
- Integration will be made with 'Comprehensive Disaster Management Plan' on aspects concerning the coastal zone;
- Effective measures will be taken to enhance coping capacity of the poor during the period of disaster and to initiate insurance scheme for improving their social security;
- Effective measures will be taken for protection against erosion and for rehabilitation of the victims of erosion;
- Safety measures will be enhanced by combining cyclone shelters, multi-purpose embankments, road system and disaster warning system. It should include special measures for children, women, the disabled and the old;
- Earthquake management will be strengthened and capacity to cope with earthquakes will be enhanced;
- Adequate provision will be made for safety of livestock during disaster and post-disaster period;

- Programs shall be taken to encourage all for tree plantation in a planned manner in the coastal zone. Emphasis will be given to social forestry and other forms of plantations, plant care and maintenance;
- The asset base of the poor, with special focus on women, shall be improved through ownership or access so that their coping capacity improves.

Sustainable management of natural resources

The Government policy to ensure sustainable management of both biotic and abiotic coastal resources will be as follows:

- Every possible steps shall be taken to secure just share from all international rivers reaching the coastal zone and the Bay of Bengal;
- Suitable measures will be taken for sustainable use of renewable resources and, to that end, limit harvesting, extraction or utilization to the corresponding cycles of their regeneration;
- Sustainable use of coastal resources shall be ensured. Combination of resource use, e.g. agriculture, forestry and fishing including aquaculture is often the major economic activity. Efforts will be given to make this sustainable;
- Optimum utilization of resources will be ensured by taking advantage of the complementarities and trade-offs between competing uses;
- Rigid enforcement of conservation regulations will affect the livelihoods of many people and such conservation efforts will be linked, as far as possible, with alternative opportunities of employment;
- Initiation of plan and its implementation will be ensured by participation of people of all sectors.

Land

- Planning will be done under land use policy to control unplanned and indiscriminate use of land resources. Strategies for new chars will be developed. Zoning regulations would be formulated and enforced in due course;
- Through its responsible agencies, the Government will proper plan and implement schemes for reclamation of balanced land from the sea and rivers.

Water

- Adequate upland flow shall be ensured in water channels to preserve the coastal estuary ecosystem threatened by the intrusion of soil salinity from the sea;
- Small water reservoirs shall be built to capture tidal water in order to enhance minor irrigation in coastal areas. Appropriate water management system within the polder utilizing existing infrastructures will be established for freshwater storage and other water utilization;
- Rainwater harvesting and conservation shall be promoted;
- Ponds and tanks will be excavated for conservation of water and local technology for water treatment (such as, pond sand filtering - P.S.F.) will be used for the supply of safe water;
- Step will be taken to ensure sustainable use and management of ground water.

Capture fisheries

- Comprehensive policies, as dealt in the National Fish Policy, in relation to exploitation, conservation and management of marine fisheries resources will be followed

- Fishers' right will be established on open water bodies for sustainable fisheries management

Aquaculture

- Environmentally adopted and socially responsive shrimp farming will be encouraged. In this regard, internationally accepted quality control measures will be introduced;
- All opportunities and potentials of aquaculture will be utilized in the coastal zone. Crab culture, pearl culture, sea grass will be encouraged.

Agriculture

- Programs for intensification of agriculture and crop diversification for improving the economic conditions of both male and female farmers and increasing food security at local and regional level shall be supported;
- Special development programs will be taken-up with a view to increasing the production of crops suitable for the coastal area with attention to maintenance of soil health;
- Use of chemical fertilizers and pesticides will be reduced, while organic manure and integrated pest management will be encouraged;
- Salt-tolerant crop varieties will be developed and extended along with possible measures to resist salinity;
- The scope of irrigation facilities will be explored and / or extended and a comprehensive water management for agriculture will be implemented.

Livestock

- Grazing land for livestock will be arranged. Facilities for livestock development will be enhanced;
- Facilities for rearing of poultry of different species including the local ones will be enhanced

Energy

- Assessments shall be made on the prospect of tidal and wave power in coastal areas' as potential energy source;
- An assessment of all types of energy resources (e.g., oil, gas, coal, nuclear minerals, hydropower, biomass fuels, solar, wind and tidal waves) will be undertaken on a regular/continuous basis by the appropriate authorities. Special measures will be undertaken for exploration and appraisal of petroleum resources in the offshore areas without undermining the nature;
- Potentials of area-based renewable sources of energy will be assessed;
- Remote and isolated areas including offshore islands, which are not likely to be brought under the networks of commercial fuels in a foreseeable future, are to be considered as potential sites for implementing renewable energy technologies, in spite of their high capital cost. Solar photovoltaic will be used for cyclone shelters;
- Special projects will be identified, for example power plants in the offshore islands. Plans for the generation of electricity in isolated and remote areas like offshore islands will be prepared separately.

Equitable distribution

To ensure right of the neglected and disadvantaged groups, the Government policy is as follows:

- Actions will be designed to reach the poorest and the remote rural areas (including the cyclone prone coastal regions, chars and river erosion affected areas), which are vulnerable to adverse ecological processes and those with high concentrations of socially disadvantaged;
- In order to ensure equitable distribution of national economic benefits, priority will be given to exposed *Upazilas* and coastal islands;
- In order to ensure equity, the thrust should be on human development of the poor for raising their capability through education, health, nutrition, employment-oriented skill training and social interventions;
- Measures will be adopted that increase access to natural resources for the poor and the disadvantaged (on which they are dependent for their livelihood)

Empowerment of communities

Mainstreaming of the coastal people will be done by enhancing their safety and capacity. In this context, Government policy will be as follows:

- Equal participation of all stakeholders shall be ensured and establishing effective co-operation between the government agencies, local government institutions and non-governmental organizations;
- Co-management procedures shall be established that will bring decision-making power to the grass root levels;
- Specific vulnerabilities of the coastal communities shall be addressed: like farmers in the saline zone, marine fishers, salt producers, dry fish processors, people living on forestry resources, ship breaking workers, vulnerable ethnic communities and so forth;
- Vesting on local government institutions, at the union, *upazila* and district levels, the power and responsibilities for design, formulation and implementation of local level development programs and projects;
- An awareness campaign shall be mounted about the long-term benefits of ICZM, recent initiatives in the coastal zone, and coastal development strategy among the NGOs, private sector, civil society and coastal communities;
- Initiatives will be taken to keep up the cultural heritage of different communities living in the coastal zone.

Women's development and gender equity

In this respect, the Government policy will be as follows:

- A gender sensitive and participatory approach will be adopted that focuses at the reduction of gender inequalities and that takes into account differences in needs and interests between men and women;
- Efforts will be made to close the gender gap, giving priority to women's education, training and employment and special support for broadening their coping capacity;
- Special attention will be paid towards employment generation for women, the promotion of women entrepreneurs as well as the removal of restrictions on women's employment and economic opportunities;
- During distribution of newly accreted khas lands, special attention will be paid to the allocation of land titles to women;

- Special projects will be implemented exclusively addressed to livelihoods enhancement and empowerment of disadvantaged women;
- Necessary institutional measures including mass awareness and motivation on violence against women will be taken.

Conservation and enhancement of critical ecosystems

The Government policy will be as follows:

Conserving the ecosystems

- Meaningful conservation shall be enforced of critical ecosystems including ECAs, heritage sites and marine reserves;
- Special measures will be taken for conservation and development of the natural environment of the Sundarbans
- The programs for institutional strengthening and capacity building shall be supported along with further development of the regulatory framework for the protection of the environment;
- The role of the Coast Guard will be acknowledged with emphasis and its capacity will be enhanced so that it can be used on behalf of all relevant institutions as a common resource for enforcement of different regulations applicable to the coastal zone;
- For activities that have direct adverse consequences on bio-diversity, steps will be taken to stop those activities and specific mitigation measures will be taken to minimize those effects;
- To protect the environment, all commitments shall be honored as signatory to different international protocols and guidelines in planning and implementation;
- Efforts shall be made to harmonize in the provisions of different existing laws and enact new laws, where required, to protect and preserve the coastal environment and its resources;
- Special measures will be taken for bio-diversity conservation;
- Measures will be taken for hill management including prohibition of hill cutting.

Pollution Control

- Zoning regulations will be established for location of new industries in consideration of fresh and safe water availability and effluent discharge possibilities;
- All industrial units will be required to install built-in safeguards against pollution within a given timeframe and will help them in obtaining financial support from international bodies to carry out the adjustments. Units failing to comply with the pollution standards will be required to pay "green tax" for cleanup of the environment polluted by them;
- Sewage treatment plants will be set up for the major cities like Chittagong, Khulna and Barisal and gradually in other urban centers;
- Steps will be taken to handle the issue of discharge of bilge water from ships and oil-spill according to international conventions to which Bangladesh is a signatory;
- A review of the desirability of supporting ship breaking as an industry will be done and, in the event of its continuation, environmental standards will be prescribed under which it has to conduct its activities.

Climate Change

- Existing institutional arrangements for monitoring of climate change in Bangladesh will continue. Steps will be taken to support upgrading of technology and institutional strengthening for enhancing their capacity for generation of better data and more accurate long-term prediction and risk related to climate change

- Implementation of adaptive measures identified in relation to climate change for coastal zone and resources shall be gradually undertaken
- Efforts shall be made to continuously maintain sea-dykes along the coastline as first line of defense against predicted sea-level rise
- An institutional framework for monitoring/detecting sea level rise shall be made and a contingency plans for coping with its impact

5.1.10 Industrial Policy, 2005

Bangladesh is a developing country, and the present government is striving relentlessly to attain rapid economic development in the country. Despite a lack of resources faced by the Government, development programs in the key sectors have continued. Therefore, the Government in the Ministry of Industries has taken the role of a facilitator. In order to establish

Economically prospective industries in industrial sub-sectors, there are plans to set up industrial parks and special economic zones so that huge amount of unused and abandoned land can be utilized. All this is aimed at fostering industrialization and economic development and generating employment opportunities in the country. To reduce poverty and generate employment opportunities, more efforts are needed to establish agro-based industries as well as to raise agricultural production. This will ensure the protection and fair price of agricultural products and employment of a huge number of unemployed people. In order to create further employment opportunities beyond the agricultural sector, initiatives should be taken to set up small, medium and large industries across the country. In order to attain this growth in this sector, special importance has been given in the Industrial Policy on agro-based and agro - processing industries and on steps to overcome possible adverse conditions in the export-oriented garment sector. Importance has also been given on considering the SMEs and cottage industries as one of the major driving forces, providing assistance to women entrepreneurs on a priority basis, setting up special economic zones in different parts of the country, improving the quality of industrial products to world standard, marketing of goods at competitive prices, and enhancing productivity in the industrial sector.

5.1.11 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.

5.1.12 National Urban Policy

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.

5.1.13 Rural Development Policy

The projects and programs as mentioned in the Rural Development Policy of Bangladesh are:

(i) Food for Works Program, (ii) G.R Program (Gratuitous Relief Program), (iii) T.R Program (Test Relief Program), (iv) V.G.D Program (Vulnerable Group Development Program), (v) V.G.F Program (Vulnerable Group Feeding Program), (vi) Single-House Single-Farm Program, (vii) Back to home Program, (viii) Food for Education Program, (ix) Rural Occupational Project, (x) Poverty Reduction Project, (xi) Self-employment Program for Women, (xii) Women Empowerment Program, (xiii) Coordinated Women Development Program, (xiv) Peace Home Program, (xv) Shelter Support Program, (xvi) Educational Allowance Program, (xvii) Aged-allowance Program, (xviii) Micro-credit Program and (xix) Allowances for Widowed, Poor and Husband-renouncement Women Program, etc.

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.

5.1.14 Disaster Management and Climate Change Policy

The issues prescribed under Climate Change Policy are:

- Mitigation, adaptation and technology transfer is a must measure to fight climate change enhanced vulnerabilities of poor.
- The complementarity of current policy regime in relation to adapting to climate change should be analyzed in order to define which aspects of adaptation are already in place. This would not only advance national (also regional and local) development processes, but also would reduce vulnerability of people to climate change.
- A micro-level climate change risk reduction plan should be developed by the communities. The process should initiate local level action ensuring the participation of grassroots people, NGOs, civil societies, academic and research institutes etc.
- A community centered approach should be taken to develop policies which should address development as well. The policy action plan should also promote appropriate technologies such as resilient crop varieties, irrigation schemes, and renewable energy sources, so that they are available and affordable for low-income communities of Bangladesh.
- It's been believed by the economists that climate change is the greatest market failure of the history of mankind. Climate is natural, therefore a common property. For this reason, climate change related economic does not follow the prevailing market mechanism. Therefore, it should be understood that, the rich countries which are polluting should start paying for adaptation for the LDC and also start paying for mitigation within their countries. Bangladesh should make its position clear in favor of this logic in all negotiations and raise its voice.

5.2 Laws and Regulations

5.2.1 Urban Development Control

The president of Pakistan in the year of 1960 was enacted the Municipal Administration Ordinance, 1960. In the year 1977 through the Paurashava Ordinance, 1977 some of the Municipalities were upgraded as Paurashava and in the year 2009 Paurashava Ordinance is renamed as local government Ordinance 2009. The Paurashava may provide the function as prescribed in the Ordinance but no provision is being outlined to control and manage those functions. The Paurashava may enforce those regulations according to their capacity. The Ordinance proves that the Paurashava is independent and self regularity body, but due to

absence of necessary man power technical support staff and the government initiative in financial matter, the Paurashava is dependent and control by central government.

5.2.2 Building Construction Rules, 1996

Land use planning Rules

These are statutory rules to control land use according to planning standard. It is based on land use policies including Local Plans, such as residential density, road standard, provision of infrastructure and services. The relevant Acts (Paurashava Act, 2009), Building Construction Act, 1952 and BNBC, 1993) and Master Plans of the cities are the main legal instruments, which is in force with regard to exercise planning control and standards.

Control of public estates

Different government agencies have developed some housing, commercial and industrial estates in different urban areas and they have leased them out. Terms and conditions of lease deed reflected control provisions included in them.

Non-compliance of development control by some government and semi-government agencies

A portion of urban lands of the urban area are owned by different government and Autonomous agencies including universities, colleges. According to Building Construction Act, 1952 (amended in 1996, followed by Paurashava) each public building needs approval from the concerned development agencies. It is observed that most of the agencies are still ignoring the regulations and they construct their buildings within their premises.

Control of private housing estates

Large numbers of pockets of urban infill and privately owned low lying peripheral lands have been developed by private companies. In some cases small scale real estate development permission is obtained occasionally but deviations from the approved plan are most common practice of the developers.

Control of informal Development

A number of unregulated or informal settlements are taking place in urban area as urbanization proceeds. Paurashava can hardly control these haphazard development activities. The Slum Up-gradation Projects, Slum Improvement Projects (SIPs), provision of basic needs etc. are taken up at time when the problems had already overtaken the situation.

Density Control

Density Control is considered as an important development control tool. It includes the number of units, people allowed per parcel of plot size, unit limitation, height of the building etc. In the Government and Semi Government institutions, building permission is hardly obtained and therefore, density control rules and regulations are not in practice. At present, Paurashava follows Building Construction Rule, 1952 (amended in 1996) which restricts the height of Building in respect of adjacent road. Therefore, density control is possible to exercise in practical.

Taxation

Urban taxation is another effective development control tool. Different types of taxation policies may to change urban land use and urban character. As an example, the industrial estates are encouraged to set up outside the city areas for tax holiday and other ancillary facilities. On the other hand, exemption of tax on urban vacant land encourages growing unauthorized settlements like slums and squatters.

Payment of Betterment fee

For every town planning scheme for an existing town, some owners of the property will be affected and as such they will have to be paid some amount as compensation. In the same time, some owners will be benefited by the proposed scheme. The share of increase in the value of the properties of such owners to be paid to the Paurashava is known as Betterment fees.

5.3 Strength and Weaknesses of the Existing Policies

Paurashava Act 2009

Although the Paurashava has been given the rights to prepare Master Plan and implement them, prepare development plans and projects for systematic development of Poura- city, building control, roads and streets plans etc. Besides, the replacement of Ordinance amended in 2008 by Paurashava Act 2009 ensures the citizen participation in a new way. But there are some drawbacks or weaknesses in this which are as follows:

- The engineering department has been given the responsibility to implement the Master Plan, but this department is not equipped enough to implement it properly
- To implement the Master Plan/ Land Use Plan, the staff requires professional training, but no one has received any training regarding implementation activities
- Central Government does not exert any pressure to implement the Land use Plan
- Paurashavas do not enjoy real autonomy to solve local problems
- More critical problem is the weak or even non-existent co-ordination amongst development partners

Urban Management Policy

The Policy statement recognized the decentralization could enhance efficiency of public expenditures by allowing local governments to be more responsive to local needs and preferences. The policy also envisions strengthening the beneficial aspects of urbanization and at the same time effectively dealing with its negative consequences so as to achieve sustainable urbanization, keeping in view the multi-dimensional nature of the urbanization process. On the other hand, the policy principles gave emphasis more on physical aspect of development rather than on social, environmental. Besides, issues on poverty reduction are missing in the policy outlines.

Land Use Policy, 2001

The National Land Use Policy, 2001 of the Ministry of Land highlights the Need, the importance and modalities of land zoning for integrated planning and management of land resources of the country. It also mentioned the need of formulating a Zoning Law and Village Improvement Act for materializing the identified land zoning area. The National Land Use Policy specially highlights the need for land zoning for the coastal area of Bangladesh. It describes about the need for definite guidelines and raises the possibility of doing coastal land zoning through an inter-ministerial task force. The policy observes that maximum utilization of lands and water resources depends on the effective land use plan. But there is no policy prescription for any specific area as context requires and also the proper methodology, technology to be used, institutional capacity are not designated.

Besides, the policy is strong on conservation of khas lands but not clear on distribution of khas land distribution program.

Industrial Policy, 2005

One of the foremost objectives of the Industrial Policy 2005 is to set up planned industries considering the real domestic demand, prospect of exporting goods abroad, and discouraging

unplanned industries in the light of past experience. The policy also encourages the agro-based industries and involvement of Women Entrepreneurs in Industrial sector, equal profit distribution among workers, owners and government. But the interests of small farmers, small business owners, artisans, and workers, are generally not well represented. This limits the benefits of trade expansion for small businesses, small farmers, artisans, and workers consequently create impacts on the key export industries. These groups are involved in import and export activities of the country indirectly. In addition, no specific mention has been made on protection of coastal environment from industrial pollution.

Coastal Zone Policy, 2005

The strong point of Coastal zone policy is that it provides integration among all sectoral policies such as land use, industrial, fisheries etc. It defines specific objectives for coastal development and the jurisdiction and extent of the coastal zone. The main stakeholders in coastal development are identified, along with their role in the development process.

Agriculture Policy, 1999

The key point of the National Agriculture Policy in relation to ICZM is its simultaneous recognition of the importance of shrimp farming as foreign exchange earning activity and its environmental consequences. However, the policy does not mention conflicts between farmer and shrimp-gher owners and thus fails to indicate any mitigation measures. Land use zoning may offer instruments to reduce conflicts. Bio-saline agriculture, practiced elsewhere, could be tried in the coastal zone.

Population Policy, 2004

It defines the strategy of population declination but no detailing has been given on the instruments that are required to reduce the population growth. Also, the responsible stakeholders that are directly and indirectly linked to this sector are not identified. A general policy prescription is given without specific group identification.

National Housing Policy, 2008

The policy provides prescription for urban and rural area individually considering the context. Though one of the major objectives of the Housing Policy was to ensure housing for all with particular emphasis on the disadvantaged, destitute, the shelter less poor and the low and middle-income groups of people, yet very little efforts have been taken on the part of the government in providing housing loans to the low-income strata of the population. Nationalized commercial banks introduced housing loans also limited for the high income group. There is virtually no credit financial mechanism for housing of low-income people in urban areas. Besides, there is no specification for private developers. No direction is given for future housing demand and supply.

Chapter- 6

PROJECTION OF FUTURE GROWTH BY 2031

6.1 Introduction

Population growth rates in developing countries are much more than of the developed countries of the world. Moreover, migration to urban areas in the developing countries has been increasing over the years. Due to increased urbanization trend in the coming years, the cities in the developing country will face housing and settlement problems, infrastructural deficiencies for increased number of populations, slum and squatter settlements, environmental degradation, etc. In practical, it is difficult to attain the actual number of population but more accuracy in population projection will encourage the future investment as projection shows the population demand. It is assumed that Amtali Paurashava, as a Paurashava will face such influx of job seekers in the coming days. As such, besides natural population growth immigrants will increase the population significantly in the coming decades.

6.2 Projection of Population

According to BBS (2011), there are total 4034 households at Amtali Planning area and average size of households is 4.3. Total number of population is 17311 whereas number of male is about 8701 and number of female is 8610. In order to get an idea about the population growth rate of Amtali Planning area, the urban population of Amtali *upazila* of 1991(244438 population) has been compared to population data of 2011 (270802 population).

Basic Assumptions

- The characteristics of the more recent periods of development for the local are expected to continue into the future
- The existing density of population, major activities of Paurashava i.e., Trade, Commerce and Service and higher sex ratio reveals the flourishing economic development of the Paurashava in recent years
- Total *Upazila* population is used for the determination of growth rate, as the Paurashava did not exist in 1991. It was established in 1998.

Methods 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
- Future population is estimated for the future year 2016, 2021, 2026 and 2031 considering 20 year planning period
- Finally, Exponential Population Projection is used to conduct the Population Projection

According to Population Census, 2011, the Paurashava population is 17311 within an area of 8.94 sq km. In 2001 population census, it was 13305 and projected population of Amtali Paurashava will be 28559 in the year 2031. Table 6.1 depicts ward wise projected population (2016-2031) of Amtali Paurashava based on medium growth rate.

Table 6.1: Projected Population During the Year 2016-2031

Ward	Population 2011 (Base year)	Population 2016	Population 2021	Population 2026	Population 2031
Ward 1	1011	1123	1282	1462	1668
Ward 2	1800	2000	2282	2603	2970
Ward 3	2718	3020	3445	3931	4484
Ward 4	2662	2958	3374	3850	4392
Ward 5	2441	2712	3094	3530	4027
Ward 6	1901	2112	2410	2749	3136
Ward 7	2018	2242	2558	2918	3329
Ward 8	1648	1831	2089	2383	2719
Ward 9	1112	1236	1410	1608	1835
Total	17311	19235	21944	25034	28559

Source: Consultants Estimation

6.3 Identifications of Future Economic Opportunities

The city of Amtali must thrive on its own potential natural resources. Fish resource and agricultural products are very much potential for the area. Food industries can be initialized based on fish resources. There are a number of areas where such prospects can be managed. First, catching fish has to be increased. Second, freezing facilities has to be enhanced. Third fish drugging facilities to be expanded and finally, small and low investment plants for processing fish resources can be initialized. Bangladesh Fisheries Development Corporation (BFDC) has taken effective projects aiming to develop the country's fisheries sector and boost export. Fish landing centers, fish preserving and fish marketing centers for traders would be set up. Warehouse facilities and ice supply for traders would also be extended under this project and ice factories would also be built.

About 43.88% of the total lands of Amtali Paurashava are devoted for agricultural purposes. So emphasize have to be given on the scientific procedure of agricultural production and these productions may be used as input of agro-based industries.

Economically active labor forces are not being properly used in production sector. This labor force can be utilized in those fishing or agro-based sector.

6.4 Projection of Land Uses

Future landuse of Amtali Paurashava has been calculated on the basis of projected population. After population projection, it has been observed that in the year of 2031, resident population will be around 28559. In some cases, landuse projection may vary considering landuse characteristics of the area.

At present, the landuse of Amtali Paurashava is not appropriate and has not developed following standard. Therefore, this master plan has addressed the issue and efforts have been done to formulize required standards for various facilities that should be followed in preparing the master plan. As per planning standard, future demand of land in various sectors is discussed in table 11.16 at chapter 11, Land use Plan, at Urban Area Plan.

Chapter- 7

LANDUSE DEVELOPMENT STRATEGIES

7.1 Strategies for Optimum Use of Urban Land Resources

Amtali Paurashava is peri-urban area with urban infrastructures and valuable agricultural lands, water resources. Therefore, in identifying the strategies or possible techniques for optimum use of Urban Land Resources, it is required to understand the urban land characteristics. According to town Improvement Act 1953 it is required to identify the strategies for optimum use of urban land resources as there exist competition amongst agriculture, urbanization and industrial development.

7.1.1 Land Use Zoning

Land use Zoning is a planning tool as it permits the government to select which type of land use should be allowed. The term differs from the 'general plan' that Zoning plan regulates the private developments and general plan controls both public and private developers. Zoning plan is integral part of general plan.

Total area of Amtali Paurashava is segregated under some broad classes that will basically guide future growth with wide aspects. Definitions of the broad classes are given bellow for conceptualizing focus of the future magnitude as well as illustration of the policies and strategies.

- A. Agriculture
- B. Core Area
- C. Peripheral Area
- D. New Urban Area
- E. Major Circulation Network
- F. Water Body

Table 7.1: Broad Landuse Zones

Zoning	Description of Zones	Area (acre)	%
Agriculture	Agricultural land (also <i>agricultural area</i>) 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, other technical crops, potatoes, 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.	593.43	22.22
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 (2011-2021) period.	287.38	10.76
Peripheral Area	This is the zone where a slow trend of urbanization is continuing in unplanned manner. The area identified in the Structure Plan as the likely choice for new urban development beyond the core area. 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	320.86	12.01
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 proposed to grow within 2031.	536.67	20.09

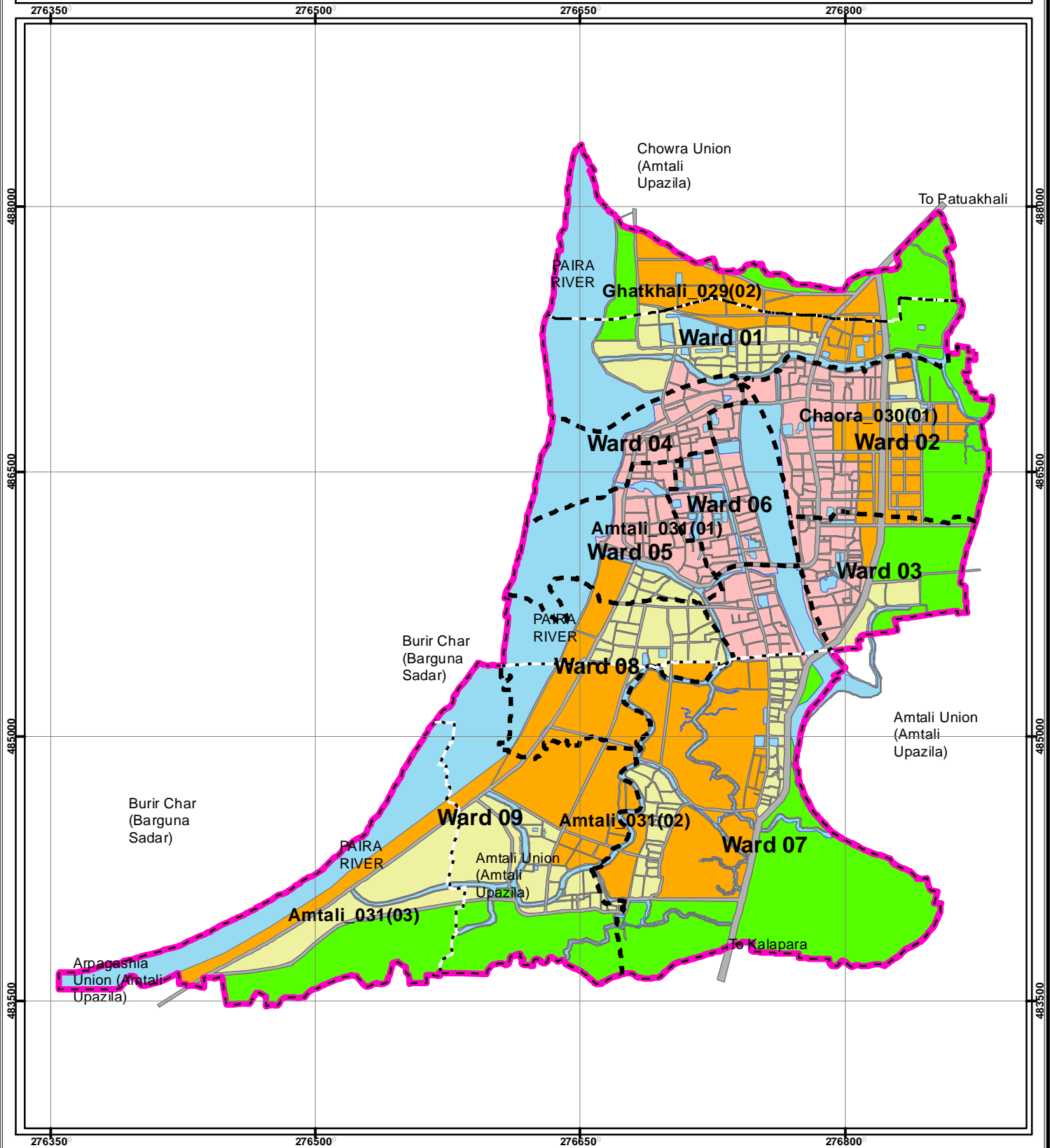
Amtali Paurashava Master Plan: 2011-2031
Structure Plan

Zoning	Description of Zones	Area (acre)	%
Major Circulation Network	Major circulation contains major road network and railways linkage with regional and national settings.	304.99	11.42
Water body	Water body containing an area equals to or more than 0.25 acres excluding those of khal, irrigation canal and river will be treated as this category.	627.85	23.50
Total		2671.17	100

Source: Consultants Estimation

Map 7.1 shows the structure plan of Amtali Paurashava.

Map 7.1: Structure Plan of Amtali Paurashava



Legend

Admin Boundary

- - - - Mouza Boundary
- Paurashava Boundary
- - - - Sheet Boundary
- - - - Ward Boundary

Structure PlanType

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

0 215 430 860 Meters



Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government,
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7.1.2 Land Acquisition and Requisition

Land acquisition is a process in which a public agency or non-profit land conservation organization purchase all the ownership rights vested to the land from a willing seller. In every case, land acquisition must mean the transfer of ownership. For implementation of any urban development program, availability of land and its control are necessary not only for future growth but also for a large number of public uses. In Bangladesh, Land Acquisition Act, 1894 is one of the most important legal tools. But as the law failed to meet the emergency needs for requisition of lands, the Acquisition and (emergency) Requisition of Immovable Property Ordinance, 1982 has been come in forth.

7.1.3 Policy Formulation

Apart from this the recommendations for Road networks can be adopted from the recommendation from national relevant policies. This will direct the future land use pattern.

7.1.3A Planned Development of undeveloped areas

Land Readjustment

It is a community building project of resident or for residents where: Land for public facilities is contributed fairly from land owners and lease holders. Where part of development benefits are provided by land owners to an implementing body to finance project cost, not in cash but in the form of reverse land.

Guided Land Development

It is a land management technique for accelerating the provision of serviced land through partnership between public sector and local communities. Its main objectives were to ensure;

1. fair return on investment to the private owner/developer;
2. a relatively large proportion of serviced sites for allotment to low income families; and at the same time,
3. recover at least part of offsite infrastructure cost for the public agency.

Site and Service

This sort of design provides the low-income people or target group with a plot and basic infrastructure. The beneficiaries either buy or lease the allocated land. Often they are provided with loan for the construction of houses.

7.1.3B Redevelopment of developed areas

Land Sharing

The principle behind this has been that the land is shared equitably between the land owner and the tenants (quasi). The land owner develops the land in such a manner that the original inhabitants in that area are given shelter in the very same area, lands for public facilities is made available to the planning agency and the remaining area is developed and sold freely in the market.

Slum Improvement

It provides land or housing to the urban poor near their work place. The scheme is also applicable to land reserved for public purposes on the condition that land on reduced scale is made available for the reserved purpose.

7.1.4 Different Fiscal Measures

Property Tax

Property tax has been the principal tax related to land and buildings. This tax according to provisions of Paurashava Act, 2009 is levied on the annual ratable value which is to be determined on the basis of area of lands or buildings.

Betterment Levy

The policy measures which can achieve optimum use of urban land use in practice still remain to be sharpened and coordinated. The measures can be classified as a) direct government investment b) legal and regulatory; and c) fiscal. Examples of these are:

- 1) Direct government investment in land development for provision of infrastructure, housing or overall town development through large scale compulsory land acquisition or other land development scheme
- 2) Statutory provisions for compulsory acquisition of land at less than market price, regulations regarding land use zoning, development control and building codes for health and safety
- 3) Fiscal measures in the form of appropriate taxation that can help achieve the land policy

7.2 Plans for New Area Development

In Amtali Paurashava, no new area has been identified for development.

7.3 Areas for Conservation and Protection

In Amtali Paurashava, there are no heritage sites within the Paurashava area. One of the major land uses of the Paurashava area is the agriculture which covers about 43.88% of total area. The agricultural land is direct and indirect source of income and has a great contribution to trade and commerce of Paurashava. It has been observed that among all wards, ward no. 7, ward no 8 and ward no. 4 have about 31.73%, 15.26% and 15.24% coverage of total agricultural land area and ward no. 4, 7 and 8 have about 21.1%, 19.0% and 18.3% coverage of total water bodies area. So these show that about 80.09%, 89.15%, and 89.49% lands are covered under agriculture and water bodies in ward no 4, Ward no 7 and ward no 8.

Other feature which requires protection is the water bodies of the Paurashava. Though encroachment rate of the Khals/drains by the unauthorized construction and cultivation on the bed of khals including aqua-culture is very low, but due to lack of regulations, encroachment may occur in near future. Besides with the appropriate use and management of these natural lines, it might be possible to manage the drainage situation of the area. In addition, Water Reservoir Act, 2000 should be followed in preservation of these water bodies as per requirement. Most of water bodies are using at present for fishing purpose. So, the preservation of these water bodies not only required for drainage but also it will be potential for economic activities.

Chapter- 8

STRATEGIES AND POLICIES FOR SECTORAL DEVELOPMENT OF THE PAURASHAVA

8.1 Socio- Economic Sectors

From the population projection it has been observed that about 11248 additional population has to be accommodated in the existing planning area during the plan period. Density of population is 12.93 persons per acre.

8.1.1 Population

Policy-01: Density Control

Justification: Amtali Paurashava is remote southern area. Its density is medium with respect to other Paurashava of southern region context about is 1936 person /sq.km. It is required to control the density of Paurashava through effective measures of planning.

Promotion: To make a successful implication of this policy, following strategies should be undertaken:

- Effective Land Use Plan for 2031 following standards and potentiality of land use under Urban Area Plan

Implementation Agency: Paurashava.

Policy-02: Densification of Residential areas through people's participation

Justification: Densification of population within the Paurashava area through zoning. Land price is comparatively high in central part of the Paurashava. Housing category need to be decentralized through effective measures of planning.

To make a successful implication of this policy, following strategies should be taken:

- Core area should be preserve for high income group through high land price. Core area comparatively highly dense area and vertical expansion is proposed for this area.
- Periphery portion where land price comparatively low can be declared for low income group.

Implementation Agency: Paurashava, Ministry of Planning

Policy03: Creation of trained grassroots level family planning workers for motivational works

Justification: Grassroots workers can give door-to-door motivational services to the local people.

Implementation Agency: Ministry of health and family planning, Ministry of Mass Education

8.1.2 Economic Development and Employment Generation

Amtali Upazila is dependent on Agriculture and Small Business through direct or indirect involvement. Cyclone, water logging and subsequently salinity problem is common in Amtali. Emphasis is required for accelerating the economic development trend by restoring the economic base of the Paurashava.

Policy 01: Promote Agro based Industries in the Growth Centers or Rural Areas

Justification: Growth centers are to become economic hub of their rural settlements. Provision of agro based industries will provide ready market of agricultural products of the rural community.

Implementation Agency: Ministry of Agriculture and Ministry of industry.

Policy 02: Light Industries need to be developed to flourish the industrial sector development

Justification: To accelerate the economic development of Amtali Paurashava in long run, it is required encourage the industrial establishment within Paurashava area.

To control the haphazard industrial development some measures will be undertaken:

- Follow the category of industries as categorized by DOE (Green Category) and Bangladesh National Building Code (low and medium category hazards)
- Follow Bangladesh National Building Code, 1993 and Building Construction Regulation, 1952 (amendment in 1996) for providing Road, setback before construction of any industrial structures
- Following the Coastal Zone Management Policy, 2005 all industrial units will be required to install built-in safeguards against pollution within a given time-frame. Units failing to comply with the pollution standards will be required to pay “green tax” for cleanup of the environment polluted by them

Implementation Agency: DOE, BSCIC

Policy 03: Promotion of Rural Growth centers as trading hub of the rural community

Justification: If national Business can be encouraged to locate in promoting Paurashava, they will provide not only earning capacity for their locally recruited employees but the opportunity for services to be provide to support the business. The Paurashava will assist central government in promoting Paurashava as potential location for inward investment.

Implementation Agency: Paurashava, DOE, BSCIC.

Policy 04: Support SME for creation of jobs and economic upliftment

Justification: Short and medium size enterprises are essential for the promotion of economic activities. The SME sector will support the large investment in many ways which help the process of their development.

Implementation Agency: Ministry of Industry, Ministry of commerce, Private Sector initiative.

Policy 05: Employment Generation through development of potential sectors

Justification: To sustain economic activity of Paurashava people for longer period. The economic activity of existing Amtali Paurashava is oriented with mainly Agriculture, Fishing and Water-way Transport Sector in some extent. Proper planning and co-ordination among these sectors and future potential sectors it would be possible to engage active labor force.

Following measures will be encouraged to implement this policy implication:

- Industrial Zone declaration in Land Use Zone (mainly light industries)

- Infrastructure development to flourish fishing industry (Market, Ice Factory, Storage facility, electricity supply etc.)
- Involvement of active labor force and community participation in different management activities of Paurashava such as solid waste management in transferring the wastes from Solid-waste transfer sites, road maintenance, public sanitation

Implementation Agency: Paurashava, DOA, Settlement Office (Land Office).

Policy 06: Declared new industrial zone

Reason: For economic improvement it is expected to increase industrial activities. At present only 3.08 acres land is devoted for industrial purpose which is very low. At least 10 acres of land is required for per Paurashava. But in case of Amtali, around 52.15 acres of land is given for industry.

Implementation Agency: Paurashava, BSCIC / Private Sector

8.1.3 Housing and Slum Improvement

Paurashava, NHA and other public agencies can pursue the following policies to develop the housing needs and planned development for housing units. But there is no local office of the NHA to execute housing program at *upazila* level. Paurashava can facilitate housing areas with site and services in designated housing zones.

Policy-01: Making provision of affordable housing for the low income people

Justification: Paurashava has to think about the housing facilities for the low income people. Private sector will be operated for profit earning, the low income people will not access to these scheme. Thus to reduce unplanned development, the development authority may take initiative for low income people. Also by providing services the general people can be encouraged to build their own houses.

Implementation Agency: Paurashava. NHA

Policy02: Planning interventions in the spontaneously developed areas.

Justification: Most of the housing areas in Bangladesh were developed within any planning intervention. Planning intervention must be undertaken for the improvement of residential and other areas. Authority must make some necessary intervention in these areas to provide basic services.

Following controlling measures will be considered in providing housing areas in Amtali Paurashava:

- Follow Private Residential Land Development Regulation, 2004 in Housing Development as mentioned in Land Use Plan under Urban Area Plan Section
- Conservation of the natural environment and preservation of cultural heritage in new housing projects
- Housing Schemes will be proposed following different land development instruments such as:
 - Redevelopment schemes
 - Site and Service schemes
 - Guided Land Development schemes
 - Land Sharing schemes

Implementation Agency: Paurashava, NHA.

Policy03: Continuous monitoring of land and housing market

Justification: The authority should monitor the principle aspects of land and housing market through data base. The Paurashava and land registry office can maintain data base and can undertake studies from time to time using GIS data base.

Implementation Agency: The Paurashava and land Registry office

8.1.4 Social Amenities and Community Facilities

All social and community facilities like health, education, religious, community centre and other facilities are included in this category. In terms of number and size of facilities the allocation land with approximate location can be determined by analyzing the pattern of existing facilities and the calculation of the requirements in future. In addition some policies recommendations were made on health, education and other facilities.

Policy-01: Social Amenities and community facility will be provided as per requirement of existing and forecasted population.

Justification: To enhance access to land with secure tenure and to promote a social lively environment for an increasing population. Both Public and private sector investments are encouraged

Provision of standards, rules and regulations are followed in allocating Educational Religious, Community Centre and Other components in Land Use Plan of Urban Area Plan.

Implementation Agency: Paurashava, NGO, CBO

8.1.5 Recreational Facilities

Policy-01: Ensuring Community level Recreational facilities

Justification: To provide a livable environment for the Paurashava people, community level recreational facilities should be preserved. In long run, preservation of recreational lands for future generations should be ensured. At present, only 1.93 acre is devoted for Recreational facilities. Parks should be created at central and at neighborhood level through Master Plan and Ward Action plan.

Both public and private sectors investment is encouraged.

Standard wise recreational facilities such as Play ground, Neighborhood parks, Stadium, Cinema hall will be provided as described in Land Use Plan of Part-B.

Implementation Agency: Paurashava, Public / Private sector

8.1.6 Safety and Security

Considering the present law and order situation and its impact on the urban life it is necessary to face the challenge of restoring law and order. The major responsibility o these tasks rest with police department. Law and order in the Paurashava and its surrounding has to be ensured.

Policy01: Improvement of law and order services for all citizens

Justification: Improvement of law and order is a national issue. Anyway local level community policing can be organized for ensuring security at local level.

Implementation Agency: Paurashava, Home Ministry.

8.2 Physical Infrastructure Sectors

8.2.1 Traffic and Transportation

Traffic is the function of landuse. It is also mention here that traffic network and the traffic generated induces the growth of landuse. Road networks will play strategic role in opening up undeveloped areas of the future term and shape up its structure. There is an interrelation between road network and utility services which together play key role to guide physical development in the town and Paurashava.

Policy-01: Develop efficient inter town or inter Paurashava communication facilities

Justification: To avoid traffic congestion within the Paurashava the structure plan recommends new roads/bypasses to link with the Kuakata tourism centre. Participatory approach will be developed to realize at least a part of the cost of the development from the beneficiaries. This will also help to reduce delay and cost involved in land accusation procedure.

Implementaion Agencies: Paurashava, RHD

Policy02: For better accessibility transport terminals should be located at major roads of the Paurashava.

Justification: To develop and facilitate easy means of transport consultant suggest the promotion of public transport.

Implementation Agencies: Paurashava, RHD

Policy03: Integration of existing road and water transportation network.

Justification: To develop an efficient Regional Transportation Network and flourish

Roadway Network: At present, Amtali Paurashava is connected with Barguna, Patuakhali, Kuakata, and Pirojpur with diverse regional roads. Thus, these networks develop the regional and national road network of Amtali Paurashava. Due to lack of infrastructure facilities, travelers often suffer from long and tedious journey by Road.

Water way Network: Water transport network of Amtali Paurashava has significant importance in carrying both people and goods. At present, nine launch and fifty trawlers serve Amtali Paurashava per day from the existing launch terminal that is operated by private operator in various routes.

Some measures will be taken to promote the Regional Transportation Network in Amtali:

- Multi modal integration of Water and Road Transport provides better service to Amtali region in respect of Time, Distance and Fare. Therefore, more launch and bus service will be required considering the Travel demand in 2031

- Transportation Service will be upgraded such as Launch, Bus, Truck Terminal Capacity considering Travel demand in 2031
- Regular Dredging and Navigation of existing water-way route is required to provide launch service in future

In promoting Regional Transportation Network System, some controlling measures will be followed:

- Existing Amtali Highway Road should be widened considering the RHD Standard manual as per category of Roads and determined Level of Service (LOS) in up to 2031

Implementation Agency: RHD, LGED, BIWTA.

Policy-04: Functional and Hierarchical Road Network Development

Justification: Road Network has been developed without following any planned pattern.

Controls: Following the existing condition, of Amtali Paurashava, some strategies will be persuaded before incepting the Transportation Development Plan

- Make a priority for in Space Allocation of ROW for better space utilization and promoting non-motorized traffic avoiding interruption, ensuring speed with motorized traffic
- 10-20 ft. plantation beside the Highway Road will be proposed for ensuring safety of people of beside Highway Road
- The Road Hierarchy of Amtali Paurashava will be modified and proposed on the basis of Road width Standards as described Chapter 3.3, Transportation and Traffic Management Plan, Section-III.
- Follow up the basic rules mentioned in Building Construction Act, 1996 at Major Intersections of the Paurashava. Some basic rules are:
 - ✓ In each Corner plot of major intersection 1m×1m land area has to be open for traffic movement
 - ✓ At the cross section of two or three roads within 50 meter distance, construction of commercial complex, Cinema Hall etc. are prohibited. But, 500 square meter area in total is permitted for commercial purpose (Shopping Complex), road width is 23 meter or greater
- Promote efficient traffic management system within Paurashava by pursuing Regulatory measures (parking control and speed control in Highway Road, access control of trucks in Paurashava area,) and Design measures (Details of lay-out of Proposed Primary Road and Secondary Road in Paurashava area, use of lighting equipment etc.) in Paurashava Road Transportation System

Implementation Agency: RHD, LGED, Paurashava.

8.2.2 Utility Services

Policy-01: Facilitating access for all citizens to basic level of services in water supply and sanitation

Justification: To reduce the incidence of water borne diseases and increasing the present coverage of safe drinking water by lowering the average number of users per tube well.

- Facilitate safe drinking water supply and safe sanitation to each household as per demand in 2031 through various means, including:
 - Piped Water Supply System
 - Water treatment plant, Overhead Tank
 - Rainwater Harvesting and Conservation (especially south-western region)

Prescribed Standards have to be followed in providing facilities as mentioned in Urban Area Plan under Plan for Urban Services.

Implementation Agency: DPHE, Paurashava.

Policy-02: Facilitating access for all citizens to electricity and gas supply

Justification: According to BBS, community series-Amtali, 2006, at Amtali Paurashava, about 60.8% (1558 households) of the total households have electricity connection. Besides, to accelerate the industrial development (Agri-based, fishery) in Amtali Paurashava electricity, gas supply must be ensured.

Consumption of wood and other natural resources based fuel will be reduced. Also alternative energy sources will be encouraged (biomass, solar etc.)

Implementation Agency: PDB

8.2.3 Flood Control and Drainage

Policy-01: Incepting Drainage Network Plan in response of Water logging problems

Justification: Lack of adequate and planned drainage facility in Amtali cause Water logging problem. The depth of maximum internal inundation ranges from 2-5 ft and duration varies 3 to 4 hours.

Following strategies should be reflected in Drainage Network Plan:

- A planned Drainage network will be provided in Drainage and Environment management Plan considering the standards, appropriate method and formula
- Regular maintenance of existing man-made and natural drainage network with Community involvement
- Illegal encroachment of Water bodies by Water Reservoir Conservation Act, 2000 ensuring storm water drainage
- Scattered throw of solid waste in water bodies by proper solid waste management activities

Implementation Agency: Paurashava, BWDB.

8.3 Environmental Issues

The Policies will strike a realistic balance between the existing livelihood requirements of the people and round environmental resources management that can ensure the livelihood in long term.

8.3.1 Natural Resources

Policy-01: Preservation of natural Water resources

Justification: To ensure natural water bodies and fish resources which are crucial to sustain the livelihood and to retain the eco-system.

Small and large sale fisheries Communities/Groups will be given incentives, training program will be developed on new and modern fish harvest techniques, conservation, distribution, pursuing. Permitted land use will be maintained in the demarcated areas that are as follows:

- Irrigation
- Provision of water way transportation in wet season
- Fishing/Fish Culture

Implementation Agency: BIWTA, BWDB, Paurashava, DOA.

8.3.2 Sanitation

Policy-01: Ensuring Safe Sanitation to Citizen

Justification: In Amtali Paurashava, the sanitation condition of Paurashava is not so much satisfactory. There exist two types of latrine viz. katcha and Pucca. Besides, dumping of solid wastes in a scattered way is a common phenomenon.

Following strategies should be promoted in ensuring sanitation:

- Dumping Site and solid waste transfer sites demarcation in Land Use Plan of Paurashava area ensuring effective management including community participation
- Proposal of Solid Waste Dumping site
- Installing public toilets in schools, bus stations, launch Terminal, Markets, important public places and community latrines in densely populated poor communities or slums

The illegal connection of existing latrines with drains needs to be controlled through proper monitoring and in future

Implementation Agency: Paurashava, DPHE, LGED.

8.3.3 Hazards

Policy-01: Identifying the hazard risk zones

Justification: As Amtali *Upazila* is an island, Cyclone is the frequent hazard and flood is the secondary impact and most apparent impact accrued from Cyclone Hazard. During Cyclonic hazard the level of water is raised up to 8-10 ft (≤ 3.05 m) (maximum). Therefore, strengthening disaster preventing and mitigating mechanisms to enhance the coping capability to the Poor in times of natural disaster is vital in this Paurashava context

Environmental Management Plan will be prepared under Urban Area Plan for all possible hazards (Cyclone, Flood, River Erosion, etc.). The Plan will provide the adaptation, prevention (structural/non-structural measures), mitigation, Preparedness techniques against a natural disaster through comprehensive disaster risk management.

To reduce the impact of hazards same manures will be undertaken which are as follows:

- Embankment, flood control sluice gates and other structural measures
- Early Warning System
- providing of multi-purpose cyclone shelter

Implementation Agency: Paurashava, BWDB, LGED.

8.3.4 Environmental Aspects

Policy-01: Pollution Control

Justification: Pollution level such as water, air and soil pollution rate is very low. As the area is located in coastal region, saline and iron also contaminate the water but at negligible rate. Besides air and soil pollution rate is also negligible. But this should not allow increasing pollution rate. To ensure safe environment for the Paurashava area, maintenance of the surface water quality is vital.

To control pollution following measures will be required:

- Make free surface waters form domestic wastes and other types of wastes which require proper solid waste management
- Riverside dumping needs to be restricted and dumping site has to be located through prescribed land use planning
- Discourage the high hazardous industries (Only Green Category Industries of DOE)
- Excessive pesticides and fertilizers use in Agriculture field cause soil pollution, therefore it is required to follow the Pesticides law, 1985

Implementation Agency: Paurashava, DPHE, DOE, DOA.

Chapter- 9

IMPLEMENTATION ISSUES

This chapter deals with the institutional arrangement for the implementation of Master Plan for Amtali Paurashava. The governance of a town or city depends on the institutional strength.

9.1 Institutional Capacity Building of the Paurashava

Institutional Capacity Building is considered as one of the main types of Capacity Building efforts, along with Human Capacity Building. Both are closely inter-related and complement each other. It aims to enhance the capacity of governments, business, non-governmental groups and communities to plan and manage the cost efficiently and effectively. Institutional is defined broadly to include legal rules, normative assumptions, governance (e.g., democratic accountability and divisions of responsibility between tiers of government and civil society) as well as administrative and organizational arrangements (e.g., how Paurashava is structured and resourced). For implementation of Master Plan of Amtali Paurashava, it is required to evaluate the institutional capacity of Amtali Paurashava.

9.1.1 Legal Aspects/Capacity of Paurashava

There are many acts and regulations exist for development and control of growth. But most of the cases they are not practiced in Paurashava level due to lack of legal aspects. Unfortunately no application is prevailing in the Paurashava for most of those Acts and Regulations. For plan restoration in Paurashava level first step should be capacity building. If the Paurashava don't have proper power to ensure law enforcement, master plan does not work properly.

In absence of enforcement, plan violation has become very common. Capacity of Paurashava needs to increase. In order to strengthen development control such efforts have to make to ensure application of the existing Acts and regulations. There should be provision of punishment for the violation of existing acts and regulations. Besides violation of any component by private individual as well as development and public sector agencies should be strictly restricted. Implementation of master plan would not be possible if any component of plan violated. The punishment provision may be incorporated in the Local Government (Paurashava) Ordinance, 2009 through an amendment.

The Paurashava Ordinance provides for special executive instrument called a Standing Order which carries the force of authority comparable to the law and provides for general guidance by the government to all municipal governments to extensively intervene in the affairs of the municipal governance in conformity with the statutory and other provisions under the rules.

9.1.2 Staffing

Paurashava is the appropriate authority to handle all planning functions. A single authority should hold the responsibility of all planning functions. Generally Paurashava is governed by an elected Mayor and councilors. The Mayor tends to dominate decision making on many aspects of Paurashava management, with little responsiveness and accountability to the public. He should have necessary logistic and efficient man power as all land acquisition within Paurashava should be passed through authority. For integrating plan provision proposed development should be incorporate with Paurashava Ordinance. According to Paurashava Ordinance, 2009 and Building Construction Rules, 1996, it is mandatory for taking approval from Paurashava authority for construction of any private or public building within the jurisdiction of Paurashava. There should have provision of punishment for the violation of rules by any organization. It is expected that government agencies and general public will have little respect for them. Otherwise the plan will gradually lose its validity as a statutory document.

Existing Manpower of Amtali Paurashava is comprised with 1 elected Mayor, 1 Chief Nirbahi Officer and 3 Departments. It has been observed that in Engineering Department about 72%

posts area vacant, in Administration Department about 71% posts are vacant and in Health, Family Planning and Conservancy Department the percentage of vacant posts are 95%.

9.1.3 Financial Aspects/ Capacity of Paurashava

Paurashava Governance is relatively weak, lacking effective citizen participation, accountability and financial management. It is required to ensure the financial management of Paurashava which will ensure the financial sustainability and governance of Paurashava. For this, generation of sufficient revenues from different sectors and also the proper utilization of generated revenues are necessary rather than dependency on budgetary transfers from the Central Government.

The Paurashava utilizes different sources to raise income and collecting revenue in due manner. But tax collection by the Paurashava is very poor. Most of the time Paurashava can not enforce any regulatory provision for collecting tax from all parties and organizations. As Paurashava is governed by an elected Mayor, he can not pressure on public and private organization due to political reason. This problem can be solved by contracting the same to the private sector on commission basis. However, before taking up a final decision some pilot projects may be conducted to study if the program really works. Similar program may also be taken for collection of rates from public toilets, parks and similar installations. The Paurashava should raise earnings by effective management of properties, better assessment and collection of taxes, rates, tolls, etc. involving private sector.

To raise income of Paurashava, commercial area development projects should be implemented. Site and Services and Specialized Development Projects as well as participatory type of development can be undertaken. Before taking that type of plans time should be considered. Such development projects should very much time bound. If the proposals are not implemented in time they may lose their applicability. Proposals lost their obsolete nature over the time. As Amtali is located in disaster prone area, it requires special attention for physical development in future otherwise it would continue unplanned and haphazard development of 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.

9.1.4 Instrumental Capacity

Amtali is a “B” category Paurashava and poor scenario is prevailing in case of instrumental capacity. Instrumental capacity includes machineries needed for construction, maintenance, delivery of services and removal of any unauthorized construction and materials. Waste transfer vehicles, road roller are instrument of the Paurashava. Instrumental capacity is required for the implementation of planning function properly. The instruments necessary for road construction and maintenance, maintenance of street light, collection and dumping of garbage, removal of unauthorized construction, excavation of tank or well, will have to be collected by the Paurashava with the use of own fund or any other sources.

9.1.5 Estate

Landuse clearance is the most important step for the implementation of plan proposal. Before any construction or development landuse clearance will be needed for every physical component whether it may be public or private. Paurashava is the only authority to give clearance. Estate section should be incorporated with Paurashava organogram. According to the proposals prescribed in the Urban Area Plan and Ward Action Plan, the Paurashava should maintain the following guidelines to ensure future development.

- Must ensure 20 ft. access road for any type of landuse clearance.
- As Amtali is high dense area vertical expansion is proposed to meet up future demand

- No permanent landuse should be allowed in the area demarcated as urban reserve.
- Physical development should direct towards north-south direction
- Must ensure that no landuse clearance is issued on the lands indicated as road, drainage channel, water reservoir, educational institution, health services, open space, fruit garden / orchard in the Urban Area Plan.

9.1.6 Monitoring, Evaluation and Updating

Development Control System

At present in Paurashava area, there exists haphazard and unplanned growth and establishment of structures. Though, Paurashava is the main authority of Development control.

Monitoring

Monitoring system is the key step of plan implementation. Monitoring system is the coordination among related authorities / agencies including Paurashava. To foster better coordination among stakeholders the Paurashava should take initiatives. Without permission of Paurashava authority not a single construction will be build up by public or private agencies. The Paurashava should exercise the power to stop unauthorized construction by public sector also. Monitoring will be needed during implementation stage of the plan. Feasibility of the plan depends on the frequent monitoring of the implementation. The inconsistency of the plan with the actual growth trend and factor is viewed through the monitoring procedure. For monitoring appropriate technical persons will be required. Under the supervision of the Paurashava authority technical persons will be responsible for such monitoring. Government may form a body for monitoring the implementation of the plan component.

Evaluation and Updating

Regular revision of existing and ongoing of new legal provision relevant to the Master plan / Urban Area Plan is necessary. Updating will be tracked due to such revision. For development and development control a number of Acts and Regulations are exist. But those Acts and regulation need to review and refurbishment in regular interval in the light of present requirement. Local Government and Engineering Department take initiatives to prepare Paurashava Master Plan. Master plan includes three tiers of plan components such as Structure Plan, Urban Area Plan and Ward Action Plan. Every 5th year of the plan period, plan document should be reviewed. The aim of the review will be to take an overview on the implementation of plan provisions, changing physical growth pattern, infrastructure development, and trend of all categories of public and private physical development including growth direction, adherence to Urban Area Plan provisions by public and private developments. Necessary changes in the Plan should be attempted in the light of the findings of the review of existing situation. However, apart from periodic review any part of the plan can also be amended if necessity arises for the sake of community's interest.

Implementation capacity of the Paurashava Master plan

The manpower of Amtali Paurashava is not so much capable to implement the Paurashava Master Plan. At present, there is lacking in manpower of Paurashava. The Existing posts are not fulfilled by the required manpower. Besides, it may require more efficient, technical and experienced manpower to implement the master plan. Town Planning unit should be functioned more strongly and effectively and there should be co-operation within the activities among the departments and Town Planning unit to make the initiative of implementation fruitful. Many projects will be implemented by the Paurashava and many others will rest on private agencies or individuals. Scale of implementation proposals depends on the fund of the responsible agencies

including Paurashava. Paurashava should try to emphasize on participatory approach. The people must be allowed to express their opinion on the proposal of the plan. 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.

The Paurashava should take initiative to foster better co-ordination among the different organization and agencies about its planning decisions and control areas.

9.2 Resource Mobilization

The shortage of finance has always plagued the urban government in attaining the optimum level of infrastructure and basic services. Under the present system, few urban government units are capable to generate sufficient resources to meet their capital and recurrent costs. Moreover, they have little incentive to take responsibility for their actions, including the collections of taxes (World Bank, 1999). Taxpayers feel they are getting little services for the taxes they pay and have grown aversion towards tax payment. On the other hand, municipal governments complain that unless taxpayers are up to date with their tax payment they are unable to provide better services. To improve the resource mobilization process, it is required to ameliorate the financial management rather than financial instruments as ancillary function.

The sources of Paurashava's income are generally taxes, rates, fees and charges levied by the local body, rents and profits accruing from properties of the local body and sums received through its services. But due to lack of management and lack of resource mobilization initiatives, most of the resources are become un- utilized. This results less sustainability of municipal infrastructure investment. Some options can be undertaken as Resource Mobilization initiatives, these are as follows:

- a) Involvement of NGOs and Community groups (CBOs)
- b) Contracting out
- c) Leasing; and
- d) Privatization

These initiatives can be considered as financial management aspects of Amtali Paurashava. Following sections represent the practice of these initiatives in different urban administration.

a) Involvement of NGOs and Community groups (CBOs)

b) Commercialization

c) Leasing

d) Privatization

Implementation Arrangements

Following table shows the sector wise implementation arrangements:

Type/sector	Implementation Agencies
Residential	
Site and services projects	Paurashava, NHA
Public Housing	Paurashava, different organization and agencies
Private Housing	Public-Private Partnership, Real Estate Company

Industry Industrial area	Paurashava, BCIC. DOE
Commerce Private Business	Company, Private Sector
Community Facility Park, Playground, Stadium, Religious facility	Private Sector, NSC, Paurashava
Education Facility School, college, Technical education	Ministry of education, ministry of science and technology
Utility Services Water supply and drainage Electricity supply, etc.	Paurashava, REB, DPHE, BWD

9.3 Concluding Remarks

Paurashava is a service giving agency; its activities should be transparent to the service recipients. The people should know procedures of its day to day activities, functions and operations in general. Status of files should be notified for knowledge of the applicants. As a whole, to improve financial management of Paurashava, it is required to ensure the governance in Paurashava through public participation, transparency in the existing system. Fund is one of the major determinants of any reformation. To generate more revenue, the alternative option can be preferred as funding source such as Municipal Development Fund. This fund is applicable for the Paurashavas that have holding tax collection, accounting system is computerized, tracked the tax defaulters, participation of stakeholders. This type of performance based funding system is essential for enriching the Paurashavas' revenue source and size.

Following issues should be kept in mind before initiation:

- The four resource mobilization initiatives have different equity effect, allocation impact and revenue raising capacity that should be incorporated
- The level of transparency and awareness varies with different resource mobilization initiatives
- The reform initiatives under consideration have significant impact on long-term institutional capacity building

Besides, the tax collection system of the Paurashava should be efficient by introducing digital database management system including Banking system to deposit tax, computerized data storage using software, proper monitoring, evaluation etc. Also, efficient manpower is also required to operate the collection system.

Part B. Urban Area Plan

URBAN AREA PLAN

Introduction

The Land use Plan is one of the four components of Urban Area Plan. Land use Planning rules are statutory rules to control land use according to planning standard. It is based on land use policies including Local Plans, such as residential density, road standard, provision of infrastructure and services. The relevant Acts and Master Plans of the cities are the legal instruments, which is in force with regard to exercise planning control and standards. Therefore, future land use of Amtali Paurashava is shaped by intermingling relation between existing and proposed land use.

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

- Land use Plan
- Transportation and Traffic Management Plan
- Drainage and Environmental Management Plan
- Plan for Urban Services

Goals and Objectives

The overall land use plan makes an approach that balances economic, environmental and aesthetic concerns which preserve the natural resources and quality of life in Amtali Paurashava. Moreover, this plan will also make recommendations for the plan's implementation to guide Paurashava Town Planner and other officials when managing future growth and development of AmtaliPaurashava. The specific goals and objectives of land use plan are described below:

Goal A: Provide a well-balanced mix of residential, commercial, recreational, and other urban services uses to serve the future needs of the community and to maintain the Paurashava as a desirable place to live.

Objectives:

- Guide the development considering density standards including High, Medium and Low Density area
- Guide new development within or adjacent to existing development
- Explore possibilities to support industrial, business and commercial growth within Paurashava area by demarcating industrial, commercial zone that operates in a manner that protects the environment and uses our natural resources efficiently
- Recognize the need to accommodate all age groups in recreational pursuits
- Provide basic urban services to the Paurashava people

Goal B: Preserve and protect the aesthetic, ecological quality, function, and other values of the Paurashava's land and natural resources

Objectives:

- Discourage development within environmentally sensitive areas such as wetlands, floodplain and lowlands
- Require natural buffers where they exist, and require native tree planting or tree replacement in areas without natural buffers to minimize the potential of land use conflicts.

Goal C: Increase community awareness, support, and involvement in growth management and land and natural resource conservation efforts

Objectives:

- Improve public access and understanding of available land use, planning, zoning and environmental information
- Balance community improvements with available funding sources to ensure equitable taxation

Goal D: Provide and maintain a safe and reliable transportation network

Objectives:

- Ensure that new roads can connect to future streets on abutting properties, whenever possible
- Ensure practice of relevant laws and regulations to control the development of city pertaining with land use and road development

Delineation of Planning Areas

For determining the existing planning area, consultants have discussed with honorable Mayor, Councilors and the local people and they expressed their valuable opinion about this issue. Moreover, consultants have dully considered several issues such as population growth rate, direction of existing growth potentials, location and distance of Upazila and District Headquarter in respect of Paurashava location, land value within and surrounding the Paurashava, tax collection status, socio-economic status, other future national development plan, if any, etc. Considering the all issues, the planning area of Amtali has been considered 10.81 sq. kilometers.

Chapter- 10

LANDUSE PLAN

10.1 Existing and Projected Land Use and Land Use Proposals

Land use Planning rules are statutory rules to control land use according to planning standard. It is based on land use policies including Local Plans, such as residential density, road standard, provision of infrastructure and services. The relevant Acts and Master Plans of the cities are the legal instruments, which is in force with regard to exercise planning control and standards. Therefore, future land use of Amtali Paurashava is shaped by intermingling relation between existing and proposed land use.

10.1.1 Existing Land Use

Map 10.1 illustrates how the land uses are distributed at present in the Paurashava area. The information helps the preparation of Master Plan providing background information for selection of areas of different land uses.

The existing land uses of the project area are shown in Table 10.1. In the land use pattern of the Paurashava, 16 types of land uses are found. It is clearly evident from the table that agricultural landuse (68.44%) dominates the Paurashava area; followed by residential (13.13%), water body (12.98%), circulation network (1.82%) and government services (1.21%). Map 10.1 shows the existing landuse of Amtali Paurashava.

Table 10.1: Existing Landuse of Amtali Paurashava

Landuse	Area (acre)	%
Residential	290.05	13.13
Commercial	19.78	0.90
Industrial	3.08	0.14
Education and Research	15.08	0.68
Community Service	3.40	0.15
Service Activity	5.36	0.24
Recreational Facilities	0.15	0.01
Governmental Services	26.82	1.21
Non Government Services	0.88	0.04
Transport & Communication	0.48	0.02
Agricultural	1511.76	68.44
Mixed Use	1.69	0.08
Urban Green Space	1.53	0.07
Circulation Network	40.19	1.82
Open Space	1.79	0.08
Water body	286.76	12.98
Total	2208.78	100

Source: Land Use Survey, 2009-2010

10.1.2 Estimation on the Requirement of Different Land Uses

This section proposes land use zoning plan for different land uses of the future town. The estimations have been made according to the Planning Standard approved by the client.

10.1.2.1 Land Use Standards

According to the projected population density it has been observed that in 2031, this area will be a high density area. On the basis of projected population and considered the planning standard additional demands for land had been calculated for various facilities such as residential, commercial, industrial, educational, public land, etc.

Agricultural lands, Water bodies will be preserved as existed unless lack of land availability is observed in providing urban services. In that case, non-productive agricultural lands can be devoted for specific urban services and also to control the density of the Paurashava area.

10.1.2.2 Land Requirement and Proposal

After the projection for the target year and analyses of existing Land Use, designation of different land uses is the foremost vital step to prepare Land Use Plan as the first component of Urban Area Plan. Before incepting the Land Use Plan for the year 2031, basic principles for different category of Land Uses have been considered. In precedence, future land use designation and land use zoning have been identified. Finally, Implementation, Monitoring and Evaluation issues have been discussed as the steps after the plan completion to make the Land Use Plan perpetual through plan period.

To allocate the land in Urban Area Plan, one uniform planning standards has been followed and also some basic assumptions have been identified considering Land use Category. The population growth, existing growth direction, economic sector and overall Paurashava Context have been emphasized in Urban Area Plan. The assumptions are mainly reflection of Building Construction Act, 1952 (amendment 1996) which is the practiced law in Amtali Paurashava for approving Building plan or site plan. Sixteen Landuse categories had been considered for Survey and interim phase but for Landuse plan seventeen categories have been considered. Detail analysis of required land based on the standard provided by PMO, LGED is presented in the Table 10.2. Detail Landuse plan has presented on **Map 10.2**.

Table 10.2: Proposed Major Landuse of Amtali Paurashava

Sl. No	Land use Category	Remarks	Area (Acre)	%
1	Administrative	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, <i>Upazila</i> Headquarter, BADC Office, Fisheries Office, Ansar/VDP Office, Agriculture Office, Zila Parishad Office, Post Office, Telephone Exchange Office and Other Government Offices.	35.63	1.33
2	Agriculture	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.	593.43	22.22
3	Circulation Network	Road and Rail communication	304.99	11.42
4	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.	36.76	1.38

Amtali Paurashava Master Plan: 2011-2031
Urban Area Plan

Sl. No	Land use Category	Remarks	Area (Acre)	%
5	Community Facilities	All community facilities including funeral places and other religious uses	18.75	0.70
6	Education & Research	All kinds of educational institutes like Primary/secondary/other Schools/ Colleges etc are mentioned to calculate the land use for education and research purpose.	37.90	1.19
7	Health Facility	Utility services include Overhead Tank ,Power Office/Control Room, Public Toilet, Sewerage Office, Waste Disposal ,Fire Service, Water Pump House ,Water Reservoir, Water Treatment Plant etc	12.75	0.48
8	General Industry Zone	Green and Orange A categories as per The Environment Conservation Rules, 1997	17.13	0.64
9	Mixed Use	Mixed land use refers to the area without dominant land use (Residential, commercial, industrial etc.).	2.82	0.11
10	Open Space	Playground, Botanical Garden, Stadium, Zoo etc. (Facilities without or with minimum building structure)	115.65	4.33
11	Recreational Facility	Facilities other than those mentioned to Open Space and indoor based facilities with designated building structure i.e. Cinema Hall, Theater Hall etc.	1.25	0.05
12	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.	-	-
13	Rural Settlement	Rural settlement includes the low dense residential area which is scattered and rural in nature. It may permit only low density uses. Aiming to control the growth in this zone, less service and facilities will be provided.	204.79	7.67
14	Transport 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.	8.29	0.31
15	Urban Deferred	Optional depending on the Paurashava and the Consultant's judgment	212.07	7.94

Amtali Paurashava Master Plan: 2011-2031
Urban Area Plan

Sl. No	Land use Category	Remarks	Area (Acre)	%
16	Urban Residential	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	434.52	16.27
17	Utility Services	Utility services include Overhead Tank, Power Office/Control Room, Public Toilet, Sewerage Office, Waste Disposal ,Fire Service, Water Pump House ,Water Reservoir, Water Treatment Plant etc.	12.59	0.47
18	Overlay Zone	If the consultant justify any area that should not be defined as other given definitions but the facility(s) may not be avoidable, they may use this category	Not applicable	
19	Forest	Forest Designated Forest Area	Not applicable	
20	Beach	Sea Beach	Not applicable	
21	Miscellaneous	Any other categories which are not related to above 23 categories.	Not applicable	
22	Historical and Heritage Site	The entire mentionable historical and heritage site.	Not applicable	
23	Water Body	Equal or More than 0.25 acre and justification by the consultant and wet land will merge with water body	627.85	23.50
Total			2671.17	100

Source: Consultants Estimation

Map 10.1: Existing Landuse of Amtali Paurashava



276650

276800

276950

488000

488000

486500

486500

485000

485000

483500

483500

276650

276800

276950

Legend

- | | | |
|----------------------|-------------------------------|----------------------------------|
| Paurashava Boundary | Education & Research | Recreational Facility |
| Ward Boundary | Governmental Services | Residential Area |
| Landuse Type | Green Spaces | Service Activity |
| Agriculture | Industrial Area | Transportation and Communication |
| Circulation Network | Mixed Use | Water Body |
| Commercial | Non Governmental Organization | |
| Community Facilities | | |

0 187.5 375 750 Meters

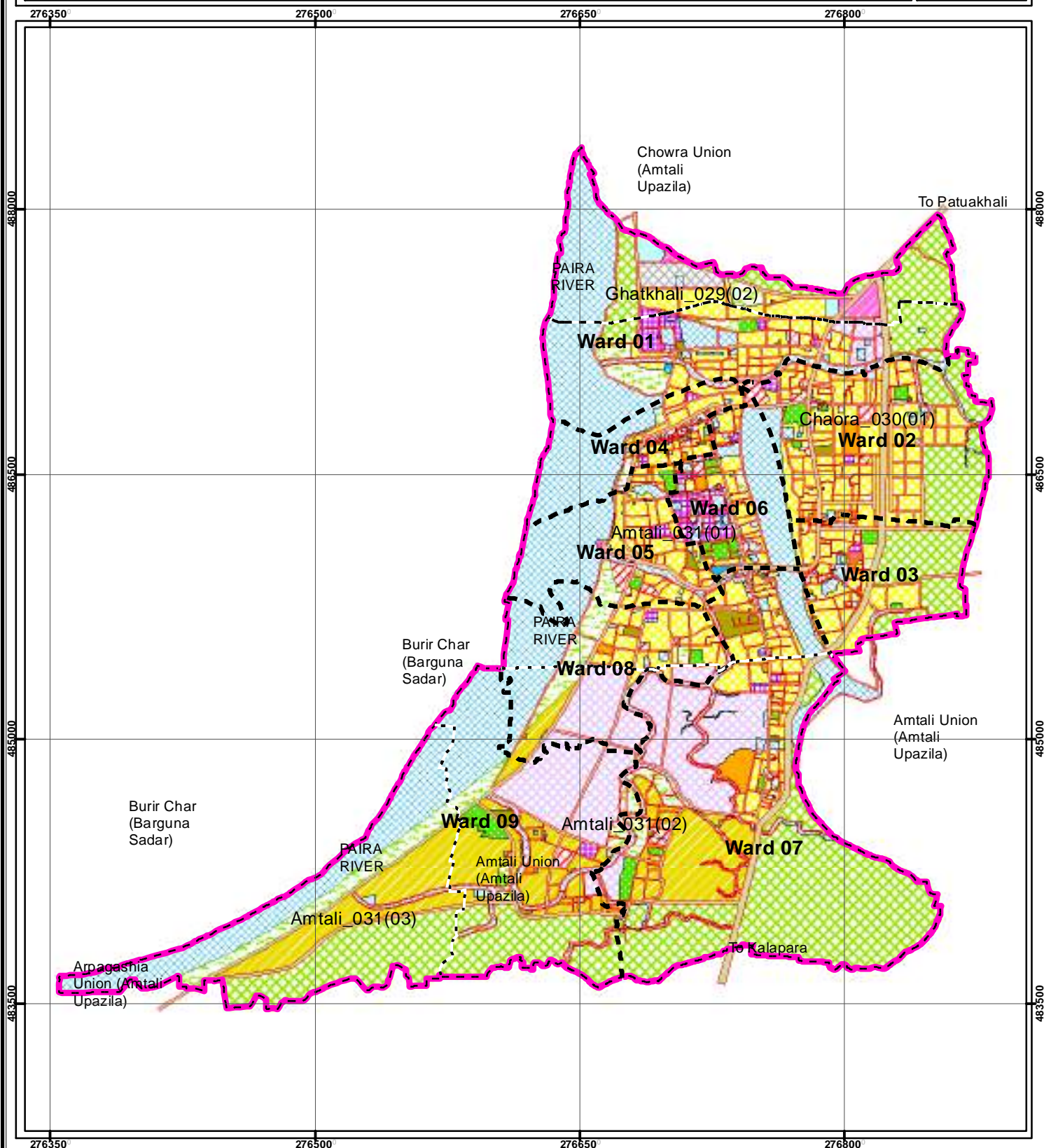


Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government,
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In Association with

Map 10.2: Proposed Landuse Plan of Amtali Paurashava



Legend

Admin Boundary

- - - Mouza Boundary
- Paurashava Boundary
- - - Sheet Boundary
- - - Ward Boundary

Landuse Type

- Administrative
- Agriculture
- Circulation Network
- Commercial Activity
- Community Facility
- Education & Research

- Health Facility
- Industrial
- Mixed Use
- Open Space
- Recreational Facilities
- Rural Settlement

- Transportation Facilities
- Urban Deferred
- Urban Settlement
- Utility Facility
- Waterbody

0 225 450 900 Meters



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In Association with

A) Urban Residential Zone

Residential zone refers to all categories of urban residential areas, including exiting ones and the residential land use proposed under the present Master Plan. Here, residential zone comprises urban residential area. In order to accommodate the projected urban resident population in the study area, around 14.02 acres of land would be required up to the year 2031. On the other hand, 271.57 acres of land have already existed as residential plots in the Amtali area. The planning team exercised hard to find out vacant and less important residential plots in a sense of growth potentiality what needs to convert other land uses to accommodate many urban services; utilities, commercial etc.

B) Rural Settlement

Rural settlement includes the low dense residential area which is scattered within planning area boundary and rural in nature. This use will have only low density uses and only up to double story building will be permitted aiming to control the growth in this zone. Less service and facilities will be provided. The zone of rural settlement is intended to provide locations, where rural settlement including agriculture can be set up and function. Without creating hazards and changes to surrounding land uses. This zone has an area of 204.79 acres (7.67% of the urban plan area) designated up to 2031. A Low Income Housing Area (2.59 acre) is proposed in this type of landuse area. The list of plot number and Mouza are given below:

Table 10.3: Development Proposal for Low Income Housing Area

Mouza Name	J.L No	Sheet No	Ward No	Plot No	Area (Acre)
Amtali	031	02	09	1508, 1698, 1706-1718	2.59

C) Commercial Zone

The commercial zone is intended to provide locations, where commercial activities including retails and wholesale can be set up and function without creating hazards to surrounding land uses. In order to accommodate the commercial land in the year 2031, about 11.64 acre more land will be required. On the other hand, 19.78 acres of land have already existed as commercial plots in the Amtali area. In response to the requirement, about 13.11 acres of land is proposed in the Master Plan. Table 10.4 shows the distribution of commercial land in the study area.

Table 10.4: Development Proposal for Commercial Zone

Type of Facility	Area (Acre)	Ward no	Plot No	Mouza Name	Phase-wise development		
					1st Phase (1 st to 5 th year)	2nd Phase (6 th to 10 th year)	3rd Phase (11 th to last 10 year)
Shopping Complex	4.50	02	732-734	Chaora_030_01	Land Acquisition and establish	Continue the development	
		03	908,909	Chaora_030_01			
		09	1320,1322,1323,1361, 1365,13666	Amtali_031_02			
Retail Market	2.43	05	560,562,564	Amtali_031_01	Land Acquisition and established	Continue The development	
		07	1922,1962,1963,1968	Amtali_031_02			
Poura Market	1.67	06	332,333	Amtali_031_01	Land Acquisition and establish	Continue the development	
Katcha Bazar	1.82	02	723-725,728,729	Chaora_030_01	Land Acquisition and establish	Continue the development	
		03	888-890	Chaora_030_01			
		05	605	Amtali_031_01			
		08	748	Amtali_031_01			
		09	1470-1473	Amtali_031_02			

Type of Facility	Area (Acre)	Ward no	Plot No	Mouza Name	Phase-wise development		
					1st Phase (1 st to 5 th year)	2nd Phase (6 th to 10 th year)	3rd Phase 11 th to last 10 year)
Cattle Hat	3.17	05	564,568-570	Amtali_031_01			
Total	13.11						

C) Industrial Zone

Amtali Paurashava is basically an island. Small business, agriculture and fishing are the main base of the economy of the area. The plan needs to accommodate such industries those have growth potentiality related to the base of economy of Amtali Paurashava. Due to the environmental and ecological condition, the plan discourages growth of heavy industries in the planning area. The plan suggested for General Industrial Zone in where processing units, small scale and harmless medium scale industries can be placed To allow industrial set up in the demarcated zone of Amtali, the plan will follow two norms:

- I) For categorizing, allocating land and providing guideline to set up industries, the plan will strictly follow the "The Environment Conservation Rule, 1997".
- II) For allocating land to set up industries, the plan will prioritize environmental & ecological condition and base of the economy of Amtali Paurashava.

About 14.16 acres of land is proposed for industrial set up in Amtali Paurashava.

Table 10.5: Development Proposal for Industrial Zone

Type of Facility	Area (Acre)	Ward no	Plot No	Mouza Name	Phase-wise development		
					1st Phase (1 st to 5 th year)	2nd Phase (6 th to 10 th year)	3rd Phase 11 th to last 10 year)
General industrial Zone	14.16	1	1819,1870,1876,1877, 1928,1929,1931-1935,1951-1975	Ghatkhali _029_02	Land acquisition and development all facilities	Development Infrastructure	Full function Activity
Total	14.16						

D) Administrative

Government Office refers such areas encompass accommodation of the offices of various government authorities along with semi-government and autonomous bodies. A few number of private bodies formed especially for public services can also be accommodated in this zone.

According to the projection, about 23.71 acres land will be required for this purpose to meet the administrative demand of projected people in the year of 2031 whereas at present only 1.31 acre land is used for government office purpose. In case of Paurashava Office, 5 acres of land will have to be proposed respectively based on the standard, whereas at present only 0.1 acre of land has been acquired by the government for construction of this offices at Amtali Paurashava. Moreover, the surrounding areas of the designated space are already developed and according to the consultation on master plan, the authority are not interested to change their space for this purposes and also they do not feel that more land will be required for this purposes. If Paurashava authority wants to shift their office, they can establish Paurashava Office in the areas proposed for

other government offices (there already available land exists). It is expected that in near future the authority will expand Paurashava area to meet its standard requirements. Other uses have been proposed in accordance with the standards. Table 10.6 reveals the distribution of proposed land of government offices at Amtali Paurashava.

Table 10.6: Development Proposal for Government Services

Type of Facility	Area (Acre)	Ward no	Plot No	Mouza Name	Phase-wise development		
					1st Phase (1 st to 5 th year)	2nd Phase (6 th to 10 th year)	3rd Phase (11 th to last 10 year)
Paurashava Office	1.33	01	183, 586	Chaora_030_01	Land acquisition	Development Infrastructure	
		02	576,579,583,585, 587,590,591	Chaora_030_01			
Total	1.33						

E) Education and Research Zone

Educational zone refers all kind of educational set up; School, Colleges, Madrasha and even such institutions operated for education like; training institutions, research institutions etc. In order to meet up the demand of projected population (2031), about 46.41 acre lands will be required. In the proposal 17.93 acres of land is given for educational purpose. Most of the primary schools are proposed in the residential areas and rural homestead zones. Table 10.7 presents the distribution of proposed land under education and research institutions.

Table 10.7: Development Proposal for Education and Research Zone

Type of Facility	Area (Acre)	Ward no	Plot No	Mouza Name	Phase-wise development		
					1st Phase (1 st to 5 th year)	2nd Phase (6 th to 10 th year)	3rd Phase 11 th to last 10 year)
Madrasa	0.77	07	2082,2084-2086	Ghatkhali		Land acquisition and development all facilities	
Primary School	3.05	02	1933-1935,1949,1950	Amtali		Land Acquisition and establish	Continue the development
		08	765,766,2161	Amtali			
		09	1482,1487,1488	Amtali			
Primary School & High School	2.66	01	155-157,207	Chaora		Continue the development	
		05	559,564,568	Amtali			
College	4.24	07	1742-1744,1942	Amtali		Land acquisition and development all facilities	
Vocational Training Center	6.37	9	1436,1437,1446-1449,1451,1452	Amtali_031_02		Land acquisition and development all facilities	
Total	17.10						

F) Agricultural Zone

Agricultural zone denotes the land suitable for agricultural production, both crops and livestock. It is one of the main resources in agriculture. Out of the total area (2671.17 acres) of Amtali Paurashava, the areas need to preserve from unplanned development to fulfill objectives sited in

various national policies along with the Master Plan. Agricultural zone covers activities related to agriculture and agriculture related production activities; farm, fisheries, pasture, horticulture etc.

G) Water Body

Water body contains all natural streams; canals, khals, irrigation canal, depressions like; beel, wetland, low laying areas and ponds. No standard is being prescribed for water body from the UTIDP. The Paurashava is rural-based urban area. In the proposal about 479.2 acres of water body are preserving though existing total water body is 507.7 acres. The rest of the lands have been used to meet up the requirements of other facilities at Paurashava.

H) Open Space

Open space includes play field / play ground, park, neighborhood park, Stadium, etc. according to the standard about 61.4 acres of land is required for projected population in the year 2031 while at present only 3.15 acres of land is used for this purpose. There are no parks exist in Amtali Paurashava. A number of Neighborhood Parks are provided which are covering the wards no 1, 2 and 3. Table 10.8 shows the proposed lands to meet up the demand of projected people.

Table 10.8: Development Proposal for Open Spaces

Type of Facility	Area (Acre)	Ward no	Plot No	Mouza Name	Phase-wise development		
					1st Phase (1 st to 5 th year)	2nd Phase (6 th to 10 th year)	3rd Phase (11 th to last 10 year)
Central Park	16.59	07	1305,1310,1312,1937,1938, 1340,1341,1944,1947,1948, 1950,1953-1955,1957-1960,1963-1970,1980,1983,1986,1991, 2788,2789	Amtali_031_02	Land acquisition and development all facilities	Development Infrastructure	Full function Activity
		09	1287-1290,1295-1301,1304-1315	Amtali_031_02			
Neighbor hood Park	4.10	1	136-138,140,143-154,1099	Chaora_030_01	Land acquisition and development all facilities	Development Infrastructure	Full function Activity
		6	457-463,465	Amtali_031_01			
Open Space	4.36	04	13-15,36-39,184,185,199,230-233,349,350,352-354,883,908-912,918,919,921,922,929, 934	Amtali_031_01	Land acquisition and development all facilities	Development Infrastructure	Full function Activity
		05	273,274,276,277,289	Amtali_031_01			
Play ground	4.96	02	822,833,840,842	Chaora_030_01	Land acquisition and development all facilities	Development Infrastructure	Full function Activity
		04	336,373-375,378,390	Amtali_031_01			
		05	559,564	Amtali_031_01			
		07	1922,1971	Amtali_031_02			
		08	763,-765	Amtali_031_01			
		09	1475,1479,1481	Amtali_031_02			
Stadium	5.40	1	1980-1983,1986-1988,2490	Ghatkhali_029_02	Land acquisition and development all facilities	Development Infrastructure	Full function Activity
Total	115.64						

I) Recreational Facilities

There exists a cinema hall in Amtali Paurashava which is covering only 0.15 acres of land. According to the standard more than double land is required for cinema hall in the year 2031. Considering future need about 1.24 acre of land is proposed for recreational purpose.

Table 10.9: Development Proposal for Recreational Facilities

Type of Facility	Area (Acre)	Ward no	Plot No	Mouza Name	Phase-wise development		
					1st Phase (1 st to 5 th year)	2nd Phase (6 th to 10 th year)	3rd Phase 11 th to last 10 year)
Auditorium	1.10	6	534-536	Amtali_031_01	Land acquisition	Development Infrastructure	
Total	1.10						

J) Circulation Network

Circulation Network refers all kind of public roads along with related facilities; footpaths, walkways etc. and embankment, railway (if exist in the area). According to the Traffic and Transportation Management Plan, about 304.99 acres of land have been proposed for circulation network at Amtali Paurashava area whereas at present only 40.2 acre land has been used for these purposes.

K) Transportation Facilities

Transportation facilities include Bus / Truck Terminals, Launch Terminal, Other Vehicle Parking Space, Gas/ Fuel Station, etc. Considering projected population in the year 2031, about 3.57 acres of land is required for various transportation and communication facilities whereas only 0.33 acres of land is used in recent. To accommodate unanticipated spatial requirement of transportation and communication sectors about 8.28 acres of land is proposed in the master plan including various facilities such as bus terminal, truck terminal, other vehicle parking, etc. Table 10.10 shows the proposed lands to meet up the demand of projected people.

Table 10.10: Development Proposal for Transportation Facilities

Type of Facility	Area (Acre)	Ward no	Plot No	Mouza Name	Phase-wise development		
					1st Phase (1 st to 5 th year)	2nd Phase (6 th to 10 th year)	3rd Phase 11 th to last 10 year)
Bus Terminal	5.79	1	2044,2047,2048,2051,2052,2055,2057,2060-2063,2065	Ghatkhali_029_02	Land acquisition	Development Infrastructure	
Fuel station	0.83	1	2045,2046,2049,2050,2053	Ghatkhali_029_02		Land acquisition and development all facilities	
Truck Terminal	1.17	01	1819,1949-1951,1690,1961,1963	Ghatkhali_029_02	Land acquisition	Development Infrastructure	
Total	7.80						

L) Utility Service

Utility Service includes Solid waste disposal site, waste transfer station, Water Treatment Plant and fire service. Considering projected population in the year 2031, about 17.25 acres of land is required for various Utility Services whereas no land is used in recent. To accommodate

unanticipated spatial requirement of Utility Services about 12.59 acres of land is proposed in the master plan. Table 10.11 shows the proposed lands to meet up the demand of projected people.

Table 10.11: Development Proposal for Utility Services

Type of Facility	Area (Acre)	Ward no	Plot No	Mouza Name	Phase-wise development		
					1st Phase (1 st to 5 th year)	2nd Phase (6 th to 10 th year)	3rd Phase (11 th to last 10 year)
Waste Transfer Station	2.14	02	455,458,459,462	Chaora_030_01			Land acquisition and development all facilities
		03	967	Chaora_030_01			
		04	183,184	Amtali_031_01			
		05	780	Amtali_031_01			
		07	2078	Amtali_031_02			
		08	630,714,715,729	Amtali_031_01			
		09	1508,1510,1511	Amtali_031_01			
Water Pump House	1.25	02	522,532	Chaora_030_01			Land acquisition and development all facilities
		09	3124,3125	Amtali_031_03			
Waste Disposal Site	4.47	01	1819,1856,1857,1864,1868-1870,1934-1948	Ghatkhali_029_02			Land acquisition and development all facilities
Electric Sub-Station	1.80	01	2042	Ghatkhali_029_02			Land acquisition and development all facilities
Fire Service Station (Extension)	2.93	01	2029,2032,2033,2036, 2037,2040	Ghatkhali_029_02			Land acquisition and development all facilities
Total	12.56						

M) Health Facilities

Health Facilities includes Solid waste disposal site, waste transfer station, and fire service. Considering projected population in the year 2031, about 17.25 acres of land is required for various Health facilities whereas no land is used in recent. To accommodate unanticipated spatial requirement of Health facilities about 6.27 acres of land is proposed in the master plan. Table 10.12 shows the proposed lands to meet up the demand of projected people.

Table 10.12: Development Proposal for Health Facilities

Type of Facility	Area (Acre)	Ward no	Plot No	Mouza Name	Phase-wise development		
					1st Phase (1 st to 5 th year)	2nd Phase (6 th to 10 th year)	3rd Phase (11 th to last 10 year)
Clinic/ Health Centre	6.27	1	123,124,125,136	Chaora_030_01	Land acquisition	Development Infrastructure	
		2	697,698-700	Chaora_030_01			
		5	308,554-556	Amtali_031_01			
		8	727,724,735	Amtali_031_01			
		9	1406,1448,1449, 1591,1593-1596, 1612	Amtali_031_02			

N) Community Facilities

Community Facilities includes Mosque/Temple/Church, Eidgah, Community Center and Graveyard. Considering projected population in the year 2031, about 5 acres of land is required for various Community Facilities whereas no land is used in recent. To accommodate unanticipated spatial requirement of Community Facilities about 15.13 acres of land is proposed in the master plan. Table 10.13 shows the proposed lands to meet up the demand of projected people.

Table 10.13: Development Proposal for Community Facilities

Type of Facility	Area (Acre)	Ward no	Plot No	Mouza Name	Phase-wise development		
					1st Phase (1 st to 5 th year)	2nd Phase (6 th to 10 th year)	3rd Phase (11 th to last 10 year)
Mosque	1.63	02	838,839	Chaora_030_01		Development Infrastructure	
		03	881,882,893,894,897,898	Chaora_030_01			
		08	702,704,705,717	Amtali_031_01			
		09	1353,1357,1358,1360	Amtali_031_02			
Central Eidgah	3.69	02	635,636,641-645,696-698,708,727,731,732	Chaora_030_01	Land acquisition	Development Infrastructure	
Central Graveyard	7.87	07	2078,2080,2087,2092-2097	Amtali_031_02	Land acquisition	Development Infrastructure	
Community Center	1.01	06	330,331,341	Amtali_031_01	Land acquisition	Development Infrastructure	
Public Toilet	0.92	06	480,864	Amtali_031_01	Land acquisition	Development Infrastructure	
		08	711,715	Amtali_031_01			
		09	1314	Amtali_031_02			
Total	15.13						

O) Urban Deferred

Urban deferred area includes potential land reserved for future use. Standard shows 10% of total land should be used as Urban Deferred area. According to it, 212.07 acre land has been conserved for this purpose.

10.2 Land Use Zoning

Zoning is a classification of landuse 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.

10.2.1 Area / Use Zoning

The objective of area 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 municipality 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.

The zoning is defined as the regulation by law of the use of land and buildings and of the height and density of buildings in specific areas for the purpose of securing convenience, health, safety and general welfare of the community. Thus, the term zoning is used to include two aspects of

planning- allocation of land for specific purposes and control of the use, height and construction of the buildings.

Though the future land requirements are the first priority of planning for a city but considering the existing land use there should be provision of zoning. The zoning will demarcate specific land use for a specific zone or area. The zones are usually classified into the following four categories with suitable sub-divisions in each zone:

- a. **Residential zone:** the character and location of this zone will depend on various factors such as nearness to the markets; freedom from nuisance, noise and smoke; nearness to parks and playgrounds etc.
- b. **Commercial zone:** this zone should be near the centers of traffic and preferably it should be about the roads. It includes the uses of land for banks, offices, godowns, shops etc.
- c. **Industrial zone:** great care should be exercised in providing units of industrial zone in various part of the town. The light industries and factories running on electric power and causing no nuisance to nearby areas may be allowed to be set close to residential areas. On the other hand, the heavy industries giving out obnoxious gases and fumes and developing noisy atmosphere may be placed on the outskirts of the town.
- d. **Recreational zone:** This zone includes mainly parks and playgrounds and in a broad sense, it may be considered to include various recreational centres such as cinemas, theatres, town halls, clubs, libraries, restaurants, stadium and other community needs.

Besides these any special land use can get special emphasis on the basis of its intensity, significance on local, national economy etc.

10.2.2 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.

10.2.3 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.

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 6m for widening the road to the permitted minimum. Perhaps the intension behind this was that gradually the whole road would rise up to 6m in short time and it is true for new areas. But 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 Plan Implementation Strategy

10.3.1 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 to be taken 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 Paurahava area. However, at present no authority is responsible for planning and managing physical development activities in the Paurahava and no regulation except Local Government (Paurahava) 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. 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.
2. Impose control on all type of buildings in the Paurahava 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.
3. Haphazard development of commercial activities is the general scenario of the Paurahava. 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 Paurahava 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 Paurahava 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 Paurahava authority is also empowered establishing hat and bazar in his jurisdiction through the Local Government (Paurahava) 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 Paurahava 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 cultivable waste land and those lands are being fallow during five consecutive years. Those lands may be utilized under the guidance of Cultivable Waste Land (Utilization) Ordinance, 1959 (Ordinance No. E.P. XIII of 1959).
13. The Paurahava 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.

10.3.2 Implementation, Monitoring and Evaluation of the Landuse Plan

Implementation through Multi-Sectoral Investment Program: 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:

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- 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 Paurahava 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 on going and implemented projects is essential to keep the future course of action on the right track. An on going 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 Paurahava 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 Paurahava. The committee will supervise implementation works regularly and issue necessary instructions to expedite the works of implementation.

Co-ordination

A Planning Section of Paurahava should have close interaction with the citizen of Paurahava 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 Paurahava 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- 11

TRANSPORTATION AND TRAFFIC MANAGEMENT PLAN

11.1 Introduction

Transportation occupies a high place in modern life. Transportation has great influence in the advancement of all spheres of life. Transport planning is a science that seeks to study the problems that arise in providing transportation facilities in an urban, regional or national setting and to prepare a systematic basis for planning such facilities. Town and country planning is a science that deals with the study of the urban or country "system" communications through channels. Transport planning is an important part of overall Town and Country Planning, since it deals with the transport network which is an important channel of a communication. Transportation and Traffic Management Plan is one of the Components of Urban Area Plan.

In Bangladesh, Transport Planning is not in practice still. Recently, government has developed the National Land Transport Policy, 2004 in order to provide a safe, integrated, effective transport system. Also, attempt has been taken to link relationship with land, economic activities and road network development. In preparing the Traffic and Transport Management Plan (Component-2) for Amtali Paurashava under Urban Area Plan, the Survey Phase and Interim phase has been completed successfully. In precedence of these activities, this plan is incepted.

11.2 Approach and Methodology

Transport study provides special attention to urban transportation planning as it greatly influences the location decisions and travel behavior of people, goods and services. Transportation is critical for the efficiency of towns contributing to their productivity and economic growth. A good network of roads and other transportation mode coupled with an efficient transport management system makes a substantial contribution to the "working efficiency" of cities and towns and enables them to become catalysts for social and economic development. On the other hand, the impact of a poorly designed urban transport system is manifested in terms of traffic congestion, delays, accidents, high energy consumption, high pollution of the environment and inequitable access to services. A well-planned transportation system results in orderly urban growth, greater use of urban public transport, lower vehicular pollution, and shorter auto trips.

A comprehensive transportation study is undertaken to investigate the existing transportation infrastructure, transportation modes and modal share scenario of Amtali Paurashava and to estimate the anticipated transportation needs of the town up to the year 2031. Accordingly, the transportation study is conducted to determine the present travel patterns and the characteristics of existing transportation facilities to forecast the future travel demand and develop a transportation plan.

An origin destination (O-D) survey was also conducted at the same point where origin and destination of the traffic passing through this point of the town were recorded. Speed and Delay survey has been done at 6 points on major local roads.

Bus and tempo fleet data were collected from local transport owners' offices like, Bus Owners' Association, Tempo Owners' Association. They also provided information about routes, trips and movement data. Information about bus station and tempo station were collected from the respective owners' association and the Paurashava/District Administration. Year wise data of non-motorized traffic were collected from the Amtali Paurashava, where these vehicles are registered.

11.3 Existing Conditions of Transportation Facilities

This section describes existing transportation facilities namely roadway and water way characteristics, modal share of vehicular traffic, level of service which incorporate degree of

traffic congestion and delay and analysis existing deficiencies in transport sector of Amtali Paurashava.

11.3.1 Road Network

11.3.1.1 Roadway Characteristics and Functional Classification

The primary roads are the urban highways whose function is to channelize the longer movement from one place to another and beyond. The primary road of Amtali Paurashava is well connected in both north (Patuakhali Sadar) south (South) and east (Barguna) directions and these roads maintain connectivity with the outside areas of Paurashava. Moreover, the primary roads are also connected with secondary and access roads and all these roads maintain good connectivity within the Paurashava area. Secondary road can not provide access to individual buildings because the consequent frequency of interruptions would give rise to traffic dangers. Tertiary road connect secondary road with access road. But in Amtali Paurashava most of the roads can not be defined according to road hierarchy.

From the physical feature survey it has been observed that about 77.33% (31.08 acre) of the roads are Pucca, 12.35% (4.96 acre) roads Kutcha and the rest of the roads are Semi-pucca (4.15 acre). Amtali Paurashava has no embankment. There are 5 bridges at Amtali Paurashava. All the bridges are pucca and condition of pavement are good. There are 19 box culverts with 1 pipe culverts exist at Amtali Paurashava. The rest of the roads are primary roads. **Map 11.1** shows existing road network of Amtali Paurashava.

Table 11.1: Type Wise Length and Area of Existing Road

Types of Road	Length (in km)	%	Area (in acre)	%
Kutcha Road	29.61	41.03	4.96	12.35
Pucca Road	34.86	48.32	31.08	77.33
Semi pucca Road	7.69	10.65	4.15	10.32
Total	58.96	100.00	40.19	100.00

Source: Physical Feature Survey, 2011

Traffic survey has been conducted on Amtali to Patuakhali Road, Nasiruddin Road, Madrasha Road, WAPDA Road, Amtali to Barguna Road and T&T Office Road. These are the important points provide access to various places both within and outside the Paurashava. Major intersections of Amtali Paurashava are A K School Intersection, WAPDA Office Intersection, Chow Rasta Intersection, etc. Beside this about 50.16 km access roads provide access to all the wards. Width of access road varies 0.61-15.24 m. Mainly LGED is responsible for construction and maintenance of most of the roads within the Paurashava.

Moreover, water transport network of Amtali Paurashava has significant importance in carrying both passenger and goods. Launches are used for carrying both passenger and commodity frequently.

11.3.1.2 Mode of Road Transport

There is no public or private bus service available for intra-zonal movement within Amtali Paurashava. Intra-zonal movement among the Paurashava area is mostly done through the non-motorized vehicles such as rickshaw, bi-cycle, van, etc. Additionally, people also use some motorized vehicles such as motorcycle, Auto Rickshaw, etc. Rickshaw is the most dominant transport for intra zonal movement. The average percentages of traffic composition are Truck 0.7%, Bus 0.7%, Car/micro-bus 1.3%, Auto rickshaw 5.8%, Motor cycle 6.3%, Rickshaw/van 61.2% and Bi-cycle 24.0%.

Moreover, water transport is also available to carry both passenger and commodity. In plan preparation land transportation has given significant importance and road network has designed considering the alternative mode (waterway network).

11.3.1.3 Intensity of Traffic Volume

Traffic volume survey has been conducted to find out total discharging traffic volume both in peak hour and off peak hour at there is no bus stand in Amtali Paurashava.

Peak Hour has been considered from 8.00 to 12.00 and 16.00 to 20.00 because most of the educational and commercial movement has been accomplished within the time periods and traffic characteristics of these time periods is different and higher than other time periods.

As there is a designated day as hat day in Amtali Paurashava, working day, weekend and Hat day traffic volume is counted for transportation survey. Survey result shows that non-motorized vehicle (85.3%) acts dominant role in Amtali Paurashava.

Survey report shows that Amtali to Patuakhali Ghat Road has the highest Off Peak Hour Traffic Volume (234.6 PCUs) per hour and Peak Hour Traffic Volume (466.1 PCUs) per hour. T&T Office Road has the lowest Off Peak Hour Traffic Volume (136.1 PCUs) per hour and Peak Hour Traffic Volume (348.4 PCUs) per hour.

Analyzing the characteristics of Peak Hour and Off Peak Hour traffics, it has been observed that the Peak Hour Traffic is more than 2 times higher than Off Peak Hour Traffic in all of the surveyed road sections.

There is also traffic volume variation at hat day and non-hat day. Generally hat time starts from after noon. So, variation of traffic volume also exists. In case of hat day it has been observed that specially the five road links that are connected with bazaar area face peak hour traffic volume 8.00-12.00 and 16.00-20.00.

11.3.1.4 Level of Service: Degree of Traffic Congestion and Delay

In order to prepare a fruitful traffic management plan, it is really important to evaluate the level of service of the road sections. Level of service of the surveyed road sections has been evaluated using the ratio of volume and capacity. The V/C ratio is defined as the ratio of maximum actual volume of traffic in the peak hour in a road way, expressed in PCUs per hour to capacity of that roadway expressed in PCUS per hour. Capacity of roadway largely depends on number of lane, road width and roadway condition. In Amtali Paurashava area all the surveyed road sections are one lane road.

In Amtali Paurashava all the roads have free flow and transport density is low. The major inter sections are not signalized so no delay is exist here.

11.3.1.5 Facilities of Pedestrians

Pedestrian facility is one of the Transportation facilities which are required to create a pedestrian friendly environment. In Amtali Paurashava, no footpath or pedestrian facility is available for the resident that is one of the vital needs for urban life.

11.3.1.6 Primary Considering Issues for Planning

Major deficiencies of transportation and traffic management are below:

- Present road network has developed without maintaining any hierarchy or planning rules
- Most of the vehicle are moved in this Paurashava are without fitness.
- Narrow road and lack of transport modes are another transportation problems of the area
- Absence of stand and proper parking spaces grounds haphazard condition and congestion.

- Absence of signalized crossing.
- Unbalanced relationship between traffic and landuse.
- The Paurashava has no pedestrian facility that directly hampers the safety of the people
- Lack of traffic control aids, street furniture, street lighting, etc.
- Water transport vehicles are not adequate and service quality is not satisfactory

Roadway Capacity Deficiency

Roadway Capacity deficiencies occur wherever the travel demand on a road is close to or higher than the vehicle capacity of that roadway. In order to identify the road capacity deficiency, it is required to make a comparison between existing Level of service (LOS) of major roads with the standard one. By comparing those it has observed that all the surveyed roads of Amtali Paurashava have free flow and transport density is low. Existing capacity of major roads are not consistent with standard capacity limit and the future traffic flow and demand may exceed the limit.

Moreover, the average width of the primary roads and secondary roads of Amtali Paurashava are 10.32 meter and 3.2 meter and 1.3 meter respectively whereas according to the PMO standard the right of way of primary road, secondary road and access road will be 18-24 meter, 13-16 meter and 6-8 meter respectively. So these roads have designed without maintaining any standards. However, these roads have to be widened where possible and essential.

Operational, Safety, Signal and other Deficiencies

- At present, there is no selected authority for the management of traffic at Amtali Paurashava. Generally The Police Department's Traffic wings are the main eligible.
- As the roads of Amtali Paurashava have free flow of traffic and most of the traffic are non-motorized both in hat and non-hat day, road safety exists naturally in the Paurashava.
- Traffic signaling system is totally absent in the Paurashava. On some specific point of primary and secondary roads, traffic signaling may be needed.

11.3.2 Condition of Water Transport

Water transport network of Amtali Paurashava has significant importance for carrying both passenger and commodity frequently. The launch service serves the route Amtali to Potuakhali, Barisal, Dhaka. There is 1 Launch ghat within Amtali Paurashava. It is located at ward no 8. Landing stage of launch terminal is semi-pucca. The condition of landing stage of launch terminal is moderate.

11.3.3 Condition of Other Transport

There is no existence of railway and airway network at Amtali Paurashava.

11.4 Future Projections

With the increase of population, demand on travel will be increase with the time. Estimating the demand for transportation facilities and services is one of the most important analysis tasks in transportation planning. The demand includes not only passenger travel but also the movement of goods. Whether conducting a regional transportation planning study or examining the impacts of transportation of a new development site, estimating expected travel demand at some future date is critical point of departure for transportation planning.

Map 11.1: Existing Road Network of Amtali Paurashava



276650

276800

276950

488000

486500

485000

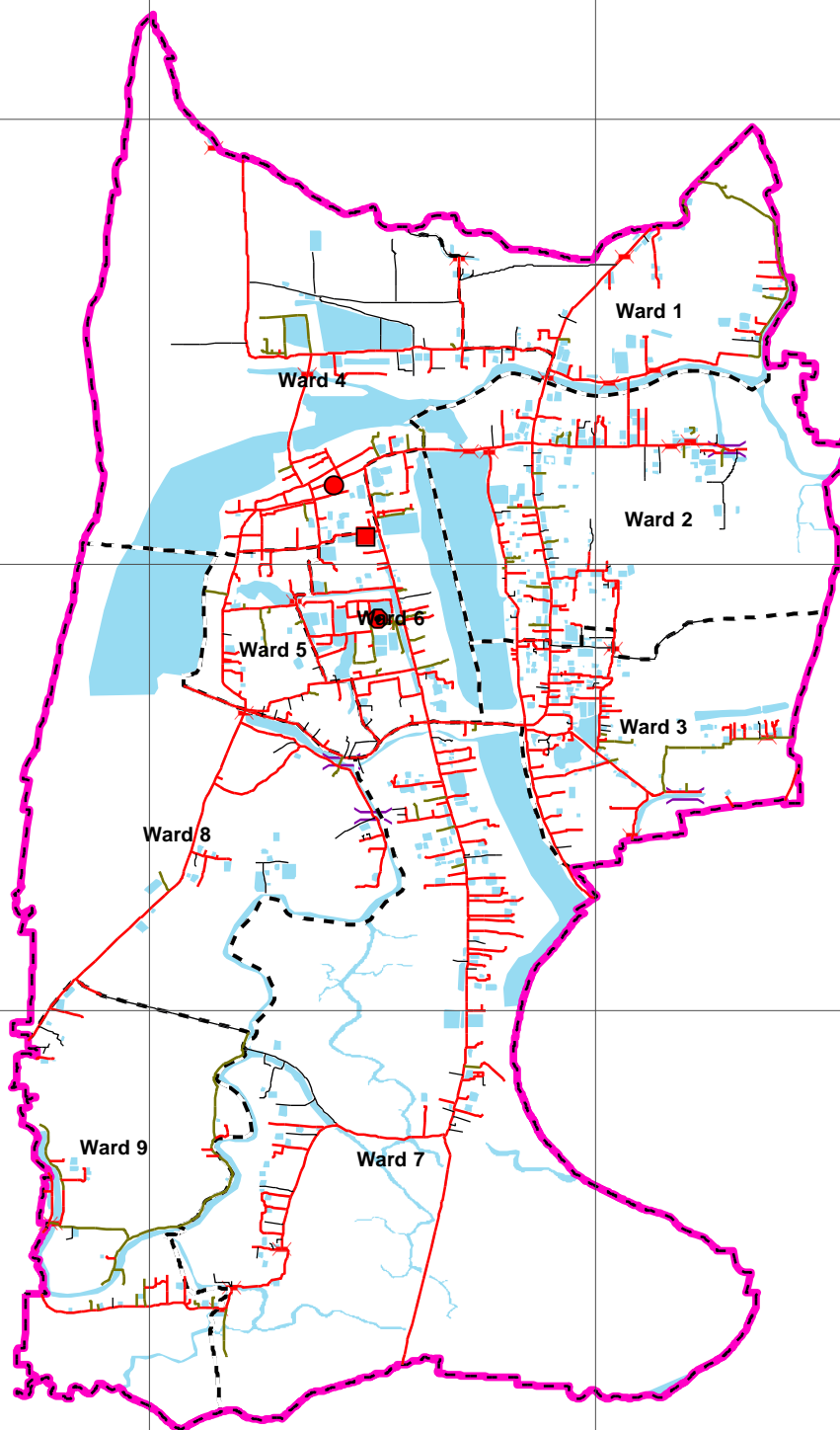
483500

488000

486500

485000

483500



276650

276800

276950

Legend

- Paurashava Boundary
- - - Ward Boundary

- Pouro Bhavan
- UP Office
- Upazila Parishad

Bridge_Culvert

- X Culvert
- Bridge
- Waterbody

Road Type

- Katcha
- Pucca
- Semipucca

0 187.5 375 750 Meters



Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government,
Rural Development and Cooperatives

CONSULTANT

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MAP 11.1: EXISTING ROAD NETWORK

11.5 Transportation Development Plan

The current chapter of the report is about Transport Development Plan covering its development plan proposals and management of the proposed project area up to the year 2031. The report describes existing transportation facilities and proposal on the important facilities such as, bus terminal, truck terminal, rickshaw/van stands, baby taxi/tempo stands and passenger sheds for local bus users.

11.5.1 Road Network Plan

The road network should be planned providing adequate access for vehicles and pedestrians and also be formed an efficient system of inter-communication among all parts of the area. To fulfill these requirements, the network should follow a standard hierarchy. The Road network Plan of Amtali Paurashava has been prepared by following the functional road hierarchy.

Definition of different Road Hierarchy			
Primary Road	Secondary Road	Tertiary road	Access road
<p>These are the urban highways (including arterial roads, ring roads and radial roads etc.) whose function is to channelize the longer movements from one part of the city to another and beyond. Dhaka Kuakata Road are this type road. The fundamental design requirements for this type of roads are:</p> <ul style="list-style-type: none"> ▪ should have minimum number of intersections at which local traffic enters the Primary road ▪ they cannot be used for giving access to individual building or property 	<p>They lead off from the form the Primary Road and usually feed down to Tertiary roads. In proposed and existing roads are this types.</p> <ul style="list-style-type: none"> ▪ they cannot be used for giving direct access to individual building because the consequent frequency of interruptions would give rise to traffic dangers ▪ High Speed cannot be permitted of the multiplicity of road junctions 	<p>They usually connect the Secondary Roads with the Access Roads.</p> <ul style="list-style-type: none"> ▪ they collect and distribute traffic to and from access Roads, housing groups and even individual houses ▪ High speed traffic and through traffic is discouraged 	<p>The sole function of access roads is to provide access to houses and properties. They usually connect individual houses with Tertiary Roads.</p>

Reviewing different previous planning proposals after discussions with experts and officials of this project a set of standard for basic infrastructure and services has been finalized, which are as follows:

Table 11.2: Standards of Roads Proposed by PMO

Landuse Category	Hierarchy of Roads	Right of Way (ROW)
Circulation Network	Primary Roads	150-100 feet
	Secondary Roads	100-60 feet
	Tertiary Road	20-40 feet

Source: UTIDP, PMO, LGED

Amtali is a small town with a very low volume of internal and external traffic movement. Considering traffic volume and discussion with Paurashava authority and local stakeholders consultants have established a road hierarchy based on the functional area within the Paurashava as well as the internal and external linkage. Existing Access roads will be connected with Tertiary and Secondary roads for better mobility. Following table shows the standard of future development of road network.

Table 11.3: Standard for Future Development of the Road Network of Amtali Paurashava

Landuse Category	Hierarchy of Roads	Right of Way (ROW)
Circulation Network	Paurashava Primary Roads	60-120 feet
	Paurashava Secondary Roads	40-50 feet
	Paurashava Local Roads	20 - 30 feet

Source: Proposed by Consultants

11.5.2 Design Principals and Standards

In preparing detail design some basic principals have been followed:

- Road Hierarchy Standards provided by PMO
- Relevant regulations of Building construction Act, 1952 (amendment in 1996), followed by Paurashava
- follow up the National Urban Land Transport Policy, 2004
- follow up the Transport planning relevant Books, articles and papers (Ref: Traffic Engineering and Transport Planning, Dr. L.R. Kadiyali)

A) Intersection improvement

This measures can be categorized into 2 types, are as follows:

- Channelization
- Improvement of Intersection geometry

a. Channelization

Channelization of intersection at grade is the separation or regulation of conflicting traffic movements into definite paths of travel by the use of pavement markings, raised islands, or other suitable means to facilitate the safe and orderly movements of both vehicles and pedestrians. Channelization is done for:

- Separation of conflicts (by using roundabout, raised island, etc.)
- Reduction of conflict points
- Reduction of excessive pavement areas

b. Improvement of intersection geometry includes:

- Corner Plot widening
- Establishment of Traffic islands

According to Building Construction Act, 1996, in each Corner plot of major intersection, 1m x 1m land area has to be open for traffic movement.

B) Land use Proposals at the Major Intersections

According to Building Construction Act, 1996, the construction permission of Shopping Complex, Cinema Hall or similar type of buildings are restricted within 50 m (164 ft) from major road intersections to avoid traffic congestion.



Fig 11.1: Channelization Measures at Major Intersections

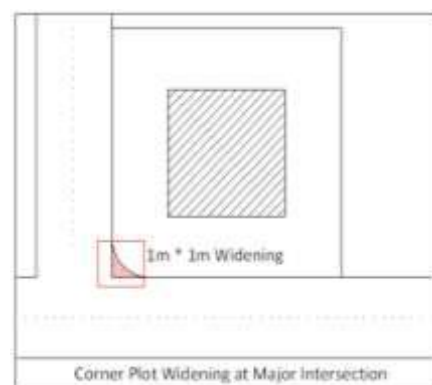


Fig 11.2: Corner Plot Widening at Intersections

C) Prioritization in ROW Space Allocation according to Road Hierarchy

In pertaining with the National Land Transport Policy, 2004, for promoting an efficient road transport system, provision of Motorized and Non-motorized vehicles is prioritized. Therefore, effective road space allocation and utilization is also emphasized in national policy. At first, a uniform priority has been fixed for designing the whole Road Network Development.

Basis of Prioritization

Prioritization has been formed in light of National Land Transport Policy, 2004.

- To promote the speed and mobilize the activities, motorized vehicles (especially Bus lane) are encouraged
- To make a environmental and economical balance (employment pattern and Income level), provision of non-motorized vehicles are kept
- To ensure safe movement of citizens, footway should be provided

Though, uniform space allocation is formed but Right Of Way (ROW), land use and the demand of different type of vehicles are not same throughout the whole Paurashava area. So, the design priority has been differed at road hierarchy as follows:

Space Allocation at ROW considering Road Hierarchy

Priority	Primary Road	Secondary Road	Tertiary Road	Access Road
1	Provide one lane (3.0m) for motorized vehicles including Bus, Car and Jeep etc. The width of each lane is minimum 3 m depending on the availability of space.	Provide one lane (3.0 m) for motorized vehicles including Bus, Car and Jeep etc. The width of each lane is minimum 2.5 m depending on the availability of space.	Provide one lane (3 m) for motorized and non-motorized vehicles including Car, Jeep, Motorcycle and Rickshaws etc. The width of each lane is minimum 2.5 m depending on the availability of space.	Provide one lane (3 m) for motorized and non-motorized vehicles including Car, Jeep, Motorcycle and Rickshaws etc. The width of each lane is minimum 2.5 m depending on the availability of space.
2	Non-motorized vehicle paths (Service lane), 2.5m wide in each direction with over-taking lane including physical segregation of .5ft wide and 1ft height concrete block.	Non-motorized vehicle paths (Service lane), 2.5m wide in each direction with over-taking lane including physical segregation of .5ft wide and 1ft height concrete block.	Pedestrian paths as per existing demand (minimum 1.5 m)	Pedestrian paths as per existing demand (minimum 1.5 m)
3	Pedestrian paths as per existing demand (minimum 1.5 m)	Pedestrian paths as per existing demand (minimum 1.5 m)	Provide one lane for motorized and non-motorized vehicles including Car, Jeep, Motorcycle and Rickshaws etc. depending on the availability of space.	

Priority	Primary Road	Secondary Road	Tertiary Road	Access Road
4	2 to 3 or more lanes for motorized vehicles. The width of each lane is minimum 2.5m depending on the availability of space.	2 to 3 lanes for motorized vehicles. The width of each lane is minimum 2.5m depending on the availability of space.		

Figure 11.3 shows the cross section of different types of roads.

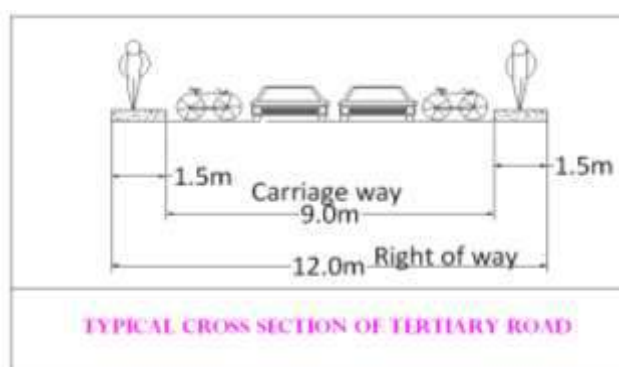
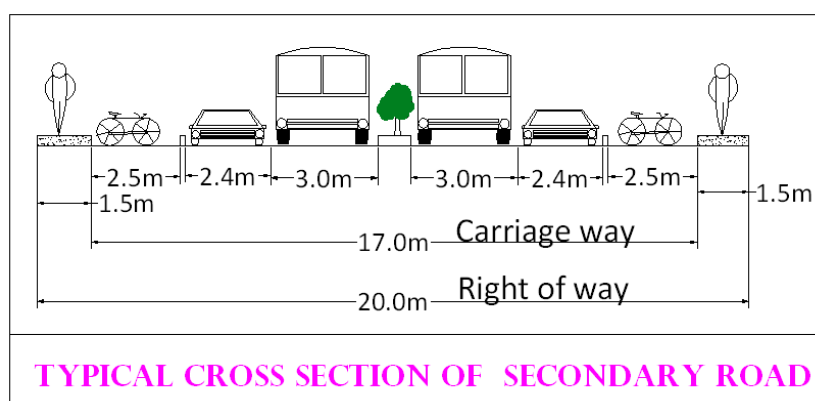
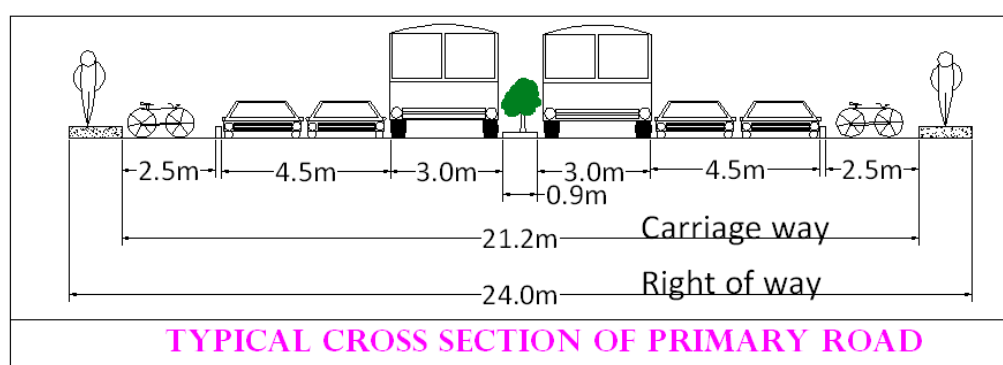


Fig 11.3: Typical Cross-Section of Various Types of Roads

11.5.3 Proposal for Improvement of the Existing Road Networks

The improvement plan for existing road network has been prepared considering two categories, which are as follows:

- A. Roads connect Paurashava with Regional Road Network
- B. Roads provide internal network of the Paurashava

All of the Road should be developed in 20 years implementation time. It will be done in three phases; 1st phase (1st 5 years), 2nd phase (2nd 5 year) and 3rd phase (last 10 year). In the master plan, about 62 kilometers roads have been proposed for widening. Table 11.4 shows the road widening proposal for the first phase and details of the road proposals shows in Annexure E.

Table 11.4: Road Widening Proposal for Existing Road (1st Phase)

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Ward No
Pr_3	Primary Road	60.00	334.098	Outside
Pr_4	Primary Road	100.00	536.813	Outside
Pr_5	Primary Road	60.00	215.483	Outside
Pr_744	Primary Road	60.00	1113.378	Ward 01
Pr_745	Primary Road	60.00	172.873	Ward 04
Pr_746	Primary Road	60.00	569.194	Ward 05
Pr_747	Primary Road	60.00	454.271	Ward 04
Pr_748	Primary Road	100.00	717.964	Ward 07
Pr_749	Primary Road	100.00	200.279	Ward 01
Pr_750	Primary Road	60.00	2511.248	Ward 09
Pr_751	Primary Road	60.00	210.890	Ward 07
Pr_752	Primary Road	60.00	2303.996	Ward 09
Pr_753	Primary Road	60.00	1015.511	Ward 08
Pr_754	Primary Road	60.00	286.744	Ward 05
Pr_755	Primary Road	80.00	99.297	Ward 07
Pr_756	Primary Road	80.00	339.704	Ward 03
Pr_757	Primary Road	80.00	206.773	Ward 06
Pr_758	Primary Road	80.00	885.929	Ward 02
Pr_759	Primary Road	80.00	639.706	Ward 01
Pr_760	Primary Road	80.00	740.087	Ward 05
Pr_761	Primary Road	80.00	184.332	Ward 06
Pr_762	Primary Road	60.00	82.812	Ward 06
Pr_763	Primary Road	60.00	284.284	Ward 02
Pr_764	Primary Road	60.00	94.873	Ward 04

Source: Based on Physical feature survey, 2010

A. Roads connect Paurashava with Regional Road Network

To avoid traffic congestion within the paurashava, a new bypass road has been proposed from Patuakhali to Kuakata towards the North-South direction. This road has considered the primary entrance of the Paurashava. Secondary road has proposed to connect east west direction of the area.

Hierarchically, the following types of roads have been proposed in the plan:

- major road having rights of way from 60 to 120 feet
- secondary road having rights of way from 40 to 50 feet of the right of way

B. Internal Network of the Paurashava

The above mentioned roads would be linked up with the proposed road so that eventually all parts of Amtali Paurashava would be well connected.

Here, two types of roads have been proposed to cater the needs of the internal circulation of the Paurashava area. These are:

- secondary road having rights of way from 40 to 50 feet
- local road having rights of way from 20 to 30 feet

Table 11.5 shows proposed road hierarchy of Amtali Paurashava.

Table 11.5: Proposed Roads of Amtali Paurashava According to Hierarchy

Types of Road	Road Width (ft)	Length (km)	%
Primary Road	60	10.24	57.11
	80	3.09	17.23
	100	4.6	25.66
Sub-Total	60-100	17.93	11.31
Secondary Road	30	15.2	24.37
	40	45.62	73.13
	50	1.56	2.50
Sub-Total	30-60	62.38	39.34
Local Road	20	76.37	97.58
	25	1.89	2.42
Sub-Total	20-25	78.26	49.35
Total		158.57	100

Source: Proposed by Consultants

11.5.4 Proposals for New Roads

To accommodate the traffic volumes about 10-15% land has been considered of total planning area. About 66.77 kilometers of new roads have been proposed to ensure accessibility in the area. Phase wise newly proposed Road (1st phase) has been shown in Table 11.6. Detail road inventory is shown in Annexure E.

Proposed Road Network of Amtali Paurashava has been presented on **Map 11.2**.

Table 11.6: Newly Proposed Road in Amtali Paurashava (1st Phase)

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Proposed	Ward No	Phase
Pr_738	Primary	60.00	75.715	New	Ward	First
Pr_739	Primary	100.00	1128.374	New	Ward	First
Pr_740	Primary	100.00	830.197	New	Ward	First
Pr_741	Primary	100.00	890.860	New	Ward	First

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Proposed	Ward No	Phase
Pr_742	Primary	100.00	299.283	New	Ward	First
Pr_743	Primary	60.00	521.265	New	Ward	First

Source: Proposed by Consultants

11.6 Plans for Other Transportation Facilities

In the field of transportation facilities, the consultant has proposed such facilities as, bus terminal, truck terminal, rickshaw stands, baby taxi/tempo stands and passenger shed for local bus users.

11.6.1 Parking and Terminal Facilities

A) Parking Facilities

Parking facilities at Amtali Paurashava has been provided considering two parameters:

- **Individual Building:** In this context, it is recommended to follow the Building Construction Act, 1996 (Sub-section 2&3, Section-13).
- **Area wise Parking Facilities:** As per area wise context, it is recommended to provide parking facilities in Commercial and Industrial area. As per Building Construction Act 1996, total 1.26 acre land and 0.80 acre land will be declared as parking zone at commercial area and industrial area of Amtali Paurashava which is 5.75% land of respective areas.

B) Terminal Facilities

Considering future travel demand in next 20 years; Terminal facilities for Bus, Truck, Motorcycle, Rickshaw and other existing transports have been provided.

- **Bus Terminal:** One bus terminals have been proposed at ward no 1. The proposed terminal will comprise about 5.79 acre areas.
- **Truck Terminal:** At Amtali Paurashava, 1.17 acre areas have been proposed for Truck Terminal in ward no. 1.

11.6.2 Development of Facilities for Pedestrians, Bicycles and Rickshaws

A) Pedestrians

Proposals regarding pedestrian walkway have been already depicted in proposed road network plan by providing separate walkway as per priority of facilities. About 1.5m footpath has been already shown in primary and secondary roads.

B) Bicycles and Rickshaws

Facility provision of bicycles and rickshaws has been already depicted in space allocation of Right of Way (ROW). Separate Service lane of 2.5 m has been already shown in Primary road and 1.8.m lane in Secondary Roads in figure 11.3.

11.6.3 Other Transportation Facilities

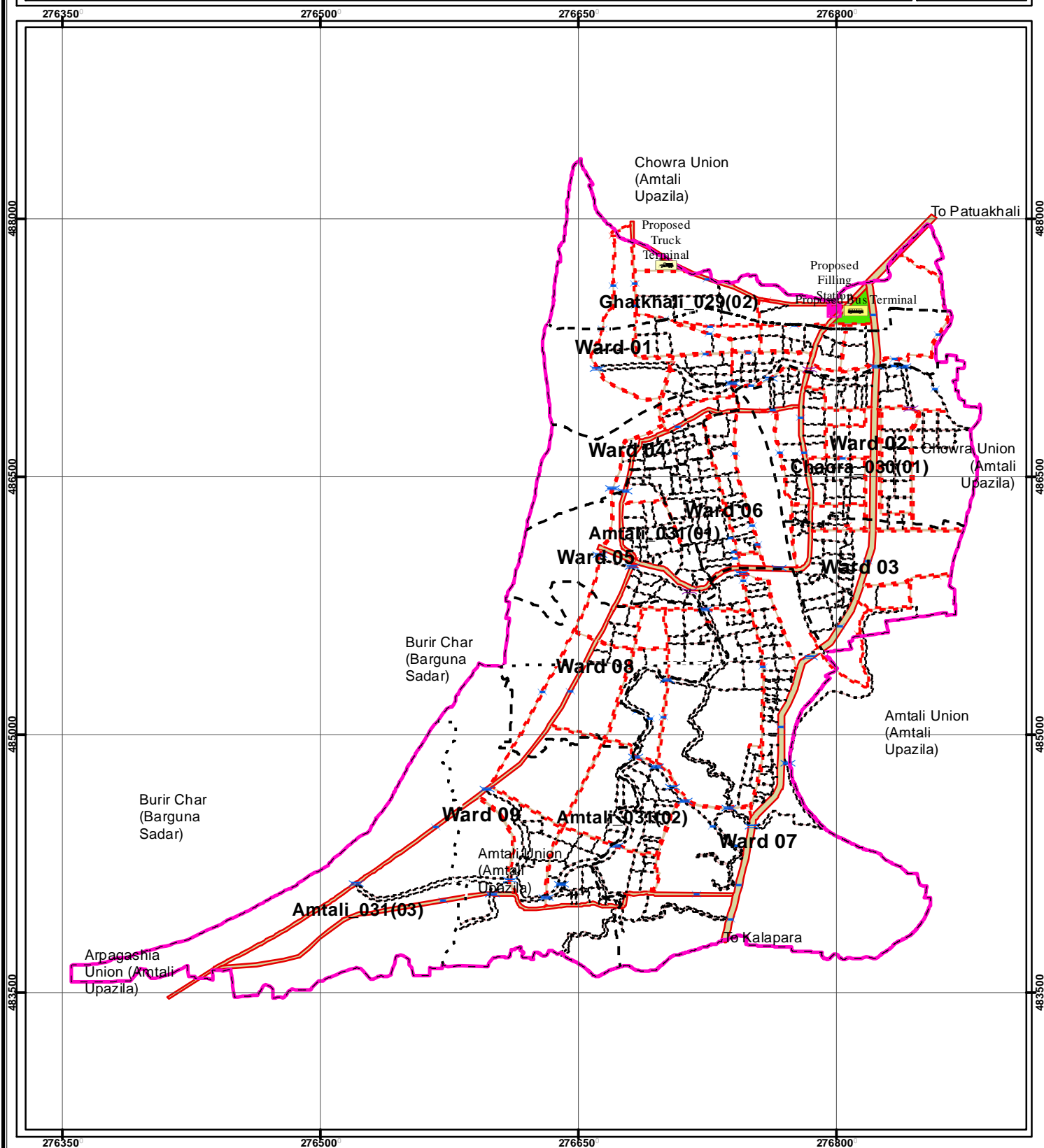
One fuel station has been proposed at ward no 1 comprising about 0.83 acres of land.

11.7 Waterway Development / Improvement Options

At present, water transport facility has significant importance for carrying passenger and commodity. If waterway network can be developed, this will reduce pressure on road network and will also boost up the economic development of the area. Therefore, some measures should be taken to promote the water transport network in Amtali Paurashava area:

- Development of infrastructural facilities
- Dredging and maintenance of existing navigable waterways and for resuscitation of dead or dying rivers, channels, or canals, including development of new channels and canals for navigation
- Carry out removal of wrecks and obstruction in inland navigable waterways
- Ensure co-ordination of Inland Water Transport with other forms of transport and with trade and agricultural interests for the optimum utilization of the available transport capacity
- Promote good quality launch services
- Develop, maintain and operate landing/station and terminal facilities
- Prepare plans or schemes for carrying out any of the above mentioned functions by BIWTA.

Map 11.2: Proposed Transport & Traffic Management Plan of Amtali Paurashava



Legend

Admin Boundary

- - - Mouza Boundary
- Paurashava Boundary
- - - Sheet Boundary
- - - Ward Boundary

Existing Bridge

- Bridge
- Culvert

Proposed Bridge

- Bridge
- Culvert

Proposed Features

- Bus Terminal
- Tempo Stand
- Truck Terminal

Proposed Road Type

- Primary Road
- Secondary Road
- Tertiary Road

Proposed Development Proposal

- Bus Terminal
- Tempo Stand
- Truck Terminal

0 230 460 920 Meters



Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government,
Rural Development and Cooperatives

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11.8 TRANSPORTATION SYSTEM MANAGEMENT (TSM)

Fundamental traffic management (TM) regulations have been in practice from the very beginning for example, rules to use a particular side (left or right) of the road. However, the modern objectives of traffic management also include operational efficiency of traffic and improvement of environment.

The main purposes of traffic management are:

- To ensure safe movement of all vehicular and pedestrian traffic
- To improve operational efficiency (junction and network links) in terms of traffic flow
- To improve the environment

The most important aspect of traffic management is its major involvement in its efficient use of basically existing facilities. These may be in the form of:

- Rules and regulations governing the use of facilities. For example, right of use of a roadway, speed limit etc. and
- New works and improvements of limited scale like flow control and segregation measures and devices

11.8.1 Strategies for Facility Operations

a) Parking Management

In Amtali Paurashava, parking measures are considered for:

- Bus Stand
- Truck Terminal
- Multimodal Transport Terminal

To provide parking space, following regulations mentioned in Building Construction Rule, 1996 should be provided:

- Parking functions should be maintained with the Parking or Stand lot, Roads cannot be used for maneuvering the vehicles
- For entrance and exit of Bus and Truck in the Terminal minimum 4.5 meter width should be provided
- On-Street Parking is applicable if:
 - Angular Parking should be provided within 45°
 - Within 25 meter of Pedestrian Crossing or Intersection, no parking would be allowed
 - No parking will be allowed over the Highway

b) Petrol Pump/ CNG Stations

Location should be away from sensitive, frontages and where it is unlikely to be detrimental to road safety and likely to minimize adverse impacts on other traffic. One Petrol pump has been proposed at Amtali Paurashava in Ward no. 1.

11.8.2 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 the hierarchy of road network. Implementation will also be followed following this hierarchy.
- Proposed roads in those areas will be chosen for immediate construction that is needed to promote growth in that area.
- Service roads will be constructed along with the major roads to allow free flow of long distance traffic.
- Bill board should be installed conveying road safety messages and instructions.
- Speed breaker should be provided at the in-front school, colleges and hospitals etc.

11.8.3 Strategies for Traffic Management

- Connect the missing links of primary, secondary and access roads on priority basis.
- Separate lane for non-motorized vehicles should be provisioned on the primary and secondary roads.
- Widen the narrow roads to make networks for efficient circulation.
- Right of Way (ROW) should be kept free from any type of development activities.
- Provide adequate pedestrian facilities and off-street parking wherever needed.
- If requires, tidal flow operation method can be applied in case of some roads. For instance, the morning peak results heavy flow of traffic towards city centre and evening peak results heavy flow towards the outside from the City Centre. In this case, half of other side lane can be utilized for one direction traffic during peak hour.

11.9 Plan Implementation Strategies

The section describes the plan implementation strategies of transportation plan of Amtali Paurashava. This also describes the regulation to implement transport plan, evaluation and coordination to implement the transport plan in the Paurashava.

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 22nd 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 7th 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-

- (i) erects, places or retains a sign on a public road, or
- (ii) 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-

- (a) 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,
- (b) 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.

Implementation, Monitoring, Evaluation and Coordination of the Plan

Implementation through Multi-Sectoral Investment Program: 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 Program (MSIP).

Objective of a Multi-Sectoral Investment Program (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.

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 program 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- 12

DRAINAGE AND ENVIRONMENTAL MANAGEMENT PLAN

12.1 Drainage Management Plan

This chapter states about goals and objectives, and methodology of Drainage Development Plan. An inventory of the existing drainage system of Amtali has been made as a part of the comprehensive topographical survey to be taken-up under this project. While assessing the drainage conditions, the serviceability, structural conditions, obstruction, siltation, blockages are taken into consideration. And finally describe the drainage and environmental management plan, and its implementation strategies.

12.1.1 Goals and Objectives

Provision of drainage facilities are important concern to human settlements to create better living environment. Failure to provide the adequate drainage facilities results in flooding and detrimental environmental quality. Drainage of high rainfall region particularly in the context of Barishal region is very important. The objectives of drainage planning are described as follows:

- To analyze drainage aspects in the planning of the Paurashava.
- To study geological fault and lineament of the project area and its surroundings.
- To study the existing water development, flood protection and flood control project (if any) in the area and their impacts in the Paurashava plan.
- To present planning options for drainage of the future Paurashava area.
- To study conservation of the natural resources like parks, open space, water bodies, existing ponds etc.
- To conserve place of historical, architectural (if any) and agricultural importance including natural fisheries.

12.1.2 Methodology and Approach to Planning

Drainage Network Survey for Amtali Paurashava has been carried out through the guideline of ToR .In this survey explore the existing drainage network system at Amtali Paurashava. The main vision of this survey is explored the length, depth, flow direction, coverage area and satisfactory level of the Paurashava inhabitants. The information of drainage network gathered from topographic, socioeconomic and physical feature survey (detail was given in Chapter 6, Section 6.2 of Amtali Survey Report). Major feature of drainage and environment survey are as follow:

- Survey the main drainage channels from their heads to the outfalls and to estimate their capacity to discharge water.
- Collect and analyze meteorological data over time in the area to determine the meteorological conditions and predict storm surges.
- Determine the efficiency of the present drainage systems and make recommendation to government.
- Organize a public enlightenment campaign to expose the adverse effects of dumping refuse in drainage channels, through a mass media meeting.
- Drainage channels were surveyed by leveling from the head of the channels to the outfall using a surveyor's level. A zero datum was chosen at the head of each channel. This zero height was then used to level the channel from the head to the toe or outfall. In areas where water flow was observed, the velocity of the flow was recorded. The flow velocity was calculated by timing the flow rate within a 3-5m length of channel. In areas where sediment

or refuse was observed to accumulate in the bottom of the channel, the thickness of such sediment or refuse was measured.

- A questionnaire was administered to local residents to collect information about flooding, refuse disposal and drainage channel patterns from local residents along flood prone areas. The answers to the questionnaire were statistically analysed and use to decipher resident's opinion on the problem of flooding.

12.2 Existing Drainage System/ Network

12.2.1 Man Made Drains

Paurashava has only 1.85 Km of pucca drainage network at Amtali Paurashava office area. This drainage network served mainly within the area of beside Paira river and West Side of Paurashava Bhaban area. Maximum people of the Paurashava deprived from drainage facility at Amtali Paurashava. Table 12.1 shows inventory of major drain in Amtali Paurashava.

Table 12.1: Existing Inventory of Drains

Id. No.	Type of Drain	Length (in Km)	Width (in m)	Ward No	Connectivity	
					Start Point	End point
1	Pucca	0.0953	0.3048	Ward No 4	Ward 5	Ward 4
2	Pucca	0.0601	0.3047	Ward No 1	Ward 1	Ward 1
3	Pucca	0.0359	0.3050	Ward No 4	Ward 4	Ward 4
4	Pucca	0.2819	0.4567	Ward No 4	Ward 4	Ward 4
5	Pucca	0.4232	0.4573	Ward No 4	Ward 4	Ward 4
6	Pucca	0.0710	0.4558	Ward No 4	Ward 4	Ward 4
7	Pucca	0.0463	0.4545	Ward No 4	Ward 4	Ward 4
8	Pucca	0.3322	0.6092	Ward No 4	Ward 4	Ward 4
9	Pucca	0.1199	0.6086	Ward No 4	Ward 4	Ward 4
10	Pucca	0.0419	0.4548	Ward No 4	Ward 4	Ward 4
11	Pucca	0.0580	0.4555	Ward No 4	Ward 4	Ward 4
12	Pucca	0.0390	0.4547	Ward No 4	Ward 4	Ward 4
13	Pucca	0.0414	0.4514	Ward No 4	Ward 4	Ward 4
14	Pucca	0.0198	0.4524	Ward No 4	Ward 4	Ward 4
15	Pucca	0.0104	0.5827	Ward No 4	Ward 4	Ward 4
16	Pucca	0.0971	0.4547	Ward No 4	Ward 4	Ward 4
17	Pucca	0.0329	0.4541	Ward No 4	Ward 4	Ward 4
18	Pucca	0.0460	0.4550	Ward No 4	Ward 4	Ward 4

Source: Physical Feature Survey, 2010

Table 12.1 shows the ward wise manmade drainage coverage in Amtali Paurashava. Total man made drainage coverage in Amtali Paurashava for an area of 0.88 Square kilometer and it cover only Ward nos. 04 and 05. The highest drainage coverage concentrates in ward no. 04, total 0.86 Square kilometer drainage coverage exist in this ward. **Map 12.1** Shows the existing Drainage Network of Amtali Paurashava

Map 11.1: Existing Drainage Network of Amtali Paurashava



276650

276800

276950

488000

488000

486500

486500

485000

485000

483500

483500

276650

276800

276950

Legend

- Paurashava Boundary
- - - Ward Boundary

- Pouro Bhavan
- UP Office
- Upazila Parishad

Bridge_Culvert

- ✕ Culvert
- Bridge
- Waterbody

- Existing Road
- Existing Drain

0 187.5 375 750 Meters



Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government,
Rural Development and Cooperatives

CONSULTANT

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Dhaka - 1000
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In Association with

12.2.2 Natural Canal and River

General Description of Natural Canals

The existing natural canal network is spread like tree roots in total Paurashava area. In some portion of the area the condition of the khal and irrigation canal are being encroached by the local people and also by local authority and the situation is deteriorating day by day. So, it should be given much concern to sustain the natural canal.

Paira River passes western portion of the project area. It has been observed from the physical features survey that about 3.5 km of rivers and 35.69 km of khals are passing through the project area. Table 12.2 shows the length and connectivity of Khals of Amtali Paurashava. And ward wise area coverage of the canals are presented in table 12.3.

Table 12.2: Drainage Coverage of Existing Khals in Amtali Paurashava

Name	Width (in m)	Length (in m)	Starting Point Connection	End Point Connection
Canal 1	82.46	8179.25	Ward 1,2,7	Ward 8
Canal 2	21.22	360.24	Ward 3	Ward 3
Canal 3	12.98	361.30	Ward 3	Ward 3
Canal 4	13.57	8199.81	Ward 7	Canal 1
Canal 5	14.86	399.42	Ward 7	Ward 7
Locha Khal	16.75	1830.26	Ward 9	Canal 4

Source: Physical Feature Survey, 2010

River

The Paira River passes through the western part of the paurashava. Due to river erosion the river has eroded the border of ward no. 04, 05 and 08. Total length of the Paira River passing along the north and western border of Amtali Paurashava is 3.5 km.

Beel/Marshland

There is no existence of Beel/Marshland at Amtali Paurashava.

Other Water Bodies (Pond-Dighi-Ditch and Dyke)

At Amtali Paurashava, about 79.43 acre areas are under water bodies comprising ditch and pond. There are about 463 ditches covering 69.35 acre area and 43 ponds comprising 10.07 acre area. Among the all wards ward no. 2 has the highest number of ditches and ward no. 6 has the highest number of ponds.

Table 12.3: Ward-Wise Area Coverage of Existing Waterbodies at Amtali Paurashava

Ward No.	Ditch		Pond		Total	
	Number	Area (acre)	Number	Area(acre)	Number	Area (acre)
W-1	41	5.31	2	0.04	43	5.35
W-2	136	14.63	0		136	14.63
W-3	102	9.48	1	0.05	103	9.53
W-4	28	15.70	5	0.82	33	16.53
W-5	10	3.18	3	0.35	13	3.53
W-6	26	6.77	18	6.94	44	13.71
W-7	84	10.51	4	0.31	88	10.83
W-8	10	1.84	9	1.39	19	3.23
W-9	26	1.92	1	0.17	27	2.10
Total	463	69.35	43	10.07	506	79.43

Source: Physical Feature Survey, 2010

12.2.3 Topographic Condition of Existing Drainage Network

Existing natural drainage network and direction of natural flow depends on the elevation of the area. The minimum and maximum ground level varies from 1.17m to 3.40m and average height is 1.67m. From the survey, it has been observed that ward no. 2, 3, 4 and 6 are the high land area in respect of other wards. The highest spot value (3.4m) location is at ward no. 2 and lowest value (1.17m) has observed at ward no 7. The flow of storm water will be from the high land to the lowlands and the ultimate destination is the river, cannels and ponds.

12.2.4 Analysis of Peak Hour Run Off Discharge and Identification of Drainage Outfalls

Drain as the structure is generally develops to free our living area from household waste water and rain water of storm water. The daily waste water discharge from a household is negligible so for the drainage design it is necessary to calculate the storm water. Urban storm drainage primarily concerns this surface run-off. The primary objective of urban drainage system design is to drain out this storm water either through open surface drains or through underground sewers. An important parameter for the design of storm water systems is the rate and volume of run-off to be conveyed through the system as a consequence of storms. Run-off estimates are carried out based on knowledge of the occurrences of heavy rainstorms and a relation between rainfall and the corresponding run-off. The quantity of run-off again depends on the geometry and physical properties of the catchments.

Rainfall occurs at irregular intervals, and intensities, and frequency and duration vary within catchments. Due to this random nature of occurrence of rain events, the storm drainage system is designed considering estimated run-off based on the analyses of past rainfall records. A widely used statistical description of heavy rainfall is that of intensity–duration–frequency curves that are developed by processing the data for a large number of storm events observed over a number of years, considering the time variation of the rainfall intensity.

12.2.5 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

$$Q = CsC_r I A$$

Q = Design runoff flow rate (cfs)

I = Rainfall intensity (in/hr)

Cs = Storage coefficient

Cr = 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 full), 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 12.4.

$$V = [1.49/n] [R^{2/3}] [S^{1/2}]$$

V = Velocity of flow, feet/second
N = Manning's roughness coefficient for channel flow
S = Slope, feet/foot
R = Hydraulic radius, feet

And

$$T_t = V / (60L)$$

T_t = Travel time, minutes
V = Velocity, feet/second
L = Length, feet

Table 12.4: Manning's "N" Values for Channel Flow

Conduit Material	Manning's "n"	Conduit Material	Manning's "n"
Closed conduits		Pipes	0.011-0.015
Asbestos-cement pipe	0.011-0.015	Liner plates	0.013-0.017
Brick	0.013-0.017	Open Channels	
Cement-lined & seal coated	0.011-0.015	Lined channels	
Concrete pipe	0.011-0.015	Asphalt	0.013-0.017
Helically corrugated metal pipe (12" – 48")	0.013-0.023	Brick	0.012-0.018
Paved invert	0.018-0.022	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

Conduit Material	Manning's "n"	Conduit Material	Manning's "n"
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 (Cs): 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 12.5

Table 12.5: 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)

Runoff Coefficient (Cr): The runoff coefficient (Cr) 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 (Cr) for each land use classification are listed in Table 12.6

Table 12.6: Modified Rational Method Runoff Coefficients

Landuse Designation	Runoff Coefficient Cr	Landuse Designation	Runoff Coefficient Cr
Residential rural	0.30	Agricultural exclusive	0.25
Residential semi urban	0.40	Forest and watershed	0.20-0.25
Residential urban	0.5-0.60	Public facilities	0.30-0.60
Apartment professional	0.70	Forest/ woodland	0.25
Neighborhood Commercial	0.85	Paved area/road	0.99
Community Commercial	0.85	Slum area	0.50-0.55
Industrial	0.70-0.75		

Source: Countywide Comprehensive Plan (Master Drainage Plan)

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.

- c. 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.

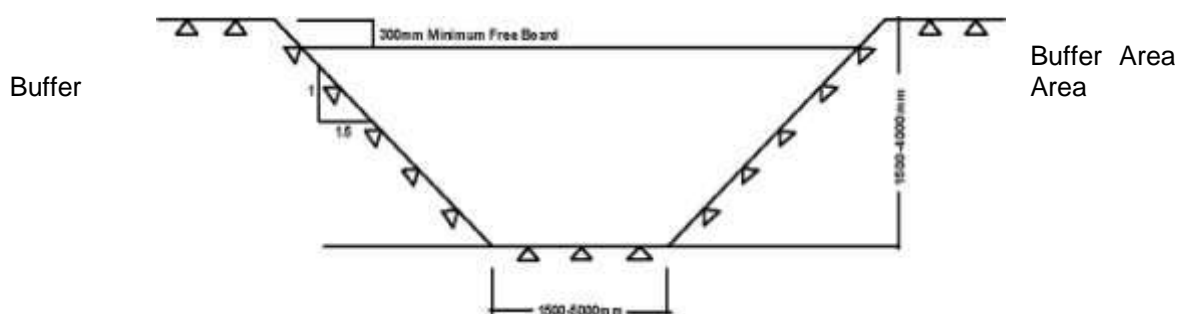
Projection

In implementing various infrastructures for development, 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 spent 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 will be given on road network in terms of conflict of drainage and waterways with roads. In the following and subsequent sections major element, their principle, purpose and function of drainage infrastructures are discussed and presented in lower to higher order which will be considered as a method for drainage planning.

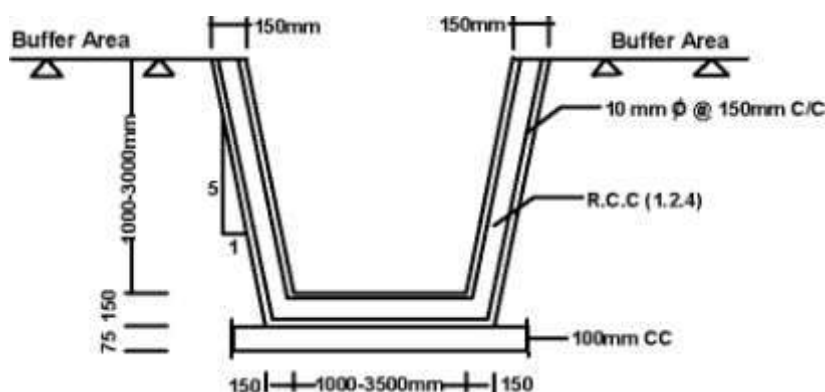
Primary Drain

Primary drains are called as the main drains. Primary drains cover larger storm drainage area than above discussed tertiary and secondary drains. 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. Figure /figures below show the typical cross-section of the primary drains:



A Typical Earthen Primary Drain (Dimensions in mm)

Fig 12.1: Earthen Primary Drain

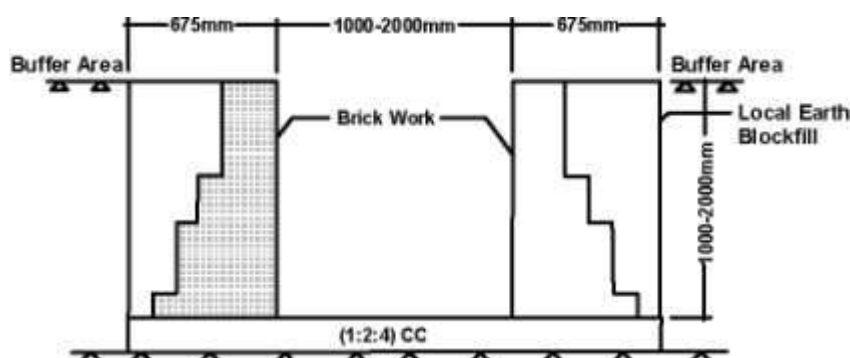


A Typical RCC Primary Drain (Dimensions in mm)

Fig 12.2: Typical RCC Primary Drain

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 also bigger than tertiary drains. Like tertiary drains, 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:

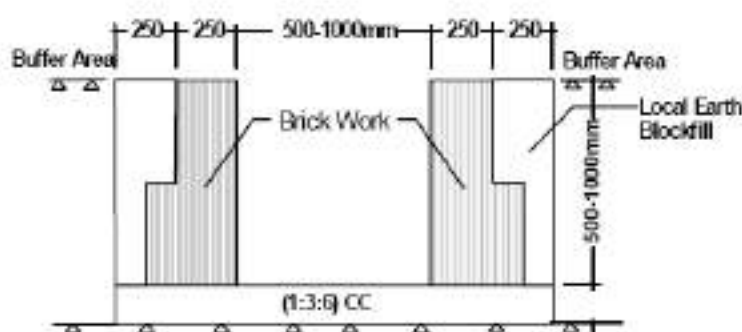


A Typical Secondary Drain (Dimensions in mm)

Fig 12.3: A Typical Secondary Drain

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. Tertiary drains generally are the under jurisdiction of municipality and city corporation. These drains or drainage networks are constructed and maintained directly by municipalities and City Corporation. These drains are constructed by brick, cement concrete and sometimes by excavating earth in their alignments. These drains may run parallel to road or across the catchment 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 channeled or lined by brick works. Tertiary drains deliver its discharge usually to secondary drains. A typical tertiary drain is shown below:



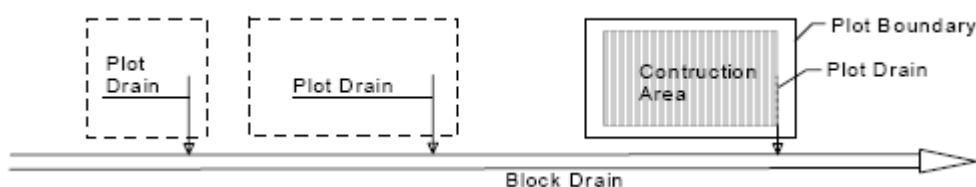
A Typical Tertiary Drain (Dimensions in mm)

Fig 12.4: A Typical Tertiary Drain

Other kinds of drainage infrastructure are 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 should be given for road network in terms of conflict of drainage and waterways with roads. In the following and subsequent sections major element, their principle, purpose and function are discussed and presented in lower to higher order:

Plot Drains

Plot drains are provided around a building on a plot. In most cases, the drain is made of bricks and 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 and Block Drain

Fig 12.5: Plot and Block Drain

Block Drain

A 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 plots 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. The shape of the block drain is also rectangular, but bigger than plot drains and its bottom is lower than plot drain. The sketch of the plot drain above also shows the block or Mohallah drain under plot drain.

Other Drainage Related Infrastructures

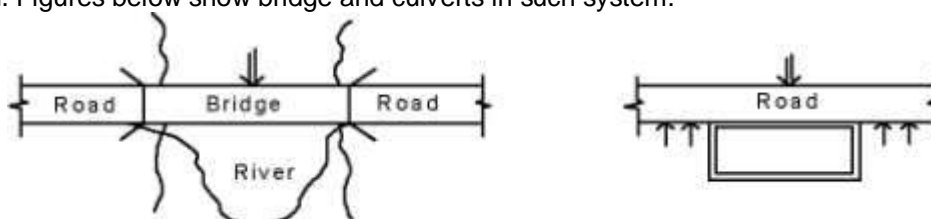
In order to facilitate or mitigate drainage issues some infrastructures are provided or used, these are namely

- Bridges, culverts, box culverts
- Drainage sluices, pipe sluices, siphons
- Flood protection embankments and flood walls

- Sluice gates, Regulators, Navigation lock
- Flood protection and drainage structures.

Bridges, Culverts and Box Culverts

These structures are provided at places wherever roads cross the drainage network system. Such structures are built on the roads to free passage of drainage water and sometimes to provide navigation/ boat passages. Consequently the conflict between drainage and road networks is mitigated. Figures below show bridge and culverts in such system.



Definition Sketch Bridge Definition Sketch Culvert

Fig 12.6: Bridge and Culvert

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 project area flood free.

However storm water from rainfall-runoff within the area causes localized flood, drainage congestion and submergence. A sketch below shows a few of such structures.

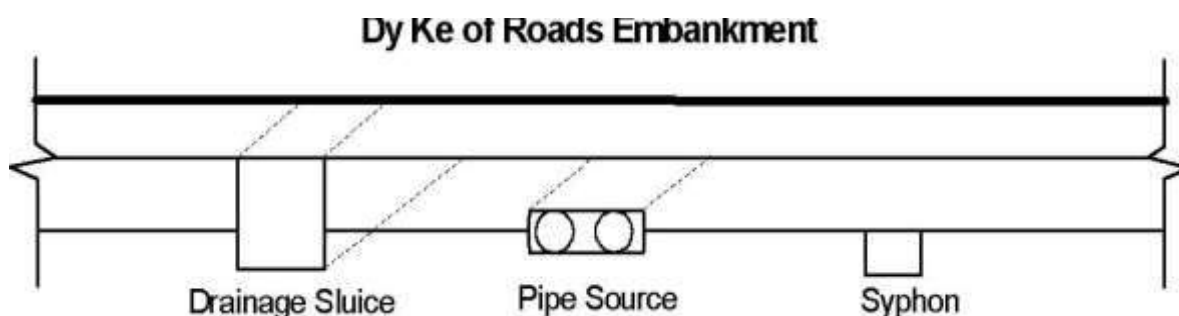


Fig 12.7: A Schematic View of Drainage Sluice, Pipe Sluice and Siphon on Embankment Which Relieve Drainage Congestion.

12.3 Plans for Drainage Management and Flood Control

12.3.1 Plan for Drain Network Development Drainage Network Plan

The Paurashava needs a hierarchical drainage system for easy and smooth discharge of storm and waste water comprising tertiary, secondary and primary drains. The existing natural khals will serve as primary drains.

12.3.2 Proposal for Improvement of the Existing Drain Networks

Paurashava has only 1.85 km pucca drainage network at western part of Amtali paurashava. A narrow portion of the paurashava is served by this network system. Based on the results of drainage study it is recommended for the existing drain that:

- Rehabilitate broken drains;
- Cover the open drains based on budget allocation.
- Construction of new channels and rehabilitation of old ones with enough drainage head.
- Construct a new pump drainage network for the area towards Paira River.
- Remove all un-authorized structures, which developed on drainage structures.
- Regular cleaning and maintenance by the concerned authorities.
- Embarking on a sustained public enlightenment to discourage residents from dumping their refuse into drainage channels.

12.3.3 Outfall of Drains

There are only 3 sluice gates exists, without any formal outfall of drains in or outside Amtali Paurashava. The secondary drains mainly discharge storm water to the nearby khals and borrow pits, which will be act as primary drain. One of the existing sluice gate situated by the side of Amtali-Patuakhali road is not sufficient for water flow, this sluice gate is being proposed to up grate up to three gates. Total 22 drainage out falls and 1 new sluice gate are proposed for drainage development plan of Amtali Paurashava.

13.3.3.1 List of Proposed New Drains

There is 35.69 km existing main khals along with 3.17 km newly excavate in Amtali Paurashava. This total 38.86 km will be served as primary drain. Based on this primary drain drainage network system of Amtali Paurashava will be established. Table 12.7 shows the summary of proposed drainage facilities at Amtali Paurashava. And Map 12.2 shows the drainage network proposal for Amtali Paurashava. In additional the Paira River flowing through the western part of Amtali Paurashava will serve as the main out fall and main natural drainage network. Phasing of proposed drains has been shown in Table 12.8.

Table 12.7: Summary of Proposed Drain

Type of Drain	Length (in M)	Length (in Km)	%
Primary	38860	38.86	25.79
Secondary	30609.31	30.61	20.31
Tertiary	81233.01	81.23	53.90
Grand Total	150702.90	150.70	100.00

Table 12.8: Proposals of New Secondary Drains

Proposed Drain ID	Drain Type	Width (in ft)	Depth (in m)	Length (m)	Phase	Ward No
S_1	Secondary Drain	2.5-3.5	1.124-2.124	326.104	First Phase	Ward 03
S_1	Secondary Drain	2.5-3.5	1.124-2.124	27.292	First Phase	Ward 06
S_1	Secondary Drain	2.5-3.5	1.124-2.124	864.556	First Phase	Ward 02
S_2	Secondary Drain	2.5-3.5	1.124-2.124	28.012	First Phase	Ward 07
S_2	Secondary Drain	2.5-3.5	1.124-2.124	846.579	First Phase	Ward 03
S_2	Secondary Drain	2.5-3.5	1.124-2.124	887.508	First Phase	Ward 02
S_3	Secondary Drain	2.5-3.5	1.124-2.124	651.318	First Phase	Ward 06
S_3	Secondary Drain	2.5-3.5	1.124-2.124	317.208	First Phase	Ward 04
S_4	Secondary Drain	2.5-3.5	1.124-2.124	914.650	First Phase	Ward 06
S_4	Secondary Drain	2.5-3.5	1.124-2.124	59.517	First Phase	Ward 04
S_5	Secondary Drain	2.5-3.5	1.124-2.124	817.279	First Phase	Ward 01
S_6	Secondary Drain	2.5-3.5	1.124-2.124	1373.625	First Phase	Ward 01
S_7	Secondary Drain	2.5-3.5	1.124-2.124	425.079	First Phase	Ward 05
S_7	Secondary Drain	2.5-3.5	1.124-2.124	9.092	First Phase	Ward 06
S_7	Secondary Drain	2.5-3.5	1.124-2.124	920.401	First Phase	Ward 04
S_8	Secondary Drain	2.5-3.5	1.124-2.124	563.725	First Phase	Ward 05
S_8	Secondary Drain	2.5-3.5	1.124-2.124	102.498	First Phase	Ward 06
S_8	Secondary Drain	2.5-3.5	1.124-2.124	678.338	First Phase	Ward 04
S_9	Secondary Drain	2.5-3.5	1.124-2.124	833.850	First Phase	Ward 03
S_9	Secondary Drain	2.5-3.5	1.124-2.124	858.069	First Phase	Ward 02
S_10	Secondary Drain	2.5-3.5	1.124-2.124	341.569	First Phase	Ward 03
S_10	Secondary Drain	2.5-3.5	1.124-2.124	879.605	First Phase	Ward 02
S_11	Secondary Drain	2.5-3.5	1.124-2.124	582.839	First Phase	Ward 01
S_12	Secondary Drain	2.5-3.5	1.124-2.124	409.742	Second Phase	Ward 08
S_12	Secondary Drain	2.5-3.5	1.124-2.124	22.755	Second Phase	Ward 07
S_12	Secondary Drain	2.5-3.5	1.124-2.124	65.815	Second Phase	Ward 05
S_13	Secondary Drain	2.5-3.5	1.124-2.124	1436.534	First Phase	Ward 07
S_14	Secondary Drain	2.5-3.5	1.124-2.124	1747.246	First Phase	Ward 07
S_15	Secondary Drain	2.5-3.5	1.124-2.124	4313.392	First Phase	Ward 09
S_17	Secondary Drain	2.5-3.5	1.124-2.124	761.113	First Phase	Ward 05
S_17	Secondary Drain	2.5-3.5	1.124-2.124	331.130	First Phase	Ward 06
S_18	Secondary Drain	2.5-3.5	1.124-2.124	570.502	First Phase	Ward 01
S_19	Secondary Drain	2.5-3.5	1.124-2.124	613.770	First Phase	Ward 01
S_20	Secondary Drain	2.5-3.5	1.124-2.124	164.474	Second Phase	Ward 04
S_20	Secondary Drain	2.5-3.5	1.124-2.124	210.902	Second Phase	Ward 01
S_21	Secondary Drain	2.5-3.5	1.124-2.124	158.934	Second Phase	Ward 04
S_21	Secondary Drain	2.5-3.5	1.124-2.124	214.282	Second Phase	Ward 01
S_22	Secondary Drain	2.5-3.5	1.124-2.124	1490.547	First Phase	Ward 07
S_23	Secondary Drain	2.5-3.5	1.124-2.124	557.131	First Phase	Ward 07
S_24	Secondary Drain	2.5-3.5	1.124-2.124	757.515	First Phase	Ward 09

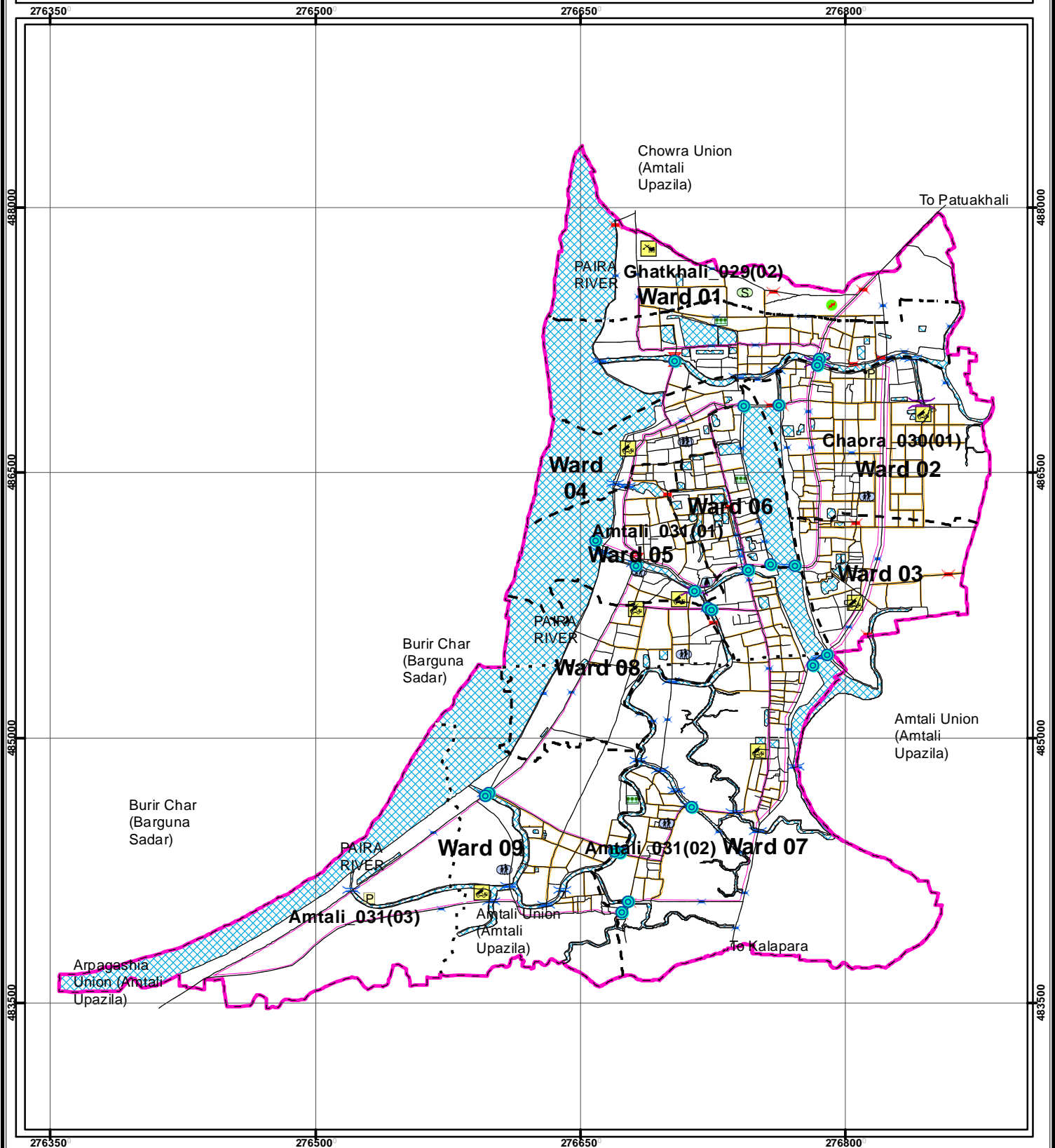
Amtali Paurashava Master Plan: 2011-2031
Urban Area Plan

Proposed Drain ID	Drain Type	Width (in ft)	Depth (in m)	Length (m)	Phase	Ward No
S_25	Secondary Drain	2.5-3.5	1.124-2.124	158.729	Third Phase	Ward 02
S_26	Secondary Drain	2.5-3.5	1.124-2.124	140.083	Third Phase	Ward 02
S_12	Secondary Drain	2.5-3.5	1.124-2.124	470.893	Second Phase	Ward 07
S_14	Secondary Drain	2.5-3.5	1.124-2.124	488.728	Second Phase	Ward 08
S_14	Secondary Drain	2.5-3.5	1.124-2.124	19.150	Second Phase	Ward 07
S_15	Secondary Drain	2.5-3.5	1.124-2.124	640.591	First Phase	Ward 07
S_15	Secondary Drain	2.5-3.5	1.124-2.124	294.690	First Phase	Ward 09
S_15	Secondary Drain	2.5-3.5	1.124-2.124	1015.518	First Phase	Ward 08
S_15	Secondary Drain	2.5-3.5	1.124-2.124	247.027	First Phase	Ward 05

12.3.3.2 List of Infrastructure Measures for Drainage and Flood Control Network

There are total 31 box culvert, 50 pipe culvert, 7 bridges and 5 sluice gates will be established for drainage and flood control network of Amtali Paurashava.

Map 12.2: Proposed Drainage & Environment Management Plan of Amtali Paurashava



Legend

Admin Boundary

- - - Mouza Boundary
- Paurashava Boundary
- - - Sheet Boundary
- - - Ward Boundary

Existing Bridge

- Bridge
- Culvert

Proposed Bridge

- Bridge
- Culvert

Proposed Environmental Features

- Central Park
- Dumping Station
- Electric Sub Station
- Fire Service
- Neighborhood Park
- Playground
- Waste Transfer Center
- Waste Water Treatment Plant
- Water Pump House

- Drainage Outfall
- Proposed Road Centerline
- Primary Drain
- Secondary Drain
- Tertiary Drain
- Waterbody

0 115230 460 690 920 Meters



Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government,
Rural Development and Cooperatives

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In Association with

12.4 Implementation Strategies and Principles

12.4.1 Plan Implementation Strategies

Management of a drainage system is more difficult than its construction. It requires not only an institutional set up but also huge resources for regular maintenance. The present engineering set up of the Paurashava is highly inadequate to manage the future drainage network. It must be equipped not only with adequate manpower but also sufficient number of logistics and equipment will be necessary for sound maintenance of the drainage system. For Amtali Paurashava with its meager revenue earning it will be extremely difficult to go for regular maintenance of the drainage system without government assistance. So, the Paurashava must be provided with sufficient budget allocation to maintenance going on regularly. The next strategy will be to create awareness among the citizens not to dispose of solid waste in the drains and get them clogged. This can be done by regular publicity, engaging NGOs for motivation and the last imposing punitive measures like, fine on the waste disposer.

12.4.2 Regulations to Implement the Drainage and Flood Plan

Regulations in Bangladesh which are related to drainage and flood management:

1. **The Acquisition and Requisition of Immovable Property Ordinance, 1982**, for acquisition of land to construct drainage and flood control structures. The Bangladesh Water Development Board is main executing organization to implement drainage and flood control activities.
2. **National Water Policy (NWP)-1999**, regulatory policy to construct structures for flood control and drainage management. The Bangladesh Water Development Board is the executing and regulatory organization.
3. **National Water Management Plan (NWMP)-2004**, regulatory plan for management of flood, drainage and water resources of Bangladesh. The Bangladesh Water Development Board is the executing and regulatory organization. Local Government Engineering Department (LGED) is responsible for management of small scale water resources in Bangladesh.
4. **Canal and Drainage Act, 1872** has enacted for excavation of canal and removal of drainage congestion from agriculture land.
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.
6. **Water Body Reservoir Act 2000** has enacted for the provision to control the illegal development activities on natural water body of Metropolitan city, Divisional town, District town and all other Paurashava area. The act also enacts that Natural Streams (River, khal, Beel, Large pond/ Lake, Waterfall or water bodies which is identified in Master Plan or any place as flood flow area, rain water or other natural drainage water reservoir area proclaimed by Government, Local Government or any organization

12.5 Environmental Management Plan

This section describes the goals and objectives, and methodology and approach to planning of environment management plan.

12.5.1 Goals and Objectives

Urban planners today are becoming ever more involved with environmental concerns. Environmental planning coordinates development to meet objectives for clean air and water; removal of toxic and other wastes; recycling of resources; energy conservation; protection of wetlands, beaches, hillsides, farmlands, forests, and floodplains; and preservation of wildlife,

natural reserves, and rivers. Historic preservation strives to keep important buildings and places as part of the permanent environment and uses them to finance the maintenance costs.

Every development work has both positive and negative impacts on environment. It is wise to consider the environmental impacts and its mitigation at planning stage. Environmental consideration at planning process can make the project sustainable for long period. The objectives of Environmental Study of Amtali Structure Plan, Master Plan and Detailed Area Plan project are,

- to study the existing ecological system and environmental problems in the project area;
- to suggest the mitigation measures for all environmental problems;
- to provide the guidelines and assist the planners, engineers and consultants involved in this project in preparing environmentally sound Plan for Amtali Town and
- to prepare an Environmental Management Plan (EMP) for future environmental management in the area.

12.5.2 Methodology and Approach to Planning

In environmental study, a multi-disciplinary approach is used for studying development project. The present environmental study is based on data collection and sharing with drainage and geology, transport engineering, socio-economic, economic and topographical survey components. A structured questionnaire prepared by LGED for environmental survey has been followed. Environmental study has been carried out through survey of biodiversity of flora and fauna, water pollution, local air pollution problem, drinking water sources, renewable energy, diseases, and major local environmental issues.

Secondary data has been collected from BWDB, UP Offices, Civil Surgeon Office, Thana Fisheries Office, District Agriculture Extension Office and Meteorological Department. Reports of national organizations were also considered as secondary sources of information.

12.5.3 Existing Environmental Condition

With the increase of housing along with population will produce impact on the environment. Rapid urbanization and numerous human activities will deteriorate the environment, if the infrastructure is not developed as per requirement. So, before planning and designing of any development project, possible adverse environmental impact should be studied. The whole range of potential impacts of the project of various environmental components due to various project activities should be identified qualitatively and in quantities, where they are possible. After identification of significant impacts and issues arising out of them, mitigation measures or project modification/ alternatives will have to be proposed to address the environmental impact issues. An environmental management plan should also be formulated for mitigation and protection of adverse effect of the project on the environment. Environmental consideration in the planning process can make the project sustainable for a long period.

12.5.3.1 Geo-morphology Geology, Soil, Sub soil Condition

Amtali Paurashava has three main types of soils with different qualities. Calcareous grey floodplain soils are structured grey silt loams to silty clays. The northern part of the area has silty clay loam of the Ganges River. The southern part has grey silty clay of the Meghna River. However, soil condition of Amtali Paurashava comprises diversified characteristics.

12.5.3.2 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.

12.5.3.3 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 30.1°C in April and minimum average monthly temperature is 17.5 °C in January in 2010. The monsoon starts from June and maximum rainfall is experienced from July to September.

12.5.3.4 Humidity

The weather of Amtali Planning area is not more contradictory from the natural weather of Bangladesh. But due to coastal characteristics, weather of this area has few special characteristics. The humidity is comparatively high in the coastal region rather than other districts of Bangladesh.

12.5.3.5 Rainfall

Amtali Paurashava is situated in the southern part of Bangladesh. Generally, rainfall is comparatively higher than other area of Bangladesh. Mean annual rainfall is 3000mm. The monsoon starts from June and maximum rainfall is experienced from July to September. The monsoon starts from June and maximum rainfall is experienced in 2007 and lowest in 2003. Annual rainfall as recorded from 2000 to 2010, the maximum was 938.8 mm in 2008 and lowest in 2003 about 469.4 mm. It is recorded that during June to October there are high volume of rainfall.

12.5.3.6 Wind Directions

The general direction of the wind is the same as that in the Gangetic Delta: south-west, changing to east for the greater part of the year, with a north and north-west direction during the months of April and May. Nor-wasters are caused by outbreaks of cold air from Central Asia which enters Bangladesh from the northwest. This wind occurs at the interface between the advancing cold air and warm air already present in the region. The temperature difference across the interface is large enough to generate the large scale turbulence which, in turn, generates thunderstorms along the interface. More specifically Amtali paurashava's wind direction is mainly towards south and most of the time wind is calm (42.9 %) which is followed by 1-2.5 m/s wind speed (38.5%) and 2.5-5 m/s wind speed (14.4%).

12.5.3.7 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. The hydrological condition of Amtali Planning area is getting of inferior quality day by day.

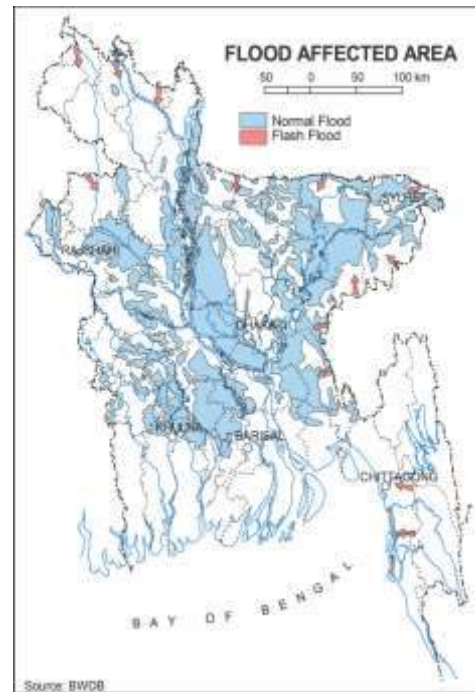
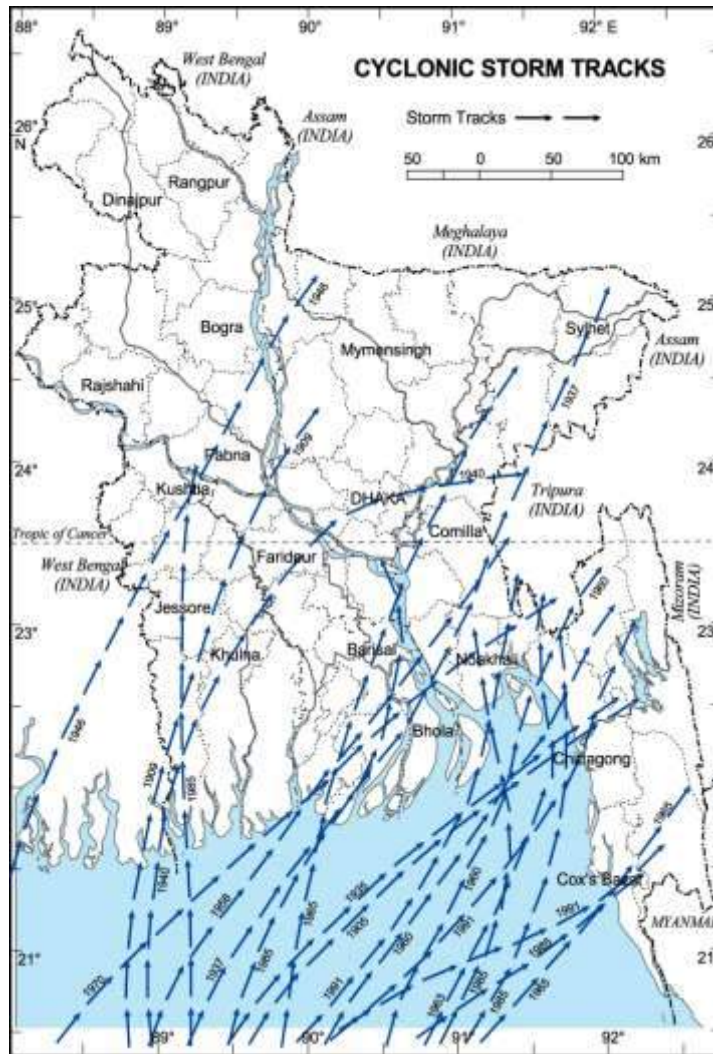


Fig 12.8: Cyclone, Flood and Earthquake condition in Amtali Paurashava

Amtali Paurashava is mainly affected by the cyclone storm and comparatively less vulnerable for flood and earthquake as it is geographically positioned in the coastal belt of Bangladesh.

12.5.4 Solid Waste and Garbage Disposal

Condition of solid waste management at Amtali Paurashava is very poor. According to the opinion of surveyed households, there is no dustbin at Amtali Paurashava. Most of the people throw their garbage here and there and especially dump to the river, canal and khal which cause serious environmental pollution and also sometimes clogged the existing drainage network. From the field survey it is also found that there is no clinical waste management system.

House Hold Waste

There is no dustbin at Amtali Paurashava. Most of the people throw their garbage here and there and especially dump to the river, canal and khal. There is lack of awareness among the town dwellers.

Industrial Waste

There is no such mentionable industry within the Amtali Paurashava causing massive environmental problem.

Clinical/ Hospital Waste

At present there is no clinical/hospital waste management system at Amtali Paurashava. Generation of clinical waste is also less in quantity. Most of the garbage threw here and there, causing environmental pollution.

Existing Waste Management System

At present, there is no solid waste management system at Amtali Paurashava. Most of the people threw garbage here and there, which causes serious environmental pollution and also sometimes clogged the existing drainage network.

12.5.5 Pollutions

Water Pollutions

Water pollution is one of the major phenomenons in Amtali Paurashava. Many causes have been identified for surface water pollution. Maximum surface water are polluted by domestic source and chemical fertilizer used in agriculture field. However, as the area is in coastal region, saline and iron have been contaminated the water. Marine vehicles are also responsible for water pollution of rivers and khals.

Sound Pollution

Noise pollution is a minor phenomenon in Amtali Paurashava. However such type of pollution problem is occurring by the road vehicles. But it has been identified that this is not a major problem for all over the area. It is a problem for some particular road side areas.

Air Pollution

The households of Amtali Paurashava face the little problem of air pollution. There are fourteen mills inside the Amtali Paurashava. These mills have been identified as main source of air pollution. No treatment plant is available in the Paurashava. A number of heavy vehicles (Highway bus and truck) move through the road and extract some pollutant particle that also causes air pollution.

Land Pollution

Land pollution is not found as problem in Amtali Paurashava.

Arsenic

There is no arsenic pollution so far has been identified by DPHE or by other study to the ground water of Amtali paurashava.

12.5.6 Natural Calamities and Localized Hazards

Water Logging

Another undesirable phenomenon is water logging. It refers to as both manmade and natural. Ground may be regarded as waterlogged when the water table of the ground water is too high to conveniently permit an anticipated activity. Different causes are responsible for water logging. Poor drainage system is one of the most important causes of water logging in the study area. There is no fixed location where water logged frequently. Most of the areas suffer water logging during heavy rainfall.

Flood

Flood is not common natural disaster at Amtali Paurashava. A flood occurs when water covers a large section of land that is normally not covered in water. Naturally floods are occurring in every rainy season but it not stay for more time. Sometimes it overflows the embankment and causes many losses of property and lives. During flood low lying settlements are mainly affected. Fig 3.11 shows flood situation in Amtali.

Cyclone

Cyclone is most common disaster at Amtali Paurashava. Every year Amtali 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 Amtali Paurashava. Mainly primary schools are serving as cyclone centers. Fig 13.8 shows the cyclone affected year of amtali Paurashava

Earthquake

Earthquake is a natural hazard and the southern area of Bangladesh is not so vulnerable. So, Amtali Paurashava is not vulnerable for earthquake. Fig 3.11 shows that Amtali is not situated in the vulnerable zone of earthquake.

Fire Hazard

The residents of Amtali Paurashava do not normally face the problem of fire.

Land Filling

Land filling creates problem in natural runoff and drainage system. The soil removed by runoff from the land accumulates below the eroded areas, in severe cases blocking roadways or drainage channels and inundating buildings.

Encroachment

Amount of land encroachment at Amtali is very little but land encroachment by the side of the canals interrupts the natural drainage system. This may be responsible for the inundation of the Paurashava.

12.6 Plans for Environmental Management and Pollution Control

The urban environment of Amtali Paurashava includes both built and natural environment. Urbanization has some increased hazard on natural environment. Where the built environment overburdens the natural environment urbanization cannot be sustainable. The urbanization is vital for countries economic growth. Urban centers concentrate services, infrastructure, labor, knowledge, entrepreneurship and markets. Marketing cities are key generators of economic activities. The urban economics are critically important in national growth and the achievement of development goal. Urbanization is unavoidable. So in every phase of planning processes all these environmental issues shall be evaluated and proper measure shall be taken to minimize the adverse environmental impacts on land pollution, water and air quality, biodiversity resources and marine resources by energy usage, transport network, waste management, slum improvement, disaster etc.

12.6.1 Proposals for Environmental Issues

12.6.1.1 Solid Waste Management Plan

A waste management system typically refers to a specific technique, strategy, or device used to treat waste materials. This may include the collection, transportation, recycling, disposal, or processing of waste. The use of waste management systems varies according to both the kinds of waste material to be treated and the aims of the treatment itself. Waste management practices can differ for developed and developing countries, urban and rural areas, and for residential and industrial producers.

Waste Handling and Transport

Waste collection methods vary widely among different countries and regions. Domestic waste collection services are often provided by local government authorities or private sector. In Amtali Paurashava, it is suggested that Community Based Organizations (CBOs) can play this role effectively. For each ward there will be a CBO that will be responsible for overall household waste collection from the source and then dumped into the dumping site. Paurashava people will then collect the waste and finally dump into the landfilling site in a fixed time every day. Same procedure will be followed for hospital and kitchen waste. As incineration is an expensive and high-tech method, it is not recommended here for clinical waste management.

Methods of Waste Disposal

- a. Landfill
- b. Incineration
- c. Recycling

Criteria for Selection of Solid Waste Dumping/landfilling Site

Usually the Paurashava does not have its own solid waste disposal site. For selection of solid waste dumping site, the following criteria should be considered.

- Site should not be situated just beside any river and canal
- Site should be located to minimum fuel distance
- Site should not create any nuisance to the residential areas as well as to the commercial and administrative areas.
- Site should be connected with main road and have sufficient width for truck movement.
- Design characteristics of a modern landfill include methods to contain leachate such as clay or plastic lying material.

12.6.1.2 Open Space, Wet-land and Relevant Features Protection Plan

The river Paira is a great asset of Amtali that plays multifaceted role for the town. It could be a navigation route to some extent, a source of water and also a source of recreation. Detail land use information of Open spaces is given in Table 11.10, Chapter 11, and Volume II of this report.

Mitigation Measures:

- The river should be preserved for future sustainable source of surface water supply for the City when the city's ground water would be depleted.
- Its banks can serve as breathing space and recreation for the town dwellers.
- The river should be kept pollution free applying regulatory measures based on environmental regulations
- No industry should be allowed within 100 m of the river bank.

Loss of Wetlands

Wetlands are mainly affected first by the urbanization process. Earth filling fills up the ponds and ditches. Waste water affects the aquatic ecosystem and makes the ponds and ditches unproductive and as a result the aquatic plants, fishes and animals have to die or migrate to other places. There is no strict regulation on earth filling of ponds. The Paurashava can fine only Tk.500 if someone fills the ponds. However, Wetlands Conversation Act exists in Bangladesh, which is applicable only to natural beels and khals. Wetlands play an important role as a reservoir of rain and flood water. They are also important to maintain the balance of ecosystems and for replenishing the ground water level through seepage.

Mitigation Measures:

- Designate all ponds in Master Plan Map and protect the large ones according to the ecological importance and public interest.
- Protect the ponds as per regulatory framework of Master Plan.
- Avoiding wetlands during road alignment fixation.
- Stopping housing, industries and other development works in wetlands through earth filling.
- Stopping earth filling of ponds in the area through creation of public awareness.
- Strict implementation of Wetland Conversation Act, 2000.
- Strict implementation of Environment Conversation Act(ECA), 1885
- Create new laws if existing one fails to stop land filling of ponds.

12.6.1.3 Ground Water Pollution

Though ground water is not a major source of drinking water supply in the study area, yet ground water pollution by salinity and arsenic is a serious problem for future water supply. It is reported that over 90% of the tube wells are affected by arsenic which is a major threat to health for those who use ground water for drinking purpose. Arsenic is geological problem. But experts view that it arises due excessive extraction of ground water. So in future, when population rises further excessive ground water extraction will aggravate contamination situation.

Mitigation Measures:

- Expand use of surface water by protecting existing ponds and excavating new ponds.
- Introduce and popularize rain water harvesting system.
- Reduce dependency on ground water.

12.6.1.4 Surface Water Pollution

Various surface water sources of the town are regularly polluted by deliberate drainage of waste water in respect of pH, turbidity and coli form bacteria when compared with national standard. But present pollution level is low due to low density of population and no industrial agglomeration. The main sources of surface water pollution are, urban waste water, sanitary sewage and solid waste dumping. With the implementation of this plan the pollution level may further increase as population and activity will increase leading to increase in waste water, sanitary sewage and solid waste dumping.

Mitigation Measures:

- Abolish katcha and hanging latrines.
- Encourage practice of sanitary latrines.
- Take measures against indiscriminate dumping of solid waste.
- Improve sanitation conditions of slaughter house, fish market and katcha bazar.
- Propaganda for public awareness.
- In future set up sewerage treatment plant to treat waste water.

12.6.2 Natural Calamities and Regular Hazard Mitigation Proposals

12.6.2.1 Cyclone

Cyclone is a regular natural calamity in the study area. It affects the poor people mostly who cannot build houses with permanent materials. Cyclones also destroy trees and other establishments causing economic losses. It is not possible to prevent cyclones, but it is possible to reduce the losses by cyclones.

Mitigation Measures:

- Construction of cyclone shelter in coastal area or use of existing primary schools or any suitable structures as cyclone shelter during disaster.
- Provide housing loan to build houses with permanent materials.
- Formulation of disaster management committee in every ward headed by councilor
- Arrange massive awareness building activities to reduce casualties during disaster
- Special attention should be given to the women, senior, and disable persons during disaster
- Take measures to promote employment and reduce poverty.

- Take appropriate measures for post disaster loss mitigation.

12.6.2.2 Flood Protection

The Paira River is subject to bank erosion, but it is not continuous. The road along the river has eroded to some extent. With implementation of Master Plan (MP) Project, the whole project area will be protected from flooding.

Enhancement Activities:

- Arrangement of pump drainage to Paira during high flood when gravitational drainage fails.
- Pump of excess water will save the area from internal flooding.

Responsible Organizations: BWDB and Paurashava

12.6.2.3 Earthquake

Although Amtali is not Earthquake prone area, however unplanned and unregulated urbanization and disregard to BNBC rules in building construction may cause it vulnerable in future. With the implementation of SMP the planned urbanization will strictly follow the actual zoning plan and following of BNBC rule will minimize the earthquake damage. In DMDP Urban Area Plan Volume-II, (Part-3, Interim Planning Rules) development restriction considering the geological fault line areas states "Structures above 2 storeys situated within 500 meters of a geological fault is not allowed unless built to the BNBC standards for Seismic Zone 3 (BNBC Section 6 Chapter 2.25)".

Enhancement Activities:

- Ensure all new buildings are designed and constructed following the guideline of BNBC.
- Development of a comprehensive plan for managing post-earthquake situation.
- Train community workers who would carry out the initial search and rescue efforts.
- Launch a massive public awareness campaign.

Responsible Organizations: Paurashava, MOFDM, Civil Defense, Fire Service and DO

12.6.2.4 Fire Hazard

Though fire hazard is low in the town it might increase in future with increased urbanization. Fire hazard will be severe when katcha housing will be built by low income poor people of the town. To avoid fire hazard following mitigation measures are recommended.

Mitigation Measures:

- Set up modern fire extinguishing devises.
- Discourage people from using low quality electrical wire in building and industries.
- Ensure periodical checking of electrical lines.
- Advise low income dwellers about cooking safety.

- Create awareness among people about the dangers of fire hazard.

12.6.2.5 Protection Plan Addressing Encroachment and Other Relevant Issues

Implementation of SMP activities like roads, drainage, bridge/culvert, housing and industrial estates and bazars will radically change the natural topography and land use pattern of the area. The agricultural area will be converted into urban and semi-urban area. The present green scenic beauty will disappear, water bodies will be lost due to rapid urbanization.

Mitigation Measures:

- Careful planning to minimize the change of the area.
- Avoid water bodies during construction of roads, housing and industrial estates.
- Practice good architectural/engineering design during planning of housing estates, buildings and the intersections of main roads.
- Enhancement of plantation and gardening to increase the scenic beauty of the town.
- Preserve the ponds, chhoras and large water bodies.
- Strict implementation of Environment Conservation Act(ECA), 1885
- Propaganda for public awareness

Responsible Organizations: Paurashava, DOE and Forest Department

12.7 Plan Implementation Strategies

12.7.1 Regulations to Implement the Environment Management Plan

Related rules and regulations for urban environment management to protect environment for sustainable urban development:

1. **Local Government (Paurashava) Ordinance 2009**, Paurashava's responsibility to concern solid wastes and sustainable development.
2. **Environmental Conservation Act 1995**, to concern water quality, air quality, noise abatement and solid wastes etc. The Department of Environment is the law enforcing organization.
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4. **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.
5. **Conservation of Environment Act, 1995** have prescribed duties and responsibilities of the Director. Most of those responsibilities are on the control of pollution.

6. **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.
7. **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.

12.7.2 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. Firstly, 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.

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- 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;

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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.

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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. In this way it will be possible to ensure governance at Paurashava level. 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- 13

PLAN FOR URBAN SERVICES

13.1 Introduction

Urban planning is critical to the healthy growth of cities. Unplanned growth leads a number of problems, creating misery for urban dwellers and making 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.

13.2 Consideration for the Preparation of Urban Service

- Specify whether the urban service will be provided in the future by a city, county, district, authority or a combination of one or more cities, counties, districts or authorities.
- Set forth the functional role of each service provider in the future provision of the urban service.
- Determine the future service area for each provider of the urban service.
- Assign responsibilities for:
 - Planning and coordinating provision of the urban service with other urban services;
 - Planning, constructing and maintaining service facilities; and
 - Managing and administering provision of services to urban users.

13.3 Range and Content of the Urban Service

The Plan for Urban Services covers planning area of Amtali Paurashava for ten years' time-frame (from 2011 to 2021). It also comprises with report and maps.

The Plan is concerned where services will be located (expected development). It also indicates how the Structure Plan policies will govern the areas and the standard for services calculated based on the population projection.

Outline of the Plan gives guidance to the Paurashava how the urban services will be developed and be promoted, maintained with a coordinated manner.

This chapter describes the urban basic services development proposals for future development of the Paurashava. The proposals have been made at the town level, under the urban area plan. The local level development proposals will be addressed in the Ward Action Plan. The development proposals deal with the basic urban services, like, water supply, drainage, sanitation, solid waste, telecommunication, electricity and community facilities, education and health.

13.3.1 Water Supply

According to BBS, it has been observed that about 0.4% households of Amtali Paurashava is connected to Paurashava supplied water supply system whereas about 93.2% households use tube-well as a source of drinking water. Additionally, about 5.9% households have well and the rest of the households use pond water for their drinking purpose.

Quality of the supply system is not so satisfactory. About 87.1% of the surveyed households affirmed that there is no water supply facility available for them. About 8.6% of the household reported that the water supply facilities of the area are moderate and 1.4% good.

Considering the above issues a water treatment plant has been proposed in ward no.02 with an area of 1.58 acre. This location is the most suitable place according to consultant because both surface and ground water is available here and no drain outfall is being proposed within its 2 Sq. km. perimeter area. Details have been given in table 10.12, chapter 10, Landuse Plan.

Water supply network has been proposed in this plan. Existing water supply line is 4263.13 m. Some water supply lines have been replaced due to road widening or other physical barriers. Total length of water supply line is proposed about 42 km.

Table 13.1: Water Supply Network in Amtali Paurashava

Proposed ID	Length (m)	Ward No	Proposed Type	Phase
W_22	158.905	Ward 05	New	Third Phase
W_23	352.433	Ward 02	New	Third Phase
W_24	494.547	Ward 01	New	Third Phase
W_43	36.187	Ward 05	Widening	Third Phase
W_44	256.411	Ward 01	Widening	Third Phase
W_45	185.491	Ward 02	Widening	Third Phase
W_45	71.284	Ward 03	Widening	Third Phase
W_46	244.057	Ward 04	Widening	Third Phase
W_46	30.984	Ward 05	Widening	Third Phase
W_47	273.565	Ward 06	Widening	Third Phase
W_48	0.28	Ward 04	Widening	Third Phase
W_48	48.237	Ward 05	Widening	Third Phase
W_48	108.586	Ward 06	Widening	Third Phase
W_49	217.498	Ward 04	Widening	Third Phase
W_50	87.983	Ward 05	Widening	Third Phase
W_50	217.049	Ward 06	Widening	Third Phase
W_1	837.451	Ward 04	New	First Phase
W_1	439.836	Ward 05	New	First Phase
W_20	530.855	Ward 07	New	First Phase
W_5	653.401	Ward 02	New	First Phase
W_5	836.542	Ward 03	New	First Phase
W_5	1122.162	Ward 07	New	First Phase
W_34	718.554	Ward 07	Widening	First Phase
W_39	1852.946	Ward 09	Widening	First Phase
W_40	208.917	Ward 09	Widening	First Phase
W_40	287.445	Ward 05	Widening	First Phase
W_40	1015.732	Ward 08	Widening	First Phase
W_40	2307.307	Ward 09	Widening	First Phase
W_41	640.081	Ward 01	Widening	First Phase
W_41	885.261	Ward 02	Widening	First Phase
W_41	261.865	Ward 03	Widening	First Phase
W_42	516.575	Ward 05	Widening	First Phase
W_42	185.58	Ward 06	Widening	First Phase

Amtali Paurashava Master Plan: 2011-2031
Urban Area Plan

Proposed ID	Length (m)	Ward No	Proposed Type	Phase
W_55	278.188	Ward 02	Widening	First Phase
W_55	12.792	Ward 04	Widening	First Phase
W_55	164.749	Ward 06	Widening	First Phase
W_65	71.866	Ward 03	Widening	First Phase
W_65	307.369	Ward 06	Widening	First Phase
W_68	197.23	Ward 07	Widening	First Phase
W_68	670.211	Ward 09	Widening	First Phase
W_10	177.898	Ward 02	New	Second Phase
W_12	0.646	Ward 02	New	Second Phase
W_12	893.403	Ward 03	New	Second Phase
W_13	410.604	Ward 02	New	Second Phase
W_14	2.096	Ward 05	New	Second Phase
W_14	293.93	Ward 07	New	Second Phase
W_14	497.995	Ward 08	New	Second Phase
W_15	359.446	Ward 02	New	Second Phase
W_15	65.168	Ward 03	New	Second Phase
W_16	316.13	Ward 02	New	Second Phase
W_17	138.136	Ward 06	New	Second Phase
W_18	266.633	Ward 07	New	Second Phase
W_18	794.663	Ward 09	New	Second Phase
W_19	798.174	Ward 08	New	Second Phase
W_19	1046.998	Ward 09	New	Second Phase
W_25	3.111	Ward 06	New	Second Phase
W_25	1500.994	Ward 07	New	Second Phase
W_26	654.281	Ward 07	New	Second Phase
W_27	543.374	Ward 02	New	Second Phase
W_27	40.8	Ward 03	New	Second Phase
W_7	614.621	Ward 02	New	Second Phase
W_30	344.753	Ward 04	Widening	Second Phase
W_30	661.516	Ward 06	Widening	Second Phase
W_38	2.018	Ward 06	Widening	Second Phase
W_38	535.018	Ward 03	Widening	Second Phase
W_53	130.814	Ward 02	Widening	Second Phase
W_54	15.154	Ward 02	Widening	Second Phase
W_54	663.422	Ward 01	Widening	Second Phase
W_57	497.961	Ward 07	Widening	Second Phase
W_57	398.617	Ward 08	Widening	Second Phase
W_58	701.377	Ward 02	Widening	Second Phase
W_59	244.503	Ward 02	Widening	Second Phase
W_60	816.362	Ward 07	Widening	Second Phase

Proposed ID	Length (m)	Ward No	Proposed Type	Phase
W_60	461.894	Ward 08	Widening	Second Phase
W_60	76.5	Ward 09	Widening	Second Phase
W_61	470.832	Ward 01	Widening	Second Phase
W_62	677.184	Ward 09	Widening	Second Phase
W_66	565.509	Ward 01	Widening	Second Phase
W_11	219.878	Ward 02	New	Third Phase
W_2	177.432	Ward 02	New	Third Phase
W_21	230.356	Ward 02	New	Third Phase
W_3	106.592	Ward 02	New	Third Phase
W_4	746.024	Ward 07	New	Third Phase
W_6	401.534	Ward 01	New	Third Phase
W_63	23.686	Ward 04	New	Third Phase
W_63	9.974	Ward 06	New	Third Phase
W_69	184.116	Ward 02	New	Third Phase
W_8	392.772	Ward 02	New	Third Phase
W_9	444.62	Ward 02	New	Third Phase
W_28	410.392	Ward 01	Widening	Third Phase
W_29	280.584	Ward 05	Widening	Third Phase
W_31	670.34	Ward 02	Widening	Third Phase
W_31	275.689	Ward 03	Widening	Third Phase
W_32	95.037	Ward 01	Widening	Third Phase
W_33	313.379	Ward 01	Widening	Third Phase
W_35	104.043	Ward 02	Widening	Third Phase
W_36	408.136	Ward 01	Widening	Third Phase
W_37	31.258	Ward 04	Widening	Third Phase
W_37	989.93	Ward 06	Widening	Third Phase
W_51	162.859	Ward 01	Widening	Third Phase
W_52	150.886	Ward 01	Widening	Third Phase
W_56	425.133	Ward 08	Widening	Third Phase
W_64	121.502	Ward 01	Widening	Third Phase
W_64	44.076	Ward 04	Widening	Third Phase
W_67	250.405	Ward 05	Widening	Third Phase

Source: Based on Physical feature Survey, 2011 and proposed by the Consultant.

13.3.2 Solid Waste

There will be 7 waste transfer stations with total area of 2.14 acres for collection of solid waste located at suitable locations. A dumping site will be developed over an area of 4.45 acres for final disposal of the solid waste. The waste dumping site is located in Ward no. 01 at the north-west corner boundary of the Paurashava. Details have been given in table 10.11, chapter 12, Landuse Plan.

13.3.3 Electricity

An electric Sub-station will be developed in ward no. 01 with an area of 1.40 acre and the network system will be:

- **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.

13.3.4 Telecommunication

The town enjoys the networks of all mobile companies operating in the country. Due to easy and cheaper access to mobile, there is actually no demand for BTCL network.

13.3.5 Sanitation

The BBS data shows that about 89.4% of the households have sanitary toilet whereas about 2.5% households have no toilet facilities. Furthermore, about 8.1% of the households have other type of toilet facilities such as kutcha toilet, hanging toilet, etc.

The socio-economic survey results indicate that about 50% of the toilets are Pucca, 0.7 % Kutcha and the rest 49.3% does not have any toilet facilities. However, the condition of toilet facilities in Ward no. 9 is extremely bad since about 100% households do not comprise toilet facilities

Due to prohibitive expenditure one should not expect establishing network and treatment plant based sewerage system in the town by the Paurashava. So, for long the sanitary system of the Paurashava will remain on site. To promote healthy sanitation, Paurashava should promote low cost sanitary latrines in the town together with awareness building for healthy sanitation. It is proposed to set up public toilets in public gathering areas, like, existing and proposed bus stand, bazar and the main town center.

13.3.6 Community Facilities

Open Space Recreation

Total necessity of open spaces is projected as 61.4 acres where 35.42 acres have been proposed for this purpose. Details have been given in table 10.9, chapter 10, at Landuse Plan.

Market Facilities

A pouro super market will be developed in ward no. 06 with an area of 1.17 acre. There is scope of established local market as per the local demands of Amtali Paurashava. Details have been given in table 10.4, chapter 10, at Landuse Plan.

Mosque, Eidgah and Graveyard

Standard determined for mosque that the allocated land has already been covered by existing mosque. So, not much additional land is not proposed for this purpose in this plan. A central

graveyard will be developed in ward 07 with an area of 7.87 acre. Details have been given in table 10.14, chapter 10, at Landuse Plan.

Community Center

There is lacking of municipal community center in the town. The consultant has proposed one community center in the Paurashava. About 1.02 acres land has been proposed for this purposes. Community center in every ward is not necessary according to local authority. Details have been given in table 10.14, chapter 10, at Landuse Plan.

13.3.7 Education

The total area under this use has been determined as 31.90 acres. Existing land is 15.07 acres and proposed 16.83 acres of land uses. Details have been given in table 10.7, chapter 10, at Landuse Plan.

13.3.8 Health

Local authority of Amtali paurashava area not willing to expend the *upazila* health complex, because they are interested its vertical expansion. A total 12.75 acres of land has been proposed at different wards for health center/ maternity clinic. Details have been given in table 10.13, chapter 10, at Landuse Plan.

Map 13.1 shows the proposed Utility Services in Amtali Paurashava.

13.4 Regulations to Address the Proposals

Local Government (Paurashava) Ordinance, 2009 (Ordinance No. XLXVIII of 2009)

According to the 2nd Schedule, Sl. No. 10, the Paurashava may provide supply of 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 will be dug, constructed or provided except with the sanction of the Paurashava.

The regulations, as discussed above, will be needed for provision of drinking water supply both Paurashava and private sources in the Paurashava.

The sewerage facilities may be provided by the Paurashava and Department of Public Health Engineering (DPHE). According to the 2nd Schedule, Sl. No. 12, of the Local Government (Paurashava) Ordinance, 2009, Paurashava provide an adequate system of public drains 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.

Public Health (Emergency Provisions) Ordinance, 1944 (Ordinance No. XXI of 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.

The Department of Public Health Engineering (DPHE) is performing activities for drinking water supply. At Paurashava level 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))

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)

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.

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Implementation, Monitoring and Evaluation of the Urban Services Plan

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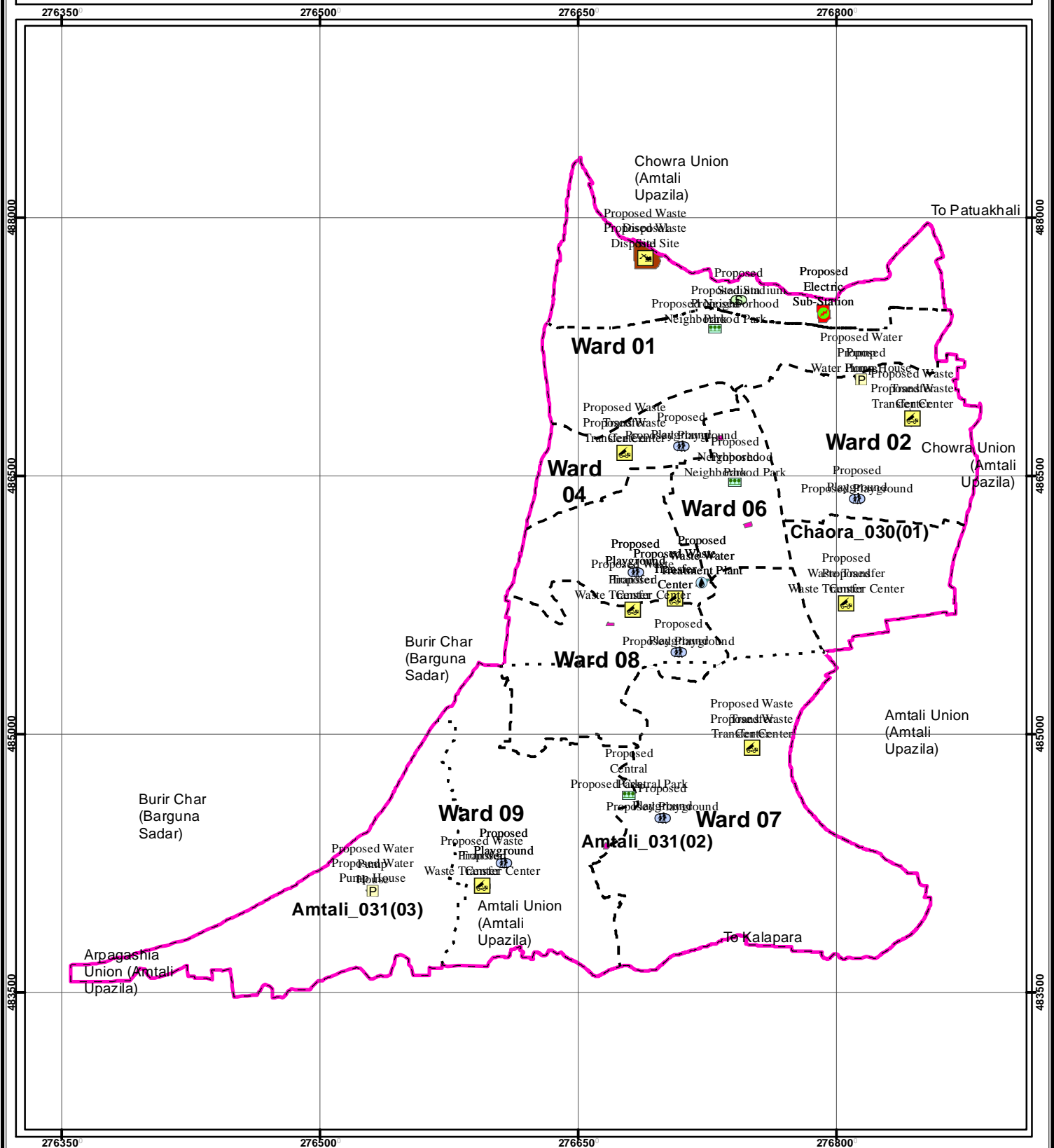
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Map 13.1: Proposed Urban Services of Amtali Paurashava



Legend

Admin Boundary

- - - Mouza Boundary
- Paurashava Boundary
- - - Sheet Boundary
- . - . Ward Boundary

Proposed Urban Service Features

- Dumping Station
- Electric Sub Station
- Fire Service
- Waste Transfer Center
- Waste Water Treatment Plant
- Water Pump House

Proposed Urban Services

- Dumping Station
- Electric Sub Station
- Public Toilet
- Waste Transfer Center
- Waste Water Treatment Plant
- Water Pump House

0 230 460 920 Meters



Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government,
Rural Development and Cooperatives

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In Association with

Part C. Ward Action Plan

Chapter- 14

WARD ACTION PLAN

14.1 Introduction

This chapter 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 (1st to 5th year of planning period) for each Ward.

14.1.1 Background

The Ward Action Plans are prepared under the framework of Structure Plan and Urban Area Plan. The Ward Action Plans contain details of development proposals at Ward level including the problems and opportunities existing therein and also include the proposals made in the upper level plan that is in the Urban Area Plan. The Ward Action Plans have been formulated for execution within a period of 5 years.

Ward Action Plan is a vital part of the current plan package as far as spatial development and development control is concerned. Absence of Ward Action Plan not only hampers undertaking of development projects by planning authority, but also leads to uncontrolled and unwanted spatial development in the private sector. Land use zoning is also provided in the Ward Action Plan to enable detailed view of proposed land use and development.

14.1.2 Content and Form of Ward Action Plan

The Ward Action Plan is detailed area plan based on the policy framework, guideline indication of Structure Plan and more detailed guideline of Urban Area Plan. The provision of Ward Action Plan is inherent in the Structure Plan with some specific purposes. The Ward Action Plan is to:

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

14.1.3 Linkage with Structure and Urban Area Plan

Ward Action Plan is the 3rd component of the Master Plan package. The other two upper level components are Structure Plan and Urban Area Plan. Structure Plan lay down the framework of the future plan including strategy and the sectoral policies. The Urban Area Plan and the Ward Action Plan detail out development proposals under the framework of Structure Plan.

14.2 Derivation of Ward Action Plan

The Ward Action Plan is derived from the conceptual framework, and guidelines and strategies for development under Structure Plan and detailed proposals of Urban Area Plan. Ward Action Plan is aimed to provide detailed infrastructure plan to guide the physical development of Amtali town including its all economic and social activities. This plan adheres to the policy directives spelled out in the Structure Plan.

14.2.1 Revisiting Structure Plan and Urban Area Plan

To guide long term growth of the Paurashava, potential locations of major development areas are identified and the Structure Plan Area is broadly classified into nine categories, namely Established Urban Area, Sub Urban Area, New Urban Area, Recreational Facility, Circulation Network, Restricted Area, Urban Peripheral Area, Agriculture Area and Water Retention Area.

The Urban Area Plan is prepared under the framework of Structure Plan and the infrastructure identified for improvement and development are listed as proposals in the Urban Area Plan. The broad classification of lands in the Structure Plan and detailed proposals in the Urban Area Plan form the basis for Ward Action Plan.

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.

14.2.3 Ward Wise Action Plan

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 formulated for execution 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 with initially. The aim of a Ward Action Plan is to prevent haphazard urban development and ensure livable environment in areas that are likely to be urbanized soon. Initially Detailed Area Plan should be covered for only those areas where action is needed immediately or where development pressure is high.

14.3 Ward Action Plan for Ward No. 01

14.3.1 Demography

Ward No.01 is located on the north-east part of the Paurashava. It has least density of population. Population projection shows 1668 population for the year 2031. For the same year, density will be 4 persons per acre in 2031. Table 14.1 shows the detail.

Table 14.1: Population Statistics of Ward No. 01

Item	Year			
	2016	2021	2026	2031
Area (acre)	430.25	430.25	430.25	430.25
Population	1123	1282	1462	1668
Density of Population (acre)	3	3	3	4

14.3.2 Ward Action Plan Proposals

14.3.2.1 Review of Existing Land Use

Ward no. 01 is more or less rural in character. Out of total 141.65 acres of land of this ward, more than 111 acres of land i.e. 78.66% is used in agriculture. The residential use with 12.3 acres, occupies 8.68% of total land, water bodies 12.36%, vacant land 8.73% and circulation network 2.53%. The LGED road from Patuakhali enters to Amtali through this ward. Only .17 % of land is used as community facilities. The availability of urban green space and recreational facilities is negligible.

14.3.2.2 Proposed Land Use Zoning

The category wise proposals are presented here. Table 14.2 shows the amount of land existing and proposed uses in Ward no. 1. **Map 14.1** shows proposed land use of Ward 01. Table 14.2 shows the detail.

Table 14.2: Comparative Scenario of Existing and Proposed Land Uses of Ward No. 01

Sl. No.	Landuse (Existing)	Area (Acre)	%	Sl. No.	Landuse (Proposed)	Area (Acre)	%
1	Agriculture	111.42	78.66	1	Agriculture	89.61	20.83
2	Circulation Network	3.58	2.53	2	Circulation Network	44.02	10.23
3	Commercial	0.20	0.14	3	Commercial	0.98	0.23
4	Community Facilities	0.23	0.17	4	Community Facilities	0.26	0.06
5	Governmental Services	0.71	0.50	5	Education & Research	1.92	0.45
6	Green Spaces	0.37	0.26	6	General Industrial Area	15.21	3.53
7	Industrial Area	0.47	0.33	7	Government Offices	11.09	2.58
8	Residential	12.30	8.68	8	Health Facility	0.42	0.10
9	Water Body	12.36	8.73	9	Open Space	22.57	5.24
				10	Transport Facilities	7.94	1.84
				11	Urban Deferred	10.93	2.54
				12	Urban Residential	70.31	16.34
				13	Utility Services	9.20	2.14
				14	Water Body	145.80	33.89
	Total	141.65	100		Total	430.25	100

Map 14.1: Proposed Landuse Plan of Ward No. 1



276700

276800

483000

483000

487000

487000

276700

276800

Admin Boundary

- - - Mouza Boundary
- Paurashava Boundary
- - - Sheet Boundary
- - - Ward Boundary

Development Features

- Bus Terminal
- Clinic
- Electric Sub-Station
- Filling Station
- General Industrial Zone
- Neighborhood Park

Legend

- Primary/High School
- Stadium
- Truck Terminal
- Ward Center
- Waste Disposal Site
- Landuse Type**
- Agricultural Land
- Circulation Network
- Commercial Zone
- Community Facilities
- Education & Research Zone

- General Industrial Zone
- Government Office
- Health Services
- Open Space
- Recreational Facilities
- Transportation Facilities
- Urban Deferred
- Urban Residential Zone
- Utility Services
- Water Body

0 50 100 200 300 400 Meters



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a. Urban Residential Zone

In existing land uses, both the urban residential and rural homestead has been considered as residential use as a whole. In Ward Action Plan, more than 70 acre of land has been earmarked for urban residential use which will occupy 16.34% of the total land.

b. Education and Research

In Ward Action Plan, one secondary school is proposed with an area of 1.92 acres, which is 0.45% of total land in Ward no. 01 of this Paurashava.

c. Commercial Activity

Only 1 acres of land has been proposed for this purpose which will occupy only 0.23% of total land.

d. Circulation network

For any type of development, circulation network is an important facility. To improve the efficiency of transport network of the ward, more roads are proposed which will consume almost 44.02 acres of land and more than 10.23% of the total area.

e. Transport and Communication Facilities

One bus terminal and one truck terminal along with a fuel station is proposed for this ward. It occupies 7.94 acres land which is 1.84% total land of the ward.

f. Community Facilities

Land for community facilities will be 0.26 acre which is 0.06 %.

g. Agricultural Area

The total area under this use has been estimated as about 89.61 acres of land covering 20.83% of the total land. Rural homestead will also perform some agricultural activities as farm, poultry or horticulture. This zone will serve as the hinterland for the town.

h. Open Space

Land for open space will be 22.57 acre which includes open recreational facilities neighborhood park and a stadium.

i. Water bodies

The plan suggests for preserving most of the 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 0.25 acres will be preserved as the water retention ponds. The proposed retention area covers 145.80 acres of land which covers almost 33.89% of the total ward area.

j. Urban Deferred

For the purpose, 10.93 acres covering 2.54% of land is proposed for the development of the town.

k. Utility Services

A total of 9.20 acre of land covering 2.14% of total land is earmarked as Utility Services zone at Ward no. 01..

14.3.2.3 Proposed Road Infrastructure Development

A total of 17.88 km of road development has been proposed in ward action plan for Ward no. 01 of Amtali Paurashava. There are primary, local and secondary roads among these proposals. The detailed scenario of road network development proposal is given in Table 14.3.

Table 14.3: Road Network Proposal at Ward no. 01

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_742	Primary Road	100.00	299.283	New	Ward 01	First Phase
Pr_744	Primary Road	60.00	1113.378	Widening	Ward 01	First Phase
Pr_749	Primary Road	100.00	200.279	Widening	Ward 01	First Phase
Pr_759	Primary Road	80.00	639.706	Widening	Ward 01	First Phase
Pr_654	Secondary Road	30.00	404.035	New	Ward 01	Second Phase
Pr_679	Secondary Road	30.00	267.671	New	Ward 01	Second Phase
Pr_680	Secondary Road	30.00	108.362	New	Ward 01	Second Phase
Pr_681	Secondary Road	30.00	277.647	New	Ward 01	Second Phase
Pr_682	Secondary Road	30.00	159.275	New	Ward 01	Second Phase
Pr_683	Secondary Road	30.00	302.364	New	Ward 01	Second Phase
Pr_684	Secondary Road	30.00	1300.784	New	Ward 01	Second Phase
Pr_689	Secondary Road	30.00	406.203	Widening	Ward 01	Second Phase
Pr_697	Secondary Road	30.00	119.298	Widening	Ward 01	Second Phase
Pr_698	Secondary Road	30.00	95.721	Widening	Ward 01	Second Phase
Pr_699	Secondary Road	30.00	313.379	Widening	Ward 01	Second Phase
Pr_701	Secondary Road	30.00	408.136	Widening	Ward 01	Second Phase
Pr_708	Secondary Road	30.00	159.270	Widening	Ward 01	Second Phase
Pr_709	Secondary Road	30.00	153.058	Widening	Ward 01	Second Phase
Pr_710	Secondary Road	30.00	1244.910	Widening	Ward 01	Second Phase
Pr_711	Secondary Road	30.00	296.938	Widening	Ward 01	Second Phase
Pr_721	Secondary Road	40.00	292.516	Widening	Ward 01	Second Phase
Pr_722	Secondary Road	40.00	346.586	Widening	Ward 01	Second Phase
Pr_723	Secondary Road	40.00	875.751	Widening	Ward 01	Second Phase
Pr_735	Secondary Road	40.00	476.726	Widening	Ward 01	Second Phase
Pr_232	Local Road	20.00	15.790	New	Ward 01	Third Phase
Pr_242	Local Road	20.00	99.540	New	Ward 01	Third Phase
Pr_252	Local Road	20.00	87.509	New	Ward 01	Third Phase
Pr_256	Local Road	20.00	8.603	New	Ward 01	Third Phase
Pr_259	Local Road	20.00	3.105	New	Ward 01	Third Phase
Pr_262	Local Road	20.00	56.858	New	Ward 01	Third Phase
Pr_263	Local Road	20.00	92.963	New	Ward 01	Third Phase
Pr_264	Local Road	20.00	85.779	New	Ward 01	Third Phase
Pr_265	Local Road	20.00	15.314	New	Ward 01	Third Phase
Pr_266	Local Road	20.00	144.572	New	Ward 01	Third Phase
Pr_268	Local Road	20.00	9.357	New	Ward 01	Third Phase
Pr_269	Local Road	20.00	54.489	New	Ward 01	Third Phase
Pr_270	Local Road	20.00	56.026	New	Ward 01	Third Phase
Pr_271	Local Road	20.00	80.505	New	Ward 01	Third Phase
Pr_272	Local Road	20.00	57.980	New	Ward 01	Third Phase
Pr_273	Local Road	20.00	98.121	New	Ward 01	Third Phase
Pr_275	Local Road	20.00	25.056	New	Ward 01	Third Phase

Amtali Paurashava Master Plan: 2011-2031
Ward Action Plan

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_277	Local Road	20.00	29.317	New	Ward 01	Third Phase
Pr_278	Local Road	20.00	41.688	New	Ward 01	Third Phase
Pr_279	Local Road	20.00	133.108	New	Ward 01	Third Phase
Pr_280	Local Road	20.00	44.203	New	Ward 01	Third Phase
Pr_281	Local Road	20.00	69.132	New	Ward 01	Third Phase
Pr_282	Local Road	20.00	89.017	New	Ward 01	Third Phase
Pr_283	Local Road	20.00	66.909	New	Ward 01	Third Phase
Pr_284	Local Road	20.00	89.472	New	Ward 01	Third Phase
Pr_285	Local Road	20.00	79.508	New	Ward 01	Third Phase
Pr_286	Local Road	20.00	29.780	New	Ward 01	Third Phase
Pr_287	Local Road	20.00	122.448	New	Ward 01	Third Phase
Pr_288	Local Road	20.00	96.602	New	Ward 01	Third Phase
Pr_289	Local Road	20.00	122.948	New	Ward 01	Third Phase
Pr_290	Local Road	20.00	176.415	New	Ward 01	Third Phase
Pr_291	Local Road	20.00	54.653	New	Ward 01	Third Phase
Pr_292	Local Road	20.00	301.638	New	Ward 01	Third Phase
Pr_293	Local Road	20.00	65.394	New	Ward 01	Third Phase
Pr_294	Local Road	20.00	98.196	New	Ward 01	Third Phase
Pr_295	Local Road	20.00	486.712	New	Ward 01	Third Phase
Pr_318	Local Road	20.00	13.076	New	Ward 01	Third Phase
Pr_320	Local Road	20.00	641.334	New	Ward 01	Third Phase
Pr_322	Local Road	20.00	1243.528	New	Ward 01	Third Phase
Pr_325	Local Road	20.00	246.091	Widening	Ward 01	Third Phase
Pr_370	Local Road	20.00	50.794	Widening	Ward 01	Third Phase
Pr_371	Local Road	20.00	112.883	Widening	Ward 01	Third Phase
Pr_372	Local Road	20.00	75.398	Widening	Ward 01	Third Phase
Pr_373	Local Road	20.00	38.796	Widening	Ward 01	Third Phase
Pr_374	Local Road	20.00	202.243	Widening	Ward 01	Third Phase
Pr_398	Local Road	20.00	119.900	Widening	Ward 01	Third Phase
Pr_399	Local Road	20.00	53.477	Widening	Ward 01	Third Phase
Pr_400	Local Road	20.00	257.626	Widening	Ward 01	Third Phase
Pr_401	Local Road	20.00	145.253	Widening	Ward 01	Third Phase
Pr_450	Local Road	20.00	63.459	Widening	Ward 01	Third Phase
Pr_455	Local Road	20.00	66.069	Widening	Ward 01	Third Phase
Pr_456	Local Road	20.00	84.936	Widening	Ward 01	Third Phase
Pr_457	Local Road	20.00	135.651	Widening	Ward 01	Third Phase
Pr_458	Local Road	20.00	41.936	Widening	Ward 01	Third Phase
Pr_538	Local Road	20.00	260.290	Widening	Ward 01	Third Phase
Pr_539	Local Road	20.00	57.192	Widening	Ward 01	Third Phase
Pr_584	Local Road	20.00	48.477	Widening	Ward 01	Third Phase
Pr_607	Local Road	20.00	143.930	Widening	Ward 01	Third Phase
Pr_608	Local Road	20.00	207.467	Widening	Ward 01	Third Phase
Pr_609	Local Road	20.00	124.901	Widening	Ward 01	Third Phase

14.3.2.4 Drainage Development Plan

There is no man-made drainage system at Ward no. 01. The existing drainage of the ward mainly depends on the natural drainage facilities. The proposed drainage facilities will be developed based on these natural channels. Table 14.4 shows the details. **Map 14.2** represents the proposed road and drainage network for Amtali Paurashava

Table 14.4: Drainage Development Plan Proposals for ward 01

Item	Length in km
Available Drainage	Nil
Proposed Drainage (Secondary)	4.38
Proposed Drainage (Tertiary)	11.77

14.3.2.5 Urban Services

a. Solid Waste Management

Solid waste management is an important urban service. As density of population increases the volume of solid waste also increases proportionately. This ward will be developed as an industrial area. However, the income level is also another major factor influencing the volume of solid waste. Population and the volume of waste in the town is yet to be large enough to become a problem for it. But the present management system is not satisfactory and it might be led to problem in future. The consultant proposes one solid waste disposal sites in this ward at on an area of 4.47 acre.

b. Water Supply

It is proposed to install a network based water supply system by exploring fresh water from the canal connected with the Paira River. A water treatment plant will be established on the bank of canal connected with the Paira River. And water supply lines in this ward will be established along all categories of roads as per the growth of the settlement from this water treatment plant. Water supply network supply will be established at 2nd phase of water supply installation at Amtali Paurashava. Water Line P-8 and P-9 have been proposed in this ward.

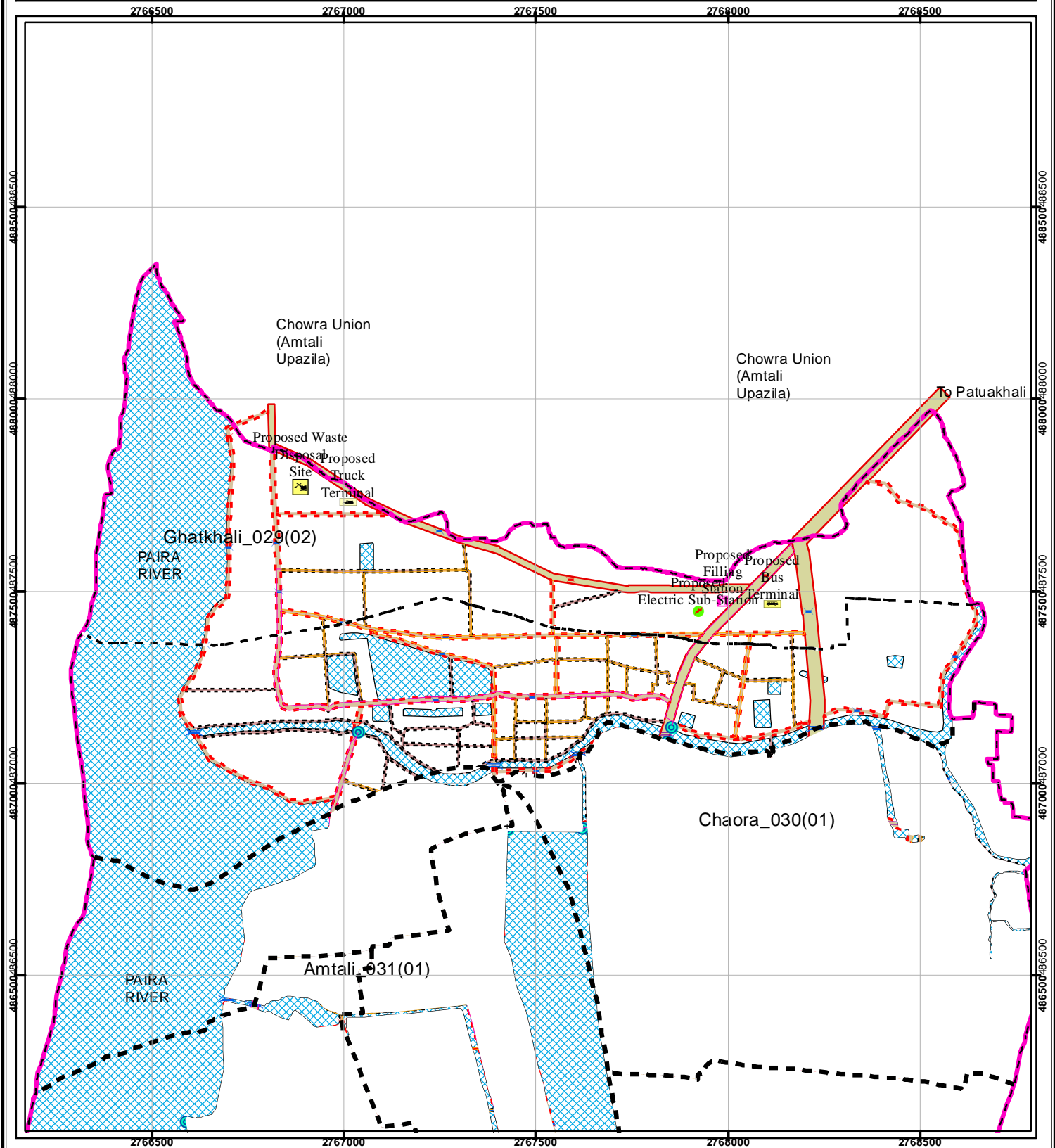
c. Sanitation

It is apprehended that the government would not be able to provide network and treatment based sanitation system for the town. So the present system of sanitation will continue. However, the Paurashava must try to promote hygienic sanitation to ensure better public health. There is hardly any public toilet in the town to serve the visitors and the local people. The existing toilet of bus terminal area has to be developed as public toilet is required for the town people and as well as for the passengers waiting for departure. **Map 14.1** represents development proposal for ward 01.

Table 14.5: Utility Service Development Proposals for ward 01

Item	Existing		Proposed	
		Area/length		Area/Length
Solid Waste Dumping Site	None		waste transfer station is proposed	4.47 acre
Water Supply Network	None		As per the design of DPHE	5154.53 m
Electricity Line			As per existing program of PDB	

Map 14.2: Proposed Road & Drainage Network of Ward No.1



Admin Boundary

- Mouza Boundary
- Paurashava Boundary
- Sheet Boundary
- Ward Boundary

Existing Bridge

- Bridge
- Culvert

Proposed Bridge

- Bridge
- Culvert

Legend

Development Features

- Bus Terminal
- Dumping Station
- Electric Sub Station
- Fire Service

- Tempo Stand
- Truck Terminal
- Waste Transfer Center
- Waste Water Treatment Plant
- Water Pump House

- Drainage Outfall
- Secondary Drain
- Tertiary Drain
- Waterbody
- Primary Road
- Secondary Road
- Local Road

0 100 200 400 Meters



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14.4 Ward Action Plan for Ward No. 02

14.4.1 Demography

Ward no. 02 is located on the eastern part of the town. It has the highest density of population. Table 14.6 shows the detail.

Table 14.6: Population Statistics of Ward No. 02

Item	Year			
	2016	2021	2026	2031
Area (acre)	258.59	258.59	258.59	258.59
Population	2000	2282	2603	2970
Density of Population (acre)	8	9	10	11

14.4.2 Ward Action Plan Proposals

14.4.2.1 Review of Existing Land Use

The maximum land of this ward at present is used for Agriculture purpose. It occupies 162.66 acres of agricultural land covering more than 60% of the total land. Water bodies occupy about 14.24% of the land of the ward. About .59 acres of land is under non-government uses, 1.53% is used for education, 2.18% for circulation network, and only .65% of land is used as community facilities. Table 14.7 shows the existing land use pattern of Amtali Paurashava.

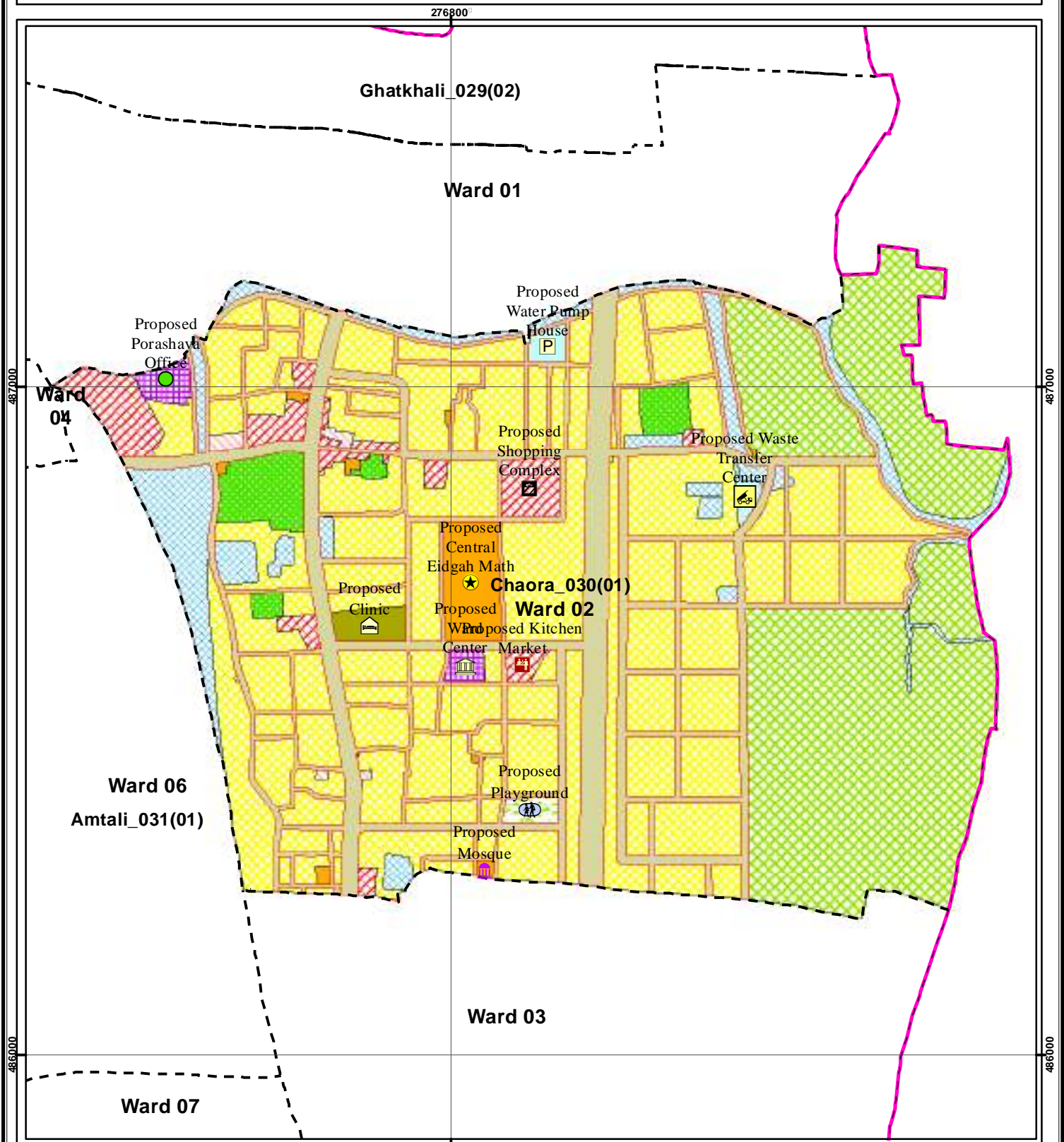
14.4.2.2 Proposed Land Use Zoning

The category wise proposals are presented here. Table 14.7 shows the amount of land existing and proposed uses in Ward no. 2. **Map 14.3** shows proposed land use of Ward 02.

Table 14.7: Comparative Scenario of Existing and Proposed Land Uses of Ward No. 02

Sl. No.	Landuse (Existing)	Area (Acre)	%	Sl. No.	Landuse (Proposed)	Area (Acre)	%
1	Agriculture	162.66	60.42	1	Agriculture	59.63	23.06
2	Circulation Network	5.86	2.18	2	Circulation Network	46.72	18.07
3	Commercial	2.17	0.81	3	Commercial	8.63	3.34
4	Community Facilities	1.75	0.65	4	Community Facilities	4.33	1.67
5	Education & Research	4.13	1.53	5	Education & Research	5.27	2.04
6	Governmental Srevices	0.09	0.03	6	Government offices	1.68	0.65
7	Green Spaces	0.17	0.06	7	Health Facility	1.31	0.51
8	Iddustrial Area	0.05	0.02	8	Mixed Use	0.62	0.24
9	Mixed Use	0.89	0.33	9	Open Space	0.75	0.29
10	Non Governmental Organization	0.59	0.22	10	Urban Residential	113.80	44.01
11	Residential	44.30	16.46	11	Utility Services	1.15	0.44
12	Water Body	46.55	17.29	12	Water Body	14.71	5.69
	Total	269.21	100.00		Total	258.59	100

Map 14.3: Proposed Landuse Plan of Ward No. 2



Admin Boundary

- Mouza Boundary
- Paurashava Boundary
- ... Sheet Boundary
- - - Ward Boundary

Development Features

- ★ Central Eidgah Math
- 🏠 Clinic
- 🛍️ Katcha Bazar
- 🕌 Mosque

Legend

- ⚽ Play Field
- 🟢 Porashava Office
- 🛍️ Shopping Complex
- 🏠 Ward Center
- 🗑️ Waste Transfer Center
- 🚰 Water Pump House
- Landuse Type**
- 🌱 Agricultural Land
- 🛣️ Circulation Network

- 🏢 Commercial Zone
- 🏠 Community Facilities
- 🎓 Education & Research Zone
- 🏭 General Industrial Zone
- 🏛️ Government Office
- 🏥 Health Services
- 🏠 Mixed Use Zone
- 🌳 Open Space
- 🏡 Urban Residential Zone
- 🔌 Utility Services
- 💧 Water Body

0 30 60 120 180 240 Meters



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a. Urban Residential Zone

In the Ward Action Plan for Ward no. 02, more than 113.80 acres of land has been earmarked for urban residential use, which will occupy 44.01% of the total land.

b. Education and Research

A total of 5.27 acres of land is proposed for education and research. One new primary school will be established at the border of the ward no. 02 and 03.

c. Commercial Activity

At present, commercial activity is very low in this ward. About 8.63 acre of land has been proposed for this purpose, which occupies only 3.34% of total land.

d. Mixed Use Zone

Only 0.62 acre of land will be used as mixed use covering 0.024% of total land.

e. Circulation network

To improve the efficiency of the Ward, more roads are proposed, which will consume about 46.72 acres of land covering about 18.07% of the total area. For the improvement of road network, widening of existing roads, link road and new roads are proposed for phase wise development within the first five years.

f. Community Facilities

A total of 4.33 acre of land will be used for community facilities covering 1.67% of the total land of this ward.

g. Open Space

About 0.75 acre of land is allocated for open space.

h. Water Bodies

The total land proposed for water retention area covers 14.71 acres.

14.4.2.3 Proposed Road Infrastructure Development

A total of 18.92 km of road development proposal have been made for Ward no. 02 of Amtali Paurashava. Length of the local roads is 11.88 km and width of these roads will be 25/20 ft. The total length of secondary road will be 4.98 km and width of these roads will be varied from 30 to 40 ft for this Ward. One primary road length is 2.06 km and width is 60/100 ft. The detailed scenario of road network development proposal is given in Table 14.8.

Table 14.8: Road Network Proposal at Ward no. 02

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_741	Primary Road	100.00	890.860	New	Ward 02	First Phase
Pr_758	Primary Road	80.00	885.929	Widening	Ward 02	First Phase
Pr_763	Primary Road	60.00	284.284	Widening	Ward 02	First Phase
Pr_11	Local Road	20.00	131.699	New	Ward 02	Second Phase
Pr_176	Local Road	20.00	46.667	New	Ward 02	Second Phase
Pr_182	Local Road	20.00	88.728	New	Ward 02	Second Phase
Pr_185	Local Road	20.00	156.130	New	Ward 02	Second Phase
Pr_186	Local Road	20.00	44.970	New	Ward 02	Second Phase

Amtali Paurashava Master Plan: 2011-2031
Ward Action Plan

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_187	Local Road	20.00	123.148	New	Ward 02	Second Phase
Pr_188	Local Road	20.00	37.367	New	Ward 02	Second Phase
Pr_190	Local Road	20.00	108.909	New	Ward 02	Second Phase
Pr_203	Local Road	20.00	42.065	New	Ward 02	Second Phase
Pr_205	Local Road	20.00	61.182	New	Ward 02	Second Phase
Pr_206	Local Road	20.00	80.346	New	Ward 02	Second Phase
Pr_207	Local Road	20.00	34.071	New	Ward 02	Second Phase
Pr_208	Local Road	20.00	141.945	New	Ward 02	Second Phase
Pr_209	Local Road	20.00	85.276	New	Ward 02	Second Phase
Pr_210	Local Road	20.00	245.405	New	Ward 02	Second Phase
Pr_213	Local Road	20.00	77.934	New	Ward 02	Second Phase
Pr_214	Local Road	20.00	263.439	New	Ward 02	Second Phase
Pr_217	Local Road	20.00	56.527	New	Ward 02	Second Phase
Pr_367	Local Road	20.00	26.738	Widening	Ward 02	Second Phase
Pr_368	Local Road	20.00	30.772	Widening	Ward 02	Second Phase
Pr_395	Local Road	20.00	45.744	Widening	Ward 02	Second Phase
Pr_396	Local Road	20.00	77.784	Widening	Ward 02	Second Phase
Pr_445	Local Road	20.00	84.547	Widening	Ward 02	Second Phase
Pr_517	Local Road	20.00	94.288	Widening	Ward 02	Second Phase
Pr_518	Local Road	20.00	155.428	Widening	Ward 02	Second Phase
Pr_519	Local Road	20.00	65.899	Widening	Ward 02	Second Phase
Pr_520	Local Road	20.00	48.325	Widening	Ward 02	Second Phase
Pr_521	Local Road	20.00	63.006	Widening	Ward 02	Second Phase
Pr_523	Local Road	20.00	267.591	Widening	Ward 02	Second Phase
Pr_524	Local Road	20.00	148.455	Widening	Ward 02	Second Phase
Pr_546	Local Road	20.00	63.506	Widening	Ward 02	Second Phase
Pr_599	Local Road	20.00	80.508	Widening	Ward 02	Second Phase
Pr_652	Secondary Road	30.00	108.684	New	Ward 02	Second Phase
Pr_655	Secondary Road	40.00	611.471	New	Ward 02	Second Phase
Pr_658	Secondary Road	40.00	184.275	New	Ward 02	Second Phase
Pr_660	Secondary Road	40.00	348.200	New	Ward 02	Second Phase
Pr_665	Secondary Road	40.00	356.105	New	Ward 02	Second Phase
Pr_666	Secondary Road	40.00	315.419	New	Ward 02	Second Phase
Pr_673	Secondary Road	30.00	420.232	New	Ward 02	Second Phase
Pr_678	Secondary Road	30.00	203.356	New	Ward 02	Second Phase
Pr_688	Secondary Road	40.00	393.289	New	Ward 02	Second Phase
Pr_695	Secondary Road	30.00	674.786	Widening	Ward 02	Second Phase
Pr_700	Secondary Road	30.00	99.122	Widening	Ward 02	Second Phase
Pr_717	Secondary Road	40.00	47.184	Widening	Ward 02	Second Phase
Pr_718	Secondary Road	40.00	101.207	Widening	Ward 02	Second Phase
Pr_719	Secondary Road	40.00	129.807	Widening	Ward 02	Second Phase
Pr_729	Secondary Road	40.00	50.194	Widening	Ward 02	Second Phase
Pr_730	Secondary Road	40.00	703.391	Widening	Ward 02	Second Phase

Amtali Paurashava Master Plan: 2011-2031
Ward Action Plan

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_731	Secondary Road	40.00	238.663	Widening	Ward 02	Second Phase
Pr_6	Local Road	25.00	48.383	New	Ward 02	Third Phase
Pr_7	Local Road	25.00	90.925	New	Ward 02	Third Phase
Pr_8	Local Road	25.00	216.012	New	Ward 02	Third Phase
Pr_9	Local Road	25.00	180.987	New	Ward 02	Third Phase
Pr_9	Local Road	25.00	182.516	New	Ward 02	Third Phase
Pr_10	Local Road	20.00	183.811	New	Ward 02	Third Phase
Pr_10	Local Road	25.00	54.836	New	Ward 02	Third Phase
Pr_13	Local Road	20.00	140.456	New	Ward 02	Third Phase
Pr_13	Local Road	25.00	390.866	New	Ward 02	Third Phase
Pr_14	Local Road	20.00	448.246	New	Ward 02	Third Phase
Pr_15	Local Road	25.00	423.280	New	Ward 02	Third Phase
Pr_16	Local Road	25.00	216.607	New	Ward 02	Third Phase
Pr_169	Local Road	20.00	0.312	New	Ward 02	Third Phase
Pr_171	Local Road	20.00	26.472	New	Ward 02	Third Phase
Pr_175	Local Road	20.00	30.984	New	Ward 02	Third Phase
Pr_177	Local Road	20.00	78.281	New	Ward 02	Third Phase
Pr_178	Local Road	20.00	25.187	New	Ward 02	Third Phase
Pr_179	Local Road	20.00	47.481	New	Ward 02	Third Phase
Pr_180	Local Road	20.00	13.862	New	Ward 02	Third Phase
Pr_219	Local Road	20.00	143.325	New	Ward 02	Third Phase
Pr_226	Local Road	20.00	48.252	New	Ward 02	Third Phase
Pr_231	Local Road	20.00	164.947	New	Ward 02	Third Phase
Pr_235	Local Road	20.00	89.492	New	Ward 02	Third Phase
Pr_236	Local Road	20.00	42.523	New	Ward 02	Third Phase
Pr_237	Local Road	20.00	120.670	New	Ward 02	Third Phase
Pr_238	Local Road	20.00	106.592	New	Ward 02	Third Phase
Pr_239	Local Road	20.00	150.849	New	Ward 02	Third Phase
Pr_240	Local Road	20.00	96.596	New	Ward 02	Third Phase
Pr_243	Local Road	20.00	25.882	New	Ward 02	Third Phase
Pr_244	Local Road	20.00	98.523	New	Ward 02	Third Phase
Pr_245	Local Road	20.00	41.728	New	Ward 02	Third Phase
Pr_246	Local Road	20.00	54.453	New	Ward 02	Third Phase
Pr_247	Local Road	20.00	178.200	New	Ward 02	Third Phase
Pr_248	Local Road	20.00	132.310	New	Ward 02	Third Phase
Pr_249	Local Road	20.00	42.573	New	Ward 02	Third Phase
Pr_250	Local Road	20.00	37.130	New	Ward 02	Third Phase
Pr_253	Local Road	20.00	80.366	New	Ward 02	Third Phase
Pr_254	Local Road	20.00	92.574	New	Ward 02	Third Phase
Pr_255	Local Road	20.00	92.244	New	Ward 02	Third Phase
Pr_257	Local Road	20.00	53.487	New	Ward 02	Third Phase
Pr_258	Local Road	20.00	80.797	New	Ward 02	Third Phase
Pr_260	Local Road	20.00	47.657	New	Ward 02	Third Phase

Amtali Paurashava Master Plan: 2011-2031
Ward Action Plan

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_267	Local Road	20.00	583.425	New	Ward 02	Third Phase
Pr_274	Local Road	20.00	84.244	New	Ward 02	Third Phase
Pr_276	Local Road	20.00	60.872	New	Ward 02	Third Phase
Pr_317	Local Road	20.00	1007.408	New	Ward 02	Third Phase
Pr_324	Local Road	20.00	3.070	Widening	Ward 02	Third Phase
Pr_364	Local Road	20.00	11.219	Widening	Ward 02	Third Phase
Pr_369	Local Road	20.00	243.641	Widening	Ward 02	Third Phase
Pr_392	Local Road	20.00	16.374	Widening	Ward 02	Third Phase
Pr_397	Local Road	20.00	38.085	Widening	Ward 02	Third Phase
Pr_444	Local Road	20.00	10.100	Widening	Ward 02	Third Phase
Pr_448	Local Road	20.00	238.016	Widening	Ward 02	Third Phase
Pr_449	Local Road	20.00	167.553	Widening	Ward 02	Third Phase
Pr_451	Local Road	20.00	134.057	Widening	Ward 02	Third Phase
Pr_452	Local Road	20.00	199.487	Widening	Ward 02	Third Phase
Pr_453	Local Road	20.00	91.291	Widening	Ward 02	Third Phase
Pr_454	Local Road	20.00	85.587	Widening	Ward 02	Third Phase
Pr_537	Local Road	20.00	121.558	Widening	Ward 02	Third Phase
Pr_559	Local Road	20.00	138.282	Widening	Ward 02	Third Phase
Pr_583	Local Road	20.00	133.720	Widening	Ward 02	Third Phase
Pr_597	Local Road	20.00	71.632	Widening	Ward 02	Third Phase
Pr_603	Local Road	20.00	95.664	Widening	Ward 02	Third Phase
Pr_627	Local Road	20.00	109.817	Widening	Ward 02	Third Phase
Pr_632	Local Road	20.00	98.249	Widening	Ward 02	Third Phase
Pr_649	Local Road	20.00	95.415	Widening	Ward 02	Third Phase
Pr_650	Local Road	20.00	142.544	Widening	Ward 02	Third Phase

14.4.2.4 Drainage Development Plan

There is only 1.6 km man-made drainage facility at Ward no. 02. Existing drainage is mostly depending on natural drainage facilities. The proposed drainage facilities will be developed based on these natural channels. Paira River will serve as primary drains for this ward and will be connected by 3.78 km secondary drain and 20.99km tertiary drain. Table 14.9 shows the details.

Table14.9: Drainage Development Plan Proposals for ward 02

Item	Length in km
Available Drainage	1.67
Proposed Drainage (Secondary)	3.78
Proposed Drainage (Tertiary)	20.99

Besides, it will be necessary to re-excavate all the encroached khals that serve as primary drains. The consultants have identified all existing khals that need to be re-excavated to allow smooth flow of water through them. **Map 14.4** represents proposed Road and Drainage Network of Ward 02

14.4.2.5 Urban Services

a. Solid Waste Management

The present management system as in the other wards is not satisfactory and it might lead to problem in future. No solid waste transfer station is proposed in this ward. But one waste transfer station will be established at the border of Ward no. 02. It is recommended that home collection system is introduced in the ward by creation of local CBOs. This will cause organized collection of waste and prevent indiscriminate littering.

b. Water Supply

It is proposed to install a network based water supply system by exploring fresh water from the Paira River for the entire Paurashava. Total 8399.49 m water lines have been proposed in this ward along with a water pump station

c. Sanitation

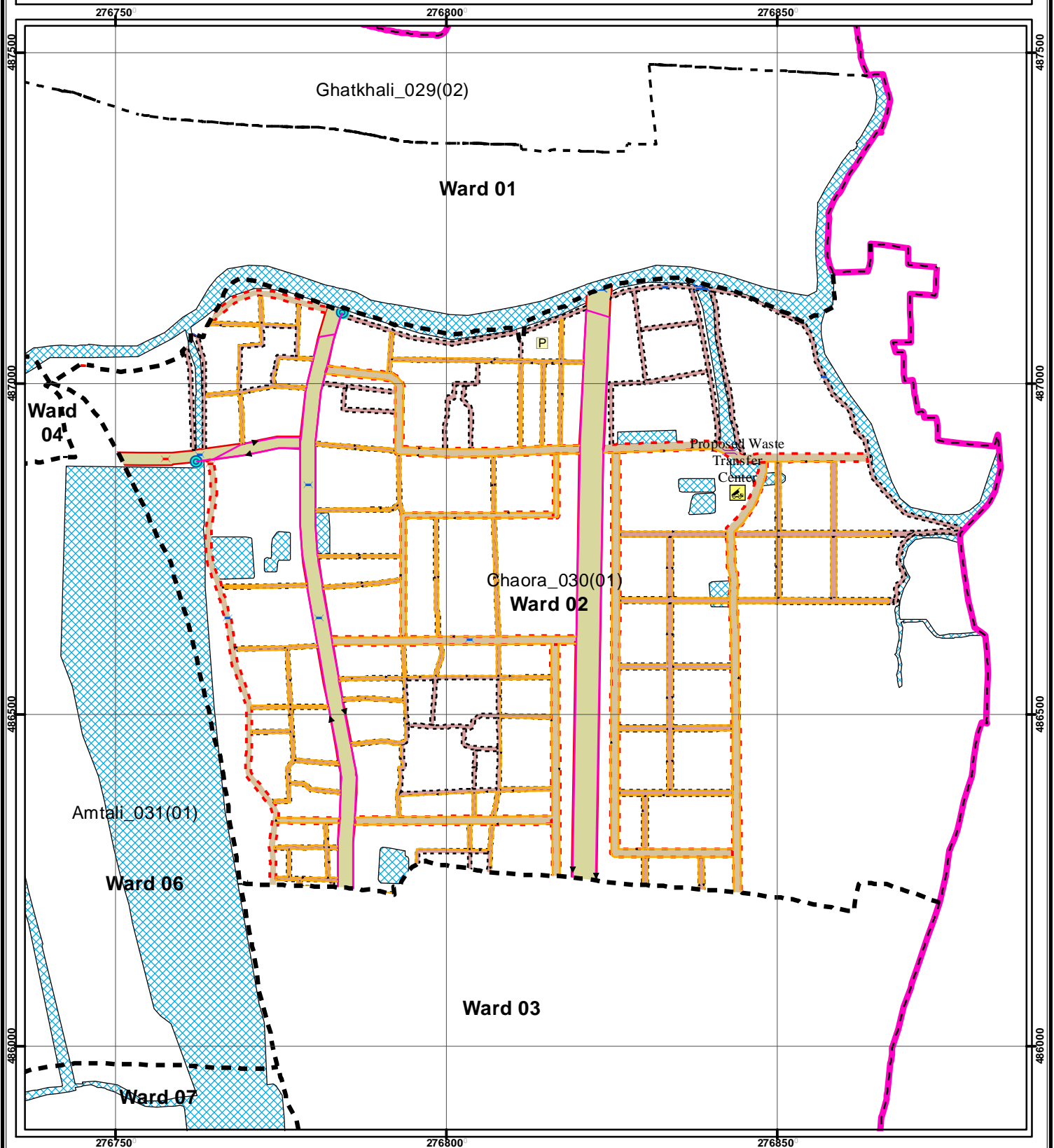
The Paurashava must try to promote hygienic sanitation for the whole Paurashava to ensure better public health.

Table 14.10: Utility Service Development Proposals for ward 02

Item	Existing		Proposed	
		Area/length		Area/Length
Solid Waste Transfer Station	None		None	0.48 acres
Water Supply Network	7	2067.14 m	As per the design of DPHE	8399.49 m
Electricity Line			As per existing program of PDB	

Map 14.3 represents development proposals for ward 2.

Map 14.2: Proposed Road & Drainage Network of Ward No.2



Admin Boundary

- Mouza Boundary
- Paurashava Boundary
- Sheet Boundary
- Ward Boundary
- Existing Bridge**
 - Bridge
 - Culvert
- Proposed Bridge**
 - Bridge
 - Culvert

Legend

Development Features

- Bus Terminal
- Dumping Station
- Electric Sub Station
- Fire Service

- Tempo Stand
- Truck Terminal
- Waste Transfer Center
- Waste Water Treatment Plant
- Water Pump House

- Drainage Outfall
- Secondary Drain
- Tertiary Drain
- Waterbody
- Primary Road
- Secondary Road
- Local Road

0 60 120 240 Meters



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14.5 Ward Action Plan for Ward No. 03

14.5.1 Demography

Ward No. 03 is located on the eastern part of the town. It has a high density of population. Estimated population for the year 2031 will be 4484 in the ward with a density of 31 persons per acre. Table 14.11 shows the detail.

Table 14.11: Population Statistics of Ward No. 03

Item	Year			
	2016	2021	2026	2031
Area (acre)	144.05	144.05	144.05	144.05
Population	3020	3445	3931	4484
Density of Population (acre)	21	24	27	31

14.5.2 Ward Action Plan Proposals

14.5.2.1 Review of Existing Land Use

The maximum land of this ward at present is used for Agriculture purpose. It occupies 87.24 acres of agricultural land covering more than 53% of the total land. Water bodies occupy about 11.58% of the land of the ward. About 49 acres of land is under residential uses, 1.45% is used for commercial facilities, and 2.98% circulation network. 0.12 acres of land in this ward is utilized for service activity. Only 0.58 acres of land is used as community facilities with negligible percentage of urban green space (.08%).

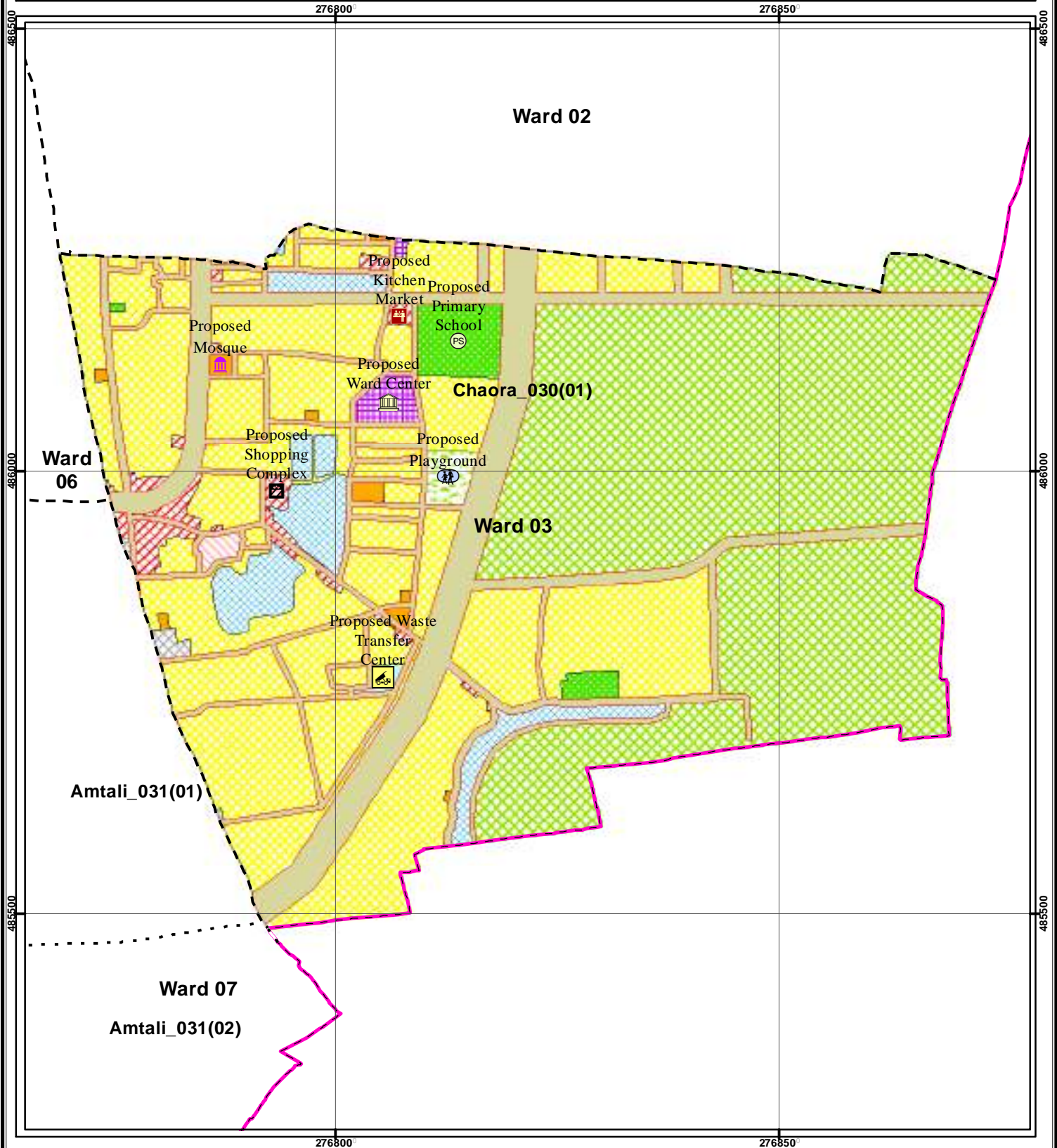
14.5.2.2 Proposed Land Use Zoning

The category wise proposals are presented here. Table 14.12 shows the amount of land existing and proposed uses in Ward no. 03. **Map 14.5** shows proposed land use of Ward 03.

Table 14.12: Comparative Scenario of Existing and Proposed Land Uses of Ward No. 03

Sl. No.	Landuse (Existing)	Area (Acre)	%	Sl. No.	Landuse (Proposed)	Area (Acre)	%
1	Agriculture	87.24	53.16	1	Administrative	0.07	0.05
2	Circulation Network	4.90	2.98	1	Agriculture	54.36	37.74
3	Commercial	2.37	1.45	2	Circulation Network	24.52	17.02
4	Community Facilities	0.58	0.35	3	Commercial	2.10	1.46
5	Education & Research	0.35	0.21	4	Community Facilities	0.63	0.44
6	Green Spaces	0.12	0.08	5	Education & Research	0.50	0.35
7	Industrial Area	0.91	0.56	6	Industry	0.31	0.22
8	Residential	48.48	29.54	7	Mixed Use	0.32	0.22
9	Service Activity	0.12	0.07	8	Urban Residential	55.23	38.34
10	Transportation & Communication	0.03	0.02	9	Utility Services	0.22	0.16
11	Water Body	19.01	11.58	10	Water Body	5.78	4.01
	Total	164.11	100		Total	144.05	100

Map 14.3: Proposed Landuse Plan of Ward No. 3



Admin Boundary

- - - Mouza Boundary
- Paurashava Boundary
- - - Sheet Boundary
- - - Ward Boundary

Development Features

- Katcha Bazar
- Mosque
- Play Field

Legend

- Primary School
- Shopping Complex
- Ward Center
- Waste Transfer Center
- Community Facilities
- Education & Research Zone
- General Industrial Zone
- Government Office
- Mixed Use Zone
- Open Space
- Urban Residential Zone
- Utility Services
- Water Body
- Agricultural Land
- Circulation Network
- Commercial Zone

0 20 40 80 120 160 Meters



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a. Urban Residential

In Ward Action Plan more than 55.23 acre of land has been earmarked for urban residential use which will occupy 38.34% of the total land.

b. Education and Research

In addition 0.50 acre of land has been proposed for education and research.

c. Commercial Activity

Total 2.10 acre of land is allocated for commercial use. In the allocated mixed use zone more commercial activities will also be operated.

d. Mixed Use

Total 0.32 acres of land is earmarked as mixed use zone in this ward where commercial and residential uses will be permitted.

e. Circulation network

To improve the efficiency of the ward more roads are proposed which will consume 24.52 acres of land and almost 17.02% of the total area. For network improvement widening of existing road, link road and new roads are proposed which will be done phase wise within 2031.

f. Community Facilities

Land for community facilities will be increased from 0.63 acres to 0.44 in future.

g. Agricultural Area

Only 54.36 acre land will be maintained as agricultural land up to the year 2031. The existing land will be use for the livelihood of this locality. Only small portion of land of rural homestead will be utilized as some sort of agricultural activities as farm, poultry or horticulture use.

h. Water Body

As the ponds with an area equal to or more than 0.25 acres will be preserved as the water retention ponds the proposed retention area covers about 5.78 acres of land which will cover more than 4.01% of the total land of the ward.

i. Utility Services

About 0.22 acre land will be used for Utility Services which include the existing newly constructed fire service station and a proposed waste transfer station.

14.5.2.3 Proposed Road Infrastructure Development

A total of 9.25 km of road development proposal have been made for Ward no. 02 of Amtali Paurashava. Length of the local roads is 5.59 km and width of these roads will be 20-25 ft. The total length of secondary road will be 2.49km and width of these roads will be varied from 30 to 50 ft for this Ward. One primary road length is 1.16 km and width is 60-100 ft. Detail scenario of road network development proposal is given in table 14.13.

Table 14.13: Road Network Proposal at Ward no. 03

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_740	Primary Road	100.00	830.197	New	Ward 03	First Phase
Pr_756	Primary Road	80.00	339.704	Widening	Ward 03	First Phase
Pr_651	Secondary Road	30.00	180.927	New	Ward 03	Second Phase
Pr_659	Secondary Road	50.00	530.167	New	Ward 03	Second Phase

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Ward Action Plan

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_664	Secondary Road	40.00	61.907	New	Ward 03	Second Phase
Pr_667	Secondary Road	50.00	211.951	New	Ward 03	Second Phase
Pr_687	Secondary Road	40.00	37.408	New	Ward 03	Second Phase
Pr_694	Secondary Road	30.00	185.924	Widening	Ward 03	Second Phase
Pr_705	Secondary Road	40.00	542.528	Widening	Ward 03	Second Phase
Pr_712	Secondary Road	30.00	83.634	Widening	Ward 03	Second Phase
Pr_713	Secondary Road	30.00	94.236	Widening	Ward 03	Second Phase
Pr_715	Secondary Road	30.00	2.382	Widening	Ward 03	Second Phase
Pr_716	Secondary Road	30.00	256.673	Widening	Ward 03	Second Phase
Pr_725	Secondary Road	30.00	161.626	Widening	Ward 03	Second Phase
Pr_737	Secondary Road	50.00	147.655	Widening	Ward 03	Second Phase
Pr_6	Local Road	25.00	47.872	New	Ward 03	Third Phase
Pr_10	Local Road	25.00	41.528	New	Ward 03	Third Phase
Pr_11	Local Road	20.00	115.243	New	Ward 03	Third Phase
Pr_11	Local Road	20.00	255.551	New	Ward 03	Third Phase
Pr_11	Local Road	20.00	165.010	New	Ward 03	Third Phase
Pr_118	Local Road	20.00	196.025	New	Ward 03	Third Phase
Pr_132	Local Road	20.00	149.786	New	Ward 03	Third Phase
Pr_133	Local Road	20.00	63.890	New	Ward 03	Third Phase
Pr_134	Local Road	20.00	45.833	New	Ward 03	Third Phase
Pr_142	Local Road	20.00	78.747	New	Ward 03	Third Phase
Pr_152	Local Road	20.00	151.625	New	Ward 03	Third Phase
Pr_161	Local Road	20.00	22.369	New	Ward 03	Third Phase
Pr_168	Local Road	20.00	33.785	New	Ward 03	Third Phase
Pr_170	Local Road	20.00	9.856	New	Ward 03	Third Phase
Pr_172	Local Road	20.00	24.625	New	Ward 03	Third Phase
Pr_313	Local Road	20.00	330.784	New	Ward 03	Third Phase
Pr_323	Local Road	20.00	211.006	Widening	Ward 03	Third Phase
Pr_338	Local Road	20.00	85.556	Widening	Ward 03	Third Phase
Pr_339	Local Road	20.00	385.936	Widening	Ward 03	Third Phase
Pr_361	Local Road	20.00	27.201	Widening	Ward 03	Third Phase
Pr_363	Local Road	20.00	21.337	Widening	Ward 03	Third Phase
Pr_365	Local Road	20.00	30.726	Widening	Ward 03	Third Phase
Pr_386	Local Road	20.00	52.928	Widening	Ward 03	Third Phase
Pr_388	Local Road	20.00	81.982	Widening	Ward 03	Third Phase
Pr_389	Local Road	20.00	36.882	Widening	Ward 03	Third Phase
Pr_391	Local Road	20.00	46.951	Widening	Ward 03	Third Phase
Pr_393	Local Road	20.00	83.391	Widening	Ward 03	Third Phase
Pr_436	Local Road	20.00	157.237	Widening	Ward 03	Third Phase
Pr_437	Local Road	20.00	52.725	Widening	Ward 03	Third Phase
Pr_439	Local Road	20.00	83.003	Widening	Ward 03	Third Phase
Pr_440	Local Road	20.00	69.884	Widening	Ward 03	Third Phase
Pr_441	Local Road	20.00	81.259	Widening	Ward 03	Third Phase

Amtali Paurashava Master Plan: 2011-2031
Ward Action Plan

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_442	Local Road	20.00	77.075	Widening	Ward 03	Third Phase
Pr_443	Local Road	20.00	54.244	Widening	Ward 03	Third Phase
Pr_484	Local Road	20.00	257.187	Widening	Ward 03	Third Phase
Pr_498	Local Road	20.00	73.938	Widening	Ward 03	Third Phase
Pr_500	Local Road	20.00	71.432	Widening	Ward 03	Third Phase
Pr_501	Local Road	20.00	84.555	Widening	Ward 03	Third Phase
Pr_522	Local Road	20.00	67.965	Widening	Ward 03	Third Phase
Pr_542	Local Road	20.00	153.891	Widening	Ward 03	Third Phase
Pr_543	Local Road	20.00	198.298	Widening	Ward 03	Third Phase
Pr_554	Local Road	20.00	77.827	Widening	Ward 03	Third Phase
Pr_577	Local Road	20.00	40.571	Widening	Ward 03	Third Phase
Pr_611	Local Road	20.00	137.192	Widening	Ward 03	Third Phase
Pr_612	Local Road	20.00	80.450	Widening	Ward 03	Third Phase
Pr_619	Local Road	20.00	77.308	Widening	Ward 03	Third Phase
Pr_621	Local Road	20.00	87.358	Widening	Ward 03	Third Phase
Pr_622	Local Road	20.00	28.071	Widening	Ward 03	Third Phase
Pr_623	Local Road	20.00	51.516	Widening	Ward 03	Third Phase
Pr_624	Local Road	20.00	85.067	Widening	Ward 03	Third Phase
Pr_625	Local Road	20.00	55.064	Widening	Ward 03	Third Phase
Pr_626	Local Road	20.00	251.370	Widening	Ward 03	Third Phase
Pr_637	Local Road	20.00	255.723	Widening	Ward 03	Third Phase
Pr_648	Local Road	20.00	84.387	Widening	Ward 03	Third Phase

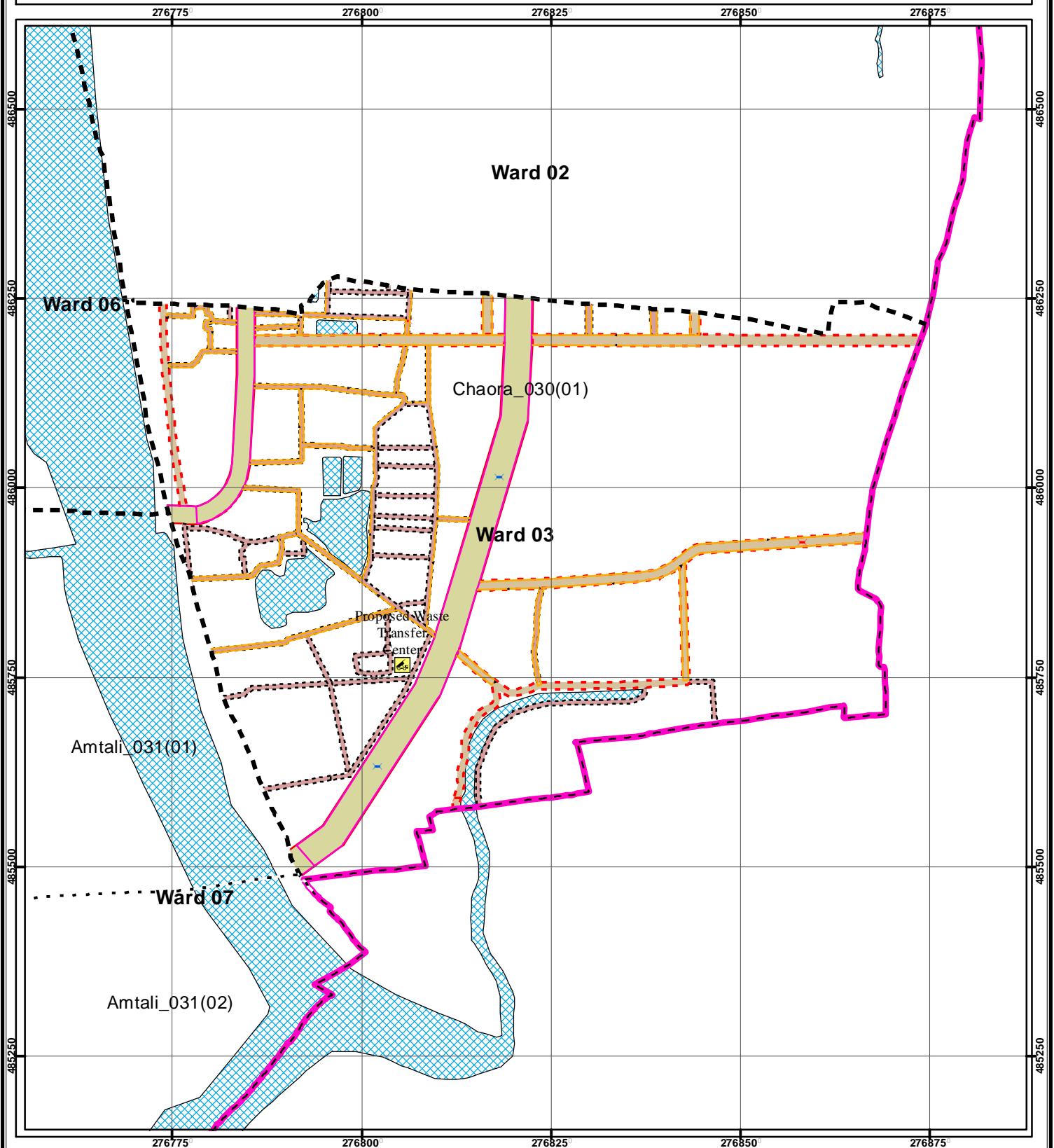
14.5.2.4 Drainage Development Plan

There is only 0.51 km manmade drainage facility in this ward. Existing drainage is mostly depending on natural drainage facilities, a canal connected with Paira Khal. The proposed drainage facilities will be developed based on these natural channels. These will serve as primary drain for the ward which will be connected by 2.34 km secondary drain and 7.56 km tertiary drain. Table 14.14 shows the detail. **Map 14.5** represents Road and Drainage Network for ward 3.

Table 14.14: Drainage Development Plan Proposals for ward 03

Item	Length in km
Available Drainage	0.51
Proposed Drainage (Secondary)	2.34
Proposed Drainage (Tertiary)	7.56

Map 14.6: Proposed Road & Drainage Network of Ward No.3



Admin Boundary

- Mouza Boundary
- Paurashava Boundary
- Sheet Boundary
- Ward Boundary
- Existing Bridge**
 - Bridge
 - Culvert
- Proposed Bridge**
 - Bridge
 - Culvert

Legend

Development Features

- Bus Terminal
- Dumping Station
- Electric Sub Station
- Fire Service

- Tempo Stand
- Truck Terminal
- Waste Transfer Center
- Waste Water Treatment Plant
- Water Pump House

- Drainage Outfall
- Secondary Drain
- Tertiary Drain
- Waterbody
- Primary Road
- Secondary Road
- Local Road

0 50 100 200 Meters



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14.5.2.5 Urban Services

a. Solid Waste Management

The consultant proposes one waste transfer stations with 0.22 acre. It is recommended that home collection system is introduced in the ward by creation of local CBOs. This will create organized collection of waste and prevent indiscriminate littering.

b. Water Supply

It is proposed to install a network based water supply system by exploring fresh water from the Paira River for the entire Paurashava.

c. Sanitation

The Paurashava must try to promote hygienic sanitation for the whole Paurashava to ensure better public health.

Table 14.15: Utility Service Development Proposals for ward 03

Item	Existing		Proposed	
		Area(acre)/length(m)		Area (acre)/Length(m)
Solid Waste Transfer Station	None		2	0.22 acre
Water Supply Network	8	1125.96 m	7	3051.63 m
Electricity Line			As per existing program of PDB	

Map 14.5 represents development proposals for ward 3.

14.6 Ward Action Plan for Ward No. 04

14.6.1 Demography

Ward no. 4 is located on the north-western part of the town. It has a very high density of population. Population projection shows that 4392 people would be living in the ward in the year 2031 with a density of 42 persons per acre. Table 14.16 shows the detail.

Table 14.16: Population Statistics of Ward No. 04

Item	Year			
	2016	2021	2026	2031
Area (acre)	105.02	105.02	105.02	105.02
Population	2958	3374	3850	4392
Density of Population (acre)	28	32	37	42

14.6.2 Ward Action Plan Proposals

14.6.2.1 Review of Existing Land Use

Out of total 362.86 acre 113.03 acre of land i.e. 31.15% is used as agricultural use. The next use is residential; 52.23 acres are used in this purpose. It occupies more than 14.4% of total land. Water bodies occupy 177.72% land of the ward. Almost .6 acre of land is used for educational purpose. At present only 1.05 acres of land are used in commercial purpose. About 1.7% is used as circulation network.

14.6.2.2 Proposed Land Use Zoning

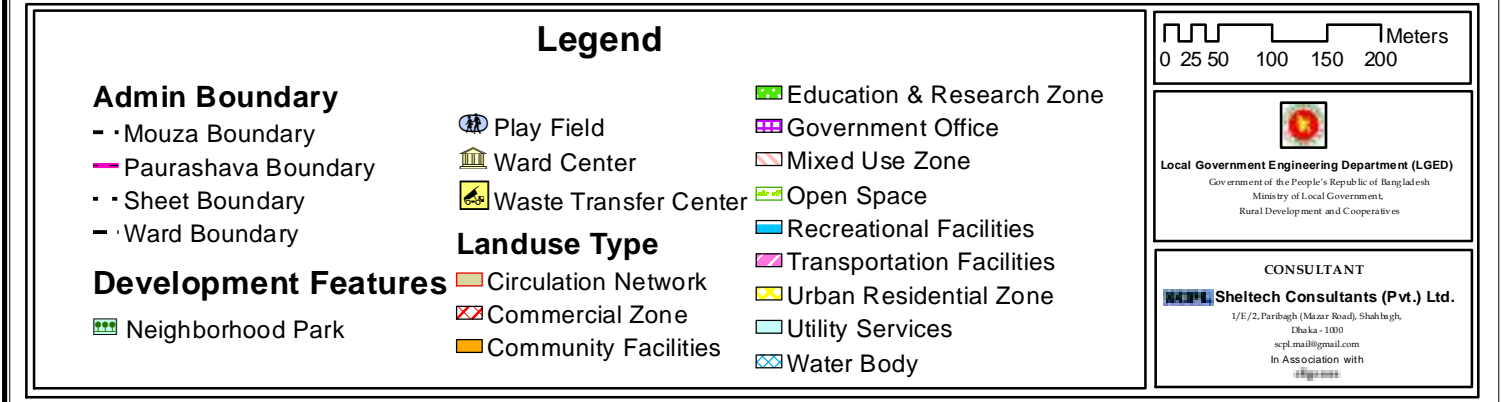
The category wise proposals are presented here. Table 14.17 shows the amount of land existing and proposed uses in Ward no. 04. **Map 14.07** shows proposed land use of Ward 04.

Table 14.17: Comparative Scenario of Existing and Proposed Land Uses of Ward No. 04

Sl. N o.	Landuse (Existing)	Area (Acre)	%	Sl. No.	Landuse (Proposed)	Area (Acre)	%
1	Agriculture	113.03	31.15	1	Administrative	1.39	1.32
2	Circulation Network	6.15	1.70	2	Circulation Network	11.90	11.33
3	Commercial	3.79	1.05	3	Commercial	3.47	3.31
4	Community Facilities	0.72	0.20	4	Community Facilities	0.64	0.61
5	Education & Research	0.60	0.17	5	Education & Research	0.17	0.16
6	Governmental Services	7.64	2.10	6	Mixed Use	1.62	1.54
7	Mixed Use	0.52	0.14	7	Open Space	4.45	4.24
8	Nongovernmental Organization	0.05	0.01	8	Recreational Facility	0.14	0.14
9	Recreational Facility	0.15	0.04	9	Urban Residential	23.92	22.78
10	Residential	52.23	14.40	10	Utility Services	0.14	0.13
11	Service Activity	0.09	0.03	11	Water Body	57.16	54.43
12	Transportation & Communication	0.17	0.05	12			
13	Water Body	177.72	48.98	13			
	Total	362.86	100		Total	105.02	100



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a. Urban Residential Zone

In Ward Action Plan more than 23.92 acres of land has been earmarked for urban residential use which will occupy about 22.78 % of the total land.

b. Education and Research

More than 0.17 acres of land has been proposed to make available more education and research facilities to the ward and its vicinity.

c. Commercial Activity

About 3.47% land is allocated specially for this purpose. Small amount of future commercial use will be done within the mixed use zone.

d. Mixed Use

Total 1.62 acres of land is earmarked as mixed use zone in this ward where commercial and residential uses will be permitted.

e. Circulation network

To improve the efficiency of the ward more roads are proposed which will consume 11.90 acres of land and more than 11.33% of the total area. For net work improvement widening of existing road, link road and new roads are proposed which will be done phase wise within 2031.

f. Community Facilities

Proposed land for community service will cover 0.64 acre of land.

g. Open Space

There is 4.45 acre of land for Open Space treated as open recreational facilities.

h. Water Body

The proposed retention area occupies about 57.16 acres of land which will cover more than 54.43% of the total land of the ward.

14.6.2.3 Proposed Road Infrastructure Development

Total 5.63 km road development proposal have been proposed for Ward no. 04. About 3.24 km long local road will be 20/25 ft wide roads. Total length of secondary road will be 1.58 km and width of these roads will be varied from 40 ft to 50 ft for this ward and about 0.79 km for primary road. Detail scenario of road network development proposal was given in Table 14.18.

Table 14.18: Road Network Proposal at Ward no. 04

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_738	Primary Road	60.00	75.715	New	Ward 04	First Phase
Pr_745	Primary Road	60.00	172.873	Widening	Ward 04	First Phase
Pr_747	Primary Road	60.00	454.271	Widening	Ward 04	First Phase
Pr_764	Primary Road	60.00	94.873	Widening	Ward 04	First Phase
Pr_200	Local Road	20.00	2.662	New	Ward 04	Second Phase
Pr_212	Local Road	20.00	62.834	New	Ward 04	Second Phase
Pr_216	Local Road	20.00	1.481	New	Ward 04	Second Phase
Pr_218	Local Road	20.00	189.704	New	Ward 04	Second Phase

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Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_220	Local Road	20.00	31.061	New	Ward 04	Second Phase
Pr_221	Local Road	20.00	74.622	New	Ward 04	Second Phase
Pr_222	Local Road	20.00	39.443	New	Ward 04	Second Phase
Pr_224	Local Road	20.00	65.057	New	Ward 04	Second Phase
Pr_225	Local Road	20.00	69.639	New	Ward 04	Second Phase
Pr_227	Local Road	20.00	53.152	New	Ward 04	Second Phase
Pr_228	Local Road	20.00	24.630	New	Ward 04	Second Phase
Pr_229	Local Road	20.00	36.063	New	Ward 04	Second Phase
Pr_326	Local Road	20.00	193.729	Widening	Ward 04	Second Phase
Pr_527	Local Road	20.00	34.743	Widening	Ward 04	Second Phase
Pr_529	Local Road	20.00	81.084	Widening	Ward 04	Second Phase
Pr_530	Local Road	20.00	32.695	Widening	Ward 04	Second Phase
Pr_532	Local Road	20.00	118.284	Widening	Ward 04	Second Phase
Pr_533	Local Road	20.00	102.825	Widening	Ward 04	Second Phase
Pr_547	Local Road	20.00	191.757	Widening	Ward 04	Second Phase
Pr_550	Local Road	20.00	93.489	Widening	Ward 04	Second Phase
Pr_552	Local Road	20.00	40.376	Widening	Ward 04	Second Phase
Pr_556	Local Road	20.00	39.472	Widening	Ward 04	Second Phase
Pr_558	Local Road	20.00	23.194	Widening	Ward 04	Second Phase
Pr_568	Local Road	20.00	191.691	Widening	Ward 04	Second Phase
Pr_602	Local Road	20.00	0.728	Widening	Ward 04	Second Phase
Pr_604	Local Road	20.00	64.461	Widening	Ward 04	Second Phase
Pr_657	Secondary Road	30.00	460.805	New	Ward 04	Second Phase
Pr_677	Secondary Road	30.00	574.923	New	Ward 04	Second Phase
Pr_693	Secondary Road	40.00	301.875	Widening	Ward 04	Second Phase
Pr_696	Secondary Road	30.00	46.280	Widening	Ward 04	Second Phase
Pr_704	Secondary Road	30.00	35.181	Widening	Ward 04	Second Phase
Pr_720	Secondary Road	40.00	168.386	Widening	Ward 04	Second Phase
Pr_233	Local Road	20.00	69.880	New	Ward 04	Third Phase
Pr_234	Local Road	20.00	105.645	New	Ward 04	Third Phase
Pr_241	Local Road	20.00	9.446	New	Ward 04	Third Phase
Pr_251	Local Road	20.00	7.231	New	Ward 04	Third Phase
Pr_261	Local Road	20.00	14.284	New	Ward 04	Third Phase
Pr_319	Local Road	20.00	204.258	New	Ward 04	Third Phase
Pr_321	Local Road	20.00	104.303	New	Ward 04	Third Phase
Pr_330	Local Road	20.00	3.572	Widening	Ward 04	Third Phase
Pr_334	Local Road	20.00	34.287	Widening	Ward 04	Third Phase
Pr_531	Local Road	20.00	39.932	Widening	Ward 04	Third Phase
Pr_535	Local Road	20.00	127.548	Widening	Ward 04	Third Phase
Pr_536	Local Road	20.00	26.536	Widening	Ward 04	Third Phase
Pr_545	Local Road	20.00	57.945	Widening	Ward 04	Third Phase
Pr_548	Local Road	20.00	103.217	Widening	Ward 04	Third Phase
Pr_549	Local Road	20.00	88.772	Widening	Ward 04	Third Phase

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_551	Local Road	20.00	41.506	Widening	Ward 04	Third Phase
Pr_557	Local Road	20.00	71.184	Widening	Ward 04	Third Phase
Pr_606	Local Road	20.00	37.438	Widening	Ward 04	Third Phase
Pr_639	Local Road	20.00	154.527	Widening	Ward 04	Third Phase
Pr_641	Local Road	20.00	84.912	Widening	Ward 04	Third Phase

14.6.2.4 Drainage Development Plan

There is no manmade drainage facility at Ward no. 04 of Amtali Paurashava. Existing drainage is mostly depending on natural drainage facilities, Paira River will be served as primary drain for the ward. Table 14.19 shows the detail. **Map 14.08** represents proposed Road and Drainage Network for Ward 4

Table 14.19: Drainage Development Plan Proposals for ward 04

Item	Length in km
Available Drainage	Nil
Proposed Drainage (Secondary)	2.29
Proposed Drainage (Tertiary)	2.89

Besides, it will be necessary to re-excavate the khals that serve as primary drains.

14.6.2.5 Urban Services

a. Solid Waste Management

The consultant proposes one solid waste transfer stations in this ward in second Ward Action Plan

b. Water Supply

It is proposed to install a network based water supply system by exploring fresh water from the Paira River for the entire Paurashava total of 1755.85 m.

c. Sanitation

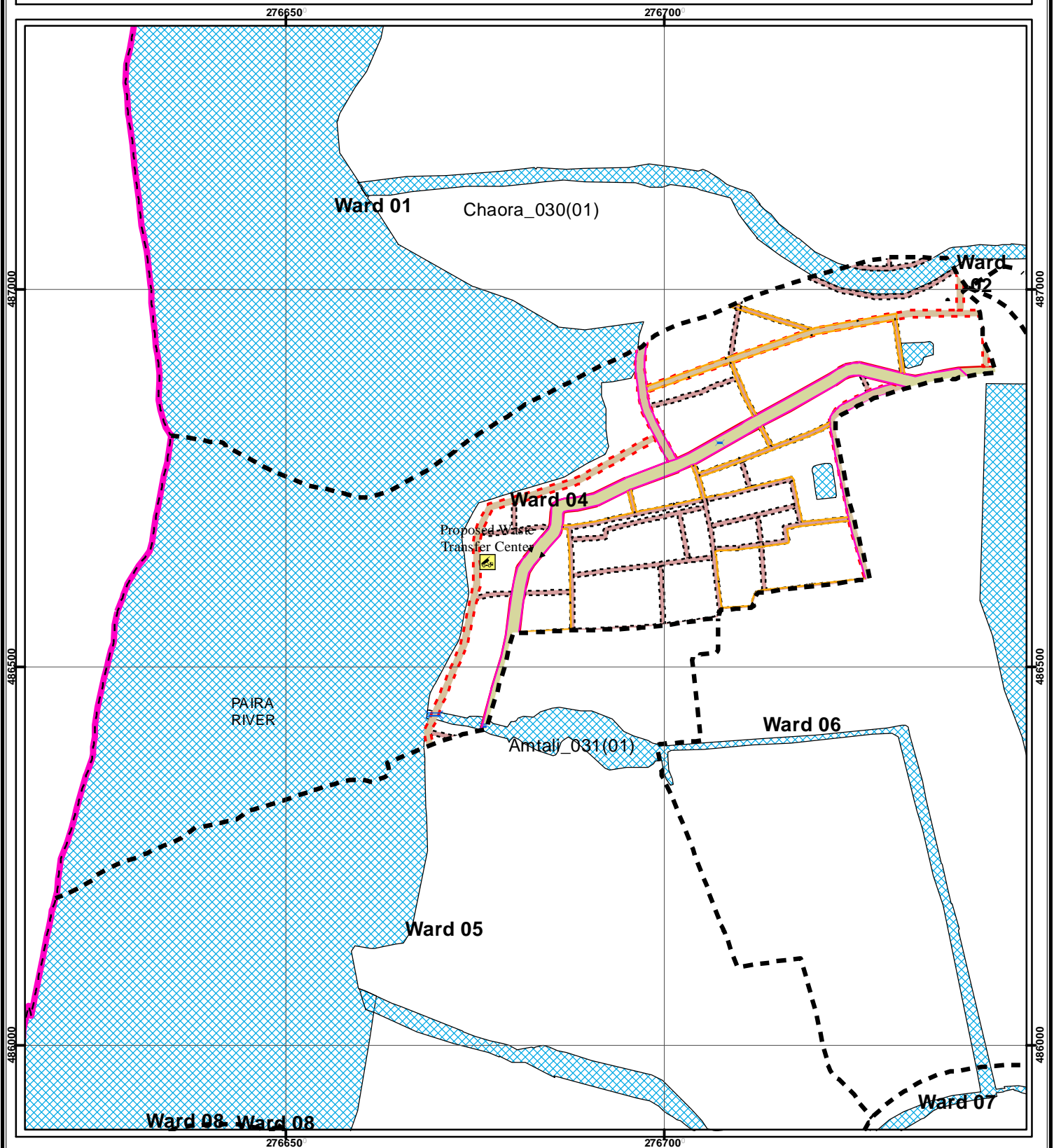
The Paurashava must try to promote hygienic sanitation for the whole Paurashava to ensure better public health.

Table 14.20: Utility Service Development Proposals for ward 04

Item	Existing		Proposed	
		Area/length		Area/Length
Solid Waste Transfer Station	None		1	0.14
Water Supply Network	11	2426.59 m	3	1755.85 m
Electricity Line			As per existing program of PDB	

Map 14.07 represents proposed physical development of ward 4.

Map 14.8: Proposed Road & Drainage Network of Ward No.4



Admin Boundary

- - - - Mouza Boundary
- Paurashava Boundary
- - - - Sheet Boundary
- - - - Ward Boundary
- Existing Bridge**
 - Bridge
 - Culvert
- Proposed Bridge**
 - Bridge
 - Culvert

Legend

Development Features

- Bus Terminal
- Dumping Station
- Electric Sub Station
- Fire Service

- Tempo Stand
- Truck Terminal
- Waste Transfer Center
- Waste Water Treatment Plant
- Water Pump House

- Drainage Outfall
- Secondary Drain
- Tertiary Drain
- Waterbody
- Primary Road
- Secondary Road
- Local Road

0 50 100 200 Meters



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14.7 Ward Action Plan for Ward No. 05

14.7.1 Demography

Ward No. 05 is located on the center part of the town. It has a low density of population. Table 14.21 shows the detail.

Table 14.21: Population Statistics of Ward No. 05

Item	Year			
	2016	2021	2026	2031
Area (acre)	148.62	148.62	148.62	148.62
Population	2712	3094	3530	4027
Density of Population (acre)	18	21	24	27

14.7.2 Ward Action Plan Proposals

14.7.2.1 Review of Existing Land Use

This ward is rural in character. Out of total 59.55 acre of land i.e. 29.25% is used as agricultural use. Though the percentage only 52% the next use is residential, more than 13 acres are used in this purpose. Water bodies occupy 5.93% land of the ward. At present only 1.24 acres of land are used in commercial purpose where as only. 5.43% is used as circulation network. Only .05 acre of land is used as community facilities with negligible percentage of urban green space. Other categories of activities are totally absent in this ward.

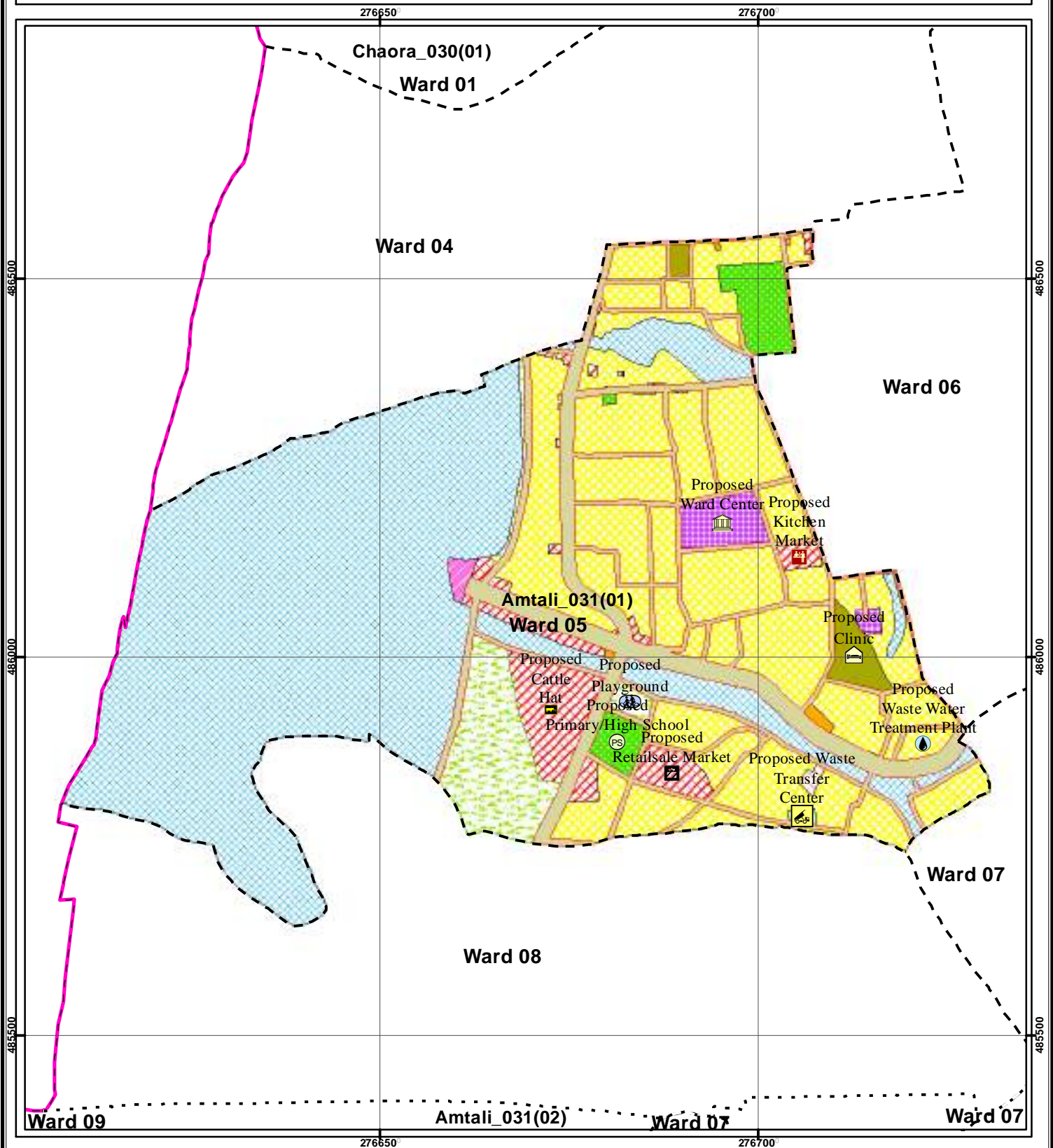
14.7.2.2 Proposed Land Use Zoning

The category wise proposals are presented here. Table 14.22 shows the amount of land existing and proposed uses in Ward no. 05. **Map 14.9** shows proposed land use of Ward 05.

Table 14.22: Comparative Scenario of Existing and Proposed Land Uses of Ward No. 05

Sl. N o.	Landuse (Existing)	Area (Acre)	%	Sl. No.	Landuse (Proposed)	Area (Acre)	%
1	Agriculture	17.42	29.25	1	Administrative	1.91	1.29
2	Circulation Network	3.23	5.43	2	Circulation Network	18.08	12.17
3	Commercial	1.24	2.08	3	Commercial	6.70	4.51
4	Community Facilities	0.05	0.08	4	Community Facilities	0.20	0.14
5	Education & Research	2.22	3.73	5	Education & Research	3.12	2.10
6	Governmental Services	0.26	0.44	6	Health Facility	1.26	0.85
7	Green Spaces	0.24	0.40	7	Open Space	6.71	4.51
8	Nongovernmental Organization	0.08	0.13	8	Mixed use	0.17	0.11
9	Residential	30.97	52.00	9	Urban Residential	45.59	30.68
10	Service Activity	0.32	0.54	10	Water Body	64.36	43.31
11	Transportation & Communication	0.00	0.00	11	Transport Facilities	0.35	0.24
12	Water Body	3.53	5.93	12	Utility Service	0.16	0.11
	Total	59.55	100.00		Total	148.62	100.00

Map 14.3: Proposed Landuse Plan of Ward No. 5



Legend

Admin Boundary

- Mouza Boundary
- Paurashava Boundary
- Sheet Boundary
- Ward Boundary

Development Features

- Cattle Hat
- Clinic



Katcha Bazar



Play Field



Primary/High School



Retailsale Market



Shewrage Treatment Plant



Ward Center



Waste Transfer Center

Landuse Type

- Circulation Network

- Commercial Zone

- Community Facilities

- Education & Research Zone

- Government Office

- Health Services

- Mixed Use Zone

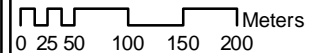
- Open Space

- Transportation Facilities

- Urban Residential Zone

- Utility Services

- Water Body



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a. Urban Residential Zone

In Ward Action Plan more than 45.59 acres of land has been earmarked for urban residential use which will occupy about 30.68% of the total land.

b. Education and Research

Total 3.11 acre land is proposed for education and research use for this ward. It covers 2.10% of total land.

c. Commercial Zone

About 6.70 acres of land is allocated specially for this purpose. Small amount of future commercial use will also be done within the mixed use zone.

d. Circulation network

To improve the efficiency of the ward more roads are proposed which will consume 18.08 acre of land and more than 12.17% of the total area. For network improvement widening of existing road, link road and new roads are proposed which will be done phase wise within 2031.

e. Community Facilities

Proposed land for community service will be 0.20 acre.

f. Open Space

Total 6.71 acre of land which covers 4.51% will be used for recreational facilities.

14.7.2.3 Proposed Road Infrastructure Development

Total 8.69 km road development proposal have been proposed in first Ward Action Plan for Ward no. 05. About 5.92 km long local road will be 20/25 ft wide and 1.17 km long secondary road will be 30/40 ft wide. Detail scenario of road network development proposal was given in table 14.23.

Table 14.23: Road Network Proposal at Ward no. 05

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_746	Primary Road	60.00	569.194	Widening	Ward 05	First Phase
Pr_754	Primary Road	60.00	286.744	Widening	Ward 05	First Phase
Pr_760	Primary Road	80.00	740.087	Widening	Ward 05	First Phase
Pr_197	Local Road	20.00	7.802	New	Ward 05	Second Phase
Pr_198	Local Road	20.00	2.965	New	Ward 05	Second Phase
Pr_199	Local Road	20.00	42.837	New	Ward 05	Second Phase
Pr_201	Local Road	20.00	30.916	New	Ward 05	Second Phase
Pr_492	Local Road	20.00	63.351	Widening	Ward 05	Second Phase
Pr_555	Local Road	20.00	233.388	Widening	Ward 05	Second Phase
Pr_563	Local Road	20.00	107.264	Widening	Ward 05	Second Phase
Pr_566	Local Road	20.00	45.256	Widening	Ward 05	Second Phase
Pr_663	Secondary Road	40.00	56.157	New	Ward 05	Second Phase
Pr_676	Secondary Road	30.00	584.559	New	Ward 05	Second Phase
Pr_690	Secondary Road	30.00	528.778	Widening	Ward 05	Second Phase
Pr_11	Local Road	20.00	46.435	New	Ward 05	Third Phase
Pr_125	Local Road	20.00	3.544	New	Ward 05	Third Phase
Pr_127	Local Road	20.00	22.327	New	Ward 05	Third Phase

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Ward Action Plan

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_128	Local Road	20.00	293.531	New	Ward 05	Third Phase
Pr_129	Local Road	20.00	70.929	New	Ward 05	Third Phase
Pr_130	Local Road	20.00	24.871	New	Ward 05	Third Phase
Pr_131	Local Road	20.00	81.233	New	Ward 05	Third Phase
Pr_135	Local Road	20.00	58.327	New	Ward 05	Third Phase
Pr_137	Local Road	20.00	24.212	New	Ward 05	Third Phase
Pr_138	Local Road	20.00	197.571	New	Ward 05	Third Phase
Pr_141	Local Road	20.00	30.183	New	Ward 05	Third Phase
Pr_143	Local Road	20.00	38.957	New	Ward 05	Third Phase
Pr_144	Local Road	20.00	104.153	New	Ward 05	Third Phase
Pr_146	Local Road	20.00	83.187	New	Ward 05	Third Phase
Pr_147	Local Road	20.00	36.986	New	Ward 05	Third Phase
Pr_148	Local Road	20.00	57.847	New	Ward 05	Third Phase
Pr_149	Local Road	20.00	51.458	New	Ward 05	Third Phase
Pr_150	Local Road	20.00	31.910	New	Ward 05	Third Phase
Pr_151	Local Road	20.00	55.815	New	Ward 05	Third Phase
Pr_153	Local Road	20.00	43.820	New	Ward 05	Third Phase
Pr_155	Local Road	20.00	124.887	New	Ward 05	Third Phase
Pr_156	Local Road	20.00	79.073	New	Ward 05	Third Phase
Pr_157	Local Road	20.00	30.381	New	Ward 05	Third Phase
Pr_159	Local Road	20.00	61.605	New	Ward 05	Third Phase
Pr_160	Local Road	20.00	55.772	New	Ward 05	Third Phase
Pr_162	Local Road	20.00	107.546	New	Ward 05	Third Phase
Pr_163	Local Road	20.00	39.241	New	Ward 05	Third Phase
Pr_164	Local Road	20.00	25.443	New	Ward 05	Third Phase
Pr_166	Local Road	20.00	47.299	New	Ward 05	Third Phase
Pr_167	Local Road	20.00	54.501	New	Ward 05	Third Phase
Pr_174	Local Road	20.00	112.492	New	Ward 05	Third Phase
Pr_181	Local Road	20.00	100.010	New	Ward 05	Third Phase
Pr_316	Local Road	20.00	151.495	New	Ward 05	Third Phase
Pr_331	Local Road	20.00	0.156	Widening	Ward 05	Third Phase
Pr_333	Local Road	20.00	42.051	Widening	Ward 05	Third Phase
Pr_353	Local Road	20.00	34.638	Widening	Ward 05	Third Phase
Pr_354	Local Road	20.00	103.719	Widening	Ward 05	Third Phase
Pr_355	Local Road	20.00	38.846	Widening	Ward 05	Third Phase
Pr_357	Local Road	20.00	15.904	Widening	Ward 05	Third Phase
Pr_358	Local Road	20.00	32.664	Widening	Ward 05	Third Phase
Pr_360	Local Road	20.00	58.159	Widening	Ward 05	Third Phase
Pr_362	Local Road	20.00	28.069	Widening	Ward 05	Third Phase
Pr_366	Local Road	20.00	29.870	Widening	Ward 05	Third Phase
Pr_384	Local Road	20.00	132.623	Widening	Ward 05	Third Phase
Pr_387	Local Road	20.00	84.756	Widening	Ward 05	Third Phase
Pr_438	Local Road	20.00	46.804	Widening	Ward 05	Third Phase

Amtali Paurashava Master Plan: 2011-2031
Ward Action Plan

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_479	Local Road	20.00	197.801	Widening	Ward 05	Third Phase
Pr_486	Local Road	20.00	237.416	Widening	Ward 05	Third Phase
Pr_489	Local Road	20.00	226.699	Widening	Ward 05	Third Phase
Pr_495	Local Road	20.00	96.978	Widening	Ward 05	Third Phase
Pr_496	Local Road	20.00	0.066	Widening	Ward 05	Third Phase
Pr_502	Local Road	20.00	0.132	Widening	Ward 05	Third Phase
Pr_525	Local Road	20.00	50.148	Widening	Ward 05	Third Phase
Pr_528	Local Road	20.00	0.329	Widening	Ward 05	Third Phase
Pr_561	Local Road	20.00	137.444	Widening	Ward 05	Third Phase
Pr_569	Local Road	20.00	267.016	Widening	Ward 05	Third Phase
Pr_570	Local Road	20.00	1.298	Widening	Ward 05	Third Phase
Pr_578	Local Road	20.00	78.129	Widening	Ward 05	Third Phase
Pr_579	Local Road	20.00	22.830	Widening	Ward 05	Third Phase
Pr_598	Local Road	20.00	157.665	Widening	Ward 05	Third Phase
Pr_628	Local Road	20.00	100.202	Widening	Ward 05	Third Phase
Pr_629	Local Road	20.00	124.705	Widening	Ward 05	Third Phase
Pr_630	Local Road	20.00	37.940	Widening	Ward 05	Third Phase
Pr_631	Local Road	20.00	84.022	Widening	Ward 05	Third Phase
Pr_634	Local Road	20.00	81.610	Widening	Ward 05	Third Phase
Pr_635	Local Road	20.00	102.649	Widening	Ward 05	Third Phase
Pr_638	Local Road	20.00	48.331	Widening	Ward 05	Third Phase
Pr_643	Local Road	20.00	81.430	Widening	Ward 05	Third Phase
Pr_644	Local Road	20.00	76.077	Widening	Ward 05	Third Phase
Pr_645	Local Road	20.00	76.905	Widening	Ward 05	Third Phase
Pr_646	Local Road	20.00	69.682	Widening	Ward 05	Third Phase
Pr_647	Local Road	20.00	37.740	Widening	Ward 05	Third Phase

14.7.2.4 Drainage Development Plan

There is no manmade drainage facility at ward no. 05. Existing drainage is mostly depending on natural drainage facilities; the proposed drainage facilities will be developed based on this natural channel. These two khals will be served as primary drain which will be connected with 2.06 km secondary drain and 5.59 km tertiary drain in first Ward Action Plan. Table 14.24 shows the detail.

Table 14.24: Drainage Development Plan Proposals for ward 05

Item	Length in km
Available Drainage	Nil
Proposed Drainage (Secondary)	2.06
Proposed Drainage (Tertiary)	5.59

Besides, it will be necessary to re-excavate the khals that serve as primary drains. **Map 14.10** represents proposed Road and Drainage Network for ward 05.

14.7.2.5 Urban Services

a. Solid Waste Management

One waste transfer will establish in first ward action plan of ward no. 05. It also is recommended that home collection system is introduced in the ward by creation of local CBOs.

b. Water Supply

It is proposed to install a network based water supply system by exploring fresh water from the Paira River for the entire Paurashava. New line has been proposed, but only replaced some existing lines for suitability.

c. Sanitation

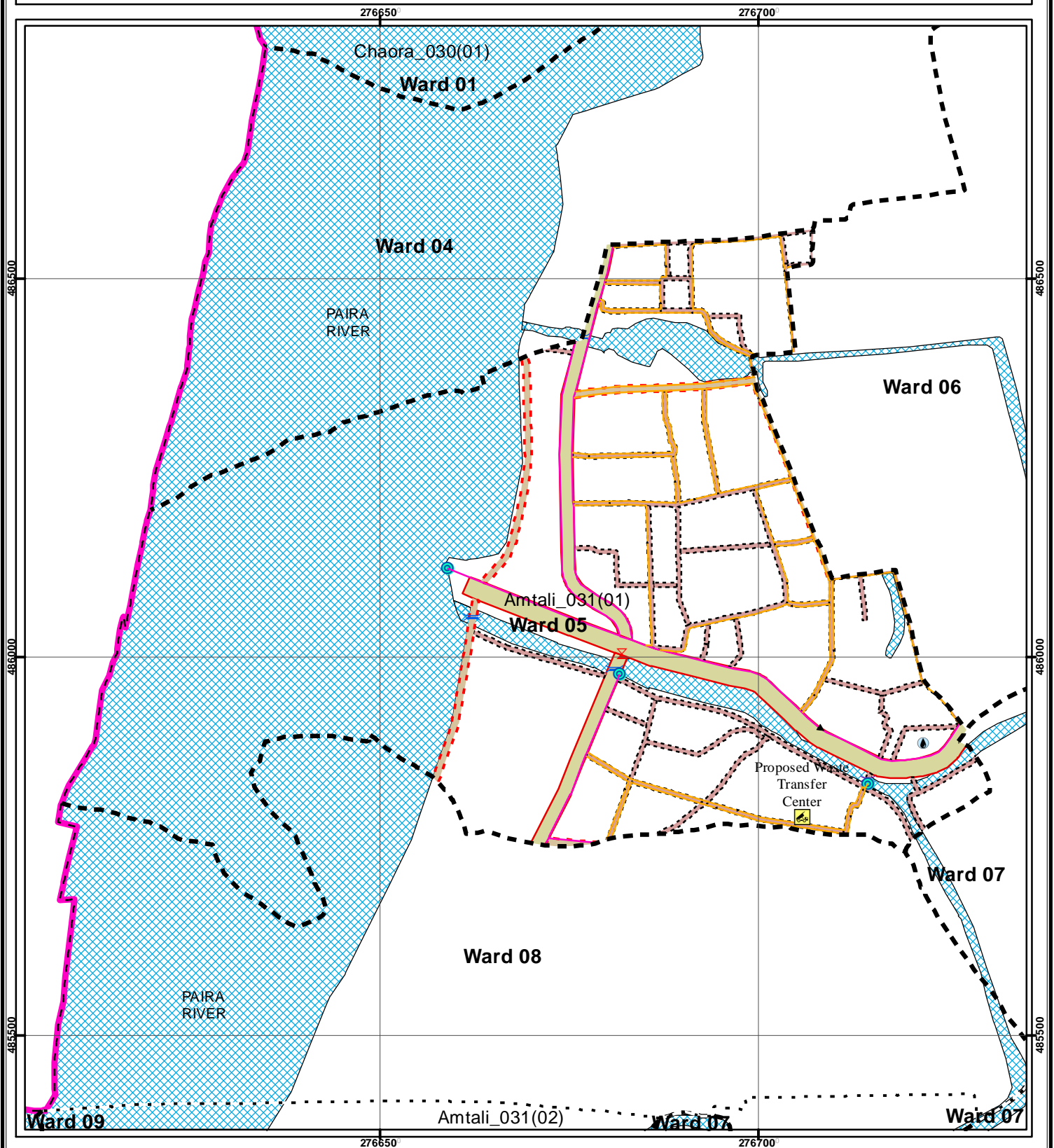
The Paurashava must try to promote hygienic sanitation for the whole Paurashava to ensure better public health.

Table 14.25: Utility Service Development Proposals for ward 05

Item	Existing		Proposed	
	No.	Area/length	No.	Area/Length
Solid Waste Transfer Station	None		2	0.15 Acre
Water Supply Network	9	2546.45 m	As per the design of DPHE	2139.23
Electricity Line			As per existing program of PDB	

Map 14.09 represents proposed physical development of ward 5.

Map 14.10: Proposed Road & Drainage Network of Ward No.5



Admin Boundary

- - - Mouza Boundary
- Paurashava Boundary
- - - Sheet Boundary
- - - Ward Boundary
- Existing Bridge**
 - Bridge
 - Culvert
- Proposed Bridge**
 - Bridge
 - Culvert

Legend

Development Features

- Bus Terminal
- Dumping Station
- Electric Sub Station
- Fire Service

- Tempo Stand
- Truck Terminal
- Waste Transfer Center
- Waste Water Treatment Plant
- Water Pump House

- Drainage Outfall
- Secondary Drain
- Tertiary Drain
- Waterbody
- Primary Road
- Secondary Road
- Local Road

0 50 100 200 Meters



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14.8 Ward Action Plan for Ward No. 06

14.8.1 Demography

Ward No. 06 is located on the Center part of the town. It has high density of population within the entire Paurashava. Table 14.26 shows detail.

Table 14.26: Population Statistics of Ward No. 06

Item	Year			
	2016	2021	2026	2031
Area (acre)	118.51	118.51	118.51	118.51
Population	2112	2410	2749	3136
Density of Population (acre)	18	20	23	26

14.8.2 Ward Action Plan Proposals

14.8.2.1 Review of Existing Land Use

Other than the markets in this ward the remaining lands are in agricultural use. Out of total 91.71 acre of land i.e. about 14% is used as agricultural use. Though the percentage is only 21% the next use is residential. Water bodies occupy more than 30% land of the ward. At present 3.2 acres of land are used in commercial purpose. About 4.23% is used as circulation network. Only .15 acre of land is used as community facilities.

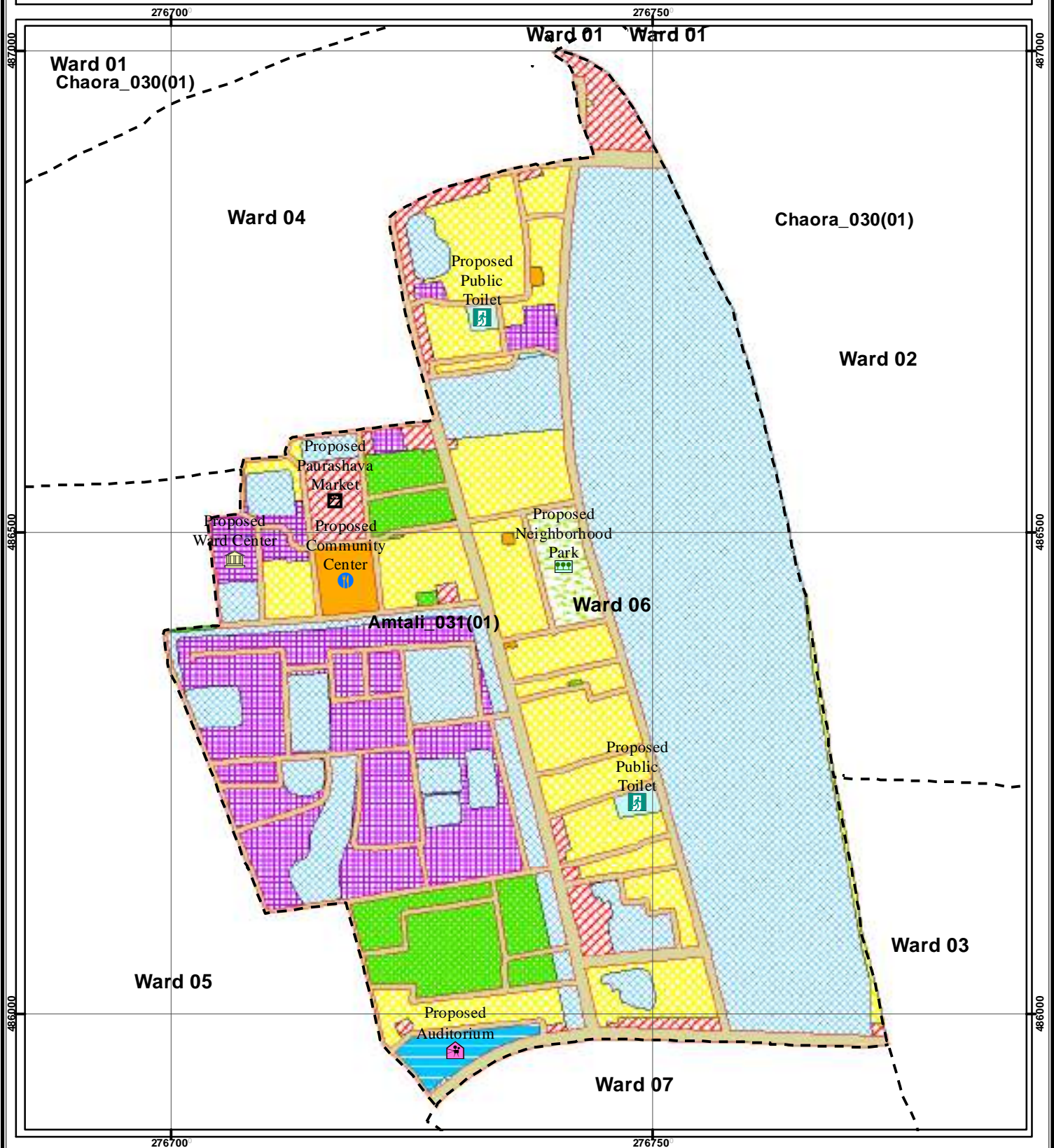
14.8.2.2 Proposed Land Use Zoning

The category wise proposals are presented here. Table 14.27 shows the amount of land existing and proposed uses in Ward no. 06. **Map 14.11** shows proposed land use of Ward 06.

Table 14.27: Comparative Scenario of Existing and Proposed Land Uses of Ward no. 06

Sl. No.	Landuse (Existing)	Area (Acre)	%	Sl. No.	Landuse (Proposed)	Area (Acre)	%
1	Agriculture	12.90	14.06	1	Administrative	14.36	12.12
2	Circulation Network	3.88	4.23	2	Circulation Network	16.01	13.51
3	Commercial	3.20	3.49	3	Commercial	4.76	4.02
4	Community Facilities	0.15	0.16	4	Community Facilities	1.60	1.35
5	Education & Research	7.33	8.00	5	Education & Research	6.09	5.14
6	Governmental Services	16.66	18.17	6	Open Space	1.51	1.28
7	Green Spaces	0.11	0.12	7	Recreational Facility	1.10	0.93
8	Non Governmental Organization	0.17	0.18	8	Urban Residential	20.82	17.57
9	Recreational Facility	0.43	0.46	9	Water Body	52.25	44.09
10	Residential	19.24	20.98	10			
11	Water Body	27.65	30.15	11			
	Total	91.71	100		Total	118.51	100

Map 14.11: Proposed Landuse Plan of Ward No. 6



Legend

Admin Boundary

- Mouza Boundary
- Paurashava Boundary
- Sheet Boundary
- Ward Boundary

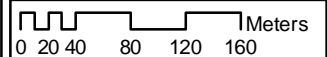
Development Features

- Auditorium
- Community Center
- Neighborhood Park
- Paurashava Market
- Public Toilet
- Ward Center

Landuse Type

- Circulation Network

- Commercial Zone
- Community Facilities
- Education & Research Zone
- Government Office
- Open Space
- Recreational Facilities
- Urban Residential Zone
- Utility Services
- Water Body



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a. Urban Residential Area

In Ward Action Plan more land is allocated as residential use. More than 20 acres of land has been earmarked for urban residential use which will occupy about 17.57% of the total land.

b. Education and Research

Total 6.09 acre of land has been proposed to make available for education purpose for the ward and its vicinity.

c. Commercial Zone

It will comprise of 4.76 acre of land. Some amount of future commercial use will be done within the mixed use zone where residential use will also be permitted.

d. Circulation network

To improve the efficiency of the ward more roads are proposed which will consume about 16.01 acres of land and more than 13.51% of the total area. For net work improvement widening of existing road, link road and new roads are proposed which will be done phase wise within 2031.

e. Community Facilities

Proposed land for community service will be 1.60 acre.

f. Open Space

At present this ward is lacking for any type of recreational facility included within the Open Space category. More than 1.51 acre of land is proposed for this use. One play ground will be established at the heart of this ward and one neighborhood park will also be allocated from this ward of Amtali.

g. Water Body

The ponds with an area equal to or more than 52.25 acres will be preserved as the water retention ponds.

14.8.2.3 Proposed Road Infrastructure Development

Total 8.62 km road development proposal have been proposed for Ward no. 06. About 6.32 km long local road will be 20- 25 ft wide and 1.82 km long secondary road will be 30/40 ft wide. Detail scenario of road network development proposal was given in table 14.28.

Table 14.28: Road Network Proposal at Ward no. 06

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_757	Primary Road	80.00	206.773	Widening	Ward 06	First Phase
Pr_761	Primary Road	80.00	184.332	Widening	Ward 06	First Phase
Pr_762	Primary Road	60.00	82.812	Widening	Ward 06	First Phase
Pr_12	Local Road	20.00	121.360	New	Ward 06	Second Phase
Pr_158	Local Road	20.00	47.876	New	Ward 06	Second Phase
Pr_165	Local Road	20.00	66.405	New	Ward 06	Second Phase
Pr_189	Local Road	20.00	65.477	New	Ward 06	Second Phase
Pr_191	Local Road	20.00	8.692	New	Ward 06	Second Phase
Pr_192	Local Road	20.00	74.301	New	Ward 06	Second Phase
Pr_193	Local Road	20.00	60.578	New	Ward 06	Second Phase
Pr_195	Local Road	20.00	77.008	New	Ward 06	Second Phase
Pr_196	Local Road	20.00	96.182	New	Ward 06	Second Phase

Amtali Paurashava Master Plan: 2011-2031
Ward Action Plan

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_202	Local Road	20.00	2.591	New	Ward 06	Second Phase
Pr_211	Local Road	20.00	106.031	New	Ward 06	Second Phase
Pr_215	Local Road	20.00	115.227	New	Ward 06	Second Phase
Pr_223	Local Road	20.00	55.977	New	Ward 06	Second Phase
Pr_230	Local Road	20.00	22.897	New	Ward 06	Second Phase
Pr_329	Local Road	20.00	158.965	Widening	Ward 06	Second Phase
Pr_332	Local Road	20.00	211.535	Widening	Ward 06	Second Phase
Pr_446	Local Road	20.00	91.946	Widening	Ward 06	Second Phase
Pr_447	Local Road	20.00	103.811	Widening	Ward 06	Second Phase
Pr_490	Local Road	20.00	56.377	Widening	Ward 06	Second Phase
Pr_491	Local Road	20.00	180.420	Widening	Ward 06	Second Phase
Pr_493	Local Road	20.00	0.324	Widening	Ward 06	Second Phase
Pr_497	Local Road	20.00	146.342	Widening	Ward 06	Second Phase
Pr_499	Local Road	20.00	125.675	Widening	Ward 06	Second Phase
Pr_503	Local Road	20.00	92.554	Widening	Ward 06	Second Phase
Pr_504	Local Road	20.00	92.260	Widening	Ward 06	Second Phase
Pr_505	Local Road	20.00	32.757	Widening	Ward 06	Second Phase
Pr_506	Local Road	20.00	35.095	Widening	Ward 06	Second Phase
Pr_507	Local Road	20.00	40.073	Widening	Ward 06	Second Phase
Pr_508	Local Road	20.00	47.497	Widening	Ward 06	Second Phase
Pr_510	Local Road	20.00	120.760	Widening	Ward 06	Second Phase
Pr_511	Local Road	20.00	48.645	Widening	Ward 06	Second Phase
Pr_512	Local Road	20.00	72.172	Widening	Ward 06	Second Phase
Pr_513	Local Road	20.00	51.017	Widening	Ward 06	Second Phase
Pr_514	Local Road	20.00	49.709	Widening	Ward 06	Second Phase
Pr_515	Local Road	20.00	38.145	Widening	Ward 06	Second Phase
Pr_516	Local Road	20.00	120.537	Widening	Ward 06	Second Phase
Pr_526	Local Road	20.00	178.031	Widening	Ward 06	Second Phase
Pr_534	Local Road	20.00	23.509	Widening	Ward 06	Second Phase
Pr_560	Local Road	20.00	278.007	Widening	Ward 06	Second Phase
Pr_565	Local Road	20.00	86.256	Widening	Ward 06	Second Phase
Pr_567	Local Road	20.00	2.262	Widening	Ward 06	Second Phase
Pr_571	Local Road	20.00	304.368	Widening	Ward 06	Second Phase
Pr_582	Local Road	20.00	38.464	Widening	Ward 06	Second Phase
Pr_594	Local Road	20.00	127.678	Widening	Ward 06	Second Phase
Pr_595	Local Road	20.00	99.831	Widening	Ward 06	Second Phase
Pr_596	Local Road	20.00	76.107	Widening	Ward 06	Second Phase
Pr_600	Local Road	20.00	35.411	Widening	Ward 06	Second Phase
Pr_601	Local Road	20.00	156.993	Widening	Ward 06	Second Phase
Pr_605	Local Road	20.00	103.531	Widening	Ward 06	Second Phase
Pr_613	Local Road	20.00	293.391	Widening	Ward 06	Second Phase
Pr_656	Secondary Road	30.00	7.657	New	Ward 06	Second Phase
Pr_668	Secondary Road	40.00	132.523	New	Ward 06	Second Phase

Amtali Paurashava Master Plan: 2011-2031
Ward Action Plan

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_691	Secondary Road	30.00	0.464	Widening	Ward 06	Second Phase
Pr_692	Secondary Road	40.00	697.837	Widening	Ward 06	Second Phase
Pr_703	Secondary Road	30.00	988.267	Widening	Ward 06	Second Phase
Pr_707	Secondary Road	40.00	1.234	Widening	Ward 06	Second Phase
Pr_136	Local Road	20.00	0.350	New	Ward 06	Third Phase
Pr_139	Local Road	20.00	128.236	New	Ward 06	Third Phase
Pr_140	Local Road	20.00	147.162	New	Ward 06	Third Phase
Pr_145	Local Road	20.00	29.866	New	Ward 06	Third Phase
Pr_154	Local Road	20.00	66.978	New	Ward 06	Third Phase
Pr_173	Local Road	20.00	67.382	New	Ward 06	Third Phase
Pr_183	Local Road	20.00	57.785	New	Ward 06	Third Phase
Pr_184	Local Road	20.00	29.533	New	Ward 06	Third Phase
Pr_194	Local Road	20.00	4.615	New	Ward 06	Third Phase
Pr_204	Local Road	20.00	130.087	New	Ward 06	Third Phase
Pr_356	Local Road	20.00	34.853	Widening	Ward 06	Third Phase
Pr_359	Local Road	20.00	61.683	Widening	Ward 06	Third Phase
Pr_385	Local Road	20.00	0.600	Widening	Ward 06	Third Phase
Pr_390	Local Road	20.00	33.625	Widening	Ward 06	Third Phase
Pr_394	Local Road	20.00	120.739	Widening	Ward 06	Third Phase
Pr_487	Local Road	20.00	180.646	Widening	Ward 06	Third Phase
Pr_488	Local Road	20.00	34.255	Widening	Ward 06	Third Phase
Pr_494	Local Road	20.00	165.535	Widening	Ward 06	Third Phase
Pr_509	Local Road	20.00	92.718	Widening	Ward 06	Third Phase
Pr_544	Local Road	20.00	155.102	Widening	Ward 06	Third Phase
Pr_562	Local Road	20.00	4.173	Widening	Ward 06	Third Phase
Pr_564	Local Road	20.00	0.266	Widening	Ward 06	Third Phase
Pr_580	Local Road	20.00	57.267	Widening	Ward 06	Third Phase
Pr_581	Local Road	20.00	79.309	Widening	Ward 06	Third Phase

14.8.2.4 Drainage Development Plan

The proposed drainage facilities will be 8.33 km, served as 2.03 km secondary drain and 6.30 km tertiary drain in first Ward Action Plan. Table 14.29 shows the detail. **Map 14.12** represents proposed Road and Drainage Network Map of Ward 6.

Table 14.29: Drainage Development Plan Proposals for ward 06

Item	Length in km
Available Drainage	Nil
Proposed Drainage (Secondary)	2.03
Proposed Drainage (Tertiary)	6.30

14.8.2.5 Urban Services

a. Solid Waste Management

The consultant does not propose solid waste transfer stations at ward no. 07.

b. Water Supply

It is proposed to install a network based water supply system by exploring fresh water from the Paira River for the entire Paurashava.

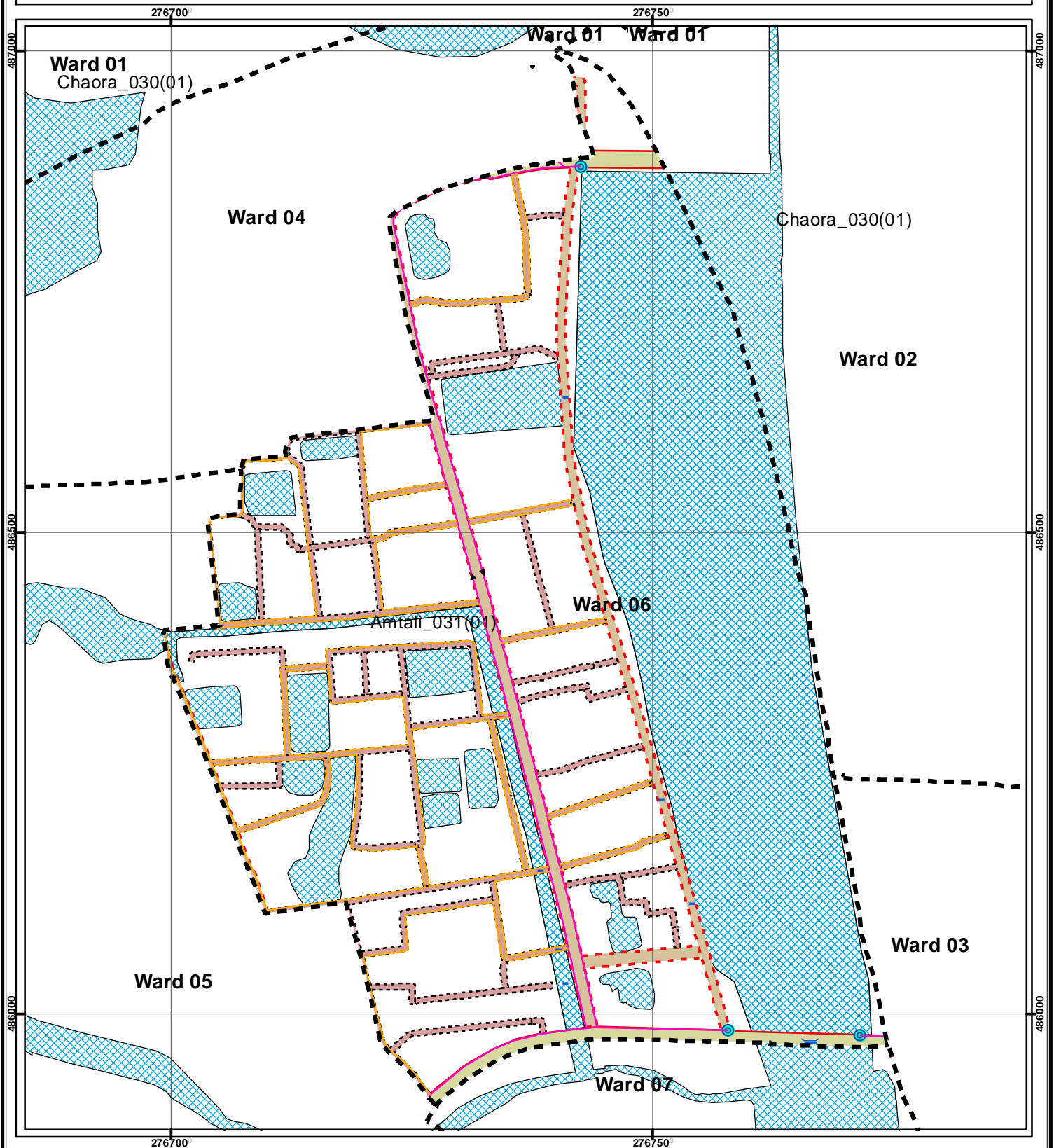
c. Sanitation

The Paurashava must try to promote hygienic sanitation for the whole Paurashava to ensure better public health. **Map 14.11** represents development proposals map of ward 06

Table 14.30: Utility Service Development Proposals for ward 06

Item	Existing		Proposed	
	No.	Area(acre)/length(m)	No.	Area(acre)/Length(m)
Solid Waste Transfer Station	None		None	-
Water Supply Network	15	2909.35 m	1	3061.58 m
Electricity Line			As per existing program of PDB	

Map 14.12: Proposed Road & Drainage Network of Ward No.6



Admin Boundary

- - - - Mouza Boundary
- Paurashava Boundary
- - - - Sheet Boundary
- - - - Ward Boundary
- Existing Bridge**
 - Bridge
 - Culvert
- Proposed Bridge**
 - Bridge
 - Culvert

Legend

Development Features

- Bus Terminal
- Dumping Station
- Electric Sub Station
- Fire Service

- Tempo Stand
- Truck Terminal
- Waste Transfer Center
- Waste Water Treatment Plant
- Water Pump House

- Drainage Outfall
- Secondary Drain
- Tertiary Drain
- Waterbody
- Primary Road
- Secondary Road
- Local Road

0 40 80 160 Meters



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14.9 Ward Action Plan for Ward No. 07

14.9.1 Demography

Ward no.07 is located on the eastern part of the town. It is the smallest ward of Amtali Paurashava. In 2001, the Ward had a population of 1476 persons with a family size of 5.84 and a male-female ratio of 100:109. Population projection shows that 3329 people would be in the ward in the year 2031. Table 14.31 shows the details.

Table 14.31: Population Statistics of Ward No. 07

Item	Year			
	2016	2021	2026	2031
Area (acre)	607.3	607.3	607.3	607.3
Population	2242	2558	2918	3329
Density of Population (acre)	4	4	5	5

14.9.2 Ward Action Plan Proposals

14.9.2.1 Review of Existing Land Use

Out of total 598.86 acres of land about 4.95% is used as residential use. The next use is agricultural; more than 476.30 acres of land are used in this purpose. Water bodies occupy about 9.84% land of the ward. More than 1.12% is used as circulation network.

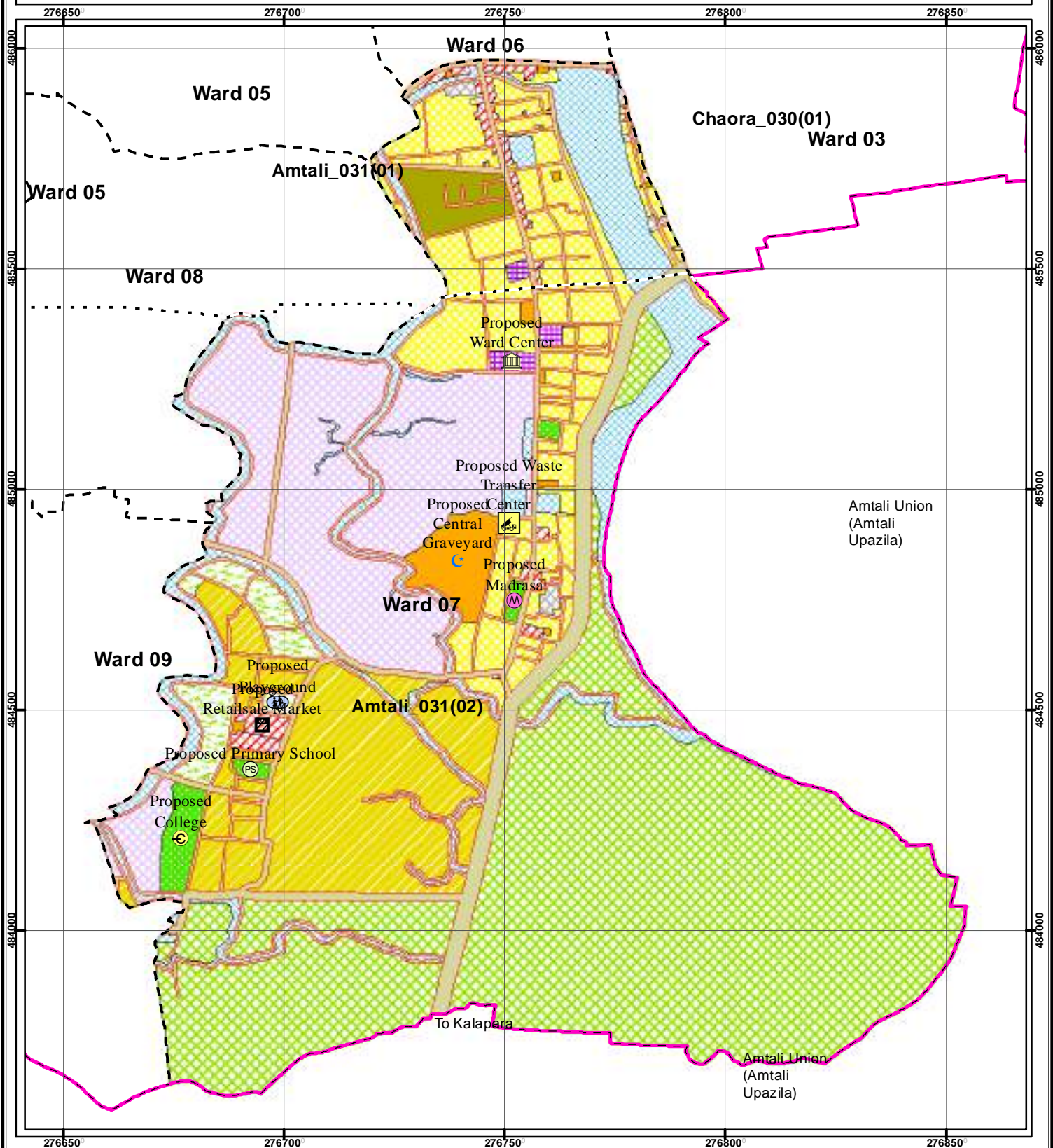
14.9.2.2 Proposed Land Use Zoning

The category wise proposals are presented here. Table 14.32 shows the amount of land existing and proposed uses in Ward no. 7. **Map 14.13** shows proposed land use of Ward 07

Table 14.32: Comparative Existing Land Use and Proposed Land Uses of Ward No. 07

Sl. No.	Landuse (Existing)	Area (Acre)	%	Sl. No.	Landuse (Proposed)	Area (Acre)	%
1	Agriculture	476.30	79.53	1	Administrative	2.17	0.36
2	Circulation Network	6.68	1.12	2	Agriculture	227.09	37.39
3	Commercial	5.74	0.96	3	Circulation Network	67.39	11.10
4	Community Facilities	0.75	0.12	4	Commercial	6.42	1.06
5	Education & Research	0.45	0.07	5	Community Facilities	9.02	1.49
6	Governmental Services	1.02	0.17	6	Education & Research	6.13	1.01
7	Green Spaces	0.52	0.09	7	Health Facility	6.48	1.07
8	Industrial Area	1.19	0.20	8	Industry	1.61	0.26
9	Mixed Use	0.11	0.02	9	Mixed Use	0.09	0.02
10	Recreational Facility	0.58	0.10	10	Open Space	10.74	1.77
11	Residential	29.62	4.95	11	Urban Deferred	85.13	14.02
12	Rural Settlement	12.29	2.05	12	Rural Settlement	65.93	10.86
13	Service Activity	4.69	0.78	13	Urban Residential	63.78	10.50
14	Water Body	58.92	9.84	14	Utility Services	0.11	0.02
				15	Water Body	55.21	9.09
	Total	598.86	100		Total	607.30	100

Map 14.13: Proposed Landuse Plan of Ward No. 7



Legend

Admin Boundary

- - Mouza Boundary
- Paurashava Boundary
- - Sheet Boundary
- - Ward Boundary

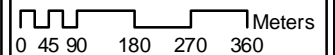
Development Features

- ☉ Central Graveyard
- 🎓 College

- 🕌 Madrasa
- ⚽ Play Field
- 🎓 Primary School
- 🏪 Retailsale Market
- 🏛 Ward Center
- 🗑 Waste Transfer Center

Landuse Type

- 🌾 Agricultural Land
- 🛣 Circulation Network
- 🏢 Commercial Zone
- 🏠 Community Facilities
- 🔬 Education & Research Zone
- 🏭 General Industrial Zone
- 🏛 Government Office
- 🏥 Health Services
- 🏠 Mixed Use Zone
- 🌳 Open Space
- 🏡 Rural Settlement
- 🏠 Urban Deferred
- 🏡 Urban Residential Zone
- 🔌 Utility Services
- 💧 Water Body



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a. Urban Residential Area

In Ward Action Plan more land is allocated as residential use. Total 63.78 acres of land has been earmarked for urban residential use which will occupy about 10.50% of the total land

b. Circulation network

To improve the efficiency of the ward more roads are proposed which will consume about 35.66 acres of land and more than 67.39% of the total area. For network improvement widening of existing road, link road and new roads are proposed which will be done phase wise within 2031.

c. Community Facilities

Total 9.02 acre area which cover 1.49% of total land of this ward will use for community facilities.

d. Open Space

Total 10.74 acre land will use for open recreational use. This land will use for establishing a stadium for this Paurashava.

f. Agricultural Zone

About 227.09 acre of land will remain as agricultural use up to the year 2031.

g. Water Body

The proposed water retention area covers about 55.21 acre of land.

14.9.2.3 Proposed Road Infrastructure Development

Total 30.07 km road development proposal have been proposed in first ward action plan for ward no. 07. The local road will be 20/25 ft wide and total length of these road is 22.27 km. Total length of secondary road will be 5.11 km and width of these roads will be 40/30 ft for this ward. There is 2.67 km primary road proposal. Detail scenario of road network development proposal was given in table 14.33.

Table 14.33: Road Network Proposal at Ward no. 07

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_739	Primary Road	100.00	1128.374	New	Ward 07	First Phase
Pr_743	Primary Road	60.00	521.265	New	Ward 07	First Phase
Pr_748	Primary Road	100.00	717.964	Widening	Ward 07	First Phase
Pr_751	Primary Road	60.00	210.890	Widening	Ward 07	First Phase
Pr_755	Primary Road	80.00	99.297	Widening	Ward 07	First Phase
Pr_29	Local Road	20.00	119.563	New	Ward 07	Second Phase
Pr_33	Local Road	20.00	93.368	New	Ward 07	Second Phase
Pr_35	Local Road	20.00	41.397	New	Ward 07	Second Phase
Pr_36	Local Road	20.00	303.743	New	Ward 07	Second Phase
Pr_39	Local Road	20.00	49.221	New	Ward 07	Second Phase
Pr_49	Local Road	20.00	135.651	New	Ward 07	Second Phase
Pr_53	Local Road	20.00	20.925	New	Ward 07	Second Phase
Pr_54	Local Road	20.00	47.783	New	Ward 07	Second Phase
Pr_55	Local Road	20.00	60.843	New	Ward 07	Second Phase
Pr_59	Local Road	20.00	80.030	New	Ward 07	Second Phase
Pr_60	Local Road	20.00	27.548	New	Ward 07	Second Phase
Pr_61	Local Road	20.00	11.252	New	Ward 07	Second Phase

Amtali Paurashava Master Plan: 2011-2031
Ward Action Plan

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_67	Local Road	20.00	80.902	New	Ward 07	Second Phase
Pr_73	Local Road	20.00	285.345	New	Ward 07	Second Phase
Pr_342	Local Road	20.00	36.971	Widening	Ward 07	Second Phase
Pr_343	Local Road	20.00	80.358	Widening	Ward 07	Second Phase
Pr_344	Local Road	20.00	125.478	Widening	Ward 07	Second Phase
Pr_347	Local Road	20.00	163.191	Widening	Ward 07	Second Phase
Pr_376	Local Road	20.00	115.270	Widening	Ward 07	Second Phase
Pr_380	Local Road	20.00	116.221	Widening	Ward 07	Second Phase
Pr_410	Local Road	20.00	124.265	Widening	Ward 07	Second Phase
Pr_411	Local Road	20.00	42.709	Widening	Ward 07	Second Phase
Pr_412	Local Road	20.00	77.924	Widening	Ward 07	Second Phase
Pr_413	Local Road	20.00	49.328	Widening	Ward 07	Second Phase
Pr_414	Local Road	20.00	100.355	Widening	Ward 07	Second Phase
Pr_459	Local Road	20.00	105.993	Widening	Ward 07	Second Phase
Pr_460	Local Road	20.00	54.118	Widening	Ward 07	Second Phase
Pr_462	Local Road	20.00	191.563	Widening	Ward 07	Second Phase
Pr_614	Local Road	20.00	85.029	Widening	Ward 07	Second Phase
Pr_615	Local Road	20.00	50.682	Widening	Ward 07	Second Phase
Pr_616	Local Road	20.00	37.903	Widening	Ward 07	Second Phase
Pr_653	Secondary Road	30.00	732.984	New	Ward 07	Second Phase
Pr_662	Secondary Road	40.00	297.661	New	Ward 07	Second Phase
Pr_670	Secondary Road	40.00	276.081	New	Ward 07	Second Phase
Pr_685	Secondary Road	40.00	76.764	New	Ward 07	Second Phase
Pr_686	Secondary Road	40.00	655.645	New	Ward 07	Second Phase
Pr_702	Secondary Road	30.00	0.417	Widening	Ward 07	Second Phase
Pr_706	Secondary Road	40.00	1420.396	Widening	Ward 07	Second Phase
Pr_714	Secondary Road	30.00	267.025	Widening	Ward 07	Second Phase
Pr_726	Secondary Road	40.00	71.591	Widening	Ward 07	Second Phase
Pr_728	Secondary Road	40.00	502.602	Widening	Ward 07	Second Phase
Pr_734	Secondary Road	40.00	813.312	Widening	Ward 07	Second Phase
Pr_12	Local Road	20.00	60.391	New	Ward 07	Third Phase
Pr_24	Local Road	20.00	8.746	New	Ward 07	Third Phase
Pr_32	Local Road	20.00	26.306	New	Ward 07	Third Phase
Pr_56	Local Road	20.00	38.579	New	Ward 07	Third Phase
Pr_58	Local Road	20.00	45.814	New	Ward 07	Third Phase
Pr_62	Local Road	20.00	20.657	New	Ward 07	Third Phase
Pr_63	Local Road	20.00	49.067	New	Ward 07	Third Phase
Pr_64	Local Road	20.00	51.376	New	Ward 07	Third Phase
Pr_65	Local Road	20.00	49.826	New	Ward 07	Third Phase
Pr_66	Local Road	20.00	33.233	New	Ward 07	Third Phase
Pr_68	Local Road	20.00	53.723	New	Ward 07	Third Phase
Pr_69	Local Road	20.00	66.048	New	Ward 07	Third Phase
Pr_70	Local Road	20.00	37.583	New	Ward 07	Third Phase

Amtali Paurashava Master Plan: 2011-2031
Ward Action Plan

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_71	Local Road	20.00	4.307	New	Ward 07	Third Phase
Pr_72	Local Road	20.00	18.524	New	Ward 07	Third Phase
Pr_74	Local Road	20.00	37.114	New	Ward 07	Third Phase
Pr_75	Local Road	20.00	188.081	New	Ward 07	Third Phase
Pr_76	Local Road	20.00	44.555	New	Ward 07	Third Phase
Pr_77	Local Road	20.00	181.851	New	Ward 07	Third Phase
Pr_78	Local Road	20.00	100.588	New	Ward 07	Third Phase
Pr_79	Local Road	20.00	99.210	New	Ward 07	Third Phase
Pr_80	Local Road	20.00	44.040	New	Ward 07	Third Phase
Pr_81	Local Road	20.00	46.122	New	Ward 07	Third Phase
Pr_82	Local Road	20.00	56.180	New	Ward 07	Third Phase
Pr_83	Local Road	20.00	91.670	New	Ward 07	Third Phase
Pr_84	Local Road	20.00	54.786	New	Ward 07	Third Phase
Pr_85	Local Road	20.00	46.495	New	Ward 07	Third Phase
Pr_86	Local Road	20.00	23.428	New	Ward 07	Third Phase
Pr_87	Local Road	20.00	39.587	New	Ward 07	Third Phase
Pr_88	Local Road	20.00	32.283	New	Ward 07	Third Phase
Pr_89	Local Road	20.00	146.845	New	Ward 07	Third Phase
Pr_90	Local Road	20.00	24.757	New	Ward 07	Third Phase
Pr_91	Local Road	20.00	19.575	New	Ward 07	Third Phase
Pr_92	Local Road	20.00	109.159	New	Ward 07	Third Phase
Pr_93	Local Road	20.00	205.186	New	Ward 07	Third Phase
Pr_94	Local Road	20.00	93.675	New	Ward 07	Third Phase
Pr_98	Local Road	20.00	71.342	New	Ward 07	Third Phase
Pr_99	Local Road	20.00	46.278	New	Ward 07	Third Phase
Pr_101	Local Road	20.00	253.628	New	Ward 07	Third Phase
Pr_102	Local Road	20.00	73.097	New	Ward 07	Third Phase
Pr_109	Local Road	20.00	204.015	New	Ward 07	Third Phase
Pr_110	Local Road	20.00	71.518	New	Ward 07	Third Phase
Pr_114	Local Road	20.00	98.626	New	Ward 07	Third Phase
Pr_117	Local Road	20.00	60.852	New	Ward 07	Third Phase
Pr_122	Local Road	20.00	166.209	New	Ward 07	Third Phase
Pr_123	Local Road	20.00	92.204	New	Ward 07	Third Phase
Pr_126	Local Road	20.00	115.303	New	Ward 07	Third Phase
Pr_297	Local Road	20.00	337.604	New	Ward 07	Third Phase
Pr_298	Local Road	20.00	1466.440	New	Ward 07	Third Phase
Pr_303	Local Road	20.00	4027.314	New	Ward 07	Third Phase
Pr_304	Local Road	20.00	2104.153	New	Ward 07	Third Phase
Pr_306	Local Road	20.00	68.459	New	Ward 07	Third Phase
Pr_309	Local Road	20.00	56.219	New	Ward 07	Third Phase
Pr_311	Local Road	20.00	1.709	New	Ward 07	Third Phase
Pr_312	Local Road	20.00	20.626	New	Ward 07	Third Phase
Pr_315	Local Road	20.00	2856.649	New	Ward 07	Third Phase

Amtali Paurashava Master Plan: 2011-2031
Ward Action Plan

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_328	Local Road	20.00	199.564	Widening	Ward 07	Third Phase
Pr_337	Local Road	20.00	13.748	Widening	Ward 07	Third Phase
Pr_340	Local Road	20.00	136.507	Widening	Ward 07	Third Phase
Pr_341	Local Road	20.00	24.056	Widening	Ward 07	Third Phase
Pr_345	Local Road	20.00	24.316	Widening	Ward 07	Third Phase
Pr_346	Local Road	20.00	35.870	Widening	Ward 07	Third Phase
Pr_348	Local Road	20.00	34.037	Widening	Ward 07	Third Phase
Pr_349	Local Road	20.00	46.323	Widening	Ward 07	Third Phase
Pr_350	Local Road	20.00	57.951	Widening	Ward 07	Third Phase
Pr_352	Local Road	20.00	133.193	Widening	Ward 07	Third Phase
Pr_377	Local Road	20.00	49.049	Widening	Ward 07	Third Phase
Pr_378	Local Road	20.00	62.266	Widening	Ward 07	Third Phase
Pr_379	Local Road	20.00	38.888	Widening	Ward 07	Third Phase
Pr_381	Local Road	20.00	45.236	Widening	Ward 07	Third Phase
Pr_383	Local Road	20.00	17.487	Widening	Ward 07	Third Phase
Pr_403	Local Road	20.00	25.094	Widening	Ward 07	Third Phase
Pr_419	Local Road	20.00	103.565	Widening	Ward 07	Third Phase
Pr_420	Local Road	20.00	56.820	Widening	Ward 07	Third Phase
Pr_421	Local Road	20.00	47.145	Widening	Ward 07	Third Phase
Pr_422	Local Road	20.00	63.247	Widening	Ward 07	Third Phase
Pr_423	Local Road	20.00	52.421	Widening	Ward 07	Third Phase
Pr_424	Local Road	20.00	12.365	Widening	Ward 07	Third Phase
Pr_425	Local Road	20.00	58.119	Widening	Ward 07	Third Phase
Pr_426	Local Road	20.00	61.534	Widening	Ward 07	Third Phase
Pr_427	Local Road	20.00	157.756	Widening	Ward 07	Third Phase
Pr_428	Local Road	20.00	158.814	Widening	Ward 07	Third Phase
Pr_429	Local Road	20.00	170.107	Widening	Ward 07	Third Phase
Pr_430	Local Road	20.00	132.484	Widening	Ward 07	Third Phase
Pr_431	Local Road	20.00	126.165	Widening	Ward 07	Third Phase
Pr_433	Local Road	20.00	84.186	Widening	Ward 07	Third Phase
Pr_434	Local Road	20.00	174.450	Widening	Ward 07	Third Phase
Pr_435	Local Road	20.00	0.866	Widening	Ward 07	Third Phase
Pr_461	Local Road	20.00	73.198	Widening	Ward 07	Third Phase
Pr_463	Local Road	20.00	67.814	Widening	Ward 07	Third Phase
Pr_464	Local Road	20.00	54.588	Widening	Ward 07	Third Phase
Pr_465	Local Road	20.00	95.513	Widening	Ward 07	Third Phase
Pr_466	Local Road	20.00	121.636	Widening	Ward 07	Third Phase
Pr_470	Local Road	20.00	136.674	Widening	Ward 07	Third Phase
Pr_473	Local Road	20.00	5.094	Widening	Ward 07	Third Phase
Pr_475	Local Road	20.00	15.719	Widening	Ward 07	Third Phase
Pr_476	Local Road	20.00	53.550	Widening	Ward 07	Third Phase
Pr_477	Local Road	20.00	155.947	Widening	Ward 07	Third Phase
Pr_480	Local Road	20.00	68.680	Widening	Ward 07	Third Phase

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_481	Local Road	20.00	113.802	Widening	Ward 07	Third Phase
Pr_482	Local Road	20.00	26.204	Widening	Ward 07	Third Phase
Pr_483	Local Road	20.00	155.077	Widening	Ward 07	Third Phase
Pr_485	Local Road	20.00	29.804	Widening	Ward 07	Third Phase
Pr_540	Local Road	20.00	57.466	Widening	Ward 07	Third Phase
Pr_541	Local Road	20.00	41.734	Widening	Ward 07	Third Phase
Pr_553	Local Road	20.00	300.180	Widening	Ward 07	Third Phase
Pr_575	Local Road	20.00	62.578	Widening	Ward 07	Third Phase
Pr_576	Local Road	20.00	61.203	Widening	Ward 07	Third Phase
Pr_585	Local Road	20.00	181.405	Widening	Ward 07	Third Phase
Pr_593	Local Road	20.00	141.067	Widening	Ward 07	Third Phase
Pr_610	Local Road	20.00	53.146	Widening	Ward 07	Third Phase
Pr_617	Local Road	20.00	201.751	Widening	Ward 07	Third Phase
Pr_618	Local Road	20.00	22.375	Widening	Ward 07	Third Phase
Pr_620	Local Road	20.00	39.811	Widening	Ward 07	Third Phase
Pr_633	Local Road	20.00	93.324	Widening	Ward 07	Third Phase
Pr_636	Local Road	20.00	11.762	Widening	Ward 07	Third Phase
Pr_640	Local Road	20.00	77.642	Widening	Ward 07	Third Phase

14.9.2.4 Drainage Development Plan

There is no manmade drainage facility at ward no. 07. Existing drainage is mostly depending on natural drainage facilities; Paira River which is passing southern border of the ward. The proposed drainage facilities will be developed based on these natural channel and served as primary drain for the ward and will be connected with 6.41 km secondary drain. Table 14.34 shows the detail.

Table 14.34: Drainage Development Plan Proposals for ward 07

Item	Length in km
Available Drainage	Nil
Proposed Drainage (Secondary)	6.41
Proposed Drainage (Tertiary)	16.03

Besides, it will be necessary to re-excavate the khals that serve as primary drains flowing of Water through them. **Map 14.14** represents proposed Road and Drainage Network for Ward 07.

14.9.2.5 Urban Services

a. Solid Waste Management

The consultant proposes solid waste transfer stations in some suitable locations for the management of solid waste. It is recommended that home collection system is introduced in the ward by creation of local CBOs. This will cause organized collection of waste and prevent indiscriminate littering.

b. Water Supply

It is proposed to install a network based water supply system by exploring fresh water from the Paira River for the entire Paurashava.

c. Sanitation

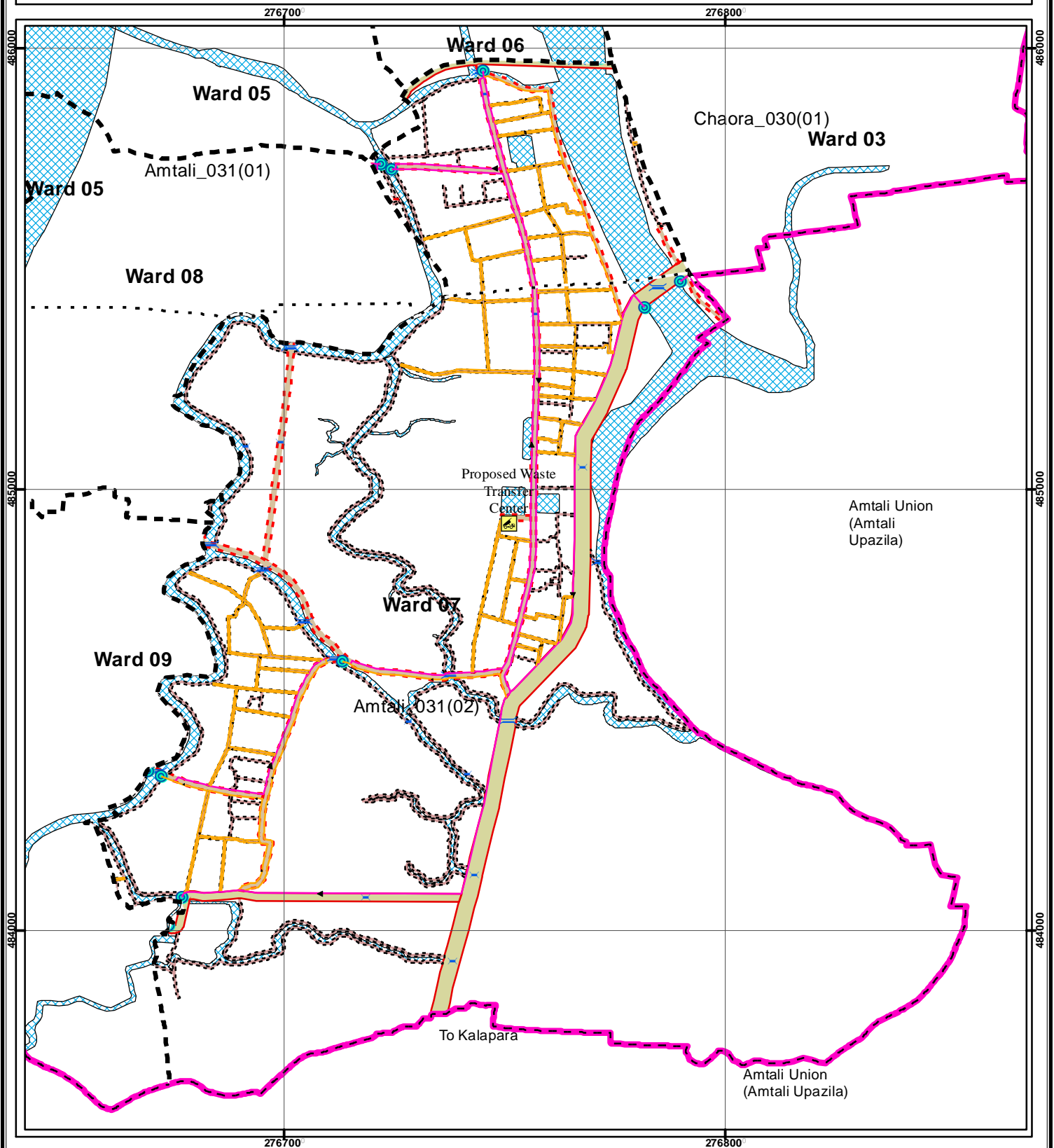
The Paurashava must try to promote hygienic sanitation for the whole Paurashava to ensure better public health.

Table 14.35: Urban Service Development Proposals for ward 07

Item	Existing		Proposed	
	No.	Area/length	No.	Area/Length
Solid Waste Transfer Station	None		1	0.11
Water Supply Network	5	1030.52 m	1	7344.98 m
Electricity Line			As per existing program of PDB	

Map 14.13 represents proposed physical development for ward 07.

Map 14.14: Proposed Road & Drainage Network of Ward No.7



Admin Boundary

- - - - Mouza Boundary
- Paurashava Boundary
- - - - Sheet Boundary
- - - - Ward Boundary
- Existing Bridge**
 - Bridge
 - Culvert
- Proposed Bridge**
 - Bridge
 - Culvert

Legend

Development Features

- Bus Terminal
- Dumping Station
- Electric Sub Station
- Fire Service

- Tempo Stand
- Truck Terminal
- Waste Transfer Center
- Waste Water Treatment Plant
- Water Pump House

- Drainage Outfall
- Secondary Drain
- Tertiary Drain
- Waterbody
- Primary Road
- Secondary Road
- Local Road

0 87.5 175 350 Meters



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14.10 Ward Action Plan for Ward No. 08

14.10.1 Demography

Ward No. 8 is located on the eastern part of the town. The estimated population for the year 2031 will be 2719 with a density of 13 persons per acre. Table 14.36 shows the detail.

Table 14.36: Population Statistics of Ward No. 08

Item	Year			
	2016	2021	2026	2031
Area (acre)	203.78	203.78	203.78	203.78
Population	1831	2089	2383	2719
Density of Population (acre)	9	10	12	13

14.10.2 Ward Action Plan Proposals

14.10.2.1 Review of Existing Land Use

Ward no. 08 is mainly rural in character. Out of total 316.27 acre of land of this ward more than 130.78 acre of land i.e. 41.35% is used as agriculture. The next use is residential; 8.8 acres are used as residential purpose. It occupies almost 2.78% of total land. Water bodies occupy about 48.14% land. More than 1.16% is used as circulation network. Only 0.03 % of land is used as Community facilities.

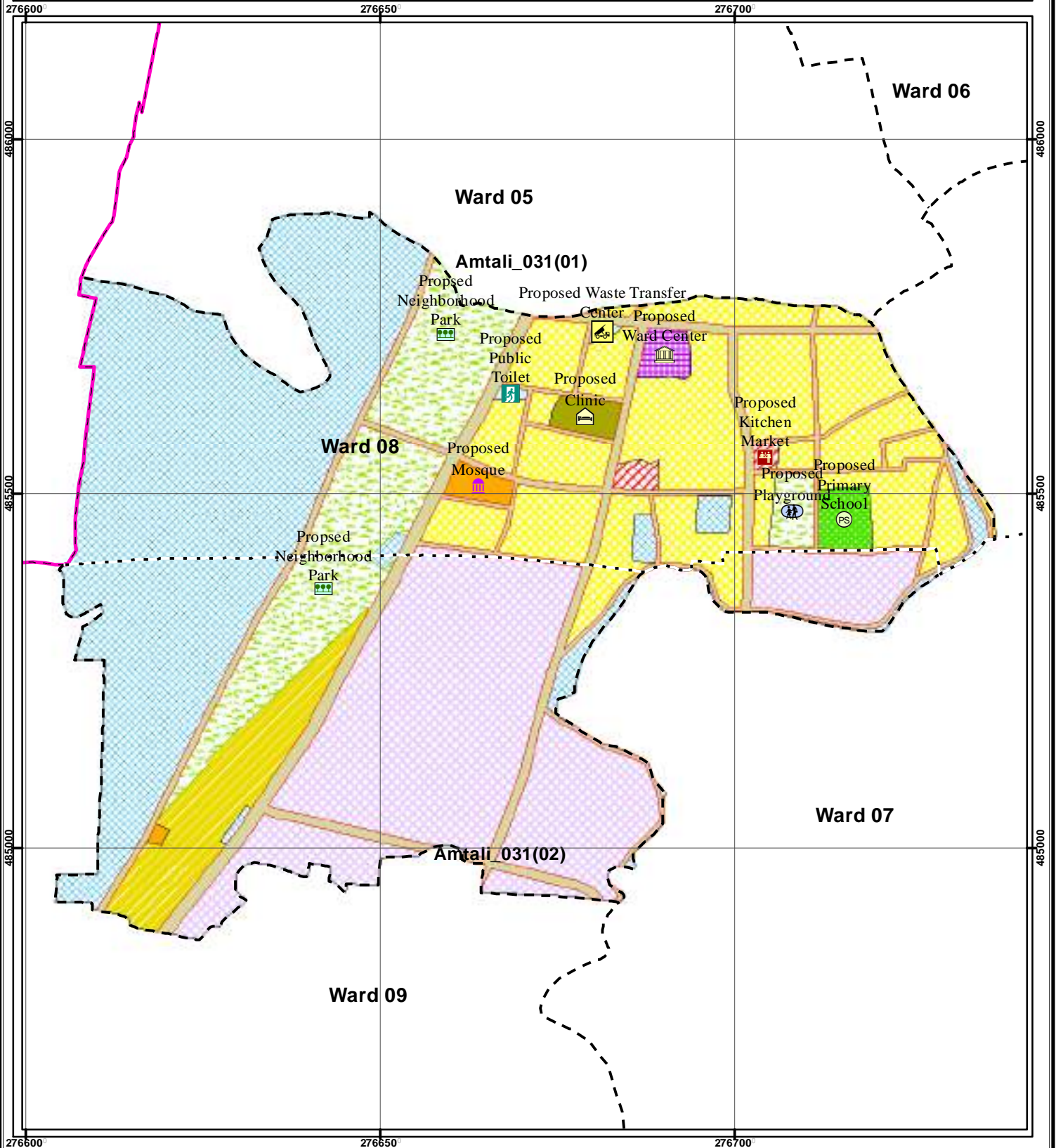
14.10.2.2 Proposed Land Use Zoning

The category wise proposals are presented here. Table 14.37 shows the amount of land existing and proposed uses in Ward no. 8. **Map 14.15** shows proposed land use of Ward 08

Table 14.37: Comparative Scenario of Existing and Proposed Land Uses of Ward No. 08

Sl. No.	Landuse (Existing)	Area (Acre)	%	Sl. No.	Landuse (Proposed)	Area (Acre)	%
1	Agriculture	130.78	41.35	1	Administrative	1.14	0.56
2	Circulation Network	3.65	1.16	2	Circulation Network	20.18	9.90
3	Commercial	0.97	0.31	3	Commercial	0.90	0.44
4	Community Facilities	0.09	0.03	4	Community Facilities	1.24	0.61
5	Industrial Area	0.42	0.13	5	Education & Research	1.61	0.79
6	Mixed Use	0.17	0.05	6	Health Facility	1.12	0.55
7	Residential	8.80	2.78	7	Open Space	21.65	10.62
8	Rural Settlement	18.70	5.91	8	Rural Settlement	9.02	4.43
9	Service Activity	0.14	0.04	9	Urban Deferred	46.75	22.94
10	Transportation & Communication	0.30	0.10	10	Urban Residential	41.07	20.15
11	Water Body	152.24	48.14	11	Utility Services	0.20	0.10
				12	Water body	58.90	28.90
	Total	316.27	100		Total	203.78	100

Map 14.15 Proposed Landuse Plan of Ward No. 8



Legend

Admin Boundary

- - - Mouza Boundary
- - - Paurashava Boundary
- - - Sheet Boundary
- - - Ward Boundary

Development Features

- Clinic
- Katcha Bazar

- Mosque
- Neighborhood Park
- Play Field
- Primary School
- Public Toilet
- Ward Center
- Waste Transfer Center

Landuse Type

- Circulation Network
- Commercial Zone
- Community Facilities
- Education & Research Zone
- Government Office
- Health Services
- Open Space
- Rural Settlement
- Urban Deferred
- Urban Residential Zone
- Utility Services
- Water Body

0 25 50 100 150 200 Meters



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a. Rural Settlement

As this ward is mostly rural in character more land is declared as rural settlement up to the year 2031. In Ward Action Plan more than 9.02 acre of land has been remained as rural settlement which will occupy about 4.43% of the total land.

b. Education and Research

The area for education and research will 0.79%.

c. Circulation network

To improve the efficiency of the ward more roads are proposed which will consume almost 20.18 acres of land and about 9.90% of the total area. For net work improvement widening of existing road, link road and new roads are proposed which will be done phase wise within 2031.

d. Community Facilities

Proposed land for community service will be 1.24 acre.

e. Water Bodies

The proposed water retention area covers 58.90 acres of land.

14.10.2.3 Proposed Road Infrastructure Development

Total 8.66 km road development proposal have been proposed for this ward. Length of the local road will be 3.94 km and width of these roads will be 20-25 ft. Total length of secondary road will be 3.71 km and width of these roads will be 40/50 ft for this ward. Detail scenario of road network development proposal was given in table 14.38.

Table 14.38: Road Network Proposal at Ward no.08

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_753	Primary Road	60.00	1015.511	Widening	Ward 08	First Phase
Pr_661	Secondary Road	40.00	436.062	New	Ward 08	Second Phase
Pr_672	Secondary Road	40.00	813.610	New	Ward 08	Second Phase
Pr_675	Secondary Road	30.00	1043.280	New	Ward 08	Second Phase
Pr_724	Secondary Road	30.00	565.845	Widening	Ward 08	Second Phase
Pr_727	Secondary Road	40.00	401.904	Widening	Ward 08	Second Phase
Pr_733	Secondary Road	40.00	450.094	Widening	Ward 08	Second Phase
Pr_95	Local Road	20.00	80.592	New	Ward 08	Third Phase
Pr_96	Local Road	20.00	95.536	New	Ward 08	Third Phase
Pr_97	Local Road	20.00	251.491	New	Ward 08	Third Phase
Pr_100	Local Road	20.00	108.839	New	Ward 08	Third Phase
Pr_103	Local Road	20.00	95.488	New	Ward 08	Third Phase
Pr_104	Local Road	20.00	112.651	New	Ward 08	Third Phase
Pr_105	Local Road	20.00	96.102	New	Ward 08	Third Phase
Pr_106	Local Road	20.00	27.976	New	Ward 08	Third Phase
Pr_107	Local Road	20.00	58.317	New	Ward 08	Third Phase
Pr_108	Local Road	20.00	40.099	New	Ward 08	Third Phase
Pr_111	Local Road	20.00	98.159	New	Ward 08	Third Phase
Pr_112	Local Road	20.00	48.117	New	Ward 08	Third Phase
Pr_113	Local Road	20.00	10.631	New	Ward 08	Third Phase

Amtali Paurashava Master Plan: 2011-2031
Ward Action Plan

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_115	Local Road	20.00	135.687	New	Ward 08	Third Phase
Pr_116	Local Road	20.00	45.889	New	Ward 08	Third Phase
Pr_119	Local Road	20.00	74.698	New	Ward 08	Third Phase
Pr_120	Local Road	20.00	110.075	New	Ward 08	Third Phase
Pr_121	Local Road	20.00	113.308	New	Ward 08	Third Phase
Pr_124	Local Road	20.00	185.321	New	Ward 08	Third Phase
Pr_308	Local Road	20.00	364.862	New	Ward 08	Third Phase
Pr_310	Local Road	20.00	852.394	New	Ward 08	Third Phase
Pr_314	Local Road	20.00	98.089	New	Ward 08	Third Phase
Pr_351	Local Road	20.00	103.933	Widening	Ward 08	Third Phase
Pr_382	Local Road	20.00	135.043	Widening	Ward 08	Third Phase
Pr_432	Local Road	20.00	67.456	Widening	Ward 08	Third Phase
Pr_467	Local Road	20.00	106.580	Widening	Ward 08	Third Phase
Pr_468	Local Road	20.00	46.691	Widening	Ward 08	Third Phase
Pr_469	Local Road	20.00	75.209	Widening	Ward 08	Third Phase
Pr_471	Local Road	20.00	22.411	Widening	Ward 08	Third Phase
Pr_472	Local Road	20.00	74.886	Widening	Ward 08	Third Phase
Pr_474	Local Road	20.00	161.298	Widening	Ward 08	Third Phase
Pr_478	Local Road	20.00	31.959	Widening	Ward 08	Third Phase
Pr_642	Local Road	20.00	12.858	Widening	Ward 08	Third Phase

14.10.2.4 Drainage Development Plan

There is no manmade drainage facility at ward no. 08 of Amtali Paurashava. Existing drainage is mostly depending on natural drainage facilities; Paira River which is passing very close to the western border. The proposed drainage facilities will be developed based on this natural channel. Table 14.39 shows the detail.

Table 14.39: Drainage Development Plan Proposals for ward 08

Item	Length
Available Drainage	Nil
Proposed Drainage (Secondary)	1.91 km
Proposed Drainage (tertiary)	4.18 km

Besides, it will be necessary to re-excavate the khals that serve as primary drains. The consultants have identified existing whole of the khals need to be re-excavated to allow smooth flow of water through them. **Map 14.16** represents proposed Road and Drainage Map of ward 08.

14.10.2.5 Urban Services

a. Solid Waste Management

Solid waste management is a major urban service. As density of population increases the volume of solid waste also increases proportionately. However, the income level is also a major factor influencing the volume of solid waste. Population and the volume of waste in the Paurashava are yet to be large enough to become a problem for the city. But the present management system is not satisfactory and it might lead to problem in future. The consultant proposes solid waste transfer stations in a suitable location. It is recommended that home collection system is introduced in the ward by creation of local CBOs. This will cause organized collection of waste and

prevent indiscriminate littering.

b. Water Supply

It is proposed to install a network based water supply system by exploring fresh water from the Paira River for the entire Paurashava. A line of 3597.54 m length has been proposed in this ward.

c. Sanitation

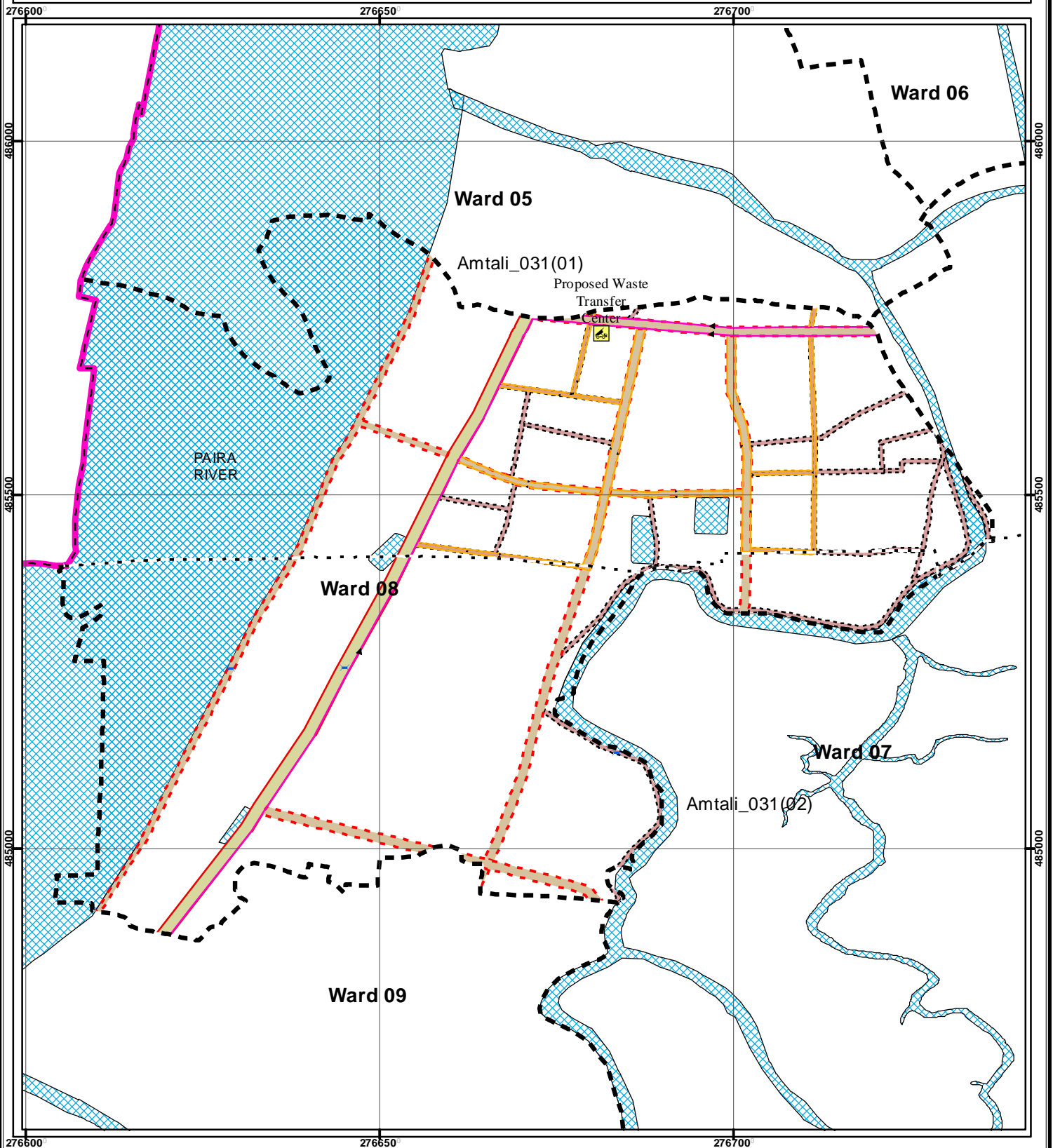
The Paurashava must try to promote hygienic sanitation for the whole Paurashava to ensure better public health.

Table 14.40: Utility Service Development Proposals for ward 08

Item	Existing		Proposed	
		Area/length		Area/Length
Solid Waste Transfer Station	None		None	0.20 Acre
Water Supply Network	None		1	3597.54 m
Electricity Line			As per existing program of PDB	

Map 14.15 represents proposed development map if ward 08

Map 14.16: Proposed Road & Drainage Network of Ward No.8



Admin Boundary

- - - - Mouza Boundary
- Paurashava Boundary
- - - - Sheet Boundary
- - - - Ward Boundary

Existing Bridge

- Bridge
- Culvert

Proposed Bridge

- Bridge
- Culvert

Legend

Development Features

- Bus Terminal
- Dumping Station
- Electric Sub Station
- Fire Service

- Tempo Stand
- Truck Terminal
- Waste Transfer Center
- Waste Water Treatment Plant
- Water Pump House

- Drainage Outfall
- Secondary Drain
- Tertiary Drain
- Waterbody
- Primary Road
- Secondary Road
- Local Road

0 55 110 220 Meters



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14.11 Ward Action Plan for Ward No. 09

14.11.1 Demography

Ward No. 9 is located on the south-eastern part of the town. It has least density of population. The estimated population for the year 2031 will be 1835 with a density of 3 ppa.

Table 14.41: Population Statistics of Ward No. 09

Item	Year			
	2016	2021	2026	2031
Area (acre)	635.34	635.34	635.34	635.34
Population	1236	1410	1608	1835
Density of Population (acre)	2	2	3	3

14.11.2 Ward Action Plan Proposals

14.11.2.1 Review of Existing Land Use

Ward no. 09 is mainly rural in character. Out of total about 204.56 acre of land of this ward almost 179.07 acre of land i.e. half of the total land is under agricultural use. Water bodies occupy 4.73% land of the ward.

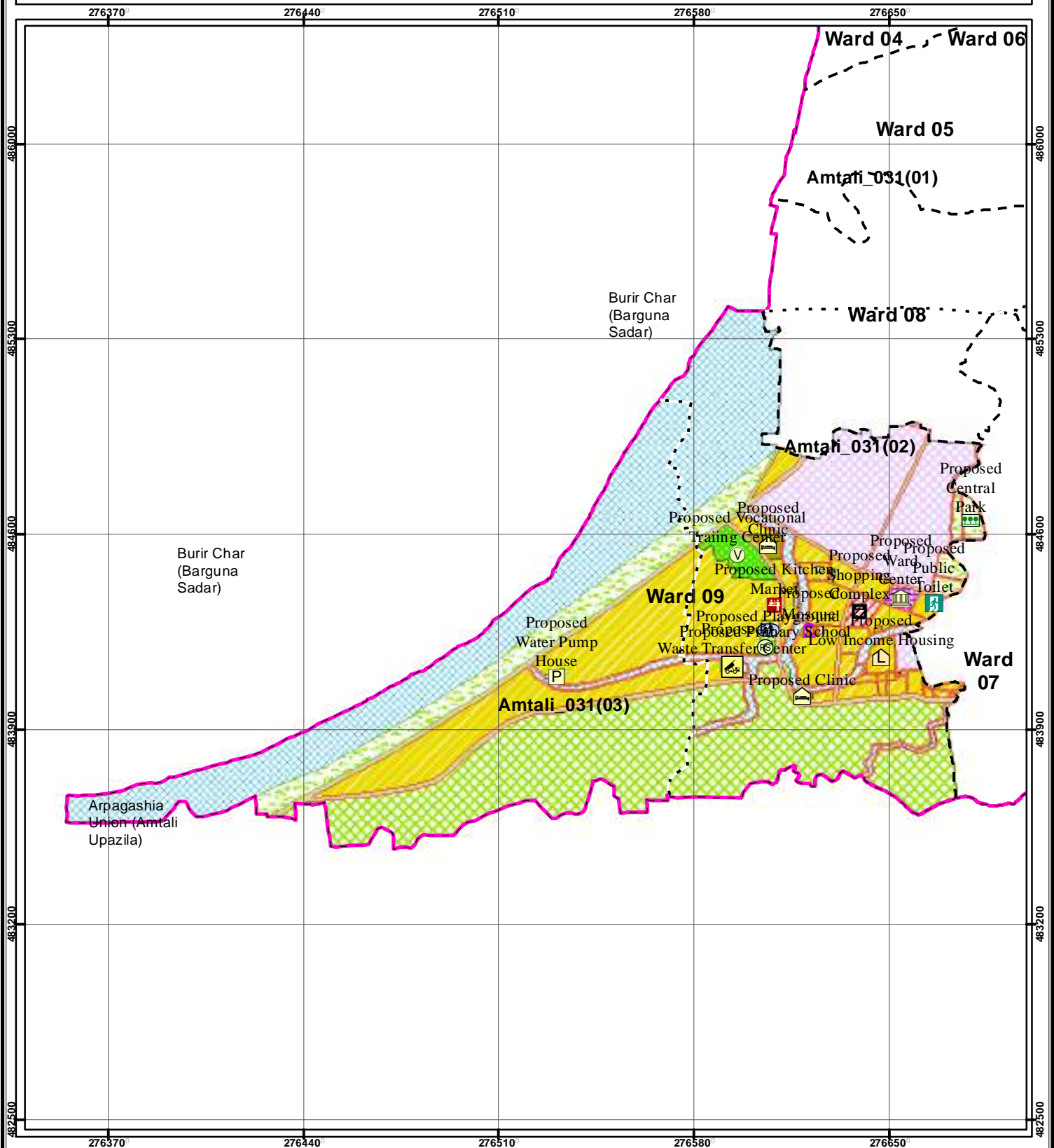
14.11.2.2 Proposed Land Use Zoning

The category wise proposals are presented here. Table 14.42 shows the amount of land existing and proposed uses in Ward no. 9. **Map 14.17** shows proposed land use of Ward 09

Table 14.42: Comparative Scenario of Existing and Proposed Land Uses of Ward No. 09

Sl. No.	Landuse (Existing)	Area (Acre)	%	Sl. No.	Landuse (Proposed)	Area (Acre)	%
1	Agriculture	179.07	87.54	1	Administrative	1.82	0.29
2	Circulation Network	2.22	1.09	2	Agriculture	162.45	25.57
3	Commercial	0.07	0.03	3	Circulation Network	44.83	7.06
4	Community Facilities	0.29	0.14	4	Commercial	2.80	0.44
5	Industrial Area	0.03	0.02	5	Community Facilities	0.82	0.13
6	Rural Settlement	13.19	6.45	6	Education & Research	7.10	1.12
7	Water Body	9.68	4.73	7	Health Facility	2.15	0.34
				8	Urban deferred	69.26	10.90
				9	Rural Settlement	129.10	20.32
				10	Utility Services	1.41	0.22
				11	Water Body	166.28	26.17
				12	Open Space	47.28	7.44
	Total	204.56	100		Total	635.34	100

Map 14.17: Proposed Landuse Plan of Ward No. 9



Admin Boundary

- - Mouza Boundary
- Paurashava Boundary
- - Sheet Boundary
- - Ward Boundary

Development Features

- Central Park
- Clinic
- Katcha Bazar
- Low Income Housing

Legend

- Mosque
- Play Field
- Primary School
- Public Toilet
- Shopping Complex
- Vocational Training Center
- Ward Center
- Waste Transfer Center
- Water Pump House

Landuse Type

- Agricultural Land
- Circulation Network
- Commercial Zone
- Community Facilities
- Education & Research Zone
- Government Office
- Health Services
- Open Space
- Rural Settlement
- Urban Deferred
- Utility Services
- Water Body

0 70 140 280 420 560 Meters



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

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In Association with

a. Rural Settlement

As half of the land of the ward is in agricultural use, so in Ward Action Plan more than 20.32% is proposed for rural homestead which is 129.10 in acres up to the year 2031.

b. Commercial Zone

About 0.44% will propose as commercial zone for this ward. Other commercial facilities will be allocated in mixed use zone.

c. Circulation network

To improve the efficiency of the ward more roads are proposed which will consume almost 44.83 acres of land and it is more than 7.06% of the total area. For net work improvement widening of existing road, link road and new roads are proposed which will be done phase wise within 2031.

d. Community Facilities

Total 0.82 acres of land will use for community facilities.

e. Agricultural Zone

More than 25.57% of the total land of the ward will remain as agricultural use up to the year 2031. Some portion of land of rural homestead will also utilize as some sort of agricultural activities as farm, poultry or horticulture use. This zone will serve as the hinter land for the town.

f. Water Body

The proposed retention area covers 166.28 acres of land.

14.11.2.3 Proposed Road Infrastructure Development

Total 17.96 km road development proposal have been proposed for Ward no. 09 of Amtali Paurashava. Total length of primary road, secondary road and tertiary road will be 4.81 km, 2.83 km and 10.31 km respectively for this ward. Detail scenario of road network development proposal was given in Table 14.43. **Map 14.18** represents proposed Road network for ward 09.

Table 14.43: Road Network Proposal at Ward no. 09

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_750	Primary Road	60.00	2511.248	Widening	Ward 09	First Phase
Pr_752	Primary Road	60.00	2303.996	Widening	Ward 09	First Phase
Pr_669	Secondary Road	40.00	789.099	New	Ward 09	Second Phase
Pr_671	Secondary Road	40.00	1042.142	New	Ward 09	Second Phase
Pr_674	Secondary Road	30.00	243.268	New	Ward 09	Second Phase
Pr_732	Secondary Road	40.00	91.251	Widening	Ward 09	Second Phase
Pr_736	Secondary Road	50.00	670.813	Widening	Ward 09	Second Phase
Pr_17	Local Road	20.00	15.919	New	Ward 09	Third Phase
Pr_18	Local Road	20.00	51.616	New	Ward 09	Third Phase
Pr_19	Local Road	20.00	14.609	New	Ward 09	Third Phase
Pr_20	Local Road	20.00	6.827	New	Ward 09	Third Phase
Pr_21	Local Road	20.00	34.969	New	Ward 09	Third Phase
Pr_22	Local Road	20.00	21.251	New	Ward 09	Third Phase
Pr_23	Local Road	20.00	9.841	New	Ward 09	Third Phase
Pr_25	Local Road	20.00	103.337	New	Ward 09	Third Phase
Pr_26	Local Road	20.00	28.898	New	Ward 09	Third Phase

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Ward Action Plan

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_27	Local Road	20.00	27.617	New	Ward 09	Third Phase
Pr_28	Local Road	20.00	66.363	New	Ward 09	Third Phase
Pr_30	Local Road	20.00	67.802	New	Ward 09	Third Phase
Pr_31	Local Road	20.00	90.081	New	Ward 09	Third Phase
Pr_34	Local Road	20.00	41.823	New	Ward 09	Third Phase
Pr_37	Local Road	20.00	47.743	New	Ward 09	Third Phase
Pr_38	Local Road	20.00	133.414	New	Ward 09	Third Phase
Pr_40	Local Road	20.00	105.006	New	Ward 09	Third Phase
Pr_41	Local Road	20.00	70.358	New	Ward 09	Third Phase
Pr_42	Local Road	20.00	104.092	New	Ward 09	Third Phase
Pr_43	Local Road	20.00	85.796	New	Ward 09	Third Phase
Pr_44	Local Road	20.00	88.414	New	Ward 09	Third Phase
Pr_45	Local Road	20.00	206.562	New	Ward 09	Third Phase
Pr_46	Local Road	20.00	113.623	New	Ward 09	Third Phase
Pr_47	Local Road	20.00	69.444	New	Ward 09	Third Phase
Pr_48	Local Road	20.00	39.930	New	Ward 09	Third Phase
Pr_50	Local Road	20.00	75.242	New	Ward 09	Third Phase
Pr_51	Local Road	20.00	29.743	New	Ward 09	Third Phase
Pr_52	Local Road	20.00	88.977	New	Ward 09	Third Phase
Pr_57	Local Road	20.00	131.841	New	Ward 09	Third Phase
Pr_296	Local Road	20.00	1681.167	New	Ward 09	Third Phase
Pr_299	Local Road	20.00	1746.157	New	Ward 09	Third Phase
Pr_300	Local Road	20.00	1039.103	New	Ward 09	Third Phase
Pr_301	Local Road	20.00	379.132	New	Ward 09	Third Phase
Pr_302	Local Road	20.00	345.860	New	Ward 09	Third Phase
Pr_305	Local Road	20.00	308.685	New	Ward 09	Third Phase
Pr_307	Local Road	20.00	19.032	New	Ward 09	Third Phase
Pr_327	Local Road	20.00	28.570	Widening	Ward 09	Third Phase
Pr_335	Local Road	20.00	212.709	Widening	Ward 09	Third Phase
Pr_336	Local Road	20.00	353.752	Widening	Ward 09	Third Phase
Pr_375	Local Road	20.00	55.705	Widening	Ward 09	Third Phase
Pr_402	Local Road	20.00	72.144	Widening	Ward 09	Third Phase
Pr_404	Local Road	20.00	47.539	Widening	Ward 09	Third Phase
Pr_405	Local Road	20.00	37.601	Widening	Ward 09	Third Phase
Pr_406	Local Road	20.00	20.588	Widening	Ward 09	Third Phase
Pr_407	Local Road	20.00	72.909	Widening	Ward 09	Third Phase
Pr_408	Local Road	20.00	19.213	Widening	Ward 09	Third Phase
Pr_409	Local Road	20.00	28.560	Widening	Ward 09	Third Phase
Pr_415	Local Road	20.00	106.411	Widening	Ward 09	Third Phase
Pr_416	Local Road	20.00	56.929	Widening	Ward 09	Third Phase
Pr_417	Local Road	20.00	33.811	Widening	Ward 09	Third Phase
Pr_418	Local Road	20.00	73.898	Widening	Ward 09	Third Phase
Pr_572	Local Road	20.00	32.270	Widening	Ward 09	Third Phase

Amtali Paurashava Master Plan: 2011-2031
Ward Action Plan

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_573	Local Road	20.00	41.184	Widening	Ward 09	Third Phase
Pr_574	Local Road	20.00	39.695	Widening	Ward 09	Third Phase
Pr_586	Local Road	20.00	92.798	Widening	Ward 09	Third Phase
Pr_587	Local Road	20.00	102.316	Widening	Ward 09	Third Phase
Pr_588	Local Road	20.00	68.803	Widening	Ward 09	Third Phase
Pr_589	Local Road	20.00	118.173	Widening	Ward 09	Third Phase
Pr_590	Local Road	20.00	308.104	Widening	Ward 09	Third Phase
Pr_591	Local Road	20.00	290.745	Widening	Ward 09	Third Phase
Pr_592	Local Road	20.00	507.171	Widening	Ward 09	Third Phase

14.11.2.4 Drainage Development Plan

Existing drainage is mostly depending on natural drainage facilities. The proposed drainage facilities will be developed based on this natural channel. Table 14.44 shows the detail.

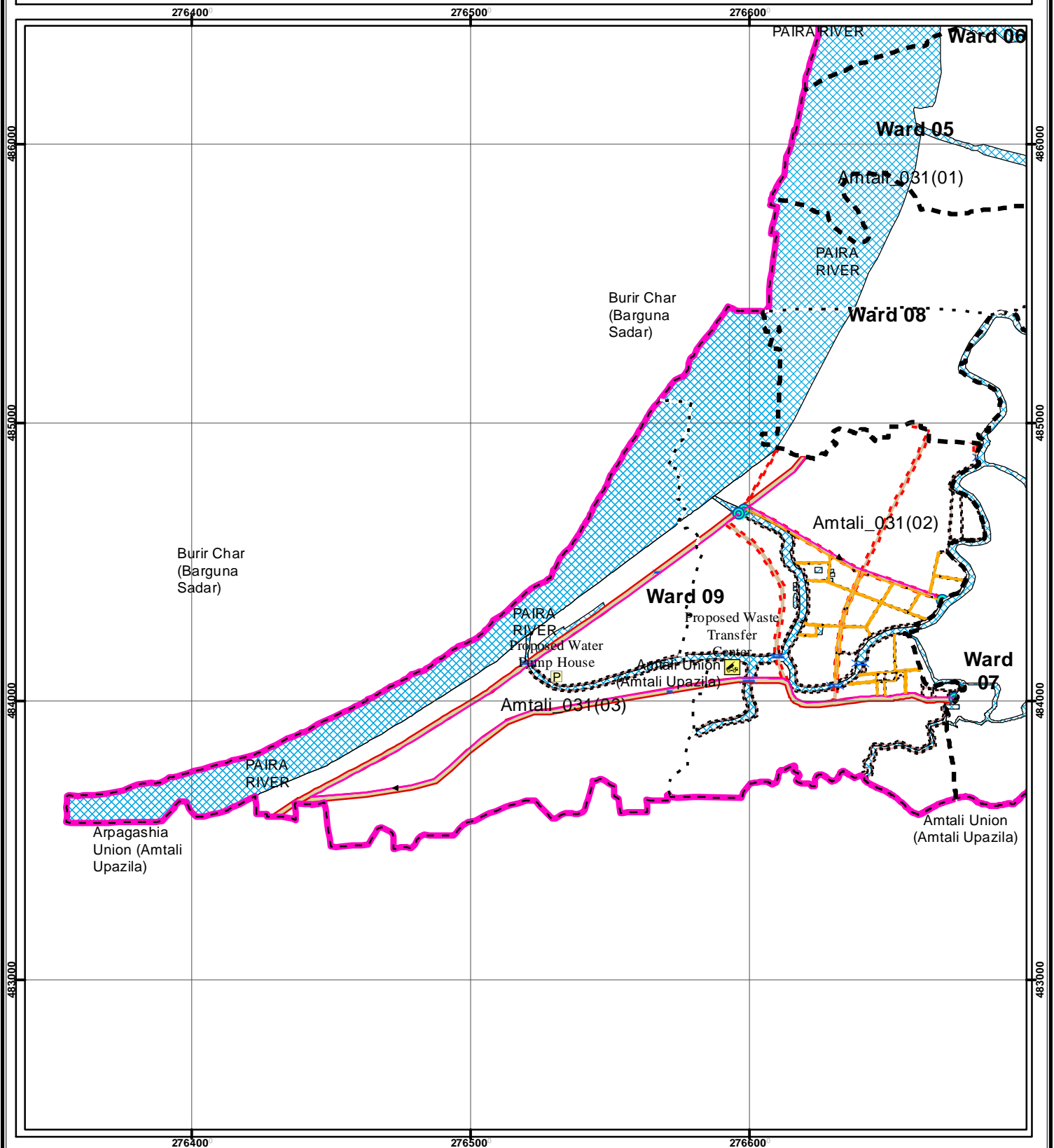
Table 14.44: Drainage Development Plan Proposals for ward 09

Item	Length
Available Drainage	Nil
Proposed Drainage (Secondary)	5.36 km
Proposed Drainage (Tertiary)	5.86 km

14.11.2.5 Urban Services

Since the ward 09 is rural settlement and agricultural land, a few development proposals have been made for this ward. A waste transfer station of total 0.82 acre land has been proposed for this ward. **Map 14.17** represents development proposals for ward 09.

Map 14.18: Proposed Road & Drainage Network of Ward No.9



Admin Boundary

- - - - Mouza Boundary
- Paurashava Boundary
- - - - Sheet Boundary
- - - - Ward Boundary

Existing Bridge

- Bridge
- Culvert

Proposed Bridge

- Bridge
- Culvert

Legend

Development Features

- Bus Terminal
- Dumping Station
- Electric Sub Station
- Fire Service

- Tempo Stand
- Truck Terminal
- Waste Transfer Center
- Waste Water Treatment Plant
- Water Pump House

- Drainage Outfall
- Secondary Drain
- Tertiary Drain
- Waterbody
- Primary Road
- Secondary Road
- Local Road

0 140 280 560 Meters



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14.12: Implementation Guidelines

The Master Plan of Amtali Paurashava will be an effective tool for planned urban development, if it is implemented properly with legal enforcement. The different components of the Master Plan have varied implications if they are not implemented in an integrated manner. There is no separate laws related directly to the implementation of Master Plan of the Paurashavas in the country other than the Paurashava Ordinance/Act 2009 and some relevant national policies and laws as discussed in chapter 5 under the Structure Plan.

However, the legal provisions that have been made in the Paurashava Ordinance/Act 2009 can effectively be applied in the implementation of the Master Plan of Amtali Paurashava for the time being along with other relevant national policies and laws that have also implications at Paurashava level, such as Wetland Conservation Act 2000 and BNBC 1993. Other national policies, guidelines and laws relevant to population, agriculture, environment, tourism, building materials, building construction etc. have implications for the implementation of various components including the Ward Action Plan of the Master Plan of Amtali Paurashava.

Therefore, until specific laws and guidelines are made by the government for the Paurashavas in Bangladesh for the implementation of Master Plans, the existing laws, policies and guidelines should be strictly followed so that the goal and objectives of these plans are achieved. Effective application of the various existing policies and laws require prudent exercise of professional knowledge and expertise, which is lacking in the existing human resources of the Paurashavas in Bangladesh. In particular, the Paurashavas require professional urban/town planner(s) in the set up of their manpower. In this context, there is an urgent need for the creation of a planning division/section in the existing set up of the Paurashava Organogram.

14.12.1 Proposals for Mitigation of Identified Issues

The critical issues of planning and development identified in the Structure Plan have been addressed through the preparation of Urban Area Plan and Ward Action Plan. The proposals made in these plans resolve the issues addressed in the Structure Plan.

14.12.2 Comparative Advantage of Master Plan

The Paurashavas in Bangladesh do not have any practicing plans at present in regard to organized development of land use or infrastructure. This situation has been continuing over a long period of time in the past promoting spontaneous land and infrastructure development. As a result, there are examples of unplanned development creating discomfort to the people living in almost all Paurashavas in the country. The implementation of the currently prepared Master Plan of the Paurashava will remove those obstacles by applying the principles, guidelines and proposals of various components of its Master Plan. The Ward Action Plan prepared following the Urban Area Plan will solve the most pressing needs of the town in infrastructure development.

14.13 Conclusion

The Paurashavas in Bangladesh for the first time in its history are having their detailed Master Plans prepared scientifically using modern tools and techniques. These Master Plans will be effective tools for planned development of most of the urban centers in Bangladesh. The planned township development will also ensure required services for the rural areas of the country. This in turn will make a positive impact on economic growth, social progress and environmental sustainability. Amtali Paurashava must avail this opportunity for its progress in the future by implementing its newly prepared 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	Pulin Chandra Golder	Urban Planner
5	Ziaul Huq	Urban Planner
6	Md. Saifur Rahman	Junior Urban Planner
7	Md. Rakibul Hossain	Junior Urban Planner
8	Md. Saifur Rahman	Junior Urban Planner
9	Md. Rakibul Hossain	Junior 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. Jahangir Hossain	Computer Operator
4	Raihanul Islam	CAD Operator
5	Zakaria Ahmed	CAD Operator
6	ANM Shafiquil Alam	Surveyor
7	Aolad Hossain	Surveyor

বাপোগাড়ির আশেপাশে
আখুন্স গাড়ার বিজা
উপ-সচিব (পৌর)।

মুদ্রাসম্পদ রিভিউ ইন্সটিটিউট, উপ-নিয়ন্ত্রক, বাংলাদেশ সরকারী মুদ্রণালয়, ঢাকা কর্তৃক মুদ্রিত
বিমান বিহারী দাল, উপ-নিয়ন্ত্রক, বাংলাদেশ ফরেনসিক ও প্রকাশনী দপ্তর,
ডেহুগাঁও, ঢাকা কর্তৃক প্রকাশিত।

Annexure- C: Land use Permission

a. Urban Residential Land Use

Land Use Permitted

The following uses in the tables are proposed to be applicable for this zone only.

Table C.1: Land Use Permitted

Permitted Urban Residential Uses
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
Satellite Dish Antenna

Permitted Urban Residential Uses
Shelter (Passers By)
Shoe Repair or Shoeshine Shop (Small)
CBO Office
Special Dwelling
Temporary Tent
Temporary tent 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)
Neighborhood Center* (Where Neighborhood Center exists)
Permitted
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

Source: Compiled by the Consultants

*Permission of Neighborhood Center Facilities in absence of formal neighborhood should be subject to Landuse Permit Committee

Land Use 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 C.2: Land Use Conditionally Permitted

Conditionally Permitted Urban Residential Uses
--

Conditionally Permitted Urban Residential Uses
Addiction Treatment Center
Amusement and Recreation (Indoors)
Funeral Services
Art Gallery, Art Studio \ Workshop
Automobile Driving Academy
Beauty and Body Service
Billiard Parlor \ Pool Hall
Book or Stationery Store or Newsstand
Building Maintenance \ Cleaning Services, No Outside Storage
Bus Passenger Shelter
Graveyard \ Cemetery
Coffee Shop \ Tea Stall
Correctional Institution
Courier Service
Crematorium
Plantation (Except Narcotic Plant)
Furniture & Variety Stores
Emergency Shelter
Energy Installation
Garages
Garden Center or Retail Nursery
Fire Brigade Station
Police Station
Temporary Rescue Shed
Guest House
Slaughter House
Static Transformer Stations
Tourist Home or Resort
Market (Bazar)
Optical Goods Sales
Outdoor Café
Outdoor Fruit and Vegetable Markets
Community Hall
Neighborhood Co-Operative Office
Overhead Water Storage Tanks
Row House
Paints and Varnishes Store
Parking Lot
Patio Homes
Photofinishing Laboratory
Post Office
Postal Facilities
Sports and Recreation Club
Tennis Club
Flood Management Structure

Conditionally Permitted Urban Residential Uses
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 Industry Land use Permitted

General Industry land use category approve only Green and Orange-A category industry mentioned in *The Environmental Conservation Rule, 1997*. The following uses in the tables are proposed to be applicable for this zone only.

Table C.3: Land Use Permitted

Permitted General Industrial Activities
Confectionery Shop
Bank & Financial Institution
Bicycle Assembly, Parts and Accessories
Blacksmith
Bus Passenger Shelter
Communication Tower Within Permitted Height
Freight Transport Facility
Police Box \ Barrack
Fire \ Rescue Station
Grocery Store
Household Appliance and Furniture Repair Service
Machine Sheds
Meat and Poultry (Packing & Processing)
Mosque, Place Of Worship
Newspaper Stand
Photocopying and Duplicating Services
Pipelines and Utility Lines
Printing, Publishing and Distributing
Public Transport Facility
Restaurant
Retail Shops \ Facilities
Salvage Processing
Salvage Yards
Satellite Dish Antenna
Sawmill, Chipping and Pallet Mill
Shelter (Passers By)
Television, Radio or Electronics Repair (No

Permitted General Industrial Activities
Outside Storage)
Transmission Lines
Truck Stop & Washing or Freight Terminal
Utility Lines
Wood Products
Woodlot
ATM Booth
Water Pump \ Reservoir
Effluent Treatment Plant
Social Forestry

Source: Compiled by the Consultants

Land Use 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 C.4: Land Use Conditionally Permitted

Conditionally Permitted General Industrial Land Uses
Amusement and Recreation (Indoors)
Appliance Store
Plantation (Except Narcotic Plant)
Cyber Café
Daycare Center (Commercial or Nonprofit)
Doctor \ Dentist Chamber
Electrical and Electronic Equipment and Instruments Sales
Employee Housing
Energy Installation
Fast Food Establishment \ Food Kiosk
Garages
Grain & Feed Mills
Incineration Facility
Super Store
Lithographic or Print Shop
Motor Vehicle Fuelling Station \ Gas Station
Motorcycle Sales Outlet
Outdoor Fruit and Vegetable Markets
Outside Bulk Storage
Overhead Water Storage Tanks
Painting and Wallpaper Sales
Paints and Varnishes
Parking Lot
Parking Lot (Commercial)
Private Garages
Retail Shops Ancillary To Studio \ Workshop

Conditionally Permitted General Industrial Land Uses
Jute Mill

Source: Compiled by the Consultants

Restricted Uses

All other uses; except the permitted and conditionally permitted uses.

c. Commercial Zone

Land Use Permitted

Commercial zone is mainly intended for supporting the office and business works. There are several functions that are permitted in this zone.

Table C.5: Land Use Permitted

Permitted Commercial Activity
Accounting, Auditing or Bookkeeping Services
Billboards, Advertisements & Advertising Structure
Agri-Business
Agricultural Sales and Services
Ambulance Service
Antique Shop
Appliance Store
Auction Market
Auditorium, Coliseum, Meeting Halls, and Conference Facilities, Convention
Auto Leasing or Rental Office
Auto Paint Shop
Auto Parts and Accessory Sales (Indoors)
Auto Repair Shop (With Garage)
Automobile Wash
Automobile Sales
Confectionery Shop
Bakery or Confectionery Retail
Bank & Financial Institution
Bar (Licensed)
Barber Shop
Beauty and Body Service
Bicycle Shop
Billiard Parlor \ Pool Hall
Book or Stationery Store or Newsstand
Building Material Sales or Storage (Indoors)
Bulk Mail and Packaging
Bus Passenger Shelter
Cinema Hall
Communication Service Facilities

Permitted Commercial Activity
Communication Tower Within Permitted Height
Computer Maintenance and Repair
Computer Sales & Services
Conference Center
Construction Company
Courier Service
Cyber Café
Daycare Center (Commercial or Nonprofit)
Department Stores, Furniture & Variety Stores
Doctor \ Dentist Chamber
Drug Store or Pharmacy
Electrical and Electronic Equipment and Instruments Sales
Fast Food Establishment \ Food Kiosk
Freight Handling, Storage & Distribution
Freight Transport Facility
Freight Yard
General Store
Grocery Store
Guest House
Hotel or Motel
Inter-City Bus Terminal
Jewelry and Silverware Sales
Junk \ Salvage Yard
Super Store
Market (Bazar)
Mosque, Place Of Worship
Motorcycle Sales Outlet
Multi-Storey Car Park
Newspaper Stand
Outdoor Fruit and Vegetable Markets
Outdoor Recreation, Commercial
Parking Lot (Commercial)
Pet Store
Photocopying and Duplicating Services
Photofinishing Laboratory & Studio
Pipelines and Utility Lines
Post Office
Preserved Fruits and Vegetables Facility \ Cold Storage
Printing, Publishing and Distributing
Project Identification Signs
Property Management Signs
Public Transport Facility
Refrigerator or Large Appliance Repair

Permitted Commercial Activity
Resort
Restaurant
Retail Shops \ Facilities
Salvage Processing
Salvage Yards
Satellite Dish Antenna
Sawmill, Chipping and Pallet Mill
Shelter (Passers By)
Shopping Mall \ Plaza
Slaughter House
Software Development
Sporting Goods and Toys Sales
Taxi Stand
Telephone Exchanges
Television, Radio or Electronics Repair (No Outside Storage)
Theater (Indoor)
Transmission Lines
Utility Lines
Vehicle Sales & Service, Leasing or Rental
Veterinarian Clinics, Animal Hospitals, Kennels and Boarding Facilities
Warehousing
Wood Products
Woodlot
ATM Booth
Water Pump \ Reservoir
Agro-Based Industry (Rice Mill, Saw Mill, Cold Storage)
Social Forestry

Source: Compiled by the Consultants

Land Use Conditionally Permitted

Some functions are permitted with some condition in this zone.

Table C.6: Land Use Conditionally Permitted

Conditionally permitted commercial activities
Amusement and Recreation (Indoors)
Bicycle Assembly, Parts and Accessories
Broadcast Studio \ Recording Studio (No Audience)
Coffee Shop \ Tea Stall
Concert Hall, Stage Shows
Construction, Survey, Soil Testing Firms
Trade Shows
Craft Workshop

Conditionally permitted commercial activities
Plantation (Except Narcotic Plant)
Energy Installation
Firm Equipment Sales & Service
Agricultural Chemicals, Pesticides or Fertilizers Shop
Fitness Centre
Flowers, Nursery Stock and Florist Supplies
Forest Products Sales
Fuel and Ice Dealers
Garages
Garden Center or Retail Nursery
Police Box \ Barrack
Fire \ Rescue Station
Grain & Feed Mills
Household Appliance and Furniture Repair Service
Incineration Facility
Indoor Amusement Centers, Game Arcades
Indoor Theatre
Lithographic or Print Shop
Motor Vehicle Fuelling Station \ Gas Station
Musical Instrument Sales or Repair
Optical Goods Sales
Painting and Wallpaper Sales
Paints and Varnishes
Parking Lot
Patio Homes
Postal Facilities
Poultry
Private Garages
Professional Office
Retail Shops Ancillary To Studio \ Workshop
Stone \ Cut Stone Products Sales

Source: Compiled by the Consultants

Restricted Uses

All other uses except, the permitted and conditionally permitted uses.

d. Rural Settlement

Land Use Permitted

The following uses in the tables are proposed to be applicable for this zone only.

Table C.7: Land Use Permitted

Permitted Rural Settlement
Agricultural Dwellings

Permitted Rural Settlement
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

Land Use 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: Land Use Conditionally Permitted

Conditionally permitted uses under Rural Settlement
Artisan's Shop (Potter, Blacksmith, and

Conditionally permitted uses under Rural Settlement
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

Land Use Permitted

The following uses in the tables are proposed to be applicable for this zone only.

Table C.9: Land Use Permitted

Permitted uses in Mixed Use Zone
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

Permitted uses in Mixed Use Zone
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

Permitted uses in Mixed Use Zone
Warehousing
Woodlot
Children's Park
ATM Booth
Water Pump \ Reservoir
Social Forestry
Dormitory
Rickshaw \ Auto Rickshaw Stand

Source: Compiled by the Consultants

Land Use Conditionally Permitted

The following uses may be permitted or disallowed in this zone after review and approval by the authority/committee.

Table C.10: Land Use Conditionally Permitted

Conditionally permitted uses in Mixed Use Zone
Agricultural Chemicals, Pesticides or Fertilizers Shop
Amusement and Recreation (Indoors)
Beauty and Body Service
Broadcast Studio \ Recording Studio (No Audience)
Building Maintenance \ Cleaning Services, No Outside Storage
Building Material Sales or Storage (Indoors)
Graveyard \ Cemetery
Coffee Shop \ Tea Stall
Computer Maintenance and Repair
Computer Sales & Services
Concert Hall, Stage Shows
Conference Center
Construction Company
Construction, Survey, Soil Testing Firms
Cottage
Counseling Services
Craft Workshop
Crematorium
Plantation (Except Narcotic Plant)
Cultural Exhibits and Libraries
Department Stores, Furniture & Variety Stores
Drug Store or Pharmacy
Energy Installation
Fitness Centre
Flowers, Nursery Stock and Florist Supplies
Freight Handling, Storage & Distribution
Freight Transport Facility
Gaming Clubs
Garages
Garden Center or Retail Nursery

Conditionally permitted uses in Mixed Use Zone
Commercial Office
Project Office
Government Office
Hotel or Motel
Household Appliance and Furniture Repair Service
Indoor Amusement Centers, Game Arcades
Indoor Theatre
Lithographic or Print Shop
Market (Bazar)
Health Office, Dental Laboratory, Clinic or Lab
Musical Instrument Sales or Repair
Optical Goods Sales
Outdoor Café
Outdoor Fruit and Vegetable Markets
Painting and Wallpaper Sales
Paints and Varnishes
Patio Homes
Photofinishing Laboratory & Studio
Poultry
Printing, Publishing and Distributing
Psychiatric Hospital
Retail Shops Ancillary To Studio \ Workshop
Radio \ Television or T&T Station With Transmitter Tower
Refrigerator or Large Appliance Repair
Restaurant
Retail Shops \ Facilities
Sporting Goods and Toys Sales
Sports and Recreation Club, Firing Range: Indoor
Telephone Exchanges
Television, Radio or Electronics Repair (No Outside Storage)

Source: Compiled by the Consultants

Restricted Uses

All uses except permitted and conditionally permitted uses are restricted in this zone.

f. Education and Research Area

Land Use Permitted

The following uses in the tables are proposed to be applicable for this zone only.

Table C.11: Land Use Permitted

Permitted uses under Education & Research Zone
Addiction Treatment Center
Billboards, Advertisements & Advertising

Permitted uses under Education & Research Zone
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

Land Use Conditionally Permitted

The following uses may be permitted or denied in this zone after review and approval by the authority/committee.

Table C.12: Land Use Conditionally Permitted

Conditionally permitted uses under Education and Research Zone
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

Restricted Uses

All uses except permitted and conditionally permitted uses are restricted in this zone.

g. Government Office

Land Use Permitted

The following uses in the tables are proposed to be applicable for this zone only.

Table C.13: Land Use Permitted

Permitted uses under Government Office Zone
Accounting, Auditing or Bookkeeping Services
Billboards, Advertisements & Advertising Structure
Confectionery Shop

Permitted uses under Government Office Zone
Bus Passenger Shelter
Civic Administration
Communication Service Facilities
Communication Tower Within Permitted Height
Construction, Survey, Soil Testing Firms
Cultural Exhibits and Libraries
Cyber Café
Emergency Shelter
Freight Transport Facility
General Store
Project Office
Government Office
Grocery Store
Guest House
Multi-Storey Car Park
Newspaper Stand
Outdoor Religious Events
Photocopying and Duplicating Services
Post Office
Professional Office
Public Transport Facility
Satellite Dish Antenna
Scientific Research Establishment
Shelter (Passers By)
Training Centre
Transmission Lines
Utility Lines
Woodlot
ATM Booth
Water Pump \ Reservoir
Social Forestry

Source: Compiled by the Consultants

Land Use Conditionally Permitted

The following uses may be permitted or denied in this zone after review and approval by the authority/committee.

Table C.14: Land Use Conditionally Permitted

Conditionally permitted uses under Government office
Amusement and Recreation (Indoors)
Auditorium, Coliseum, Meeting Halls, and Conference Facilities, Convention
Bank & Financial Institution
Boarding and Rooming House
Book or Stationery Store or Newsstand

Conditionally permitted uses under Government office
Coffee Shop \ Tea Stall
Conference Center
Courier Service
Plantation (Except Narcotic Plant)
Daycare Center (Commercial or Nonprofit)
Detention Facilities
Doctor \ Dentist Chamber
Energy Installation
Fast Food Establishment \ Food Kiosk
Flowers, Nursery Stock and Florist Supplies
Freight Handling, Storage & Distribution
Freight Yard
Gallery \ Museum
Garages
Police Box \ Barrack
Fire \ Rescue Station
Lithographic or Print Shop
Mosque, Place Of Worship
Outdoor Café
Parking Lot
Parking Lot (Commercial)
Pipelines and Utility Lines
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

Land Use Permitted

The following uses in the tables are proposed to be applicable for this zone only.

Table C.15: Land Use Permitted

Permitted uses under Agricultural Zone
Food Grain Cultivation
Vegetable Cultivation
Cash Crop Cultivation
Horticulture
Arboriculture
Dairy Farming
Deep Tube Well
Shallow Tube Well
Irrigation Facilities (Irrigation Canal, Culvert, Flood Wall etc)
Temporary Structure (Agricultural)
Animal Shelter
Duckery

Permitted uses under Agricultural Zone
Aquatic Recreation Facility (Without Structure)
Tree Plantation (Except Narcotic Plant)
Aquaculture
Static Transformer Stations
Transmission Lines
Utility Lines
Woodlot
Social Forestry

Source: Compiled by the Consultants

Land Use Conditionally Permitted

Table C.17: Land Use Conditionally Permitted

Conditionally permitted uses under Agricultural Zone
Graveyard \ Cemetery
Communication Tower Within Permitted Height
Crematorium
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.

j. Open Space

Land Use Permitted

The following uses in the tables are proposed to be applicable for this zone only.

Table C.16: Land Use Permitted

Permitted uses under Open Space
Botanical Garden & Arboretum
Bus Passenger Shelter
Caravan Park \ Camping Ground
Carnivals and Fairs
Circus
Plantation (Except Narcotic Plant)
Landscape and Horticultural Services
Open Theater
Park and Recreation Facilities (General)
Pipelines and Utility Lines
Playing Field
Special Function Tent
Tennis Club
Transmission Lines

Permitted uses under Open Space
Urban-Nature Reserve
Utility Lines
Woodlot
Zoo
Roadside Parking
Social Forestry
Memorial Structure

Source: Compiled by the Consultants

Landuse Conditionally Permitted

Table C.18: Land Use Conditionally Permitted

Conditionally permitted uses under open space
Communication Tower Within Permitted Height
Trade Shows
Fitness Centre
Flowers, Nursery Stock and Florist Supplies
Golf Course
Motorized Recreation
Outdoor Recreation Facilities
Outdoor Recreation, Commercial
Outdoor Sports and Recreation
Park Maintenance Facility
Retreat Center
Sports and Recreation Club, Firing Range: Indoor

Source: Compiled by the Consultants

Restricted Uses

All uses except permitted and conditionally permitted uses are restricted.

k. Water Body

Retaining water is the main purpose of this type of Landuse.

Land Use Permitted

The following uses in the tables are proposed to be applicable for this zone only.

Table C.19: Land Use Permitted

Permitted uses under Water Body
Aquatic Recreation Facility (Without Structure)
Fishing Club
Utility Lines
Water Parks
Memorial Structure

Source: Compiled by the Consultants

Land Use Conditionally Permitted

The following uses may be permitted or denied in this zone after review and approval by the authority/committee.

Table C.20: Land Use Conditionally Permitted

Conditionally permitted uses under water body
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.

আমতলী পৌরসভার চূড়ান্ত মহাপরিকল্পনার উপর মতবিনিময় সভার কার্যবিবরণী

তারিখ: ২৭/০৩/২০২৩

স্থান: আমতলী পৌরসভা

সময়: সকাল ১১:০০ ঘটিকায়

স্থানীয় সরকার প্রাথমিক অধিদপ্তরের আওতাধীন উপজেলা শহর অঞ্চলটোমো উন্নয়ন প্রকল্পাবলি আমতলী পৌরসভার চূড়ান্ত মহাপরিকল্পনার উপর এক মতবিনিময় সভা অনুষ্ঠিত হয়। আমতলী পৌরসভা ও পরামর্শক প্রতিষ্ঠানের ১৭/৭ উপস্থাপে এই মতবিনিময় সভার আয়োজন করা হয়। আমতলী পৌরসভার মেয়র জনাব মোঃ মতিয়াব রহমান এর সভাপতিত্বে মতবিনিময় সভা অনুষ্ঠিত হয়। উক্ত মতবিনিময় সভায় পৌরসভার সার্বজনীনকর্তৃপক্ষ সহ স্থানীয় পদাধিকারী ব্যক্তি বর্গ, বিভিন্ন সরকারি-বেসরকারি সংস্থার কর্মকর্তাবৃন্দ, স্থানীয় সরকার প্রাথমিক অধিদপ্তরের প্রতিনিধি, এবং মহাপরিকল্পনা প্রণয়ন প্রকল্পে নিযুক্ত পরামর্শকবৃন্দ উপস্থিত হয়ে আলোচনায় অংশগ্রহণ করেন।

সভার শুরুতে মেয়র মহোদয়ের উপস্থিতিতে সকলকে শুভেচ্ছা জানিয়ে আনুষ্ঠানিকভাবে সভার কার্যক্রম শুরু করেন। সভাপতি পৌরসভার মহাপরিকল্পনা প্রণয়ন সংক্রান্ত কাজের উপর স্বাগত বক্তব্যে উল্লেখ করেন যে, পরিকল্পিতভাবে শহর গড়ে উঠলে একমুখে যেমন বাসযোগ্য উন্নত শহর গড়ে তোলা যাবে অন্যদিকে শিল্প তথা সেসব অর্থনীতি সমৃদ্ধ করা সম্ভব হবে।

উপজেলা শহর অঞ্চলটোমো উন্নয়ন প্রকল্পের পরিকল্পনাবলি পুনর্নির্বাচিত পৌরসভার প্রকল্পের দুই পর্যায়সম্পূর্ণ ও বহুমুখী বসতিগত উন্নয়নের জন্য সকলের সহযোগিতা কামনা করেন এবং বলেন যে সকলের মূল্যবান মতামত পরিকল্পনাকে আরো গঠনমূলক ও সমরোপযোগী করবে।

পরামর্শক প্রতিষ্ঠানের পক্ষ থেকে ডাঃ নূরুল ইসলাম মাসুদ, উপস্থিতি সকলকে স্বাগত জানিয়ে খসড়া মহাপরিকল্পনার উপর Power Point Presentation এর মাধ্যমে ডার বক্তব্য তুলে ধরেন। তিনি কার্যক্রমসমূহ, উন্নয়নের স্কেলসমূহ ব্যাপে ব্যাপে বর্ণনা করেন। প্রথমে মাঠ পর্যায়ে বিভিন্ন প্রকার জরিপ কার্যক্রম ও জরিপ খোঁজ সংগৃহীত তথ্য সম্পর্কে আলোচনাকৃত করেন। এরপর মহাপরিকল্পনার কোথায় কিভাবে প্রস্তাবনা সমূহ ওয়ার্ড ভিত্তিক সেওয়া হয়েছে সেসব বিবরণ আলোচনা করেন। তিনি আরও উল্লেখ করেন যে, সকলের মতামতের ভিত্তিতে যে প্রস্তাবসমূহ সেওয়া হয়েছিল তা নিম্নরূপ:

Proposed Facility	Ward No.	Mouza Name	Plot No.	Area (acre)
Wholesale Market	2	Chaura	832, 833, 732, 733, 734	3.12
Super Market	2	Chaura	832, 834, 835, 836, 837, 838, 884, 885, 886, 887	2.16
Retail Market	2	Chaura	848, 851	0.20
Retail Shop	2	Chaura	807, 809, 810, 813	4.69
	3	Chaura	897, 898, 899, 898, 900, 908, 909	
Neighborhood Market	1	Ghatkhali	2037, 2040, 2042, 2045, 2048	1.41
Cattle Hat	8	Amrai	588, 589, 570	0.58
Small Scale Industry	1	Ghatkhali	2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2121	25.06
		Chaura	279, 280, 281, 282, 285, 286, 288, 289	
Cottage	4	Ghatkhali	1099, 1594, 1819, 1916, 1928, 1929, 1930, 1931,	27.14

Or Agro Based Industry			1932, 1933, 1935, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1971, 1973	
		Chaora	94, 95, 96, 97, 98, 99, 100, 133, 134, 135, 136, 137, 138, 140, 143, 144, 145, 146, 147	
Paurashava Office	2	Amtali Chaora	579, 583, 584, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 613, 883, 1081	4.58
College	1	Ghatkhali	2045, 2046, 2049, 2050, 2053	2.86
	8	Amtali	564, 565, 566, 568, 630	
High School	3	Chaora	798, 799, 800, 806, 807, 884, 885, 886	3.90
	1	Ghatkhali	2037, 2040, 2042, 888, 891	
Primary School	1	Chaora	207, 209, 210, 211, 214, 215, 216, 217	4.88
	3	Chaora	786, 787, 788, 789, 790, 791, 792, 1004, 1005, 1007, 1008, 1009	
Primary School & High School	8	Amtali	564, 568	1.29
Vocational Training Center	3	Chaora	792, 793, 794, 795, 796, 797, 798, 884, 885, 1001, 1002, 1003, 1004	4.22
Nursery	3	Chaora	932, 933, 934, 935, 936	0.77
	8	Amtali	559, 564	
Park	2	Amtali, Chaora	461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 883, 953, 954, 955, 956, 957, 958, 959, 401, , 513, 586, 618, 649, 650, 651, 652, 655, 658, 660, 661, 664, 685, 687, 688, 672, 673, 674, 675, 852, 853, 854, 1085, 1086	24.96
	3	Amtali, Chaora	883, 884, 883, 885, 886, 887, 936, 967, 968	
	5	Amtali	282, 288, 289, 292, 293, 294, 559	
	6	Amtali	454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 465, 466, 468, 469, 472, 473, 476, 477, 480, 481, 483, 486, 487, 489, 490, 491, 883, 953, 954, 955, 961, 962, 963, 964, 965, 966, 967, 968, 971, 972, 973, 974, 980, 981, 986, 967, 991, 992, 993, 995, 996, 997, 998, 2812, 2819	
	7	Amtali	494, 495, 496, 497, 501, 503, 506, 507, 508, 511, 513, 810, 820, 821, 822, 825, 827, 874, 875, 876, 883, 1961, 1962, 2250, 2251, 2252, 2793	
	8	Amtali	630, 728, 730, 731	
Clinic/ Health Centre	1	Ghatkhali	2019, 2026, 2027, 2028, 2029, 2032, 2033, 2036, 2037	5.04
	2	Chaora	463, 468, 469, 470, 471, 472, 474, 475, 513	
	3		888, 910, 917	
	7	Amtali	1960, 1962	
Police Box	2	Chaora	755	0.09
Central Park	5, 6	Amtali	308, 309, 533, 534, 535, 544, 554, 555, 556, 557	4.02
	1	Chaora	209, 210, 211, 215, 216, 217, 218, 222	3.81
Neighborhood Park	2	Chaora	764, 767, 768, 844, 844, 849	
	3	Chaora	891, 898, 899	
	7	Amtali	1922, 1961, 1962, 1971	1.87
Play ground				
Stadium	2, 4	Chaora, Ghatkhali	708, 152, 153, 154, 155, 156, 157, 207, 208, 209, 210, 1975, 1977, 1978, 1979, 1980, 1987, 1988, 1989, 1990, 2480, 2491	7.74
Cinema	3	Chaora	942, 965, 967	0.21
Fuel station	3	Chaora	868, 870, 880, 889	0.48
Bus Terminal	1	Ghatkhali	2062, 2063, 2065, 2066, 2067	2.19
	2	Chaora	807, 808, 809	
	3	Chaora	807, 808, 884, 885, 886, 887	
				0.97
Waste Transfer Station	1	Chaora	289	
	2	Chaora	724, 728, 729, 754, 840	
	3	Chaora	1005, 1007	
Water Treatment Plant	2	Chaora	479, 480, 481, 482, 483, 484, 485, 486, 487	1.58

Waste Disposal Site	4	Ghatkhali	1933, 1934, 1935, 1936, 1937, 1938, 939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963	10.01
Mosque	2	Chaora	755,812	0.16
	3	Chaora	798	
Eidgah	2,4	Chaora, Amtali	833,944,945,948, 949, 22222	2.04
Central Graveyard	4	Chaora	110,116	1.47
Community Center	2	Chaora	798	2.14
	4	Chaora	174,175,601	
	5	Amtali	291,292	

সভা শেষে মেয়র মহোদয় পরামর্শক প্রতিষ্ঠানের পরিকল্পনাবিদগণকে এবং স্থানীয় সরকার প্রকৌশল অধিদপ্তরকে পৌরসভার মহাপরিকল্পনা প্রনয়নের জন্য পুনরায় ধন্যবাদ জ্ঞাপন করেন এবং সম্ভাব্য সকল দিকনির্দেশনামূলক সন্ধিবেশিত করে যথাশীঘ্রসম্ভব চূড়ান্ত মহাপরিকল্পনা প্রণয়ন করার জন্য অনুরোধ করেন এবং সকলকে ধন্যবাদ জানিয়ে পৌরসভার স্বপ্ন বাস্তবায়নের আশা ব্যক্ত করে সভার কার্যক্রম সমাপ্তি ঘোষণা করেন।


 ২৬.০৪.১৬
 মেয়র মতিয়ার রহমান
 মেয়র
 আমতলী পৌরসভা, বরগুনা।

Upazila Towns Infrastructure Development Project
Package – 11 (Barisal Region)

Attendance of Participants: Amtali Pourashava

[illegible]

Road Inventory Table of Amtali Paurashava

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_3	Primary Road	60.00	334.098	Widening	Ouside	First Phase
Pr_4	Primary Road	100.00	536.813	Widening	Ouside	First Phase
Pr_5	Primary Road	60.00	215.483	Widening	Ouside	First Phase
Pr_741	Primary Road	100.00	890.860	New	Ward 02	First Phase
Pr_758	Primary Road	80.00	885.929	Widening	Ward 02	First Phase
Pr_763	Primary Road	60.00	284.284	Widening	Ward 02	First Phase
Pr_746	Primary Road	60.00	569.194	Widening	Ward 05	First Phase
Pr_757	Primary Road	80.00	206.773	Widening	Ward 06	First Phase
Pr_739	Primary Road	100.00	1128.374	New	Ward 07	First Phase
Pr_750	Primary Road	60.00	2511.248	Widening	Ward 09	First Phase
Pr_752	Primary Road	60.00	2303.996	Widening	Ward 09	First Phase
Pr_743	Primary Road	60.00	521.265	New	Ward 07	First Phase
Pr_748	Primary Road	100.00	717.964	Widening	Ward 07	First Phase
Pr_751	Primary Road	60.00	210.890	Widening	Ward 07	First Phase
Pr_755	Primary Road	80.00	99.297	Widening	Ward 07	First Phase
Pr_753	Primary Road	60.00	1015.511	Widening	Ward 08	First Phase
Pr_754	Primary Road	60.00	286.744	Widening	Ward 05	First Phase
Pr_760	Primary Road	80.00	740.087	Widening	Ward 05	First Phase
Pr_761	Primary Road	80.00	184.332	Widening	Ward 06	First Phase
Pr_762	Primary Road	60.00	82.812	Widening	Ward 06	First Phase
Pr_738	Primary Road	60.00	75.715	New	Ward 04	First Phase
Pr_745	Primary Road	60.00	172.873	Widening	Ward 04	First Phase
Pr_747	Primary Road	60.00	454.271	Widening	Ward 04	First Phase
Pr_764	Primary Road	60.00	94.873	Widening	Ward 04	First Phase
Pr_742	Primary Road	100.00	299.283	New	Ward 01	First Phase
Pr_744	Primary Road	60.00	1113.378	Widening	Ward 01	First Phase
Pr_749	Primary Road	100.00	200.279	Widening	Ward 01	First Phase
Pr_759	Primary Road	80.00	639.706	Widening	Ward 01	First Phase
Pr_740	Primary Road	100.00	830.197	New	Ward 03	First Phase
Pr_756	Primary Road	80.00	339.704	Widening	Ward 03	First Phase
Pr_10	Secondary Road	30.00	0.676	New	Ouside	Second Phase
Pr_1	Secondary Road	30.00	104.460	New	Ouside	Second Phase
Pr_2	Secondary Road	40.00	0.485	Widening	Ouside	Second Phase
Pr_2	Secondary Road	30.00	4.231	Widening	Ouside	Second Phase
Pr_2	Secondary Road	30.00	526.636	Widening	Ouside	Second Phase
Pr_2	Secondary Road	40.00	15.503	Widening	Ouside	Second Phase
Pr_11	Local Road	20.00	131.699	New	Ward 02	Second Phase
Pr_176	Local Road	20.00	46.667	New	Ward 02	Second Phase
Pr_182	Local Road	20.00	88.728	New	Ward 02	Second Phase

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_185	Local Road	20.00	156.130	New	Ward 02	Second Phase
Pr_186	Local Road	20.00	44.970	New	Ward 02	Second Phase
Pr_187	Local Road	20.00	123.148	New	Ward 02	Second Phase
Pr_188	Local Road	20.00	37.367	New	Ward 02	Second Phase
Pr_190	Local Road	20.00	108.909	New	Ward 02	Second Phase
Pr_203	Local Road	20.00	42.065	New	Ward 02	Second Phase
Pr_205	Local Road	20.00	61.182	New	Ward 02	Second Phase
Pr_669	Secondary Road	40.00	789.099	New	Ward 09	Second Phase
Pr_671	Secondary Road	40.00	1042.142	New	Ward 09	Second Phase
Pr_674	Secondary Road	30.00	243.268	New	Ward 09	Second Phase
Pr_732	Secondary Road	40.00	91.251	Widening	Ward 09	Second Phase
Pr_736	Secondary Road	50.00	670.813	Widening	Ward 09	Second Phase
Pr_29	Local Road	20.00	119.563	New	Ward 07	Second Phase
Pr_33	Local Road	20.00	93.368	New	Ward 07	Second Phase
Pr_35	Local Road	20.00	41.397	New	Ward 07	Second Phase
Pr_36	Local Road	20.00	303.743	New	Ward 07	Second Phase
Pr_39	Local Road	20.00	49.221	New	Ward 07	Second Phase
Pr_49	Local Road	20.00	135.651	New	Ward 07	Second Phase
Pr_53	Local Road	20.00	20.925	New	Ward 07	Second Phase
Pr_54	Local Road	20.00	47.783	New	Ward 07	Second Phase
Pr_55	Local Road	20.00	60.843	New	Ward 07	Second Phase
Pr_59	Local Road	20.00	80.030	New	Ward 07	Second Phase
Pr_60	Local Road	20.00	27.548	New	Ward 07	Second Phase
Pr_61	Local Road	20.00	11.252	New	Ward 07	Second Phase
Pr_67	Local Road	20.00	80.902	New	Ward 07	Second Phase
Pr_73	Local Road	20.00	285.345	New	Ward 07	Second Phase
Pr_342	Local Road	20.00	36.971	Widening	Ward 07	Second Phase
Pr_343	Local Road	20.00	80.358	Widening	Ward 07	Second Phase
Pr_344	Local Road	20.00	125.478	Widening	Ward 07	Second Phase
Pr_347	Local Road	20.00	163.191	Widening	Ward 07	Second Phase
Pr_376	Local Road	20.00	115.270	Widening	Ward 07	Second Phase
Pr_380	Local Road	20.00	116.221	Widening	Ward 07	Second Phase
Pr_410	Local Road	20.00	124.265	Widening	Ward 07	Second Phase
Pr_411	Local Road	20.00	42.709	Widening	Ward 07	Second Phase
Pr_412	Local Road	20.00	77.924	Widening	Ward 07	Second Phase
Pr_413	Local Road	20.00	49.328	Widening	Ward 07	Second Phase
Pr_414	Local Road	20.00	100.355	Widening	Ward 07	Second Phase
Pr_459	Local Road	20.00	105.993	Widening	Ward 07	Second Phase
Pr_460	Local Road	20.00	54.118	Widening	Ward 07	Second Phase
Pr_462	Local Road	20.00	191.563	Widening	Ward 07	Second Phase

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_614	Local Road	20.00	85.029	Widening	Ward 07	Second Phase
Pr_615	Local Road	20.00	50.682	Widening	Ward 07	Second Phase
Pr_616	Local Road	20.00	37.903	Widening	Ward 07	Second Phase
Pr_653	Secondary Road	30.00	732.984	New	Ward 07	Second Phase
Pr_662	Secondary Road	40.00	297.661	New	Ward 07	Second Phase
Pr_670	Secondary Road	40.00	276.081	New	Ward 07	Second Phase
Pr_685	Secondary Road	40.00	76.764	New	Ward 07	Second Phase
Pr_686	Secondary Road	40.00	655.645	New	Ward 07	Second Phase
Pr_702	Secondary Road	30.00	0.417	Widening	Ward 07	Second Phase
Pr_706	Secondary Road	40.00	1420.396	Widening	Ward 07	Second Phase
Pr_714	Secondary Road	30.00	267.025	Widening	Ward 07	Second Phase
Pr_726	Secondary Road	40.00	71.591	Widening	Ward 07	Second Phase
Pr_728	Secondary Road	40.00	502.602	Widening	Ward 07	Second Phase
Pr_734	Secondary Road	40.00	813.312	Widening	Ward 07	Second Phase
Pr_661	Secondary Road	40.00	436.062	New	Ward 08	Second Phase
Pr_672	Secondary Road	40.00	813.610	New	Ward 08	Second Phase
Pr_675	Secondary Road	30.00	1043.280	New	Ward 08	Second Phase
Pr_724	Secondary Road	30.00	565.845	Widening	Ward 08	Second Phase
Pr_727	Secondary Road	40.00	401.904	Widening	Ward 08	Second Phase
Pr_733	Secondary Road	40.00	450.094	Widening	Ward 08	Second Phase
Pr_197	Local Road	20.00	7.802	New	Ward 05	Second Phase
Pr_198	Local Road	20.00	2.965	New	Ward 05	Second Phase
Pr_199	Local Road	20.00	42.837	New	Ward 05	Second Phase
Pr_201	Local Road	20.00	30.916	New	Ward 05	Second Phase
Pr_492	Local Road	20.00	63.351	Widening	Ward 05	Second Phase
Pr_555	Local Road	20.00	233.388	Widening	Ward 05	Second Phase
Pr_563	Local Road	20.00	107.264	Widening	Ward 05	Second Phase
Pr_12	Local Road	20.00	121.360	New	Ward 06	Second Phase
Pr_566	Local Road	20.00	45.256	Widening	Ward 05	Second Phase
Pr_663	Secondary Road	40.00	56.157	New	Ward 05	Second Phase
Pr_676	Secondary Road	30.00	584.559	New	Ward 05	Second Phase
Pr_158	Local Road	20.00	47.876	New	Ward 06	Second Phase
Pr_690	Secondary Road	30.00	528.778	Widening	Ward 05	Second Phase
Pr_165	Local Road	20.00	66.405	New	Ward 06	Second Phase
Pr_189	Local Road	20.00	65.477	New	Ward 06	Second Phase
Pr_191	Local Road	20.00	8.692	New	Ward 06	Second Phase
Pr_206	Local Road	20.00	80.346	New	Ward 02	Second Phase
Pr_207	Local Road	20.00	34.071	New	Ward 02	Second Phase
Pr_192	Local Road	20.00	74.301	New	Ward 06	Second Phase
Pr_208	Local Road	20.00	141.945	New	Ward 02	Second Phase

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_209	Local Road	20.00	85.276	New	Ward 02	Second Phase
Pr_210	Local Road	20.00	245.405	New	Ward 02	Second Phase
Pr_213	Local Road	20.00	77.934	New	Ward 02	Second Phase
Pr_214	Local Road	20.00	263.439	New	Ward 02	Second Phase
Pr_217	Local Road	20.00	56.527	New	Ward 02	Second Phase
Pr_367	Local Road	20.00	26.738	Widening	Ward 02	Second Phase
Pr_193	Local Road	20.00	60.578	New	Ward 06	Second Phase
Pr_195	Local Road	20.00	77.008	New	Ward 06	Second Phase
Pr_368	Local Road	20.00	30.772	Widening	Ward 02	Second Phase
Pr_395	Local Road	20.00	45.744	Widening	Ward 02	Second Phase
Pr_396	Local Road	20.00	77.784	Widening	Ward 02	Second Phase
Pr_445	Local Road	20.00	84.547	Widening	Ward 02	Second Phase
Pr_196	Local Road	20.00	96.182	New	Ward 06	Second Phase
Pr_517	Local Road	20.00	94.288	Widening	Ward 02	Second Phase
Pr_202	Local Road	20.00	2.591	New	Ward 06	Second Phase
Pr_211	Local Road	20.00	106.031	New	Ward 06	Second Phase
Pr_215	Local Road	20.00	115.227	New	Ward 06	Second Phase
Pr_223	Local Road	20.00	55.977	New	Ward 06	Second Phase
Pr_230	Local Road	20.00	22.897	New	Ward 06	Second Phase
Pr_329	Local Road	20.00	158.965	Widening	Ward 06	Second Phase
Pr_332	Local Road	20.00	211.535	Widening	Ward 06	Second Phase
Pr_518	Local Road	20.00	155.428	Widening	Ward 02	Second Phase
Pr_446	Local Road	20.00	91.946	Widening	Ward 06	Second Phase
Pr_519	Local Road	20.00	65.899	Widening	Ward 02	Second Phase
Pr_520	Local Road	20.00	48.325	Widening	Ward 02	Second Phase
Pr_521	Local Road	20.00	63.006	Widening	Ward 02	Second Phase
Pr_523	Local Road	20.00	267.591	Widening	Ward 02	Second Phase
Pr_524	Local Road	20.00	148.455	Widening	Ward 02	Second Phase
Pr_546	Local Road	20.00	63.506	Widening	Ward 02	Second Phase
Pr_447	Local Road	20.00	103.811	Widening	Ward 06	Second Phase
Pr_599	Local Road	20.00	80.508	Widening	Ward 02	Second Phase
Pr_652	Secondary Road	30.00	108.684	New	Ward 02	Second Phase
Pr_490	Local Road	20.00	56.377	Widening	Ward 06	Second Phase
Pr_655	Secondary Road	40.00	611.471	New	Ward 02	Second Phase
Pr_658	Secondary Road	40.00	184.275	New	Ward 02	Second Phase
Pr_200	Local Road	20.00	2.662	New	Ward 04	Second Phase
Pr_212	Local Road	20.00	62.834	New	Ward 04	Second Phase
Pr_216	Local Road	20.00	1.481	New	Ward 04	Second Phase
Pr_491	Local Road	20.00	180.420	Widening	Ward 06	Second Phase
Pr_218	Local Road	20.00	189.704	New	Ward 04	Second Phase

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_220	Local Road	20.00	31.061	New	Ward 04	Second Phase
Pr_660	Secondary Road	40.00	348.200	New	Ward 02	Second Phase
Pr_221	Local Road	20.00	74.622	New	Ward 04	Second Phase
Pr_222	Local Road	20.00	39.443	New	Ward 04	Second Phase
Pr_224	Local Road	20.00	65.057	New	Ward 04	Second Phase
Pr_493	Local Road	20.00	0.324	Widening	Ward 06	Second Phase
Pr_665	Secondary Road	40.00	356.105	New	Ward 02	Second Phase
Pr_225	Local Road	20.00	69.639	New	Ward 04	Second Phase
Pr_227	Local Road	20.00	53.152	New	Ward 04	Second Phase
Pr_666	Secondary Road	40.00	315.419	New	Ward 02	Second Phase
Pr_673	Secondary Road	30.00	420.232	New	Ward 02	Second Phase
Pr_678	Secondary Road	30.00	203.356	New	Ward 02	Second Phase
Pr_688	Secondary Road	40.00	393.289	New	Ward 02	Second Phase
Pr_695	Secondary Road	30.00	674.786	Widening	Ward 02	Second Phase
Pr_700	Secondary Road	30.00	99.122	Widening	Ward 02	Second Phase
Pr_228	Local Road	20.00	24.630	New	Ward 04	Second Phase
Pr_717	Secondary Road	40.00	47.184	Widening	Ward 02	Second Phase
Pr_718	Secondary Road	40.00	101.207	Widening	Ward 02	Second Phase
Pr_719	Secondary Road	40.00	129.807	Widening	Ward 02	Second Phase
Pr_729	Secondary Road	40.00	50.194	Widening	Ward 02	Second Phase
Pr_730	Secondary Road	40.00	703.391	Widening	Ward 02	Second Phase
Pr_731	Secondary Road	40.00	238.663	Widening	Ward 02	Second Phase
Pr_229	Local Road	20.00	36.063	New	Ward 04	Second Phase
Pr_654	Secondary Road	30.00	404.035	New	Ward 01	Second Phase
Pr_326	Local Road	20.00	193.729	Widening	Ward 04	Second Phase
Pr_679	Secondary Road	30.00	267.671	New	Ward 01	Second Phase
Pr_680	Secondary Road	30.00	108.362	New	Ward 01	Second Phase
Pr_681	Secondary Road	30.00	277.647	New	Ward 01	Second Phase
Pr_682	Secondary Road	30.00	159.275	New	Ward 01	Second Phase
Pr_683	Secondary Road	30.00	302.364	New	Ward 01	Second Phase
Pr_684	Secondary Road	30.00	1300.784	New	Ward 01	Second Phase
Pr_689	Secondary Road	30.00	406.203	Widening	Ward 01	Second Phase
Pr_697	Secondary Road	30.00	119.298	Widening	Ward 01	Second Phase
Pr_698	Secondary Road	30.00	95.721	Widening	Ward 01	Second Phase
Pr_699	Secondary Road	30.00	313.379	Widening	Ward 01	Second Phase
Pr_701	Secondary Road	30.00	408.136	Widening	Ward 01	Second Phase
Pr_708	Secondary Road	30.00	159.270	Widening	Ward 01	Second Phase
Pr_709	Secondary Road	30.00	153.058	Widening	Ward 01	Second Phase
Pr_710	Secondary Road	30.00	1244.910	Widening	Ward 01	Second Phase
Pr_711	Secondary Road	30.00	296.938	Widening	Ward 01	Second Phase

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_721	Secondary Road	40.00	292.516	Widening	Ward 01	Second Phase
Pr_722	Secondary Road	40.00	346.586	Widening	Ward 01	Second Phase
Pr_723	Secondary Road	40.00	875.751	Widening	Ward 01	Second Phase
Pr_735	Secondary Road	40.00	476.726	Widening	Ward 01	Second Phase
Pr_527	Local Road	20.00	34.743	Widening	Ward 04	Second Phase
Pr_529	Local Road	20.00	81.084	Widening	Ward 04	Second Phase
Pr_530	Local Road	20.00	32.695	Widening	Ward 04	Second Phase
Pr_497	Local Road	20.00	146.342	Widening	Ward 06	Second Phase
Pr_532	Local Road	20.00	118.284	Widening	Ward 04	Second Phase
Pr_499	Local Road	20.00	125.675	Widening	Ward 06	Second Phase
Pr_533	Local Road	20.00	102.825	Widening	Ward 04	Second Phase
Pr_503	Local Road	20.00	92.554	Widening	Ward 06	Second Phase
Pr_504	Local Road	20.00	92.260	Widening	Ward 06	Second Phase
Pr_505	Local Road	20.00	32.757	Widening	Ward 06	Second Phase
Pr_506	Local Road	20.00	35.095	Widening	Ward 06	Second Phase
Pr_507	Local Road	20.00	40.073	Widening	Ward 06	Second Phase
Pr_508	Local Road	20.00	47.497	Widening	Ward 06	Second Phase
Pr_510	Local Road	20.00	120.760	Widening	Ward 06	Second Phase
Pr_511	Local Road	20.00	48.645	Widening	Ward 06	Second Phase
Pr_512	Local Road	20.00	72.172	Widening	Ward 06	Second Phase
Pr_513	Local Road	20.00	51.017	Widening	Ward 06	Second Phase
Pr_514	Local Road	20.00	49.709	Widening	Ward 06	Second Phase
Pr_515	Local Road	20.00	38.145	Widening	Ward 06	Second Phase
Pr_516	Local Road	20.00	120.537	Widening	Ward 06	Second Phase
Pr_526	Local Road	20.00	178.031	Widening	Ward 06	Second Phase
Pr_534	Local Road	20.00	23.509	Widening	Ward 06	Second Phase
Pr_560	Local Road	20.00	278.007	Widening	Ward 06	Second Phase
Pr_565	Local Road	20.00	86.256	Widening	Ward 06	Second Phase
Pr_567	Local Road	20.00	2.262	Widening	Ward 06	Second Phase
Pr_571	Local Road	20.00	304.368	Widening	Ward 06	Second Phase
Pr_582	Local Road	20.00	38.464	Widening	Ward 06	Second Phase
Pr_594	Local Road	20.00	127.678	Widening	Ward 06	Second Phase
Pr_595	Local Road	20.00	99.831	Widening	Ward 06	Second Phase
Pr_596	Local Road	20.00	76.107	Widening	Ward 06	Second Phase
Pr_600	Local Road	20.00	35.411	Widening	Ward 06	Second Phase
Pr_601	Local Road	20.00	156.993	Widening	Ward 06	Second Phase
Pr_605	Local Road	20.00	103.531	Widening	Ward 06	Second Phase
Pr_613	Local Road	20.00	293.391	Widening	Ward 06	Second Phase
Pr_656	Secondary Road	30.00	7.657	New	Ward 06	Second Phase
Pr_668	Secondary Road	40.00	132.523	New	Ward 06	Second Phase

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_691	Secondary Road	30.00	0.464	Widening	Ward 06	Second Phase
Pr_547	Local Road	20.00	191.757	Widening	Ward 04	Second Phase
Pr_550	Local Road	20.00	93.489	Widening	Ward 04	Second Phase
Pr_552	Local Road	20.00	40.376	Widening	Ward 04	Second Phase
Pr_556	Local Road	20.00	39.472	Widening	Ward 04	Second Phase
Pr_558	Local Road	20.00	23.194	Widening	Ward 04	Second Phase
Pr_568	Local Road	20.00	191.691	Widening	Ward 04	Second Phase
Pr_692	Secondary Road	40.00	697.837	Widening	Ward 06	Second Phase
Pr_602	Local Road	20.00	0.728	Widening	Ward 04	Second Phase
Pr_604	Local Road	20.00	64.461	Widening	Ward 04	Second Phase
Pr_703	Secondary Road	30.00	988.267	Widening	Ward 06	Second Phase
Pr_657	Secondary Road	30.00	460.805	New	Ward 04	Second Phase
Pr_677	Secondary Road	30.00	574.923	New	Ward 04	Second Phase
Pr_693	Secondary Road	40.00	301.875	Widening	Ward 04	Second Phase
Pr_696	Secondary Road	30.00	46.280	Widening	Ward 04	Second Phase
Pr_704	Secondary Road	30.00	35.181	Widening	Ward 04	Second Phase
Pr_720	Secondary Road	40.00	168.386	Widening	Ward 04	Second Phase
Pr_707	Secondary Road	40.00	1.234	Widening	Ward 06	Second Phase
Pr_651	Secondary Road	30.00	180.927	New	Ward 03	Second Phase
Pr_659	Secondary Road	50.00	530.167	New	Ward 03	Second Phase
Pr_664	Secondary Road	40.00	61.907	New	Ward 03	Second Phase
Pr_667	Secondary Road	50.00	211.951	New	Ward 03	Second Phase
Pr_687	Secondary Road	40.00	37.408	New	Ward 03	Second Phase
Pr_694	Secondary Road	30.00	185.924	Widening	Ward 03	Second Phase
Pr_705	Secondary Road	40.00	542.528	Widening	Ward 03	Second Phase
Pr_712	Secondary Road	30.00	83.634	Widening	Ward 03	Second Phase
Pr_713	Secondary Road	30.00	94.236	Widening	Ward 03	Second Phase
Pr_715	Secondary Road	30.00	2.382	Widening	Ward 03	Second Phase
Pr_716	Secondary Road	30.00	256.673	Widening	Ward 03	Second Phase
Pr_725	Secondary Road	30.00	161.626	Widening	Ward 03	Second Phase
Pr_737	Secondary Road	50.00	147.655	Widening	Ward 03	Second Phase
Pr_4	Local Road	20.00	36.828	New	Ouside	Third Phase
Pr_8	Local Road	20.00	1106.640	New	Ouside	Third Phase
Pr_6	Local Road	25.00	47.872	New	Ward 03	Third Phase
Pr_10	Local Road	25.00	41.528	New	Ward 03	Third Phase
Pr_11	Local Road	20.00	115.243	New	Ward 03	Third Phase
Pr_11	Local Road	20.00	255.551	New	Ward 03	Third Phase
Pr_11	Local Road	20.00	165.010	New	Ward 03	Third Phase
Pr_17	Local Road	20.00	15.919	New	Ward 09	Third Phase
Pr_18	Local Road	20.00	51.616	New	Ward 09	Third Phase

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_19	Local Road	20.00	14.609	New	Ward 09	Third Phase
Pr_20	Local Road	20.00	6.827	New	Ward 09	Third Phase
Pr_21	Local Road	20.00	34.969	New	Ward 09	Third Phase
Pr_22	Local Road	20.00	21.251	New	Ward 09	Third Phase
Pr_23	Local Road	20.00	9.841	New	Ward 09	Third Phase
Pr_25	Local Road	20.00	103.337	New	Ward 09	Third Phase
Pr_26	Local Road	20.00	28.898	New	Ward 09	Third Phase
Pr_27	Local Road	20.00	27.617	New	Ward 09	Third Phase
Pr_28	Local Road	20.00	66.363	New	Ward 09	Third Phase
Pr_30	Local Road	20.00	67.802	New	Ward 09	Third Phase
Pr_31	Local Road	20.00	90.081	New	Ward 09	Third Phase
Pr_34	Local Road	20.00	41.823	New	Ward 09	Third Phase
Pr_37	Local Road	20.00	47.743	New	Ward 09	Third Phase
Pr_38	Local Road	20.00	133.414	New	Ward 09	Third Phase
Pr_40	Local Road	20.00	105.006	New	Ward 09	Third Phase
Pr_41	Local Road	20.00	70.358	New	Ward 09	Third Phase
Pr_42	Local Road	20.00	104.092	New	Ward 09	Third Phase
Pr_43	Local Road	20.00	85.796	New	Ward 09	Third Phase
Pr_44	Local Road	20.00	88.414	New	Ward 09	Third Phase
Pr_45	Local Road	20.00	206.562	New	Ward 09	Third Phase
Pr_12	Local Road	20.00	60.391	New	Ward 07	Third Phase
Pr_24	Local Road	20.00	8.746	New	Ward 07	Third Phase
Pr_32	Local Road	20.00	26.306	New	Ward 07	Third Phase
Pr_56	Local Road	20.00	38.579	New	Ward 07	Third Phase
Pr_58	Local Road	20.00	45.814	New	Ward 07	Third Phase
Pr_62	Local Road	20.00	20.657	New	Ward 07	Third Phase
Pr_63	Local Road	20.00	49.067	New	Ward 07	Third Phase
Pr_95	Local Road	20.00	80.592	New	Ward 08	Third Phase
Pr_96	Local Road	20.00	95.536	New	Ward 08	Third Phase
Pr_97	Local Road	20.00	251.491	New	Ward 08	Third Phase
Pr_64	Local Road	20.00	51.376	New	Ward 07	Third Phase
Pr_65	Local Road	20.00	49.826	New	Ward 07	Third Phase
Pr_100	Local Road	20.00	108.839	New	Ward 08	Third Phase
Pr_103	Local Road	20.00	95.488	New	Ward 08	Third Phase
Pr_104	Local Road	20.00	112.651	New	Ward 08	Third Phase
Pr_66	Local Road	20.00	33.233	New	Ward 07	Third Phase
Pr_105	Local Road	20.00	96.102	New	Ward 08	Third Phase
Pr_106	Local Road	20.00	27.976	New	Ward 08	Third Phase
Pr_68	Local Road	20.00	53.723	New	Ward 07	Third Phase
Pr_118	Local Road	20.00	196.025	New	Ward 03	Third Phase

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_107	Local Road	20.00	58.317	New	Ward 08	Third Phase
Pr_108	Local Road	20.00	40.099	New	Ward 08	Third Phase
Pr_111	Local Road	20.00	98.159	New	Ward 08	Third Phase
Pr_69	Local Road	20.00	66.048	New	Ward 07	Third Phase
Pr_70	Local Road	20.00	37.583	New	Ward 07	Third Phase
Pr_112	Local Road	20.00	48.117	New	Ward 08	Third Phase
Pr_71	Local Road	20.00	4.307	New	Ward 07	Third Phase
Pr_132	Local Road	20.00	149.786	New	Ward 03	Third Phase
Pr_133	Local Road	20.00	63.890	New	Ward 03	Third Phase
Pr_134	Local Road	20.00	45.833	New	Ward 03	Third Phase
Pr_142	Local Road	20.00	78.747	New	Ward 03	Third Phase
Pr_11	Local Road	20.00	46.435	New	Ward 05	Third Phase
Pr_125	Local Road	20.00	3.544	New	Ward 05	Third Phase
Pr_127	Local Road	20.00	22.327	New	Ward 05	Third Phase
Pr_128	Local Road	20.00	293.531	New	Ward 05	Third Phase
Pr_129	Local Road	20.00	70.929	New	Ward 05	Third Phase
Pr_152	Local Road	20.00	151.625	New	Ward 03	Third Phase
Pr_130	Local Road	20.00	24.871	New	Ward 05	Third Phase
Pr_131	Local Road	20.00	81.233	New	Ward 05	Third Phase
Pr_135	Local Road	20.00	58.327	New	Ward 05	Third Phase
Pr_137	Local Road	20.00	24.212	New	Ward 05	Third Phase
Pr_138	Local Road	20.00	197.571	New	Ward 05	Third Phase
Pr_141	Local Road	20.00	30.183	New	Ward 05	Third Phase
Pr_161	Local Road	20.00	22.369	New	Ward 03	Third Phase
Pr_143	Local Road	20.00	38.957	New	Ward 05	Third Phase
Pr_144	Local Road	20.00	104.153	New	Ward 05	Third Phase
Pr_146	Local Road	20.00	83.187	New	Ward 05	Third Phase
Pr_147	Local Road	20.00	36.986	New	Ward 05	Third Phase
Pr_148	Local Road	20.00	57.847	New	Ward 05	Third Phase
Pr_168	Local Road	20.00	33.785	New	Ward 03	Third Phase
Pr_170	Local Road	20.00	9.856	New	Ward 03	Third Phase
Pr_172	Local Road	20.00	24.625	New	Ward 03	Third Phase
Pr_149	Local Road	20.00	51.458	New	Ward 05	Third Phase
Pr_150	Local Road	20.00	31.910	New	Ward 05	Third Phase
Pr_151	Local Road	20.00	55.815	New	Ward 05	Third Phase
Pr_153	Local Road	20.00	43.820	New	Ward 05	Third Phase
Pr_155	Local Road	20.00	124.887	New	Ward 05	Third Phase
Pr_156	Local Road	20.00	79.073	New	Ward 05	Third Phase
Pr_6	Local Road	25.00	48.383	New	Ward 02	Third Phase
Pr_7	Local Road	25.00	90.925	New	Ward 02	Third Phase

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_8	Local Road	25.00	216.012	New	Ward 02	Third Phase
Pr_9	Local Road	25.00	180.987	New	Ward 02	Third Phase
Pr_9	Local Road	25.00	182.516	New	Ward 02	Third Phase
Pr_10	Local Road	20.00	183.811	New	Ward 02	Third Phase
Pr_10	Local Road	25.00	54.836	New	Ward 02	Third Phase
Pr_13	Local Road	20.00	140.456	New	Ward 02	Third Phase
Pr_13	Local Road	25.00	390.866	New	Ward 02	Third Phase
Pr_14	Local Road	20.00	448.246	New	Ward 02	Third Phase
Pr_15	Local Road	25.00	423.280	New	Ward 02	Third Phase
Pr_232	Local Road	20.00	15.790	New	Ward 01	Third Phase
Pr_242	Local Road	20.00	99.540	New	Ward 01	Third Phase
Pr_252	Local Road	20.00	87.509	New	Ward 01	Third Phase
Pr_256	Local Road	20.00	8.603	New	Ward 01	Third Phase
Pr_259	Local Road	20.00	3.105	New	Ward 01	Third Phase
Pr_262	Local Road	20.00	56.858	New	Ward 01	Third Phase
Pr_263	Local Road	20.00	92.963	New	Ward 01	Third Phase
Pr_264	Local Road	20.00	85.779	New	Ward 01	Third Phase
Pr_265	Local Road	20.00	15.314	New	Ward 01	Third Phase
Pr_266	Local Road	20.00	144.572	New	Ward 01	Third Phase
Pr_268	Local Road	20.00	9.357	New	Ward 01	Third Phase
Pr_269	Local Road	20.00	54.489	New	Ward 01	Third Phase
Pr_46	Local Road	20.00	113.623	New	Ward 09	Third Phase
Pr_72	Local Road	20.00	18.524	New	Ward 07	Third Phase
Pr_74	Local Road	20.00	37.114	New	Ward 07	Third Phase
Pr_47	Local Road	20.00	69.444	New	Ward 09	Third Phase
Pr_48	Local Road	20.00	39.930	New	Ward 09	Third Phase
Pr_50	Local Road	20.00	75.242	New	Ward 09	Third Phase
Pr_51	Local Road	20.00	29.743	New	Ward 09	Third Phase
Pr_75	Local Road	20.00	188.081	New	Ward 07	Third Phase
Pr_76	Local Road	20.00	44.555	New	Ward 07	Third Phase
Pr_52	Local Road	20.00	88.977	New	Ward 09	Third Phase
Pr_77	Local Road	20.00	181.851	New	Ward 07	Third Phase
Pr_57	Local Road	20.00	131.841	New	Ward 09	Third Phase
Pr_113	Local Road	20.00	10.631	New	Ward 08	Third Phase
Pr_78	Local Road	20.00	100.588	New	Ward 07	Third Phase
Pr_115	Local Road	20.00	135.687	New	Ward 08	Third Phase
Pr_79	Local Road	20.00	99.210	New	Ward 07	Third Phase
Pr_80	Local Road	20.00	44.040	New	Ward 07	Third Phase
Pr_313	Local Road	20.00	330.784	New	Ward 03	Third Phase
Pr_116	Local Road	20.00	45.889	New	Ward 08	Third Phase

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_81	Local Road	20.00	46.122	New	Ward 07	Third Phase
Pr_157	Local Road	20.00	30.381	New	Ward 05	Third Phase
Pr_16	Local Road	25.00	216.607	New	Ward 02	Third Phase
Pr_270	Local Road	20.00	56.026	New	Ward 01	Third Phase
Pr_271	Local Road	20.00	80.505	New	Ward 01	Third Phase
Pr_272	Local Road	20.00	57.980	New	Ward 01	Third Phase
Pr_323	Local Road	20.00	211.006	Widening	Ward 03	Third Phase
Pr_169	Local Road	20.00	0.312	New	Ward 02	Third Phase
Pr_273	Local Road	20.00	98.121	New	Ward 01	Third Phase
Pr_296	Local Road	20.00	1681.167	New	Ward 09	Third Phase
Pr_82	Local Road	20.00	56.180	New	Ward 07	Third Phase
Pr_159	Local Road	20.00	61.605	New	Ward 05	Third Phase
Pr_160	Local Road	20.00	55.772	New	Ward 05	Third Phase
Pr_299	Local Road	20.00	1746.157	New	Ward 09	Third Phase
Pr_300	Local Road	20.00	1039.103	New	Ward 09	Third Phase
Pr_83	Local Road	20.00	91.670	New	Ward 07	Third Phase
Pr_338	Local Road	20.00	85.556	Widening	Ward 03	Third Phase
Pr_339	Local Road	20.00	385.936	Widening	Ward 03	Third Phase
Pr_84	Local Road	20.00	54.786	New	Ward 07	Third Phase
Pr_85	Local Road	20.00	46.495	New	Ward 07	Third Phase
Pr_86	Local Road	20.00	23.428	New	Ward 07	Third Phase
Pr_87	Local Road	20.00	39.587	New	Ward 07	Third Phase
Pr_88	Local Road	20.00	32.283	New	Ward 07	Third Phase
Pr_89	Local Road	20.00	146.845	New	Ward 07	Third Phase
Pr_90	Local Road	20.00	24.757	New	Ward 07	Third Phase
Pr_91	Local Road	20.00	19.575	New	Ward 07	Third Phase
Pr_92	Local Road	20.00	109.159	New	Ward 07	Third Phase
Pr_93	Local Road	20.00	205.186	New	Ward 07	Third Phase
Pr_94	Local Road	20.00	93.675	New	Ward 07	Third Phase
Pr_119	Local Road	20.00	74.698	New	Ward 08	Third Phase
Pr_98	Local Road	20.00	71.342	New	Ward 07	Third Phase
Pr_162	Local Road	20.00	107.546	New	Ward 05	Third Phase
Pr_163	Local Road	20.00	39.241	New	Ward 05	Third Phase
Pr_164	Local Road	20.00	25.443	New	Ward 05	Third Phase
Pr_166	Local Road	20.00	47.299	New	Ward 05	Third Phase
Pr_167	Local Road	20.00	54.501	New	Ward 05	Third Phase
Pr_174	Local Road	20.00	112.492	New	Ward 05	Third Phase
Pr_361	Local Road	20.00	27.201	Widening	Ward 03	Third Phase
Pr_181	Local Road	20.00	100.010	New	Ward 05	Third Phase
Pr_363	Local Road	20.00	21.337	Widening	Ward 03	Third Phase

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_171	Local Road	20.00	26.472	New	Ward 02	Third Phase
Pr_365	Local Road	20.00	30.726	Widening	Ward 03	Third Phase
Pr_316	Local Road	20.00	151.495	New	Ward 05	Third Phase
Pr_175	Local Road	20.00	30.984	New	Ward 02	Third Phase
Pr_177	Local Road	20.00	78.281	New	Ward 02	Third Phase
Pr_178	Local Road	20.00	25.187	New	Ward 02	Third Phase
Pr_275	Local Road	20.00	25.056	New	Ward 01	Third Phase
Pr_277	Local Road	20.00	29.317	New	Ward 01	Third Phase
Pr_278	Local Road	20.00	41.688	New	Ward 01	Third Phase
Pr_279	Local Road	20.00	133.108	New	Ward 01	Third Phase
Pr_280	Local Road	20.00	44.203	New	Ward 01	Third Phase
Pr_301	Local Road	20.00	379.132	New	Ward 09	Third Phase
Pr_99	Local Road	20.00	46.278	New	Ward 07	Third Phase
Pr_101	Local Road	20.00	253.628	New	Ward 07	Third Phase
Pr_102	Local Road	20.00	73.097	New	Ward 07	Third Phase
Pr_109	Local Road	20.00	204.015	New	Ward 07	Third Phase
Pr_110	Local Road	20.00	71.518	New	Ward 07	Third Phase
Pr_114	Local Road	20.00	98.626	New	Ward 07	Third Phase
Pr_120	Local Road	20.00	110.075	New	Ward 08	Third Phase
Pr_117	Local Road	20.00	60.852	New	Ward 07	Third Phase
Pr_331	Local Road	20.00	0.156	Widening	Ward 05	Third Phase
Pr_386	Local Road	20.00	52.928	Widening	Ward 03	Third Phase
Pr_333	Local Road	20.00	42.051	Widening	Ward 05	Third Phase
Pr_388	Local Road	20.00	81.982	Widening	Ward 03	Third Phase
Pr_389	Local Road	20.00	36.882	Widening	Ward 03	Third Phase
Pr_391	Local Road	20.00	46.951	Widening	Ward 03	Third Phase
Pr_179	Local Road	20.00	47.481	New	Ward 02	Third Phase
Pr_393	Local Road	20.00	83.391	Widening	Ward 03	Third Phase
Pr_180	Local Road	20.00	13.862	New	Ward 02	Third Phase
Pr_219	Local Road	20.00	143.325	New	Ward 02	Third Phase
Pr_226	Local Road	20.00	48.252	New	Ward 02	Third Phase
Pr_281	Local Road	20.00	69.132	New	Ward 01	Third Phase
Pr_282	Local Road	20.00	89.017	New	Ward 01	Third Phase
Pr_283	Local Road	20.00	66.909	New	Ward 01	Third Phase
Pr_284	Local Road	20.00	89.472	New	Ward 01	Third Phase
Pr_302	Local Road	20.00	345.860	New	Ward 09	Third Phase
Pr_122	Local Road	20.00	166.209	New	Ward 07	Third Phase
Pr_305	Local Road	20.00	308.685	New	Ward 09	Third Phase
Pr_307	Local Road	20.00	19.032	New	Ward 09	Third Phase
Pr_327	Local Road	20.00	28.570	Widening	Ward 09	Third Phase

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_335	Local Road	20.00	212.709	Widening	Ward 09	Third Phase
Pr_336	Local Road	20.00	353.752	Widening	Ward 09	Third Phase
Pr_375	Local Road	20.00	55.705	Widening	Ward 09	Third Phase
Pr_123	Local Road	20.00	92.204	New	Ward 07	Third Phase
Pr_126	Local Road	20.00	115.303	New	Ward 07	Third Phase
Pr_297	Local Road	20.00	337.604	New	Ward 07	Third Phase
Pr_298	Local Road	20.00	1466.440	New	Ward 07	Third Phase
Pr_303	Local Road	20.00	4027.314	New	Ward 07	Third Phase
Pr_402	Local Road	20.00	72.144	Widening	Ward 09	Third Phase
Pr_404	Local Road	20.00	47.539	Widening	Ward 09	Third Phase
Pr_405	Local Road	20.00	37.601	Widening	Ward 09	Third Phase
Pr_406	Local Road	20.00	20.588	Widening	Ward 09	Third Phase
Pr_304	Local Road	20.00	2104.153	New	Ward 07	Third Phase
Pr_306	Local Road	20.00	68.459	New	Ward 07	Third Phase
Pr_309	Local Road	20.00	56.219	New	Ward 07	Third Phase
Pr_311	Local Road	20.00	1.709	New	Ward 07	Third Phase
Pr_312	Local Road	20.00	20.626	New	Ward 07	Third Phase
Pr_315	Local Road	20.00	2856.649	New	Ward 07	Third Phase
Pr_328	Local Road	20.00	199.564	Widening	Ward 07	Third Phase
Pr_337	Local Road	20.00	13.748	Widening	Ward 07	Third Phase
Pr_340	Local Road	20.00	136.507	Widening	Ward 07	Third Phase
Pr_341	Local Road	20.00	24.056	Widening	Ward 07	Third Phase
Pr_345	Local Road	20.00	24.316	Widening	Ward 07	Third Phase
Pr_346	Local Road	20.00	35.870	Widening	Ward 07	Third Phase
Pr_348	Local Road	20.00	34.037	Widening	Ward 07	Third Phase
Pr_121	Local Road	20.00	113.308	New	Ward 08	Third Phase
Pr_349	Local Road	20.00	46.323	Widening	Ward 07	Third Phase
Pr_350	Local Road	20.00	57.951	Widening	Ward 07	Third Phase
Pr_352	Local Road	20.00	133.193	Widening	Ward 07	Third Phase
Pr_436	Local Road	20.00	157.237	Widening	Ward 03	Third Phase
Pr_437	Local Road	20.00	52.725	Widening	Ward 03	Third Phase
Pr_353	Local Road	20.00	34.638	Widening	Ward 05	Third Phase
Pr_439	Local Road	20.00	83.003	Widening	Ward 03	Third Phase
Pr_440	Local Road	20.00	69.884	Widening	Ward 03	Third Phase
Pr_441	Local Road	20.00	81.259	Widening	Ward 03	Third Phase
Pr_442	Local Road	20.00	77.075	Widening	Ward 03	Third Phase
Pr_443	Local Road	20.00	54.244	Widening	Ward 03	Third Phase
Pr_231	Local Road	20.00	164.947	New	Ward 02	Third Phase
Pr_235	Local Road	20.00	89.492	New	Ward 02	Third Phase
Pr_236	Local Road	20.00	42.523	New	Ward 02	Third Phase

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_237	Local Road	20.00	120.670	New	Ward 02	Third Phase
Pr_285	Local Road	20.00	79.508	New	Ward 01	Third Phase
Pr_238	Local Road	20.00	106.592	New	Ward 02	Third Phase
Pr_239	Local Road	20.00	150.849	New	Ward 02	Third Phase
Pr_240	Local Road	20.00	96.596	New	Ward 02	Third Phase
Pr_243	Local Road	20.00	25.882	New	Ward 02	Third Phase
Pr_286	Local Road	20.00	29.780	New	Ward 01	Third Phase
Pr_287	Local Road	20.00	122.448	New	Ward 01	Third Phase
Pr_288	Local Road	20.00	96.602	New	Ward 01	Third Phase
Pr_289	Local Road	20.00	122.948	New	Ward 01	Third Phase
Pr_377	Local Road	20.00	49.049	Widening	Ward 07	Third Phase
Pr_378	Local Road	20.00	62.266	Widening	Ward 07	Third Phase
Pr_379	Local Road	20.00	38.888	Widening	Ward 07	Third Phase
Pr_381	Local Road	20.00	45.236	Widening	Ward 07	Third Phase
Pr_383	Local Road	20.00	17.487	Widening	Ward 07	Third Phase
Pr_403	Local Road	20.00	25.094	Widening	Ward 07	Third Phase
Pr_419	Local Road	20.00	103.565	Widening	Ward 07	Third Phase
Pr_420	Local Road	20.00	56.820	Widening	Ward 07	Third Phase
Pr_124	Local Road	20.00	185.321	New	Ward 08	Third Phase
Pr_308	Local Road	20.00	364.862	New	Ward 08	Third Phase
Pr_310	Local Road	20.00	852.394	New	Ward 08	Third Phase
Pr_421	Local Road	20.00	47.145	Widening	Ward 07	Third Phase
Pr_314	Local Road	20.00	98.089	New	Ward 08	Third Phase
Pr_351	Local Road	20.00	103.933	Widening	Ward 08	Third Phase
Pr_422	Local Road	20.00	63.247	Widening	Ward 07	Third Phase
Pr_382	Local Road	20.00	135.043	Widening	Ward 08	Third Phase
Pr_423	Local Road	20.00	52.421	Widening	Ward 07	Third Phase
Pr_424	Local Road	20.00	12.365	Widening	Ward 07	Third Phase
Pr_425	Local Road	20.00	58.119	Widening	Ward 07	Third Phase
Pr_432	Local Road	20.00	67.456	Widening	Ward 08	Third Phase
Pr_354	Local Road	20.00	103.719	Widening	Ward 05	Third Phase
Pr_426	Local Road	20.00	61.534	Widening	Ward 07	Third Phase
Pr_427	Local Road	20.00	157.756	Widening	Ward 07	Third Phase
Pr_428	Local Road	20.00	158.814	Widening	Ward 07	Third Phase
Pr_429	Local Road	20.00	170.107	Widening	Ward 07	Third Phase
Pr_484	Local Road	20.00	257.187	Widening	Ward 03	Third Phase
Pr_430	Local Road	20.00	132.484	Widening	Ward 07	Third Phase
Pr_355	Local Road	20.00	38.846	Widening	Ward 05	Third Phase
Pr_357	Local Road	20.00	15.904	Widening	Ward 05	Third Phase
Pr_358	Local Road	20.00	32.664	Widening	Ward 05	Third Phase

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_360	Local Road	20.00	58.159	Widening	Ward 05	Third Phase
Pr_362	Local Road	20.00	28.069	Widening	Ward 05	Third Phase
Pr_498	Local Road	20.00	73.938	Widening	Ward 03	Third Phase
Pr_500	Local Road	20.00	71.432	Widening	Ward 03	Third Phase
Pr_501	Local Road	20.00	84.555	Widening	Ward 03	Third Phase
Pr_366	Local Road	20.00	29.870	Widening	Ward 05	Third Phase
Pr_244	Local Road	20.00	98.523	New	Ward 02	Third Phase
Pr_245	Local Road	20.00	41.728	New	Ward 02	Third Phase
Pr_246	Local Road	20.00	54.453	New	Ward 02	Third Phase
Pr_247	Local Road	20.00	178.200	New	Ward 02	Third Phase
Pr_248	Local Road	20.00	132.310	New	Ward 02	Third Phase
Pr_522	Local Road	20.00	67.965	Widening	Ward 03	Third Phase
Pr_249	Local Road	20.00	42.573	New	Ward 02	Third Phase
Pr_250	Local Road	20.00	37.130	New	Ward 02	Third Phase
Pr_384	Local Road	20.00	132.623	Widening	Ward 05	Third Phase
Pr_387	Local Road	20.00	84.756	Widening	Ward 05	Third Phase
Pr_253	Local Road	20.00	80.366	New	Ward 02	Third Phase
Pr_290	Local Road	20.00	176.415	New	Ward 01	Third Phase
Pr_291	Local Road	20.00	54.653	New	Ward 01	Third Phase
Pr_431	Local Road	20.00	126.165	Widening	Ward 07	Third Phase
Pr_433	Local Road	20.00	84.186	Widening	Ward 07	Third Phase
Pr_542	Local Road	20.00	153.891	Widening	Ward 03	Third Phase
Pr_543	Local Road	20.00	198.298	Widening	Ward 03	Third Phase
Pr_254	Local Road	20.00	92.574	New	Ward 02	Third Phase
Pr_233	Local Road	20.00	69.880	New	Ward 04	Third Phase
Pr_434	Local Road	20.00	174.450	Widening	Ward 07	Third Phase
Pr_554	Local Road	20.00	77.827	Widening	Ward 03	Third Phase
Pr_438	Local Road	20.00	46.804	Widening	Ward 05	Third Phase
Pr_234	Local Road	20.00	105.645	New	Ward 04	Third Phase
Pr_241	Local Road	20.00	9.446	New	Ward 04	Third Phase
Pr_251	Local Road	20.00	7.231	New	Ward 04	Third Phase
Pr_255	Local Road	20.00	92.244	New	Ward 02	Third Phase
Pr_479	Local Road	20.00	197.801	Widening	Ward 05	Third Phase
Pr_136	Local Road	20.00	0.350	New	Ward 06	Third Phase
Pr_486	Local Road	20.00	237.416	Widening	Ward 05	Third Phase
Pr_139	Local Road	20.00	128.236	New	Ward 06	Third Phase
Pr_140	Local Road	20.00	147.162	New	Ward 06	Third Phase
Pr_489	Local Road	20.00	226.699	Widening	Ward 05	Third Phase
Pr_145	Local Road	20.00	29.866	New	Ward 06	Third Phase
Pr_261	Local Road	20.00	14.284	New	Ward 04	Third Phase

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_495	Local Road	20.00	96.978	Widening	Ward 05	Third Phase
Pr_496	Local Road	20.00	0.066	Widening	Ward 05	Third Phase
Pr_154	Local Road	20.00	66.978	New	Ward 06	Third Phase
Pr_407	Local Road	20.00	72.909	Widening	Ward 09	Third Phase
Pr_408	Local Road	20.00	19.213	Widening	Ward 09	Third Phase
Pr_409	Local Road	20.00	28.560	Widening	Ward 09	Third Phase
Pr_435	Local Road	20.00	0.866	Widening	Ward 07	Third Phase
Pr_461	Local Road	20.00	73.198	Widening	Ward 07	Third Phase
Pr_577	Local Road	20.00	40.571	Widening	Ward 03	Third Phase
Pr_502	Local Road	20.00	0.132	Widening	Ward 05	Third Phase
Pr_525	Local Road	20.00	50.148	Widening	Ward 05	Third Phase
Pr_173	Local Road	20.00	67.382	New	Ward 06	Third Phase
Pr_183	Local Road	20.00	57.785	New	Ward 06	Third Phase
Pr_184	Local Road	20.00	29.533	New	Ward 06	Third Phase
Pr_257	Local Road	20.00	53.487	New	Ward 02	Third Phase
Pr_292	Local Road	20.00	301.638	New	Ward 01	Third Phase
Pr_463	Local Road	20.00	67.814	Widening	Ward 07	Third Phase
Pr_415	Local Road	20.00	106.411	Widening	Ward 09	Third Phase
Pr_416	Local Road	20.00	56.929	Widening	Ward 09	Third Phase
Pr_417	Local Road	20.00	33.811	Widening	Ward 09	Third Phase
Pr_418	Local Road	20.00	73.898	Widening	Ward 09	Third Phase
Pr_572	Local Road	20.00	32.270	Widening	Ward 09	Third Phase
Pr_573	Local Road	20.00	41.184	Widening	Ward 09	Third Phase
Pr_574	Local Road	20.00	39.695	Widening	Ward 09	Third Phase
Pr_464	Local Road	20.00	54.588	Widening	Ward 07	Third Phase
Pr_194	Local Road	20.00	4.615	New	Ward 06	Third Phase
Pr_204	Local Road	20.00	130.087	New	Ward 06	Third Phase
Pr_356	Local Road	20.00	34.853	Widening	Ward 06	Third Phase
Pr_258	Local Road	20.00	80.797	New	Ward 02	Third Phase
Pr_528	Local Road	20.00	0.329	Widening	Ward 05	Third Phase
Pr_260	Local Road	20.00	47.657	New	Ward 02	Third Phase
Pr_359	Local Road	20.00	61.683	Widening	Ward 06	Third Phase
Pr_385	Local Road	20.00	0.600	Widening	Ward 06	Third Phase
Pr_319	Local Road	20.00	204.258	New	Ward 04	Third Phase
Pr_267	Local Road	20.00	583.425	New	Ward 02	Third Phase
Pr_321	Local Road	20.00	104.303	New	Ward 04	Third Phase
Pr_390	Local Road	20.00	33.625	Widening	Ward 06	Third Phase
Pr_330	Local Road	20.00	3.572	Widening	Ward 04	Third Phase
Pr_293	Local Road	20.00	65.394	New	Ward 01	Third Phase
Pr_294	Local Road	20.00	98.196	New	Ward 01	Third Phase

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_295	Local Road	20.00	486.712	New	Ward 01	Third Phase
Pr_465	Local Road	20.00	95.513	Widening	Ward 07	Third Phase
Pr_611	Local Road	20.00	137.192	Widening	Ward 03	Third Phase
Pr_612	Local Road	20.00	80.450	Widening	Ward 03	Third Phase
Pr_394	Local Road	20.00	120.739	Widening	Ward 06	Third Phase
Pr_466	Local Road	20.00	121.636	Widening	Ward 07	Third Phase
Pr_470	Local Road	20.00	136.674	Widening	Ward 07	Third Phase
Pr_473	Local Road	20.00	5.094	Widening	Ward 07	Third Phase
Pr_475	Local Road	20.00	15.719	Widening	Ward 07	Third Phase
Pr_476	Local Road	20.00	53.550	Widening	Ward 07	Third Phase
Pr_619	Local Road	20.00	77.308	Widening	Ward 03	Third Phase
Pr_477	Local Road	20.00	155.947	Widening	Ward 07	Third Phase
Pr_621	Local Road	20.00	87.358	Widening	Ward 03	Third Phase
Pr_622	Local Road	20.00	28.071	Widening	Ward 03	Third Phase
Pr_623	Local Road	20.00	51.516	Widening	Ward 03	Third Phase
Pr_624	Local Road	20.00	85.067	Widening	Ward 03	Third Phase
Pr_625	Local Road	20.00	55.064	Widening	Ward 03	Third Phase
Pr_626	Local Road	20.00	251.370	Widening	Ward 03	Third Phase
Pr_274	Local Road	20.00	84.244	New	Ward 02	Third Phase
Pr_561	Local Road	20.00	137.444	Widening	Ward 05	Third Phase
Pr_569	Local Road	20.00	267.016	Widening	Ward 05	Third Phase
Pr_570	Local Road	20.00	1.298	Widening	Ward 05	Third Phase
Pr_578	Local Road	20.00	78.129	Widening	Ward 05	Third Phase
Pr_276	Local Road	20.00	60.872	New	Ward 02	Third Phase
Pr_480	Local Road	20.00	68.680	Widening	Ward 07	Third Phase
Pr_579	Local Road	20.00	22.830	Widening	Ward 05	Third Phase
Pr_598	Local Road	20.00	157.665	Widening	Ward 05	Third Phase
Pr_481	Local Road	20.00	113.802	Widening	Ward 07	Third Phase
Pr_637	Local Road	20.00	255.723	Widening	Ward 03	Third Phase
Pr_628	Local Road	20.00	100.202	Widening	Ward 05	Third Phase
Pr_334	Local Road	20.00	34.287	Widening	Ward 04	Third Phase
Pr_482	Local Road	20.00	26.204	Widening	Ward 07	Third Phase
Pr_531	Local Road	20.00	39.932	Widening	Ward 04	Third Phase
Pr_467	Local Road	20.00	106.580	Widening	Ward 08	Third Phase
Pr_629	Local Road	20.00	124.705	Widening	Ward 05	Third Phase
Pr_630	Local Road	20.00	37.940	Widening	Ward 05	Third Phase
Pr_631	Local Road	20.00	84.022	Widening	Ward 05	Third Phase
Pr_634	Local Road	20.00	81.610	Widening	Ward 05	Third Phase
Pr_635	Local Road	20.00	102.649	Widening	Ward 05	Third Phase
Pr_648	Local Road	20.00	84.387	Widening	Ward 03	Third Phase

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_317	Local Road	20.00	1007.408	New	Ward 02	Third Phase
Pr_324	Local Road	20.00	3.070	Widening	Ward 02	Third Phase
Pr_364	Local Road	20.00	11.219	Widening	Ward 02	Third Phase
Pr_483	Local Road	20.00	155.077	Widening	Ward 07	Third Phase
Pr_318	Local Road	20.00	13.076	New	Ward 01	Third Phase
Pr_369	Local Road	20.00	243.641	Widening	Ward 02	Third Phase
Pr_487	Local Road	20.00	180.646	Widening	Ward 06	Third Phase
Pr_535	Local Road	20.00	127.548	Widening	Ward 04	Third Phase
Pr_392	Local Road	20.00	16.374	Widening	Ward 02	Third Phase
Pr_397	Local Road	20.00	38.085	Widening	Ward 02	Third Phase
Pr_468	Local Road	20.00	46.691	Widening	Ward 08	Third Phase
Pr_485	Local Road	20.00	29.804	Widening	Ward 07	Third Phase
Pr_638	Local Road	20.00	48.331	Widening	Ward 05	Third Phase
Pr_444	Local Road	20.00	10.100	Widening	Ward 02	Third Phase
Pr_448	Local Road	20.00	238.016	Widening	Ward 02	Third Phase
Pr_488	Local Road	20.00	34.255	Widening	Ward 06	Third Phase
Pr_586	Local Road	20.00	92.798	Widening	Ward 09	Third Phase
Pr_540	Local Road	20.00	57.466	Widening	Ward 07	Third Phase
Pr_587	Local Road	20.00	102.316	Widening	Ward 09	Third Phase
Pr_469	Local Road	20.00	75.209	Widening	Ward 08	Third Phase
Pr_449	Local Road	20.00	167.553	Widening	Ward 02	Third Phase
Pr_588	Local Road	20.00	68.803	Widening	Ward 09	Third Phase
Pr_471	Local Road	20.00	22.411	Widening	Ward 08	Third Phase
Pr_643	Local Road	20.00	81.430	Widening	Ward 05	Third Phase
Pr_536	Local Road	20.00	26.536	Widening	Ward 04	Third Phase
Pr_451	Local Road	20.00	134.057	Widening	Ward 02	Third Phase
Pr_320	Local Road	20.00	641.334	New	Ward 01	Third Phase
Pr_322	Local Road	20.00	1243.528	New	Ward 01	Third Phase
Pr_325	Local Road	20.00	246.091	Widening	Ward 01	Third Phase
Pr_370	Local Road	20.00	50.794	Widening	Ward 01	Third Phase
Pr_371	Local Road	20.00	112.883	Widening	Ward 01	Third Phase
Pr_372	Local Road	20.00	75.398	Widening	Ward 01	Third Phase
Pr_541	Local Road	20.00	41.734	Widening	Ward 07	Third Phase
Pr_553	Local Road	20.00	300.180	Widening	Ward 07	Third Phase
Pr_452	Local Road	20.00	199.487	Widening	Ward 02	Third Phase
Pr_373	Local Road	20.00	38.796	Widening	Ward 01	Third Phase
Pr_644	Local Road	20.00	76.077	Widening	Ward 05	Third Phase
Pr_494	Local Road	20.00	165.535	Widening	Ward 06	Third Phase
Pr_509	Local Road	20.00	92.718	Widening	Ward 06	Third Phase
Pr_545	Local Road	20.00	57.945	Widening	Ward 04	Third Phase

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_453	Local Road	20.00	91.291	Widening	Ward 02	Third Phase
Pr_548	Local Road	20.00	103.217	Widening	Ward 04	Third Phase
Pr_374	Local Road	20.00	202.243	Widening	Ward 01	Third Phase
Pr_398	Local Road	20.00	119.900	Widening	Ward 01	Third Phase
Pr_399	Local Road	20.00	53.477	Widening	Ward 01	Third Phase
Pr_454	Local Road	20.00	85.587	Widening	Ward 02	Third Phase
Pr_400	Local Road	20.00	257.626	Widening	Ward 01	Third Phase
Pr_575	Local Road	20.00	62.578	Widening	Ward 07	Third Phase
Pr_544	Local Road	20.00	155.102	Widening	Ward 06	Third Phase
Pr_549	Local Road	20.00	88.772	Widening	Ward 04	Third Phase
Pr_576	Local Road	20.00	61.203	Widening	Ward 07	Third Phase
Pr_562	Local Road	20.00	4.173	Widening	Ward 06	Third Phase
Pr_401	Local Road	20.00	145.253	Widening	Ward 01	Third Phase
Pr_450	Local Road	20.00	63.459	Widening	Ward 01	Third Phase
Pr_455	Local Road	20.00	66.069	Widening	Ward 01	Third Phase
Pr_456	Local Road	20.00	84.936	Widening	Ward 01	Third Phase
Pr_585	Local Road	20.00	181.405	Widening	Ward 07	Third Phase
Pr_537	Local Road	20.00	121.558	Widening	Ward 02	Third Phase
Pr_559	Local Road	20.00	138.282	Widening	Ward 02	Third Phase
Pr_583	Local Road	20.00	133.720	Widening	Ward 02	Third Phase
Pr_551	Local Road	20.00	41.506	Widening	Ward 04	Third Phase
Pr_457	Local Road	20.00	135.651	Widening	Ward 01	Third Phase
Pr_458	Local Road	20.00	41.936	Widening	Ward 01	Third Phase
Pr_538	Local Road	20.00	260.290	Widening	Ward 01	Third Phase
Pr_472	Local Road	20.00	74.886	Widening	Ward 08	Third Phase
Pr_593	Local Road	20.00	141.067	Widening	Ward 07	Third Phase
Pr_474	Local Road	20.00	161.298	Widening	Ward 08	Third Phase
Pr_610	Local Road	20.00	53.146	Widening	Ward 07	Third Phase
Pr_597	Local Road	20.00	71.632	Widening	Ward 02	Third Phase
Pr_603	Local Road	20.00	95.664	Widening	Ward 02	Third Phase
Pr_627	Local Road	20.00	109.817	Widening	Ward 02	Third Phase
Pr_589	Local Road	20.00	118.173	Widening	Ward 09	Third Phase
Pr_478	Local Road	20.00	31.959	Widening	Ward 08	Third Phase
Pr_617	Local Road	20.00	201.751	Widening	Ward 07	Third Phase
Pr_539	Local Road	20.00	57.192	Widening	Ward 01	Third Phase
Pr_590	Local Road	20.00	308.104	Widening	Ward 09	Third Phase
Pr_557	Local Road	20.00	71.184	Widening	Ward 04	Third Phase
Pr_618	Local Road	20.00	22.375	Widening	Ward 07	Third Phase
Pr_632	Local Road	20.00	98.249	Widening	Ward 02	Third Phase
Pr_584	Local Road	20.00	48.477	Widening	Ward 01	Third Phase

Proposed Road ID	Road Type	Width (in ft)	Length (in m)	Status	Ward No	Phase
Pr_620	Local Road	20.00	39.811	Widening	Ward 07	Third Phase
Pr_607	Local Road	20.00	143.930	Widening	Ward 01	Third Phase
Pr_606	Local Road	20.00	37.438	Widening	Ward 04	Third Phase
Pr_645	Local Road	20.00	76.905	Widening	Ward 05	Third Phase
Pr_639	Local Road	20.00	154.527	Widening	Ward 04	Third Phase
Pr_633	Local Road	20.00	93.324	Widening	Ward 07	Third Phase
Pr_608	Local Road	20.00	207.467	Widening	Ward 01	Third Phase
Pr_591	Local Road	20.00	290.745	Widening	Ward 09	Third Phase
Pr_636	Local Road	20.00	11.762	Widening	Ward 07	Third Phase
Pr_592	Local Road	20.00	507.171	Widening	Ward 09	Third Phase
Pr_642	Local Road	20.00	12.858	Widening	Ward 08	Third Phase
Pr_646	Local Road	20.00	69.682	Widening	Ward 05	Third Phase
Pr_640	Local Road	20.00	77.642	Widening	Ward 07	Third Phase
Pr_564	Local Road	20.00	0.266	Widening	Ward 06	Third Phase
Pr_649	Local Road	20.00	95.415	Widening	Ward 02	Third Phase
Pr_609	Local Road	20.00	124.901	Widening	Ward 01	Third Phase
Pr_647	Local Road	20.00	37.740	Widening	Ward 05	Third Phase
Pr_580	Local Road	20.00	57.267	Widening	Ward 06	Third Phase
Pr_581	Local Road	20.00	79.309	Widening	Ward 06	Third Phase
Pr_650	Local Road	20.00	142.544	Widening	Ward 02	Third Phase
Pr_641	Local Road	20.00	84.912	Widening	Ward 04	Third Phase

Proposed Drain ID	Drain Type	Width (in ft)	Depth (in m)	Length_m	Phase	Ward_No
T_41	Tertiary Drain	1.50 - 2.50	1-1.5	19.020	First Phase	Ward 03
S_1	Secondary Drain	2.5-3.5	1.124-2.124	326.104	First Phase	Ward 03
S_1	Secondary Drain	2.5-3.5	1.124-2.124	27.292	First Phase	Ward 06
S_1	Secondary Drain	2.5-3.5	1.124-2.124	864.556	First Phase	Ward 02
S_2	Secondary Drain	2.5-3.5	1.124-2.124	28.012	First Phase	Ward 07
S_2	Secondary Drain	2.5-3.5	1.124-2.124	846.579	First Phase	Ward 03
S_2	Secondary Drain	2.5-3.5	1.124-2.124	887.508	First Phase	Ward 02
S_3	Secondary Drain	2.5-3.5	1.124-2.124	651.318	First Phase	Ward 06
S_3	Secondary Drain	2.5-3.5	1.124-2.124	317.208	First Phase	Ward 04
S_4	Secondary Drain	2.5-3.5	1.124-2.124	914.650	First Phase	Ward 06
S_4	Secondary Drain	2.5-3.5	1.124-2.124	59.517	First Phase	Ward 04
S_5	Secondary Drain	2.5-3.5	1.124-2.124	817.279	First Phase	Ward 01
S_6	Secondary Drain	2.5-3.5	1.124-2.124	1373.625	First Phase	Ward 01
S_7	Secondary Drain	2.5-3.5	1.124-2.124	425.079	First Phase	Ward 05
S_7	Secondary Drain	2.5-3.5	1.124-2.124	9.092	First Phase	Ward 06
S_7	Secondary Drain	2.5-3.5	1.124-2.124	920.401	First Phase	Ward 04
S_8	Secondary Drain	2.5-3.5	1.124-2.124	563.725	First Phase	Ward 05
S_8	Secondary Drain	2.5-3.5	1.124-2.124	102.498	First Phase	Ward 06
S_8	Secondary Drain	2.5-3.5	1.124-2.124	678.338	First Phase	Ward 04
S_9	Secondary Drain	2.5-3.5	1.124-2.124	833.850	First Phase	Ward 03
S_9	Secondary Drain	2.5-3.5	1.124-2.124	858.069	First Phase	Ward 02
S_10	Secondary Drain	2.5-3.5	1.124-2.124	341.569	First Phase	Ward 03
S_10	Secondary Drain	2.5-3.5	1.124-2.124	879.605	First Phase	Ward 02
S_11	Secondary Drain	2.5-3.5	1.124-2.124	582.839	First Phase	Ward 01
S_13	Secondary Drain	2.5-3.5	1.124-2.124	1436.534	First Phase	Ward 07
S_14	Secondary Drain	2.5-3.5	1.124-2.124	1747.246	First Phase	Ward 07
S_15	Secondary Drain	2.5-3.5	1.124-2.124	4313.392	First Phase	Ward 09
S_17	Secondary Drain	2.5-3.5	1.124-2.124	761.113	First Phase	Ward 05
S_17	Secondary Drain	2.5-3.5	1.124-2.124	331.130	First Phase	Ward 06
S_18	Secondary Drain	2.5-3.5	1.124-2.124	570.502	First Phase	Ward 01
S_19	Secondary Drain	2.5-3.5	1.124-2.124	613.770	First Phase	Ward 01
S_22	Secondary Drain	2.5-3.5	1.124-2.124	1490.547	First Phase	Ward 07
S_23	Secondary Drain	2.5-3.5	1.124-2.124	557.131	First Phase	Ward 07
S_24	Secondary Drain	2.5-3.5	1.124-2.124	757.515	First Phase	Ward 09
T_3	Tertiary Drain	1.50 - 2.50	1-1.5	1296.293	First Phase	Ward 09
T_4	Tertiary Drain	1.50 - 2.50	1-1.5	754.556	First Phase	Ward 09
T_21	Tertiary Drain	1.50 - 2.50	1-1.5	1013.951	First Phase	Ward 01
T_24	Tertiary Drain	1.50 - 2.50	1-1.5	811.580	First Phase	Ward 02
T_41	Tertiary Drain	1.50 - 2.50	1-1.5	765.167	First Phase	Ward 03
T_51	Tertiary Drain	1.50 - 2.50	1-1.5	888.354	First Phase	Ward 02

Proposed Drain ID	Drain Type	Width (in ft)	Depth (in m)	Length_m	Phase	Ward_No
T_70	Tertiary Drain	1.50 - 2.50	1-1.5	25.848	First Phase	Ward 07
T_70	Tertiary Drain	1.50 - 2.50	1-1.5	1209.936	First Phase	Ward 03
T_72	Tertiary Drain	1.50 - 2.50	1-1.5	591.044	First Phase	Ward 03
T_78	Tertiary Drain	1.50 - 2.50	1-1.5	341.715	First Phase	Ward 03
T_78	Tertiary Drain	1.50 - 2.50	1-1.5	241.766	First Phase	Ward 02
T_115	Tertiary Drain	1.50 - 2.50	1-1.5	463.769	First Phase	Ward 05
T_115	Tertiary Drain	1.50 - 2.50	1-1.5	307.343	First Phase	Ward 06
T_132	Tertiary Drain	1.50 - 2.50	1-1.5	761.590	First Phase	Ward 01
T_136	Tertiary Drain	1.50 - 2.50	1-1.5	729.821	First Phase	Ward 02
T_139	Tertiary Drain	1.50 - 2.50	1-1.5	1250.410	First Phase	Ward 07
T_148	Tertiary Drain	1.50 - 2.50	1-1.5	945.997	First Phase	Ward 09
T_148	Tertiary Drain	1.50 - 2.50	1-1.5	54.389	First Phase	Ward 07
T_165	Tertiary Drain	1.50 - 2.50	1-1.5	576.754	First Phase	Ward 01
T_166	Tertiary Drain	1.50 - 2.50	1-1.5	793.758	First Phase	Ward 01
T_168	Tertiary Drain	1.50 - 2.50	1-1.5	1387.962	First Phase	Ward 01
T_201	Tertiary Drain	1.50 - 2.50	1-1.5	991.546	First Phase	Ward 02
T_202	Tertiary Drain	1.50 - 2.50	1-1.5	30.210	First Phase	Ward 03
T_202	Tertiary Drain	1.50 - 2.50	1-1.5	679.247	First Phase	Ward 02
T_238	Tertiary Drain	1.50 - 2.50	1-1.5	5.056	First Phase	Ward 08
T_238	Tertiary Drain	1.50 - 2.50	1-1.5	1332.750	First Phase	Ward 07
T_248	Tertiary Drain	1.50 - 2.50	1-1.5	570.426	First Phase	Ward 08
T_256	Tertiary Drain	1.50 - 2.50	1-1.5	1253.562	First Phase	Ward 02
T_257	Tertiary Drain	1.50 - 2.50	1-1.5	31.105	First Phase	Ward 03
T_257	Tertiary Drain	1.50 - 2.50	1-1.5	845.971	First Phase	Ward 02
T_267	Tertiary Drain	1.50 - 2.50	1-1.5	698.857	First Phase	Ward 07
T_280	Tertiary Drain	1.50 - 2.50	1-1.5	610.087	First Phase	Ward 07
T_282	Tertiary Drain	1.50 - 2.50	1-1.5	685.036	First Phase	Ward 07
S_15	Secondary Drain	2.5-3.5	1.124-2.124	640.591	First Phase	Ward 07
S_15	Secondary Drain	2.5-3.5	1.124-2.124	294.690	First Phase	Ward 09
S_15	Secondary Drain	2.5-3.5	1.124-2.124	1015.518	First Phase	Ward 08
S_15	Secondary Drain	2.5-3.5	1.124-2.124	247.027	First Phase	Ward 05
S_12	Secondary Drain	2.5-3.5	1.124-2.124	409.742	Second Phase	Ward 08
S_12	Secondary Drain	2.5-3.5	1.124-2.124	22.755	Second Phase	Ward 07
S_12	Secondary Drain	2.5-3.5	1.124-2.124	65.815	Second Phase	Ward 05
S_20	Secondary Drain	2.5-3.5	1.124-2.124	164.474	Second Phase	Ward 04
S_20	Secondary Drain	2.5-3.5	1.124-2.124	210.902	Second Phase	Ward 01
S_21	Secondary Drain	2.5-3.5	1.124-2.124	158.934	Second Phase	Ward 04
S_21	Secondary Drain	2.5-3.5	1.124-2.124	214.282	Second Phase	Ward 01
T_2	Tertiary Drain	1.50 - 2.50	1-1.5	325.535	Second Phase	Ward 09
T_5	Tertiary Drain	1.50 - 2.50	1-1.5	270.363	Second Phase	Ward 03
T_6	Tertiary Drain	1.50 - 2.50	1-1.5	258.086	Second Phase	Ward 02

Proposed Drain ID	Drain Type	Width (in ft)	Depth (in m)	Length_m	Phase	Ward_No
T_7	Tertiary Drain	1.50 - 2.50	1-1.5	255.896	Second Phase	Ward 06
T_10	Tertiary Drain	1.50 - 2.50	1-1.5	117.744	Second Phase	Ward 04
T_10	Tertiary Drain	1.50 - 2.50	1-1.5	96.767	Second Phase	Ward 01
T_14	Tertiary Drain	1.50 - 2.50	1-1.5	321.383	Second Phase	Ward 03
T_15	Tertiary Drain	1.50 - 2.50	1-1.5	516.972	Second Phase	Ward 05
T_16	Tertiary Drain	1.50 - 2.50	1-1.5	233.688	Second Phase	Ward 06
T_17	Tertiary Drain	1.50 - 2.50	1-1.5	230.311	Second Phase	Ward 06
T_18	Tertiary Drain	1.50 - 2.50	1-1.5	227.907	Second Phase	Ward 06
T_19	Tertiary Drain	1.50 - 2.50	1-1.5	222.083	Second Phase	Ward 06
T_20	Tertiary Drain	1.50 - 2.50	1-1.5	523.033	Second Phase	Ward 09
T_30	Tertiary Drain	1.50 - 2.50	1-1.5	277.738	Second Phase	Ward 01
T_33	Tertiary Drain	1.50 - 2.50	1-1.5	276.636	Second Phase	Ward 01
T_35	Tertiary Drain	1.50 - 2.50	1-1.5	315.133	Second Phase	Ward 02
T_36	Tertiary Drain	1.50 - 2.50	1-1.5	224.536	Second Phase	Ward 04
T_38	Tertiary Drain	1.50 - 2.50	1-1.5	219.649	Second Phase	Ward 04
T_39	Tertiary Drain	1.50 - 2.50	1-1.5	230.783	Second Phase	Ward 01
T_43	Tertiary Drain	1.50 - 2.50	1-1.5	216.074	Second Phase	Ward 07
T_52	Tertiary Drain	1.50 - 2.50	1-1.5	485.709	Second Phase	Ward 02
T_53	Tertiary Drain	1.50 - 2.50	1-1.5	338.542	Second Phase	Ward 02
T_54	Tertiary Drain	1.50 - 2.50	1-1.5	283.296	Second Phase	Ward 02
T_55	Tertiary Drain	1.50 - 2.50	1-1.5	271.530	Second Phase	Ward 02
T_56	Tertiary Drain	1.50 - 2.50	1-1.5	514.915	Second Phase	Ward 02
T_59	Tertiary Drain	1.50 - 2.50	1-1.5	443.819	Second Phase	Ward 07
T_62	Tertiary Drain	1.50 - 2.50	1-1.5	230.145	Second Phase	Ward 07
T_69	Tertiary Drain	1.50 - 2.50	1-1.5	216.833	Second Phase	Ward 07
T_73	Tertiary Drain	1.50 - 2.50	1-1.5	220.121	Second Phase	Ward 03
T_74	Tertiary Drain	1.50 - 2.50	1-1.5	379.112	Second Phase	Ward 03
T_76	Tertiary Drain	1.50 - 2.50	1-1.5	122.397	Second Phase	Ward 03
T_76	Tertiary Drain	1.50 - 2.50	1-1.5	154.360	Second Phase	Ward 02
T_84	Tertiary Drain	1.50 - 2.50	1-1.5	404.122	Second Phase	Ward 05
T_85	Tertiary Drain	1.50 - 2.50	1-1.5	290.179	Second Phase	Ward 05
T_88	Tertiary Drain	1.50 - 2.50	1-1.5	329.378	Second Phase	Ward 05
T_90	Tertiary Drain	1.50 - 2.50	1-1.5	216.203	Second Phase	Ward 05
T_91	Tertiary Drain	1.50 - 2.50	1-1.5	341.638	Second Phase	Ward 05
T_92	Tertiary Drain	1.50 - 2.50	1-1.5	234.994	Second Phase	Ward 05
T_93	Tertiary Drain	1.50 - 2.50	1-1.5	306.371	Second Phase	Ward 05
T_94	Tertiary Drain	1.50 - 2.50	1-1.5	469.419	Second Phase	Ward 06
T_95	Tertiary Drain	1.50 - 2.50	1-1.5	546.895	Second Phase	Ward 06
T_97	Tertiary Drain	1.50 - 2.50	1-1.5	252.565	Second Phase	Ward 06
T_98	Tertiary Drain	1.50 - 2.50	1-1.5	488.726	Second Phase	Ward 06
T_99	Tertiary Drain	1.50 - 2.50	1-1.5	416.817	Second Phase	Ward 06

Proposed Drain ID	Drain Type	Width (in ft)	Depth (in m)	Length_m	Phase	Ward_No
T_100	Tertiary Drain	1.50 - 2.50	1-1.5	507.849	Second Phase	Ward 06
T_106	Tertiary Drain	1.50 - 2.50	1-1.5	232.474	Second Phase	Ward 02
T_107	Tertiary Drain	1.50 - 2.50	1-1.5	261.614	Second Phase	Ward 02
T_108	Tertiary Drain	1.50 - 2.50	1-1.5	219.332	Second Phase	Ward 02
T_114	Tertiary Drain	1.50 - 2.50	1-1.5	265.287	Second Phase	Ward 05
T_117	Tertiary Drain	1.50 - 2.50	1-1.5	3.749	Second Phase	Ward 05
T_117	Tertiary Drain	1.50 - 2.50	1-1.5	411.942	Second Phase	Ward 06
T_119	Tertiary Drain	1.50 - 2.50	1-1.5	260.215	Second Phase	Ward 06
T_121	Tertiary Drain	1.50 - 2.50	1-1.5	213.717	Second Phase	Ward 06
T_122	Tertiary Drain	1.50 - 2.50	1-1.5	221.911	Second Phase	Ward 06
T_124	Tertiary Drain	1.50 - 2.50	1-1.5	477.868	Second Phase	Ward 04
T_127	Tertiary Drain	1.50 - 2.50	1-1.5	453.446	Second Phase	Ward 04
T_133	Tertiary Drain	1.50 - 2.50	1-1.5	338.630	Second Phase	Ward 02
T_141	Tertiary Drain	1.50 - 2.50	1-1.5	319.197	Second Phase	Ward 07
T_142	Tertiary Drain	1.50 - 2.50	1-1.5	306.086	Second Phase	Ward 07
T_143	Tertiary Drain	1.50 - 2.50	1-1.5	250.695	Second Phase	Ward 07
T_144	Tertiary Drain	1.50 - 2.50	1-1.5	271.839	Second Phase	Ward 07
T_145	Tertiary Drain	1.50 - 2.50	1-1.5	355.173	Second Phase	Ward 07
T_146	Tertiary Drain	1.50 - 2.50	1-1.5	272.600	Second Phase	Ward 07
T_149	Tertiary Drain	1.50 - 2.50	1-1.5	231.715	Second Phase	Ward 09
T_150	Tertiary Drain	1.50 - 2.50	1-1.5	238.566	Second Phase	Ward 05
T_150	Tertiary Drain	1.50 - 2.50	1-1.5	283.504	Second Phase	Ward 06
T_151	Tertiary Drain	1.50 - 2.50	1-1.5	248.035	Second Phase	Ward 06
T_158	Tertiary Drain	1.50 - 2.50	1-1.5	522.914	Second Phase	Ward 01
T_160	Tertiary Drain	1.50 - 2.50	1-1.5	295.853	Second Phase	Ward 01
T_162	Tertiary Drain	1.50 - 2.50	1-1.5	247.091	Second Phase	Ward 01
T_163	Tertiary Drain	1.50 - 2.50	1-1.5	210.015	Second Phase	Ward 01
T_167	Tertiary Drain	1.50 - 2.50	1-1.5	351.941	Second Phase	Ward 01
T_169	Tertiary Drain	1.50 - 2.50	1-1.5	239.743	Second Phase	Ward 01
T_170	Tertiary Drain	1.50 - 2.50	1-1.5	485.919	Second Phase	Ward 01
T_174	Tertiary Drain	1.50 - 2.50	1-1.5	367.911	Second Phase	Ward 01
T_175	Tertiary Drain	1.50 - 2.50	1-1.5	412.842	Second Phase	Ward 01
T_178	Tertiary Drain	1.50 - 2.50	1-1.5	235.045	Second Phase	Ward 02
T_182	Tertiary Drain	1.50 - 2.50	1-1.5	490.635	Second Phase	Ward 02
T_183	Tertiary Drain	1.50 - 2.50	1-1.5	55.308	Second Phase	Ward 03
T_183	Tertiary Drain	1.50 - 2.50	1-1.5	377.258	Second Phase	Ward 02
T_184	Tertiary Drain	1.50 - 2.50	1-1.5	54.412	Second Phase	Ward 03
T_184	Tertiary Drain	1.50 - 2.50	1-1.5	377.679	Second Phase	Ward 02
T_188	Tertiary Drain	1.50 - 2.50	1-1.5	330.814	Second Phase	Ward 03
T_189	Tertiary Drain	1.50 - 2.50	1-1.5	270.593	Second Phase	Ward 03
T_190	Tertiary Drain	1.50 - 2.50	1-1.5	251.003	Second Phase	Ward 03

Proposed Drain ID	Drain Type	Width (in ft)	Depth (in m)	Length_m	Phase	Ward_No
T_192	Tertiary Drain	1.50 - 2.50	1-1.5	330.646	Second Phase	Ward 03
T_193	Tertiary Drain	1.50 - 2.50	1-1.5	222.758	Second Phase	Ward 03
T_194	Tertiary Drain	1.50 - 2.50	1-1.5	221.069	Second Phase	Ward 03
T_199	Tertiary Drain	1.50 - 2.50	1-1.5	214.706	Second Phase	Ward 02
T_203	Tertiary Drain	1.50 - 2.50	1-1.5	209.994	Second Phase	Ward 02
T_204	Tertiary Drain	1.50 - 2.50	1-1.5	271.329	Second Phase	Ward 02
T_205	Tertiary Drain	1.50 - 2.50	1-1.5	265.144	Second Phase	Ward 02
T_206	Tertiary Drain	1.50 - 2.50	1-1.5	268.064	Second Phase	Ward 02
T_207	Tertiary Drain	1.50 - 2.50	1-1.5	261.627	Second Phase	Ward 02
T_209	Tertiary Drain	1.50 - 2.50	1-1.5	237.255	Second Phase	Ward 08
T_214	Tertiary Drain	1.50 - 2.50	1-1.5	428.740	Second Phase	Ward 05
T_215	Tertiary Drain	1.50 - 2.50	1-1.5	345.493	Second Phase	Ward 09
T_218	Tertiary Drain	1.50 - 2.50	1-1.5	236.573	Second Phase	Ward 08
T_220	Tertiary Drain	1.50 - 2.50	1-1.5	36.314	Second Phase	Ward 08
T_220	Tertiary Drain	1.50 - 2.50	1-1.5	367.611	Second Phase	Ward 05
T_224	Tertiary Drain	1.50 - 2.50	1-1.5	232.167	Second Phase	Ward 07
T_233	Tertiary Drain	1.50 - 2.50	1-1.5	249.241	Second Phase	Ward 07
T_235	Tertiary Drain	1.50 - 2.50	1-1.5	298.222	Second Phase	Ward 07
T_236	Tertiary Drain	1.50 - 2.50	1-1.5	302.237	Second Phase	Ward 07
T_237	Tertiary Drain	1.50 - 2.50	1-1.5	363.497	Second Phase	Ward 07
T_242	Tertiary Drain	1.50 - 2.50	1-1.5	211.408	Second Phase	Ward 07
T_243	Tertiary Drain	1.50 - 2.50	1-1.5	352.814	Second Phase	Ward 07
T_245	Tertiary Drain	1.50 - 2.50	1-1.5	320.329	Second Phase	Ward 08
T_246	Tertiary Drain	1.50 - 2.50	1-1.5	362.222	Second Phase	Ward 08
T_247	Tertiary Drain	1.50 - 2.50	1-1.5	349.224	Second Phase	Ward 08
T_249	Tertiary Drain	1.50 - 2.50	1-1.5	400.002	Second Phase	Ward 08
T_251	Tertiary Drain	1.50 - 2.50	1-1.5	237.306	Second Phase	Ward 02
T_252	Tertiary Drain	1.50 - 2.50	1-1.5	232.122	Second Phase	Ward 02
T_253	Tertiary Drain	1.50 - 2.50	1-1.5	237.345	Second Phase	Ward 02
T_254	Tertiary Drain	1.50 - 2.50	1-1.5	236.591	Second Phase	Ward 02
T_263	Tertiary Drain	1.50 - 2.50	1-1.5	249.418	Second Phase	Ward 07
T_264	Tertiary Drain	1.50 - 2.50	1-1.5	232.931	Second Phase	Ward 07
T_265	Tertiary Drain	1.50 - 2.50	1-1.5	286.927	Second Phase	Ward 07
T_266	Tertiary Drain	1.50 - 2.50	1-1.5	288.610	Second Phase	Ward 07
T_272	Tertiary Drain	1.50 - 2.50	1-1.5	370.329	Second Phase	Ward 02
T_273	Tertiary Drain	1.50 - 2.50	1-1.5	506.266	Second Phase	Ward 02
T_281	Tertiary Drain	1.50 - 2.50	1-1.5	302.883	Second Phase	Ward 07
T_286	Tertiary Drain	1.50 - 2.50	1-1.5	419.588	Second Phase	Ward 07
T_164	Tertiary Drain	1.50 - 2.50	1-1.5	248.085	Second Phase	Ward 01
S_12	Secondary Drain	2.5-3.5	1.124-2.124	470.893	Second Phase	Ward 07
S_14	Secondary Drain	2.5-3.5	1.124-2.124	488.728	Second Phase	Ward 08

Proposed Drain ID	Drain Type	Width (in ft)	Depth (in m)	Length_m	Phase	Ward_No
S_14	Secondary Drain	2.5-3.5	1.124-2.124	19.150	Second Phase	Ward 07
S_25	Secondary Drain	2.5-3.5	1.124-2.124	158.729	Third Phase	Ward 02
S_26	Secondary Drain	2.5-3.5	1.124-2.124	140.083	Third Phase	Ward 02
T_1	Tertiary Drain	1.50 - 2.50	1-1.5	200.252	Third Phase	Ward 02
T_8	Tertiary Drain	1.50 - 2.50	1-1.5	159.466	Third Phase	Ward 04
T_9	Tertiary Drain	1.50 - 2.50	1-1.5	149.478	Third Phase	Ward 04
T_11	Tertiary Drain	1.50 - 2.50	1-1.5	54.451	Third Phase	Ward 01
T_13	Tertiary Drain	1.50 - 2.50	1-1.5	131.886	Third Phase	Ward 03
T_22	Tertiary Drain	1.50 - 2.50	1-1.5	81.249	Third Phase	Ward 07
T_23	Tertiary Drain	1.50 - 2.50	1-1.5	117.202	Third Phase	Ward 07
T_25	Tertiary Drain	1.50 - 2.50	1-1.5	180.882	Third Phase	Ward 02
T_26	Tertiary Drain	1.50 - 2.50	1-1.5	197.448	Third Phase	Ward 02
T_27	Tertiary Drain	1.50 - 2.50	1-1.5	183.731	Third Phase	Ward 02
T_28	Tertiary Drain	1.50 - 2.50	1-1.5	163.901	Third Phase	Ward 01
T_29	Tertiary Drain	1.50 - 2.50	1-1.5	161.348	Third Phase	Ward 01
T_31	Tertiary Drain	1.50 - 2.50	1-1.5	205.699	Third Phase	Ward 01
T_32	Tertiary Drain	1.50 - 2.50	1-1.5	185.242	Third Phase	Ward 01
T_34	Tertiary Drain	1.50 - 2.50	1-1.5	161.357	Third Phase	Ward 01
T_37	Tertiary Drain	1.50 - 2.50	1-1.5	160.661	Third Phase	Ward 01
T_40	Tertiary Drain	1.50 - 2.50	1-1.5	83.583	Third Phase	Ward 03
T_42	Tertiary Drain	1.50 - 2.50	1-1.5	183.654	Third Phase	Ward 03
T_44	Tertiary Drain	1.50 - 2.50	1-1.5	127.717	Third Phase	Ward 09
T_45	Tertiary Drain	1.50 - 2.50	1-1.5	80.793	Third Phase	Ward 09
T_45	Tertiary Drain	1.50 - 2.50	1-1.5	2.443	Third Phase	Ward 07
T_46	Tertiary Drain	1.50 - 2.50	1-1.5	123.837	Third Phase	Ward 09
T_47	Tertiary Drain	1.50 - 2.50	1-1.5	96.894	Third Phase	Ward 09
T_48	Tertiary Drain	1.50 - 2.50	1-1.5	191.410	Third Phase	Ward 09
T_49	Tertiary Drain	1.50 - 2.50	1-1.5	183.276	Third Phase	Ward 09
T_50	Tertiary Drain	1.50 - 2.50	1-1.5	102.524	Third Phase	Ward 08
T_57	Tertiary Drain	1.50 - 2.50	1-1.5	156.075	Third Phase	Ward 02
T_58	Tertiary Drain	1.50 - 2.50	1-1.5	146.225	Third Phase	Ward 07
T_60	Tertiary Drain	1.50 - 2.50	1-1.5	179.772	Third Phase	Ward 07
T_61	Tertiary Drain	1.50 - 2.50	1-1.5	203.669	Third Phase	Ward 07
T_63	Tertiary Drain	1.50 - 2.50	1-1.5	208.853	Third Phase	Ward 07
T_64	Tertiary Drain	1.50 - 2.50	1-1.5	90.417	Third Phase	Ward 07
T_65	Tertiary Drain	1.50 - 2.50	1-1.5	202.504	Third Phase	Ward 07
T_66	Tertiary Drain	1.50 - 2.50	1-1.5	204.896	Third Phase	Ward 07
T_67	Tertiary Drain	1.50 - 2.50	1-1.5	192.805	Third Phase	Ward 07
T_68	Tertiary Drain	1.50 - 2.50	1-1.5	194.218	Third Phase	Ward 07
T_71	Tertiary Drain	1.50 - 2.50	1-1.5	198.368	Third Phase	Ward 03
T_75	Tertiary Drain	1.50 - 2.50	1-1.5	126.734	Third Phase	Ward 03

Proposed Drain ID	Drain Type	Width (in ft)	Depth (in m)	Length_m	Phase	Ward_No
T_77	Tertiary Drain	1.50 - 2.50	1-1.5	103.401	Third Phase	Ward 02
T_79	Tertiary Drain	1.50 - 2.50	1-1.5	110.829	Third Phase	Ward 03
T_80	Tertiary Drain	1.50 - 2.50	1-1.5	65.975	Third Phase	Ward 03
T_80	Tertiary Drain	1.50 - 2.50	1-1.5	68.166	Third Phase	Ward 02
T_81	Tertiary Drain	1.50 - 2.50	1-1.5	70.030	Third Phase	Ward 02
T_82	Tertiary Drain	1.50 - 2.50	1-1.5	192.640	Third Phase	Ward 02
T_83	Tertiary Drain	1.50 - 2.50	1-1.5	48.812	Third Phase	Ward 02
T_86	Tertiary Drain	1.50 - 2.50	1-1.5	187.598	Third Phase	Ward 05
T_87	Tertiary Drain	1.50 - 2.50	1-1.5	209.819	Third Phase	Ward 05
T_89	Tertiary Drain	1.50 - 2.50	1-1.5	174.451	Third Phase	Ward 05
T_96	Tertiary Drain	1.50 - 2.50	1-1.5	200.959	Third Phase	Ward 06
T_101	Tertiary Drain	1.50 - 2.50	1-1.5	199.953	Third Phase	Ward 06
T_102	Tertiary Drain	1.50 - 2.50	1-1.5	190.121	Third Phase	Ward 02
T_103	Tertiary Drain	1.50 - 2.50	1-1.5	179.201	Third Phase	Ward 02
T_104	Tertiary Drain	1.50 - 2.50	1-1.5	106.464	Third Phase	Ward 02
T_105	Tertiary Drain	1.50 - 2.50	1-1.5	117.845	Third Phase	Ward 02
T_109	Tertiary Drain	1.50 - 2.50	1-1.5	206.966	Third Phase	Ward 02
T_110	Tertiary Drain	1.50 - 2.50	1-1.5	145.934	Third Phase	Ward 02
T_111	Tertiary Drain	1.50 - 2.50	1-1.5	139.950	Third Phase	Ward 02
T_112	Tertiary Drain	1.50 - 2.50	1-1.5	187.707	Third Phase	Ward 02
T_113	Tertiary Drain	1.50 - 2.50	1-1.5	125.030	Third Phase	Ward 02
T_116	Tertiary Drain	1.50 - 2.50	1-1.5	195.809	Third Phase	Ward 05
T_118	Tertiary Drain	1.50 - 2.50	1-1.5	196.283	Third Phase	Ward 05
T_120	Tertiary Drain	1.50 - 2.50	1-1.5	208.780	Third Phase	Ward 04
T_123	Tertiary Drain	1.50 - 2.50	1-1.5	124.304	Third Phase	Ward 04
T_125	Tertiary Drain	1.50 - 2.50	1-1.5	164.350	Third Phase	Ward 04
T_126	Tertiary Drain	1.50 - 2.50	1-1.5	140.849	Third Phase	Ward 04
T_128	Tertiary Drain	1.50 - 2.50	1-1.5	111.438	Third Phase	Ward 04
T_129	Tertiary Drain	1.50 - 2.50	1-1.5	149.917	Third Phase	Ward 01
T_130	Tertiary Drain	1.50 - 2.50	1-1.5	190.746	Third Phase	Ward 01
T_131	Tertiary Drain	1.50 - 2.50	1-1.5	207.999	Third Phase	Ward 01
T_134	Tertiary Drain	1.50 - 2.50	1-1.5	76.503	Third Phase	Ward 02
T_137	Tertiary Drain	1.50 - 2.50	1-1.5	174.091	Third Phase	Ward 02
T_138	Tertiary Drain	1.50 - 2.50	1-1.5	138.058	Third Phase	Ward 02
T_140	Tertiary Drain	1.50 - 2.50	1-1.5	199.458	Third Phase	Ward 07
T_147	Tertiary Drain	1.50 - 2.50	1-1.5	124.449	Third Phase	Ward 09
T_152	Tertiary Drain	1.50 - 2.50	1-1.5	108.171	Third Phase	Ward 04
T_152	Tertiary Drain	1.50 - 2.50	1-1.5	90.815	Third Phase	Ward 01
T_153	Tertiary Drain	1.50 - 2.50	1-1.5	115.189	Third Phase	Ward 04
T_154	Tertiary Drain	1.50 - 2.50	1-1.5	39.792	Third Phase	Ward 01
T_155	Tertiary Drain	1.50 - 2.50	1-1.5	206.627	Third Phase	Ward 01

Proposed Drain ID	Drain Type	Width (in ft)	Depth (in m)	Length_m	Phase	Ward_No
T_156	Tertiary Drain	1.50 - 2.50	1-1.5	193.233	Third Phase	Ward 01
T_157	Tertiary Drain	1.50 - 2.50	1-1.5	132.110	Third Phase	Ward 01
T_171	Tertiary Drain	1.50 - 2.50	1-1.5	133.847	Third Phase	Ward 01
T_172	Tertiary Drain	1.50 - 2.50	1-1.5	181.562	Third Phase	Ward 01
T_173	Tertiary Drain	1.50 - 2.50	1-1.5	196.451	Third Phase	Ward 01
T_176	Tertiary Drain	1.50 - 2.50	1-1.5	85.212	Third Phase	Ward 02
T_177	Tertiary Drain	1.50 - 2.50	1-1.5	85.437	Third Phase	Ward 02
T_179	Tertiary Drain	1.50 - 2.50	1-1.5	199.522	Third Phase	Ward 02
T_180	Tertiary Drain	1.50 - 2.50	1-1.5	121.687	Third Phase	Ward 02
T_181	Tertiary Drain	1.50 - 2.50	1-1.5	121.128	Third Phase	Ward 02
T_185	Tertiary Drain	1.50 - 2.50	1-1.5	60.918	Third Phase	Ward 03
T_185	Tertiary Drain	1.50 - 2.50	1-1.5	72.789	Third Phase	Ward 02
T_186	Tertiary Drain	1.50 - 2.50	1-1.5	68.057	Third Phase	Ward 03
T_187	Tertiary Drain	1.50 - 2.50	1-1.5	181.412	Third Phase	Ward 03
T_191	Tertiary Drain	1.50 - 2.50	1-1.5	185.522	Third Phase	Ward 03
T_195	Tertiary Drain	1.50 - 2.50	1-1.5	41.329	Third Phase	Ward 03
T_195	Tertiary Drain	1.50 - 2.50	1-1.5	42.422	Third Phase	Ward 02
T_196	Tertiary Drain	1.50 - 2.50	1-1.5	40.914	Third Phase	Ward 03
T_196	Tertiary Drain	1.50 - 2.50	1-1.5	42.846	Third Phase	Ward 02
T_197	Tertiary Drain	1.50 - 2.50	1-1.5	35.026	Third Phase	Ward 03
T_197	Tertiary Drain	1.50 - 2.50	1-1.5	48.832	Third Phase	Ward 02
T_198	Tertiary Drain	1.50 - 2.50	1-1.5	34.523	Third Phase	Ward 03
T_198	Tertiary Drain	1.50 - 2.50	1-1.5	49.346	Third Phase	Ward 02
T_200	Tertiary Drain	1.50 - 2.50	1-1.5	168.655	Third Phase	Ward 02
T_208	Tertiary Drain	1.50 - 2.50	1-1.5	168.265	Third Phase	Ward 08
T_210	Tertiary Drain	1.50 - 2.50	1-1.5	209.823	Third Phase	Ward 08
T_211	Tertiary Drain	1.50 - 2.50	1-1.5	207.572	Third Phase	Ward 08
T_212	Tertiary Drain	1.50 - 2.50	1-1.5	174.190	Third Phase	Ward 08
T_213	Tertiary Drain	1.50 - 2.50	1-1.5	203.164	Third Phase	Ward 08
T_216	Tertiary Drain	1.50 - 2.50	1-1.5	188.894	Third Phase	Ward 08
T_217	Tertiary Drain	1.50 - 2.50	1-1.5	187.373	Third Phase	Ward 08
T_219	Tertiary Drain	1.50 - 2.50	1-1.5	5.577	Third Phase	Ward 08
T_219	Tertiary Drain	1.50 - 2.50	1-1.5	146.682	Third Phase	Ward 05
T_221	Tertiary Drain	1.50 - 2.50	1-1.5	28.290	Third Phase	Ward 08
T_221	Tertiary Drain	1.50 - 2.50	1-1.5	76.416	Third Phase	Ward 05
T_222	Tertiary Drain	1.50 - 2.50	1-1.5	86.970	Third Phase	Ward 07
T_223	Tertiary Drain	1.50 - 2.50	1-1.5	126.811	Third Phase	Ward 07
T_225	Tertiary Drain	1.50 - 2.50	1-1.5	163.277	Third Phase	Ward 07
T_226	Tertiary Drain	1.50 - 2.50	1-1.5	87.455	Third Phase	Ward 07
T_227	Tertiary Drain	1.50 - 2.50	1-1.5	118.388	Third Phase	Ward 07
T_228	Tertiary Drain	1.50 - 2.50	1-1.5	145.697	Third Phase	Ward 07

Proposed Drain ID	Drain Type	Width (in ft)	Depth (in m)	Length_m	Phase	Ward_No
T_229	Tertiary Drain	1.50 - 2.50	1-1.5	102.261	Third Phase	Ward 07
T_230	Tertiary Drain	1.50 - 2.50	1-1.5	128.621	Third Phase	Ward 07
T_231	Tertiary Drain	1.50 - 2.50	1-1.5	164.473	Third Phase	Ward 07
T_232	Tertiary Drain	1.50 - 2.50	1-1.5	184.981	Third Phase	Ward 07
T_239	Tertiary Drain	1.50 - 2.50	1-1.5	111.890	Third Phase	Ward 07
T_240	Tertiary Drain	1.50 - 2.50	1-1.5	153.071	Third Phase	Ward 07
T_241	Tertiary Drain	1.50 - 2.50	1-1.5	161.394	Third Phase	Ward 07
T_244	Tertiary Drain	1.50 - 2.50	1-1.5	195.808	Third Phase	Ward 08
T_250	Tertiary Drain	1.50 - 2.50	1-1.5	117.684	Third Phase	Ward 02
T_255	Tertiary Drain	1.50 - 2.50	1-1.5	161.525	Third Phase	Ward 02
T_258	Tertiary Drain	1.50 - 2.50	1-1.5	130.166	Third Phase	Ward 07
T_259	Tertiary Drain	1.50 - 2.50	1-1.5	169.830	Third Phase	Ward 07
T_260	Tertiary Drain	1.50 - 2.50	1-1.5	126.893	Third Phase	Ward 07
T_261	Tertiary Drain	1.50 - 2.50	1-1.5	127.223	Third Phase	Ward 07
T_262	Tertiary Drain	1.50 - 2.50	1-1.5	128.297	Third Phase	Ward 07
T_268	Tertiary Drain	1.50 - 2.50	1-1.5	180.177	Third Phase	Ward 02
T_269	Tertiary Drain	1.50 - 2.50	1-1.5	180.183	Third Phase	Ward 02
T_270	Tertiary Drain	1.50 - 2.50	1-1.5	179.648	Third Phase	Ward 02
T_271	Tertiary Drain	1.50 - 2.50	1-1.5	179.637	Third Phase	Ward 02
T_274	Tertiary Drain	1.50 - 2.50	1-1.5	124.946	Third Phase	Ward 02
T_275	Tertiary Drain	1.50 - 2.50	1-1.5	125.709	Third Phase	Ward 02
T_276	Tertiary Drain	1.50 - 2.50	1-1.5	118.185	Third Phase	Ward 02
T_277	Tertiary Drain	1.50 - 2.50	1-1.5	119.039	Third Phase	Ward 02
T_278	Tertiary Drain	1.50 - 2.50	1-1.5	185.641	Third Phase	Ward 02
T_279	Tertiary Drain	1.50 - 2.50	1-1.5	154.255	Third Phase	Ward 07
T_283	Tertiary Drain	1.50 - 2.50	1-1.5	196.285	Third Phase	Ward 09
T_284	Tertiary Drain	1.50 - 2.50	1-1.5	184.665	Third Phase	Ward 09
T_285	Tertiary Drain	1.50 - 2.50	1-1.5	103.962	Third Phase	Ward 06
T_285	Tertiary Drain	1.50 - 2.50	1-1.5	2.002	Third Phase	Ward 04
T_287	Tertiary Drain	1.50 - 2.50	1-1.5	108.060	Third Phase	Ward 07
T_288	Tertiary Drain	1.50 - 2.50	1-1.5	156.510	Third Phase	Ward 01
T_289	Tertiary Drain	1.50 - 2.50	1-1.5	119.499	Third Phase	Ward 04
T_290	Tertiary Drain	1.50 - 2.50	1-1.5	134.917	Third Phase	Ward 09
T_256	Tertiary Drain	1.50 - 2.50	1-1.5	184.766	Third Phase	Ward 02

Table G: Planning Schedule of Waterbodies in Amtali Paurashava

Annexure-G

Type	Area_Acre	Mouza_Name	PLOT_NO	Ward_No
River	12.2045	Chaora	1	Ward 01
River	0.0828	Chaora	1	Ward 04
River	2.4930	Chaora	2	Ward 01
River	0.0161	Chaora	2	Ward 04
River	0.0700	Chaora	3	Ward 01
River	0.0216	Chaora	3	Ward 04
River	0.0598	Chaora	4	Ward 01
River	0.0100	Chaora	4	Ward 04
River	0.6047	Chaora	5	Ward 01
River	0.0138	Chaora	5	Ward 04
River	1.3787	Chaora	6	Ward 01
River	0.0287	Chaora	6	Ward 04
River	0.9819	Chaora	7	Ward 01
River	0.1169	Chaora	7	Ward 04
River	4.3941	Chaora	8	Ward 01
River	0.0453	Chaora	8	Ward 04
River	0.4911	Chaora	9	Ward 01
River	0.4607	Chaora	9	Ward 04
River	1.2081	Chaora	10	Ward 01
River	0.0344	Chaora	10	Ward 04
River	0.1069	Chaora	11	Ward 01
River	0.0567	Chaora	11	Ward 04
River	0.2858	Chaora	12	Ward 01
River	0.0603	Chaora	12	Ward 04
River	0.1428	Chaora	13	Ward 01
River	0.0559	Chaora	13	Ward 04
River	0.3852	Chaora	14	Ward 01
River	0.5926	Chaora	15	Ward 01
River	0.0071	Chaora	15	Ward 04
River	0.1579	Chaora	16	Ward 01
River	0.0096	Chaora	16	Ward 04
River	0.5440	Chaora	17	Ward 01
River	0.0080	Chaora	17	Ward 04
River	0.3658	Chaora	18	Ward 01
River	0.0113	Chaora	18	Ward 04
River	1.0225	Chaora	19	Ward 01
River	0.0079	Chaora	19	Ward 04
River	0.9777	Chaora	20	Ward 01
River	0.0073	Chaora	20	Ward 04
River	0.0701	Chaora	21	Ward 01
River	0.0083	Chaora	21	Ward 04
River	0.2298	Chaora	22	Ward 01
River	0.0060	Chaora	22	Ward 04
River	0.4052	Chaora	23	Ward 01
River	0.0065	Chaora	23	Ward 04
River	0.0795	Chaora	24	Ward 01
River	0.0056	Chaora	24	Ward 04
River	0.1028	Chaora	25	Ward 01
River	0.5117	Chaora	26	Ward 01
River	0.0776	Chaora	27	Ward 01
River	0.2782	Chaora	28	Ward 01
River	0.0789	Chaora	29	Ward 01
River	0.5957	Chaora	30	Ward 01
River	0.0052	Chaora	30	Ward 04
River	0.9726	Chaora	31	Ward 01
River	0.7190	Chaora	32	Ward 01
River	0.0072	Chaora	32	Ward 04
River	2.5555	Chaora	33	Ward 01

Table G: Planning Schedule of Waterbodies in Amtali Paurashava

Annexure-G

River	2.2515	Chaora	34	Ward 01
River	0.0054	Chaora	34	Ward 04
River	0.7878	Chaora	35	Ward 01
River	0.0078	Chaora	35	Ward 04
River	1.7780	Chaora	36	Ward 01
Canal	0.1660	Chaora	36	Ward 01
River	0.0103	Chaora	36	Ward 01
Canal	0.0103	Chaora	36	Ward 01
River	0.0061	Chaora	36	Ward 04
River	0.2572	Chaora	37	Ward 01
River	0.6037	Chaora	38	Ward 01
River	0.5966	Chaora	39	Ward 01
River	0.2056	Chaora	40	Ward 01
River	0.1226	Chaora	41	Ward 01
River	0.4579	Chaora	42	Ward 01
River	1.7209	Chaora	43	Ward 01
River	0.6919	Chaora	44	Ward 01
River	1.3252	Chaora	45	Ward 01
River	0.2304	Chaora	46	Ward 01
River	0.2009	Chaora	47	Ward 01
River	1.0683	Chaora	48	Ward 01
Canal	0.0605	Chaora	48	Ward 01
Canal	0.0832	Chaora	49	Ward 01
River	0.8419	Chaora	50	Ward 01
Canal	0.0665	Chaora	50	Ward 01
River	0.1159	Chaora	51	Ward 01
River	0.0473	Chaora	52	Ward 01
River	0.1700	Chaora	53	Ward 01
River	0.3226	Chaora	54	Ward 01
River	0.1443	Chaora	55	Ward 01
River	0.3666	Chaora	56	Ward 01
River	0.1906	Chaora	57	Ward 01
River	0.3992	Chaora	58	Ward 01
River	0.1544	Chaora	59	Ward 01
River	0.1683	Chaora	60	Ward 01
River	0.5952	Chaora	61	Ward 01
River	0.3299	Chaora	62	Ward 01
River	0.6280	Chaora	63	Ward 01
River	0.1358	Chaora	64	Ward 01
River	0.2136	Chaora	65	Ward 01
River	0.1055	Chaora	66	Ward 01
River	0.1806	Chaora	67	Ward 01
River	0.2770	Chaora	68	Ward 01
River	0.7995	Chaora	69	Ward 01
Canal	0.1048	Chaora	69	Ward 01
River	0.5682	Chaora	70	Ward 01
River	0.2548	Chaora	71	Ward 01
Canal	0.0899	Chaora	71	Ward 01
River	0.1882	Chaora	72	Ward 01
Canal	0.0751	Chaora	72	Ward 01
River	0.1489	Chaora	73	Ward 01
Canal	0.0769	Chaora	73	Ward 01
Canal	0.1235	Chaora	74	Ward 01
River	0.1736	Chaora	75	Ward 01
River	0.4847	Chaora	76	Ward 01
River	0.1402	Chaora	77	Ward 01
River	0.3809	Chaora	78	Ward 01
River	0.0470	Chaora	79	Ward 01
River	0.0091	Chaora	80	Ward 01

Table G: Planning Schedule of Waterbodies in Amtali Paurashava

Annexure-G

River	0.2985	Chaora	81	Ward 01
Canal	0.0646	Chaora	82	Ward 01
Canal	0.1801	Chaora	83	Ward 01
River	0.8685	Chaora	84	Ward 01
River	0.0911	Chaora	85	Ward 01
River	0.2677	Chaora	86	Ward 01
River	0.3502	Chaora	87	Ward 01
River	0.1759	Chaora	88	Ward 01
River	0.0711	Chaora	89	Ward 01
Canal	0.0803	Chaora	92	Ward 01
Canal	0.0420	Chaora	93	Ward 01
Canal	0.1981	Chaora	94	Ward 01
Canal	0.1096	Chaora	95	Ward 01
Canal	0.0544	Chaora	96	Ward 01
Canal	0.0997	Chaora	97	Ward 01
Ditch	0.0949	Chaora	98	Ward 01
Canal	0.1502	Chaora	98	Ward 01
Ditch	0.2616	Chaora	99	Ward 01
Canal	0.0947	Chaora	99	Ward 01
Ditch	0.2612	Chaora	100	Ward 01
Canal	0.0868	Chaora	100	Ward 01
River	0.0211	Chaora	109	Ward 01
River	0.0206	Chaora	110	Ward 01
Canal	0.3287	Chaora	116	Ward 01
Canal	0.5705	Chaora	117	Ward 01
Ditch	0.0748	Chaora	119	Ward 01
Canal	0.2806	Chaora	119	Ward 01
Canal	0.1687	Chaora	120	Ward 01
Ditch	0.0185	Chaora	121	Ward 01
Ditch	0.1354	Chaora	122	Ward 01
Ditch	0.0675	Chaora	124	Ward 01
Ditch	0.1250	Chaora	125	Ward 01
Ditch	0.2606	Chaora	126	Ward 01
Ditch	0.2892	Chaora	127	Ward 01
Ditch	0.1082	Chaora	128	Ward 01
Ditch	0.0987	Chaora	129	Ward 01
Ditch	0.1207	Chaora	130	Ward 01
Ditch	0.0478	Chaora	132	Ward 01
Ditch	0.0822	Chaora	133	Ward 01
Ditch	0.0576	Chaora	134	Ward 01
Ditch	0.1577	Chaora	136	Ward 01
Ditch	0.8818	Chaora	136	Ward 01
Ditch	0.4396	Chaora	137	Ward 01
Ditch	0.2039	Chaora	138	Ward 01
Ditch	0.0683	Chaora	139	Ward 01
Ditch	0.1716	Chaora	139	Ward 01
Ditch	0.7988	Chaora	140	Ward 01
Ditch	0.0186	Chaora	141	Ward 01
Ditch	0.2793	Chaora	141	Ward 01
Ditch	0.0540	Chaora	142	Ward 01
Ditch	0.2467	Chaora	142	Ward 01
Ditch	0.1674	Chaora	143	Ward 01
Ditch	0.0942	Chaora	144	Ward 01
Ditch	0.7169	Chaora	144	Ward 01
Ditch	0.1060	Chaora	145	Ward 01
Ditch	0.6652	Chaora	145	Ward 01
Ditch	0.0837	Chaora	146	Ward 01
Ditch	0.6562	Chaora	146	Ward 01
Ditch	0.0446	Chaora	147	Ward 01

Table G: Planning Schedule of Waterbodies in Amtali Paurashava

Annexure-G

Ditch	0.4105	Chaora	147	Ward 01
Ditch	0.0421	Chaora	148	Ward 01
Ditch	0.2189	Chaora	148	Ward 01
Ditch	0.1517	Chaora	149	Ward 01
Ditch	0.7525	Chaora	149	Ward 01
Ditch	0.2669	Chaora	150	Ward 01
Ditch	0.4204	Chaora	151	Ward 01
Ditch	0.7316	Chaora	152	Ward 01
Ditch	0.6265	Chaora	153	Ward 01
Ditch	0.0971	Chaora	154	Ward 01
Ditch	0.2432	Chaora	165	Ward 01
Ditch	0.0528	Chaora	166	Ward 01
Ditch	0.0717	Chaora	167	Ward 01
Ditch	0.0551	Chaora	168	Ward 01
Ditch	0.0299	Chaora	172	Ward 01
Canal	0.0784	Chaora	181	Ward 01
Canal	0.1535	Chaora	182	Ward 01
Canal	0.1272	Chaora	183	Ward 01
Canal	0.1805	Chaora	184	Ward 01
River	0.0584	Chaora	184	Ward 04
River	0.1162	Chaora	185	Ward 04
Canal	0.0280	Chaora	186	Ward 01
River	0.0841	Chaora	186	Ward 04
Canal	0.0541	Chaora	187	Ward 01
River	0.0484	Chaora	187	Ward 04
River	1.6974	Chaora	188	Ward 04
River	0.2748	Chaora	189	Ward 04
River	0.2089	Chaora	190	Ward 04
River	0.1924	Chaora	191	Ward 04
River	0.1995	Chaora	192	Ward 04
River	0.1067	Chaora	193	Ward 04
Canal	0.0258	Chaora	194	Ward 01
River	0.1663	Chaora	194	Ward 04
River	0.1310	Chaora	195	Ward 04
River	0.0401	Chaora	196	Ward 04
River	0.0341	Chaora	197	Ward 04
Canal	0.0136	Chaora	198	Ward 01
River	0.0340	Chaora	198	Ward 04
Canal	0.0162	Chaora	199	Ward 01
River	0.2846	Chaora	199	Ward 04
River	0.1151	Chaora	200	Ward 04
River	0.3648	Chaora	201	Ward 04
Canal	0.0071	Chaora	202	Ward 01
River	2.5655	Chaora	202	Ward 04
River	0.7112	Chaora	203	Ward 04
River	0.8007	Chaora	204	Ward 04
River	1.5774	Chaora	205	Ward 04
River	0.9839	Chaora	206	Ward 04
River	0.4472	Chaora	207	Ward 04
River	0.9378	Chaora	208	Ward 04
River	0.5568	Chaora	209	Ward 04
River	0.3930	Chaora	210	Ward 04
River	1.6327	Chaora	211	Ward 04
River	0.0217	Chaora	213	Ward 04
River	0.1045	Chaora	214	Ward 04
River	0.6400	Chaora	215	Ward 04
River	0.0736	Chaora	216	Ward 04
River	0.0786	Chaora	217	Ward 04
River	0.2774	Chaora	218	Ward 04

Table G: Planning Schedule of Waterbodies in Amtali Paurashava

Annexure-G

River	0.2631	Chaora	219	Ward 04
River	0.2236	Chaora	220	Ward 04
River	0.2475	Chaora	221	Ward 04
River	0.1519	Chaora	222	Ward 04
River	0.1114	Chaora	223	Ward 04
River	0.0966	Chaora	224	Ward 04
River	0.1602	Chaora	225	Ward 04
River	0.5406	Chaora	226	Ward 04
River	0.5264	Chaora	227	Ward 04
River	0.5142	Chaora	228	Ward 04
River	0.6280	Chaora	229	Ward 04
River	0.2281	Chaora	230	Ward 04
River	0.8161	Chaora	231	Ward 04
River	0.6755	Chaora	232	Ward 04
Canal	0.0127	Chaora	232	Ward 04
River	0.0088	Chaora	232	Ward 04
Canal	0.0088	Chaora	232	Ward 04
River	0.1002	Chaora	233	Ward 04
Ditch	0.2263	Chaora	234	Ward 01
River	0.1591	Chaora	234	Ward 04
Canal	0.0051	Chaora	235	Ward 01
River	0.0782	Chaora	235	Ward 04
Ditch	0.0831	Chaora	236	Ward 01
Canal	0.0051	Chaora	236	Ward 01
River	1.5270	Chaora	236	Ward 04
River	0.4618	Chaora	237	Ward 04
River	0.9009	Chaora	238	Ward 04
River	0.4594	Chaora	239	Ward 04
Canal	0.0086	Chaora	240	Ward 01
River	0.6004	Chaora	240	Ward 04
River	0.0460	Chaora	241	Ward 04
River	0.0391	Chaora	242	Ward 04
River	0.0531	Chaora	243	Ward 04
River	0.0548	Chaora	244	Ward 04
River	0.1712	Chaora	245	Ward 04
Canal	0.0490	Chaora	246	Ward 01
River	0.2349	Chaora	246	Ward 04
Canal	0.0317	Chaora	247	Ward 01
River	0.1072	Chaora	247	Ward 04
Ditch	0.5283	Chaora	248	Ward 01
River	0.1387	Chaora	248	Ward 04
River	0.1043	Chaora	249	Ward 04
Ditch	0.2223	Chaora	250	Ward 01
River	0.0885	Chaora	250	Ward 04
River	0.0500	Chaora	251	Ward 04
Ditch	0.3530	Chaora	252	Ward 01
River	0.4651	Chaora	252	Ward 04
River	0.1575	Chaora	253	Ward 04
River	0.8748	Chaora	254	Ward 04
River	1.7809	Chaora	255	Ward 04
Ditch	0.0084	Chaora	256	Ward 01
River	0.7179	Chaora	256	Ward 04
River	0.7817	Chaora	257	Ward 04
River	2.1791	Chaora	258	Ward 04
River	0.8661	Chaora	259	Ward 05
River	1.9937	Chaora	260	Ward 05
Ditch	0.0874	Chaora	261	Ward 01
River	0.2790	Chaora	261	Ward 05
Ditch	0.1099	Chaora	262	Ward 01

Table G: Planning Schedule of Waterbodies in Amtali Paurashava

Annexure-G

River	0.3327	Chaora	262	Ward 05
River	0.0850	Chaora	263	Ward 05
River	0.1222	Chaora	264	Ward 05
Ditch	0.0336	Chaora	265	Ward 01
River	0.0817	Chaora	265	Ward 05
River	1.7346	Chaora	266	Ward 05
Ditch	0.0164	Chaora	267	Ward 01
River	0.1404	Chaora	267	Ward 05
River	0.6998	Chaora	268	Ward 05
River	2.4406	Chaora	269	Ward 05
River	0.4549	Chaora	270	Ward 05
River	0.6718	Chaora	271	Ward 05
River	0.5748	Chaora	272	Ward 05
River	1.1229	Chaora	273	Ward 05
River	1.8672	Chaora	274	Ward 05
River	0.0066	Chaora	277	Ward 05
Canal	0.0876	Chaora	287	Ward 05
River	0.1738	Chaora	289	Ward 05
Canal	0.0542	Chaora	289	Ward 05
Pond	0.0111	Chaora	292	Ward 06
Pond	0.0292	Chaora	294	Ward 06
Canal	0.0444	Chaora	294	Ward 06
Ditch	0.2919	Chaora	295	Ward 01
Canal	0.8249	Chaora	295	Ward 05
Pond	0.1339	Chaora	295	Ward 06
Canal	0.3024	Chaora	295	Ward 06
Ditch	0.1143	Chaora	296	Ward 06
Pond	0.1180	Chaora	296	Ward 06
Canal	0.0144	Chaora	296	Ward 06
Ditch	0.0066	Chaora	301	Ward 06
Ditch	0.0945	Chaora	302	Ward 06
Ditch	0.0163	Chaora	303	Ward 06
Canal	0.0065	Chaora	305	Ward 01
Canal	0.0251	Chaora	306	Ward 01
Canal	0.0896	Chaora	307	Ward 01
Canal	1.3420	Chaora	309	Ward 01
Canal	0.2453	Chaora	309	Ward 01
Ditch	0.0914	Chaora	309	Ward 05
Pond	0.0330	Chaora	309	Ward 06
Canal	0.1630	Chaora	310	Ward 01
Canal	0.0178	Chaora	312	Ward 06
Canal	0.0161	Chaora	314	Ward 06
Canal	0.0124	Chaora	315	Ward 06
Pond	0.4136	Chaora	316	Ward 06
Pond	0.0417	Chaora	317	Ward 06
Pond	0.0836	Chaora	317	Ward 06
Pond	0.0631	Chaora	317	Ward 06
Pond	0.0543	Chaora	318	Ward 06
Pond	0.0544	Chaora	319	Ward 06
Pond	0.1957	Chaora	320	Ward 06
Pond	0.3824	Chaora	320	Ward 06
Pond	0.0062	Chaora	320	Ward 06
Pond	0.0170	Chaora	321	Ward 06
Pond	0.0474	Chaora	321	Ward 06
Canal	0.0055	Chaora	321	Ward 06
Pond	0.0513	Chaora	322	Ward 06
Ditch	0.0327	Chaora	322	Ward 06
Pond	0.2010	Chaora	322	Ward 06
Pond	0.1987	Chaora	322	Ward 06

Table G: Planning Schedule of Waterbodies in Amtali Paurashava

Annexure-G

Pond	0.1787	Chaora	322	Ward 06
Ditch	0.0371	Chaora	323	Ward 06
Pond	0.1377	Chaora	323	Ward 06
Pond	0.0589	Chaora	323	Ward 06
Pond	0.0866	Chaora	323	Ward 06
Ditch	0.0392	Chaora	324	Ward 06
Pond	0.0432	Chaora	324	Ward 06
Pond	0.0639	Chaora	324	Ward 06
Pond	0.0505	Chaora	324	Ward 06
Ditch	0.0344	Chaora	325	Ward 06
Pond	0.0477	Chaora	325	Ward 06
Pond	0.0133	Chaora	325	Ward 06
Pond	0.1255	Chaora	326	Ward 06
Pond	0.2774	Chaora	327	Ward 06
Pond	0.5538	Chaora	327	Ward 06
Pond	0.4358	Chaora	327	Ward 06
Pond	0.0949	Chaora	328	Ward 06
Pond	0.1203	Chaora	328	Ward 06
Pond	0.1625	Chaora	328	Ward 06
Pond	0.0085	Chaora	329	Ward 06
Pond	0.0357	Chaora	329	Ward 06
Pond	0.1857	Chaora	329	Ward 06
Canal	0.0246	Chaora	329	Ward 06
Canal	0.2981	Chaora	330	Ward 06
Pond	0.3229	Chaora	334	Ward 06
Pond	0.1644	Chaora	339	Ward 06
Pond	0.3895	Chaora	340	Ward 06
Pond	0.2141	Chaora	342	Ward 06
Canal	0.1197	Chaora	344	Ward 05
Canal	0.5031	Chaora	345	Ward 05
Canal	0.0330	Chaora	346	Ward 05
Canal	0.6564	Chaora	348	Ward 05
River	1.1283	Chaora	349	Ward 04
Canal	0.2233	Chaora	349	Ward 04
Canal	0.2100	Chaora	349	Ward 05
Canal	0.0207	Chaora	356	Ward 02
Canal	0.0063	Chaora	384	Ward 02
Canal	0.0073	Chaora	385	Ward 02
Pond	0.1932	Chaora	392	Ward 04
Canal	0.0125	Chaora	397	Ward 02
Canal	0.0214	Chaora	400	Ward 02
Canal	1.8284	Chaora	401	Ward 02
Pond	0.0128	Chaora	401	Ward 04
Ditch	0.5499	Chaora	439	Ward 06
Canal	0.1689	Chaora	442	Ward 02
Ditch	0.1886	Chaora	451	Ward 02
Ditch	0.0219	Chaora	452	Ward 02
Canal	0.1704	Chaora	454	Ward 06
Canal	0.0866	Chaora	457	Ward 06
Canal	0.0599	Chaora	461	Ward 06
Canal	0.5167	Chaora	462	Ward 02
Canal	0.0408	Chaora	462	Ward 06
Canal	0.0586	Chaora	463	Ward 02
Canal	0.0269	Chaora	467	Ward 02
Canal	0.0787	Chaora	468	Ward 02
Canal	0.0288	Chaora	468	Ward 06
Canal	0.0164	Chaora	469	Ward 02
Canal	0.0351	Chaora	469	Ward 06
Canal	0.0335	Chaora	470	Ward 02

Table G: Planning Schedule of Waterbodies in Amtali Paurashava

Annexure-G

Canal	0.0221	Chaora	471	Ward 02
Canal	0.0558	Chaora	472	Ward 06
Canal	0.0511	Chaora	473	Ward 02
Canal	0.0289	Chaora	473	Ward 06
Canal	0.0440	Chaora	474	Ward 02
Canal	0.0083	Chaora	475	Ward 02
Canal	0.0420	Chaora	476	Ward 02
Canal	0.0264	Chaora	476	Ward 06
Canal	0.0150	Chaora	477	Ward 02
Canal	0.0980	Chaora	477	Ward 06
Canal	0.0523	Chaora	478	Ward 02
Canal	0.0221	Chaora	479	Ward 02
Canal	0.1691	Chaora	480	Ward 06
Canal	0.0063	Chaora	481	Ward 02
Canal	0.1794	Chaora	481	Ward 06
Canal	0.0638	Chaora	483	Ward 02
Ditch	0.0176	Chaora	483	Ward 06
Canal	0.2647	Chaora	483	Ward 06
Canal	0.0168	Chaora	484	Ward 02
Ditch	0.0325	Chaora	485	Ward 06
Canal	0.0055	Chaora	486	Ward 02
Ditch	0.1682	Chaora	486	Ward 06
Canal	0.3693	Chaora	486	Ward 06
Ditch	0.0180	Chaora	487	Ward 06
Ditch	0.2241	Chaora	487	Ward 06
Canal	0.3591	Chaora	487	Ward 06
Canal	0.1022	Chaora	488	Ward 02
Ditch	0.3755	Chaora	488	Ward 06
Canal	0.0376	Chaora	489	Ward 02
Canal	0.1247	Chaora	490	Ward 02
Canal	0.0271	Chaora	490	Ward 06
Canal	0.0711	Chaora	491	Ward 02
Canal	0.1654	Chaora	491	Ward 06
Canal	0.0145	Chaora	494	Ward 02
Canal	0.1352	Chaora	494	Ward 07
Canal	0.0056	Chaora	495	Ward 02
Canal	0.0364	Chaora	495	Ward 06
Canal	0.1387	Chaora	495	Ward 07
Canal	0.0395	Chaora	496	Ward 02
Canal	0.4211	Chaora	496	Ward 07
Canal	0.0418	Chaora	497	Ward 02
Canal	0.0967	Chaora	497	Ward 07
Canal	0.0246	Chaora	499	Ward 02
Canal	0.5754	Chaora	499	Ward 07
Canal	0.1200	Chaora	500	Ward 07
Canal	0.3856	Chaora	501	Ward 07
Ditch	0.0474	Chaora	503	Ward 07
Canal	0.5815	Chaora	503	Ward 07
Canal	0.0353	Chaora	504	Ward 02
Canal	0.0321	Chaora	504	Ward 07
Canal	0.0895	Chaora	505	Ward 02
Canal	0.0555	Chaora	505	Ward 07
Canal	0.0186	Chaora	506	Ward 02
Canal	0.4955	Chaora	506	Ward 07
Ditch	0.1305	Chaora	507	Ward 02
Canal	0.0057	Chaora	507	Ward 07
Ditch	0.2083	Chaora	508	Ward 02
Canal	0.1931	Chaora	508	Ward 07
Ditch	0.0598	Chaora	509	Ward 02

Table G: Planning Schedule of Waterbodies in Amtali Paurashava

Annexure-G

Canal	0.0278	Chaora	509	Ward 07
Ditch	0.0156	Chaora	510	Ward 02
Canal	0.0295	Chaora	510	Ward 07
Canal	0.2421	Chaora	511	Ward 07
Canal	0.2527	Chaora	512	Ward 02
Canal	0.0706	Chaora	512	Ward 07
Canal	0.0192	Chaora	513	Ward 02
Canal	0.5162	Chaora	513	Ward 07
Canal	0.0082	Chaora	515	Ward 07
Ditch	0.1475	Chaora	517	Ward 07
Ditch	0.4311	Chaora	518	Ward 07
Ditch	0.0912	Chaora	519	Ward 07
Canal	0.1023	Chaora	520	Ward 02
Ditch	0.2117	Chaora	520	Ward 07
Canal	0.0909	Chaora	521	Ward 02
Canal	0.0253	Chaora	522	Ward 02
Canal	0.0145	Chaora	522	Ward 07
Canal	0.0261	Chaora	525	Ward 06
Canal	0.0076	Chaora	532	Ward 02
Pond	0.0934	Chaora	532	Ward 04
Canal	1.3008	Chaora	532	Ward 06
Canal	0.0696	Chaora	532	Ward 07
Canal	0.0434	Chaora	533	Ward 02
Ditch	0.2414	Chaora	533	Ward 05
Canal	0.1678	Chaora	533	Ward 06
Canal	0.0129	Chaora	534	Ward 02
Canal	0.1775	Chaora	534	Ward 06
Canal	0.0636	Chaora	535	Ward 02
Canal	0.0179	Chaora	536	Ward 02
Canal	0.0398	Chaora	537	Ward 02
Canal	0.0159	Chaora	537	Ward 06
Canal	0.0970	Chaora	537	Ward 07
Canal	0.0138	Chaora	538	Ward 02
Canal	0.5652	Chaora	538	Ward 07
Canal	0.0580	Chaora	539	Ward 07
Canal	0.0096	Chaora	541	Ward 02
Canal	0.0587	Chaora	542	Ward 02
Canal	0.0853	Chaora	543	Ward 02
Canal	0.0125	Chaora	544	Ward 02
Ditch	0.0102	Chaora	544	Ward 05
Canal	0.1066	Chaora	544	Ward 05
Canal	0.0264	Chaora	547	Ward 05
Canal	0.0806	Chaora	548	Ward 05
Canal	0.0387	Chaora	549	Ward 05
Canal	0.1034	Chaora	550	Ward 05
Canal	0.2361	Chaora	552	Ward 05
Canal	0.0244	Chaora	556	Ward 02
Canal	0.0130	Chaora	557	Ward 02
Canal	0.7623	Chaora	557	Ward 05
Canal	0.3382	Chaora	558	Ward 05
Canal	0.7065	Chaora	559	Ward 05
Canal	0.3132	Chaora	564	Ward 05
Canal	0.0160	Chaora	568	Ward 05
Canal	0.5196	Chaora	570	Ward 05
River	1.3890	Chaora	571	Ward 05
Canal	0.1893	Chaora	571	Ward 05
River	1.3001	Chaora	572	Ward 05
Canal	0.0612	Chaora	572	Ward 05
River	0.0969	Chaora	572	Ward 05

Table G: Planning Schedule of Waterbodies in Amtali Paurashava

Annexure-G

Canal	0.0969	Chaora	572	Ward 05
Canal	0.1957	Chaora	573	Ward 02
River	3.0040	Chaora	573	Ward 05
River	0.5112	Chaora	574	Ward 05
River	0.6163	Chaora	575	Ward 05
Canal	0.0348	Chaora	576	Ward 02
River	0.3455	Chaora	576	Ward 05
Canal	0.0096	Chaora	577	Ward 01
River	1.2047	Chaora	577	Ward 05
Canal	0.0157	Chaora	578	Ward 02
River	1.2540	Chaora	578	Ward 05
Canal	0.0141	Chaora	579	Ward 02
River	0.4064	Chaora	579	Ward 05
Canal	0.0127	Chaora	580	Ward 02
River	0.2021	Chaora	580	Ward 05
River	0.0594	Chaora	581	Ward 05
Canal	0.0754	Chaora	582	Ward 02
River	0.4462	Chaora	582	Ward 05
Canal	0.0457	Chaora	583	Ward 02
River	4.2827	Chaora	583	Ward 05
Canal	0.0605	Chaora	584	Ward 02
River	0.1342	Chaora	584	Ward 05
River	0.4542	Chaora	585	Ward 05
Canal	5.7498	Chaora	586	Ward 01
River	0.3516	Chaora	586	Ward 05
River	1.3427	Chaora	587	Ward 05
River	3.3620	Chaora	588	Ward 05
River	0.0440	Chaora	589	Ward 05
River	0.3715	Chaora	590	Ward 05
River	0.1473	Chaora	591	Ward 05
River	0.5056	Chaora	592	Ward 05
River	0.2234	Chaora	593	Ward 05
River	0.9225	Chaora	594	Ward 05
River	0.2732	Chaora	595	Ward 05
River	0.0482	Chaora	596	Ward 05
River	0.0853	Chaora	597	Ward 05
River	0.2882	Chaora	598	Ward 05
River	2.7708	Chaora	599	Ward 05
River	0.4751	Chaora	600	Ward 05
Canal	0.6407	Chaora	601	Ward 01
Canal	0.4488	Chaora	601	Ward 02
River	2.0054	Chaora	601	Ward 05
River	1.0040	Chaora	602	Ward 05
River	0.3567	Chaora	603	Ward 05
River	0.0782	Chaora	604	Ward 05
Canal	0.0260	Chaora	605	Ward 02
River	0.2447	Chaora	605	Ward 05
Canal	0.0922	Chaora	606	Ward 02
River	1.2472	Chaora	606	Ward 05
Canal	0.0100	Chaora	607	Ward 02
River	0.2124	Chaora	607	Ward 05
Canal	0.0276	Chaora	608	Ward 02
River	0.6805	Chaora	608	Ward 05
River	0.4608	Chaora	609	Ward 05
River	0.2786	Chaora	610	Ward 05
River	3.3864	Chaora	611	Ward 05
River	0.9670	Chaora	612	Ward 05
Canal	0.0217	Chaora	613	Ward 02
River	0.3227	Chaora	613	Ward 05

Table G: Planning Schedule of Waterbodies in Amtali Paurashava

Annexure-G

Canal	0.0085	Chaora	614	Ward 02
River	0.2429	Chaora	614	Ward 05
River	0.9582	Chaora	615	Ward 05
River	0.3840	Chaora	616	Ward 05
River	0.2872	Chaora	617	Ward 05
Canal	0.0219	Chaora	618	Ward 02
River	0.0461	Chaora	618	Ward 05
River	0.0989	Chaora	619	Ward 05
River	0.2537	Chaora	620	Ward 05
River	0.8104	Chaora	621	Ward 05
River	0.4624	Chaora	622	Ward 05
River	0.6452	Chaora	623	Ward 05
River	0.1278	Chaora	624	Ward 05
River	1.2801	Chaora	630	Ward 08
River	0.0425	Chaora	631	Ward 08
River	5.5502	Chaora	632	Ward 08
River	0.0287	Chaora	633	Ward 08
Ditch	0.1020	Chaora	635	Ward 02
River	0.4067	Chaora	635	Ward 08
River	0.1410	Chaora	636	Ward 08
Ditch	0.0201	Chaora	637	Ward 02
Ditch	0.1333	Chaora	637	Ward 02
River	0.0494	Chaora	637	Ward 08
Ditch	0.0171	Chaora	638	Ward 02
River	0.0385	Chaora	638	Ward 08
Ditch	0.0652	Chaora	639	Ward 02
River	4.0010	Chaora	639	Ward 08
Ditch	0.0189	Chaora	640	Ward 02
River	0.2123	Chaora	640	Ward 08
Ditch	0.0524	Chaora	641	Ward 02
River	0.3992	Chaora	641	Ward 08
Ditch	0.0440	Chaora	642	Ward 02
River	0.2689	Chaora	642	Ward 08
River	0.3321	Chaora	643	Ward 08
River	0.3911	Chaora	644	Ward 08
River	0.1790	Chaora	645	Ward 08
River	0.1572	Chaora	646	Ward 08
Ditch	0.0412	Chaora	647	Ward 02
River	0.4680	Chaora	647	Ward 08
Ditch	0.1567	Chaora	648	Ward 02
River	1.0128	Chaora	648	Ward 08
Canal	0.0423	Chaora	649	Ward 02
River	1.3638	Chaora	649	Ward 08
Canal	0.0428	Chaora	650	Ward 02
River	2.7630	Chaora	650	Ward 08
Canal	0.1144	Chaora	651	Ward 02
River	1.1016	Chaora	651	Ward 08
Ditch	0.0081	Chaora	653	Ward 02
Ditch	0.0261	Chaora	653	Ward 02
Ditch	0.0679	Chaora	654	Ward 02
Canal	0.1042	Chaora	655	Ward 02
Canal	0.0505	Chaora	656	Ward 02
Canal	0.0441	Chaora	657	Ward 02
Canal	0.0559	Chaora	658	Ward 02
River	0.0065	Chaora	658	Ward 08
Canal	0.0330	Chaora	659	Ward 02
River	0.1721	Chaora	659	Ward 08
Canal	0.0520	Chaora	660	Ward 02
River	1.3211	Chaora	660	Ward 08

Table G: Planning Schedule of Waterbodies in Amtali Paurashava

Annexure-G

Canal	0.0357	Chaora	661	Ward 02
River	0.2144	Chaora	661	Ward 08
Canal	0.0269	Chaora	662	Ward 02
River	0.4955	Chaora	662	Ward 08
Canal	0.0329	Chaora	663	Ward 02
River	1.0407	Chaora	663	Ward 08
Canal	0.0474	Chaora	664	Ward 02
River	1.2653	Chaora	664	Ward 08
Canal	0.0681	Chaora	665	Ward 02
River	0.6724	Chaora	665	Ward 08
Canal	0.0652	Chaora	666	Ward 02
River	0.1675	Chaora	666	Ward 08
Canal	0.0727	Chaora	667	Ward 02
River	0.4520	Chaora	667	Ward 08
Canal	0.0299	Chaora	668	Ward 02
River	1.1007	Chaora	668	Ward 08
River	1.5020	Chaora	669	Ward 08
River	0.7534	Chaora	670	Ward 08
River	0.2628	Chaora	671	Ward 08
River	0.2444	Chaora	672	Ward 08
Canal	0.0617	Chaora	673	Ward 02
River	0.6055	Chaora	673	Ward 08
River	1.1839	Chaora	674	Ward 08
River	0.1839	Chaora	675	Ward 08
River	0.5444	Chaora	676	Ward 08
River	0.6199	Chaora	677	Ward 08
River	0.2069	Chaora	678	Ward 08
River	0.9993	Chaora	679	Ward 08
River	0.8285	Chaora	680	Ward 08
River	0.7597	Chaora	681	Ward 08
River	0.9135	Chaora	682	Ward 08
River	0.0711	Chaora	683	Ward 08
River	0.0074	Chaora	688	Ward 08
Pond	0.0312	Chaora	692	Ward 08
Pond	0.1472	Chaora	693	Ward 08
Pond	0.0794	Chaora	695	Ward 08
River	0.1435	Chaora	696	Ward 08
River	0.0220	Chaora	697	Ward 08
River	0.0120	Chaora	698	Ward 08
River	0.1274	Chaora	699	Ward 08
Ditch	0.0304	Chaora	721	Ward 08
Ditch	0.4631	Chaora	722	Ward 08
Ditch	0.0274	Chaora	723	Ward 08
Ditch	0.0670	Chaora	743	Ward 02
Ditch	0.2220	Chaora	744	Ward 02
Ditch	0.1589	Chaora	744	Ward 02
Ditch	0.0624	Chaora	745	Ward 02
Ditch	0.0454	Chaora	745	Ward 02
Canal	0.0147	Chaora	745	Ward 02
Ditch	0.0618	Chaora	746	Ward 02
Ditch	0.2451	Chaora	746	Ward 08
Ditch	0.2394	Chaora	747	Ward 08
Ditch	0.0093	Chaora	748	Ward 02
Ditch	0.1037	Chaora	748	Ward 08
Canal	0.0449	Chaora	769	Ward 08
Canal	0.0556	Chaora	770	Ward 08
Canal	0.1070	Chaora	771	Ward 08
Canal	0.0656	Chaora	772	Ward 08
Canal	0.1486	Chaora	773	Ward 08

Table G: Planning Schedule of Waterbodies in Amtali Paurashava

Annexure-G

Canal	0.2729	Chaora	775	Ward 08
Canal	0.0348	Chaora	781	Ward 05
Canal	0.2091	Chaora	783	Ward 05
Canal	0.0658	Chaora	789	Ward 07
Canal	0.0142	Chaora	790	Ward 07
Canal	0.1224	Chaora	792	Ward 07
Canal	0.0421	Chaora	796	Ward 07
Canal	0.0571	Chaora	797	Ward 07
Canal	0.0410	Chaora	799	Ward 07
Canal	0.1133	Chaora	800	Ward 07
Canal	0.0636	Chaora	803	Ward 07
Canal	0.0638	Chaora	804	Ward 07
Canal	0.0829	Chaora	805	Ward 07
Canal	0.0125	Chaora	806	Ward 07
Canal	0.4572	Chaora	820	Ward 07
Canal	0.2172	Chaora	821	Ward 07
Canal	0.0554	Chaora	822	Ward 07
Canal	0.0752	Chaora	825	Ward 07
Canal	0.9131	Chaora	827	Ward 07
Canal	0.2475	Chaora	828	Ward 07
Canal	0.1301	Chaora	829	Ward 07
Canal	0.0666	Chaora	830	Ward 07
Canal	0.0624	Chaora	831	Ward 07
Canal	0.0532	Chaora	832	Ward 07
Canal	0.0635	Chaora	833	Ward 07
Canal	0.0271	Chaora	835	Ward 07
Ditch	0.0268	Chaora	840	Ward 02
River	0.0486	Chaora	845	Ward 04
Canal	0.0298	Chaora	849	Ward 07
Ditch	0.1556	Chaora	850	Ward 02
Ditch	0.0262	Chaora	851	Ward 02
River	0.0910	Chaora	853	Ward 04
River	0.0189	Chaora	854	Ward 04
River	0.1483	Chaora	855	Ward 04
River	0.1000	Chaora	856	Ward 05
River	0.0994	Chaora	857	Ward 05
Ditch	0.3165	Chaora	861	Ward 02
River	0.3357	Chaora	865	Ward 05
River	0.0967	Chaora	866	Ward 05
River	0.0330	Chaora	869	Ward 08
Ditch	0.3717	Chaora	870	Ward 03
River	0.1761	Chaora	870	Ward 05
Ditch	0.0263	Chaora	871	Ward 03
River	0.0754	Chaora	871	Ward 05
River	0.1778	Chaora	872	Ward 05
River	0.1470	Chaora	873	Ward 08
Canal	0.2022	Chaora	874	Ward 07
Canal	0.0697	Chaora	875	Ward 07
Canal	0.2534	Chaora	876	Ward 07
River	14.1601	Chaora	883	Ward 04
Canal	1.1236	Chaora	883	Ward 04
Canal	26.4840	Chaora	883	Ward 06
Canal	8.5139	Chaora	883	Ward 07
Canal	0.0711	Chaora	884	Ward 05
River	0.6813	Chaora	885	Ward 04
River	0.0761	Chaora	886	Ward 04
River	0.0727	Chaora	887	Ward 04
River	0.0211	Chaora	888	Ward 04
River	0.0713	Chaora	889	Ward 05

Table G: Planning Schedule of Waterbodies in Amtali Paurashava

Annexure-G

River	0.0454	Chaora	890	Ward 05
River	0.0952	Chaora	891	Ward 05
River	0.9770	Chaora	893	Ward 04
River	0.1487	Chaora	894	Ward 04
River	0.1638	Chaora	895	Ward 04
River	0.0511	Chaora	896	Ward 04
River	0.0494	Chaora	897	Ward 04
River	0.1916	Chaora	898	Ward 04
River	0.7277	Chaora	899	Ward 04
Ditch	0.0111	Chaora	900	Ward 03
Ditch	0.2053	Chaora	900	Ward 03
Ditch	0.1867	Chaora	900	Ward 03
River	0.1030	Chaora	900	Ward 04
River	0.0096	Chaora	901	Ward 04
River	0.1730	Chaora	902	Ward 04
River	0.0778	Chaora	903	Ward 04
River	0.0675	Chaora	904	Ward 04
River	0.1450	Chaora	905	Ward 04
River	0.0216	Chaora	906	Ward 04
River	0.0322	Chaora	907	Ward 04
Ditch	0.4604	Chaora	908	Ward 03
Ditch	0.0254	Chaora	908	Ward 03
River	0.1615	Chaora	908	Ward 04
Ditch	0.3154	Chaora	909	Ward 03
River	0.0081	Chaora	909	Ward 04
Ditch	0.3056	Chaora	910	Ward 03
River	0.0348	Chaora	910	Ward 04
River	0.0767	Chaora	911	Ward 04
Ditch	0.3403	Chaora	916	Ward 03
Ditch	0.2650	Chaora	917	Ward 03
Ditch	0.3242	Chaora	917	Ward 03
River	0.0336	Chaora	918	Ward 04
River	0.0261	Chaora	919	Ward 04
River	0.0203	Chaora	920	Ward 04
River	0.1627	Chaora	921	Ward 04
River	0.0506	Chaora	922	Ward 04
Ditch	0.5870	Chaora	923	Ward 03
Ditch	0.1034	Chaora	925	Ward 03
Ditch	0.1960	Chaora	928	Ward 03
Ditch	0.1171	Chaora	932	Ward 03
Canal	0.0238	Chaora	938	Ward 04
Canal	0.0129	Chaora	942	Ward 04
Ditch	0.0773	Chaora	946	Ward 04
Ditch	0.1024	Chaora	947	Ward 04
Canal	0.0333	Chaora	954	Ward 06
Canal	0.0084	Chaora	955	Ward 06
Canal	0.0541	Chaora	958	Ward 03
Canal	0.0457	Chaora	961	Ward 03
Canal	0.1605	Chaora	962	Ward 03
Canal	0.1884	Chaora	963	Ward 03
Canal	0.0337	Chaora	963	Ward 06
Canal	0.7105	Chaora	964	Ward 03
Canal	0.0512	Chaora	964	Ward 06
Canal	0.0797	Chaora	965	Ward 06
Canal	0.1254	Chaora	966	Ward 06
Canal	0.1260	Chaora	967	Ward 06
Canal	0.2449	Chaora	968	Ward 06
Canal	0.3132	Chaora	969	Ward 06
Canal	0.2241	Chaora	970	Ward 06

Table G: Planning Schedule of Waterbodies in Amtali Paurashava

Annexure-G

Ditch	0.0344	Chaora	971	Ward 06
Canal	1.2353	Chaora	971	Ward 06
Ditch	0.2213	Chaora	972	Ward 06
Canal	0.0412	Chaora	972	Ward 06
Ditch	1.6323	Chaora	973	Ward 06
Canal	0.5646	Chaora	973	Ward 06
Canal	0.4066	Chaora	974	Ward 06
Canal	0.1524	Chaora	976	Ward 06
Canal	0.1295	Chaora	977	Ward 06
Canal	0.0805	Chaora	978	Ward 06
Canal	0.3658	Chaora	979	Ward 06
Canal	0.3914	Chaora	980	Ward 06
Canal	0.3873	Chaora	981	Ward 06
Canal	0.0938	Chaora	982	Ward 06
Canal	0.1354	Chaora	983	Ward 06
Canal	0.1995	Chaora	984	Ward 06
Canal	0.1230	Chaora	985	Ward 06
Canal	0.4494	Chaora	986	Ward 06
Canal	0.2669	Chaora	987	Ward 06
Canal	0.0172	Chaora	988	Ward 06
Canal	0.2091	Chaora	989	Ward 06
Canal	0.0822	Chaora	990	Ward 06
Canal	0.0851	Chaora	991	Ward 06
Canal	0.1974	Chaora	992	Ward 06
Canal	0.2897	Chaora	993	Ward 06
Canal	0.2872	Chaora	994	Ward 06
Canal	0.0204	Chaora	995	Ward 06
Canal	0.0100	Chaora	996	Ward 06
Canal	0.0354	Chaora	997	Ward 06
Canal	0.0251	Chaora	998	Ward 06
Canal	0.1123	Chaora	999	Ward 06
Canal	0.0949	Chaora	1000	Ward 06
River	0.1910	Chaora	1001	Ward 09
River	1.1174	Chaora	1003	Ward 09
River	0.3120	Chaora	1004	Ward 09
River	0.5196	Chaora	1007	Ward 09
River	0.5647	Chaora	1008	Ward 09
River	0.1423	Chaora	1009	Ward 09
River	0.0485	Chaora	1010	Ward 09
River	0.3174	Chaora	1011	Ward 09
River	0.2481	Chaora	1012	Ward 09
River	0.1467	Chaora	1013	Ward 09
River	0.0087	Chaora	1014	Ward 09
River	0.1772	Chaora	1015	Ward 08
River	0.1465	Chaora	1016	Ward 08
River	0.2526	Chaora	1017	Ward 08
River	0.2301	Chaora	1018	Ward 08
River	0.1853	Chaora	1019	Ward 09
River	0.0322	Chaora	1020	Ward 08
River	0.0175	Chaora	1021	Ward 08
River	0.2996	Chaora	1022	Ward 08
River	0.2476	Chaora	1023	Ward 08
River	0.4100	Chaora	1024	Ward 08
River	0.1986	Chaora	1025	Ward 08
River	0.9112	Chaora	1025	Ward 09
River	0.1308	Chaora	1026	Ward 09
River	0.4114	Chaora	1027	Ward 09
River	1.0810	Chaora	1028	Ward 09
River	1.9793	Chaora	1029	Ward 09

Table G: Planning Schedule of Waterbodies in Amtali Paurashava

Annexure-G

River	0.6723	Chaora	1030	Ward 09
River	0.6540	Chaora	1031	Ward 09
River	0.1111	Chaora	1032	Ward 09
River	0.0988	Chaora	1033	Ward 09
River	0.4325	Chaora	1034	Ward 09
River	0.6090	Chaora	1035	Ward 09
River	0.2347	Chaora	1036	Ward 09
River	0.2726	Chaora	1037	Ward 09
River	0.1700	Chaora	1038	Ward 09
River	0.1287	Chaora	1039	Ward 09
River	0.3796	Chaora	1040	Ward 09
River	0.6831	Chaora	1041	Ward 09
River	0.2485	Chaora	1042	Ward 09
River	0.2983	Chaora	1043	Ward 09
River	0.2866	Chaora	1044	Ward 09
River	0.2386	Chaora	1045	Ward 09
River	0.5344	Chaora	1046	Ward 09
River	0.2724	Chaora	1047	Ward 09
River	0.8466	Chaora	1048	Ward 09
River	0.6784	Chaora	1049	Ward 09
River	0.3012	Chaora	1050	Ward 09
River	0.3858	Chaora	1051	Ward 09
River	0.1931	Chaora	1052	Ward 09
River	0.2767	Chaora	1053	Ward 09
River	0.3556	Chaora	1054	Ward 09
River	0.0537	Chaora	1055	Ward 09
River	0.3725	Chaora	1056	Ward 09
River	0.0303	Chaora	1057	Ward 09
River	0.2477	Chaora	1058	Ward 09
River	0.0339	Chaora	1060	Ward 09
River	0.1474	Chaora	1061	Ward 09
River	0.1541	Chaora	1062	Ward 09
River	0.0856	Chaora	1063	Ward 09
River	1.5941	Chaora	1064	Ward 09
River	0.2120	Chaora	1065	Ward 09
River	0.8501	Chaora	1067	Ward 09
River	1.1769	Chaora	1068	Ward 09
River	0.0657	Chaora	1069	Ward 09
River	0.0404	Chaora	1070	Ward 09
River	0.1150	Chaora	1071	Ward 09
River	0.5193	Chaora	1072	Ward 09
River	0.4607	Chaora	1073	Ward 09
River	0.3847	Chaora	1075	Ward 09
River	0.4459	Chaora	1077	Ward 09
Canal	0.0217	Chaora	1078	Ward 01
River	1.5264	Chaora	1078	Ward 09
River	1.2059	Chaora	1079	Ward 09
Canal	1.3749	Chaora	1080	Ward 02
River	0.0129	Chaora	1080	Ward 08
River	6.4990	Chaora	1080	Ward 09
Canal	0.0173	Chaora	1081	Ward 01
River	0.2003	Chaora	1081	Ward 09
River	1.9554	Chaora	1082	Ward 09
River	0.2092	Chaora	1083	Ward 09
Ditch	0.7865	Chaora	1084	Ward 02
Ditch	0.0399	Chaora	1084	Ward 02
River	0.1472	Chaora	1084	Ward 09
Ditch	0.0063	Chaora	1085	Ward 02
Canal	0.1585	Chaora	1085	Ward 02

Table G: Planning Schedule of Waterbodies in Amtali Paurashava

Annexure-G

River	0.2137	Chaora	1085	Ward 09
Ditch	0.0842	Chaora	1086	Ward 02
Canal	1.7092	Chaora	1086	Ward 02
River	0.2527	Chaora	1086	Ward 09
River	0.2307	Chaora	1087	Ward 09
River	0.2041	Chaora	1088	Ward 01
River	0.3531	Chaora	1088	Ward 09
River	0.3132	Chaora	1089	Ward 09
River	0.2552	Chaora	1090	Ward 09
River	0.3073	Chaora	1091	Ward 09
River	0.2946	Chaora	1092	Ward 09
River	0.3179	Chaora	1093	Ward 09
River	0.3759	Chaora	1094	Ward 09
River	0.5420	Chaora	1095	Ward 09
River	0.4813	Chaora	1096	Ward 09
River	0.1579	Chaora	1097	Ward 09
Ditch	0.0768	Chaora	1098	Ward 01
River	0.1229	Chaora	1098	Ward 09
Ditch	0.1651	Chaora	1099	Ward 01
River	0.2387	Chaora	1099	Ward 09
River	0.1047	Amtoli	1100	Ward 09
River	0.1381	Amtoli	1101	Ward 09
River	0.3116	Amtoli	1102	Ward 09
River	0.2220	Amtoli	1103	Ward 09
River	0.0358	Amtoli	1104	Ward 09
River	0.1468	Amtoli	1105	Ward 09
River	0.0858	Amtoli	1106	Ward 09
River	0.4369	Amtoli	1107	Ward 09
River	0.0581	Amtoli	1108	Ward 09
River	0.1300	Amtoli	1109	Ward 09
River	0.0071	Amtoli	1110	Ward 09
River	0.0179	Amtoli	1111	Ward 09
River	0.0881	Amtoli	1113	Ward 09
River	0.1685	Amtoli	1115	Ward 09
River	0.2348	Amtoli	1116	Ward 09
River	0.6973	Amtoli	1117	Ward 09
River	0.7432	Amtoli	1122	Ward 08
River	1.0302	Amtoli	1123	Ward 08
River	0.8654	Amtoli	1124	Ward 08
River	2.9576	Amtoli	1125	Ward 08
River	0.8129	Amtoli	1126	Ward 08
River	0.1727	Amtoli	1127	Ward 08
River	0.6493	Amtoli	1128	Ward 08
River	1.1230	Amtoli	1129	Ward 08
River	0.0731	Amtoli	1130	Ward 08
River	0.3858	Amtoli	1131	Ward 08
River	2.1004	Amtoli	1132	Ward 08
River	1.2850	Amtoli	1133	Ward 08
River	0.9866	Amtoli	1136	Ward 08
Pond	0.1578	Amtoli	1137	Ward 08
River	1.4978	Amtoli	1137	Ward 08
Pond	0.0075	Amtoli	1140	Ward 08
River	0.5810	Amtoli	1140	Ward 08
River	0.0417	Amtoli	1141	Ward 08
Pond	0.0592	Amtoli	1146	Ward 08
Pond	0.0599	Amtoli	1147	Ward 08
Canal	0.0271	Amtoli	1198	Ward 08
Canal	0.4888	Amtoli	1199	Ward 08
Canal	0.0187	Amtoli	1204	Ward 08

Table G: Planning Schedule of Waterbodies in Amtali Paurashava

Annexure-G

Canal	0.0054	Amtoli	1207	Ward 08
Canal	0.0539	Amtoli	1210	Ward 08
Canal	0.0389	Amtoli	1211	Ward 08
Canal	0.0127	Amtoli	1212	Ward 08
Canal	0.0192	Amtoli	1274	Ward 09
Canal	0.0051	Amtoli	1276	Ward 09
Canal	0.0161	Amtoli	1313	Ward 07
Canal	0.0155	Amtoli	1317	Ward 07
Canal	0.0148	Amtoli	1317	Ward 09
Ditch	0.0295	Amtoli	1325	Ward 09
Ditch	0.0334	Amtoli	1326	Ward 09
Ditch	0.0126	Amtoli	1327	Ward 09
Canal	0.0210	Amtoli	1331	Ward 09
Canal	0.0489	Amtoli	1333	Ward 09
Canal	0.0154	Amtoli	1341	Ward 09
Canal	0.0270	Amtoli	1342	Ward 09
Canal	0.0059	Amtoli	1346	Ward 09
Canal	0.0406	Amtoli	1351	Ward 09
Ditch	0.0623	Amtoli	1358	Ward 09
Ditch	0.0050	Amtoli	1367	Ward 09
Ditch	0.0286	Amtoli	1369	Ward 09
Ditch	0.0465	Amtoli	1370	Ward 09
Ditch	0.0090	Amtoli	1371	Ward 09
Ditch	0.0313	Amtoli	1372	Ward 09
Ditch	0.0371	Amtoli	1384	Ward 09
Ditch	0.0085	Amtoli	1389	Ward 09
Ditch	0.0868	Amtoli	1389	Ward 09
Canal	0.0100	Amtoli	1399	Ward 09
Canal	0.0275	Amtoli	1400	Ward 09
Canal	3.5618	Amtoli	1406	Ward 09
Canal	0.1208	Amtoli	1407	Ward 09
River	0.0381	Amtoli	1408	Ward 09
Canal	0.2531	Amtoli	1408	Ward 09
River	0.0637	Amtoli	1409	Ward 09
Canal	0.0050	Amtoli	1411	Ward 09
Canal	0.1068	Amtoli	1412	Ward 09
Canal	0.1093	Amtoli	1413	Ward 09
Canal	0.0385	Amtoli	1414	Ward 09
River	0.0064	Amtoli	1415	Ward 09
Canal	0.0180	Amtoli	1415	Ward 09
River	0.0137	Amtoli	1416	Ward 09
Canal	0.0108	Amtoli	1416	Ward 09
River	0.3410	Amtoli	1419	Ward 09
River	0.0265	Amtoli	1420	Ward 09
River	0.0915	Amtoli	1421	Ward 09
River	0.0155	Amtoli	1422	Ward 09
River	0.0148	Amtoli	1423	Ward 09
Canal	0.0265	Amtoli	1429	Ward 09
Canal	0.0075	Amtoli	1430	Ward 09
River	0.0189	Amtoli	1439	Ward 09
River	0.0895	Amtoli	1444	Ward 09
Ditch	0.0087	Amtoli	1463	Ward 09
Ditch	0.0345	Amtoli	1463	Ward 09
Ditch	0.0443	Amtoli	1463	Ward 09
Ditch	0.1223	Amtoli	1466	Ward 09
Canal	0.0091	Amtoli	1467	Ward 09
Canal	0.0109	Amtoli	1468	Ward 09
Ditch	0.0140	Amtoli	1469	Ward 09
Canal	0.0053	Amtoli	1488	Ward 09

Table G: Planning Schedule of Waterbodies in Amtali Paurashava

Annexure-G

Canal	0.0838	Amtoli	1489	Ward 09
Canal	0.0562	Amtoli	1490	Ward 09
Canal	5.4437	Amtoli	1508	Ward 07
Canal	1.9515	Amtoli	1524	Ward 09
Canal	0.0080	Amtoli	1528	Ward 09
Canal	0.0188	Amtoli	1529	Ward 09
Canal	0.0052	Amtoli	1530	Ward 09
Canal	0.0724	Amtoli	1532	Ward 09
Canal	0.0931	Amtoli	1577	Ward 09
Canal	0.0679	Amtoli	1581	Ward 09
Canal	0.9881	Amtoli	1625	Ward 09
Canal	0.0147	Amtoli	1626	Ward 09
Canal	0.0058	Amtoli	1636	Ward 09
Canal	0.0056	Amtoli	1679	Ward 09
Canal	0.5431	Amtoli	1680	Ward 09
Canal	0.1390	Amtoli	1681	Ward 07
Canal	0.1648	Amtoli	1684	Ward 07
Canal	0.0060	Amtoli	1689	Ward 09
Canal	0.0056	Amtoli	1695	Ward 09
Canal	0.0081	Amtoli	1716	Ward 09
Canal	0.0083	Amtoli	1718	Ward 09
Canal	0.0596	Amtoli	1719	Ward 07
Canal	1.7324	Amtoli	1721	Ward 07
Canal	0.0643	Amtoli	1722	Ward 07
Canal	0.0845	Amtoli	1723	Ward 07
Canal	0.0218	Amtoli	1725	Ward 07
Canal	0.0102	Amtoli	1726	Ward 07
Canal	0.0812	Amtoli	1727	Ward 07
Canal	0.0243	Amtoli	1728	Ward 07
Canal	0.1158	Amtoli	1729	Ward 07
Canal	0.0157	Amtoli	1730	Ward 07
Canal	0.0097	Amtoli	1731	Ward 07
Canal	0.0485	Amtoli	1736	Ward 07
Canal	0.0149	Amtoli	1775	Ward 07
Canal	0.0086	Amtoli	1788	Ward 07
Canal	0.1774	Amtoli	1791	Ward 07
Canal	0.0482	Amtoli	1795	Ward 07
Canal	0.0856	Amtoli	1796	Ward 07
River	0.8737	Ghatkhali	1821	Ward 01
River	0.1354	Ghatkhali	1822	Ward 01
River	0.3152	Ghatkhali	1823	Ward 01
River	0.1516	Ghatkhali	1824	Ward 01
River	0.2414	Ghatkhali	1825	Ward 01
River	1.0130	Ghatkhali	1826	Ward 01
River	0.3261	Ghatkhali	1827	Ward 01
River	0.6674	Ghatkhali	1828	Ward 01
River	0.1566	Ghatkhali	1829	Ward 01
River	0.4374	Ghatkhali	1830	Ward 01
River	0.4647	Ghatkhali	1831	Ward 01
River	0.4800	Ghatkhali	1832	Ward 01
River	0.5462	Ghatkhali	1833	Ward 01
River	0.5091	Ghatkhali	1834	Ward 01
River	0.3540	Ghatkhali	1835	Ward 01
River	0.0890	Ghatkhali	1836	Ward 01
River	0.1558	Ghatkhali	1837	Ward 01
River	0.6998	Ghatkhali	1838	Ward 01
River	0.6290	Ghatkhali	1839	Ward 01
River	0.0863	Ghatkhali	1840	Ward 01
River	0.6526	Ghatkhali	1841	Ward 01

Table G: Planning Schedule of Waterbodies in Amtali Paurashava

Annexure-G

River	0.2774	Ghatkhali	1842	Ward 01
Canal	0.3081	Ghatkhali	1842	Ward 07
River	0.7629	Ghatkhali	1843	Ward 01
River	2.8091	Ghatkhali	1844	Ward 01
River	0.4785	Ghatkhali	1845	Ward 01
River	0.2989	Ghatkhali	1846	Ward 01
River	0.2237	Ghatkhali	1847	Ward 01
River	0.7478	Ghatkhali	1848	Ward 01
Canal	0.0627	Ghatkhali	1848	Ward 07
River	0.4710	Ghatkhali	1849	Ward 01
Canal	0.0202	Ghatkhali	1849	Ward 07
River	0.3155	Ghatkhali	1850	Ward 01
Canal	0.0182	Ghatkhali	1850	Ward 07
River	1.1834	Ghatkhali	1851	Ward 01
Canal	0.0616	Ghatkhali	1851	Ward 07
River	0.9843	Ghatkhali	1852	Ward 01
Canal	0.0278	Ghatkhali	1852	Ward 07
River	2.2753	Ghatkhali	1853	Ward 01
River	0.5628	Ghatkhali	1854	Ward 01
River	1.4074	Ghatkhali	1856	Ward 01
River	0.7524	Ghatkhali	1857	Ward 01
River	0.0768	Ghatkhali	1858	Ward 01
River	0.0997	Ghatkhali	1859	Ward 01
River	0.1007	Ghatkhali	1860	Ward 01
River	0.0761	Ghatkhali	1861	Ward 01
River	0.2048	Ghatkhali	1862	Ward 01
River	0.0763	Ghatkhali	1863	Ward 01
River	0.9720	Ghatkhali	1864	Ward 01
Canal	0.0438	Ghatkhali	1864	Ward 07
River	0.0330	Ghatkhali	1865	Ward 01
River	0.0343	Ghatkhali	1866	Ward 01
Canal	0.5357	Ghatkhali	1866	Ward 07
River	0.5313	Ghatkhali	1867	Ward 01
River	0.5838	Ghatkhali	1868	Ward 01
River	1.9821	Ghatkhali	1869	Ward 01
River	2.1325	Ghatkhali	1870	Ward 01
River	0.1034	Ghatkhali	1871	Ward 01
River	0.0920	Ghatkhali	1872	Ward 01
River	0.3205	Ghatkhali	1873	Ward 01
River	0.0795	Ghatkhali	1874	Ward 01
Canal	0.0145	Ghatkhali	1874	Ward 07
River	0.0266	Ghatkhali	1875	Ward 01
Canal	0.0182	Ghatkhali	1875	Ward 07
River	0.6663	Ghatkhali	1876	Ward 01
Canal	0.0325	Ghatkhali	1876	Ward 07
River	2.3702	Ghatkhali	1877	Ward 01
River	1.0521	Ghatkhali	1878	Ward 01
River	1.0279	Ghatkhali	1879	Ward 01
River	0.0583	Ghatkhali	1880	Ward 01
River	0.0753	Ghatkhali	1881	Ward 01
River	0.1482	Ghatkhali	1882	Ward 01
River	0.3772	Ghatkhali	1883	Ward 01
River	0.4605	Ghatkhali	1884	Ward 01
River	0.3170	Ghatkhali	1885	Ward 01
River	4.6677	Ghatkhali	1886	Ward 01
River	0.2899	Ghatkhali	1887	Ward 01
River	0.3532	Ghatkhali	1888	Ward 01
River	2.0607	Ghatkhali	1889	Ward 01
River	0.5040	Ghatkhali	1890	Ward 01

Table G: Planning Schedule of Waterbodies in Amtali Paurashava

Annexure-G

River	0.1028	Ghatkhali	1891	Ward 01
River	0.0605	Ghatkhali	1892	Ward 01
River	0.0406	Ghatkhali	1893	Ward 01
River	0.0933	Ghatkhali	1894	Ward 01
River	0.4998	Ghatkhali	1895	Ward 01
Canal	0.0638	Ghatkhali	1895	Ward 07
River	0.7302	Ghatkhali	1896	Ward 01
River	0.1902	Ghatkhali	1897	Ward 01
River	0.0747	Ghatkhali	1898	Ward 01
Canal	0.1044	Ghatkhali	1898	Ward 07
River	0.1225	Ghatkhali	1899	Ward 01
River	0.3958	Ghatkhali	1900	Ward 01
River	1.4497	Ghatkhali	1901	Ward 01
River	0.9075	Ghatkhali	1902	Ward 01
River	0.1427	Ghatkhali	1903	Ward 01
River	0.1011	Ghatkhali	1904	Ward 01
River	0.1991	Ghatkhali	1905	Ward 01
River	0.2313	Ghatkhali	1906	Ward 01
River	1.2483	Ghatkhali	1907	Ward 01
River	1.3884	Ghatkhali	1908	Ward 01
River	0.3166	Ghatkhali	1909	Ward 01
River	0.2238	Ghatkhali	1910	Ward 01
River	0.1823	Ghatkhali	1911	Ward 01
River	0.4322	Ghatkhali	1912	Ward 01
River	0.5338	Chaora	1914	Ward 01
River	0.1683	Chaora	1915	Ward 01
River	3.3504	Ghatkhali	1916	Ward 01
River	1.0209	Ghatkhali	1917	Ward 01
River	0.0130	Ghatkhali	1920	Ward 01
River	0.0740	Ghatkhali	1921	Ward 01
River	0.1617	Ghatkhali	1922	Ward 01
River	0.1446	Ghatkhali	1923	Ward 01
River	0.0582	Ghatkhali	1924	Ward 01
Canal	0.0512	Ghatkhali	1945	Ward 07
Ditch	0.0971	Ghatkhali	1956	Ward 01
Ditch	0.5118	Ghatkhali	1957	Ward 01
Canal	0.0112	Amtoli	1965	Ward 07
Canal	0.0366	Amtoli	1966	Ward 07
Canal	0.0092	Amtoli	1967	Ward 07
Canal	0.0773	Amtoli	1980	Ward 07
Canal	2.1478	Amtoli	1982	Ward 07
Canal	0.4288	Amtoli	1983	Ward 07
Canal	0.0952	Amtoli	1991	Ward 07
Canal	0.0504	Amtoli	1992	Ward 07
Canal	0.0148	Amtoli	1995	Ward 07
Canal	0.0645	Amtoli	2003	Ward 07
Canal	0.0181	Amtoli	2005	Ward 07
Canal	0.1389	Amtoli	2007	Ward 07
Canal	0.0416	Amtoli	2008	Ward 07
Canal	0.0115	Amtoli	2009	Ward 07
Canal	0.1080	Amtoli	2011	Ward 07
Canal	0.4387	Amtoli	2015	Ward 07
Canal	0.0708	Amtoli	2016	Ward 07
Canal	0.0122	Amtoli	2017	Ward 07
Canal	0.0377	Amtoli	2019	Ward 07
Canal	0.1204	Amtoli	2021	Ward 07
Canal	0.0165	Amtoli	2022	Ward 07
Canal	0.0225	Amtoli	2023	Ward 07
Canal	0.0156	Amtoli	2024	Ward 07

Table G: Planning Schedule of Waterbodies in Amtali Paurashava

Annexure-G

Canal	0.0522	Amtoli	2025	Ward 07
Canal	0.2112	Amtoli	2026	Ward 07
Canal	0.0199	Amtoli	2027	Ward 07
Canal	0.0340	Amtoli	2030	Ward 07
Canal	0.0086	Amtoli	2032	Ward 07
Canal	0.0271	Amtoli	2035	Ward 07
Canal	0.0107	Amtoli	2036	Ward 07
Canal	0.0093	Amtoli	2044	Ward 07
Canal	0.0118	Amtoli	2045	Ward 07
Canal	0.2602	Amtoli	2047	Ward 07
Canal	0.1745	Amtoli	2049	Ward 07
Canal	0.0271	Amtoli	2054	Ward 07
Canal	0.0765	Amtoli	2055	Ward 07
Canal	0.2189	Amtoli	2056	Ward 07
Canal	0.2265	Amtoli	2057	Ward 07
Canal	0.0441	Amtoli	2058	Ward 07
Canal	0.1025	Amtoli	2059	Ward 07
Canal	0.0169	Amtoli	2070	Ward 07
Canal	0.1369	Amtoli	2071	Ward 07
Canal	0.0651	Amtoli	2072	Ward 07
Canal	0.0202	Amtoli	2076	Ward 07
Canal	0.0067	Amtoli	2077	Ward 07
Canal	0.1087	Amtoli	2079	Ward 07
Ditch	0.8092	Amtoli	2098	Ward 07
Ditch	0.0053	Amtoli	2100	Ward 07
Canal	0.0552	Amtoli	2101	Ward 07
Canal	0.0155	Amtoli	2102	Ward 07
Canal	0.0140	Amtoli	2105	Ward 07
Canal	0.0163	Amtoli	2106	Ward 07
Canal	0.0372	Amtoli	2108	Ward 07
Canal	0.0056	Amtoli	2110	Ward 07
Canal	0.0777	Amtoli	2111	Ward 07
Canal	0.0411	Amtoli	2115	Ward 07
Canal	0.0255	Amtoli	2117	Ward 07
Canal	0.0229	Amtoli	2118	Ward 07
Canal	0.0839	Amtoli	2120	Ward 07
Canal	0.0288	Amtoli	2123	Ward 07
Canal	0.0224	Amtoli	2124	Ward 07
Canal	0.0078	Amtoli	2126	Ward 07
Canal	0.0228	Amtoli	2127	Ward 07
Canal	0.0206	Amtoli	2143	Ward 07
Canal	0.0133	Amtoli	2144	Ward 07
Canal	0.0272	Amtoli	2145	Ward 07
Canal	0.1005	Amtoli	2146	Ward 07
Canal	0.0767	Amtoli	2147	Ward 07
Canal	0.0132	Amtoli	2148	Ward 07
Canal	0.0166	Amtoli	2149	Ward 07
Canal	0.0064	Amtoli	2153	Ward 07
Canal	0.0161	Amtoli	2156	Ward 08
Canal	0.0083	Amtoli	2158	Ward 08
Canal	0.0158	Amtoli	2160	Ward 08
Canal	0.0857	Amtoli	2161	Ward 08
Canal	0.0179	Amtoli	2162	Ward 07
Canal	0.0892	Amtoli	2163	Ward 08
Canal	3.4334	Amtoli	2164	Ward 07
Canal	0.0774	Amtoli	2171	Ward 07
Canal	0.0071	Amtoli	2172	Ward 07
Canal	0.2212	Amtoli	2184	Ward 07
Ditch	0.0233	Amtoli	2194	Ward 07

Table G: Planning Schedule of Waterbodies in Amtali Paurashava

Annexure-G

Canal	0.0951	Amtoli	2197	Ward 07
Ditch	0.1361	Amtoli	2198	Ward 07
Ditch	0.1134	Amtoli	2199	Ward 07
Canal	0.0275	Amtoli	2200	Ward 07
Canal	0.1442	Amtoli	2203	Ward 07
Canal	0.8194	Amtoli	2204	Ward 07
Ditch	0.1318	Amtoli	2206	Ward 07
Ditch	0.0734	Amtoli	2208	Ward 07
Ditch	0.0776	Amtoli	2212	Ward 07
Ditch	0.0487	Amtoli	2213	Ward 07
Canal	0.0132	Amtoli	2213	Ward 07
Ditch	0.0434	Amtoli	2214	Ward 07
Canal	0.4719	Amtoli	2252	Ward 07
Canal	0.7477	Amtoli	2253	Ward 07
Canal	0.4149	Amtoli	2254	Ward 07
Canal	0.0313	Amtoli	2255	Ward 07
Canal	0.3594	Amtoli	2256	Ward 07
Canal	0.4295	Amtoli	2257	Ward 07
Canal	0.0883	Amtoli	2258	Ward 07
Canal	0.2172	Amtoli	2259	Ward 07
Canal	0.0630	Amtoli	2260	Ward 07
Canal	0.3616	Amtoli	2261	Ward 07
Canal	0.0626	Amtoli	2263	Ward 07
Canal	0.2218	Amtoli	2264	Ward 07
Canal	0.0952	Amtoli	2268	Ward 07
Canal	0.0390	Amtoli	2269	Ward 07
Canal	0.0241	Amtoli	2270	Ward 07
Canal	0.0373	Amtoli	2271	Ward 07
Canal	0.0396	Amtoli	2272	Ward 07
Canal	0.2636	Amtoli	2273	Ward 07
Canal	0.2044	Amtoli	2274	Ward 07
Canal	0.3119	Amtoli	2275	Ward 07
Canal	0.1632	Amtoli	2288	Ward 07
Canal	0.2040	Amtoli	2290	Ward 07
Canal	0.0925	Amtoli	2291	Ward 07
Canal	0.0872	Amtoli	2292	Ward 07
Canal	0.0923	Amtoli	2293	Ward 07
Canal	0.1201	Amtoli	2294	Ward 07
Canal	0.0193	Amtoli	2299	Ward 07
Canal	0.0234	Amtoli	2300	Ward 07
Canal	0.0295	Amtoli	2301	Ward 07
Canal	0.1106	Amtoli	2302	Ward 07
Canal	0.1231	Amtoli	2303	Ward 07
Canal	0.1615	Amtoli	2307	Ward 07
Ditch	0.0067	Amtoli	2313	Ward 07
Ditch	0.3471	Amtoli	2314	Ward 07
Ditch	0.0383	Amtoli	2315	Ward 07
Canal	0.1066	Amtoli	2316	Ward 07
Canal	0.0854	Amtoli	2317	Ward 07
Canal	0.1368	Amtoli	2318	Ward 07
Canal	0.0111	Amtoli	2319	Ward 07
Canal	0.0125	Amtoli	2386	Ward 07
Canal	0.1066	Amtoli	2387	Ward 07
Canal	0.1430	Amtoli	2393	Ward 07
Canal	0.0566	Amtoli	2394	Ward 07
Canal	0.0690	Amtoli	2397	Ward 07
Canal	0.1038	Amtoli	2398	Ward 07
Canal	0.2646	Amtoli	2401	Ward 07
Canal	0.0299	Amtoli	2430	Ward 07

Table G: Planning Schedule of Waterbodies in Amtali Paurashava

Annexure-G

Canal	0.4499	Amtoli	2436	Ward 07
Canal	0.1519	Amtoli	2437	Ward 07
Canal	0.1632	Amtoli	2439	Ward 07
Canal	0.1097	Amtoli	2440	Ward 07
Canal	0.1369	Amtoli	2441	Ward 07
Canal	0.0123	Amtoli	2443	Ward 07
Canal	0.1644	Amtoli	2449	Ward 07
Canal	0.0627	Amtoli	2467	Ward 07
Canal	0.0231	Amtoli	2468	Ward 07
Canal	0.2453	Chaora	2469	Ward 01
Canal	0.0076	Amtoli	2741	Ward 07
River	0.6674	Amtoli	2743	Ward 09
River	0.1882	Amtoli	2744	Ward 09
River	0.2762	Amtoli	2745	Ward 09
River	0.5509	Amtoli	2746	Ward 09
River	0.3810	Amtoli	2747	Ward 09
River	0.1737	Amtoli	2748	Ward 09
River	0.1822	Amtoli	2749	Ward 09
River	0.1053	Amtoli	2750	Ward 09
River	0.5103	Amtoli	2772	Ward 08
Canal	0.0356	Amtoli	2773	Ward 07
Canal	0.1167	Amtoli	2777	Ward 07
Canal	0.0272	Amtoli	2778	Ward 07
Canal	0.0387	Amtoli	2779	Ward 07
Canal	0.0160	Amtoli	2780	Ward 07
Canal	0.0080	Amtoli	2781	Ward 07
Canal	5.1582	Amtoli	2799	Ward 07
River	0.1268	Amtoli	2802	Ward 09
River	0.1094	Amtoli	2803	Ward 09
River	0.0520	Amtoli	2804	Ward 09
River	0.0910	Amtoli	2805	Ward 09
River	0.0320	Amtoli	2806	Ward 09
River	0.0250	Amtoli	2807	Ward 09
River	0.0273	Amtoli	2808	Ward 09
River	0.0286	Amtoli	2809	Ward 09
River	0.0493	Amtoli	2810	Ward 09
Canal	0.0745	Amtoli	2811	Ward 06
Canal	0.0188	Amtoli	2812	Ward 06
Canal	0.0482	Amtoli	2813	Ward 06
Canal	0.1258	Amtoli	2814	Ward 06
Canal	0.2722	Amtoli	2815	Ward 06
Canal	0.1673	Amtoli	2816	Ward 06
River	1.8815	Amtoli	3001	Ward 09
River	1.8705	Amtoli	3002	Ward 09
River	0.6727	Amtoli	3003	Ward 09
River	0.7769	Amtoli	3004	Ward 09
River	0.8492	Amtoli	3005	Ward 09
River	0.8056	Amtoli	3006	Ward 09
River	0.1673	Amtoli	3007	Ward 09
River	0.1837	Amtoli	3008	Ward 09
River	0.8330	Amtoli	3009	Ward 09
River	0.9300	Amtoli	3010	Ward 09
River	0.7721	Amtoli	3011	Ward 09
River	0.2730	Amtoli	3012	Ward 09
River	0.3484	Amtoli	3013	Ward 09
River	0.2933	Amtoli	3014	Ward 09
River	0.0867	Amtoli	3015	Ward 09
River	0.2294	Amtoli	3016	Ward 09
River	0.3043	Amtoli	3017	Ward 09

Table G: Planning Schedule of Waterbodies in Amtali Paurashava

Annexure-G

River	0.1971	Amtoli	3018	Ward 09
River	0.2551	Amtoli	3019	Ward 09
River	0.2899	Amtoli	3020	Ward 09
River	0.0708	Amtoli	3021	Ward 09
River	0.0826	Amtoli	3022	Ward 09
River	0.0966	Amtoli	3023	Ward 09
River	0.1232	Amtoli	3024	Ward 09
River	0.4603	Amtoli	3025	Ward 09
River	0.4735	Amtoli	3026	Ward 09
River	0.8634	Amtoli	3027	Ward 09
River	0.6214	Amtoli	3028	Ward 09
River	0.0867	Amtoli	3029	Ward 09
River	0.0717	Amtoli	3030	Ward 09
River	0.0962	Amtoli	3031	Ward 09
River	0.1557	Amtoli	3032	Ward 09
River	0.1403	Amtoli	3033	Ward 09
River	0.1652	Amtoli	3034	Ward 09
River	0.5503	Amtoli	3035	Ward 09
River	0.6130	Amtoli	3036	Ward 09
River	1.4371	Amtoli	3037	Ward 09
River	0.6960	Amtoli	3038	Ward 09
River	0.2739	Amtoli	3039	Ward 09
River	0.1482	Amtoli	3040	Ward 09
River	0.0915	Amtoli	3041	Ward 09
River	0.6482	Amtoli	3042	Ward 09
River	0.6303	Amtoli	3043	Ward 09
River	0.1081	Amtoli	3044	Ward 09
River	0.2893	Amtoli	3045	Ward 09
River	0.1614	Amtoli	3046	Ward 09
River	0.1653	Amtoli	3047	Ward 09
River	0.4892	Amtoli	3048	Ward 09
River	0.3727	Amtoli	3049	Ward 09
River	0.2708	Amtoli	3050	Ward 09
River	1.6576	Amtoli	3051	Ward 09
River	0.5633	Amtoli	3053	Ward 09
River	1.3229	Amtoli	3054	Ward 09
River	0.7547	Amtoli	3055	Ward 09
River	0.1661	Amtoli	3056	Ward 09
River	0.2612	Amtoli	3057	Ward 09
River	0.0867	Amtoli	3058	Ward 09
River	0.0779	Amtoli	3060	Ward 09
River	0.7226	Amtoli	3062	Ward 09
River	0.2108	Amtoli	3063	Ward 09
River	0.0273	Amtoli	3064	Ward 09
River	0.1357	Amtoli	3065	Ward 09
River	0.1853	Amtoli	3066	Ward 09
River	2.0588	Amtoli	3067	Ward 09
River	0.1530	Amtoli	3068	Ward 09
River	1.7093	Amtoli	3069	Ward 09
River	0.6547	Amtoli	3070	Ward 09
River	0.1409	Amtoli	3071	Ward 09
River	0.3570	Amtoli	3072	Ward 09
River	0.1793	Amtoli	3088	Ward 09
River	0.5022	Amtoli	3089	Ward 09
River	0.0719	Amtoli	3090	Ward 09
River	0.1303	Amtoli	3091	Ward 09
River	0.7626	Amtoli	3092	Ward 09
River	2.5686	Amtoli	3093	Ward 09
River	0.1616	Amtoli	3094	Ward 09

Table G: Planning Schedule of Waterbodies in Amtali Paurashava

Annexure-G

River	0.3939	Amtoli	3095	Ward 09
River	0.5813	Amtoli	3096	Ward 09
River	0.1301	Amtoli	3097	Ward 09
Pond	0.1865	Amtoli	3098	Ward 09
Pond	0.0619	Amtoli	3099	Ward 09
River	0.0490	Amtoli	3100	Ward 09
River	0.0162	Amtoli	3101	Ward 09
River	0.0697	Amtoli	3102	Ward 09
River	0.0089	Amtoli	3104	Ward 09
Pond	0.2840	Amtoli	3106	Ward 09
Pond	0.0734	Amtoli	3107	Ward 09
Pond	0.0380	Amtoli	3108	Ward 09
Pond	0.0106	Amtoli	3109	Ward 09
Pond	0.1157	Amtoli	3110	Ward 09
Pond	0.0849	Amtoli	3111	Ward 09
Canal	0.0078	Amtoli	3134	Ward 09
Pond	0.2389	Amtoli	3135	Ward 09
Pond	0.3256	Amtoli	3136	Ward 09
Canal	0.4582	Amtoli	3137	Ward 09
River	1.9252	Amtoli	3138	Ward 09
Canal	0.0121	Amtoli	3138	Ward 09
River	0.6381	Amtoli	3139	Ward 09
River	2.1387	Amtoli	3140	Ward 09
River	1.4026	Amtoli	3142	Ward 09
River	2.0622	Amtoli	3143	Ward 09
River	0.8302	Amtoli	3144	Ward 09
River	0.0174	Amtoli	3145	Ward 09
River	0.0087	Amtoli	3147	Ward 09
River	0.0223	Amtoli	3155	Ward 09
River	0.0276	Amtoli	3156	Ward 09
River	1.3074	Amtoli	3157	Ward 09
River	0.2718	Amtoli	3158	Ward 09
River	0.8718	Amtoli	3159	Ward 09
River	0.0077	Amtoli	3160	Ward 09
River	0.0096	Amtoli	3191	Ward 09
River	0.7487	Amtoli	3192	Ward 09
River	1.1188	Amtoli	3193	Ward 09
River	0.0133	Amtoli	3194	Ward 09
River	0.0149	Amtoli	3195	Ward 09
River	0.7680	Amtoli	3196	Ward 09
River	0.5993	Amtoli	3197	Ward 09
River	0.0156	Amtoli	3198	Ward 09
River	0.0118	Amtoli	3199	Ward 09
River	0.6451	Amtoli	3200	Ward 09
River	1.0479	Amtoli	3201	Ward 09
River	0.0067	Amtoli	3202	Ward 09
River	0.0224	Amtoli	3203	Ward 09
River	1.1604	Amtoli	3204	Ward 09
River	0.0350	Amtoli	3216	Ward 09
River	0.0071	Amtoli	3217	Ward 09
River	0.8874	Amtoli	3222	Ward 09
River	0.9714	Amtoli	3223	Ward 09
River	0.9022	Amtoli	3224	Ward 09
River	1.6670	Amtoli	3225	Ward 09
River	1.8737	Amtoli	3226	Ward 09
River	0.0086	Amtoli	3227	Ward 09
River	0.0073	Amtoli	3228	Ward 09
River	0.0241	Amtoli	3229	Ward 09
River	0.4180	Amtoli	3230	Ward 09

Table G: Planning Schedule of Waterbodies in Amtali Paurashava

Annexure-G

River	0.2082	Amtoli	3231	Ward 09
River	0.0268	Amtoli	3232	Ward 09
River	0.5219	Amtoli	3238	Ward 09
River	2.0393	Amtoli	3239	Ward 09
River	1.5581	Amtoli	3242	Ward 09
River	1.5888	Amtoli	3243	Ward 09
River	0.6852	Amtoli	3244	Ward 09
River	0.5545	Amtoli	3245	Ward 09
River	0.9783	Amtoli	3246	Ward 09
River	23.5824	Amtoli	3247	Ward 09
River	0.2812	Amtoli	3270	Ward 09
River	1.2138	Amtoli	3271	Ward 09
River	0.5258	Amtoli	3272	Ward 09
River	1.0122	Amtoli	3273	Ward 09
River	0.2840	Amtoli	3421	Ward 09
River	0.1889	Amtoli	3422	Ward 09
River	0.2026	Amtoli	3423	Ward 09
River	0.0648	Amtoli	3436	Ward 09
River	0.0899	Amtoli	3437	Ward 09
River	0.1197	Amtoli	3438	Ward 09
River	0.1125	Amtoli	3439	Ward 09
River	0.1762	Amtoli	3440	Ward 09
River	0.2052	Amtoli	3441	Ward 09
River	0.0533	Amtoli	3442	Ward 09
River	0.0631	Amtoli	3443	Ward 09
River	0.0771	Amtoli	3444	Ward 09
Pond	0.0262	Amtoli	3448	Ward 09
River	0.3772	Amtoli	3449	Ward 09
Pond	0.0440	Amtoli	3453	Ward 09
Pond	0.0337	Amtoli	3454	Ward 09
Canal	0.0415	Amtoli	3458	Ward 09
Canal	2.2419	Amtoli	3459	Ward 09
River	0.0114	Amtoli	3460	Ward 09
River	0.0257	Amtoli	3466	Ward 09
River	0.1502	Amtoli	3467	Ward 09
River	0.0518	Amtoli	3468	Ward 09
River	0.0637	Amtoli	3469	Ward 09
River	0.0348	Amtoli	3471	Ward 09
River	0.0416	Amtoli	3472	Ward 09
River	0.0277	Amtoli	3473	Ward 09
River	0.0068	Amtoli	3474	Ward 09
River	0.0122	Amtoli	3475	Ward 09
River	0.1694	Amtoli	99999	Ward 01
Ditch	0.0252	Amtoli	206	Ward 01
River	0.4671	Amtoli	212	Ward 04
Canal	0.0159	Amtoli	443	Ward 02
Canal	0.4501	Amtoli	443	Ward 02
Canal	0.2984	Amtoli	489	Ward 06
Canal	0.0211	Amtoli	519	Ward 02
Canal	0.1594	Amtoli	551	Ward 05
Canal	0.0703	Amtoli	562	Ward 02
River	0.2733	Amtoli	851	Ward 01
Ditch	0.0775	Amtoli	898	Ward 03
Ditch	0.0837	Amtoli	898	Ward 03
Canal	0.1391	Amtoli	975	Ward 06
Canal	0.0649	Amtoli	975	Ward 06
River	0.0893	Amtoli	1011	Ward 08
River	0.4886	Amtoli	1066	Ward 09
River	0.0753	Amtoli	1066	Ward 09

Table G: Planning Schedule of Waterbodies in Amtali Paurashava

Annexure-G

Canal	0.0078	Amtoli	1295	Ward 07
Canal	0.0148	Amtoli	1295	Ward 07
Canal	0.0201	Amtoli	1297	Ward 07
River	0.0650	Amtoli	1417	Ward 09
River	0.3810	Amtoli	1418	Ward 09
Canal	4.7252	Amtoli	1508	Ward 09
Canal	0.0164	Amtoli	1536	Ward 09
Canal	0.2355	Amtoli	2308	Ward 07
Canal	1.6300	Amtoli	2798	Ward 07
Canal	0.0207	Amtoli	22222	Ward 04
Ditch	0.0934	Amtoli	22222	Ward 04