Payra-Kuakata Comprehensive Plan Focusing on Eco-Tourism Urban Area Plan: 2021-2031

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বাংলা

অতিরিক্ত সংখ্যা কর্তৃপক্ষ কর্তৃক প্রকাশিত

বৃহস্পতিবার, আগস্ট ২৯, ২০২৪

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প্রজ্ঞাপন

তারিখ: ০৬ ভাদ্র ১৪৩১ বঙ্গাব্দ/ ২১ আগস্ট ২০২৪ খ্রিষ্টাব্দ

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EXECUTIVE SUMMARY

The Urban Area Plan (UAP) is formulated to serve as a guide to the future town's infrastructure development together with the land use control. The Urban Area Plan is prepared for the Paurashava area and is meant for a period of 10 years. The Urban Area Plan is more elaborate than the Structure Plan and is divided into four chapters – Strategic Planning Zones, Transportation and Traffic Management Guidelines, Drainage and Environmental Management Guidelines and Ward Action Plan including Landuse Guidelines. Therefore, Urban Area Plan is the mid-level plan that covers the existing urban plan of Galachipa Paurashava. Urban Area Plan would guide land use and infrastructure within the area potential for urban settlements within next 10 years. This plan aims to formulate Urban Area Plan and Action Area plan at local level.

The presentation of this Report is in compliance with the Terms of Reference for Payra Kuakata Comprehensive Plan Focusing on Eco-Tourism. Galachipa, a Paurashava of Patuakhali district, is located at Galachipa Upazila in the southern part of the country. The Paurashava was established 17th March, 1997, as a B category Paurashava and covers 2 mouzas (4 sheets). The current population is approximately 25721 (BBS, 2022).

As per the planning standards set for present development plan, an amount of total 144.04 acre of land proposed for urban services for next 10 years. The future development infrastructure, amenities and services facilities are allocated in conformity with planning standards for urban areas based on the demand of local dwellers as collected through PRA survey.

CHAPTER 1 INTRODUCTION

1.1Background of Urban Area plan

Urban Area Plan includes those areas which require economic, physical and social renewal and for areas likely to be subject to large scale development over the lifetime of the plan. Urban Area Plan (UAP) provides an interim mid-term strategy for 10 years and covers for the development of urban areas within the project area. Urban Area Plan is included land use plan, Transport Network, Drainage Plan and Future Facilities. This plan is mainly developed for Galachipa Paurashava and also it is a guideline for development control of the Paurashava.

1.2Purpose of Urban Area Plan

Urban Area Plan would guide land use and infrastructure within the area potential for urban settlements within next 10 years. Urban Area Plan is a statutory planning document to guide future development of urban up to 2031. The plan will play an important role of enabling upazila parishad to play greater role as a facilitator for promoting private sector development initiatives. These plans guidance to how it can develop the roles i.e. to promote development, to co-ordinate development and to control development. Considering the diversified issues that must be addresses to guide the overall development of the urban areas of the upazila, the midterm (10 years) plan will consist of the following plans:

- Urban Land Use Plan
- Traffic & transportation plan
- Drainage network plan
- Urban services plan

1.3Area Coverage under Urban Area Plan

Galachipa upazila has a designated Paurashava of 9 wards along with great impact of urban growth. According to the structure plan, Galachipa Paurashava is experiencing probable urban growth. Urban Area Plan is included urban Land Use Plan, traffic & transportation plan, drainage network plan and urban services plan. Depending on existing facilities, projected population for 10 years and demand from PRA the urban facilities are distributed. The circulation network and drainage network has been given top priority.

Ward wise area of Galachipa Paurashava is given by the Table. From the analysis, the proposed Structure Plan Area is 594.32 sq. km and the core urban area is 2.20 sq. km and potential urban area is 2.76 sq.km. The plan area has been shown in Map.

Ward No	Area acre (GIS)
Ward No 01	70.87
Ward No 02	95.60
Ward No 03	178.35
Ward No 04	55.86
Ward No 05	54.37
Ward No 06	193.03
Ward No 07	96.66
Ward No 08	90.52
Ward No 09	210.20
Total	1045.48

Table 1.2: Ward wise Area of Galachipa Paurashava

Source: PKCP Project, UDD,2022

1.4Description of the potential urban expansion area

From the survey it has been observed that Galachipa Paurashava is expanding in south eastern side to kalikapur Bazar direction. Area particularly in the east is more potential compared to north-west for immediate development.

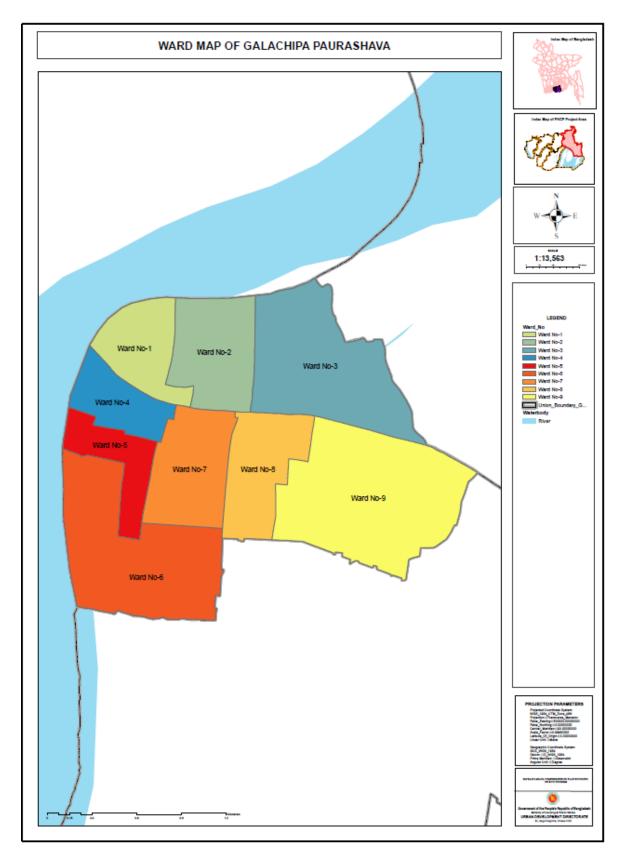


Figure 1 Ward Map of Galachipa Paurashava

Source: PKCP Project, UDD,2022

CHAPTER 2 SPATIAL PLANNING ZONES

Strategic Planning Zones (SPZs) are designated areas within a municipality or a region that are identified for specific land use purposes. These zones are typically used to support and facilitate the implementation of strategic plans and policies for the area. The main purpose of SPZs is to promote sustainable and coordinated development of an area by directing development and land use activities in a way that is consistent with the overall vision and objectives of the area's strategic plan. SPZs are typically established through zoning regulations and may include a range of land use designations such as residential, commercial, industrial, or green space.

The specific characteristics of SPZs may vary depending on the needs of the municipality or region, but they typically involve a collaborative process involving community stakeholders, government officials, and planning professionals. Through this process, stakeholders can identify and prioritize areas for development and determine appropriate land uses, design standards, and development guidelines. Not all of the SPZ are urban or will become urban in the near future. Whether urban, urbanizing or remaining rural clarity is required on the legal status of the existing land use and on the change in land use that may be promoted, allowed or prohibited.

2.1 Reflection from Upper-Tier Plans

The Structure Plan provides a long term strategy to the year 2041 for the development of Galachipa Upazila. It consists of a report and a map. It identifies the magnitude and direction of growth and recommends spatial and sectoral policies over the long term for the Galachipa Upazila core urban area. The Urban Area Plan provides a mid-term strategy to the year 2031 for the development of the existing potential urban area and those areas likely to come under urbanization pressure over the next decade.

2.2SPZ Classification

The Spatial Planning Zones are-The urban area of Galachipa has been divided into 7 Spatial Planning Zones (SPZ), each of them needs to be examined and actions related to promotion have to be identified. Spatial planning zones are important because they help to ensure that land use is managed in a coordinated and efficient manner, taking into account the needs and priorities of different stakeholders.

The Spatial Planing Zones are of Galachipa Upazila are listed below:

SPZ 01: Upazila Town center (UTC)

SPZ 03: Urban

- SPZ 04: Urban Fringe
- SPZ 02: New Urban Area

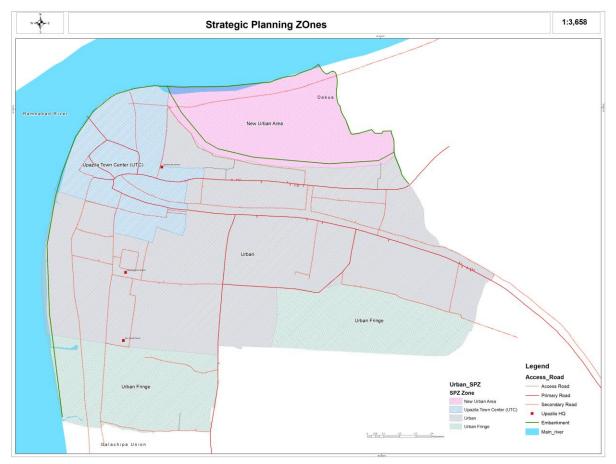


Figure 2 Strategic Planning Zones

Table 1: SPZ zones Area

SPZ_Zone	Area Acre	%
Urban	548.40	52.45
Upazila Town Center (UTC)	126.63	12.11
New Urban Area	140.54	13.44
Urban Fringe	229.95	21.99
Total	1045.52	100.00

Source: PKCP Project, UDD,2022

Source: PKCP Project, UDD,2022

SPZ 01: Upazila Town center (UTC):

This Upazila town center is the administrative and commercial center of the upazila. It is the place where the upazila administration is located. It has a well road network. The area is dominated by wholesale markets, bazar and some institutional uses while the remaining is predominantly mixed use. Dominant land use includes Upazila parishad, Upazila Veterinary Hospital, Forest office, Police Station, Food Storage and Commercial area. This zone contains sheikh rasel stadium, Golden park and can be promote as recreational activities zone. There has a great opportunity to promote recreational facilities here naturally because of riverside location. There is a proposed bridge and also a truck parking stand adjacent to this area and also char area can be developed as different recreational activities River interaction makes the place for attractive to local people.

Major Issues and Problems

The road network is narrow and has no connection with mainland. This Upazila town center has no connection with other union because of the absence of bridge and geographical location.

Due to the proper communication network, the agricultural product and others good price is high compare to the other upazila of Bangladesh

There is no Upazila Health complex for the treatment and no proper system for pure drinking water.

•Mostly char land and also major portion of land covers seikh rasel stadium

•Coastal afforestation beside river

Opportunities

The proposed ferry ghat will establish a well-connected road network with other Upazila.

The proposed primary road from Koralia Bazar to Baherchor Bazar will ease traffic circulation.

The construction of proposed bridge improves the communication system and connects other union of Galachipa Upazila.

• Providing River side based recreational facilities also char areas can be utilized

•Preserving areas for eco-tourism

Action Required

□ Widening of roads and Construction of drainage should pivotal. This will substantially reduce the traffic and drainage problem. The local authorities can invest in infrastructure such as roads, drainage systems to make the area more accessible and safe for businesses and customers.

□ Promote all investors to ensure that the area develops with a positive image of a gateway to Galachipa.

□ parking facility is necessary to avoid congestion

□ As Galachipa UTC area is connected though waterway transport so that a well-connected public transport system can make it easier for people to access the CBD area. A prompt action is inneed to construct proposed Bridge from Haridebpur ferighat to Galachipa Paurashava

□Local authorities can work with transport providers to improve connectivity so that people from other upazila or unions can easily communicate

- •Market the area for private and public investment for the development of fresh water fish processing industry.
- •Promote all investors to ensure that the area develops with a positive image of a gateway to Galachipa Paurashava.
- •Also sheikh rasel stadium, Golden park and prem park can also be developed especially prem park (local people called). It should be developed so that this place can entertain people and also some recreational activities should be developed

 \Box Prepare an action plan.

SPZ 04: New Urban Area (Bangabandhu Planned Residential Area)

This is an existing area where GOVT declared as proposed Bangabandhu Planned Residential Area. The city is expanding to north to meet the population growth spontaneously. A planned residential area is a neighborhood or section of a city, town or suburban area primarily designed and zoned for residential use. It is typically characterized by a concentration of homes, apartments, townhouses, and other types of dwellings, along with supporting infrastructure such as parks, schools, and shops. The primary function of a residential area is to provide housing for individuals and families, and as such, it is usually designed to be a safe, comfortable, and livable environment. Some residential areas may also have restrictions on certain types of commercial or industrial activity, to ensure that the area remains primarily residential in nature.

Major Issues and Problems

- ≻Char land
- ≻Low density with no development
- Project was initiated but no work has been done since then. So, urbanization is not yet taking place and it is unlikely that it is to experience rapid changes.

Opportunities

- ≻Low density development
- ≻High land
- Proximity to the existing urban area
- Major road and canal forms the boundary
- Mostly char land and also major portion of land covers seikh rasel stadium
- ➢Coastal afforestation beside river

Action Required

- A layout plan has been prepared for this Bangabandhu planned residential area. So, all activities has developed in the plan
- >Initiate community based actions to prepare local development plan.
- Pursue different government agencies to prepare infrastructure plan before development takes place.
- ≻ This action area Plan is on priority basis.
- The zone shall remain rural for many more years. As such the authority should discourage
- A municipality or development board should be created for the governance of the zone and to provide guidance for the public and private development.

SPZ 03: Urban:

This is adjacent to UTC, with existing high to moderate densely developed and open/green space. The zone comprises the relatively high density development area except UTC zone. This is the prime residential area of Galachipa Pourashava. This zone is occupied by the most of the peoples in this Pourashava.

Major Issues and Problems:

- •High density area
- •High land value
- •Spontaneous development without proper infrastructure provision
- •Insufficient road width

Opportunities

- •Medium density development
- Proximity to major urban services

- •Proximity to the urban core area
- •Proximity to major road.

Action Required

- •A road network plan should be prepared and maintained by respective authority.
- •Urban services should be provided according to Urban Area Plan
- •Initiate community based awareness program to preserve and protect water bodies.
- Prepare Local Area Plan on priority basis.

SPZ 02: Urban Fringe

This zone located from Inner fringe to Paurashava boundary which has mixture of urban and rural land uses (Rest of the area except urban core and inner fringe, mainly agriculture dominated area). The zone comprises the relatively low density development area around the periphery area of the Pourashava. This area describes urban agriculture with rural settlements in nature. Most of the people of Galachipa Paurashava are fisherman and farmer.

Major Issues and Problems:

- •Semi-urban area
- •Low density area
- •Spontaneous development by destroying urban agriculture
- •Insufficient road network

Opportunities

- •Low density development
- •Preserving agricultural land and natural water bodies
- •Utilizing vacant land
- •Natural drainage system

Action Required

- •Identify the alignment of proposed road and need up-gradation.
- •Initiate community based actions to prepare local development plan.
- •Initiate community based awareness program to preserve and protect water bodies.

- •Prepare Local Area Plan on priority basis.
- •Identifying potential agricultural land and take actions to preserve them.

CHAPTER 3 TRANSPORTATION AND TRAFFIC MANAGEMENT GUIDELINES

3.1Introduction

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. This plan shall consist of the inventory and analysis of existing and proposed circulation systems, patterns and any other modes of transportation in the paurashava in co-ordination with the land use plan. The focus of local concern will be municipal streets and roads, pedestrian circulation, local facilities, local bicycle paths, parking and other facilities providing or supporting the partition of people and goods within the Paurashava. This focus will also include associated land such as terminals, stations and other shipping facilities.

Better transportation accessibility to study area is needed dreadfully to improve its connectivity within the area and with the remaining parts of the country. Better accessibility within the tourist spots can enhance the tourism sector of the country which will have greater impact on tourism and economic sector in Bangladesh. In addition, improvement of walkability and other facilities like housing, tourist entertainment activities, restaurants etc. within the tourist spots is necessary to provide safety and comfort to the local and international tourists.

3.2Purpose and Objectives

The goal of the plan for the transportation system should be to provide a balanced transportation stem that meets the needs of the community by accommodating the movement of people, goods, and riches at an optimum level of safety, economy and efficiency.

3.3Output from Transportation survey

In transportation survey there the base-year traffic volume and traffic count survey has been done. To understand the transportation network of the project area, the survey team visited selected major places, major intersections, bazars, waterway ghats, terminals and tourist spots, of Galachipa Upazila.

3.4Waterways Ghats and Terminals

From transportation survey it is found that overall ferry service in Patuakhali and Barguna is in awful condition over the years. Most of the ferries are now at risky situation due to low demand. In Galachipa, the paurashava connected from Haridebpur ferry ghat and only way to travel is small boats which are also risky. The ferry service is unavailable and only used to transport

heavy vehicles. So, not more than one ferry mainly serves this area. The pontoon at Galachipa ferry terminal partly sinks during the high tide as cracks developed at its bottom.

In Galachipa Upazila, Char Kajal is well known for its fishing business area which also attracts trips and apart from that, Galachipa Paurashava is the only passing route of traffic because from Haridebpur there is a river Ramnabad River and also no connecting bridge. So, people come by ferry or boat and gather in Galachipa pyrashava. Alos, Galachipa considered as business hub. That is why, road network is very important element for Galachipa Paurashava. So, Galachipa Paurashava considered as one of the top ten (10) Zones where most Trips are being attracted in Traffic and Transportation survey.

It is found that, there are 44 bridges at Galachipa Paurashava. Few bridges are pucca and condition of pavement are good and the rests of them are wooden. There are 1 box culvert with 6 pipe culverts exist at Galachipa Paurashava. The rest of the roads are primary roads.

3.5Existing 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. This analysis show existing deficiencies in transport sector of Galachipa Paurashava. Traffic volume survey has been conducted to find out the scenario of average daily traffic, peak hour traffic and off-peak hour traffic. Origin-Destination survey has been carried out to know the pattern of traffic generation, traffic distribution, traffic modes and traffic costing, travel behavior etc. Growth center survey has been conducted at 5 points on Pourashava to determine the traffic congestion factors and conditions. Stakeholder interview has been accomplished to understand the traffic conditions in this area and find out the potential decisions to solve traffic problems.

3.6Existing Road Network

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 Galachipa Paurashava is connected in north and north east (Dashmina) 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 cannot 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 Galachipa Paurashava most of the roads cannot be defined according to road hierarchy.From the physical feature survey it has been observed that about 70.10% (1861.5 m) of the roads are Pucca, 18.68 % (234 m) roads Kutcha and the rest of the roads are Semi-pucca 11.21% (152.4 m. Map 11.1 shows existing road network of Galachipa Paurashava.

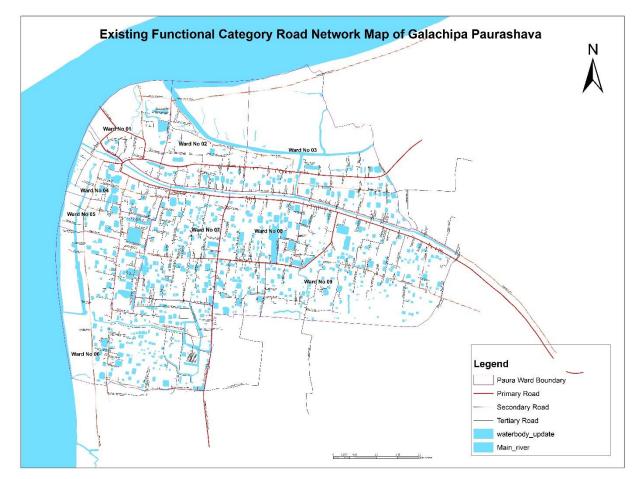


Figure 3 Existing Function Category of Road Network Source: PKCP Project, UDD,2022

Table 2: Existing Road Network of Galachipa Paurashava

Functional Category	Total (m)	%
Primary Road	222.3	9.89
Secondary Road	233.2	10.379
Tertiary Road	1792.4	79.74
Grand Total	2247.9	100

Source: PKCP Project, UDD,2022

Table 3:Road Type of Galachipa Paurashava

Road Type	%
Katcha Road	18.68
Pucca Road	70.10
Semi Pucca Road	11.21
Grand Total	100.00

Source: PKCP Project, UDD,2022

3.7Existing Waterways

There are 40 Box culverts, 16 bridges, 8 culvert, 2 sluice gate in Galachipa Pauashava. The given table shows ward wise distribution.

WARD	Box Culvert	Bridge	Culvert	Sluice Gate	Grand Total
Ward No 01	2	1	1		4
Ward No 02	4	1	1		6
Ward No 03	7	1		1	9
Ward No 04	1	1			2
Ward No 06	6	5	1	1	13
Ward No 07	2	2	2		6
Ward No 08	7		1		8
Ward No 09	11	5	2		18
Grand Total	40	16	8	2	66

Table 4: Ward wise Distribution of Galachipa Paurashava

Source: PKCP Project, UDD,2022

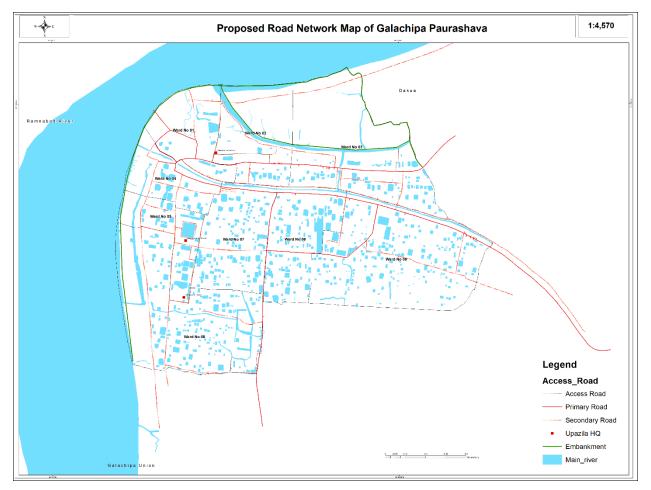
3.8Road Network Plan

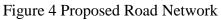
The standards have been adopted by the consultants to draw up the transportation development plan. Following are the suggested planning standards for road network development. These road hierarchies are proposed based on the functional linkage of the road of Galachipa Paurashava.

Galachipa 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 stakeholder's 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.

Landuse Category	Road Classification	Length
	Primary Road	80 feet
Circulation Network	Secondary Road	60 feet
	Tertiary Road	40 feet

Source: PKCP Project, UDD,2022





Source: PKCP Project, UDD,2022

3.9Proposals for Improvement of Existing Road Network

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 10 years implementation time. In the master plan, about 111.44 kilometers roads have been proposed for widening. Summary of road widening proposal has been shown in Table.

Table 6: Functional Category Wise Proposed Road

Func_Cat	Name	Width_Tot	Proposed_w	Remarks
Primary Road	Ferry Ghat Road	6	60	widening
Primary Road	Wapda Road	6	60	widening
Primary Road	Wapda Road	6	60	widening
Primary Road	Ferry Ghat Road	6	60	widening
Primary Road	Sadar Road	5	40	widening
Primary Road	Textile College Road	5.5	40	widening
Primary Road	College Road	5	60	widening
Primary Road	Samudabad Road	5.5	80	widening
Primary Road	Galachipa to Panpatti Ghat Road	3.5	80	widening
Primary Road	Samudabad Road	2.8	80	widening
Primary Road	Wapda Road	6	60	widening
Primary Road	Wapda Road	6	60	widening
Primary Road	Wapda Road	6	60	widening
Primary Road	Wapda Road	6	60	widening
Primary Road	Wapda Road	6	60	widening
Primary Road	Wapda Road	6	60	widening
Primary Road	Wapda Road	6	60	widening
Primary Road	Wapda Road	6	60	widening
Primary Road	Wapda Road	6	60	widening
Primary Road	Wapda Road	6	60	widening
Primary Road	Wapda Road	6	60	widening
Primary Road	Wapda Road	6	60	widening
Primary Road	Wapda Road	6	60	widening
Primary Road	College Road	5	60	widening
Primary Road	College Road	5	60	widening
Primary Road	College Road	5	60	widening
Primary Road	College Road	5	60	widening
Primary Road	College Road	5	60	widening
Primary Road	College Road	5	60	widening
Primary Road	College Road	5	60	widening
Primary Road	College Road	5	60	widening
Primary Road	College Road	5	60	widening
Primary Road	College Road	5	60	widening
Primary Road	College Road	5	60	widening

Primary Road	College Road	5	60	widening
Primary Road	College Road	5	60	widening
Primary Road	College Road	5	40	widening
Primary Road	Wapda Road	6	60	widening
Primary Road	Ferry Ghat Road	6	60	6
		-		widening
Primary Road	Samudabad Road	5.5	60	widening
Primary Road	Samudabad Road	5.5	60	widening
Secondary Road		2.8	40	widening
Secondary Road	Banga Bandhu Road	2.8	40	widening
Secondary Road	Fire Service Road	3	40	widening
Secondary Road	Fire Service Road	3	40	widening
Secondary Road	Paurashava Road	2.5	40	widening
Secondary Road	Kheyaghat Road	5	60	widening
Secondary Road	Paurashava Road	3	60	widening
Secondary Road	Paurashava Road	3	40	widening
Secondary Road	Charpara Road	2.8	40	widening
Secondary Road	Wapda Road	6	40	widening
Secondary Road	Wapda Road	6	60	widening
Secondary Road	Wapda Road	6	60	widening
Secondary Road	Wapda Road	6	60	widening
Secondary Road	Wapda Road	6	60	widening
Secondary Road	Santibag Road	2.5	60	widening
Secondary Road	Wapda Road	6	60	widening
Secondary Road	High School Road	5	60	widening
Secondary Road	Babri Mosque Road	5	60	widening
Secondary Road	VIP Road	5	60	widening
Secondary Road	Upazila Road	3.2	60	widening
Secondary	Girls School Road	4	60	widening

Road				
Secondary Road	Paurashava Road	2.5	60	widening
Secondary Road	Paurashava Road	2.6	60	widening
Secondary Road	Upazila Road	3.2	60	widening
Secondary Road	Wapda Road	6	60	widening
Secondary Road	High School Road	3.8	60	widening
Secondary Road	Girls School Road	4	60	widening
Secondary Road	Girls School Road	4	60	widening
Secondary Road	Upazila Road	3.2	60	widening
Secondary Road	Helipad Road	3	60	widening
Secondary Road	Upazila Road	3.2	60	widening
Secondary Road	Upazila Road	3.2	60	widening
Secondary Road	College Road	5	60	widening
Secondary Road	Babri Mosque Road	5	60	widening
Secondary Road	Fulkhali Road	3	60	widening
Secondary Road	Santibag Road	2.5	60	widening
Secondary Road	Fulkhali Road	3	60	widening
Secondary Road	College Road	5	60	widening
Secondary Road	Wapda Road	6	60	widening
Secondary Road	College Road	5	60	widening
Secondary Road	Hospital Road	4	60	widening
Secondary Road	Banani Road	5	60	widening
Secondary Road	Banani Road	5	60	widening
Secondary Road	Fulkhali Road	3	60	widening
Secondary Road	Paurashava Road	3.8	60	widening

Secondary	Paurashava Road	2.3	60	widening
Road	Τ ⁰ Τ D 1	5	(0)	
Secondary Road	T&T Road	2	60	widening
Secondary	Paurashava Road	2.3	60	widening
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Secondary Road	Paurashava Road	2.5	60	widening
Secondary Road	Upazila Road	3.2	60	widening
Secondary Road	Wazed Road	4	60	widening
Secondary Road	Paurashava Road	3.5	60	widening
Secondary Road	Santibag Road	2.5	60	widening
Secondary Road	Santibag Road	2.5	60	widening
Secondary Road	Galachipa Paurashava Road	3	60	widening
Secondary Road	Banga Bandhu Road	2.8	40	widening
Secondary Road	Kheyaghat Road	2	60	widening
Secondary Road	Ferry Ghat Road	6	60	widening
Secondary Road	Paurashava Road	3	40	widening
Secondary Road	Galachipa Paurashava Road	3	60	widening
Tertiary Road	Charpara Road	2.8	20	Newly Proposed
Tertiary Road	Wapda Road	6	20	Newly Proposed
Tertiary Road		2	20	Newly Proposed
Tertiary Road	Wapda Road	6	20	Newly Proposed
Tertiary Road		4	40	widening
Tertiary Road		4	40	widening
Tertiary Road	Kheyaghat Road	2	40	widening
Tertiary Road	Launch Ghat Road	2.6	40	widening
Tertiary Road	Ferry Ghat Road	7.4	40	widening
Tertiary Road	Wapda Road	6	40	widening
Tertiary Road	Ferry Ghat Road	6	40	widening
Tertiary Road	Ferry Ghat Road	6	40	widening
Teruary Roau	Terry Onat Road	U	40	widening

Tertiary Road	Paurashava Road	3	40	widening
Tertiary Road		2.5	40	widening
Tertiary Road		2.5	40	widening
Tertiary Road	Fire Service Road	3	40	widening
Tertiary Road	Fire Service Road	3	40	widening
Tertiary Road	Paurashava Road	3	40	widening
Tertiary Road	Wapda Road	6	40	widening
Tertiary Road	Wazed Road	4	40	widening
Tertiary Road	Paurashava Road	3	40	widening
Tertiary Road	Wapda Road	6	40	widening
Tertiary Road	Wapda Road	6	40	widening
Tertiary Road		3	40	widening
Tertiary Road	Wapda Road	6	40	widening
Tertiary Road		3	40	widening
Tertiary Road	Santibag Road	2.5	40	widening
Tertiary Road		2	40	widening
Tertiary Road		2	40	widening
Tertiary Road		2	40	widening
Tertiary Road		5	40	widening
Tertiary Road	Paurashava Road	2.5	40	widening
Tertiary Road		2	40	widening
Tertiary Road	Girls School Road	4	40	widening
Tertiary Road	Pollob Bari Road	2	40	widening
Tertiary Road	Paurashava Road	2.5	20	Newly
				Proposed
Tertiary Road	Paurashava Road	2.5	40	widening
Tertiary Road		1.7	40	widening
Tertiary Road		1.7	40	widening
Tertiary Road	Pollob Bari Road	2	40	widening
Tertiary Road		2	40	widening
Tertiary Road	Sonirvor Road	2	40	widening
Tertiary Road	Sonirvor Road	2	40	widening
Tertiary Road	Sonirvor Road	2	40	widening
Tertiary Road	Sonirvor Road	2	40	widening
Tertiary Road	Pollob Bari Road	3	40	widening
Tertiary Road	Pollob Bari Road	3	40	widening
Tertiary Road	Pollob Bari Road	3	40	widening
Tertiary Road		1.6	40	widening
Tertiary Road	High School Road	3.8	40	widening
Tertiary Road	High School Road	3.8	40	widening
Tertiary Road	High School Road	2.5	40	widening
Tertiary Road	Pollob Bari Road	2	40	widening

Tertiary Road	High School Road	2.5	40	widening
Tertiary Road	High School Road	2.5	40	widening
Tertiary Road	High School Road	2.5	40	widening
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Tertiary Road	Sonirvor Road	2	40	widening
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Tertiary Road	Sonirvor Road	2	40	widening
Tertiary Road	Sonirvor Road	2	40	widening
Tertiary Road	Sonirvor Road	2	40	widening
Tertiary Road	Annondo Para Road	2	40	widening
Tertiary Road	Annondo Para Road	2	40	widening
Tertiary Road	Annondo Para Road	2	40	widening
Tertiary Road	Pollob Bari Road	1.7	40	widening
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Tertiary Road	Pollob Bari Road	1.7	40	widening
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Tertiary Road	Girls School Road	4	40	widening
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Tertiary Road	High School Road	2.5	40	widening
Tertiary Road	Upazila Road	3.2	40	widening
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Tertiary Road	Upazila Road	3.2	40	widening
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Tertiary Road	Baker Dhali Road	3.9	40	widening
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Tertiary Road	Baker Dhali Road	3.9	40	widening
Tertiary Road	Baker Dhali Road	3.9	40	widening
Tertiary Road	Baker Dhali Road	3.9	40	widening
Tertiary Road	Baker Dhali Road	2.5	40	widening
Tertiary Road	Baker Dhali Road	2.5	40	widening
Tertiary Road	Baker Dhali Road	2.5	40	widening
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Tertiary Road	Galachipa Paurashava Road	3	40	widening
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Tertiary Road		2	40	widening
Tertiary Road		1.3	40	widening
Tertiary Road	Helipad Road	3	40	widening
Tertiary Road		1.5	40	widening
Tertiary Road	Samudabad Road	5.5	20	Newly Proposed
Tertiary Road	Samudabad Road	5.5	20	Newly Proposed
Tertiary Road	Samudabad Road	5.5	40	widening
Tertiary Road	Samudabad Road	5.5	40	widening
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Tertiary Road	Samudabad Road	5.5	40	widening
Tertiary Road	College Road	5	40	widening
Tertiary Road	College Road	5	40	widening
Tertiary Road	College Road	5	40	widening
Tertiary Road	College Road	5	40	widening
Tertiary Road	Baker Dhali Road	2.5	40	widening
Tertiary Road	Samudabad Road	2.8	40	widening
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Tertiary Road		2.8	40	widening
Tertiary Road	Baker Dhali Road	2.5	40	widening
Tertiary Road	Baker Dhali Road	2.5	40	widening
Tertiary Road	Baker Dhali Road	2.5	40	widening
Tertiary Road	Baker Dhali Road	2.5	40	widening
Tertiary Road		1.5	40	widening
Tertiary Road	Upazila Road	3.2	40	widening
Tertiary Road	Upazila Road	3.2	40	widening
Tertiary Road		1.7	40	widening
Tertiary Road		1.7	40	widening
Tertiary Road	Upazila Road	3.2	40	widening
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Tertiary Road	Upazila Road	3.2	40	widening
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Tertiary Road	Baker Dhali Road	3.9	40	widening
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Tertiary Road	Upazila Road	3.2	40	widening
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Tertiary Road	Upazila Road	3.2	40	widening
Tertiary Road	College Road	5	40	widening
Tertiary Road		2	40	widening
Tertiary Road		1	40	widening
Tertiary Road		1.5	40	widening
Tertiary Road		1.5	40	widening
Tertiary Road		2.8	40	widening
Tertiary Road	College Road	5	40	widening
Tertiary Road	Banani Road	2.8	40	widening
Tertiary Road		3	40	widening
Tertiary Road	Banani Road	2.8	40	widening
Tertiary Road	Samudabad Road	2.8	40	widening
Tertiary Road	Paurashava Road	2.3	40	widening
Tertiary Road	Paurashava Road	2.3	40	widening
Tertiary Road	Fulkhali Road	3	40	widening
Tertiary Road		1.5	40	widening
Tertiary Road	College Road	5	40	widening
Tertiary Road	College Road	5	40	widening
Tertiary Road	Charpara Road	2.8	40	widening
Tertiary Road	Paurashava Road	3	40	widening
Tertiary Road	Paurashava Road	3	40	widening
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Tertiary Road	Paurashava Road	3	40	widening
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Tertiary Road		1.5	40	widening
Tertiary Road	Wapda Road	6	40	widening
Tertiary Road	Charpara Road	2.8	40	widening
Tertiary Road	Wapda Road	6	40	widening
Tertiary Road	Wapda Road	6	40	widening

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Tertiary Road	Wapda Road	6	40	widening
Tertiary Road	Wazed Road	4	40	widening
Tertiary Road	Charpara Road	2.8	40	widening
Tertiary Road	Wazed Road	4	40	widening
Tertiary Road	Wapda Road	6	40	widening
Tertiary Road	Paurashava Road	3.5	40	widening
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Tertiary Road		2.5	40	widening
Tertiary Road		1	40	widening
Tertiary Road	Ferry Ghat Road	6	40	widening
Tertiary Road	Wapda Road	6	40	widening
Tertiary Road	Santibag Road	2.5	40	widening
Tertiary Road	Santibag Road	2.5	40	widening
Tertiary Road	Salitibag Koau	1	40	widening
	Fulkhali Road	3	40	widening
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Tertiary Road	Fulkhali Road	3	40	widening
Tertiary Road	Wapda Road	6	40	widening
Tertiary Road	Wapda Road	6	40	widening
Tertiary Road	Wapda Road	6	40	widening
Tertiary Road	Girls School Road	4	40	widening
Tertiary Road		1.5	40	widening
Tertiary Road		1.5	40	widening
Tertiary Road	High School Road	2.5	40	widening
Tertiary Road	High School Road	2.5	40	widening
Tertiary Road		1.5	40	widening
Tertiary Road		1.5	40	widening
Tertiary Road	Paurashava Road	2.6	40	widening
Tertiary Road	Paurashava Road	2.6	40	widening
Tertiary Road	Paurashava Road	2.6	40	widening
Tertiary Road		1.5	40	widening
Tertiary Road	College Road	5	40	widening
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Tertiary Road	College Road	5	40	widening
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Tertiary Road	College Road	5	40	widening
Tertiary Road	College Road	5	40	widening
Tertiary Road	Hospital Road	4	40	widening
Tertiary Road	Upazila Road	3.2	40	widening
Tertiary Road	1	1.7	40	widening
Tertiary Road	College Road	5	40	widening
Tertiary Road	College Road	5	40	widening
Tertiary Road	College Road	5	40	widening
Tertiary Road	College Road	5	40	widening
Tertiary Road	College Road	5	40	widening
Tertiary Road	Hospital Road	4	20	Newly
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Tertiary Road	Hospital Road	3	40	widening
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Tertiary Road	Banani Road	5	20	Newly
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Tertiary Road	College Road	5	40	widening
Tertiary Road	College Road	5	40	widening
Tertiary Road	Banani Road	5	40	widening
Tertiary Road	Banani Road	5	40	widening
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Tertiary Road	Banani Road	5	40	widening
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Tertiary Road	Banani Road	5	40	widening

Tertiary Road	Banani Road	5	20	Newly Proposed
Tertiary Road	Banani Road	5	40	widening
Tertiary Road	Khalifa Road	3.5	40	widening
Tertiary Road	Banani Road	5	40	widening
Tertiary Road	Banani Road	5	40	widening
Tertiary Road	Banani Road	5	40	widening
Tertiary Road		2.8	40	widening
Tertiary Road	-	2.8	40	widening
Tertiary Road	Upazila Road	3.2	40	widening
Tertiary Road		1.5	40	widening
Tertiary Road		1.5	40	widening
Tertiary Road		1.5	40	widening
Tertiary Road	College Road	5	40	widening
Tertiary Road	College Road	5	40	widening
Tertiary Road	College Road	5	40	widening
Tertiary Road	College Road	5	40	widening
Tertiary Road		3	40	widening
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Tertiary Road	College Road			widening
Tertiary Road	Banani Road	2.8	40	widening
Tertiary Road	Banani Road	2.8	40	widening
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Tertiary Road	Banani Road	5	40	widening
Tertiary Road	Banani Road	2.8	40	widening
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Tertiary Road	Banani Road	5	40	widening
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Tertiary Road	Banani Road	2.8	40	widening
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Tertiary Road	Babri Mosque Road	5	40	widening
Tertiary Road	-	1	40	widening
Tertiary Road	Paurashava Road	2.3	40	widening
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Tertiary Road	Paurashava Road	2.3	40	widening
Tertiary Road	Paurashava Road	2.3	40	widening
Tertiary Road	Paurashava Road	2.3	40	widening
Tertiary Road	Samudabad Road	2.8	40	widening
Tertiary Road		1.5	40	widening
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Tertiary Road		1.5	40	widening
Tertiary Road	Madrasha Road	2.5	40	widening
Tertiary Road	Madrasha Road	2.5	40	widening
Tertiary Road		1.5	40	widening
Tertiary Road		1.5	40	widening
Tertiary Road		2	40	widening
Tertiary Road		1.7	40	widening
Tertiary Road		2.5	40	widening
Tertiary Road	Ferry Ghat Road	7.4	40	widening
Tertiary Road	Paurashava Road	3	40	widening
Tertiary Road	Wazed Road	4	40	widening
Tertiary Road	Wazed Road	4	40	widening

Tertiary Road	Wazed Road	4	40	widening
Tertiary Road	Wazed Road	4	40	widening
Tertiary Road	Wazed Road	4	40	widening
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Tertiary Road		2	40	widening
Tertiary Road		1.5	40	widening
Tertiary Road		1.5	40	widening
Tertiary Road	Pollob Bari Road	2	40	widening
Tertiary Road	Sonirvor Road	2	40	widening
Tertiary Road	Girls School Road	4	40	widening
Tertiary Road	Annondo Para Road	2	40	widening
Tertiary Road	Pollob Bari Road	1.7	40	widening
Tertiary Road	Pollob Bari Road	1.7	40	widening
Tertiary Road	Pollob Bari Road	1.7	40	widening
Tertiary Road	Upazila Road	3.2	40	widening
Tertiary Road		1	40	widening
Tertiary Road		1.5	40	widening
Tertiary Road	Samudabad Road	5.5	40	widening
Tertiary Road	College Road	5	40	widening
Tertiary Road		1.2	40	widening
Tertiary Road		1.5	40	widening
Tertiary Road		2	40	widening
Tertiary Road		2	40	widening
Tertiary Road	Baker Dhali Road	2.5	40	widening
Tertiary Road	Baker Dhali Road	2.5	40	widening
Tertiary Road	Upazila Road	3.2	40	widening
Tertiary Road		2	40	widening
Tertiary Road	Upazila Road	3.2	40	widening
Tertiary Road	Upazila Road	3.2	40	widening
Tertiary Road	Upazila Road	3.2	20	Newly
Terriere Deed	U	2.2	40	Proposed
Tertiary Road	Upazila Road	3.2	40	widening
Tertiary Road	College Road		40	widening
Tertiary Road		1.5	40	widening
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Tertiary Road	Daumash D 1	3	40	widening
Tertiary Road	Paurashava Road		40	widening
Tertiary Road	Classing D 1	1.5	40	widening
Tertiary Road	Charpara Road	2.8	40	widening
Tertiary Road	Charpara Road	2.8	40	widening
Tertiary Road	Charpara Road	2.8	40	widening

Tertiary Road	Wapda Road	6	40	widening
	*	6	40	widening
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Tertiary Road	Wapda Road	6	40	widening
Tertiary Road	Wapda Road	6	40	widening
Tertiary Road	Wazed Road	4	40	widening
Tertiary Road	Wazed Road	4	40	widening
Tertiary Road	Wazed Road	4	40	widening
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Tertiary Road	Wapda Road	6	40	widening
Tertiary Road	Wazed Road	4	40	widening
Tertiary Road	Wazed Road	4	40	widening
Tertiary Road	Wazed Road	4	40	widening
Tertiary Road	Wapda Road	6	40	widening
Tertiary Road	Wapda Road	6	40	widening
Tertiary Road		1	40	widening
Tertiary Road	Wapda Road	6	40	widening
Tertiary Road	Wapda Road	6	40	widening
Tertiary Road	Paurashava Road	3.5	40	widening
Tertiary Road	Wapda Road	6	40	widening
Tertiary Road		1	40	widening
Tertiary Road	Santibag Road	2.5	40	widening
Tertiary Road	Santibag Road	2.5	40	widening
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Tertiary Road	Santibag Road	2.5	40	widening
Tertiary Road	Santibag Road	2.5	40	widening
Tertiary Road	Fulkhali Road	3	40	widening
Tertiary Road	Fulkhali Road	3	40	widening
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Tertiary Road	Fulkhali Road	3	40	widening
Tertiary Road	Santibag Road	2.5	40	widening
Tertiary Road	-	1.5	40	widening
Tertiary Road	Fulkhali Road	3	40	widening
Tertiary Road		1.5	40	widening
Tertiary Road	Wapda Road	6	40	widening
Tertiary Road	Wapda Road	6	40	widening
Tertiary Road		3	40	widening
Tertiary Road		3	40	widening
Tertiary Road	Wapda Road	6	40	widening
Tertiary Road	Wapda Road	6	40	widening
Tertiary Road	Fulkhali Road	3	40	widening
Tertiary Road	Fulkhali Road	3	40	widening
Tertiary Road	Fulkhali Road	3	40	widening
Tertiary Road	Wapda Road	6	40	widening
Tertiary Road	Wapda Road	6	40	widening
Tertiary Road	Krishi Bank Road	3.5	40	widening
Tertiary Road		1	40	widening
Tertiary Road		1.5	40	widening
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Tertiary Road		1.5	40	widening
Tertiary Road		1.5	40	widening
Tertiary Road	Pollob Bari Road	1.7	40	widening
Tertiary Road	Paurashava Road	2.6	40	widening
Tertiary Road		2	40	widening
Tertiary Road		2	40	widening
Tertiary Road	College Road	5	40	widening
Tertiary Road	College Road	5	40	widening
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Tertiary Road	College Road	5	40	widening
Tertiary Road	College Road	5	40	widening
Tertiary Road	Hospital Road	4	40	widening
Tertiary Road		2	40	widening
Tertiary Road		1.6	40	widening
Tertiary Road	College Road	5	40	widening
Tertiary Road	College Road	5	40	widening
Tertiary Road	College Road	5	40	widening
Tertiary Road	College Road	5	40	widening
Tertiary Road		1.2	40	widening
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Tertiary Road	College Road	5	40	widening
Tertiary Road	College Road	5	40	widening
Tertiary Road	College Road	5	40	widening
Tertiary Road	College Road	5	40	widening
Tertiary Road	Banani Road	5	40	widening
Tertiary Road	Banani Road	5	40	widening
Tertiary Road	Banani Road	5	40	widening
Tertiary Road		2	40	widening
Tertiary Road		3	40	widening
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Tertiary Road		3	40	widening
Tertiary Road		1	40	widening
Tertiary Road	Mosque Moholla Road	3	40	widening
Tertiary Road	Mosque Moholla Road	3	40	widening
Tertiary Road	Wapda Road	6	40	widening
Tertiary Road	Banani Road	2.8	40	widening
Tertiary Road		1.5	40	widening
Tertiary Road		1.5	40	widening
Tertiary Road		2	40	widening
Tertiary Road		2.5	40	widening
Tertiary Road		1.5	40	widening
Tertiary Road		1.5	40	widening
Tertiary Road		1	40	widening
Tertiary Road	Babri Mosque Road	5	40	widening
Tertiary Road	Babri Mosque Road	5	40	widening
Tertiary Road	Paurashava Road	2.3	40	widening
Tertiary Road	Paurashava Road	2.3	40	widening
Tertiary Road	Paurashava Road	2.3	40	widening
Tertiary Road	Babri Mosque Road	5	40	widening
Tertiary Road	Babri Mosque Road	5	40	widening
Tertiary Road	Samudabad Road	2.8	40	widening
Tertiary Road	Mosque Moholla Road	3	40	widening
Tertiary Road		2	40	widening
Tertiary Road	Hospital Road	4	40	widening
Tertiary Road		1.6	40	widening

Tertiary Road	Ferry Ghat Road	7.4	40	widening
Tertiary Road	Ferry Ghat Road	7.4	40	widening
Tertiary Road		1.5	40	widening
Tertiary Road		1.3	40	widening
Tertiary Road		1.3	40	widening
Tertiary Road	Samudabad Road	2.8	40	widening
Tertiary Road		1.5	40	widening
Tertiary Road	Galachipa Paurashava Road	3	40	widening
Tertiary Road	Pollob Bari Road	2	40	widening
Tertiary Road		2.5	40	widening
Tertiary Road		2.5	40	widening
Tertiary Road		2.5	40	widening
Tertiary Road		2.5	40	widening
Tertiary Road		1.5	40	widening
Tertiary Road		1.5	40	widening
Tertiary Road	Upazila Road	3.2	40	widening
Tertiary Road		1.6	40	widening
Tertiary Road		2.5	40	widening
Tertiary Road		1.3	40	widening
Tertiary Road	Girls School Road	4	20	Newly Proposed
Tertiary Road	Girls School Road	4	20	Newly Proposed
Tertiary Road		0	20	Newly Proposed
Tertiary Road		0	20	Newly Proposed
Tertiary Road		0	20	Newly Proposed

3.10Design Principles and Standards

Source: PKCP Project, UDD,2022

PRA survey has been done throughout the Upazila. During the session and survey most of the people demanded for road network improvement. Road network hierarchy has been developed for the proposed roads of this Upazila according to the LGED and RHD. National highway and Regional highway has been proposed to upgraded into four lane roads. The significant roads inside the Upazila has been proposed to make pucca. The following cross section and proposed road width have to maintain during road construction. In **Table** description of the types, agencies who are responsible are given and in **Table** road cross-section standards have been presented. **Table** depicts the proposed roads according to width along with lane.

Sl. No.	Туре	Definition	Ownership and Responsibility
1	National Highways	Highways connecting National Capital with Divisional HQ/s or seaports or land ports or Asian Highways.	RHD*
2	Regional Highways	Highways connecting District HQ/s or main river or land ports or with each other not connected by National Highways.	RHD
3	Zila Road	Roads connecting District HQ/s with Upazila HQ/s or connecting one Upazila HQ to another Upazila HQ by a single main connection with National/Regional Highway, through shortest distance/route.	RHD
4	Upazila Road	Roads connecting Upazila HQ/s with Growth Centers with another Growth Center by a single main connection or connecting Growth Center to Higher Road System**, through shortest distance / route.	LGED*/LGI*
5	Union Road	Roads connecting Union HQ/s with Upazila HQ/s, Growth Centers or Local Markets or with each other.	LGED*/LGI*
6	Village Road	a) Roads connecting Villages with Union HQ/s, local markets, farms and ghats or with each other.b) Roads within a Village.	LGED*/LGI*

Table 7: Description of the Types, Definitions and Definitions and Agencies Responsible for various Roads of the Country (2003)

Source: LGED, 2005

3.11Safe, affordable, sustainable and connected communities

Communities will find better places to live, work and raise a family, with easy and safe access to social and economic opportunities. An effective network of connectivity will foster the safe, efficient movement of people and goods and contributes to Galachipa Upazila economy. Roads and highways and other mass transits directly connect to other transportation modes and are vital to moving of products to markets both within and outside the urban area. To achieve the goal following issues will have to be addressed:

- Providing a greater choice of travel modes (BUS/CAR/TRUCK)
- distributing goods and services more efficiently;
- Improving road safety and road widening;
- Reducing the environmental impacts of the transport system;
- Fostering medium density development;
- Utilization of water way transport network;

To attain the above goal the following objectives policies have been recommended.

Design Classes

Roads in Bangladesh are divided into the following six design types. The figures of crosssections are presented in **Figure**

			section widths	in metres			
Design Type	PCU/peak hour (typical MV AADT)	Crest Width(meter)	Carriageway (no. of lanes)	Paved shoulders	Indicative Road Classification		
1	4500 - 8500 (19,000-36,000)	36.2	2x 11 (6)	1.8			
2	2100-4500 (7,000- 19,000)	21.6	2x7.3 (4)	1.8	onal		
3	1600-2100 (5,000-7,000)	16.3	7.3 (2)	1.5	National	nal	
4	800- 1600 (1,000-5,000)	12.1	6.2 (2)	1.5		Regional	
5	400 - 800 (500 -1,000)	9.8	5.5 (2)	1.2			Feeder
6	<400 (<500)	9.8	3.7 (1)	1.2			Ц

Table 8:Road Cross-Section Standards

Source: RHD 2004

Table 9: Proposed Road Width

Sl. No.	Road Category	Buffer Width (meter)	Lane	Design Type
1	National Highways	21.6	4	Type 2
2	Regional Highways	16.3	2	Type 3
3	Zila Road	12.1	2	Type 4
4	Upazila Road	7.3	1	
5	Union Road	5.5	1	
6	Village Road	4.8	1	

Source: RHD 2004

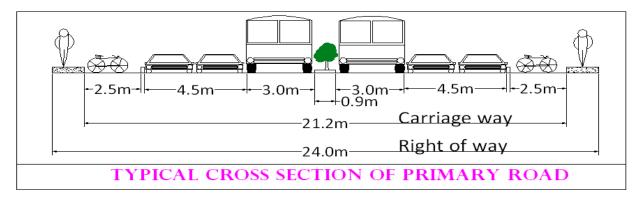


Figure 5 Typical Cross Section of Primary Road

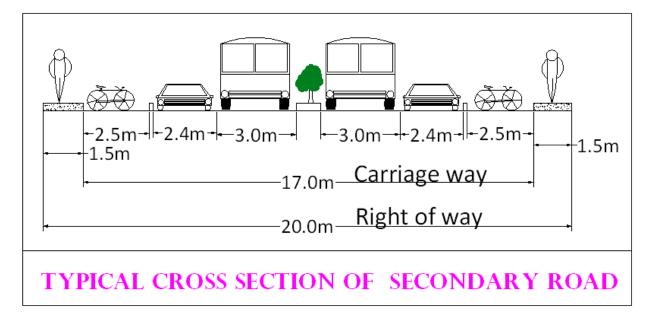


Figure 6 Typical Cross Section of Secondary Road

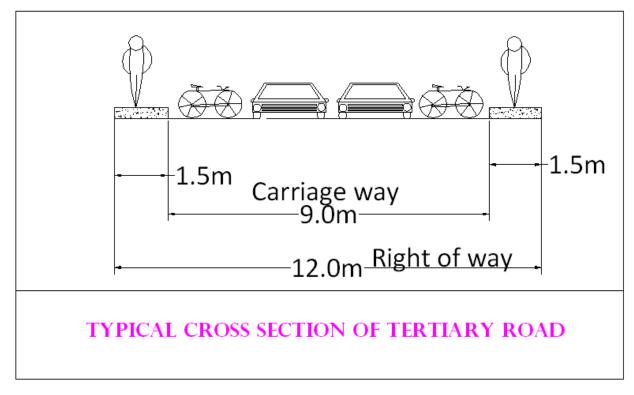


Figure 7 Typical Cross Section of Tertiary Road

CHAPTER 4 URBAN DRAINAGE AND ENVIRONMENT MANAGEMENT PLAN

4.1Introduction

This chapter discusses the Drainage Development Plan's goals, objectives, and methodology. As part of the thorough topographical study that will be conducted as part of this project, an inventory of the current drainage system in Galachipa has been created. Serviceability, structural conditions, obstruction, siltation, and obstructions are taken into account when evaluating the drainage conditions. Finally, discuss the drainage and environmental management strategy and the methods used to carry it out.

4.2Goals 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 Patuakhali region is very important. The objectives of drainage planning are described as follows:

- ≻To analyze drainage aspects in the planning of the Urban Area geographical location.
- >To study geological fault and lineament of the project area and its surroundings.
- To conserve place of historical, architectural (if any) and agricultural importance including natural fisheries.

4.3Methodology and Approach to Planning

The main vision of this survey is explored the length, depth, flow direction, coverage area and satisfactory level of the inhabitants. The information of drainage network gathered from topographic, socioeconomic and physical feature survey. Major feature of drainage and environment survey are as follow:

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 natural 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.

4.4Existing Drainage Network

Galachipa Upazila is located in the Patuakhali district of Bangladesh, which is a low-lying region with extensive waterways, rivers, and wetlands. Due to its topography and climate, the region is prone to flooding during the monsoon season, which can cause significant damage to infrastructure and agriculture. To mitigate the impact of flooding, various drainage networks have been developed in the region over time. These networks include canals, drains, embankments, and flood control structures that help to manage water flow and reduce flood risks.

However, the effectiveness and maintenance of these drainage networks can vary depending on the specific location and local conditions. It is essential to regularly monitor and maintain these systems to

ensure they are functioning correctly and continue to provide effective flood protection to the communities they serve. From the below table it is found that only 16.40 sqkm are pucca drainage and 1.74 sqkm are katcha drainage. As a growing upazila, infrastructure of drainage are very necessary. Therefore, Galachipa Paurashava is situated just beside the river and water logging problems are prevalent of this paurashava. From PRA survey, it is found that the demand of infrastructure of proper drainage system is the highest priority.

Table 10: Existing Drainage Type of Galachipa Urban Area

Drainage Type	Sqkm
Katcha	1.74
Pucca	16.40
Total	18.15

4.5Natural Canal & River

Table represents the present scenario of existing waterbody of Galachipapa paurashava. There is existence of canal, pond and river. Majority of water body of this upazila covered with river and canal Majority of water body of this upazila covered with river and canal which is 84.15% and 10.42%. Galachipa and Ramnabad is the major river flowing through this Upazila.

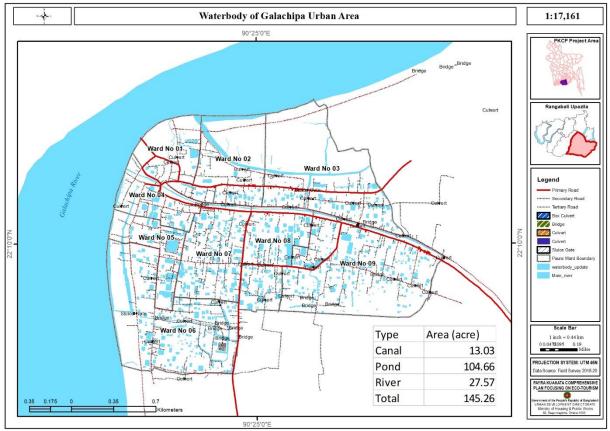


Figure 8: Waterbody of Galachipa Paurashava

Source: PKCP Project, UDD,2022

4.6Plans for Drainage Network

In Galachipa Paurashava, the main outlet drainage location of main center is near the launch ghat road. However, others outlets location of this Paurashava are near the Hazarat Shahjalal Jame mosque (Ward no-6), near the sluice gate of 6 no. Ward, near the Wapda Road of 6 no. Ward and near the Lake Park of east Ratandi union. All the outlets fall into the Galachipa River except the outlet of near Lake Park of east Ratandi union.

Drainage catchments for all Paurashava and urban area are delineated using digital elevation model (DEM) with spatial resolution of 1m which is collected from consulting firm. However, this DEM is resampled into 10m spatial resolution for the processing of drainage catchment delineation as shown in Figure-1-6. The Sub-watershed analysis has been conducted using ArcGIS spatial analysis and Archydro extension tools.

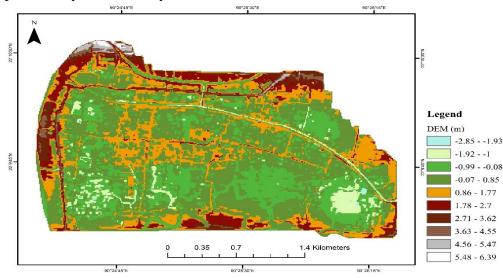


Figure 9:Digital Elevation Model (DEM) of Galachipa Paurashava

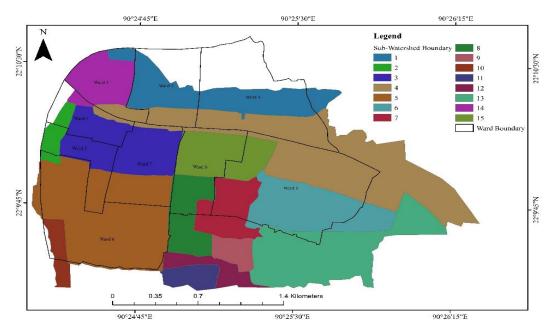


Figure 10:Sub-catchments map of Galachipa Paurashava Source: PKCP Project, UDD,2022

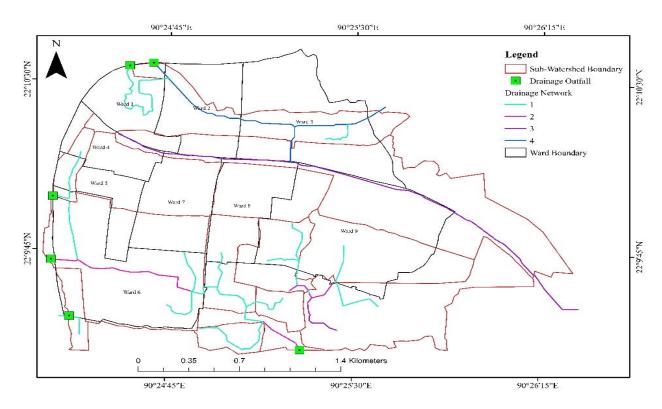
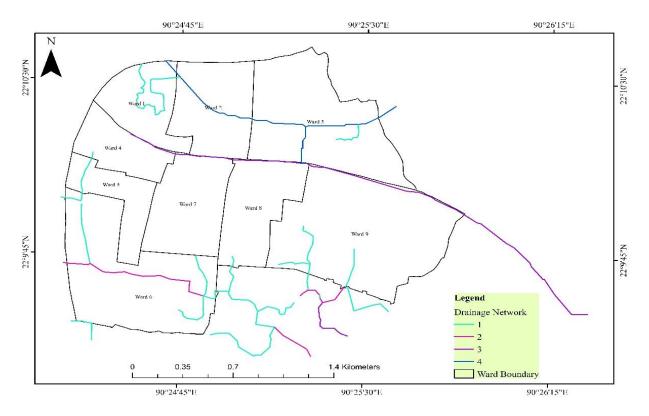
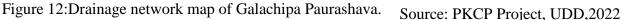


Figure 11: Map of sub-watersheds outlet in Galachipa Paurashava





4.7Proposed Drainage Network

Watershed analysis requires fill the sinks (depression) of the study area as first step. The sinks are low elevation areas in DEMs that are surrounded by higher terrain that disrupts the flow path. Filling sinks creates a hydrologically connected DEM for watershed analyses. The fill process helps to raising the value of a cell identified as a sink cell to match the elevation of its downhill neighbor.

Using Arc hydro tool extension of ArcGIS, flow direction has been determined for the study area from the processed DEM. The main concept of the model is that water from cell that would flow to the adjacent cell which has steepest gradient. It also assumes the catchment as depression less without any ponds or pits. After filling the DEM sinks, a flow direction was computed by calculating the steepest slope and by encoding into each cell eight possible flow directions towards the surrounding cells. This is called the 8-direction pour point model to determine flow path. Flow direction maps of all Paurashava and urban area are shown in Figure-7-12.

Flow direction map is used for flow accumulation map. The flow accumulation is generated by addressing each cell of the DEM, counts how many upstream cells contribute to flow through the given cell. Flow direction and accumulation maps are then used to delineate the stream network. Figure- shows flow accumulation maps of all Paurashava and urban area.

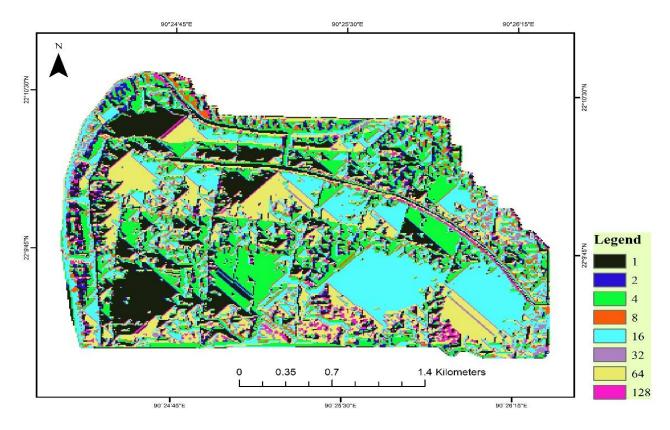


Figure 13:Flow direction map of Galachipa Paurashava.

Source: PKCP Project, UDD,2022

Drainage Outfall

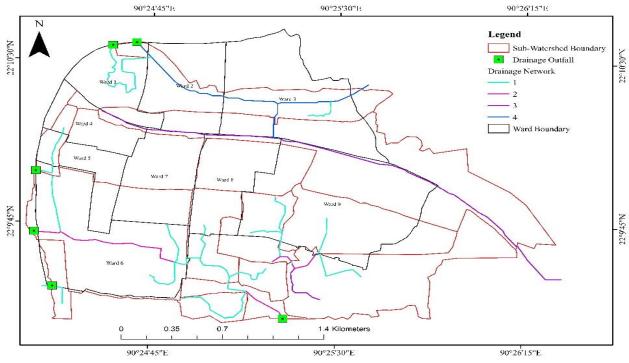


Figure 14: Map of sub-watersheds outlet in Galachipa Paurashava Source: PKCP Project, UDD,2022

There are only 2 sluice gates exists, without any formal outfall of drains in or outside Galachipa 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 Galachipa-Patuakhali road is being proposed to up grate up to three gates. Total 27 drainages out fall and 2 new sluice gates are proposed for drainage development plan of Galachipa Paurashava.

This plan should address the major environmental issues facing a paurashava. From environmental agreement perspective it is important that critical areas, natural resource lands and the environment be protected. In addition, environmental infrastructure such as water supply, storm drainage sanitary sewer and solid waste management facilities that are required to mitigate negative environmental consequences resulting from individual and collective human activities, should be properly planned and implemented. Proper management of existing infrastructure and services is also of crucial. This plan should cover the following environmental features and issues where applicable:

Natural Resources

- •Forests and natural vegetation Streams and water bodies
- •Wetlands
- •Shorelines
- •Aquifers
- •Water quality
- •Air quality

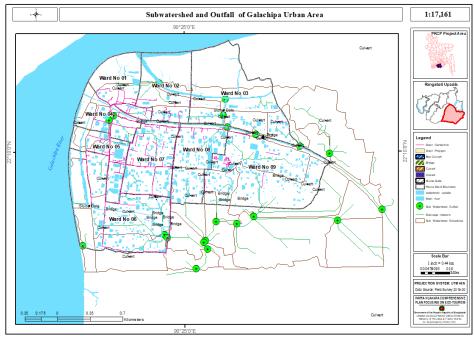


Figure 15: Subwatershed and outfall of Galachipa Paurashava

CHAPTER 5 URBAN AREA PLAN

5.1Introduction

The land use plan is the principal component of the Urban Area Plan. The plan must consider the allocation of land for residence, business, industry, potential municipal facilities, public and private recreation, major institutional facilities, mixed uses, open space and natural and fragile areas. Optimum intensities and standards of development must be established for each use classification and location based upon current development, natural land characteristics, and projected municipal services and facilities.

Allocations of land use must consider impacts on surface and ground water resources, wetlands, coastal features, and other sensitive and fragile natural resources. Judgments must be made on the ability of various existing and new land use controls to properly protect these natural resources.

The characteristics, trends and projections of population and employment will be essential input to the allocation of land areas for use. The plan should show how the projections have been used to determine amounts of land needed for residential, industrial, and other purposes. These quantitative relationships carry over to other components of the plan in that certain facilities and services (utilities, transportation, recreation areas etc.) are needed to support the land allocation to each use.

5.2Existing Land Use

The overall pattern of existing land uses and possible future land distribution for various land uses can be observed. The information shows the quantity of land coverage for various land use categories over different spatial planning areas in the Upazila. This helps the adoption of land use development strategies and distribution of required land for various services and facilities for promotion of urban services in the suitable places of the Upazila identified from physical planning point of view. The inhabitant of Galachipa main occupation is agriculture and fishing. So, the urban area is residential dominant area that occupy 424 acre of land. The agriculture land use is the second largest of this urban area.

Existing Landuse	Area (Acres)
Administrative	28.37
Agriculture	192.68
Beach	6.27
Commercial	26.96
Community Service	10.43
Education & Research	17.53

Table-02: Existing Land Use Distribution

Existing Landuse	Area (Acres)
Green Space	130.53
Healthcare Service	4.49
Industrial	2.27
Miscellaneous	0.67
Mixed Use	4.10
Non- Government Services	0.83
Open Space	15.84
Recreation & Open Space	14.92
Residential	424.06
Service Activities	2.14
Transport & Communication	37.95
Vegetation	2.47
Waterbody	135.62
Wet Land	6.15

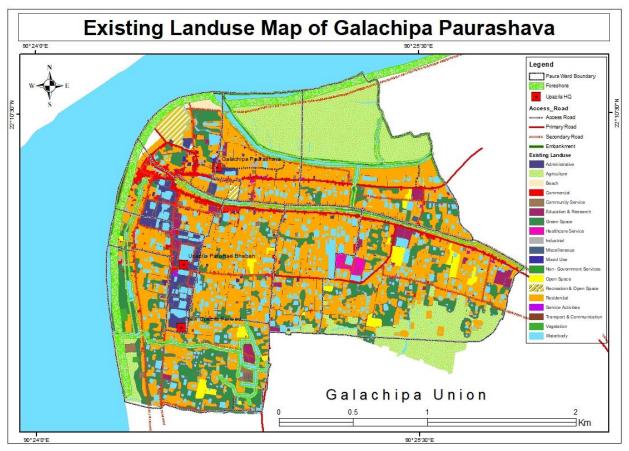


Figure 16 Existing Landuse Map

Source: PKCP Project, UDD,2022

5.3Land use plan components

Designation of Land Use

One of the objectives of land use plan is to designate appropriate areas for residential, commercial, industrial, parks and open space, and various types of community and public facilities that will be mutually supportive, equitably distributed and will accommodate the projected need for reasonable development opportunities in each sector. Following is the classification of land use that may be used as a guide for designating appropriate areas for different types of land uses in the potential paurashava depending upon its size and its socio-economic and physical characteristics.

Land Development Management Zones

As a basis of land development management for Galachipa Upazila, the urban area plan designates fourteen development management zones as listed below and which are indicated on the potential urban area plan map.

For each of these zones, land uses are indicated in three categories –permitted uses, conditional uses and use requiring a special plan review.

	Land use	Permit	Remarks
1	Residential	Residential developments for:	The developments in this zone are
	a.Low density residential	1. Flats	subject to controls on building form and building height as
	b.Medium density c.High density	2. Condominium	determined by the competent authority. The quantum of all
	residential	3. Town house	ancillary or non-residential uses
	d.Planned residential e.Special area	4. Terrace House	needed for support or management of a residential estate
	(aborigine's area, fishermen's area,	5. Semi-Detached House	are to be determined by the competent authority according to
	low income	6.Detached House	the scale of the residential
	housing)	7. Strata-Landed Housing	development.
		8. Retirement Housing	
		9. Serviced Apartments	
		10. Student Hostel	
2	Commercial	Developments for:	The developments in this zone are
	a.Central Business	1.Offices	subject to controls on the type and quantum of commercial uses as
	District/ Town	2.Mixed Uses (e.g.	determined by the competent
	center	Office/Shopping/Cinema/Hotel/Flat).	authority.
	b.Community	3. Convention/Exhibition Centre	autionty.
	commercial	4.Commercial	
	c.Neighborhood	5.Bank	

Table-05: Land Zone Definition

			I
	commercial d.ICT/e-commerce center e.Urban Street Vendor f.Fa rmer's market	6.Market/Food Centre/Restaurant7.Cinema8.Entertainment9.Foreign Trade10.Mission/Chancery	
3	Residential and Commercial	 1.Flats with commercial uses at 1st storey 2.Shop 3.Residential Developments (e.g. Flats) 	Commercial areas are normally restricted to the 1 st storey. Commercial areas may be allowed above and/or below the 1st storey subject to evaluation by the competent authority. Where the competent authority allows commercial areas above and/or below the 1 st storey, the total quantum of the floor area of commercial uses in the 1st and other storeys shall not exceed the maximum allowable floor area at the 1 st storey
4	Commercial and Residential	1.Mixed Commercial & Residential development (e.g. Shopping/Hotel/ Office & Residential)	Commercial areas shall not be located above residential areas. The type and quantum of commercial and related uses and the total quantum of such commercial and related uses shall be determined by the competent authority. The total quantum of commercial and related uses shall not, unless otherwise allowed by the competent authority exceed 40% of the maximum allowable floor area
5	Industrial and Manufacturing 1 (IM-1)	Clean and Light industrial factories with one or more predominant uses as mentioned in industrial development act.	The quantum of permitted ancillary uses shall not exceed 40% of the total floor area. The types of uses that may be allowed are subject to the evaluation of the competent authority and other relevant authorities.
6	Health Facilities	1.Hospital 2.Polyclinic 3.Clinic/Dental Clinic 4.Veterinary Clinic 5.Nursing Home 6.Medical suite	Hospitals shall only be allowed subject to evaluation by the competent authority

7	Education and	1 Vindergerten	
7	Education and	1.Kindergarten 2.Primary School	
	Research		
		3.Secondary School	
		4. Junior College	
		5.Institute of Technical Education	
		6.Polytechnic	
		7.University	
		8.Religious School/Institute	
		9.Foreign System School	
		10.Special Education School (e.g. School for	
		the Disabled)	
8	Public Administrative	Public Administrative	The specific institutional use that
	and Community		may be allowed for a site is
	Facilities	1.Courts	subject to evaluation by the
		2.Police Station	competent authority.
		3.Fire Station	competent autionty.
		4.Prison	
		5.Drug Rehabilitation Centre/Halfway House	
		6.Reformative Centre	
		Community Institutions	
		7.Association premises	
		8.Community Centre/Club	
		9.Community Hall	
		10.Welfare Home	
		11.Child Care Centre	
		12.Home For The Aged	
		13.Home For The Disabled	
		14.Workers' Dormitory	
		Cultural Institutions	
		Cultural institutions	
		15.Television/Filming Studio Complex	
		16.Performing Arts Centre	
		17.Library	
		18.Museum	
		19.Arts Centre/Science Centre Concert Hall	
		19.Arts centre science centre concert train	
9	Open Space/ Green	1.Park	Where additional sites for open
	Space	2.Play-grounds (stadium, Play field etc.)	space are deemed necessary, they
	-	3.Natural and underdeveloped resources areas	may be secured by the competent
		(critical habitat areas, areas with natural	authority.
		beauty such as river bank or char, heritage	uunonty.
		sites etc.)	The notations used to delineate
		4.Coastal Afforestation	the park connectors may not show
		5.Swamp Area	
		6.Natural Open Space	their precise boundaries which are
		on taunal Open Space	subject to interpretation and
			determination by the competent
			authority.
10	Waterbody	1.River	The notations used to delineate
		2.Major Drain & Canal	the drainage reserves may not
		3.Reservoir	show their precise alignment
		4.Pond	which are subject to interpretation
		5.Pond (Conservation)	and determination by the
			competent authority and other
			compound additionary and other

			relevant authorities. Additional drainage reserves may be secured by the competent authority for any locality as may be deemed necessary.
11	Road	 Roads (all category) Cycle tracks Footpath Special facilities for disabled and elderly people 	The notations used to delineate the route of the roads may not show their precise alignment, which is subject to interpretation and determination by the competent authority and other relevant authorities. All roads including their junctions are subject to widening and improvement, as may be determined by the competent authority. Buffers along and adjoining roads may be required to be set aside where deemed necessary by the competent authority. Additional road reserves may be secured by the competent authority for any locality as may be deemed
			necessary.
12	Transportation Facilities	 Bus, truck, taxi terminal Rickshaw/tempo/ bike stand Launch/boat/steamer terminals Helipad/airport Driving Circuit/Test Centre Petrol Station 	Petrol Station/Kiosk shall only be allowed subject to evaluation by the competent authority
13	Public Services and Utilities	1.ICT center 2.Fire service 3.Sewerage treatment/disposal area 4.Waste disposal area 5.Water supply/ treatment plant 6.Rainwater harvest area 7.Power station 8.Graveyard/Cemetery/ Cremations area 9.Electrical Substation 10.Power Station 11.Sports Facilities (Gymnasium)	Additional sites for such purposes for any locality may be secured by the competent authority where deemed necessary.
14	Agriculture	 1.Agrotechnology Par 2.Aquaculture Farm (e.g. Aquarium fish) 3.Plant Nursery 4.Hydroponics Farm 5.Agriculture research/ experimental station 	

Proposed Facilities

Table-06: List of Proposed facilities

Proposed Facilities	Frequency
Bangabandhu Uposohor	1
Bridge	4
Central Creamatorium	1
Culvert	1
ICT Center	1
Open Theatre	1
Overhead Tank	4
Park	1
Public Library	1
Recreation	2
Surface Water Treatment Plant	1
Tempo Stand	2
Townhall	1
Transfer Station	8
Waste Management Plant	1
Water Treatment Plant	1

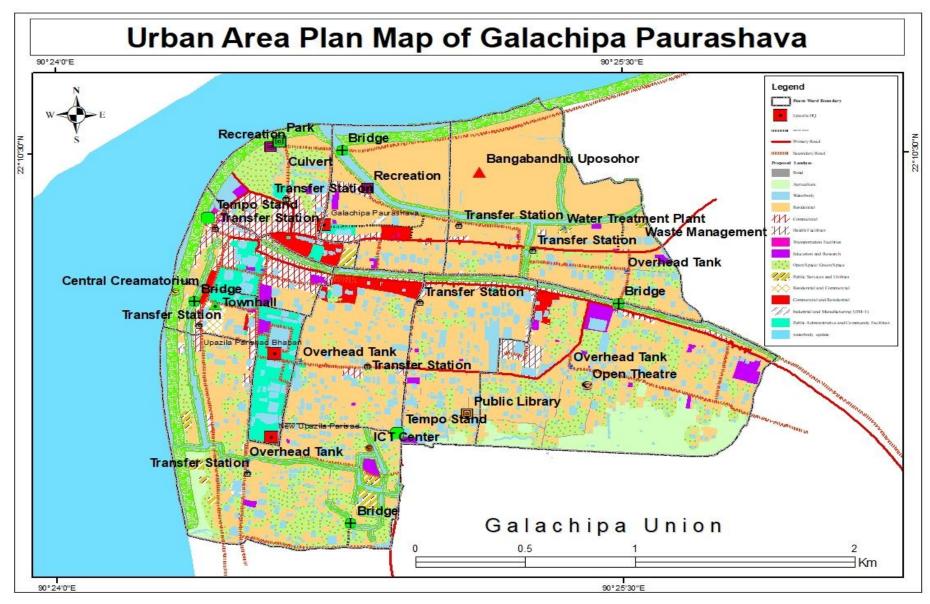


Figure 17 Potential Urban Area Plan

Table-07: Proposed Land use area

Proposed Landuse	Area(Acre)
Agriculture	52.66
Commercial	59.23
Commercial and Residential	18.92
Education and Research	16.90
Health Facilities	5.17
Industrial and Manufacturing 1(IM-1)	2.30
Open Space/ Green Space	154.27
Public Administrative and Community Facilities	32.22
Public Services and Utilities	12.96
Residential	503.36
Residential and Commercial	3.70
Road	27.19
Transportation Facilities	0.60
Waterbody	157.25

Source: PKCP Project, UDD,2022

Commercial Facilities

Commercial land use is the use of land for commercial purposes. The trading of goods and services at retail stores, the trading of goods and services at wholesale, the operation of financial institutions, and a wide range of services that are roughly categorized as "Business" are among these activities. Market-ready locations and existing markets are also included in commercial land. The business zone is designed to offer spaces that can operate without endangering nearby land uses. Despite the fact that only around 17.56 acres of the land are actually used for this purpose under the current land use, the zone represents about 0.89 % of the entire potential urban region. This zone has been proposed with an area of 74 acres up to 2031.

Determination of Standard

According to the standard for Wholesale Market/bazar, 3 to 5 acres' land is to be provided for every 10,000 populations and 0.5-acre land for every 10,000 populations for Retail market. An amount of 0.5-acre land for every 20,000 populations for future Paurashava shopping complex/ market, 1 to 1.25-acre land for cattle market and 1-acre land (per 25,000 population) for bank, hotel, garage and godown is recommended.

Recommendation / Forecast

The plan has proposed for a shopping complex/ market of 16.95 acres, Retail sale market of 98.75 acres and whole sale market of 26.39 acre. Necessary planning permission and design criteria will be provided by the Responsible Authority. Some lands may be allowed to use for other commercial purposes like bank, hotel and godown.

Residential Area

Galachipa Potential Urban area current residential areas include homestead gardens, courtyards, and unoccupied land of households. However, the proposed land use only includes residential land, accounting for 256 acres.

Determination of Standard

The standard recommended for residential development is 100-150 persons per acre (gross). It is recommended that 150-200 persons per acre for real estate or housing areas can be considered both for public and private sectors. No standard is being recommended for low-income group.

Recommendation/ Proposition

According to the standard (100 persons per acre), 256 acres land will be needed up to the year 2031. Existing residential area (572 acres) is higher than the projected areas (256 acres) as homestead vacant lands and homestead gardens are included with the residential demarcation and calculation as well. Considering the scenario, an amount of 256 acres of land has been allocated for residential use only. The area proposed for such development should not exceed 20 acres. Rural environment should be maintained in the row housing areas. The Consultant also recommends and demarcates a public or private entrepreneurship housing area in the Urban Residential Zone.

Industrial and Manufacturing 1(IM-1)

General industries are the Green and Orange A categories as per the Environment Conservation Rules, 1997. The general industrial zone is intended to provide locations, where general industrial establishments can be set up and function without creating hazards to surrounding land uses. It is likely that major industrial establishments will be located in the near future. The industrial zone has been proposed with an area of 25.42 acres. Since there is no industrial agglomeration in the town, the action area plan has proposed for some area of general agro based industry and small scale industry.

Determination of Standard

According to the planning standard, 2.5 acres land is being allocated for every 10,000 people in case of general agro based and small-scale industry. An amount of 10 to 20 acres per Upazila headquarters or Paurashava is recommended for heavy industry and service industry.

Recommendation / Forecast

The recommends of planned formation including grouping of industries on different locations. Under industrial zone, it has particularly proposed land for small scale and agro based industries.

Public Administrative

Government Office zone covers all kinds of government offices including existing and proposed uses (e.g. proposed ward office) in the town. The existing and proposed government offices are Upazila Tahsil Office, Upazila Agriculture Office, Police Station, Sub-registry Office, T & T Office, and Upazila Parisad Office. The proposed Government Offices are Paurashava complex and Ward Centers for nine wards. Total area under this use is proposed for 38.84 acres.

Determination of Standard

According to the standard for government office land, 15 acres of land is to be provided for the Upazila, 3 to 5 acres per future Paurashava Office, and 2 to 5 acres per Union. Total required land for administration stands at 8.90 acres. New government office land will be needed and it is being proposed.

Recommendation/ Forecast

The Potential Urban Area is lacking important government offices. Vertical expansion of the existing government offices is required.

<u>Road</u>

In total, 13.7 acres or 0.7% of the Galachipa Urban Area (including existing circulation network) area has been proposed for circulation network for 2031. Road network including primary, secondary, tertiary and access road falls under this category in Galachipa Urban Area. It shows development proposal for Circulation Network.

Transportation Facilities

Under transportation facilities, both transport and communication services are considered. For Galachipa Urban Area, this category includes bus terminal/ stand, filling station, garage, passenger shed, ticket counter, transport office etc. At present, there is no bus and truck terminal in Galachipa Urban Area.

Determination of Standard

According to the standard for administrative land, 1 acre of land is to be provided for a bus stand which might serve 15,000-25,500 population, 1 acre of land is to be provided for a bus terminal/ stand which will serve 50,000 people. An amount of 0.25-acre land is required per motor cycle stand, rickshaw stand. Total required land for Transportation Facilities stands at 13.7 acres.

Recommendation/ Forecast

A bus terminal with an area of 5 acres is proposed in urban area.

Community Facilities

Community facilities include Community Centre, Graveyard/ Burial Site/ Cremation Ground, Electric Sub-station, Water Supply Pump, Post Office, T&T Office, Police Outpost, Public Library, Eidgah, Mosque/Church/Temple, Fire Service Station, Club, etc. The existing land area under such uses is 0.87 acres and proposal is made for new 26.1 acres of land for future use in community facilities.

Determination of Standard

The planning standard suggests for allocating 0.5 acre of land per 20,000 people for community centre, Graveyard/ Burial Site/ Cremation Ground and Eidgah. An area of 0.5-acre land per 20,000 people is prescribed for Mosque/ Church/ Temple, Post office and T&T Office. For Fire Service Station, 0.5-acre land per 20,000 people is recommended. For Upazila Administrative Headquarters, 1 acre per 20,000 people and an area of 3–5 acres for the Upazila Police Station are recommended. In total, an amount of 26.1 acres of land is required for fulfilling these demands up to 2031.

Recommendation/ Proposition

The plan recommends 1 new eidgah with 0.92 acres of land, 1 new graveyard with 1.33 acres. Areas for Mosque/Church/Temple, Post office and T&T Office are needed to be readjusted within the existing areas.

Education and Research

Educational and Institutional area refers to mainly educational institutions and other social service facilities and conditional uses. The total area under this use has been determined as 22.6 acres (1.14 % of the Urban Area) that include 15 acres of land uses. The plan also recommends for strengthening the existing institutional status through vertical expansion and conversion of non-government institutions.

Determination of Standard

According to the standard for nursery/ kindergarten, 1 unit with 0.5 acres of land is to be provided for every 10,000 populations and for primary school, 1 unit with 2 acres of land is to be provided for every 5,000 populations. The plan has estimated a population of 13,000 for the year 2031. Considering projected demand, 4.29 and 34.33 acres of land will be required respectively for nursery/ kindergarten and primary school up to the year 2035. Thus, new nursery and primary schools are required.

According to standard, 5 acres of land may be provided for every 20,000 populations for one secondary school. Therefore, as per standard the planning area needs (85,819*5 acres / 20,000) 21.45 acres' land for secondary school up to the year 2035. Thus, new high schools are required.

According to standard, 10 acres of land may be provided for every 20,000 populations for one college. Therefore, as per standard the planning area needs (85,819*10 acres/ 20,000) 21.45 acres' land for secondary school up to the year 2035. Thus, new college is required.

An important component for the urban area is vocational training as people living in the Upazila can be benefitted from its services. Multi-dimensional training may be offered through the centre. People are being benefited directly and may prepare them as technical persons obtaining training from vocational centre. At present, there is no vocational training center in the urban center. The prescribed standard for vocational training center is 5 to 10 acres for Upazila.

Recommendation/ Proposition

According to the standard and considering different planning aspects, 5 new secondary/ high schools with an area of 11.01 acres are proposed for the planning area. Besides, with increasing enrollment, existing high schools may be expanded horizontally or vertically.

According to the standard and considering different planning aspects, 1 new colleges with an area of 14.676 acres are proposed for the planning area. Besides, with increasing enrollment, existing high schools may be expanded horizontally or vertically.

Health Facilities

The zone of health care facilities is intended to provide locations, where health facilities including Upazila Health Complex, maternity clinics, and other health facilities can be set up and function without creating hazards to surrounding land uses. This zone has been proposed with an area of 47.39 acres designated up to 2031, which is only 1.2% of the total urban area. Community Health Care Center will be available at each side of urban area with other facilities.

Determination of Standard

The prescribed standard for health facilities are 10 to 20 acres for Upazila Hospital and 1 acre per 5000 populations for Health center/ Maternity clinic. According to the standard, up to the year 2035, 6.36 acres of land will be needed for Health center/ Maternity clinic.

Recommendation/ Proposition

Considering different planning aspects, five Community clinics are proposed at ward no. 2, 6, 7 and 9 with an area of 7.33 acres

Public Services and Utilities

A number of utility establishments are required in a town to run services properly. Utility services include Overhead Tank, Power Office/ Control Room, Public Toilet, Sewerage

Office, Waste Disposal Site, Water Pump House, Water Reservoir, Water Treatment Plant, Waste Transfer Station etc. The consultant has earmarked some area for utility services like, solid waste disposal site with an area of 13.36 acre. There will be 9 waste transfer stations for collection of solid waste located at suitable locations of different wards.

Open Space/ Green Space

Recreational and sport facilities without or with minimum building structure i.e. Playground, Botanical Garden, Stadium, Zoo etc. are listed and proposed in the Open Space zone. This zone has been provided to meet the active and passive recreational needs of the people and at the same time, conserve the resources as per Playfield, Open Space, Park and Natural Water Reservoir Conservation Act, 2000. Total area earmarked for this zone stands at 132.41 acres. The present land area under this category is insignificant to mention.

Determination of Standard

According to the standard for recreational facilities, 0.5 acre of land is to be provided for every 20,000 populations for cinema/theatre, 5 to 10 acres land for stadium/sports complex and 1 acre land per 10,000 population for a neighborhood/ community park. For the projected population, total 39.20 acres of land is required for neighborhood/ community parks up to the year 2035. The study team recommends 27.64 acres for Children Park/ Central Urban Park and 2.36 acres for community parks.

Recommendation/ Proposition

The study team recommends 2 play fields / grounds of 5.66 acres, a central park on 27.64 acres of land.

Residential and Commercial

Mainly existing land use consisting of dwelling units, kitchen, latrine, out-house, kitchen garden, cowshed and courtyard.

CHAPTER 6 WARD ACTION PLAN

6.1Introduction

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 ward action plan for each Ward.

6.2Background

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.

6.3Review of Existing

Existing Facilities and PRA proposals -

Ward_No	F1_Use	Total	proposal from PRA
1	Coaching Center	1	School, Graveyard, Embankment
	College	1	
	Community Center	1	
	Fish Market	1	
	Mosque	1	
	NGO Office	2	
	Pharmacy	3	
	Primary School	1	
	Restaurant	19	
1 Total		30	
2	Mosque	4	Recreation area
	Paurashava Office	1	
	Primary School	1	
	Restaurant	2	
	Union Parishad	1	
2 Total		9	
3	Cyclone Shelter, School	1	Graveyard, Community Clinic, Bridge, Primary School, Proposed Bus stand

		Mosque	3	
		Primary School	1	
		Restaurant	1	
2 Totol		Restaurant	6	
3 Total				Contraction of the Contraction
	4	Coaching Center	2	Community Center
		Community Police Center	1	
		Diagnostic Center	1	
		District Council Dak Bungalow	1	
		Fish Market	1	
		Galachipa Press Club	1	
		High School	15	
		Mosque	3	
		Pharmacy	4	
		Post Office	1	
		Primary School	6	
		Pump House	1	
		Restaurant	19	
		Upazila Land Office	2	
4 Total			58	
	5	Agriculture Office	1	Embankment, School 2, Market
		Auditorium- Public Library	1	
		Bank	1	
		College	1	
		Community Center	1	
		Govt Office	2	
		High School	2	
		Mosque	3	
		Pharmacy	3	
		Primary School	1	
		Pump House	1	
		Restaurant	4	
		UNO Office	1	
		Upazila Parishad Office	1	
		Water Tank	1	
5 Total			24	
	6	Bank	1	Deep tube well, Sluice gate, Bridge, Graveyard
		Mosque	7	,,
		NGO Office	1	
		Restaurant	7	
6 Total		Restauran	16	
0 10tai	7	АТМ ВООТН	10	Culvert
	/	Bank	1	Curvent
			1	
		Coaching Center College	2	
		Diagnostic Center, Office, House	1	
		Hospital	1	
		Land Office	1	
		Mosque	4	
		NGO Office	1	
		Pharmacy	16	

	Restaurant	11	
	Sub Register Office	3	
	Union Land Office	1	
7 Total		44	
	8 ASA NGO Office	1	Burning Ground maintenance
	Coaching Center	1	
	College	7	
	Mosque	3	
	Pharmacy	2	
	Primary School	5	
	Restaurant	3	
8 Total		22	
	9 Bank	1	New primary School, Culvert cum drain
	BRAC Office	1	
	Coaching Center	2	
	College	9	
	Diagnostic Center	1	
	High School	3	
	Hospital	2	
	Mosque	5	
	NGO Office	1	
	Pharmacy	5	
	Primary School	5	
	Restaurant	1	
9 Total		36	
Grand Total		245	

Source: PKCP Project, UDD,2022

6.4Ideal Urban Area Facilities

Ideal urban cities can vary based on specific cultural, environmental, and societal contexts, but there are several common criteria that are often considered important for creating livable and sustainable urban environments. An ideal urban city seeks to create a balanced and sustainable environment that enhances the quality of life for its residents, promotes inclusivity, fosters innovation and creativity, and preserves the city's unique cultural identity. Landuse wise Ideal Urban Area Facilities has given below.

URBAN AREA

- 1. Residential Land Area
 - •Low Density residential
 - •Medium density
 - •Planned residential
- 2. Commercial land use
 - •Central Business District/Town Center
 - Community Commercial
 - •Neighborhood Commercial
 - ICT /e-commerce Center

- 3. Open Space & recreation
 - •Park
 - •Play-grounds (stadium, playfield)

Natural and underdeveloped resources areas (critical habitat and natural beauty such as river bank, char

- 4. Education and Research Center
 - •Primary School
 - •High School
 - •College
 - Madrasa
- 5. Health Facilities
 - •Community Clinic
 - Hospital
- 6. Community Facilities
 - Public Library
 - •Community Center
 - •Open Theatre
 - •Mosque or Religious Facilities
- 7. Public Services and utilities
 - •ICT center
 - Fire Service
 - •Sewerage Treatment
 - •Waste Disposal Site
 - •Power Station Graveyard
- 8. Transportation Facilities
 - Bus truck , taxi stand/ Terminal
 - •Rickshaw/ Tempo stand
 - Launch Ghat
 - •Helipad
- 9. Adminstrative
 - •Government
- 10 Roads
- 11 Agriculture
- 12 Water bodies
- 13 Wet land/Ecologically Sensitive Area
- 14 Open Space
- 15 Potential Urban Extension Area
- 16 Shoreline
- 17 Water works Infrastructure (sluice gate, culverts, sewerage)

6.5Ward Action Plan for Ward No. 01

6.5.1Demography

Ward No. 1 consists of the mouza named Ratandi, Char Haridebpur, Badarpur, Galachipa. Ward No.1 is located on the north-east part of the Paurashava. It has least density of population. Population projection shows 2952 population for the year 2031.

Table shows the detail Present population of the Ward is 2470 (2022) and 3391 in 2041. Density of population is 35 persons per acre and it will be 42 in the year 2031.

Item	2011	2022	2031	2041
Area (acre)	70.87			
Population	2483	2470	2952	3391
Density	35	35	42	48

Population Statistics of Ward No. 01

Source: PKCP Project, UDD, 2022

6.5.2 Review of Existing Land Use

Out of total 49.35 acres of land of this ward, more than 16.60 acres of land i.e. 33.63% is used in residential. The agricultural use with 0.15 acres, occupies 0.30% of total land, water bodies 15%, commercial use 8.11%, mixed use 4.37% and circulation network 6.40%. Only 5.53% of land is used as education facilities.

Table 11: Existing Landuse category in Ward-01

Ward No 01	Area (acre)	%
Administrative	2.28	3.21
Agriculture	0.10	0.14
Beach	5.85	8.24
Commercial	4.39	6.18
Community Service	0.23	0.32
Education & Research	0.24	0.34
Green Space	10.09	14.21
Healthcare Service	0.01	0.02
Industrial	0.20	0.29
Miscellaneous	0.11	0.15
Mixed Use	1.35	1.90
Non- Government Services	0.08	0.11
Recreation & Open Space	14.90	20.99
Residential	17.95	25.28
Service Activities	0.07	0.10
Transport & Communication	3.55	5.00
Waterbody	5.86	8.25
Wet Land	3.75	5.29
Total	70.99	100.00

6.5.3Findings from PRA ward no 1

SL No.	Problem	Explanation Behind problems	Solution	Comments
1	Absence of Embankment	From Badarpur to River Par road that means north side of 130 no barak there is in need of Embankment.	Embankment should built in this area	Within 1-5 years.
2	Problem of roads.	From Private college road to Ferighat road that means ice road, Widening of roads and maintenance of roads should carry from community center to khaddo gudam road	construction of new roads, road light and maintenance of roads are essential in this area	Within 10- 15 years.
3	Drainage Problem	Drainage is needed in private college road On the south side of Cricket stadium where there are settlements there is in need of drainage system	Construction of new drainage and excavation of canals is needed	Within 1-2 years.
4	Drinking water problem.	There is a need of pure drinking water supply near to 130 no Barrak	Deep tube well in this area could solve drinking water problems	Within 1-2 years.
5	Lack of Educational Facilities	On the north side of 100 no Barrak, educational institution is needed.	School cum cyclone shelter could solve the problem	Within 1-5 years
6	Problem of Graveyard	Beside food storage in community center road, graveyard is needed	Land filling and establish light in Graveyard	Within 1-5 years
7	Problem of Solid waste management	Waste disposal bins are needed in different areas of ward 1	Garbage throwing points need to be demarked	Within 1-5 years
	Drainage Problem	On the north side road of Al aksa mosque, the north south road which moves towards sluice gate,	Excavation of canals a new drainage could sol the problem	

Table 12: Representation of PRA Output of Ward No. 1

		drainage is needed		
1.	Necessary of Embankment	From 56 no Dakua Model Govt. Primary School to Darun Nazad Keramotia Islamia Cadet Madrasa , drainage system is necessary	Maintenance of Embankment and new embankment should built in this area	Within 10- 15 years.
2.	Roads problem.	From Char para road to Kalabagan road embankment is necessary	Maintenance of roads and construction of new roads could solve the problem	Within 1-5 years
3.	Lack of adequate pure water.	Widening of Kalabagan road and kalabagan road need to be constructed pucca	Tubewell establishment and establishment of overhead tank	Within 1-5 years.
4.	Water logging problems	On the east side of Samdhania Talimul Islamia Madrasa, new road is needed	A proper drainage management system is necessary	Within 1-5 years
5.	Fecal sludge problems	Man women and children are faces various problems because of pure drinking water. Especially in Kalabagan area, they immediately need to collect pure drinking water	Sewerage system and public toilet need to be established immediately	Within 5- 10 years
6.	Lack of entertainment	Water stagnation problems need to be eradicated	Park, playground, river ghat maintenance	Within 10- 15 years.
7.	Waste disposal	To remove waste at the front of every house there need a waste disposal dustbin	Dustbin should establish and awareness among people need to be ensured	Within 5- 10 years
8.	Unemployment Problem.	Near sluice gate , entertainment sites are needed	To create employment opportunity, market and small cottage industries need to be established	Within 5- 10 years
9.	Safety problems	Due to lack of dustbin, waste is throne haphazardly here and there by filling up of drainage, which results in drainages congestion and water logging.	In this ward, cc camera should establish as well as police and other protectors should alert all the time	Within 1-5 years.

10 Culvert and sluice gate	Unemployment problems can be solved in this ward	New culvert a construction of sluice g	and	Within 1-5 years.
problems	if government and private organization or private industries would open their business here. Also they can trained young generation technical training. In this way young	construction of sluice g need to be established	ate	years.
	generation can service their unemployment problems			

Ward Action Plan Proposals

6.5.4Proposed Land Use Zoning

Table 13: Proposed Landuse category in Ward-01

Ward No 01	Area (acre)	%
Char Land	5.85	8.24
Commercial and Residential	5.09	7.17
Commercial Use	14.79	20.84
Education and Research	0.85	1.20
Healthcare Service	0.01	0.02
Industrial	0.21	0.30
Open Space/Green Space	22.50	31.69
Public Administrative and Defence	2.22	3.13
Public services and utilities	1.70	2.40
Residential Use	4.12	5.80
Road	2.93	4.12
Waterbody	6.17	8.70
Wet Land	4.54	6.40
Total	70.99	100.00

Source: PKCP Project, UDD,2022

Table 14: Proposed Landuse of Ward 1

Proposals	Mouza_Name	JL_No	Sheet_No	Plot_No	Area (acre)
Park	Char Haridebpur	20	1	428	2.70
Primary School	Char Haridebpur	20	1	428	24.52

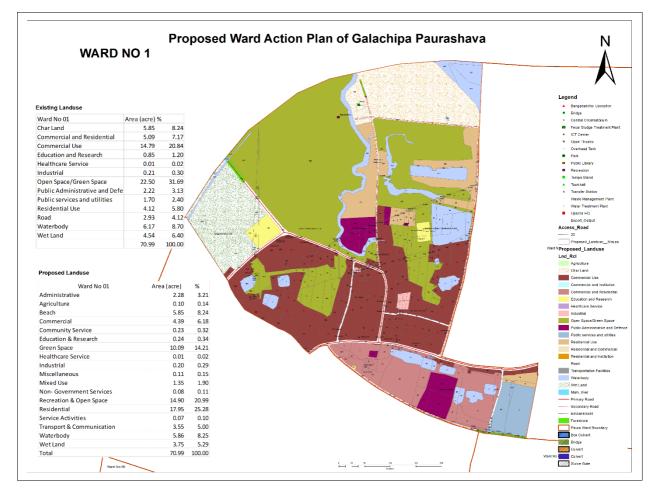


Figure 18: Proposed Ward Action Plan of Ward 1

Source: PKCP Project, UDD,2022

6.6Ward Action Plan for Ward No. 02

6.6.1Demography

Ward No. 2 consists of the mouza named Char Haridebpur and Galachipa. Ward no. 02 is located on the northern part of the town. It has a moderate density of population. Present population of the Ward is 2777 (2022) and it will 3538 in the year 2031 and 4271 in 2041. Table 15:Population Statistics of Ward No. 02

Item	2011	2022	2031	2041
Area (acre)	95.60			
Population	2122	2777	3538	4271
Density	22	29	37	45

Source: PKCP Project, UDD,2022

6.6.2 Review of Existing Land Use

Out of total 95.77 acres of land of this ward, more than 36.45 acres of land i.e. 38.06 % is used in residential. The agricultural use with 35.88 acres, occupies 37.47% of total land, water bodies 15.36%, commercial use 1.41%, only .001% of land is used as green space.

Table 16: Existing Landuse category in Ward-02

Ward No 02	Area (acre)	%
Administrative	1.469752	1.53
Agriculture	35.883879	37.47
Beach	0.424084	0.44
Commercial	1.355087	1.41
Community Service	0.423153	0.44
Education & Research	1.098002	1.15
Green Space	0.000214	0.00
Industrial	0.451113	0.47
Mixed Use	0.457495	0.48
Non- Government Services	0.015471	0.02
Recreation & Open Space	0.0254	0.03
Residential	36.451559	38.06
Service Activities	0.522844	0.55
Transport & Communication	2.474876	2.58
Waterbody	14.714341	15.36
Total	95.77	100.00

6.6.3Findings from PRA ward no 2

SL No.	Problem	Reason behind problems	Possible Solution	Comments
1.	Drainage Problem	On the north side road of Al aksa mosque, the north south road which moves towards sluice gate , drainage is needed	Excavation of canals and new drainage could solve the problem	Within 1-5 years.
2.	Necessary of Embankment	From 56 no Dakua Model Govt. Primary School to Darun Nazad Keramotia Islamia Cadet Madrasa , drainage system is necessary	Maintenance of Embankment and new embankment should built in this area	Within 10- 15 years.
3.	Roads problem.	From Char para road to Kalabagan road embankment is necessary	Maintenance of roads and construction of new roads could solve the problem	Within 1-5 years
4.	Lack of adequate pure water.	Widening of Kalabagan road and kalabagan road need to be constructed pucca	Tubewell establishment and establishment of overhead tank	Within 1-5 years.
5.	Water logging problems	On the east side of Samdhania Talimul Islamia Madrasa, new road is needed	A proper drainage management system is necessary	Within 1-5 years

6.	Fecal sludge problems	Man women and children are faces various problems because of pure drinking water. Especially in Kalabagan area, they immediately need to collect pure drinking water	Sewerage system and public toilet need to be established immediately	Within 5- 10 years
7.	Lack of entertainment	Water stagnation problems need to be eradicated	Park, playground, river ghat maintenance	Within 10- 15 years.
8.	Waste disposal	To remove waste at the front of every house there need a waste disposal dustbin	Dustbin should establish and awareness among people need to be ensured	Within 5- 10 years
9.	Unemploymen t Problem.	Near sluice gate , entertainment sites are needed	To create employment opportunity, market and small cottage industries need to be established	Within 5- 10 years
10.	Safety problems	Due to lack of dustbin, waste is throne haphazardly here and there by filling up of drainage, which results in drainages congestion and water logging.	In this ward, cc camera should establish as well as police and other protectors should alert all the time	Within 1-5 years.
11.	Culvert and sluice gate problems	Unemployment problems can be solved in this ward if government and private organization or private industries would open their business here. Also they can trained young generation technical training. In this way young generation can service their unemployment problems	New culvert and construction of sluice gate need to be established	Within 1-5 years.

Ward Action Plan Proposals

6.6.4Proposed Land Use Zoning

The category wise proposals are presented here. Table 12 shows the amount of land uses in Ward no. 2. Map shows proposed land use of Ward 01. Table shows the detail.

Table 18: Proposed Land Uses of Ward No. 02

Ward No 02	Area (acre)	%
Agriculture	0.00	0.00
Char Land	36.09	37.68
Commercial and Residential	2.17	2.26
Commercial Use	4.73	4.94
Education and Research	1.20	1.25
Industrial	0.45	0.47
Open Space/Green Space	0.06	0.06
Public Administrative and Defence	1.47	1.53
Public services and utilities	0.03	0.03
Residential Use	32.77	34.21
Road	1.99	2.08
Waterbody	14.82	15.47
Total	95.77	100.00

Source: PKCP Project, UDD,2022

6.6.5 Development Proposals for Ward No-2

The consultant proposes some urban facilities in Ward No-1. It includes Shashan Ghat, Eco Park (Partial), Park, Administrative Office, Helipad etc. The details of the proposal is given in the table below.

Development Proposals for ward 02 (Mouza Wise)

ID NO	Proposed Landuse	Proposa ls Name	Area (Acre)	Locatio n (Ward)	Mouza Name	JL No	Sheet No	Plot No
CS- 9	Community Service	Shashan Ghat	0.50	1,7	Ghutaba chha	12	5	N/A

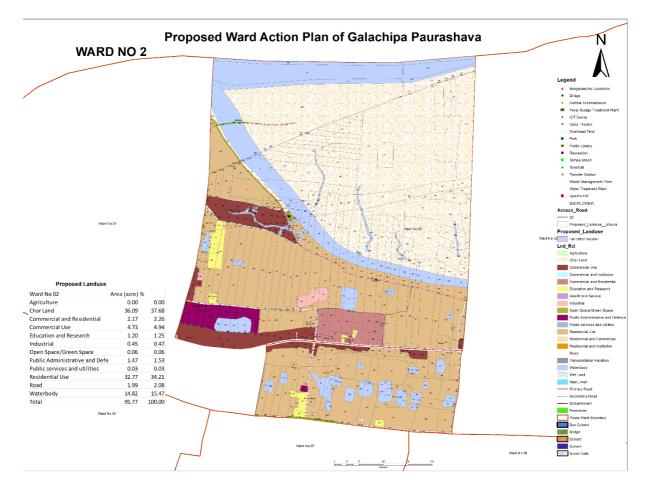


Figure 19: Proposed Ward Action Plan of Ward No. 02 Source: PKCP Project, UDD,2022

6.7Ward Action Plan for Ward No. 03

6.7.1Demography

Ward No. 3 consists of the mouza named Char Haridebpur, Dakua, Galachipa and Phulkhali

Ratandi. Ward No. 03 is located on the north-eastern part of the town. Estimated population for the year 2031 will be 4484 in the ward with a density of 27Population Statistics of Ward No. 03

Item	2011	2022	2031	2041	
Area (acre)	178.35				
Population	1430	1802	2219	2609	
Density	8	10	12	15	

6.7.2 Review of Existing Land Use

Out of total 95.77 acres of land of this ward, more than 36.45 acres of land i.e. 38.06 % is used in residential. The agricultural use with 35.88 acres, occupies 37.47% of total land, water bodies 15.36%, commercial use 1.41%, only .001% of land is used as green space.

Ward No 03	Area (acre)	%
Agriculture	84.31	47.19
Commercial	0.81	0.45
Community Service	0.88	0.49
Education & Research	1.65	0.92
Green Space	10.81	6.05
Industrial	0.02	0.01
Miscellaneous	0.32	0.18
Mixed Use	0.07	0.04
Open Space	1.07	0.60
Residential	58.15	32.55
Service Activities	0.27	0.15
Transport & Communication	4.67	2.61
Waterbody	15.63	8.75
Total	178.66	100.00

Table 19: Existing Landuse category in Ward-03

Source: PKCP Project, UDD,2022

6.7.3Findings from PRA ward no 3

Table 20: Representation of PRA Output of Ward No.3

SL No.	Problem	Solution	Explanation	Comments
1.	Educational Institution	School cum cyclone shelter could solve the problem	In wapda road, on the north side of madrasa primary	Within 1-5 years
	needed.	L	school is needed	5
2.	Problems of	Construction of new drains	Drainage maintenance is	Within 1-5
	drainage.	are needed in this area and	needed in wapda road and	years
		excavation of canals are also in need	construction of drainage is needed in Sonali Bag	
3.	Road network	Construction of new roads,	Wapda road and sonali Bag	Within 1-5
	Problem	widening of roads and new	roads should be	years
		roads must be constructed	maintenance	
4.	Embankment	Waste eradicate system	Galachipa Jame mosque, on	Within 1-2
		should be provided by the	the north side of imdadia	years
		government and private	madrasa there is a khal and	
		way.	beside the khal embankment	
			is needed	
5.	Entertainment	On the bank of river and	e	Within 5-10
	sites	bank of pond there should	and 396 to 398 no dag and	years.
		be entertainment sites	402-405 no dag	
6.	Lack of pure	Deep tube well must be	Pure drinking water source	Within 1-5

	drinking	established	must be proposed in 435 no	years
	water.		daag, 458 no daag, 465 no	
			daag and 385 no daag which	
			are adjacent to Saleha super	
			market	
7.	Graveyard	Government Graveyard is	On the both side of khal	Within 5-10
	problem	needed	(414 no daag)graveyard	years.
			should be proposed	
8.	Community	Community clinic must be	411 no daag and 413 no	Within 5-10
	clinic	proposed	deaag community clinic	years.
			must be proposed	
9.	Solid Waste	Sites must be proposed to	Various areas of waste bins	Within 5-10
	Mangaemnet	throw wastes	should propose in different	years.
			sutes of 3 no ward	

Ward Action Plan Proposals

6.7.4Proposed Land Use Zoning

The category wise proposals are presented here. Table 12 shows the amount of land uses in

Ward no. 2. Map shows proposed land use of Ward 01. Table shows the detail.

Table 21: Proposed Land Uses of Ward No. 03

Ward No 03	Area (acre)	%
Char Land	83.34	46.57
Commercial Use	0.88	0.49
Education and Research	1.10	0.61
Healthcare Service	0.25	0.14
Industrial	0.02	0.01
Open Space/Green Space	12.23	6.83
Public services and utilities	1.33	0.74
Residential Use	59.25	33.11
Road	3.94	2.20
Transportation Facilities	0.05	0.03
Waterbody	16.56	9.26
Total	178.94	100.00

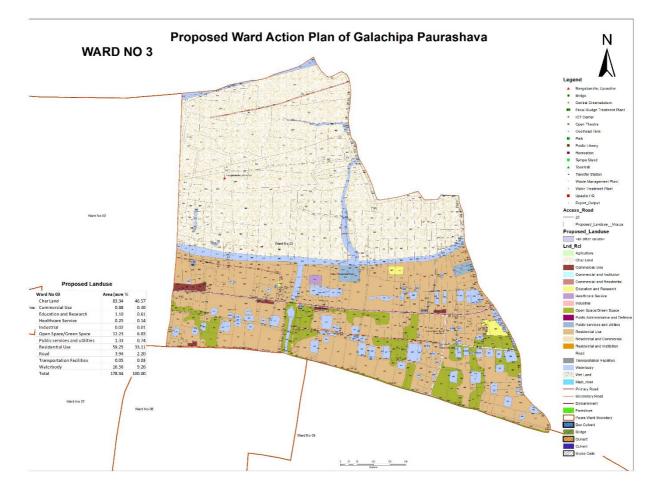


Figure 20: proposed Ward Action Map of ward no 3 Source: PKCP Project, UDD,2022

6.7.5 Development Proposals for Ward No-3

There proposes some urban facilities in Ward No-3. It includes community clinic, Overhead Tank, primary school, CNG stand. The details of the proposal is given in the table below. Table 22:Development Proposals for ward 03 (Mouza Wise)

Proposals	Mouza_Name	JL_No	Sheet_No	Plot_No	Area
					(acre)
Community Clinic	Galachipa	49	0	413	10.08
Overhead Tank	Galachipa	49	0	385	0.76
Primary School	Galachipa	49	0	396, 397	11.14
Proposed CNG Stand	Galachipa	49	0	387, 388	2.16

Source: PKCP Project, UDD,2022

6.8Ward Action Plan for Ward No. 04

6.8.1Demography

Ward No. 3 consists of the mouza named BadarpurGalachipa, Purbba Golkhali, Ratandi. Ward no. 4 is located on the western part of the town. It is the smallest ward in the entire paurashava. It has a very high density of population.

Item	2011	2022	2031	2041	
Area (acre)	55.86				
Population	2275	2174	2087	2022	
Density	41	39	37	36	

6.8.2 Review of Existing Land Use

Out of total 178.66 acres of land of this ward, more than 58.15 acres of land i.e. 32.55 % is used in residential. The agricultural use with 84.31 acres, occupies 47.19 % of total land, water bodies 8.75%, commercial use .45%, only 6.05% of land is used as green space. Table 23: Existing Landuse category in Ward-04

Ward No 04	Area (acre)	%
Administrative	6.13	10.96147
Agriculture	0.01	0.026324
Commercial	8.78	15.69447
Community Service	0.86	1.54233
Education & Research	2.39	4.269472
Green Space	0.80	1.434896
Healthcare Service	0.11	0.19717
Industrial	0.57	1.010275
Miscellaneous	0.02	0.029938
Mixed Use	0.53	0.955316
Non- Government Services	0.03	0.057096
Residential	22.89	40.90923
Service Activities	0.03	0.055472
Transport & Communication	3.37	6.029011
Waterbody	7.03	12.55343
Wet Land	2.39	4.274093
Total	55.96	100

Source: PKCP Project, UDD,2022

6.8.3Findings from PRA ward no 4

Table 24: Representation of PRA Output of Ward No.4

SL No.	Problem	Solution	Explanation	Comments
1.	Problems of	Canal Excavation, and	Beside Galachipa Model Govt	Within 1-5
	drainage.	should make drainage	Primary School, drainage has	years.
		beside roads	needed	
2.	Modern Market	Bazar areas should	On the both side of Kheya ghat	Within 5-
		modified as modern	road, modern bazar has needed	10 years
		feature		
3.	Road network	New road and	Majhi Vandari astana road should	Within 5-
	Problem	maintenance	make widen. Infront of Model	10 years
			Govt Primary School, the road	

SL No.	Problem	Solution	Explanation	Comments
			should make widen. Girls school road should be widen	
4.	Solid Waste Management	Transfer station and treatment plant	Garbage throwing place have to set up in every suitable places of ward no 4	Within 1-5 years.
5.	Burning Ground and Graveyard	Burning ground and Graveyard development	Burning ground and graveyard bshould be deeveloped	Within 5- 10 years.
6.	Public Toilet	Public toilet should make in market areas	Health work center and near popular Diagonistic center a public toilet is needed	Within 1-5 years.
7.	Community Center	New community center has proposed	Community center is needed in 352, 351 no daag Beside of Galachipa High School in 106 no daag, community center is needed	Within 1-5 years.

Ward Action Plan Proposals

6.8.4Proposed Land Use Zoning

The category wise proposals are presented here. Table shows the amount of land uses in

Ward no. 4. Map shows proposed land use of Ward 04.

Table 25: Proposed Land Uses of Ward No. 04

Ward No 04	Area (acre)	%
Commercial and Residential	0.99	1.76
Commercial Use	20.24	36.17
Education and Research	2.45	4.37
Healthcare Service	0.11	0.20
Industrial	0.54	0.97
Open Space/Green Space	0.56	1.01
Public Administrative and Defence	6.56	11.72
Public services and utilities	0.28	0.50
Residential Use	10.20	18.22
Road	2.56	4.57
Transportation Facilities	0.54	0.97
Waterbody	8.40	15.01
Wet Land	2.55	4.55
Total	55.97	100.00

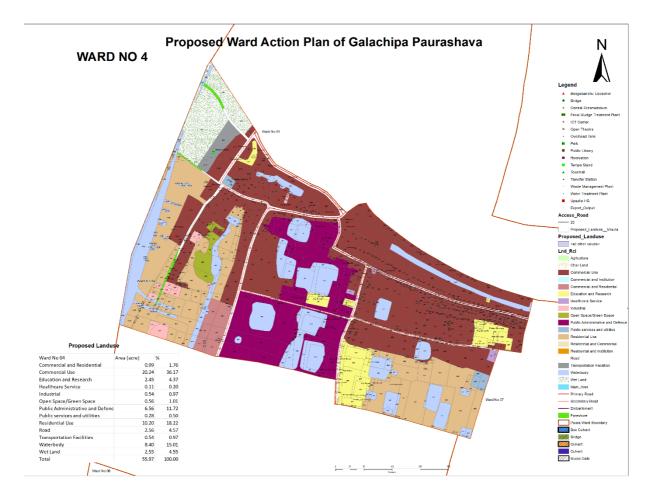


Figure 21:Proposed Ward Action Plan of Ward no 4

6.8.5Development Proposals for Ward No-4

There propose some urban facilities in Ward No-4. It includes community center, pauro market, waste transfer station. **The** details of the proposal is given in the table below.

Table 26: Development Proposals for ward 04 (Mouza Wise)

Proposals	Mouza_Name	JL_No	Sheet_No	Plot_No	Area
					(acre)
Community Center	Ratandi	108	1	330, 336	8.12
				339	
				960	
Pauro Market	Ratandi	108	1	81, 860	11.08
Waste Transfer Station	Purbba Golkhali, Ratandi	113, 108	4,1	4100, 20	3.35

6.9Ward Action Plan for Ward No. 05

6.9.1Demography

Ward No. 3 consists of the mouza named Purbba Golkhali, Ratandi. Ward No. 5 is located on the middle western part of the town. It has a low density of population.

Item	2011	2022	2031	2041
Area (acre)	54.37			
Population	1755	1770	1784	1794
Density	32	33	33	33

Source: PKCP Project, UDD,2022

6.9.2 Review of Existing Land Use

Out of total 178.66 acres of land of this ward, more than 54.08 acres of land i.e. 25.99 % is used in residential. The agricultural use with .02 acres, occupies .04 % of total land, water bodies 21.22%, commercial use .4.63%, only 2.76% of land is used as green space.

Table 27: Existing Landuse category in Ward-05

Ward No 05	Area (acre)	%
Administrative	18.02	33.32
Agriculture	0.02	0.04
Commercial	2.51	4.63
Community Service	0.56	1.04
Education & Research	0.94	1.74
Green Space	1.49	2.76
Industrial	0.45	0.84
Mixed Use	0.14	0.26
Non- Government Services	0.26	0.47
Open Space	0.45	0.84
Residential	14.06	25.99
Service Activities	0.40	0.75
Transport & Communication	3.30	6.10
Waterbody	11.48	21.22
Total	54.08	100.00

Source: PKCP Project, UDD,2022

6.9.3Findings from PRA ward no 5

Table 28: Representation of PRA Output of Ward No.5

SL No.	Problem	Solution	Explanation	Comments
1.	Necessary of	New embankment is needed beside river bank		Within 1-2 years.

SL No.	Problem	Solution	Explanation	Comments
	Embankment			
2.	Drainage Problem	New drains have made and canal excavation is needed	In front of the road of Senior judicial Magistrate Court, drainage is needed	Within 1-2 years.
3.	Entertainment sites	Park and playground should propose	480, 500, 513 and 514 no daag playground has proposed	Within 1-5 years
4.	Road network Problem	New roads and maintenance of roads should be developed	Roads improvements have in need	Within 1-5 years
5.	Lack of pure drinking water.	Surface water treatment plant should develop	5 no ward surface water treatment plant is in need	Within 1-2 years.
6.	Educational Institution needed.	So. primary school is essential.	School is needed in 660 no daag	Within 1-5 years
7.	Unemployment Problem.	Employment opportunities must be created	Employment opportunities has been created	Within 1-2 years.

Ward Action Plan Proposals

6.9.4Proposed Land Use Zoning

The category wise proposals are presented here. Table below shows the amount of land uses

in Ward no. 5. Map shows proposed land use of Ward 05

Table 29: Proposed Land Uses of Ward No. 05

Ward No 05	Area (Acre)	%
Commercial and Residential	1.12	2.07
Commercial Use	2.49	4.59
Education and Research	0.96	1.77
Industrial	0.48	0.88
Open Space/Green Space	1.78	3.27
Public Administrative and Defence	21.32	39.28
Public services and utilities	0.71	1.31
Residential and Commercial	3.31	6.10
Residential and Institution	0.00	0.00
Residential Use	6.74	12.43
Road	2.66	4.90
Waterbody	12.70	23.39
Total	54.27	100.00

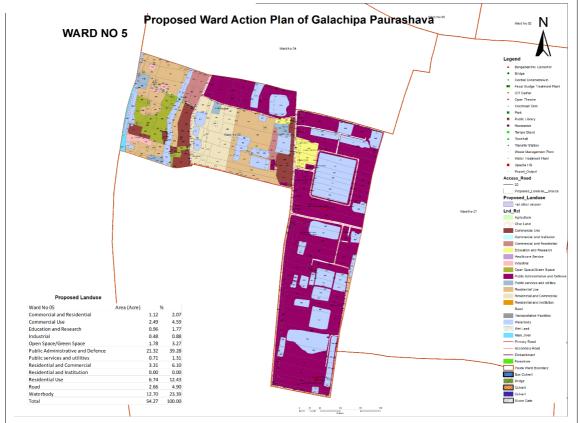


Figure 22:Proposed Ward Actionj Plan of Ward No 5 Source: PKCP Project, UDD,2022

6.9.5 Development Proposals for Ward No-5

There propose some urban facilities in Ward No-5. It includes central crematorium, playground, town hall. **The** details of the proposal are given in the table below.

Proposals	Mouza_Name	JL_No	Sheet_No	Plot_No	Area
					(acre)
Central Crematorium	Purbba Golkhali,Ratandi	113,	4,1	4100, 479,480	8.44
		108			
Playground	Ratandi	108	1	481, 491, 493,	12.72
				494, 500	
Townhall	Ratandi	108	1	471, 485	5.29

 Table 30:Development Proposals for ward 05 (Mouza Wise)

6.10Ward Action Plan for Ward No. 06

6.10.1Demography

Ward No. 6 consists of the mouza named Purbba Golkhali, Ratandi. Ward No. 6 is located on the south-western part of the town. It has the moderate density of population within the Paurashava.

Item	2011	2022	2031	2041	
Area (acre)	193.03				
Population	n 3352 4443		5725	6974	
Density	17	23	30	36	

6.10.2 Review of Existing Land Use

Out of total 189.17 acres of land of this ward, more than 69.39 acres of land i.e. 36.68 % is used in residential. The agricultural use with 13.27 acres, occupies 7.01 % of total land, water bodies 12.60%, commercial use .99 %, only 31.50% of land is used as green space.

Table 31: Existing Landuse category in Ward-06

Ward No 06	Area (acre)	%
Agriculture	13.27	7.01
Commercial	1.88	0.99
Community Service	4.56	2.41
Education & Research	3.53	1.87
Green Space	59.58	31.50
Industrial	0.57	0.30
Miscellaneous	0.07	0.04
Mixed Use	0.36	0.19
Non- Government Services	0.06	0.03
Open Space	4.20	2.22
Residential	69.39	36.68
Service Activities	0.08	0.04
Transport & Communication	5.30	2.80
Vegetation	2.47	1.31
Waterbody	23.84	12.60
Total	189.17	100.00

Source: PKCP Project, UDD,2022

6.10.3Findings from PRA ward no 6

Table 32: Representation of PRA Output of Ward No.6

SL No.	Problem	Solution	Explanation	Comments
1.	Drainage	Khal must be connected	Water stagnation has occurred	Within 1-5

	11 1		: 4252 4244 4250 4251	
	problem and	to Drainage and	in 4253, 4344, 4350, 4351,	years.
	waterlogging	excavation of khals	4348, 4334, 4336, 4339, 4367	
			daag. So, water logging	
			problem should eradicate	
2.	Entertainment	New Playground and	Newly constructed	Within 1-5
	sites	park should develop	playground and park has	years.
			proposed beside Galachipa	
			river	
3.	Road Problem	Road construction and	New roads are needed from 4341	Within 1-5
5.		maintenance and	no daag to 4367 no daag	years.
				jeurs.
		widening of roads		
	X 1 C	should need		XXX.1
4.	Lack of pure	Deep tube well should	Tubewell is needed Near	Within 5-
	drinking water.	establish	Islambag jame mosque	10 years.
			Near Grameen Bank 628 no	
			daag and 412 no daag deep	
			tube well is needed	
5.	Embankment	Embankment should	620 and 4035 no daag aligned	Within 5-
		make properly	beside Galachipa river	10 years
			embankment is needed	J.
6.	Cyclone Shelter	New structural shelter	On the north side of existing	Within 5-
		should develop	canal, cyclone shelter is needed	10 years.
7.	Solid Waste	Dustbin should need	Garbage thowing points is in need	Within 1-
	Management		of every sides of ward	5years.
8.	Temple needed	Maintenance of existing	Sarbojonin temple should	Within 1-5
	*	structure and renovation	maintain	years.
9.	Primary School	New school should biuild	Beside Galachipa river, primary	Within 5-
	5		school is needed	10 years.
10.	Drug Control	Awareness of people is	Increase of public awareness	Within 1-5
	-	necessary to eradicate	_	years.
		this problem		
11.				

Ward Action Plan Proposals

6.10.4Proposed Land Use Zoning

The category wise proposals are presented here. Table 12 shows the amount of land uses in

Ward no. 6. Map shows proposed land use of Ward 06. Table shows the detail.

Table 33: Proposed Land Uses of Ward No. 06

Ward No 06	Area (acre)	%
Agriculture	11.35	5.90
Commercial Use	4.01	2.09
Education and Research	2.15	1.12
Industrial	0.60	0.31
Open Space/Green Space	61.81	32.16
Public services and utilities	8.30	4.32
Residential and Commercial	0.39	0.20

Residential and Institution	0.27	0.14
Residential Use	69.11	35.96
Road	3.48	1.81
Waterbody	30.74	15.99
Total	192.21	100.00

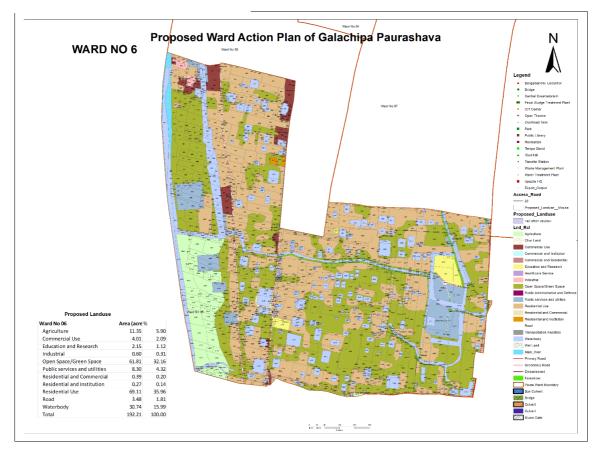


Figure 23:Proposed Ward Action Plan of Ward No. 06 Source: PKCP Project, UDD,2022

6.10.5Development Proposals for Ward No-6

There proposes some urban facilities in Ward No-6. It includes children park, ICT center, Overhead Tank. Tempo stand, Transfer Station. **The** details of the proposal is given in the table below.

Proposals	Mouza_Name	JL_No	Sheet_No	Plot_No	Area (acre)
Children Park	Ratandi	108	4	4006, 4007,4008	3.95
ICT Center	Ratandi	108	4	4293	3.57
Overhead Tank	Ratandi	108	4	4209,4271, 4278	1.14
Tempo Stand	Ratandi	108	1	728	2.09
Transfer Station	Ratandi	108	4	4209,4258,4260, 4278	1.52

Table 34:Development Proposals for ward 06 (Mouza Wise)

6.11Ward Action Plan for Ward No. 07

6.11.1Demography

Ward No. 7 consists of the mouza named Galachipa , Ratandi. Ward No. 6 is located on the south-western part of the town. It has the moderate density of population within the Paurashava.

Item	2011	2022	2022 2031		
Area (acre)	96.66				
Population	3148	3535	3924	4256	
Density	33	37	41	44	

Source: PKCP Project, UDD,2022

6.11.2Review of Existing Land Use

Out of total 96.63 acres of land of this ward, more than 62.24 acres of land i.e. 64.40 % is used in residential. The agricultural use with .15 acres, occupies .15 % of total land, water bodies 16.14 %, commercial use 3.36 %, only 8.56% of land is used as green space. Table 35:Existing Landuse category in Ward-07

Ward No 07	Area (acre)	%
Administrative	0.32	0.33
Agriculture	0.15	0.15
Commercial	3.24	3.36
Community Service	0.70	0.73
Education & Research	0.06	0.06
Green Space	7.38	7.64
Healthcare Service	0.06	0.06
Miscellaneous	0.03	0.03
Mixed Use	0.79	0.81
Non- Government Services	0.19	0.20
Open Space	1.38	1.43
Residential	62.24	64.40
Service Activities	0.27	0.28
Transport & Communication	4.23	4.37
Waterbody	15.60	16.14
Total	96.63	100.00

Source: PKCP Project, UDD,2022

6.11.3Findings from PRA ward no 7

Table 36: Representation of PRA Output of Ward No.7

SL No.	Problem	Solution		Explanation	Comments	
1.	Waterlogging	Drainage should	be	668, 715, 713, 710, 711	Within 1-5	
		connected to khal		these roads water	years.	

			stagnation should eradicate and Drainage should be connected to khal 989, 889, 844, 843, , 994, 842, 968, 847 and 686 this areas water stagnation problem should eradiacte	
2.	Road Problem	Road should high and construction of new roads	New road should proposed in both side of 694 no daag On the east side road of 694 no daag this road should establish high	Within 1-5 years.
3.	Drainage problem	Drainage newly developed and cleaning of drainage	Upazila road should nbe well established Thye drain which is in 777 no daag, slope should be established in this slope	Within 1-5 years.
4.	Pure Drinking Problem	Tubewell should establish	Tubewell is needed for Pure drinking water in 968 no daag	Within 5-10 years.
5.	Lack of Entertainment Sites	Park is needed	Entertainment sites are needed in 329 no daag	Within 10-15 years.
6.	Mosquito Problem	Eradication of water stagnation and increase awareness of paurashava committee	Mosquittoo medicine is needed to spray from paurashava	Within 1-5 years.
7.	Health related problem	Modern treatment and improvement of establishment is needed	Establishment is needed and improvement of modern treatment is necessary	Within 1-5 years.
L	l			1

Ward Action Plan Proposals

6.11.4Proposed Land Use Zoning

The category wise proposals are presented here. Table 12 shows the amount of land uses in

Ward no. 7. Map shows proposed land use of Ward 07. Table shows the detail.

Table 37: Proposed Land Uses of Ward No. 07

Ward No 07	Area (acre)	%
Commercial and Institution	0.39	0.41
Commercial and Residential	7.24	7.50
Commercial Use	3.50	3.62

Education and Research	0.08	0.08
Healthcare Service	0.06	0.06
Open Space/Green Space	6.93	7.18
Public Administrative and Defence	0.53	0.55
Public services and utilities	0.28	0.29
Residential Use	59.74	61.85
Road	2.23	2.31
Waterbody	15.60	16.15
Total	96.60	100.00

6.11.5Development Proposals for Ward No-7

There proposes some urban facilities in Ward No-7. It includes public library. **The** details of the proposal is given in the table below.

Table 38: Proposed Ward Action Plan of Ward No. 07

Proposals	Mouza_Name	JL_No	Sheet_No	Plot_No	Area (acre)
Community Center	Ratandi	108	1	330	8.12
Overhead Tank	Ratandi	108	1	380, 381, 679, 680	10.22
Tempo Stand	Ratandi	108	1	728	2.09
Transfer Station	Ratandi	108	1	767	1.06

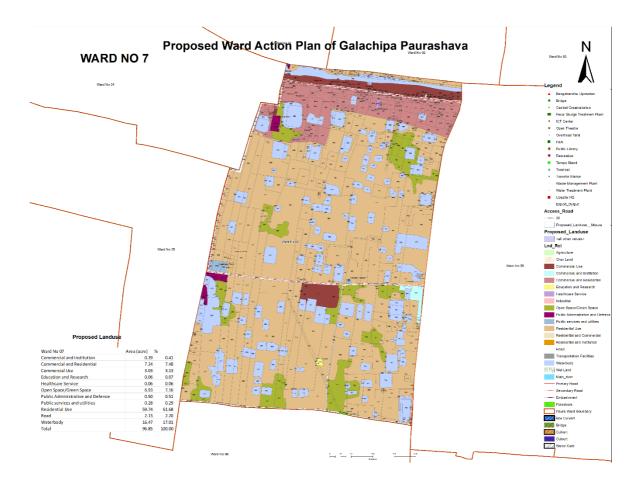


Figure 24: Development Proposals for ward 07 (Mouza Wise)

6.12Ward Action Plan for Ward No. 08

6.12.1Demography

Ward No. 8 consists of the mouza named Purbba Golkhali, Ratandi.

Item	2011	2022 2031		2041	
Area (acre)	90.52				
Population	2301	3249	4432	5643	
Density	25	36	49	62	

Source: PKCP Project, UDD,2022

6.12.2 Review of Existing Land Use

Out of total 90.50 acres of land of this ward, more than 55.52 acres of land i.e. 61.35 % is used in residential. The agricultural use with 2.04 acres, occupies 2.26 % of total land, water bodies 20.75%, commercial use 1.60%, only 8.56% of land is used as green space.

Table 39: Existing Landuse category in Ward-08

Ward No 08	Area (acre)	%
Administrative	0.15	0.16
Agriculture	2.04	2.26
Commercial	1.45	1.60
Community Service	0.70	0.78
Education & Research	1.38	1.52
Green Space	7.75	8.56
Healthcare Service	0.02	0.02
Mixed Use	0.23	0.25
Non- Government Services	0.12	0.13
Open Space	0.12	0.13
Residential	55.52	61.35
Service Activities	0.02	0.02
Transport & Communication	3.15	3.48
Waterbody	18.78	20.75
Total	90.50	100.00

Source: PKCP Project, UDD,2022

Ward Action Plan Proposals

6.12.3Proposed Land Use Zoning

The category wise proposals are presented here. Table 12 shows the amount of land uses in

Ward no. 8. Map shows proposed land use of Ward 08. Table shows the detail.

Table 40: Proposed Land Uses of Ward No. 08

Ward No 08	Area(acre)	%
Agriculture	1.89	2.09
Commercial and Residential	0.00	0.00
Commercial Use	4.84	5.35
Education and Research	1.38	1.52
Healthcare Service	0.02	0.02
Open Space/Green Space	7.59	8.38
Public Administrative and Defence	0.15	0.16
Public services and utilities	0.19	0.21
Residential Use	53.38	58.99
Road	2.28	2.52
Transportation Facilities	0.00	0.00
Waterbody	18.78	20.75
Total	90.50	100.00

6.12.4Development Proposals for Ward No-8

There proposes some urban facilities in Ward No-8. It includes public library. **The** details of the proposal is given in the table below.

Proposals	Mouza_Name	JL_No	Sheet_No	Plot_No	Area (acre)
Public Library	Ratandi	108	2	1552, 1553,1555	1.76

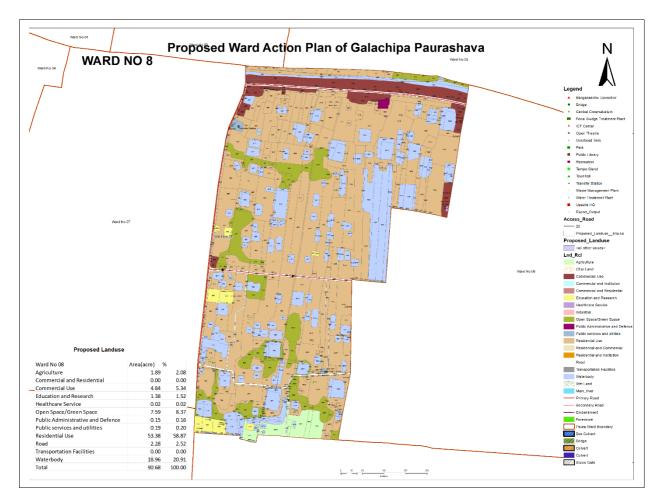


Figure 25: Proposed Ward Action Plan of Ward No. 08

Source: PKCP Project, UDD,2022

6.13Ward Action Plan for Ward No. 09

6.13.1Demography

Ward No.9 consists of the mouza named Galachipa, Ratandi, Ratandi Kalikapur. Ward No. 8 is located on the south-western part of the town. It has the moderate density of population within the Paurashava.

Item	2011	2022	2031	2041
Area (acre)		210	0.20	
Population	2334	3501	5043	6698
Density	11	17	24	32

6.13.2 Review of Existing Land Use

Out of total 210.56 acres of land of this ward, more than 87.32 acres of land i.e. 41.47 % is used in residential. The agricultural use with 37.81 acres, occupies 17.96 % of total land, water bodies 10.62%, commercial use 1.21%, only 4.09% of land is used as open space.

Table 42: Existing Landuse category in Ward-09

Ward No 09	Area (acre)	%
Agriculture	37.81	17.96
Commercial	2.55	1.21
Community Service	1.50	0.71
Education & Research	6.24	2.97
Green Space	31.26	14.85
Healthcare Service	4.28	2.03
Miscellaneous	0.12	0.06
Mixed Use	0.19	0.09
Non- Government Services	0.08	0.04
Open Space	8.61	4.09
Residential	87.32	41.47
Service Activities	0.47	0.22
Transport & Communication	7.73	3.67
Waterbody	22.37	10.62
Total	210.56	100.00

Source: PKCP Project, UDD,2022

Ward Action Plan Proposals

6.13.3Proposed Land Use Zoning

The category wise proposals are presented here. Table 12 shows the amount of land uses in Ward no. 8. Map shows proposed land use of Ward 09. Table shows the detail.

Table 43: Proposed Land Uses of Ward No. 09

Ward No 09	Area (acre)	%
Agriculture	39.43	18.72
Commercial and Residential	2.31	1.10
Commercial Use	3.81	1.81
Education and Research	6.76	3.21

Healthcare Service	4.72	2.24
Open Space/Green Space	40.82	19.39
Public services and utilities	0.15	0.07
Residential and Institution	2.01	0.95
Residential Use	80.47	38.22
Road	5.18	2.46
Waterbody	24.91	11.83
Total	210.56	100.00

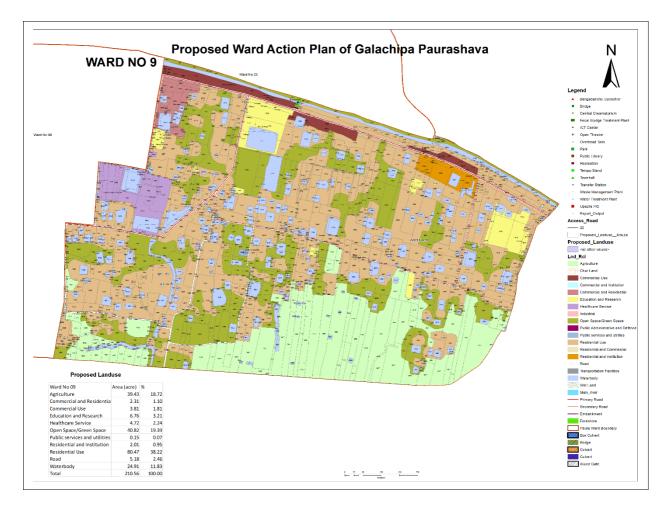


Figure 26: Proposed Ward Action Plan of Ward No. 09 Source: PKCP Project, UDD,2022

6.13.4Development Proposals for Ward No 9

There proposes some urban facilities in Ward No-9. It includes public library. **The** details of the proposal is given in the table below.

Table 44: Development Proposals for ward 09 (Mouza Wise)

Proposals	Mouza_Name	JL_No	Sheet_No	Plot_No	Area (acre)
Open Theatre	Ratandi	108	2	1817, 1818	4.65

Overhead Tank	Ratandi	108	2	1801,1803,1806	1.31
Primary School	Ratandi	108	2	1962	12.40

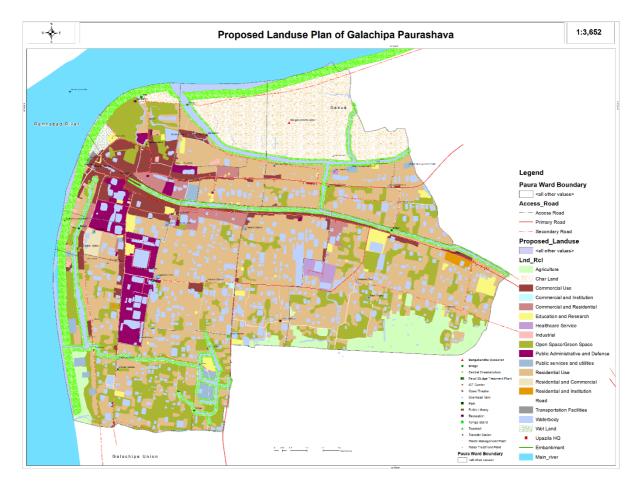


Figure 27: Proposed Landuse Plan of Galachipa Paurashava

CHAPTER 7 CONCLUSION

The Urban Area Plan of Galachipa Pourashava consists of the plans for Ward level Plan for the Pourashava. Galachipa Pourashava has already Master Plan under execution, which has been updated for Detailed Action Area Plan under the current project. Some priority actions are suggested for short-term development. While preparing the Ward level Action Area Plans under the present project, major provisions of the existing Paurashava Master Plan were taken into consideration so that conflicts in development can be avoided. In the development process of the Pourashava, coordination among all local authorities within Patharghata Pourashava will be necessary for integrated development encompassing the potentials of urban areas. There is scope for local government authorities for cooperation and collaboration among themselves for local development in a comprehensive manner. It is expected that the Urban Area Plans prepared under the current project will provide essential tools for integrated development at Patharghata Pourashava.

ANNEXTURE_A

Land use Permission

a. Residential

Land Use Permitted

The following uses in the tables are proposed to be applicable for this zone only.

Table A.1: Land Use Permitted

Permitted Urban Residential Uses		
Artisan's Shop	Project Identification Signs	
Assisted Living or Elderly Home	Property Management Signs	
Confectionery Shop	Public Transport Facility	
Barber Shop	Satellite Dish Antenna	
Child Daycare \ Preschool	Shelter (Passers By)	
Cleaning \ Laundry Shop	Shoe Repair or Shoeshine Shop (Small)	
Communication Service Facilities	CBO Office	
Communication Tower Within	Special Dwelling	
Condominium or Apartment	Temporary Tent	
Cottage	Temporary tent for Permitted Function	
Cyber Café	Newspaper Stand	
Daycare Center (Commercial or Nonprofit)	Specialized School: Dance, Art, Music, Physically Challenged & Others	
Drug Store or Pharmacy	Transmission Lines	
Employee Housing (Guards \ Drivers) \	Urban-Nature Reserve	
General Store	Utility Lines	
Grocery Store	Woodlot	
High School	Children's Park (Must Have Parking)	
Household Appliance and Furniture Repair	ATM Booth	
Housing For Seasonal Firm Labor	Water Pump \ Reservoir	
Landscape and Horticultural Services	Monument (Neighborhood Scale)	
Mosque, Place Of Worship	Bill Payment Booth	
Newspaper Stand	Boarding and Rooming House	
Nursery School	Dormitory	

Orphanage	Memorial Structure (Ancillary)
Eidgah	NeighborhoodCenter*(Where Neighborhood
Photocopying and Duplicating Services (No	Community Center
Pipelines and Utility Lines	Doctor \ Dentist Chamber
Playing Field	Cultural Exhibits and Libraries
Primary School	Fast Food Establishment \ Food Kiosk
Cyclone Shelter	Flowers, Nursery Stock and Florist Supplies
Private Garages (Ancillary Use)	Fitness Centre
Departmental Stores	Gaming Clubs
Retail Shops \ Facilities	

Source: Compiled by the Consultants

*Permission of Neighborhood Center Facilities in absence of formal neighborhood should be subject to Land use 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.

ConditionallyPermittedUrban Residential Uses		
Addiction Treatment Center	Flood Management Structure	
Amusement and Recreation (Indoors)	Telephone Sub Station	
Funeral Services	Electrical Sub Station	
Art Gallery, Art Studio \ Workshop	Postal Facilities	
Automobile Driving Academy	Sports and Recreation Club	
Beauty and Body Service	Photofinishing Laboratory	
Billiard Parlor \ Pool Hall	Post Office	
Book or Stationery Store or Newsstand	Temporary Rescue Shed	
Building Maintenance \ Cleaning Services,	Tennis Club	
Bus Passenger Shelter	Guest House	
Graveyard \ Cemetery	Slaughter House	
Coffee Shop \ Tea Stall	Static Transformer Stations	

Correctional Institution	Tourist Home or Resort
Courier Service	Market (Bazar)
Crematorium	Optical Goods Sales
Plantation (Except Narcotic Plant)	Outdoor Café
Furniture & Variety Stores	Outdoor Fruit and Vegetable Markets
Emergency Shelter	Community Hall
Energy Installation	Neighborhood Co-Operative Office
Garages	Overhead Water Storage Tanks
Garden Center or Retail Nursery	Row House
Fire Brigade Station	Paints and Varnishes Store
Police Station	Parking Lot

Source: Compiled by the Consultants

Restricted Uses

All uses except permitted and conditionally permitted uses are restricted in this zone.

b. Industrial and Manufacturing 1(IM-1)

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.

Permitted General Industrial Activities		
Confectionery Shop	Restaurant	
Bank & Financial Institution	Retail Shops \ Facilities	
Bicycle Assembly, Parts and Accessories	Salvage Processing	
Blacksmith	Salvage Yards	
Bus Passenger Shelter	Satellite Dish Antenna	
Communication Tower Within Permitted	Sawmill, Chipping and Pallet Mill	
Freight Transport Facility	Shelter (Passers By)	
Police Box \ Barrack	Television, Radio or Electronics Repair (No	
Fire \ Rescue Station	Transmission Lines	
Grocery Store	Truck Stop & Washing or Freight Terminal	
Household Appliance and Furniture Repair	Utility Lines	

Table A.3: Land Use Permitted

Wood Products
Woodlot
ATM Booth
Water Pump \ Reservoir
Effluent Treatment Plant
Social Forestry
Public Transport Facility

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.

Conditionally Permitted General Industrial Land Uses		
Amusement and Recreation (Indoors)	Super Store	
Appliance Store	Lithographic or Print Shop	
Plantation (Except Narcotic Plant)	Motor Vehicle Fueling Station \ Gas Station	
Cyber Café	Motorcycle Sales Outlet	
Daycare Center (Commercial or Nonprofit)	Outdoor Fruit and Vegetable Markets	
Doctor \ Dentist Chamber	Outside Bulk Storage	
Electrical and ElectronicEquipment and	Overhead Water Storage Tanks	
Employee Housing	Painting and Wallpaper Sales	
Energy Installation	Paints and Varnishes	
Fast Food Establishment \ Food Kiosk	Parking Lot	
Garages	Parking Lot (Commercial)	
Grain & Feed Mills	Private Garages	
Incineration Facility	Retail Shops Ancillary To Studio \ Workshop	

Table A.4: Land Use Conditionally Permitted

Source: Compiled by the Consultants

Restricted Uses

All other uses; except the permitted and conditionally permitted uses.

c. Commercial Zone/ Commercial and Residential 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.

Permitted Commercial Activity	
Accounting, Auditing or Bookkeeping Services	Market (Bazar)
Billboards, Advertisements & Advertising	Mosque, Place Of Worship
Agri-Business	Motorcycle Sales Outlet
Agricultural Sales and Services	Multi-Storey Car Park
Ambulance Service	Newspaper Stand
Antique Shop	Outdoor Fruit and Vegetable Markets
Appliance Store	Outdoor Recreation, Commercial
Auction Market	Parking Lot (Commercial)
Auditorium, Coliseum, Meeting Halls, and	Pet Store
Conference Facilities, Convention	Photocopying and Duplicating Services
Auto Leasing or Rental Office	Photofinishing Laboratory & Studio
Auto Paint Shop	Pipelines and Utility Lines
Auto Parts and Accessory Sales (Indoors)	Post Office
Auto Repair Shop (With Garage)	Preserved Fruits and Vegetables Facility \
Automobile Wash	Cold Storage
Automobile Sales	Printing, Publishing and Distributing
Confectionery Shop	Project Identification Signs
Bakery or Confectionery Retail	Property Management Signs
Bank & Financial Institution	Public Transport Facility
Barber Shop	Refrigerator or Large Appliance Repair
Beauty and Body Service	Resort
Bicycle Shop	Restaurant
Billiard Parlor \ Pool Hall	Retail Shops \ Facilities
Book or Stationery Store or Newsstand	Salvage Processing
Building Material Sales or Storage (Indoors)	Salvage Yards
Bulk Mail and Packaging	Satellite Dish Antenna
Bus Passenger Shelter	Sawmill, Chipping and Pallet Mill
Cinema Hall	Shelter (Passers By)

Table A.5: Land Use Permitted

Shopping Mall \ Plaza
Slaughter House
Software Development
Sporting Goods and Toys Sales
Taxi Stand
Telephone Exchanges
Television, Radio or Electronics Repair (No Outside Storage)
Outside Storage) Theater (Indoor)
Transmission Lines
Utility Lines
Vehicle Sales & Service, Leasing or Rental
VeterinarianClinics, AnimalHospitals, Kennels and Boarding Facilities
and Boarding Facilities Warehousing
Wood Products
Woodlot
ATM Booth
Water Pump \ Reservoir
Agro-Based Industry (Rice Mill, Saw Mill, Cold Storage)
Mill, Cold Storage) Social Forestry
Inter-City Bus Terminal
Jewelry and Silverware Sales
Junk \ Salvage Yard
Super Store

Source: Compiled by the Consultants

Land Use Conditionally Permitted

Some functions are permitted with some condition in this zone.

Table A.6: Land Use Conditionally Permitted

Conditionally permitted commercial activities		
Amusement and Recreation (Indoors)	Fire \ Rescue Station	
Bicycle Assembly, Parts and Accessories	Grain & Feed Mills	
Broadcast Studio \ Recording Studio (No	Household Appliance and Furniture Repair	

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. Residential

Land Use Permitted

The following uses in the tables are proposed to be applicable for this zone only.

Table A.7: Land Use Permitted

Permitted Rural Settlement	
Agricultural Dwellings	Playing Field
Animal Husbandry	Satellite Dish Antenna
Animal Shelter	NGO \ CBO Facilities
Graveyard \ Cemetery	Special Dwelling (E.G. Dorm For Physically
Child Daycare \ Preschool	Temporary Shed \ Tent

Specialized School: Dance, Art, Music,	
Static Electrical Sub Stations	
Transmission Lines	
Utility Lines	
Woodlot	
Plantation (Except Narcotic Plant)	
Social Forestry	
Memorial Structure	
orphanage	
Outdoor Religious Events (Eidgah)	
Nursery School	

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. A.8: Land Use Conditionally Permitted

Conditionally permitted uses under Rural Settlement		
Artisan's Shop (Potter, Blacksmith and Goldsmith Etc.)	Garden Center or Retail Nursery	
Researchorganization(Agriculture\ Fisheries)	Emergency Shelter	
Energy Installation	Sports and Recreation Club, Firing Range: Indoor	
Fish Hatchery		

Source: Compiled by the Consultants

Restricted Uses

All uses except permitted and conditionally permitted uses are restricted in this zone.

e. Residential and Commercial

Land Use Permitted

The following uses in the tables are proposed to be applicable for this zone only.

Table A.11: Land Use Permitted

Permitted uses in Mixed Use Zone		
Accounting, Auditing or Bookkeeping	Fast Food Establishment \ Food Kiosk	
Residential Structure(Flat/Apartment/Row	Funeral Services	
Addiction Treatment Center	General Store	
Billboards, Advertisements & Advertising	Grocery Store	
Structure	Guest House	
Agricultural Sales and Services	Hospital	
Antique Store	Jewelry and Silverware Sales	
Appliance Store	Landscape and Horticultural Services	
Art Gallery, Art Studio \ Workshop	Mosque, Place Of Worship	
Artisan's Shop	Newspaper Stand	
Assisted Living or Elderly Home	Nursery School	
Auditorium, Coliseum, Meeting Halls, and	Photocopying and Duplicating Services	
Conference Facilities, Convention	Pipelines and Utility Lines	
Auto Leasing or Rental Office	Primary School	
Automobile Wash	Project Identification Signs	
Automobile Driving Academy	Property Management Signs	
Confectionery Shop	Public Transport Facility	
Bakery or Confectionery Retail	Resort	
Bank & Financial Institution	Satellite Dish Antenna	
Barber Shop	Shelter (Passers By)	
Bicycle Shop	Shoe Repair or Shoeshine Shop (Small)	
Billiard Parlor \ Pool Hall	Slaughter House	
Blacksmith	Social organization	
Boarding and Rooming House	Software Development	
Book or Stationery Store or Newsstand	Special Dwelling	
Bus Passenger Shelter	Toys and Hobby Goods Processing and	
Child Daycare \ Preschool	Training Centre	
Cleaning \ Laundry Shop	Transmission Lines	
Commercial Recreational Buildings	Utility Lines	
Communication Service Facilities	Vehicle Sales & Service, Leasing or Rental	

Communication Tower Within Permitted	Warehousing
Height	
Community Center	Woodlot
Condominium or Apartment	Children's Park
Correctional Institution	ATM Booth
Courier Service	Water Pump \ Reservoir
Cyber Café	Social Forestry
Daycare Center (Commercial or Nonprofit)	Dormitory
Doctor \ Dentist Chamber	Rickshaw \ Auto Rickshaw Stand
Employee Housing	
Fabric Store	

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 A.9: Land	Use Conditionall	y Permitted
-----------------	------------------	-------------

Conditionally permitted uses in Mixed Use Zone	
Agricultural Chemicals, Pesticides or	Freight Transport Facility
Amusement and Recreation (Indoors)	Gaming Clubs
Beauty and Body Service	Garages
Broadcast Studio\Recording Studio(No	Garden Center or Retail Nursery
Audience)	Commercial Office
Building Maintenance \ Cleaning Services, No	Project Office
Outside Storage	Government Office
Building Material Sales or Storage (Indoors)	Hotel or Motel
Graveyard \ Cemetery	Household Appliance and Furniture Repair
Coffee Shop \ Tea Stall	Service
Computer Maintenance and Repair	Indoor Amusement Centers, Game Arcades
Computer Sales & Services	Indoor Theatre
Concert Hall, Stage Shows	Lithographic or Print Shop
Conference Center	Market (Bazar)

Construction Company	Health Office, Dental Laboratory, Clinic or
Construction, Survey, Soil Testing Firms	Musical Instrument Sales or Repair
Cottage	Optical Goods Sales
Counseling Services	Outdoor Café
Craft Workshop	Outdoor Fruit and Vegetable Markets
Crematorium	Painting and Wallpaper Sales
Plantation (Except Narcotic Plant)	Paints and Varnishes
Cultural Exhibits and Libraries	Patio Homes
Department Stores, Furniture & Variety Stores	Photofinishing Laboratory & Studio
Drug Store or Pharmacy	Poultry
Energy Installation	Printing, Publishing and Distributing
Fitness Centre	Psychiatric Hospital
Flowers, Nursery Stock and Florist Supplies	Retail Shops Ancillary To Studio \ Workshop
Freight Handling, Storage & Distribution	Radio\Television or T&T Station With
Sporting Goods and Toys Sales	Refrigerator or Large Appliance Repair
Sports and Recreatio Club, Firing Range:	Restaurant
Telephone Exchanges	Retail Shops \ Facilities
Television, RadioorElectronics Repair (No out 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

Land Use Permitted

The following uses in the tables are proposed to be applicable for this zone only.

Table A.10: Land Use Permitted

Permitted uses under Education & Research Zone	
Addiction Treatment Center	Cyber Café
Billboards, Advertisements & Advertising	Freight Transport Facility
Art Gallery, Art Studio \ Workshop	General Store
Automobile Driving Academy	Grocery Store

or Print Shop
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Car Park
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and Duplicating Services
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Office
fication Signs
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ers By)
chool: Dance, Art, Music &

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 A.11: Land Use Conditionally Permitted

Conditionallypermittedusesunder Education and Research Zone	
Auditorium, Coliseum, Meeting Halls, and	Flowers, Nursery Stock and Florist Supplies
Bank & Financial Institution	Gallery \ Museum
Barber Shop	Garages
Boarding and Rooming House	Indoor Theatre
Book or Stationery Store or Newsstand	orphanage

Coffee Shop \ Tea Stall	Outdoor Café
Counseling Services	Parking Lot
Courier Service	Pipelines and Utility Lines
Plantation (Except Narcotic Plant)	Postal Facilities
Daycare Center (Commercial or Nonprofit)	Psychiatric Hospital
Doctor \ Dentist Chamber	Fast Food Establishment \ Food Kiosk
Drug Store or Pharmacy	

Source: Compiled by the Consultants

Restricted Uses

All uses except permitted and conditionally permitted uses are restricted in this zone.

g. Public Administrative and Community Facilities/Public Services and Utilities

Land Use Permitted

The following uses in the tables are proposed to be applicable for this zone only.

Table A.15: Land Use Permitted

Permitted uses under Government Office Zone	
Accounting, Auditing or Bookkeeping	Outdoor Religious Events
Billboards, Advertisements & Advertising	Photocopying and Duplicating Services
Structure	Post Office
Confectionery Shop	Professional Office
Bus Passenger Shelter	Public Transport Facility
Civic Administration	Satellite Dish Antenna
Communication Service Facilities	Scientific Research Establishment
Communication Tower Within Permitted	Shelter (Passers By)
Height	Training Centre
Construction, Survey, Soil Testing Firms	Transmission Lines
Cultural Exhibits and Libraries	Utility Lines
Cyber Café	Woodlot
Emergency Shelter	ATM Booth
Freight Transport Facility	Water Pump \ Reservoir
General Store	Social Forestry

Project Office	Multi-Storey Car Park
Government Office	Newspaper Stand
Grocery Store	
Guest House	

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 A.16: Land Use Conditionally Permitted

Conditionallypermittedusesunder Government office	
Amusement and Recreation (Indoors)	Gallery \ Museum
Auditorium, Coliseum, Meeting Halls, and Conference Facilities, Convention	Garages
Bank & Financial Institution	Police Box \ Barrack
Boarding and Rooming House	Fire \ Rescue Station
Book or Stationery Store or Newsstand	Lithographic or Print Shop
Coffee Shop \ Tea Stall	Mosque, Place Of Worship
Conference Center	Outdoor Café
Courier Service	Parking Lot
Plantation (Except Narcotic Plant)	Parking Lot (Commercial)
Daycare Center (Commercial or Nonprofit)	Pipelines and Utility Lines
Detention Facilities	Postal Facilities
Doctor \ Dentist Chamber	Flowers, Nursery Stock and Florist Supplies
Energy Installation	Freight Handling, Storage & Distribution
Fast Food Establishment \ Food Kiosk	Freight Yard

Source: Compiled by the Consultants

Restricted Uses

All uses except permitted and conditionally permitted uses are restricted in this zone.

h. Agriculture

Land Use Permitted

The following uses in the tables are proposed to be applicable for this zone only.

Table A17: Land Use Permitted

Permitted uses under Agricultural Zone	
Food Grain Cultivation	Duckery
Vegetable Cultivation	AquaticRecreationFacility(Without Structure)
Cash Crop Cultivation	Tree Plantation (Except Narcotic Plant)
Horticulture	Aquaculture
Arboriculture	Static Transformer Stations
Dairy Firming	Transmission Lines
Deep Tube Well	Utility Lines
Shallow Tube Well	Woodlot
Irrigation Facilities (Irrigation Canal, Culvert, Flood Wall etc)	Social Forestry
Temporary Structure (Agricultural)	
Animal Shelter	
	·

Source: Compiled by the Consultants

Land Use Conditionally Permitted

Table A18: 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.

i. Open Space/ Green Space

Land Use Permitted

The following uses in the tables are proposed to be applicable for this zone only.

Table A.19: Land Use Permitted

Permitted uses under Open Space	
Botanical Garden & Arboretum	Pipelines and Utility Lines
Bus Passenger Shelter	Playing Field
Caravan Park \ Camping Ground	Special Function Tent
Carnivals and Fairs	Tennis Club
Circus	Transmission Lines
Plantation (Except Narcotic Plant)	Urban-Nature Reserve
Landscape and Horticultural Services	Utility Lines
Open Theater	Woodlot
Park and Recreation Facilities (General)	Zoo
Social Forestry	Roadside Parking
Memorial Structure	

Source: Compiled by the Consultants

Landuse Conditionally Permitted

Table A 20: Land Use Conditionally Permitted

Conditionally permitted uses under open space					
Communication Tower Within Permitted	Outdoor Recreation, Commercial				
Trade Shows	Outdoor Sports and Recreation				
Fitness Centre	Park Maintenance Facility				
Flowers, Nursery Stock and Florist Supplies	Retreat Center				
Golf Course	Sports and Recreation Club, Firing Range:				
Motorized Recreation	Outdoor Recreation Facilities				

Source: Compiled by the Consultants

Restricted Uses

All uses except permitted and conditionally permitted uses are restricted.

j. 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 A.21: 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 A.22: Land Use Conditionally Permitted

Conditionally	permitted	uses un	nder wat	er body	
Plantation (Except Narcotic Plant)					
Marina \ Boating Facility					
Motorized Recreation					
Sources Compiled by the Congulta					

Source: Compiled by the Consultants

Restricted Uses

All uses except permitted and conditionally permitted uses are restricted.

ANNEXTURE_B

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