



Government of the people's Republic of Bangladesh

Ministry of Housing and Public Works

Urban Development Directorate

82 Segunbagicha, Dhaka-1000

PREPARATION OF DEVELOPMENT PLAN FOR MEHERPUR ZILLA

REPORT ON ASSIGNMENT-5

An Assessment Report of previous Master Plan for Gangni Upazila

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Summary: Development Plan of Gangni Upazila (2013-2033) by UDD

Gangni Upazila occupies an area of 341.98 sq. km., located in between 23°44' and 23°52' north latitudes and in between 88°34' and 88°47' east longitudes. It is bounded on the north by Daulatpur Upazila (Kustia), east by Mirpur Upazila (Kustia), south by Alamdanga and Meherpur Sadar Upazila and west by Meherpur Sadar Upazila and West Bengal of India. Gangni Thana was formed in 1923 and it was turned into an upazila on 24 February 1984. Main rivers or water bodies of this upazila are Bhairab, Ichamati, Mathabhanga and Kazla; Elangi beel, Nuner beel and Elalgari Damash beel are notable. The upazila has 20 hat/bazars, 5 growth centers. Being naturally conditioned by an agricultural hub the upazila serves the city as a hinterland by providing agricultural goods. The upazila is gradually turning into a service providing area. The main Crops of Gangni Upazila are Paddy, Jute, Wheat, Tobacco, Maize, Vegetables. Extinct or nearly extinct crops are Indigo, Arahar, Khesari Pulse. The purpose of this master plan is to provide a development guide to the municipality where most of the urban development activities are expected to take place over the next 20 years. If the master plan is implemented, it will create a favorable environment for new investments by developing basic infrastructure and services.

Projection of Population

Gangni Upazila is now growing in diverse sites and its development will be flourished in near future. The recent compound annual growth rate of Gangni Upazila is 1.13%. For the projection of future population in Gangni Upazila, medium growth rate which is 1.54% has been determined for Urban, Suburban and Rural areas and the projected results are summarized in below tables respectively Urban, Suburban and Rural Areas.

Projected Population according to the Urban, rural and Suburban Area

Area Type	Year Based Projected Population				
	2011(Base Year)	2018	2023	2028	2033
Gangni Upazila Total	299607	333436	359913	388493	432358
Gangni Upazila Rural	269368	299782	323588	349283	388721
Gangni Upazila Urban	25500	28379	30633	33065	36799
Gangni Upazila Other Urban	4739	5274	5693	6145	6839

Source: Estimated by the consultants, 2018.

Survey:

In the project, the survey was conducted according to the following sectors:

1. PRA (Participatory Rapid Appraisal)
2. Topographic Survey
3. Socio-economic Survey
4. Photogrammetric works Survey
5. Agricultural Survey
6. Traffic and Transportation Survey
7. Formal-informal Economic Survey
8. Geological & geophysical Survey
9. Physical Features Survey
10. Hydrological Survey
11. Land use Survey

Reviewed Policies, Acts and Rules

Policy document usually follows a staged approach for development. Identify specific issues that could

trigger the need for a policy review or new policy development or an identification of policy gap. The

list of reviewed policies, acts and rules are given below:

1. Climate Change Policies
2. The Sendai Framework for Disaster Risk Reduction 2015-2030
3. Quito Implementation Plan for the New Urban Agenda
4. Sustainable Development Goals (SDG)
5. The United Nations Framework Convention on Climate Change
6. Seventh Five Year Plan ((FY2016 – FY2020)
7. National Urban Sector Policy, 2011
8. National Land Use Policy 2001
9. National Housing Policy, 2008 (Draft)
10. Population Policy 2004
11. National Environment Policy 1992
12. Disaster Management Act 2012
13. National Plan for Disaster Management 2008-2015
14. The Climate Change Strategy and Action Plan 2009
15. Industrial Policy 2005
16. National Tourism Policy 1992
17. National Agriculture Policy, 1999
18. National Forest Policy 1994
19. National Fisheries Policy 1998
20. National Water Policy 1999
21. Bangladesh National Building Code (BNBC) 1993
22. The Building Construction Act 1952
23. Building Construction Rules 1996
24. Private Residential Land Development Rule-2004
25. Real Estate Development and Management Act 2010

26. Burning of Bricks (Control) Act 1989

27. National policy for safe water supply and sanitation 1998

Formulation of Planning Standard

Table: Recommended Standard for Major Land Uses

Types of Land Uses	Recommended Standard
1. Residential	
General residential	150 persons/1 acre
Real Estate-Public/Private	200 population/ 1 acre
2. Roads	
Upazila primary roads	70 feet and above
Upazila secondary roads	40feet
Upazila local/Tertiary roads	32 feet
Access Road	20 feet
3.Education	
Nursery	0.5 acre/10,000 population
Primary School/ kindergarten	2.00 acres/5000 population
Secondary/High School	5.00 acres /20,000 population
College	10.00 acres/20,000 population
Vocational Training Centre	5 - 10 acres / Upazila
Other	5.00 acres / 20,000 population
4.Open Space	
Play field/ground	3.00 acres/20,000 population
Park	1.00 acre /10000 population
Types of Land Uses	Recommended Standard
Neighborhood Park	1.00 acre /10000 population
5. Recreational	
Stadium/sports complex	5 – 10 acres/Upazila HQ
Cinema/ Theatre	1.0 acre /20,000 population
6. Health	

Upazila health complex	10 -20 acres/Upazila HQ
health center/Maternity clinic	1.00 acre/ 5,000 population
7. Community Facilities	
Mosque/Church/Temple	0.5 acre /20,000 population
Eidgah	1.0 acre/20,000 population
Graveyard	1.00 acre /20,000 population
Community center	1.00 acre /20,000 population
Police Station	3 – 5 acres/Upazila HQ
Police Box/outpost	0.5 acre/ per box
Fire Station	1.00 acre/ 20,000 population
Post office	0.5 acre /20,000 population
8. Utilities	
Water supply	1.00 acre /20,000 population
Gas	1.00 acre /20,000 population
Solid waste disposal site	5– 10 acres/Upazila HQ
Waste transfer station	0.25 acres/per waste transfer station
Electric sub-station	1.00 acre/20,000 population
Telephone exchange	0.5 acre/20,000 population
Fuel Station	0.5 acre/20,000 population
Others	-
9. Commerce and Shopping	
Wholesale market	1.0 acres/ 10000 population
retail sale market	1.0 acres/ 1000 population
Corner shops	0.25 acre/per corner shop
Neighborhood market	1.00 acre/per neighborhood market
Super Market	1.50 – 2.50 acres/per super market
10.Industry	
small scale	1.50 acres /1000 population
Heavy Industry	5.0 acres /10000 population

11. Transportation	
Bus terminal	1.0 acre /20,000 population
Truck terminal	0.50 acre /20,000 population
Launch/steamer terminal	1.00 acre /20,000 population
Rickshaw/van/Tempoo stand	0.25 acre /one baby taxi/tempo stand
Passenger Shed	0.25 acre /one baby taxi/tempo stand
Others	-
12. Administration/Govt. Service	
Upazila complex	10-15.00 acres
Paurashava office	3 – 5 acres
Types of Land Uses	Recommended Standard
Others	-

Participatory Rural Appraisal (PRA)

Participatory Rural Appraisal (PRA) is considered one of the popular and effective procedure to incorporate the knowledge and opinions of people in the planning and management of development projects and programs. In recent years there has been rapid expansion of new participatory reflection and action methods and related approaches in the context of development and research. PRA methods are now increasingly used in both Rural and Urban situations. Three tools were selected such as Social Mapping, Venn diagram and Technology of Participation for collecting information from the field.

Table: Union and Ward wise PRA Findings of Gangni Upazila

Union/Ward	Problems	Potentials
Bamondi Union	<ul style="list-style-type: none"> ➤ Unemployment ➤ Health Service ➤ Water Logging ➤ Education ➤ Communication 	<ul style="list-style-type: none"> ➤ Agricultural land ➤ Market ➤ Cattle farming ➤ Fish farming ➤ Foreign Currency
Katholi Union	<ul style="list-style-type: none"> ➤ Safe Drinking Water ➤ Health service ➤ Water Logging ➤ Education 	<ul style="list-style-type: none"> ➤ Agricultural land ➤ Market ➤ Water body ➤ Active manpower

	➤ Communication	➤ Foreign Currency
Kazipur Union	➤ Sanitation ➤ Communication Problem	➤ Agriculture Land ➤ Manpower

	➤ Educational Problem ➤ Electricity ➤ Drug Addiction	➤ India-Bangladesh Border ➤ Foreign Currency ➤ Fish Cultivation
Motmura Union	➤ Law and Order ➤ Health Service ➤ Electricity ➤ Education ➤ Communication	➤ Agriculture Land ➤ Business ➤ Cattle Farming ➤ Fish Farming ➤ Foreign Currency
Raipur Union	➤ Communication ➤ Health service ➤ Water Logging ➤ Education ➤ Pure Drinking Water	➤ Cultivable land ➤ Active Manpower ➤ Cattle Farming ➤ Fish Farming ➤ Foreign Currency
Saharbati Union	➤ Education ➤ Communication ➤ Unemployment ➤ Health Problem ➤ Agriculture Problem	➤ Agriculture ➤ Educated Manpower ➤ Cattle Farming ➤ Vegetable Cultivation ➤ Foreign Currency
Sholotaka Union	➤ Communication ➤ Health Service ➤ Pure Drinking Water ➤ Sanitation ➤ Rehabilitation	➤ Cultivable land ➤ Rice Mill ➤ Cattle Farming ➤ Fish Farming ➤ Active Manpower

Tetul baria Union	<ul style="list-style-type: none"> ➤ Pure Drinking Water ➤ Drug Addiction ➤ Insufficient Budget ➤ Rehabilitation ➤ Communication 	<ul style="list-style-type: none"> ➤ Agricultural Land ➤ Bangladesh-India Border ➤ Cattle Farming ➤ Active Manpower ➤ Foreign Currency
Dhankhola Union	<ul style="list-style-type: none"> ➤ Communication ➤ Pure Drinking Water ➤ Unemployment ➤ Sanitation ➤ Water Logging 	<ul style="list-style-type: none"> ➤ Agricultural Land ➤ Vegetable Cultivation ➤ Fish Farming ➤ Cattle Farming ➤ Manpower
Ward No. 01	<ul style="list-style-type: none"> ➤ Drainage Problem ➤ Communication Problem ➤ Unemployment ➤ Lack of Pure Drinking Water, Arsenic Contamination ➤ Drug Addiction 	<ul style="list-style-type: none"> ➤ Chitla Firm ➤ Active Manpower ➤ Domestic Animals ➤ Educational Institute ➤ Agricultural land
Ward No. 02	<ul style="list-style-type: none"> ➤ Road Repair ➤ No Drain ➤ Electricity Problem ➤ Shortage of Dustbin ➤ No Community Clinic 	<ul style="list-style-type: none"> ➤ Khas Land ➤ Active Manpower ➤ Domestic Animal ➤ Harvest Land ➤ Good Player
Ward No. 03	<ul style="list-style-type: none"> ➤ Communication Problem ➤ Water Logging ➤ Electricity Problem 	<ul style="list-style-type: none"> ➤ Active Manpower ➤ Agricultural Land ➤ Domestic Rearing
	<ul style="list-style-type: none"> ➤ Drainage System ➤ Control of Alcohol & Security Provision 	<ul style="list-style-type: none"> ➤ School/College/Orphans House ➤ Fruit Garden

Ward No. 04	<ul style="list-style-type: none"> ➤ Drainage Problem ➤ Shortage of Pure Drinking Water ➤ Communication Problem ➤ Health Related Problem ➤ Lack of Recreation 	<ul style="list-style-type: none"> ➤ Educated unemployed Youth ➤ Fish Farm ➤ Handcraft ➤ Farm ➤ Khas Land
Ward No. 05	<ul style="list-style-type: none"> ➤ Problems of Water Flow in Canal ➤ Road Repair ➤ No Drain ➤ No Playground ➤ Lack of Educational Institute 	<ul style="list-style-type: none"> ➤ Agricultural Land ➤ Fish Culture ➤ Domestic Rearing ➤ Remittance ➤ Educated Person
Ward No. 06	<ul style="list-style-type: none"> ➤ Drainage Problem ➤ Communication Problem ➤ Electricity Problem ➤ Water Logging ➤ Lack of Safe Drinking Water 	<ul style="list-style-type: none"> ➤ Malsadoho Canal ➤ Land to Develop Community Center ➤ Cattle Hat ➤ Agriculture Land ➤ Vegetable Hat
Ward No. 07	<ul style="list-style-type: none"> ➤ Communication Problem ➤ Water Logging ➤ Low Quality Educational Infrastructure ➤ Lack of Govt. health Facility ➤ Lack of Recreational Facility 	<ul style="list-style-type: none"> ➤ Doha River ➤ Active Manpower ➤ Fruit Garden & Vegetation ➤ Agriculture Land ➤ Domestic Animal
Ward No. 08	<ul style="list-style-type: none"> ➤ No Drain ➤ Communication Problem ➤ Unhealthy Drinking Water ➤ No Electricity ➤ No Recreational Facility 	<ul style="list-style-type: none"> ➤ Unemployed Young Generation ➤ Domestic Animal ➤ Gangni Bazar ➤ Agriculture Land ➤ Upazila Office

Ward No. 09	<ul style="list-style-type: none"> ➤ Communication Problem ➤ Water Logging ➤ Unhealthy Drinking Water ➤ Lack of Dustbin ➤ Electricity Connection 	<ul style="list-style-type: none"> ➤ CHETUR Bhil ➤ Agricultural Land ➤ Khas Land ➤ Educational Institute ➤ Brick Field
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Strategies and Policies for Sectoral Development

Economic Development

Policy-01: Attracting investment in various economic sectors.

Policy-02: Light Industries need to be developed to flourish the Industrial Sector Development.

Policy-03: Developing Growth Center Markets.

Policy 04: Ensure Best Possible Use of Land.

Policy-05: Encourage Investment in Business

Policy 06: Creating special economic zones for faster industrial development.

Policy 07: Employment Generation through Development of Potential Sectors.

Infrastructure Development

Policy -01: Developing an integrated local, regional and national transportation system.

Policy -02: Improving local transport network within the Upazila linking the nearest districts.

Policy -03: Establishing a Railway Platform for better communications.

Policy -04: Widening of Existing Narrow Roads.

Policy-05: Develop Efficient inter Upazila Communication Facilities.

Policy-06: For better Accessibility Transport Terminals should be Located at Major Roads

Policy 07: Develop Safe Pedestrian Sidewalks and Bicycle Paths along the Roads.

Utility Services

Policy-01: Facilitating Access for all Citizens to Basic Level of Services in Water Supply and Sanitation.

Policy-02: Management of Toxic Waste from Industry.

Policy-03: Providing street lighting within the whole upazila boundary.

Agriculture Development

Policy 01: Demarcating 2 crops and 3 crops land and preserving the existing agricultural lands.

Policy 02: Increasing production in the existing agricultural lands.

Policy 03: Discouraging residential expansion in the agricultural land.

Policy 04: Promotion of Regional Agriculture.

Open Space and Recreation

Policy-01: Conserving the play field, open space, park and natural water reservoir.

Policy 02: Development of Public Park

Housing Development

Policy-01: Making Provision of Affordable Housing for the Low-Income People

Policy 02: Densification of Residential Areas.

Policy 03: Stop all Illegal Construction.

Policy 04: Specific Policies for Urban and Rural Settlement Area:

Ecology and Environment

Policy-01: Preservation of Ponds and Water bodies

Policy 02: Treatment of Industrial Waste before Discharging into the River.

Policy 03: Incepting Drainage Network Plan in Response of Water Logging Problems.

Policy-04: Identifying the Hazard Risk Zones.

Policy-05: Pollution Control

Heritage Development

Policy01: Conservation of Heritage Site.

Policy 02: Promoting and Attracting Investment in Tourism Development.

Drainage and flood control

Policy 01: Developing drainage system within the Paurashava area.

Policy-02: Preserving and maintaining the existing natural water bodies for drainage, flood control and environmental purposes.

Industry

Policy 01: Stopping establishment of new brickfields within the Paurashava area and close proximity of any agricultural zone.

Policy 02: Encouraged the agro based industries and cottage industries

Policy 03: Heavy industries must be developed in concentric way in specific land use category

Policy 04: Creating special economic zones for faster industrial development

Land Use Plan

The Urban Area Plan identifies approaches of planning existing and proposed land use. It is based on the land use policies, guidelines and proposals including land use zoning plan.

17 types of land uses are found. It is clearly evident from the table that agricultural land use (81.23%) dominates the Gangni Upazila area; followed by residential (14.38 %), water body (2.56%), circulation network (0.75%) and Commercial (0.24%).

Proposed land use is projected for the target year 2033. More land has been proposed than existing land uses like Residential (14.087%), Circulation Network (1.96%) land uses in Gangni for accommodate target population according to planning standards.

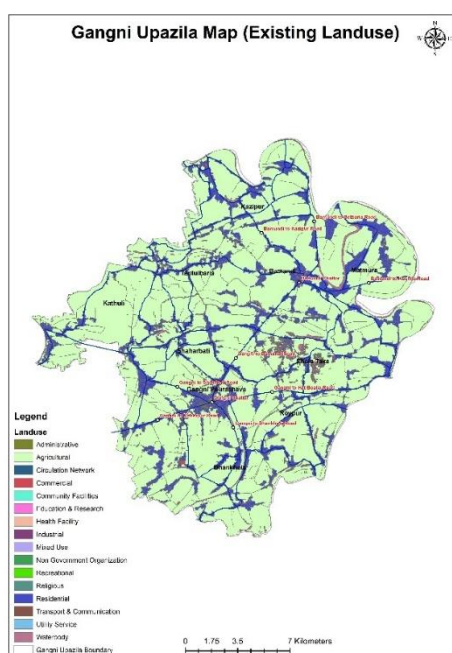


Figure: Existing Landuse Map

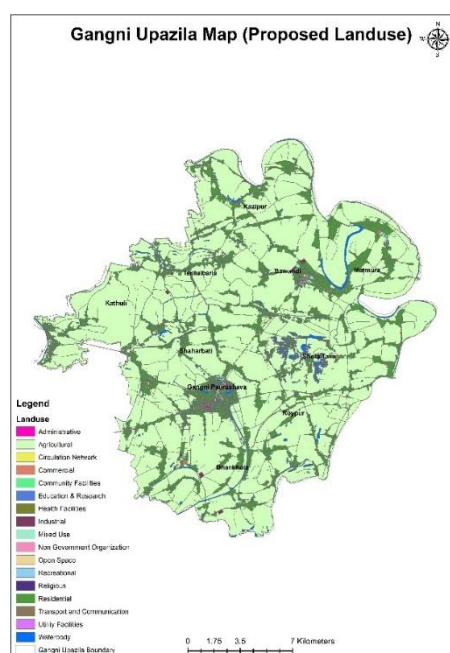


Figure: Proposed Landuse Map

Table: Existing and Proposed Land Use of Gangni Paurashava

Gangni Land use	Existing Land use		Proposed land use	
	Area in Sq Km	Percentage (%)	Area in Sq Km	Percentage (%)
Administrative	0.143	0.04	0.205	0.06
Agricultural	280.118	81.23	276.371	80.14
Circulation Network	2.573	0.75	6.757	1.96
Commercial	0.835	0.24	0.866	0.25
Community Facilities	0.004	0.001	0.098	0.028
Education & Research	0.008	0.002	0.29	0.084

Health Facilities	0.011	0.003	0.057	0.0165
Industrial	0.004	0.001	0.526	0.153
Mixed Use	0.349	0.1	1.223	0.355
NGO	0.013	0.003	0.012	0.003
Open Space	0	0	0.034	0.0098
Recreational Facilities	0.0005	0.0001	0.078	0.023
Religious	0.052	0.015	0.051	0.014
Residential	49.5985	14.38	48.373	14.027
Transport and Communication	0.0205	0.006	0.04	0.011
Utility Facilities	0.0011	0.0003	0.061	0.017
Water bodies	8.843	2.56	9.823	2.85
Total	344.865	100.00	344.865	100.00

Source: Estimated by the consultants, 2018.

Upazila Structure Plan

Gangni Upazila consist an area of 341.98 sq. kilometers. This large-scale geographic area is a potential opportunity broad scale land use zoning to implement a fruit full structure plan. The reflection of inventory for the Upazila regarding existing physical, demographic, economic, and social- infrastructure features, separated under some broad classes that will basically guide future growth with wide aspects. Broad Land use Zoning will provide sustainable structural development for future growth and designing strategic guidelines. Table shows the Structure Plan of Gangni Upazila.

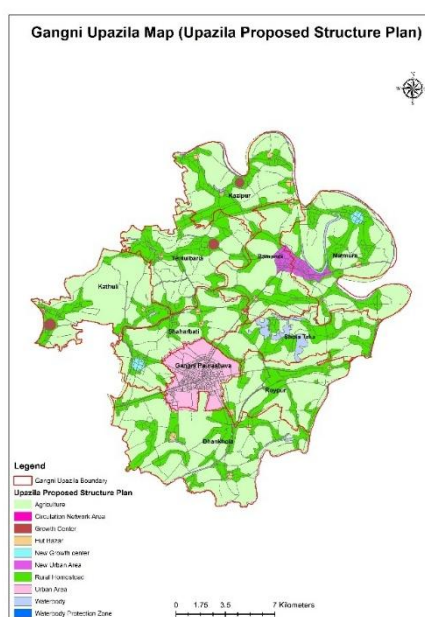


Figure: Proposed Structure Plan Map

Table: Structure Plan of Gangni Upazila

Type	Area_sqkm	Area_acre	%
Agriculture	213.76	52820.86	62.16
Circulation Network	6.45	1594.98	1.88
Growth center	1.13	279.16	0.33
Hut Bazar	2.22	547.97	0.64
New Growth Center	1.16	287.35	0.34
New Urban Area	3.60	898.36	1.06
Rural Homestead	91.04	22495.98	26.47
Urban Area	15.87	3922.29	4.62
Water body Protection Zone	2.06	508.78	0.60
Water body	6.56	1622.40	1.91

Source: Estimated by the consultants, 2018.

Urban Structure Plan

For urban structure plan, eight major categories are considered for broad land use zoning. Firstly, the core zone is identified according to the major commercial activities, population density, major activities hub and administrative focal point. After that, the urban fringe and the periphery area is delineated for considering the urban expansion and urban settlement pattern. And a future growth area is proposed with the agglomeration of different facility, government services and new housing area. Table Shows the Structure Plan of Gangni Paurashava.

Table: Structure Plan of Gangni Paurashava

Type	Area (sqkm)	Area (acre)	%
Agriculture	6.95	1718.29	40.52
Urban Core Area	0.79	194.27	4.58
Urban Fringe Area	2.26	559.29	13.19
Industrial Zone	0.07	17.69	0.42
Water body	0.29	71.83	1.69
Periphery Area	4.57	1129.35	26.63
New Urban Area	1.15	284.92	6.72
Circulation Network	1.07	265.1	6.25

Source: Estimated by the consultants, 2018.

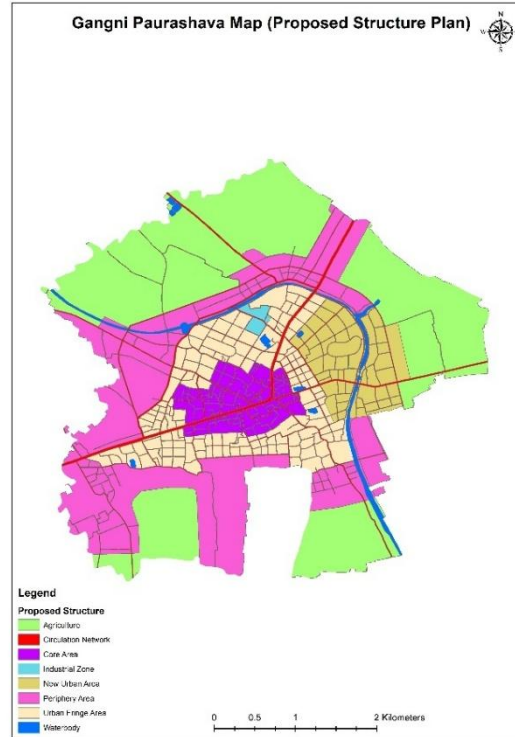


Figure: Proposed Urban Structure Plan Map

Existing Road Network

Gangni Upazila is serving by all types of road category of LGED. According to Banglapedia, 2017; Pucca road 223.59 km, Katcha road 467.25 km. Road network data and other road infrastructure will be updated through physical feature survey.

Table: Major Roads of Gangni Upazila

Road ID	Name of the Road	Length (km)
R745	Kushtia (Trimohoni)-Maherpur-Chuadanga-Jhenaidah Road	117
R746	Meherpur-Mujibnagar (BRD Camp) Road	16
Z7452	Gangni-Kathuli-Kulbaria Road	20
Z7456	Bamundi-Hatboalia-Alamdanga Road	24
Z7466	Meherpur-North Shalikhha-Kaligangni Road	10

Source: Field Survey, 2017

The Regional Highway R745 has been linked with R746 at Meherpur District and several Zila Roads have been passed through Gangni Upazila.

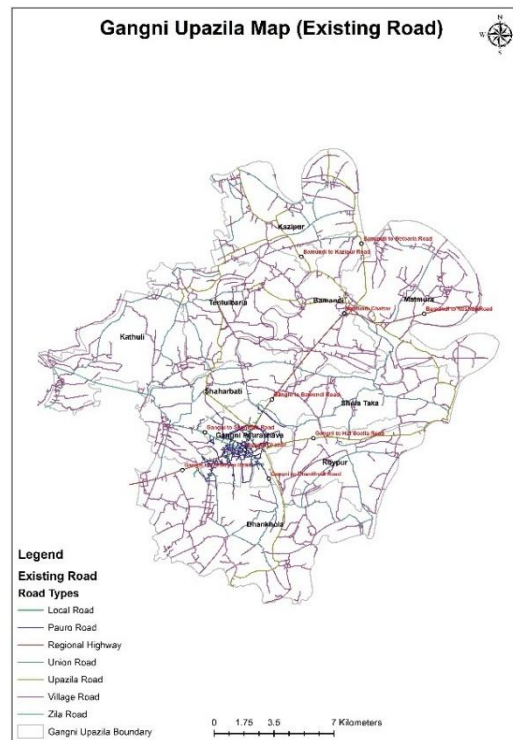


Figure: Existing Upazila Road Map

Table: Existing Roads of Gangni Upazila

Road Type	Length in Km.	Percentage
Katcha	188.59	22.51%
HBB	155.46	18.55%
Pucca	493.91	58.94%
Total	837.96	100%

Source: Field Survey, 2017

About 6 types of road hierarchy have been found in Gangni Upazila. Most of the roads are village road both in terms of number and length. The Road hierarchy condition has been shown in the following table.

Table: Road Hierarchy of Gangni Upazila

Road Hierarchy	Length in Km.	Percentage
Regional Highway	23.78	2.84%
Zilla Road	14.91	1.78%
Upazila Road	81.99	9.78%
Union Road	143.60	17.14%

Pouro Road	5.66	0.67%
Local Road	68.31	8.15%
Village Road	499.72	59.63%
Total	837.96	100%

Source: Field Survey, 2017

Total 980.60 km roads have been proposed in the plan consisting of 32.71 km Primary Road, 69.84 km Secondary Road I, 184.16 km of Secondary Road II, and 549.96 km of Paurashava Road / Union Road. Bypass has been proposed along the main regional way of Gangni Upazila. The proposed road has been shown in the table below with their respective Length.

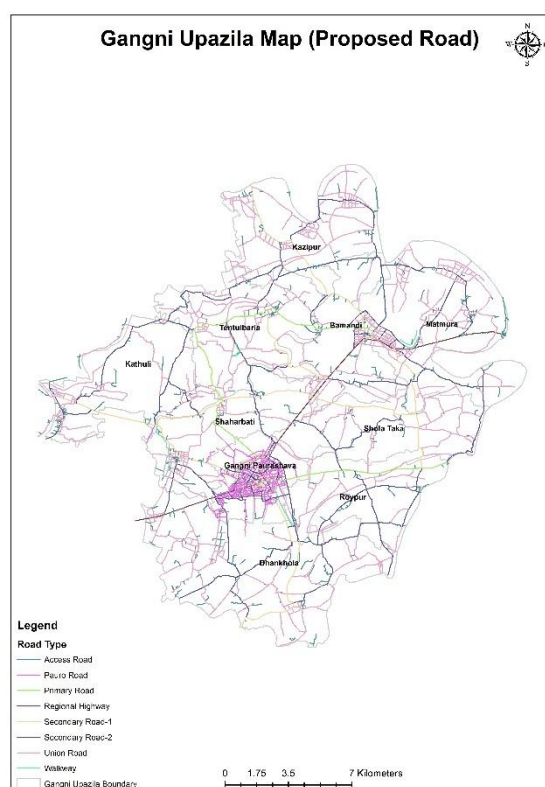


Figure: Proposed Upazila Road Map

Table: Proposed Roads Length in Gangni Upazila

Proposed Hierarchy	Length (km)
Access Road	110.50
Paura Road	81.77
Primary Road	32.71
Regional Highway	23.78
Secondary Road-1	69.84

Secondary Road-2	184.16
Union Road	468.19
Walkway	9.65

Source: Estimated by the consultants, 2018.

Proposed Transportation Facility

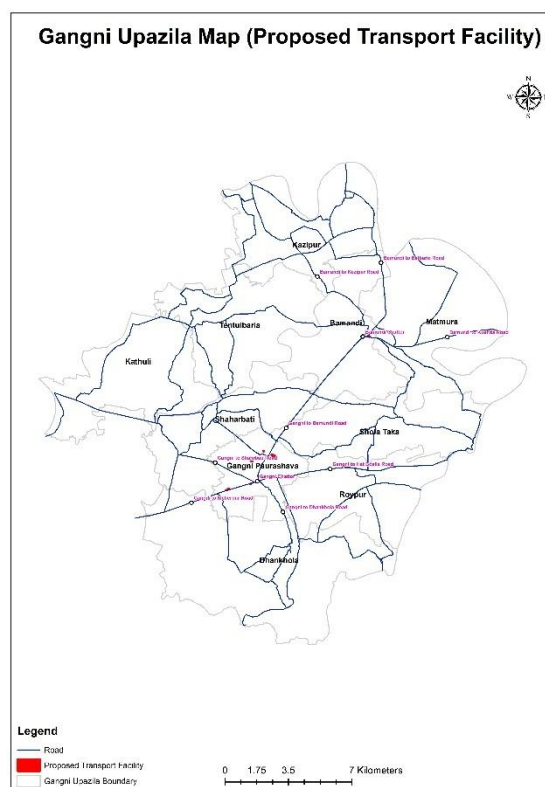


Figure: Proposed Upazila Transportation Facility Map

Table: Proposed Transportation Facility

UNION	Name	Area (Acre)	Landuse
Gangni Paurashava (Ward-06)	Bus Terminal	2.08	Transport and Communication
Gangni Paurashava (Ward-05)	Truck Terminal	0.52	Transport and Communication
Gangni Paurashava (Ward-04)	Bus Bay	0.15	Transport and Communication
Gangni Paurashava (Ward-01)	Auto/Rickshaw Stand	0.35	Transport and Communication
Gangni Paurashava (Ward-05)	Auto/Mini Bus Stand	0.34	Transport and Communication
Gangni Paurashava (Ward-06)	Auto/Mini Bus Stand	0.11	Transport and Communication
Gangni Paurashava (Ward-01)	Fuel/CNG Station	0.45	Transport and Communication

Gangni Paurashava (Ward-05)	Helipad	0.36	Transport and Communication
Bamandi	Bus Bay	0.45	Transport and Communication
Bamandi	Auto Stand	0.26	Transport and Communication
Bamandi	Parking Area	0.32	Transport and Communication

Source: Estimated by the consultants, 2018.

Proposed Natural Drainage system

The urban areas lack proper drainage system. From the hydrological analysis of Gangni Upazila 4 types of area has been delineated. In the suitability analysis of Gangni Upazila it shows 4 categories of land inundation type i.e.; not suitable for other use or water bodies, suitable for agriculture, moderately suitable for other uses and area which are not inundated. Most of the area of Gangni has been found to be not inundated. Area suitable land for agriculture has been found in most of the parts. Map 12.9 Shows Drainage Plan of Gangni Upazila.

As Most of the river channel in Gangni Upazila is illegally occupied by the power holder and in many cases the river channel is drying for lack of water. Only in rainy season the water is found in the channel. And no better linkage is found among the beels having water in dry season. So, in drainage

Network proposal this dry channel of the rivers and canals will be excavated. All the illegal encroachment must be demolished and all the fish processing area with illegal dam must be omitted. And the previous channel of the river according to mouza line will be re-established.

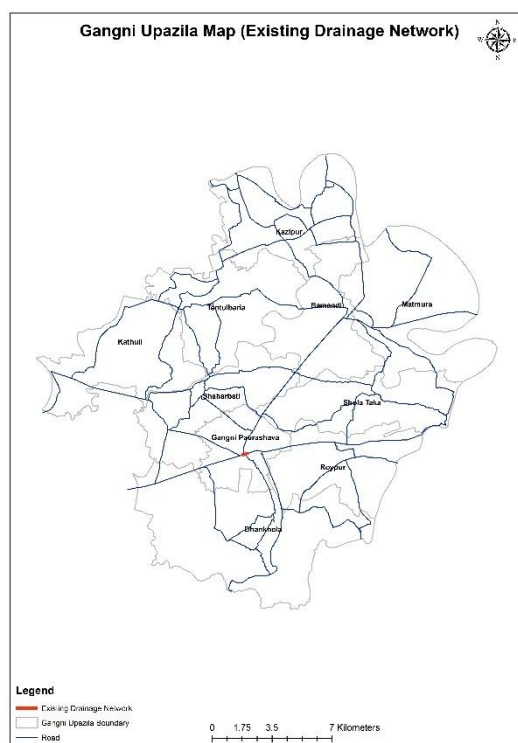


Figure: Existing Drainage Network Map

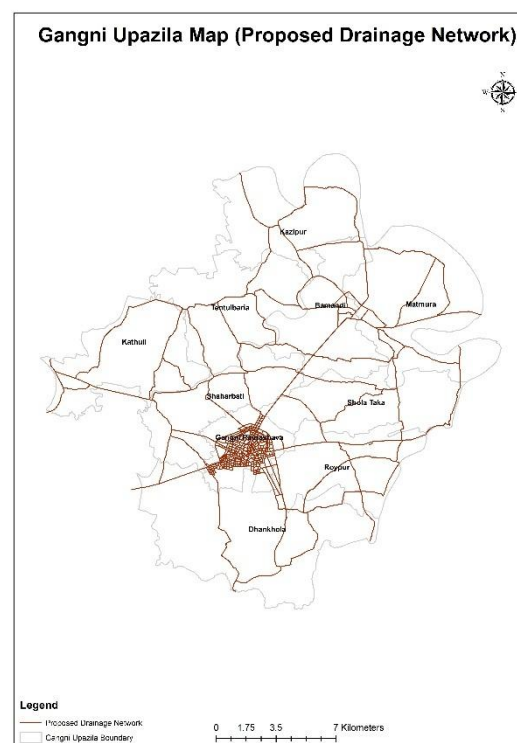


Figure: Proposed Drainage Network Map

Proposed Manmade Drainage

According to all type of analysis, Flow direction, contour the man-made drainage channel has proposed along with the road network. In Gangni Upazila, as there are enough natural water bodies through all the unions the man-made drain is proposed only in urban area. For what, In Paurashava and in some cases growth center or in hut bazaar area manmade drain will be build up to reduce the water congestion.

Urban Services

Administrative Zone

Administrative zone covers all kinds of government offices and Non-Government Offices including existing and proposed uses in Gangni Paurashava. The land of total 26.48 acres of land has been proposed for administration includes Food Godown in ward no 5 along with youth development canter in ward no 5 and 6. Future Government Office has been proposed at ward no 5 and 6. A Shilpokola Academy has also been proposed in ward no 6. Table 15.1 shows the proposals to meet up the demand of projected people.

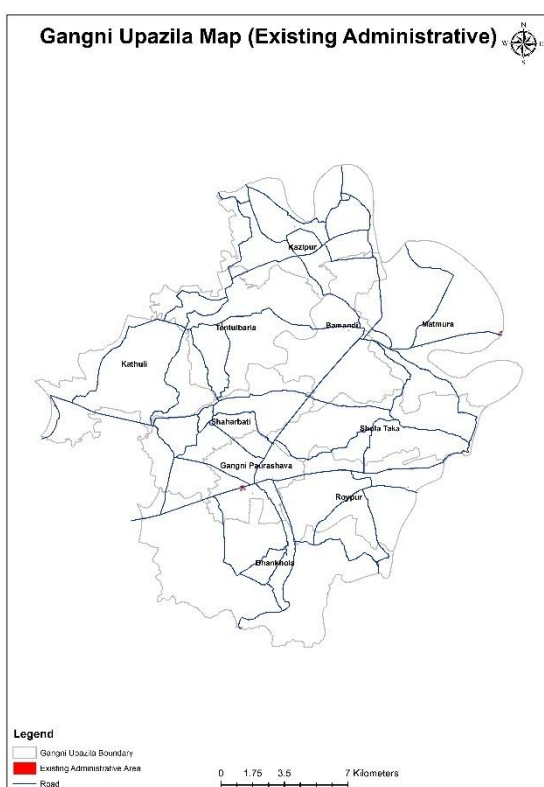


Figure: Existing Administrative Area Map

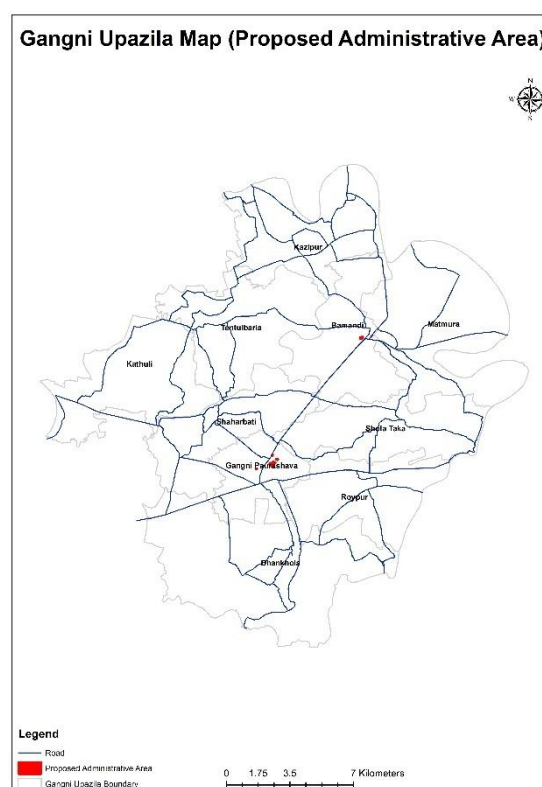


Figure: Proposed Administrative Area Map

Table: Proposals for Administrative Facilities.

Name	Landuse	Area_acre	Ward No
Future Government Office	Administrative	10.71	Gangni Paurashava Ward 05
Future Government Office	Administrative	10.71	Gangni Paurashava Ward 06

Youth Development Center	Administrative	1.46	Gangni Paurashava Ward 05
Youth Development Center	Administrative	1.46	Gangni Paurashava Ward 06
Food Godown	Administrative	0.52	Gangni Paurashava Ward 05
Shilpokola Academy	Administrative	1.62	Gangni Paurashava Ward 06

Source: Estimated by the consultants, 2018.

Commercial Activities

In response to the requirement, total about 2.51 acres of land has been proposed for Planning. Neighbourhood Market, Shopping Complex and Wholesale Market have been proposed at different wards in Gangni Paurashava. Table shows the proposals of commercial land use.

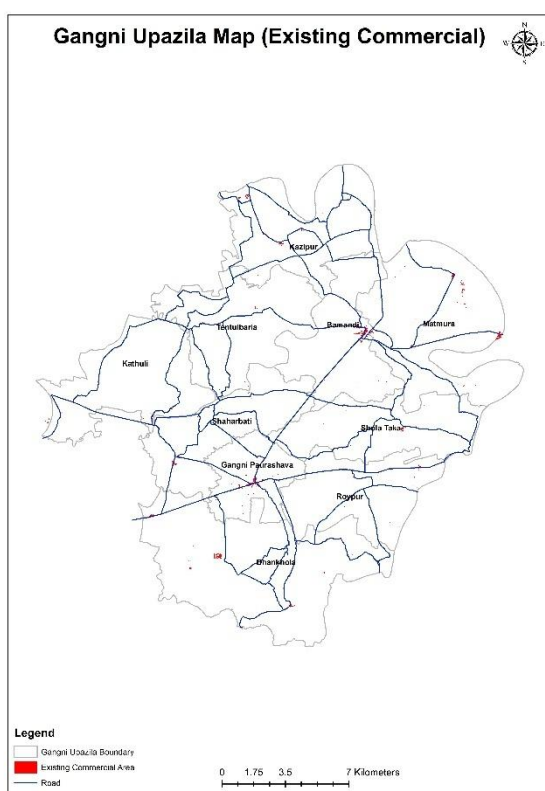


Figure: Existing Commercial Area Map

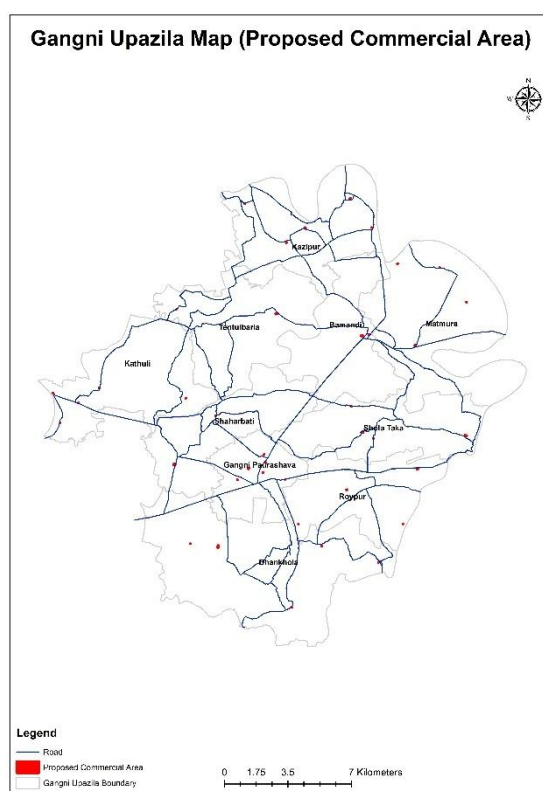


Figure: Proposed Commercial Area Map

Table: Proposals for Commercial Activities.

Name	Landuse	Area_ acre	Ward No
Wholesale Market	Commercial	0.85	Gangni Paurashava Ward 05
Shopping Complex	Commercial	0.63	Gangni Paurashava Ward 06
Neighborhood Market	Commercial	0.26	Gangni Paurashava Ward 07
Neighborhood Market	Commercial	0.51	Gangni Paurashava Ward 05

Neighborhood Market	Commercial	0.26	Gangni Paurashava Ward 03
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Source: Estimated by the consultants, 2018.

Community and Religious Facilities

Community and Religious Facilities include Mosque Complex, Cultural Centre, Auditorium, Multi- Purpose Hall, Shamshan Ghat and Graveyard etc. To accommodate unanticipated spatial requirement of Community and Religious Facilities, total about 10.26 acres of land has been proposed. Table shows the proposals for of Community and Religious facilities.

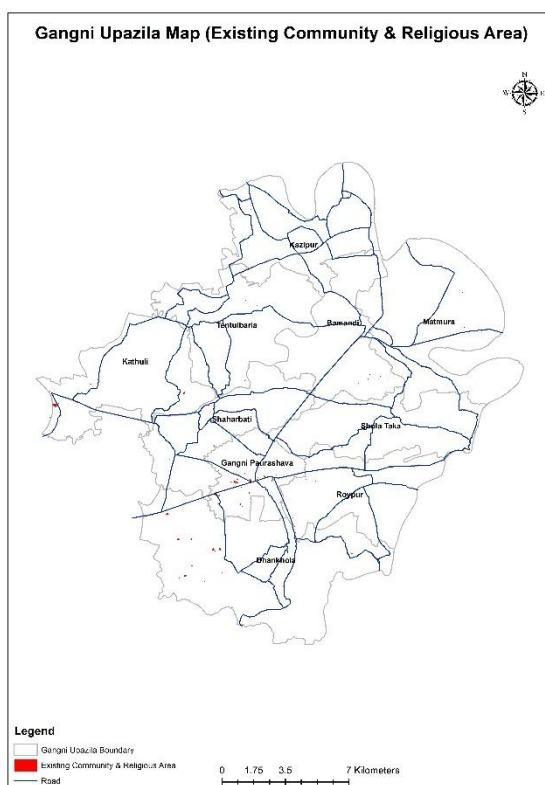


Figure: Existing Community & Religious Area Map

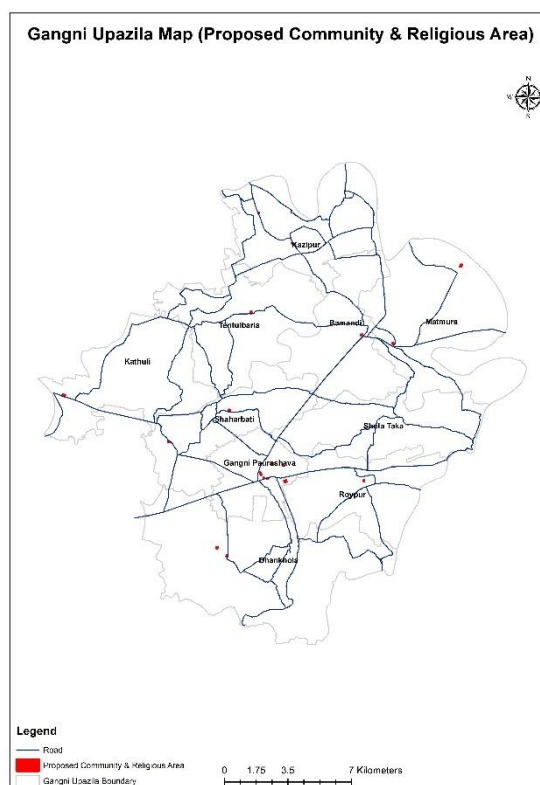


Figure: Proposed Community & Religious Area Map

Table: Proposals for Community and Religious Facilities

Name	Landuse	Area _acre	Ward No
Auditorium	Community Facilities	0.64	Gangni Paurashava Ward 06
Multi-Purpose Hall	Community Facilities	0.39	Gangni Paurashava Ward 06
Cultural Center	Community Facilities	2.13	Gangni Paurashava Ward 06
Graveyard	Community Facilities	2.98	Gangni Paurashava Ward 07
Shamshan Ghat	Community Facilities	0.97	Gangni Paurashava Ward 06
Cultural Center	Community Facilities	2.13	Gangni Paurashava Ward 06
Mosque Complex	Religious	1.02	Gangni Paurashava Ward 01

Source: Estimated by the consultants, 2018.

Education and Health Facilities

Educational zone refers all kind of educational institutes such as School, Colleges, Madrasha, School for Autistic Child, training centers for vocational and agricultural purposes etc. and Health Facilities includes Upazila Health complex, health center or maternity clinic. In the proposal, a land of 2.33 acre in total has been proposed for Education and Health services Table 15.4 and Table 15.5 shows proposals for education and health facilities.

Table: Proposals for Education & Research

Name	Landuse	Ward No	Area_acre
Agriculture Training Institute	Education & Research	Ward 06	0.28
Vocational Training Institute	Education & Research	Ward 06	0.50
Public Library	Education & Research	Ward 05	0.33

Source: Estimated by the consultants, 2018.

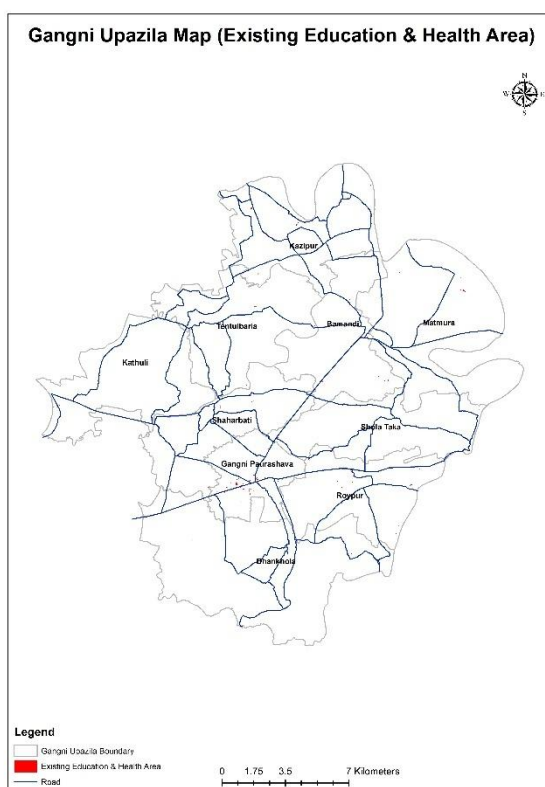


Figure: Existing Education & Health Facilities Area Map

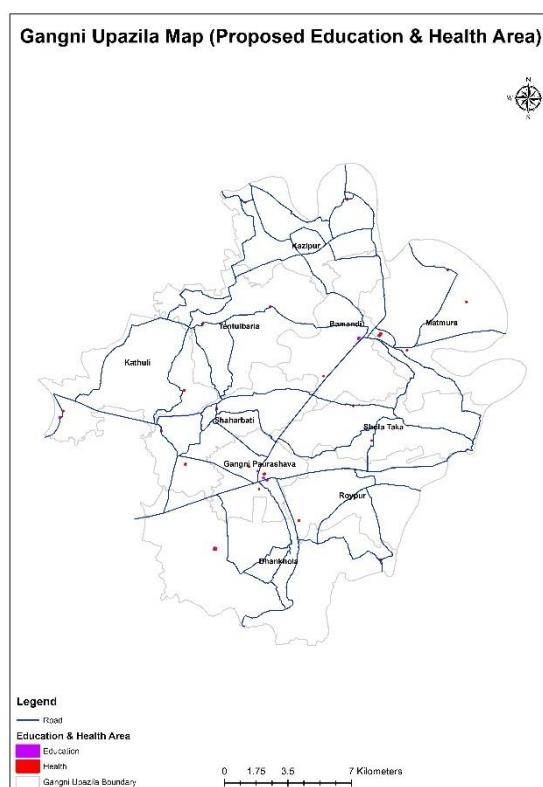


Figure: Proposed Education & Health Facilities Area Map

Table: Proposals for Health Facility

Name	Land use	Ward No	Area (acre)
Hospital	Health Facilities	Ward 06	0.74
Community Clinic	Health Facilities	Ward 05	0.39
Community Clinic	Health Facilities	Ward 08	0.09

Source: Estimated by the consultants, 2018.

Industrial Zone

The plan needs to accommodate industries which have growth potentials related to the base of economy of Gangni Paurashava. Due to the environmental and ecological condition, the plan discourages growth of heavy industries in the planning area. About 25.02 acres of land has been proposed for industrial development which includes Industrial Zone, Fish Processing Zone, Cold Storage, Agro Based Industry and Fish Processing Zone. Table shows proposals for Industrial Zone.

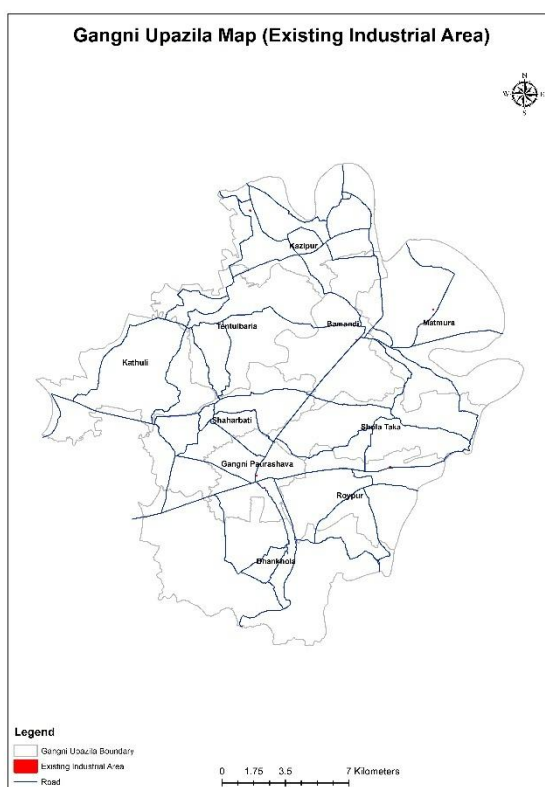


Figure: Existing Industrial Area Map

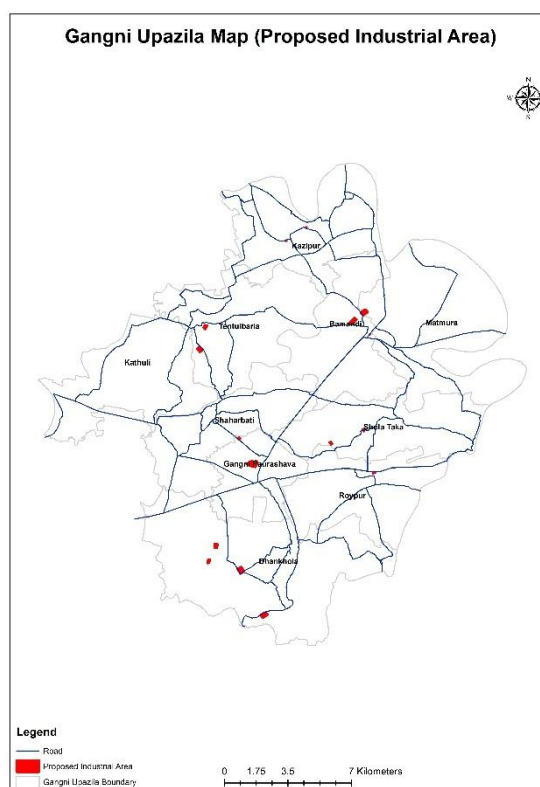


Figure: Proposed Industrial Area Map

Table: Proposals for Industrial Zone

Name	Landuse	Ward No	Area_ acre
Industrial Zone	Industrial	Ward 05	9.33
Industrial Zone	Industrial	Ward 06	0.01
Fish Processing Zone	Industrial	Ward 05	1.81
Industrial Zone	Industrial	Ward 05	7.12
Food Processing Zone	Industrial	Ward 05	2.01
Cold Storage	Industrial	Ward 05	0.51
Agro Based Industry	Industrial	Ward 05	4.23

Source: Estimated by the consultants, 2018.

Recreational Facilities and Open Space

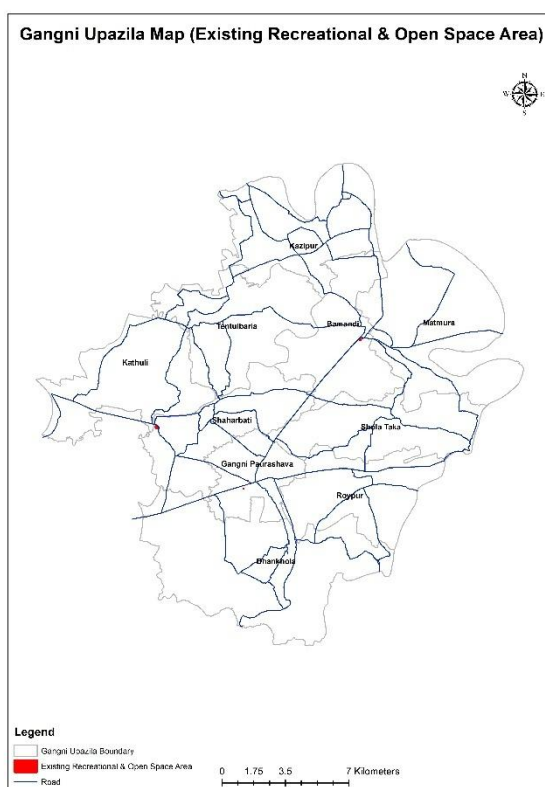


Figure: Existing Recreational & Open Space Area Map

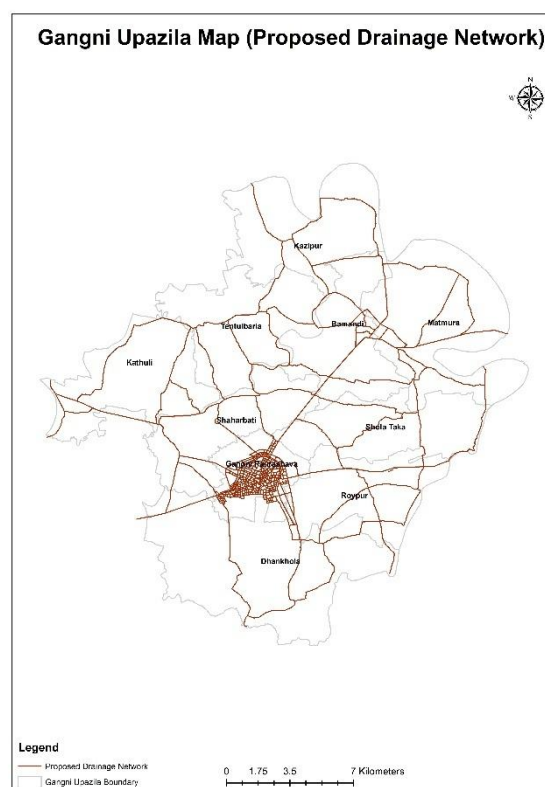


Figure: Proposed Recreational & Open Space Area Map

Table: Proposals for Open Space and Recreational Facilities

Landuse	Name	Ward No	Area_acre
Open Space	Playground	Ward 06	1.31
Open Space	Playground	Ward 05	1.69
Recreational	Stadium	Ward 05	4.99
Open Space	Neighborhood Park	Ward 06	0.25
Open Space	Neighborhood Park	Ward 07	0.38
Open Space	Neighborhood Park	Ward 05	0.67
Recreational	Sports Complex	Ward 05	0.90
Open Space	Neighborhood Park	Ward 06	1.86
Open Space	Public Gathering Place	Ward 06	2.58
Recreational	Indoor Stadium	Ward 05	0.00
Recreational	Indoor Stadium	Ward 06	0.72

Recreational	Gymnasium	Ward 05	0.22
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Source: Estimated by the consultants, 2018.

Utility and Waste Management

Utility and Waste management includes Solid Waste Disposal Site, Waste Transfer Station, Solar Park, Public Toilet, Electric Sub Station, Pump House, Night Soil Treatment Plant and Water Treatment Plant in Gangni Paurashava. Total 9.56 acres of land has been proposed in the Paurashava. Table shows the proposal to meet up the demand of projected people.

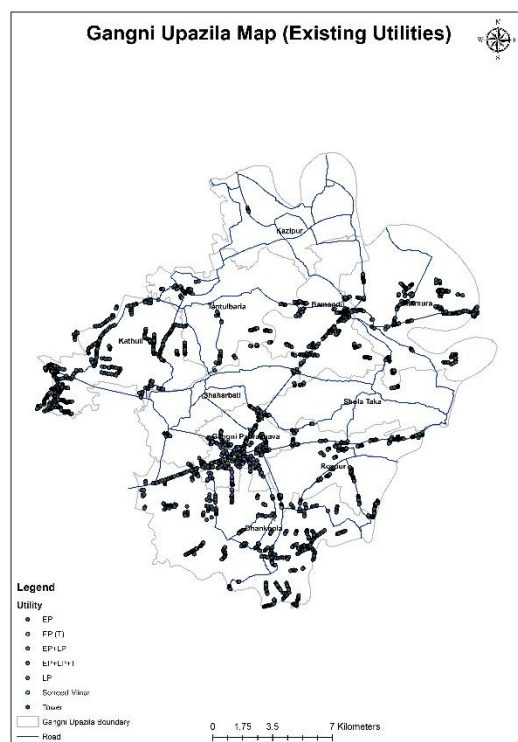


Figure: Existing Recreational & Open Space Area Map

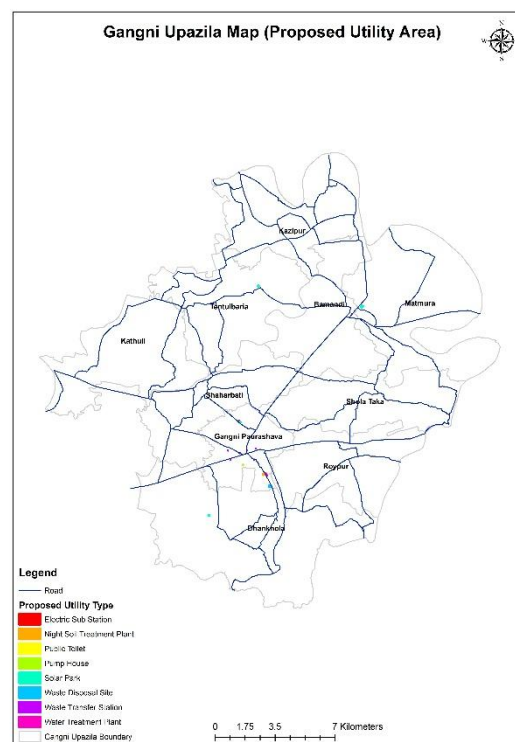


Figure: Proposed Recreational & Open Space Area Map

Table: Proposals for Utility Services

Utility Facilities	Night Soil Treatment Plant	Ward 09	2.02
Utility Facilities	Waste Transfer Station	Ward 06	0.11
Utility Facilities	Public Toilet	Ward 06	0.02
Utility Facilities	Waste Transfer Station	Ward 06	0.06
Utility Facilities	Waste Transfer Station	Ward 09	0.03
Utility Facilities	Waste Transfer Station	Ward 02	0.05
Utility Facilities	Waste Transfer Station	Ward 04	0.06
Utility Facilities	Public Toilet	Ward 04	0.03

Utility Facilities	Waste Transfer Station	Ward 03	0.02
Utility Facilities	Pump House	Ward 09	0.24
Utility Facilities	Water Treatment Plant	Ward 09	1.29
Utility Facilities	Waste Disposal Site	Ward 09	3.25
Utility Facilities	Electric Sub Station	Ward 05	1.27
Utility Facilities	Solar Park	Ward 05	1.11

Source: Estimated by the consultants, 2018.

Proposals for Agriculture Development

In Gangni Upazila Three Agro-based industries (25.45 acres) at Bamandi union and Ward No 05 in Gangni Paurashava are proposed for enhance farmer's income and widening of market. Five Cold Storage (2.03 acres) at Bamandi union, Shola Taka Union, Kazipur Union and Ward No 05 in Gangni Paurashava for increase storage capacity. Besides these, one Ice Factory, three Fish Processing Zones and two Dairy Farm are proposed a suitable location to fulfil the demand of the area.

Table: List of Proposed Facility

Name	Area_ acre	UNION
Dairy Farm	4.61	Gangni Paurashava
Dairy Farm	14.02	Dhankhola
Fish Processing Zone	1.98	Gangni Paurashava
Food Processing Zone	2.08	Gangni Paurashava
Cold Storage	0.65	Gangni Paurashava
Agro Based Industry	4.52	Gangni Paurashava
Agro based Industry	16.03	Bamandi
Cold Storage	0.26	Bamandi
Fish Processing Zone	5.10	Dhankhola
Cottage Industry	8.07	Dhankhola
Cold Storage	0.69	Shola Taka
Ice Factory	0.60	Shola Taka
Fish Processing Zone	3.00	Shola Taka
Agro Based Industry	6.48	Tentulbaria
Cold Storage	0.27	Kazipur

Cold Storage	0.44	Kazipur
Cottage Industry	8.07	Dhankhola
Cottage Industry	8.07	Dhankhola
Cottage Industry	8.07	Dhankhola
Cottage Industry	8.07	Dhankhola
Ice Factory	0.60	Shola Taka
Cottage Industry	8.07	Dhankhola

Source: Estimated by the consultants, 2018.

Table: Existing and Proposed Growth Center and Hat Bazar.

Union	Existing		Proposed	
	No of Hat Bazar	No of Growth Centre	Proposed Growth Centre	No of Rural Sells and Service Centre (RSSC)
Bamandi	4	1	-	-
Dhankhola	4	-	-	4
Kathuli	4	1	-	4
Kazipur	5	1	-	3
Matmura	5	-	1	3
Roypur	6	-	-	3
Shaharbati	4	-	1	1
Shola Taka	3	-	-	3
Tentulbaria	3	1	-	2
Total	38	4	-	23

Source: Estimated by the consultants, 2018.

Based on the discussion and analysis of all the issues mentioned above, it can be concluded that the master plan for Gangni Upazilla, formulated by the UDD, is indeed practical and timely. The recommendation in the plan to reduce residential land area and promote compact townships, as well as increased mixed land use, needs further discussion on how to implement the development of residential areas more comprehensively and how they will be renewed. There is also a lack of appropriate reasoning and detailed analysis regarding the establishment of engineering and technology universities. Additionally, other plans and proposals are not fully aligned with the projected population growth, which requires further refinement for accuracy.