



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-4

Collection of previous Master Plan or Development Plan of the Project Area and make an Assessment Report of previous Master Plan compared to the Present Scenario

May 2025

Sanjib Saha
Urban Planner

ASSIGNMENT 4:

Collection of previous Master Plan or Development Plan of the Project Area and make an Assessment Report of previous Master Plan compared to the Present Scenario



JUNE 16, 2025

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PREPARAION OF DEVELOPMENT PLAN FOR

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Summary of Assignment-4

A. Summary of Assignment-4

This report summarizes the Assignment-4 according to the ToR by Urban Planner (Individual Consultant) for the " Preparation of Development Plan for Meherpur Zilla " project. The fourth assignment has done by me is “Collection of previous Maser Plan or Development Plan of the Project Area and make an Assessment Report of previous Master Plan compared to the Present Scenario”. Here, brief assessment Report on Road Network Plan of Paurashava Area between Master Plan of Gangni Paurashava, 2009 and Development Plan of Gangni Upazila, 2018. The road network of Gangni Paurashava was developed and established according to the growing demand, following the development pattern and meeting short term need. Thus, most of the cases road network is established after the development of infrastructure resulting poor layout of road network, narrow road, pedestrian problem, utility services problem, emergency services problem etc. In Bangladesh, transport planning is still not practiced. To provide a safe and efficient transportation system, the government recently developed the National Land Transport Policy, 2004. There has also been an attempt to determine a relationship between land, economic activity, and the development of transportation networks.

(Sanjib Saha)

Urban Planner

Assessment Report on Road Network Plan of Paurashava Area between Master Plan of Gangni Paurashava, 2009 and Development Plan of Gangni Upazila, 2018

In the modern world, transportation holds a prominent position. The science of transport planning aims to create a methodical foundation for designing transportation infrastructure by researching the issues that come up when delivering them in an urban, regional, or national context. A significant component of overall town and country planning is transportation planning.

Transport planning is still not used in Bangladesh. The National Land Transport Policy, 2004 was recently created by the government to offer a secure, well-functioning transportation infrastructure. Additionally, an effort has been made to establish a connection between land, economic activity, and the construction of transportation networks.

The road network of Gangni Paurashava was developed and established according to the growing demand, following the development pattern and meeting short term need. Thus, most of the cases road network is established after the development of infrastructure resulting poor layout of road network, narrow road, pedestrian problem, utility services problem, emergency services problem etc. Intra-zonal movement is mostly carried out through bicycle, rickshaw, rickshaw-van, motorcycle, Auto Rickshaws. Meherpur -Kushtia highway is the main road network for communication with other districts. Other major roads are:

- Hatboalia Road
- Shaharbati Road
- Upazila Road
- Hall Para
- Thana Para Road
- Chitla Road
- Hospital Road
- Shishirpara Road
- Bashbari Bazar Road

Two major road intersections within Gangni Paurashava area are:

- Bus Stand Intersection
- Thana Mour Intersection

According to the physical feature survey, the total length of roads in the Paurashava area is 82.97 km. There are katcha, semi-pucca and pucca roads within the Paurashava area. Here is the comparison of the data between 2009, 2018 and.

Table 1: Type wise Length of Road

Type of Road	2009		2018		2025	
	Length (km)	%	Length (km)	%	Length (km)	%
Pucca	24.81	27.95	46.02	55.47	46.93	56.56
Semi-Pucca	36.52	41.14	27.50	33.14	26.91	32.43
Katcha	27.43	30.90	9.45	11.39	9.13	11.00
Total	82.97	100.00	82.97	100.00	82.97	100.00

Source: Physical Feature Survey, 2009, 2018 and 2025

According to the above table, it is observed that from 2009 to 2018 almost 28% roads have been converted to pucca roads and type of almost 20% katcha roads have been converted to other type. On the other side, from 2018 to 2025, 1.09% roads have been converted to pucca roads and type of 0.39% katcha roads have been converted to other type

LGED maintains 8.28 km of roads within the Gangni Paurashava. These are,

- Malshadoha Road
- Thana Para Road
- Chitla Road
- Gangni-Dhamachaki Road

The Paurashava has so far developed about 75 km of pucca, semi-pucca and katcha roads within its area with different widths. The Paurashava is also responsible for maintaining these roads. The authority has named many of these roads after renowned local personalities.

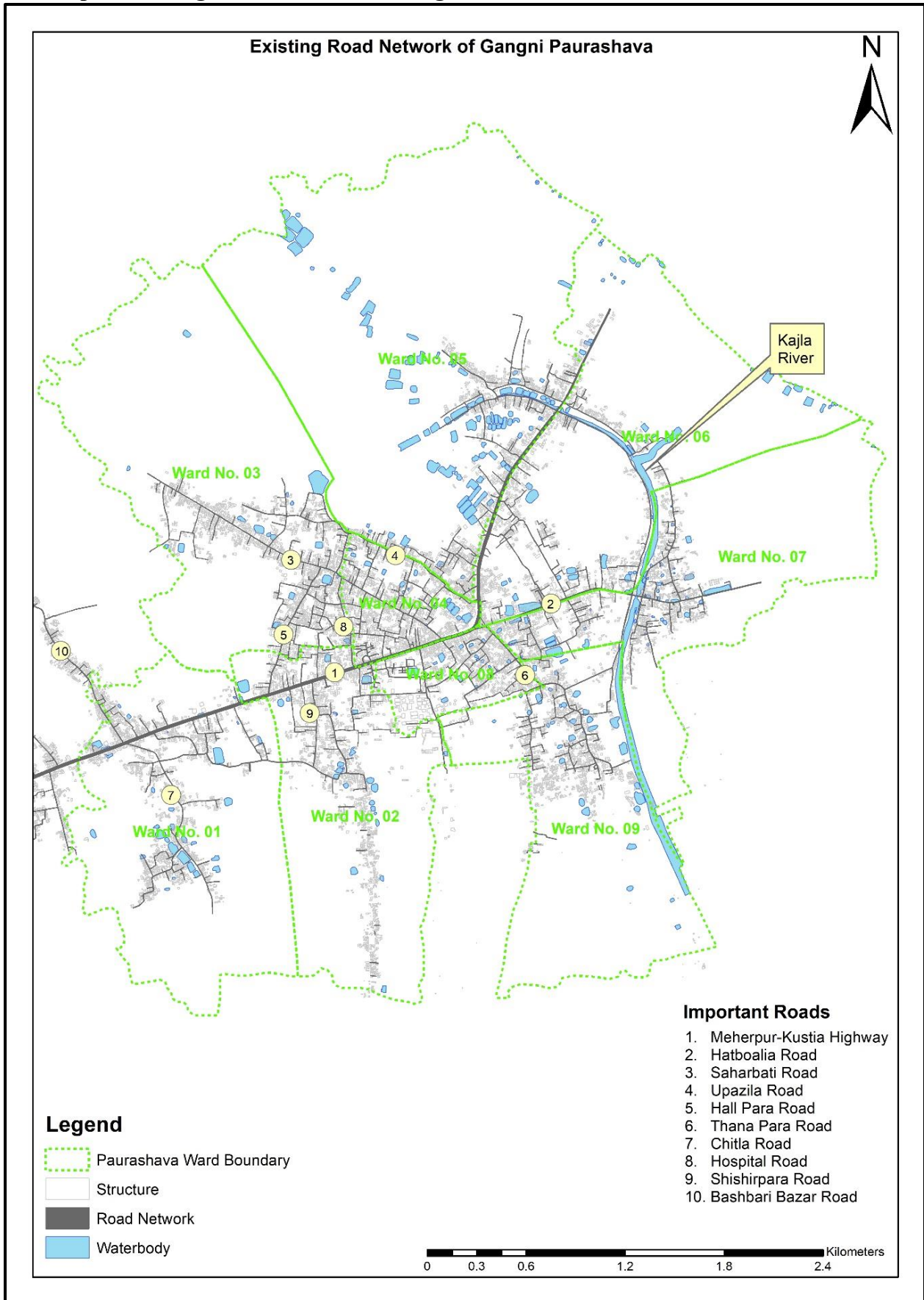
About 6 types of road hierarchy have been found in Gangni Upazila. Most of the roads are village road both in terms of number and length. The Road hierarchy condition has been shown in the following table.

Table 2: Road Hierarchy of Paurashava Area

Hierarchy of Road	Length (km)	%
Regional Highway	12.55	15.13
LGED Road	8.28	9.98
Paurashava Road	62.14	74.89
Total	82.97	100

Source: Physical Feature Survey, 2025

Map 1: Existing Road Network of Gangni Paurashava



Along with secondary and access roads, the Gangni Paurashava main road maintains excellent connectivity within the Paurashava region and is well connected to other parts of the Upazila districts. However, according to standards, these roadways are not sufficiently wide. Therefore, it is necessary to upgrade the traffic management system and widen the small roads. In addition, some new roads must be planned in order to meet the demand for travel in the future. In order to satisfy pedestrian demand, walkway facilities must be installed.

According to, Gangni Upazila Development Plan 2018, the road network plan has been prepared considering the service area by the proposed roads and well connectivity with the major growth centers and highways. Besides these the minimum loss of the land has been also ensured. 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.

In Paurashva area, total 134.54 km roads have been proposed in the plan consisting of 5.01 km of Reginal Highway, 7.46 km Primary Road, 12.70 km Secondary Road I, 20.52 km of Secondary Road II, and 79.40 km of Paurashava Road and 6.16 km of Access Road.

Table 2: Proposal of Road Hierarchy in Paurashava Area

Hierarchy of Road	Length (km)	%
Regional Highway	5.01	3.82
Primary Road	7.46	5.68
Secondary Road I	12.70	9.68
Secondary Road II	20.52	15.63
Paurashava Road	79.40	60.50
Access Road	6.16	4.69
Total	134.54	100

Source: Physical Feature Survey, 2018

Map 2: Proposed Road Network of Gangni Paurashava

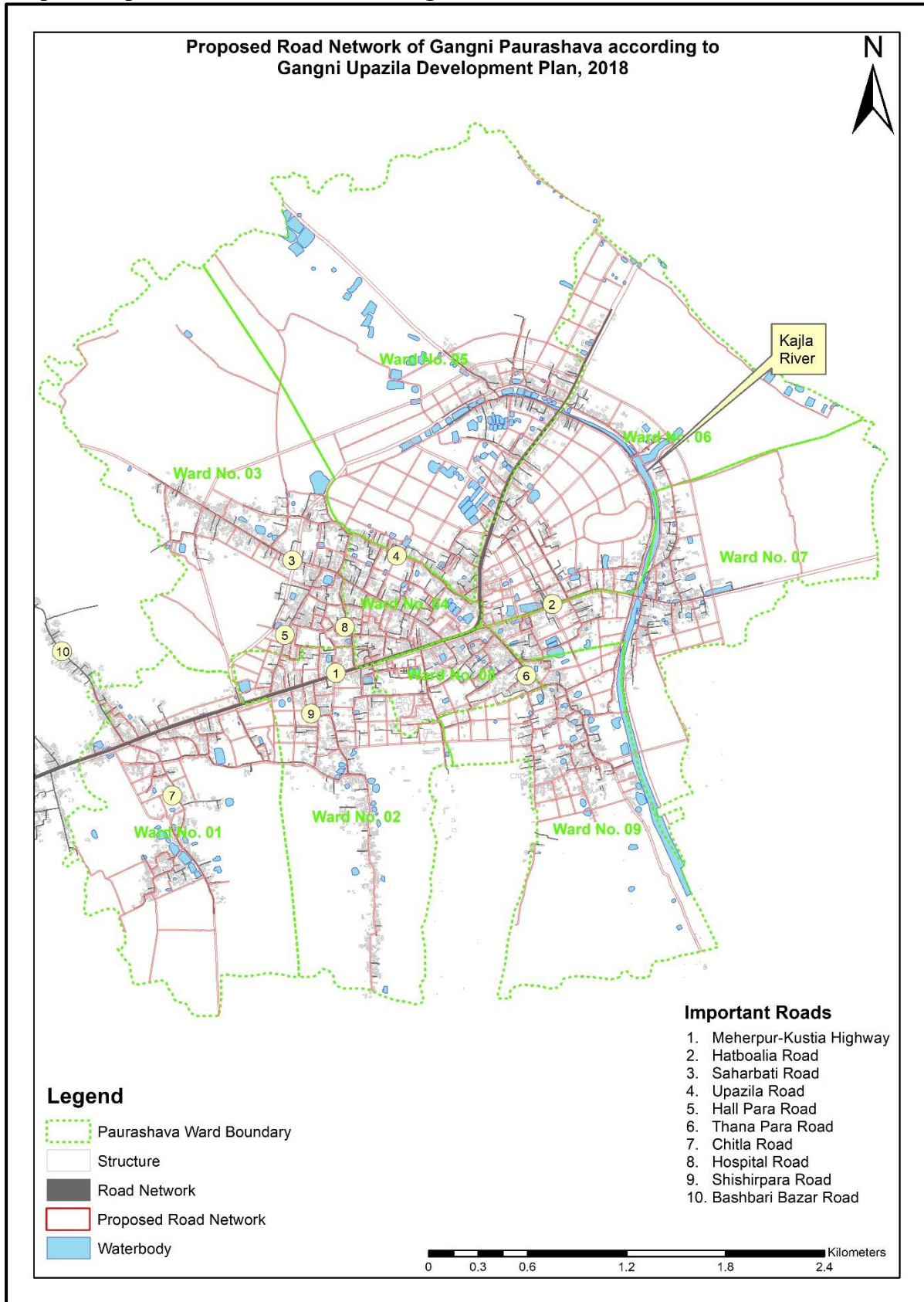


Table 3: Proposal of Major Road in Paurashava Area

Name of the Road	Existing Width (feet)	Proposed Width (feet)
Meherpur-Kustia Highway	60	100
Hatboalia Road	16	60
Shaharbati Road/ Gangni-Chougacha Road	12	40
Gangni Upazila Road	12	30
Hall Para Road	14	30
Thana Para Road	14	40
Chitla Road	10	20
Hospital Road	10	40
Shishirpara Road	8	30
Bashbari Bazar Road	12	30

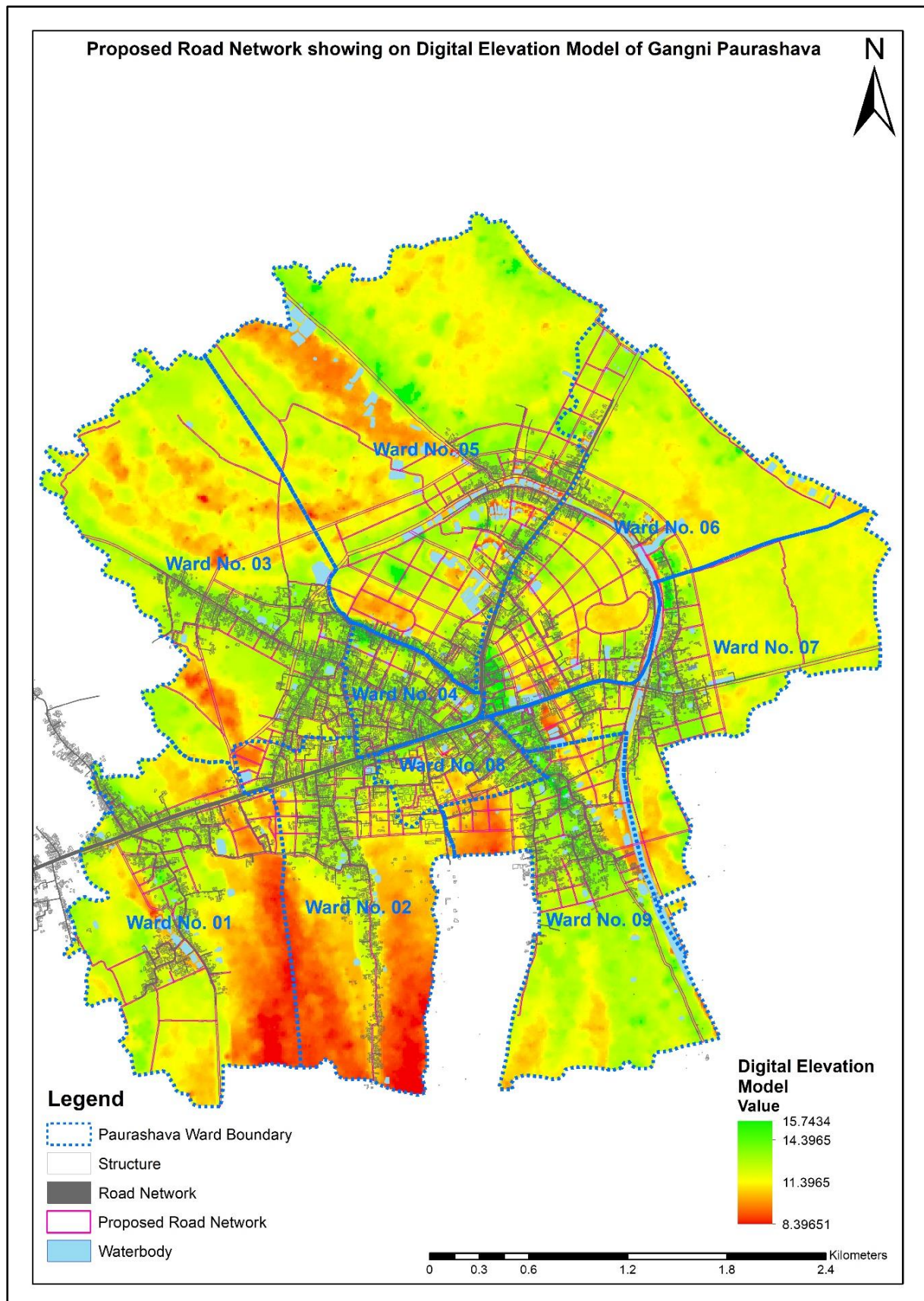
Source: Physical Feature Survey, 2018 and Development Plan, 2018

For performance evaluation of any road, observe some criteria as follows:

- Assessment of the road network performance against established criteria, including
 - ✓ Traffic congestion Levels
 - ✓ Travel time reliability
 - ✓ Road safety performance
 - ✓ Accessibility for all users
 - ✓ Environmental impacts
 - ✓ Economic efficiency
- Identification of strengths and weakness
- Analysis of road network ability to meet current and future demand
- Analysis of the network ability to handle emergency vehicles.

In Gangni Paurasava area, most of the land is low lying. Urban areas have been developed in comparatively highly elevated areas. Highest land level is 15.74 meter and lowest land level is 8.39 meter above sea level. Average land elevation is 11.36 meter. Road network developed along the high elevated area. Buildings are constructed along the roads. Low lying lands are used as agricultural production in maximum area.

Map 3: Proposed Road Network showing on DEM of Gangni Paurashava



According to Gangi Upazila Development Plan, 2018, almost 50 km of new roads have been proposed in Gangni Paurashva area. Maximum roads of this have been proposed in low lying area (**Map-3**). Building a new road in a low-lying area presents a unique set of challenges and potential shortcomings that need careful consideration during the planning and design phases. Here are some of the key shortcomings:

Building a new road in a low-lying area presents a unique set of challenges and potential shortcomings that need careful consideration during the planning and design phases. Here are some of the key shortcomings:

1. Increased Flood Risk:

Obstruction of Natural Flow: The road embankment can act as a barrier, impeding the natural flow of floodwaters. This can lead to increased water levels and prolonged inundation on the upstream side of the road and potentially reduce flooding on the downstream side, altering the natural flood patterns of the area.

Increased Velocity and Scouring: Constricting the floodplain can increase the velocity of floodwaters passing through culverts or bridge openings, leading to scouring and erosion of the road embankment, foundations, and surrounding areas.

Backwater Effects: The road structure can cause backwater effects, increasing flood depths in areas that were not previously as severely affected.

Impact on Drainage: The road can disrupt existing drainage patterns, potentially leading to waterlogging in adjacent low-lying areas if cross-drainage structures (culverts, bridges) are inadequate or poorly placed.

2. Structural Instability:

Saturated Subgrade: Low-lying areas often have high water tables. The subgrade (soil beneath the road) can become saturated, significantly reducing its load-bearing capacity and leading to pavement failure (rutting, cracking, settlement).

Scour of Foundations: Bridge and culvert foundations can be vulnerable to scour from flowing water, especially during flood events, potentially leading to structural collapse.

3. Construction Challenges:

Water Management: Construction in waterlogged areas requires significant dewatering efforts, which can be costly and environmentally disruptive.

Soil Instability: Soft and saturated soils can make construction difficult, requiring specialized techniques like soil stabilization or the use of geotextiles.

Material Availability and Transportation: Accessing and transporting construction materials to a low-lying, potentially flood-prone area can be challenging and expensive.

4. Environmental Impacts:

Wetland Destruction: Low-lying areas often include valuable wetlands that provide important ecological functions (flood control, water filtration, habitat). Road construction can lead to direct loss and fragmentation of these habitats.

Impact on Aquatic Life: Altered drainage patterns and increased sedimentation from construction can negatively impact aquatic ecosystems. Culverts, if not properly designed, can act as barriers to fish passage.

Wildlife Movement: The road embankment can act as a barrier to the movement of terrestrial wildlife.

Water Quality Degradation: Runoff from the road surface can carry pollutants (oil, grease, de-icing salts) into nearby water bodies.

5. Economic Considerations:

Higher Initial Construction Costs: Addressing the challenges of building in low-lying areas (water management, soil stabilization, specialized structures) will likely increase the initial construction costs.

Increased Maintenance Costs: Roads in flood-prone areas often require more frequent and costly maintenance due to water damage, erosion, and structural issues.

Economic Disruption During Floods: Road closures due to flooding can disrupt transportation networks, impacting businesses and communities.

Cost of Retrofitting: If the initial design doesn't adequately address flood risks, expensive retrofitting may be required later.