



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-6

Meta Data Creation with Report

April 2025

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Introduction: Meherpur Paurashava is the municipality of Meherpur, a city located in the western part of Bangladesh. It serves as the administrative center of the Meherpur District. The municipality was established in 1960 and covers an area of around 13.62 square kilometers. It has a population of approximately 47,000 people. Today, Meherpur Paurashava is an important commercial and administrative hub, with agriculture being a major part of the local economy.

- **Purpose of the Report:** This report aims to analyze the current land use patterns in Meherpur Paurashava to assist in urban planning, zoning decisions, and sustainable development strategies. It provides insights into the existing land uses and helps in managing future growth effectively.
- **Study Area:** The study area covers Meherpur Paurashava, which is the municipality of Meherpur District, located in the western part of Bangladesh. It serves as an important administrative and commercial hub for the district.
- **Scope of Analysis:** The analysis includes all land uses within the boundaries of Meherpur Paurashava, including residential, commercial, industrial, agricultural, institutional, and open spaces.

Objectives of the Study: The primary objective of the study of Meherpur Paurashava is to collect accurate and up-to-date information on the existing physical and infrastructural conditions within the municipal area. Specific objectives include:

1. **To identify and map existing land use patterns** including residential, commercial, agricultural, administrative, and recreational areas.
2. **To assess the condition and coverage of infrastructure** such as roads, drainage systems, water supply, sanitation, and public facilities.
3. **To document natural features** such as rivers, canals, ponds, lowlands, and vegetation that influence urban development and ecological balance.
4. **To analyze the spatial distribution of physical elements** to support effective planning, zoning, and service delivery.
5. **To create a baseline database** for use in preparing master plans, development strategies, and infrastructure investment planning.
6. **To support informed decision-making** for sustainable urban growth, risk reduction and improved quality of life for residents.

Scope of the study: Land use mapping in Meherpur Paurashava (municipality) can provide valuable insights into the area's development, zoning, and planning needs. The scope of land use mapping in this context would include:

1. Urban Planning and Zoning

- Identifying different land uses such as residential, commercial, industrial, and agricultural areas.
- Helping the local government in zoning regulations to manage the growth of the town effectively.
- Planning for infrastructure like roads, utilities, and public facilities.

2. Environmental Management

- Assessing green spaces, water bodies, and natural reserves.
- Identifying areas at risk of degradation and ensuring the conservation of natural resources.
- Planning for sustainable development by balancing growth with environmental protection.

3. Agricultural and Rural Development

- Mapping areas suitable for agriculture versus urban development.
- Identifying agricultural land that needs protection from urban sprawl.

Overview of Land Use in Meherpur Paurashava: The land use in Meherpur Paurashava is categorized as follows:

- **Residential:** The municipality has a variety of residential areas, ranging from single-family homes to multi-story apartments. Residential areas are mostly concentrated in the central and suburban parts of the municipality.
- **Commercial:** Commercial zones are located primarily along the main roads and in the town center. This includes retail shops, small businesses, offices, and service industries.
- **Industrial:** Meherpur Paurashava has limited industrial activity, mostly on the outskirts of the municipality. Industries are small-scale and mainly focus on agriculture-related processing.
- **Agricultural:** Surrounding Meherpur, agricultural land is used for farming and cultivation, with rice, vegetables, and fruit being the primary crops. Agricultural areas contribute significantly to the local economy.
- **Open Space/Recreational:** Meherpur has a few parks and recreational spaces, mostly in residential neighborhoods. These spaces are used for community activities and leisure.
- **Road circulation:** The municipality is connected by roads, which facilitate trade and movement between Meherpur and neighboring regions. Major roads include the Meherpur-Jhenidah highway and Meherpur-Kushtia highway.
- **Institutional:** Institutional land use includes government offices, educational institutions, and healthcare facilities, which are distributed throughout the municipality.
- **Mixed use:** Mixed-use land use refers to the development of an area that incorporates different types of land uses (residential, commercial, industrial, recreational, etc.) within the same geographic space or building. The goal is to promote more efficient use of land, reduce the need for travel, and create vibrant, walkable communities. There are many mixed use building in road side of Meherpur Paurashava.

Land Use Patterns in Meherpur Paurashava: The total land area of Meherpur Paurashava is 4,504.60 acres, and it is distributed across several categories, each serving a specific purpose for the development and well-being of the local community. Below is the breakdown of the land use:

Residential: A significant portion of the land approx. (903.40 acres) is dedicated to residential development, providing housing solutions for the growing population of Meherpur. This area is vital in accommodating families and promoting sustainable urban growth.

Mixed Use: These lands are designated for mixed-use developments, which integrate both residential and commercial properties (83.36 acres). This allows for a balanced community where people can live, work, and engage in recreational activities in proximity.

Education and Research: A portion of the land is reserved for educational institutions and research facilities, (14.40 acres) fostering the growth of knowledge and innovation within Meherpur. These spaces are crucial for developing human capital and supporting future generations.

Community Facilities: This area is designated for community services such as parks, recreational centers, and other public amenities that cater to the social needs of residents, promoting health, wellness, and social interaction approx. (11.01 acres)

Commercial: A small but important area (1.55 acres) is allocated for commercial use, supporting businesses, retail outlets, and services that contribute to the local economy and provide employment opportunities.

Administrative: This land is reserved for administrative and government functions, (45.38 acres) housing the local government offices and institutions that ensure the proper governance and management of Meherpur Paurashava.

Agriculture/Vacant Land: A significant portion of the land, 3271.70 acres, and remains dedicated to agriculture and vacant land. This area is essential for maintaining agricultural production, supporting the local economy, and potentially being used for future development as needed.

Waterbody: Waterbody consist of 32.60 acres like ponds and others and Bhairab River passed through the whole paurashava area approximately 3730.5 acres.

Road Network: Total existing road network in Meherpur paurashava is 0.05 acres.

This land use distribution ensures that Meherpur Paurashava is developed in a balanced manner, with appropriate areas for residential, commercial, educational, and recreational use while also preserving essential agricultural and vacant spaces for future growth and sustainability.

This table clearly shows the distribution of land use across different categories in Meherpur Paurashava. Here's the table for the land use distribution in Meherpur Paurashava:

The land use pattern across the wards reveals a diverse mix of residential, agricultural, mixed-use, and administrative functions. Wards 2, 3, and 6 are primarily composed of residential and mixed-use areas, indicating a blend of housing and commercial activities. Wards 4, 5, 7, and 8 are predominantly residential with significant agricultural land, suggesting a semi-urban or peri-urban character. Ward 1 features a combination of residential, mixed-use, and administrative land use, reflecting its functional diversity. Similarly, Ward 9 includes residential, agricultural, and administrative uses.

Table 1: Existing land use area of Meherpur Paurashava

| Serial no | Existing Land use category | Area(Acres) | Percentage (%) |
|-----------|----------------------------|-------------|----------------|
| 1 | Administrative | 45.38 | 1.01% |
| 2 | Agriculture | 3271.70 | 72.61% |
| 3 | Commercial | 1.55 | 0.03% |
| 4 | Community Facilities | 11.01 | 0.24% |
| 5 | Education & Research | 14.40 | 0.32% |
| 6 | Mixed Use | 83.36 | 1.85% |
| 7 | Residential | 903.40 | 20.04% |
| 8 | Road Circulation | 131.83 | 2.93% |
| 9 | Utility Service | 9.26 | 0.21% |
| 10 | Waterbody | 32.60 | 0.75% |
| | Total | 4504.60 | 100% |

Source: Prepared by Consultant, 2025

Existing land use area of Ward 1

The total area of **145.61 acres** is primarily allocated to **Agriculture** (40.89%) and **Residential** (37.89%) uses. **Administrative** areas account for **20.04%**, while **Mixed Use** and **Road Circulation** represent **5.60%** and **6.14%**, respectively. **Waterbody** covers a negligible portion at **0.00%**. This distribution reflects a focus on agricultural and residential development, with adequate infrastructure and administrative space.

Table 2: Existing land use area of Ward 1

| Serial No | Existing Land Use Category | Area (Acres) | Percentage (%) |
|-----------|----------------------------|--------------|----------------|
| 1 | Administrative | 26.40 | 20.04% |
| 2 | Agriculture | 53.86 | 40.89% |
| 3 | Mixed Use | 7.36 | 5.60% |
| 4 | Residential | 49.88 | 37.89% |
| 5 | Road Circulation | 8.08 | 6.14% |
| 6 | Waterbody | 0.0053 | 0.01% |
| — | Total | 145.61 | 100% |

Source: Prepared by Consultant, 2025

Existing land use area of Ward 2

The total area of **138.33 acres** is primarily dedicated to **Residential** use, which accounts for **64.97%**. **Agriculture** follows with **10.07%**, while **Mixed Use** represents **9.84%** of the total area. **Road Circulation** occupies **6.39%** and **Education and Research** makes up a smaller portion at **0.65%**

Table 3: Existing land use area of Ward 2

| Serial No | Existing Land Use Category | Area (Acres) | Percentage (%) |
|-----------|----------------------------|--------------|----------------|
| 1 | Education and research | 0.97 | 0.65% |
| 2 | Agriculture | 15.16 | 10.07% |
| 3 | Mixed Use | 14.80 | 9.84% |
| 4 | Residential | 97.76 | 64.97% |
| 5 | Road Circulation | 9.61 | 6.39% |
| — | Total | 138.33 | 100% |

Source: Prepared by Consultant, 2025

Existing land use area of Ward 3

The total area of **145.21 acres** is predominantly used for **Residential** purposes, which account for **69.16%**. **Agriculture** follows with **16.39%**, while **Road Circulation** covers **6.21%**. **Mixed Use** and **Waterbody** represent **2.31%** and **1.30%**, respectively. Smaller portions are allocated to **Education and Research** (0.34%), **Utility Service** (0.19%), and a minimal **Waterbody** area.

Table 4: Existing land use area of Ward 3

| Serial No | Existing Land Use Category | Area (Acres) | Percentage (%) |
|-----------|----------------------------|--------------|----------------|
| 1 | Education and research | 0.50 | 0.34% |
| 2 | Agriculture | 24.82 | 16.39% |
| 3 | Mixed Use | 3.49 | 2.31% |
| 4 | Residential | 104.72 | 69.16% |
| 5 | Road Circulation | 9.40 | 6.21% |
| 6 | Utility service | 0.28 | 0.19% |
| 7 | Waterbody | 1.97 | 1.30% |
| | Total | 145.21 | 100% |

Source: Prepared by Consultant, 2025

Existing land use area of Ward 4

The total area of **753.70 acres** is predominantly dedicated to **Agriculture**, which occupies **90.93%** of the land. **Residential** areas account for **8.89%**, while **Road Circulation** represents **1.60%**. Smaller portions are allocated to **Mixed Use** (0.35%), **Waterbody** (0.11%), **Utility Service** (0.06%), and **Education and Research** (0.10%)

Table 5: Existing land use area of Ward 4

| Serial No | Existing Land Use Category | Area (Acres) | Percentage (%) |
|-----------|----------------------------|--------------|----------------|
| 1 | Education and research | 0.79 | 0.10% |
| 2 | Agriculture | 671.65 | 90.93% |
| 3 | Mixed Use | 2.55 | 0.35% |
| 4 | Residential | 65.69 | 8.89% |
| 5 | Road Circulation | 11.78 | 1.60% |
| 6 | Utility service | 0.44 | 0.06% |
| 7 | Waterbody | 0.77 | 0.11% |
| | Total | 753.70 | 100% |

Source: Prepared by Consultant, 2025

Existing land use area of Ward 5

The total area of **1341.71 acres** is largely dedicated to **Agriculture**, which accounts for **87.69%** of the land. **Residential** areas follow, covering **9.63%**, while **Road Circulation** occupies **1.29%**. Smaller portions are allocated to **Mixed Use** (0.90%), **Waterbody** (0.15%), **Commercial** (0.07%), **Administrative** (0.17%), and **Utility Service** (0.04%)

Table 6: Existing land use area of Ward 5

| Serial No | Existing Land Use Category | Area (Acres) | Percentage (%) |
|-----------|----------------------------|--------------|----------------|
| 1 | Education and research | 0.52 | 0.04% |
| 2 | Agriculture | 1176.38 | 87.69% |
| 3 | Mixed Use | 12.02 | 0.90% |
| 4 | Residential | 129.12 | 9.63% |
| 5 | Road Circulation | 17.29 | 1.29% |
| 6 | Utility service | 0.57 | 0.04% |
| 7 | Waterbody | 2.00 | 0.15% |
| 8 | Commercial | 0.93 | 0.07% |
| 9 | Administrative | 2.29 | 0.17% |
| | Total | 1341.71 | 100% |

Source: Prepared by Consultant, 2025

Existing land use area of Ward 6

The total area of **99.69 acres** is primarily dedicated to **Residential** use, which accounts for **50.97%**. **Mixed Use** follows with **16.75%**, while **Agriculture** covers **10.64%** of the land. Other significant areas include **Road Circulation** (8.80%), **Waterbody** (5.04%), and **Community Facilities** (1.95%). Smaller portions are allocated to **Education and Research** (3.10%), **Administrative** (3.10%), and **Utility Service** (0.25%).

Table 7: Existing land use area of Ward 6

| Serial No | Existing Land Use Category | Area (Acres) | Percentage (%) |
|-----------|----------------------------|--------------|----------------|
| 1 | Education and research | 3.07 | 3.10% |
| 2 | Agriculture | 10.53 | 10.64% |
| 3 | Mixed Use | 16.59 | 16.75% |
| 4 | Residential | 50.51 | 50.97% |
| 5 | Road Circulation | 8.72 | 8.80% |
| 6 | Utility service | 0.24 | 0.25% |
| 7 | Waterbody | 4.99 | 5.04% |

| | | | |
|---|----------------------|-------|-------|
| 8 | Administrative | 3.07 | 3.10% |
| 9 | Community facilities | 1.93 | 1.95% |
| | Total | 99.69 | 100% |

Source: Prepared by Consultant, 2025

Existing land use area of Ward 7

The total area of **572.58 acres** is predominantly dedicated to **Agriculture**, which covers **67.84%** of the land. **Residential** areas account for **24.59%**, while **Road Circulation** occupies **4.53%**. Other land uses include **Mixed Use** (1.31%), **Utility Service** (1.37%), **Education and Research** (0.73%), and **Administrative** (0.68%). Smaller portions are allocated to **Waterbody** (0.37%) and **Commercial** (0.02%).

Table 8: Existing land use area of Ward 7

| Serial No | Existing Land Use Category | Area (Acres) | Percentage (%) |
|-----------|----------------------------|--------------|----------------|
| 1 | Education and research | 4.13 | 0.73% |
| 2 | Agriculture | 382.96 | 67.84% |
| 3 | Mixed Use | 7.40 | 1.31% |
| 4 | Residential | 138.84 | 24.59% |
| 5 | Road Circulation | 25.54 | 4.53% |
| 6 | Utility service | 7.70 | 1.37% |
| 7 | Waterbody | 2.06 | 0.37% |
| 8 | Administrative | 3.81 | 0.68% |
| 9 | Commercial | 0.11 | 0.02% |
| | Total | 572.58 | 100% |

Source: Prepared by Consultant, 2025

Existing land use area of Ward 8

The total area of **648.70 acres** is largely dedicated to **Agriculture**, covering **65.17%** of the land. **Residential** areas account for **9.99%**, while **Road Circulation** occupies **2.15%**. Other significant land uses include **Mixed Use** (0.91%), **Waterbody** (0.47%), and **Commercial** (0.05%). Smaller portions are allocated to **Education and Research** (0.15%) and **Administrative** (0.13%).

Table 9: Existing land use area of Ward 8

| Serial no | Existing Land use category | Area(Acres) | percentage |
|-----------|----------------------------|---------------|------------|
| 1 | Education and research | 1.26 | 0.15% |
| 2 | Agriculture | 535.05 | 65.17% |
| 3 | Mixed Use | 7.45 | 0.91% |
| 4 | Residential | 81.92 | 9.99% |
| 5 | Road Circulation | 17.66 | 2.15% |
| 6 | Commercial | 0.43 | 0.05% |
| 7 | Waterbody | 3.87 | 0.47% |
| 8 | Administrative | 1.03 | 0.13% |
| | Total | 648.70 | 100% |

Source: Prepared by Consultant, 2025

Existing land use area of Ward 9

The total area of **658.73 acres** is predominantly used for **Agriculture**, covering **56.38%** of the land. **Residential** areas account for **26.03%**, while **Mixed Use** represents **1.64%**. **Road Circulation** occupies **3.39%**, and **Waterbody** accounts for **2.28%**. Smaller portions are allocated to **Education and Research** (0.32%), **Administrative** (1.23%), and **Community Facilities** (1.28%).

Table 10: Existing land use area of Ward 9

| Serial no | Existing Land use category | Area(Acres) | percentage |
|-----------|----------------------------|---------------|------------|
| 1 | Education and research | 2.29 | 0.32% |
| 2 | Agriculture | 401.30 | 56.38% |
| 3 | Mixed Use | 11.70 | 1.64% |
| 4 | Residential | 185.24 | 26.03% |
| 5 | Road Circulation | 24.14 | 3.39 % |
| 6 | Waterbody | 16.20 | 2.28% |
| 7 | Administrative | 8.76 | 1.23% |
| 9 | Community facilities | 9.07 | 1.28% |
| | Total | 658.73 | 100% |

Source: Prepared by Consultant, 2025

The land use distribution across the total area of 4,504.60 acres reflects a predominantly agricultural landscape, with agriculture accounting for approximately 72.61% of the total land area. This suggests that the region is primarily oriented towards farming and related rural activities. Residential areas constitute the second largest land use category at 20.04%, indicating a considerable portion of land dedicated to housing and community living. Road circulation

occupies 2.93% of the area, supporting connectivity and access throughout the region. Mixed-use development accounts for 1.85%, offering a blend of residential, commercial, or institutional functions within shared spaces. Administrative land use comprises 1.01%, while community facilities and education & research occupy 0.24% and 0.32% respectively, reflecting limited but essential social infrastructure. Commercial land use is minimal, covering only 0.03% of the total area, suggesting low levels of concentrated economic or retail activity. Overall, the land use pattern highlights a rural setting with supporting infrastructure and moderate residential development, but with minimal emphasis on commercial or institutional zones.

Table 11: Ward wise land use type

| Ward no | Main type of land use |
|---------|--|
| Ward 1 | Residential,Mixed use, Administrative |
| Ward 2 | Residential,Mixed use |
| Ward 3 | Residential,Mixed use |
| Ward 4 | Agriculture, Residential |
| Ward 5 | Residential,Agriculture |
| Ward 6 | Residential,Mixed use |
| Ward 7 | Residential,Agriculture |
| Ward 8 | Residential,Agriculture |
| Ward 9 | Residential,Agriculture,Administrative |

Source: Prepared by Consultant, 2025

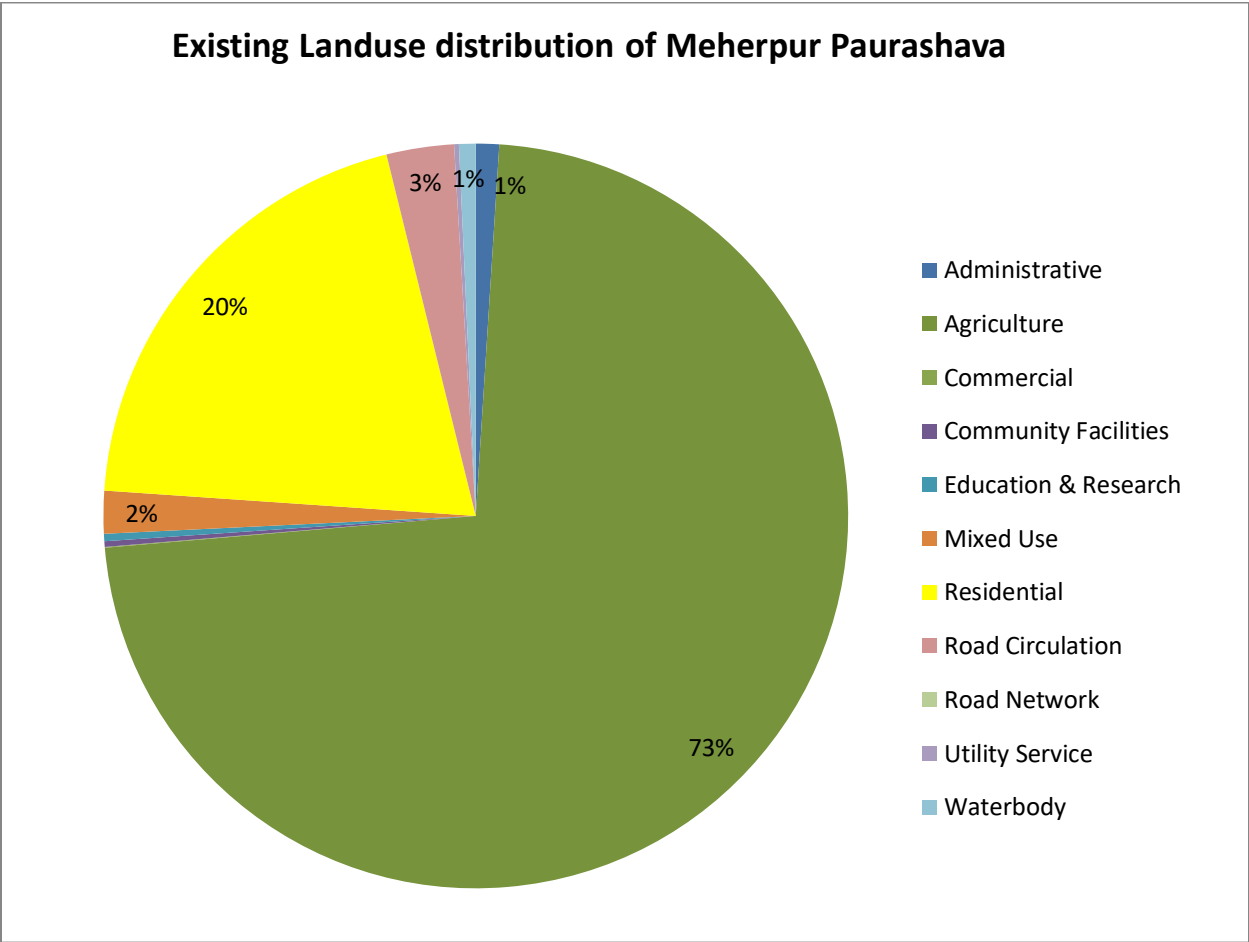


Figure 1: Existing Land use distribution of Meherpur Paurashava
Consultant, 2025

Source: Prepared by

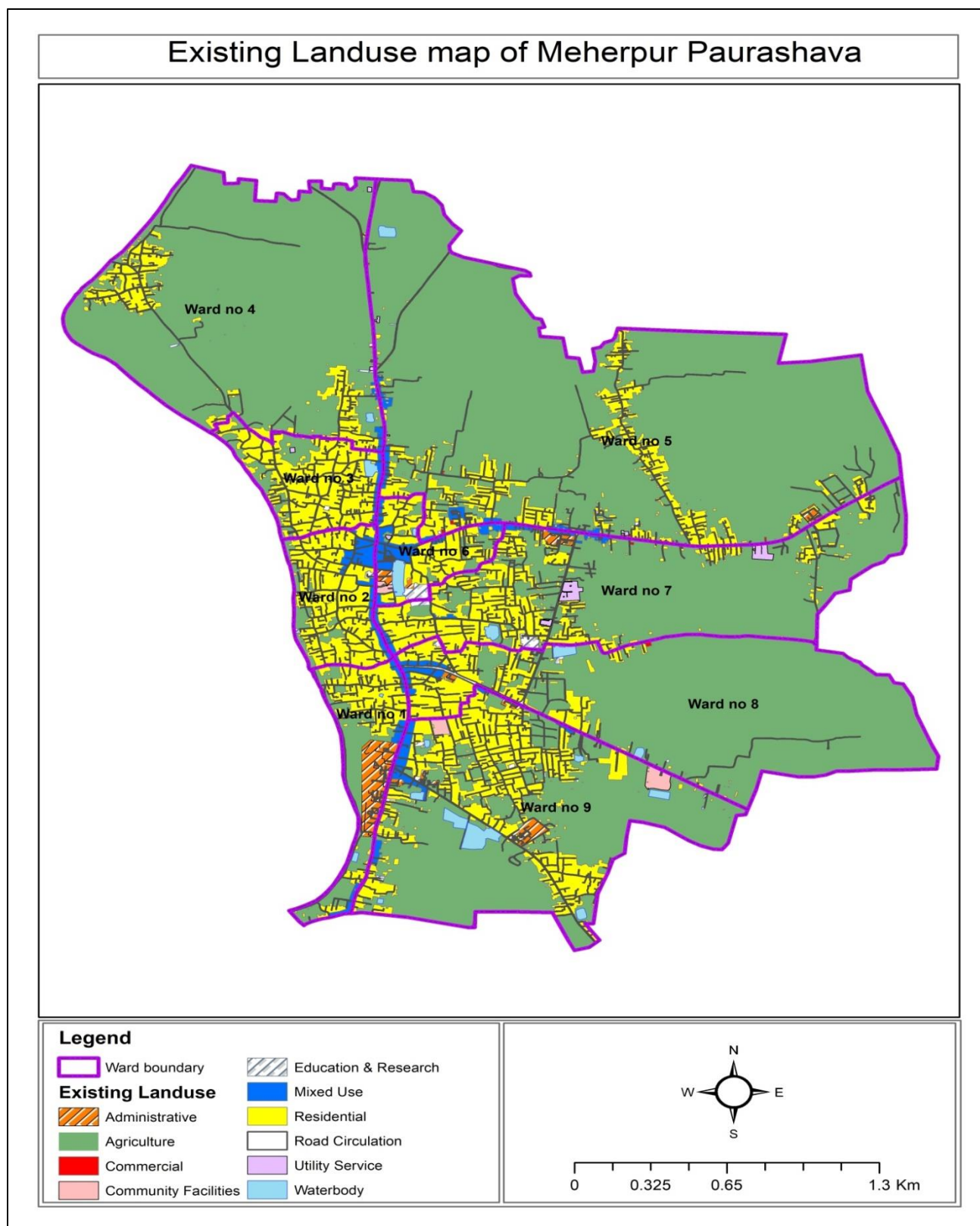


Figure 2: Existing Land use map of Meherpur Paurashava
Consultant, 2025

Source: Prepared by

Methods for Land Requirement Estimation:

Population-Based Estimates:

- Residential Land: Estimate the number of housing units needed based on population projections and average household sizes.
- Commercial/Industrial Land: Determine the required area based on anticipated economic activity and business needs.

Activity-Based Estimates:

- Agricultural Land: Calculate the area needed for crop production or livestock based on yield rates and consumption patterns.
- Infrastructure: Estimate the land needed for roads, utilities, and other infrastructure based on projected traffic volumes and service demands.

Population projection for Meherpur Paurashava: The population projection for Meherpur Paurashava from 2024 to 2046 shows significant growth, with the total population increasing from 51,663 in 2024 to 81,081 in 2046. Wards 1 and 4 exhibit the highest growth, with Ward 4 rising from 7,988 to 17,360, indicating rapid urbanization. Ward 1 also experiences substantial growth, reaching 14,626 by 2046. Wards 2, 5, and 6 show moderate but steady increases, while Wards 7, 8, and 9 have more stable populations. Notably, Ward 3 is the only ward with a declining trend, dropping from 3,256 in 2024 to 2,904 in 2046, indicating possible migration or demographic shifts. These trends highlight the uneven distribution of population growth, which may impact future urban planning and resource allocation.

Table 12: Projected Population of Meherpur Paurashava

| Ward no | Year | | | | | | | |
|---------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 2001 | 2011 | 2024 | 2026 | 2031 | 2036 | 2041 | 2046 |
| Ward 1 | 4873 | 6236 | 7599 | 9004 | 10409 | 11815 | 13220 | 14626 |
| Ward 2 | 3594 | 4136 | 4678 | 5249 | 5819 | 6390 | 6960 | 7530 |
| Ward 3 | 3443 | 3350 | 3256 | 3186 | 3115 | 3045 | 2975 | 2904 |
| Ward 4 | 4324 | 6156 | 7988 | 9863 | 11737 | 13611 | 15485 | 17360 |
| Ward 5 | 3037 | 3860 | 4683 | 5533 | 6382 | 7232 | 8081 | 8931 |
| Ward 6 | 3140 | 3511 | 3883 | 4278 | 4674 | 5069 | 5465 | 5860 |
| Ward 7 | 4890 | 6140 | 7390 | 8682 | 8724 | 8766 | 8808 | 8850 |
| Ward 8 | 3897 | 4114 | 4331 | 4576 | 4618 | 4660 | 4702 | 4744 |
| Ward 9 | 3426 | 5640 | 7855 | 10107 | 10149 | 10191 | 10233 | 10275 |
| Meherpur Paurashava Total | 34624 | 43144 | 51663 | 60478 | 65629 | 70780 | 75930 | 81081 |

Source: Prepared by Consultant, 2025

In the year 2011, **Ward 1** had the highest net population density, with **125.02 people per acre (ppa)**, followed by **Ward 4** at **93.85 ppa**, and **Ward 6** at **69.51 ppa**. These areas were considered the most densely populated in terms of residential concentration. On the other hand, **Ward 5** had the lowest net density at just **29.89 ppa**, with **Wards 3, 9, and 2** also falling into the lower density category, ranging from approximately **30 to 42 ppa**. In terms of gross density, which includes all land uses, **Ward 1** again led with **42.61 ppa**, while **Ward 5** had the lowest at just **2.878 ppa**, indicating very sparse development.

Looking ahead to the projections for 2046, **Ward 1** is expected to remain the most densely populated area, with a significant increase in net density reaching **293.22 ppa**, and a gross density of **99.85 ppa**. **Ward 4** also shows a substantial rise, with net density jumping to **264.67 ppa**, making it the second highest in terms of concentration. **Ward 6** continues to see growth, reaching **116.01 ppa** in net density. In contrast, **Ward 3** is projected to experience a decrease in both gross and net density, with net density dropping to **27.73 ppa**, suggesting possible land use changes or population decline. Despite some growth, **Ward 5** remains among the least dense, with net density only increasing to **69.16 ppa** and gross density to **6.65 ppa**.

Overall, the data indicates a trend of increasing urban density in selected wards, particularly **Wards 1, 4, and 6**, while **Wards 3 and 5** maintain relatively low densities, either due to limited development or differing planning priorities.

Table 13: Ward-wise Existing and Proposed Population Density of Meherpur Pourashava

| Ward no | 2011 | | 2046 | |
|----------|--------------------|-------------------|--------------------|-------------------|
| | Gross Density(ppa) | Net Density (ppa) | Gross Density(ppa) | Net Density (ppa) |
| 1 | 42.61 | 125.02 | 99.85 | 293.22 |
| 2 | 29.89 | 42.30 | 54.43 | 77.02 |
| 3 | 23.06 | 31.99 | 19.99 | 27.73 |
| 4 | 8.164 | 93.85 | 23.03 | 264.67 |
| 5 | 2.878 | 29.89 | 6.65 | 69.16 |
| 6 | 34.92 | 69.51 | 58.29 | 116.01 |
| 7 | 4.578 | 44.22 | 15.45 | 63.74 |
| 8 | 6.341 | 50.21 | 7.31 | 57.91 |
| 9 | 8.561 | 30.44 | 15.59 | 55.46 |

Source: Prepared by Consultant, 2025

Note: The database will be updated after receiving the final physical feature survey from the consulting firm.