



PLANNING STANDARD FORMULATION

-Standard Set-up for Paurashava

Submitted To

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1. Planning Standard Formulation

1.1 Introduction

Planning Standard is an important element in Planning. Planning standard has been set from various assessments. Population projection, existing facilities, project area, various standards used in Bangladesh etc have been analysed. This work has shown some analysis of planning standard of Mirsharai & Baroiarhat Paurashava.

1.2 Comparative Planning Standard for community facilities

There are some planning standards from various development authorities, rules & projects that are considered for comparison & that are shown in below in tabular form. Those development authorities, rules & projects that are considered are given below:

- 1. Private Residential Land Development Project Rules, 2004**
- 2. DMDP (1995) and DAP (2010) for Dhaka City**
- 3. Neighbourhood in Dhaka City**
- 4. RMDP, 2004**
- 5. KMDP, 2000**
- 6. Barishal, 2010**
- 7. Sylhet, 2010**
- 8. Chittagong City**
- 9. Rangpur City Corporation**
- 10. The District Towns Infrastructure Development Project (DTIDP)**
- 11. Upazila Towns Infrastructure Development Project (UTIDP)**
- 12. UDD**
- 13. LGED**
- 14. Purbachal New Town Project**
- 15. Mirsharai & Baroiarhat Master Plan, 2011-2031**
- 16. Time-Saver Standards for Housing & Residential Development**

There are 5 types of broad categorical facilities that are selected for comparing planning standards among above mentioned development authorities, rules & projects. Those categories are given below:

- 1. Education**
- 2. Health**
- 3. Recreation**
- 4. Socio-cultural**
- 5. Services**

Now, the tables are given below showing the comparative planning standard for community facilities in Bangladesh:

Planning standard

(in Acre/1000 popⁿ)

| Type | PRLDR, 2004 | DMDP, 1995 & DAP, 2010 | Neighbourhood (DAP) (Minimum) | RMDP, 2004 | KMDP, 2000 | Barisal, 2010 | Sylhet, 2010 | Chittagong city, 2006 | Rangpur City Corporation (Minimum) | DTIDP, 2004 | UTIDP, 2008 | UDD | LGED | Purbachal | Mirsharai & Baroiarhat master plan, 2011-2031 | Time-Saver Standard (Minimum) |
|------|-------------|------------------------|-------------------------------|------------|------------|---------------|--------------|-----------------------|------------------------------------|-------------|-------------|-----|------|-----------|---|-------------------------------|
|------|-------------|------------------------|-------------------------------|------------|------------|---------------|--------------|-----------------------|------------------------------------|-------------|-------------|-----|------|-----------|---|-------------------------------|

EDUCATION

(Area in Acre & 'F' for facility)

| | | | | | | | | | | | | | | | | |
|---------|---|------|-----|-----|-----|-----|----|---|---|---|--|----|----|---|---|--|
| Nursery | .08 (1F/ 2500 Pop ⁿ , Area: .2) | - | - | - | - | - | - | - | .1 (1F/ 2000 Pop ⁿ , Area: .2) | .08 (1F/ 5000 Pop ⁿ , Area: .4) | .05 (1F/ 10000 Pop ⁿ , Area: .5) | - | - | - | .05 (1F/ 10000 Pop ⁿ , Area: .5) | .05 (max walking distance: .125mile) |
| primary | .08 | .067 | .16 | .25 | .15 | .14 | .2 | - | .67 | .15 | .4 | .4 | .4 | - | .4 | 4.67 (max |

| | | | | | | | | | | | | | | | | |
|-----------|---|--|---|--|---|--|---|---|--|--|---|---|---|---|--|---|
| | (1F/ 2500 Pop ⁿ , Area: .3) | (1F/ 15000 Pop ⁿ , Area: 1) | (2F/ 12500 Pop ⁿ , Area: 1/F) | (1F/ 4000 Pop ⁿ , Area: 1) | (1F/ 3400 Pop ⁿ , Area: .5) | (1F/ 7000 Pop ⁿ , Area: 1) | (1F/ 5000 Pop ⁿ , Area: 1) | | (1F/ 1500 Pop ⁿ , Area: 1) | (1F/ 2000 Pop ⁿ , Area: .3) | (1F/ 5000 Pop ⁿ , Area: 2) | (1F/ 5000 Pop ⁿ , Area: 2) | (1F/ 5000 Pop ⁿ , Area: 2) | | (1F/ 5000 Pop ⁿ , Area: 2) | walking distance: .5mile) |
| Secondary | .1 (1F/ 10000 Pop ⁿ , Area: 1.2) | 1 (1F/ 20000 Pop ⁿ , Area: 2) | .12 (1F/ 12500 Pop ⁿ , Area: 1.5/F) | .33 (1F/ 6000 Pop ⁿ , Area: 2) | .3 (1F/ 5000 Pop ⁿ , Area: 1.5) | .25 (1F/ 8000 Pop ⁿ , Area: 2) | .12 (1F/ 25000 Pop ⁿ , Area: 3) | - | .3 (1F/ 5000 Pop ⁿ , Area: 1.5) | - | .25 (1F/ 20000 Pop ⁿ , Area: 5) | .25 (1F/ 20000 Pop ⁿ , Area: 5) | .25 (1F/ 20000 Pop ⁿ , Area: 5) | - | .25 (1F/ 20000 Pop ⁿ , Area: 5) | 1.8 (max walking distance: .75mile) |
| college | .08 (1F/ 15000 Pop ⁿ , Area: 1.2) | .067 (1F/ 30000 Pop ⁿ , Area: 2) | - | .33 (1F/ 6000 Pop ⁿ , Area: 2) | .3 (1F/ 5000 Pop ⁿ , Area: 1.5) | .25 (1F/ 8000 Pop ⁿ , Area: 2) | .12 (1F/ 25000 Pop ⁿ , Area: 3) | - | .2 (1F/ 15000 Pop ⁿ , Area: 3) | - | .5 (1F/ 20000 Pop ⁿ , Area: 10) | .25 (1F/ 20000 Pop ⁿ , Area: 5) | .25 (1F/ 20000 Pop ⁿ , Area: 5) | - | .5 (1F/ 20000 Pop ⁿ , Area: 10) | - |
| madrasa | - | .04 | - | - | - | - | .25 | - | - | .05 | - | .25 | .25 | - | - | - |

| | | (1F/ 25000 Pop ⁿ , Area: 1) | | | | | (1F/ 8000 Pop ⁿ , Area: 2) | | | (1F/ 20000 Pop ⁿ , Area: 1) | | | | | | |
|----------------|---|--|---|---|---|---|---|---|---|--|---|---|---|---|---|---|
| Degree college | - | - | - | .33 | .28 | - | - | - | - | .13 | - | - | - | - | - | - |
| | | | | (1F/ 30000 Pop ⁿ , Area: 10) | (1F/ 36000 Pop ⁿ , Area: 10) | | | | | (1F/ 15000 Pop ⁿ , Area: 2) | | | | | | |
| Technical | - | - | - | - | - | - | - | - | .13 | - | - | - | - | - | - | - |
| | | | | | | | | | (1F/ 15000 Pop ⁿ , Area: 2) | | | | | | | |

Table 01: Comparative Planning Standard for Educational Institutions

Source: Developing planning standard for community facilities: A study in the context of urban areas in Bangladesh (Thesis), Time Saver Standard, Mirsharai & Baroiarhat Paurashava Master Plan (2011-2031)

Planning standard

(in Acre/1000 popⁿ)

| Type | PRLDR, 2004 | DMDP, 1995 & DAP, 2010 | Neighbourhood (DAP) (Minimum) | RMDP, 2004 | KMDP, 2000 | Barishal, 2010 | Sylhet, 2010 | Chittagong city, 2006 | Rangpur City Corporation (Minimum) | DTIDP, 2004 | UTIDP, 2008 | UDD | LGED | Purbachal | Mirsharai & Baroiarhat master plan, 2011-2031 | Time-Saver Standard (Minimum) |
|------|-------------|------------------------|-------------------------------|------------|------------|----------------|--------------|-----------------------|------------------------------------|-------------|-------------|-----|------|-----------|---|-------------------------------|
|------|-------------|------------------------|-------------------------------|------------|------------|----------------|--------------|-----------------------|------------------------------------|-------------|-------------|-----|------|-----------|---|-------------------------------|

HEALTH

(Area in Acre & 'F' for facility)

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|--|---|---|---|--|---|
| Small clinic/ Clinic/ Health centre | .04 (1F/ 15000 pop ⁿ , area: .6) | - | - | - | - | - | - | - | .06 (1F/ 5000 pop ⁿ , area: .3) | .12 (1F/ 5000 pop ⁿ , area: .6) | .2 (1F/ 5000 pop ⁿ , area: 1) | .2 (1F/ 5000 pop ⁿ , area: 1) | .2 (1F/ 5000 pop ⁿ , area: 1) | - | .2 (1F/ 5000 Pop ⁿ , Area: 1) | - |
|---|---|---|---|---|---|---|---|---|---|---|--|---|---|---|--|---|

| | | | | | | | | | | | | | | | | |
|-----------------|--|---|---|---|---|---|---|---|--|--|---|--|--|------------|---|---|
| Hospital | .04 | - | - | - | - | - | - | - | .04 max | .04 | - | .25 | .25 | .06 | - | - |
| | (1F/ 100000 pop ⁿ , area: 4) | | | | | | | | (1F/ 250000 pop ⁿ , area: 10) | (1F/ 100000 pop ⁿ , area: 4) | | (1F/ 20000 pop ⁿ , area: 5) | (1F/ 20000 pop ⁿ , area: 5) | | | |

Table 02: Comparative Planning Standard for Health Facilities

Source: Developing planning standard for community facilities: A study in the context of urban areas in Bangladesh (Thesis), Time Saver Standard, Mirsharai & Baroiarhat Paurashava Master Plan (2011-2031)

Planning standard
(in Acre/1000 popⁿ)

| Type | PRLDR, 2004 | DMDP, 1995 & DAP, 2010 | Neighbour- hood (DAP) (Minimum) | RMDP, 2004 | KMDP, 2000 | Barishal, 2010 | Sylhet, 2010 | Chittagong city, 2006 | Rangpur City Corporation (Minimum) | DTIDP, 2004 | UTIDP, 2008 | UDD | LGED | Purbachal | Mirsharai & Baroiarhat master plan, 2011-2031 | Time- Saver Standard (Minimum) |
|------|----------------|---------------------------------|--|---------------|---------------|-------------------|-----------------|--------------------------|---|----------------|----------------|-----|------|-----------|--|---|
|------|----------------|---------------------------------|--|---------------|---------------|-------------------|-----------------|--------------------------|---|----------------|----------------|-----|------|-----------|--|---|

RECREATION

(Area in Acre & 'F' for facility)

| | | | | | | | | | | | | | | | | |
|---------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|
| Playlot | - | - | - | - | - | - | - | - | .5 (1F/ 200 pop ⁿ , Area: .1) | - | - | - | - | - | - | .5 (service radius: .25 mile) |
|---------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|--|

| | | | | | | | | | | | | | | | | |
|---------------------------|---|---|---|--|--|--|---|----------|--|---|---|---|---|------------|---|--|
| | | | | | | | | | | | | | | | | |
| Playground | .08 (1F/ 2500 popⁿ, Area: .5) | - | .16 (2F/ 12500 popⁿ, Area: 1/F) | - | - | - | .08 (1F/ 25000 popⁿ, Area: 2) | - | .5 (1F/ 30000 popⁿ, Area: 1.5) | .08 (1F/ 25000 popⁿ, Area: 2) | .15 (1F/ 20000 popⁿ, Area: 3) | .15 (1F/ 20000 popⁿ, Area: 3) | .15 (1F/ 20000 popⁿ, Area: 3) | .07 | .15 (1F/ 20000 Popⁿ, Area: 3) | 2 (service radius: .5 mile) |
| Park/ Eco park | .12 (1F/ 2500 popⁿ, Area: .5) | .16 (1F/ 25000 popⁿ, Area: 4) | .024 (1F/ 12500 popⁿ, Area: .3) | 1.5 (1F/ 1000 popⁿ, Area: 1.5) | 2 (1F/ 1000 popⁿ, Area: 2) | 1 (1F/ 1000 popⁿ, Area: 1) | .12 (1F/ 25000 popⁿ, Area: 3) | - | - | .2 (1F/ 10000 popⁿ, Area: 2) | 1 (1F/ 1000 popⁿ, Area: 1) | 1 (1F/ 1000 popⁿ, Area: 1) | 1 (1F/ 1000 popⁿ, Area: 1) | .01 | 1 (1F/ 1000 popⁿ, Area: 1) | - |

| | | | | | | | | | | | | | | | | |
|---------------------------------|---|---|---|---|---|---|---|--|---|--|--|------|------|-----------------------|--|--|
| Neighbour- Hood park | - | - | - | - | - | - | - | .2 (1F/ 5000 pop ⁿ , Area: 1) | .33 (1F/ 1500 pop ⁿ , Area: .5) | .2 (1F/ 10000 pop ⁿ , Area: 2) | 1 (1F/ 1000 pop ⁿ , Area: 1) | - | - | .04 (play lot) | 1 (1F/ 1000 pop ⁿ , Area: 1) | 2 (service radius: .5 mile) |
| City park | - | - | - | - | - | - | - | .5 (1F/ 10000 pop ⁿ , Area: 5) | - | - | - | - | - | - | - | - |
| Regional park | - | - | - | - | - | - | - | .25 (1F/ 20000 pop ⁿ , Area: 5) | - | - | - | - | - | - | - | - |
| Cinema hall | - | - | - | - | - | - | - | - | .012 | .02 | .05 | .025 | .025 | - | .05 | - |

| | | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|---|---|--|---|---|--|---|--|
| | | | | | | | | | (1F/ 25000 pop ⁿ , Area: .3) | (1F/ 25000 pop ⁿ , Area: .5) | (1F/ 20000 pop ⁿ , Area: 1) | (1F/ 20000 pop ⁿ , Area: .5) | (1F/ 20000 pop ⁿ , Area: .5) | | (1F/ 20000 pop ⁿ , Area: 1) | |
|--|--|--|--|--|--|--|--|--|---|---|--|---|---|--|---|--|

Table 03: Comparative Planning Standard for Recreational Facilities

Source: Developing planning standard for community facilities: A study in the context of urban areas in Bangladesh (Thesis), Time Saver Standard, Mirsharai & Baroiarhat Paurashava Master Plan (2011-2031)

**Planning standard
(in Acre/1000 popⁿ)**

| Type | PRLDR, 2004 | DMDP, 1995 & DAP, 2010 | Neighbourhood (DAP) (Minimum) | RMDP, 2004 | KMDP, 2000 | Barishal, 2010 | Sylhet, 2010 | Chittagong city, 2006 | Rangpur City Corporation (Minimum) | DTIDP, 2004 | UTIDP, 2008 | UDD | LGED | Purbachal | Mirsharai & Baroiarhat master plan, 2011-2031 | Time-Saver Standard (Minimum) |
|------|-------------|------------------------|-------------------------------|------------|------------|----------------|--------------|-----------------------|------------------------------------|-------------|-------------|-----|------|-----------|---|-------------------------------|
|------|-------------|------------------------|-------------------------------|------------|------------|----------------|--------------|-----------------------|------------------------------------|-------------|-------------|-----|------|-----------|---|-------------------------------|

SOCIO-CULTURAL

(Area in Acre & 'F' for facility)

| | | | | | | | | | | | | | | | | |
|--------|--|--|--|---|---|---|---|---|---|---|---|---|---|------|---|-----|
| Mosque | .04 | .05 | .032 | - | - | - | - | - | .13 | .01 | .025 | .025 | .025 | .026 | .025 | 2.5 |
| | (1F/ 2500 pop ⁿ , Area: .1) | (1F/ 6000 pop ⁿ , Area: .3) | (2F/ 12500 pop ⁿ , Area: .2/F) | | | | | | (1F/ 1500 pop ⁿ , Area: .2) | (1F/ 10000 pop ⁿ , Area: .1) | (1F/ 20000 pop ⁿ , Area: .5) | (1F/ 20000 pop ⁿ , Area: .5) | (1F/ 20000 pop ⁿ , Area: .5) | | (1F/ 20000 pop ⁿ , Area: .5) | |

| | | | | | | | | | | | | | | | | |
|-------------------------|---|-----------------------------|--|--|----------|-----------------------------|---|----------|--|---|---|--|--|------------|---|----------|
| | | | | | | | | | | | | | | | | |
| Community centre | .04 (1F/ 2500 popⁿ, Area: .1) | (1F/ ward, Area: .3) | .026 (1F/ 12500 popⁿ, Area: .33) | (1F/ neighbourhood, Area: .3) | - | (1F/ ward, Area: .3) | .015 (1F/ 20000 popⁿ, Area: .3) | - | .03 (Desired) (1F/ 50000 popⁿ, Area: .5) | .05 (1F/ 20000 popⁿ, Area: 1) | .05 (1F/ 20000 popⁿ, Area: 1) | .05 (1F/ 20000 popⁿ, Area: 1) | .05 (1F/ 20000 popⁿ, Area: 1) | - | .05 (1F/ 20000 popⁿ, Area: 1) | - |
| Graveyard | - | (1F/ ward, Area: 2) | - | .1 (1F/ 50000 popⁿ, Area: 5) | - | - | .25 (1F/ 20000 popⁿ, Area: 5) | - | .1 (1F/ 30000 popⁿ, Area: 3) | .25 (1F/ 20000 popⁿ, Area: 5) | .05 (1F/ 20000 popⁿ, Area: 1) | .03 (1F/ 20000 popⁿ, Area: .6) | .03 (1F/ 20000 popⁿ, Area: .6) | .21 | .05 (1F/ 20000 popⁿ, Area: 1) | - |

| | | | | | | | | | | | | | | | | |
|--------|---|---|---|---|---|---|---|---|---|---|--|---|---|------|--|---|
| Eidgah | - | - | - | - | - | - | - | - | - | .025 | .05 | .025 | .025 | .004 | .05 | - |
| | | | | | | | | | | (1F/ 20000 pop ⁿ , Area: .5) | (1F/ 20000 pop ⁿ , Area: 1) | (1F/ 20000 pop ⁿ , Area: .5) | (1F/ 20000 pop ⁿ , Area: .5) | | (1F/ 20000 pop ⁿ , Area: 1) | |

Table 04: Comparative Planning Standard for Socio-Cultural Facilities

Source: Developing planning standard for community facilities: A study in the context of urban areas in Bangladesh (Thesis), Time Saver Standard, Mirsharai & Baroiarhat Paurashava Master Plan (2011-2031)

| Planning standard (in Acre/1000 pop ⁿ) | | | | | | | | | | | | | | | | |
|---|----------------|---|--|---|---------------|-------------------|---|--------------------------|---|--|---|---|---|-----------|---|---|
| Type | PRLDR, 2004 | DMDP, 1995 & DAP, 2010 | Neighbour- hood (DAP) (Minimum) | RMDP, 2004 | KMDP, 2000 | Barishal, 2010 | Sylhet, 2010 | Chittagong city, 2006 | Rangpur City Corporation (Minimum) | DTIDP, 2004 | UTIDP, 2008 | UDD | LGED | Purbachal | Mirsharai & Baroiarhat master plan, 2011- 2031 | Time- Saver Standard (Minimum) |
| Services (Area in Acre & 'F' for facility) | | | | | | | | | | | | | | | | |
| Post office | - | .003 (1F/ 35000 pop ⁿ , Area: .1) | .0004 (1F/ 12500 pop ⁿ , Area: .005) | .025 (1F/ 20000 pop ⁿ , Area: .5) | - | - | .0025 (1F/ 20000 pop ⁿ , Area: .05) | - | - | .02 (1F/ 20000 pop ⁿ , Area: .4) | .025 (1F/ 20000 pop ⁿ , Area: .5) | .025 (1F/ 20000 pop ⁿ , Area: .5) | .025 (1F/ 20000 pop ⁿ , Area: .5) | - | .025 (1F/ 20000 pop ⁿ , Area: .5) | - |
| Bus terminal | - | - | - | - | - | - | - | - | - | .03 (1F/ 100000 pop ⁿ , Area: 3) | .05 (1F/ 20000 pop ⁿ , Area: 1) | .05 (1F/ 20000 pop ⁿ , Area: 1) | .05 (1F/ 20000 pop ⁿ , Area: 1) | - | .05 (1F/ 20000 pop ⁿ , Area: 1) | - |
| Fire station | - | (1F/ 4 wards, Area: 1) | - | - | - | - | - | - | - | 50 decimal for "A" Category; 30 decimal for "B" Category (Minimum) | .05 (1F/ 20000 pop ⁿ , Area: 1) | .05 (1F/ 20000 pop ⁿ , Area: 1) | .05 (1F/ 20000 pop ⁿ , Area: 1) | .02 | .05 (1F/ 20000 pop ⁿ , Area: 1) | - |

Table 05: Comparative Planning Standard for Services

Source: Developing planning standard for community facilities: A study in the context of urban areas in Bangladesh (Thesis), Time Saver Standard, Mirsharai & Baroiarhat Paurashava Master Plan (2011-2031)

1.3 Assessment of Population & Area for Finding Relation with Paurashava Level Planning Standard:

| Plan or Authority | Population | Area |
|--------------------------|------------------|--------------|
| Mirsharai Paurashava | 16218 | 1895.49 Acre |
| Baroiarhat Paurashava | 11602 | 526. 08 Acre |
| | | |
| PRLDR, 2004 | 3500 | 10 Acre |
| DMDP | 1751925 | 533994 Acre |
| DAP (Neighbourhood) | 12500 | 50 Acre |
| RMDP | 878500 | 23890 Acre |
| KMDP | 294255 | 90755 Acre |
| Rangpur City Corporation | 120000 | 50677 Acre |
| Purbachal | - | 6150 Acre |
| | | |
| DTIDP & UTIDP | Paurashava Level | |
| UDD & LGED | Upazila Level | |

*Green= Considered & Yellow= Related to Considered

Table 06: Finding the related Plan or Authority with population & area to Paurashava level

Source: Internet

1.4 Population projection with linear method:

Linear Method formula:

$$P_{t+n} = P_t(1+r)^n$$

Here,

P_{t+n} = Projected population

P_t = Current year population

r = growth rate (.01, high rate, 20 years interval)

n = year interval

| Mirsharai Upazila | | | | | | |
|------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 2011 | 2016 | 2021 | 2026 | 2031 | 2036 | 2041 |
| 398716 | 419055 | 440431 | 462897 | 486509 | 511326 | 537409 |
| Mirsharai Paurashava | | | | | | |
| 2011 | 2016 | 2021 | 2026 | 2031 | 2036 | 2041 |
| 16218 | 17045 | 17915 | 18829 | 19789 | 20798 | 21859 |
| Baroiarhat Paurashava | | | | | | |
| 2011 | 2016 | 2021 | 2026 | 2031 | 2036 | 2041 |
| 11602 | 12194 | 12816 | 13470 | 14157 | 14879 | 15638 |

Table 07: Population Projection of Total Population

Source: BBS

| Age group | Mirsharai Upazila | | | | | | |
|------------------|--------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | 2011 | 2016 | 2021 | 2026 | 2031 | 2036 | 2041 |
| (3-5) | 27136 | 28520 | 29975 | 31504 | 33111 | 34800 | 36575 |
| (6-10) | 49574 | 52103 | 54761 | 57554 | 60490 | 63575 | 66818 |
| (11-14) | 37340 | 39245 | 41247 | 43351 | 45562 | 47886 | 50329 |
| (15-19) | 42898 | 45086 | 45998 | 47631 | 49322 | 51073 | 52886 |
| (20-24) | 37402 | 39310 | 38730 | 38730 | 38730 | 38730 | 38730 |
| (25-29) | 33436 | 35142 | 36934 | 38818 | 40798 | 42879 | 45067 |
| Total | 227786 | 239405 | 247644 | 257588 | 268013 | 278944 | 290405 |

| Age group | Mirsharai Paurashava | | | | | | |
|--------------|-----------------------|------|-------|-------|-------|-------|-------|
| | 2011 | 2016 | 2021 | 2026 | 2031 | 2036 | 2041 |
| (3-5) | 1029 | 1081 | 1137 | 1195 | 1256 | 1320 | 1387 |
| (6-10) | 1931 | 2030 | 2133 | 2242 | 2356 | 2476 | 2603 |
| (11-14) | 1469 | 1544 | 1623 | 1705 | 1792 | 1884 | 1980 |
| (15-19) | 1796 | 1888 | 1984 | 2085 | 2191 | 2303 | 2421 |
| (20-24) | 1573 | 1653 | 1738 | 1826 | 1919 | 2017 | 2120 |
| (25-29) | 1415 | 1487 | 1563 | 1643 | 1727 | 1815 | 1907 |
| Total | 9213 | 9683 | 10177 | 10696 | 11242 | 11815 | 12418 |
| | | | | | | | |
| Age group | Baroiarhat Paurashava | | | | | | |
| | 2011 | 2016 | 2021 | 2026 | 2031 | 2036 | 2041 |
| (3-5) | 794 | 835 | 877 | 922 | 969 | 1018 | 1070 |
| (6-10) | 1400 | 1471 | 1546 | 1625 | 1708 | 1795 | 1887 |
| (11-14) | 1059 | 1113 | 1170 | 1229 | 1292 | 1358 | 1427 |
| (15-19) | 1269 | 1334 | 1402 | 1473 | 1548 | 1627 | 1710 |
| (20-24) | 1327 | 1395 | 1466 | 1541 | 1619 | 1702 | 1789 |
| (25-29) | 1072 | 1127 | 1184 | 1245 | 1308 | 1375 | 1445 |
| Total | 6921 | 7274 | 7645 | 8035 | 8445 | 8876 | 9328 |

Table 08: Population Projection of School-Going Population

Source: BBS

1.5 Number of Existing facilities

| Facilities | | Number of existing Facilities |
|------------------|--------------------------------|-------------------------------|
| EDUCATION | Nursery | - |
| | Primary | 183 |
| | Nursery+ Primary | - |
| | Secondary (1-10) | 48 |
| | College (1-12) | - |
| | College (11-12) | 6 |
| | Madrasa | 27 |
| | Degree College or Technical | - |

| | | |
|----------------------|---------------------------------------|-----|
| Health | Small clinic/ Clinic/Health centre | 1 |
| | Hospital | 14 |
| Recreation | Playlot | - |
| | Playground | - |
| | Park/ Eco park | - |
| | Neighbourhood park | - |
| | Cinema hall | - |
| Socio-Culture | Mosque | 520 |
| | Community centre | - |
| | Graveyard | - |
| | Eidgah | - |
| Service | Post office | 30 |
| | Bus terminal | - |
| | Fire station | - |

| | | |
|--|-------|----|
| | Bazar | 33 |
|--|-------|----|

Table 09: Number of Existing Facilities Mirsharai Upazila

Source: Internet

| Facilities | | Number of existing Facilities |
|-------------------|---------------------|--------------------------------------|
| EDUCATION | Nursery | 1 |
| | Primary | 6 |
| | Nursery+ Primary | - |
| | Secondary (1-10) | 3 |
| | College (1-12) | 1 |
| | College (11-12) | 1 |
| | Madrasa | 12 |

| | | |
|----------------------|---------------------------------------|----|
| | Degree College or Technical | - |
| Health | Small clinic/ Clinic/Health centre | 3 |
| | Hospital | 2 |
| Recreation | Playlot | - |
| | Playground | - |
| | Park/ Eco park | - |
| | Neighbourhood park | - |
| | Cinema hall | - |
| Socio-Culture | Mosque | 23 |
| | Community centre | - |
| | Graveyard | - |
| | Eidgah | 5 |
| Service | Post office | - |
| | Bus terminal | - |

| | | |
|--|--------------|---|
| | Fire station | - |
| | Bazar | 2 |

Table 10: Number of Existing Facilities Mirsharai Paurashava

Source: Internet

| Facilities | | Number of existing Facilities |
|-------------------|------------------------------------|--------------------------------------|
| EDUCATION | Nursery | - |
| | Primary | 5 |
| | Nursery+ Primary | - |
| | Secondary (1-10) | 3 |
| | College (1-12) | - |
| | College (11-12) | - |
| | Madrasa | 3 |
| | Degree College or Technical | 1 |
| Health | Small clinic/ Clinic/Health centre | 1 |
| | Hospital | 2 |

| | | |
|----------------------|--------------------|-----------|
| Recreation | Playlot | - |
| | Playground | - |
| | Park/ Eco park | - |
| | Neighbourhood park | - |
| | Cinema hall | - |
| Socio-Culture | Mosque | 11 |
| | Community centre | - |
| | Graveyard | 12 |
| | Eidgah | - |
| Service | Post office | - |
| | Bus terminal | 1 |
| | Fire station | - |
| | Bazar | 2 |

Table 11: Number of Existing Facilities Baroiarhat Paurashava

Source: Internet

1.6 FACILITY NEEDED ACCORDING TO PAURASHAVA ACT, 2009

According to Paurashava Act, 2009, some of the facilities have to be in the Paurashava area.

Those are given below:

1. Bus stand,
2. Katcha bazar,
3. Primary school,
4. Clinic,
5. Fire services,
6. Graveyard,
7. Playground,
8. Park etc.

1.7 FINALYSED PLANNING STANDARD

To set-up planning standard for Mirsharai & Baroiarhat Paurashava, some of the consideration have been keep in mind, such as, 'Minimum Land for Optimum Population', 'Existing Facilities' etc.

Planning standards are fixed up with the help of assessment of other planning standard used for various plan or authorities. Those planning standards that are finalised for Mirsharai & Baroiarhat Paurashava are given below:

| Planning standard (EDUCATION) | | Comments |
|--|---|---|
| Nursery | <ul style="list-style-type: none"> • .1 Acre/1000popⁿ • 1F/2000 Popⁿ, • Total Area: .2 Acre • Distance from home= .5 km | Adopt from Rangpur City Corporation and PRLDR |
| Primary | <ul style="list-style-type: none"> • .15 Acre/1000popⁿ • 1F/2000 Popⁿ, • Total Area: .3 Acre • School Building= 3000 sq. ft. or .07 Acre • Playlot= .2 Acre • Distance from home= .5 km | Adopt from Directorate of Primary Education Rangpur City Corporation and DTIDP 2004 |
| Nursery+ Primary | <ul style="list-style-type: none"> • .15 Acre/1000popⁿ • 1F/2000 Popⁿ, • School Building= 4000 (3000+1000) sq. ft. or .09 Acre • Total Area: .3 Acre • Playlot= .2 Acre • Distance from home= .5 km | Adopt from Directorate of Primary Education, PRLDR, DTIDP 2004 and Rangpur City Corporation |

| | | |
|------------------------------------|--|--|
| <p>Secondary (1-10)</p> | <ul style="list-style-type: none"> • .24 Acre/1000popⁿ • 1F/5000 Popⁿ, • School Building= 9000 sq. ft. or .2 Acre • Total Area: 1.2 Acre • Playground= 1 Acre • Distance from home= 1.5 km | <p>Adopt from Rangpur City Corporation, PRLDR, KMDP 2000, Directorate of Primary Education</p> |
| <p>College (1-12)</p> | <ul style="list-style-type: none"> • .1 Acre/1000popⁿ • 1F/15000 Popⁿ, • School Building= 15000 sq. ft. or .35 Acre • Total Area: 1.5 Acre • Playground= 1 Acre • Distance from home= 1.5 km | <p>Adopt from Directorate of Primary Education, PRLDR and Rangpur City Corporation</p> |
| <p>College (11-12)</p> | <ul style="list-style-type: none"> • .125 Acre/1000popⁿ • 1F/8000 Popⁿ, • School Building= 6000 sq. ft. or .14 Acre • Total Area: 1 Acre • Playground= .8 Acre • Distance from home= 3 km | <p>Adopt from Directorate of Primary Education, Barishal 2010 and Rangpur City Corporation</p> |

| | | |
|------------------------------------|---|---|
| Madrasa | <ul style="list-style-type: none"> • .15 Acre/1000popⁿ • 1F/10000 Popⁿ, • Total Area: 1.5 Acre • Distance from home= 1.5 km | Adopt from DAP 2010, Sylhet 2010 and Rangpur City Corporation |
| Degree College or Technical | <ul style="list-style-type: none"> • .13 Acre/1000popⁿ • 1F/15000 Popⁿ, • Total Area: 2 Acre • Distance from home= 3 km | Adopt from Rangpur City Corporation and DTIDP 2004 |

Table 12: Planning Standard for Mirsharai &Baroiarhat Paurashava (Education)

| Planning standard (Health) | | Comments |
|---|--|---|
| Small clinic/ Clinic/Health centre | <ul style="list-style-type: none"> • .04 acre/ 1000 popⁿ • 1F/ 7500 popⁿ, • Total area: .3 acre • Distance from home= 1 km | Adopt from PRLDR and Rangpur City Corporation |
| Hospital/ Upzilla Health Complex | <ul style="list-style-type: none"> • .2 acre/ 1000 popⁿ • 1F/ 20000 popⁿ, • Total area 4 acre | Adopt from UDD and PRLDR |

Table 13: Planning Standard for Mirsharai &Baroiarhat Paurashava (Health Facilities)

| Planning standard (Recreation) | | Comments |
|---|--|---|
| Playlot | <ul style="list-style-type: none"> • .5 acre/ 1000 popⁿ • 1F/200 popⁿ, • Total area: .1 acre | Adopt from Rangpur City Corporation |
| Playground | <ul style="list-style-type: none"> • .08 acre/ 1000 popⁿ • 1F/12500 popⁿ, • Total Area: 1 acre • Distance from home=0.5 km | Adopt from Sylhet, 2010 |
| Park/ Eco park | <ul style="list-style-type: none"> • .1 acre/ 1000 popⁿ • 1F/10000 popⁿ, • Total Area: 1 acre • Distance from home= 1 km | Adopt from PRLDR and Chittagong City 2006 |
| Neighbourhood park | <ul style="list-style-type: none"> • .2 acre/ 1000 popⁿ • 1F/2500 popⁿ, • Area: .5 acre • Distance from home=0.5 km | Adopt from Chittagong City 2006 |
| Cinema hall | <ul style="list-style-type: none"> • .025 acre/ 1000 popⁿ • 1F/20000 popⁿ • Area: .5 acre | Adopt from UDD |

Table 14: Planning Standard for Mirsharai & Baroiarhat Paurashava (Recreational Facilities)

| Planning standard (Service) | | Comments |
|--|--|-------------------------|
| Post office | <ul style="list-style-type: none"> • .0025 acre/ 1000 popⁿ • 1F/ 20000 popⁿ, • Total Area: .05 acre | Adopt from Sylhet, 2010 |
| Bus terminal | <ul style="list-style-type: none"> • .05 acre/ 1000 popⁿ • 1F/ 20000 popⁿ • Total Area:1 acre | Adopt from UDD |

| | | |
|---------------------|--|-----------------------|
| Fire station | <ul style="list-style-type: none"> • .05 acre/ 1000 popⁿ • 1F/ 20000 popⁿ • Total Area:1 acre • Distance from residential area 10 km | Adopt from UDD |
| Bazar | <ul style="list-style-type: none"> • .03 acre/ 1000 popⁿ • 1F/ 10000 popⁿ • Total Area:.3 acre • Distance from residential area 1.5 km | Adopt from DTIDP 2004 |

Table 15: Planning Standard for Mirsharai &Baroiarhat Paurashava (Services)

| Planning standard (Socio-Culture) | | Comments |
|--|--|--|
| Mosque | <ul style="list-style-type: none"> • .02 acre/ 1000 popⁿ • 1F/5000 popⁿ, • Total Area: .1 acre • Distance from home= .5 km | Adopt from DTIDP,2004 and Rangpur City Corporation |
| Community centre | <ul style="list-style-type: none"> • .015 acre/ 1000 popⁿ • 1F/20000 popⁿ, • Total Area: .3 acre | Adopt from Sylhet, 2010 |
| Graveyard | <ul style="list-style-type: none"> • .03 acre/ 1000 popⁿ • 1F/10000 popⁿ, • Total Area: .3 acre | Adopt from UDD |
| Eidgah | <ul style="list-style-type: none"> • .025 acre/ 1000 popⁿ • 1F/20000 popⁿ, • Total Area: .5 acre | Adopt from UDD |

Table 16: Planning Standard for Mirsharai &Baroiarhat Paurashava (Socio-Cultural Facilities)

1.8 Walking distance analysis

The finalised standard for Paurashava is compared with the standard of Bhandaria Paurashava made by UDD in 2013 and Time Saver Standard. The table showing below will help to understand the comparative results for walking distance.

| Criteria | UDD,2013 (Bhandaria Paurashava) | Time Saver Standard | Finalised standard for Paurashava |
|--------------------|---------------------------------------|------------------------|--------------------------------------|
| | Walking distance (km) | | |
| Primary School | 0.25-0.5 | .4-.8 | .5 |
| High School | 0.5-0.75 | 1.60 | 1.5 |
| College/University | 0.5-1 | 30-45 min | 1.5-3.0 |
| Kacha Bazar | 0.25-0.50 | - | 1.5 |
| Clinic | 0.25 | - | 1 |
| General Hospital | 0.5 | 45 min | |
| Park | 0.5-0.75 | - | 1 |
| Playground | 0.25 | 30 min | .5 |
| Religious | - | 1.6 | .5 |

Table 17: Walking Distance Analysis

Source: Bhandaria Paurashava, Time Saver Standard

1.9 Demand analysis

In this analytical part, the below table shows the number of additional facilities according to the finalised planning standard for Mirsharai & Baroiarhat Paurashava with the consideration of projected population up to 2041. The existing facilities also analysed for counting the final output.

| Facilities | | Number of existing Facilities | Standard (acre/pop ⁿ per Facility) | Year | | | | | | |
|------------|------------------|-------------------------------|---|--------------------------|-------|-------|-------|-------|-------|-------|
| | | | | 2011 | 2016 | 2021 | 2026 | 2031 | 2036 | 2041 |
| | | | | Population | | | | | | |
| | | | | 16218 | 17045 | 17915 | 18829 | 19789 | 20798 | 21859 |
| | | | | Demand (Facility needed) | | | | | | |
| EDUCATION | Nursery | 1 | .2/2000 | 8.11 | 8.52 | 8.96 | 9.41 | 9.89 | 10.40 | 10.93 |
| | Primary | 6 | .3/2000 | 8.11 | 8.52 | 8.96 | 9.41 | 9.89 | 10.40 | 10.93 |
| | Nursery+ Primary | | .3/2000 | 8.11 | 8.52 | 8.96 | 9.41 | 9.89 | 10.40 | 10.93 |
| | Secondary (1-10) | 3 | 1.2/5000 | 3.24 | 3.41 | 3.58 | 3.77 | 3.96 | 4.16 | 4.37 |
| | College (1-12) | 1 | 1.5/15000 | 1.08 | 1.14 | 1.19 | 1.26 | 1.32 | 1.39 | 1.46 |
| | College (11-12) | 1 | 1/8000 | 2.03 | 2.13 | 2.24 | 2.35 | 2.47 | 2.60 | 2.73 |
| | Madrasa | 12 | 1.5/10000 | 1.62 | 1.70 | 1.79 | 1.88 | 1.98 | 2.08 | 2.19 |

| | | | | | | | | | | |
|----------------------|---|----|----------|-------|-------|-------|-------|-------|-------|-------|
| | Degree College or Technical | | 2/15000 | 1.08 | 1.14 | 1.19 | 1.26 | 1.32 | 1.39 | 1.46 |
| | | | | | | | | | | |
| Health | Small clinic/ Clinic/Health centre | 3 | .3/7500 | 1.55 | 1.63 | 1.71 | 1.80 | 1.89 | 1.98 | 2.09 |
| | Hospital | 2 | 4/20000 | 0.58 | 0.61 | 0.64 | 0.67 | 0.71 | 0.74 | 0.78 |
| Recreation | Playlot | | .1/200 | 58.01 | 60.97 | 64.08 | 67.35 | 70.78 | 74.39 | 78.19 |
| | Playground | | 1/12500 | 0.93 | 0.98 | 1.03 | 1.08 | 1.13 | 1.19 | 1.25 |
| | Park/ Eco park | | 1/10000 | 1.16 | 1.22 | 1.28 | 1.35 | 1.42 | 1.49 | 1.56 |
| | Neighbourhood park | | .5/2500 | 4.64 | 4.88 | 5.13 | 5.39 | 5.66 | 5.95 | 6.26 |
| | Cinema hall | | .5/20000 | 0.58 | 0.61 | 0.64 | 0.67 | 0.71 | 0.74 | 0.78 |
| | | | | | | | | | | |
| Socio-Culture | Mosque | 23 | .1/5000 | 2.32 | 2.44 | 2.56 | 2.69 | 2.83 | 2.98 | 3.13 |
| | Community centre | | .3/20000 | 0.58 | 0.61 | 0.64 | 0.67 | 0.71 | 0.74 | 0.78 |
| | Graveyard | | .3/10000 | 1.16 | 1.22 | 1.28 | 1.35 | 1.42 | 1.49 | 1.56 |

| | | | | | | | | | | |
|----------------|---------------------|---|----------------|------|------|------|------|------|------|------|
| | | | | | | | | | | |
| | Eidgah | 5 | .5/2000 0 | 0.58 | 0.61 | 0.64 | 0.67 | 0.71 | 0.74 | 0.78 |
| Service | | | | | | | | | | |
| | Post office | | 0.05/20 000 | 0.58 | 0.61 | 0.64 | 0.67 | 0.71 | 0.74 | 0.78 |
| | Bus terminal | | 1/20000 | 0.58 | 0.61 | 0.64 | 0.67 | 0.71 | 0.74 | 0.78 |
| | Fire station | | 1/20000 | 0.58 | 0.61 | 0.64 | 0.67 | 0.71 | 0.74 | 0.78 |
| | Bazar | 2 | 0.3/100 00 | 1.16 | 1.22 | 1.28 | 1.35 | 1.42 | 1.49 | 1.56 |

Table 18: Demand Analysis for Mirsharai Paurashava

| Facilities | Number of existing Facilities | Standard (acre/pop ⁿ per Facility) | Year | | | | | | | |
|------------------|-------------------------------|---|--------------------------|-------|-------|-------|-------|-------|-------|------|
| | | | 2011 | 2016 | 2021 | 2026 | 2031 | 2036 | 2041 | |
| | | | Population | | | | | | | |
| | | | 11602 | 12194 | 12816 | 13470 | 14157 | 14879 | 15638 | |
| | | | Demand (Facility needed) | | | | | | | |
| EDUCATION | Nursery | - | .2/2000 | 5.80 | 6.10 | 6.41 | 6.73 | 7.08 | 7.44 | 7.82 |
| | Primary | 5 | .3/2000 | 5.80 | 6.10 | 6.41 | 6.73 | 7.08 | 7.44 | 7.82 |
| | Nursery+ Primary | - | .3/2000 | 5.80 | 6.10 | 6.41 | 6.73 | 7.08 | 7.44 | 7.82 |
| | Secondary (1-10) | 3 | 1.2/5000 | 2.32 | 2.44 | 2.56 | 2.69 | 2.83 | 2.98 | 3.13 |
| | College (1-12) | - | 1.5/15000 | 0.77 | 0.81 | 0.85 | 0.90 | 0.94 | 0.99 | 1.04 |
| | College (11-12) | - | 1/8000 | 1.45 | 1.52 | 1.60 | 1.68 | 1.77 | 1.85 | 1.95 |
| | Madrasa | 3 | 1.5/10000 | 1.16 | 1.22 | 1.28 | 1.35 | 1.42 | 1.49 | 1.56 |
| | Degree College | 1 | 2/15000 | 0.77 | 0.81 | 0.85 | 0.90 | 0.94 | 0.99 | 1.04 |

| | or Technical | | | | | | | | | |
|----------------------|---|-----------|------------|-------|-------|-------|-------|-------|-------|-------|
| Health | Small clinic/ Clinic/Health centre | 1 | .3/7500 | 1.55 | 1.63 | 1.71 | 1.80 | 1.89 | 1.98 | 2.09 |
| | Hospital | 2 | 4/20000 | 0.58 | 0.61 | 0.64 | 0.67 | 0.71 | 0.74 | 0.78 |
| Recreation | Playlot | - | .1/200 | 58.01 | 60.97 | 64.08 | 67.35 | 70.78 | 74.39 | 78.19 |
| | Playground | - | 1/12500 | 0.93 | 0.98 | 1.03 | 1.08 | 1.13 | 1.19 | 1.25 |
| | Park/ Eco park | - | 1/10000 | 1.16 | 1.22 | 1.28 | 1.35 | 1.42 | 1.49 | 1.56 |
| | Neighbourhood park | - | .5/2500 | 4.64 | 4.88 | 5.13 | 5.39 | 5.66 | 5.95 | 6.26 |
| | Cinema hall | - | .5/20000 | 0.58 | 0.61 | 0.64 | 0.67 | 0.71 | 0.74 | 0.78 |
| Socio-Culture | Mosque | 11 | .1/5000 | 2.32 | 2.44 | 2.56 | 2.69 | 2.83 | 2.98 | 3.13 |
| | Community centre | - | .3/20000 | 0.58 | 0.61 | 0.64 | 0.67 | 0.71 | 0.74 | 0.78 |
| | Graveyard | 12 | .3/10000 | 1.16 | 1.22 | 1.28 | 1.35 | 1.42 | 1.49 | 1.56 |
| | Eidgah | - | .5/20000 | 0.58 | 0.61 | 0.64 | 0.67 | 0.71 | 0.74 | 0.78 |
| Service | Post office | - | 0.05/20000 | 0.58 | 0.61 | 0.64 | 0.67 | 0.71 | 0.74 | 0.78 |
| | Bus terminal | 1 | 1/20000 | 0.58 | 0.61 | 0.64 | 0.67 | 0.71 | 0.74 | 0.78 |
| | Fire station | - | 1/20000 | 0.58 | 0.61 | 0.64 | 0.67 | 0.71 | 0.74 | 0.78 |
| | Bazar | 2 | 0.3/10000 | 1.16 | 1.22 | 1.28 | 1.35 | 1.42 | 1.49 | 1.56 |

Table 19: Demand Analysis for Baroiarhat Paurashava

1.10 Conclusion

This planning standard will be helpful for Mirsharai Upazila Development Plan. Planning Standard for Paurashava level has been formulated with the help of population projection, existing facilities & various planning standard used in Bangladesh such as PRLDR, UDD, Rangpur City Corporation etc. in this work.

Reference:

- Developing planning standard for community facilities: A study in the context of urban areas in Bangladesh', Khan, A. M. 2016.