

7.2.2 Estimated Future Land Use

a. Basis of Estimation

The important basis of estimating the amount of land under each land use type is the size of population in different periods of the Master Plan. The distribution of existing land uses have been estimated considering the total requirements of land in future. Land for different uses have been determined on the basis of estimated future demand for each category of land use.

b. Estimation of Residential Land Requirement

The present population of the planning area has been estimated as 61457 (2010) as per growth rate of 2.63%. This gives a gross density of 9 persons/acre.

The future housing area need to be based on a recommended planning standard of 150 persons per acre. The projected population for 2030 is 103289. But considering urbanization trend and migration the team takes the target of 1, 50,000 population for 2030. With this standard, the estimation shows, the land required to accommodate total projected population (1, 50,000) in the year 2030 will be 1000 acres. But survey of existing land use has identified 1131.46 acres of land currently under residential use with a low density of population (about 9 persons per acre). So there need no additional residential use in Narail Paurashava.

Table- 7.6: Land Required for Housing

Use/Facility	Recommended standard	Estimation of Land Requirement	Existing Land (acre)	Required Total Land in Acre (2030)
Residential	150 persons/acre	150000 /150 persons / acre = 1000 acre	1131.46	-

c. Estimation of Land for Commercial and Mixed Use

There is no reason to expect any sharp rise in business activities in next 20 years in the Narail . The current land under commercial (business/trading) use is 37.98 acres including business areas of shopping and bazaar areas. Market facilities are usually provided privately on commercial basis depending on trend of sale of goods. So it is not possible to fix a standard or project actual area for these services. Field observations shows that most commercial areas are actually mixed areas combined with residence and small scale industry. So, instead of marking commercial areas exclusively for commerce use these areas can develop as mixed use.

Table- 7.7: Land Required for Commerce and Mixed use

Use/Facility	Recommended standard	Estimation of Land Requirement (acre)	Existing Land (acre)	Total Required Land (2030)
Wholesale market:	6 acre per town centre including services/ repairing & supplies	6	6	0
Retail sale market:	5 acre includes market square, occasional supplies & shop like use	5	0	5
Corner Shop:	0.2/ 2,500 Population	12	8	4
Retail Katcha Bazar:	1 in each ward & also for every 20,000 Population, 0.3 acre minimum space for each Bazaar	9	3	6
Neighborhood Market	0.5 acre per 10,000 Population	7.5	0	7.5
Super Market (locally known as new market):	1.5 – 2.5 acre per	2.5	0	2.5
Other Commercial (Servicing & repairing, Hardware & Furnishing, Market square)	-		0	0
Total		42	36.34	5.66
Mixed Use	-		95.34	

For the sake of current planning the team can earmark land as per standard for commercial land use and put them at appropriate locations where commercial facilities may be developed privately or publicly. The total required commercial land will stand at only 42 acres. The extra land requirement will stands at 5.66 acres. Where as the existing mixed use land in Narail is 95.34 acre.

d. Estimation of Land for Industry

According to planning standard the total land for industries comes to 75.00 acres with 15.00 acres for small scale industries and 60.00 acres for cottage and agro based industries. We assume that the estimated land will cover BSCIC initiative to set up a minimum 15 acres industrial estate in every Paurashava.

Therefore, in the years 2030, the estimated land for general industry and manufacturing will stand at 75.00 acres and the existing land use of this purpose is 11.73 acres. So 63.27 acres of additional land will be required.

Table- 7.8: Land Required for General Industries

Use/Facility	Recommended standard	Estimation of Land Requirement (acre)	Existing Land (acre)	Required Additional Land (2030)
Small scale	BSCIC area minimum 15 acres per	15	0	15
Cottage/agro-based	1.00 acres /5000 population	30	11.73	18.27
Total		75	11.73	63.27

e. Education

Estimation of land according to standard indicates there will be a land requirement of 92 acres to accommodate educational facilities by the year 2030. If we deduct the already available 28.96 acres of existing land uses under various education facilities there will be a need of additional 63.04 acres of land for education facilities.

Table- 7.9: Land Required for Education Facilities

Use/Facility	Recommended standard	Estimation of Land Requirement (acre)	Existing Land (acre)	Required Additional Land (2030)
Nursery	0.4 acre for 5,000 Population	12	0.8	11.2
Primary School	0.30 acre for 1 Primary School; 1 Primary School for 2,000 People, Minimum no of students (from class 1 to 5): 150 Persons, Minimum land for each school (within): 12 decimal, Distance between two primary school: 2 km	22.5	10.26	12.24
Secondary School or high School	Minimum land within 1 acre	18	5.5	12.5
Alim & Dakhil Madrasa	Minimum land within 0.75 acre	1	0.58	0.42
Fazil & Kamil Madrasa	Minimum land within 1 acre	1	0	1
Other Madrasa	1 acre/ 20,000 Population; 1000 seats	7.5	0	7.5
Technical School & college	Minimum land for establishment of Engineering College 8 acre, Minimum land for Polytechnic Institute 5 acre, Minimum land for Technical School & College 2 acre	8	3.5	4.5
Intermediate / Degree College	2 acres for 1College; 1 College for 15,000 Population	20.00	9.4	10.6
University	Minimum land for establishment of private university 2 acres	2	0	2
Total		92.0	28.96	63.04

f. Health

There already exists Narail Sadar hospital on an area of 3.5 acres. Estimate shows there need additional 2.5 acres of land for the hospital according to recommended standard. The consultant feels there need a hospital in Narail. In future, as the population and density increases, demand for local health facilities will increase. So, additional land of 38 acres will be needed for Health centre/ Maternity clinic.

Table- 7.10: Land Required for Health Facilities

Use/Facility	Recommended standard	Estimation of Land Requirement (acre)	Existing Land (acre)	Required Additional Land (2030)
Hospital	4 acre per 10,000 Population & minimum 100 bed per hospital	6	3.5	2.5
Clinic	0.6 acre per 5,000 Population	18	0.52	17.48
Health centre / Maternity clinic	0.6 acre per 5,000 Population	18	0	18
Total		42	4.02	37.98

g. Open Space & Recreational

Total recommended land required for various recreation facilities stands at 62 acres. The facilities include, play field/ground, parks of various categories and stadium/sport complex. But as per the standard the required open space is 262.5 acre.

Table- 7.11: Land Required for Open Space Recreation

Use/Facility	Recommended standard	Estimation of Land Requirement (acre)	Existing Land (acre)	Required Additional Land (2030)
Motel and Tourist Centre	Minimum land: 2 acres	2	0	2
Play field/ground	2 acre per 25,000 Population; minimum walking distance 1.5 km	12	2.28	9.72
Park/ Neighborhood park	2 acre per 10,000 Population	30	0	30
Stadium/sports complex	5 acre per 50,000 Population	15	5.75	9.25
Cinema/ Theatre	0.5 acre 25,000 Population	3	0.327	2.673
Total		62	8.357	53.643
Open Space	1.75 acre per 1,000 Population	262.5	448.91	0

h. Transportation

In the field of transport establishment the Consultants proposes such facilities as, truck terminal, rickshaw stands at selected places, baby taxi/tempo stand and passenger shed for local bus users. However, many of the proposals may seem pre matured, but will be necessary in future. If land acquisition for these facilities is delayed, land may not be available in future for providing such facilities.

Table-7.12: Land Required for Transportation Facilities

Use/Facility	Recommended standard	Estimation of Land Requirement (acre)	Existing Land (acre)	Required Additional Land (2030)
Bus terminal	Minimum 3 acres per terminal, 3 acres per 1,00,000 Population	4.5	1.7	2.8
Truck terminal	Minimum 3 acres per terminal	6	0	6
Baby taxi/tempo stand	0.5 acre per stand	2	0	2
Rickshaw stand	0.3 acre per stand	1.2	0	1.2
Water way & Landing Station:	Minimum 2 acres for landing station & office, For off-shore land: 500 meter on both sides of the landing station	2	0	2
Rail way & Station:	From one home signal to another home signal: length 3,000 feet & width 500 feet, Total land area: 34.72 acres, Minimum land width for establishment of single line: 100 feet for Broad Gage and 90 feet for meter Gauge (considerable average height of the embankment 10 feet), Minimum land width for establishment of double line: 125 feet for Broad Gage and 115 feet for meter Gauge	34.72	0	34.72

	(considerable average height of the embankment 10 feet)			
Total		50.42	1.7	48.72

i. Administration

Land for administration is meant for public sector office activities.

Table-7.13: Land Required for Administration

Use/Facility	Recommended standard	Estimation of Land Requirement (acre)	Existing Land (acre)	Required Additional Land (2030)
Youth Development centre	Minimum 2 — 3 acres lands for establishment of Youth training centre & Regional Human Development Centre	3	0	3
DC Office	Office: 4 acres; Residence .5 acre	4.5	4.5	0
Judge Court	District Judge Court: 1 acre; Residence 33 decimal	1.33	1.56	0
SP Office	SP office: 1 acre; Residence: Residence 33 decimal	1.33	1.5	0
Police Line	10 acres	10		10
Thana	1 acre	1	1.18	0
Police Fari	33 decimal	0.99	0.99	0
Circuit House	1.5 acres	1.5	1.5	0
Civil Surgeon	Office: 0.25 acre; Residence 33 decimal	0.58	0.58	0
XEN (PWD)*	Office: 0.25 acre; Residence 33 decimal	0.58	0.58	0
Office for Islamic Foundation	Minimum 0.10 decimal	0.1	0	0.1
Jail	Minimum land 5 acre	5	6.7	0
Others	As per concerned department	0	0	0
Total		29.91	19.09	13.1

The existing Office premise is situated in an area of 2.10 acres. The Consultants consider that this is enough for Narail Paurashava.

j. Public utilities

A number of utility establishments are required in a town to run services properly. There will be 9 waste transfer stations for collection of solid waste. Each ward will have one station with an area of 0.20 acre. So there will be need for 1.8 acres for 9 transfer stations. A dumping site will be developed over an area of 5.00 acres for final disposal of the solid waste. The total additional land requirement under this category is 4.85 acres.

Table- 7.14: Land Required for Utilities

Use/Facility	Recommended standard	Estimation of Land Requirement (acre)	Existing Land (acre)	Required Additional Land (2030)
Bangladesh Oil, Gas & Mineral Resource Corporation	For establishment of CNG station: 120 feet X 120 feet; (1400 sq. ft or 33 decimal along the road), Distance within two station: 3 km considering one side of road & 2 km considering both sides of roads, Necessary requirements of the corporation must have to be fulfilled	0.33	0	0.33
Power Development Board	Minimum land for construction of 33/11 KV & 2*10 MVA Substation .07 acre, Minimum land for construction of GIS Substation less than .07 acre, Minimum distance for installation of 33 KV, 11 KV & 4 KV line 30-40 meters	0.07	5	4.93
Fire Services	Minimum 50 decimal for "A" Category, Minimum 30 decimal for "B" Category	0.5	0.5	0
Post office	0.4 acres per 20,000 Population	3	0.35	2.65
Solid waste transfer station	Minimum 20 decimal per ward	1.8	0	1.8
Solid waste disposal site	Minimum 5 acre per ***	5	0	5
Total		10.7	5.85	4.85

k. Community Facilities

For various community facilities, the land requirement has been fixed at 50.25 acres. There need community center in Narail Paurashava. As the Paurashava is far from costal region so there need no cyclone center here.

Table-7.15: Estimation of Land Requirement for Community Facilities

Use/Facility	Recommended standard	Estimation of Land Requirement (acre)	Existing Land (acre)	Required Additional Land (2030)
Community centre	1 acre per 20,000 population	7.5	0	7.5
Mosque/Church/ Temple	0.1 acre per 10,000 Population	1.5	7.12	0
Eidgah	0.5 acre per 20,000 Population	3.75	2.17	1.58
Graveyard	5 acre per 20,000 Population	37.5	8.13	29.37
Total		50.25	17.42	32.83

7.2.3 Summary showing distribution of land for existing and proposed land use

The following table is the illustration of land for existing and proposed land use. There is a need of minimum 1043.09 acres of land for future allocation.

Table-7.: Summary Distribution of land for existing and proposed land use

Sl. No.	Use/ Facilities	Estimation of Land Requirement (acre)	Existing Land (acre)	Required Additional Land (2030)
1.	Residential	1000	1131.46	720
2.	Commercial	42	36.34	5.66
3.	Mixed Use		95.34	
4.	Industrial	75	11.73	63.27
5.	Educational	92.0	28.96	63.04
6.	Health	42	4.02	37.98
7.	Open Spaces & Recreational	324.5	457.267	53.64
8.	Transportation	50.42	1.7	48.72
9.	Administrative	29.91	19.09	13.1
10.	Community Facility	50.25	17.42	32.83
11.	Utility Services	10.7	5.85	4.85
Total				1043.09

7.3: Land Use Proposals

7.3.1 Introduction

Development control is an essential part of urban planning. For development control certain procedures have to be followed for approval of designs of various categories of structures, establishments and land uses. The first condition is to secure land use permit according to approved zoning plan followed by approval of the design of proposed building/structure.

In land use zoning, the entire area of a town is divided into suitable land use zones to create congenial and livable environment and thereby enhance land value. In Bangladesh such land use zoning is incorporated as a part of the master plan / land use plan/urban area plan. Before submitting building plans for approval an applicant must secure land use permit from the Paurashava. For land use permit, an applicant's prospective use of structure must be compatible with the approved land use zone of the site. Land use zoning limits activities that can or cannot function on a land parcel by establishing a range of development options. Land use zoning is a legal instrument by application of which can control,

- a) The height of building/structure,
- b) The area of a land parcel that must be left vacant, and
- c) The use of a building and land occupancy

Zoning can be of three types, area zoning, density zoning and height zoning.

Area Zoning

By area zoning an area is divided into zones suitable for that particular area. The main objectives of such zoning are done mainly from environmental point of view that accrues other social benefits.

Density Zoning

The aim of the density zoning is to limit the size of population in any particular area by means of density control. The size of population has bearing on the capacity of designed utility facilities and amenities and traffic volume and crowding, especially in the residential areas. Such zoning is done to ensure a healthy and enjoyable community living.

Height Zoning

Height zoning restrict the height of buildings structures in any particular area. This zoning is aimed to promote the proper and sound development of areas. Height zoning is of particular importance in airport areas to ensue take off and landing of aircrafts.

Considering the existing level of development and development prospects, the Consultants recommend to follow the area zoning only.

Zoning is only a part of development control regulations. A prospective developer in a has to comply with other rules and regulations, like, Building Construction Rules, 1996 under East Bengal Building Construction Act 1952, Bangladesh National Building Code 1993 and other conditions of construction method, building safety and associated issues.

7.3.2 Designation of Future Land Use

Designation of future land use (Land Use Zoning) as is required to fulfill the requirements of the approved TOC requires information on (a) Sectoral Projects, (b) Means of implementation and (c) Responsible authority. This corresponds to the decisions of the standing committee (Sec. 67 of Act 2009) as urban management and services responsibilities as under:

Table-7.17: Decision of the standing committee as urban management and services responsibility

Sl. No.	Sector	Functions/ Services	Agency responsible for implementation	Source (as per Act 2009)
1	Planning and Development Control	- Strategic Structure Planning - Area and Local Planning - Multi Sectoral Investment Planning/ Master Plan, etc.	- - -	- Sec.53-54 - Sec. 32 - Do
2	Water, Sanitation and Drainage	- Water Supply - Drainage - Flood Control	- - Do - WDB/	- Sec. 53, Sub sec. (2) & Sec 10 - Do (3) & Sec 12 - Do, Sec 2 & Sec 47
3	Other Utilities	- Electricity - Gas - Telecom	- DESCO, PDB, REB -BTCL	- - -
4	Roads & Transport	- Main Road - Other Road - Street Lighting - Traffic Management - Traffic Control - Bus Terminal, Rail/ Water/ Air Transportation	- / RHD - / LGED - - / Police - Police - BRTC/ IWTA/Civil aviation, Private/ Other	- Sec 38, 53(2) - Do, Sec 39 - Schedule 2 Sec 41 - Sec 40-44 - Sec 43 - Sec 53(2)
5	Municipal Services	- Solid Waste - Street Sweeping - Market - Slaughter House - Parks & Green	- - - - -	- Sec 53(1) - Do - Sec 21, Sch 2 - Do - Sec 23, Sch 2,
6	Protective Services	- Police - Fire	- Police/ - Civil Defense	-Sec 53(1) - Sec 45
7	Housing and Land Development Plan	- Government Building - High income land development/ Housing - Low Income housing and Land Development - Area Development and Upgrading - Industrial Estate - Commercial Estate - Land Acquisitions	-PWD - Private - / NGO/ Other – / Private - BSCIC/ BEPZA - / Private/ Other - ADCLA; CLAC -	- -Sec 2, Sec 32, Sec 34 - Do-Sec 33, Sch (2), - Sec 62 - - Sch (2) - Sec 64 -
8	Social Service, Education and Culture	- Education - Primary - Secondary	- Dept. of Education - Dept. of Technical Education	- Sch (2), Sec 56-61 - Sch(2), Sec 59 - Sch(2), Sec 60

		Technical - Culture - Library - Primary Health Care - Hospital - Social Welfare - Public Health/ Sanitation - Health Center	- - - DPHE/ - -DSW/ - -	- Sch(2), Sec 9, 56-57 - Sch(2), Sec 8 - Sch (2), Sec 61, 63 - Sch(2), Sec 1-9 - Do
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7.3.3 Proposed Land use Category

The following land use zone classification is recommended under the current Master Plan.

1. Administrative
2. Agricultural
3. Commercial
4. Community Facility
5. Educational
6. Health
7. General Industrial Area
8. Noxious Industrial Area
9. Mixed Use
10. Open Spaces and Recreational
11. Residential
12. Restricted Area
13. Transportation
14. Urban Reserve Area
15. Utility Services
16. Water Bodies

In the sections below, the general definition of the use and description of associated permitted and conditionally permitted uses under each land use zone have been provided. The uses that are not listed here in any of the categories shall be treated as Restricted Use for the corresponding land use category and shall not be permitted only except unanimously decided otherwise by the appropriate authority. In such situations the use shall get permission in the category of New Use. The following table describes the area of specific area of the corresponding land use category.

Table- 7.18: Area of Different Proposed Land Use Category

Sl. No.	Proposed Land use	Area in acre	Area in Sq. km.	Percentage
1.	Administrative	78.1264	0.316173	1.08
2.	Agricultural	2126.9841	8.607787	29.40
3.	Commercial Area	68.7075	0.278055	0.95
4.	Community Facilities	83.4915	0.337885	1.15
5.	Educational Area	149.6912	0.605792	2.07
6.	General Industrial Area	476.5472	1.92856	6.59
7.	Health Services	12.0412	0.04873	0.17
8.	Mixed use	96.9338	0.392286	1.34
9.	Noxious Industrial Area	177.4776	0.718242	2.45
10.	Open Space and Recreational	47.8850	0.193788	0.66
11.	Residential	2341.2232	9.4748	32.36
12.	Defense & Security	11.2211	0.045411	0.16
13.	Transportation & Communication	649.1493	2.627071	8.97
14.	Urban Deferred Area	423.6561	1.714513	5.86
15.	Utility Services	96.1609	0.389158	1.33
16.	Water bodies	396.4237	1.604305	5.48
Total		7235.7198	29.28256	100.00

Following is a short description on recommended land use zones.

a. Residential

The total land proposed for residential zone is 2341.22 acres (947.48 hectares) which is about 32% of the Urban Area Plan area. Different categories of housing areas have been proposed in the development plan under the categories of residential. These categories have been made for promotion of housing through private and public initiatives. The residential category includes all

areas of future residential development, public housing and hotels and lodging establishments and existing housing areas.

The existing staff housing areas of different public sector agencies have been marked as public housing. As per EBBC Act 1952 all categories of structures need approval from appropriate authority before undertaking their construction. Therefore, developers of public buildings should also seek approval before construction. All housing areas will be allowed to have ancillary processing and service land uses to support the residential dwellers.

This zone will allow residential uses as listed in Table-7.19.

b. Commercial

Commercial zones are designed into two types: office and business predominated. Commercial Office Zone is an office pre-dominated commercial zone that mainly supports the official works. It supports other types of commercial activities, too. Proposals for these areas involve large-scale buildings and require a high degree of accessibility and parking space for car users and delivery vehicles. Existing commercial areas and areas potential for future commercial development have been placed under commercial use.

The other type commercial areas generally contain one or more of a wide variety of uses that includes business uses, offices, hotel, public houses, and limited forms of retailing. Mainly bazar, shopping agglomerations and areas suitable for commercial development have been placed under this category. This zone has an area of 68.70 acres designated up to 2030. This zone will permit and conditionally permit commercial uses as listed in Table-7.19.

c. Mixed Use Zone

Mixed use zones have been recommended to allow some flexibility in development. Such a like Narail, as the trend shows, an exclusive commercial land use is unlikely to function. Admixture of land uses will allow flexibility of development, instead of restricting development. Total area for mixed uses has been put to 96.93 acres, including both, existing and proposed land uses. This zone will allow residential structures together with commercial uses as listed in Table-7.19.

d. Transport & Communication

Estimates show that about 649.15 acres of land under the existing and proposed road and relevant infrastructure facilities. This constitutes about 8.97% of the planning area. Other transport facilities like, bus and truck terminal etc have been included in this zone.

e. Industrial

The purpose and intent of industrial zone is to provide areas in appropriate locations where various light and heavy industrial operations can be conducted without creating hazards to surrounding land uses. Industrial zones have been categorized into two zones like general industrial and noxious industrial zones.

Industrial land use includes areas where industries have already been developed, BSCIC, industrial clusters and areas that are potential for future industrial development. The land earmarked for general and noxious industrial use stands at 476.5472 and 177.47 acres. In these zones a complex line of industrial and supporting non-industrial land uses will be permitted and conditional permission will be given to a number of other land uses as specified on Table-7.19.

f. Agricultural area

The Paurashava has a vast area of agricultural land that demands formation of a separate zone like, Agricultural zone. This land use type also includes lands lying outside of the urban growth boundary and identified as green belt and encompassed by the agricultural area Boundary. The total area under this use has been proposed as 4481 acres that include existing and proposed land uses. The following are permitted Uses within the Urban Reserve (UR) Zone:

- Agriculture, Livestock Based
- Agriculture, Vegetation Based (mushroom farms shall not be permitted)
- Existing facilities up to the date of gazette notification of the master plan. Condition is that, no further extension will be permitted.

Details of permitted and conditional uses are presented in Table-7.19. The total area under this use has been estimated as 2126.98 acres that include existing and proposed land uses.

g. Educational

Under the category of educational area all institutional uses like education and research institute, etc have been included. Land belonging to educational use includes all categories of educational and training institutions. Educational institute like Medical College, Animal Hospital & research Institutes etc have been included in this zone. Total land under this land use is 149.69 acres which is about 2.07 % of the study area.

h. Health

The health area includes all existing health service establishments and the areas proposed for health facilities. The total land earmarked for this category stands at 12.04 acre (0.17%).

i. Administrative

Administrative zone covers all kinds of government and non-government offices in the town. The permitted use in this zone and conditional uses as listed in Table-7.19. The total area under this use has been estimated as 78.12 acres that include existing and proposed land uses.

j. Open spaces and Recreational

The planning area has extremely low level of formal open space. The proposed open space cover the parks, play fields and the existing open space areas like, forest, park, etc. The proposed recreational facilities for open space will increase the urban breathing space in the planning area. The total area under recreational land stands at 47.88 acres which is 0.66% of the planning area.

k. Community Facilities

This land use covers all categories of community facilities and establishments like mosque, temple, church, Eidgah, graveyard, community centre etc. This type of facility are scattered all over the master plan area. This land has an area of about 83.49 acres.

l. Water bodies

The planning area has 396.42 acres of water body within the . The plan suggests preserving most of these water bodies for two purposes, first, to serve as source of water, second to serve as water retention area during monsoon. The ponds with an area equal to or more than 0.25 acres will be preserved as the water retention ponds. There will be permitted uses in this zone and allow some other uses conditionally as stated in Table-7.19.

m. Utility Services

Public utilities for various services like fire service, post office, solid waste transfer station, solid waste disposal centre, electric sub-station, filling station, etc are an important land use for Narail . The Consultants have delineated 96.16 acre of land for public utilities.

n. Urban deferred Area

Lands have been deferred in different parts of the Structure Plan area for future urban development. The total amount of such land stands at 423.65 acres (5.86%).

7.3.4 Land Development Regulations to implement the Land use Plan

7.3.4.1 Policy support to implement the Land use plan

The policy support from the Act, 2009 is as follows:

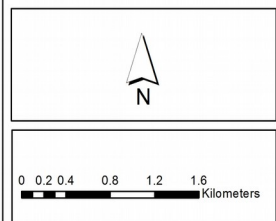
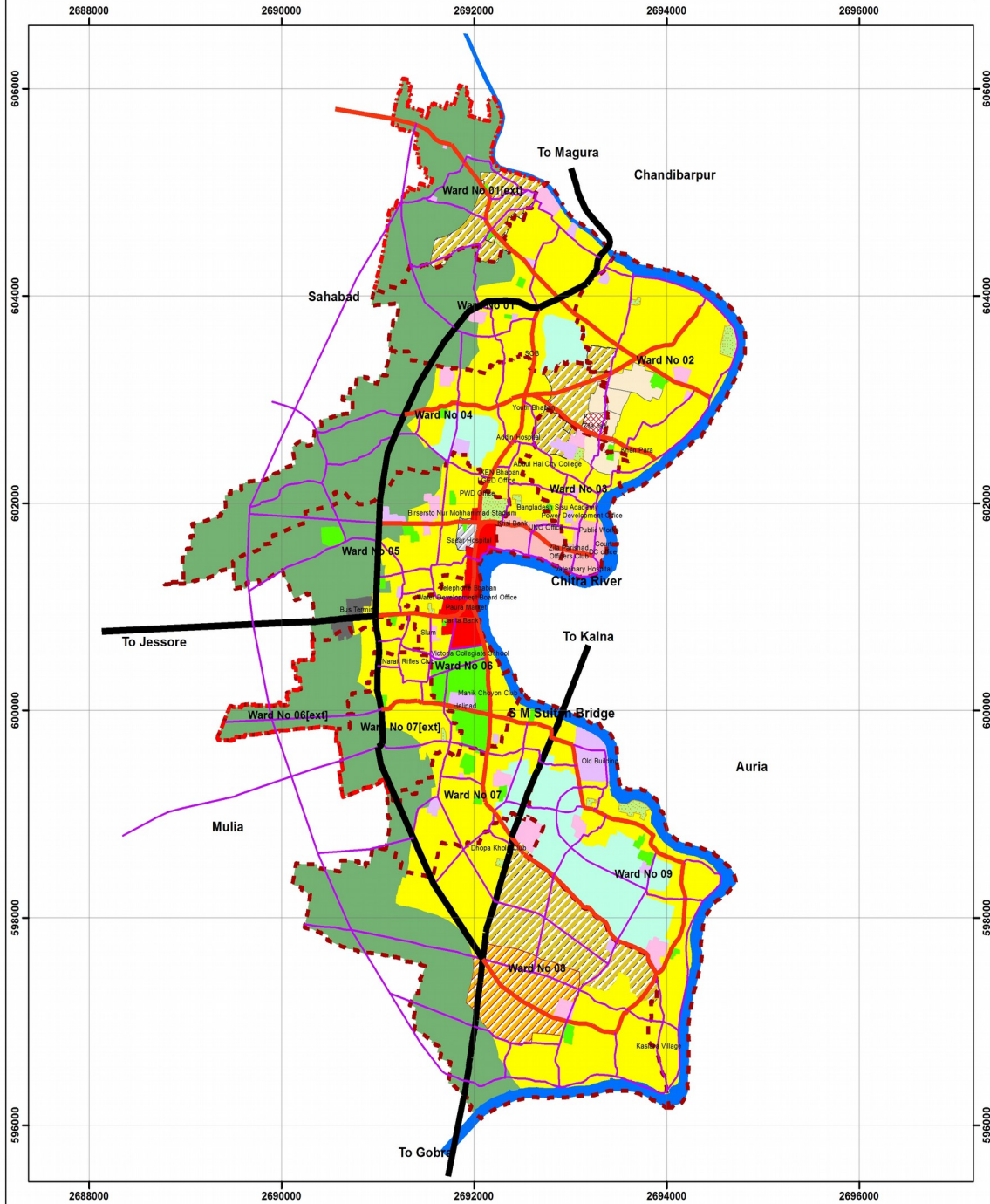
According to Second schedule 32 of section 50-71:

Master Plan

A may, and if so required by the Prescribed Authority shall, draw up a Master Plan for the municipality which shall, among other matters, provide for-

- a. a survey of the municipality including its history, statistics, public services and other prescribed particulars;
- b. development, expansion and improvement of any area within the municipality; and
- c. Restrictions, regulations and prohibitions to be imposed with regard to the development of sites, and the erection and re-erection of buildings within the municipality.”

Map 7.2: Land Use Plan Map of Narail Paurashava



Legend	
	Project Boundary
	Ward Boundary
	Proposed Road Type
	Primary
	Secondary
	Tertiary
	Proposed Land Use
	Administrative
	Agricultural
	Commercial Area
	Community Facilities
	Educational Area
	General Industrial Area
	Health Services
	Mixed use
	Noxious Industrial Area
	Open Space and Recreational
	Residential
	Defense & Security
	Transportation & Communication
	Urban Deferred Area
	Utility Services
	Water bodies


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According to Second schedule 33 of section 50-71:

Site Development Schemes

(1) Where Master Plan has been drawn up under section 95 and such Master Plan has been approved, with or without any modifications by the Prescribed Authority, no owner of lands exceeding such area as may be specified in this behalf in the Master plan as so approved, shall develop the site or erect or re-erect a building or any plot of land covered by the Master plan, except in conformity with the provisions of a Site Development Scheme sanctioned for the area in the prescribed manner.

(2) Among other matters, a Site Development Scheme may provide for-

- a. the division of the site into plots;
- b. the streets, drains and open spaces to be provided;
- c. the land to be reserved for public purposes and to be transferred to the ;
- d. the land to be acquired by the ;
- e. the price of plots;
- f. the works that shall be executed at the cost of the owner or owners of the site or sites; and
- g. the period during which the area shall be developed.

According to Second schedule 34 of section 50-71:

Execution of Site Development Schemes

(1) The execution of a Site Development Scheme shall be subject to the inspection and control of the , and the may give such directions with regard to the execution of the Scheme as may be necessary for the proper development of site.

(2) If any area is development or otherwise dealt with in contravention of the provisions of the sanctioned Site Development Scheme, the may by notice require the owner of such area or the person who has contravened the provisions to make such alteration in the site as may be specified in the notice and where such alteration is not made or for any reason cannot be carried out, the may, in the prescribed manner, require and enforce the demolition of the offending structure, and notwithstanding anything to the contrary contained in any law, no compensation shall be payable for such demolition.

(3) If an area for which a Site Development Scheme has been sanctioned is not developed within the period provided in the Site Development Scheme, and further extension is not allowed by the , or if the development is not in conformity with the terms of the Site Development Scheme, the may, in the prescribed manner, take over the development of the site and execute the necessary works, and the cost incurred thereon by the shall be deemed to be a tax levied on the owner or owners under this Act.”

According to Second schedule 35 of section 50-71:

Erection and re-erection of buildings

(1) No person shall erect or re-erect a building or commence to erect or re-erect a building unless the site has been approved, and the building plan has been sanctioned by the .

(2) A person intending to erect or re-erect a building, shall apply for sanction in the manner provided in the by-laws, and shall pay such fees as may be levied by the with the previous sanction of the Prescribed Authority.

(3) All building applications presented under this section shall be registered in the manner provided in the by-laws, and shall disposed of as early as possible, but not later than sixty days from the date of the registration of the application, and if no order is passed on an application within sixty days of its registration, it shall be deemed to have been sanctioned to the extent to which it does not contravene the provisions of the building by-laws, or of the Master Plan or Site Development Scheme, if any-

(4) A may, for reasons to be stated in writing, reject a site plan or a building plan, but any person aggrieved thereby may appeal to the Prescribed Authority within thirty days of the order of rejection, and the order passed by the Prescribed Authority in appeal shall be final.

(5) A may sanction a site plan or a building plan subject to such modifications or terms as may be specified in the order of sanction.

(6) Nothing in this section shall apply to any work, addition or alteration which the may, by-law, declare to be exempt.”

According to Second schedule 36 of section 50-71:

Completion of buildings, alterations of buildings, etc

(1) every person who has erected or re-erected a building shall, within thirty days of the completion of the building, report such completion to the .

(2) The shall cause every building which has been completed to be inspected, and if it has been constructed in violation or contravention of any provision of this Ordinance, the rules or the by-laws or of the Master Plan of Site Development scheme, if any, the may require the alterations of the building so as to be in compliance therewith, and where such alteration is not possible, the may require the building or any part thereof to be demolished, or on the application of the owner such building compound the offence, provided that no offence shall be so compounded if it involves any violation or contravention of the provisions of a Master Plan or of a sanctioned Site Development Scheme.

(3) If a building is required to be demolished under the provisions of subsection (2), and such requirement is not complied with within the specified period, the may have the building demolished through its own agency, and the cost incurred thereon by the shall be deemed to be a tax levied on the owner or occupier of the building under this Ordinance.

According to Second schedule 37 of section 50-71:

Regulation of buildings

(1) If any building, or anything fixed thereon, be deemed by the to be in a ruinous state or likely to fall or in any way dangerous to any inhabitant of such building or of any neighboring building or to any occupier thereof or to passers-by, the may by notice require the owner or occupier of such building to take such action in regard to the building as may be specified in the notice, and if there is default, the may take the necessary steps itself and the cost incurred thereon by the shall be deemed to be a tax levied on the owner or occupier of the building under this Ordinance.

(2) If a building is in a dangerous condition, or otherwise unfit for human habitation, the may prohibit the occupation of such building till it has been suitably repaired to the satisfaction of the .”

With the help of Act, 2009 the proposed land use can implement. The proposed regulation is elaborate in the Structure Plan section.

7.3.3.2 Land use regulation for different land use zones

Summary of permitted & conditional uses of different land use category for Narail.

Table-7.19: Permitted & conditional uses of different Land use category

Permitted use	O	Residential	Commercial	Mixed Use Area	Communication Transportation &	General Industrial Area	Noxious Industrial Area	Agricultural Area	Educational Area	Health Services	Administrative	Open Space and Recreational	Community Facilities	Water Body	Restricted Area	Utility Services	Urban Deferred Area
Not permitted	N																
Land use																	
Agriculture, Forestry & grazing		N	N	N	C	N	N	O	N	N	N	O	C	O	O	C	O
Aquaculture & fisheries		N	N	N	C	N	N	O	N	N	N	O	C	O	O	C	O
Brick fields		N	N	N	N	N	N	C	N	N	N	C	N	C	N	N	O
Cemeteries / graveyard		C	N	C	C	C	C	O	N	C	N	C	O	N	O	O	O
Cinemas		N	O	C	O	N	N	N	N	N	C	N	O	N	O	N	N
Clinics, medical		C	O	O	O	O	C	N	C	O	C	N	O	N	O	C	C
Clubs, private		C	O	O	C	C	N	N	N	C	C	N	O	N	O	C	N

<table border="1"> <tr> <td>Permitted use</td> <td>O</td> </tr> <tr> <td>Conditional use</td> <td>C</td> </tr> <tr> <td>Plan review required</td> <td>P</td> </tr> <tr> <td>Not permitted</td> <td>N</td> </tr> </table>	Permitted use	O	Conditional use	C	Plan review required	P	Not permitted	N	Residential	Commercial	Mixed-Use Area	Communication Transportation &	General Industrial Area	Noxious Industrial Area	Agricultural Area	Educational Area	Health Services	Administrative	Open Space and Recreational	Community Facilities	Water-Body	Restricted Area	Utility Services	Urban Deferred Area
	Permitted use	O																						
	Conditional use	C																						
	Plan review required	P																						
	Not permitted	N																						
Colleges & universities	C	C	P	N	N	N	C	O	C	C	N	O	N	N	N	N								
Dwellings, farm	O	N	O	N	N	N	O	N	N	N	O	N	C	N	N	O								
Dwellings, minimal housing	O	N	O	N	C	N	O	N	N	N	N	N	C	C	C	C								
Dwellings, single/multi family	O	N	O	N	N	N	N	O	C	C	N	O	N	N	C	C								
Flood management structures	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O								
Hospitals (with morgue)	N	C	P	C	N	N	C	N	O	N	N	C	N	O	N	N								
Hotel guest house	N	O	O	O	N	N	N	N	C	C	N	O	N	N	C	N								
Hotel international class	N	O	O	O	N	N	N	N	N	C	N	O	N	N	N	N								
Industrial , orange a	N	C	C	C	O	C	N	C	C	C	N	C	N	C	C	C								
Industrial , orange b	N	N	N	N	O	C	N	N	N	N	N	N	N	N	N	N								
Industrial , red	N	N	N	N	N	O	N	N	N	N	N	N	N	N	N	N								
Institutions	C	O	O	N	O	N	N	O	C	O	N	O	N	C	N	N								
Major development	C	C	C	O	C	C	C	C	C	O	C	O	O	O	O	O								
Offices / services	C	O	O	O	C	C	N	C	C	O	N	O	N	C	O	N								
Parking facilities, commercial	C	O	C	O	O	O	N	C	C	O	C	O	C	C	O	N								
Petrol stations	N	O	C	O	O	O	N	N	N	O	N	O	N	N	O	N								
Public uses & structures	C	O	O	O	O	O	N	C	C	O	C	O	O	N	O	N								
Recreation facilities, outdoor	O	O	O	O	O	N	O	C	C	C	O	O	O	N	C	O								
Religious uses & structures	O	O	O	O	O	C	O	O	O	O	O	O	O	O	O	O								
Repair shops, major	N	O	N	N	O	O	N	N	N	N	N	C	N	N	N	N								
Repair shops. Minor	C	O	O	C	O	O	N	C	N	C	N	O	C	C	C	N								
Retail shops & restaurants	C	O	O	O	C	C	N	C	C	O	O	O	C	O	C	N								
Schools, private	O	C	C	N	N	N	N	O	N	C	N	O	N	O	N	N								
Schools, government, religious	O	C	O	N	N	N	N	O	N	C	N	O	N	O	N	N								
Shopping center / large market	N	O	P	N	N	N	N	N	N	N	N	C	N	N	C	N								

<table border="1"> <tr><td>Permitted use</td><td>O</td></tr> <tr><td>Conditional use</td><td>C</td></tr> <tr><td>Plan review required</td><td>P</td></tr> <tr><td>Not permitted</td><td>N</td></tr> </table>	Permitted use	O	Conditional use	C	Plan review required	P	Not permitted	N	Residential	Commercial	Mixed Use Area	Communication Transportation &	General Industrial Area	Noxious Industrial Area	Agricultural Area	Educational Area	Health Services	Administrative	Open Space and Recreational	Community Facilities	Water Body	Restricted Area	Utility Services	Urban Deferred Area
	Permitted use	O																						
	Conditional use	C																						
	Plan review required	P																						
	Not permitted	N																						
Stadium, sports	N	C	P	N	N	N	N	N	N	N	O	C	N	N	C	N								
Terminals, train, bus	N	O	P	O	N	N	N	N	N	N	O	O	O	N	O	N								
Trade center	N	O	P	N	N	N	N	N	N	N	N	O	N	N	N	N								
Utility installations	C	C	P	C	C	C	C	C	C	C	C	O	C	C	O	C								
Ware housing & distribution	N	O	C	O	O	O	N	N	N	N	N	C	C	N	C	N								
Waste disposal & processing/ incinerator	N	N	N	C	C	O	C	N	C	C	C	O	N	C	O	O								

7.3.5 Implementation, monitoring and Evaluation of the Land Use Plan

7.3.5.1 Implementation Strategy

Traditionally, owing to complexities, government does not involve people in the planning and development process of any project and attempt to implement it with own or procured fund through land acquisition. Such a policy has some built-in problems that sometimes strongly resist its implementation.

People rightly feel that they have the right to know about the plan which has direct bearing on their life and property. The plan regardless of its quality uproots many people from their home and community they belong to. Thus sometimes a strong and desperate group of affected people together with their friends and allies resist, with their united strength, the implementation process of a development project.

In our country, during land purchase people records land at considerably low price than the actual. This reality makes people financially looser when the land is acquired by government. Compensation all over the world is a complicated process. Brokers prop up to bridge the gap between innocent people and the government machinery. Money sticks to broker's hands. Plan Implementation through Active Community Participation Technique is the answer to offset these impossible obstacles on the way to plan implementation. The plan recommends involving beneficiaries in plan implementation.

7.3.5.2 Land Management

Effective land management is one of the most important tools for the implementation of spatial development plans. For existing urban areas of middle to high densities, the most effective approaches are urban rehabilitation/upgrading and land sharing, either or not engaging community based development techniques for which proper institutional and financial mechanisms have to be established. On the contrary, for existing urban areas with relatively low densities, government agencies may acquire land for construction of infrastructure and provision of urban service, and also for the implementation of site and services schemes that can offer low cost plots to low income households. Mechanism for institutional and financial support for disadvantaged group may be adopted like cross subsidy, etc.

7.3.5.2.1 Land Management Techniques

Urban Renewal

Urban renewal is necessary for a built up urban areas where there is considered blight and obsolescence and derelict and not fit for human habitation. It is necessary for those areas that are already threatened by degradation of physical environment due to over population, congestion and unplanned development, also where the land uses are haphazard, unsystematic and incompatible.

The basic essential infrastructure urban services and community facilities are not properly exist, in the area where there is existence of heritage and which are in decaying stage.

Site and Service Scheme

Site and service schemes would be offered by private developers, including cross subsidization as part of the conditions. Such schemes will fulfill the conditions in order to obtain a development license for a larger area. Here too, institutional provisions will be needed to make this spatial land management technique work effectively. In the Site and Services schemes the most important issue is matching the plot size distribution to the income of the expected/targeted beneficiary. Community based development of (hard core poor) low-income housing including facilities in the existing urban area and the urban fringe area through consulting with facilitator and users will be the responsibilities of the public sector urban development agencies.

Land Readjustment/Guided Land Development

Land readjustment and guided land development both aim at improving accessibility and at providing better services without the (compulsory) land acquisition by government agencies. In this type of plan the development authority can play a vital role in planning and development in co-operation with land owners and other service giving agencies. Success depends to a high degree on limiting the amount of land that is needed for these purposes. Therefore, improvement of accessibility should aim at widening and improving capacity of existing roads (and providing some missing links) rather than the construction of completely new roads. Similarly, the provision of services should not go beyond strict minimum standards. New neighborhood centers (in which most services should be concentrated) in newly developing areas can be located just outside existing core areas, so that they serve both the new development and existing area. For good accessibility these centers should be situated near the major junctions of the road network. Minimum standards for some urban services are given in the Urban Area Plan. For other services minimum standards has to be prepared. In land readjustment and guided land development schemes some space will be available for new development, but improving the existing situation deserves more attention. Here, one of the most important issues is giving support to occupants to improve the quality of their own shelter (security of tenure, access to small scale loans, cheap building materials), including sanitation, water supply and garbage disposal.

7.3.5.2 Use of Appropriate Land Management Techniques

Land management in the study area will be done in three possible ways:

1. Private sector development
2. Public sector development and,
3. Development control.

Land Reservation for Infrastructure and Restriction on Land Use Clearance

Structure Plan policy recommends to reserve land earmarked for infrastructure (suggested in the current plan as advance acquisition). It is very likely that it would not be possible to implement all development proposals in a short time due to resource constraint. So, there will be need to reserve the lands earmarked for infrastructure development. This reservation may be made by way of pegging the earmarked area/boundary using marking materials. Besides, strict restriction be imposed on according permission to any development other than mentioned in the development plan proposals for that area. This however, might necessitate amending the immovable property acquisition and requisition act.

Special Area Treatment

Structure Plan mentioned about taking “special treatment” regarding some special areas “to allow their present function and future expansion to be secured.” They include places of national importance, places of heritage, security establishments, etc. The Building Construction Rules 2008 (Section 61, Page 3058) also calls for conservation and preservation of important establishments and buildings of heritage. It suggests preparation of rules and regulations for proper conservation and preservation of such establishments.

7.3.5.3 Development Permit

Development Permit is the most important function of and for that matter of any City Development Authority. Master plan will have no bearing unless development can be channelized to its desirable direction through effective permit procedure. Master plan has developed its plan using GIS

database and other advanced computer software of world standard. The necessary planner to handle this database is quite available in the country. This combination provides the unique opportunity to make its plan permit procedure fast, well managed and transparent. This is also in line with the idea of digital Bangladesh pronounced by the present govt.

a. Computerization of the Permit procedure

Maintaining information of all the development activities within the jurisdiction is a mammoth task and maintain them in the present manual method is neither possible nor necessary. Consultant recommends development of customize software for the purpose. The system would prove worthwhile by saving in the form of time, cost, ease of management, ease of upgrading of information, control of corruption and so forth.

b. Landuse Permit

has the legal responsibility to develop plan for the wellbeing of the citizens within its jurisdiction and implement the same by channelizing all developments through appropriate control mechanisms. Issue Plan Permit to private plot owner/s or developers working with the consent of the owner/s that comply the set regulations constitute the most part of development control activity conducted by . Town Planner will issue permit for development proposals in accordance with the Table 7.19 of the master plan. If the proposal requires review the Town Planner will review it and submit it to the appropriate committee with recommendation for decision.

CHAPTER- 8

TRANSPORTATION AND TRAFFIC MANAGEMENT PLAN

8.1 Introduction

8.1.1 Introduction

The current chapter of the report is about Transportation and Traffic Management Plan covering its development plan proposals and management of the proposed project area up to the year 2030. The report also gives the objectives of the purpose and the role of Transportation and Traffic Management Plan and its relation with Structure Plan and Land Use Plan.

8.1.2 Goals and Objectives

The goals and objectives of the Transportation and traffic management plan area as follows:

- i. Study the viability of different solutions for traffic management and *develop a practical short term traffic management plan*, including one way system, restricted access for large vehicles, improved signal system traffic islands, roundabouts, pedestrian crossings, deceleration lanes for turning traffic, suitable turning radius, parking policies and separation of pedestrians and rickshaws etc.
- ii. Assess the *non-pedestrian traffic movements that are dominated by cycle rickshaw*. Special recommendations should be made as how best to utilize this form to transport without causing unnecessary delays to other vehicles. *Proposals should also consider pedestrians and theirs safety, with special attention for the children*.
- iii. Assess the *current land use* with regard to road transportation, bus and truck stations, etc. and recommend *actions to optimize this land use*, especially with regard to owned land.
- iv. Prepare a **Road network plan** based on topographic and Base Map prepared under the Project. *Recommend road development standards* which will serve as a guide for the long and short term implementation of road. Suggest **Traffic and Transportation Management Plan** and also suggest a *traffic enforcement measure*.

8.2: Existing Conditions of Transportation Facilities & Deficiencies

8.2.1 Existing Transportation System and Infrastructure (Roads, railway, water way and airway)

According to the Physical Feature Survey the length of total roads in the Paurashava is 147.97 km with 58.64 km pucca, 46.11 km semi-pucca and 43.23 km of katcha roads. There are about 14.16 km of Primary road, 13.18 km of secondary road and 120.78 km of tertiary road in the Paurashava. Detail ward wise list of road hierarchy will be present in the interim phase. The Paurashava has 8-9 Bridges, and 120 Culverts.

Narail Bus Terminal

Narail Bus terminal is situated about 1.24 Km away from zero point of Gohat Khola More. The total area of the terminal is about 1.83 Acre. The present service buses have the capacity of 45 – 50 passengers. This terminal lacks most of the passenger facilities. There is no security arrangement though buses ply from 6 AM to 11 PM. There is no Police / Ansar deputed in the bus terminal. There is no drinking water supply for the passenger. The scarcity of sitting arrangement and continual disruption of electricity makes the entire area chaotic.

Bus / Truck Stand beside the Jessore Road and old Bus stand

Apart from the old ferry ghat near Paurashava which is now more famous as boat ghat, the other transport infrastructure includes new bus terminal (along Jessore Gohatkholra road), Old bus terminal, petrol station etc. However, there are some parking spaces which are not prominent and not delineated area in Narail Paurashava. For instances, motorcycle space near old bus terminal, micro-bus stand near Paurashava etc. Besides, road markings, signs, zebra crossing, traffic signals, traffic and light posts are not available in the main roads. Major portion of such roads are occupied by temporary shops and mobile hawkers.

Waterway Services

The existing ferry ghat is now less effective due to the presence of SM Sultan Bridge on Chitra River. Although the Bridge makes trouble-free connection between Jessore and Lohagora, the

location of the bridge is questionable for the accessibility of the Paurashava from Faridpur district or eastern part of Narail. If a bridge is made in the boat ghat area which was previously used as ferry ghat near Paurashava, more than 2 km distance will be reduced to connect Narail Paurashava to Lohagora or eastern Narail.

8.2.2 Roadway Characteristics and Functional Classification

All Regional and Feeder Roads pass through the Narail Paurashava. A statement of existing roads and highways carrying inter district and intra city traffic including the road characteristics the length etc is given below. Following are the brief description of RHD roads:

Table 8.1: Description of the Roads constructed by RHD

SI No.	Road Name	Length, Km (Under Narail Paurashava)	Average Right of Way (ROW), M
01.	Narail-Jessore Road	2.4	15.5
02.	Narail – Magura Road	3.34	12.50
03.	Narail – Gobra Main Road	2.52	13.50

Source: Roads and Highways Department (RHD), Road Sub-Division, Narail, February, 2010

The following table shows the characteristics of roads in Narail Paurashava. The Narail-Jessore Road originating from Gohat Khola intersection crosses the Paurashava boundary at a distance of about 1.71 Km.

Table 8.2 Roadway Characteristics in Narail Paurashava

Route Name	Road Category	Total Length Km	Pavement Type	Carriage way Width (m)	ROW Width (m)	Footpath width (m)	Ward Coverage
Gohat Khola More-Dhopa Khola More	Regional Highway RHD	2.584	Black Top Flexible	4.67	12.61	No Footpath	Ward No. 05 and 06
Narail-Jessore Main Road	Regional Highway RHD	2.359	Black Top Flexible	6.15	23.98	No Footpath	Ward No. 05 and 06
Narail-Magura Main Road	Regional Highway RHD	3.06	Black Top Flexible	5.46	27.02	No Footpath	Ward No. 01, 04 and 05
Vouakhali Uttarpara Road	Paurashava Road	0.602	Black Top Flexible	3.02	11.2	No Footpath	Ward No. 05
Vouakhali Kahirdanga Road	Paurashava Road	0.579	Black Top Flexible	3	14.25	No Footpath	Ward No. 05
Vouakhali_Ghoshpara Road	Paurashava Road	0.454	Black Top Flexible	3	9.76	No Footpath	Ward No. 05
Victoria College Road/ Badhaghat Road	Paurashava Road	0.641	Blacktop Flexible	5.7	15.98	No Footpath	Ward No. 06
Ujirpur Road	Paurashava Road	2.547	Blacktop Flexible	3	21.24	No Footpath	Ward No. 08 and 09
Shahid Saif Mizan Road	Paurashava Road	0.469	Blacktop flexible	4.08	12.32	No Footpath	Ward No. 03

Source: Traffic and transportation survey of Narail Paurashava, 2009.

The road network of the Paurashava can be classified of the following three categories as the functional point of view:

1. Primary Road
2. Secondary Road
3. Tertiary Road

Table 8.3 illustrates the functional classification of roads in the project area.

Table 8.3 Functional classification of road in the Project area

Sl. No.	Ward No.	Category of Road (Length in Km)			Total Length (Km)
		Primary Road	Secondary Road	Tertiary Road	
1	Ward 01	1.67	0.72	9.49	11.88
2	Ward 1(extra)	0.00	0.00	11.65	11.65
3	Ward 02	0.46	2.41	8.78	11.65
4	Ward 03	1.95	1.19	17.57	20.70
5	Ward 04	2.36	1.08	11.02	14.46
6	Ward 05	2.62	2.21	7.44	12.28

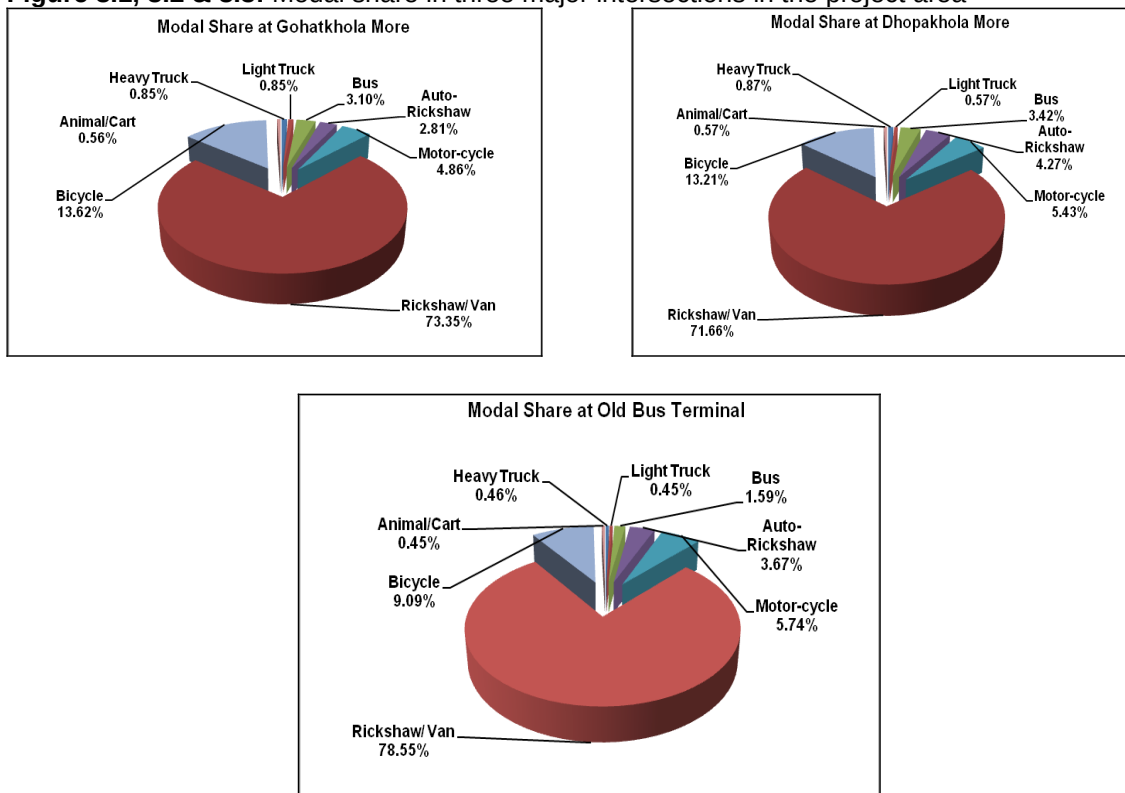
7	Ward 06	1.47	0.55	4.91	6.93
8	Ward 6(extra)	2.95	0.00	15.32	18.27
9	Ward 07	0.36	1.23	15.95	17.54
10	Ward 7(extra)	0.00	1.30	8.42	9.72
11	Ward 08	0.08	0.23	3.30	3.62
12	Ward 09	0.23	2.26	6.91	9.41
Grand Total		14.16	13.18	120.78	148.12

Source: Traffic and transportation survey of Narail Paurashava, 2009.

8.2.3 Mode of Transport

The mode of transport of this Paurashava is mainly non-motorized vehicle based. Most of the people of the Paurashava fulfill their daily trips by the mode of Bicycle, Rickshaw and van. But at recent years the main mode is changed to battery driven auto rickshaw, locally known as 'Auto'. This vehicle is quite favorite mode of transport now in Narail Paurashava. This vehicle is ridden on a shared basis and for short trips only. It is replacing rickshaw as a mode of transport. Major goods transport is made by truck for long distance traffic. Following figures shows the mode of composition in the project area:

Figure 8.1, 8.2 & 8.3: Modal share in three major intersections in the project area

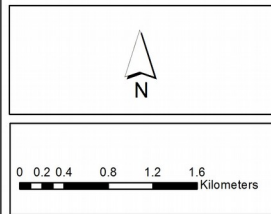
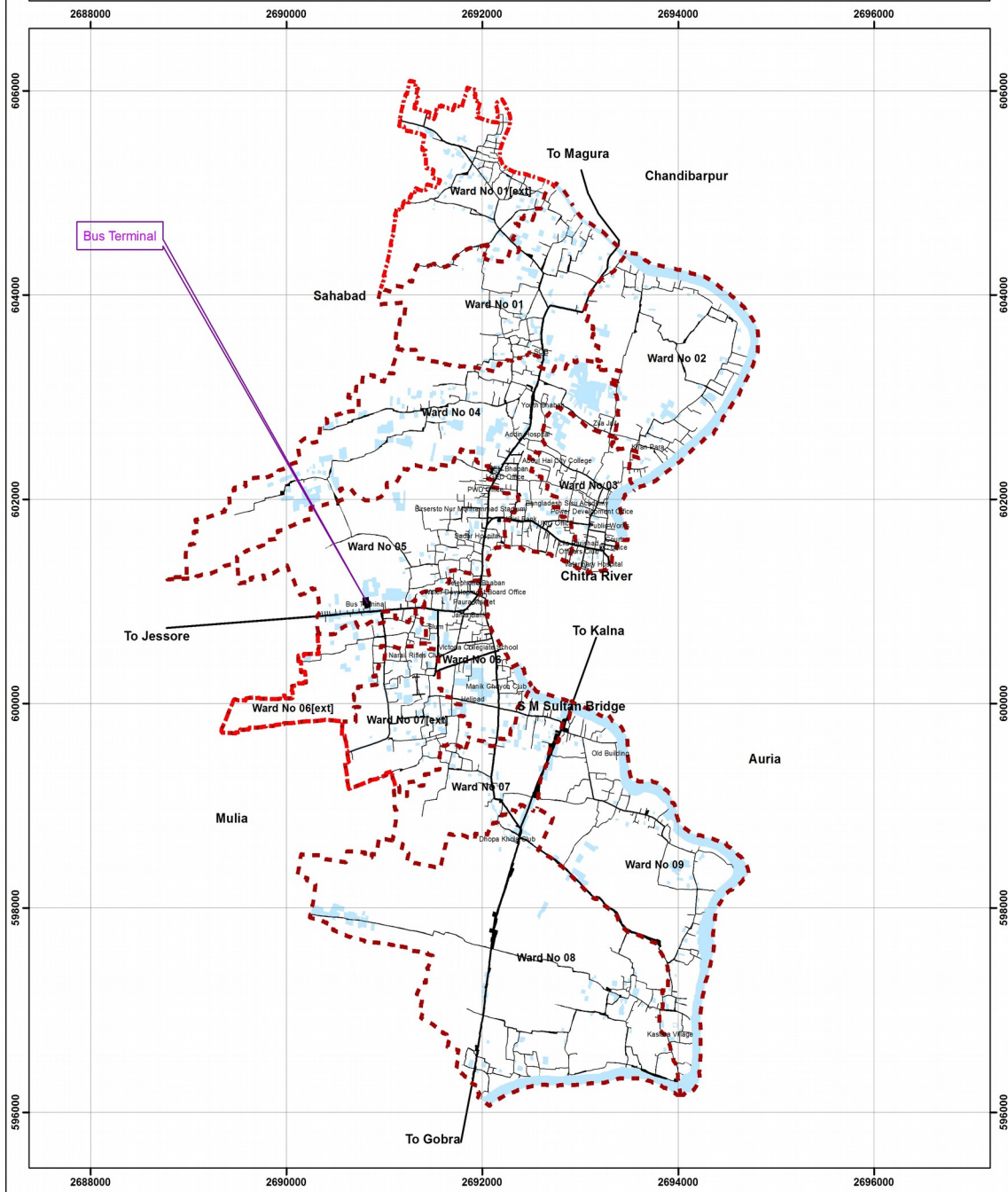


The modal share at all three intersections reflects that Non-motorized vehicle especially rickshaw or van is the most frequently used mode than motorized vehicle. Buses cannot cross this intersection during daytime. So few bus were found in this time. Bus/minibus is used for long distance travel so modal share of bus/minibus is also significant. Jessore-Narail major road is used in all types of long distance through traffic so modal share of motorized vehicle is significant.

Available Mode: Bus Terminals to Towns

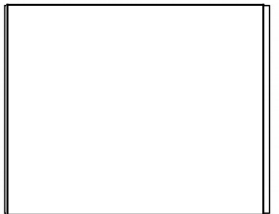
The main traffic available to transport passengers from this bus terminal is Rickshaws/vans/Auto (Battery Driven) etc .The rickshaws and vans are parked around the bus terminal in scattered manner. Some private cars and minibuses also carry passengers from this bus terminal.

Map 8.1: Existing Road Network of Narail Paurashava



Legend

Project Boundary	Existing Landuse Water bodies
Ward Boundary	Transportation
Existing Road Category	
Access/ Local	
Primary	
Secondary	



8.2.4 Intensity of Traffic Volume

The traffic volume count Survey is designed using Five bar gate method to determine total volume of each mode of traffic plying in the pre selected route. For these purpose appropriate prescribed forms earlier supplied by LGED has been used. The prescribed forms have been exclusively used to cover all modes of Traffic plying from different direction. Ten numbers of enumerators have been engaged for the purpose 3 crucial spots earlier selected. The enumerators were given an orientation training session and prescribed forms were distributed to them on the basis of priority of Spots. The traffic counts started at 6.30 Am in the morning for 24 hours every day for 3 days except break / recession at 10-10.3AM, 2-2.30 PM , 7 – 7.30 PM for prayers / launch everyday except FRIDAY when traffic survey were carried out for 6 hours considering very light traffic. The survey Spots were so selected that enumerators could count traffic from inside the protected room by the side of the road. This traffic volume survey was carried out from 5th Nov to 08th Nov 2009. All modes of traffic i.e. Trains bus / minibus Trucks / Mini trucks Microbus /Rickshaw /vans / Power Tiller / Nosimon / Korimon / bicycle/ tempo were counted in important routes. The weather was more or less fair.

Location of traffic volume counts:

The following spots were earlier selected for all modes of traffic:

1. Gohatkhol More (Central business district)
2. Dhopakhol More
3. Old Bus Terminal

The following results have been worked out from the traffic volume counts. The main data base and table containing PCU vs AADT and (Non Mechanized Vehicle) NMV in respective roads are given.

Figure 8.4: Peak Hour Volume at Three Major Intersections

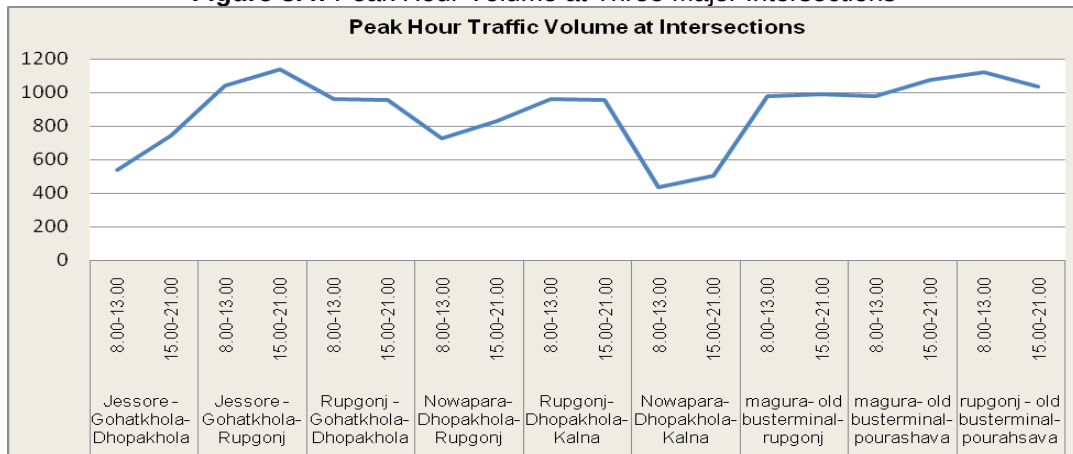
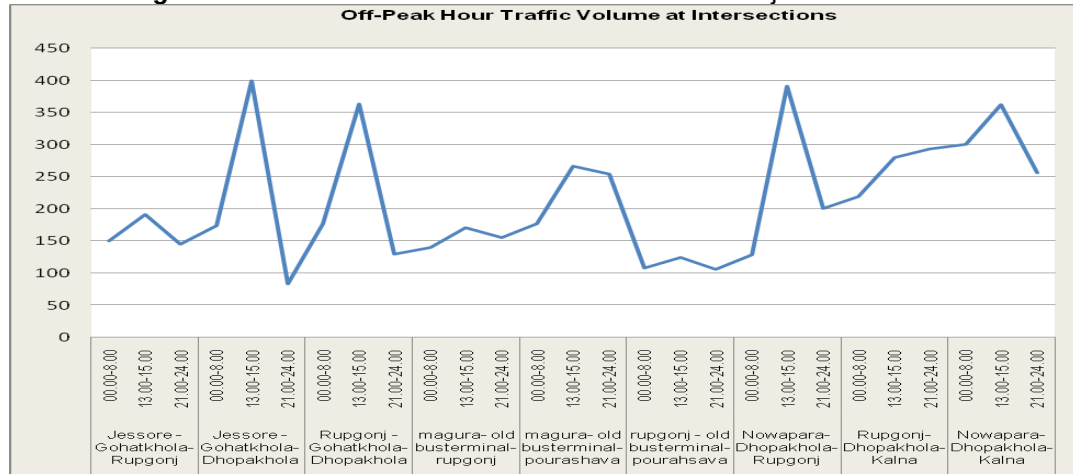


Figure 8.5: Off-Peak Hour Traffic Volume at Three Major Intersections



PCU analysis in different Routes:

Table 8.4: Peak Hour Volume at Three Major Intersections

Name of the intersection	Peak Hour	PCUs	Motorized Vehicle		Non-Motorized Vehicle		Total Vehicle no.
			No.	(%)	No.	(%)	
Jessore - Gohatkholo-Dhopakhola	8.00-13.00	536	91	8.15	420	3.96	511
	15.00-21.00	745	141	12.62	447	4.21	588
Jessore - Gohatkholo-Rupgonj	8.00-13.00	940	49	4.39	719	6.78	768
	15.00-21.00	1035	52	4.65	883	8.33	935
Rupgonj -Gohatkholo-Dhopakhola	8.00-13.00	961	31	2.77	785	7.40	816
	15.00-21.00	954	39	3.49	824	7.77	863
Nowapara-Dhopakhola-Rupgonj	8.00-13.00	323	26	2.36	262	2.47	288
	15.00-21.00	387	23	2.06	303	2.86	326
Rupgonj-Dhopakhola-Kalna	8.00-13.00	459	24	2.15	372	3.50	396
	15.00-21.00	413	32	2.86	318	3.00	350
Nowapara-Dhopakhola-Kalna	8.00-13.00	296	12	1.07	158	1.48	170
	15.00-21.00	231	17	1.50	181	1.70	197
Magura- old bus terminal- Rupgonj	8.00-13.00	976	75	6.71	829	7.82	904
	15.00-21.00	986	60	5.37	827	7.80	887
Magura- old bus terminal-Paurashava	8.00-13.00	977	127	11.37	856	8.07	983
	15.00-21.00	1071	136	12.17	803	7.57	939
Rupgonj - old bus terminal- Paurashava	8.00-13.00	1120	89	7.97	856	8.07	945
	15.00-21.00	983	93	8.32	765	7.21	858

Source: Traffic and transportation survey of Narail Paurashava, 2009.

Table 8.5 Off-Peak Hour Volume at Three Major Intersections

Name of the intersection	Off-Peak Hour	PCUs	Motorized	Motorized (%)	Non-Motorized	Non-Motorized (%)	Total Vehicle no.
Jessore - Gohatkholo-Rupgonj	00.00-8.00	150	41	34	82	66	123
	13.00-15.00	191	26	14	164	86	190
	21.00-24.00	145	33	32	69	68	102
Jessore - Gohatkholo-Dhopakhola	00.00-8.00	174	16	12	120	88	136
	13.00-15.00	399	14	4	315	96	329
	21.00-24.00	83	16	25	47	75	63
Rupgonj - Gohatkholo-Dhopakhola	00.00-8.00	177	12	9	129	91	141
	13.00-15.00	363	15	5	289	95	304
	21.00-24.00	129	14	15	83	85	97
Nowapara-Dhopakhola-Rupgonj	00.00-8.00	140	19	20	77	80	96
	13.00-15.00	170	20	14	121	86	141
	21.00-24.00	155	16	13	112	87	128
Rupgonj-Dhopakhola-Kalna	00.00-8.00	177	20	14	122	86	141
	13.00-15.00	266	21	10	197	90	218
	21.00-24.00	254	23	11	183	89	207
Nowapara-Dhopakhola-Kalna	00.00-8.00	108	20	29	50	71	70
	13.00-15.00	124	14	15	82	85	96
	21.00-24.00	106	10	11	76	89	86
Magura - Old Bus Terminal - Rupgonj	00.00-8.00	128	20	22	71	78	91
	13.00-15.00	391	18	6	293	94	311
	21.00-24.00	200	22	15	122	85	144
Magura- Old bus terminal-Paurashava	00.00-8.00	219	33	20	135	80	168
	13.00-15.00	280	24	10	213	90	237
	21.00-24.00	293	36	15	207	85	243
Rupgonj - Old Bus	00.00-8.00	300	29	12	207	88	236

Name of the intersection	Off-Peak Hour	PCUs	Motorized	Motorized (%)	Non-Motorized	Non-Motorized (%)	Total Vehicle no.
Terminal - Paurashava	13.00-15.00	362	30	10	282	90	312
	21.00-24.00	256	27	13	180	87	207

Source: Traffic and transportation survey of Narail Paurashava, 2009.

8.2.5 Level of Service: Degree of Traffic Congestion and Delay

The service which a roadway offers to the road user can vary under different volumes of traffic. The Highway capacity Manual has introduced the concept of "Level of Service" to denote the level of facility one can derive from a road under different operating characteristics and traffic volumes. The operating conditions for the six levels of service selected by the Manual are given below, Level 'A' representing the highest and Level 'F' representing the lowest:

Table 8.6 Standard Level of Service

Level of Services	V/C ratio
Level of Service A	Zone of Free flow ≤ 0.33
Level of Service B	Zone of Stable flow ≤ 0.50
Level of Service C	Zone of Stable flow ≤ 0.65
Level of Service D	Unstable Flow ≤ 0.80
Level of Service E	Unstable Flow ≤ 1.0
Level of Service F	Forced flow at low speed > 1

Source: Traffic and Transportation Engineering by L.R. Kadiyali

- LOS A: Free Flow Traffic- Individual users are practically unaffected by the presence of other vehicles on a road section. The choice of speed and the maneuverability are free. The level of comfort is excellent, as the driver needs minimal attention. The V/C should not exceed .33. Two Dhopakhola lanes are in this category and needs minimum attention at the moment.
- LOS B: Steady Traffic- The presence of other vehicles on the section begins to affect the behavior of individual drivers. The choice of the speed is free, but the maneuverability has somewhat decreased. The comfort is excellent, as the driver simply needs to keep an eye on nearby vehicles. One lane of Dhopakhola is just fall (.34) in this category which should not need any intervention at the moment.
- LOS C: Steady Traffic but Limited-The presence of other vehicles affects drivers. The choice of the speed is affected and maneuvering requires vigilance. The level of comfort decreases quickly at this level, because the driver has a growing impression of being caught between other vehicles. The V/C should not exceed .59 for this category. Two Gohatkhola lanes are in this category and needs to think further.
- LOS D: Steady Traffic at High Density- The speed and the maneuverability are severely reduced. Low level of comfort for the driver, as he must constantly avoid collisions with other vehicles. A slight increase of the traffic risks causing some operational problems and saturating the network. The V/C must be within .8. The existing survey shows that the old bus terminal area needs to focus immediately for traffic intervention.

In the project area the consultants have performed traffic survey in 3 Road intersections. On the basis of that traffic survey; the consultants have evaluated the performance of 9 Road sections. The only quantitative measure for the performance evaluation of sections that has been used in the study is volume to capacity ratio (V/C ratio). Traffic capacity is defined as the maximum hourly rate at which vehicles can reasonably be expected to traverse a roadway during a given period of time under prevailing roadway, traffic and control conditions and expressed as PCUs per hour. Peak Traffic Volume is defined as the actual peak hour traffic passing a particular roadway during a given time period and expressed as PCUs per hour.

Table 8.7: Evaluation of the LOS of the Major Road Sections

Name of the intersections	Type of Lane	Peak Hour Traffic Volume (PCUs Per hour)	Capacity	V/C	Level of Service
Gohatkholra (Road 1)	Single	745	1400	0.53	C
Gohatkholra (Road 2)	Single	1035	1400	0.74	D
Gohatkholra (Road 3)	Single	961	1400	0.69	C
Dhopakhola (Road 1)	Single	387	1400	0.28	A
Dhopakhola (Road 2)	Single	459	1400	0.34	B
Dhopakhola (Road 3)	Single	296	1400	0.21	A
Old busterminal (Road 1)	Single	986	1400	0.70	D
Old busterminal (Road 2)	Single	1071	1400	0.77	D
Old busterminal (Road 3)	Single	1120	1400	0.80	D

Capacity of a roadway largely depends on number of lane, road width and roadway condition. However, capacity was calculated in PCU per hour and the standard capacity of a lane is assumed as 1400 PCU per hour. The capacity of the Road sections is calculated by applying the standards made by the RHD which presents in future projection section of this report. Traffic volume is obtained from Traffic Survey data. Then the individual V/C ratio of all the 9 primary and secondary roads is calculated and the corresponding level of service are evaluated and presented in the table below:

8.2.6 Facilities for Pedestrians

General Pedestrian Facilities

The main central business district is situated around Rupganj Bazar. A chaotic crisscross intersection is the main cause of traffic/pedestrian congestion around this intersection. At present there is no facility for movement of pedestrian. The main path for pedestrian is the roadway in all directions. This unplanned pedestrian walking over the road way are poses serious constraints to the moving vehicles. So to resolve this situation a new pedestrian footpath is being studied. After the analysis of pedestrian volume on respective roads a new pedestrian walkway may be proposed, if he needed.

From pedestrian interview survey data it was gathered that 24 percent of the pedestrians prefer walking on foot shopping. About 17 percent pedestrians walked for education purpose, 17 percent pedestrian opted walking for social work purpose. The distance traversed mostly ranged from below 3 km. From Traffic volume survey it is gathered that following roads carry extreme pedestrian due to eminent commercial complex in the heart of Paurashava .The following table shows roads carrying majority of the pedestrians and recommendation there of.

Table 8.8: Pedestrian traffic flow in Narail Paurashava

Road Name	Daily Average Flow	Maximum Hourly Flow	Comments
Magura – Rupganj Road (Old Bus Terminal)	1626	313	Congested area, No pedestrian facilities has found. Road Crossing is risky.
Magura – Paurashava Road (Old Bus Terminal)	1358	266	No footpath found. Enough space for installation of pedestrian facilities.
Rupganj – Paurashava (Old Bus Terminal)	1441	226	There is no footpath on this road.
Jessore – Rupganj Road (at Gohatkholra More)	1151	199	There is no footpath on this road.
Jessore – Dhopakhola Road (at Gohatkholra More)	921	159	There is no footpath on this road.
Rupganj – Dhopakhola Road (at Gohatkholra More)	945	136	There is no footpath on this road.
Nowapara – Rupganj (at Dhopakhola More)	849	153	No footpath found. Enough space for installation of pedestrian facilities.
Rupganj – Kalna (at Dhopakhola More)	388	36	No footpath found. Risky to cross the road. Need zebra Crossing.
Nowapara – Kalna Road (at Dhopakhola More)	336	55	No footpath found. Bad smell of Narod River in walk through the road.

Source: Traffic and transportation survey of Narail Paurashava, 2009.

From pedestrian interview data base analysis the following figure gives the average pedestrian using pavement carriageway for different purposes. A graphical representation gives the clear picture as shown below.

Origin and Destination of trips

Pedestrian origin and destination trips are very important for providing efficient movement of people. It is found that most of the pedestrian are coming towards the Paurashava from different place of origin (Table-8.9). Significant number of pedestrian traffic generated from Simakhal, Mosifpur, Tileydan and just outside the Paurashava.

Table-8.9: Origin and Destination of the pedestrian

		Dhitola	Fultala	Paurashava	Majipara	Maishakh	Mosipul	Narail Paurashava	New Bus	Rupgonj	Shimakha	Shitaram	Total	
Origin	Banugati							1					1	
	Bus stand									1			1	
	Charikha									1			1	
	Doulatpu							2					2	
	Feryghat						1	1	1				3	
	Handola							2					2	
	Hayderkh							1					1	
	Jamidarb						1						1	
	Khatbari							1					1	
	Kurigram							2					2	
	Outside Paurashava							4		1			5	
	Mahabad							1					1	
	Majipara							3					3	
	Mohammad			1									1	
	Mojapur							1					1	
	Mosipul	1	1	1		1						1	5	
	Nainpur						1						1	
	Narail Paurashava				1							1		2
	Old bus							1						1
	Polaydan							1						1
Rupgonj				1			1						2	
Shibanan							1						1	
Simakhal							4						4	
Tileydan							5						5	
Tularamp							1						1	
Vingram							1						1	
Total		1	1	1	2	1	5	32	1	2	1	1	50	

SOURCE: TRAFFIC AND TRANSPORTATION SURVEY DATA OF NARAIL PAURASHAVA BY AQUA, 2009

Purpose of trips and distance Traveled

It is found that 22% people traveled .5-1.5 km to make a trip which is second highest in this category. The majority of the people (26%) traveled 2-4 km. However, almost similar proportions of trips are found for other three groups (Figure 8.6).

Figure 8.6: Pedestrian Distances Traveled (in Km)

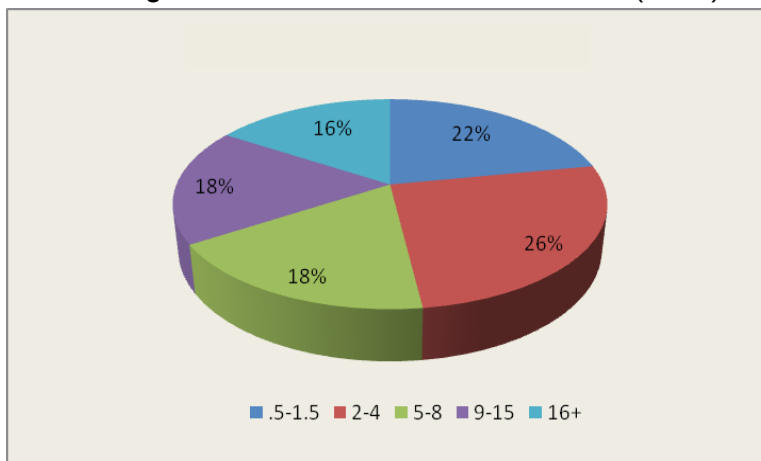


Table 8.10 shows that people traveled in significant number .5 to 4 km for work purpose. However, for other purposes like shopping, education or social, people are less likely to travel such distance.

Table 8.10: Trip purpose and according to distance traveled of the pedestrian

Purpose	Distance in km					Total
	0.5-1.5	2-4	4-8	9-15	16+	
Work/commute	7	7	3	2	1	20
Business Related	1	4		4	2	11
Shopping	2	1	2	1	2	8
Education	1	1	1	2	2	7
Social			3		1	4
Total	11	13	9	9	8	50

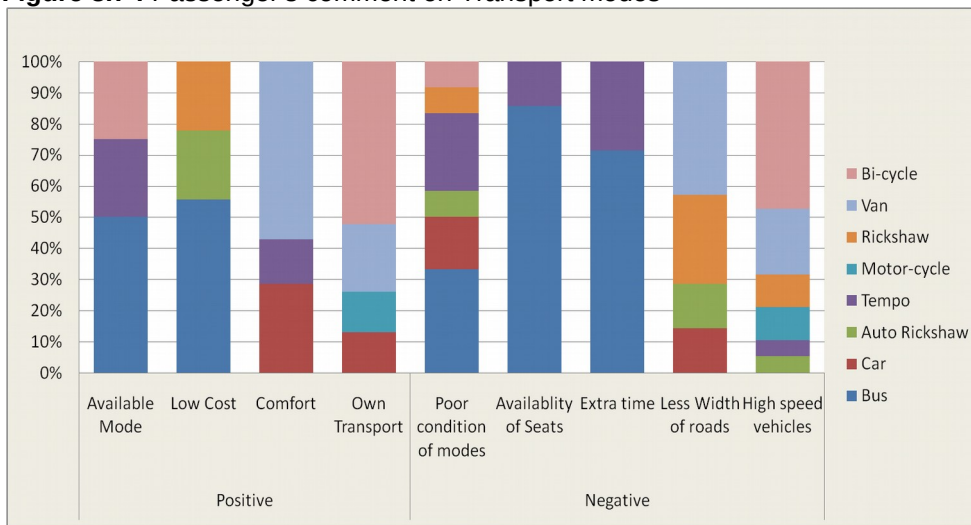
Source: Traffic and Transportation Survey Data of Narail Paurashava by AQUA, 2009

8.2.7 Analysis of Existing Deficiencies

Comments on Transport modes

People provide valuable opinion about the modes those they use usually. Apart from the common transportation infrastructure problems like broken roads, less width of the metal surface etc, people gave their judgment both positive and negative comments about the modes. From 39 people only 31 people provides the opinion (Figure 8.7). Although people are happy with the availability of bus and its low cost, people are rather disappointed with poor condition, timing and seats of the services. For non-motorized transport, people are more fear with the high speed motorized vehicles running in this predominate non-motorized area.

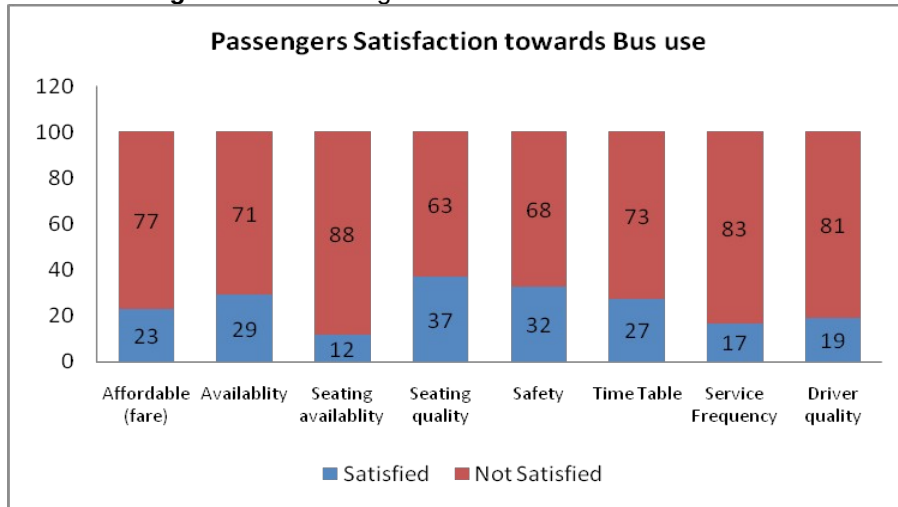
Figure 8.7 : Passenger's comment on Transport modes



Passenger's comments towards Bus service

Passenger interview survey has been carried out to find out peoples' perception about bus which they use usually. The collected comments were both for positive and negative aspects of bus services. Apart from common infrastructure problem people provide judgments about various aspects affordability, bus and its seating availability etc. In the following figure 8.8, the passenger's comments are presented where people who are not satisfied with bus service and those who shows positive attitude are presented. It is showed that majority of people are not satisfied with bus use. However, they are not satisfied the availability of the bus service(71%), seating availability (88%), Time table(73%),Driver quality(81%) and service frequency (83%).In contrast, they are satisfied with seating quality (37%), safety (32%) etc.

Figure 8.8: Passengers satisfaction towards bus use



8.3: Future Projection

8.3.1 Travel Demand Forecasting for Next 20 Years

The projection of number of bus and amount of passengers was done assuming that the number of bus is enough to support the present demand. From the analysis of present travel demand the following forecast has been made by the consultant:

Table-8.11: Travel Demand Forecasting of bus and bus passenger in different routes

Sl. No.	Bus Route	Bus Trip per day	Passenger trip per day	Passenger in different routes				Bus in different routes			
				Year 2010	Year 2015	Year 2020	Year 2025	Year 2030	Year 2015	Year 2020	Year 2025
1	Jessore –Rupganj	59	2950	2730	3086	3488	3943	55	62	70	79
2	Jessore – Dhopakhola	52	2600	2407	2720	3075	3475	48	54	61	70
3	Rupganj – Dhopakhola	38	1900	1759	1988	2247	2540	35	40	45	51
4	Nowapara – Rupganj	54	2700	2499	2825	3193	3609	50	56	64	72
5	Rupganj – Kalna	44	2200	2036	2302	2602	2941	41	46	52	59
6	Nowapara – Kalna	28	1400	1296	1465	1656	1871	26	29	33	37
7	Magura – Rupganj	49	2450	2268	2563	2897	3275	45	51	58	65
8	Magura – Paurashava	29	1450	1342	1517	1715	1938	27	30	34	39
9	Rupganj – Paurashava	39	1950	1805	2040	2306	2606	36	41	46	52
	Total	392	19600	18141	20505	23177	26197	363	410	464	524

Source: 1. Bus owner association, 2010; Projected by consultant
2. Passenger has taken 50 per bus

Table-8.12: Cumulative bus passenger forecasting for 20 year

Year	Population in the Paurashava	Bus Passenger per day	Bus Trips per day	New bus
2011	46761	19600	392	--
2015	53242	18141	363	42
2020	60621	20505	410	89
2025	69023	23177	464	143
2030	78590	26197	524	203

Source: BBS, 2011and projected.

The travel demand forecasting shows that there will need of 203 buses in different routes to accommodate the surplus bus passenger of 26197 per day in 2030.

8.3.2 Transportation Network Considered

From the origin and destination point of view (Table 8.13) it could be noted that major trips are generated from Narail central area which are also the places for trip attraction. Other trip attracting points are Majipara and Jessore.

Table-8.13: Origin-Destination of Bus users

Destination	Origin													Total
	Faridpur	Goalkhal	Gobra	Gupalgon	Jessore	Kanlagha	Khulna	Laxmipas	Lohagara	Mithapur	Mosipul	Narail	Simakhal	
Adampur												1		1
Andalbar												1		1
Bahir Ch												1		1
Bhunagat												3		3
Charikha												2		2
Dhaka								1						1
Dibikhad												1		1
Gangapur												1		1
Gubra						1								1
Hossainp												1		1
Jessore											1	2	1	4
Khulna						2								2
Majipara												6		6
Mithapuk												2		2
Narail	2		1		1	1	1		1	1				8
Pulomgha												1		1
Rajshahi				1										1
Singia												1		1
Tularamp		1										1		2
Total	2	1	1	1	1	4	1	1	1	1	1	24	1	40

Source: Traffic and Transportation Survey Data of Narail Paurashava by AQUA, 2009

With the help of the percentile distribution of O-D matrix prioritizing of the different long distance routes and with the help of this ranking the forecasting of different facilities for the future demand can be done. The model shows that maximum people of outside of the Paurashava are traveling from the adjoining upazillas.

8.4 Recommended Transportation Development Plan

8.4.1 Plan for Road Network Development

8.4.1.1 Road Network Plan

The proposed road hierarchy for Narail area as follows:

1. Primary Road
2. Secondary Road
3. Tertiary Road
4. Access Road/ Local Road

The dominant aim of planning is to design urban roads with a clear functional hierarchy. Primary roads are those major routes specially designated to canalize large volumes of traffic moving longer distances from one locality to another; Secondary and tertiary roads provide for shorter journeys to schools, shops and recreation, and give access to residential properties. By creating a residential road pattern that discourages through traffic, residential amenity—traffic noise, accidents, delays to pedestrians crossing roads—can be protected.

Major roads surround but do not pass through the neighborhood. Almost all of the roads which are purely residential are in the form of loops and cul-de-sac, thus inhibiting through traffic and vehicle speeds. The design provides for maximum safety and convenience of pedestrians and cyclists, especially to the local shops and primary school, and there is a considerable degree of segregation of pedestrian, cycle and motor traffic ways.

The following list of guidelines should consider in road network development:

- The proposed hierarchy of roads should maintain;
- each road should only intersect with roads of the same class or in the class immediately above or below it in the hierarchy;

- direct access to arterial roads should be restricted to collector or distributor roads, and these intersections should be T-junctions and signalized if warranted;
- direct access to private property from arterial roads should not generally be permitted;
- each class of road should be designed to a recognized standard, related to function and traffic speed;
- local roads should be designed to limit vehicle speeds;
- collector roads should not provide continuous through routes for traffic between arterials;
- local/local, local/collector and collector/collector should be T-junctions, but acute angle Y-junctions should be avoided;
- intersections should provide adequate sight-distance;
- the road layout should be such that the traffic generated by local roads and carried by the collectors should be within the range of 2,000-2,500 vehicles per day; and
- Pedestrian and cycle facilities should be included.

Following are the suggested planning standards of (Table-8.14). The standards are meant for use by DTIDP, LGED and other planning and development agencies. The standards have been adopted by the consultants to draw up the current series of plans.

Table- 8.14: Proposal for Road Standard in the Project area

Space Standards for Transportation Facilities		
Road Network:		
Classification	ROW (in meter) for Widening	ROW (in meter) for New Construction
primary road	18-24 meter	36-45 meter
secondary road	13-16 meter	18-20 meter
Collector/ Tertiary Road	9-12 meter	12-15 meter
Access Road/ Local Road	6-8 meter	6-8 meter
Footpath	2-3 meter	
Bus terminal	- Minimum 3 acres per terminal - 3 acres per 1,00,000 Population	
Truck terminal	Minimum 3 acres per terminal	
Baby taxi/tempo stand	0.5 acre per stand	
Rickshaw stand	0.3 acre per stand	
Water way & Landing Station:	Minimum 2 acres for landing station & office	
	For off-shore land: 500 meter on both sides of the landing station	
Rail way & Station:	- From one home signal to another home signal: length 3,000 feet & width 500 feet	
	- Total land area: 34.72 acres	
	- Minimum land width for establishment of single line: 100 feet for Broad Gauge and 90 feet for meter Gauge (considerable average height of the embankment 10 feet)	
	- Minimum land width for establishment of double line: 125 feet for Broad Gauge and 115 feet for meter Gauge (considerable average height of the embankment 10 feet)	
RHD	Road network of RHD within will follow as per RHD Rules**	

Source: District Towns Infrastructure Development Project

8.4.1.2 Existing road networks improvement plan

The consultant has been proposed 99.60 km of existing road to widen. The following table reveals the future development projects of the Paurashava.

Table-8.15: List of the existing road network improvement projects of Narail

Proposed ID	Existing Road Width(m)	Road Name	Existing Road Type	Proposed Road Category	Length(m)	Proposed Road Width (m)	Remarks	Phase	Ward no
S1	4.00		Road_Pucca	Secondary	855.839	18.00	Widening	Phase 1	Ward 01(Ext)
S2	4.00		Road_Pucca	Secondary	423.645	18.00	Widening	Phase 1	Ward 01(Ext)

Proposed ID	Existing Road Width(m)	Road Name	Existing Road Type	Proposed Road Category	Length(m)	Proposed Road Width (m)	Remarks	Phase	Ward no
T1	3.00		Road_Pucca	Tertiary	258.673	16.00	Widening	Phase 3	Ward 01(Ext)
T2	2.60		Road_Semipucca	Tertiary	562.467	16.00	Widening	Phase 3	Ward 01(Ext)
S3	4.00		Road_Pucca	Secondary	213.767	18.00	Widening	Phase 1	Ward 01(Ext)
S4	3.00		Road_Pucca	Secondary	323.493	18.00	Widening	Phase 1	Ward 01(Ext)
S5	3.00		Road_Pucca	Secondary	119.984	18.00	Widening	Phase 1	Ward 01(Ext)
S6	3.00		Road_Pucca	Secondary	322.297	18.00	Widening	Phase 1	Ward 01(Ext)
S7	3.80		Road_Pucca	Secondary	457.218	18.00	Widening	Phase 1	Ward 01(Ext)
T3	3.00		Road_Semipucca	Tertiary	375.484	16.00	Widening	Phase 2	Ward 01
T4	2.80		Road_Semipucca	Tertiary	381.959	16.00	Widening	Phase 3	Ward 01
T5	3.00		Road_Pucca	Tertiary	659.496	16.00	Widening	Phase 3	Ward 01(Ext)
P1	5.50	Jessore Road	Road_Pucca	Primary	348.443	36.00	Widening	Phase 1	Ward 05
S8	6.00	Magura Road	Road_Pucca	Secondary	727.019	18.00	Widening	Phase 2	Ward 01
S9	5.60	Magura Road	Road_Pucca	Secondary	649.887	18.00	Widening	Phase 2	Ward 04
S10	5.40	Magura Road	Road_Pucca	Secondary	708.001	18.00	Widening	Phase 2	Ward 05
T6	2.50	Raghunathpur Charpara Road	Road_Semipucca	Tertiary	356.372	16.00	Widening	Phase 2	Ward 01(Ext)
T7	3.00	Raghunathpur Charpara Road	Road_Semipucca	Tertiary	175.448	16.00	Widening	Phase 2	Ward 01(Ext)
T8	3.00		Road_Semipucca	Tertiary	200.842	16.00	Widening	Phase 3	Ward 01
T9	2.00		Road_Katcha	Tertiary	77.675	16.00	Widening	Phase 3	Ward 01
P2	5.60	Ghora Khali Ghat Road	Road_Pucca	Primary	361.307	36.00	Widening	Phase 1	Ward 01
T10	3.50		Road_Katcha	Tertiary	579.653	16.00	Widening	Phase 2	Ward 01(Ext)
T11	3.50		Road_Katcha	Tertiary	59.454	16.00	Widening	Phase 3	Ward 01
T12	2.80		Road_Katcha	Tertiary	207.532	16.00	Widening	Phase 3	Ward 01(Ext)
T13	2.50		Road_Katcha	Tertiary	384.144	16.00	Widening	Phase 3	Ward 01(Ext)
T14	2.50		Road_Katcha	Tertiary	66.856	16.00	Widening	Phase 3	Ward 01(Ext)
T15	2.00		Road_Katcha	Tertiary	352.702	16.00	Widening	Phase 3	Ward 01(Ext)
T16	2.00		Road_Katcha	Tertiary	208.212	16.00	Widening	Phase 3	Ward 01(Ext)
T17	2.00		Road_Katcha	Tertiary	32.154	16.00	Widening	Phase 3	Ward 01(Ext)
T18	3.50	Magura Road	Road_Pucca	Tertiary	367.202	16.00	Widening	Phase 2	Ward 01
T19	2.60		Road_Pucca	Tertiary	325.776	16.00	Widening	Phase 2	Ward 01
T20	2.60		Road_Semipucca	Tertiary	140.901	16.00	Widening	Phase 2	Ward 01(Ext)
T21	3.00	City College Road	Road_Pucca	Tertiary	763.101	16.00	Widening	Phase 1	Ward 03
T22	3.20	City College Road	Road_Pucca	Tertiary	583.799	16.00	Widening	Phase 1	Ward 03
S11	3.00		Road_Semipucca	Secondary	193.346	18.00	Widening	Phase 4	Ward 04
T23	2.70	Vatia Road	Road_Semipucca	Tertiary	588.472	16.00	Widening	Phase 4	Ward 02
P3	5.50	Narail- Kalna Road	Road_Pucca	Primary	2016.022	36.00	Widening	Phase 1	Ward 09
P4	3.50	Narail-Gobra Main Road	Road_Pucca	Primary	477.592	36.00	Widening	Phase 1	Ward 08
T24	5.70	Victoria College Road/ Badhaghat Road	Road_Pucca	Tertiary	641.245	16.00	Widening	Phase 1	Ward 06
S12	3.00		Road_Pucca	Secondary	349.723	18.00	Widening	Phase 1	Ward 09
T25	2.50		Road_Katcha	Tertiary	1256.654	16.00	Widening	Phase 2	Ward 08
S13	3.20	Helipad Road	Road_Pucca	Secondary	490.059	18.00	Widening	Phase 1	Ward 06
S14	3.20	Machimdia Road	Road_Pucca	Secondary	502.959	18.00	Widening	Phase 1	Ward 07
T26	2.50	Hatbaria Mission Road	Road_Semipucca	Tertiary	329.108	16.00	Widening	Phase 3	Ward 09
T27	3.00		Road_Pucca	Tertiary	242.266	16.00	Widening	Phase 2	Ward 08
T28	3.00		Road_Pucca	Tertiary	375.079	16.00	Widening	Phase 2	Ward 01
T29	3.00		Road_Pucca	Tertiary	542.693	16.00	Widening	Phase 2	Ward 01
S15	3.00	Ujirpur Road	Road_Pucca	Secondary	1325.699	18.00	Widening	Phase 1	Ward 09
T30	3.00		Road_Semipucca	Tertiary	284.307	16.00	Widening	Phase 2	Ward 09
T31	3.00		Road_Semipucca	Tertiary	28.841	16.00	Widening	Phase 2	Ward 09
T32	2.50		Road_Semipucca	Tertiary	524.291	16.00	Widening	Phase 3	Ward 09
S16	3.20		Road_Pucca	Secondary	685.817	18.00	Widening	Phase 1	Ward 09

Proposed ID	Existing Road Width(m)	Road Name	Existing Road Type	Proposed Road Category	Length(m)	Proposed Road Width (m)	Remarks	Phase	Ward no
P5	3.60		Road_Pucca	Primary	251.682	36.00	Widening	Phase 1	Ward 06(Ext)
P6	3.60	Mulia Road	Road_Pucca	Primary	983.711	36.00	Widening	Phase 1	Ward 07(Ext)
T33	3.00		Road_Pucca	Tertiary	222.443	16.00	Widening	Phase 3	Ward 08
T34	3.00		Road_Pucca	Tertiary	401.474	16.00	Widening	Phase 2	Ward 09
P7	4.80	Magura Road	Road_Pucca	Primary	63.012	36.00	Widening	Phase 1	Ward 01
P8	5.50	Narail-Gobra Main Road	Road_Pucca	Primary	75.822	36.00	Widening	Phase 1	Ward 08
T35	3.00		Road_Semipucca	Tertiary	112.441	16.00	Widening	Phase 3	Ward 08
T36	3.20		Road_Semipucca	Tertiary	128.511	16.00	Widening	Phase 3	Ward 08
S17	2.00		Road_Semipucca	Secondary	469.709	18.00	Widening	Phase 1	Ward 08
T37	3.00		Road_Semipucca	Tertiary	158.254	16.00	Widening	Phase 3	Ward 08
T38	2.00		Road_Semipucca	Tertiary	375.197	16.00	Widening	Phase 3	Ward 08
T39	2.00		Road_Semipucca	Tertiary	130.288	16.00	Widening	Phase 3	Ward 08
T40	2.00		Road_Semipucca	Tertiary	312.206	16.00	Widening	Phase 3	Ward 08
T41	2.80		Road_Semipucca	Tertiary	317.605	16.00	Widening	Phase 2	Ward 08
T42	2.00		Road_Katcha	Tertiary	154.731	16.00	Widening	Phase 3	Ward 08
S18	3.00		Road_Pucca	Secondary	422.072	18.00	Widening	Phase 1	Ward 09
S19	3.00		Road_Pucca	Secondary	356.744	18.00	Widening	Phase 1	Ward 09
T43	2.00		Road_Semipucca	Tertiary	277.273	16.00	Widening	Phase 4	Ward 09
T44	2.00		Road_Katcha	Tertiary	185.581	16.00	Widening	Phase 4	Ward 09
T45	3.00		Road_Semipucca	Tertiary	191.328	16.00	Widening	Phase 4	Ward 01
T46	3.00		Road_Semipucca	Tertiary	107.682	16.00	Widening	Phase 4	Ward 01
T47	2.60		Road_Semipucca	Tertiary	98.705	16.00	Widening	Phase 4	Ward 01
T48	2.50		Road_Katcha	Tertiary	112.804	16.00	Widening	Phase 3	Ward 02
T49	2.80		Road_Semipucca	Tertiary	108.144	16.00	Widening	Phase 3	Ward 02
S20	4.00		Road_Katcha	Secondary	450.500	18.00	Widening	Phase 2	Ward 02
T50	3.60		Road_Katcha	Tertiary	159.382	16.00	Widening	Phase 3	Ward 02
T51	3.00	Barsolo Road	Road_Semipucca	Tertiary	942.038	16.00	Widening	Phase 4	Ward 02
T52	3.00	Mosheskhula Jail Khana Road	Road_Pucca	Tertiary	545.378	16.00	Widening	Phase 2	Ward 03
S21	2.50		Road_Semipucca	Secondary	267.142	18.00	Widening	Phase 4	Ward 02
T53	3.00		Road_Pucca	Tertiary	225.003	16.00	Widening	Phase 2	Ward 04
S22	2.50		Road_Semipucca	Secondary	162.253	18.00	Widening	Phase 2	Ward 04
T54	3.00	Durgapur Nayanpur Road	Road_Pucca	Tertiary	948.363	16.00	Widening	Phase 2	Ward 04
T55	3.00	Malidanga Road	Road_Pucca	Tertiary	416.669	16.00	Widening	Phase 3	Ward 04
S23	5.70	Court Road	Road_Pucca	Secondary	387.460	18.00	Widening	Phase 1	Ward 04
T56	2.50		Road_Pucca	Tertiary	420.198	16.00	Widening	Phase 1	Ward 03
T57	3.20	Bazar Road	Road_Pucca	Tertiary	207.469	16.00	Widening	Phase 2	Ward 03
T58	3.00	Shahid Mujib Road	Road_Pucca	Tertiary	262.190	16.00	Widening	Phase 4	Ward 03
T59	5.00	Shahid Saif Mizan Road	Road_Pucca	Tertiary	222.931	16.00	Widening	Phase 2	Ward 03
T60	3.50	Shahid Saif Mizan Road	Road_Pucca	Tertiary	246.979	16.00	Widening	Phase 2	Ward 03
T61	3.00		Road_Pucca	Tertiary	520.344	16.00	Widening	Phase 3	Ward 04
T62	3.00		Road_Semipucca	Tertiary	454.732	16.00	Widening	Phase 3	Ward 04
T63	3.00	Vouakahli Kahirdanga Road	Road_Pucca	Tertiary	169.254	16.00	Widening	Phase 2	Ward 05
T64	3.00	Vouakahli Kahirdanga Road	Road_Semipucca	Tertiary	424.852	16.00	Widening	Phase 2	Ward 05
T65	3.00		Road_Semipucca	Tertiary	654.716	16.00	Widening	Phase 2	Ward 05
T66	2.20		Road_Semipucca	Tertiary	159.919	16.00	Widening	Phase 2	Ward 04
T67	3.00	Vouakahli Kahirdanga Road	Road_Pucca	Tertiary	272.977	16.00	Widening	Phase 1	Ward 05
T68	3.50		Road_Katcha	Tertiary	634.062	16.00	Widening	Phase 2	Ward 04
S24	4.00		Road_Pucca	Secondary	120.549	18.00	Widening	Phase 2	Ward 07(Ext)
T69	6.00	Hatibagan Road	Road_Pucca	Tertiary	458.528	16.00	Widening	Phase 1	Ward 06
T70	5.00		Road_Pucca	Tertiary	23.572	16.00	Widening	Phase 1	Ward 06
S25	5.00		Road_Pucca	Secondary	74.192	18.00	Widening	Phase 1	Ward 06
T71	2.50	Siddique Road	Road_Katcha	Tertiary	658.980	16.00	Widening	Phase 2	Ward 09
T72	2.60		Road_Semipucca	Tertiary	322.891	16.00	Widening	Phase 2	Ward 08
T73	3.00		Road_Katcha	Tertiary	156.754	16.00	Widening	Phase 4	Ward 04
T74	4.00	Durgapur Road	Road_Katcha	Tertiary	134.510	16.00	Widening	Phase 4	Ward 04
T75	3.00	Jaker Sibir Road	Road_Pucca	Tertiary	274.435	16.00	Widening	Phase 1	Ward 06(Ext)
T76	2.50	Jaker Sibir Road	Road_Pucca	Tertiary	239.183	16.00	Widening	Phase 1	Ward 07(Ext)

Proposed ID	Existing Road Width(m)	Road Name	Existing Road Type	Proposed Road Category	Length(m)	Proposed Road Width (m)	Remarks	Phase	Ward no
T77	4.00		Road_Katcha	Tertiary	157.686	16.00	Widening	Phase 1	Ward 07(Ext)
T78	3.00	Asrom Road	Road_Pucca	Tertiary	262.271	16.00	Widening	Phase 1	Ward 06
T79	3.60	Manik Sarak	Road_Pucca	Tertiary	358.274	16.00	Widening	Phase 1	Ward 06
S26	4.00	Rupgonj Bazar Road	Road_Pucca	Secondary	376.186	18.00	Widening	Phase 1	Ward 06
T80	2.00		Road_Semipucca	Tertiary	203.460	16.00	Widening	Phase 1	Ward 04
T81	2.00		Road_Katcha	Tertiary	164.318	16.00	Widening	Phase 4	Ward 04
T82	2.00		Road_Semipucca	Tertiary	234.387	16.00	Widening	Phase 3	Ward 04
T83	2.60		Road_Semipucca	Tertiary	140.160	16.00	Widening	Phase 1	Ward 05
T84	7.00	Chitra Ferry Ghut Road	Road_Pucca	Tertiary	86.102	16.00	Widening	Phase 1	Ward 03
T85	3.60	Munsi Ualiar Road	Road_Pucca	Tertiary	301.414	16.00	Widening	Phase 3	Ward 04
T86	3.30	Gochar Road	Road_Pucca	Tertiary	586.255	16.00	Widening	Phase 1	Ward 04
T87	3.00	Mosheshkhula - Aladatpur Link Road	Road_Pucca	Tertiary	131.216	16.00	Widening	Phase 2	Ward 04
T88	3.00	Mosheshkhula - Aladatpur Link Road	Road_Semipucca	Tertiary	415.366	16.00	Widening	Phase 2	Ward 03
T89	3.00	Shahid Tushar Road	Road_Pucca	Tertiary	315.898	16.00	Widening	Phase 3	Ward 03
T90	3.00	Vouakahli Ghoshpara Road	Road_Pucca	Tertiary	334.502	16.00	Widening	Phase 1	Ward 05
T91	3.00	South Narail Village Road	Road_Pucca	Tertiary	614.037	16.00	Widening	Phase 1	Ward 07(Ext)
T92	3.00	Betbaria Road	Road_Pucca	Tertiary	328.755	16.00	Widening	Phase 3	Ward 06
T93	3.00	Bethbaria Road	Road_Semipucca	Tertiary	278.060	16.00	Widening	Phase 3	Ward 07(Ext)
T94	2.00		Road_Katcha	Tertiary	191.838	16.00	Widening	Phase 2	Ward 07
T95	2.00		Road_Katcha	Tertiary	130.171	16.00	Widening	Phase 2	Ward 07
T96	2.00		Road_Katcha	Tertiary	111.562	16.00	Widening	Phase 1	Ward 07
T97	3.00		Road_Semipucca	Tertiary	103.409	16.00	Widening	Phase 4	Ward 05
T98	2.00		Road_Katcha	Tertiary	180.514	16.00	Widening	Phase 4	Ward 01
T99	2.00		Road_Pucca	Tertiary	83.200	16.00	Widening	Phase 1	Ward 04
T100	2.00		Road_Katcha	Tertiary	154.798	16.00	Widening	Phase 1	Ward 04
T101	3.30		Road_Pucca	Tertiary	146.600	16.00	Widening	Phase 2	Ward 04
T102	3.00	Khanpara Road	Road_Semipucca	Tertiary	195.402	16.00	Widening	Phase 3	Ward 02
T103	3.00	Boakhali Road	Road_Katcha	Tertiary	413.998	16.00	Widening	Phase 2	Ward 05
T104	3.00	Shahid Tushar Road	Road_Pucca	Tertiary	187.639	16.00	Widening	Phase 2	Ward 03
S27	5.50	Jessore Road	Road_Pucca	Secondary	358.260	18.00	Widening	Phase 1	Ward 05
S28	7.90	Jessore Road	Road_Pucca	Secondary	101.796	18.00	Widening	Phase 1	Ward 05
S29	8.40	Jessore Road	Road_Pucca	Secondary	82.814	18.00	Widening	Phase 1	Ward 05
T105	3.50		Road_Pucca	Tertiary	201.832	16.00	Widening	Phase 3	Ward 06
T106	2.00		Road_Semipucca	Tertiary	152.350	16.00	Widening	Phase 3	Ward 06
T107	5.00	Bethbaria Road	Road_Katcha	Tertiary	256.175	16.00	Widening	Phase 3	Ward 07
T108	3.00	Bethbaria Road	Road_Semipucca	Tertiary	123.610	16.00	Widening	Phase 3	Ward 07
T109	3.00		Road_Semipucca	Tertiary	456.857	16.00	Widening	Phase 3	Ward 07
T110	1.00		Road_Semipucca	Tertiary	91.019	16.00	Widening	Phase 1	Ward 07
T111	2.50	Bagan Bari Road	Road_Semipucca	Tertiary	204.072	16.00	Widening	Phase 2	Ward 07(Ext)
T112	1.80	Police Line Road	Road_Katcha	Tertiary	60.994	16.00	Widening	Phase 1	Ward 07(Ext)
T113	2.50		Road_Semipucca	Tertiary	203.820	16.00	Widening	Phase 3	Ward 09
T114	3.00		Road_Katcha	Tertiary	258.340	16.00	Widening	Phase 3	Ward 09
T115	2.50		Road_Semipucca	Tertiary	142.125	16.00	Widening	Phase 3	Ward 09
T116	2.00		Road_Semipucca	Tertiary	188.682	16.00	Widening	Phase 3	Ward 09
T117	2.50		Road_Semipucca	Tertiary	275.896	16.00	Widening	Phase 2	Ward 09
T118	2.00		Road_Semipucca	Tertiary	185.493	16.00	Widening	Phase 2	Ward 09
T119	1.80		Road_Semipucca	Tertiary	67.631	16.00	Widening	Phase 4	Ward 05
T120	3.50		Road_Katcha	Tertiary	247.181	16.00	Widening	Phase 2	Ward 05
S30	3.00		Road_Katcha	Secondary	121.463	18.00	Widening	Phase 4	Ward 05
T121	2.50		Road_Katcha	Tertiary	180.908	16.00	Widening	Phase 3	Ward 05
S31	2.00		Road_Katcha	Secondary	122.336	18.00	Widening	Phase 2	Ward 07(Ext)
S32	3.00		Road_Semipucca	Secondary	528.729	18.00	Widening	Phase 1	Ward 09
T122	2.00		Road_Katcha	Tertiary	111.130	16.00	Widening	Phase 4	Ward 05
S33	2.00		Road_Katcha	Secondary	109.058	18.00	Widening	Phase 4	Ward 05
T123	4.00		Road_Katcha	Tertiary	425.085	16.00	Widening	Phase 2	Ward 08
T124	3.00		Road_Semipucca	Tertiary	82.489	16.00	Widening	Phase 2	Ward 08
T125	3.00		Road_Semipucca	Tertiary	256.593	16.00	Widening	Phase 2	Ward 08

Proposed ID	Existing Road Width(m)	Road Name	Existing Road Type	Proposed Road Category	Length(m)	Proposed Road Width (m)	Remarks	Phase	Ward no
T126	2.00		Road_Semipucca	Tertiary	178.242	16.00	Widening	Phase 2	Ward 09
S34	6.00	Jessore Road	Road_Pucca	Secondary	570.479	18.00	Widening	Phase 1	Ward 06
T127	4.00		Road_Katcha	Tertiary	182.168	16.00	Widening	Phase 2	Ward 01(Ext)
S35	5.50	Gobra road	Road_Pucca	Secondary	288.542	18.00	Widening	Phase 1	Ward 08
S36	2.20	Bagan Bari Road	Road_Semipucca	Secondary	225.691	18.00	Widening	Phase 2	Ward 07(Ext)
T128	2.50		Road_Semipucca	Tertiary	194.955	16.00	Widening	Phase 3	Ward 09
S37	3.00		Road_Katcha	Secondary	163.437	18.00	Widening	Phase 4	Ward 08
S38	3.00		Road_Semipucca	Secondary	390.321	18.00	Widening	Phase 1	Ward 09
T129	3.70	Shahid Muktijoddha Mamunur Rashid Kanchan Road	Road_Pucca	Tertiary	182.052	16.00	Widening	Phase 1	Ward 03
T130	3.00		Road_Semipucca	Tertiary	130.358	16.00	Widening	Phase 3	Ward 04
S39	4.00	Kalibari Road/ Sarnopatti Road	Road_Pucca	Secondary	196.839	18.00	Widening	Phase 1	Ward 06
S40	3.00	Durgapur Nayanpur Road	Road_Pucca	Secondary	762.167	18.00	Widening	Phase 2	Ward 04
S41	8.40	Jessore Road	Road_Pucca	Secondary	35.324	18.00	Widening	Phase 1	Ward 06
T131	3.00	Siddique Road	Road_Katcha	Tertiary	185.273	16.00	Widening	Phase 2	Ward 07
S42	3.00		Road_Semipucca	Secondary	231.586	18.00	Widening	Phase 1	Ward 02
T132	1.50		Road_Katcha	Tertiary	360.127	16.00	Widening	Phase 2	Ward 09
S43	5.30	Jessore Road	Road_Pucca	Secondary	266.735	18.00	Widening	Phase 1	Ward 05
S44	3.60		Road_Katcha	Secondary	89.400	18.00	Widening	Phase 2	Ward 02
T133	2.50		Road_Semipucca	Tertiary	110.317	16.00	Widening	Phase 1	Ward 04
S45	5.70	Court Road	Road_Pucca	Secondary	282.153	18.00	Widening	Phase 1	Ward 05
T134	3.00		Road_Semipucca	Tertiary	86.732	16.00	Widening	Phase 2	Ward 01
T135	2.50	Vatia Road	Road_Semipucca	Tertiary	33.659	16.00	Widening	Phase 4	Ward 02
T136	2.70	Vatia Road	Road_Semipucca	Tertiary	470.277	16.00	Widening	Phase 4	Ward 02
T137	2.80	Vatia Road	Road_Katcha	Tertiary	158.327	16.00	Widening	Phase 4	Ward 04
T138	2.50	Barasula Road	Road_Pucca	Tertiary	90.761	16.00	Widening	Phase 4	Ward 02
S46	6.00	Jail Road	Road_Katcha	Secondary	259.808	18.00	Widening	Phase 4	Ward 04
S47	5.50	Magura Road	Road_Pucca	Secondary	213.921	18.00	Widening	Phase 2	Ward 04
T139	2.50	City Scholl Road	Road_Katcha	Tertiary	33.517	16.00	Widening	Phase 1	Ward 04
T140	2.00	City Scholl Road	Road_Semipucca	Tertiary	49.819	16.00	Widening	Phase 1	Ward 04
S48	5.30	Court Road	Road_Pucca	Secondary	321.756	18.00	Widening	Phase 1	Ward 04
S49	6.50	Court Road	Road_Pucca	Secondary	209.424	18.00	Widening	Phase 1	Ward 03
S50	6.90	Court Road	Road_Pucca	Secondary	104.734	18.00	Widening	Phase 1	Ward 03
T141	5.00	Chitra Ferry Ghut Road	Road_Pucca	Tertiary	68.426	16.00	Widening	Phase 1	Ward 03
T142	1.60		Road_Katcha	Tertiary	54.768	16.00	Widening	Phase 4	Ward 03
T143	3.20	Munsi Ualiar Road	Road_Pucca	Tertiary	221.380	16.00	Widening	Phase 3	Ward 03
T144	3.00		Road_Semipucca	Tertiary	7.907	16.00	Widening	Phase 2	Ward 03
T145	3.00		Road_Semipucca	Tertiary	266.503	16.00	Widening	Phase 2	Ward 03
T146	3.00	Mosheshkhula - Aladatpur Link Road	Road_Semipucca	Tertiary	38.755	16.00	Widening	Phase 2	Ward 03
T147	2.50	Barasula Road	Road_Pucca	Tertiary	356.212	16.00	Widening	Phase 2	Ward 03
S51	3.20	Durgapur Aladatpur Road	Road_Pucca	Secondary	156.921	18.00	Widening	Phase 2	Ward 04
T148	2.60		Road_Semipucca	Tertiary	51.870	16.00	Widening	Phase 3	Ward 01(Ext)
S52	3.50		Road_Pucca	Secondary	167.115	18.00	Widening	Phase 1	Ward 01
T149	2.00		Road_Semipucca	Tertiary	252.234	16.00	Widening	Phase 3	Ward 08
T150	2.00		Road_Katcha	Tertiary	123.343	16.00	Widening	Phase 2	Ward 09
T151	2.50		Road_Katcha	Tertiary	233.561	16.00	Widening	Phase 3	Ward 09
S53	3.00	Ujirpur Road	Road_Pucca	Secondary	306.379	18.00	Widening	Phase 1	Ward 09
T152	3.00		Road_Semipucca	Tertiary	129.353	16.00	Widening	Phase 3	Ward 09
S54	3.20		Road_Pucca	Secondary	100.322	18.00	Widening	Phase 1	Ward 09
S55	3.20		Road_Pucca	Secondary	180.855	18.00	Widening	Phase 1	Ward 09
S56	4.30		Road_Pucca	Secondary	262.655	18.00	Widening	Phase 1	Ward 09
S57	3.25	Hatbaria Road	Road_Pucca	Secondary	142.611	18.00	Widening	Phase 1	Ward 07
S58	3.00	Hatbaria Mission Road	Road_Pucca	Secondary	231.109	18.00	Widening	Phase 1	Ward 09
T153	3.00		Road_Katcha	Tertiary	49.701	16.00	Widening	Phase 3	Ward 08
T154	3.00		Road_Semipucca	Tertiary	81.310	16.00	Widening	Phase 3	Ward 08
T155	2.50		Road_Semipucca	Tertiary	174.598	16.00	Widening	Phase 4	Ward 08

Proposed ID	Existing Road Width(m)	Road Name	Existing Road Type	Proposed Road Category	Length(m)	Proposed Road Width (m)	Remarks	Phase	Ward no
P9	3.70	Narail-Gobra Main Road	Road_Pucca	Primary	374.098	36.00	Widening	Phase 1	Ward 08
P10	3.70	Narail-Gobra Main Road	Road_Pucca	Primary	302.074	36.00	Widening	Phase 1	Ward 08
P11	3.50	Narail-Gobra Main Road	Road_Pucca	Primary	224.345	36.00	Widening	Phase 1	Ward 08
P12	4.00	Narail-Gobra Main Road	Road_Pucca	Primary	195.101	36.00	Widening	Phase 1	Ward 08
P13	3.90	Narail-Gobra Main Road	Road_Pucca	Primary	175.331	36.00	Widening	Phase 1	Ward 08
P14	3.80	Narail-Gobra Main Road	Road_Pucca	Primary	63.166	36.00	Widening	Phase 1	Ward 08
T156	3.00		Road_Semipucca	Tertiary	45.748	16.00	Widening	Phase 2	Ward 08
S59	3.00		Road_Semipucca	Secondary	273.386	18.00	Widening	Phase 1	Ward 08
S60	2.50		Road_Semipucca	Secondary	45.459	18.00	Widening	Phase 1	Ward 08
T157	2.50		Road_Semipucca	Tertiary	66.427	16.00	Widening	Phase 3	Ward 08
T158	2.00		Road_Semipucca	Tertiary	171.102	16.00	Widening	Phase 3	Ward 08
T159	2.00		Road_Katcha	Tertiary	40.170	16.00	Widening	Phase 3	Ward 08
T160	4.00		Road_Semipucca	Tertiary	81.812	16.00	Widening	Phase 3	Ward 08
T161	3.00		Road_Semipucca	Tertiary	61.299	16.00	Widening	Phase 2	Ward 08
T162	2.50		Road_Semipucca	Tertiary	48.541	16.00	Widening	Phase 2	Ward 08
P15	3.80	Narail-Gobra Main Road	Road_Pucca	Primary	97.341	36.00	Widening	Phase 1	Ward 08
P16	3.40	Narail-Gobra Main Road	Road_Pucca	Primary	316.848	36.00	Widening	Phase 1	Ward 08
T163	2.70		Road_Semipucca	Tertiary	100.435	16.00	Widening	Phase 2	Ward 07
T164	3.00	Bethbaria Road	Road_Semipucca	Tertiary	199.802	16.00	Widening	Phase 3	Ward 07
T165	5.00		Road_Katcha	Tertiary	186.006	16.00	Widening	Phase 3	Ward 04
T166	2.20		Road_Semipucca	Tertiary	32.382	16.00	Widening	Phase 2	Ward 04
T167	3.00		Road_Katcha	Tertiary	176.752	16.00	Widening	Phase 2	Ward 04
S61	5.50	Gobra road	Road_Pucca	Secondary	557.140	18.00	Widening	Phase 1	Ward 06
P17	6.00	Jessore Road	Road_Pucca	Primary	323.979	36.00	Widening	Phase 1	Ward 05
T168	2.60		Road_Pucca	Tertiary	241.665	16.00	Widening	Phase 2	Ward 06(Ext)
S62	8.40	Jessore Road	Road_Pucca	Secondary	36.695	18.00	Widening	Phase 1	Ward 05
S63	7.10	Jessore Road	Road_Pucca	Secondary	76.608	18.00	Widening	Phase 1	Ward 06
S64	6.60	Jessore Road	Road_Pucca	Secondary	53.365	18.00	Widening	Phase 1	Ward 06
S65	7.40	Jessore Road	Road_Pucca	Secondary	155.288	18.00	Widening	Phase 1	Ward 06
T169	5.60	Hatibagan Road	Road_Pucca	Tertiary	195.161	16.00	Widening	Phase 1	Ward 07(Ext)
T170	3.00		Road_Katcha	Tertiary	48.927	16.00	Widening	Phase 1	Ward 07(Ext)
T171	3.00	Police Line Road	Road_Semipucca	Tertiary	196.018	16.00	Widening	Phase 1	Ward 07(Ext)
T172	1.80		Road_Semipucca	Tertiary	67.645	16.00	Widening	Phase 1	Ward 07(Ext)
T173	4.00		Road_Semipucca	Tertiary	45.333	16.00	Widening	Phase 1	Ward 07(Ext)
T174	2.30		Road_Semipucca	Tertiary	183.937	16.00	Widening	Phase 2	Ward 05
T175	2.80	Vatia Road	Road_Semipucca	Tertiary	31.208	16.00	Widening	Phase 4	Ward 04
T176	2.00		Road_Katcha	Tertiary	50.819	16.00	Widening	Phase 3	Ward 08
T177	2.50	Hatbaria Mission Road	Road_Semipucca	Tertiary	174.802	16.00	Widening	Phase 3	Ward 09
T178	2.50		Road_Semipucca	Tertiary	82.969	16.00	Widening	Phase 2	Ward 09
T179	3.00		Road_Semipucca	Tertiary	114.411	16.00	Widening	Phase 3	Ward 08
T180	3.00	Kurigram Nilam Sarak Machimdia Road	Road_Pucca	Tertiary	143.585	16.00	Widening	Phase 3	Ward 05
S66	3.25		Road_Pucca	Secondary	27.511	18.00	Widening	Phase 1	Ward 09
T181	3.00		Road_Semipucca	Tertiary	27.778	16.00	Widening	Phase 2	Ward 03
P19	0.00			Primary	901.178	36.00	Widening	Phase 1	Ward 01
T182	3.60	Mulia Road	Road_Pucca	Tertiary	2792.343	16.00	Widening	Phase 4	Ward 07(Ext)
P20	3.60	Mulia Road	Road_Pucca	Primary	62.373	36.00	Widening	Phase 1	Ward 07(Ext)
P21	3.50	Narail-Gobra Main Road	Road_Pucca	Primary	255.030	36.00	Widening	Phase 1	Ward 08
P23	0.00			Primary	793.827	36.00	Widening	Phase 1	Ward 08
S68	3.30	Hamid Textile Mill Road	Road_Pucca	Secondary	84.126	18.00	Widening	Phase 4	Ward 05
S70	3.30	Hamid Textile Mill Road	Road_Pucca	Secondary	79.814	18.00	Widening	Phase 4	Ward 05
S71	3.00		Road_Semipucca	Secondary	40.221	18.00	Widening	Phase 4	Ward 05
S73	2.00		Road_Pucca	Secondary	44.819	18.00	Widening	Phase 4	Ward 04
S75	7.00	Jail Road	Road_Katcha	Secondary	129.571	18.00	Widening	Phase 4	Ward 04
S77	3.00	Jail Khana Road	Road_Semipucca	Secondary	149.139	18.00	Widening	Phase 4	Ward 02
S79	3.60		Road_Katcha	Secondary	183.893	18.00	Widening	Phase 1	Ward 02
T184	4.00		Road_Katcha	Tertiary	269.974	16.00	Widening	Phase 2	Ward 08

Proposed ID	Existing Road Width(m)	Road Name	Existing Road Type	Proposed Road Category	Length(m)	Proposed Road Width (m)	Remarks	Phase	Ward no
T186	0.00			Tertiary	348.407	16.00	Widening	Phase 4	Ward 07(Ext)
S86	3.25	Hatbaria Road	Road_Pucca	Secondary	69.153	18.00	Widening	Phase 1	Ward 07
T187	0.00			Tertiary	1271.714	16.00	Widening	Phase 4	Ward 06(Ext)
P24	0.00			Primary	2175.194	36.00	Widening	Phase 1	Extension
T190	2.20		Road_Semipucca	Tertiary	70.020	16.00	Widening	Phase 2	Ward 04
T191	3.00	Vouakahli Kahirdanga Road	Road_Pucca	Tertiary	70.369	16.00	Widening	Phase 1	Ward 05
T192	3.00	Vouakahli Uttarpara Road	Road_Pucca	Tertiary	92.317	16.00	Widening	Phase 1	Ward 05
S89	3.00	Durgapur Nayanpur Road	Road_Pucca	Secondary	89.352	18.00	Widening	Phase 2	Ward 04
T193	3.00		Road_Katcha	Tertiary	158.734	16.00	Widening	Phase 3	Ward 08
T194	2.50		Road_Semipucca	Tertiary	155.176	16.00	Widening	Phase 3	Ward 08
T196	3.60		Road_Katcha	Tertiary	86.998	16.00	Widening	Phase 3	Ward 02
T197	2.50	Vatia Road	Road_Semipucca	Tertiary	122.473	16.00	Widening	Phase 4	Ward 02
T198	2.50	Vatia Road	Road_Semipucca	Tertiary	202.710	16.00	Widening	Phase 4	Ward 02
S90	0.00			Secondary	62.959	18.00	Widening	Phase 4	Ward 02
T199	3.00		Road_Semipucca	Tertiary	134.148	16.00	Widening	Phase 3	Ward 08
T200	3.00		Road_Semipucca	Tertiary	35.992	16.00	Widening	Phase 2	Ward 09
T201	2.00		Road_Semipucca	Tertiary	65.459	16.00	Widening	Phase 2	Ward 09
T203	3.50		Road_Katcha	Tertiary	134.387	16.00	Widening	Phase 2	Ward 08
T204	3.00	Ujirpur Road	Road_Pucca	Tertiary	242.933	16.00	Widening	Phase 3	Ward 08
T207	0.00			Tertiary	195.884	16.00	Widening	Phase 3	Ward 09
T209	3.00	Bethbaria Road	Road_Semipucca	Tertiary	43.750	16.00	Widening	Phase 3	Ward 07
T216	2.00		Road_Semipucca	Tertiary	89.139	16.00	Widening	Phase 3	Ward 05
T219	3.00		Road_Semipucca	Tertiary	111.477	16.00	Widening	Phase 2	Ward 03
T225	3.50		Road_Katcha	Tertiary	58.379	16.00	Widening	Phase 3	Ward 01(Ext)
T226	2.80		Road_Semipucca	Tertiary	134.451	16.00	Widening	Phase 3	Ward 01
T228	3.00	Shahid Mujib Road	Road_Pucca	Tertiary	130.774	16.00	Widening	Phase 4	Ward 03
T230	0.00			Tertiary	55.982	16.00	Widening	Phase 1	Ward 04
T232	2.50	Central Jame Masjid Road	Road_Pucca	Tertiary	16.318	16.00	Widening	Phase 1	Ward 03
T236	5.00	Bethbaria Road	Road_Katcha	Tertiary	56.124	16.00	Widening	Phase 3	Ward 07
T238	3.00		Road_Katcha	Tertiary	59.665	16.00	Widening	Phase 1	Ward 07
T239	0.00			Tertiary	86.075	16.00	Widening	Phase 3	Ward 07
T240	0.00			Tertiary	117.359	16.00	Widening	Phase 1	Ward 07(Ext)
T242	3.00	Helipad Road	Road_Semipucca	Tertiary	52.105	16.00	Widening	Phase 3	Ward 07(Ext)
T246	3.00	Vouakahli Ghoshpara Road	Road_Pucca	Tertiary	53.555	16.00	Widening	Phase 1	Ward 05
T247	2.80		Road_Pucca	Tertiary	18.531	16.00	Widening	Phase 1	Ward 05
T248	0.00			Tertiary	68.441	16.00	Widening	Phase 2	Ward 05
T249	0.00			Tertiary	30.504	16.00	Widening	Phase 1	Ward 07(Ext)
T250	2.50	Jaker Sibir Road	Road_Pucca	Tertiary	32.741	16.00	Widening	Phase 1	Ward 07(Ext)
T256	3.50		Road_Katcha	Tertiary	60.260	16.00	Widening	Phase 4	Ward 04
T261	2.50		Road_Katcha	Tertiary	134.545	16.00	Widening	Phase 3	Ward 09
T263	0.00			Tertiary	58.123	16.00	Widening	Phase 2	Ward 09
T264	0.00			Tertiary	102.599	16.00	Widening	Phase 3	Ward 08
T265	2.00		Road_Semipucca	Tertiary	33.992	16.00	Widening	Phase 3	Ward 08
T268	3.00		Road_Semipucca	Tertiary	61.161	16.00	Widening	Phase 3	Ward 08
T269	0.00			Tertiary	360.320	16.00	Widening	Phase 3	Ward 08
T271	2.00		Road_Semipucca	Tertiary	198.165	16.00	Widening	Phase 3	Ward 08
T272	0.00			Tertiary	169.308	16.00	Widening	Phase 3	Ward 08
T276	3.00		Road_Pucca	Tertiary	42.036	16.00	Widening	Phase 2	Ward 08
T278	3.00		Road_Pucca	Tertiary	47.351	16.00	Widening	Phase 3	Ward 08
T284	4.00		Road_Katcha	Tertiary	21.315	16.00	Widening	Phase 1	Ward 07(Ext)
T285	0.00			Tertiary	460.361	16.00	Widening	Phase 2	Ward 06
T286	3.00	Asrom Road	Road_Pucca	Tertiary	73.439	16.00	Widening	Phase 2	Ward 06
T289	2.50	Vatia Road	Road_Semipucca	Tertiary	27.988	16.00	Widening	Phase 3	Ward 02
T290	3.00		Road_Semipucca	Tertiary	96.970	16.00	Widening	Phase 3	Ward 01
T293	0.00			Tertiary	576.550	16.00	Widening	Phase 4	Extension
S92	5.00	Narail-Gobra Main Road	Road_Pucca	Secondary	846.131	18.00	Widening	Phase 1	Ward 07

Proposed ID	Existing Road Width(m)	Road Name	Existing Road Type	Proposed Road Category	Length(m)	Proposed Road Width (m)	Remarks	Phase	Ward no
T296	4.00	Kalibari Road/ Sarnopatti Road	Road_Pucca	Tertiary	60.770	16.00	Widening	Phase 1	Ward 06
T297	0.00			Tertiary	51.653	16.00	Widening	Phase 1	Ward 06
T298	2.80		Road_Semipucca	Tertiary	381.959	16.00	Widening	Phase 2	Ward 01
T299	2.70	Vatia Road	Road_Semipucca	Tertiary	588.472	16.00	Widening	Phase 4	Ward 04
S97	3.00	Jail Khana Road	Road_Semipucca	Secondary	149.139	18.00	Widening	Phase 4	Ward 04
T300	2.70	Vatia Road	Road_Semipucca	Tertiary	588.472	16.00	Widening	Phase 4	Ward 02
S98	6.00	Magura Road	Road_Pucca	Secondary	727.019	18.00	Widening	Phase 2	Ward 04
S99	3.80		Road_Pucca	Secondary	457.218	18.00	Widening	Phase 1	Ward 01
T304	3.00	Boakhali Road	Road_Katcha	Tertiary	413.998	16.00	Widening	Phase 2	Ward 04
T305	3.00	City College Road	Road_Pucca	Tertiary	763.101	16.00	Widening	Phase 1	Ward 04
T306	3.00	Mosheskhula - Aladatpur Link Road	Road_Semipucca	Tertiary	415.366	16.00	Widening	Phase 2	Ward 04
S100	5.40	Magura Road	Road_Pucca	Secondary	708.001	18.00	Widening	Phase 2	Ward 04
T309	3.30	Gochar Road	Road_Pucca	Tertiary	586.255	16.00	Widening	Phase 1	Ward 05
T310	0.00			Tertiary	460.361	16.00	Widening	Phase 2	Ward 06(Ext)
P28	3.60	Mulia Road	Road_Pucca	Primary	983.711	36.00	Widening	Phase 1	Ward 07(Ext)
S101	3.20	Machimdia Road	Road_Pucca	Secondary	502.959	18.00	Widening	Phase 1	Ward 06
S102	5.00	Narail-Gobra Main Road	Road_Pucca	Secondary	846.131	18.00	Widening	Phase 1	Ward 06
P29	5.50	Narail- Kalna Road	Road_Pucca	Primary	2016.022	36.00	Widening	Phase 1	Ward 07
P31	5.50	Narail- Kalna Road	Road_Pucca	Primary	2016.022	36.00	Widening	Phase 1	Ward 08