Government of the People's Republic of Bangladesh

Local Government Division

Ministry of Local Government, Rural Development & Cooperatives

DAULATKHAN PAURASHAVA

MASTER PLAN: 2011-2031

February, 2015

Technical Assistance: Local Government Engineering Department (LGED)

Government of the People's Republic of Bangladesh

Local Government Division

Ministry of Local Government, Rural Development & Cooperatives

DAULATKHAN PAURASHAVA MASTER PLAN: 2011-2031

STRUCTURE PLAN

URBAN AREA PLAN:

- Landuse Plan
- Transportation & Traffic Management Plan
- Drainage & Environmental Management Plan

WARD ACTION PLAN

February, 2015

DAULATKHAN PAURASHAVA

DAULATKHAN, BHOLA

DAULATKHAN PAURASHAVA MASTER PLAN: 2011-2031

Published by:

DAULATKHAN PAURASHAVA

Supported by Upazila Towns Infrastructure Development Project (UTIDP) of

Local Government Engineering Department (LGED) under

Local Government Division

Consultant :

Sheltech Consultants (Pvt.) Ltd.
1/E/2 Paribagh (Mazar Road), Shahbagh, Dhaka-1000
in association with
Design Planning and Management Consultants Ltd.

Copyright: Daulatkhan Paurashava
Local Government Division (LGD),
Ministry of Local Government, Rural Development & Cooperatives

First Edition: Februry, 2015

Price: BDT 1500.00
USD 20.00

Preface

Bangladesh has been experiencing rapid urbanization in the last four decades where level of urbanization has reached from 7.6% to nearly 29% between 1970 and 2011. Multidimensional complex factors like; socio-economic, political, demographic and climatic are responsible for this higher growth of spatial transformation. The fast urbanization is putting pressure on the small towns' limited land, urban services and environment along with countries big cities. Whereas urbanization is also considered as an opportunity and an integral part of the development process. Proper development plans and guidelines with necessary legislative measures and appropriate institutional arrangement can help to achieve sustainable urban as well as rural development.

However, presently, the Paurashavas has the legal mandate to take initiatives of formulating development plans, providing infrastructure and other services and creating opportunities for people to initiate developments with sustainable and harmonic approach. In this regards, Daulatkhan had initiated steps to frame its' Master Plan (Physical Development Plan) by taking technical assistance from the Local Government Engineering Department (LGED). LGED under the Local Government Division of the Ministry of Local Government, Rural Development and Cooperatives initiated a project titled 'Upazila Towns Infrastructure Development Project (UTIDP)' providing all sorts of technical assistances to prepare long term physical development plan titled 'Master Plan' for Daulatkhan Paurashava.

Master Plan of Daulatkhan Paurashva has been prepared following the pre-requisite of the Local Government (Paurashva) Act, 2009. To prepare the Master Plan, LGED engaged consulting firm named Sheltech Consultants (Pvt.) Ltd in association with Design Planning and Management Consultants Ltd. and set up a Project Management Office (PMO) deploying a Project Director, Deputy Project Director, experienced Urban Planners as Individual Consultant and support staffs. Regular monitoring, evaluation and feedback from PMO had also accelerate the pace and quality of the master plan preparation tasks. During formulation of the Master Plan, the Paurashava authority along with the project & the Consultant ensure people's opinion, observation and expectation in various ways: conducting sharing meetings, Public Hearing etc. At the end of the formulation process, the Paurashava completed all procedures necessary for its approval as per the related clauses and sub-clauses of the Local Government (Paurashava) Act, 2009. Paurashava Authority has submitted this Plan to the Local Government Division of the Ministry of Local Government, Rural Development and Cooperatives for final approval and gazette notification.

This Master Plan comprises of three tier of plan in a hierarchical order, these are: Structure Plan for 20 years, Urban Area Plan for 10 years and Ward Action Plan for 5 years. Urban Area Plan also comprises of three components namely; Land use plan, Traffic & Transportation Management plan and Drainage & Environmental Management Plan. This Master plan will serve as guidelines for the future infrastructure development of Daulatkhan Paurashava together with land use control and effective management of service facilities.

The Paurashava Authority acknowledges the full support and all out cooperation from the consultant team, the Project Management office of UTIDP, LGED, Local Government Division of the Local Government, Rural Development and Cooperatives Ministry, public representatives, other stakeholders and civil society with deepest gratitude for accomplishing this remarkable assignment.

Cooperation and participation from national to local authorities, all government institutions, private entities and people of Daulatkhan Paurashava will be necessary to implement this Master Plan successfully and make this Paurashava developed and livable. I hope Daulatkhan Paurashava will be a model Paurashava in Bangladesh through building itself green and sustainable by successful implementation of this Master Plan.

(Ali Azam Mukul)
Mayor
Daulatkhan Paurahsava.

EXECUTIVE SUMMARY

The presentation of this Master Plan Report is in compliance to the Terms of Reference for the preparation of Master plan for Daulatkhan Paurashava under the project titled “Upazila Town Infrastructure Development Project”. Daulatkhan was upgraded as B category Paurashava in 1997. It occupies an area of 2.34 sq. km and consists of 9 wards and 1 mauza. At present the total population is almost 16728 of which 8535 are male and 8193 are female. Density of population is about 7149 persons per sq. km and literacy rate is about 41.6%.

The plan aims of preparing the master plan is to identify the infrastructural facilities needed for socio economic and physical development and activities of the people living in the Paurashava so to improve their living condition.

The Master plan has the three components- the Structure Plan, the Urban Area Plan and the Ward Action Plan. The **Structure Plan** basically concerned with the physical development of broad strategies for managing and promoting efficient urban development over the long term (2011-2031) and attempts to integrate economic, physical and environmental objectives. It also identifies the basic strategic options available to accommodate the anticipated growth. The Structure Plan also outlines major sector wise policies to guide development in the desired manner over a longer period of time (for 20 years).

Second Component is the **Urban Area Plan** which is synthesized with upper tier of the Plan, the Structure Plan. The Urban Area plan provide an interim mid-term strategy for 10 years (2011-2021) for the development, of the Paurashava following the broad guidelines set by the longer term structure plan. The plans can be prepared for specific sections of the urban area identified in the structure plan for rapid development or for special projects and improvements. It gives detailed information on the preferred development pattern, showing location of roads, infrastructure, community facilities and land use zones. Considering the development growth trends, an estimated growth rate for Daulatkhan Paurashava has been fixed at 1.0 % using Exponential formula. Urban Area Plan is comprised of four components that is Land use Plan, Transportation and Traffic Management Plan, Drainage and Environmental Management Plan and Plan for Urban Services.

Land Use Plan is mainly confined to the land use zoning. Total 19 categories of landuse zones have been identified in Daulatkhan Paurashava. About 31.32% lands are preserved for residential purpose and 3.91% of total built up area reserved as Urban deferred. Relevant land development control regulations and necessary implementation guidelines have also been incorporated.

Transportation and Traffic Management Plan includes existing condition of transportation facilities, intensity of traffic volume, travel demand forecasting for next 20 years, future traffic volume and transportation development plan. Moreover transportation system management and plan implementation strategies are also described in this plan.

Drainage and Environmental Management Plan is third part and subdivided into two segments- Drainage and Environment. Existing drainage network, land level, plan for drainage management

and flood control, plan implementation strategies are also described in this plan. Existing environmental condition, solid waste management, environmental pollution, plan for environmental management and plan implementation strategies are also included. Projection on existing and proposed urban services, have been provided in this plan.

The Third component is **Ward Action Plan (WAP)** where ward wise priority schemes, phasing of the schemes is made. Prioritization of no. of wards based on existing development pattern and need of development is also identified.

It is also mentioned here that the draft plan has been prepared on the basis of comments made by the PMO and the Paurashava. It is suggested that to follow up the plan proposals and recommendations of different sectors to keep balance with demand and supply of citizens' requirements. The Master Plan will facilitate the agglomeration of people with the view to provide all facilities that will be help full for boosting up their socioeconomic condition. It should be kept in mind that master plan is a guideline for development and control of growth in a systematic manner. Without proper regulation or rules it would not be possible to manage the Master Plan. However appropriate authority must be obligatory for the execution of the Master Plan.

Table of Contents

		Page No.
Preface		i
Executive Summary		ii-iii
Table of Contents		iv-xv
List of Tables		xi-xii
List of Maps		xiii
List of Figures		xiv
List of Abbreviations and Acronyms		xv

PART A : STRUCTURE PLAN

		Page No.
Chapter 1: Introduction		
1.1	Introduction	1
1.2	Philosophy of the Master Plan	2
1.3	Objectives of the Master Plan	2
1.4	Conceptualization	2
1.5	Approach and Methodology	4
1.5.1	Demarcation of the Planning area	5
1.5.2	Preparation of Base Map	5
1.5.3	Surveys	5
1.5.4	Data and Information Management	7
1.5.5	Adopted Planning Standard	7
1.5.6	Stake holder's consultation	8
1.6	Scope of the Work	8
Chapter 2: Structure Plan		
2.1	Background of the Paurashava	9
2.2	Vision of the Structure Plan	9
2.3	Objectives of the Structure Plan	9
2.4	Content and Format of Structure Plan	10
Chapter 3: Existing Trend and Growth		
3.1	Social Development	12
3.2	Economic Development	12
3.3	Physical Infrastructure Development	12
3.4	Environmental Growth	13
3.5	Population	13
3.6	Institutional Capacity	13
3.7	Urban Growth Area	14
3.8	Catchments Area	15
3.9	Land Use and Urban Services	17
3.10	Paurashava Functional Linkage with Regional and National Network	17
3.11	Role of Agencies for Different Sectoral Activities	19
Chapter 4: Critical Planning Issues		
4.1	Physical Infrastructure	22
4.2	Socio-Economic	22
4.3	Environment	23
4.4	Transport and Communication	23
4.5	Landuse Control	24
4.6	Disaster	24
4.7	Laws and Regulations	25

Chapter 5: Paurashava Development Related Policies, Laws and Regulations

5.1	General		26
	5.1.1	Local Government (Paurashava) Act, 2009	26
	5.1.2	Urban Management Policy, 1999	26
	5.1.3	National Housing Policy, 2008	27
	5.1.4	Population Policy, 2004	28
	5.1.5	National Land Use Policy, 2001	29
	5.1.6	National Agriculture Policy, 1999	30
	5.1.7	Transportation Policy	30
	5.1.8	Environment Policy	31
	5.1.9	Coastal Zone Policy, 2005	31
	5.1.10	Industrial Policy, 2005	38
	5.1.11	Health Policy	39
	5.1.12	National Urban Policy	39
	5.1.13	Rural Development Policy	40
	5.1.14	Disaster Management and Climate Change Policy	41
5.2	Laws and Regulations		42
	5.2.1	Urban Development Control	42
	5.2.2	Building Construction Rules, 1996	42
5.3	Strength and Weaknesses of the Existing Policies		43

Chapter 6: Projection of Future Growth by 2031

6.1	Introduction		46
6.2	Projection of Population		46
6.3	Identifications of Future Economic Opportunities		47
6.4	Projection of Land Uses		48

Chapter 7: Land Use Development Strategies

7.1	Strategies for Optimum Use of Urban Land Resources		49
	7.1.1	Land use Zoning	49
	7.1.2	Land Acquisition and Requisition	50
	7.1.3	Policy Formulation	50
	7.1.4	Different Fiscal Measures	52
7.2	Plans for New Area Development		53
7.3	Areas for Conservation and Protection		55

Chapter 8: Strategies and Policies for Sectoral Development of the Paurashava

8.1	Socio- Economic Sectors		56
	8.1.1	Landuse Control	56
	8.1.2	Economic Development	56
	8.1.3	Employment Generation	57
	8.1.4	Housing and Resettlement Zone Development	58
	8.1.5	Social Amenities and Community Facilities	58
	8.1.6	Recreational Facilities	59
	8.1.7	Safety and Security	59
8.2	Physical Infrastructure Sectors		60
	8.2.1	Traffic and Transportation	60
	8.2.2	River Erosion Control & Drainage	61
	8.2.3	Utility Services	62
8.3	Environmental Issues		62

Chapter 9: Implementation Issues

9.1	Institutional Capacity Building of the Paurashava		65
	9.1.1	Staffing and Training	65
	9.1.2	Lack of Automation	66
	9.1.3	Town Planning Capacity	66
	9.1.4	Legal Aspects	69
	9.1.5	Good Governance in Legal Provisions	69
	9.1.6	Financial Issues	69

9.1.7 Monitoring, Evaluation and Updating 70
9.1.8 Periodic Review and Updating 70
9.2 Resource Mobilization 71
9.3 Concluding Remarks 71

PART B: URBAN AREA PLAN

Chapter 10: Introduction to Urban Area Plan
10.1 Introduction 72
10.2 Goals and Objectives 72
10.3 Delineation of Planning Areas 73

Chapter 11: Land Use Plan
11.1 Existing and Projected Land Use and Land Use Proposals 74
11.1.1 Existing Land use 74
11.1.2 Estimation on the Requirement of Different Land Uses 74
11.1.2.1 Land Use Standards 75
11.1.2.2 Land Requirement and Proposal 75
11.2 Land Use Zoning 90
11.2.1 Area / Use Zoning 91
11.2.2 Density / Bulk Zoning 91
11.2.3 Height Zoning 92
11.3 Plan Implementation Strategy 92
11.3.1 Land Development Regulations to Implement the Land Use Plan 92
11.3.2 Implementation, Monitoring and Evaluation of the Land Use Plan 94

Chapter 12: Transportation and Traffic Management Plan
12.1 Introduction 98
12.2 Approach and Methodology 98
12. 3 Existing Conditions of Transportation Facilities 99
12.3.1 Road Network 99
12.3.1.1 Roadway Characteristics and Functional Classification 99
12.3.1.2 Mode of Transport 100
12.3.1.3 Intensity of Traffic Volume 100
12.3.1.4 Level of Service: Degree of Traffic Congestion and Delay 101
12.3.1.5 Facilities of Pedestrians 101
12.3.1.6 Primary Considering Issues for Planning 101
12.3.2 Condition of Water Transport 102
12.3.3 Condition of Other Transport 102
12.4 Future Projections 102
12.4.1 Travel Demand Forecasting for Next 20 Years 103
12.4.2 Transportation Network Considered 103
12.4.3 Future Traffic Volume and Level of Service 103
12.5 Transportation Development Plan 105
12.5.1 Road Network Plan 105
12.5.2 Design Principals and Standards 105
12.5.3 Proposal for Improvement of the Existing Road Network 109
12.5.4 Proposals for New Road 121
12.6 Plan for Other Transportation Facilities 125
12.6.1 Parking and Terminal Facilities 125
12.6.2 Development of Facilities for Pedestrians, Bicycles and Rickshaws 128
12.6.3 Other Transportation Facilities 128
12.7 Waterway Development/Improvement Option 128
12.8 Transportation System Management (TSM) 129
12.8.1 Strategies for Facility Operations 129
12.8.2 Strategies for Traffic Flow and Safety 130
12.8.3 Strategies for Traffic Management 130
12.9 Plan Implementation Strategies 130

Chapter 13: Drainage and Environnemental Management Plan

13.1 Drainage Management Plan 136
13.1.1 Goals and Objectives 136
13.1.2 Methodology and Approach to Planning 136
13.2 Existing Drainage System Network 137
13.2.1 Man Made Drains 137
13.2.2 Natural Canal and River 140
13.2.3 Topographic Condition of Existing Drainage Network 141
13.2.4 Analysis of Peak Hour Run Off Discharge and Identification of Drainage Outfalls 141
13.3 Plans for Drainage Management and Flood Control 148
13.3.1 Plan for Drain Network Development Drainage Network Plan 148
13.3.2 Proposal for Improvement of the Existing Drain Networks 148
13.3.3 Outfall of Drains 148
13.3.3.1 List of Proposed New Drains 148
13.3.3.2 List of Infrastructure Measures for Drainage and Flood Control Network 151
13.4 Implementation Strategies & Principles 152
13.4.1 Plan Implementation Strategies 152
13.4.2 Regulations to Implement the Drainage & Flood Plan 152
13.5 Environmental Management Plan 154
13.5.1 Introduction 154
13.5.2 Goals and Objectives 154
13.5.3 Methodology and Approach to Planning 154
13.5.4 Existing Environmental Condition 154
13.5.4.1 Geo-morphology Geology, Soil, Sub soil Condition 154
13.5.4.2 Climate 155
13.5.4.3 Temperature 155
13.5.4.4 Humidity 155
13.5.4.5 Rainfall 155
13.5.4.6 Wind Directions 155
13.5.4.7 Hydrology 157
13.5.5 Solid Waste and Garbage Disposal 157
13.5.6 Pollutions 157
13.5.7 Natural Calamities and Localized Hazards 158

13.6 Plans for Environmental Management and Pollution Control 160
13.6.1 Proposals for Environmental Issues 160
13.6.1.1 Solid Waste Management Plan 160
13.6.1.2 Open Space, Wet-land and Relevant Features Protection Plan 160
13.6.1.3 Ground Water Pollution 161
13.6.1.4 Surface Water Pollution 161
13.6.2 Natural Calamities and Regular Hazard Mitigation Proposals 162
13.6.2.1 Cyclone 162
13.6.2.2 Flood Protection 162
13.6.2.3 Earthquake 163
13.6.2.4 Fire Hazard 163
13.6.2.5 Protection Plan Addressing Encroachment and Other Relevant Issues 163
13.7 Plan Implementation Strategies 164
13.7.1 Regulations to Implement the Environment Management Plan 164
13.7.2 Implementation, Monitoring, Evaluation and Coordination of the Plan 165

Chapter 14: Plan for Urban Services

14.1 Introduction 168
14.2 Consideration for the Preparation of Urban Service 168
14.3 Range and Content of the Urban Service 168
14.3.1 Water Supply 168
14.3.2 Solid Waste 169
14.3.3 Telecommunication 169
14.3.4 Sanitation 169

14.3.5 Community Facilities 169
14.3.6 Education 170
14.3.7 Health 170
14.4 Regulations to Address the Proposals 170
14.5 Implementation, Monitoring and Evaluation 172

PART C: WARD ACTION PLAN

Chapter 15: Ward Action Plan

15.1 Introduction 175
15.1.1 Background 175
15.1.2 Content and Form of Ward Action Plan 175
15.1.3 Linkage with Structure and Urban Area Plan 175
15.2 Derivation of Ward Action Plan 175
15.2.1 Revisiting Structure Plan and Urban Area Plan 176
15.2.2 Prioritization 176
15.2.3 Ward Wise Action Plan 176
15.3 Ward Action Plan for Ward No. 01 177
15.3.1 Demography 177
15.3.2 Ward Action Plan Proposals 177
15.3.2.1 Review of Existing Land Use 177
15.3.2.2 Proposed Land Use Zoning 177
15.3.2.3 Proposed Road Infrastructure Development 180
15.3.2.4 Drainage Development Plan 181
15.3.2.5 Urban Services 183
15.4 Ward Action Plan for Ward No. 02 185
15.4.1 Demography 185
15.4.2 Ward Action Plan Proposals 185
15.4.2.1 Review of Existing Land Use 185
15.4.2.2 Proposed Land Use Zoning 185
15.4.2.3 Proposed Road Infrastructure Development 188
15.4.2.4 Drainage Development Plan 190
15.4.2.5 Urban Services 191
15.5 Ward Action Plan for Ward No. 03 194
15.5.1 Demography 194
15.5.2 Ward Action Plan Proposals 194
15.5.2.1 Review of Existing Land Use 194
15.5.2.2 Proposed Land Use Zoning 194
15.5.2.3 Proposed Road Infrastructure Development 197
15.5.2.4 Drainage Development Plan 199
15.5.2.5 Urban Services 201
15.6 Ward Action Plan for Ward No. 04 203
15.6.1 Demography 203
15.6.2 Ward Action Plan Proposals 203
15.6.2.1 Review of Existing Land Use 203
15.6.2.2 Proposed Land Use Zoning 203
15.6.2.3 Proposed Road Infrastructure Development 206
15.6.2.4 Drainage Development Plan 208
15.6.2.5 Urban Services 210
15.7 Ward Action Plan for Ward No. 05 212
15.7.1 Demography 212
15.7.2 Ward Action Plan Proposals 212
15.7.2.1 Review of Existing Land Use 212
15.7.2.2 Proposed Land Use Zoning 212
15.7.2.3 Proposed Road Infrastructure Development 215
15.7.2.4 Drainage Development Plan 215
15.7.2.5 Urban Services 218
15.8 Ward Action Plan for Ward No. 06 220
15.8.1 Demography 220
15.8.2 Ward Action Plan Proposals 220
15.8.2.1 Review of Existing Land Use 220

15.8.2.2 Proposed Land Use Zoning 220
15.8.2.3 Proposed Road Infrastructure Development 223
15.8.2.4 Drainage Development Plan 223
15.8.2.5 Urban Services 225
15.9 Ward Action Plan for Ward No. 07 227
15.9.1 Demography 227
15.9.2 Ward Action Plan Proposals 227
15.9.2.1 Review of Existing Land Use 227
15.9.2.2 Proposed Land Use Zoning 227
15.9.2.3 Proposed Road Infrastructure Development 230
15.9.2.4 Drainage Development Plan 233
15.9.2.5 Urban Services 235
15.10 Ward Action Plan for Ward No. 08 237
15.10.1 Demography 237
15.10.2 Ward Action Plan Proposals 237
15.10.2.1 Review of Existing Land Use 237
15.10.2.2 Proposed Land Use Zoning 237
15.10.2.3 Proposed Road Infrastructure Development 240
15.10.2.4 Drainage Development Plan 241
15.10.2.5 Urban Services 243
15.11 Ward Action Plan for Ward No. 09 245
15.11.1 Demography 245
15.11.2 Ward Action Plan Proposals 245
15.11.2.1 Review of Existing Land Use 245
15.11.2.2 Proposed Land Use Zoning 245
15.11.2.3 Proposed Road Infrastructure Development 248
15.11.2.4 Drainage Development Plan 250
15.11.2.5 Urban Services 252
15.12 Implementation Guidelines 254
15.12.1 Proposals for Mitigation of Identified Issues 254
15.12.2 Comparative Advantage of Master Plan 254
15.13 Conclusion 255

Annexure

Annex-A Team Composition of Master Plan Preparation
Annex-B Paurashava Gazette
Annex-C Permitted Land Use
Annex-D Meeting Minutes
Annex-E Proposed Road Inventory
Annex-F Proposed Drain Inventory
Annex-G Mouza Schedule of Waterbody
Annex-H

1. Structure Plan Map
2. Land Use Plan Map
3. Transportation and Traffic Management Plan
4. Drainage and Environmental Management Plan

LIST OF TABLES

		Page No.
Table 2.1	Mouza Wise Area of Daulatkhan Paurashava	10
Table 3.1	Population Distribution of Daulatkhan Paurashava Area	13
Table 6.1	Projected Population during the Year 2016-2031	47
Table 7.1	Broad Land use Zones	49
Table 11.1	Existing Land use of Daulatkhan Paurashava	74
Table 11.2	Proposed Major Land use of Daulatkhan Paurashava	76
Table 11.3	Land Requirement, Existing and Proposed Land use of Daulatkhan Paurashava for the Year 2031	80
Table 11.4	Development Proposal for Residential Zone	82
Table 11.5	Development Proposal for Commercial Zone	83
Table 11.6	Development Proposal for Industrial Zone	84
Table 11.7	Development Proposal for Government Services	85
Table 11.8	Development Proposal for Recreational Facilities	85
Table 11.9	Development Proposal for Open Spaces	86
Table 11.10	Development Proposal for Health Facilities	86
Table 11.11	Development Proposal for Community Facilities	87
Table 11.12	Development Proposal for Education and Research Zone	88
Table 11.13	Development Proposal for Transportation Facilities	89
Table 11.14	Development Proposal for Utility Services	90
Table 12.1	Type Wise Length and Area of Road	99
Table 12.2	Standard of Roads Proposed by PMO	105
Table 12.3	Standard for Future Development of the Road Network of Daulatkhan Paurashava	105
Table 12.4	Phase Wise Road Widening Proposals of Existing Road	110
Table 12.5	Proposed Roads of Daulatkhan Paurashava According to Hierarchy	121
Table 12.6	Phase Wise Newly Proposed Road	121
Table 13.1	Existing Inventory of Drains	137
Table 13. 2	Drainage Coverage of Existing Khals in Daulatkhan Paurashava	140
Table 13.3	Ward Wise Area Coverage of Existing Waterbodies at Daulatkhan Paurashava	140
Table 13.4	Manning's "N" Values for Channel Flow	143
Table 13.5	Storage Coefficients for Flat Land	143
Table 13.6	Modified Rationale Method Runoff Coefficients	144
Table 13.7	Summary of Proposed Drain	148
Table 13.8	Proposals of New Drain	149
Table 15.1	Population Statistics of Ward No. 01	177
Table 15.2	Comparative Scenario of Existing and Proposed Land Uses of Ward No. 01	177
Table 15.3	Road Network Proposal at Ward no. 01	180
Table 15.4	Drainage Development Plan Proposals for ward 01	181
Table 15.5	Urban Service Development Proposals for ward 01	183
Table 15.6	Population Statistics of Ward No. 02	185
Table 15.7	Comparative Scenario of Existing and Proposed Land Uses of Ward No. 02	185
Table 15.8	Road Network Proposal at Ward no. 02	188
Table 15.9	Drainage Development Plan Proposals for ward 02	191
Table 15.10	Urban Service Development Proposals for ward 02	191
Table 15.11	Population Statistics of Ward No. 03	194
Table 15.12	Comparative Scenario of Existing and Proposed Land Uses of Ward No. 3	194
Table 15.13	Road Network Proposal at Ward no. 03	197
Table 15.14	Drainage Development Plan Proposals for ward 03	199
Table 15.15	Urban Service Development Proposals for ward 03	201
Table 15.16	Population Statistics of Ward No. 04	203
Table 15.17	Comparative Scenario of Existing and Proposed Land Uses of Ward No. 04	203
Table 15.18	Road Network Proposal at Ward no. 04	206
Table 15.19	Drainage Development Plan Proposals for ward 04	208
Table 15.20	Urban Service Development Proposals for ward 04	210
Table 15.21	Population Statistics of Ward No. 05	212
Table 15.22	Comparative Scenario of Existing and Proposed Land Uses of Ward No. 05	212
Table 15.23	Road Network Proposal at Ward no. 05	215

Table 15.24	Drainage Development Plan Proposals for ward 05	216
Table 15.25	Urban Service Development Proposals for ward 05	218
Table 15.26	Population Statistics of Ward No. 06	220
Table 15.27	Comparative Scenario of Existing and Proposed Land Uses of Ward No. 06	220
Table 15.28	Road Network Proposal at Ward no. 06	223
Table 15.29	Drainage Development Plan Proposals for ward 06	223
Table 15.30	Urban Service Development Proposals for ward 06	225
Table 15.31	Population Statistics of Ward No. 07	227
Table 15.32	Comparative Scenario of Existing and Proposed Land Uses of Ward No. 07	227
Table 15.33	Road Network Proposal at Ward no. 07	230
Table 15.34	Drainage Development Plan Proposals for ward 07	233
Table 15.35	Urban Service Development Proposals for ward 07	235
Table 15.36	Population Statistics of Ward No. 08	237
Table 15.37	Comparative Scenario of Existing and Proposed Land Uses of Ward No. 08	237
Table 15.38	Road Network Proposal at Ward no. 08	240
Table 15.39	Drainage Development Plan Proposals for ward 08	241
Table 15.40	Urban Service Development Proposals for ward 08	243
Table 15.41	Population Statistics of Ward No. 09	245
Table 15.42	Comparative Scenario of Existing and Proposed Land Uses of Ward No. 09	245
Table 15.43	Road Network Proposal at Ward no. 09	248
Table 15.44	Drainage Development Plan Proposals for ward 09	250
Table 15.45	Urban Service Development Proposals for ward 09	252

LIST OF MAPS

		Page No.
Map 3.1	Future Growth Direction of Daulatkhan Paurashava	16
Map 3.2	Regional Linkage of Daulatkhan Paurashava	18
Map 7.1	Structure Plan of Daulatkhan Paurashava	51
Map 11.1	Existing Land use of Daulatkhan Paurashava	78
Map 11.2	Proposed Land use Plan of Daulatkhan Paurashava	79
Map 12.1	Existing Road Network of Daulatkhan Paurashava	104
Map 12.2	Proposed Road Network of Daulatkhan Paurashava	127
Map 13.1	Existing Drainage Network of Daulatkhan Paurashava	139
Map 13.2	Proposed Drainage Network of Daulatkhan Paurashava	153
Map 14.1	Proposed Urban Services of Daulatkhan Paurashava	174
Map 15.1	Proposed land use of ward No. 01	178
Map 15.2	Proposed Road and Drainage Network of ward No. 01	182
Map 15.3	Development Proposals of ward No. 01	184
Map 15.4	Proposed land use of ward No. 02	186
Map 15.5	Proposed Road and Drainage Network of ward No. 02	192
Map 15.6	Development Proposals of ward No. 02	193
Map 15.7	Proposed land use of ward No. 03	195
Map 15.8	Proposed Road and Drainage Network of ward No. 03	200
Map 15.9	Development Proposals of ward No. 03	202
Map 15.10	Proposed land use of ward No. 04	204
Map 15.11	Proposed Road and Drainage Network of ward No. 04	209
Map 15.12	Development Proposals of ward No. 04	211
Map 15.13	Proposed land use of ward No. 05	213
Map 15.14	Proposed Road and Drainage Network of ward No. 05	217
Map 15.15	Development Proposals of ward No. 05	219
Map 15.16	Proposed land use of ward No. 06	221
Map 15.17	Proposed Road and Drainage Network of ward No. 06	224
Map 15.18	Development Proposals of ward No. 06	226
Map 15.19	Proposed land use of ward No. 07	228
Map 15.20	Proposed Road and Drainage Network of ward No. 07	234
Map 15.21	Development Proposals of ward No. 07	236
Map 15.22	Proposed land use of ward No. 08	238
Map 15.23	Proposed Road and Drainage Network of ward No. 08	242
Map 15.24	Development Proposals of ward No. 08	244
Map 15.25	Proposed land use of ward No. 09	246
Map 15.26	Proposed Road and Drainage Network of ward No. 09	251
Map 15.27	Development Proposals of ward No. 09	253

LIST OF FIGURES

		Page No.
Fig 1.1	Diagram of Master Plan Preparation	4
Fig 2.1	Content of Structure Plan	11
Fig 9.1	Scope of Work for Planning Division	67
Fig 9.2	Organogram for a “B” Class Paurashava	68
Fig 9.3	Proposed Urban Planning Division for “B” Class Paurashava	68
Fig 12.1	Channelization Measures at Major Intersections	106
Fig 12.2	Corner Plot Widening at Intersections	106
Fig 12.3	Space Allocation of Road Hierarchy	108
Fig 12.4	Typical Cross-Section of Various Types of Roads	109
Fig 13.1	Earthen Primary Drain	145
Fig 13.2	Typical RCC Primary Drain	145
Fig 13.3	Typical Secondary Drain	145
Fig 13.4	Typical Tertiary Drain	146
Fig 13.5	Plot and Block Drain	146
Fig 13.6	Bridge and Culvert	147
Fig 13.7	A Schematic View of Drainage Sluice, Pipe Sluice and Siphon on Embankment Which Relieve Drainage Congestion	147
Fig 13.8	Wind Speed Data of Several Years in Bhola	155
Fig 13.9	Cyclone, Flood, and Earthquake Condition in Daulatkhan Paurashava	156

Part A. Structure Plan

List of Abbreviations and Acronyms

BBS	:	Bangladesh Bureau of Statistics
BDT	:	Bangladeshi Taka (Currency)
BM	:	Bench Mark
BTCL	:	Bangladesh Telecommunication Company Limited
BWDB	:	Bangladesh Water Development Board
CBO	:	Community Based organization
CS	:	Cadastral Survey
DGPS	:	Differential Global Positioning System
EMP	:	Environmental Management Plan
EPA	:	Environment Protection Authority
GCP	:	Ground Control Points
GIS	:	Geographic information System
Govt.	:	Government
GPS	:	Global Positioning System
H.Q.	:	Head Quarter
H/hold	:	Household
JICA	:	Japan International Cooperative Agency
KM/ km	:	Kilometer
LAN	:	Local Area Network
LCC	:	Lambert Conformal Conic
LGED	:	Local Government Engineering Department
LPG	:	Liquid Petroleum Gas
MV	:	Motorized Vehicle
NGO	:	Non-Government Organizations
NMV	:	Non Motorized Vehicle
O-D	:	Origin – Destination
Orgs.	:	Organizations
PCU	:	Passenger Car Unit
PD	:	Project Director
PMO	:	Project Management Office
R.F.	:	Representative Fraction
RHD	:	Roads and Highways Department
RoW	:	Right of Way
RS	:	Revenue Survey
RTK-GPS	:	Real Time Kinematics Global Positioning System
SoB	:	Survey of Bangladesh
SPSS	:	Statistical Package for Social Science
TCP	:	Temporary Control Point
TIN	:	Triangulated Irregular Network
ToR	:	Terms of Reference

Chapter-1
INTRODUCTION

1.1 Introduction

A massive program to prepare master plan of 223 Paurashavas and Kuakata Tourism Centre under the project titled “Upazilla Towns Infrastructure Development Project’ (UTIDP) funded by the Government of Bangladesh has been taken by Local Government Engineering Department (LGED), Ministry of Local Government, Rural Development and Cooperatives, Government of the People’s Republic of Bangladesh. The aim of master plans for the Paurashavas is to identify the infrastructural facilitates needed for overall socio-economic and physical development and activities of the people living in the respective Paurashava so as to improve their living conditions.

However, the main rationale of preparing master plan of Daulatkhan Paurashava is to prepare Land Use Plan, Ward Action Plan, and related Infrastructural Plans as visualized in the Terms of Reference (TOR). The Master Plan of Daulatkhan Paurashava is to be prepared based on the topography survey, physical feature survey, land use survey, socio-economic survey and other different types of sector surveys/studies. However, the plan consists of three volumes known as Master Plan. These are:

- **Structure plan**
- **Urban Area Plan**

  -Landuse Plan;

  -Transportation and Traffic Management Plan;

  -Drainage and Environmental Management Plan; and

  -Plan for Urban Services.
- **Ward Action Plan**

The following features have been addressed in preparing the master plan for Daulatkhan Paurashava:

- Guide/regulate planned development of infrastructure and facilities;
- Facilitate socio-economic development activities;
- Ensure conservation of natural streams and addressing properly environmental concerns;
- Apprehend existing unplanned growth;
- Stop further encroachment of the fertile agricultural lands and potential beach areas;
- Proper and optimal use of land;
- Facilitate provision of utilities, services and facilities for the resident population;
- Spatial layout for public sector, private sector and public- private sector investments; and
- Facilitate conservation of bio-diversity.

1.2 Philosophy of the Master Plan

The master plan will facilitate among the people of a defined place for improving their socio-economic condition by providing all supportive facilities for them. Moreover, considerable care has to be given to improve their quality of life through providing some other facilities such as recreational, municipal facilities etc. But it should be kept in mind that master plan is a guideline for development and control of growth in a systematic manner. Without proper regulation or rules it would not be possible to manage the master plan. However, appropriate authority will be obligatory for the execution of the master plan.

1.3 Objectives of the Master Plan

According to the Terms of Reference (TOR) the objectives of the Master Plan are as follows:

- Find out problems and potentialities of developing various sectors;
- Facilitating the provision for all types of infrastructure and service facilities needed for development as well as socio-economic facilities and infrastructure for the local people;
- Supporting protection of the local environment/ecology;
- Preparing a 20-year Master Plan used as tool to guide and regulate planned physical growth and development;
- Facilitating job opportunities for the local people so as to address the issue of poverty reduction in line with the national policy of poverty reduction; and
- Keeping provision for short, medium and long-term investment plans by the public sector, the private sector and the PPP in implementing the Daulatkhan Paurashava plan.

1.4 Conceptualization

Structure Plan

The term Structure Plan includes a full analysis of the existing scenarios, emphasize the existing condition of different sectoral infrastructures, identification of sectoral issues and interventions, recommendation of solution for each sector and setting proposal and recommendations for the future action to be taken within the mentioned period, say 20 years. This is a longer-term plan.

Urban Area Plan

The term Urban Area Plan (UAP) is prepared for managing and promoting development over medium term on the basis of the strategies set by the longer-term structure plan. Basically the UAP is an interpretation of the Structure Plan over the medium term (10 years). The coverage of the UAP is existing urban areas and their immediate surroundings with the purpose of providing development guidance in these areas where most of the urban development activities are

expected to take place over the next 10 years. Delineation of the Urban Area Plan should be based on the urban growth area as identified in the Structure Plan. It will contain more details

about specific programs and policies that require to be implemented over the medium term. The UAP is consisted with the Land Use plan, Transportation and traffic Management plan, Drainage and Environmental Management Plan and Community Services Plan.

Ward Action Plan

This is called short-term plan, say 5 years. Individual Ward of the Paurashava is deserved scope of this plan. In the Paurashava, 9 Ward Action Plan is being prepared. The plan includes review of the existing situation of the Ward with respect to land use, community facilities, public services, utilities, infrastructures, etc. Problems need immediate attention and scope of development is the basis of this plan. The problems and their recommendations as prescribed in the Urban Area Plan are being emphasized for immediate implementation with the help of ward Action Plan

1.5 Approach and Methodology

The project is aimed for development of infrastructure and services for the Paurashava with optimum provision of opportunities for local people and extending services to surrounding areas.

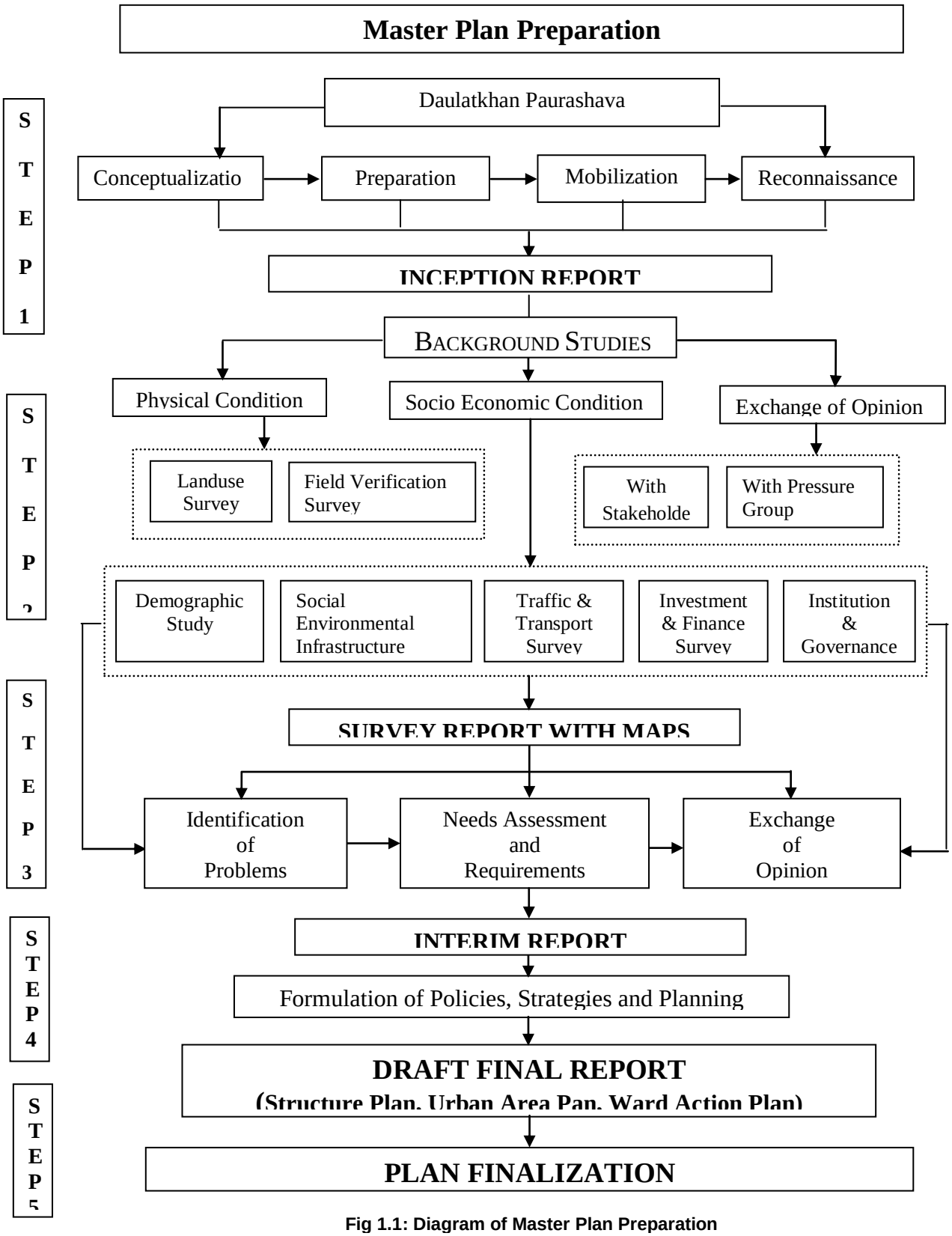


Fig 1.1: Diagram of Master Plan Preparation

1.5.1 Demarcation of the Planning Area

The demarcation of the study area is an important task in order to gather information and data. As per TOR, the study area or the planning area should be determined by the consultants reviewing its growth potential, geographical and geological context, tourism aspects and other relevant issues. Determining the planning area for Daulatkhan Paurashava, the consultants had exercised above issues and fixed the area of the Paurashava. The total area of the Daulatkhan Planning Area is 579.17acres (2.34 sq km) and there is no extended area in the structure plan. However, in demarcating the study area, the following aspects have been considered:

- the existing and future road linkages;
- physical growth directions; and
- physical features of the area and the surrounding areas.

1.5.2 Preparation of the Base Map

The following steps have been followed to prepare the base map:

- Collection of RS Mouza Maps;
- Identification of GCP (TIC) on Digitized Maps;
- Scanning of Mouza Maps;
- Edge Matching and Preparation of Study Area Map;
- Digitization of RS Mouza Maps;
- Edit Plot Check of Digitized Coverage; and
- Geo-referencing of Mouza Maps.

1.5.3 Surveys

1.5.3.1 Topographic Survey

Topography survey was conducted by using RTK-GPS and Total Station (TS) survey technique. Topographic survey has included the following features:

- Land levels/spot levels for contours at 50m intervals with denser intervals for undulations;
- Alignment and crest levels (not exceeding 50m) of roads, embankments, dykes and other drainage divides;
- Alignment of rivers, lake, canal, drainage channels etc;
- Outline of bazars, water body, swamps and forest, etc;
- Type, width, length and name of road above flood level;

- For closed boundary/outline of homestead, water bodies, swamps, forest etc. junctions, spot heights or land levels will be taken roughly at 10m intervals in normal cases and contour will be at 0.3 meter interval; and
- Crest levels will not exceed 50m along all dyke, roads and drainage divide.

1.5.3.2 Physical Feature Survey

Physical feature surveys have provided the basis for understanding many planning problems. To know existing information about physical features of Daulatkhan Paurashava, physical feature survey was carried out. The physical features map was prepared on RS/CS map on 1´´=165´ scale showing the following features:

- Cross Section, long section, type, width, length and name of road, road level above datum, slopes, flooding lands, slopes, borrow pit;
- Identification of any bridge or culvert on the road with their length & width and span of the bridge, condition of abutments, condition of the deck, wing walls abutments;
- Type, size, inlet and outlet location of drain along with flow direction, width of the canal, place of encroachment;
- Type of sewer system, size, type and location of sewerage line, location of bins, identification of any other sewerage collection system;
- Identification of the water supply system, location of overhead water tank and its capacity, catchments area of overhead tank;
- Identification, location and capacity of electricity, telephone service; and
- If any, new items identified during the survey period will also be surveyed;

1.5.3.3 Land use Survey

Utilizing the Base Map, (physical features survey overlay on survey map) the land use map was prepared indicating the broad categories of land uses. And it described using a suitable land use code reference. The characteristics of each land use area were described in the survey report. The Land Use Maps were prepared on the Base Map.

1.5.3.4 Socio-economic Survey

The planning principle directs towards people and their needs concerning housing, shopping, recreational, employment, education, and health services, etc. Detail information on population is essential for estimation of land requirement for future needs. It is also essential for allocating land between various competing uses.

A socio-economic survey for collection of primary data was conducted at Daulatkhan Paurashava. The sample size of socio-economic survey was 5% as per ToR. It is clearly understood that the purpose of this socio-economic survey is to obtain the project related socio-

economic data on households in the project area. All data were collected from the primary sources through a specially designed socio-economic questionnaire survey.

1.5.3.5 Drainage and Environmental Study

The consultants have undertaken a drainage survey and environmental study at Daulatkhan Paurashava. The preparation of master plan for the next 20 years for the Paurashava seeks environmental investigation of development activities that will be undertaken in next 20 years. The issues/aspects that were investigated as per the TOR are as follows:

Existing Infrastructure

- Drainage
  - Man-made (drainage network, gradient, attachment area, out let)
  - Natural (flow direction, hydrology, usability)
- Water supply (network, coverage)
- Sewerage (location/network, condition)
- Solid waste management-existing system, location of garbage disposal, management aspect

Environmental Aspects

- Humidity, rainfall and temperature of the study area;
- Climatic and Disaster Condition, Soil and topographic Condition;
- Environmental Pollution (air, water and noise pollution);
- Identification of hazards;
- Existing mitigation/coping measures, if any; and
- Identification of environmental protection laws/regulations.

1.5.4 Data and Information Management

All the data and information collected from the primary and secondary sources have been sorted/edited and computerized and analyzed. Projections were done in the case of populations so as to estimate the spatial requirements of different services and facilities for the resident population. All these were accomplished in line with the objectives of the plan so as to estimate the land requirements for different service and facilities. Elaborate information regarding projection and estimation of land requirements are available in the following concern chapters.

1.5.5 Adopted Planning Standards

The planning standard provided by the PMO office of UTIDP has followed to prepare the Master Plan.

1.5.6 Stakeholders' Consultations

After preparation of a draft plan, a consultation meeting has conducted with the concerned authority and local people of Daulatkhan Paurashava to acquire aspirations, demand, problems and prospects of the area and community as well as the views of service proving agencies and local administration and share the master plan with them. After incorporating their views and demands, the master plan has prepared.

1.6 Scope of Work

The scope of the work is to cover all aspects related to the preparation of Master Plan / Urban Area Plan which include Land Use Plan, Traffic Management Plan, Drainage and Environment Plan and Ward Action Plan. Prepare a plan to set out proposed Master Plan at three levels namely Structural Plan, Master Plan / Urban Area Plan and Ward Action Plan. In order to prepare these plans following activities has been conducted:

- Visits to the Daulatkhan Paurashava have been made in different stages for the preparation of Master plan;
- An inception meeting at the Paurashava level has been conducted to inform Paurashava about the scope of work for the preparation of Master Plan for 20 years development vision;
- The study area has been determined on the basis of existing condition demand of the Paurashava and the potentiality for future development;
- Different types of survey activities have been conducted from primary and secondary source;
- A comprehensive drainage master plan for a period of 20 years has been prepared;
- Assessing existing condition an integrated transportation plan is proposed for next 20 years;
- Ward action plan with list of priority schemes for the development of roads parks and other social facilities are proposed which need to implement during the first five years of the plan period;
- Consultation meeting has been organized with the help of concerned Paurashava and local stakeholders; and
- Master plan and report with required standard have been prepared and submitted as required TOR.

Chapter-2
STRUCTURE PLAN

2.1 Background of the Paurashava

Daulatkhan upazila is situated in Bhola district. It is located between $22^0$32′ and $22^0$48′ north latitudes and between $90^0$40′ and $90^0$53′ east longitudes. It is bounded on the north by the Meghna river, on the east by Ramgati upazila of Lakshmipur zila and Sudharam upazila of Noakhali zila, on the south by Burhanuddin and Tazumuddin upazila and on the west by Bhola sadar upazila. Daulatkhan Paurashava occupies an area of 2.34 sq. km. It consists of 9 Wards.

Daulatkhan is the former headquarters of Bhola district is located at the southern part of the country. Daulatkhan became police station in 1872. It was upgraded to an upazila on the 1st August, 1983. Daulatkhan Upazila consists of 9 Unions, 27 mauzas, 9 mahallas and 27 villages whereas Daulatkhan Paurashava consists of only one mauza. The Paurashava was established in 1997. However, Daulatkhan Paurashava consists of 9 wards with an area of 2.34 sq.km (Field Survey, 2010).

2.2 Vision of the Structure Plan

The vision of the Structure Plan is oriented with the policy development for the project area in relation with national and regional policies or framework through close liaison between planning authority and government departments. In a word, it will provide the basis of Co-coordinating decisions. It will be considered as the upper level planning guideline component for next two levels of planning i.e. Urban Area Plan and Ward Action Plan. Structure Plan will identify the urban growth area based on which the Master Plan area will be delineated. It will set policy framework which will be more detailed in Urban Area Plan. Moreover, it will provide the basis of development control in pursuing the Urban Area Plan. Subsequently, the indication of action areas and the nature of treatment in different sectors will also be considered here. It will define the location of action areas but not the boundaries, also the priority, possible effect of actions proposed. Pertaining with Action Area Plan, the combination of Public and Private Agency or individuals' involvement to implement the proposed actions will be stated here.

2.3 Objectives of the Structure Plan

The main objectives of preparing master plan of Daulatkhan Paurashava are to prepare Structure Plan, Urban Area Plan and Ward Action Plan as envisaged in the Terms of Reference (TOR). The structure plan has the following objectives:

- To identify the main development issues facing the Paurashava (town) with major opportunities and constraints;
- To identify the growth and possible physical expansion of the city as foreseen considering economic base and Trend;
- To provide a view of required and suitable lands for future physical expansion;

- To develop the sector wise strategies pursuing the future development control in a desirable direction; and
- To identify the resources which are needed to strengthen the financial resources of the town
    - Establishment of inter sectoral goals, policies and general proposals for urban spatial development, and
    - Provide framework for the next hierarchy of Daulatkhan Paurashava Master Plan and
      Ward action plan.

2.4 Content and Format of Structure Plan

As per Terms of References (TORs) the Structure Plan of Daulatkhan Paurashava has been prepared for 20 years in long term. The Urban Area Plan (UAP) will be an interpretation of Structure Plan in Medium Term and Ward Action Plan in Short Term. Figure 2.1 shows the content of structure plan.

Demarcation of Structure Plan Area

The issues have been adopted for demarcating the study area for Daulatkhan Paurashava comprises the following:

- Study the existing Paurashava boundary with existing growth trend and pattern Analysis of the physical development constraints and potentialities;
- Study of the existing and future national, regional and local linkages with Daulatkhan;
- Consultation with local governments; and
- Consultation with local people, members of civil societies and other stakeholders.

According to the gazette notification, the Daulatkhan Paurashava comprises one mouza namely– Char Bara Lamchhi Dhali. The total Paurashava area is about 579.17 acre (about 2.34 sq.km). The following table shows mouza wise area of Daulatkhan Paurashava. **Map 1.1** delineates the structure plan area of Daulatkhan Paurashava.

Table 2.1: Mouza Wise Area of Daulatkhan Paurashava

Name of Paurashava	Name of Mouza	J.L. No	Sheet No.	Map Category	Area	
					in Acre	in Sq.km
Daulatkhan	Char Bara Lamchhi Dhali	34	1	RS	344.09	1.39
		34	2	RS	235.08	0.95
Total					**579.17**	**2.34**

Source: Paurashava, 2010.

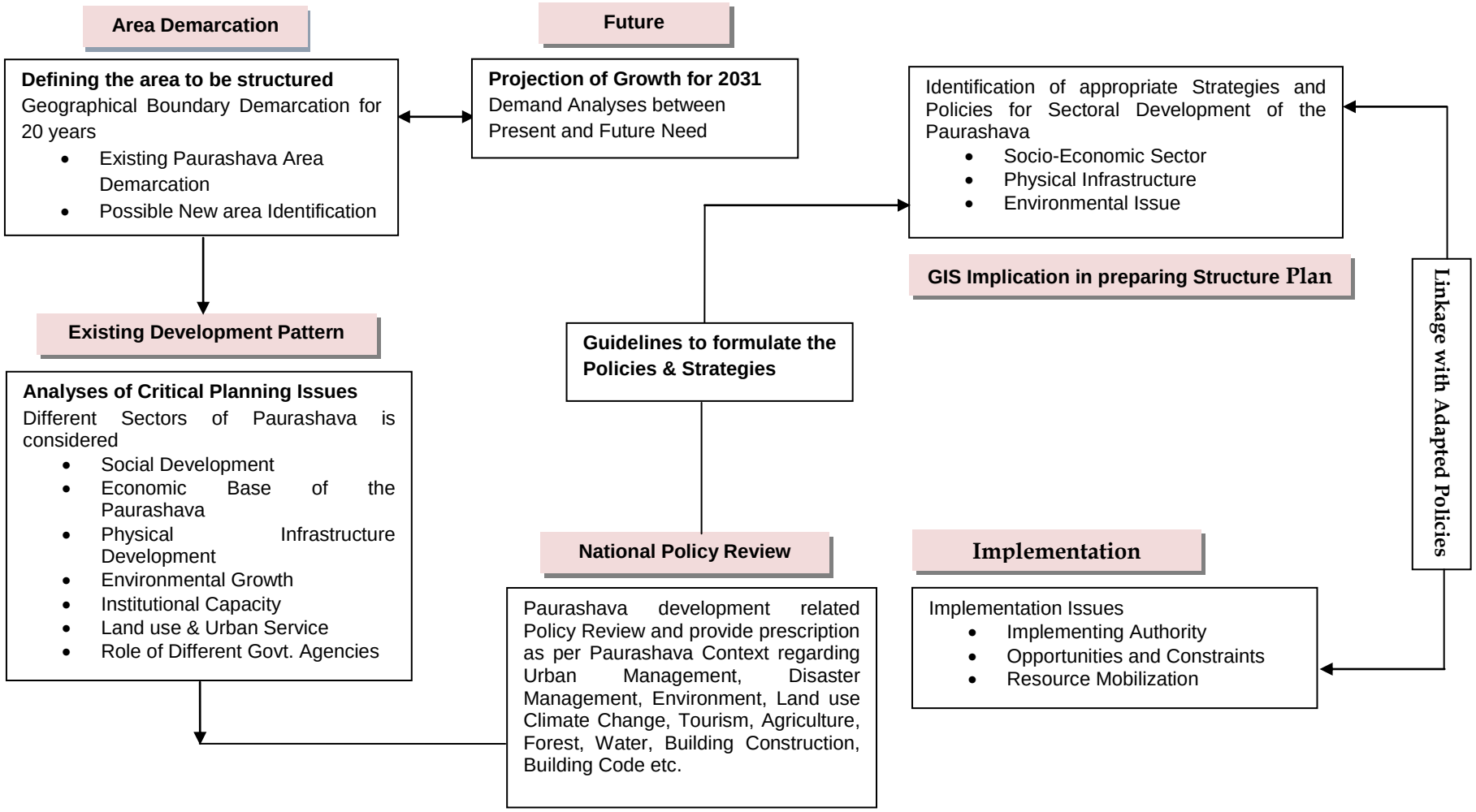


Fig 2.1: Content of Structure Plan

Chapter-3
EXISTING TREND AND GROWTH

3.1 Social Development

In Daulatkhan Paurashava, about 60% households concentrated in potential core area. This indicates that Daulatkhan is a semi-urbanized area where mainly commercial development concentrated on core area, influential or affluent people live in the potential core area and the urban poor those are always likely to live in fringe area.

The educational status of an area is the major determinant of society building. As per BBS 2001, in Daulatkhan Paurashava the literacy rate is about 37.3% where the national level the literacy rate is about 53.3%.

It is seen that almost all the wards have similarity in occupation, and agriculture is dominant in every ward. As regards, 2.6% of the people are unemployed (Socio Economic Survey, 2010).

Most of the households (90.6%) own their house by inheritance whereas about 6.3% of the households purchased their house. Considering other assets it has been observed that according to BBS 2001, about 22.92% households own agricultural lands.

There are different types of income groups of people living at Daulatkhan Paurashava area. About 41.7% of the households' incomes are within the range of Tk 5001.00 – Tk.10, 000.00 per month. Further, 20.5% of the household have income per month Tk. 2500.00 – Tk. 5000.00; 17.3% Tk. 10,001.00 - Tk. 15,000.00 and 8.7% Tk. 15,001.00 – Tk. 20,000.00.

3.2 Economic Development

In Bangladesh, the economy is composed of formal and informal sectors. But statistics on the size of the informal economy in Bangladesh are difficult to find out. Formal economic activities sector of Daulatkhan Paurashava mainly comprises Trade and Commerce, Agriculture, Service Sector, Industry, Transport and so on. The major occupational group is involved in agricultural activity (Socio Economic Survey, 2010). About 63.3% of all the households' members irrespective of sexes of Daulatkhan Paurashava are within the age group of 16-57 years. This indicates majority of the household members are economically active group. Daulatkhan Paurashava would have tourist potential as Kuakata Tourism Centre is one of the nearest attractions. Besides, the Meghna River which has been passed beside the Paurashava area can be used for the development of fishing industry.

3.3 Physical Infrastructure Development

As Bhola region is mainly dependent on agriculture so the Paurashava activities is still oriented with agriculture sector and the physical infrastructure development is hindered due to natural calamities.

Physical feature survey depict that about 83.88% structures are devoted for residential purpose and 13.02% for Commercial activities. About 88.63% of all types of structures are kutcha which is followed by 7.66% semi-pucca. Pucca structure is very low percentage, among them 14.04% are used for educational purpose. Only 29 structures are devoted for religious purpose.

At present, the road network of Daulatkhan planning area shows lack of planning and one third part of the roads are semi-pucca. So, it might be possible to develop the planning area considering the ward wise development to some extent.

At Daulatkhan Paurashava, total length of drainage line is about 8.76 km. Most of the drains are natural.

3.4 Environmental Growth

Daulatkhan Paurashava is located in the southern part of Bangladesh. It is very close to the Bay of Bengal. It enjoys generally a sub-tropical monsoon climate. While there are six seasons in a year, three namely, the Winter, the Summer and the Monsoon are prominent. Winter which is quite pleasant begins in December and ends in February which ranges from of 7.8^{o}-14^{o} C. Drinking water of the Paurashava is quite saline as Daulatkhan is an island. So, the establishment of Water Treatment Plant beside the River will be required for ensuring the good drinking water. In addition, it is possible to preserve the environment before any advanced development as industrial development is very low.

3.5 Population

Daulatkhan Paurashava is about 2.34 sq. kilometers and comprises around 16728 numbers of people (male 8535 and female 8193). Area of Daulatkhan Paurashava is a high density area compared to upazila density. Total area is divided into two parts by Meghna River. One of them is an island which follows mainly rural characteristics with low density. Other part is highly dense area. The average population density of Daulatkhan Planning area is 7149 person /sq.km.

Table 3.1: Population Distribution of Daulatkhan Paurashava Area at 2011

Ward	Population at 2011	Area (acre)	Density (person per acre)
Ward 1	1501	81.69	18
Ward 2	2759	83.98	33
Ward 3	2525	70.5	36
Ward 4	1302	67.08	19
Ward 5	813	20.02	41
Ward 6	1196	32.25	37
Ward 7	1738	108.01	16
Ward 8	1997	43.26	46
Ward 9	2897	72.38	40
Total	**16728**	**579.17**	**29**

Source: BBS 2011, Community Series, Zila: Bhola, 2012, BBS 2011 and Field Survey, 2010

3.6 Institutional Capacity

In Daulatkhan Paurashava, the plan implementation and main power executing authority will be the Paurashava itself. Therefore, effective execution capacity in terms of revenue generation, manpower capacity of the Paurashava is required to evaluate to implement the plan. There are two major component of income generation. These are: 1) Revenue, 2) Development.

In most of the Paurashavas of Bangladesh the main income source is Revenues from different sources. But in Daulatkhan Paurashava, in last 5 years the income from development section

has contributed about 72% on an average to the overall income of Paurashava whereas revenue sector has contributed about 28% on an average to the overall income.

Analyses reveal that highest income expenditure ratio (1.06) is observed in 2008-09 year and lowest ratio (0.84) is observed in 2006-07. It indicates that in 2006-07, the expenditure was greater than income and in 2008-09 the income was higher than the expenditure. Besides, in the year 2010-11, the income expenditure ratio shows a balanced condition (1.00).

Existing Manpower of Daulatkhan Paurashava is consisted of 1 elected Mayor, 12 councilors (9 male and 3 female), and 3 Departments. These are:

1. Engineering Department;
2. Administrative Department; and
3. Health, Family Planning & Conservancy Department.

These three departments comprised of 35, 35 and 19 persons respectively. The manpower of Daulatkhan Paurashava is not so much capable to implement the Paurashava Master Plan. The Existing posts are not fulfilled by the required manpower. Besides, it may require more efficient, technical and experienced manpower to implement the master plan. It has been observed that in Engineering Department about 80% posts are vacant, in Administration Department about 69% posts are vacant and in Health and Family Planning Department the percentage of vacant posts are 89%.

Moreover at present, there is no town planning unit at Daulatkhan Paurashava. Engineering Department is responsible for monitoring the development control issues of this Paurashava.

3.7 Urban Growth Area

Daulatkhan Paurashava is linear in shape. The Paurashava is expanding along the Main Road on south north direction. This is the important network which is located middle of Paurashava area. Commercial development is already expanding along with the Main Road. Water bodies are the pull factor which directed commercial growth towards eastern part. Moreover, a major portion of western part remains agricultural land.

The existing growth agglomerations along potential core area accommodate mostly the residential areas. Specially for getting advantage of high lands, residential areas developed on these areas that are accelerating growth of the Paurashava on the east side. Industrial development is mainly concentrated near water bodies. So, it is expected and required to concentrate the development in the existing rather than expanding towards other areas.

On the other hand, existing industrial area is mixed with the commercial area of the Paurashava. In considering the commercial and administrative land development, both sides of Meghna River is the potential area for commercial development.

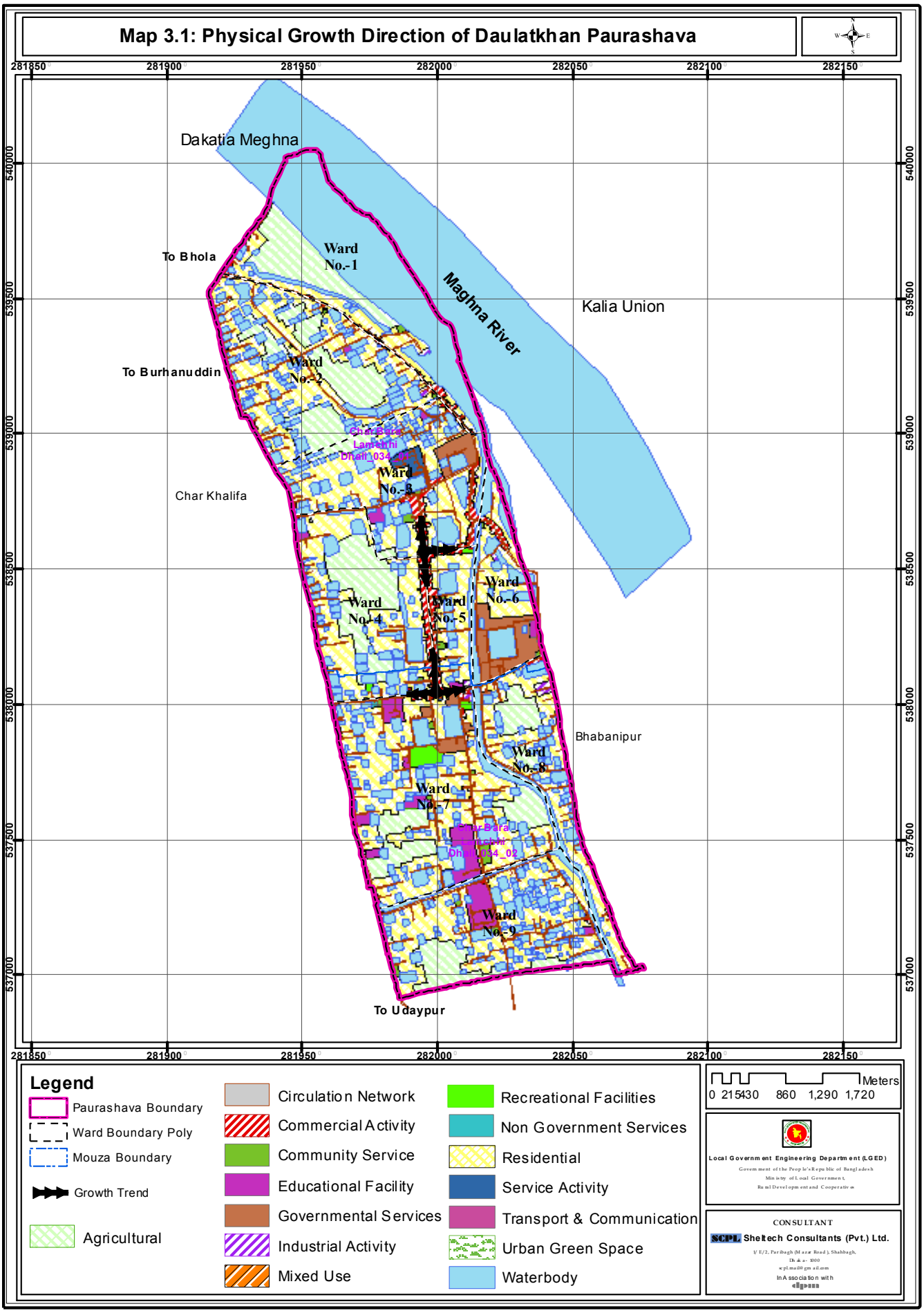
Most of the roads of all wards are pucca and the overall condition is moderate except access roads. All these areas have been well linked up with functional road network but some roads are

narrow especially access roads which are required to be more widened. The existing natural features having river and khals are playing a vital water ways in connecting the area with that Bay of Bengal.

3.8 Catchments Area

Catchments area of the Daulatkhan Paurashava is calculated according to the agriculture commodities and movement of dwellers for rendering services. From Daulatkhan Paurashava, agriculture commodities marketed to the Bhola Zila and other adjacent areas. At present from Daulatkhan Paurashava rice, paddy, betel leaf, wheat, potato, etc product are supplied to different district by water way through Launch or trawler. Also, the fishes such as Hilsha, Pungash are also available here which are caught from Meghna River which is adjacent to Daulatkhan Paurashava. Theses fishes are also distributed to all over the country. Thus, this upazila is contributing to national economy.

Moreover, most of these trading activities of this Paurashava are conducted through some prominent bazaars of the Paurashava. The important bazaars are: Khaer Hat and Bangla Bazaar. People from different locations including Paurashava people, outside from Daulatkhan Paurashava come here for daily bazaar. However, these opportunities have to be properly linked up and optimized for enhancing socio-economic developmental activities so as to boost up living condition of the people living in the urban area.


Map 3.1: Physical Growth Direction of Daulatkhan Paurashava
Dakatia Meghna
Maghna River
Kalia Union
To Bhola
To Burhanuddin
Char Khalifa
Bhabanipur
To Udaypur
Ward No.-1
Ward No.-2
Ward No.-3
Ward No.-4
Ward No.-5
Ward No.-6
Ward No.-7
Ward No.-8
Ward No.-9
281850
281900
281950
282000
282050
282100
282150
540000
539500
539000
538500
538000
537500
537000
Legend
Paurashava Boundary
Ward Boundary Poly
Mouza Boundary
Growth Trend
Agricultural
Circulation Network
Commercial Activity
Community Service
Educational Facility
Governmental Services
Industrial Activity
Mixed Use
Recreational Facilities
Non Government Services
Residential
Service Activity
Transport & Communication
Urban Green Space
Waterbody
Meters
0 215430 860 1,290 1,720
Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government,
Rural Development and Cooperatives
CONSULTANT
SCPL Sheltech Consultants (Pvt.) Ltd.
In Association with

3.9 Land Use and Urban Services

Land use is one of major determinant of planning especially in a developing country where technical component is being upgraded still. Suitable land use planning not only controls the development but also it can affect the traffic generation and degeneration of a particular area. At Daulatkhan Paurashava, there is dominance of residential land (about 40.73% of the total) followed by water bodies (about 30.88%) and 15.52% agricultural landuse.

Each ward is more or less covered by residential land use. Most of the ward area shares more than 40% residential land use except ward no. 1 and ward no. 5. The highest residential land use (53.15%) is observed in ward no. 5. Most of the wards have commercial land use in some extent. Among them, ward no. 1, 2, 6, 7, 8 and 9 have only 0.5 to 2% use which is negligible. The major commercial and administrative development has been observed in ward no. 5 with 13.9% coverage. In Daulatkhan Paurashava area there is little industrial activities. Only, ward no. 8 shares 1.6% land for industrial purpose.

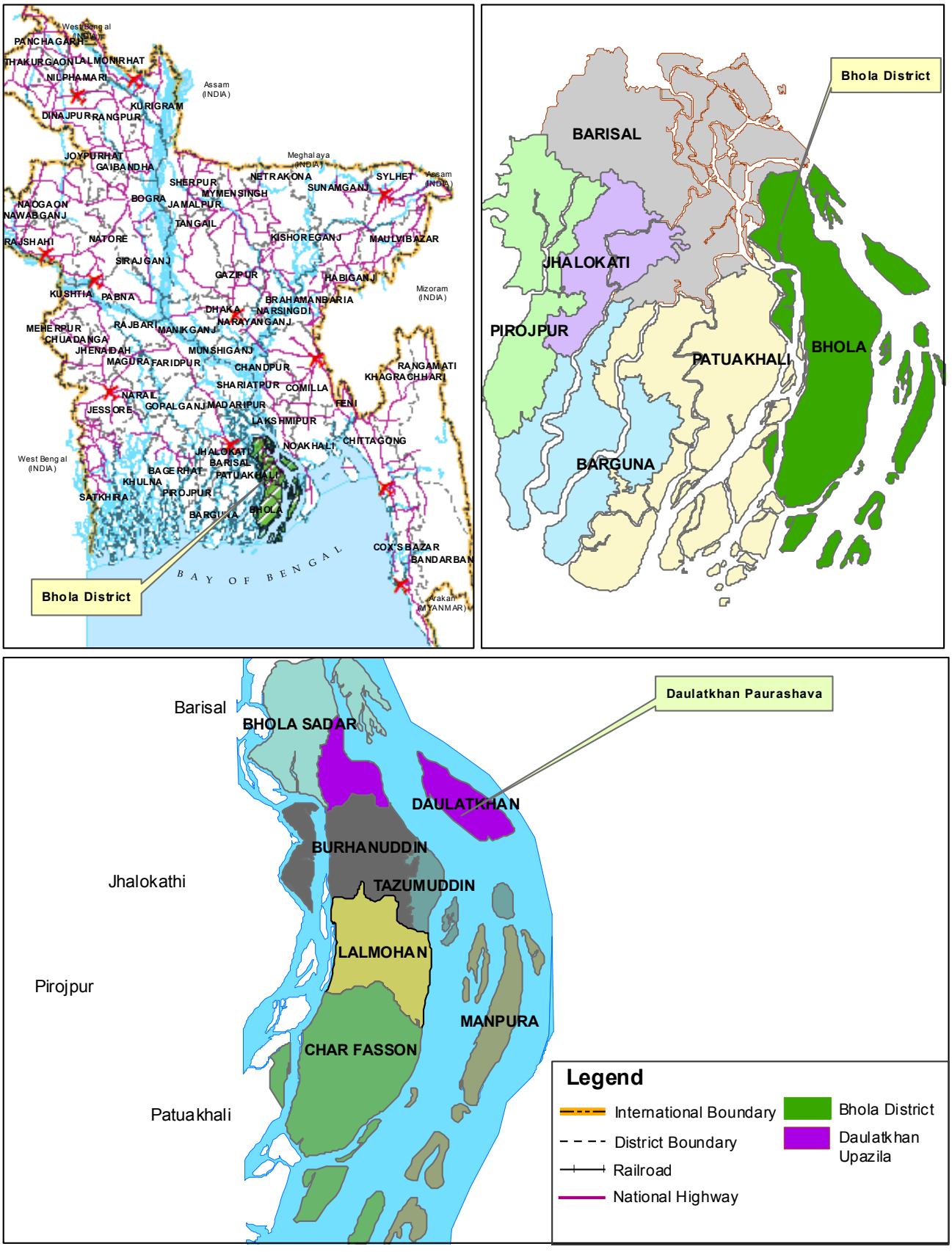
The condition of recreational facilities in Paurashava area is not good enough. At present, ward no. 7 (2.28%) have potentiality of recreational facility though lands are still available as open space.

3.10 Paurashava Functional Linkage with Regional and National Network

Daulatkhan Paurashava is located at Bhola District which is a coastal area. Daulatkhan is the former headquater of Bhola which is situated at the fringe of the Bay of Bengal. It is bounded on the north by Barisal district, on the east by Lakshmipur and Noakhali district, on the south by the Bay of Bengal and on the west by Barisal and Patuakhali district.

Bhola is disaster prone area due to its location. Communication system in Bhola is totally different from other districts of Barisal. Daulatkhan Paurashava of Bhola District is mainly an island. Daulatkhan is not directly connected with other districts. Bhola is used as via route. A regional highway is gone through Daulatkhan Purashava which is connected Burhanuddin Lalmohan, Char Fasson and Tazumuddin with district headquarter Bhola. Moreover, each of seven upazila is connected by water ways. So in case of Bhola district water ways improvement should be given more priority than road network compare to other in district Barisal Division.

Map 3.1: Regional Linkage Map of Daulatkhan Paurashava



3.11 Role of Agencies for Different Sectoral Activities

Daulatkhan is a B Class Paurashava. The collaboration among different agencies is essential to execute the plan and make a linkage with national plan and investment. Therefore, the role of different agencies or organizations is required to identify and understand.

LGED

The major functions of LGED can be broadly categorized as follows:

- Rural infrastructure development;
- Urban infrastructure development; and
- Small scale water resources development

Urban Infrastructure Development consists of Planning and implementation of integrated town centre (bus terminals, markets etc.), municipal roads, bridge/culverts, drainage, water supply and sanitation projects, solid waste management projects, slum upgrading projects, development of Land use plan, improve planning & management capacity and resources mobilization & management, Institutional development of municipalities through training and computerizations, preparation of district and upazila town master plan, Development of technical specifications and manuals for construction of urban infrastructures.

RHD

RHD is responsible for the construction and the maintenance of the major road and bridge network of Bangladesh. It has a sustainable capacity to plan, manage and deliver its full range of responsibilities in respect of the main road and bridge network and to be accountable for these duties.

PWD

Public Works Department (PWD) plays a pivotal role in the implementation of government construction projects. It also undertakes projects for autonomous bodies as deposit works. The specific functions are:

- Construction of Buildings for Other Agencies on a Deposit Work Basis;
- Maintenance of Public Parks;
- Design and Construction of Public Buildings except those of RHD, T&T, Postal Department;
- Construction of National Monuments;
- Repair and Maintenance of Public Buildings;
- Preparation of Book of Specifications and Code of Practice;
- Acquisition and Requisition of Land for construction Work;

- Procurement of Materials & Equipment Required for Construction Work; and
- Valuation of Land and Property and Fixing of Standard Rent.

BWDB

Bangladesh Water Development Board (BWDB) is the principal agency of the government for managing water resources of the country. It was given the responsibility of accomplishing the tasks of executing flood control, drainage and irrigation projects to increase productivity in agriculture and fisheries.

DPHE

The Department of Public Health Engineering (DPHE) with its development partners is trying to ameliorate the sufferings caused by the lack of safe water. Alternative options for safe water supply are being catered in worse affected areas. Similarly for excreta and other waste management DPHE is implementing different projects to achieve an improved environment. Besides, ensuring water supply and sanitation services/ facilities during and after the natural disasters/ calamities is another major function of DPHE.

PDB

Major roles of Bangladesh Power Development Board (BPDB) are

- To deliver quality electricity at reasonable and affordable prices with professional service excellence;
- To make electricity available to all citizens on demand by the year 2020;
- To provide specialized skilled services in Operation and Maintenance with outstanding performance in Generation, Transmission and
- Distribution for promoting competition among various power sector entities; and also
- To reach self sufficiency by increasing of its income and reduction of expenditure.

BIWTA

An advisory committee has subsequently been constituted to advise the authority in respect of all matters related to development, maintenance and operation of inland water transport and of inland waterways in Bangladesh.

- Draw up programmers of dredging requirements and priorities for efficient maintenance of existing navigable waterways and for resuscitation of dead or dying rivers, channels, or canals, including development of new channels and canals for navigation;
- Develop, maintain and operate inland river ports, landing/ferry ghats and terminal facilities in such ports or ghats;

- Carry out removal of wrecks and obstruction in inland navigable waterways; and
- Ensure co-ordination of Inland Water Transport with other forms of transport, with major sea ports, and with trade and agricultural interests for the optimum utilization of the available transport capacity.

Regulatory functions

a) Fixation of maximum and minimum fares and freight rates for Inland Water Transport on behalf of the Government;

b) Approve time tables for passenger launch services; and

c) Act as the Competent Authority of Bangladesh for the protocol on Inland Water Transit and Trade, looking after the use of waterways of Bangladesh on behalf of the Govt. of Bangladesh for the purpose of trade and transit between Bangladesh and India as provided in the Protocol

Land Registration Department

Land Registration Committee responsible for land registration. This Registration department records land mutations arising through sale, inheritance or other forms of transfer, reports changes to the Ministry of Land, and collects the Immovable Property Transfer Tax.

Chapter- 4
CRITICAL PLANNING ISSUES

4.1 Physical Infrastructure

Daulatkhan Paurashava is an island. As this Paurashava is located in a disaster prone area, its geographical location itself a constraint to develop the infrastructure in the Paurashava. The Meghna River is passing through the east side of the Paurashava. Most of the parts of ward no. 1, 2, 4, northern part of ward no. 3 and south-western part of ward 9 are low laying areas. These lands immerse when flash flood occurs.

The physical developments of Daulatkhan Paurashava have encroached water bodies such as river, khal and the existing fertile land. This is very much detrimental for conserving biodiversity. Further, the existing physical developments are taking agricultural lands as much as possible which will create danger on the food security and also on the economic base of the planning area.

The Paurashava is a naturally developed area. Planning effort yet not been taken by the public authority. Therefore, there are some segmented and sporadic physical developments that have been occurred over the years in different parts of the Daulatkhan Paurashava.

The internal roads are developed in an unplanned way and also most of the access roads are katcha and narrow. These roads are not capable to accommodate the future growth of this area. Moreover, there is no traffic management system and footpath facility which cause lack of planning in transport network development. This situation hinder the economic development but also the potentiality of physical development of Paurashava.

The overall condition of utility / municipal services is unsatisfactory. Water supply network and electricity facility is not adequate for residents of this area. Moreover, there is no solid waste disposal facilities, sewerage facilities and gas supply facility. Low land elevation and the distribution of water bodies make it difficult to provide the utility services, road network development over the Paurashava and also hinder well investment to encourage any industrial development.

4.2 Socio-Economic

The overall condition of different available urban utilities/civic services at Daulatkhan Paurashava area is not satisfactory. No gas supply facility is available for the households of Daulatkhan Paurashava which is one of the fundamental urban facilities for the residents living there. At present there is no dustbin and waste disposal facility at Daulatkhan Paurashava. It appears that wastes are thrown here and there which pollute the area and create environmental problems. The people of this area also suffer for disaster problems such as flood, water logging, cyclone, etc. people also face some pollution problems like water pollution, noise pollution, beach pollution, etc. There is also lack of recreational facility at the Daulatkhan Paurashava. The households of Daulatkhan Paurashava face some communication problems in their daily life such as narrow road problem, flood erosion problem, road jam problem and lacking of town bus service. However, this aspect needs vital consideration.

Most of the economic activities in Daulatkhan area are rudimentary in nature. Poor technology, unskilled labor force, low investment makes such economic activities uncompetitive with other

cities and towns. Public investment in Daulatkhan area is not enough to generate growth impulses. Public investment in appropriate areas is a must for revitalizing its economy. The local people, particularly those who are rich usually apathetic toward investment. The main reason can be explained in two points: first, the investment is not safe and the second the rich must in big cities where there investments are safe. Lack of availability of funding sources/agencies viz. bank, etc is also acting as hindrance for economic development.

4.3 Environment

Daulatkhan Paurashava is located on the coastal belt, as a result the people of this area face cyclone almost every year. Devastating cyclones hit the area usually accompanied by high-speed winds, sometimes reaching 220 km/hr or more and 5-6m high waves, causing extensive damage to life, property and livestock. It has observed that Cyclone hits Daulatkhan Paurashava in different years. But, in 1970, 1975, 1991, 2007 and 2009 year the extreme cyclone track is passed over the Daulatkhan.

As the area is in coastal region, saline and iron have been contaminated the water. Agricultural production, fisheries and livestock are affected by higher salinity in the dry season.

At present, there is no solid waste management system at Daulatkhan Paurashava. Most of the people threw garbage here and there, which causes serious environmental pollution and also sometimes clogged the existing drainage network.

In preparing the master plan for Daulatkhan Paurashava, the above issues have dully been considered and proper steps have been taken to mitigate those effects.

4.4 Transport and Communication

Daulatkhan Paurashava is connected with Bhola with a regional road. Daulatkhan is connected with other districts via Bhola. The inter-district movement is mostly done through motorized vehicles. Moreover, water transport network of Daulatkhan Paurashava has significant importance for the movement of both people and commodity.

There is no public or private bus service available for intra-zonal movement among Daulatkhan Paurashava. Intra-zonal movement among the Paurashava area is mostly done through the non-motorized vehicles such as rickshaw, bi-cycle, van, etc. People also use some motorized vehicles such as motorcycle, nochhimon, etc. Rickshaw is the most dominant transport for intra zonal movement. Peak Hour traffic has been observed from 8.00 to 12.00 and 16.00 to 20.00 because most of the educational and commercial movement has been accomplished within the time periods.

There is no bus stand at Daulatkhan Paurashava. Buses are normally stopped at near Daulatkhan bazaar. At present, there is no designated space for truck terminal. Most of the vehicles park here and there. In most cases rickshaws and vans gather in front of the intersection places. Regularly rickshaws and vans gather on road in katcha bazaar road at Daulatkhan

Bazzar. However, attentions have to be given to arrange bus, truck and other vehicles stands in suitable places.

The area is not served by well defined road hierarchy and most of the roads are narrow. At present, the roads of Daulatkhan Paurashava have free flow and transport density is low. But it is important to design a planned network with designated width to accommodate the future pressure of traffic.

4.5 Landuse Control

At the present time, there is no control over land development at Daulatkhan Paurashava. The master plan is intended to prove a broad guideline to control the future development and to organize all types of development in a planned manner.

Major aim of the Landuse Policy 2001 was to prevent indiscriminate conversion of agricultural land in to non-agricultural use, because such conversion may be threatened for food security of the country. During implementation of Urban Area Plan / Ward Action Plan, necessary control should be imposed according to the following manner.

- High value agriculture land should be preserved only for agriculture purposes.
- Water body should be preserved to maintain the natural drainage system of the area.
- Easy accessibility with the surrounding upazila and regional linkage has to be ensured.
- Rural characteristics of the rural settlement have to be strictly maintained.
- All the municipal services have to be designed covering all the residents of the planning area.
- Land encroachment should be strictly outlawed.
- Agricultural lands can be used for other purposes considering the importance of the use and considering the quality of land in terms of its production.

4.6 Disaster

Daulatkhan Paurashava is located on the coastal belt, as a result the people of this area face cyclone almost every year. Devastating cyclones hit the area usually accompanied by high-speed winds, sometimes reaching 220 km/hr or more and 5-6m high waves, causing extensive damage to life, property and livestock. It has observed that Cyclone hit Daulatkhan Paurashava in different years. But, in 1970, 1975, 1991, 2007 and 2009 year the extreme cyclone track is passed over the Daulatkhan. The cyclone SIDR and Aila were a big hazard for their natural climatic condition. It also damaged many lives, forests, agricultures and infrastructures.

4.7 Laws and Regulations

The laws and regulations prescribed (mentioned in Chapter 5 section 5.2) are not directly related with the physical development activities and their control. The East Bengal Building Construction

Act, 1952 is called the mother regulation to control all type of physical development but no instruction is being included in the Paurashava Ordinance, 2009 regarding EBBC Act, 1952. The Paurashava authority approves the building plan and excavation of tank without any regulatory control.

The regulation prescribed in the Local Government (Paurashava) Act, 2009 on the preparation of master plan is called traditional regulation. In the modern world, the concept of master plan became obsolete. In this project, the so called master plan, as mentioned in the Paurashava and Surrounding Area Ordinance, 2009 considered as a package and the plan included in this package named Structure Plan, Urban Area Plan and Ward Action Plan, though there is no regulation in the country on the preparation and implementation of those plans. However, eligible development authority will be required to exercise proper rules and regulations for controlling the development considering various related issues.

Chapter- 5
PAURASHAVA DEVELOPMENT RELATED POLICIES, LAWS AND REGULATIONS

5.1 General

Planning law must clearly define the extent and content of the rights of the Government and the people. Thus, legislative measures can help to frame policies for best use of land and its policies to control. Law should aim at a clear definition of the responsibilities and functions of various Government departments and its respective powers. For urban development, law has profound implications. It defines the system of urban Government, establishes the system of urban planning and regulation of urban development.

5.1.1 Local Government (Paurashava) Act, 2009

According to the Section 95, Paurashava, 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 survey for the municipality including its history, statistics, public services and other prescribed particulars;
- Development, expansion and improvement of any area within the municipality; and
- 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.

5.1.2 Urban Management Policy, 1999

The adopted policies under the policy statement are:

- Paurashavas shall provide and maintain the following services to their constituents: (i) Water supply, (ii) storm water drainage (iii) solid waste disposal, (iv) public sanitation, (v) roads and traffic control systems, (vi) public markets, (vii) public transport terminals, (viii) recreational parks and reserves, (ix) community centres, (x) street lighting, etc**.**
- Municipalities shall develop Public Investment Programs (PIP) which will reflect the priority infrastructure needs and appropriate fiscal practices needed to accomplish these;
- The capital budgeting process by municipalities and project selection shall be made transparent;
- Land use plans shall be prepared by Paurashavas in consultations with local communities and shall be periodically updated. Such plan shall form the basis for all property and land development and the assessment of taxes. Each Paurashava and Surrounding Area shall endeavor to appoint a full time qualified Urban Planner to its staff for this purpose, and until such appointment is executed; such services shall be contracted out;
- All external financing extended either directly to Paurashavas by multilateral or bilateral sources or on-lent via the MDF for municipal investments shall be provided on comparable terms;

- Paurashava and Surrounding Area will adopt as early as possible a double entry accounting system on a cash basis. Training and technical assistance shall be provided on a priority basis to facilitate computerization in the transition to double entry accounting;
- Paurashavas shall generate sufficient revenues from their own sources to meet, at a minimum, all of their operating expenses;
- The Government shall review in consultation with municipalities the current intergovernmental revenue transfer system and make appropriate changes to make it transparent, rational, and predictable and to some extent performance based;
- Paurashavas shall endeavor to contract out service provision in whole or in part to private providers in areas such as solid waste disposal, public sanitation, and road maintenance;
- Paurashavas shall conduct periodic public meetings to advise their constituents regarding their activities as well as to engage the public in consultations regarding investment choices, decisions and priorities. As part of this increased transparency; and
- Maximizing the participation of women shall be accorded high priority.

5.1.3 National Housing Policy, 2008

The salient features of the housing strategy envisaged in the National Housing Policy are:

- The role of the government in housing will be to supply serviced land at reasonable price and to help create and promote housing financing institution;
- Efforts will be made to increases affordability of the disadvantaged and the low income groups through providing credit for income generation;
- Improvement and rehabilitation of the existing housing stock will be given priority by the government alongside new housing;
- Encroachment on public land and unauthorized constructions will be discouraged;
- Facilities incremental house building and ensure wider application resources; and
- Conservation of the natural environment and preservation of cultural heritage in new housing projects.

In this policy, there are some specifications are illustrated for Urban and Rural Housing. As the urban and rural context in Bangladesh is different, so the strategies and policies of these sectors are also different. Though the context is different but rural area and urban area are economically, socially and environmentally dependent on each other.

Rural Housing

Clause 5.9 of the Housing Policy describes about the rural housing. In the Housing Policy, following measures are suggested to improve rural housing:

- Avoiding unnecessary displacement of rural settlements due to development projects and where unavoidable, makes proper rehabilitation of the households, with full community involvement;
- Encroachment on agricultural land by proliferation of homestead should be discouraged. Efforts should be made for planned densification of rural homesteads. Subject to availability of khas lands, programs similar to 'Adarsha Gram' program of the Ministry of land will be undertaken in rural areas;
- The coordinated provision of water supply, sanitation, electricity, roads and other basic infrastructure services to existing and new habitations;
- Providing assistance by way of providing credit, dissemination of appropriate technology and delivery system for promoting housing;
- Initiating schemes for increased employment opportunities and income generation by extending appropriate credits and advice, so that housing affordability is enhanced;
- Establishing suitable institutional structure including strengthening of existing organizations at district and local level, with the responsibility for planning, financing, implementation, supervision and monitoring of rural housing schemes, and with the full involvement of beneficiaries, NGOs and CBOs, giving special attention to the needs of the poorest segments, specially women and disadvantaged persons; and
- Linking the development of housing sites and the up gradation of rural housing with the activities under the Bangladesh Rural Development Board (BRDB) and other programs for the creation of rural assets and employment.

5.1.4 Population Policy, 2004

The following strategies will be adopted to slow down the growth of urban population:

- Satellite towns and growth centers should be established with adequate facilities to provide alternative destinations to rural migrants. Roads and communication systems should be linked with the growth centers; along with health, education housing and other welfare services created in those places. Headquarters of important Government and non- Government Organizations, educational institutions and industrial units may also be shifted or relocated to other cities;
- Relax rules relating to going abroad of skilled workers and make provision for dual citizenship;
- Impart education and skill training to the young men and women to become competent and skillful to handle many new and emerging fields in the cities and towns; and
- Create skilled manpower for overseas employment.

5.1.5 National Land Use Policy, 2001

Main Components of the Policy

- use as much as required for agriculture purposes and land use cannot be changed with permission of the appropriate authority;
- ensure use of land owned by the land lord absentee;
- keep limit the process of division of agricultural land into small pieces;
- identification of zones for land uses by Paurashavas and other places of Upazilas;
- provision of assistance by the Revenue Office of District Administration in preparing zoning maps by the local government organizations;
- existence of zoning law in the country; Abide this law to implement the zoning map prepared by the local government organizations;
- encouragement to construct multi-storied buildings instead of single storied in the rural and urban areas so as to ensure optimum use land for residential purposes;
- identification of the forest land by the Ministry of Forest and Environment;
- undertake measures for protection, maintenance and expansion of the existing forest land;
- encouragement for development of the social forestry;
- keep open the exiting water bodies and those are not to be filled in. Entrust the responsibility of maintaining small ponds by the owners and large water bodies such as river, channels, haor, baor and beel by the community people and the Government. To this effect, these water bodies are to be re-excavated regularly;
- use of embankments for controlling flood as roads as far as possible;
- planned tree plantation on the embankments;
- use ditches and other water bodies for fish production and rearing ducks created during cutting of earth for constructing embankments. Not to dig new land as much as possible during constructing embankments rather re-excavate the existing filled in water bodies;
- ensure not to create water-logging by constructing embankments;
- no acquisition of land for the purpose of road construction other than/except national highways, regional and district to Upazila roads, Upazila to Upazila connecting roads. Avoid human settlements and fertile agricultural land to acquire land wherever land acquisition is of utmost need. Construct inter and intra village roads in planned manner;
- construct/establish industries in the designated places keeping view on the availability of support services for industrialization;
- not to pollute/infect land or environment through discharging waste from the industries and follow strictly to treat industrial waste;
- construct service roads along the main roads of the country so as to ensure safe movement of traffic as well as set aside 10 feet to 20 feet of land for plantation trees on the both sides of roads;

- discourage construction of small and cottage industries within 10 kilometers of radius if industries are accommodated within the BSCIC industrial area; and
- protection of social rights of possessing land by the indigenous people living in the different parts of the country following their traditional laws.

5.1.6 National Agriculture Policy, 1999

The following steps will be taken to ensure planned utilization of land for crop production:

- Land zoning program will be taken up by the Soil Resources Development Institute (SRDI) on a priority basis. Integrated approach of SRDI will be further strengthened for this purpose;
- To ensure maximum utilization of land, bottom up planning through people's participation and its implementation will be started from the mouza or village level;
- In most areas the same land is suitable for more than one crop. Therefore, farmers will be encouraged to grow more profitable crops as an alternative to only rice-rice cropping pattern;
- Fertile agricultural land is going out of cultivation due to its use for non-agricultural purposes such as private construction, house building, brickfield, etc. Appropriate measures will be taken to stop this trend in the light of the Land Policy of the government;
- Maximum utilization of land will be ensured through promotion of inter-cropping with the main crops;
- Acquisition of land in excess of requirement for non-agricultural purposes will be discouraged; and
- Programs will be taken up to motivate the landowners not to keep their land unused without any acceptable reason.

5.1.7 Transportation Policy

At present there is no standard design and national unit cost for construction and maintenance of various roads and bridges and culverts. As a result substantial cost difference has been proposed by the agencies for same type of road / bridges for the same area. Following tasks of a road projects will be adopted:

- The Committee reviewed the design standards for the Union, Upazila, Zila Roads, and concluded that the key design criteria for all roads should be traffic and axle loads, and not the classification of the roads;
- The six design standards agreed by the Committee to form a logical progression in terms of road width and pavement thickness, all based on traffic considerations. They are not directly related to road classification;

- The agreed design standards are to be used by all road agencies. Road agencies will be required to use appropriate standards for roads according to traffic criteria;
- Reconstruction- full pavement reconstruction on an existing embankment;
- New road Construction - completely new embankment and road pavement, including bridges, culverts and any necessary slope protection. This is likely to prove a rare category of road project in Bangladesh;
- Widening- road widening and upgrading, including full re-construction of the existing pavement; and
- Strengthening- removing existing road surfacing and providing a new base layer of Base Type-1 and surfacing.

5.1.8 Environment Policy

Bangladesh National Environment Policy was approved and published in 1992. Key elements of the Policy are –

- Maintain ecological balance and overall physical development progress of the country through protection and development of different sectors. Protection from natural disaster is one of them;
- Identification and regulation all type of activities which pollutes and degrade the environment;
- Ensuring proper Environment Impact Assessment prior to undertaking of industrial and other development projects; and
- Ensuring sustainable use of natural resources.

5.1.9 Coastal Zone Policy, 2005

The following are the broad components of the policy:

Economic growth

- Efforts shall be made to enhance annual growth rate to a level required to achieve national goal for poverty reduction and economic growth;
- Available opportunities of the coastal zone will be used through sustainable management to enhance standard of living of coastal communities by investing in different sectors;
- A strategy shall be formulated covering all routes to development taking multidimensional nature of poverty;
- Emphasis will be given on building efficient power, transportation and telecommunication links, particularly with islands;

- Special emphasis will be given to utilize gas-based power, manufacturing and processing industries;
- Settled isolated chars and islands will be brought under 'special rural development programs';
- Necessary measures will be taken to increase the flow of investments in the coastal zone including direct foreign investment (DFI), especially by setting up more export processing zones (EPZ); and
- Steps will be taken for medium and small private investments for coastal development.

Basic needs and opportunities for livelihoods

To meet basic needs of the coastal people and enhance livelihood opportunities, the Government policy will be as follows:

- Alleviation of poverty through creation of job opportunities and finding options for diversified livelihoods would be the major principles of all economic activities. Economic opportunities based on local resources will be explored to enhance income of the people;
- The intensity of coverage of primary education, health care, sanitation and safe drinking water facilities will be increased;
- Food production will be continued at the self-sufficiency level and of higher production of diversified high-value export goods;
- Private sector and the non-governmental organizations (NGO) will be encouraged to implement activities for the poor people;
- Collateral-free credit under easy terms will be arranged as part of all livelihood enhancement programs and activities;
- No alteration or stoppage of an existing employment opportunity shall be made without creating opportunities for alternative employment;
- Special measures will be taken during the period of disaster;
- *Khas* land will be distributed among the landless and a more transparent process of land settlement will be ensured;
- An effective program for land reclamation will be developed;
- Provide facilitate for the coastal navigation;
- An integrated network of communication including roads and waterways will be developed;
- The law and order situation will be improved by setting up police outposts in remote and far flung areas; and
- Free flow of information for the people will be ensured.

Reduction of vulnerabilities

In order to reduce the vulnerabilities of the coastal poor from disasters like cyclone, drainage congestion, land erosion, drought, etc, the Government policy is as follows:

- Reduction to vulnerability to natural disasters would be an integral aspect of the national strategies for poverty reduction;
- Integration will be made with 'Comprehensive Disaster Management Plan' on aspects concerning the coastal zone;
- Effective measures will be taken to enhance coping capacity of the poor during the period of disaster and to initiate insurance scheme for improving their social security;
- Effective measures will be taken for protection against erosion and for rehabilitation of the victims of erosion;
- Safety measures will be enhanced by combining cyclone shelters, multi-purpose embankments, road system and disaster warning system. It should include special measures for children, women, the disabled and the old;
- Earthquake management will be strengthened and capacity to cope with earthquakes will be enhanced;
- Adequate provision will be made for safety of livestock during disaster and post-disaster period;
- Programs shall be taken to encourage all for tree plantation in a planned manner in the coastal zone. Emphasis will be given to social forestry and other forms of plantations, plant care and maintenance; and
- The asset base of the poor, with special focus on women, shall be improved through ownership or access so that their coping capacity improves.

Sustainable management of natural resources

The Government policy to ensure sustainable management of both biotic and abiotic coastal resources will be as follows:

- Every possible steps shall be taken to secure just share from all international rivers reaching the coastal zone and the Bay of Bengal;
- Suitable measures will be taken for sustainable use of renewable resources and, to that end, limit harvesting, extraction or utilization to the corresponding cycles of their regeneration;
- Sustainable use of coastal resources shall be ensured. Combination of resource use, e.g. agriculture, forestry and fishing including aquaculture is often the major economic activity. Efforts will be given to make this sustainable;
- Optimum utilization of resources will be ensured by taking advantage of the complementarities and trade-offs between competing uses;
- Rigid enforcement of conservation regulations will affect the livelihoods of many people and such conservation efforts will be linked, as far as possible, with alternative opportunities of employment; and
- Initiation of plan and its implementation will be ensured by participation of people of all sectors.

Land

- Planning will be done under land use policy to control unplanned and indiscriminate use of land resources. Strategies for new chars will be developed. Zoning regulations would be formulated and enforced in due course; and
- Through its responsible agencies, the Government will proper plan and implement schemes for reclamation of balanced land from the sea and rivers.

Water

- Adequate upland flow shall be ensured in water channels to preserve the coastal estuary ecosystem threatened by the intrusion of soil salinity from the sea;
- Small water reservoirs shall be built to capture tidal water in order to enhance minor irrigation in coastal areas. Appropriate water management system within the polder utilizing existing infrastructures will be established for freshwater storage and other water utilization;
- Rainwater harvesting and conservation shall be promoted;
- Ponds and tanks will be excavated for conservation of water and local technology for water treatment (such as, pond sand filtering - P.S.F.) will be used for the supply of safe water; and
- Step will be taken to ensure sustainable use and management of ground water.

Capture fisheries

- Comprehensive policies, as dealt in the National Fish Policy, in relation to exploitation, conservation and management of marine fisheries resources will be followed; and
- Fishers' right will be established on open water bodies for sustainable fisheries management

Aquaculture

- Environmentally adopted and socially responsive shrimp farming will be encouraged. In this regard, internationally accepted quality control measures will be introduced; and
- All opportunities and potentials of aquaculture will be utilized in the coastal zone. Crab culture, pearl culture, sea grass will be encouraged.

Agriculture

- Programs for intensification of agriculture and crop diversification for improving the economic conditions of both male and female farmers and increasing food security at local and regional level shall be supported;
- Special development programs will be taken-up with a view to increasing the production of crops suitable for the coastal area with attention to maintenance of soil health;
- Use of chemical fertilizers and pesticides will be reduced, while organic manure and integrated pest management will be encouraged;

- Salt-tolerant crop varieties will be developed and extended along with possible measures to resist salinity; and
- The scope of irrigation facilities will be explored and / or extended and a comprehensive water management for agriculture will be implemented.

Livestock

- Grazing land for livestock will be arranged. Facilities for livestock development will be enhanced; and
- Facilities for rearing of poultry of different species including the local ones will be enhanced.

Energy

- Assessments shall be made on the prospect of tidal and wave power in coastal areas' as potential energy source;
- An assessment of all types of energy resources (e.g., oil, gas, coal, nuclear minerals, hydropower, biomass fuels, solar, wind and tidal waves) will be undertaken on a regular/continuous basis by the appropriate authorities. Special measures will be undertaken for exploration and appraisal of petroleum resources in the offshore areas without undermining the nature;
- Potentials of area-based renewable sources of energy will be assessed;
- Remote and isolated areas including offshore islands, which are not likely to be brought under the networks of commercial fuels in a foreseeable future, are to be considered as potential sites for implementing renewable energy technologies, in spite of their high capital cost. Solar photovoltaic will be used for cyclone shelters; and
- Special projects will be identified, for example power plants in the offshore islands. Plans for the generation of electricity in isolated and remote areas like offshore islands will be prepared separately.

Equitable distribution

To ensure right of the neglected and disadvantaged groups, the Government policy is as follows:

- Actions will be designed to reach the poorest and the remote rural areas (including the cyclone prone coastal regions, chars and river erosion affected areas), which are vulnerable to adverse ecological processes and those with high concentrations of socially disadvantaged;
- In order to ensure equitable distribution of national economic benefits, priority will be given to exposed Upazilas and coastal islands;
- In order to ensure equity, the thrust should be on human development of the poor for raising their capability through education, health, nutrition, employment-oriented skill training and social interventions; and

- Measures will be adopted that increase access to natural resources for the poor and the disadvantaged (on which they are dependent for their livelihood).

Empowerment of communities

Mainstreaming of the coastal people will be done by enhancing their safety and capacity. In this context, Government policy will be as follows:

- Equal participation of all stakeholders shall be ensured and establishing effective co-operation between the government agencies, local government institutions and non-governmental organizations;
- Co-management procedures shall be established that will bring decision-making power to the grass root levels;
- Specific vulnerabilities of the coastal communities shall be addressed: like farmers in the saline zone, marine fishers, salt producers, dry fish processors, people living on forestry resources, ship breaking workers, vulnerable ethnic communities and so forth;
- Vesting on local government institutions, at the union, upazila and district levels, the power and responsibilities for design, formulation and implementation of local level development programs and projects;
- An awareness campaign shall be mounted about the long-term benefits of ICZM, recent initiatives in the coastal zone, and coastal development strategy among the NGOs, private sector, civil society and coastal communities; and
- Initiatives will be taken to keep up the cultural heritage of different communities living in the coastal zone.

Women's development and gender equity

In this respect, the Government policy will be as follows:

- A gender sensitive and participatory approach will be adopted that focuses at the reduction of gender inequalities and that takes into account differences in needs and interests between men and women;
- Efforts will be made to close the gender gap, giving priority to women's education, training and employment and special support for broadening their coping capacity;
- Special attention will be paid towards employment generation for women, the promotion of women entrepreneurs as well as the removal of restrictions on women's employment and economic opportunities;
- During distribution of newly accreted khas lands, special attention will be paid to the allocation of land titles to women;
- Special projects will be implemented exclusively addressed to livelihoods enhancement and empowerment of disadvantaged women; and

- Necessary institutional measures including mass awareness and motivation on violence against women will be taken.

Conservation and enhancement of critical ecosystems

The Government policy will be as follows:

Conserving the ecosystems

- Meaningful conservation shall be enforced of critical ecosystems including ECAs, heritage sites and marine reserves;
- Special measures will be taken for conservation and development of the natural environment of Sundarbans;
- The programs for institutional strengthening and capacity building shall be supported along with further development of the regulatory framework for the protection of the environment;
- The role of the Coast Guard will be acknowledged with emphasis and its capacity will be enhanced so that it can be used on behalf of all relevant institutions as a common resource for enforcement of different regulations applicable to the coastal zone;
- For activities that have direct adverse consequences on bio-diversity, steps will be taken to stop those activities and specific mitigation measures will be taken to minimize those effects;
- To protect the environment, all commitments shall be honored as signatory to different international protocols and guidelines in planning and implementation;
- Efforts shall be made to harmonize in the provisions of different existing laws and enact new laws, where required, to protect and preserve the coastal environment and its resources;
- Special measures will be taken for bio-diversity conservation; and
- Measures will be taken for hill management including prohibition of hill cutting.

Pollution Control

- Zoning regulations will be established for location of new industries in consideration of fresh and safe water availability and effluent discharge possibilities;
- All industrial units will be required to install built-in safeguards against pollution within a given timeframe and will help them in obtaining financial support from international bodies to carry out the adjustments. Units failing to comply with the pollution standards will be required to pay “green tax” for cleanup of the environment polluted by them;
- Sewage treatment plants will be set up for the major cities like Chittagong, Khulna and Barisal and gradually in other urban centers;
- Steps will be taken to handle the issue of discharge of bilge water from ships and oil-spill according to international conventions to which Bangladesh is a signatory; and

- A review of the desirability of supporting ship breaking as an industry `will be done and, in the event of its continuation, environmental standards will be prescribed under which it has to conduct its activities.

Climate Change

- Existing institutional arrangements for monitoring of climate change in Bangladesh will continue. Steps will be taken to support upgrading of technology and institutional strengthening for enhancing their capacity for generation of better data and more accurate long-term prediction and risk related to climate change;
- Implementation of adaptive measures identified in relation to climate change for coastal zone and resources shall be gradually undertaken;
- Efforts shall be made to continuously maintain sea-dykes along the coastline as first line of defense against predicted sea-level rise; and
- An institutional framework for monitoring/detecting sea level rise shall be made and a contingency plans for coping with its impact.

5.1.10 Industrial Policy, 2005

Bangladesh is a developing country, and the present government is striving relentlessly to attain rapid economic development in the country. Despite a lack of resources faced by the Government, development programs in the key sectors have continued. Therefore, the Government in the Ministry of Industries has taken the role of a facilitator. In order to establish economically prospective industries in industrial sub-sectors, there are plans to set up industrial parks and special economic zones so that huge amount of unused and abandoned land can be utilized. All this is aimed at fostering industrialization and economic development and generating employment opportunities in the country. To reduce poverty and generate employment opportunities, more efforts are needed to establish agro-based industries as well as to raise agricultural production. This will ensure the protection and fair price of agricultural products and employment of a huge number of unemployed people. In order to create further employment opportunities beyond the agricultural sector, initiatives should be taken to set up small, medium and large industries across the country. In order to attain this growth in this sector, special importance has been given in the Industrial Policy on agro-based and agro - processing industries and on steps to overcome possible adverse conditions in the export-oriented garment sector. Importance has also been given on considering the SMEs and cottage industries as one of the major driving forces, providing assistance to women entrepreneurs on a priority basis, setting up special economic zones in different parts of the country, improving the quality of industrial products to world standard, marketing of goods at competitive prices, and enhancing productivity in the industrial sector.

5.1.11 Health Policy

National Health Policy was approved and published by the government in the year 2000. Aim of the Health Policy is:

- To develop a system to ensure easy and availability of health services for the people living in urban and rural areas;
- To ensure optimum quality, acceptance and availability of primary health care including government medical services at the Upazila and Union level;
- To adopt satisfactory measures for ensuring improved maternal and child health at the Union level and install facilities for safe child delivery in each village;
- To improve overall reproductive health resources and services;
- To ensure the presence of full-time doctors, nurses and other officers / staffs, provide and maintain necessary equipment and supplies at each of the Upazila Health Complexes and Union Health and Family Welfare Centres;
- To formulate specific policies for medical colleges and private clinics, and to introduce appropriate laws and regulations for the control and management of such institutions including maintenance of service quality;
- To explore ways to make the family planning program more acceptable, easily available and effective among the extremely poor and low-income communities; and
- To arrange special health services for mentally retarded, physical disabled and for elderly population.

5.1.12 National Urban Policy

The major objectives of national urban policy will aim to:

- Ensure regionally balanced urbanization through diffused development and hierarchically structured urban system;
- Facilitate economic development, employment generation, reduction of inequality and poverty eradication through appropriate regulatory frameworks and infrastructure provisions;
- Ensure optimum utilization of land resources and meet increased demand for housing and urban services through public-private partnerships;
- Protect, preserve and enhance urban environment, especially water bodies;
- Devolve authority at the local urban level and strengthen local governments through appropriate powers, resources and capabilities so that these can take effective responsibility for a wide range of planning, infrastructure provision, service delivery and regulatory functions;
- Involve all sectors of the community, in participatory decision-making and implementation processes;

- Ensure social justice and inclusion by measures designed to increase the security of poor people through their access to varied livelihood opportunities, secure tenure and basic affordable services;
- Take in to account, particular needs of women, men, children, youth, elderly and the disabled in developing policy responses and implementation;
- Assure health, safety and security of all citizens through multifaceted initiatives to reduce crime and violence;
- Protect, preserve and enhance the historical and cultural heritage of cities and enhance their aesthetic beauty;
- Develop and implement urban management strategies and governance arrangements for enhancing complementary roles of urban and rural areas in sustainable development; and
- Ensure good governance by enhancing transparency and establishing accountability.

5.1.13 Rural Development Policy

The projects and programs as mentioned in the Rural Development Policy of Bangladesh are:

(i) Food for Works Program, (ii) G.R Program (Gratuitous Relief Program), (iii) T.R Program (Test Relief Program), (iv)V.G.D Program (Vulnerable Group Development Program), (v)V.G.F Program (Vulnerable Group Feeding Program), (vi) Single-House Single-Farm Program, (vii) Back to home Program, (viii) Food for Education Program, (ix) Rural Occupational Project, (x) Poverty Reduction Project, (xi) Self-employment Program for Women, (xii) Women Empowerment Program, (xiii) Coordinated Women Development Program, (xiv) Peace Home Program, (xv)Shelter Support Program, (xvi) Educational Allowance Program, (xvii) Aged-allowance Program, (xviii) Micro-credit Program and (xix)Allowances for Widowed, Poor and Husband-renouncement Women Program, etc.

Some of the aims and objectives of the Rural Development Policy is presented here:

- To increase the income and provision of jobs for the Villagers, especially for women and people under low-living standard in the rural areas;
- To confirm sustainable economic and social development through poverty reduction;
- To encourage self-employment opportunities in the rural areas;
- To emphasize for the development of rural wealth according to the equal distribution of economy and national development as prescribed in the Constitution of Bangladesh;
- To give confirmation to the rural people about infrastructural development, equal distribution of wealth and marketing of the agricultural production;
- To produce technologically efficient people about education, technical education and trainings in rural areas;
- Identification of demand and their fulfillment for socio-economic development of rural poor, persons involved with the production, especially small farmers and landless people; and

- To reduce distances between towns and villages about services prevail through collective efforts and develop gradually.

5.1.14 Disaster Management and Climate Change Policy

The issues prescribed under Climate Change Policy are:

- Mitigation, adaptation and technology transfer is a must measure to fight climate change enhanced vulnerabilities of poor;
- The complementarily of current policy regime in relation to adapting to climate change should be analyzed in order to define which aspects of adaptation are already in place. This would not only advance national (also regional and local) development processes, but also would reduce vulnerability of people to climate change;
- A micro-level climate change risk reduction plan should be developed by the communities. The process should initiate local level action ensuring the participation of grassroots people, NGOs, civil societies, academic and research institutes etc.
- A community centered approach should be taken to develop policies which should address development as well. The policy action plan should also promote appropriate technologies such as resilient crop varieties, irrigation schemes, and renewable energy sources, so that they are available and affordable for low-income communities of Bangladesh; and
- It's been believed by the economists that climate change is the greatest market failure of the history of mankind. Climate is natural, therefore a common property. For this reason, climate change related economic does not follow the prevailing market mechanism. Therefore, it should be understood that, the rich countries which are polluting should start paying for adaptation for the LDC and also start paying for mitigation within their countries. Bangladesh should make its position clear in favor of this logic in all negations and raise its voice.

5.2 Laws and Regulations

5.2.1 Urban Development Control

The president of Pakistan in the year of 1960 was enacted the Municipal Administration Ordinance, 1960. In the year 1977 through the Paurashava Ordinance, 1977 some of the Municipalities were upgraded as Paurashava and in the year 2009 Paurashava Ordinance is renamed as local government Ordinance 2009. The Paurashava may provide the function as prescribed in the Ordinance but no provision is being outlined to control and manage those functions. The Paurashava may enforce those regulations according to their capacity. The Ordinance proves that the Paurashava is independent and self regularity body, but due to absence of necessary man power technical support staff and the government initiative in financial matter, the Paurashava is dependent and control by central government.

5.2.2 Building Construction Rules, 1996

Land use planning Rules

These are statutory rules to control land use according to planning standard. It is based on land use policies including Local Plans, such as residential density, road standard, provision of infrastructure and services. The relevant Acts (Paurashava Act, 2009, Building Construction Act, 1952 and BNBC, 1993) and Master Plans of the cities are the main legal instruments, which is in force with regard to exercise planning control and standards.

Control of public estates

Different government agencies have developed some housing, commercial and industrial estates in different urban areas and they have leased them out. Terms and conditions of lease deed reflected control provisions included in them.

Non-compliance of development control by some government and semi-government agencies

A portion of urban lands of the urban area are owned by different government and Autonomous agencies including universities, colleges. According to Building Construction Act, 1952 (amended in 1996, followed by Paurashava) each public building needs approval from the concerned development agencies. It is observed that most of the agencies are still ignoring the regulations and they construct their buildings within their premises.

Control of private housing estates

Large numbers of pockets of urban infill and privately owned low lying peripheral lands have been developed by private companies. In some cases small scale real estate development permission is obtained occasionally but deviations from the approved plan are most common practice of the developers.

Control of informal Development

A number of unregulated or informal settlements are taking place in urban area as urbanization proceeds. Paurashava can hardly control these haphazard development activities. The Slum Up gradation Projects, Slum Improvement Projects (SIPs), provision of basic needs etc. are taken up at time when the problems had already overtaken the situation.

Density Control

Density Control is considered as an important development control tool. It includes the number of units, people allowed per parcel of plot size, unit limitation, height of the building etc. In the Government and Semi Government institutions, building permission is hardly obtained and therefore, density control rules and regulations are not in practice. At present, Paurashava follows Building Construction Rule, 1952 (amended in 1996) which restricts the height of Building in respect of adjacent road. Therefore, density control is possible to exercise in practical.

Taxation

Urban taxation is another effective development control tool. Different types of taxation policies may to change urban land use and urban character. As an example, the industrial estates are encouraged to set up outside the city areas for tax holiday and other ancillary facilities. On the other hand, exemption of tax on urban vacant land encourages growing unauthorized settlements like slums and squatters.

Payment of Betterment fee

For every town planning scheme for an existing town, some owners of the property will be affected and as such they will have to be paid some amount as compensation. In the same time, some owners will be benefited by the proposed scheme. The share of increase in the value of the properties of such owners to be paid to the Paurashava is known as Betterment fees.

5.3 Strength and Weaknesses of the Existing Policies

Paurashava Act 2009

Although the Paurashava has been given the rights to prepare Master Plan and implement them, prepare development plans and projects for systematic development of Poura- city, building control, roads and streets plans etc. Besides, the replacement of Ordinance amended in 2008 by Paurashava Act 2009 ensures the citizen participation in a new way. But there are some drawbacks or weaknesses in this which are as follows:

- The engineering department has been given the responsibility to implement the Master Plan, but this department is not equipped enough to implement it properly;
- To implement the Master Plan/ Land Use Plan, the staff requires professional training, but no one has received any training regarding implementation activities;
- Central Government does not exert any pressure to implement the Land use Plan;
- Paurashavas do not enjoy real autonomy to solve local problems; and

- More critical problem is the weak or even non-existent co-ordination amongst development partners.

Urban Management Policy

The Policy statement recognized the decentralization could enhance efficiency of public expenditures by allowing local governments to be more responsive to local needs and preferences. The policy also envisions strengthening the beneficial aspects of urbanization and at the same time effectively dealing with its negative consequences so as to achieve sustainable urbanization, keeping in view the multi-dimensional nature of the urbanization process. On the other hand, the policy principles gave emphasis more on physical aspect of development rather than on social, environmental. Besides, issues on poverty reduction are missing in the policy outlines.

Land Use Policy, 2001

The National Land Use Policy, 2001 of the Ministry of Land highlights the Need, the importance and modalities of land zoning for integrated planning and management of land resources of the country. It also mentioned the need of formulating a Zoning Law and Village Improvement Act for materializing the identified land zoning area. The National Land Use Policy specially highlights the need for land zoning for the coastal area of Bangladesh. It describes about the need for definite guidelines and raises the possibility of doing coastal land zoning through an inter-ministerial task force. The policy observes that maximum utilization of lands and water resources depends on the effective land use plan. But there is no policy prescription for any specific area as context requires and also the proper methodology, technology to be used, institutional capacity are not designated. Besides, the policy is strong on conservation of khas lands but not clear on distribution of khas land distribution program.

Industrial Policy, 2005

One of the foremost objectives of the Industrial Policy 2005 is to set up planned industries considering the real domestic demand, prospect of exporting goods abroad, and discouraging unplanned industries in the light of past experience. The policy also encourages the agro-based industries and involvement of Women Entrepreneurs in Industrial sector, equal profit distribution among workers, owners and government. But the interests of small farmers, small business owners, artisans, and workers, are generally not well represented. This limits the benefits of trade expansion for small businesses, small farmers, artisans, and workers consequently create impacts on the key export industries. These groups are involved in import and export activities of the country indirectly. In addition, no specific mention has been made on protection of coastal environment from industrial pollution.

Coastal Zone Policy, 2005

The strong point of Coastal zone policy is that it provides integration among all sectoral policies such as land use, industrial, fisheries etc. It defines specific objectives for coastal development

and the jurisdiction and extent of the coastal zone. The main stakeholders in coastal development are identified, along with their role in the development process.

Agriculture Policy, 1999

The key point of the National Agriculture Policy in relation to ICZM is its simultaneous recognition of the importance of shrimp farming as foreign exchange earning activity and its environmental consequences. However, the policy does not mention conflicts between farmer and shrimp-gher owners and thus fails to indicate any mitigation measures. Land use zoning may offer instruments to reduce conflicts. Bio-saline agriculture, practiced elsewhere, could be tried in the coastal zone.

Population Policy, 2004

It defines the strategy of population declination but no detailing has been given on the instruments that are required to reduce the population growth. Also, the responsible stakeholders that are directly and indirectly linked to this sector are not identified. A general policy prescription is given without specific group identification.

National Housing Policy, 2008

The policy provides prescription for urban and rural area individually considering the context. Though one of the major objectives of the Housing Policy was to ensure housing for all with particular emphasis on the disadvantaged, destitute, the shelter less poor and the low and middle-income groups of people, yet very little efforts have been taken on the part of the government in providing housing loans to the low-income strata of the population. Nationalized commercial banks introduced housing loans also limited for the high income group. There is virtually no credit financial mechanism for housing of low-income people in urban areas. Besides, there is no specification for private developers. No direction is given for future housing demand and supply.

Chapter- 6
PROJECTION OF FUTURE GROWTH BY 2031

6.1 Introduction

Population growth rates in developing countries are much more than of the developed countries of the world. Moreover, migration to urban areas in the developing countries has been increasing over the years. Due to increased urbanization trend in the coming years, the cities in the developing country will face housing and settlement problems, infrastructural deficiencies for increased number of populations, slum and squatter settlements, environmental degradation, etc. In practical, it is difficult to attain the actual number of population but more accuracy in population projection will encourage the future investment as projection shows the population demand. It is assumed that Daulatkhan Paurashava, as a Paurashava will face such influx of job seekers in the coming days. As such, besides natural population growth immigrants will increase the population significantly in the coming decades.

6.2 Projection of Population

In order to get an idea about the population growth rate of Daulatkhan Planning area, the population of 2001 is 14401 and 16728 is in 2011. Urban and rural growth rate is different.Growth rate of 2001 is 1.22% and -0.27% is in 2011. As urban growth rate of Daulatkhan is very low, average of zila growth rate and upazila growth rate is considered as medium growth rate. From this it has been observed that the annual growth rate is 1.0% that is parallel with both national growth rate and urban growth rate. Total population in the area on the basis of exponential growth the population will be 17581, 18478, 19421, 20411 in the years of 2016, 2021, 2026 and 2031.

Basic Assumptions

- The characteristics of the more recent periods of development for the local are expected to continue into the future;
- The existing density of population, major activities of Paurashava i.e., Trade, Commerce and Service and higher sex ratio reveals the flourishing economic development of the Paurashava in recent years.

Methods Used

Population projection has been conducted on the basis of following determined methods and techniques:

- The base year for such above mentioned projection is 2011 as per available census data
- Future population is estimated for the future year 2016, 2021, 2026 and 2031 considering 20 years planning period

- Finally, Exponential Population Projection is used to conduct the Population Projection. Projected growth rate is 1.0%.

According to Population projection, population of Daulatkhan Paurashava will be 20,411 in the year 2031. Table 6.1 depicts ward wise projected population (2016-2031) of Daulatkhan Paurashava based on medium growth rate.

Table 6.1: Projected Population during the Year 2016-2031

Ward No.	Population 2011	Projected Population at Different Years			
		2016	2021	2026	2031
1	1501	1578	1658	1743	1832
2	2759	2900	3048	3203	3367
3	2525	2654	2789	2931	3081
4	1302	1368	1438	1512	1589
5	813	854	898	944	992
6	1196	1257	1321	1389	1459
7	1738	1827	1920	2018	2121
8	1997	2099	2206	2318	2437
9	2897	3045	3200	3363	3535
Total	**16728**	**17581**	**18478**	**19421**	**20411**

Source: Consultants Estimation

6.3 Identification of Future Economic Opportunities

The city of Daulatkhan must thrive on its own potential natural resources. Fish resource is very much potential for the area. Food industries can be initialized based on fish resources. There are a number of areas where such prospects can be managed. First, catching fish has to be increased. Second, freezing facilities has to be enhanced. Third fish drugging facilities to be expanded and finally, small and low investment plants for processing fish resources can be initialized. Bangladesh Fisheries Development Corporation (BFDC) has taken effective projects aiming to develop the country's fisheries sector and boost export. Fish landing centers, fish preserving and fish marketing centers for traders would be set up. Warehouse facilities and ice supply for traders would also be extended under this project and ice factories in Daulatkhan, Bhola would also be built. According to the Fishermen, a great numbers of fishing trawlers were engaged in hilsa fishing in Daulatkhan. Therefore, fish merchants have urged development of processing industry, setting up of cold storage and ensuring electricity and ice supply for preservation and availability of hilsa round the year.

About 15.52% of the total lands of Daulatkhan Paurashava are devoted for agricultural purposes. So emphasize have to be given on the scientific procedure of agricultural production and these productions may be used as input of agro-based industries.

Economically active labor forces are not being properly used in production sector. This labor force can be utilized in those fishing or agro-based sector.

The government has finalized a Tk 129 crore project for the development of Bhola Gas Field at Burhanuddin upazila. The development of Bhola district will provide a positive impact on

Daulatkhan Paurashava. The extracted gas will be a major fuel of electricity supply in Daulatkhan which will boost up the economy.

6.4 Projection of Land Uses

Future landuse of Daulatkhan Paurashava has been calculated on the basis of projected population. After population projection, it has been observed that in the year of 2031, resident population will be around 20,411. In some cases, landuse projection may vary considering landuse characteristics of the area.

At present, the landuse of Daulatkhan Paurashava is not appropriate and has not developed following standard. Therefore, this master plan has addressed the issue and efforts have been done to formulize required standards for various facilities that should be followed in preparing the master plan. As per planning standard, future demand of land in various sectors is discussed in table 11.3, chapter 11-Land use Plan, Part B.

Chapter- 7
LANDUSE DEVELOPMENT STRATEGIES

7.1 Strategies for Optimum Use of Urban Land Resources

Daulatkhan Paurashava is peri-urban area with urban infrastructures and also valuable agricultural lands, water resources. Therefore, in identifying the strategies or possible techniques for optimum use of Urban Land Resources, it is required to understand the urban land characteristics. According to town Improvement Act 1953 it is required to identify the strategies for optimum use of urban land resources as there exist competition amongst agriculture, urbanization and industrial development.

7.1.1 Land use Zoning

Land use Zoning can be a very powerful planning tool as it permits the government to select which type of land use should be allowed. The term differs from the 'general plan' that Zoning plan regulates the private developments and general plan controls both public and private developers. Zoning plan is integral part of general plan.

Total area of Daulatkhan Paurashava is segregated under some broad classes that will basically guide future growth with wide aspects. Definitions of the broad classes are given below for conceptualizing focus of the future magnitude as well as illustration of the policies and strategies.

A. Agriculture
B. Core Area
C. Peripheral Area
D. Fringe Area
E. New Urban Area
F. Major Circulation Network
G. Water Body

Table 7.1: Broad Land use Zones

Zoning	Description of Zones	Area (acre)	%
Agriculture	Agricultural land (also *agricultural area*) denotes the land suitable for agricultural production, both crops and livestock. It is one of the main resources in agriculture. The land under annual crops, such as cereals, other technical crops, potatoes, vegetables, and melons; also includes land left temporarily fallow; land under permanent crops (e.g., fruit plantations); areas for natural grasses and grazing of livestock.	15.42	2.66
Core Area	This area is also known as built-up area. This is defined as the area which has the highest concentration of services; it also has the highest population concentration and density. It will absorb most population growth during the Land use Plan (2011-2021) period.	103.40	17.85
Major Circulation Network	Major circulation contains major road network and railways linkage with regional and national settings.	99.24	17.13

Zoning	Description of Zones	Area (acre)	%
Fringe Area	This zone is developing areas which will take further decades to reach the population densities of the urban core area. Low initial densities in these areas do not justify supply of a full range of services as they will initially be underused. However, it is essential that planning and reservation of rights of way, at least for primary networks, be undertaken soon to enable provision when justified by increased density levels and allowed by resources.	96.27	16.62
New Urban Area	This zone will be the required additional area for future planned urban development as per population projection. New facilities and services like road, drains, footpath, waste transfer station and other civic services will be provided. This area is proposed to grow within 2031.	42.04	7.26
Peripheral Area	This is the zone where a slow trend of urbanization is continuing in unplanned manner. The area identified in the Structure Plan as the likely choice for new urban development beyond the core area. Ideally, it might be reasonable to provide primary infrastructure networks in this area to foster development and encouraged to enable a more rapid urbanization in a planned way	54.30	9.38
Water body	Water body containing an area equals to or more than 0.25 acres excluding those of khal, irrigation canal and river will be treated as this category.	168.54	29.10
Total		**579.21**	**100**

Source: Consultants Estimation

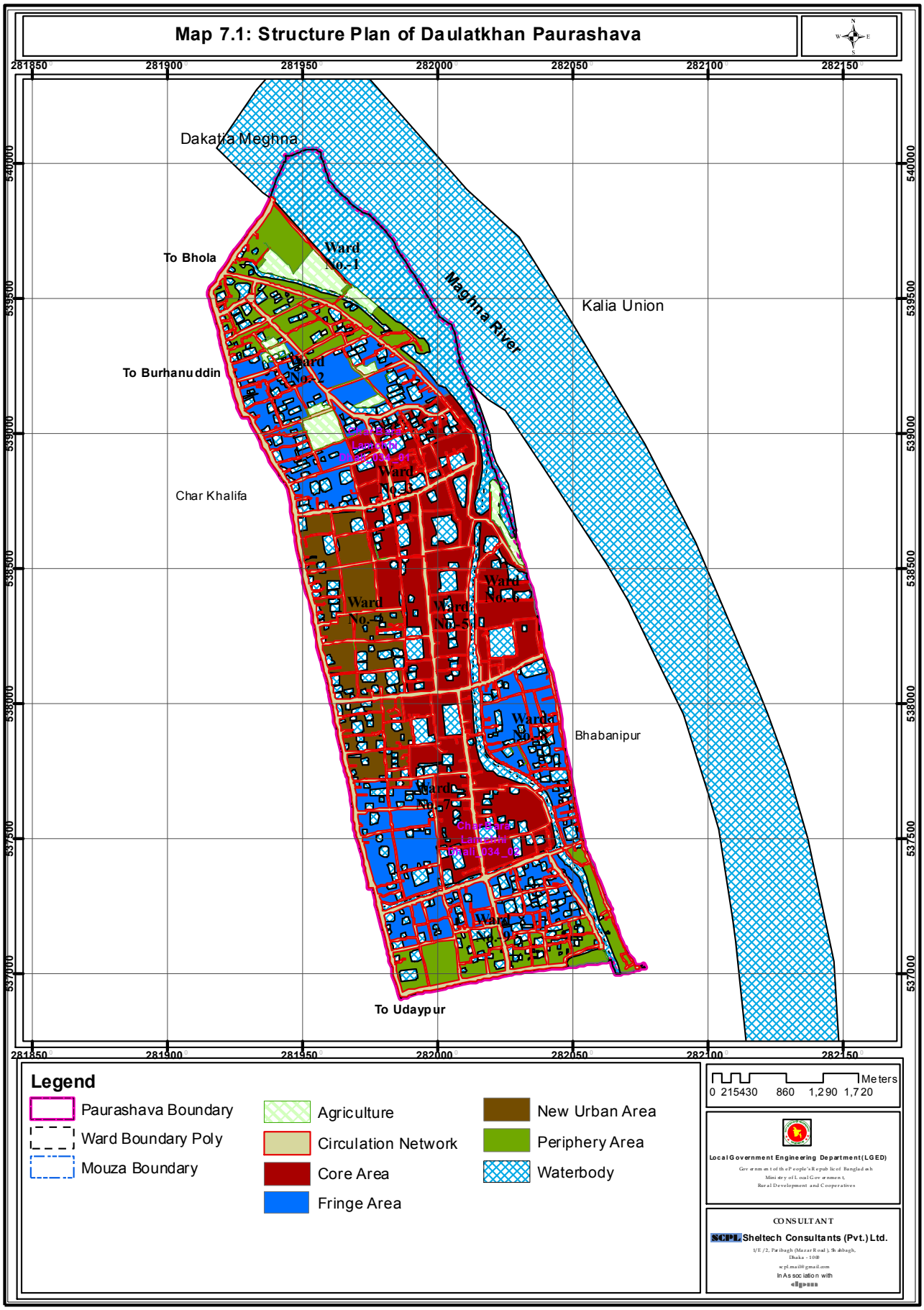
Map 7.1 shows the structure plan of Daulatkhan Paurashava.

7.1.2 Land Acquisition and Requisition

Land acquisition is a process in which a public agency or non-profit land conservation organization purchase all the ownership rights vested to the land from a willing seller. In every case, land acquisition must mean the transfer of ownership. For implementation of any urban development program, availability of land and its control are necessary not only for future growth but also for a large number of public uses. In Bangladesh, Land Acquisition Act, 1894 is one of the most important legal tools. But as the law failed to meet the emergency needs for requisition of lands, the Acquisition and (emergency) Requisition of Immovable Property Ordinance, 1982 has been come in forth.

7.1.3 Policy Formulation

Apart from this the recommendations for Road networks can be adopted from the recommendation from national relevant policies. This will direct the future land use pattern.


Map 7.1: Structure Plan of Daulatkhan Paurashava
Dakatia Meghna
To Bhola
Ward No.-1
Meghna River
Kalia Union
To Burhanuddin
Ward No.-2
Char Khalifa
Ward No.-3
Ward No.-4
Ward No.-5
Ward No.-6
Ward No.-8
Bhabanipur
Ward No.-7
Ward No.-9
To Udaypur
281850
281900
281950
282000
282050
282100
282150
540000
539500
539000
538500
538000
537500
537000
Legend
Paurashava Boundary
Ward Boundary Poly
Mouza Boundary
Agriculture
Circulation Network
Core Area
Fringe Area
New Urban Area
Periphery Area
Waterbody
Meters
0 215430 860 1,290 1,720
Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government,
Rural Development and Cooperatives
CONSULTANT
SCPL Sheltech Consultants (Pvt.) Ltd.
1/E/2, Paribagh (Mazar Road), Shahbagh,
Dhaka - 1000
scpl.mail@gmail.com
In Association with

7.1.3A Planned Development of Undeveloped Areas

Land Readjustment

It is a community building project of resident or for residents where: Land for public facilities is contributed fairly from land owners and lease holders. Where part of development benefits are provided by land owners to an implementing body to finance project cost, not in cash but in the form of reverse land.

Guided Land Development

It is a land management technique for accelerating the provision of serviced land through partnership between public sector and local communities. Its main objectives were to ensure;

1. fair return on investment to the private owner/developer;
2. a relatively large proportion of serviced sites for allotment to low income families; and at the same time;
3. recover at least part of offsite infrastructure cost for the public agency.

Site and Service

This sort of design provides the low-income people or target group with a plot and basic infrastructure. The beneficiaries either buy or lease the allocated land. Often they are provided with loan for the construction of houses.

7.1.3B Redevelopment of Developed Areas

Land Sharing

The principle behind this has been that the land is shared equitably between the land owner and the tenants (quasi). The land owner develops the land in such a manner that the original inhabitants in that area are given shelter in the very same area, lands for public facilities is made available to the planning agency and the remaining area is developed and sold freely in the market.

Slum Improvement

It provides land or housing to the urban poor near their work place. The scheme is also applicable to land reserved for public purposes on the condition that land on reduced scale is made available for the reserved purpose.

7.1.4 Different Fiscal Measures

Property Tax

Property tax has been the principal tax related to land and buildings. This tax according to provisions of Paurashava Act, 2009 is levied on the annual ratable value which is to be determined on the basis of area of lands or buildings.

Betterment Levy

The policy measures which can achieve optimum use of urban land use in practice still remain to be sharpened and coordinated. The measures can be classified as a) direct government investment b) legal and regulatory; and c) fiscal. Examples of these are:

- Direct government investment in land development for provision of infrastructure, housing or overall town development through large scale compulsory land acquisition or other land development scheme
- Statutory provisions for compulsory acquisition of land at less than market price, regulations regarding land use zoning, development control and building codes for health and safety
- Fiscal measures in the form of appropriate taxation that can help achieve the land policy

7.2 Plans for New Urban Area Development

In preparing Structure Plan for Daulatkhan Paurashava, some areas are identified outside the Paurashava and adjacent to Paurashava. Due some growth factors these areas are considered under Structure Plan policy.

If the future growth direction of Paurashava is considered outside the present Paurashava area, then the present Infrastructure development would be major determinant. It has been observed that major Road or Highway Road passes through the Paurashava area at north direction towards Bhola, at south direction towards Char Fasson.

It has been observed that major Road or Highway Road passes through the Paurashava area at north direction towards Bhola. At south direction towards Lalmohan Upazilla. And the main highway of the R & D passes through the paurashava at the western part towards charfassion. Another road comes from Shantirhat from the North part of the Paurashava. And another portion of the extension area beside the proposed link road of the Bangla bazaar road and the R & H road to the charfassion. Besides, emphasis can be given at north –western side of Paurashava, beside the main highway can be another growth pole of the Paurashava area. On the other hand, at the South side towards Lalmohan there is less possibility of growth as because at present huge agricultural lands and lack of infrastructural facilities. Besides, this area is comparatively low lying area than other ward area.

Policies and Strategies

A large number of constraints are involved with the development of new area. Following strategies are involved with the development of new areas:

- Low incomes;
- Difficulties associated with assembling parcels of land which are large enough to make viable development sites;
- Disputes over ownership;
- Absence of private sector land developers;
- Lack of access (capable of resolution often only by works on land under the control of others); and

- The need in most cases for land to be prepared in some way prior development either by filling where it is subject to flooding or by earth moving where it is too steep to develop. In both cases, drainage works have to form an essential part of the land preparation task.

The policies and strategies of the Paurashava related to new area development are –

Explore and Implement means of increasing the number and pace of public sector land development projects: This is one area where government can have a direct influence on accelerating the rate of conversion of non-urban to urban land.

Explore and Implement, with the private sector, means of increasing the number and pace of private sector land development projects: In moving towards realization of the objective of government supporting the private sector in its development role (i.e. acting as an enabler rather than a provider), the Paurashava will examine, with the private sector, the means of overcoming the constraints to new area development.

Realization of the above two strategies is likely to require changes in legislation and administrative procedures at the national level. The other strategies of the Paurashava relating to new area development are set out below.

Promote upgrading of the existing urban area: As densities within the existing Paurashava Town increase, there will be growing pressure for upgrading to ensure that infrastructure provision is adequate and that living conditions are acceptable.

Most of the parts of the Paurashava are in agriculture practice and few parts are in urban area will require no upgrading at all. Accordingly the Paurashava will set priorities throughout the study area and ensure, through its own efforts or the efforts of others, that upgrading projects are necessary. Obvious areas for early consideration will be slum and squatter settlements. Local community and NGOs may involve with the upgrading projects.

Ensure that land is available for all income groups: In accordance with Government's commitment to poverty alleviation, as expressed in the Poverty Reduction Strategy and the objectives of the National Housing Policy, a further major task facing the Paurashava is to ensure that land is made available for all income groups.

Reconsider the role that development control plays in the planning and management of new area: Where development control is institutionally well-established (with adequate legislation, administrative resources and enforcement power) it can be a very effective 'tool' in restricting new

area development where it is considered unsuitable; encouraging it in areas where it is considered suitable; and influencing the type of development that takes place in any particular location. It can attempt to strengthen development control institutionally to enable it to perform its role more adequately. On the other hand, it can consider restricting the role of development control to those functions which it considers critical such as ensuring that development does not take place in corridors required for new road construction or road widening, or ensuring that polluting industry takes place only in areas which are suitable for it.

Encourage the development of unused or underutilized land rather than new areas: The Paurashava is characterized by having much unused or underutilized land within the heart of the town. This land represents a wasting asset. If maximum use is to be made of the existing investment in infrastructure and if journey times are to be kept short, then fuller utilization of this land is essential. The Paurashava will examine the reasons why such land remains unused or underutilized and will endeavour to overcome the constraints to its development.

7.3 Areas for Conservation and Protection

In Daulatkhan Paurashava, there are no heritage sites under Paurashava area. One of the major land uses of the Paurashava area is the agriculture which covers about 13.67% of total area. The agricultural land is direct and indirect source of income and has a great contribution to trade and commerce of Paurashava. It has been observed that among all wards, ward no. 1, ward no. 2 and ward no. 4 have about 17.79%, 24.12% and 20.55% coverage of total agricultural land area & about 19.57%, 25.82% and 27.53% of total land area of respective wards. In ward no. 1, 3 and 6 about 63.67%, 30.51% and 31.69% lands of total ward area are covered under water bodies.

Other feature which requires protection is the water bodies of the Paurashava. Though encroachment rate of the Khals/drains by the unauthorized construction and unauthorized cultivation on the bed of khals including aqua-culture is very low. But due to lack of regulations encroachment may occur in near future. Besides with the appropriate use and management of these natural lines, it might be possible to manage the drainage situation of the area. In addition, Water Reservoir Act, 2000 should be followed in preservation of these water bodies as per requirement. Most of water bodies are using at present for fishing purpose. So, the preservation of these water bodies not only required for drainage but also it will be potential for economic activities.

Chapter- 8
STRATEGIES AND POLICIES FOR SECTORAL DEVELOPMENT OF THE PAURASHAVA

8.1 Socio- Economic Sectors

Once Daulatkhan was a prosperous and rich area in the island; fish and rice was main exportable item from upazila. Recently river erosion has appeared as a silent killer and disordered everything in the upazila. The area is now an out migrant prone, and losing its population.

From the population projection it has been observed that about 3683 additional population has to be accommodated in the existing planning area during the plan period. Present density of population is 29 persons per acre. At the end of the plan period, the estimated density would be 35 persons per acre.

8.1.1 Land use Control

Policy-01: Ensure best possible use of land[1]

Reason: To contribute to the land for economic development and employment generation proper landuse is necessary. In Daulatkhan Paurashava, plots devoted to agriculture purpose can be utilized for economically more profitable manner. Within Paurashava area, land is limited and agriculture has been discouraged.

Promotion: Prevent indiscriminate and misuse of land and initiate the relevant development projects.

Controls: Preservation and identification of resource based lands are as follows:

- Agricultural land for other urban uses.
- Inland Water bodies for fishery purpose and recreational purpose.
- Khas land will be distributed among the landless and a more transparent process of land settlement will be ensured

Implementation Agency: Paurashava**,** DOA, Settlement Office (Land Office), BWDB.

8.1.2 Economic Development

Daulatkhan Upazila is dependent on service activity and fisheries through direct or indirect involvement. Cyclone, water logging and subsequently salinity problem is common in Daulatkhan. Emphasis is given to accelerating the economic development by restoring the economic base of the Paurashava.

Policy-01: Creation of storage facilities and cold storage[2]

Promotion: Emphasis should be given to the following issues:

- Establishment of cold storage
- Inland Open Water preservation

[1] Following the National Land Use Policy, 2001
[2] The policy has been formulated in light of Fifth Five Year Plan (2010-11) and National Fish Policy, 1998

Implementation Agency: DOF, BFDC, LGED.

Policy-02: Light Industries need to be developed to flourish the industrial sector development[3]

Reason: To accelerate the economic development of Daulatkhan Paurashava in the long run, it is required to encourage the industrial establishment within Paurashava area.

Control: To control the haphazard industrial development measures will be undertaken:

- Follow the category of industries as categorized by DOE (Green Category) and Bangladesh National Building Code (low and medium category hazards)
- Follow Bangladesh National Building Code, 1993 and Building Construction Regulation, 1952 (amendment in 1996) for providing Road, setback before construction of any industrial structures
- Following the Coastal Zone Management Policy, 2005 all industrial units will be required to install built-in safeguards against pollution within a given time-frame. Units failing to comply with the pollution standards will be required to pay "green tax" for cleanup of the environment polluted by them

Implementation Agency: DOE, BSCIC.

8.1.3: Employment Generation

Policy-01: Encourage investment in business

Justification: Local people can be encouraged to invest in business.

Implementing Agency: Paurashava, Private Sector.

Policy-02: Reduce cost of doing business

Justification: Authority can reduce cost, revenue on business to encourage people.

Implementing Agency: Paurashava, Private Sector.

Policy 03: Employment Generation through Development of Potential Sectors

Reason: To sustain economic activity of Paurashava people for longer period. The economic activity of existing Daulatkhan Paurashava is oriented with mainly Agriculture, Fishing and Water-way Transport Sector in some extent. Proper planning and co-ordination among these sectors and future potential sectors it would be possible to engage active labor force.

Promotion: Following measures will be encouraged to implement this policy implication:

- Industrial Zone declaration in Land Use Zone (mainly light industries)
- Infrastructure development to flourish fishing industry (Market, Ice Factory, Storage facility, electricity supply etc.)

[3] The policy has been formulated in light of National Industrial Policy, 1999 (Recommended Specially for Coastal region)

- Water-way network development (more trawlers, launches, etc.)
- Involvement of active labor force and community participation in different management activities of Paurashava such as solid waste management in transferring the wastes from Solid-waste transfer sites, road maintenance, public sanitation

Implementation Agency: Paurashava**,** DOA, Settlement Office (Land Office), BIWTA.

8.1.4 Housing and Resettlement Zone Development

Paurahava, NHA and other public agencies can pursue the following policies to develop housing facilities and planned development for housing units. But there is no local office of the NHA to execute housing program at upazila level. Paurashava can facilitate housing areas with site and services in designated housing zones including resettlement areas.

Policy-01: Making provision of affordable housing for the low income people

Justification: Paurashava has to think about housing facilities for the low income people. Private sector will be operated for profit earning, the low income people will not access to these scheme. Thus to reduce unplanned development, the development authority may take initiative for low income people. Also by providing services the general people can be encouraged to build their own houses.

Implementing Agency: Paurashava. NHA.

Policy-02: Establishing resettlement zone for erosion affected people

Justification: Paurashava has to think about the erosion affected people & also about the people who are affected by any type of development project. Affected people will not be able to access to the schemes offered by private sector.

Implementing Agency: Paurashava**,** NHA.

Policy-03: Continuous monitoring of land and housing market

Justification: The authority should monitor the main aspects of land and housing market through data base. The Paurashava and land registry office can maintain data base and can undertake studies from time to time using GIS.

Implementing Agency: The Paurashava and land Registry office.

8.1.5 Social Amenities and Community Facilities

All social and community facilities like health, education, religious, community centre and other facilities are included in this category. In terms of number and size of facilities the allocation land with approximate location can be determined by analyzing the pattern of existing facilities and the calculation of the requirements in future. In addition some policies recommendations were made on health, education and other facilities.

Policy-01: Social amenities and community facility to be provided as per requirement of existing and forecasted population

Justification: To enhance access to land with secure tenure and to promote a social lively environment for an increasing population. Both Public and private sector investments are encouraged.

Provision of standards, rules and regulations are followed in allocating Educational Religious, Community Centre and Other components in Land Use Plan of Urban Area Plan.

Implementing Agency: Paurashava, NGO, CBO.

Policy-02: Creation of Training facilities at the grassroots level family planning workers for motivational activities

Justification: Grassroots workers can give door-to-door motivational services to the local people.

Implementing Agency: Ministry of health and family planning, Ministry of Mass Education, NGO.

8.1.6 Recreational Facilities

Policy: Ensuring community level recreational facilities like open space, park, and play ground etc.

Justification: To provide a livable environment for the Paurashava people, community level recreational facilities should be preserved. In the long run, preservation of recreational lands for future generations should be ensured. At present, only 2.68 acre is devoted for Recreational facilities. Parks should be created at central and at neighborhood level through Master Plan and Ward Action plan.

Both public and private sectors investment is encouraged.

Standard wise recreational facilities such as Play ground, Neighborhood parks, Stadium, Cinema hall will be provided as described in Land Use Plan of Volume II.

Implementing Agency: Paurashava, Public / Private sector.

8.1.7 Safety and Security

Considering the present law and order situation and its impact on the urban life it is necessary to face the challenge of restoring law and order. The major responsibility of these tasks goes to police department. Law and order in the Paurashava and its surrounding has to be ensured.

Policy: Improvement of law and order services for all citizens

Justification: Improvement of law and order is a national issue. Anyway local level community policing can be organized for ensuring security at local level.

Implementing Agency: Paurashava, Home Ministry.

8.2 Physical Infrastructure Sectors

8.2.1 Traffic and Transportation

Traffic is the function of landuse. It is also mention here that traffic network and the traffic generated induces the growth of landuse. Road networks will play strategic role in opening up undeveloped areas of the future term and shape up its structure. There is an interrelation between road network and utility services which together play key role to guide physical development in the town and Paurashava.

Policy-01: Develop efficient inter town communication facilities

Justification: To avoid traffic congestion within the Paurashava, the roads have to be widened. The main artery of the Paurashava has to be kept free from any development.

Implementing Agencies: Paurashava, RHD.

Policy-02: Maintenance or repairing of roads

Justification: To develop and facilitate easy means of transport, the authority should give emphasis on the maintenance or repairing of existing roads where needed.

Implementing Agencies: Paurashava.

Policy-03: Development of missing linkages

Justification: For easy, convenient, and safe movement, it is recommended that all missing linkages on roads are to be linked.

Implementing Agencies: Paurashava, RHD.

Policy-04: For better accessibility transport terminals should be located at major roads of the Paurashava

Justification: To develop and facilitate easy means of transport consultant suggest that the promotion of public transport is to be encouraged.

Implementing Agencies: Paurashava, RHD.

Policy-05: Improvement of road to launch terminal

Justification: To develop an efficient Transportation Network easy access to be developed with the Launch Terminal.

Roadway Network: Daulatkhan Paurashava is now of the main transport route. It is necessary to develop Bhola-Daulatkhan road and Daulatkhan-Lalmohan and Char fassion route.

Water way Network: Water transport network of Daulatkhan Paurashava has less important in carrying both people and goods. But Dhaka-Daulatkhan and Daulatkhan-Lakshipur rate is getting important. It is to be developed properly.

- Existing Bhola-Daulatkhan main road should be widened considering the RHD Standard manual as per category of Roads and determined Level of Service (LOS) in up to 2031.

Implementing Agency: RHD, LGED, BIWTA.

Policy-06: Functional and hierarchical road network development

Justification: Road Network has been developed without following any planned pattern. **Controls:** Following the existing condition, of Daulatkhan Paurashava, some strategies will be persuaded before incepting the Transportation Development Plan.

- Make a priority for in space allocation of ROW for better space utilization and promoting non-motorized traffic avoiding interruption, ensuring speed with motorized traffic.
- 10-20 ft. plantation at road side will be proposed.
- The Road Hierarchy of Daulatkhan Paurashava will be modified and proposed on the basis of Road width Standards as described Chapter 3, Transportation and Traffic Management Plan, Volume-II.
- Follow up the basic rules mentioned in Building Construction Act, 1996 at Major Intersections of the Paurashava. Some basic rules are:
  - ✓ In each Corner plot of major intersection 1m×1m land area has to be open for traffic movement.
  - ✓ At the cross section of two or three roads within 50 meter distance, construction of commercial complex, Cinema Hall etc. are prohibited. But, 500 square meter area in total is permitted for commercial purpose (Shopping Complex), road width is 23 meter or greater.
- Promote efficient traffic management system within Paurashava by pursuing Regulatory measures (parking control and speed control in Highway Road, access control of trucks in Paurashava area,) and Design measures (Details of lay-out of Proposed Primary Road and Secondary Road in Paurashava area, use of lighting equipment etc.) in Paurashava Road Transportation System

Implementing Agency: RHD, LGED, Paurashava.

8.2.2 River Erosion Control and Drainage

Policy: Incepting drainage network plan in response of water logging problems

Justification: Lack of adequate and planned drainage facility in Daulatkhan causes Water logging problem. The depth of maximum internal inundation ranges from 2-5 ft and duration varies 3 to 4 hours.

Following strategies should be reflected in Drainage Network Plan:

- A planned Drainage network will be provided in Drainage and Environment management Plan considering the standards, appropriate method and formula
- Regular maintenance of existing man-made and natural drainage network with Community involvement

- Illegal encroachment of Water bodies by Water Reservoir Conservation Act, 2000 ensuring storm water drainage
- Scattered throw of solid waste in water bodies by proper solid waste management activities

Implementing Agency: Paurashava, BWDB.

8.2.3 Utility Services

Policy-01: Facilitating access for all citizens to basic level of services in water supply and sanitation

Justification: To reduce the incidence of water borne diseases and increasing the present coverage of safe drinking water by lowering the average number of users per tube well.

- Facilitate safe drinking water supply and safe sanitation to each household as per demand in 2031 through various means, including:

  - Piped Water Supply System
  - Water treatment plant, Overhead Tank
  -Rainwater Harvesting and Conservation

Prescribed Standards have to be followed in providing facilities as mentioned in Urban Area Plan under Plan for Urban Services.

Implementing Agency: DPHE, Paurashava.

Policy-02: Facilitating access for all citizens to electricity supply

Justification: According to BBS, community series 2011-Bhola, at Daulatkhan Paurashava, about 56.3% (3203 households) of the total households has electricity connection. Besides, to accelerate the industrial development (Agri-based, fishery) in Daulatkhan Paurashava electricity, gas supply must be ensured.

Consumption of wood and other natural resources based fuel will be reduced. Also alternative energy sources will be encouraged (biomass, solar etc.)

Implementing Agency: PDB, REB.

8.3 Environmental Issues

The Policies will strike a realistic balance between the existing livelihood requirements of the people and round environmental resources management that can ensure the livelihood in long term.

Policy-01: Preservation of ponds

Justification: To ensure natural water bodies and fish resources which are crucial to sustain the livelihood and to retain the eco-system.

Small and large sale fisheries Communities/Groups will be given incentives, training program will be developed on new and modern fish harvest techniques, conservation, distribution, pursing.

Permitted land use will be maintained in the demarcated areas that are as follows:

- Irrigation
- Provision of water way transportation in wet season
- Fishing/Fish Culture

Implementing Agency: BIWTA, BWDB, Paurashava, DOA.

Policy-02: Identifying the erosion risk zones

Justification: As Daulatkhan Upazila is an island, Cyclone is the frequent hazard and flood is the secondary impact and most apparent impact accrued from Cyclone Hazard. During Cyclonic hazard the level of water is raised up to 8-10 ft (<=3.05 m) (maximum). Therefore, strengthening disaster preventing and mitigating mechanisms to enhance the coping capability to the Poor in times of natural disaster is vital in this Paurashava context.

Environmental Management Plan will be prepared under Urban Area Plan for all possible hazards (Cyclone, Flood, River Erosion, etc.). The Plan will provide the adaptation, prevention (structural/non-structural measures), mitigation, Preparedness techniques against a natural disaster through comprehensive disaster risk management.

To reduce the impact of hazards same manures will be undertaken which are as follows:

- Embankment, flood control sluice gates and other structural measures
- Early Warning System
- providing of multi-purpose cyclone shelter

Implementing Agency: Paurashava, BWDB, LGED.

Policy-03: Ensuring safe sanitation for citizen

Justification: In Daulatkhan Paurashava, the sanitation condition of Paurashava is not so much satisfactory. There exist two types of latrine viz. katcha and Pucca. Besides, dumping of solid wastes in a scattered way is a common phenomenon.

Following strategies should be promoted in ensuring sanitation:

- Dumping Site and solid waste transfer sites demarcation in Land Use Plan of Paurashava area ensuring effective management including community participation
- Proposal of Solid Waste Dumping site
- Installing public toilets in schools, bus stations, launch Terminal, Markets, important public places and community latrines in densely populated poor communities or slums

The illegal connection of existing latrines with drains needs to be controlled through proper monitoring and in future

Implementing Agency: Paurashava, DPHE, LGED.

CHAPTER - 9
IMPLEMENTATION ISSUES

This chapter deals with the issues of implementation of the Master Plan. Here, recommendations have been made about capacity building and resource mobilization for the implementation of the plan.

9.1 Institutional Capacity Building of the Paurashava

In the present context of spatial and legal jurisdiction of the Paurashava for planned development of its area, some recommendations are made here. Also, observing the financial and Institutional strength of individual stakeholders in relation to their liabilities and identifying their shortages and absence of any perfect coordinating body, some suggestions have been made as remedial measures as a whole.

- All urban local governments including Upazila level Paurashavas must be given more independence and autonomy to perform their responsibilities. At the same time, their accountability to the government and people regarding their performance has to be ensured. For this purpose the legal framework of the urban local governments has to be reviewed and updated. The legal provisions have to be consolidated and simplified and make them compatible to changing circumstances. Opportunities must be created in the Act allowing scope for privatization of service providing activities.
- To avoid duplication of development functions, there should be clear line of separation between central government and the urban local government.
- A double entry cash accounting system has to be introduced to modernize the accounting system. For this purpose, massive training programme has to be arranged for the relevant municipal staff.
- To improve revenue collection, the urban local governments should be given more power and responsibilities. Measures should be taken for strengthening the Paurashava administration for municipal development.
- Section-50 of the Local Government (Paurashava) Act, 2009 needs to be revised and more power should be given to the Executive Officer for appointment of employees.

It cannot virtually function effectively as a Paurashava under such a stringent financial condition. To function, effectively, it must raise its revenue earning. But it is reported that the Paurashava cannot collect all its holding tax from the citizens. Holding tax is the most important source of its own revenue earning. It must take care to ensure 100% recovery of holding tax. The Paurashava cannot function effectively depending upon government grant only. The existing manpower position of the Engineering, Development control and Accounts should be substantially raised to handle future volume of work. Moreover, additional staff especially for the implementation of Master Plan will soon be required.

The present plan package imposes a large number of development projects on Daulatkhan Paurashava for implementation. Paurashava will not only be the custodian of the plan, it will also directly implement much of the development projects. Besides, it will also be responsible for monitoring and implementation of the development projects by other urban development and service giving agencies. This situation calls for strengthening of the existing capability of Paurashava.

9.1.1 Staffing and Training

As a traditional system of the Paurashava, engineer and secretary are appointed directly by the Ministry of Local Government and other staffs are appointed locally through the approval of the Ministry after the advertisement on the newspapers. In Daulatkhan Paurashava, the revenue income is too low. That's why it is not capable to pay the salary of all the officials and staffs. The salary is recovered from the government grant and BMDF allocation. This is the main reason for under staffing of the Paurashava.

There is no proper arrangement for staff training. As a result, the staffs are mostly unskilled. They cannot deliver proper service to the citizens. Besides, most of them are not qualified enough to render proper services.

9.1.2 Lack of Automation

Most works in the Paurashava are done manually. Such practice delays works and deprives the citizens from services. This is also a source of mal-practice and corruption. Modern office and working equipment should be installed. Use of modern technology will increase efficiency in planning and record keeping, finally expedite decision making process.

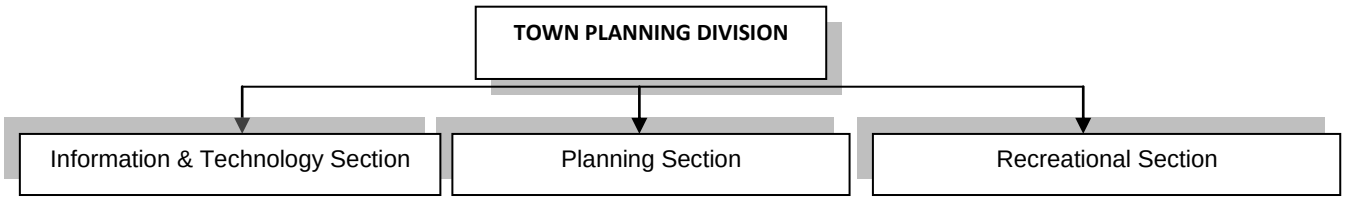
9.1.3 Town Planning Capacity

9.1.3.1 Institutional Framework

To rearrange the institutional framework for the Paurashavas recently the government has made a committee for the categorization of all the Paurashavas of Bangladesh. According to the clause no. 72-78 (Paurashava Officer & staff, provident fund etc) of Local Government (Paurashava) Act 2009 and on the basis of the type and category of works, the committee suggested appropriate section/units/divisions within the Paurashava framework. Planning unit or division will be necessary to set sequentially as the authority can perform its' mandatory responsibility town development and control' well and serve the inhabitants presently as well as in the future. The planning unit/division may have some sections that are as follows:

Planning Div:
a) IT Section
b) Planning Section
c) Beautification and recreation Section

According to the division and its' relevant sections, what so ever appropriate with the necessity and capacity over time, it is recommended to set up necessary manpower for each category of Paurashava. Possible scope of proposed planning unit/division is given bellow:



Activities of Information Technology

-Information and Technology Management

Task to Execute Information and Technology Management

-Establishment of network system among all the divisions of the Paurashava

-Providing assistance and technical support (software and hardware support) for accounting, tax assessment, tax collection, preparing water supply bill etc.

-Establishing, marinating and updating of Paurashava website.

-Providing support for MIS.

-Establishing GIS set up and database for practicing in Paurashava activities.

Planning Functions

-Master Plan

-Planning Development Projects

-Land Development Projects

-Building Control

-Social Development Plan

-Commercial Projects

Steps to execute the functions

Master plan:

-Preparation of Master Plan, establishing legal basis of the Master Plan and execution of development control on the activities as per Master Plan

-Review of Master Plan on a regular interval.

-Controlling development projects in excess of land earmarked in the Master Plan.

-Preparing and implementing phase-wise development projects, social development projects, commercial projects etc.

-Undertaking development projects and controlling implementation of those projects in terms of transport network planning and drainage Master Plan and initiation of updating those projects on a regular basis each year.

Functions Concerning Recreation

-Govt. wetland, govt. fishing grounds, pond and low lands;

-Tree Plantation, Afforestation;

-Park, Playground, open spaces;

-Beautification (Landscaping)

Task to execute the works

Water Bodies and Low Lands:

-Take initiatives to establish infrastructure and facilities for recreational purpose by using govt. wetland, fishing ground, pond and ditch within the Paurashava.

-Hand over the responsibility to the appropriate private sector management and fix proper charge fee and ensure its collection which is require for maintaining and operational management of wetland facilities.

Landscaping

-Construction and maintaining aesthetic beautiful substance, sculpture, fountain etc in suitable place of the town which express the local heritage, art, culture, history and education.

-Take beatification activities, implementation and maintenance of road side area, major intersection, open space, Paurashava office premise area, in front of important establishment and open space in front of different govt. organizations.

-Initiate the activities for agreement with different private bank, insurance, mobile company and other different organizations for the beatification of the town.

Fig 9.1: Scope of Work for Planning Division

9.1.3.2 Lack of Paurashava Town Planning Capacity

At present, the Paurashava has no town planning section or any appropriate manpower to prepare and implement the Master Plan. For proper implementation of the Master Plan for each Paurashava under UTIDP, establishment of a separate planning unit is indispensable. The Paurashava must strengthen its capacity to implement its Master Plan when it will be completed. It will otherwise be in trouble for implementation, monitoring and updating the Master Plan.

Daulatkhan is a 'B' class Paurashava. For the 'B' class Paurashava Government approved an organogram/ manpower requirement. If we compare the existing manpower with the approved organogram we find that there is a huge gap between the two. Many positions have been vacant since the inception of Paurashava. However, strengthening of the Town Planning Division is a pre-requisite for successful implementation of the Master Plan. Paurashava authority supported with the line ministry should take necessary steps to set up planning unit and strengthen all units/division of the Paurashava for its better performance.

9.1.4 Legal Aspects

The drive to establish strong urban local governance in the Paurashava is yet to be legalized. The governance programs at present are operated project wise based on the formulated policies of the implementing agencies of the national government. The Laws that the country inherited are mostly prepared during the colonial rule to serve its own interests. Even after independence from the British, the issue of good governance was not infused into the new Acts formulated.

9.1.5 Good Governance in Legal Provisions

There is hardly any Act where the elements of good governance are clearly visible. The consultant has identified some Acts, where some elements of good governance can be traced.

The Paurashava/Municipal Act/Ordinances prepared at different times since 1960's have iterated for the preparation of Master Plan by the Paurashava/Municipality for its planned development. So far urban local government Ordinances/Acts made in 1967, 1977, 2008 and 2009, all suggested for planned development. The Local Government (Paurashava) Act, 2009 has made the provision of having a Master Plan prepared by a Paurashava within five years of its inception. The function of the Paurashava also includes that it ensures planned development following the rules of the Ordinance. But there is no provision for public participation in the Local Government (Paurashava) Act, 2009. In all these legal documents, people's role has been ignored which is the violation of the norms of good governance.

The constitution of the Peoples' republic of Bangladesh clearly spells out that the Government should work to minimize the gap between urban and rural areas. A planned Paurashava development in that pursuit can provide necessary services to improve quality of life in both urban and rural areas within the Upazila.

9.1.6 Financial Issues

Governance in Daulatkhan Paurashava

Financial governance refers to transparency and accountability of financial matters. All financial matters must be transparent to all. People must know about the policies and programs of the Paurashava, how much revenue is collected each year and the amount of expenditure made on annual development. They must also be answerable to the people on how the public money is being spent and accounts being maintained.

The Ministry of LGRD and Cooperative has undertaken a number of projects in respect of establishing governance in upgrading Paurashava accounts system, like, UGIIP, STIFPP. Computer and accessories are supplied under these projects for automation of the accounts system. Besides, trainings are also offered to the Paurashava accounts staff for enabling introduction of automation in accounts system. But all these services have not yet reached Daulatkhan Paurashava.

Revenue Management

The Paurashava still follows a traditional management system in tax collection and revenue management though a scheme of computerized automotive financial system has already been introduced in this Paurashava. Assessment section is responsible to assess the tax of the Paurashava and tax collection, and license and bazar section are responsible to collect the tax of the Paurashava. The public is mainly informed about tax collection during the presentation of annual budget. They may, however, get information from the councilor or Paurashava accounts office.

Paurashava's Financial Capacity and Plan Execution

The main focus of Paurashava financial governance is to establish automation in entire financial management. This includes computerization of accounts system, holding tax management, and billing of different service charges. Software for above functions have been supplied and installed

in the Paurashavas covered by financial automotive projects. The projects also provided training to the relevant staffs for functioning of the systems. With the implementation of these projects people can now instantly know about the status of their tax payment, bill payment, and licensing. This has not only made the functions of the Paurashava easy, but also has freed the citizens for paying bribe, and experiencing hassle.

The size of annual budgets of the Paurashavas indicates the poor financial status of the Paurashavas. With low income, Daulatkhan Paurashava will have to depend substantially on the government funding for implementing the development projects. But the government has limitations of its resources. In such a situation, if the Paurashava cannot raise its own revenue adequately, it will not be able to execute much of the development projects under the Master Plan.

9.1.7 Monitoring, Evaluation and Updating

Monitoring and evaluation is a very important part of plan implementation. Monitoring helps check if the plan is being implemented properly. It also measures the level of implementation of the plan. If the plan implementation is not on track, corrective measures can be taken to put execution on the track. After expiry of any plan, evaluation is made about the errors and omissions. Such evaluation helps take corrective measures in the next plan. Such monitoring and evaluation must be carried out from within the Paurashava. But Daulatkhan Paurashava is not equipped with qualified manpower to make such evaluation. Monitoring and evaluation of a plan is essentially, the responsibility of qualified and experienced planners. As there is no planner in the Paurashava, monitoring of plan implementation will be seriously affected. However, plan evaluation can be accomplished by means of out sourcing as and when it is required.

9.1.8 Periodic Review and Updating

The plan package needs to be updated regularly to make it respond to the spatial changes over time. But such updating would require relevant technical professionals and requisite fund that are highly lacking in Daulatkhan Paurashava. As there is no planner or planning section in the Paurashava, review and updating of the Master Plan will require service of senior level planners that Paurashava might not be able to provide. This service will have to be procured by out sourcing and the Paurashava is not even capable to accomplish this financially either. This will create problem when the plans or its components gets obsolete or need to be changed. Another problem would arise when the duration of plans ends. It is necessary that the entire plan document (including all planning and land use proposals) should be reviewed every 4th year of the plan period and will come into execution from the 5th year. The aim of the review will be to analyze the status of implementation of plan provisions, the changing physical growth pattern, infrastructure development, and the trend of public and private physical development including growth direction.

A new set of plans will have to be prepared replacing the old ones. This problem, however, can be overcome by undertaking another planning project by LGED. So, for regular updating and changes, and plan implementation monitoring, the Paurashava should immediately set up a planning section with a number of planners and other staff. The section will not only look after planning, but will also be responsible for development control, estate management, and project preparation. Since the planners would be qualified and skilled in computer operation, they can also help achieving automation of the Paurashava functions.

9.2 Resource Mobilization

Resource mobilization will be one of the most challenging tasks in implementing the current plan package. Though the development proposals are said to be executed by a large number of development agencies, but it is beyond doubt that the heaviest burdens will have to be shouldered by the Paurashava. As a local government agency, it suffers from resource constraint due to low level of urbanization and investment by both public and private sectors. The land value will maintain perpetually low growth rate in the town. Therefore, prospect of mobilization of substantial resource from sale of serviced land is extremely meagre. For the same reason, revenue earning from betterment fee, planning permission and other sources may also remain low. Paurashava is heavily dependent on the government for executing its development projects as it is unable to collect sufficient revenue from its tax and non-tax sources. Therefore, it is clear that execution of development projects under the current plan will depend heavily on the government response to supply adequate fund. This situation calls for increasing revenue earning by generating new revenue sources.

9.3 Concluding Remarks

From the past experience, it has been observed that plans are prepared for organized development, but development control has been subject to negligence. In most cases, execution has been piece-meal. It is unfortunate that town planning has not yet become a part of our urban development culture. Individuals develop lands and construct buildings with a little respect for planned development, and the concerned authority is also unable to exercise full control on development. Some strict measures are necessary to make stakeholders follow up plans and development rules. Awareness is to be built among the people to follow the Master Plan provisions and plan. Government agencies must be compelled to follow plans. Existing laws in this regard must be updated incorporating provisions of plan execution.

Policy-04: Pollution Control

Justification: Pollution level such as water, air and soil pollution rate is very low. As the area is located in coastal region, saline and iron also contaminate the water but at negligible rate. Besides air and soil pollution rate is also negligible. But this should not allow increasing pollution rate. To ensure safe environment for the Paurashava area, maintenance of the surface water quality is vital.

To control pollution following measures will be required:

- Make free surface waters form domestic wastes and other types of wastes which require proper solid waste management
- Riverside dumping needs to be restricted and dumping site has to be located through prescribed land use planning
- Discourage the high hazarders industries (Only Green Category Industries of DOE)
- Excessive pesticides and fertilizers use in Agriculture field cause soil pollution, therefore it is required to follow the Pesticides law, 1985

Implementing Agency: Paurashava, DPHE, DOE, DOA.

Part B. Urban Area Plan

Chapter- 10
INTRODUCTION

10.1 Introduction

The Land use Plan is one of the four components of Urban Area Plan. Land use Planning rules are statutory rules to control land use according to planning standard. It is based on land use policies including Local Plans, such as residential density, road standard, provision of infrastructure and services. The relevant Acts and Master Plans of the cities are the legal instruments, which is in force with regard to exercise planning control and standards. Therefore, future land use of Daulatkhan Paurashava is shaped by intermingling relation between existing and proposed land use.

The Terms of Reference (TOR) specify that the Urban Area Plan (UAP) / Multi- sector Investment Plan (MSIP) will consist of the following plans:

- Land use Plan
- Transportation and Traffic Management Plan
- Drainage and Environmental Management Plan
- Plan for Urban Services

10.2 Goals and Objectives

The overall land use plan makes an approach that balances economic, environmental and aesthetic concerns which preserve the natural resources and quality of life in Daulatkhan Paurashava. Moreover, this plan will also make recommendations for the plan's implementation to guide Paurashava Town Planner and other officials when managing future growth and development of Daulatkhan Paurashava. The specific goals and objectives of land use plan are described below:

Goal A: Provide a well-balanced mix of residential, commercial, recreational, and other urban services uses to serve the future needs of the community and to maintain the Paurashava as a desirable place to live.

Objectives:

- Guide the development considering density standards including High, Medium and Low Density area
- Guide new development within or adjacent to existing development
- Explore possibilities to support industrial, business and commercial growth within Paurashava area by demarcating industrial, commercial zone that operates in a manner that protects the environment and uses our natural resources efficiently
- Recognize the need to accommodate all age groups in recreational pursuits
- Provide basic urban services to the Paurashava people

Goal B: Preserve and protect the aesthetic, ecological quality, function, and other values of the Paurashava's land and natural resources

Objectives:

- Discourage development within environmentally sensitive areas such as wetlands, floodplain and lowlands
- Require natural buffers where they exist, and require native tree planting or tree replacement in areas without natural buffers to minimize the potential of land use conflicts.

Goal C: Increase community awareness, support, and involvement in growth management and land and natural resource conservation efforts

Objectives:

- Improve public access and understanding of available land use, planning, zoning and environmental information
- Balance community improvements with available funding sources to ensure equitable taxation

Goal D: Provide and maintain a safe and reliable transportation network

Objectives:

- Ensure that new roads can connect to future streets on abutting properties, whenever possible
- Ensure practice of relevant laws and regulations to control the development of city pertaining with land use and road development

10.3 Delineation of Planning Areas

For determining the existing planning area, consultants have discussed with honorable Mayor, Councilors and the local people and they expressed their valuable opinion about this issue. Moreover, consultants have dully considered several issues such as population growth rate, direction of existing growth potentials, location and distance of Upazila and District Headquarter in respect of Paurashava location, land value within and surrounding the Paurashava, tax collection status, socio-economic status, other future national development plan, if any, etc. Considering the all issues, the planning area of Daulatkhan has been considered 2.34 sq. kilometers.

Chapter- 11
LAND USE PLAN

11.1 Existing and Projected Land Use and Land Use Proposals

Land use Planning rules are statutory rules to control land use according to planning standard. It is based on land use policies including Local Plans, such as residential density, road standard, provision of infrastructure and services. The relevant Acts and Master Plans of the cities are the legal instruments, which is in force with regard to exercise planning control and standards. Therefore, future land use of Daulatkhan Paurashava is shaped by intermingling relation between existing and proposed land use.

11.1.1 Existing Land Use

The existing land uses of the project area are shown in Table 11.1. In the land use pattern of the Paurashava, 15 types of land uses are found. It is clearly evident from the table that residential landuse (40.73%) dominates the Paurashava area; followed by water body (30.88%), agriculture (15.52%), circulation network (3.54%) and Commercial (2.95%). **Map 11.1** shows the existing landuse of Daulatkhan Paurashava.

Table 11.1: Existing Land use of Daulatkhan Paurashava

Land use		Area (acre)	%
Administrative	Government Service	13.47	2.33
	Non-Government Service	0.16	0.03
Agricultural		89.88	15.52
Circulation Network		20.48	3.54
Commercial		17.06	2.95
Community Service		3.01	0.52
Education & Research		12.98	2.24
Industrial		1.63	0.28
Mixed Use		0.35	0.06
Recreational Facilities		2.68	0.46
Residential		235.88	40.73
Service Activity		2.30	0.40
Transportation & Communication		0.03	0.01
Urban Green Space		0.42	0.07
Water Body		178.84	30.88
Total		**579.17**	**100**

Source: Land Use Survey, 2010.

11.1.2 Estimation on the Requirement of Different Land Uses

This section proposes land use zoning plan for different land uses of the future town. The estimations have been made according to the Planning Standard approved by the client.

11.1.2.1 Land Use Standards

According to the projected population density it has been observed that in 2031, this area will not be a high density area. On the basis of projected population and considered the planning standard additional demands for land had been calculated for various facilities such as residential, commercial, industrial, educational, public land, etc.

Agricultural lands, Water bodies will be preserved as existed unless lack of land availability is observed in providing urban services. In that case, non-productive agricultural lands can be devoted for specific urban services and also to control the density of the Paurashava area.

11.1.2.2 Land Requirement and Proposal

After the projection for the target year and analyses of existing Land Use, designation of different land uses is the foremost vital step to prepare Land Use Plan as the first component of Urban Area Plan. Before incepting the Land Use Plan for the year 2031, basic principles for different category of Land Uses have been considered. In precedence, future land use designation and land use zoning have been identified. Finally, Implementation, Monitoring and Evaluation issues have been discussed as the steps after the plan completion to make the Land Use Plan perpetual through plan period. Detail analysis of required land based on the standard provided by PMO, LGED is presented in the Table 11.3.

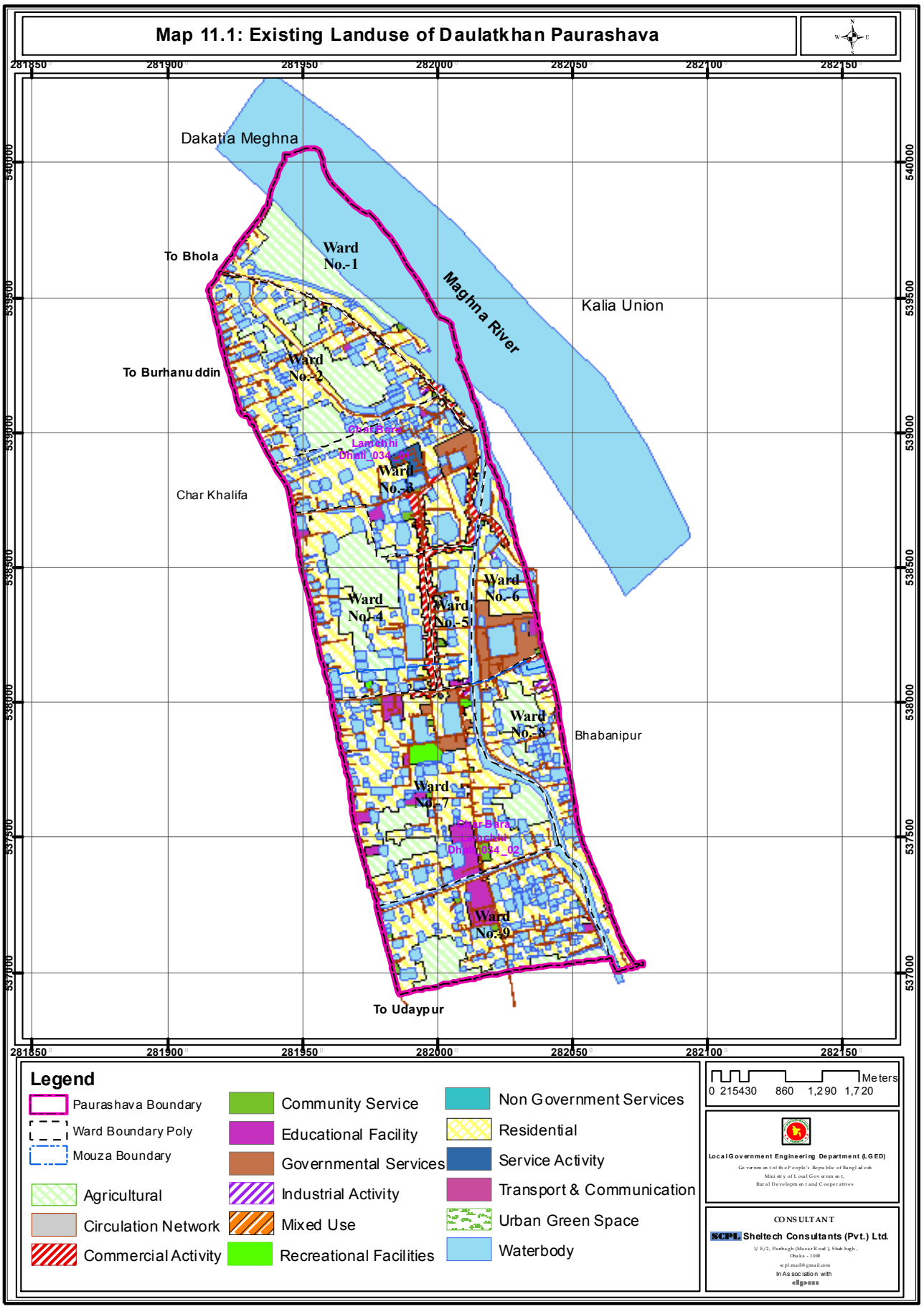
To allocate the land in Urban Area Plan, one uniform planning standards has been followed and also some basic assumptions have been identified considering Land use Category. The population growth, existing growth direction, economic sector and overall Paurashava Context have been emphasized in Urban Area Plan. The assumptions are mainly reflection of Building Construction Act, 1952 (amendment 1996) which is the practiced law in Daulatkhan Paurashava for approving Building plan or site plan. Fifteen Land use categories had been considered for Survey and interim phase but for Land use plan nineteen categories have been considered. Detail Land use plan has presented on **Map 11.2** and Table 11.2.

Table 11.2: Proposed Major Landuse of Daulatkhan Paurashava

Sl. No.	Land use Category	Remarks	Area (Acre)	%
1	Government Services	All Government Offices except large scale service based offices as Civil Surgeon Office, DC Office, Police Box, Police Fari, Police Station, LGED Office, Paurashava Office, Settlement Office, Union Parishad Office, Upazila Headquarter, BADC Office, Fisheries Office, Ansar/VDP Office, Agriculture Office, Zila Parishad Office, Post Office, Telephone Exchange Office and Other Government Offices.	18.83	3.25
2	Agricultural Zone	Agricultural land denotes the land suitable for agricultural production, both crops and livestock. It is one of the main resources in agriculture. It includes productive land (single, double and triple cropped), seed bed, fisheries, poultry farm, dairy farm, nursery, horticulture etc.	15.36	2.65
3	Circulation Network	Road and Rail communication	98.87	17.07
4	Commercial Zone	The land used for commercial activities is considered as commercial land use. These activities include the buying and selling of goods and services in retail businesses, wholesale buying and selling, financial establishments, and wide variety of services that are broadly classified as "business". Even though these commercial activities use only a small amount of land, they are extremely important to a community's economy. Commercial land includes established markets and areas earmarked for markets.	20.79	3.59
5	Community Facilities	All community facilities including funeral places and other religious uses	4.45	0.77
6	Education & Research Zone	All kinds of educational institutes like Primary/secondary/other Schools/ Colleges etc are mentioned to calculate the land use for education and research purpose.	22.86	3.95
7	Health Facility	Health Facilities include Upazila Hospital, Health Center, Maternity Clinic, Clinic etc.	7.99	1.38
8	General Industry Zone	Green and Orange A categories as per The Environment Conservation Rules, 1997	8.77	1.52
9	Open Space	Playground, Botanical Garden, Stadium, Zoo etc. (Facilities without or with minimum building structure)	15.39	2.66
10	Recreational Facility	Facilities other than those mentioned to Open Space and indoor based facilities with designated building structure i.e. Cinema Hall, Theater Hall etc.	0.83	0.14
11	Transport Facilities	Under transport and communication land use both transport and communication services are considered. This category includes airport, bus terminal/ stand, ferry ghat, filling station, garage, launch terminal, post office, passenger shed, telephone exchange, ticket counter, transport office etc.	4.04	0.70
12	Urban Deferred	Optional depending on the Paurashava and the Consultant's judgment	22.62	3.91
13	Urban Residential Zone	Urban Residential area is a land use in which housing predominates. These include single family housing, multi-family residential, or mobile homes. Zoning for residential use may permit some services or work opportunities or may totally exclude business and industry. It may permit high density land use	180.82	31.23
14	Utility Services	Utility services include Overhead Tank, Power Office/Control Room, Public Toilet, Sewerage Office, Waste Disposal ,Fire Service, Water Pump House ,Water Reservoir, Water Treatment Plant etc.	8.39	1.45
15	Overlay Zone	If the consultant justify any area that should not be defined as other given definitions but the facility(s) may not be avoidable, they may use this category	Not applicable	-
16	Forest	Forest Designated Forest Area	Not applicable	-

Sl. No.	Land use Category	Remarks	Area (Acre)	%
17	Beach	Sea Beach	Not applicable	-
18	Historical and Heritage Site	The entire mentionable historical and heritage site.	Not applicable	-
19	Water Body	Equal or More than 0.25 acre and justification by the consultant and wet land will merge with water body	148.94	25.73
Total			**578.95**	**100.00**

Source: Consultants Estimation


Map 11.1: Existing Landuse of Daulatkhan Paurashava
Dakatia Meghna
To Bhola
Ward No.-1
Maghna River
Kalia Union
To Burhanuddin
Ward No.-2
Char Bora Lamchhi Dhali_034_01
Ward No.-3
Char Khalifa
Ward No.-4
Ward No.-5
Ward No.-6
Ward No.-8
Bhabanipur
Ward No.-7
Char Bora Lamchhi Dhali_034_02
Ward No.-9
To Udaypur
281850
281900
281950
282000
282050
282100
282150
540000
539500
539000
538500
538000
537500
537000
Legend
Paurashava Boundary
Ward Boundary Poly
Mouza Boundary
Agricultural
Circulation Network
Commercial Activity
Community Service
Educational Facility
Governmental Services
Industrial Activity
Mixed Use
Recreational Facilities
Non Government Services
Residential
Service Activity
Transport & Communication
Urban Green Space
Waterbody
Meters
0 215430 860 1,290 1,720
Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government,
Rural Development and Cooperatives
CONSULTANT
SCPL Sheltech Consultants (Pvt.) Ltd.
1/E/2, Pantbagh (Mazar Road), Shahbagh,
Dhaka - 1000
scpl.mail@gmail.com
In Association with

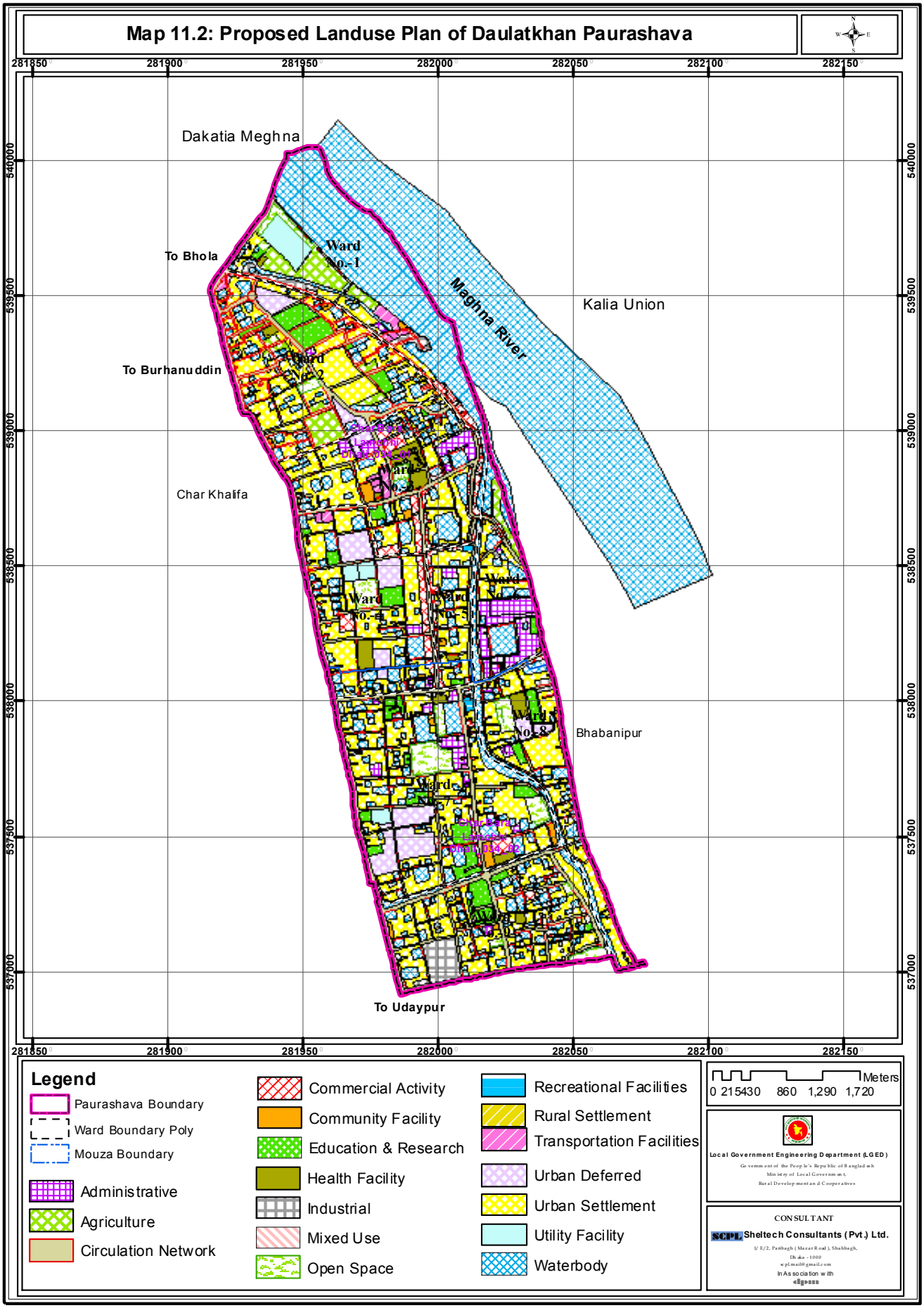

Map 11.2: Proposed Landuse Plan of Daulatkhan Paurashava
281850
281900
281950
282000
282050
282100
282150
540000
539500
539000
538500
538000
537500
537000
Dakatia Meghna
To Bhola
Ward No.-1
Meghna River
Kalia Union
To Burhanuddin
Ward No.-2
Char Khalifa
Ward No.-3
Ward No.-4
Ward No.-5
Ward No.-6
Ward No.-7
Ward No.-8
Bhabanipur
Ward No.-9
To Udaypur
Legend
Paurashava Boundary
Ward Boundary Poly
Mouza Boundary
Administrative
Agriculture
Circulation Network
Commercial Activity
Community Facility
Education & Research
Health Facility
Industrial
Mixed Use
Open Space
Recreational Facilities
Rural Settlement
Transportation Facilities
Urban Deferred
Urban Settlement
Utility Facility
Waterbody
Meters
0 215430 860 1,290 1,720
Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government,
Rural Development and Cooperatives
CONSULTANT
SCPL Sheltech Consultants (Pvt.) Ltd.
In Association with

Table 11.3: Land Requirement, Existing and Proposed Land use of Daulatkhan Paurashava for the Year 2031

Sl. No.	Landuse Categories	Types of Landuses	Recommended Standard	Projected Required Land for 2031(Acre)	Existing Land (Acre)	Deficiency/Surplus (Acre)	Proposed Land (acre)
1	Residential	General residential	100 – 150 persons/1 acre	204.11	235.88	-31.77	-54.49
		Real Estate – Public/Private	200 population/ 1 acre				
		Total		***204.11***	***235.88***	**31.77**	***54.49***
2	Education and Research	Nursery	0.5 acre/10,000 population	1.02			
		Primary School/ kindergarten	2.00 acres/5000 population	8.16			
		Secondary/High School	5.00 acres /20,000 population	5.10			
		College	10.00 acres/20,000 population	10.21			
		Vocational Training Centre	5 - 10 acres / Upazila	5			
		Other	5.00 acres / 20,000 population	5.10			
		Total		***34.60***	***12.98***	***21.64***	***9.89***
3	Open Space	Play field/ground	3.00 acres/20,000 population	3.06			
		Park	1.00 acre /1000 population	20.41			
		Neighborhood park	1.00 acre /1000 population	20.41			
		Central Park					
		Total		***43.88***	***0.42***	***43.46***	***9.1***
4	Recreational Facility	Stadium/sports complex	5 – 10 acres/ Upazila HQ	5.00			
		Cinema/ Theatre	1.0 acre /20,000 population	1.02			
		Total		***6.02***	***2.68***	***3.34***	***3.3***
5	Health Service	Upazila health complex/ hospital	10 -20 acres/ Upazila HQ	10.00			
		health centre/Maternity clinic	1.00 acre/ 5,000 population	4.08			
		Total		***14.08***	***2.03***	***12.05***	***5.95***
6	Community Facilities	Mosque/Church/Temple	0.5 acre /20,000 population	0.51			
		Eidgah	1.0 acre/20,000 population	1.02			
		Graveyard	1.00 acre /20,000 population	1.02			
		Community centre	1.00 acre /20,000 population	1.02			
		Cremation Place	1.00 acre /20,000 population	1.02			
		Total		***4.59***	***3.01***	***1.58***	***1.45***
7	Commercial	Wholesale market	1.0 acres/ 10000 population	2.04			
		Retail sale market	1.0 acres/ 1000 population	20.41			
		Corner shops	0.25 acre/per corner shop				

Sl. No.	Landuse Categories	Types of Landuses	Recommended Standard	Projected Required Land for 2031(Acre)	Existing Land (Acre)	Deficiency/Surplus (Acre)	Proposed Land (acre)
		Neighborhood market	1.00 acre/per neighborhood market	1			
		Super Market	1.50 – 2.50 acres/per super market	2			
		Total		***25.45***	***17.06***	***8.39***	***3.73***
8	Utility Services	Drainage	As per local requirement				
		Water supply	1.00 acre /20,000 population	1.02			
		Gas	1.00 acre /20,000 population	1.02			
		Solid waste disposal site	4-10 acres/Upazila HQ	5			
		Waste transfer station (9 nos)	0.25 acres/per waste transfer station	2.25			
		Fire Service	1.00 acre/20,000 population	1.02			
		Telephone exchange	0.5 acre/20,000 population	0.51			
		Water Treatment Plant	1.00 acre/20,000 population	1.02			
		Overhead tank					
		Total		***11.84***	***2.30***	***9.54***	***6.1***
9	Industrial	Small scale /cottage/agro-based	10 acre/Paurashava	10	1.63		
		Total		***10***	***1.63***	***8.37***	***7.15***
10	Transportation Facilities	Bus terminal	1.0 acre /20,000 population	1.02			
		Truck terminal	0.50 acre /20,000 population	0.51			
		Launch/steamer terminal	1.00 acre /20,000 population	1.02			
		Railway station	4.00 acre / per Station				
		Baby taxi/tempo stand	0.25 acre /one baby taxi/tempo stand	0.5			
		Rickshaw/van stand	0.25 acre /one baby taxi/tempo stand	0.25			
		Passenger Shed	0.25 acre /one baby taxi/tempo stand	0.25			
		Fuel Station	0.5 acre/20,000 population	0.51			
		Total		***4.06***	***0.03***	***4.03***	***4.01***
11	Administrative	Upazila complex	15.00 acres	15			
		Paurashava office (Ward Councilor's Office)	3 – 5 acres	5			
		Police Station	3 – 5 acres/Upazila HQ	3			
		Police Box/outpost	0.5 acre/ per box				
		Post office	0.5 acre /20,000 population	0.51			

Sl. No.	Landuse Categories	Types of Landuses	Recommended Standard	Projected Required Land for 2031(Acre)	Existing Land (Acre)	Deficiency/Surplus (Acre)	Proposed Land (acre)
		Telephone Exchange Office	0.5 acre /20,000 population	0.51			
		Total		***24.02***	***13.63***	***10.39***	***5.19***
12	Circulation Networks	Paurashava primary roads	150 – 100 feet				
		Paurashava secondary roads	100 – 60 feet				
		Paurashava local roads	40 - 20 feet				
		Total			***20.48***		***78.85***
13	Agriculture	Agri-extension Farm	10 acres/Upazila HQ	10	89.88	-79.88	-74.51
		Total		***10***	***89.88***	79.88	***74.51***
14	Restricted Area	Jail/Sub Jail	10 acres/Upazila HQ	10	**0**	**10**	-
		Electric Sub station	1.00 acre /20,000 population	1.03	**0**	**1.03**	1.03
		Total		***11.02***	***0***	***11.03***	***1.03***
15	Urban Deferred	Urban Deferred	10 percent of the total build up area and new urban area	17.18	0	17.18	22.62
		Total		***17.18***	***0***	***17.18***	***22.62***

Source: The Consultants' Estimation

* Here – indicates surplus of land, * indicates estimated by the consultants

A) Residential Zone

Residential zone refers to all categories of urban residential areas, including exiting ones and the residential land use proposed under the present Master Plan. Here, residential zone comprises urban residential area. In order to accommodate the projected urban resident population in the study area, around 204.11 acres of land would be required up to the year 2031. On the other hand, 235.88 acres of land have already existed as residential plots in the Daulatkhan area. This zone will allow commercial uses as listed in **Table-A.1, ANNEX-C**, and conditional uses as listed in **Table-A.2, ANNEX-C.** There is surplus of urban residential land of 31.77 acre. The list of plot number and Mouza are given below:

Table 11.4: Development Proposal for Residential Zone

Landuse Name	Area (acre)	Ward No	Plot No	Mouza Name
Resettlement Zone	3.95	2	105,108,109,112,113,116,117,121,124,127,132,133,138,141,142,147	Char Bara Lamchhi Dhali
Low Income Housing	3.81	8	573,582,583,584,585,586,588	Char Bara Lamchhi Dhali
Total	**7.76**			

B) Commercial Zone

The commercial zone is intended to provide locations, where commercial activities including retails and wholesale can be set up and function without creating hazards to surrounding land uses. In

order to accommodate the commercial land in the year 2031, about 8.39 acre more land will be required. On the other hand, 17.06 acres of land have already existed as commercial plots in the Daulatkhan area. In response to the requirement, about 3.80 acres of land is proposed in the Master Plan. This zone will allow commercial uses as listed in **Table-A.5, ANNEX-C**, and conditional uses as listed in **Table-A.6, ANNEX-C**. Table 11.5 shows the distribution of commercial land in the study area.

Table 11.5: Development Proposal for Commercial Zone

Type of facility	Area (Acre)	Ward no	Plot no	Mouza Name	Phase-wise development		
					1st Phase (1st to 5th year)	2nd Phase (6th to 10th year)	3rd Phase 11th to last 10 year)
Super Market	0.64	3	229,231,232,233,234,235,292,293,294,295	Char Bara Lamchhi Dhali	Land Acquisition and establish	Continue the development	
		4	235				
Wholesale Market	0.98	3	174,175,182,183,184,189,190,198	Char Bara Lamchhi Dhali	Land Acquisition and established	Continue The development	
Neighborhood Market	2.18	4	244,245,246	Char Bara Lamchhi Dhali	Land Acquisition and establish	Continue the development	
		7	628,629,630				
		9	675,677				
Total	**3.80**						

C) Industrial Zone

Daulatkhan Paurashava is basically an island. Small business, agriculture and fishing are the main base of the economy of the area. The plan needs to accommodate such industries those have growth potentiality related to the base of economy of Daulatkhan Paurashava. Due to the environmental and ecological condition, the plan discourages growth of heavy industries in the planning area. The plan segregated industries generally in to two classes; (I) General Industrial Zone in where processing units, small scale and harmless medium scale industries can be placed and, (II) Heavy industries in where all type of medium, heavy and toxic industries can be placed. . In this zone a complex line of industrial and supporting non-industrial land uses will be permitted as per **Table-A.3, ANNEX-C** and conditional permission will be given to a number of other land uses as specified on **Table-A.4, ANNEX-C**. To allow industrial set up in the demarcated zone of Daulatkhan, the plan will follow two norms:

a) For categorizing, allocating land and providing guideline to set up industries, the plan will strictly follow the “The Environment Conservation Rule, 1997”.

b) For allocating land to set up industries, the plan will prioritize environmental & ecological condition and base of the economy of Daulatkhan Paurashava.

About 8.78 acres of land is proposed for industrial set up in Daulatkhan Paurashava.

Table 11.6: Development Proposal for Industrial Zone

Type of facility	Area (Acre)	Ward no	Plot No	Mouza Name	Phase-wise development		
					1st Phase (1st to 5th year)	2nd Phase (6th to 10th year)	3rd Phase 11th to last 10 year)
Agro-based/Fish processing	1.5	1	4,6,7,8,28,31,32,33,34,38, 39,46,47,50,52,55,56	Char Bara Lamchhi Dhali	Land acquisition and development all facilities	Development Infrastructure	Full function Activity
Small industry	4.41	9	716,717,718,719, 720,721,722,724, 725,727,730,732, 734,735,736,737, 738	Char Bara Lamchhi Dhali	Land acquisition and development all facilities	Development Infrastructure	Full function Activity
Total	**5.91**						

D) Agricultural Zone

Agricultural zone denotes the land suitable for agricultural production, both crops and livestock. It is one of the main resources in agriculture. Out of the total area (579.17 acres) of Daulatkhan Paurashava, the areas need to preserve from unplanned development to fulfill objectives sited in various national policies along with the Master Plan. Agricultural zone covers activities related to agriculture and agriculture related production activities; farm, fisheries, pasture, horticulture etc. Details of land uses are presented in **Table-A.17, ANNEX-C** and conditional uses as listed in **Table-A.18, ANNEX-C**.

E) Administrative

Government Office refers such areas encompass accommodation of the offices of various government authorities along with semi-government and autonomous bodies. A few number of private bodies formed especially for public services can also be accommodated in this zone.

According to the projection, about 23.51 acres land will be required for this purpose to meet the administrative demand of projected people in the year of 2031 whereas at present 13.63 acre land is used for administrative purpose. In case of Paurashava Office 5 acres of land will have to be proposed respectively based on the standard. It is expected that in near future the authority will expand Paurashava area to meet its standard requirements. Other uses have been proposed in accordance with the standards. The permitted uses in this zone are presented in **Table-A.15**, **ANNEX-C** and conditional uses as listed in **Table-A.16**, **ANNEX-C**. Table 11.7 reveals the distribution of proposed land of government offices at Daulatkhan Paurashava.

Table 11.7: Development Proposal for Government Services

Type of facility	Area (Acre)	Ward no	Plot no	Mouza Name	Phase-wise development		
					1st Phase (1st to 5th year)	2nd Phase (6th to 10th year)	3rd Phase 11th to last 10 year)
Ward center	3.46	1	101,104,105,108	Char Bara Lamchhi Dhali	Land acquisition	Development Infrastructure	
		2	101,104				
		3	175,182,183,184				
		4	256,265,266				
		5	328,329,330,331, 332,333,424,425				
		6	382				
		7	528,529,530,531				
		8	586,589				
		9	714,715,742				
Extended Paurashava Complex	1.91	7	540,543,544,591	Char Bara Lamchhi Dhali		Development Infrastructure	
Police box	0.74	3	174,175,182	Char Bara Lamchhi Dhali	Land acquisition	Development Infrastructure	
		7	632,633				
Total	**6.11**						

F) Recreational Facilities

There exists only 2.68 acres of land for recreational facilities. According to the standard 6.02 acre of land is required for this purpose in the year 2031. Considering future need about 3.3 acre of land is proposed for recreational purpose. An existing stadium with 3.69 acres of land is present at ward no 7.

Table 11.8: Development Proposal for Recreational Facilities

Type of facility	Area (Acre)	Ward no	Plot no	Mouza Name	Phase-wise development		
					1st Phase (1st to 5th year)	2nd Phase (6th to 10th year)	3rd Phase 11th to last 10 year)
Stadium	3.69	7	538,539,540,542, 543,544,591	Char Bara Lamchhi Dhali	Land acquisition	Development Infrastructure	
Total	**3.69**						

G) Open Space

Open space includes play field / play ground, park, neighborhood park, Stadium, etc. according to the standard about 43.88 acres of land is required for projected population in the year 2031 while at present only 0.42 acres of land is used for this purpose. The details of permitted and conditional permits have been presented in **Table-A.19, ANNEX-C** and conditional uses as listed in **Table-A.20, ANNEX-C**. A number of Neighborhood Parks are provided which are covering the wards no 8 and 9. Table 11.9 shows the proposed lands to meet up the demand of projected people.

Table 11.9: Development Proposal for Open Spaces

Type of facility	Area (Acre)	Ward no	Plot no	Mouza Name	Phase-wise development		
					1st Phase (1st to 5th year)	2nd Phase (6th to 10th year)	3rd Phase 11th to last 10 year)
Neighborhood Park	2.07	8	571,572,573,574,575,576	Char Bara Lamchhi Dhali	Land acquisition and development all facilities	Development Infrastructure	Full function Activity
		9	739,740,742				
Playground	4.36	1	12,26,27	Char Bara Lamchhi Dhali		Development Infrastructure	Full function Activity
		4	243,244				
		7	570,632,633,634,635,637,1226				
		9	667,668,671				
Park	3.76	2	116,117,121	Char Bara Lamchhi Dhali	Land acquisition and development all facilities	Development Infrastructure	Full function Activity
		3	204,216,217				
		7	545,549,550,551,552,555				
		9	760,763,764,767,768				
Total	**10.19**						

H) Health Facilities

Health Facilities includes Upazila Health complex, health center or maternity clinic. Considering projected population in the year 2031, about 14.08 acres of land is required for various Health facilities whereas only 2.03 acre land is used in recent. To accommodate unanticipated spatial requirement of Health facilities about 4.60 acres of land is proposed in the master plan. This zone will allow some uses as listed in **Table-A.9**, **ANNEX-C**, and conditional uses as listed in **Table-A.10**, **ANNEX-C**. Table 11.10 shows the proposed lands to meet up the demand of projected people.

Table 11.10: Development Proposal for Health Facilities

Type of facility	Area (Acre)	Ward no	Plot no	Mouza Name	Phase-wise development		
					1st Phase (1st to 5th year)	2nd Phase (6th to 10th year)	3rd Phase 11th to last 10 year)
Clinic	1.99	1	6,7,8,26,27	Char Bara Lamchhi Dhali	Land acquisition	Development Infrastructure	
		3	222				
		5	348,349,476,477				
		9	679,680,682,683,685,686				
Hospital	1.95	2	63,70,72	Char Bara Lamchhi Dhali	Land acquisition	Development Infrastructure	
		4	249,250,251,252,253				
Maternity /Health Center	0.66	7	628,629,630	Char Bara Lamchhi Dhali	Land acquisition	Development Infrastructure	

Type of facility	Area (Acre)	Ward no	Plot no	Mouza Name	Phase-wise development		
					1st Phase (1st to 5th year)	2nd Phase (6th to 10th year)	3rd Phase 11th to last 10 year)
Total	**4.60**						

I) Community Facilities

Community Facilities includes Masjid/Temple/Church, Eidgah, Community Center and Graveyard. Considering projected population in the year 2031, about 4.59 acres of land is required for various Community Facilities whereas 3.01 acre land is used in recent. To accommodate unanticipated spatial requirement of Community Facilities about 1.45 acres of land is proposed in the master plan. Table 11.11 shows the proposed lands to meet up the demand of projected people.

Table 11.11: Development Proposal for Community Facilities

Type of facility	Area (Acre)	Ward No.	Plot no	Mouza Name	Phase-wise development		
					1st Phase (1st to 5th year)	2nd Phase (6th to 10th year)	3rd Phase 11th to last 10 year)
Eidgah	0.79	7	626,628	Char Bara Lamchhi Dhali	Land acquisition	Development Infrastructure	
Graveyard	34	2	62,63,64,77,149,150,151,152	Char Bara Lamchhi Dhali	Land acquisition	Development Infrastructure	
		9	704,705,706,709,710,711,				
Shamshan ghat	0.47	6	379,382	Char Bara Lamchhi Dhali	Land acquisition	Development Infrastructure	
		7	570,631,632,641				
Total	**1.60**						

J) Education and Research Zone

Educational & Research zone refers to mainly education & research and other social service facilities as listed in **Table-A.13, ANNEX-C,** and conditional uses as listed in **Table-A.14, ANNEX-C**. Educational zone refers all kind of educational set up; School, Colleges, Madrasha and even such institutions operated for education like; training institutions, research institutions etc. In order to meet up the demand of projected population (2031), about 38.46 acre lands will be required. In the proposal 13.32 acres of land is given for educational purpose. Most of the primary schools are proposed in the residential areas. Table 11.12 presents the distribution of proposed land under education and research institutions.

Table 11.12: Development Proposal for Education and Research Zone

Type of facility	Area (Acre)	Ward no	Plot no	Mouza Name	Phase-wise development		
					1st Phase (1st to 5th year)	2nd Phase (6th to 10th year)	3rd Phase 11th to last 10 year)
Kindergarden School	0.59	4	235,238,239	Char Bara Lamchhi Dhali		Land acquisition and development all facilities	
College cum Cyclone Shelter	2.27	2	59,60,62,63,72,73,74,75,76,77,78,79				
High School cum Cyclone Shelter cum Cyclone Shelter	2.97	2	59,60,63	Char Bara Lamchhi Dhali		Land acquisition and development all facilities	
		7	555,556,557,621,623,624,625,641,1237,1238,1239				
		8	579,581				
Primary School cum Cyclone Shelter	2.17	1	8,12,27	Char Bara Lamchhi Dhali		Continue the development	
		2	63,64,65,105,108				
		7	504,556,557,570,594,595,604,605,608,609,1223,1236				
		8	546,588,589				
		9	684,685,692				
Vocational Training Center cum Cyclone Shelter	2.66	2	76,79,93,94,97,101	Char Bara Lamchhi Dhali		Land acquisition and development all facilities	
Woman College	1.51	4	244,271,272,273,274,275,276,277,278,279	Char Bara Lamchhi Dhali		Land acquisition and development all facilities	
Homeopathic College	1.15	2	124,127,132,138,141,142,145	Char Bara Lamchhi Dhali		Land acquisition and development all facilities	
Total	**13.32**						

K) Water Body

Water body contains all natural streams; canals, khals, irrigation canal, depressions like; beel, wetland, low laying areas and ponds. No standard is being prescribed for water body from the UTIDP. The Paurashava is rural-based urban area. In the proposal about 148.84 acres of water body are being preserved though existing total water body is 178.84 acres. These waterbodies have been preserved under the 'Playfield, Open Space, Park and Natural Water Reservoir Conservation Act, 2000'. The Planning Schedule of Waterbodies in Patharghata Paurashava is shown in **Annexure G**. The rest of the lands have been used to meet up the requirements of other facilities at Paurashava. In order to preserve them and keep them functional only the uses as suggested in **Table-A.21, ANNEX-C** will be permitted. Some other uses will be permitted on conditions as suggested in the list put in Table**-A.22, ANNEX-C**.

L) Circulation Network

Circulation Network refers all kind of public roads along with related facilities; footpaths, walkways etc. and embankment, railway (if exist in the area). According to the Traffic and

Transportation Management Plan, about 99.33 acres of land have been proposed for circulation network at Daulatkhan Paurashava area whereas at present only 20.48 acre land has been used for these purposes.

M) Transportation Facilities

Transportation facilities include Bus / Truck Terminals, Launch Terminal, Other Vehicle Parking Space, Gas/ Fuel Station, etc. Considering projected population in the year 2031, about 3.57 acres of land is required for various transportation and communication facilities whereas only 0.03 is used in recent. To accommodate unanticipated spatial requirement of transportation and communication sectors about 4.01 acres of land is proposed in the master plan including various facilities such as bus terminal, truck terminal, launch terminal, other vehicle parking, etc. Table 11.13 shows the proposed lands to meet up the demand of projected people.

Table 11.13 Development Proposal for Transportation Facilities

Type of facility	Area (Acre)	Ward no	Plot no	Mouza Name	Phase-wise development		
					1st Phase (1st to 5th year)	2nd Phase (6th to 10th year)	3rd Phase 11th to last 10 year)
Bus Terminal	0.79	3	203,204,216,217, 218,220,221,222	Char Bara Lamchhi Dhali	Land acquisition	Development Infrastructure	
Rickshaw stand	0.31	1	108,109	Char Bara Lamchhi Dhali			
		7	591				
Passenger Shed	0.35	1	108,109	Char Bara Lamchhi Dhali			
		3	218,222				
Fuel station	0.31	4	235	Char Bara Lamchhi Dhali		Land acquisition and development all facilities	
Launch terminal	1.07	1	97,101,104,105,108	Char Bara Lamchhi Dhali		Land acquisition and development all facilities	
Tempo Stand	0.44	1	108,109	Char Bara Lamchhi Dhali		Land acquisition and development all facilities	
		4	235				
Truck Stand	0.30	2	2,3,4,9	Char Bara Lamchhi Dhali	Land acquisition	Development Infrastructure	
Total	**3.57**						

N) Utility Service

Utility Service includes Solid waste disposal site, waste transfer station, Water Treatment Plant and fire service. Considering projected population in the year 2031, about 11.84 acres of land is required for various Utility Services whereas only 2.30 acre of land is used in recent. To accommodate unanticipated spatial requirement of Utility Services about 6.1 acres of land is

proposed in the master plan. Table 11.14 shows the proposed lands to meet up the demand of projected people.

Table 11.14: Development Proposal for Utility Services

Type of facility	Area (Acre)	Ward no	Plot no	Mouza Name	Phase-wise development		
					1st Phase (1st to 5th year)	2nd Phase (6th to 10th year)	3rd Phase 11th to last 10 year)
Fire Station & Electrical Sub Station	1.87	4	235,240,241,243	Char Bara Lamchhi Dhali	Land acquisition	Development Infrastructure	
Waste Disposal Site	4.52	1	12,13,22,23,24,25,26,29,30,31,38,40	Char Bara Lamchhi Dhali		Land acquisition and development all facilities	
Waste transfer station	0.94	1	60,62	Char Bara Lamchhi Dhali		Land acquisition and development all facilities	
		2	108,109				
		3	168,174				
		4	235				
		5	348,357,359,474				
		6	369,373				
		7	632,633				
		8	647,648,657,999 99				
		9	722				
Water Treatment Plant	0.98	7	604,1213	Char Bara Lamchhi Dhali		Land acquisition and development all facilities	
Total	**8.31**						

O) Restricted Area

Restricted Area includes Electric substation and Sub jail. Considering projected population in the year 2031, about 11.03 acres of land is required for Restricted Area, whereas no land is used in recent. To accommodate unanticipated spatial requirement of the Area about 1.03 acres of land consisting plot no. 240,241,243 is proposed at Ward No.04.

P) Urban Deferred

Urban deferred area includes potential land reserved for future use. Standard shows 10% of total build up land and new urban land should be used as Urban Deferred area. According to it, 22.62 acre land has been conserved for this purpose.

11.2 Land Use Zoning

Zoning is a classification of land use that limits what activities can or cannot take place on a parcel of land by establishing a range of development options. Zoning has been defined as an action through legislation provided to a development authority/Paurashava to control a) heights to which buildings may be erected; b) the area of lots that must be left un-built upon; and c) the uses to which buildings may be constructed.

11.2.1 Area / Use Zoning

The objective of area zoning is to specify which types of land use are considered appropriate for different areas or 'zones', and it therefore indicates the planning control objectives of the authority or municipality for its administrative area. The authority is obliged under the planning acts to designate in its development plan objectives for the use solely and primarily of particular areas for particular purposes.

The zoning is defined as the regulation by law of the use of land and buildings and of the height and density of buildings in specific areas for the purpose of securing convenience, health, safety and general welfare of the community. Thus, the term zoning is used to include two aspects of planning- allocation of land for specific purposes and control of the use, height and construction of the buildings.

Though the future land requirements are the first priority of planning for a city but considering the existing land use there should be provision of zoning. The zoning will demarcate specific land use for a specific zone or area. The zones are usually classified into the following four categories with suitable sub-divisions in each zone:

a. **Residential zone:** the character and location of this zone will depend on various factors such as nearness to the markets; freedom from nuisance, noise and smoke; nearness to parks and playgrounds etc.

b. **Commercial zone:** this zone should be near the centers of traffic and preferably it should about the roads. It includes the uses of land for banks, offices, godowns, shops etc.

c. **Industrial zone:** great care should be exercised in providing units of industrial zone in various part of the town. The light industries and factories running on electric power and causing no nuisance to nearby areas may be allowed to be set close to residential areas. On the other hand, the heavy industries giving out obnoxious gases and fumes and developing noisy atmosphere may be placed on the outskirts of the town.

d. **Recreational zone:** This zone includes mainly parks and playgrounds and in a broad sense, it may be considered to include various recreational centers such as cinemas, theatres, town halls, clubs, libraries, restaurants, stadium and other community needs.

Besides these any special land use can get special emphasis on the basis of its intensity, significance on local, national economy etc.

11.2.2 Density / Bulk Zoning

Aim of the density zoning is to provide an acceptable density which is related to the designed facilities and amenities especially for the residential areas. This will ensure a healthy community and enjoyable community life. In a particular area, how much number of buildings will be permitted and constructed, the decision is under the density zoning. Provisioning of setback rule and percent of land uses for different purposes is the prime consideration of density zoning. The proposed

percentage mentioned in the land use table is the only tool to control building density in the Paurashava.

11.2.3 Height Zoning

This zoning provides height limits for structures and objects of natural growth and standards for use of an area which encourage and promote the proper and sound development of areas. It is also applicable to height restrictions for flight safety around airports or other similar purposes.

For effective development control, in addition land use zoning individual facility and the structures therein is complied certain regulations imposed to ensure desirable end. Relation between ground cover of buildings and the land parcel that house it, minimum setback of building from the adjoining plot boundaries and the maximum floor area that can be constructed in relation to plot size and the connecting road among many other details, are controlled by Building Construction Rules 1996.

According to the Building Construction Rule, 1996, minimum permissible road width for obtaining plan permission is to shown, construction is allowed on plots connected by narrow roads provided the plot owner leaves formally half of the addition area needed to make the road 6m for widening the road to the permitted minimum. Perhaps the intension behind this was that gradually the whole road would rise up to 6m in short time and it is true for new areas. But congested unplanned area represents an alarming picture. In commercial area, most of the plots are occupied almost entirely by pucca structures covering the property line connected by the narrow pathways. Those owners did not bother for Paurashava's plan permission and a handful of those who obtained plan permission did not care to follow them. It is suggested that existing rules need to be modified to tackle the environmental problems created by illegal building construction.

11.3 Plan Implementation Strategy

11.3.1 Land Development Regulations to Implement the Land use Plan

Effective implementation of a plan is the most important part of the planning process. The process of Implementation needs to be carried out with care and efficiency in order to produce best outcomes. This chapter highlights various measures needed to be taken in order to implement the land use plan proposals.

Implementation of the Land use Plan depends on successful pursuit of the policies specified in the Structure Plan. Those policies represent a significant challenge face with the responsibility of planning and managing the development of the Paurashava area. However, at present no authority is responsible for planning and managing physical development activities in the Paurashava and no regulation except Local Government (Paurashava) Ordinance, 2009 for controlling physical development. This poses a serious constraint to the implementation of the Land use Plan and in fact any other form of development plans.

The factors that have been taken into account in deciding the priority include such things as – the importance of the issue that the policy addresses, its potential impact on the lives of the

population, the ease with which it can be implemented, its urgency and its interdependence with other policies.

Prior to introduction of the regulations to implement the land use plan, legislative involvement is recommended here.

1. To control the air, water, noise and soil pollution, Conservation of Environment and Pollution Control Act, 1995 (Act No. I of 1995) was enacted. In the Paurashava, there is no authority for enforcing the provisions prescribed in the said Act. The pollution related with the implementation of land use component may be controlled with this Act.
2. Impose control on all type of buildings in the Paurashava according to the setback rule prescribed in the Building Construction (Amendment) Rules, 1996 (Notification No. S. R. O. No. 112-L/96). Building permission for extended areas shall be according to the land use provision prescribed in the plan. Any permission for building construction, front road width shall not be less than 16 ft. and the construction must follow the Building Construction (Amendment) Rules, 1996.
3. Haphazard development of commercial activities is the general scenario of the Paurashava. It is necessary to impose control on commercial activities provisioned in the Shops and Establishments Act, 1965 (Act No. VII of 1965).
4. In case of man-made canal, regulations prescribed in the Canal and Drainage Act, 1873 (Act No. VIII of 1873) is the best weapon. For the linking of canal with others and river considering drainage facilities the Act may be enforced.
5. For the conservation of archeological monuments or structures or historical development the Ancient Monuments Preservation Act, 1904 (Act No. VII of 1904) may be enforced. Archeological Department of Bangladesh and Paurashava authority through a partnership process may preserve such type of development.
6. To control air pollution due to brick burning with the establishment of brick field, Brick Burning Control Ordinance, 1989 (Ordinance No. VIII of 1989) is the appropriate regulation. The Paurashava authority may enforce this Ordinance with the authorization given by the government to him.
7. To control the medical practitioner, establishment of private clinics and pathological laboratories, the statute named Medical Practice, Private Clinics and Laboratories (Regulation) Ordinance, 1982 (Ordinance No. IV of 1982) was enacted. For efficient enforcement of the Ordinance, the Paurashava authority may execute the Ordinance with the authorization of government.
8. The Paurashava will have to exercise strictly Playfield, Open space, Garden and Natural Tank in Urban Areas Preservation Act, 2000 (Act No. XXXVI of 2000) to some specially important areas like, riverfront and water bodies, drainage channels, low land below certain level, designated open space, etc. Development restrictions are needed around security and key point installations. The provision of restriction will strengthen the power of the plan to safeguard its development proposals and land use provisions.
9. The government is authorized for establishment of hat and bazar with the acquisition of land through the statute named Hat and Bazar (Establishment and Acquisition) Ordinance, 1959 (No. XIX of 1959). In case of private hat and bazar, a management body is being empowered

through the Bangladesh Hats and Bazars (Management) Order, 1973 (P.O. 73/72). The Paurashava authority is also empowered establishing hat and bazar in his jurisdiction through the Local Government (Paurashava) Ordinance, 2009. Coordination may be framed among the government (Upazila Parishad), Paurashava and private owner for the establishment, development and management of the hat and bazar located in the Paurashava premises.

10. In the Paurashava premises, industrial development is controlled by the Bangladesh Cottage Industries Corporation through Bangladesh Cottage Industries Corporation Act, 1973 (Act No. XXVIII of 1973), Industrial Development Corporation through East Pakistan Industrial Development Corporation Rules, 1965 (No. EPIDC / 2A-2/63/354) and Factory Inspector through Factories Act, 1965 (Act No. IV of 1965). Locational aspects and issuing of trade license is controlled by the Paurashava authority. A joint coordination cell among those four authorities may control the establishment of factories and industries in the Paurashava.
11. In the Paurashava, for rain water harvesting, some specific ponds / tanks will needed to be preserved. A number of derelict tanks may be improved through tank improvement project and in this case Tanks Improvement Act, 1939 (Act No. XV of 1939) will support the Paurashava is regulatory aspects.
12. Except Khas land, a considerable amount of public land in the Paurashava may be identified as fallow land or unproductive land. In regulatory term those lands are considered as cultivable waste land and those lands are being fallow during five consecutive years. Those lands may be utilized under the guidance of Cultivable Waste Land (Utilization) Ordinance, 1959 (Ordinance No. E.P. XIII of 1959).
13. The Paurashava should raise its efforts on the imposition and realization of betterment fees to raise its income. In this case, East Bengal Betterment Fees Act, 1953 may be enforced.

11.3.2 Implementation, Monitoring and Evaluation of the Land use Plan

Implementation through Multi-Sectoral Investment Program: Major infrastructure development works such as primary roads, water supply, drainage, etc., will largely be controlled by Government. Public works requires efficient co-ordination through the Multi-Sectoral Investment Programme (MSIP).

Objective of a Multi-Sectoral Investment Programme (MSIP) will match a list of the development projects with the funding stream necessary to implement them. There are two basic activities that would determine the contents of MSIP. One activity would be to prioritize and schedule the investment projects of all public agencies so they will collectively help to achieve the development goals and objectives of the Land use Plan. Second activity would be to analyze the source and availability of fund for the prioritized list of development projects.

Implementation through Action Plans and Projects: Action Plans and Projects will be the implementation plans to solve problems at the local level. Action plans will take a direct approach toward plan implementation with a minimum of research, reports or elaborate planning methods. These projects will be easily identifiable and will require minimum resource.

Implementation through Development Control: Land use zoning is one of several methods of plan implementation to be considered. In all cases where some form of development, land use control may be applied; careful consideration requires the following ideologies:

- purpose to be achieved by the development controls;
- where controls should be applied;
- what aspect of development needs to be controlled;
- what type of development controls are required;
- what degree or level of development control is required;
- who will be affected by the required control;
- who will be affected by the controls and in what manner;
- when the controls should be applied;
- what will be the likely impact of the controls;
- how and by whom will the controls be administered and enforced.

Development control as an instrument of plan implementation may be selectively applied within the Land use Plan. Development controls would also be varied in intensity and detail to suit the particular circumstances. It is important that they should be clear and easily understood by all parties concerned. Since the entire Paurashava Master Plan 'package' has become statutory, development controls associated with its component plans would also be statutory.

Implementation by Facilitating Private Investment: Another approach that would be taken by government toward plan implementation will be to guide and facilitate investments made by the private sector. Government can achieve this with relative ease and at very low cost by setting up a legal and operational framework, coupled with suitable incentives, to facilitate land consolidation, plot boundary readjustment, efficient lay out of plots and provision of local infrastructure by the private sector. The benefits of this approach would be:

- increased efficiently of the urban land market would make, more private land available to urban households;
- would pass much of the development costs for local infrastructure to the private sector and land market mechanisms;
- would increase in land for development without large cash outlays by government to purchase land for development schemes; and
- would keep provision of land for community facilities virtually no cost to government.

Plan Monitoring

The Land use Plan would simply be tools for guiding and encouraging the growth and development of the Paurashava in a preferred manner. In a rapidly changing urban environment, the Land use Plan would require to keep up to date. If this is not done, within a few years it will be obsolete. Therefore, it is imperative that the requirement for regular updating of the Land use Plan be made a legal requirement.

For implementation of the various program components of the Land use Plan appropriate administrative measures will have to be undertaken. This will essentially include project preparation and monitoring of their execution and evaluation. For carrying out all these activities appropriate institutional measures are also be needed.

Evaluation

Monitoring and evaluation of on going and implemented projects is essential to keep the future course of action on the right track. An on going project should be regularly monitored and handicaps identified to enable taking appropriate measures at the right time.

Post implementation evaluation is also needed to take appropriate measures correcting past errors-from project preparation to implementation.

The top level supervision has to be done by a high level supervisory committee headed by Paurashava Mayor, LGED representative and Local Government Ministry. Other members of the committee will be local Ward Councilors, local community leader/social workers and the Town Planner of the Paurashava. The committee will supervise implementation works regularly and issue necessary instructions to expedite the works of implementation.

Co-ordination

A Planning Section of Paurashava should have close interaction with the citizen of Paurashava at large in order to make people aware of the benefits of a good plan and, therefore, their social responsibility to promote plan implementation in one hand and also resist contraventions on the other. A specific interactive cell is recommended to operate in this regard with following responsibilities:

- Provide pre-application advice to residents, consultants and developers about land use management issues and application procedures for the submission of development applications.
- Enforce planning and land use management related legislation and zoning scheme regulations.
- Issue of property zoning certificates.
- Investigate and resolve land use management complaints, illegal land use and prosecuting contraventions.

Such interactive windows may be opened in various convenient locations to ensure ease of the answers to commonly asked questions may be shown in the internet. Besides, those may be shown in the print and electronic media time to time.

In spontaneous areas, while all out people's co-operation is needed for project implementation; there will also be some elements of negotiation. Negotiation will be particularly needed in case of road widening projects. It will be a crucial task for Paurashava to convince the affected people to give up their land for road use. Efforts should be made to convince the land owners on the ground of enhancement of property value due to road widening. In case people refuse to offer land free of cost necessary arrangements may have to be made for payment of compensation. This process of negotiation will be very critical, cumbersome and time consuming, and therefore, has to be handled with utmost care and patience. The best results can be accrued only by wining people's confidence. In case the authority fails to get peoples co-operation they should exercise power of compulsory acquisition of land. Attempts may be made to engage NGOs / CBOs to work as catalysts in negotiation.

Chapter- 12
TRANSPORTATION AND TRAFFIC MANAGEMENT PLAN

12.1 Introduction

Transportation occupies a high place in modern life. Transportation has great influence in the advancement of all spheres of life. Transport planning is a science that seeks to study the problems that arise in providing transportation facilities in an urban, regional or national setting and to prepare a systematic basis for planning such facilities. Town and country planning is a science that deals with the study of the urban or country “system” communications through channels. Transport planning is an important part of overall Town and Country Planning, since it deals with the transport network which is an important channel of a communication. Transportation and Traffic Management Plan is one of the Components of Urban Area Plan.

In Bangladesh, Transport Planning is not in practice still. Recently, government has developed the National Land Transport Policy, 2004 in order to provide a safe, integrated, effective transport system. Also, attempt has been taken to link relationship with land, economic activities and road network development. In preparing the Traffic and Transport Management Plan (Component-2) for Daulatkhan Paurashava under Urban Area Plan (Volume-II), the Survey Phase and Interim phase has been completed successfully. In precedence of these activities, this plan is incepted.

12.2 Approach and Methodology

Transport study provides special attention to urban transportation planning as it greatly influences the location decisions and travel behavior of people, goods and services. Transportation is critical for the efficiency of towns contributing to their productivity and economic growth. A good network of roads and other transportation mode coupled with an efficient transport management system makes a substantial contribution to the "working efficiency" of cities and towns and enables them to become catalysts for social and economic development. On the other hand, the impact of a poorly designed urban transport system is manifested in terms of traffic congestion, delays, accidents, high energy consumption, high pollution of the environment and inequitable access to services. A well-planned transportation system results in orderly urban growth, greater use of urban public transport, lower vehicular pollution, and shorter auto trips.

A comprehensive transportation study is undertaken to investigate the existing transportation infrastructure, transportation modes and modal share scenario of Daulatkhan Paurashava and to estimate the anticipated transportation needs of the town up to the year 2031. Accordingly, the transportation study is conducted to determine the present travel patterns and the characteristics of existing transportation facilities to forecast the future travel demand and develop a transportation plan.

Traffic volume survey has been conducted to find out the scenario of average daily traffic, peak hour traffic and off-peak hour traffic. Origin-Destination survey has been carried out to know the pattern of traffic generation, traffic distribution, modal split etc. Speed and delay survey has been conducted at 2 points on major local roads.

Bus and tempo fleet data were collected from local transport owners' offices like, Bus Owners' Association, Tempo Owners' Association. They also provided information about routes, trips and movement data. Information about bus station and tempo station were collected from the respective owners' association and the Paurashava/District Administration. Year wise data of non-motorized traffic were collected from the Daulatkhan Paurashava, where these vehicles are registered.

12.3 Existing Conditions of Transportation Facilities

This section describes existing transportation facilities namely roadway and water way characteristics, modal share of vehicular traffic, level of service which incorporate degree of traffic congestion and delay and analysis existing deficiencies in transport sector of Daulatkhan Paurashava.

12.3.1 Road Network

12.3.1.1 Roadway Characteristics and Functional Classification

The primary roads are the urban highways whose function is to channelize the longer movement from one place to another and beyond. The primary road of Daulatkhan Paurashava is connected in north and north south (Bhola and Borhanuddin) directions and these roads maintain connectivity with the outside areas of Paurashava. Moreover, the primary roads are also connected with secondary and access roads and all these roads maintain good connectivity within the Paurashava area. Secondary road cannot provide access to individual buildings because the consequent frequency of interruptions would give rise to traffic dangers. Tertiary road connect secondary road with access road. But in Daulatkhan Paurashava most of the roads cannot be defined according to road hierarchy.

From the physical feature survey it has been observed that about 69.50% (57.61 sq.km) of the roads are Pucca, 21.90% (18.15 sq.km) roads Kutcha and the rest of the roads are Semi-pucca 8.59% (7.12 sq.km). There are 12 bridges at Daulatkhan Paurashava. All the bridges are pucca and condition of pavement are good. There are 10 box culvert with 3 pipe culverts exist at Daulatkhan Paurashava. The rest of the roads are primary roads. **Map 12.1** shows existing road network of Daulatkhan Paurashava.

Table 12.1: Type Wise Length and Area of Existing Road

Types of road	Length (in km)	%	Area (in sq.m)	%
Kutcha Road	6.42	21.60	18153.93	21.90
Pucca Road	19.53	65.19	57605.84	69.50
Semi pucca Road	3.96	29.96	7122.73	8.59
Total	**29.96**	**100.00**	**82882.51**	**100.00**

Source: Physical Feature Survey, 2011.

Traffic volume survey has been conducted at two major intersections namely Daulatkhan Post Office More and Hafizia Madrasha More comprising eight road links (Hafizia Madrasa to Sonali

bank road, Hafizia Madrasa to Resubi Govt primary School, Hafizia Madrasa to Road 1, Post office to Sonali Bank, Post office to Upazila Parishad Complex, Post office to Daulatkhan

Primary school, Hospital to Paurashava Building, Dimond Cinema Hall to Abu Abdullah College) that are the dominant traffic generating links of Paurashava Area. Major intersections of Daulatkhan Paurashava are Post Office More and Hafizia Madrasha More, etc. Beside this about 26.77 km access roads provide access to all the wards. Width of access road varies 1-4.5 m. Mainly LGED is responsible for construction and maintenance of most of the roads within the Paurashava.

12.3.1.2 Mode of Road Transport

There is no public or private bus service available for intra-zonal movement within Daulatkhan Paurashava. Intra-zonal movement among the Paurashava area is mostly done through the non-motorized vehicles such as rickshaw, bi-cycle, van, etc. People also use some motorized vehicles such as motorcycle, Auto Rickshaw, etc. Additionally, van is used for carrying both passengers and goods. Rickshaw is the most dominant transport for intra zonal movement. The average percentages of traffic composition are Truck 0.75%, Bus 0.53%, Car/micro-bus 0.91%, Auto rickshaw 7.05%, Motor cycle 4.46%, Rickshaw/van 61.25% and Bi-cycle 25.06%.

12.3.1.3 Intensity of Traffic Volume

Traffic volume survey has been conducted to find out total discharging traffic volume both in peak hour and off peak hour at there is no bus stand in Daulatkhan Paurashava.

Peak Hour has been considered from 8.00 to 12.00 and 16.00 to 20.00 because most of the educational and commercial movement has been accomplished within the time periods and traffic characteristics of these time periods is different and higher than other time periods.

As there is a designated day as hat day in Daulatkhan Paurashava, working day, weekend and Hat day traffic volume is counted for transportation survey. Survey result shows that non-motorized vehicle (86.31%) acts dominant role in Daulatkhan Paurashava.

Survey report shows that Hafizia Madrasha to Road 1 has the highest Peak Hour Traffic Volume (405.8 PCUs) per hour and Hospital to Paurashava Building road has the lowest Peak Hour Traffic Volume (191.8 PCUs) per hour. Post office to Daulatkhan Primary school Road has the highest Off Peak Hour Traffic Volume (205.2 PCUs) per hour and Hospital to Paurashava Building Road has the lowest Off Peak Hour Traffic Volume (60.6 PCUs) per hour.

Analyzing the characteristics of Peak Hour and Off Peak Hour traffics, it has been observed that the Peak Hour Traffic is more than 2 times higher than Off Peak Hour Traffic in all of the surveyed road sections.

There is also traffic volume variation at hat day and non-hat day. Generally hat time starts from afternoon. So, variation of traffic volume also exists. In case of hat day it has been observed that specially the two road links that are connected with bazaar area face peak hour traffic volume 8.00-12.00 and 16.00-20.00.

12.3.1.4 Level of Service: Degree of Traffic Congestion and Delay

In order to prepare a fruitful traffic management plan, it is really important to evaluate the level of service of the road sections. Level of service of the surveyed road sections has been evaluated using the ratio of volume and capacity. The V/C ratio is defined as the ratio of maximum actual volume of traffic in the peak hour in a road way, expressed in PCUs per hour to capacity of that roadway expressed in PCUS per hour. Capacity of roadway largely depends on number of lane, road width and roadway condition. In Daulatkhan Paurashava area all the surveyed road sections are one lane road.

In Daulatkhan Paurashava all the roads have free flow and transport density is low. The major inter sections are not signalized so no delay is exist here.

12.3.1.5 Facilities of Pedestrians

Pedestrian facility is one of the Transportation facilities which are required to create a pedestrian friendly environment. Most of the roads at Daulatkhan Paurashava do not have foot-path. So, pedestrian facility is very poor at Daulatkhan Paurashava. But this facility is one of the vital needs for urban life.

12.3.1.6 Primary Considering Issues for Planning

Major deficiencies of transportation and traffic management are below:

- Present road network has developed without maintaining any hierarchy or planning rules.
- Poor and damaged road conditions are the most dominant transportation problem of Daulatkhan Paurashava.
- Narrow road and lack of transport modes are another transportation problems of the area
- Absence of stand and proper parking spaces grounds haphazard condition and congestion.
- Lack of traffic management system and low quality transports result low quality of service to the residents of Daulatkhan Paurashava.
- Absence of signalized crossing.
- The Paurashava has no pedestrian facility that directly hampers the safety of the people
- Lack of traffic control aids, street furniture, street lighting, etc.
- Water transport vehicles are not adequate and service quality is not satisfactory

Roadway Capacity Deficiency

Roadway Capacity deficiencies occur wherever the travel demand on a road is close to or higher than the vehicle capacity of that roadway. In order to identify the road capacity deficiency, it is required to make a comparison between existing Level of service (LOS) of major roads with the standard one. By comparing those it has observed that all the surveyed roads of Daulatkhan Paurashava have free flow and transport density is low. Existing capacity of major roads are not consistent with standard capacity limit and the future traffic flow and demand may exceed the limit.

Moreover, the average width of the primary roads and secondary roads of Daulatkhan Paurashava are 4 meter and 3.5 meter and 3.75 meter respectively whereas according to the PMO standard the right of way of primary road, secondary road and access road will be 18-24 meter, 13-16 meter and 6-8 meter respectively. So these roads have designed without maintaining any standards. However, these roads have to be widened where possible and essential.

Operational, Safety, Signal and other Deficiencies

- At present, there is no selected authority for the management of traffic at Daulatkhan Paurashava. Generally The Police Department's Traffic wings are the main eligible.
- As the roads of Daulatkhan Paurashava have free flow of traffic and most of the traffic are non-motorized both in hat and non-hat day, road safety exists naturally in the Paurashava.
- Traffic signaling system is totally absent in the Paurashava. On some specific point of primary and secondary roads, traffic signaling may be needed.

12.3.1 Condition of Water Transport

In the Daulatkhan Paurashava area there is no Launch ghat. There is a lanch ghat near to Daulatkhan Paurashava which is also used by the residents of Daulatkhan Paurashava. Water transport network of Daulatkhan Paurashava has significant importance in carrying goods. Launch and trawler are used for carrying both passenger and commodity frequently. As this Launch Ghat is not within study area, it is not considered in this study.

12.3.2 Condition of other Transport

At this stage there is no need to propose car way, rail way in this Paurashava.

12.4 Future Projections

With the increase of population, demand on travel will be increase with the time. Estimating the demand for transportation facilities and services is one of the most important analysis tasks in transportation planning. The demand includes not only passenger travel but also the movement of goods. Whether conducting a regional transportation planning study or examining the impacts of

transportation of a new development site, estimating expected travel demand at some future date is critical point of departure for transportation planning.

12.4.1 Travel Demand Forecasting for Next 20 Years

At Daulatkhan Paurashava, the existing road network is quite sufficient for accommodating present volume of traffic. At Daulatkhan Paurashava about 21.6% of the roads are kutcha and needs to be constructed as pucca or at least semi-pucca. Moreover, most of the roads are

narrow. Road Alignment should be straight in main road for improving transport quality. Widening of these roads and new construction of some roads will act as a vital role for accommodating future traffic volume. Moreover, the people of Daulatkhan Paurashava depend on both road network and water transport network. This will also help to reduce pressure on road transport network. Forecasting travel demand requires variety of data such as historical data on traffic, missing link, economic importance, trip generation and distribution pattern, routes choice, modal spilt, etc. Growth direction is also a considerable component for the demand analysis of the road.

12.4.2 Transportation Network Considered

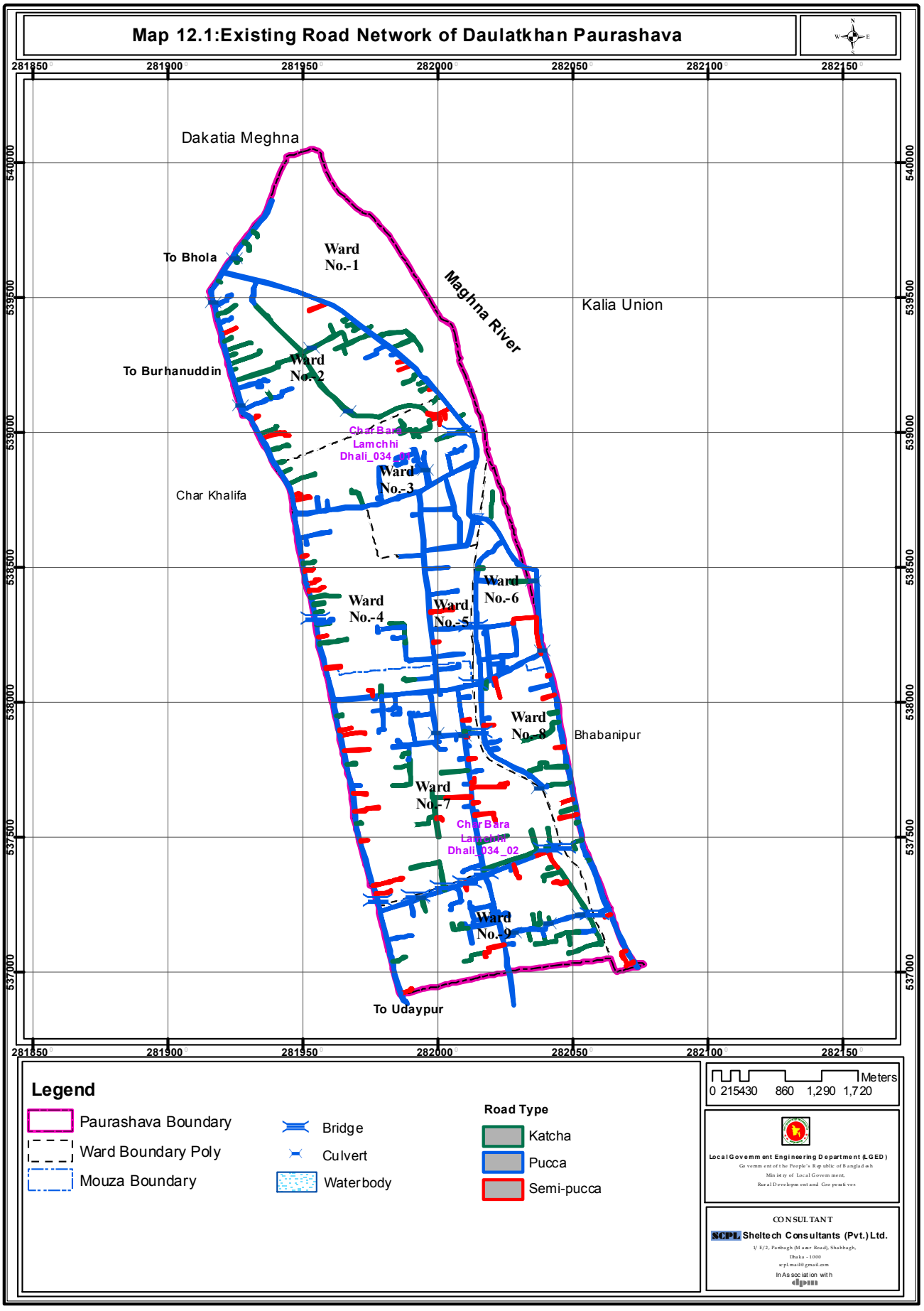
The primary road of Daulatkhan Paurashava is well connected in both north and north south directions within the Upazila areas and the primary roads are also connected with secondary and access roads and all these roads maintain good connectivity within the Paurashava area. But these roads are not wide enough on the basis of standard. So, the narrow roads have to be widened on the basis of standards and katcha roads will be improved with the time and also traffic management system will be improved. Besides, some new roads also have been proposed to accommodate the future travel demand. Moreover, footpath facilities have to be introduced to meet up the demand of pedestrians.

12.4.3 Future Traffic Volume and Level of Service

In the year 2011, the population of Daulatkhan Paurashava is about 16728 and after 20 years it will be 20411 (2031). At present highest PCU/hr is about 205.2 at non-hat day and at hat day is about 1312.6. It means traffic congestion is not alarming.

It is expected that gradual implementation of the components prescribed in the Master Plan will increase traffic volume. But at the same time the roads will be widened and new roads will be constructed. So, the increase traffic will be accommodated by these roads.

After the improvement of roads, commercial and industrial activities will also be boost up. This may increase traffic volume of the area. The proposed transport network and traffic management system will make it possible to remain the traffic scenario stable for next 20 years.


Map 12.1:Existing Road Network of Daulatkhan Paurashava
Dakatia Meghna
To Bhola
Ward No.-1
Maghna River
Kalia Union
To Burhanuddin
Ward No.-2
Char Bata Lamchhi Dhali_034_01
Ward No.-3
Char Khalifa
Ward No.-4
Ward No.-5
Ward No.-6
Ward No.-8
Bhabanipur
Ward No.-7
Char Bata Lamchhi Dhali_034_02
Ward No.-9
To Udaypur
281850
281900
281950
282000
282050
282100
282150
540000
539500
539000
538500
538000
537500
537000
Legend
Paurashava Boundary
Ward Boundary Poly
Mouza Boundary
Bridge
Culvert
Waterbody
Road Type
Katcha
Pucca
Semi-pucca
Meters
0 215430 860 1,290 1,720
Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government,
Rural Development and Cooperatives
CONSULTANT
SCPL Sheltech Consultants (Pvt.) Ltd.
In Association with

12.5 Transportation Development Plan

The current chapter of the report is about Transport Development Plan covering its development plan proposals and management of the proposed project area up to the year 2031. The report describes existing transportation facilities and proposal on the important facilities such as, bus terminal, rickshaw stand, fuel station and passenger sheds.

12.5.1 Road Network Plan

The standards are meant for use by UTIDP, LGED and other planning and development agencies. The standards have been adopted by the consultants to draw up the transportation development plan. Following are the suggested planning standards (Table 12.2) for road network development. These road hierarchies are proposed based on the functional linkage of the road of Daulatkhan Paurashava:

Table 12.2: Standards of Roads Proposed by PMO

Landuse Category	Hierarchy of Roads	Right of Way (ROW)
Circulation Network	Primary Roads	100-150 feet
	Secondary Roads	60-100 feet
	Tertiary Road	20-40 feet

Source: UTIDP, PMO, LGED

Daulatkhan is a small town with a very low volume of internal and external traffic movement. Considering traffic volume and discussion with Paurashava authority and local stakeholders consultants have established a road hierarchy based on the functional area within the Paurashava as well as the internal and external linkage. Existing Access roads will be connected with Tertiary and Secondary roads for better mobility. Following table shows the standard of future development of road network.

Table 12.3: Standard for Future Development of the Road Network of Daulatkhan Paurashava

Landuse Category	Hierarchy of Roads	Right of Way (ROW)
Circulation Network	Paurashava Primary Roads	60-80 feet
	Paurashava Secondary Roads	40-50 feet
	Paurashava Local Roads	20-30 feet

Source: Proposed by Consultants

12.5.2 Design Principals and Standards

In preparing detail design some basic principals have been followed:

- Road Hierarchy Standards provided by PMO
- Relevant regulations of Building construction Act, 1952 (amendment in 1996), followed by Paurashava

- follow up the National Urban Land Transport Policy, 2004
- follow up the Transport planning relevant Books, articles and papers (Ref: Traffic Engineering and Transport Planning, Dr. L.R. Kadiyali)

A) Intersection improvement

This measures can be categorized into 2 types, are as follows:

a. Channelization

b. Improvement of Intersection geometry

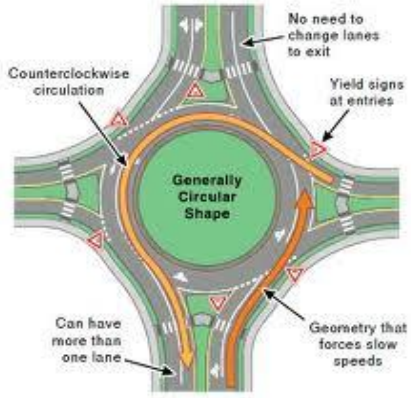


Fig 12.1: Channelization Measures at Major Intersections

a. Channelization

Channelization of intersection at grade is the separation or regulation of conflicting traffic movements into definite paths of travel by the use of pavement markings, raised islands, or other suitable means to facilitate the safe and orderly movements of both vehicles and pedestrians. Channelization is done for:

- Separation of conflicts (by using roundabout, raised island, etc.)
- Reduction of conflict points
- Reduction of excessive pavement areas

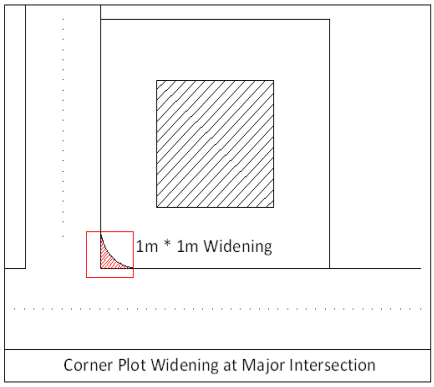


Fig 12.2: Corner Plot Widening at Intersections

b. Improvement of intersection geometry includes:

- Corner Plot widening
- Establishment of Traffic islands

According to Building Construction Act, 1996, in each Corner plot of major intersection, 1m×1m land area has to be open for traffic movement.

B) Land use Proposals at the Major Intersections

According to Building Construction Act, 1996, the construction permission of Shopping Complex, Cinema Hall or similar type of buildings are restricted within 50 m (164 ft) from major road intersections to avoid traffic congestion.

C) Prioritization in ROW Space Allocation according to Road Hierarchy

In pertaining with the National Land Transport Policy, 2004, for promoting an efficient road transport system, provision of Motorized and Non-motorized vehicles is prioritized. Therefore, effective road space allocation and utilization is also emphasized in national policy. At first, a uniform priority has been fixed for designing the whole Road Network Development.

Basis of Prioritization

Prioritization has been formed in light of National Land Transport Policy, 2004.

- To promote the speed and mobilize the activities, motorized vehicles (especially Bus lane) are encouraged
- To make a environmental and economical balance (employment pattern and Income level), provision of non-motorized vehicles are kept
- To ensure safe movement of citizens, footway should be provided

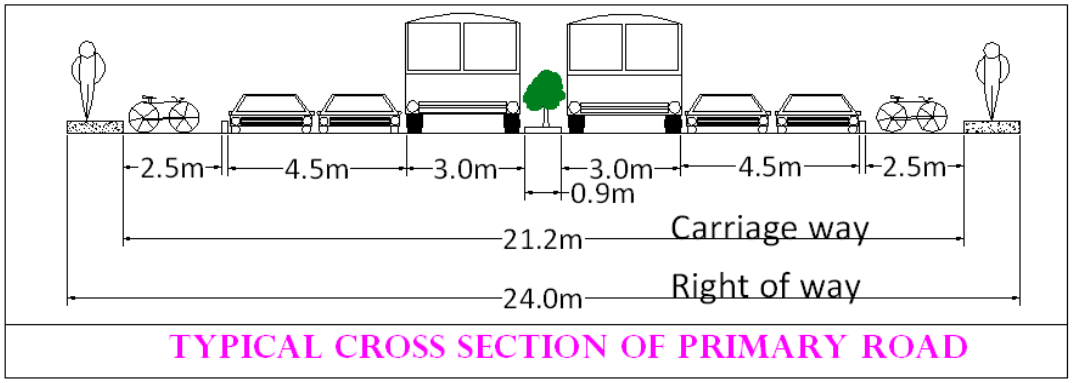
Though, uniform space allocation is formed but Right Of Way (ROW), land use and the demand of different type of vehicles are not same throughout the whole Paurashava area. So, the design priority has been differed at road hierarchy as follows:

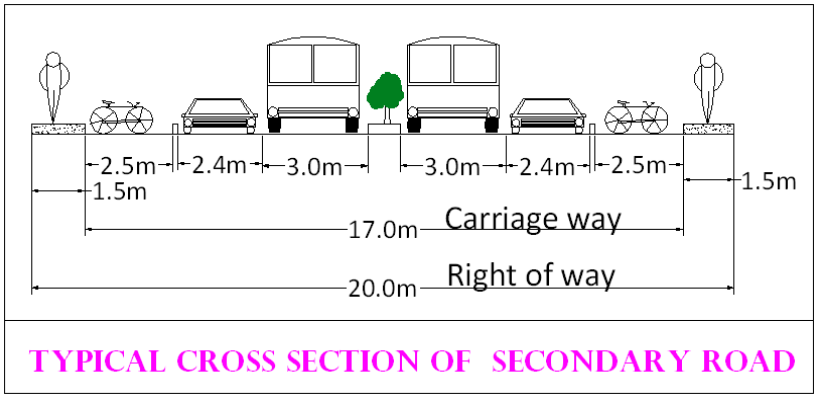
Space Allocation at ROW Considering Road Hierarchy

Priority	Primary Road	Secondary Road	Tertiary Road	Access Road
1	Provide one lane (3.0m) for motorized vehicles including Bus, Car and Jeep etc. The width of each lane is minimum 3 m depending on the availability of space.	Provide one lane (3.0 m) for motorized vehicles including Bus, Car and Jeep etc. The width of each lane is minimum 2.5 m depending on the availability of space.	Provide one lane (3 m) for motorized and non-motorized vehicles including Car, Jeep, Motorcycle and Rickshaws etc. The width of each lane is minimum 2.5 m depending on the availability of space.	Provide one lane (3 m) for motorized and non- motorized vehicles including Car, Jeep, Motorcycle and Rickshaws etc. The width of each lane is minimum 2.5 m depending on the availability of space.
2	Non-motorized vehicle paths (Service lane), 2.5m wide in each direction with over-taking lane including physical segregation of .5ft wide and 1ft height concrete block.	Non-motorized vehicle paths (Service lane), 2.5m wide in each direction with over-taking lane including physical segregation of .5ft wide and 1ft height concrete block.	Pedestrian paths as per existing demand (minimum 1.5 m)	Pedestrian paths as per existing demand (minimum 1.5 m)
3	Pedestrian paths as per existing demand (minimum 1.5 m)	Pedestrian paths as per existing demand (minimum 1.5 m)	Provide one lane for motorized and non-motorized vehicles including Car, Jeep, Motorcycle and Rickshaws etc. depending on the availability of space.	
4	2 to 3 or more lanes for motorized vehicles. The width of each lane is minimum 2.5m depending on the availability of space.	2 to 3 lanes for motorized vehicles. The width of each lane is minimum 2.5m depending on the availability of space.		

Fig 12.3: Space Allocation of Road Hierarchy

Figure 12.3 shows the cross section of different types of roads.





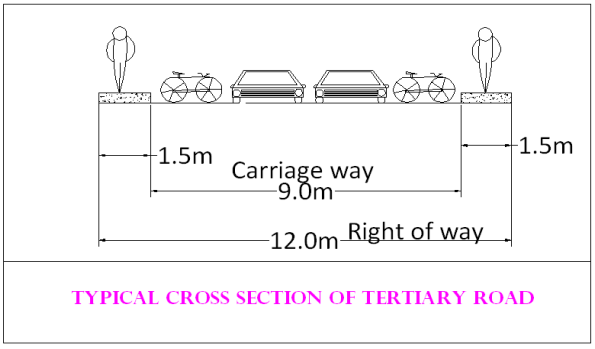


Fig 12.4: Typical Cross-Section of Various Types of Roads

12.5.3 Proposal for Improvement of the Existing Road Networks

The improvement plan for existing road network has been prepared considering two categories, which are as follows:

A. Roads connect Paurashava with Regional Road Network

B. Roads provide internal network of the Paurashava

All of the road should be developed in 20 years implementation time. It will be done in three phases; 1st phase (1st 5 years), 2nd phase (2nd 5 year) and 3rd phase (last 10 year). In the

master plan, about 30.84 kilometers roads have been proposed for widening. Phase wise road widening proposal has been shown in Table 12.4.

Table 12.4 Phase Wise Road Widening Proposal for Existing Road

Road ID	Road Type	Width (in ft)	Length (in m)	Development Phase
PR-1	Primary Road	80.00	326.17	1st
PR-2	Primary Road	80.00	0.02	1st
PR-3	Primary Road	80.00	777.02	1st
PR-4	Primary Road	80.00	0.02	1st
PR-5	Primary Road	80.00	195.28	1st
PR-6	Primary Road	80.00	3.67	1st
PR-7	Primary Road	80.00	0.44	1st
PR-8	Primary Road	80.00	711.04	1st
PR-9	Primary Road	80.00	0.44	1st
PR-10	Primary Road	80.00	776.47	1st
PR-11	Primary Road	80.00	339.12	1st
SR-1	Secondary Road	40.00	1075.82	1st
SR-2	Secondary Road	40.00	12.91	1st
SR-3	Secondary Road	40.00	15.34	1st
SR-4	Secondary Road	40.00	10.45	1st
SR-5	Secondary Road	40.00	9.60	1st
SR-6	Secondary Road	40.00	9.61	1st
SR-7	Secondary Road	50.00	1.85	1st
SR-8	Secondary Road	40.00	1.85	1st
SR-9	Secondary Road	40.00	0.02	1st
SR-10	Secondary Road	50.00	0.01	1st
SR-11	Secondary Road	40.00	0.02	1st
SR-12	Secondary Road	50.00	12.25	1st
SR-13	Secondary Road	50.00	66.22	1st
SR-14	Secondary Road	50.00	832.66	1st
SR-18	Secondary Road	40.00	52.25	1st
SR-19	Secondary Road	40.00	11.41	1st
SR-20	Secondary Road	40.00	0.02	1st
SR-21	Secondary Road	40.00	323.91	1st
SR-22	Secondary Road	40.00	18.65	1st
SR-23	Secondary Road	40.00	9.35	1st
SR-24	Secondary Road	50.00	134.98	1st
SR-25	Secondary Road	50.00	5.59	1st
SR-26	Secondary Road	50.00	227.36	1st
SR-30	Secondary Road	50.00	3.41	1st
SR-31	Secondary Road	50.00	442.26	1st
SR-32	Secondary Road	40.00	0.02	1st
SR-33	Secondary Road	50.00	0.01	1st
SR-34	Secondary Road	50.00	0.38	1st
SR-35	Secondary Road	50.00	0.29	1st
SR-36	Secondary Road	50.00	498.38	1st
SR-37	Secondary Road	50.00	6.17	1st
SR-38	Secondary Road	50.00	18.24	1st
SR-39	Secondary Road	50.00	242.43	1st
SR-40	Secondary Road	50.00	0.28	1st
SR-41	Secondary Road	50.00	0.38	1st
SR-42	Secondary Road	50.00	0.29	1st
SR-43	Secondary Road	40.00	247.21	1st
SR-44	Secondary Road	40.00	9.13	1st
SR-45	Secondary Road	50.00	7.12	1st
SR-46	Secondary Road	50.00	682.17	1st
SR-47	Secondary Road	50.00	1.43	1st
SR-48	Secondary Road	50.00	31.14	1st
SR-49	Secondary Road	50.00	494.39	1st

Road ID	Road Type	Width (in ft)	Length (in m)	Development Phase
SR-50	Secondary Road	50.00	0.28	1st
SR-51	Secondary Road	40.00	463.72	1st
SR-52	Secondary Road	40.00	0.97	1st
SR-53	Secondary Road	50.00	288.33	1st
SR-54	Secondary Road	50.00	12.35	1st
SR-55	Secondary Road	50.00	1049.22	1st
SR-56	Secondary Road	50.00	17.08	1st
SR-57	Secondary Road	50.00	7.32	1st
SR-58	Secondary Road	50.00	14.49	1st
SR-59	Secondary Road	50.00	343.38	1st
TR-1	Tertiary Road	30.00	2.02	2nd
TR-2	Tertiary Road	30.00	2.02	2nd
TR-4	Tertiary Road	30.00	0.01	2nd
TR-5	Tertiary Road	30.00	0.01	2nd
TR-7	Tertiary Road	30.00	12.67	2nd
TR-8	Tertiary Road	30.00	22.66	2nd
TR-9	Tertiary Road	30.00	12.20	2nd
TR-10	Tertiary Road	30.00	15.41	2nd
TR-11	Tertiary Road	30.00	263.16	2nd
TR-12	Tertiary Road	30.00	351.82	2nd
TR-13	Tertiary Road	30.00	12.51	2nd
TR-14	Tertiary Road	30.00	279.01	2nd
TR-15	Tertiary Road	30.00	8.19	2nd
TR-16	Tertiary Road	30.00	304.40	2nd
TR-22	Tertiary Road	30.00	0.01	2nd
TR-23	Tertiary Road	30.00	0.01	2nd
TR-25	Tertiary Road	30.00	4.53	2nd
TR-26	Tertiary Road	30.00	261.82	2nd
TR-27	Tertiary Road	30.00	5.66	2nd
TR-28	Tertiary Road	30.00	29.70	2nd
TR-29	Tertiary Road	30.00	3.78	2nd
TR-30	Tertiary Road	30.00	74.39	2nd
TR-31	Tertiary Road	30.00	12.21	2nd
TR-32	Tertiary Road	30.00	96.72	2nd
TR-38	Tertiary Road	30.00	0.08	2nd
TR-40	Tertiary Road	30.00	36.03	2nd
TR-41	Tertiary Road	30.00	1.08	2nd
TR-42	Tertiary Road	30.00	62.28	2nd
TR-43	Tertiary Road	30.00	12.21	2nd
TR-44	Tertiary Road	30.00	93.25	2nd
TR-45	Tertiary Road	30.00	12.22	2nd
TR-46	Tertiary Road	30.00	76.54	2nd
TR-47	Tertiary Road	30.00	12.23	2nd
TR-48	Tertiary Road	30.00	23.55	2nd
TR-55	Tertiary Road	30.00	0.08	2nd
TR-59	Tertiary Road	30.00	363.68	1st
TR-60	Tertiary Road	30.00	5.89	2nd
TR-61	Tertiary Road	30.00	200.26	2nd
TR-62	Tertiary Road	30.00	12.91	2nd
TR-63	Tertiary Road	30.00	211.35	2nd
TR-64	Tertiary Road	30.00	12.24	2nd
TR-65	Tertiary Road	30.00	82.42	2nd
TR-66	Tertiary Road	30.00	147.92	2nd
TR-67	Tertiary Road	30.00	7.63	2nd
TR-68	Tertiary Road	30.00	133.23	2nd
TR-69	Tertiary Road	30.00	7.64	2nd
TR-70	Tertiary Road	30.00	159.08	2nd
TR-71	Tertiary Road	30.00	7.63	2nd
TR-72	Tertiary Road	30.00	97.10	2nd

Road ID	Road Type	Width (in ft)	Length (in m)	Development Phase
TR-73	Tertiary Road	30.00	7.63	2nd
TR-74	Tertiary Road	30.00	105.71	2nd
TR-82	Tertiary Road	30.00	25.80	2nd
TR-84	Tertiary Road	30.00	90.26	2nd
TR-85	Tertiary Road	30.00	35.37	2nd
TR-86	Tertiary Road	30.00	1.86	2nd
TR-88	Tertiary Road	30.00	7.98	2nd
TR-89	Tertiary Road	30.00	117.06	2nd
TR-90	Tertiary Road	30.00	49.82	2nd
TR-91	Tertiary Road	30.00	7.72	2nd
TR-92	Tertiary Road	30.00	27.24	2nd
TR-93	Tertiary Road	30.00	85.14	2nd
TR-94	Tertiary Road	30.00	7.83	2nd
TR-95	Tertiary Road	30.00	7.57	2nd
TR-96	Tertiary Road	30.00	334.99	2nd
TR-97	Tertiary Road	30.00	8.28	2nd
TR-98	Tertiary Road	30.00	20.55	2nd
TR-99	Tertiary Road	30.00	57.19	2nd
TR-113	Tertiary Road	30.00	7.64	2nd
TR-114	Tertiary Road	30.00	6.80	2nd
TR-115	Tertiary Road	30.00	25.12	2nd
AR-1	Access Road	20.00	12.23	2nd
AR-2	Access Road	20.00	20.48	2nd
AR-3	Access Road	20.00	12.20	2nd
AR-4	Access Road	20.00	26.59	2nd
AR-5	Access Road	20.00	13.05	2nd
AR-6	Access Road	20.00	160.53	2nd
AR-7	Access Road	20.00	12.83	2nd
AR-8	Access Road	20.00	11.73	2nd
AR-9	Access Road	20.00	2.74	2nd
AR-10	Access Road	20.00	2.03	2nd
AR-11	Access Road	20.00	1.96	2nd
AR-12	Access Road	20.00	1.89	2nd
AR-13	Access Road	20.00	2.12	2nd
AR-14	Access Road	20.00	1.86	2nd
AR-15	Access Road	20.00	2.08	2nd
AR-16	Access Road	20.00	1.88	2nd
AR-17	Access Road	20.00	1.94	2nd
AR-18	Access Road	20.00	1.86	2nd
AR-19	Access Road	20.00	1.90	2nd
AR-20	Access Road	20.00	1.85	2nd
AR-21	Access Road	20.00	6.24	2nd
AR-22	Access Road	20.00	20.26	2nd
AR-23	Access Road	20.00	6.30	2nd
AR-24	Access Road	20.00	17.34	2nd
AR-25	Access Road	20.00	6.80	3rd
AR-26	Access Road	20.00	84.38	3rd
AR-27	Access Road	20.00	6.59	3rd
AR-28	Access Road	20.00	194.30	3rd
AR-29	Access Road	20.00	1.97	3rd
AR-33	Access Road	20.00	0.02	3rd
AR-34	Access Road	20.00	0.01	3rd
AR-35	Access Road	20.00	0.01	3rd
AR-36	Access Road	20.00	0.01	3rd
AR-37	Access Road	20.00	0.01	3rd
AR-38	Access Road	20.00	0.01	3rd
AR-39	Access Road	20.00	0.01	3rd
AR-40	Access Road	20.00	0.01	3rd
AR-41	Access Road	20.00	0.02	3rd

Road ID	Road Type	Width (in ft)	Length (in m)	Development Phase
AR-42	Access Road	20.00	0.01	3rd
AR-43	Access Road	20.00	0.01	3rd
AR-44	Access Road	20.00	0.01	3rd
AR-45	Access Road	20.00	12.25	2nd
AR-46	Access Road	20.00	1.45	2nd
AR-47	Access Road	20.00	12.48	2nd
AR-48	Access Road	20.00	64.90	2nd
AR-49	Access Road	20.00	12.84	2nd
AR-50	Access Road	20.00	38.65	2nd
AR-51	Access Road	20.00	12.35	2nd
AR-52	Access Road	20.00	47.08	2nd
AR-53	Access Road	20.00	12.24	2nd
AR-54	Access Road	20.00	61.90	2nd
AR-55	Access Road	20.00	12.21	2nd
AR-56	Access Road	20.00	113.63	2nd
AR-57	Access Road	20.00	12.22	2nd
AR-58	Access Road	20.00	20.94	2nd
AR-59	Access Road	20.00	12.20	2nd
AR-60	Access Road	20.00	73.85	2nd
AR-61	Access Road	20.00	26.77	2nd
AR-62	Access Road	20.00	8.15	2nd
AR-63	Access Road	20.00	12.35	2nd
AR-64	Access Road	20.00	168.01	2nd
AR-65	Access Road	20.00	57.26	2nd
AR-66	Access Road	20.00	12.22	2nd
AR-67	Access Road	20.00	19.68	2nd
AR-68	Access Road	20.00	12.54	2nd
AR-69	Access Road	20.00	98.30	2nd
AR-70	Access Road	20.00	12.28	2nd
AR-71	Access Road	20.00	148.12	2nd
AR-72	Access Road	20.00	12.33	2nd
AR-73	Access Road	20.00	115.30	2nd
AR-74	Access Road	20.00	6.38	2nd
AR-75	Access Road	20.00	62.07	2nd
AR-76	Access Road	20.00	36.46	2nd
AR-77	Access Road	20.00	4.57	2nd
AR-78	Access Road	20.00	4.74	2nd
AR-79	Access Road	20.00	22.19	2nd
AR-80	Access Road	20.00	4.49	2nd
AR-81	Access Road	20.00	16.61	2nd
AR-82	Access Road	20.00	31.94	2nd
AR-83	Access Road	20.00	4.41	2nd
AR-84	Access Road	20.00	62.32	2nd
AR-85	Access Road	20.00	4.68	2nd
AR-86	Access Road	20.00	18.07	2nd
AR-87	Access Road	20.00	4.57	2nd
AR-88	Access Road	20.00	4.93	2nd
AR-89	Access Road	20.00	106.10	2nd
AR-90	Access Road	20.00	4.34	2nd
AR-91	Access Road	20.00	17.45	2nd
AR-92	Access Road	20.00	4.85	2nd
AR-93	Access Road	20.00	46.96	2nd
AR-94	Access Road	20.00	4.38	2nd
AR-95	Access Road	20.00	66.94	2nd
AR-96	Access Road	20.00	4.51	2nd
AR-97	Access Road	20.00	27.02	2nd
AR-98	Access Road	20.00	4.34	2nd
AR-99	Access Road	20.00	36.89	2nd
AR-100	Access Road	20.00	4.42	2nd

Road ID	Road Type	Width (in ft)	Length (in m)	Development Phase
AR-101	Access Road	20.00	10.59	2nd
AR-102	Access Road	20.00	0.46	2nd
AR-103	Access Road	20.00	45.32	2nd
AR-104	Access Road	20.00	7.50	3rd
AR-105	Access Road	20.00	12.21	3rd
AR-106	Access Road	20.00	8.03	3rd
AR-107	Access Road	20.00	43.02	3rd
AR-151	Access Road	20.00	0.02	3rd
AR-152	Access Road	20.00	0.01	3rd
AR-153	Access Road	20.00	0.01	3rd
AR-154	Access Road	20.00	0.01	3rd
AR-155	Access Road	20.00	0.01	3rd
AR-156	Access Road	20.00	0.01	3rd
AR-157	Access Road	20.00	0.01	3rd
AR-158	Access Road	20.00	0.01	3rd
AR-159	Access Road	20.00	0.02	3rd
AR-160	Access Road	20.00	0.01	3rd
AR-161	Access Road	20.00	0.01	3rd
AR-162	Access Road	20.00	27.23	2nd
AR-163	Access Road	20.00	3.89	2nd
AR-164	Access Road	20.00	44.47	2nd
AR-165	Access Road	20.00	18.61	2nd
AR-166	Access Road	20.00	7.62	2nd
AR-167	Access Road	20.00	34.29	2nd
AR-168	Access Road	20.00	7.74	2nd
AR-169	Access Road	20.00	61.95	2nd
AR-170	Access Road	20.00	17.49	2nd
AR-171	Access Road	20.00	223.15	2nd
AR-172	Access Road	20.00	7.63	2nd
AR-173	Access Road	20.00	132.68	2nd
AR-174	Access Road	20.00	19.21	2nd
AR-175	Access Road	20.00	14.11	2nd
AR-176	Access Road	20.00	119.75	2nd
AR-177	Access Road	20.00	8.05	2nd
AR-178	Access Road	20.00	168.35	2nd
AR-179	Access Road	20.00	8.04	2nd
AR-180	Access Road	20.00	73.08	2nd
AR-181	Access Road	20.00	7.88	2nd
AR-182	Access Road	20.00	75.09	2nd
AR-183	Access Road	20.00	11.21	2nd
AR-184	Access Road	20.00	8.18	2nd
AR-185	Access Road	20.00	100.95	3rd
AR-186	Access Road	20.00	8.76	3rd
AR-187	Access Road	20.00	43.68	3rd
AR-188	Access Road	20.00	10.58	3rd
AR-189	Access Road	20.00	29.52	3rd
AR-190	Access Road	20.00	15.80	3rd
AR-191	Access Road	20.00	20.40	3rd
AR-192	Access Road	20.00	119.55	3rd
AR-193	Access Road	20.00	5.98	3rd
AR-194	Access Road	20.00	254.66	3rd
AR-195	Access Road	20.00	7.85	3rd
AR-196	Access Road	20.00	5.10	3rd
AR-197	Access Road	20.00	147.41	3rd
AR-198	Access Road	20.00	7.97	3rd
AR-199	Access Road	20.00	7.85	3rd
AR-200	Access Road	20.00	16.44	3rd
AR-201	Access Road	20.00	4.49	3rd
AR-202	Access Road	20.00	115.83	3rd

Road ID	Road Type	Width (in ft)	Length (in m)	Development Phase
AR-203	Access Road	20.00	12.22	3rd
AR-204	Access Road	20.00	56.11	3rd
AR-205	Access Road	20.00	12.21	3rd
AR-206	Access Road	20.00	25.46	3rd
AR-207	Access Road	20.00	44.76	3rd
AR-208	Access Road	20.00	3.69	3rd
AR-209	Access Road	20.00	26.88	3rd
AR-210	Access Road	20.00	4.25	3rd
AR-211	Access Road	20.00	12.44	3rd
AR-212	Access Road	20.00	26.19	3rd
AR-213	Access Road	20.00	25.16	3rd
AR-214	Access Road	20.00	9.36	3rd
AR-215	Access Road	20.00	12.29	3rd
AR-216	Access Road	20.00	28.02	3rd
AR-236	Access Road	20.00	0.01	3rd
AR-237	Access Road	20.00	0.18	3rd
AR-238	Access Road	20.00	0.18	3rd
AR-240	Access Road	20.00	98.25	2nd
AR-241	Access Road	20.00	22.60	2nd
AR-242	Access Road	20.00	100.40	2nd
AR-243	Access Road	20.00	29.92	2nd
AR-244	Access Road	20.00	5.80	2nd
AR-245	Access Road	20.00	33.53	2nd
AR-246	Access Road	20.00	5.79	2nd
AR-247	Access Road	20.00	2.62	2nd
AR-248	Access Road	20.00	2.64	2nd
AR-249	Access Road	20.00	2.68	2nd
AR-250	Access Road	20.00	2.72	2nd
AR-251	Access Road	20.00	2.74	2nd
AR-252	Access Road	20.00	2.74	2nd
AR-253	Access Road	20.00	2.74	2nd
AR-254	Access Road	20.00	3.80	2nd
AR-255	Access Road	20.00	12.33	2nd
AR-256	Access Road	20.00	44.00	2nd
AR-257	Access Road	20.00	12.20	2nd
AR-258	Access Road	20.00	21.61	2nd
AR-259	Access Road	20.00	12.21	2nd
AR-260	Access Road	20.00	11.60	2nd
AR-261	Access Road	20.00	28.90	2nd
AR-262	Access Road	20.00	12.21	2nd
AR-263	Access Road	20.00	17.81	2nd
AR-264	Access Road	20.00	12.21	2nd
AR-265	Access Road	20.00	32.11	2nd
AR-266	Access Road	20.00	12.40	2nd
AR-267	Access Road	20.00	110.00	2nd
AR-268	Access Road	20.00	12.44	2nd
AR-269	Access Road	20.00	49.52	2nd
AR-270	Access Road	20.00	12.21	3rd
AR-271	Access Road	20.00	37.62	3rd
AR-272	Access Road	20.00	12.21	3rd
AR-273	Access Road	20.00	32.30	3rd
AR-274	Access Road	20.00	12.20	3rd
AR-275	Access Road	20.00	13.70	3rd
AR-276	Access Road	20.00	12.30	3rd
AR-277	Access Road	20.00	123.15	3rd
AR-278	Access Road	20.00	29.74	3rd
AR-279	Access Road	20.00	3.75	3rd
AR-280	Access Road	20.00	3.19	3rd
AR-281	Access Road	20.00	4.04	3rd

Road ID	Road Type	Width (in ft)	Length (in m)	Development Phase
AR-282	Access Road	20.00	9.25	3rd
AR-283	Access Road	20.00	53.06	3rd
AR-284	Access Road	20.00	73.35	3rd
AR-285	Access Road	20.00	9.42	3rd
AR-290	Access Road	20.00	44.86	3rd
AR-307	Access Road	20.00	98.47	3rd
AR-308	Access Road	20.00	9.27	3rd
AR-313	Access Road	20.00	0.11	3rd
AR-314	Access Road	20.00	0.08	3rd
AR-315	Access Road	20.00	0.03	3rd
AR-316	Access Road	20.00	0.08	3rd
AR-317	Access Road	20.00	0.15	3rd
AR-318	Access Road	20.00	0.18	3rd
AR-319	Access Road	20.00	0.18	3rd
AR-323	Access Road	20.00	92.52	2nd
AR-324	Access Road	20.00	3.23	2nd
AR-325	Access Road	20.00	115.44	2nd
AR-326	Access Road	20.00	3.23	2nd
AR-327	Access Road	20.00	4.32	2nd
AR-328	Access Road	20.00	18.79	2nd
AR-329	Access Road	20.00	3.23	2nd
AR-330	Access Road	20.00	4.47	2nd
AR-331	Access Road	20.00	126.97	2nd
AR-332	Access Road	20.00	3.24	2nd
AR-333	Access Road	20.00	9.15	2nd
AR-334	Access Road	20.00	82.65	2nd
AR-335	Access Road	20.00	3.20	2nd
AR-336	Access Road	20.00	107.26	2nd
AR-337	Access Road	20.00	3.15	2nd
AR-338	Access Road	20.00	77.20	3rd
AR-339	Access Road	20.00	3.08	3rd
AR-346	Access Road	20.00	0.03	3rd
AR-347	Access Road	20.00	0.08	3rd
AR-348	Access Road	20.00	0.15	3rd
AR-349	Access Road	20.00	182.80	2nd
AR-350	Access Road	20.00	6.31	2nd
AR-351	Access Road	20.00	65.51	2nd
AR-352	Access Road	20.00	4.74	2nd
AR-353	Access Road	20.00	49.72	2nd
AR-354	Access Road	20.00	32.15	2nd
AR-355	Access Road	20.00	6.34	2nd
AR-356	Access Road	20.00	50.96	2nd
AR-357	Access Road	20.00	3.94	2nd
AR-358	Access Road	20.00	5.97	2nd
AR-359	Access Road	20.00	12.78	2nd
AR-360	Access Road	20.00	6.34	2nd
AR-361	Access Road	20.00	106.76	2nd
AR-362	Access Road	20.00	18.62	3rd
AR-363	Access Road	20.00	4.60	3rd
AR-364	Access Road	20.00	69.25	3rd
AR-365	Access Road	20.00	25.56	3rd
AR-366	Access Road	20.00	231.28	3rd
AR-367	Access Road	20.00	5.63	3rd
AR-368	Access Road	20.00	353.66	3rd
AR-369	Access Road	20.00	4.59	3rd
AR-373	Access Road	20.00	88.33	2nd
AR-374	Access Road	20.00	52.94	2nd
AR-375	Access Road	20.00	32.75	2nd
AR-376	Access Road	20.00	62.63	2nd

Road ID	Road Type	Width (in ft)	Length (in m)	Development Phase
AR-377	Access Road	20.00	115.88	2nd
AR-378	Access Road	20.00	94.36	2nd
AR-379	Access Road	20.00	7.63	2nd
AR-380	Access Road	20.00	12.25	2nd
AR-381	Access Road	20.00	14.61	2nd
AR-382	Access Road	20.00	12.23	2nd
AR-383	Access Road	20.00	13.80	2nd
AR-384	Access Road	20.00	12.25	2nd
AR-385	Access Road	20.00	37.80	2nd
AR-386	Access Road	20.00	12.28	2nd
AR-387	Access Road	20.00	121.13	2nd
AR-388	Access Road	20.00	12.33	2nd
AR-389	Access Road	20.00	63.11	2nd
AR-390	Access Road	20.00	12.26	2nd
AR-391	Access Road	20.00	24.15	2nd
AR-392	Access Road	20.00	11.11	2nd
AR-393	Access Road	20.00	20.31	2nd
AR-394	Access Road	20.00	12.28	2nd
AR-395	Access Road	20.00	40.45	2nd
AR-396	Access Road	20.00	12.21	2nd
AR-397	Access Road	20.00	7.40	3rd
AR-398	Access Road	20.00	12.29	3rd
AR-399	Access Road	20.00	17.31	3rd
AR-400	Access Road	20.00	100.75	3rd
AR-401	Access Road	20.00	4.57	3rd
AR-402	Access Road	20.00	22.12	3rd
AR-403	Access Road	20.00	4.56	3rd
AR-404	Access Road	20.00	22.45	3rd
AR-405	Access Road	20.00	7.64	3rd
AR-406	Access Road	20.00	16.82	3rd
AR-407	Access Road	20.00	7.63	3rd
AR-408	Access Road	20.00	6.33	3rd
AR-409	Access Road	20.00	7.63	3rd
AR-410	Access Road	20.00	98.65	3rd
AR-411	Access Road	20.00	7.62	3rd
AR-412	Access Road	20.00	107.72	3rd
AR-413	Access Road	20.00	4.12	3rd
AR-414	Access Road	20.00	1.77	3rd
AR-415	Access Road	20.00	1.79	3rd
AR-416	Access Road	20.00	33.03	3rd
AR-417	Access Road	20.00	7.63	3rd
AR-418	Access Road	20.00	106.93	3rd
AR-419	Access Road	20.00	5.85	3rd
AR-420	Access Road	20.00	69.44	3rd
AR-421	Access Road	20.00	7.64	3rd
AR-422	Access Road	20.00	278.58	3rd
AR-423	Access Road	20.00	7.71	3rd
AR-424	Access Road	20.00	4.56	3rd
AR-425	Access Road	20.00	20.50	3rd
AR-426	Access Road	20.00	7.63	3rd
AR-427	Access Road	20.00	21.18	3rd
AR-428	Access Road	20.00	7.62	3rd
AR-429	Access Road	20.00	39.69	3rd
AR-430	Access Road	20.00	7.62	3rd
AR-431	Access Road	20.00	20.93	3rd
AR-432	Access Road	20.00	7.62	3rd
AR-433	Access Road	20.00	21.69	3rd
AR-434	Access Road	20.00	7.65	3rd
AR-435	Access Road	20.00	1.90	3rd

Road ID	Road Type	Width (in ft)	Length (in m)	Development Phase
AR-436	Access Road	20.00	3.79	3rd
AR-437	Access Road	20.00	6.02	3rd
AR-438	Access Road	20.00	14.43	3rd
AR-439	Access Road	20.00	7.63	3rd
AR-440	Access Road	20.00	49.81	3rd
AR-441	Access Road	20.00	7.63	3rd
AR-442	Access Road	20.00	20.17	3rd
AR-443	Access Road	20.00	7.63	3rd
AR-444	Access Road	20.00	84.95	3rd
AR-445	Access Road	20.00	7.62	3rd
AR-446	Access Road	20.00	149.02	3rd
AR-447	Access Road	20.00	28.43	3rd
AR-448	Access Road	20.00	101.97	3rd
AR-449	Access Road	20.00	7.62	3rd
AR-450	Access Road	20.00	7.60	3rd
AR-451	Access Road	20.00	7.63	3rd
AR-452	Access Road	20.00	20.81	3rd
AR-453	Access Road	20.00	182.05	3rd
AR-454	Access Road	20.00	7.81	3rd
AR-455	Access Road	20.00	54.42	3rd
AR-456	Access Road	20.00	186.52	3rd
AR-457	Access Road	20.00	8.88	3rd
AR-458	Access Road	20.00	8.56	3rd
AR-459	Access Road	20.00	13.27	3rd
AR-460	Access Road	20.00	2.27	3rd
AR-461	Access Road	20.00	7.60	3rd
AR-462	Access Road	20.00	12.22	3rd
AR-463	Access Road	20.00	90.84	3rd
AR-464	Access Road	20.00	11.90	3rd
AR-465	Access Road	20.00	103.39	3rd
AR-466	Access Road	20.00	4.05	3rd
AR-467	Access Road	20.00	7.58	3rd
AR-468	Access Road	20.00	0.13	3rd
AR-471	Access Road	20.00	28.15	3rd
AR-472	Access Road	20.00	9.92	3rd
AR-473	Access Road	20.00	69.90	3rd
AR-474	Access Road	20.00	78.20	3rd
AR-475	Access Road	20.00	27.17	3rd
AR-476	Access Road	20.00	35.56	3rd
AR-477	Access Road	20.00	5.16	3rd
AR-505	Access Road	20.00	0.11	3rd
AR-506	Access Road	20.00	0.08	3rd
AR-509	Access Road	20.00	1.05	2nd
AR-510	Access Road	20.00	63.01	2nd
AR-511	Access Road	20.00	1.67	2nd
AR-512	Access Road	20.00	56.43	2nd
AR-513	Access Road	20.00	2.40	2nd
AR-514	Access Road	20.00	57.78	2nd
AR-515	Access Road	20.00	2.58	2nd
AR-516	Access Road	20.00	154.00	2nd
AR-517	Access Road	20.00	2.62	2nd
AR-518	Access Road	20.00	30.35	2nd
AR-519	Access Road	20.00	2.78	2nd
AR-520	Access Road	20.00	180.83	2nd
AR-521	Access Road	20.00	2.74	2nd
AR-522	Access Road	20.00	28.56	2nd
AR-523	Access Road	20.00	1.99	2nd
AR-524	Access Road	20.00	4.26	2nd
AR-525	Access Road	20.00	102.75	2nd

Road ID	Road Type	Width (in ft)	Length (in m)	Development Phase
AR-526	Access Road	20.00	22.90	2nd
AR-527	Access Road	20.00	7.63	2nd
AR-528	Access Road	20.00	20.27	2nd
AR-529	Access Road	20.00	8.00	2nd
AR-530	Access Road	20.00	70.38	2nd
AR-531	Access Road	20.00	7.79	2nd
AR-532	Access Road	20.00	2.02	2nd
AR-533	Access Road	20.00	1.89	2nd
AR-534	Access Road	20.00	2.21	2nd
AR-535	Access Road	20.00	29.84	2nd
AR-536	Access Road	20.00	2.33	2nd
AR-537	Access Road	20.00	23.02	2nd
AR-538	Access Road	20.00	20.46	2nd
AR-539	Access Road	20.00	55.81	2nd
AR-540	Access Road	20.00	33.13	2nd
AR-541	Access Road	20.00	27.93	2nd
AR-542	Access Road	20.00	2.25	2nd
AR-543	Access Road	20.00	13.91	2nd
AR-544	Access Road	20.00	1.52	2nd
AR-545	Access Road	20.00	8.90	2nd
AR-546	Access Road	20.00	2.53	2nd
AR-547	Access Road	20.00	10.67	2nd
AR-548	Access Road	20.00	2.52	2nd
AR-549	Access Road	20.00	78.61	2nd
AR-550	Access Road	20.00	2.51	2nd
AR-551	Access Road	20.00	46.95	2nd
AR-552	Access Road	20.00	40.41	2nd
AR-553	Access Road	20.00	2.61	3rd
AR-554	Access Road	20.00	596.35	3rd
AR-555	Access Road	20.00	8.39	3rd
AR-556	Access Road	20.00	2.11	3rd
AR-558	Access Road	20.00	18.11	3rd
AR-559	Access Road	20.00	4.61	3rd
AR-571	Access Road	20.00	49.49	2nd
AR-572	Access Road	20.00	7.63	2nd
AR-573	Access Road	20.00	151.06	2nd
AR-574	Access Road	20.00	7.64	2nd
AR-575	Access Road	20.00	4.57	2nd
AR-576	Access Road	20.00	0.92	2nd
AR-577	Access Road	20.00	7.63	2nd
AR-578	Access Road	20.00	36.83	2nd
AR-579	Access Road	20.00	4.57	2nd
AR-580	Access Road	20.00	19.19	2nd
AR-581	Access Road	20.00	4.57	2nd
AR-582	Access Road	20.00	48.06	2nd
AR-583	Access Road	20.00	4.71	2nd
AR-584	Access Road	20.00	61.73	2nd
AR-585	Access Road	20.00	38.71	2nd
AR-586	Access Road	20.00	31.38	2nd
AR-587	Access Road	20.00	9.43	2nd
AR-592	Access Road	20.00	71.12	3rd
AR-593	Access Road	20.00	7.63	3rd
AR-594	Access Road	20.00	157.26	3rd
AR-595	Access Road	20.00	14.24	3rd
AR-596	Access Road	20.00	4.57	3rd
AR-597	Access Road	20.00	9.59	3rd
AR-598	Access Road	20.00	4.56	3rd
AR-599	Access Road	20.00	42.36	3rd
AR-600	Access Road	20.00	7.64	3rd

Road ID	Road Type	Width (in ft)	Length (in m)	Development Phase
AR-601	Access Road	20.00	1.95	3rd
AR-602	Access Road	20.00	7.62	3rd
AR-603	Access Road	20.00	24.38	3rd
AR-604	Access Road	20.00	28.94	3rd
AR-605	Access Road	20.00	101.76	3rd
AR-606	Access Road	20.00	7.63	3rd
AR-607	Access Road	20.00	5.00	3rd
AR-608	Access Road	20.00	17.36	3rd
AR-609	Access Road	20.00	7.63	3rd
AR-610	Access Road	20.00	79.01	3rd
AR-611	Access Road	20.00	7.85	3rd
AR-612	Access Road	20.00	25.02	3rd
AR-613	Access Road	20.00	7.74	3rd
AR-614	Access Road	20.00	50.70	3rd
AR-615	Access Road	20.00	7.65	3rd
AR-616	Access Road	20.00	14.11	3rd
AR-617	Access Road	20.00	7.65	3rd
AR-618	Access Road	20.00	98.99	3rd
AR-619	Access Road	20.00	4.88	3rd
AR-620	Access Road	20.00	11.89	3rd
AR-621	Access Road	20.00	260.54	3rd
AR-622	Access Road	20.00	7.62	3rd
AR-623	Access Road	20.00	5.26	3rd
AR-624	Access Road	20.00	28.99	3rd
AR-625	Access Road	20.00	7.62	3rd
AR-626	Access Road	20.00	22.98	3rd
AR-627	Access Road	20.00	4.59	3rd
AR-628	Access Road	20.00	12.20	3rd
AR-629	Access Road	20.00	64.08	3rd
AR-630	Access Road	20.00	12.33	3rd
AR-631	Access Road	20.00	40.39	3rd
AR-632	Access Road	20.00	9.00	3rd
AR-633	Access Road	20.00	4.56	3rd
AR-634	Access Road	20.00	13.31	3rd
AR-659	Access Road	20.00	19.83	3rd
AR-660	Access Road	20.00	5.28	3rd

A. Roads connect Paurashava with Regional Road Network

To avoid traffic congestion within the paurashava, the road has been widened to 80 feet that goes to Burhanuddin towards North-South direction. This road has considered the primary entrance of the Paurashava. Secondary road has proposed to connect east west direction of the area.

Hierarchically, the following types of roads have been proposed in the plan:

- major road having rights of way from 80 feet
- secondary road having rights of way from 40 to 50 feet of the right of way

B. Internal Network of the Paurashava

The above mentioned roads would be linked up with the proposed road so that eventually all parts of Daulatkhan Paurashava would be well connected.

Here, two types of roads have been proposed to cater the needs of the internal circulation of the Paurashava area. These are:

- secondary road having rights of way 40 to 50 feet
- local road having rights of way from 20 to 30 feet

Table 12.5: Proposed Roads of Daulatkhan Paurashava According to Hierarchy

Types of Road	Road Width (ft)	Number of Roads	Length (km)
Paurashava Secondary Road	40	20	2.27
	50	33	5.44
Sub-Total			**7.71**
Paurashava Tertiary Road	30	70	4.59
Sub-Total			**4.59**
Paurashava Access Road	20	487	15.40
Sub-Total			**15.40**
Total		**610**	**27.7**

Source: Proposed by Consultants

In the road network plan, more than 65% of the roads (according to road length) have proposed for widening.

12.5.4 Proposals for New Roads

To accommodate the traffic volumes about 10-15% land has been considered of total planning area. About 15.98 kilometers new roads have been proposed to ensure accessibility in the area. Phase wise newly proposed Road has been shown in Table 12.6.

Proposed Road Network of Daulatkhan Paurashava has been presented on **Map 12.2**.

Table 12.6: Phase Wise Newly Proposed Road in Daulatkhan Paurashava

Road ID	Road Type	Width (in ft)	Length (in m)	Development Phase
SR-15	Secondary Road	50.00	72.71	1st
SR-16	Secondary Road	50.00	13.78	1st
SR-17	Secondary Road	50.00	38.90	1st
SR-27	Secondary Road	50.00	233.44	1st
SR-28	Secondary Road	50.00	7.13	1st
SR-29	Secondary Road	50.00	45.40	1st
TR-3	Tertiary Road	30.00	2.43	2nd
TR-6	Tertiary Road	30.00	0.02	2nd
TR-17	Tertiary Road	30.00	15.27	2nd
TR-18	Tertiary Road	30.00	150.51	2nd
TR-19	Tertiary Road	30.00	163.87	2nd
TR-20	Tertiary Road	30.00	18.31	2nd
TR-21	Tertiary Road	30.00	52.35	2nd
TR-24	Tertiary Road	30.00	0.02	2nd
TR-33	Tertiary Road	30.00	221.38	2nd
TR-34	Tertiary Road	30.00	6.60	2nd
TR-35	Tertiary Road	30.00	116.30	2nd
TR-36	Tertiary Road	30.00	1.01	2nd
TR-37	Tertiary Road	30.00	18.44	2nd
TR-39	Tertiary Road	30.00	0.16	2nd
TR-49	Tertiary Road	30.00	320.98	2nd
TR-50	Tertiary Road	30.00	190.20	2nd

Road ID	Road Type	Width (in ft)	Length (in m)	Development Phase
TR-51	Tertiary Road	30.00	7.67	2nd
TR-52	Tertiary Road	30.00	90.91	2nd
TR-53	Tertiary Road	30.00	76.81	2nd
TR-54	Tertiary Road	30.00	178.66	2nd
TR-56	Tertiary Road	30.00	0.16	2nd
TR-57	Tertiary Road	30.00	5.88	2nd
TR-58	Tertiary Road	30.00	518.34	2nd
TR-75	Tertiary Road	30.00	92.30	2nd
TR-76	Tertiary Road	30.00	113.53	2nd
TR-77	Tertiary Road	30.00	5.63	2nd
TR-78	Tertiary Road	30.00	67.44	2nd
TR-79	Tertiary Road	30.00	398.42	2nd
TR-80	Tertiary Road	30.00	5.18	2nd
TR-81	Tertiary Road	30.00	200.40	2nd
TR-83	Tertiary Road	30.00	1.51	2nd
TR-87	Tertiary Road	30.00	43.20	2nd
TR-100	Tertiary Road	80.00	613.41	2nd
TR-101	Tertiary Road	30.00	7.72	2nd
TR-102	Tertiary Road	30.00	45.94	2nd
TR-103	Tertiary Road	30.00	12.14	2nd
TR-104	Tertiary Road	30.00	175.20	2nd
TR-105	Tertiary Road	30.00	12.15	2nd
TR-106	Tertiary Road	30.00	236.22	2nd
TR-107	Tertiary Road	30.00	7.70	2nd
TR-108	Tertiary Road	30.00	119.71	2nd
TR-109	Tertiary Road	30.00	7.48	2nd
TR-110	Tertiary Road	30.00	251.62	2nd
TR-111	Tertiary Road	30.00	11.92	2nd
TR-112	Tertiary Road	30.00	71.90	2nd
TR-116	Tertiary Road	30.00	12.92	2nd
TR-117	Tertiary Road	30.00	34.36	2nd
AR-30	Access Road	20.00	6.19	3rd
AR-31	Access Road	20.00	13.31	3rd
AR-32	Access Road	20.00	510.34	3rd
AR-108	Access Road	20.00	136.46	3rd
AR-109	Access Road	20.00	8.17	3rd
AR-110	Access Road	20.00	46.38	3rd
AR-111	Access Road	20.00	27.41	3rd
AR-112	Access Road	20.00	7.78	3rd
AR-113	Access Road	20.00	121.17	3rd
AR-114	Access Road	20.00	363.55	3rd
AR-115	Access Road	20.00	5.11	3rd
AR-116	Access Road	20.00	13.18	3rd
AR-117	Access Road	20.00	78.50	3rd
AR-118	Access Road	20.00	29.18	3rd
AR-119	Access Road	20.00	8.31	3rd
AR-120	Access Road	20.00	83.77	3rd
AR-121	Access Road	20.00	7.41	3rd
AR-122	Access Road	20.00	5.71	3rd
AR-123	Access Road	20.00	106.94	3rd
AR-124	Access Road	20.00	7.45	3rd
AR-125	Access Road	20.00	119.05	3rd
AR-126	Access Road	20.00	4.56	3rd
AR-127	Access Road	20.00	117.16	3rd
AR-128	Access Road	20.00	7.53	3rd
AR-129	Access Road	20.00	4.56	3rd
AR-130	Access Road	20.00	103.17	3rd
AR-131	Access Road	20.00	187.93	3rd
AR-132	Access Road	20.00	5.23	3rd

Road ID	Road Type	Width (in ft)	Length (in m)	Development Phase
AR-133	Access Road	20.00	138.39	3rd
AR-134	Access Road	20.00	4.76	3rd
AR-135	Access Road	20.00	92.54	3rd
AR-136	Access Road	20.00	5.03	3rd
AR-137	Access Road	20.00	119.23	3rd
AR-138	Access Road	20.00	4.83	3rd
AR-139	Access Road	20.00	38.25	3rd
AR-140	Access Road	20.00	4.73	3rd
AR-141	Access Road	20.00	12.01	3rd
AR-142	Access Road	20.00	49.34	3rd
AR-143	Access Road	20.00	154.99	3rd
AR-144	Access Road	20.00	7.26	3rd
AR-145	Access Road	20.00	10.01	3rd
AR-146	Access Road	20.00	57.38	3rd
AR-147	Access Road	20.00	108.99	3rd
AR-148	Access Road	20.00	4.26	3rd
AR-149	Access Road	20.00	14.25	3rd
AR-150	Access Road	20.00	7.60	3rd
AR-217	Access Road	20.00	0.76	3rd
AR-218	Access Road	20.00	168.72	3rd
AR-219	Access Road	20.00	174.19	3rd
AR-220	Access Road	20.00	8.09	3rd
AR-221	Access Road	20.00	6.98	3rd
AR-222	Access Road	20.00	87.51	3rd
AR-223	Access Road	20.00	4.75	3rd
AR-224	Access Road	20.00	152.98	3rd
AR-225	Access Road	20.00	6.83	3rd
AR-226	Access Road	20.00	51.34	3rd
AR-227	Access Road	20.00	78.30	3rd
AR-228	Access Road	20.00	3.94	3rd
AR-229	Access Road	20.00	82.60	3rd
AR-230	Access Road	20.00	6.00	3rd
AR-231	Access Road	20.00	200.15	3rd
AR-232	Access Road	20.00	8.38	3rd
AR-233	Access Road	20.00	4.88	3rd
AR-234	Access Road	20.00	68.36	3rd
AR-235	Access Road	20.00	46.28	3rd
AR-239	Access Road	20.00	0.22	3rd
AR-286	Access Road	20.00	178.81	3rd
AR-287	Access Road	20.00	59.76	3rd
AR-288	Access Road	20.00	3.16	3rd
AR-289	Access Road	20.00	9.12	3rd
AR-291	Access Road	20.00	136.49	3rd
AR-292	Access Road	20.00	188.91	3rd
AR-293	Access Road	20.00	173.94	3rd
AR-294	Access Road	20.00	9.53	3rd
AR-295	Access Road	20.00	9.14	3rd
AR-296	Access Road	20.00	3.66	3rd
AR-297	Access Road	20.00	198.66	3rd
AR-298	Access Road	20.00	166.81	3rd
AR-299	Access Road	20.00	7.66	3rd
AR-300	Access Road	20.00	9.16	3rd
AR-301	Access Road	20.00	5.84	3rd
AR-302	Access Road	20.00	91.99	3rd
AR-303	Access Road	20.00	207.56	3rd
AR-304	Access Road	20.00	5.86	3rd
AR-305	Access Road	20.00	5.10	3rd
AR-306	Access Road	20.00	9.23	3rd
AR-309	Access Road	20.00	13.45	3rd

Road ID	Road Type	Width (in ft)	Length (in m)	Development Phase
AR-310	Access Road	20.00	306.85	3rd
AR-311	Access Road	20.00	90.90	3rd
AR-312	Access Road	20.00	5.79	3rd
AR-320	Access Road	20.00	0.22	3rd
AR-321	Access Road	20.00	0.06	3rd
AR-322	Access Road	20.00	0.18	3rd
AR-340	Access Road	20.00	75.91	3rd
AR-341	Access Road	20.00	4.65	3rd
AR-342	Access Road	20.00	28.80	3rd
AR-343	Access Road	20.00	4.00	3rd
AR-344	Access Road	20.00	50.56	3rd
AR-345	Access Road	20.00	4.43	3rd
AR-370	Access Road	20.00	55.74	3rd
AR-371	Access Road	20.00	206.63	3rd
AR-372	Access Road	20.00	4.14	3rd
AR-469	Access Road	20.00	44.00	3rd
AR-470	Access Road	20.00	95.48	3rd
AR-478	Access Road	20.00	11.90	3rd
AR-479	Access Road	20.00	239.00	3rd
AR-480	Access Road	20.00	5.30	3rd
AR-481	Access Road	20.00	69.17	3rd
AR-482	Access Road	20.00	234.07	3rd
AR-483	Access Road	20.00	5.50	3rd
AR-484	Access Road	20.00	10.95	3rd
AR-485	Access Road	20.00	197.23	3rd
AR-486	Access Road	20.00	73.76	3rd
AR-487	Access Road	20.00	2.87	3rd
AR-488	Access Road	20.00	108.33	3rd
AR-489	Access Road	20.00	26.52	3rd
AR-490	Access Road	20.00	9.16	3rd
AR-491	Access Road	20.00	109.31	3rd
AR-492	Access Road	20.00	5.59	3rd
AR-493	Access Road	20.00	12.33	3rd
AR-494	Access Road	20.00	68.43	3rd
AR-495	Access Road	20.00	2.33	3rd
AR-496	Access Road	20.00	31.04	3rd
AR-497	Access Road	20.00	135.14	3rd
AR-498	Access Road	20.00	7.56	3rd
AR-499	Access Road	20.00	4.57	3rd
AR-500	Access Road	20.00	1.05	3rd
AR-501	Access Road	20.00	19.85	3rd
AR-502	Access Road	20.00	4.65	3rd
AR-503	Access Road	20.00	110.33	3rd
AR-504	Access Road	20.00	5.30	3rd
AR-507	Access Road	20.00	0.06	3rd
AR-508	Access Road	20.00	0.18	3rd
AR-557	Access Road	20.00	82.82	3rd
AR-560	Access Road	20.00	112.09	3rd
AR-561	Access Road	20.00	102.61	3rd
AR-562	Access Road	20.00	9.15	3rd
AR-563	Access Road	20.00	74.34	3rd
AR-564	Access Road	20.00	116.13	3rd
AR-565	Access Road	20.00	263.13	3rd
AR-566	Access Road	20.00	7.15	3rd
AR-567	Access Road	20.00	192.37	3rd
AR-568	Access Road	20.00	169.85	3rd
AR-569	Access Road	20.00	46.34	3rd
AR-570	Access Road	20.00	13.40	3rd
AR-588	Access Road	20.00	248.53	3rd

Road ID	Road Type	Width (in ft)	Length (in m)	Development Phase
AR-589	Access Road	20.00	7.77	3rd
AR-590	Access Road	20.00	5.14	3rd
AR-591	Access Road	20.00	4.37	3rd
AR-635	Access Road	20.00	12.16	3rd
AR-636	Access Road	20.00	147.55	3rd
AR-637	Access Road	20.00	4.52	3rd
AR-638	Access Road	20.00	96.30	3rd
AR-639	Access Road	20.00	4.70	3rd
AR-640	Access Road	20.00	36.67	3rd
AR-641	Access Road	20.00	97.65	3rd
AR-642	Access Road	20.00	4.70	3rd
AR-643	Access Road	20.00	129.60	3rd
AR-644	Access Road	20.00	5.34	3rd
AR-645	Access Road	20.00	63.01	3rd
AR-646	Access Road	20.00	4.18	3rd
AR-647	Access Road	20.00	112.90	3rd
AR-648	Access Road	20.00	4.71	3rd
AR-649	Access Road	20.00	69.25	3rd
AR-650	Access Road	20.00	13.01	3rd
AR-651	Access Road	20.00	123.33	3rd
AR-652	Access Road	20.00	9.20	3rd
AR-653	Access Road	20.00	92.04	3rd
AR-654	Access Road	20.00	12.07	3rd
AR-655	Access Road	20.00	88.98	3rd
AR-656	Access Road	20.00	47.07	3rd
AR-657	Access Road	20.00	49.74	3rd
AR-658	Access Road	20.00	4.52	3rd
AR-661	Access Road	20.00	58.83	3rd

12.6 Plans for Other Transportation Facilities

In the field of transportation facilities, the consultant has proposed such facilities as, bus terminal, truck terminal, rickshaw stands, baby taxi/tempo stands and passenger shed for local bus users.

12.6.1 Parking and Terminal Facilities

A) Parking Facilities

Parking facilities at Daulatkhan Paurashava has been provided considering two parameters:

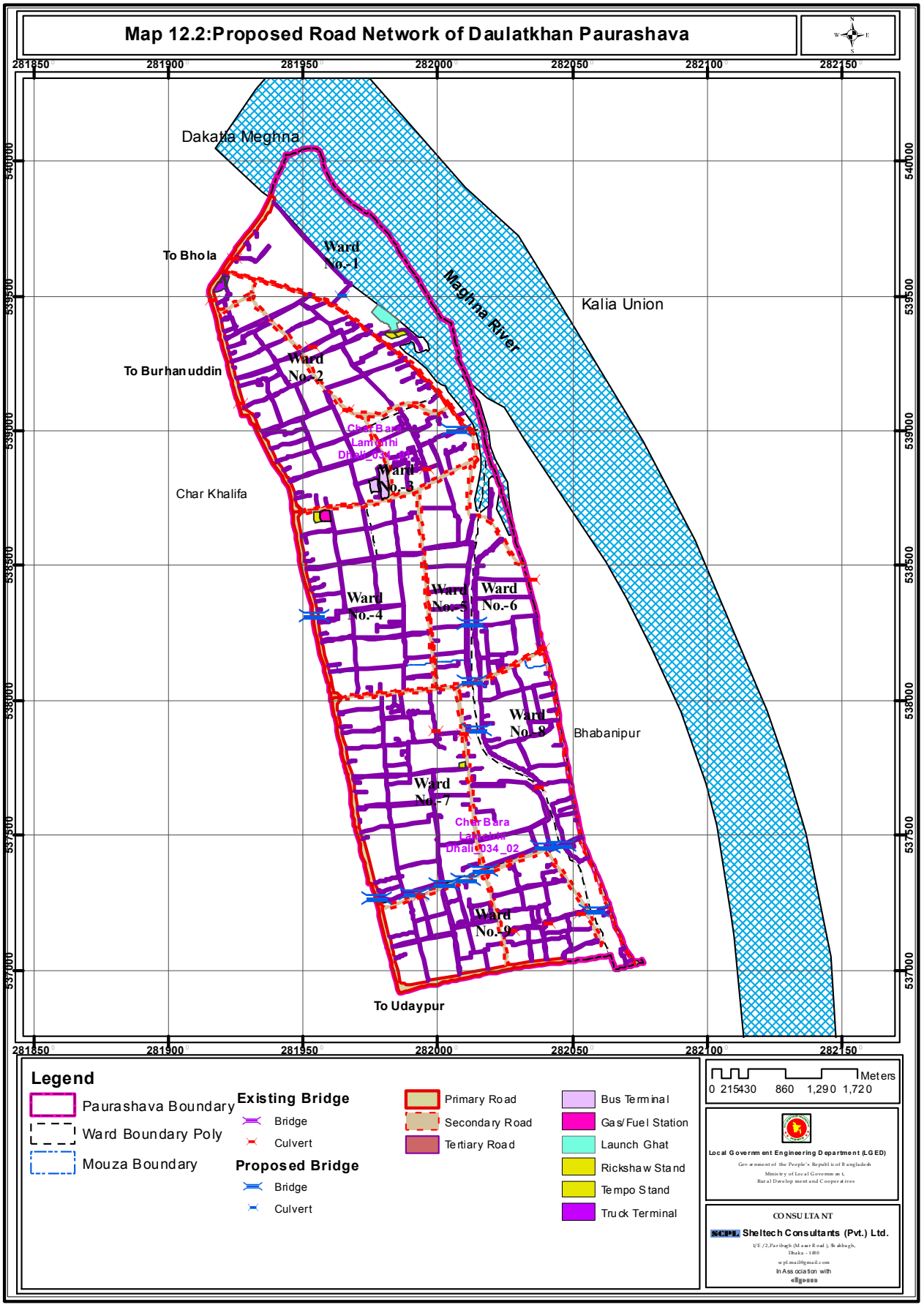
- Individual Building: In this context, it is recommended to follow the Building Construction Act, 1996 (Sub-section 2&3, Section-13).
- Area wise Parking Facilities: As per area wise context, it is recommended to provide parking facilities in Commercial and Industrial area. As per Building Construction Act 1996, total 1st 0.26

acre land and 0.80 acre land will be declared as parking zone at commercial area and industrial area of Daulatkhan Paurashava.

B) Terminal Facilities

Considering future travel demand in next 20 years; Terminal facilities for Bus, Truck, Motorcycle, Rickshaw and other existing transports have been proposed.

- **Bus Terminal:** One bus terminal has been proposed at ward no 3. The proposed terminal will comprise about 1st 1.15 acre areas. Detail has been given in table 11.13, chapter 11, Landuse Plan, Part B.
- **Other Vehicle Parking:** At Daulatkhan Paurashava, no Parking area will be proposed. But every important intersection has sufficient on street parking area in rights of way.
- **Launch Terminal & Ferry Ghat:** One launch terminal and no new ferry ghat has been proposed rather the existing terminal and ghat has been proposed for expansion.


Map 12.2:Proposed Road Network of Daulatkhan Paurashava
Dakatia Meghna
To Bhola
Ward No.-1
Meghna River
Kalia Union
To Burhanuddin
Ward No.-2
Char Bara Lamothi Dhalir_034_01
Ward No.-3
Char Khalifa
Ward No.-4
Ward No.-5
Ward No.-6
Ward No.-8
Bhabanipur
Ward No.-7
Char Bara Lamothi Dhalir_034_02
Ward No.-9
To Udaypur
281850
281900
281950
282000
282050
282100
282150
540000
539500
539000
538500
538000
537500
537000
Legend
Paurashava Boundary
Ward Boundary Poly
Mouza Boundary
Existing Bridge
Bridge
Culvert
Proposed Bridge
Bridge
Culvert
Primary Road
Secondary Road
Tertiary Road
Bus Terminal
Gas/Fuel Station
Launch Ghat
Rickshaw Stand
Tempo Stand
Truck Terminal
Meters
0 215430 860 1,290 1,720
Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Cooperatives
CONSULTANT
SCPL Sheltech Consultants (Pvt.) Ltd.
In Association with

12.6.2 Development of Facilities for Pedestrians, Bicycles and Rickshaws

A) Pedestrians

Proposals regarding pedestrian walkway have been already depicted in proposed road network plan by providing separate walkway as per priority of facilities. About 1st .5m footpath has been already shown in primary and secondary roads.

B) Bicycles and Rickshaws

Facility provision of bicycles and rickshaws has been already depicted in space allocation of Right of Way (ROW). Separate Service lane of 2.5 m has been already shown in Primary road and 18.m lane in Secondary Roads in figure 12.3.

12.6.3 Other Transportation Facilities

One fuel station has been proposed at ward no 4 comprising about 0.39 acre of land.

12.7 Waterway Development / Improvement Options

At present, water transport facility has significant importance for carrying passenger and commodity. If waterway network can be developed, this will reduce pressure on road network and will also boost up the economic development of the area. Therefore, some measures should be taken to promote the water transport network in Daulatkhan Paurashava area:

- Development of infrastructural facilities
- Dredging and maintenance of existing navigable waterways and for resuscitation of dead or dying rivers, channels, or canals, including development of new channels and canals for navigation
- Carry out removal of wrecks and obstruction in inland navigable waterways
- Ensure co-ordination of Inland Water Transport with other forms of transport and with trade and agricultural interests for the optimum utilization of the available transport capacity
- Promote good quality launch services
- Develop, maintain and operate landing/station and terminal facilities
- Prepare plans or schemes for carrying out any of the above mentioned functions by BIWTA.

12.8 Transportation System Management (TSM)

Fundamental traffic management (TM) regulations have been in practice from the very beginning for example, rules to use a particular side (left or right) of the road. However, the modern

Objectives of traffic management also include operational efficiency of traffic and improvement of environment. The main purposes of traffic management are:

- To ensure safe movement of all vehicular and pedestrian traffic
- To improve operational efficiency (junction and network links) in terms of traffic flow
- To improve the environment

The most important aspect of traffic management is its major involvement in its efficient use of basically existing facilities. These may be in the form of:

- Rules and regulations governing the use of facilities. For example, right of use of a roadway, speed limit etc. and
- New works and improvements of limited scale like flow control and segregation measures and devices

12.8.1Strategies for Facility Operations

Parking Management

In Daulatkhan Paurashava, parking measures are considered for:

- Bus Stand
- Truck Terminal

To provide parking space, following regulations mentioned in Building Construction Rule, 1996 should be provided:

- Parking functions should be maintained with the Parking or Stand lot, Roads cannot used for maneuvering the vehicles
- For entrance and exit of Bus and Truck in the Terminal minimum 4.5 meter width should be provided
- On-Street Parking is applicable if:
    - Angular Parking should be provided within 45^{o}
    - Within 25 meter of Pedestrian Crossing or Intersection, no parking would be allowed
    - No parking will be allowed over the Highway

12.8.2 Strategies for Traffic Flow and Safety

Following strategies will be adopted to implement circulation network in the planning area:

- A comprehensive road network plan has been prepared for the Paurashava using the hierarchy of road network. Implementation will also be followed following this hierarchy.
- Proposed roads in those areas will be chosen for immediate construction that is needed to promote growth in that area.
- Service roads will be constructed along with the major roads to allow free flow of long distance traffic.
- Bill board should be installed conveying road safety messages and instructions.
- Speed breaker should be provided at the in-front school, colleges and hospitals etc.

12.8.3 Strategies for Traffic Management

- Connect the missing links of primary, secondary and access roads on priority basis.
- Separate lane for non-motorized vehicles should be provisioned on the primary and secondary roads.
- Widen the narrow roads to make networks for efficient circulation.
- Right of Way (ROW) should be kept free from any type of development activities.
- Provide adequate pedestrian facilities and off-street parking wherever needed.
- If requires, tidal flow operation method can be applied in case of some roads. For instance, the morning peak results heavy flow of traffic towards city centre and evening peak results heavy flow towards the outside from the City Centre. In this case, half of other side lane can be utilized for one direction traffic during peak hour.

12.9 Plan Implementation Strategies

The section describes the plan implementation strategies of transportation plan of Daulatkhan Paurashava. This also describes the regulation to implement transport pan, evaluation and coordination to implement the transport plan in the Paurashava.

Regulations to Implement the Transportation Plan

Following regulations will be needed for implementation of the plan.

Public Roads Act, 2004: Objectives of the Public Roads Act, 2004 is prescribed in the section 2.

Those objectives are to:

(a) Establish ownership and responsibilities for roads;

(b) Establish the framework for managing the road network;
(c) Establish general principles for road management;

(d) Provide for general design and planning principles for roads;

(e) Confer powers and responsibilities on road authorities;

(f) Commit road authorities to provide and maintain safe roads, and to do so using resources efficiently;

(g) Provide for the establishment and classification of public roads;

(h) Provide for data bases of public roads, and public access to them;

(i) set out rights and duties of road users;

(j) Control activities on roads;

(k) Make special provision for restriction on access to roads;

(l) Identify characteristics of new road types;

(m) Provide a legal framework for private sector participation in road construction, operation and maintenance, including tolling of roads;

(n) Establish defenses for civil liabilities; and

(o) Create offences and provide for penalties.

Section 5 of the Public Roads Act, 2004 has defined public roads as-

(1) The Government may declare a public road.

(2) The declaration may be made in relation to land, whether or not it is currently used for passage by members of the public.

(3) In the declaration, the Government shall classify the public road as:

(a) a national road; (b) a regional road; (c) a Zila road; (d) an urban road; (e) an Upazila road; (f) a union road; (g) a village road.

Motor Vehicles Ordinance, 1983 (Ordinance No. LV of 1983) was enacted in 22nd September, 1983. The Ordinance will be needed mostly for the registration of motor vehicles and issuing of driving license.

Stage Carriages Act, 1861 (Act No. XVI of 1861) was enacted in 7thJuly 1861. Section 1st of the Act has defined the term Stage Carriage and said, “every carriage drawn by one or more horses which shall ordinarily be used for the purpose of conveying passengers for hire to or from any place in Bangladesh shall, without regard to the form or construction of such carriage, be deemed to be a Stage Carriages within the meaning of this Act.” Again, according to the section 2, no carriage shall be used as a Stage Carriage unless licensed by a Magistrate.

The Paurashava may, in communication with the RHD and LGED and with the prime approval from the Government may enforce the regulations as mentioned above. Again, some of the relevant regulations of developed countries may be enforced by the appropriate authority for the

betterment of accessibility, road safety and road management. In connection with this concept, **Highways Act of England and Wales** may be followed.

According to the section 70(1a) of the **Highways Act of England and Wales**, the owner or occupier of any structure and the owner or occupier of any land on which a structure is situated shall take all reasonable steps to ensure that the structure or the use of the structure is not a hazard or potential hazard to persons using a public road and that it does not obstruct or interfere with the safe use of a public road or the maintenance of a public road.

(b) Where a structure or the use of a structure is a hazard or potential hazard to persons using a public road or where it obstructs or interferes with the safe use of a public road or with the maintenance of a public road, a road authority may serve a notice in writing on the owner or occupier of the structure or on the owner or occupier of any land on which the structure is situated to remove, modify or carry out specified works in relation to the structure within the period stated in the notice.

(2 a) The owner or occupier of land shall take all reasonable steps to ensure that a tree, shrub, hedge or other vegetation on the land is not a hazard or potential hazard to persons using a public road and that it does not obstruct or interfere with the safe use of a public road or the maintenance of a public road.

(b) Where a tree, shrub, hedge or other vegetation is a hazard or potential hazard to persons using a public road or where it obstructs or interferes with the safe use of a public road or with the maintenance of a public road, a road authority may serve a notice in writing on the owner or occupier of the land on which such tree, shrub, hedge or other vegetation is situated requiring the preservation, felling, cutting, lopping, trimming or removal of such tree, shrub, hedge or other vegetation within the period stated in the notice.

Again, section 71(1a) said that, any person who, without lawful authority or the consent of a road authority-

(i) erects, places or retains a sign on a public road, or

(ii) erects, places or retains on a public road any caravan, vehicle or other structure or thing (whether on wheels or not) used for the purposes of advertising, the sale of goods, the provision of services or other similar purpose, shall be guilty of an offence.

Section 76(1st) of the **Highways Act of England and Wales** have provisioned regulations for a road authority and said, a road authority may-

(a) construct and maintain drains in, on, under, through or to any land for the purpose of draining water from, or preventing water flowing onto, a public road,

(b) use any land for the temporary storage or the preparation of any gravel, stone, sand, earth or other material required for the construction or maintenance of a public road.

Implementation, Monitoring, Evaluation and Coordination of the Plan

Implementation through Multi- Sectoral Investment Program: Major infrastructure development works such as primary roads, secondary roads, transportation facilities etc., will

largely be controlled by Government. Public works requires efficient co-ordination through the Multi-Sectoral Investment Program (MSIP).

Objective of a Multi-Sectoral Investment Program (MSIP) will match a list of the development projects with the funding stream necessary to implement them. There are two basic activities that would determine the contents of MSIP. One activity would be to prioritize and schedule the investment projects of all public agencies so they will collectively help to achieve the development goals and objectives of the Transportation and Traffic Management Plan. Second activity would be to analyze the source and availability of fund for the prioritized list of development projects.

Implementation through Action Plans and Projects: Action Plans and Projects will be the implementation plans to solve problems at the local level. Action plans will take a direct approach toward plan implementation with a minimum of research, reports or elaborate planning methods. These projects will be easily identifiable and will require minimum resource.

Implementation through Development Control: Landuse zoning is one of several methods of plan implementation to be considered. In all cases where some form of development, landuse control may be applied; careful consideration requires the following ideologies:

- the purpose to be achieved by the development controls;
- where controls should be applied;
- what aspect of development needs to be controlled;
- what type of development controls are required;
- what degree or level of development control is required;
- who will be affected by the required control;
- who will be affected by the controls and in what manner;
- when the controls should be applied;
- what will be the likely impact of the controls;
- how and by whom will the controls be administered and enforced.

Development control as an instrument of plan implementation may be selectively applied within the Urban Area Plans. Development controls would also be varied in intensity and detail to suit the particular circumstances. It is important that they should be clear and easily understood by all parties concerned. Since the entire Paurashava Master Plan 'package' has become statutory, development controls associated with its component plans would also be statutory.

Implementation by Facilitating Private Investment: Another approach that would be taken by government toward plan implementation will be to guide and facilitate investments made by the private sector. Government can achieve this with relative ease and at very low cost by setting up a legal and operational framework, coupled with suitable incentives, to facilitate land

Consolidation plot boundary readjustment, efficient layout of plots and provision of local infrastructure by the private sector. The benefits of this approach would be:

- increased efficiently of the urban land market would make, more private land available to urban households;
- would pass much of the development costs for local infrastructure to the private sector and land market mechanisms;
- would increase in land for development without large cash outlays by government to purchase land for development schemes; and
- would keep provision of land for community facilities virtually no cost to government.

Plan Monitoring

The Transportation and Traffic Management Plan would simply be tools for guiding and encouraging the growth and development of an urban area in a preferred manner. In a rapidly changing urban environment, the Transportation and Traffic Management Plan would require to keep up to date. If this is not done, within a few years it will be obsolete. Therefore, it is imperative that the requirement for regular updating of the Transportation and Traffic Management Plan be made a legal requirement.

For implementation of the various program components of the Transportation and Traffic Management Plan appropriate administrative measures will have to be undertaken. This will essentially include project preparation and monitoring of their execution and evaluation. For carrying out all these activities appropriate institutional measures are also be needed.

Evaluation

Monitoring and evaluation of ongoing and implemented projects is essential to keep the future course of action on the right track. An ongoing project should be regularly monitored and handicaps identified to enable taking appropriate measures at the right time. Post implementation evaluation is also needed to take appropriate measures correcting past errors-from project preparation to implementation.

The top level supervision has to be done by a high level supervisory committee headed by the Paurashava Mayor, LGED representative, RHD and Local Government Ministry. Other members of the committee will be local Ward Councilors, local community leader/social workers and the Town Planner of the Paurashava. The committee will supervise implementation works regularly and issue necessary instructions to expedite the works of implementation.

Co-ordination

A Planning Section of Paurashava should have close interaction with the citizen of Paurashava at large in order to make people aware of the benefits of a good plan and, therefore, their social

responsibility to promote plan implementation in one hand and also resist contraventions on the other. A specific interactive cell is recommended to operate in this regard with following responsibilities:

- Provide pre-application advice to residents, consultants and developers about landuse management issues and application procedures for the submission of development applications.
- Enforce planning and landuse management related legislation and zoning scheme regulations.
- Issue of property zoning certificates.
- Investigate and resolve landuse management complaints, illegal landuse and prosecuting contraventions.

Such interactive windows may be opened in various convenient locations to ensure ease of the answers to commonly asked questions may be shown in the internet. Besides, those may be shown in the print and electronic media time to time.

In spontaneous areas, while all out people's co-operation is needed for project implementation; there will also be some elements of negotiation. Negotiation will be particularly needed in case of road widening projects. It will be a crucial task for Paurashava to convince the affected people to give up their land for road use. Efforts should be made to convince the land owners on the ground of enhancement of property value due to road widening. In case people refuse to offer land free of cost necessary arrangements may have to be made for payment of compensation. This process of negotiation will be very critical, cumbersome and time consuming, and therefore, has to be handled with utmost care and patience. The best results can be accrued only by wining people's confidence. In case the authority fails to get peoples co-operation they should exercise power of compulsory acquisition of land through Acquisition of Requisition of Immovable Property Ordinance, 1982. Attempts may be made to engage NGOs / CBOs / RHD / LGED to work as catalysts in negotiation.

Chapter- 13
DRAINAGE AND ENVIRONMENTAL MANAGEMENT PLAN

13.1 Drainage Management Plan

This chapter states about goals and objectives, and methodology of Drainage Development Plan. An inventory of the existing drainage system of Daulatkhan has been made as a part of the comprehensive topographical survey to be taken-up under this project. While assessing the drainage conditions, the serviceability, structural conditions, obstruction, siltation, blockages are taken into consideration. And finally describe the drainage and environmental management plan, and its implementation strategies.

13.1.1 Goals and Objectives

Provision of drainage facilities are important concern to human settlements to create better living environment. Failure to provide the adequate drainage facilities results in flooding and detrimental environmental quality. Drainage of high rainfall region particularly in the context of Bhola region is very important. The objectives of drainage planning are described as follows:

- To analyze drainage aspects in the planning of the Paurashava.
- To study geological fault and lineament of the project area and its surroundings.
- To study the existing water development, flood protection and flood control project (if any) in
- the area and their impacts in the Paurashava plan.
- To present planning options for drainage of the future Paurashava area.
- To study conservation of the natural resources like parks, open space, water bodies, existing ponds etc.
- To conserve place of historical, architectural (if any) and agricultural importance including natural fisheries.

13.1.2 Methodology and Approach to Planning

Drainage Network Survey for Daulatkhan Paurashava has been carried out through the guideline of ToR .In this survey explore the existing drainage network system at Daulatkhan Paurashava. The main vision of this survey is explored the length, depth, flow direction, coverage area and satisfactory level of the Paurashava inhabitants. The information of drainage network gathered from topographic, socioeconomic and physical feature survey (detail was given in Chapter 6, Section 6.2 of Daulatkhan Survey Report). Major feature of drainage and environment survey are as follow:

- Survey the main drainage channels from their heads to the outfalls and to estimate their capacity to discharge water.
- Collect and analyze meteorological data over time in the area to determine the meteorological conditions and predict storm surges.
- Determine the efficiency of the present drainage systems and make recommendation to government.

- Organize a public enlightenment campaign to expose the adverse effects of dumping refuse in drainage channels, through a mass media meeting.
- Drainage channels were surveyed by leveling from the head of the channels to the outfall using a surveyor's level. A zero datum was chosen at the head of each channel. This zero height was then used to level the channel from the head to the toe or outfall. In areas where water flow was observed, the velocity of the flow was recorded. The flow velocity was calculated by timing the flow rate within a 3-5m length of channel. In areas where sediment or refuse was observed to accumulate in the bottom of the channel, the thickness of such sediment or refuse was measured.
- A questionnaire was administered to local residents to collect information about flooding, refuse disposal and drainage channel patterns from local residents along flood prone areas. The answers to the questionnaire were statistically analyzed and use to decipher resident's opinion on the problem of flooding.

13.2 Existing Drainage System/ Network

13.2.1 Man Made Drains

Drainage network is very much insufficient at the study area. During survey drainage outlets and reservoir are found insufficient in the study area. Very few men made drains are found to drain out waste water and storm water. Table 13.1 shows inventory of major drain in Daulatkhan Paurashava.

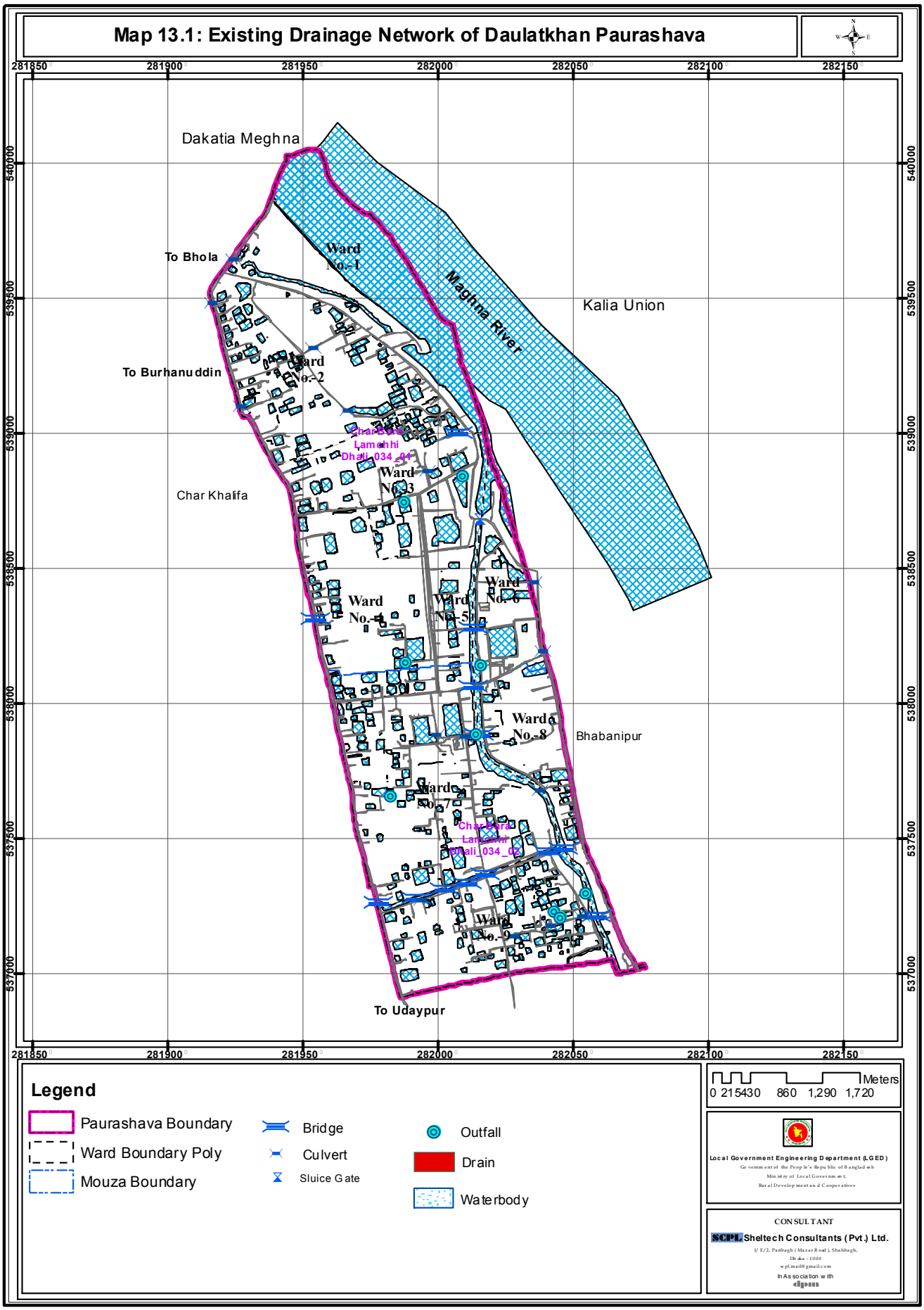
Table 13.1: Existing Inventory of Drains

Id No.	Type of Drain	length in (m)	width in ft	Ward_Name	Connectivity	
					Start point	End point
D-1	Pucca	201.91	0.98	Ward No. 03	Ward-3	Ward-3
D-2	Pucca	314.84	0.98	Ward No. 03	Ward-3	Ward-3
D-3	Pucca	486.77	0.98	Ward No. 04	Ward-4	Ward-4
D-4	Pucca	330.7	0.98	Ward No. 03	Ward-3	Ward-3
D-5	Pucca	155.2	0.66	Ward No. 05	Ward-5	Ward-5
D-6	Pucca	99.19	0.66	Ward No. 06	Ward-6	Ward-6
D-7	Pucca	100.58	0.66	Ward No. 06	Ward-6	Ward-6
D-8	Pucca	102.56	0.66	Ward No. 06	Ward-6	Ward-6
D-9	Pucca	100.92	0.66	Ward No. 07	Ward-7	Ward-7
D-10	Pucca	147.86	0.66	Ward No. 06	Ward-6	Ward-6
D-11	Pucca	105.24	0.66	Ward No. 07	Ward-7	Ward-7
D-12	Pucca	133.27	0.66	Ward No. 07	Ward-7	Ward-7
D-13	Pucca	198.59	0.66	Ward No. 07	Ward-7	Ward-7

Id No.	Type of Drain	length in (m)	width in ft	Ward_Name	Connectivity	
					Start point	End point
D-14	Pucca	88.04	0.66	Ward No. 07	Ward-7	Ward-7
D-15	Pucca	183.63	2.46	Ward No. 09	Ward-9	Ward-9
D-16	Pucca	25.16	1.97	Ward No. 09	Ward-9	Ward-9
D-17	Pucca	516.2	0.98	Ward No. 05	Ward-5	Ward-5
Total Length (in m)		**3290.66**				

Source: Physical Feature Survey, 2010

Table 13.1 shows the ward wise manmade drainage coverage in Daulatkhan Paurashava. Total man made drainage coverage in Daulatkhan Paurashava for an area of 0.98 Square kilometer and it covers all Ward. The highest drainage coverage concentrates in ward no. 07. **Map 13.1** Shows the existing Drainage Network of Daulatkhan Paurashava.


Map 13.1: Existing Drainage Network of Daulatkhan Paurashava
N
W
E
S
281850
281900
281950
282000
282050
282100
282150
540000
539500
539000
538500
538000
537500
537000
Dakatia Meghna
To Bhola
Ward No.-1
Meghna River
Kalia Union
To Burhanuddin
Ward No.-2
Char Kalma Lamchhi
Dhali_034_04
Ward No.-3
Char Khalifa
Ward No.-4
Ward No.-5
Ward No.-6
Ward No.-8
Bhabanipur
Ward No.-7
Char Kalma Lamchhi
Dhali_034_02
Ward No.-9
To Udaypur
Legend
Paurashava Boundary
Ward Boundary Poly
Mouza Boundary
Bridge
Culvert
Sluice Gate
Outfall
Drain
Waterbody
Meters
0 215430 860 1,290 1,720
Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government,
Rural Development and Cooperatives
CONSULTANT
SCPL Sheltech Consultants (Pvt.) Ltd.
1/ E/2, Panbagh (Mazar Road), Shahbagh,
Dhaka - 1000
scpl.mail@gmail.com
In Association with

13.2.2 Natural Canal and River

General Description of Natural Canals

The existing natural canal network is spread like tree roots in total Paurashava area. In some portion of the area the condition of the khal and irrigation canal are being encroached by the local people and also by local authority and the situation is deteriorating day by day. So, it should be given much concern to sustain the natural canal.

At Daulatkhan Paurashava canals have an important role in drainage system. Total area of khal/canal at Daulatkhan is 4.17 acres. Table 13.2 shows the length and connectivity of Khals of Daulatkhan Paurashava, and ward wise area coverage of the canals are presented in table 13.2.

Table 13.2: Drainage Coverage of Existing Khals/Canals in Daulatkhan Paurashava

Name	Length (in m)	Width (in m)	Starting Point Connection	End Point Connection
Canal-1	622.35	11.86	Ward-01	Ward-01
Canal-2	687.77	12.38	Ward-07	River

Source: Physical Feature Survey, 2010

River

Daulatkhan Paurashava comprises one river namely Meghna which encloses about 66.04 acre of the Paurashava area covering ward no. 1, 3, 5,6,7,8 and 9. The river passes by the side of the wards. So the Paurashava do not cover the total width of the river. The river serves as primary drainage and is connected with the canals/khals at the Daulatkhan Paurashava.

Other Water Bodies (Pond-Dighi-Ditch and Dyke)

At Daulatkhan Paurashava, about 108.63 acre areas are under water bodies comprising ditch and pond. There are about 120 ditches covering 9.56 acres area and 439 ponds comprising 99.07 acres area. Among the all wards ward no. 9 has the highest number of ditches whereas ward 2 has the highest numbers of ponds.

Table 13.3: Ward-Wise Area Coverage of Existing Waterbodies at Daulatkhan Paurashava

Ward No.	Ditch		Pond		Total	
	Number	Area (acre)	Number	Area(acre)	Number	Area (acre)
W-1	0	0	8	0.88	8	0.88
W-2	21	1.31	101	17.77	122	19.08
W-3	11	1.25	70	18.39	81	19.64
W-4	10	1.22	50	13.08	60	14.30
W-5	0		11	3.41	11	3.41
W-6	0		9	5.95	9	5.95
W-7	30	2.61	69	19.03	99	21.64
W-8	21	1.53	33	6.48	54	8.02
W-9	27	1.64	88	14.07	115	15.71
Total	**120**	**9.56**	**439**	**99.07**	**559**	**108.63**

Source: Physical Feature Survey, 2010

13.2.3 Topographic Condition of Existing Drainage Network

Existing natural drainage network and direction of natural flow depends on the elevation of the area. The minimum and maximum ground level varies from 0.50 m to 4.50 m and average height is 1.50 m. From the survey, it has been observed that ward no. 1, 3, 4 and 9 are the low land area in respect of other wards. The flow of storm water will be from the high land to the lowlands and the ultimate destination is the river, cannels and ponds.

13.2.4 Analysis of Peak Hour Run Off Discharge and Identification of Drainage Outfalls

Drain as the structure is generally develops to free our living area from household waste water and rain water of storm water. The daily waste water discharge from a household is negligible so for the drainage design it is necessary to calculate the storm water. Urban storm drainage primarily concerns this surface run-off. The primary objective of urban drainage system design is to drain out this storm water either through open surface drains or through underground sewers. An important parameter for the design of storm water systems is the rate and volume of run-off to be conveyed through the system as a consequence of storms. Run-off estimates are carried out based on knowledge of the occurrences of heavy rainstorms and a relation between rainfall and the corresponding run-off. The quantity of run-off again depends on the geometry and physical properties of the catchments.

Rainfall occurs at irregular intervals, and intensities, and frequency and duration vary within catchments. Due to this random nature of occurrence of rain events, the storm drainage system is designed considering estimated run-off based on the analyses of past rainfall records. A widely used statistical description of heavy rainfall is that of intensity–duration–frequency curves that are developed by processing the data for a large number of storm events observed over a number of years, considering the time variation of the rainfall intensity.

Method Used

Storm and used water: The drains are designed to collect excess rainfall that comes as surface runoff from urban area, convey the runoff and finally discharge them to outfalls. The design of drains involves hydrological computations of rainfall intensity, its frequency of occurrence, duration etc., and the total run off of a particular area. The modified rational method shall be used for calculation of peak runoff for a definite frequency and duration from particular drainage basin. One limitation of this method is that it cannot be used for catchment area greater than 320 acres. The Natural Resources Conservation Service (NRCS) method formerly the US Soil Conservation Service (SCS) method shall be used.

In Modified Rational Method, the overall watershed is divided into zones that contribute to hydraulically significant points of concentration. The boundary of the zones is established based upon local topographic boundaries such as streets, existing drainage systems, etc., using good engineering practice.

The design flow rate by Modified Rational Formula is

$Q = CsC\ r\ IA$

Q = Design runoff flow rate (cfs)
I = Rainfall intensity (in/hr)
Cs = Storage coefficient
Cr = Runoff coefficient
A = Drainage area (acres)

Rainfall Intensity (I): The rainfall intensity is the average rainfall rate for a particular drainage basin or sub-basin. The intensity is selected on the basis of the design rainfall duration and return period. The return period is established by design standards as a design parameter. Rainfall intensity with 5 years return period is generally employed for design of primary drains and canal improvement. Rainfall intensity with 3 years return period is employed for design of secondary drains. The design duration is equal to the time of concentration for the drainage area under consideration. Time of concentration is a critical parameter both for the Modified Rational Equation and SCS method. Time of concentration is generally defined as the longest runoff travel time for contributing flow to reach the outlet or design point, or other point of interest. It is frequently calculated along the longest flow path physically.

Estimating the time of concentration involves identification of an appropriate flow path or paths and estimating runoff travel times along the flow paths. Where post-development conditions include significant pervious surfaces, the time of concentration for just impervious portions of the basin may be required to calculate and compare peak flow response for the basin as a whole against that of the more rapidly-draining impervious surfaces alone. The Time of Concentration composed of the Initial Time of Concentration, sometimes referred to as the Inlet Time or Time of Entry and the Travel Time. Initial Time of Concentration is that time required for runoff to travel from the most remote point in the drainage area to the first point of concentration. This can be determined using the Kirpitch equation. The Initial Time of Concentration must be five minutes or longer. In instances where Initial Times of Concentration are estimated to be shorter than five minutes, five minutes shall be applied.

The second part of the Time of Concentration is the Travel Time that takes the flow to travel along the drain. Channel flow occurs in channels carrying integrated flows, pipes (flowing partially full), and streams. Where storage is not significant, Travel Times can be estimated by applying Manning's Equation, and using estimates of channel characteristics and appropriate roughness values for pipe, channel, or stream features as tabulated in Table 13.4.

$V=[1.49/n]\ [R^{2/3}]\ [S^{1/2}]$

V = Velocity of flow, feet/second
N = Manning's roughness coefficient for channel flow
S = Slope, feet/foot
R = Hydraulic radius, feet

And

$T_t = V / (60L)$

T_t = Travel time, minutes

V = Velocity, feet/second

L = Length, feet

Table 13.4: Manning's "N" Values for Channel Flow

Conduit Material	Manning's "n"	Conduit Material	Manning's "n"
Closed conduits		Pipes	0.011-0.015
Asbestos-cement pipe	0.011-0.015	Liner plates	0.013-0.017
Brick	0.013-0.017	Open Channels	
Cement-lined & seal coated	0.011-0.015	Lined channels	
Concrete pipe	0.011-0.015	Asphalt	0.013-0.017
Helically corrugated metal pipe (12'' – 48'')	0.013-0.023	Brick	0.012-0.018
Paved invert	0.018-0.022	Vegetation	0.030-0.400
Spun asphalt lined	0.011-0.015	Earth, straight and uniform	0.020-0.030
Spiral metal pipe (smooth)	0.012-0.015	Earth, winding, fairly uniform	0.025-0.040
3 – 8 in. diameter	0.014-0.016	Rock	0.030-0.045
10 – 12 in. diameter	0.016-0.018	Un maintained	0.050-0.140
Larger than 12 in. diameter	0.019-0.021	Fairly regular section	0.030-0.070
Plastic pipe (smooth interior)	0.01.-0.015	Irregular section with pools	0.040-0.100

Source: Municipality of Anchorage. Drainage Design Guideline, March 2007 ver.4.08 pp-62.

Storage Coefficient (Cs): Due to very flat topography of Bangladesh, the runoff is significantly slow. The rainfall after evaporation and infiltration accumulates first in the depressions, until these have been reached their capacity and then runoff. To take these effects a storage coefficient is used. The value of the storage coefficient is based on average ground slope and the nature of the ground surface. Some of the storage coefficients are listed in Table 13.5

Table 13.5: Storage Coefficients for Flat Land

Characteristics of surface	Storage Coefficient		
	Slope < 1: 1000	Slope < 1: 500	Slope < 1: 500
Residential urban	0.70	0.80	0.90
Commercial	0.80	0.90	1.00
Industrial	0.70	0.80	0.90
Residential Rural nature	0.60	0.70	0.80
Agricultural	0.50	0.60	0.70
Forest/woodland	0.30	0.40	0.50
Aquatic land	0.30	0.40	0.50
Paved area/road	0.80	0.90	1.00

Source: Countywide Comprehensive Plan (Master Drainage Plan) Exhibit-VIII.

Runoff Coefficient (Cr): The runoff coefficient (Cr) values shall be assigned to the various land use zoning classifications. The runoff coefficient values are based on the slope of the land surface, degree of imperviousness and the infiltration capacity of the land surface. The type of land use can greatly affect the amount of runoff. The quantity of runoff and peak flow rates are increased when the land is developed because the impervious surface area increases with the addition of roads, driveways, roofs, etc. The values of the runoff coefficient (Cr) for each land use classification are listed in Table 13.6

Table 13.6: Modified Rational Method Runoff Coefficients

Land use designation	Runoff Coefficient Cr	Land use designation	Runoff Coefficient Cr
Residential rural	0.30	Agricultural exclusive	0.25
Residential semi urban	0.40	Forest and watershed	0.20-0.25
Residential urban	0.5-0.60	Public facilities	0.30-0.60
Apartment professional	0.70	Forest/ woodland	0.25
Neighborhood Commercial	0.85	Paved area/road	0.99
Community Commercial	0.85	Slum area	0.50-0.55
Industrial	0.70-0.75		

Source: Countywide Comprehensive Plan (Master Drainage Plan) Exhibit-VIII.

Catchment Area: The size and shape of the catchment or sub-catchment for each drain shall be determined by plan metering topographic maps and by field survey. In determining the total runoff of a catchment area the following assumptions to be made:

a. The peak rate of runoff at any point is a direct function of the average rainfall for the time of concentration to that point.

b. The recurrence interval of the peak discharge is same as the recurrence interval of the average rainfall intensity.

c. The Time of Concentration is the time required for the runoff to become established and flow from the most distant point of the drainage area to the point of discharge.

Projection

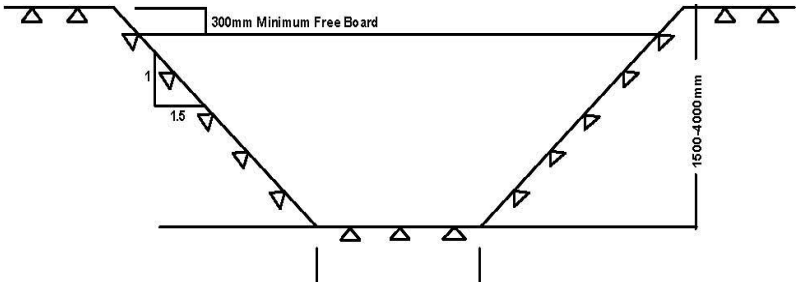
In implementing various infrastructures for development, drainage is generally given less priority and is normally considered to be the last or final steps for development. Such scenario is particularly true for Bangladesh; although different types of drainage infrastructures are among others by far the heaviest impact on physical infrastructure network. As a result, physical environment, health, hygiene and standard of living suffer seriously. In development projects, Government, Semi-government and Public sector allocated funds are mostly spent on buildings, roads and other more visible infrastructures and drainage comes as the last item of development. By the time, drainage development begins to start; there appears shortage of fund, consequently

as a matter of policy-do little or do-nothing situation appears and as eyewash very little is done for drainage development. In case of urban development, if drainage is not given priority, sufferings of the inhabitants will continuously increase with the passage of time.

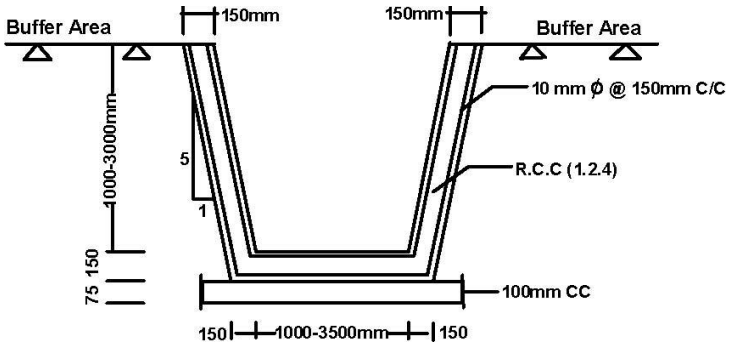
Drainage development for urbanization should start with drains. Drains can be classified as Plot drains, Block drains, Tertiary drains, Secondary drains and Primary drains. Other natural drainage infrastructure is lowland, outfall areas, khals and rivers. Man-made drains are Plot, Block, Tertiary, Secondary and Primary drains and others are natural drainage infrastructures. In planning for drainage network, care will be given on road network in terms of conflict of drainage and waterways with roads. In the following and subsequent sections major element, their principle, purpose and function of drainage infrastructures are discussed and presented in lower to higher order which will be considered as a method for drainage planning.

Primary Drain

Primary drains are called as the main drains. Primary drains cover larger storm drainage area than above discussed tertiary and secondary drains. In ascending order its position is third. Its cross-section is larger than other types; carrying capacity is high and is constructed of brick, cement concrete and sometimes reinforced concrete. Primary drains may be of earthen structure provided sufficient land is available and land value is low. Contributing drainage water comes from tertiary and secondary drains. Primary drains discharge its drainage water to outfall, natural khal, river or large lowland area/ Beels. Figure 13.1 and 13.2 show the typical cross-section of the primary drain.



A Typical Earthen Primary Drain (Dimensions in mm)
Fig 13.1: Earthen Primary Drain

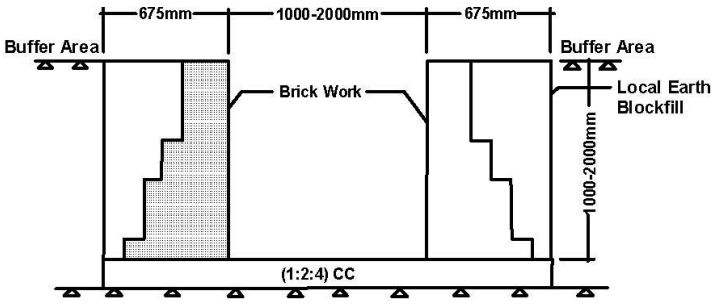


A Typical RCC Primary Drain (Dimensions in mm)
Fig 13.2: Typical RCC Primary Drain

Secondary Drain

Secondary drains collect discharge from tertiary drains. One secondary drain may receive drainage discharges from several tertiary drains in its course. Size and capacity of secondary drain is much bigger than tertiary drains, its catchment area is also bigger than tertiary drains.

Like tertiary drains, it may run parallel to bigger roads. Secondary drains may run along



A Typical Secondary Drain (Dimensions in mm)
Fig 13.3: A Typical Secondary Drain

and through the middle of its storm water contributing area. The typical cross-section, size and shape, and its construction material are shown in figure 13.3.

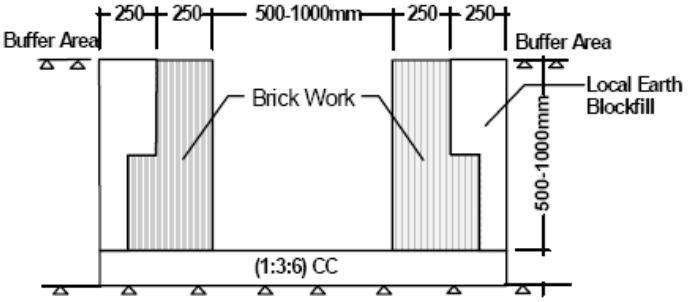


Fig 13.4: A Typical Tertiary Drain

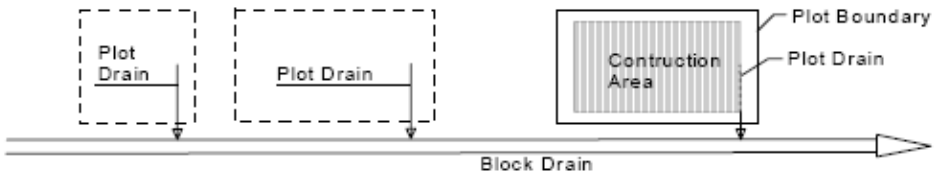
Tertiary Drain

Tertiary drain carry run-off or storm water received from the above mentioned plot drains and block or Mohallah drains. Their catchment area or storm water contributing area is bigger than Mohallah drains. Tertiary drains generally are the under jurisdiction of municipality and city corporation. These drains or drainage networks are constructed and maintained directly by municipalities and City Corporation. These drains are constructed by brick, cement concrete and sometimes by excavating earth in their alignments. These drains may run parallel to road or across the catchment area. Sometimes borrow pits of the road serves as drains provided borrow pits are uniformly and continuously excavated. Borrow pits that serve as drains may be channeled or lined by brick works. Tertiary drains deliver its discharge usually to secondary drains. A typical tertiary drain is shown in figure 13.4.

Other kinds of drainage infrastructure are lowland, outfall areas, khals and rivers. Manmade drains are Plot, Block, Tertiary, Secondary and Primary drains and others are natural drainage infrastructures. In planning for drainage network, care should be given for road network in terms of conflict of drainage and waterways with roads. In the following and subsequent sections major element, their principle, purpose and function are discussed and presented in lower to higher order:

Plot Drains

Plot drains are provided around a building on a plot. In most cases, the drain is made of bricks and rectangular in shape that can carry storm water generated in the plot and from the building. Plot drain is connected to the Block or Mohallah drain. Figure 13.5 below gives an impression of plot drain usually constructed in a plot and block drains that follow plot drain.



A Sketch Showing Plot and Block Drain
Fig 13.5: Plot and Block Drain

Block Drain

A block drain is provided at the outside of a block that accommodates several buildings of the block. The block drains are made of bricks like plots drains but bigger in size so that it can serve the storm water generated within the block and the buildings and open areas within the block. Sometimes the block drain may serve few neighboring blocks or Mohallahs. Block drains carry storm water coming from the plot drains. The shape of the block drain is also rectangular, but bigger than plot drains and its bottom is lower than plot drain. The sketch of the plot drain above also shows the block or Mohallah drain under plot drain.

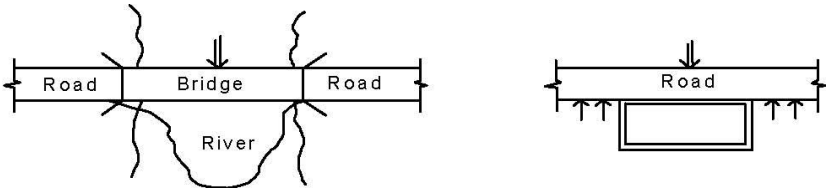
Other Drainage Related Infrastructures

In order to facilitate or mitigate drainage issues some infrastructures are provided or used, these are namely

- Bridges, culverts, box culverts
- Drainage sluices, pipe sluices, siphons
- Flood protection embankments and flood walls
- Sluice gates, Regulators, Navigation lock
- Flood protection and drainage structures.

Bridges, Culverts and Box Culverts

These structures are provided at places wherever roads cross the drainage network system. Such structures are built on the roads to free passage of drainage water and sometimes to provide navigation/ boat passages. Consequently the conflict between drainage and road networks is mitigated. Figures below show bridge and culverts in such system.



Definition Sketch Bridge Definition Sketch Culvert
Fig 13.6: Bridge and Culvert

Drainage sluices, pipe sluices and siphons

Drainage sluices, pipe sluices and siphons are provided on the embankments. Embankments protect the area from floods coming from outside rivers and make the project area flood free.

However storm water from rainfall-runoff within the area causes localized flood, drainage congestion and submergence. A sketch below shows a few of such structures.

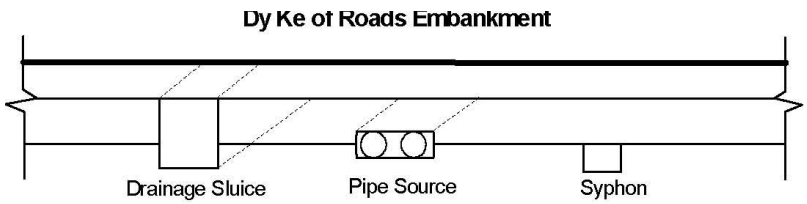


Fig 13.7: A schematic View of Drainage Sluice, Pipe Sluice and Siphon on Embankment Which Relieve Drainage Congestion.

13.3 Plans for Drainage Management and Flood Control

13.3.1 Plan for Drain Network Development Drainage Network Plan

The Paurashava needs a hierarchical drainage system for easy and smooth discharge of storm and waste water comprising tertiary, secondary and primary drains. The existing natural khals will serve as primary drains.

13.3.2 Proposal for Improvement of the Existing Drain Networks

Daulatkhan paurashava has only 3.29 km pucca drainage network. A narrow portion of the paurashava is served by this network system. Based on the results of drainage study it is recommended for the existing drain that:

- Rehabilitate broken drains;
- Cover the open drains based on budget allocation.
- Construction of new channels and rehabilitation of old ones with enough drainage head.
- Construct a new pump drainage network for the area towards Paira River.
- Remove all un-authorized structures, which developed on drainage structures.
- Regular cleaning and maintenance by the concerned authorities.
- Embarking on a sustained public enlightenment to discourage residents from dumping their refuse into drainage channels.

13.3.3 Outfall of Drains

Maximum drainage out fall exists at Daulatkhan Paurashava are in river, canal/ khals in different ward and low lying areas.

13.3.3.1 List of Proposed New Drains

Total 1.53 km will be served as primary drain. Based on this primary drain drainage network system of Daulatkhan Paurashava will be established. Table 13.7 shows the summary of proposed drainage facilities at Daulatkhan Paurashava. And Map 13.2 shows the drainage network proposal for Daulatkhan Paurashava. In additional the Meghna River flowing through the Daulatkhan Paurashava will serve as the main out fall and main natural drainage network. Phasing of proposed drains has been shown in Table 13.8. **Map 13.2** represents the proposed drains in Paurashava.

Table 13.7: Summary of Proposed Drain

Type of Drain	Length (in m)	Length (in km)	%
Primary	1534.07	1.53	4.03
Secondary	16334.49	16.33	42.95
Tertiary	20157.10	20.16	53.00
Grand Total	**38025.66**	**38.03**	**100.00**

Table 13.8: Proposals of New Drain

Drain_ID	Drain Type	Length (in m)	Width (in ft)	Depth (in m)	Phase
PR-1	Primary Drain	199.18	3.5-4.5	2.00-3.00	1st
PR-2	Primary Drain	39.85	3.5-4.5	2.00-3.00	1st
PR-3	Primary Drain	346.27	3.5-4.5	2.00-3.00	3rd
PR-4	Primary Drain	164.89	3.5-4.5	2.00-3.00	2nd
PR-5	Primary Drain	111.64	3.5-4.5	2.00-3.00	3rd
PR-6	Primary Drain	5.74	3.5-4.5	2.00-3.00	3rd
PR-7	Primary Drain	16.55	3.5-4.5	2.00-3.00	3rd
PR-8	Primary Drain	129.20	3.5-4.5	2.00-3.00	1st
PR-9	Primary Drain	13.29	3.5-4.5	2.00-3.00	1st
PR-10	Primary Drain	144.26	3.5-4.5	2.00-3.00	1st
PR-11	Primary Drain	232.75	3.5-4.5	2.00-3.00	1st
PR-12	Primary Drain	186.35	3.5-4.5	2.00-3.00	1st
PR-13	Primary Drain	0.01	3.5-4.5	2.00-3.00	2nd
PR-14	Primary Drain	0.01	3.5-4.5	2.00-3.00	3rd
PR-15	Primary Drain	0.01	3.5-4.5	2.00-3.00	3rd
PR-16	Primary Drain	0.01	3.5-4.5	2.00-3.00	2nd
PR-17	Primary Drain	0.03	3.5-4.5	2.00-3.00	2nd
PR-18	Primary Drain	0.03	3.5-4.5	2.00-3.00	2nd
SR-2	Secondary Drain	389.83	2.5-3.5	1.124-2.124	3rd
SR-3	Secondary Drain	652.62	2.5-3.5	1.124-2.124	2nd
SR-4	Secondary Drain	650.85	2.5-3.5	1.124-2.124	2nd
SR-5	Secondary Drain	832.54	2.5-3.5	1.124-2.124	3rd
SR-6	Secondary Drain	553.00	2.5-3.5	1.124-2.124	3rd
SR-7	Secondary Drain	320.43	2.5-3.5	1.124-2.124	3rd
SR-8	Secondary Drain	39.00	2.5-3.5	1.124-2.124	3rd
SR-9	Secondary Drain	610.29	2.5-3.5	1.124-2.124	3rd
SR-10	Secondary Drain	358.18	2.5-3.5	1.124-2.124	3rd
SR-11	Secondary Drain	213.38	2.5-3.5	1.124-2.124	1st
SR-12	Secondary Drain	495.03	2.5-3.5	1.124-2.124	2nd
SR-13	Secondary Drain	234.18	2.5-3.5	1.124-2.124	2nd
SR-14	Secondary Drain	32.73	2.5-3.5	1.124-2.124	2nd
SR-15	Secondary Drain	8.91	2.5-3.5	1.124-2.124	2nd
SR-16	Secondary Drain	1065.56	2.5-3.5	1.124-2.124	2nd
SR-17	Secondary Drain	10.59	2.5-3.5	1.124-2.124	2nd
SR-18	Secondary Drain	687.37	2.5-3.5	1.124-2.124	2nd
SR-19	Secondary Drain	7.45	2.5-3.5	1.124-2.124	3rd
SR-20	Secondary Drain	747.31	2.5-3.5	1.124-2.124	3rd
SR-21	Secondary Drain	418.56	2.5-3.5	1.124-2.124	1st
SR-22	Secondary Drain	10.13	2.5-3.5	1.124-2.124	2nd
SR-23	Secondary Drain	268.86	2.5-3.5	1.124-2.124	3rd
SR-24	Secondary Drain	6.46	2.5-3.5	1.124-2.124	3rd
SR-25	Secondary Drain	393.33	2.5-3.5	1.124-2.124	2nd
SR-26	Secondary Drain	5.65	2.5-3.5	1.124-2.124	2nd
SR-27	Secondary Drain	789.81	2.5-3.5	1.124-2.124	2nd
SR-28	Secondary Drain	32.55	2.5-3.5	1.124-2.124	2nd
SR-29	Secondary Drain	189.72	2.5-3.5	1.124-2.124	3rd
SR-30	Secondary Drain	0.01	2.5-3.5	1.124-2.124	3rd
SR-31	Secondary Drain	416.59	2.5-3.5	1.124-2.124	3rd
SR-32	Secondary Drain	216.79	2.5-3.5	1.124-2.124	3rd
SR-33	Secondary Drain	245.52	2.5-3.5	1.124-2.124	3rd
SR-34	Secondary Drain	244.46	2.5-3.5	1.124-2.124	3rd
SR-35	Secondary Drain	171.60	2.5-3.5	1.124-2.124	3rd
SR-36	Secondary Drain	70.54	2.5-3.5	1.124-2.124	3rd
SR-37	Secondary Drain	768.99	2.5-3.5	1.124-2.124	3rd
SR-38	Secondary Drain	0.30	2.5-3.5	1.124-2.124	3rd
SR-39	Secondary Drain	0.30	2.5-3.5	1.124-2.124	3rd
SR-40	Secondary Drain	0.10	2.5-3.5	1.124-2.124	3rd
SR-41	Secondary Drain	0.10	2.5-3.5	1.124-2.124	3rd

Drain_ID	Drain Type	Length (in m)	Width (in ft)	Depth (in m)	Phase
SR-42	Secondary Drain	0.01	2.5-3.5	1.124-2.124	3rd
SR-43	Secondary Drain	509.59	2.5-3.5	1.124-2.124	1st
SR-44	Secondary Drain	178.82	2.5-3.5	1.124-2.124	1st
SR-45	Secondary Drain	424.60	2.5-3.5	1.124-2.124	3rd
SR-46	Secondary Drain	701.82	2.5-3.5	1.124-2.124	3rd
SR-47	Secondary Drain	503.76	2.5-3.5	1.124-2.124	3rd
SR-48	Secondary Drain	394.96	2.5-3.5	1.124-2.124	3rd
SR-49	Secondary Drain	328.80	2.5-3.5	1.124-2.124	3rd
SR-50	Secondary Drain	406.08	2.5-3.5	1.124-2.124	2nd
SR-51	Secondary Drain	412.84	2.5-3.5	1.124-2.124	3rd
SR-52	Secondary Drain	158.39	2.5-3.5	1.124-2.124	2nd
SR-53	Secondary Drain	155.20	2.5-3.5	1.124-2.124	2nd
TR-1	Tertiary Drain	189.81	1.5-2.5	.64-1.00	3rd
TR-2	Tertiary Drain	407.50	1.5-2.5	.64-1.00	2nd
TR-3	Tertiary Drain	144.22	1.5-2.5	.64-1.00	2nd
TR-4	Tertiary Drain	313.65	1.5-2.5	.64-1.00	2nd
TR-5	Tertiary Drain	259.06	1.5-2.5	.64-1.00	2nd
TR-6	Tertiary Drain	248.94	1.5-2.5	.64-1.00	2nd
TR-7	Tertiary Drain	55.62	1.5-2.5	.64-1.00	2nd
TR-8	Tertiary Drain	87.48	1.5-2.5	.64-1.00	2nd
TR-9	Tertiary Drain	433.10	1.5-2.5	.64-1.00	2nd
TR-10	Tertiary Drain	149.77	1.5-2.5	.64-1.00	2nd
TR-11	Tertiary Drain	267.52	1.5-2.5	.64-1.00	2nd
TR-12	Tertiary Drain	179.45	1.5-2.5	.64-1.00	2nd
TR-13	Tertiary Drain	298.56	1.5-2.5	.64-1.00	2nd
TR-14	Tertiary Drain	316.79	1.5-2.5	.64-1.00	2nd
TR-15	Tertiary Drain	123.38	1.5-2.5	.64-1.00	2nd
TR-16	Tertiary Drain	95.47	1.5-2.5	.64-1.00	2nd
TR-17	Tertiary Drain	187.11	1.5-2.5	.64-1.00	2nd
TR-18	Tertiary Drain	143.89	1.5-2.5	.64-1.00	2nd
TR-19	Tertiary Drain	471.08	1.5-2.5	.64-1.00	2nd
TR-20	Tertiary Drain	118.56	1.5-2.5	.64-1.00	2nd
TR-21	Tertiary Drain	398.47	1.5-2.5	.64-1.00	2nd
TR-22	Tertiary Drain	282.43	1.5-2.5	.64-1.00	2nd
TR-23	Tertiary Drain	133.22	1.5-2.5	.64-1.00	2nd
TR-24	Tertiary Drain	236.47	1.5-2.5	.64-1.00	2nd
TR-25	Tertiary Drain	144.47	1.5-2.5	.64-1.00	2nd
TR-26	Tertiary Drain	11.26	1.5-2.5	.64-1.00	2nd
TR-27	Tertiary Drain	131.12	1.5-2.5	.64-1.00	2nd
TR-28	Tertiary Drain	281.74	1.5-2.5	.64-1.00	2nd
TR-29	Tertiary Drain	89.55	1.5-2.5	.64-1.00	2nd
TR-30	Tertiary Drain	0.02	1.5-2.5	.64-1.00	2nd
TR-31	Tertiary Drain	0.01	1.5-2.5	.64-1.00	2nd
TR-32	Tertiary Drain	0.21	1.5-2.5	.64-1.00	2nd
TR-33	Tertiary Drain	174.38	1.5-2.5	.64-1.00	2nd
TR-34	Tertiary Drain	331.57	1.5-2.5	.64-1.00	2nd
TR-35	Tertiary Drain	114.91	1.5-2.5	.64-1.00	2nd
TR-36	Tertiary Drain	242.01	1.5-2.5	.64-1.00	2nd
TR-37	Tertiary Drain	346.37	1.5-2.5	.64-1.00	2nd
TR-38	Tertiary Drain	260.09	1.5-2.5	.64-1.00	2nd
TR-39	Tertiary Drain	201.13	1.5-2.5	.64-1.00	2nd
TR-40	Tertiary Drain	176.80	1.5-2.5	.64-1.00	2nd
TR-41	Tertiary Drain	283.90	1.5-2.5	.64-1.00	2nd
TR-42	Tertiary Drain	128.53	1.5-2.5	.64-1.00	2nd
TR-43	Tertiary Drain	378.74	1.5-2.5	.64-1.00	3rd
TR-44	Tertiary Drain	109.06	1.5-2.5	.64-1.00	3rd
TR-45	Tertiary Drain	234.60	1.5-2.5	.64-1.00	3rd
TR-46	Tertiary Drain	146.22	1.5-2.5	.64-1.00	3rd
TR-47	Tertiary Drain	0.02	1.5-2.5	.64-1.00	3rd
TR-48	Tertiary Drain	0.01	1.5-2.5	.64-1.00	3rd
TR-49	Tertiary Drain	0.21	1.5-2.5	.64-1.00	3rd

Drain_ID	Drain Type	Length (in m)	Width (in ft)	Depth (in m)	Phase
TR-50	Tertiary Drain	0.17	1.5-2.5	.64-1.00	3rd
TR-51	Tertiary Drain	0.09	1.5-2.5	.64-1.00	2nd
TR-52	Tertiary Drain	0.26	1.5-2.5	.64-1.00	2nd
TR-53	Tertiary Drain	264.93	1.5-2.5	.64-1.00	3rd
TR-54	Tertiary Drain	122.45	1.5-2.5	.64-1.00	2nd
TR-55	Tertiary Drain	171.40	1.5-2.5	.64-1.00	1st
TR-56	Tertiary Drain	92.43	1.5-2.5	.64-1.00	1st
TR-57	Tertiary Drain	132.54	1.5-2.5	.64-1.00	1st
TR-58	Tertiary Drain	104.10	1.5-2.5	.64-1.00	2nd
TR-59	Tertiary Drain	344.01	1.5-2.5	.64-1.00	1st
TR-60	Tertiary Drain	187.63	1.5-2.5	.64-1.00	1st
TR-61	Tertiary Drain	0.94	1.5-2.5	.64-1.00	2nd
TR-62	Tertiary Drain	267.64	1.5-2.5	.64-1.00	1st
TR-63	Tertiary Drain	246.53	1.5-2.5	.64-1.00	2nd
TR-64	Tertiary Drain	246.83	1.5-2.5	.64-1.00	2nd
TR-65	Tertiary Drain	7.78	1.5-2.5	.64-1.00	2nd
TR-66	Tertiary Drain	350.12	1.5-2.5	.64-1.00	2nd
TR-67	Tertiary Drain	128.22	1.5-2.5	.64-1.00	2nd
TR-68	Tertiary Drain	187.99	1.5-2.5	.64-1.00	2nd
TR-69	Tertiary Drain	330.40	1.5-2.5	.64-1.00	2nd
TR-70	Tertiary Drain	194.13	1.5-2.5	.64-1.00	2nd
TR-71	Tertiary Drain	116.42	1.5-2.5	.64-1.00	2nd
TR-72	Tertiary Drain	133.19	1.5-2.5	.64-1.00	3rd
TR-73	Tertiary Drain	219.70	1.5-2.5	.64-1.00	3rd
TR-74	Tertiary Drain	276.95	1.5-2.5	.64-1.00	3rd
TR-75	Tertiary Drain	32.73	1.5-2.5	.64-1.00	3rd
TR-76	Tertiary Drain	229.74	1.5-2.5	.64-1.00	3rd
TR-77	Tertiary Drain	184.49	1.5-2.5	.64-1.00	3rd
TR-78	Tertiary Drain	244.72	1.5-2.5	.64-1.00	2nd
TR-79	Tertiary Drain	121.29	1.5-2.5	.64-1.00	2nd
TR-80	Tertiary Drain	133.87	1.5-2.5	.64-1.00	2nd
TR-81	Tertiary Drain	151.71	1.5-2.5	.64-1.00	2nd
TR-82	Tertiary Drain	7.20	1.5-2.5	.64-1.00	2nd
TR-83	Tertiary Drain	381.61	1.5-2.5	.64-1.00	1st
TR-84	Tertiary Drain	413.42	1.5-2.5	.64-1.00	2nd
TR-85	Tertiary Drain	214.23	1.5-2.5	.64-1.00	2nd
TR-86	Tertiary Drain	150.07	1.5-2.5	.64-1.00	3rd
TR-87	Tertiary Drain	452.18	1.5-2.5	.64-1.00	3rd
TR-88	Tertiary Drain	5.72	1.5-2.5	.64-1.00	3rd
TR-89	Tertiary Drain	686.06	1.5-2.5	.64-1.00	1st
TR-90	Tertiary Drain	155.97	1.5-2.5	.64-1.00	1st
TR-91	Tertiary Drain	0.17	1.5-2.5	.64-1.00	2nd
TR-92	Tertiary Drain	0.09	1.5-2.5	.64-1.00	2nd
TR-93	Tertiary Drain	0.26	1.5-2.5	.64-1.00	2nd
TR-94	Tertiary Drain	4.50	1.5-2.5	.64-1.00	2nd
TR-95	Tertiary Drain	272.58	1.5-2.5	.64-1.00	2nd
TR-96	Tertiary Drain	383.03	1.5-2.5	.64-1.00	2nd
TR-97	Tertiary Drain	6.39	1.5-2.5	.64-1.00	2nd
TR-98	Tertiary Drain	723.64	1.5-2.5	.64-1.00	2nd
TR-99	Tertiary Drain	233.04	1.5-2.5	.64-1.00	1st
TR-100	Tertiary Drain	497.74	1.5-2.5	.64-1.00	1st
TR-101	Tertiary Drain	439.30	1.5-2.5	.64-1.00	1st
TR-102	Tertiary Drain	188.97	1.5-2.5	.64-1.00	2nd
TR-103	Tertiary Drain	12.03	1.5-2.5	.64-1.00	2nd
TR-104	Tertiary Drain	177.85	1.5-2.5	.64-1.00	2nd
TR-105	Tertiary Drain	197.17	1.5-2.5	.64-1.00	1st

13.3.3.2 List of Infrastructure measures for Drainage and Flood Control Network

Total 10 box culverts, 3 pipe culverts and 1 sluice gate will be established for drainage and flood control network of Daulatkhan Paurashava.

13.4 Implementation Strategies and Principles

13.4.1 Plan Implementation Strategies

Management of a drainage system is more difficult than its construction. It requires not only an institutional set up but also huge resources for regular maintenance. The present engineering set up of the Paurashava is highly inadequate to manage the future drainage network. It must be equipped not only with adequate manpower but also sufficient number of logistics and equipment will be necessary for sound maintenance of the drainage system. For Daulatkhan Paurashava with its meager revenue earning it will be extremely difficult to go for regular maintenance of the drainage system without government assistance. So, the Paurashava must be provided with sufficient budget allocation to maintenance going on regularly. The next strategy will be to create awareness among the citizens not to dispose of solid waste in the drains and get them clogged. This can be done by regular publicity, engaging NGOs for motivation and the last imposing punitive measures like, fine on the waste disposer.

13.4.2 Regulations to Implement the Drainage and Flood Plan

Regulations in Bangladesh which are related to drainage and flood management:

1. **The Acquisition and Requisition of Immovable Property Ordinance, 1982,** for acquisition of land to construct drainage and flood control structures. The Bangladesh Water Development Board is main executing organization to implement drainage and flood control activities.

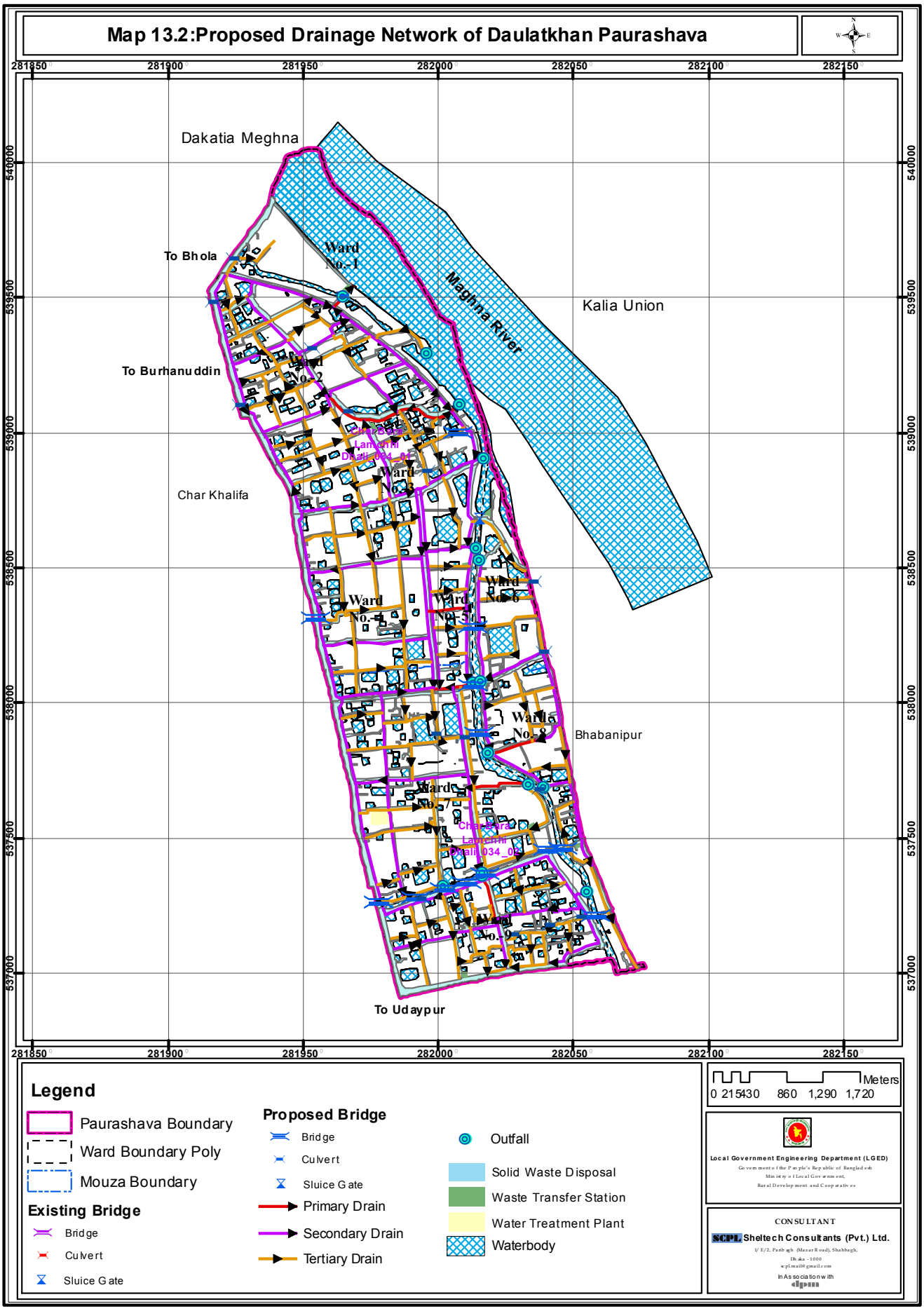
2. **National Water Policy (NWP)-1999,** regulatory policy to construct structures for flood control and drainage management. The Bangladesh Water Development Board is the executing and regulatory organization.

3. **National Water Management Plan (NWMP)-2004,** regulatory plan for management of flood, drainage and water resources of Bangladesh. The Bangladesh Water Development Board is the executing and regulatory organization. Local Government Engineering Department (LGED) is responsible for management of small scale water resources in Bangladesh.

4. **Canal and Drainage Act, 1872** has enacted for excavation of canal and removal of drainage congestion from agriculture land.

5. **Public Health (Emergency Provision) Ordinance, 1944** has enacted for the improvement of drainage and sanitation facilities. Department of Public Health Engineering (DPHE) is authorized to enforce the regulations.

6. **Water Body Reservoir Act 2000** has enacted for the provision to control the illegal development activities on natural water body of Metropolitan city, Divisional town, District town and all other Paurashava area. The act also enacts that Natural Streams (River, khal, Beel, Large pond/ Lake, Waterfall or water bodies which is identified in Master Plan or any place as flood flow area, rain water or other natural drainage water reservoir area proclaimed by Government, Local Government or any organization


Map 13.2:Proposed Drainage Network of Daulatkhan Paurashava
N
W
E
S
281850
281900
281950
282000
282050
282100
282150
540000
539500
539000
538500
538000
537500
537000
Dakatia Meghna
To Bhola
Ward No.-1
Meghna River
Kalia Union
To Burhanuddin
Ward No.-2
Ward No.-3
Char Khalifa
Ward No.-4
Ward No.-5
Ward No.-6
Ward No.-8
Bhabanipur
Ward No.-7
Ward No.-9
To Udaypur
Legend
Paurashava Boundary
Ward Boundary Poly
Mouza Boundary
Existing Bridge
Bridge
Culvert
Sluice Gate
Proposed Bridge
Bridge
Culvert
Sluice Gate
Primary Drain
Secondary Drain
Tertiary Drain
Outfall
Solid Waste Disposal
Waste Transfer Station
Water Treatment Plant
Waterbody
Meters
0 215430 860 1,290 1,720
Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government,
Rural Development and Cooperatives
CONSULTANT
SCPL Sheltech Consultants (Pvt.) Ltd.
In Association with

13.5 Environmental Management Plan

13.5.1 Introduction

Environment is an important consideration during preparation of a Master Plan of an area. During the preparation of Master Plan of Daulatkhan Paurashava, different environmental issues have been analyzed and information has been collected accordingly. Information on drainage, sewerage (location/network, condition) and solid waste management system (existing and proposed plan), pollution sources and types also have been analyzed.

13.5.2 Goals and Objectives

The objectives of environmental study are as follows:

- to study the existing ecological system and environmental problems in the project area;
- to suggest the mitigation measures for all environmental problems;
- to provide the guidelines and assist the planners, engineers and consultants involved in this
- project in preparing environmentally sound Plan for Daulatkhan Town and
- to prepare an Environmental Management Plan (EMP) for future environmental management in the area.

13.5.3 Methodology and Approach to Planning

In environmental study, a multi-disciplinary approach is used for studying development project. The present environmental study is based on data collection and sharing with drainage and geology, transport engineering, socio-economic, economic and topographical survey components. A structured questionnaire prepared by LGED for environmental survey has been followed. Environmental study has been carried out through survey of biodiversity of flora and fauna, water pollution, local air pollution problem, drinking water sources, renewable energy, diseases, and major local environmental issues as well as secondary data has been considered.

13.5.4 Existing Environmental Condition

13.5.4.1 Geo-morphology Geology, Soil, Sub soil Condition

Daulatkhan Paurashava has two main types of soils with different qualities such as non-calcareous alluvium and calcareous grey floodplain soils. Non-calcareous alluvium soils are raw sandy and silty alluvial deposits and generally neutral to alkaline in reaction. Peat soils are highly organic dark colored soils. Calcareous grey floodplain soils are structured grey silt loams to silty clays, calcareous from the surface or at shallow depths. However, soil condition of Daulatkhan Paurashava comprises diversified characteristics.

.

13.5.4.2 Climate

The Climate of an area is comprised of its Temperature, Average Humidity (%), Rainfall, Wind Speed and Hydrology. This zila bears a hot summer and a mild winter. But almost all the area of the zila is occasionally affected by cyclonic storm surges and tidal bores that originate over the Bay of Bengal during monsoon.

13.5.4.3 Temperature

Temperature rises steadily from January to April, remains fairly steady from April to October and then falls to reach the lowest in January. The maximum average monthly temperature is 35.8^{o}c in August and minimum average monthly temperature is 7.8 ^{o}c in January in 2003. The monsoon starts from June and maximum rainfall is experienced from July to September.

13.5.4.4 Humidity

The weather of Daulatkhan Planning area is not more contradictory from the natural weather of Bangladesh. But due to coastal characteristics, weather of this area has few special characteristics. The humidity is comparatively high in the coastal region rather than other districts of Bangladesh.

13.5.4.5 Rainfall

The monsoon starts from June and maximum rainfall is experienced in 2004 and lowest in 2010. Annual rainfall as recorded from 2003 to 2010, the maximum was 210.57 mm in 2004 and lowest in 2010 about 64.08 mm. It is recorded that during June to October there are high volume of rainfall.

13.5.4.6 Wind Directions

Monthly Prevailing Wind speed in knots and direction of Daulatkhan Planning area for the years of 1977 to 2007 has been presented below in Fig 13.8. It shows that wind direction in is mainly towards south and most of the time wind is calm (61.7 %) which is followed by 1-2.5 m/s wind speed (29.9%) and 2.5-5 m/s wind speed (7.2%).

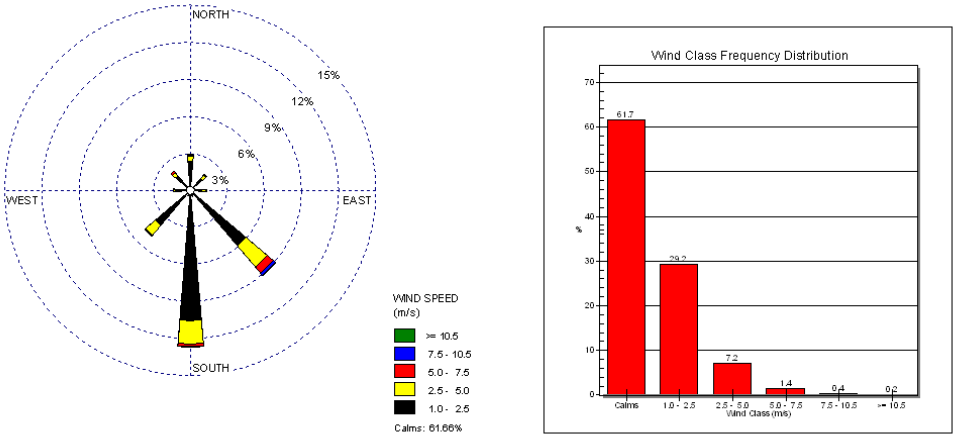
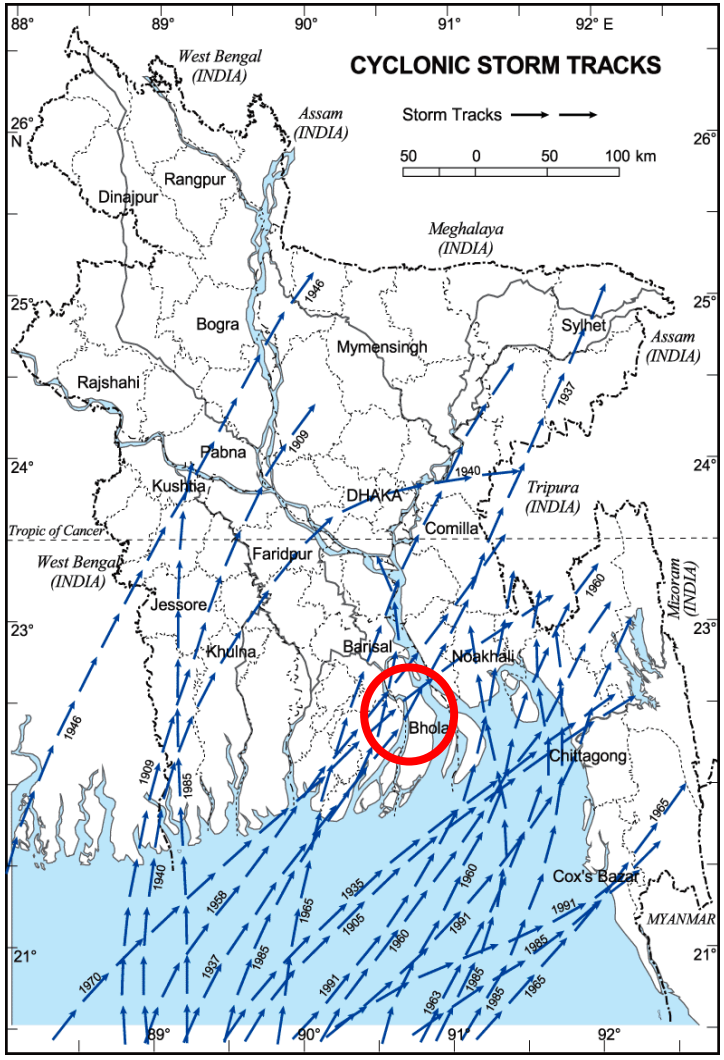
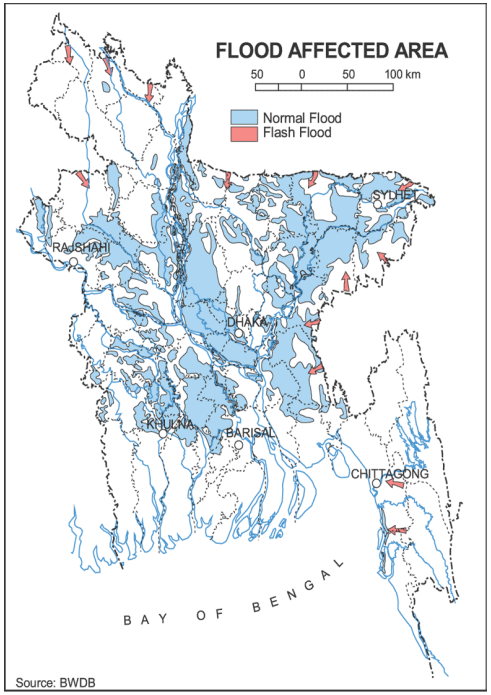


Fig 13.8: Wind Speed Data of Several Years in Bhola
Source: Bangladesh Metrological Department, 2011.





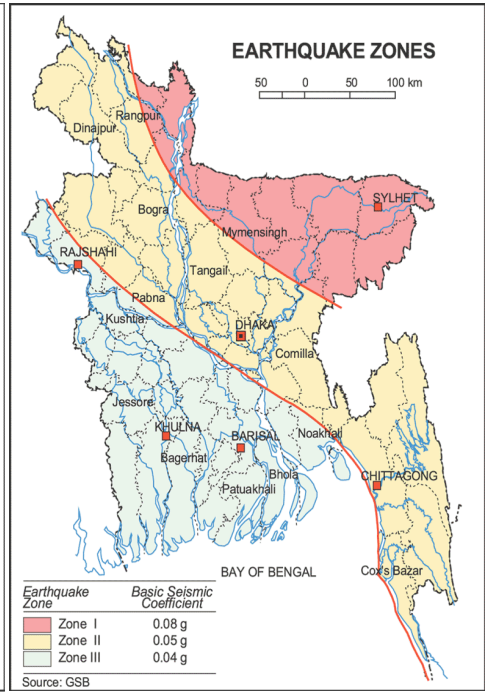


Fig 13.9: Cyclone, Flood and Earthquake Condition in Daulatkhan Paurashava.

Daulatkhan Paurashanva is mainly affected by the cyclone storm and comparatively less vulnerable for flood and earthquake as it is geographically positioned in the coastal belt of Bangladesh.

13.5.4.7 Hydrology

Hydrology can be defined as the scientific study of the waters of the earth, especially with relation to the effects of precipitation and evaporation upon the occurrence and character of water in streams, lakes, and on or below the land surface. The hydrological condition of Daulatkhan Planning area is getting of inferior quality day by day.

13.5.5 Solid Waste and Garbage Disposal

Condition of solid waste management at Daulatkhan Paurashava is very poor. According to the opinion of surveyed households, there is no solid waste management system at Daulatkhan Paurashava. Most of the people throw their garbage here and there and especially dump to the river, canal and khal which cause serious environmental pollution and also sometimes clogged the existing drainage network. From the field survey it is also found that there is no clinical waste management system. The standard demand rate of solid waste generation is 0.03 kg/ per capita/ per day which will be estimated in Interim phase.

House Hold Waste

According to the opinion of surveyed households, there is no dustbin at Daulatkhan Paurashava. Most of the people throw their garbage here and there and specially dump to the canal and khal which cause environmental pollution and also sometimes clogged the existing drainage network. From the field survey it is also found that there is no clinical waste management system.

Industrial Waste

There is no severe environmental pollution generating industrial unit situated within and/or nearby Daulatkhan Paurashava area. 6 saw mills, 2 rice mills, and 6 ice factories are situated in Daulatkhan Paurashava area.

Kitchen Market Waste

At present there is no dustbin at Daulatkhan Paurashava to collect kitchen market wastes. Generally people throw their garbage here and there which cause environmental pollution and also sometimes clogged the existing drainage network.

Existing Waste Management System

At present, there is no solid waste management system at Daulatkhan Paurashava. Most of the people threw garbage here and there, which causes serious environmental pollution and also sometimes clogged the existing drainage network.

13.5.6 Pollutions

Water Pollutions

Water pollution is one of the major phenomenons in Daulatkhan Paurashava. Many causes have been identified for surface water pollution. Maximum surface water are polluted by domestic source and chemical fertilizer used in agriculture field. However, as the area is in coastal region, saline and iron have been contaminated the water. Marine vehicles are also responsible for water pollution of rivers and khals.

Sound Pollution

Noise pollution is a minor phenomenon in Daulatkhan Paurashava. However such type of pollution problem is occurring by the road vehicles. But it has been identified that this is not a major problem for all over the area. It is a problem for some particular road side areas.

Land Pollution

Land pollution is a vital problem. Flood and river erosion is responsible for land erosion. During floods and river erosion, the loss of soil from farmland may be reflected in reduced crop production potential, lower surface water quality and damaged drainage networks.

Air Pollution

The households of Daulatkhan Paurashava face the problem of air pollution. There are industries inside the Daulatkhan Paurashava. These industries have been identified as main source of air pollution. No treatment plant is available in the Paurashava. A number of heavy vehicles (Highway bus and truck) move through the road and extract some pollutant particle that also causes air pollution.

Arsenic

In Daulatkhan Paurashava arsenic contamination rate is as low as negligible.

13.5.7 Natural Calamities and Localized Hazards

Water Logging

Another undesirable phenomenon is water logging. It refers to as both manmade and natural. Ground may be regarded as waterlogged when the water table of the ground water is too high to conveniently permit an anticipated activity. Different causes are responsible for water logging. Poor drainage system is one of the most important causes of water logging in the study area. There is no fixed location where water logged frequently. Most of the areas suffer water logging during heavy rainfall.

Flood

A flood is not a common natural disaster at Daulatkhan Paurashava. The area hardly faces flash flood. In 1955, 1974, and 1988 year most of the area of Bangladesh affected by flood but Daulatkhan was not affected in that time. The Paurashava was affected only in the flood of 1998.

Cyclone

Cyclone is another common disaster at Daulatkhan Paurashava. Every year Daulatkhan Paurashava is affected by cyclone. Among them the identifiable disaster was cyclone SIDR in 2007 and Aila in 2009. The disaster SIDR and Aila were a big hazard for their natural climatic condition. It also damages many lives, forests, agricultures and infrastructures. For the help of cyclone affected peoples and livestock during and after cyclone there are cyclone centers at Daulatkhan Paurashava. Mainly primary schools are serving as cyclone centers.

Earthquake

Earthquake is a natural hazard and the southern area of Bangladesh is not so vulnerable. So, Daulatkhan Paurashava is not vulnerable for earthquake.

River Erosion

River erosion is a common phenomenon of Daulatkhan Paurashava. River erosion is one form of soil degradation along with soil compaction, low organic matter, and loss of soil structure, poor internal drainage, salinisation, and soil acidity problems. These other forms of soil degradation, serious in themselves, usually contribute to accelerated soil erosion. Soil erosion is a naturally occurring process on all land. The agents of soil erosion are water and wind, each contributing a significant amount of soil loss each year at Daulatkhan Paurashava. Soil erosion may be a slow process that continues relatively unnoticed, or it may occur at an alarming rate causing serious loss of topsoil. The loss of soil from farmland may be reflected in reduced crop production potential, lower surface water quality and damaged drainage networks. The soil removed by runoff from the land, for example during a large storm, accumulates below the eroded areas, in severe cases blocking roadways or drainage channels and inundating buildings.

Soil Erosion

Soil erosion is a naturally occurring process on all land. The agents of soil erosion are water and wind, each contributing a significant amount of soil loss each year at Daulatkhan Paurashava. The loss of soil from farmland may be reflected in reduced crop production potential, lower surface water quality and damaged drainage networks. The soil removed by runoff from the land, for example during a large storm, accumulates below the eroded areas, in severe cases blocking roadways or drainage channels and inundating buildings.

Fire Hazard

The residents of Daulatkhan Paurashava do not normally face the problem of fire.

Land Filling

Land filling creates problem in natural runoff and drainage system. The soil removed by runoff from the land accumulates below the eroded areas, in severe cases blocking roadways or drainage channels and inundating buildings.

Encroachment

Amount of land encroachment at Daulatkhan is very little but land encroachment beside river interrupts the natural flow of river and is responsible for river erosion. Encroachment by the side of the canals interrupts the natural drainage system. This may be responsible for the inundation of the Paurashava.

13.6 Plans for Environmental Management and Pollution Control

13.6.1 Proposals for Environmental Issues

13.6.1.1 Solid waste management Plan

No waste collection system is available in Daulatkhan Paurashava to handle / manage household/ kitchen market/clinical waste. Most of the people throw their garbage here and there and especially dump to canal and khal which environmental pollution and also sometimes clogged the existing drainage network. Although at present, environmental pollution due to solid waste not a serious problem on Daulatkhan Paurashava good solid waste management practice should be implemented for better environment at Daulatkhan Paurashava. To fulfill that aim some suggestions are recommended as Solid Waste Management Plan.

Criteria for Selection of Solid Waste Dumping Site

Usually the Paurashava does not have its own solid waste disposal site. For selection of solid waste dumping site, the following criteria should be considered.

- Site should not be situated just beside any river and canal
- Site should be located to minimum fuel distance
- Site should not create any nuisance to the residential areas as well as to the commercial and administrative areas.
- Site should be connected with main road and have sufficient width for truck movement.
- Infiltration of water into the dump should be prevented by covering the wastes with a layer of soil and sloping surface of the dump.

13.6.1.2 Open Space, Wet-land and Relevant Features Protection Plan

The river Meghna is a great asset of Daulatkhan that plays multifaceted role for the town. It could be a navigation route to some extent, a source of water and also a source of recreation. Detail land use information of Open spaces is given in Table 11.9, Chapter 11, and Part B of this report.

Mitigation Measures:

- The river should be preserved for future sustainable source of surface water supply for the
- City when the city's ground water would be depleted.
- Its banks can serve as breathing space and recreation for the town dwellers.
- The river should be kept pollution free applying regulatory measures based on environmental regulations
- No industry should be allowed within 100 m of the river bank.

Loss of Wetlands

Wetlands are mainly affected first by the urbanization process. Earth filling fills up the ponds and ditches. Waste water affects the aquatic ecosystem and makes the ponds and ditches unproductive and as a result the aquatic plants, fishes and animals have to die or migrate to other places. There is no strict regulation on earth filling of ponds. The Paurashava can fine only Tk.500 if someone fills the ponds. However, Wetlands Conversation Act exists in Bangladesh, which is applicable only to natural beels and khals. Wetlands play an important role as a reservoir of rain and flood water. They are also important to maintain the balance of ecosystems and for replenishing the ground water level through seepage.

Mitigation Measures:

- Designate all ponds in Master Plan Map and protect the large ones according to the ecological importance and public interest.
- Protect the ponds as per regulatory framework of Master Plan.
- Avoiding wetlands during road alignment fixation.
- Stopping housing, industries and other development works in wetlands through earth filling.
- Stopping earth filling of ponds in the area through creation of public awareness.
- Strict implementation of Wetland Conversation Act, 2000.
- Strict implementation of Environment Conversation Act(ECA), 1885
- Create new laws if existing one fails to stop land filling of ponds.

13.6.1.3 Ground Water Pollution

Though ground water is not a major source of drinking water supply in the study area, yet ground water pollution by salinity and arsenic is a serious problem for future water supply. Arsenic is geological problem. But experts view that it arises due excessive extraction of ground water. So in future, when population rises further excessive ground water extraction will aggravate contamination situation.

Mitigation Measures:

- Expand use of surface water by protecting existing ponds and excavating new ponds.
- Introduce and popularize rain water harvesting system.
- Reduce dependency on ground water.

13.6.1.4 Surface Water Pollution

Various surface water sources of the town are regularly polluted by deliberate drainage of waste water in respect of pH, turbidity and coli form bacteria when compared with national standard. But present pollution level is low due to low density of population and no industrial agglomeration. The main sources of surface water pollution are urban waste water, sanitary

sewage and solid waste dumping. With the implementation of this plan the pollution level may further increase as population and activity will increase leading to increase in waste water, sanitary sewage and solid waste dumping.

Mitigation Measures:

- Abolish katcha and hanging latrines.
- Encourage practice of sanitary latrines.
- Take measures against indiscriminate dumping of solid waste.
- Improve sanitation conditions of slaughter house, fish market and katcha bazar.
- Propaganda for public awareness.
- In future set up sewerage treatment plant to treat waste water.

13.6.2 Natural Calamities and Regular Hazard Mitigation Proposals

13.6.2.1 Cyclone

Cyclone is a regular natural calamity in the study area. It affects the poor people mostly who cannot build houses with permanent materials. Cyclones also destroy trees and other establishments causing economic losses. It is not possible to prevent cyclones, but it is possible to reduce the losses by cyclones.

Mitigation Measures:

- Construction of cyclone shelter in coastal area.
- Provide housing loan to build houses with permanent materials.
- Take measures to promote employment and reduce poverty.
- Take appropriate measures for post disaster loss mitigation.

13.6.2.2 Flood Protection

The Meghna River is subject to bank erosion, but it is not continuous. The road along the river has eroded to some extent. With implementation of Master Plan (MP) Project, the whole project area will be protected from flooding.

Enhancement Activities:

- Arrangement of pump drainage to Meghna River during high flood when gravitational drainage fails.
- Pump of excess water will save the area from internal flooding.

Responsible Organizations: BWDB and Paurashava.

13.6.2.3 Earthquake

Although Daulatkhan is not Earthquake prone area, however unplanned and unregulated urbanization and disregard to BNBC rules in building construction may cause it vulnerable in future. With the implementation of SMP the planned urbanization will strictly follow the actual zoning plan and following of BNBC rule will minimize the earthquake damage. In DMDP Urban Area Plan Volume-II, (Part-3, Interim Planning Rules) development restriction considering the geological fault line areas states **"**Structures above 2 storeys situated within 500 meters of a geological fault is not allowed unless built to the BNBC standards for Seismic Zone 3 (BNBC Section 6 Chapter 2.25)"**.**

Enhancement Activities:

- Ensure all new buildings are designed and constructed following the guideline of BNBC.
- Development of a comprehensive plan for managing post-earthquake situation.
- Train community workers who would carry out the initial search and rescue efforts.
- Launch a massive public awareness campaign.

Responsible Organizations: Paurashava, MOFDM, Civil Defense, Fire Service and DO.

13.6.2.4 Fire Hazard

Though fire hazard is low in the town it might increase in future with increased urbanization. Fire hazard will be severe when katcha housing will be built by low income poor people of the town. To avoid fire hazard following mitigation measures are recommended.

Mitigation Measures:

- Set up modern fire extinguishing devises.
- Discourage people from using low quality electrical wire in building and industries.
- Ensure periodical checking of electrical lines.
- Advise low income dwellers about cooking safety.
- Create awareness among people about the dangers of fire hazard.

13.6.2.5 Protection Plan Addressing Encroachment and Other Relevant Issues

Implementation of SMP activities like roads, drainage, bridge/culvert, housing and industrial estates and bazars will radically change the natural topography and land use pattern of the area. The agricultural area will be converted into urban and semi-urban area. The present green scenic beauty will disappear; water bodies will be lost due to rapid urbanization.

Mitigation Measures:

- Careful planning to minimize the change of the area.
- Avoid water bodies during construction of roads, housing and industrial estates.
- Practice good architectural/engineering design during planning of housing estates, buildings and the intersections of main roads.
- Enhancement of plantation and gardening to increase the scenic beauty of the town.
- Preserve the ponds, chhoras and large water bodies.
- Strict implementation of Environment Conversation Act(ECA), 1885
- Propaganda for public awareness

Responsible Organizations: Paurashava, DOE and Forest Department.

13.7 Plan Implementation Strategies

13.7.1 Regulations to Implement the Environment Management Plan

Related rules and regulations for urban environment management to protect environment for sustainable urban development:

1. **Local Government (Paurashava) Ordinance 2009**, Paurashava's responsibility to concern solid wastes and sustainable development.

2. **Environmental Conservation Act 1995**, to concern water quality, air quality, noise abatement and solid wastes etc. The Department of Environment is the law enforcing organization.

3. **Environmental Conservation Rules 1997,** to concern water quality, air quality, noise abatement and solid wastes etc. The Department of Environment is the law enforcing organization.
4. **Acquisition and Requisition of Immovable Property Ordinance, 1982** is needed for acquisition of land in view to construct environmental components. The authority, according to the demand, will apply to the Deputy Commissioner for such acquisition.
5. **Conservation of Environment Act, 1995** have prescribed duties and responsibilities of the Director. Most of those responsibilities are on the control of pollution.
6. **Playfield, Open space, Garden and Natural Tank in Urban Areas Preservation Act, 2000** will be needed for the preservation of playfield, garden, open space and natural tank of the Paurashava.
7. **Water Hyacinth Act, 1936** was enacted for preventing the spread of water hyacinth in Bangladesh and for its destruction. It is said in the section 5 that, no person shall grow or

cultivate water hyacinth in any garden or in any ornamental water or receptacle. Again, according to the section 8(1) said, with a view to facilitating the discovery or destruction of water hyacinth, an Authorized Officer may, subject to any rules made under this Act, by a notice served in the prescribed manner, direct an occupier of any land, premises or water within a notified area to cause-

a) any branches of trees or shrubs on any such land or premises which overhang the edge of any river, stream, waterway, ditch, marsh, bil, lake, tank, pond, pool or pit to be cut back and any undergrowth or jungle thereon to be removed from such edge, within a distance specified in the notice, or

b) any vegetation appearing above the surface of any such water to be removed from the water, within such period as may be specified in the notice.

13.7.2 Implementation, Monitoring, Evaluation and Coordination of the Plan

Implementation through Multi-Sectoral Investment Programme: Major infrastructure development works such as primary roads, water supply, drainage, etc., will largely be controlled by Government. Public works requires efficient co-ordination through the Multi-Sectoral Investment Programme (MSIP).

Objective of a Multi-Sectoral Investment Programme (MSIP) will match a list of the development projects with the funding stream necessary to implement them. There are two basic activities that would determine the contents of MSIP. Firstly, activity would be to prioritize and schedule the investment projects of all public agencies so they will collectively help to achieve the development goals and objectives of the Urban Area Plan. Second activity would be to analyze the source and availability of fund for the prioritized list of development projects.

Implementation through Action Plans and Projects: Action Plans and Projects will be the implementation plans to solve problems at the local level. Action plans will take a direct approach toward plan implementation with a minimum of research, reports or elaborate planning methods. These projects will be easily identifiable and will require minimum resource.

Implementation through Development Control: Landuse zoning is one of several methods of plan implementation to be considered. In all cases where some form of development, landuse control may be applied; careful consideration requires the following ideologies:

Development control as an instrument of plan implementation may be selectively applied within the Urban Area Plans. Development controls would also be varied in intensity and detail to suit the particular circumstances. It is important that they should be clear and easily understood by all parties concerned. Since the entire Paurashava Master Plan 'package' has become statutory, development controls associated with its component plans would also be statutory.

Implementation by Facilitating Private Investment: Another approach that would be taken by government toward plan implementation will be to guide and facilitate investments made by the

private sector. Government can achieve this with relative ease and at very low cost by setting up a legal and operational framework, coupled with suitable incentives, to facilitate land consolidation, plot boundary readjustment, efficient layout of plots and provision of local infrastructure by the private sector. The benefits of this approach would be:

- increased efficiently of the urban land market would make, more private land available to urban households;
- would pass much of the development costs for local infrastructure to the private sector and land market mechanisms;
- would increase in land for development without large cash outlays by government to purchase land for development schemes; and
- would keep provision of land for community facilities virtually no cost to government.

Plan Monitoring

The Urban Area Plan would simply be tools for guiding and encouraging the growth and development of an urban area in a preferred manner. In a rapidly changing urban environment, the Urban Area Plan would require to keep up to date. If this is not done, within a few years it will be obsolete. Therefore, it is imperative that the requirement for regular updating of the Urban Area Plan be made a legal requirement.

For implementation of the various program components of the Urban Area Plan appropriate administrative measures will have to be undertaken. This will essentially include project preparation and monitoring of their execution and evaluation. For carrying out all these activities appropriate institutional measures are also be needed.

Evaluation

Monitoring and evaluation of ongoing and implemented projects is essential to keep the future course of action on the right track. An ongoing project should be regularly monitored and handicaps identified to enable taking appropriate measures at the right time.

Post implementation evaluation is also needed to take appropriate measures correcting past errors-from project preparation to implementation.

The top level supervision has to be done by a high level supervisory committee headed by Paurashava Mayor, LGED representative and Local Government Ministry. Other members of the committee will be local Ward Councilors, local community leader/social workers and the Town Planner of the Paurashava. The committee will supervise implementation works

Co-ordination

A Planning Section of Paurashava should have close interaction with the citizen of Paurashava at large in order to make people aware of the benefits of a good plan and, therefore, their social responsibility to promote plan implementation in one hand and also resist contraventions on the other. In this way it will be possible to ensure governance at Paurashava level. A specific interactive cell is recommended to operate in this regard with following responsibilities:

- Provide pre-application advice to residents, consultants and developers about landuse management issues and application procedures for the submission of development applications.
- Enforce planning and landuse management related legislation and zoning scheme regulations.
- Issue of property zoning certificates.
- Investigate and resolve landuse management complaints, illegal landuse and prosecuting contraventions.

Such interactive windows may be opened in various convenient locations to ensure ease of the answers to commonly asked questions may be shown in the internet. Besides, those may be shown in the print and electronic media time to time.

In spontaneous areas, while all out people's co-operation is needed for project implementation; there will also be some elements of negotiation. Negotiation will be particularly needed in case of road widening projects. It will be a crucial task for Paurashava to convince the affected people to give up their land for road use. Efforts should be made to convince the land owners on the ground of enhancement of property value due to road widening. In case people refuse to offer land free of cost necessary arrangements may have to be made for payment of compensation. This process of negotiation will be very critical, cumbersome and time consuming, and therefore, has to be handled with utmost care and patience. The best results can be accrued only by wining people's confidence. In case the authority fails to get peoples co-operation they should exercise power of compulsory acquisition of land. Attempts may be made to engage NGOs / CBOs to work as catalysts in negotiation.

Chapter- 14
PLAN FOR URBAN SERVICES

14.1 Introduction

Urban planning is critical to the healthy growth of cities. Unplanned growth leads a number of problems, creating misery for urban dwellers and making remedying of those difficulties. Yet flawed urban planning is little better, or perhaps worse, than no urban planning at all. It is thus important, when taking on such an enormous task as the drafting of an Urban Area Plan for a Paurashava, to ensure that the plan is well considered and likely to be conducive to good health and well-being of the urban dwellers.

14.2 Consideration for the Preparation of Urban Service

- Specify whether the urban service will be provided in the future by a city, county, district, authority or a combination of one or more cities, counties, districts or authorities.
- Set forth the functional role of each service provider in the future provision of the urban service.
- Determine the future service area for each provider of the urban service.
- Assign responsibilities for:

- Planning and coordinating provision of the urban service with other urban services;

- Planning, constructing and maintaining service facilities; and

- Managing and administering provision of services to urban users.

14.3 Range and Content of the Urban Service

The Plan for Urban Services covers planning area of Daulatkhan Paurashava for ten years' time-frame (from 2011 to 2021). It also comprises with report and maps. The Plan in concerned where services will be located (expected development). It also indicates how the Structure Plan policies will govern the areas and the standard for services calculated based on the population projection. Outline of the Plan gives guidance to the Paurashava how the urban services will be developed and be promoted, maintained with a coordinated manner. This chapter describes the urban basic services development proposals for future development of the Paurashava. The proposals have been made at the town level, under the urban area plan. The local level development proposals will be addressed in the Ward Action Plan. The development proposals deal with the basic urban services, like, water supply, drainage, sanitation, solid waste, telecommunication, electricity and community facilities, education and health.

14.3.1 Water Supply

According to BBS, it has been observed that about 0.2% households of Daulatkhan Paurashava is connected to Paurashava supplied water supply system whereas about 95.80% households use tube-well as a source of drinking water. Additionally, about 8.7% households have well and the rest of the households use pond water for their drinking purpose.

Quality of the supply system is not so satisfactory. All the surveyed households affirmed that there is no water supply facility available for them.

Considering the above issues a water treatment plant has been proposed in ward no.07 with an area of 0.98 acre. This location is the most suitable place according to consultant because both surface and ground water is available here and no drain outfall is being proposed within its 0.39 Sq km perimeter area. Details have been given in table 11.14, chapter 11, Landuse Plan, Part B.

14.3.2 Solid Waste

There will be waste transfer stations in every ward with an area of 1.01acres for collection of solid waste located at suitable locations. A dumping site will be developed over an area of 4.52 acres for final disposal of the solid waste. The waste dumping site is located in Ward no. 01 of the Paurashava. Details have been given in table 11.14, chapter 11, Landuse Plan, Part B.

14.3.3 Telecommunication

The town enjoys the networks of all mobile companies operating in the country. Due to easy and cheaper access to mobile, there is actually no demand for BTCL network.

14.3.4 Sanitation

The BBS data shows that about 58.0% of the households have sanitary toilet whereas about 11.3% households have no toilet facilities. Furthermore, about 28.6% of the households have other type of toilet facilities such as kutcha toilet, hanging toilet, etc.

The socio-economic survey results indicate that about 55.1% of the toilets are Pucca, 0.8 % Kutcha and the rest 44.1% do not have toilet facility. However, the condition of toilet facilities is not good at Daulatkhan Paurashava

Due to prohibitive expenditure one should not expect establishing network and treatment plant based sewerage system in the town by the Paurashava. So, for long the sanitary system of the Paurashava will remain on site. To promote healthy sanitation, Paurashava should promote low cost sanitary latrines in the town together with awareness building for healthy sanitation. It is proposed to set up public toilets in public gathering areas, like, existing and proposed bus stand, bazar and the main town center.

14.3.5 Community Facilities

Open Space Recreation

Total necessity of open spaces is projected as 43.88 acres. 9.52 acres have been proposed for this purpose. Details have been given in Table 11.9, Chapter 11, Landuse Plan, Part B.

Market Facilities

Super market will be developed in ward no. 03 and 04 with an area of 0.88 acre. There is scope of established local market as per the local demands of Daulatkhan Paurashava. Detailed will be

given in Ward Action Plan. Details have been given in Table 11.5, Chapter 11, Landuse Plan, Part B.

Community Center

There is lacking of municipal community center in the town. The consultant has proposed one community center in the Paurashava. About 0.74 acres land has been proposed. Community center in every ward is not necessary according to local authority. It has been proposed in ward 3. Details have been given in Table 11.11, Chapter 11, Landuse Plan, Part B.

Police Outpost

Police outposts have been proposed for control the law and order of the Paurashava Total area is proposed for 3.24 acres. There is scope of establishing police out post in the proposed ward center for Daulatkhan Paurashava. Details have been given in Table 11.7, Chapter 11, Landuse Plan, Part B.

14.3.6 Education

The total area under this use has been determined as 34.60 acres. Existing land is 12.98 acres and proposed 9.89 acres of land uses. Detail proposal for education and research is shown in ward action plan. Details have been given in Table 11.12, Chapter 11, Landuse Plan, Part B.

14.3.7 Health

A total 5.98 acres of land has been proposed at different wards for health center/ maternity clinic. Details have been given in Table 11.10, Chapter 11, Landuse Plan, Part B.

Map 11.1 shows the proposed Utility Services in Daulatkhan Paurashava.

14.4 Regulations to Address the Proposals

Local Government (Paurashava) Act, 2009 (Act No. XLXVIII of 2009)

According to the 2nd Schedule, Sl. No. 10, the Paurashava may provide supply of water sufficient for public and private purposes. Frame and execute water supply scheme for the construction and maintenance of such works for storage and distribution of water. In case of private sources of water supply, it is said that, all private sources of water supply within the Paurashava shall be subject to control, regulation and inspection by the Paurashava. No new well, water pump or any other source of water for drinking purposes will be dug, constructed or provided except with the sanction of the Paurashava.

The regulations, as discussed above, will be needed for provision of drinking water supplies both Paurashava and private sources in the Paurashava.

The sewerage facilities may be provided by the Paurashava and Department of Public Health Engineering (DPHE). According to the 2nd Schedule, Sl. No. 12, of the Local Government (Paurashava) Act, 2009, Paurashava provide an adequate system of public drains and all such drains shall be constructed, maintained, kept, cleared and emptied with due regard to the heal and convenience of the public. All private drains shall be subject to control, regulation and inspection by the Paurashava.

Public Health (Emergency Provisions) Ordinance, 1944 (Ordinance No. XXI of 1944)

According to the **s**ection 2(e) "public health services" and "public health establishment" include respectively sanitary, water-supply, vaccination, sewage disposal, drainage and conservancy services and establishment maintained for the purposes of such services, and any other service or establishment of a local authority which the Government may by notification in the Official Gazette declare to be a public health service or public health establishment for any purpose of this Ordinance.

The Department of Public Health Engineering (DPHE) is performing activities for drinking water supply. At Paurashava level If DPHE likes to render their service according to the water supply network as presented in this plan, the regulation will be the safeguard for them.

East Pakistan Water and Power Development Authority Rules, 1965 (No. 4-1(E)

The Power Development Board (PDB) is empowered for power generation under the guidance of Electricity Act, 1910. At present, PDB and Rural Electrification Board (under the Rural Electrification Board Ordinance, 1977) is performing the role relevant with the electrification of the Paurashava. The existing authorities will be needed for electrification of the Paurashava according to the guidelines presented in the plan.

Telegraph and Telephone Board Ordinance, 1975 (Ordinance No. XLVII of 1975)

A Telegraph and Telephone Board (T&T Board) was composed through this Ordinance. Section 6(1) of the Ordinance has prescribed the functions of the Board and said, it shall be the function of the Board to provide efficient telegraph and telephone services and to do all acts and things necessary for the development of telegraphs and telephones. In the Paurashava, at present, a T & T Board is performing the functions prescribed in the section 6(1). T & T Board is the sole authority for performing the same and it will be continued in future also. But, the Mobile telephone system generates a revolution in the society. Most of the people are depended on the Mobile phone system. The plan does not consider this system.

East Pakistan Water and Power Development Authority Rules, 1965 (No. 4-1(E)

The Power Development Board (PDB) is empowered for power generation under the guidance of Electricity Act, 1910. At present, PDB and Rural Electrification Board (under the Rural Electrification Board Ordinance, 1977) is performing the role relevant with the electrification of the

Paurashava. The existing authorities will be needed for electrification of the Paurashava according to the guidelines presented in the plan.

14.5 Implementation, Monitoring and Evaluation

Implementation, Monitoring and Evaluation of the Urban Services Plan

Implementation through Multi-Sectoral Investment Program: Major infrastructure development works such as primary roads, water supply, drainage, etc., will largely be controlled by Government. Public works requires efficient co-ordination through the Multi-Sectoral Investment Program (MSIP).

Objective of a Multi-Sectoral Investment Program (MSIP) will match a list of the development projects with the funding stream necessary to implement them. There are two basic activities that would determine the contents of MSIP. One activity would be to prioritize and schedule the investment projects of all public agencies so they will collectively help to achieve the development goals and objectives of the Urban Services Plan. Second activity would be to analyze the source and availability of fund for the prioritized list of development projects.

Implementation through Action Plans and Projects: Action Plans and Projects will be the implementation plans to solve problems at the local level. Action plans will take a direct approach toward plan implementation with a minimum of research, reports or elaborate planning methods. These projects will be easily identifiable and will require minimum resource.

Implementation through Development Control: Landuse zoning is one of several methods of plan implementation to be considered. In all cases where some form of development, landuse control may be applied; careful consideration requires the following ideologies:

- the purpose to be achieved by the development controls;
- where controls should be applied;
- what aspect of development needs to be controlled;
- what type of development controls are required;
- what degree or level of development control is required;
- who will be affected by the required control;
- who will be affected by the controls and in what manner;
- when the controls should be applied;
- what will be the likely impact of the controls;
- how and by whom will the controls be administered and enforced.

Development control as an instrument of plan implementation may be selectively applied within the Urban Services Plans. Development controls would also be varied in intensity and detail to suit the particular circumstances. It is important that they should be clear and easily understood by all parties concerned. Since the entire Paurashava Master Plan ‘package’ has become statutory, development controls associated with its component plans would also be statutory.

Implementation by Facilitating Private Investment: Another approach that would be taken by government toward plan implementation will be to guide and facilitate investments made by the private sector. Government can achieve this with relative ease and at very low cost by setting up a legal and operational framework, coupled with suitable incentives, to facilitate land consolidation, plot boundary readjustment, efficient lay out of plots and provision of local infrastructure by the private sector. The benefits of this approach would be:

- increased efficiently of the urban land market would make, more private land available to urban households;
- would pass much of the development costs for local infrastructure to the private sector and land market mechanisms;
- would increase in land for development without large cash outlays by government to purchase land for development schemes; and
- would keep provision of land for community facilities virtually no cost to government.

Plan Monitoring

The Urban Services Plan would simply be tools for guiding and encouraging the growth and development of an urban area in a preferred manner. In a rapidly changing urban environment, the Urban Services Plan would require to keep up to date. If this is not done, within a few years it will be obsolete. Therefore, it is imperative that the requirement for regular updating of the Urban Services Plan be made a legal requirement.

For implementation of the various program components of the Urban Services Plan appropriate administrative measures will have to be undertaken. This will essentially include project preparation and monitoring of their execution and evaluation. For carrying out all these activities appropriate institutional measures are also be needed.

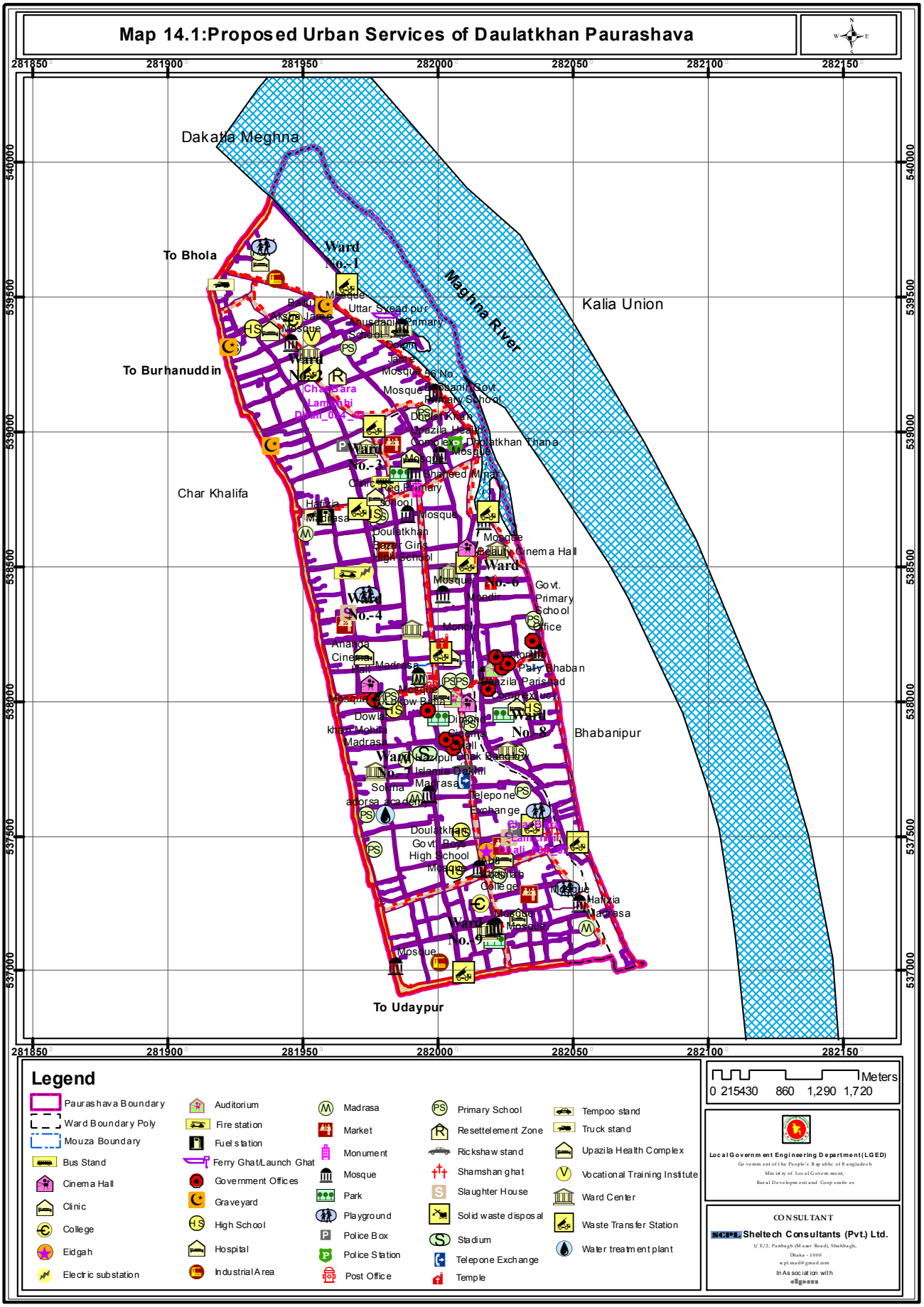
Evaluation

Monitoring and evaluation of ongoing and implemented projects is essential to keep the future course of action on the right track. An ongoing project should be regularly monitored and handicaps identified to enable taking appropriate measures at the right time.

Post implementation evaluation is also needed to take appropriate measures correcting past errors-from project preparation to implementation.

The top level supervision has to be done by a high level supervisory committee headed by the Paurashava Mayor, representatives of the service giving agencies and Local Government Ministry. Other members of the committee will be local Ward Councilors, local community leader/social workers and the Town Planner of the Paurashava. The committee will supervise implementation works regularly and issue necessary instructions to expedite the works of implementation.

Map 14.1:Proposed Urban Services of Daulatkhan Paurashava



Part C. Ward Action Plan

Chapter- 15
WARD ACTION PLAN

15.1 Introduction

This chapter contains Ward Action Plan of each individual Ward. First, the issues prevailing in different Wards have been briefly described followed by description of Development Proposals in first ward action plan (1^{st} to 5^{th} year of planning period) for each Ward.

15.1.1 Background

The Ward Action Plans are prepared under the framework of Structure Plan and Urban Area Plan. The Ward Action Plans contain details of development proposals at Ward level including the problems and opportunities existing therein and also include the proposals made in the upper level plan that is in the Urban Area Plan. The Ward Action Plans have been formulated for execution within a period of 5 years.

Ward Action Plan is a vital part of the current plan package as far as spatial development and development control is concerned. Absence of Ward Action Plan not only hampers undertaking of development projects by planning authority, but also leads to uncontrolled and unwanted spatial development in the private sector. Land use zoning is also provided in the Ward Action Plan to enable detailed view of proposed land use and development.

15.1.2 Content and Form of Ward Action Plan

The Ward Action Plan is detailed area plan based on the policy framework, guideline indication of Structure Plan and more detailed guideline of Urban Area Plan. The provision of Ward Action Plan is inherent in the Structure Plan with some specific purposes. The Ward Action Plan is to:

a. Provide basic micro level infrastructure and services in the study area through systematic planning, under the framework of Structure Plan and proposals of the Urban Area Plan;
b. Create congenial environment to promote economic activities;
c. Improve drainage system and protect natural water channels from encroachment; and
d. Create service centers to promote urban growth.

15.1.3 Linkage with Structure and Urban Area Plan

Ward Action Plan is the 3^{rd} component of the Master Plan package. The other two upper level components are Structure Plan and Urban Area Plan. Structure Plan lay down the framework of the future plan including strategy and the sectoral policies. The Urban Area Plan and the Ward Action Plan detail out development proposals under the framework of Structure Plan.

15.2 Derivation of Ward Action Plan

The Ward Action Plan is derived from the conceptual framework, and guidelines and strategies for development under Structure Plan and detailed proposals of Urban Area Plan. Ward Action Plan is aimed to provide detailed infrastructure plan to guide the physical development of Daulatkhan upazila including its all economic and social activities. This plan adheres to the policy

directives spelled out in the Structure Plan.

15.2.1 Revisiting Structure Plan and Urban Area Plan

To guide long term growth of the Paurashava, potential locations of major development areas are identified and the Structure Plan Area is broadly classified into nine categories, namely Established Urban Area, Sub Urban Area, New Urban Area, Recreational Facility, Circulation Network, Restricted Area, Urban Peripheral Area, Agriculture Area and Water Retention Area. The Urban Area Plan is prepared under the framework of Structure Plan and the infrastructure identified for improvement and development are listed as proposals in the Urban Area Plan. The broad classification of lands in the Structure Plan and detailed proposals in the Urban Area Plan form the basis for Ward Action Plan.

15.2.2 Prioritization

The prioritization of project proposals in Ward wise Action Plan are made on the basis of urgency for development depending on the needs of people and the town's requirement for infrastructure development.

15.2.3 Ward Wise Action Plan

The Ward Action Plan is prepared for each of the nine Wards and is presented in order of their serial number. The Ward Action Plans are a series of detailed spatial development plans of different use and facilities. The plans comprise maps of appropriate scale supported by explanatory report. The Ward Action Plans have been formulated for execution within a period of 5 years. They do not initially cover the entire Structure Plan area. While all sub-areas will eventually require Ward Action Plan, only priority areas are to be dealt with initially. The aim of a Ward Action Plan is to prevent haphazard urban development and ensure livable environment in areas that are likely to be urbanized soon. Initially Detailed Area Plan should be covered for only those areas where action is needed immediately or where development pressure is high.

15.3 Ward Action Plan for Ward No. 01

15.3.1 Demography

Ward No.1 is located on the Northern part of the Paurashava. Population projection shows 1832 population for the year 2031. For the same year, it will be 22 persons per acre in 2031. Table 15.1 shows the detail.

Table 15.1: Population Statistics of Ward No. 01

Item	Year			
	2016	2021	2026	2031
Area (acre)	81.69	81.69	81.69	81.69
Population	1578	1658	1743	1832
Density of Population (acre)	19	20	21	22

15.3.2 Ward Action Plan Proposals

15.3.2.1 Review of Existing Land Use

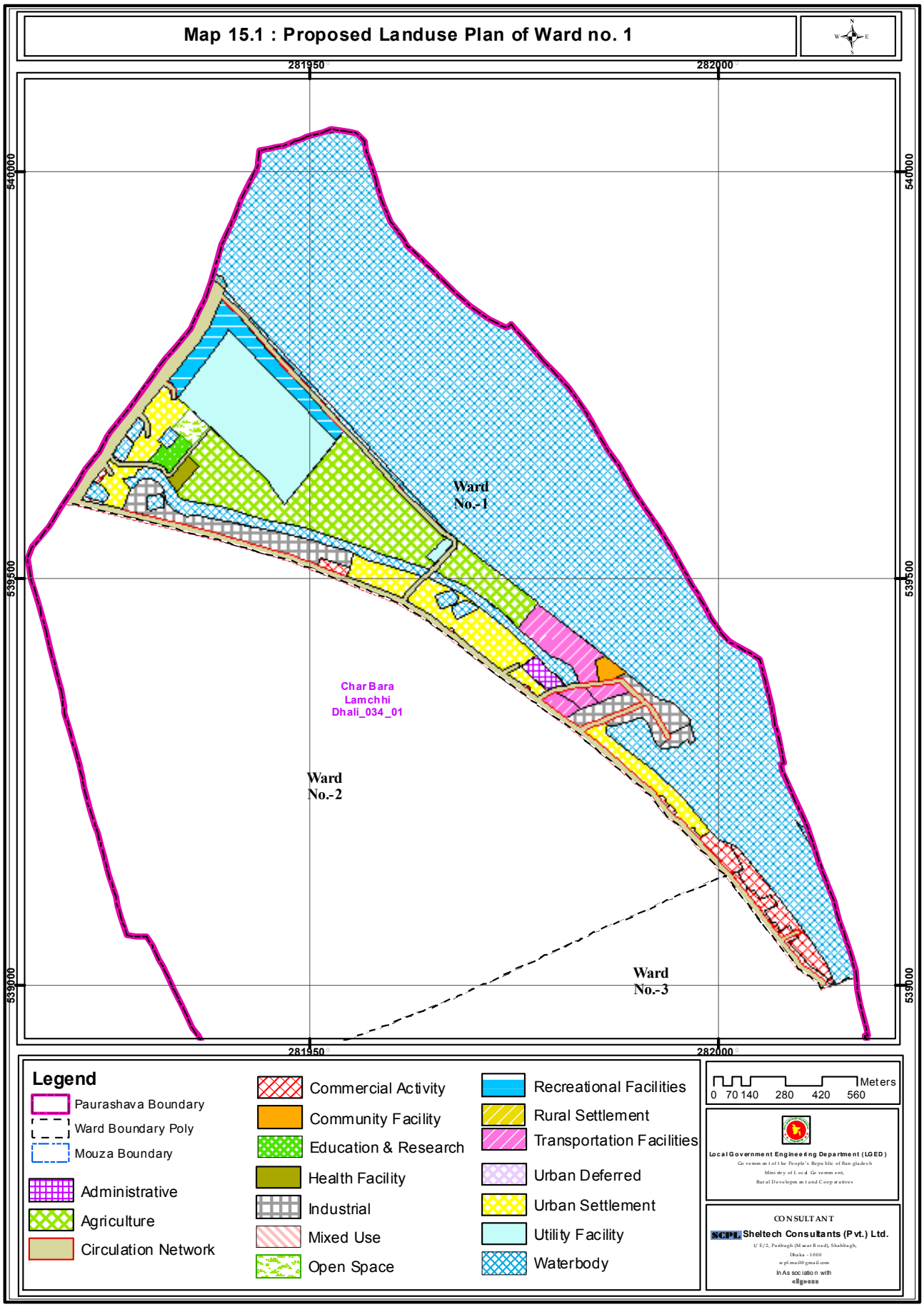
Out of total 81.69 acres of land of this ward, more than 10 acres of land i.e. 12.83% is used in residential. The agricultural use with 15.99 acres, occupies 19.57% of total land, water bodies 63.68%, commercial use 1.58%, and circulation network 1.92%. There is no land for educational facility.

15.3.2.2 Proposed Land Use Zoning

The category wise proposals are presented here. Table 15.2 shows the amount of land existing and proposed uses in Ward no. 1. **Map 15.1** shows proposed land use of Ward 01. Table 15.2 shows the detail.

Table 15.2: Comparative Scenario of Existing and Proposed Land Uses of Ward No. 01

Sl. No.	Landuse Category		Existing		Proposed	
			Area (Acre)	%	Area (Acre)	%
01	Administrative	Government Service	0.0003	0.0	0.24	0.29
		Non-Government Service	-	-	-	-
02	Agriculture		15.99	19.57	7.06	8.64
03	Circulation Network		1.57	1.92	5.15	6.30
04	Commercial Activity		1.29	1.58	1.58	1.93
05	Community Service		0.18	0.22	0.18	0.22
06	Deferred Area		-	-	-	
07	Educational and Research		-	-	0.28	0.34
08	Health Facility				0.19	0.23
09	Industrial		0.16	0.2	2.71	3.32
10	Mixed Use		-	-	-	-
11	Open Space		-	-	0.26	0.32
12	Recreational Facilities		-	-	1.45	1.78
13	Residential		10.48	12.83	4.34	5.31
14	Transportation and Communication		-	-	1.6	1.96
15	Utility Service		-	-	4.63	5.67
16	Water Body		52.02	63.68	52.02	63.96
	Total		**81.69**	**100.00**	**81.69**	**100.00**


Map 15.1 : Proposed Landuse Plan of Ward no. 1
281950
282000
540000
539500
539000
Ward No.-1
Char Bara Lamchhi Dhali_034_01
Ward No.-2
Ward No.-3
Legend
Paurashava Boundary
Ward Boundary Poly
Mouza Boundary
Administrative
Agriculture
Circulation Network
Commercial Activity
Community Facility
Education & Research
Health Facility
Industrial
Mixed Use
Open Space
Recreational Facilities
Rural Settlement
Transportation Facilities
Urban Deferred
Urban Settlement
Utility Facility
Waterbody
Meters
0 70 140 280 420 560
Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Cooperatives
CONSULTANT
SCPL Sheltech Consultants (Pvt.) Ltd.
In Association with

a. Urban Residential Zone

In existing land uses, both the urban residential and rural homestead has been considered as residential use as a whole. In Ward Action Plan, more than 4 acre of land has been earmarked for urban residential use which will occupy 5.31% of the total land.

b. Circulation network

For any type of development, circulation network is an important facility. To improve the efficiency of transport network of the ward, more roads are proposed which will consume almost 5.15 acres of land and more than 6.30% of the total area.

c. Administrative Area

0.29% land has been allocated for administrative purpose. Ward councilor's office and a police box have been proposed in this ward.

d. Commercial Activity

At present, commercial activity and density of population are moderate in this ward. Only 1.58 acres of land has been proposed for this purpose which will occupy only 1.93 % of total land.

e. Education and Research

In Ward Action Plan, 0.34% of total land has been allocated for education.

f. Health Facilities

0.23% land has been allocated for health purpose. A health center has been proposed in this purpose.

g. Community Facilities

Land for community facilities will be 0.08 acre which is 0.22 %. A community center has been proposed in this ward.

h. Utility Service

A total of 4.63 acre of land covering 5.67% of total land is earmarked as Utility Services zone at Ward no. 01. Proposal is made for the establishment of one waste transfer station and solid waste disposal site in this zone.

i. Transport and Communication

One tempo stand, passenger shed is proposed for this ward. It occupies 1.6 acres land which is 1.96% total land of the ward. A passenger shade has been proposed in this ward.

j. Industrial Activity

A total 2.71 acre land has been allocated in this purpose.

k. Recreational Facilities

A total 1.78% land has been allocated in this purpose.

l. Open Space

Land for Open space will be 0.26 acre which includes open recreational facilities playground, Local Park and green belt.

m. Agricultural Area

The Paurashava including Ward No. 01 has a vast area of agricultural land that demands formation of a separate zone like, agriculture zone. The total area under this use has been estimated as about 7.06 acres of land covering 8.64% of the total land.

n. Water bodies

The plan suggests for preserving most of the water bodies for two purposes, first, to serve as source of water, second to serve as water retention area during monsoon. The ponds will be preserved as the water retention ponds. The proposed retention area covers 52.02 acres of land which covers almost 63.96% of the total ward area.

o. Urban Deferred

For this purpose, on land has been proposed in Ward no. 01.

15.3.2.3 Proposed Road Infrastructure Development

A total of 2.64 km of road development has been proposed in first ward action plan for Ward no. 01 of Daulatkhan Paurashava. Length of the access road will be 1.17 km and width of these roads will be 20ft. Total length of secondary road will be 1.14 km and width will be 60 ft for this ward. Total length of tertiary road of this ward will be 0.01km. The rest 0.33 km primary road will be developed and its width will be 80 ft. The detailed scenario of road network development proposal is given in Table 15.3.

Table 15.3: Road Network Proposal at Ward no. 01

Type	Proposed Road ID	Length in m	Remark	Phase
Primary Road	PR-1	326.17	Widening	1st
Primary Road	PR-2	0.02	Widening	1st
Secondary Road	SR-1	1075.82	Widening	1st
Secondary Road	SR-2	12.91	Widening	1st
Secondary Road	SR-3	15.34	Widening	1st
Secondary Road	SR-4	10.45	Widening	1st
Secondary Road	SR-5	9.60	Widening	1st
Secondary Road	SR-6	9.61	Widening	1st
Secondary Road	SR-7	1.85	Widening	1st
Secondary Road	SR-8	1.85	Widening	1st
Secondary Road	SR-9	0.02	Widening	1st
Secondary Road	SR-10	0.01	Widening	1st
Secondary Road	SR-11	0.02	Widening	1st
Tertiary Road	TR-1	2.02	Widening	2nd
Tertiary Road	TR-2	2.02	Widening	2nd
Tertiary Road	TR-3	2.43	New	2nd
Tertiary Road	TR-4	0.01	Widening	2nd
Tertiary Road	TR-5	0.01	Widening	2nd
Tertiary Road	TR-6	0.02	New	2nd
Access Road	AR-01	12.23	Widening	2nd
Access Road	AR-02	20.48	Widening	2nd
Access Road	AR-03	12.20	Widening	2nd
Type	**Proposed Road ID**	**Length in m**	**Remark**	**Phase**

Access Road	AR-04	26.59	Widening	2nd
Access Road	AR-05	13.05	Widening	2nd
Access Road	AR-06	160.53	Widening	2nd
Access Road	AR-07	12.83	Widening	2nd
Access Road	AR-08	11.73	Widening	2nd
Access Road	AR-09	2.74	Widening	2nd
Access Road	AR-10	2.03	Widening	2nd
Access Road	AR-11	1.96	Widening	2nd
Access Road	AR-12	1.89	Widening	2nd
Access Road	AR-13	2.12	Widening	2nd
Access Road	AR-14	1.86	Widening	2nd
Access Road	AR-15	2.08	Widening	2nd
Access Road	AR-16	1.88	Widening	2nd
Access Road	AR-17	1.94	Widening	2nd
Access Road	AR-18	1.86	Widening	2nd
Access Road	AR-19	1.90	Widening	2nd
Access Road	AR-20	1.85	Widening	2nd
Access Road	AR-21	6.24	Widening	2nd
Access Road	AR-22	20.26	Widening	2nd
Access Road	AR-23	6.30	Widening	2nd
Access Road	AR-24	17.34	Widening	2nd
Access Road	AR-25	6.80	Widening	3rd
Access Road	AR-26	84.38	Widening	3rd
Access Road	AR-27	6.59	Widening	3rd
Access Road	AR-28	194.30	Widening	3rd
Access Road	AR-29	1.97	Widening	3rd
Access Road	AR-30	6.19	New	3rd
Access Road	AR-31	13.31	New	3rd
Access Road	AR-32	510.34	New	3rd
Access Road	AR-33	0.02	Widening	3rd
Access Road	AR-34	0.01	Widening	3rd
Access Road	AR-35	0.01	Widening	3rd
Access Road	AR-36	0.01	Widening	3rd
Access Road	AR-37	0.01	Widening	3rd
Access Road	AR-38	0.01	Widening	3rd
Access Road	AR-39	0.01	Widening	3rd
Access Road	AR-40	0.01	Widening	3rd
Access Road	AR-41	0.02	Widening	3rd
Access Road	AR-42	0.01	Widening	3rd
Access Road	AR-43	0.01	Widening	3rd
Access Road	AR-44	0.01	Widening	3rd

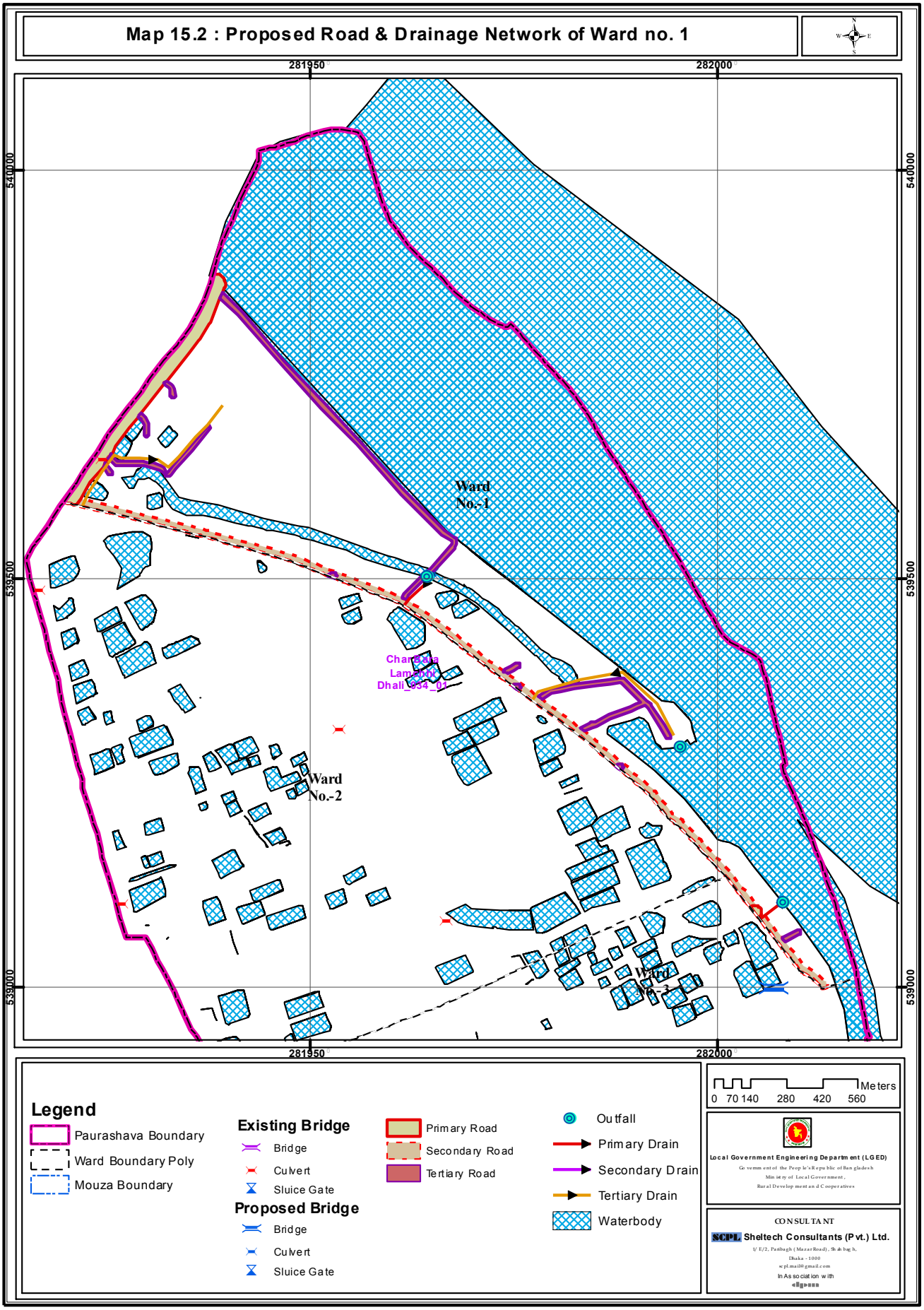
- "AR" for access road, "TR" for tertiary road, "SR" for secondary road, and "PR" for primary road.

15.3.2.4 Drainage Development Plan

There is both natural and man-made drainage system at Ward no. 01. The existing drainage of the ward mainly depends on the natural drainage facilities. There is proposal for manmade drainage facilities in Ward Action Plan. The proposed drainage facilities will be developed based on these natural channels. Table 15.4 shows the details. **Map 15.2** represents the proposed road and drainage network for Daulatkhan Paurashava.

Table15.4: Drainage Development Plan Proposals for ward 01

Item	Length in km
Proposed Drainage (Primary)	0.09
Proposed Drainage (Tertiary)	0.47


Map 15.2 : Proposed Road & Drainage Network of Ward no. 1
281950
282000
540000
539500
539000
Ward No.-1
Ward No.-2
Ward No.-3
Legend
Paurashava Boundary
Ward Boundary Poly
Mouza Boundary
Existing Bridge
Bridge
Culvert
Sluice Gate
Proposed Bridge
Bridge
Culvert
Sluice Gate
Primary Road
Secondary Road
Tertiary Road
Outfall
Primary Drain
Secondary Drain
Tertiary Drain
Waterbody
Meters
0 70 140 280 420 560
Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government,
Rural Development and Cooperatives
CONSULTANT
SCPL Sheltech Consultants (Pvt.) Ltd.
In Association with

15.3.2.5 Urban Services

a. Solid Waste Management

Solid waste management is an important urban service. As density of population increases the volume of solid waste also increases proportionately. This ward will be developed as an industrial area. However, the income level is also another major factor influencing the volume of solid waste. Population and the volume of waste in the town is yet to be large enough to become a problem for it. But the present management system is not satisfactory and it might be led to problem in future. The consultant proposes one solid waste transfer stations in this ward at on an area of 0.11 acre and 4.52 acre of land is for Solid Waste Disposal. It is recommended that home collection system is introduced in the ward by creation of local CBOs. This will cause organized collection of waste and prevent indiscriminate littering.

b. Water Supply

It is proposed to install a network based water supply system by exploring fresh water from the Meghna River for the entire Paurashava. And water supply lines in this ward will be established along all categories of roads as per the growth of the settlement. There is only 1 existing water supply network line. And water supply network is proposed as per the design of DPHE.

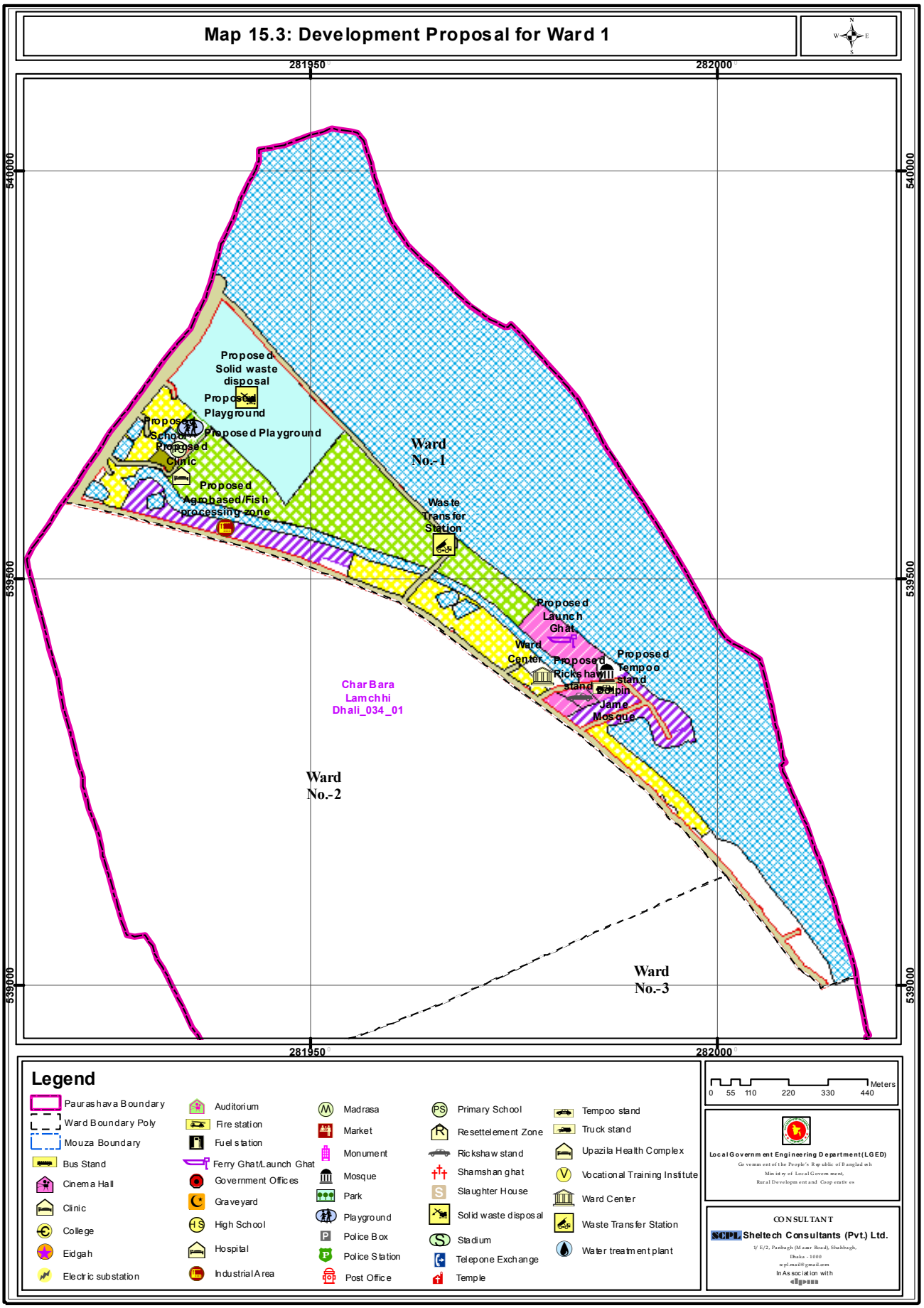
c. Sanitation

It is apprehended that the government would not be able to provide network and treatment based sanitation system for the town. So the present system of sanitation will continue. However, the Paurashava must try to promote hygienic sanitation to ensure better public health. There is hardly any public toilet in the town to serve the visitors and the local people. The existing toilet of bus terminal area has to be developed as public toilet is required for the town people and as well as for the passengers waiting for departure. **Map 15.3** represents proposed urban services for ward 01.

Table15.5: Urban Service Development Proposals for ward 01

Item	Existing		Proposed	
	No.	Area/length	No.	Area/Length
Solid Waste Transfer Station	None		Waste transfer station is proposed	0.11 acre
Electricity Line			As per existing program of PDB	

Map 15.3: Development Proposal for Ward 1



Legend

- Paurashava Boundary
- Ward Boundary Poly
- Mouza Boundary
- Bus Stand
- Cinema Hall
- Clinic
- College
- Eidgah
- Electric substation
- Auditorium
- Fire station
- Fuel station
- Ferry Ghat/Launch Ghat
- Government Offices
- Graveyard
- High School
- Hospital
- Industrial Area
- Madrasa
- Market
- Monument
- Mosque
- Park
- Playground
- Police Box
- Police Station
- Post Office
- Primary School
- Resettelement Zone
- Rickshaw stand
- Shamshan ghat
- Slaughter House
- Solid waste disposal
- Stadium
- Telepone Exchange
- Temple
- Tempoo stand
- Truck stand
- Upazila Health Complex
- Vocational Training Institute
- Ward Center
- Waste Transfer Station
- Water treatment plant

0 55 110 220 330 440 Meters

Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Cooperatives

CONSULTANT
SCPL Sheltech Consultants (Pvt.) Ltd.
1/E/2, Paribagh (Manar Road), Shahbagh, Dhaka - 1000
scpl.mail@gmail.com
In Association with

15.4 Ward Action Plan for Ward No. 02

15.4.1 Demography

Ward no. 02 is located on the north-west part of the town. It has a moderate density of population. Table 15.6 shows the detail.

Table 15.6: Population Statistics of Ward No. 02

Item	Year			
	2016	2021	2026	2031
Area (acre)	83.98	83.98	83.98	83.98
Population	2900	3048	3203	3367
Density of Population (acre)	35	36	38	40

15.4.2 Ward Action Plan Proposals

15.4.2.1 Review of Existing Land Use

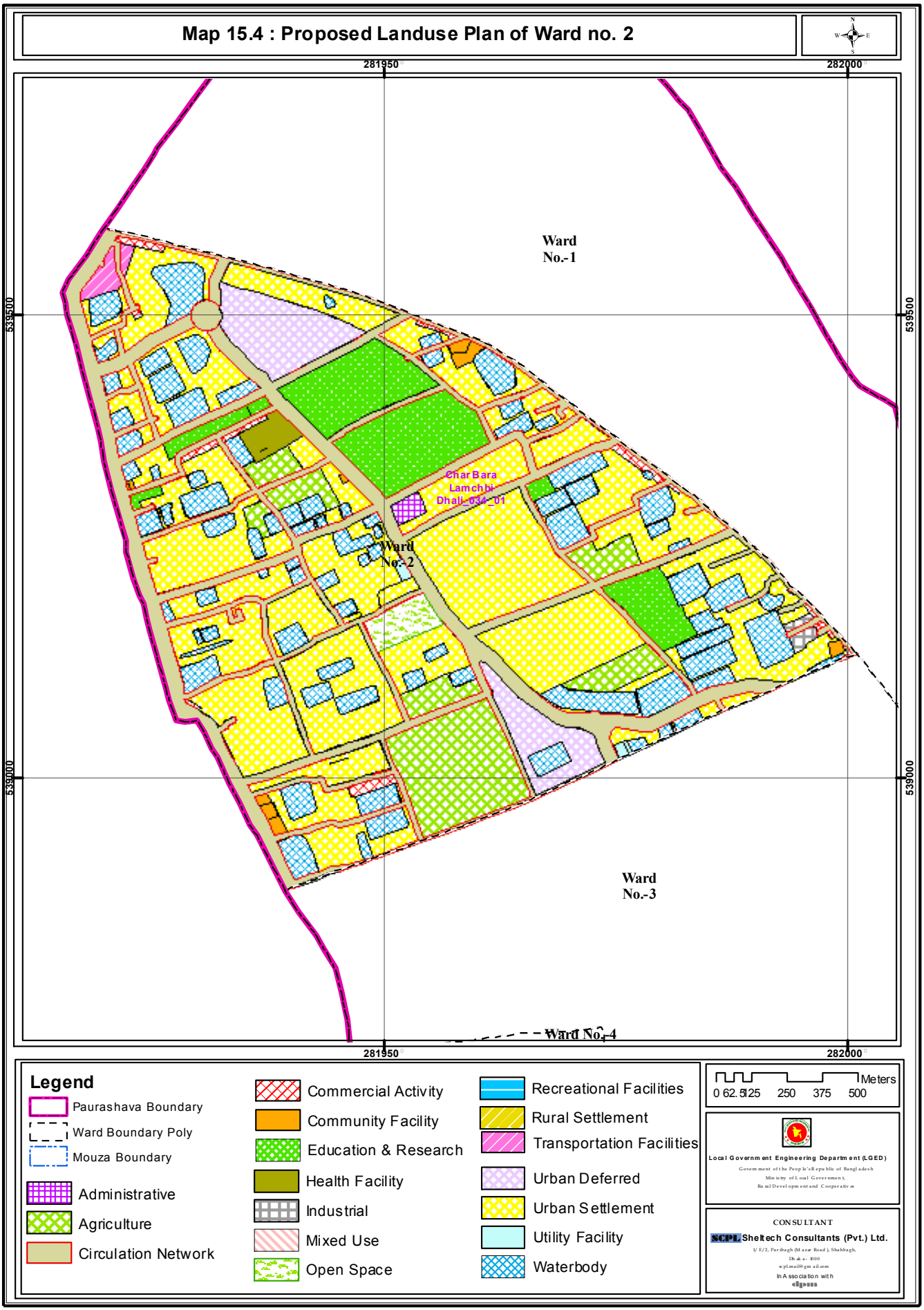
The maximum land of this ward at present is used for residential purpose. It occupies 38.99 acres of land covering more than 46.43% of the total land. Water bodies occupy about 22.72% of the land of the ward. About 21.68 acres of land is under agricultural uses, 0.20% is used for education, 3.36% for circulation network, and only 0.17% of land is used as community facilities. Table 15.8 shows the existing land use pattern of Daulatkhan Paurashava.

15.4.2.2 Proposed Land Use Zoning

The category wise proposals are presented here. Table 15.7 shows the amount of land existing and proposed uses in Ward no. 02. **Map 15.4** shows proposed land use of Ward 02.

Table 15.7: Comparative Scenario of Existing and Proposed Land Uses of Ward No. 02

Sl. No.	Landuse Category		Existing		Proposed	
			Area (Acre)	%	Area (Acre)	%
01	Administrative	Government Service	-	-	0.2	0.23
		Non-Government Service	-	-	-	-
02	Agriculture		21.68	25.82	6.26	7.45
03	Circulation Network		2.82	3.36	17.83	21.23
04	Commercial Activity		0.75	0.89	0.65	0.77
05	Community Service		0.14	0.17	0.42	0.50
06	Deferred Area		-	-	3.70	4.41
07	Education and Research		0.17	0.20	6.78	8.07
08	Health Facility		-	-	0.50	0.60
09	Industrial		0.22	0.26	0.19	0.22
10	Mixed Use		-	-	-	-
11	Open Space		-	-	-	-
12	Recreational Facilities		-	-	-	-
13	Residential		38.99	46.43	33.82	40.28
14	Transportation and Communication		0.13	0.15	0.39	0.46
15	Utility Service		-	-	0.12	0.15
16	Water Body		19.08	22.72	13.12	15.63
	Total		**83.98**	**100.00**	**83.98**	**100.00**


Map 15.4 : Proposed Landuse Plan of Ward no. 2
281950
282000
539500
539000
Ward
No.-1
Char Bara
Lamchhi
Dhal_034_01
Ward
No.-2
Ward
No.-3
Ward No.-4
Legend
Paurashava Boundary
Ward Boundary Poly
Mouza Boundary
Administrative
Agriculture
Circulation Network
Commercial Activity
Community Facility
Education & Research
Health Facility
Industrial
Mixed Use
Open Space
Recreational Facilities
Rural Settlement
Transportation Facilities
Urban Deferred
Urban Settlement
Utility Facility
Waterbody
Meters
0 62.5125 250 375 500
Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government,
Rural Development and Cooperatives
CONSULTANT
SCPL Sheltech Consultants (Pvt.) Ltd.
In Association with

a. Urban Residential Zone

In the Ward Action Plan for Ward no. 02, more than 33.82 acres of land has been earmarked for urban residential use, which will occupy 40.28% of the total land. Table 15.8 shows the details about the existing and proposed land uses of Ward no. 2.

b. Circulation network

To improve the efficiency of the Ward, more roads are proposed, which will consume about 17.83 acres of land covering about 21.23% of the total area. For the improvement of road network, widening of existing roads, link road and new roads are proposed for phase wise development within the first five years.

c. Administrative Area

Total 0.20 acre land has been allocated for administrative purpose. A new Ward councilor's office has been proposed in this ward.

d. Commercial Activity

At present, commercial activity and also the density of population is very low in this ward. Only 0.65 acre of land has been proposed for this purpose, which occupies only 0.77% of total land.

e. Education and Research

A total of 5.6.78 acres of land is proposed for education and research. One new nursery school and one vocational training institute covering 2.66 acres land will be established at the border of the ward no. 02 and 07. 1.15 acres of land also has been proposed for Homeopathic College.

f. Health Facilities

A total 0.50 acre land has been allocated finally for health purpose. A new health center has been proposed in this ward.

g. Community Facilities

A total of 0.42 acre of land will be used for community facilities covering 0.50 % of the total land of this ward.

h. Utility Services

A total 0.12 acre land has been allocated for utility services. Waste transfer stations have been proposed in this ward.

i. Transport Facilities

A total 0.46% land has been allocated in this purpose.

j. Industrial Activity

A total 0.22% land has been allocated for industrial purpose.

k. Recreational Facilities

Recreational Facilities have been absent in this ward.

l. Agriculture

The Paurashava including Ward No. 02 has a vast area of agricultural land that demands formation of a separate zone like, agriculture zone. The total area under this use has been estimated at about 6.26 acres of land covering 7.45% of the total land.

m. Water Bodies

The total land proposed for water retention area covers 13.12 acres.

15.4.2.3 Proposed Road Infrastructure Development

A total of 7.97 km of road development proposal have been made for Ward no. 02 of Daulatkhan Paurashava. Length of the access roads is 4.41 km and width of these roads will be 20 ft. The total length of tertiary road will be 1.68 km and width of these roads will be 30 ft for this Ward. The total length of secondary road will be 1.10 km and width of these roads will be 60 ft. Primary road length is 0.78 km and width is 80 ft. The detailed scenario of road network development proposal is given in Table 15.8.

Table 15.8: Road Network Proposal at Ward no. 02

Type	Proposed Road ID	Length in m	Remark	Phase
Primary Road	PR-3	777.02	Widening	1st
Primary Road	PR-4	0.02	Widening	1st
Secondary Road	SR-11	12.25	Widening	1st
Secondary Road	SR-12	66.22	Widening	1st
Secondary Road	SR-13	832.66	Widening	1st
Secondary Road	SR-14	72.71	New	1st
Secondary Road	SR-15	13.78	New	1st
Secondary Road	SR-16	38.90	New	1st
Secondary Road	SR-17	52.25	Widening	1st
Secondary Road	SR-18	11.41	Widening	1st
Secondary Road	SR-19	0.02	Widening	1st
Tertiary Road	TR-6	12.67	Widening	2nd
Tertiary Road	TR-7	22.66	Widening	2nd
Tertiary Road	TR-8	12.20	Widening	2nd
Tertiary Road	TR-9	15.41	Widening	2nd
Tertiary Road	TR-10	263.16	Widening	2nd
Tertiary Road	TR-11	351.82	Widening	2nd
Tertiary Road	TR-12	12.51	Widening	2nd
Tertiary Road	TR-13	279.01	Widening	2nd
Tertiary Road	TR-14	8.19	Widening	2nd
Tertiary Road	TR-15	304.40	Widening	2nd
Tertiary Road	TR-16	15.27	New	2nd
Tertiary Road	TR-17	150.51	New	2nd
Tertiary Road	TR-18	163.87	New	2nd
Tertiary Road	TR-19	18.31	New	2nd
Tertiary Road	TR-20	52.35	New	2nd
Tertiary Road	TR-21	0.01	Widening	2nd
Tertiary Road	TR-22	0.01	Widening	2nd
Tertiary Road	TR-23	0.02	New	2nd
Access Road	AR-45	12.25	Widening	2nd
Access Road	AR-46	1.45	Widening	2nd
Access Road	AR-47	12.48	Widening	2nd
Access Road	AR-48	64.90	Widening	2nd
Access Road	AR-49	12.84	Widening	2nd
Access Road	AR-50	38.65	Widening	2nd
Access Road	AR-51	12.35	Widening	2nd
Access Road	AR-52	47.08	Widening	2nd

Type	Proposed Road ID	Length in m	Remark	Phase
Access Road	AR-53	12.24	Widening	2nd
Access Road	AR-54	61.90	Widening	2nd
Access Road	AR-55	12.21	Widening	2nd
Access Road	AR-56	113.63	Widening	2nd
Access Road	AR-57	12.22	Widening	2nd
Access Road	AR-58	20.94	Widening	2nd
Access Road	AR-59	12.20	Widening	2nd
Access Road	AR-60	73.85	Widening	2nd
Access Road	AR-61	26.77	Widening	2nd
Access Road	AR-62	8.15	Widening	2nd
Access Road	AR-63	12.35	Widening	2nd
Access Road	AR-64	168.01	Widening	2nd
Access Road	AR-65	57.26	Widening	2nd
Access Road	AR-66	12.22	Widening	2nd
Access Road	AR-67	19.68	Widening	2nd
Access Road	AR-68	12.54	Widening	2nd
Access Road	AR-69	98.30	Widening	2nd
Access Road	AR-70	12.28	Widening	2nd
Access Road	AR-71	148.12	Widening	2nd
Access Road	AR-72	12.33	Widening	2nd
Access Road	AR-73	115.30	Widening	2nd
Access Road	AR-74	6.38	Widening	2nd
Access Road	AR-75	62.07	Widening	2nd
Access Road	AR-76	36.46	Widening	2nd
Access Road	AR-77	4.57	Widening	2nd
Access Road	AR-78	4.74	Widening	2nd
Access Road	AR-79	22.19	Widening	2nd
Access Road	AR-80	4.49	Widening	2nd
Access Road	AR-81	16.61	Widening	2nd
Access Road	AR-82	31.94	Widening	2nd
Access Road	AR-83	4.41	Widening	2nd
Access Road	AR-84	62.32	Widening	2nd
Access Road	AR-85	4.68	Widening	2nd
Access Road	AR-86	18.07	Widening	2nd
Access Road	AR-87	4.57	Widening	2nd
Access Road	AR-88	4.93	Widening	2nd
Access Road	AR-89	106.10	Widening	2nd
Access Road	AR-90	4.34	Widening	2nd
Access Road	AR-91	17.45	Widening	2nd
Access Road	AR-92	4.85	Widening	2nd
Access Road	AR-93	46.96	Widening	2nd
Access Road	AR-94	4.38	Widening	2nd
Access Road	AR-95	66.94	Widening	2nd
Access Road	AR-96	4.51	Widening	2nd
Access Road	AR-97	27.02	Widening	2nd
Access Road	AR-98	4.34	Widening	2nd
Access Road	AR-99	36.89	Widening	2nd
Access Road	AR-100	4.42	Widening	2nd
Access Road	AR-101	10.59	Widening	2nd
Access Road	AR-102	0.46	Widening	2nd
Access Road	AR-103	45.32	Widening	2nd
Access Road	AR-104	7.50	Widening	3rd
Access Road	AR-105	12.21	Widening	3rd
Access Road	AR-106	8.03	Widening	3rd
Access Road	AR-107	43.02	Widening	3rd
Access Road	AR-108	136.46	New	3rd
Access Road	AR-109	8.17	New	3rd
Access Road	AR-110	46.38	New	3rd
Access Road	AR-111	27.41	New	3rd
Access Road	AR-112	7.78	New	3rd
Access Road	AR-113	121.17	New	3rd

Type	Proposed Road ID	Length in m	Remark	Phase
Access Road	AR-114	363.55	New	3rd
Access Road	AR-115	5.11	New	3rd
Access Road	AR-116	13.18	New	3rd
Access Road	AR-117	78.50	New	3rd
Access Road	AR-118	29.18	New	3rd
Access Road	AR-119	8.31	New	3rd
Access Road	AR-120	83.77	New	3rd
Access Road	AR-121	7.41	New	3rd
Access Road	AR-122	5.71	New	3rd
Access Road	AR-123	106.94	New	3rd
Access Road	AR-124	7.45	New	3rd
Access Road	AR-125	119.05	New	3rd
Access Road	AR-126	4.56	New	3rd
Access Road	AR-127	117.16	New	3rd
Access Road	AR-128	7.53	New	3rd
Access Road	AR-129	4.56	New	3rd
Access Road	AR-130	103.17	New	3rd
Access Road	AR-131	187.93	New	3rd
Access Road	AR-132	5.23	New	3rd
Access Road	AR-133	138.39	New	3rd
Access Road	AR-134	4.76	New	3rd
Access Road	AR-135	92.54	New	3rd
Access Road	AR-136	5.03	New	3rd
Access Road	AR-137	119.23	New	3rd
Access Road	AR-138	4.83	New	3rd
Access Road	AR-139	38.25	New	3rd
Access Road	AR-140	4.73	New	3rd
Access Road	AR-141	12.01	New	3rd
Access Road	AR-142	49.34	New	3rd
Access Road	AR-143	154.99	New	3rd
Access Road	AR-144	7.26	New	3rd
Access Road	AR-145	10.01	New	3rd
Access Road	AR-146	57.38	New	3rd
Access Road	AR-147	108.99	New	3rd
Access Road	AR-148	4.26	New	3rd
Access Road	AR-149	14.25	New	3rd
Access Road	AR-150	7.60	New	3rd
Access Road	AR-151	0.02	Widening	3rd
Access Road	AR-152	0.01	Widening	3rd
Access Road	AR-153	0.01	Widening	3rd
Access Road	AR-154	0.01	Widening	3rd
Access Road	AR-155	0.01	Widening	3rd
Access Road	AR-156	0.01	Widening	3rd
Access Road	AR-157	0.01	Widening	3rd
Access Road	AR-158	0.01	Widening	3rd
Access Road	AR-159	0.02	Widening	3rd
Access Road	AR-160	0.01	Widening	3rd
Access Road	AR-161	0.01	Widening	3rd

- “AR” for access road, “TR” for tertiary road, “SR” for secondary road, and “PR” for primary road.

15.4.2.4 Drainage Development Plan

Existing drainage is mostly depending on natural drainage facilities. The proposed drainage facilities will be developed based on these natural channels. Meghna River will serve as primary drains for this ward and will be connected by 3.56 km secondary drain and 3.41 km tertiary drain. Table 15.9 shows the details. **Map 15.5** represents proposed Road and Drainage Network of Ward 2

Table15.9: Drainage Development Plan Proposals for ward 02

Item	Length in km
Proposed Drainage (Primary)	0.35
Proposed Drainage (Secondary)	3.56
Proposed Drainage (Tertiary)	3.41

Besides, it will be necessary to re-excavate all the encroached khals that serve as primary drains. The consultants have identified all existing khals that need to be re-excavated to allow smooth flow of water through them.

15.4.2.5 Urban Services

a. Solid Waste Management

The present management system as in the other wards is not satisfactory and it might lead to problem in future. 0.1 acre land is proposed as waste transfer station. But one waste transfer station will be established in the middle of Ward no. 02. It is recommended that home collection system is introduced in the ward by creation of local CBOs. This will cause organized collection of waste and prevent indiscriminate littering.

b. Water Supply

It is proposed to install a network based water supply system by exploring fresh water from the Meghna River for the entire Paurashava. And water supply lines in this ward will be established along all categories of roads as per the growth of the settlement. There is no existing water supply network line in this ward. And water supply network is proposed as per the design of DPHE.

c. Sanitation

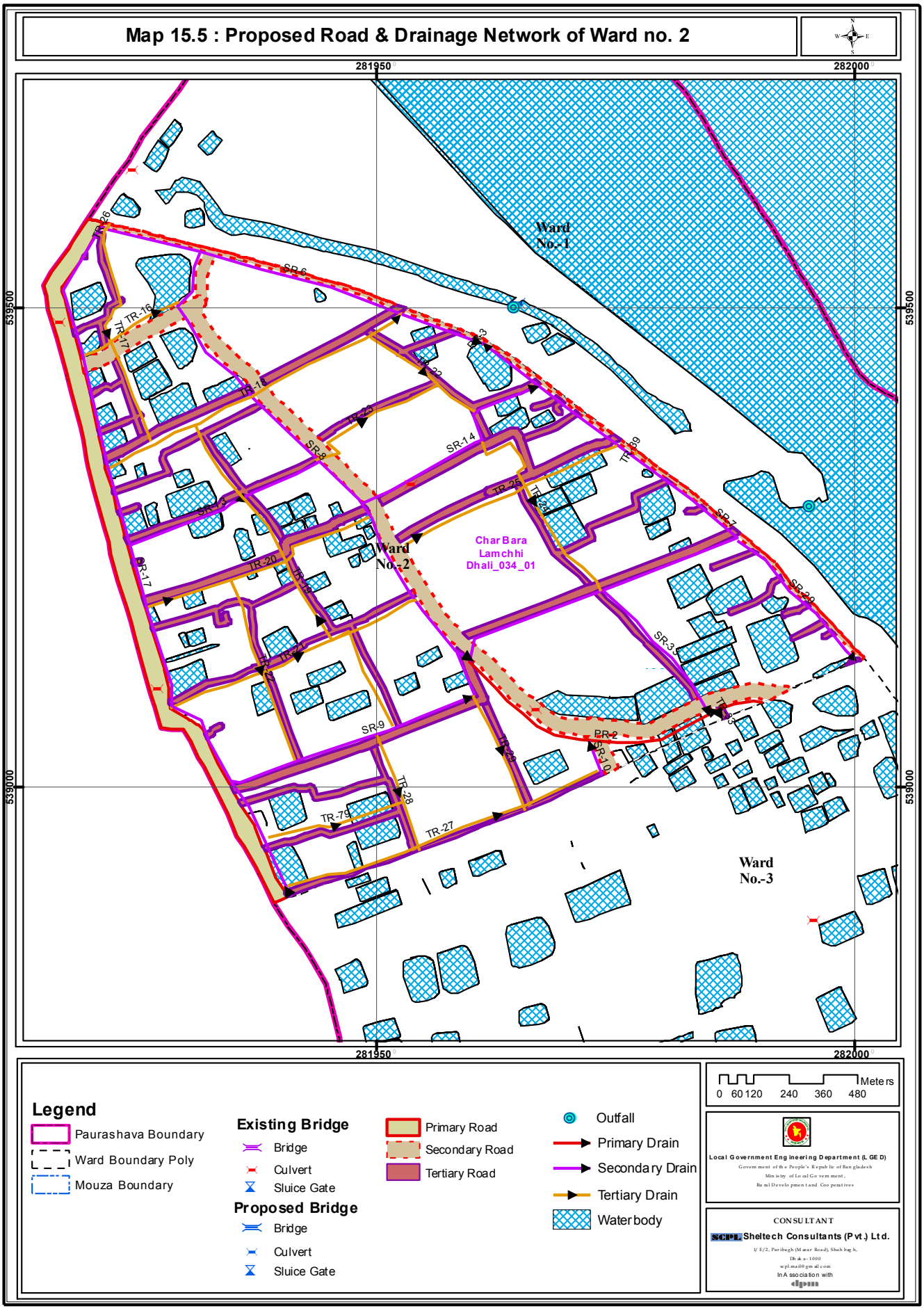
The Paurashava must try to promote hygienic sanitation for the whole Paurashavsa to ensure better public health.

Table15.10: Urban Service Development Proposals for ward 02

Item	Existing		Proposed	
	No.	Area/length	No.	Area/Length
Solid Waste Transfer Station	None		One transfer station	0.1 acre
Electricity Line			As per existing program of PDB	

Map 15.6 represents proposed urban services for ward 2.

Map 15.5 : Proposed Road & Drainage Network of Ward no. 2



Legend

- Paurashava Boundary
- Ward Boundary Poly
- Mouza Boundary

Existing Bridge
- Bridge
- Culvert
- Sluice Gate

Proposed Bridge
- Bridge
- Culvert
- Sluice Gate

- Primary Road
- Secondary Road
- Tertiary Road

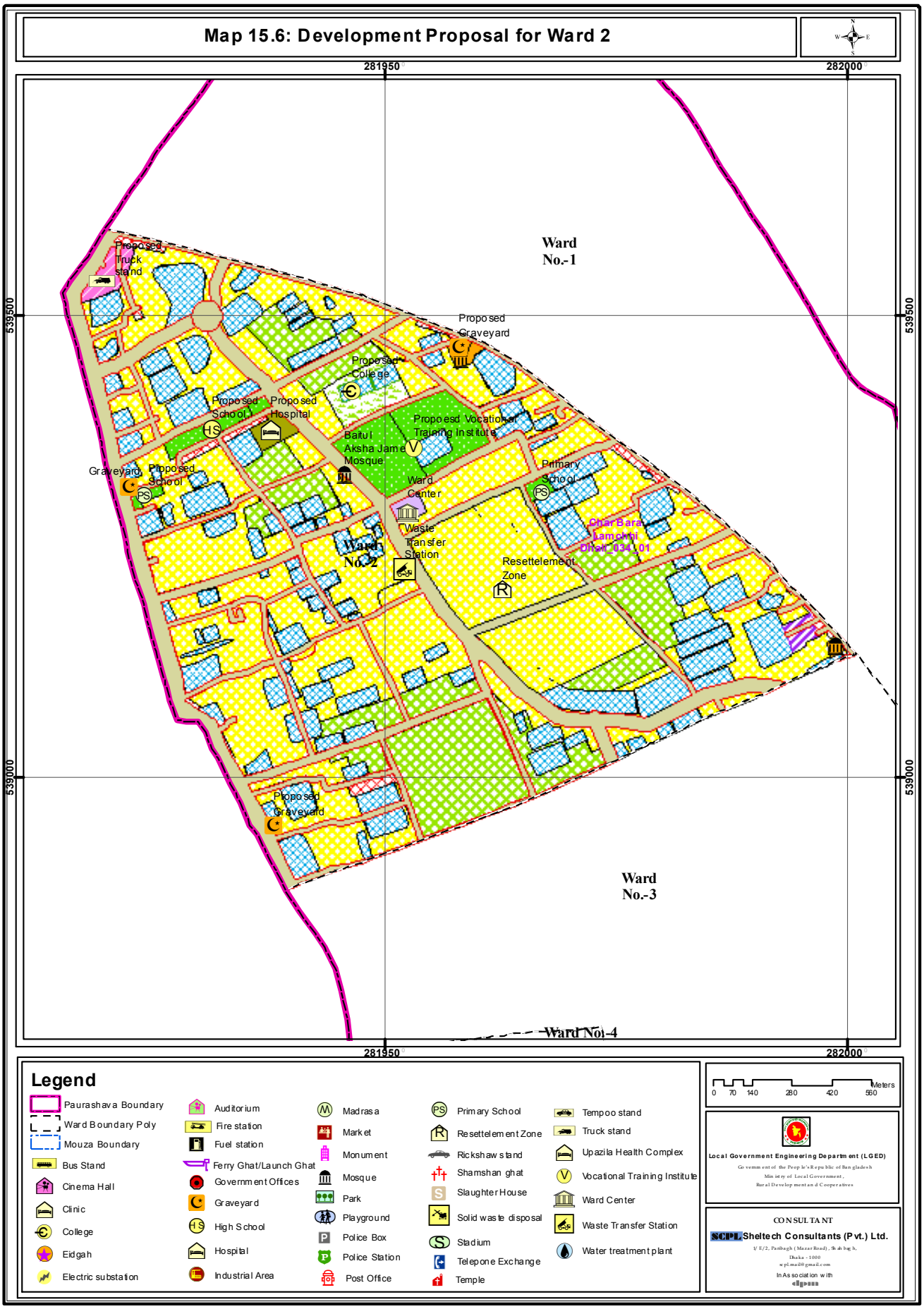
- Outfall
- Primary Drain
- Secondary Drain
- Tertiary Drain
- Waterbody

Meters
0 60 120 240 360 480

Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Cooperatives

CONSULTANT
SCPL Sheltech Consultants (Pvt.) Ltd.
I/E/2, Paribagh (Mazar Road), Shahbagh, Dhaka-1000
scpl.mail@gmail.com
In Association with
dpm

Map 15.6: Development Proposal for Ward 2



Legend

- Paurashava Boundary
- Ward Boundary Poly
- Mouza Boundary
- Bus Stand
- Cinema Hall
- Clinic
- College
- Eidgah
- Electric substation
- Auditorium
- Fire station
- Fuel station
- Ferry Ghat/Launch Ghat
- Government Offices
- Graveyard
- High School
- Hospital
- Industrial Area
- Madrasa
- Market
- Monument
- Mosque
- Park
- Playground
- Police Box
- Police Station
- Post Office
- Primary School
- Resettelement Zone
- Rickshaw stand
- Shamshan ghat
- Slaughter House
- Solid waste disposal
- Stadium
- Telepone Exchange
- Temple
- Tempoo stand
- Truck stand
- Upazila Health Complex
- Vocational Training Institute
- Ward Center
- Waste Transfer Station
- Water treatment plant

0 70 140 280 420 560 Meters

Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Cooperatives

CONSULTANT
SCPL Sheltech Consultants (Pvt.) Ltd.
V/E/2, Panbagh (Mazar Road), Shahbagh, Dhaka - 1000
scplma@gmail.com
In Association with

15.5 Ward Action Plan for Ward No. 03

15.5.1 Demography

Ward No. 03 is located on the middle part of the town. Estimated population for the year 2031 will be 3081 in the ward with a density of 44 persons per acre. Table 15.11 shows the detail.

Table 15.11: Population Statistics of Ward No. 03

Item	Year			
	2016	**2021**	**2026**	**2031**
Area (acre)	70.5	70.5	70.5	70.5
Population	2654	2789	2931	3081
Density of Population (acre)	38	40	42	44

15.5.2 Ward Action Plan Proposals

15.5.2.1 Review of Existing Land Use

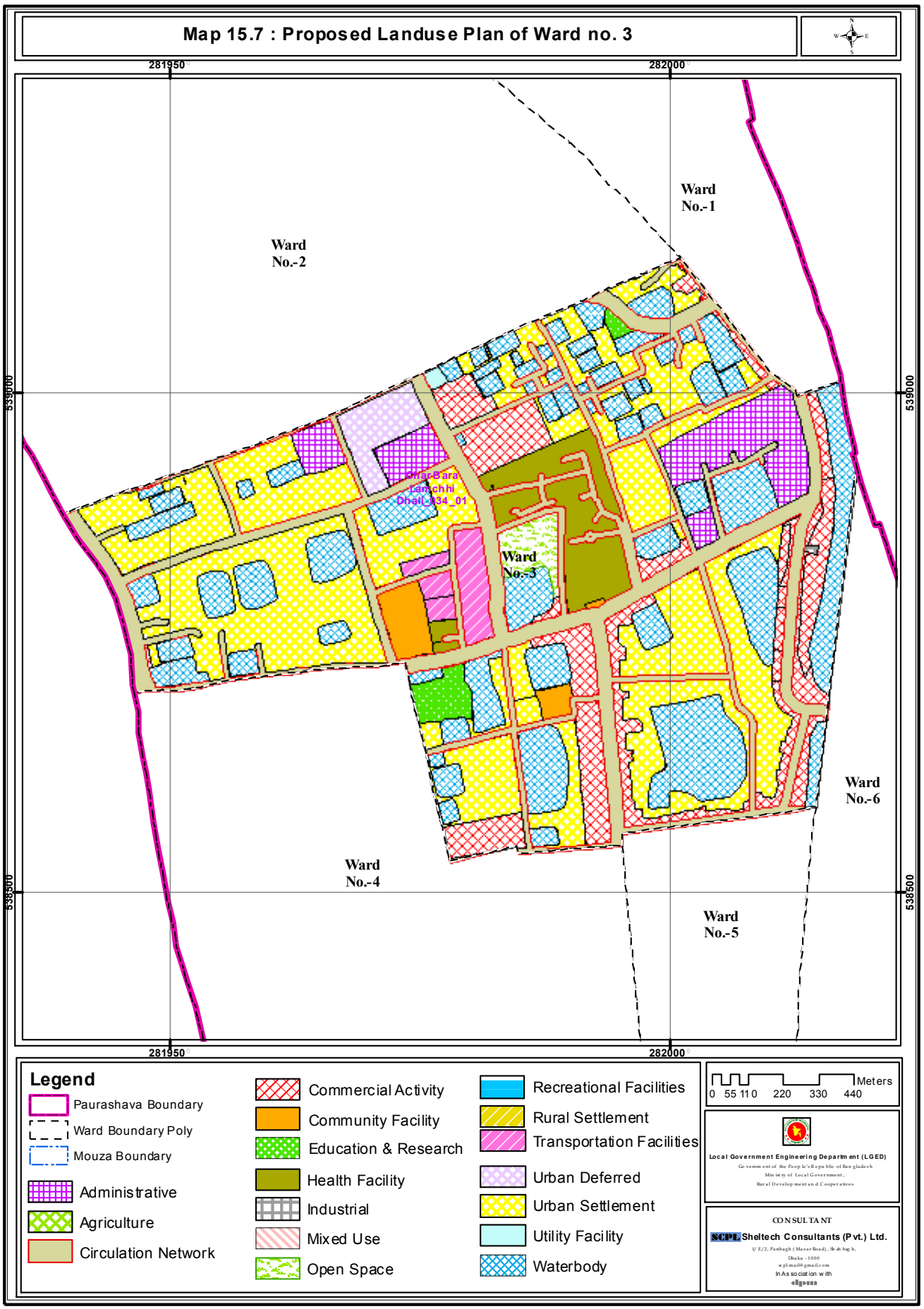
The maximum land of this ward at present is used for residential purpose. It occupies 31.01 acres of land covering more than 43.99% of the total land. Water bodies occupy about 30.52% of the land of the ward. About 2.88 acres of land is under agricultural uses, 8.06% is used for commercial facilities, 3.94% circulation network. No land in this ward is utilized for service activity. Only 0.40 acres of land is used as community facilities with negligible percentage of urban green space (.01%).

15.5.2.2 Proposed Land Use Zoning

The category wise proposals are presented here. Table 15.12 shows the amount of land existing and proposed uses in Ward no. 03. **Map 15.7** shows proposed land use of Ward 03.

Table15.12: Comparative Scenario of Existing and Proposed Land Uses of Ward No. 03

Sl. No.	Landuse Category		Existing		Proposed	
			Area (Acre)	**%**	**Area (Acre)**	**%**
01	Administrative	Government Service	3.03	4.3	3.6	5.11
		Non-Government Service	-	-	-	-
02	Agriculture		2.88	4.09	-	-
03	Circulation Network		2.78	3.94	13.20	18.72
04	Commercial Activity		5.68	8.06	7.34	10.41
05	Community Service		0.4	0.57	1.01	1.43
06	Deferred Area		-	-	1.18	1.67
07	Education and Research		0.85	1.21	0.75	1.06
08	Health Facility		-	-	2.95	4.18
09	Industrial		0.03	0.04	0.02	0.03
10	Mixed Use		0.07	0.1	-	-
11	Open Space		0.01	0.01	0.78	1.11
12	Recreational Facilities		2.24	3.19	-	-
13	Residential		31.01	43.99	22.04	31.26
14	Transportation and Communication		-	-	1.32	1.87
15	Utility Service		-	-	0.08	0.11
16	Water Body		21.52	30.52	16.23	23.02
	Total		**70.50**	**100.00**	**70.50**	**100.00**


Map 15.7 : Proposed Landuse Plan of Ward no. 3
281950
282000
539000
538500
Ward No.-1
Ward No.-2
Ward No.-3
Ward No.-4
Ward No.-5
Ward No.-6
Dhar Bara Lamchhi Dhaka_134_01
Legend
Paurashava Boundary
Ward Boundary Poly
Mouza Boundary
Administrative
Agriculture
Circulation Network
Commercial Activity
Community Facility
Education & Research
Health Facility
Industrial
Mixed Use
Open Space
Recreational Facilities
Rural Settlement
Transportation Facilities
Urban Deferred
Urban Settlement
Utility Facility
Waterbody
Meters
0 55 110 220 330 440
Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Cooperatives
CONSULTANT
SCPL Sheltech Consultants (Pvt.) Ltd.
In Association with

a. Urban Residential

In Ward Action Plan more than 22.04 acre of land has been earmarked for urban residential use which will occupy 31.26% of the total land.

b. Circulation network

To improve the efficiency of the ward more roads are proposed which will consume 13.20 acres of land and almost 18.72% of the total area. For network improvement widening of existing road, link road and new roads are proposed which will be done phase wise within 2031.

c. Administrative

A total 3.6 acre land has been allocated in this ward in administrative purpose. A police box and ward councilor's office have been proposed in this ward 3.

d. Commercial Activity

Total 7.34 acre of land is allocated for commercial use.

e. Education and Research

In addition 0.75 acre of land has been proposed for education and research.

f. Health services

Total 2.95 acres land has been allocated in this ward. A health center has been proposed.

g. Community Facilities

Land for community facilities will be increased from 0.4 acres to 1.01 in future.

h. Utility Services

0.08 acre land will be used for Utility Services which include the existing newly constructed solid waste transfer station.

i. Transport and Communication

Total 1.32 acre of land will be used for transport and communication at Ward no. 03. New bus stand, passenger shed have been proposed in this ward.

j. Industrial Activity

A total land covering 0.03% of the ward area has been allocated for industrial purpose.

k. Recreational Facilities

Recreational Facilities have been absent in this ward.

l. Open Space

Above 0.78 acres of land has been allocated as open spaces which include Neighborhood Park, park and other open spaces.

m. Agricultural Area

Agricultural land of this ward has been used for facilitating different facilities.

n. Water Body

As the ponds will be preserved as the water retention ponds the proposed retention area covers about 16.23 acres of land which will cover more than 23.02% of the total land of the ward.

15.5.2.3 Proposed Road Infrastructure Development

Total 5.99 km road development proposal have been proposed for Ward no. 03. Length of the access road will be 3.48 km and width of these roads will be not less than 20 ft. Total length of tertiary road will be 0.85 km and width of these roads will be 30 ft Total length of secondary road will be 1.45 km and width of these roads will be 60 ft. There is a primary road proposal in ward no. 03 which length is 0.2 km. Detail scenario of road network development proposal is given in table 15.13.

Table 15.13: Road Network Proposal at Ward no. 03

Type	Proposed Road ID	Length in m	Remark	Phase
Primary Road	PR-5	195.28	Widening	1st
Primary Road	PR-6	3.67	Widening	1st
Primary Road	PR-7	0.44	Widening	1st
Secondary Road	SR-20	323.91	Widening	1st
Secondary Road	SR-21	18.65	Widening	1st
Secondary Road	SR-22	9.35	Widening	1st
Secondary Road	SR-23	134.98	Widening	1st
Secondary Road	SR-24	5.59	Widening	1st
Secondary Road	SR-25	227.36	Widening	1st
Secondary Road	SR-26	233.44	New	1st
Secondary Road	SR-27	7.13	New	1st
Secondary Road	SR-28	45.40	New	1st
Secondary Road	SR-29	3.41	Widening	1st
Secondary Road	SR-30	442.26	Widening	1st
Secondary Road	SR-31	0.02	Widening	1st
Secondary Road	SR-32	0.01	Widening	1st
Secondary Road	SR-33	0.38	Widening	1st
Secondary Road	SR-34	0.29	Widening	1st
Tertiary Road	TR-24	4.53	Widening	2nd
Tertiary Road	TR-25	261.82	Widening	2nd
Tertiary Road	TR-26	5.66	Widening	2nd
Tertiary Road	TR-27	29.70	Widening	2nd
Tertiary Road	TR-28	3.78	Widening	2nd
Tertiary Road	TR-29	74.39	Widening	2nd
Tertiary Road	TR-30	12.21	Widening	2nd
Tertiary Road	TR-31	96.72	Widening	2nd
Tertiary Road	TR-32	221.38	New	2nd
Tertiary Road	TR-33	6.60	New	2nd
Tertiary Road	TR-34	116.30	New	2nd
Tertiary Road	TR-35	1.01	New	2nd
Tertiary Road	TR-36	18.44	New	2nd
Tertiary Road	TR-37	0.08	Widening	2nd
Tertiary Road	TR-38	0.16	New	2nd
Access Road	AR-161	27.23	Widening	2nd
Access Road	AR-162	3.89	Widening	2nd
Access Road	AR-163	44.47	Widening	2nd
Access Road	AR-164	18.61	Widening	2nd

Type	Proposed Road ID	Length in m	Remark	Phase
Access Road	AR-165	7.62	Widening	2nd
Access Road	AR-166	34.29	Widening	2nd
Access Road	AR-167	7.74	Widening	2nd
Access Road	AR-168	61.95	Widening	2nd
Access Road	AR-169	17.49	Widening	2nd
Access Road	AR-170	223.15	Widening	2nd
Access Road	AR-171	7.63	Widening	2nd
Access Road	AR-172	132.68	Widening	2nd
Access Road	AR-173	19.21	Widening	2nd
Access Road	AR-174	14.11	Widening	2nd
Access Road	AR-175	119.75	Widening	2nd
Access Road	AR-176	8.05	Widening	2nd
Access Road	AR-177	168.35	Widening	2nd
Access Road	AR-178	8.04	Widening	2nd
Access Road	AR-179	73.08	Widening	2nd
Access Road	AR-180	7.88	Widening	2nd
Access Road	AR-181	75.09	Widening	2nd
Access Road	AR-182	11.21	Widening	2nd
Access Road	AR-183	8.18	Widening	2nd
Access Road	AR-184	100.95	Widening	3rd
Access Road	AR-185	8.76	Widening	3rd
Access Road	AR-186	43.68	Widening	3rd
Access Road	AR-187	10.58	Widening	3rd
Access Road	AR-188	29.52	Widening	3rd
Access Road	AR-189	15.80	Widening	3rd
Access Road	AR-190	20.40	Widening	3rd
Access Road	AR-191	119.55	Widening	3rd
Access Road	AR-192	5.98	Widening	3rd
Access Road	AR-193	254.66	Widening	3rd
Access Road	AR-194	7.85	Widening	3rd
Access Road	AR-195	5.10	Widening	3rd
Access Road	AR-196	147.41	Widening	3rd
Access Road	AR-197	7.97	Widening	3rd
Access Road	AR-198	7.85	Widening	3rd
Access Road	AR-199	16.44	Widening	3rd
Access Road	AR-200	4.49	Widening	3rd
Access Road	AR-201	115.83	Widening	3rd
Access Road	AR-202	12.22	Widening	3rd
Access Road	AR-203	56.11	Widening	3rd
Access Road	AR-204	12.21	Widening	3rd
Access Road	AR-205	25.46	Widening	3rd
Access Road	AR-206	44.76	Widening	3rd
Access Road	AR-207	3.69	Widening	3rd
Access Road	AR-208	26.88	Widening	3rd
Access Road	AR-209	4.25	Widening	3rd
Access Road	AR-210	12.44	Widening	3rd
Access Road	AR-211	26.19	Widening	3rd
Access Road	AR-212	25.16	Widening	3rd
Access Road	AR-213	9.36	Widening	3rd
Access Road	AR-214	12.29	Widening	3rd
Access Road	AR-215	28.02	Widening	3rd
Access Road	AR-216	0.76	New	3rd
Access Road	AR-217	168.72	New	3rd
Access Road	AR-218	174.19	New	3rd
Access Road	AR-219	8.09	New	3rd
Access Road	AR-220	6.98	New	3rd
Access Road	AR-221	87.51	New	3rd
Access Road	AR-222	4.75	New	3rd
Access Road	AR-223	152.98	New	3rd
Access Road	AR-224	6.83	New	3rd

Type	Proposed Road ID	Length in m	Remark	Phase
Access Road	AR-225	51.34	New	3rd
Access Road	AR-226	78.30	New	3rd
Access Road	AR-227	3.94	New	3rd
Access Road	AR-228	82.60	New	3rd
Access Road	AR-229	6.00	New	3rd
Access Road	AR-230	200.15	New	3rd
Access Road	AR-231	8.38	New	3rd
Access Road	AR-232	4.88	New	3rd
Access Road	AR-233	68.36	New	3rd
Access Road	AR-234	46.28	New	3rd
Access Road	AR-235	0.01	Widening	3rd
Access Road	AR-236	0.18	Widening	3rd
Access Road	AR-237	0.18	Widening	3rd
Access Road	AR-238	0.22	New	3rd

- "AR" for access road, "TR" for tertiary road, "SR" for secondary road, and "PR" for primary road

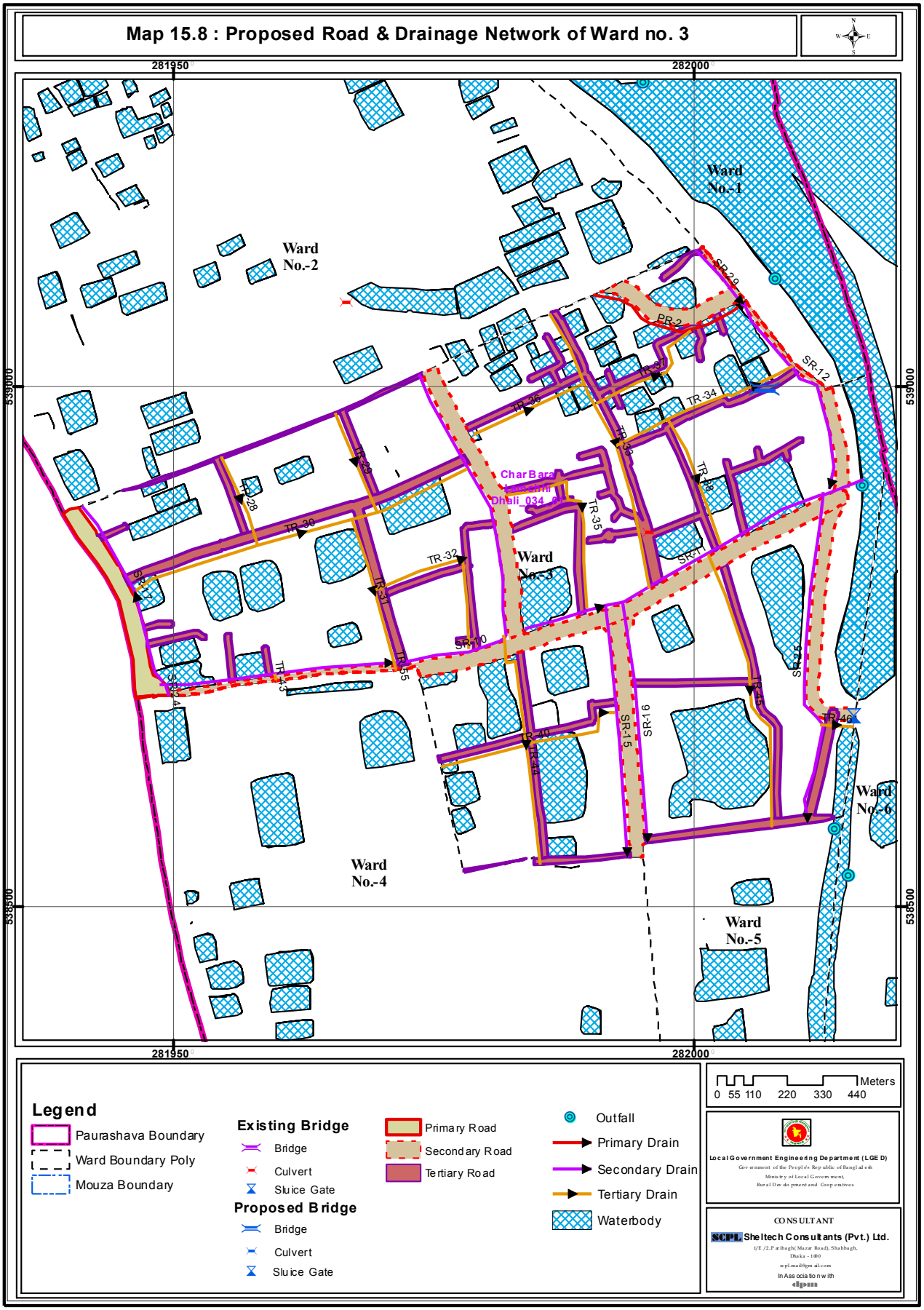
15.5.2.4 Drainage Development Plan

Existing drainage is mostly depending on natural drainage facilities, a canal connected with Meghna River. The proposed drainage facilities will be developed based on these natural channels. These will serve as primary drain for the ward which will be connected by 2.26 km secondary drain and 2.65 km tertiary drain. Table 15.14 shows the detail.

Table 15.14: Drainage Development Plan Proposals for ward 03

Item	Length in km
Proposed Drainage (Primary)	0.16
Proposed Drainage (Secondary)	2.26
Proposed Drainage (Tertiary)	2.65

Map 15.8 represents Road and Drainage Network for ward 3.


Map 15.8 : Proposed Road & Drainage Network of Ward no. 3
281950
282000
539000
538500
Ward No.-1
Ward No.-2
Ward No.-3
Ward No.-4
Ward No.-5
Ward No.-6
Char Bara
Dhali_034_01
SR-1
SR-7
SR-10
SR-12
SR-15
SR-16
SR-25
SR-29
PR-2
TR-27
TR-28
TR-29
TR-30
TR-31
TR-32
TR-33
TR-34
TR-35
TR-36
TR-37
TR-38
TR-40
TR-43
TR-45
TR-46
Legend
Paurashava Boundary
Ward Boundary Poly
Mouza Boundary
Existing Bridge
Bridge
Culvert
Sluice Gate
Proposed Bridge
Bridge
Culvert
Sluice Gate
Primary Road
Secondary Road
Tertiary Road
Outfall
Primary Drain
Secondary Drain
Tertiary Drain
Waterbody
0 55 110 220 330 440 Meters
Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Cooperatives
CONSULTANT
SCPL Sheltech Consultants (Pvt.) Ltd.
1/E /2,Paribagh(Mazar Road), Shahbagh, Dhaka - 1000
scpl.mail@gmail.com
In Association with

15.5.2.5 Urban Services

a. Solid Waste Management

The consultant proposes a waste transfer station with 0.15 acre. It is recommended that home collection system is introduced in the ward by creation of local CBOs. This will create organized collection of waste and prevent indiscriminate littering.

b. Water Supply

It is proposed to install a network based water supply system by exploring fresh water from the Meghna River for the entire Paurashava. And water supply lines in this ward will be established along all categories of roads as per the growth of the settlement. There is no existing water supply network line. And water supply network is proposed as per the design of DPHE.

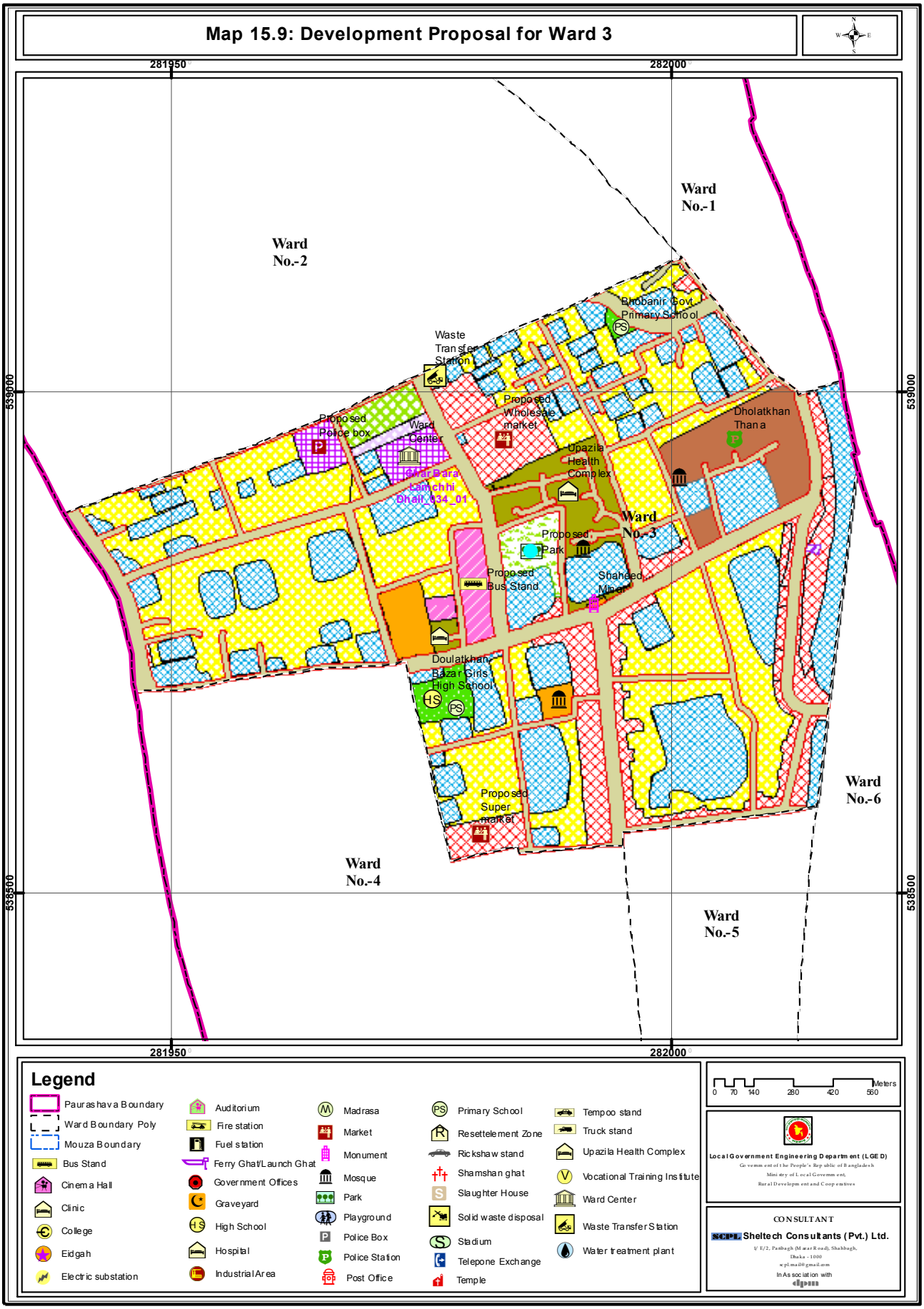
c. Sanitation

The Paurashava must try to promote hygienic sanitation for the whole Paurashavsa to ensure better public health.

Table 15.15: Urban Service Development Proposals for ward 03

Item	Existing		Proposed	
	No.	Area(acre)/length(m)	No.	Area (acre)/Length(m)
Solid Waste Transfer Station	None		1	0.15
Electricity Line			As per existing program of PDB	

Map 15.9 represents proposed urban services for ward 3.


Map 15.9: Development Proposal for Ward 3
281950
282000
539000
538500
Ward No.-1
Ward No.-2
Ward No.-3
Ward No.-4
Ward No.-5
Ward No.-6
Bhobanir Govt Primary School
Waste Transfer Station
Proposed Wholesale market
Proposed Police box
Ward Center
Dholatkhan Thana
Upazila Health Complex
Proposed Park
Proposed Bus Stand
Shaheed Minar
Doulatkhan Bazar Girls High School
Proposed Super market
Legend
Paurashava Boundary
Ward Boundary Poly
Mouza Boundary
Bus Stand
Cinema Hall
Clinic
College
Eidgah
Electric substation
Auditorium
Fire station
Fuel station
Ferry Ghat/Launch Ghat
Government Offices
Graveyard
High School
Hospital
Industrial Area
Madrasa
Market
Monument
Mosque
Park
Playground
Police Box
Police Station
Post Office
Primary School
Resettelement Zone
Rickshaw stand
Shamshan ghat
Slaughter House
Solid waste disposal
Stadium
Telepone Exchange
Temple
Tempoo stand
Truck stand
Upazila Health Complex
Vocational Training Institute
Ward Center
Waste Transfer Station
Water treatment plant
0 70 140 280 420 560 Meters
Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Cooperatives
CONSULTANT
SCPL Sheltech Consultants (Pvt.) Ltd.
In Association with

15.6 Ward Action Plan for Ward No. 04

15.6.1 Demography

Ward no. 4 is located on the western part of the town. Population projection shows that 1589 people would be living in the ward in the year 2031 with a very density of 24 persons per acre. Table 15.16 shows the detail.

Table 15.16: Population Statistics of Ward No. 04

Item	Year			
	2016	**2021**	**2026**	**2031**
Area (acre)	67.08	67.08	67.08	67.08
Population	1368	1438	1512	1589
Density of Population (acre)	20	21	23	24

15.6.2 Ward Action Plan Proposals

15.6.2.1 Review of Existing Land Use

Out of total 67.08 acre 18.47 acre of land i.e. 27.53% is used as agricultural use. The next use is residential; 27.86 acres are used in this purpose. It occupies more than 41% of total land. Water bodies occupy 21.33% land of the ward. Almost 0.34 acre of land is used for educational purpose. At present 3.27 acres of land are used in commercial purpose. About 3.65% is used as circulation network.

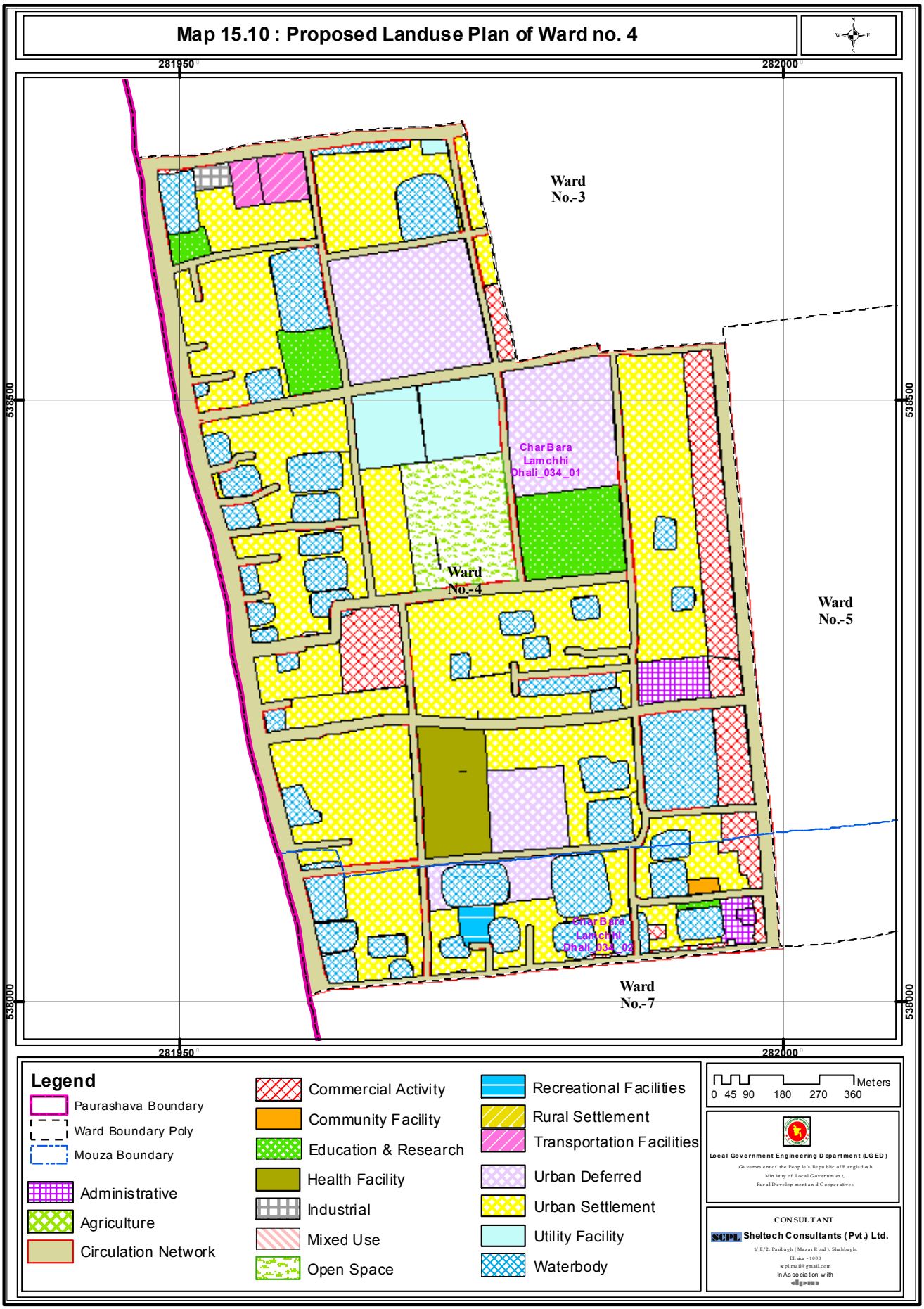
15.6.2.2 Proposed Land Use Zoning

The category wise proposals are presented here. Table 15.17 shows the amount of land existing and proposed uses in Ward no. 04. **Map 15.10** shows proposed land use of Ward 04.

Table 15.17: Comparative Scenario of Existing and Proposed Land Uses of Ward No. 04

Sl. No.	Landuse Category		Existing		Proposed	
			Area (Acre)	**%**	**Area (Acre)**	**%**
01	Administrative	Government Service	0.05	0.07	0.76	1.13
		Non-Government Service	-	-	-	-
02	Agriculture		18.47	27.53	-	-
03	Circulation Network		2.45	3.65	12.34	18.40
04	Commercial Activity		3.27	4.87	4.05	6.04
05	Community Service		0.09	0.13	0.08	0.12
06	Deferred Area		-	-	6.96	10.37
07	Education and Research		0.34	0.51	2.34	3.49
08	Health Facility		-	-	1.45	2.17
09	Industrial		0.03	0.04	0.15	0.23
10	Mixed Use		-	-	-	-
11	Open Space		0.21	0.31	2.23	3.33
12	Recreational Facilities		-	-	0.20	0.30
13	Residential		27.86	41.53	23.96	35.72
14	Restricted Area		-	-	-	-
15	Transportation and Communication		-	-	0.61	0.91
16	Utility Service		-	-	1.94	2.89
17	Water Body		14.31	21.33	10.05	14.91
	Total		**67.08**	**100.00**	**67.08**	**100.00**

Map 15.10 : Proposed Landuse Plan of Ward no. 4



a. Urban Residential Zone

In Ward Action Plan more than 23.96 acres of land has been earmarked for urban residential use which will occupy about 35.72 % of the total land.

b. Circulation network

To improve the efficiency of the ward more roads are proposed which will consume 12.34 acres of land and more than 18.40% of the total area. For network improvement widening of existing road, link road and new roads are proposed which will be done phase wise within 2031.

c. Administrative

Total 0.76 acres land has been allocated for administrative purpose. One ward councilor's office and one police box have been proposed in this ward.

d. Commercial Activity

6.04% land is allocated specially for this purpose.

e. Education and Research

More than 2.34 acres of land has been proposed to make available more education and research facilities to the ward and its vicinity. 1.6 acres of land has been proposed for Women College in this ward.

f. Health Facilities

2.17% land has been allocated for health facilities.

g. Community Facilities

Proposed land for community service will cover 0.08 acre of land.

h. Utility Service

A total 2.89% land has been allocated for utility services. New electric substation, a new waste transfer station and a fire service have been proposed.

i. Transport and Communication

Total 0.61 acre of land is allotted for Transport and Communication. A tempo station, fuel station has been proposed in this ward.

j. Industrial Activity

0.15 acres land has been allocated in ward 4. Small industries have been proposed in this ward.

k. Open Space

There is 2.23 acre of land for Open Space treated as open recreational facilities.

l. Recreational Facilities

0.2 acre of land has been proposed for this purpose in this ward.

m. Agricultural Area

Agricultural land of this ward has been used for facilitating different facilities.

n. Water Body

The proposed retention area occupies about 10 acres of land which will cover more than 14.91% of the total land of the ward.

15.6.2.3 Proposed Road Infrastructure Development

Total 5.89 km road development proposal have been proposed for Ward no. 04. 3.21 km long access road will be 20 ft wide. Total length of tertiary road will be 1.19 km and width of these roads will be 30 ft. Total length of secondary road will be 0.77 km and width of these roads will be 60 ft for this ward. Detail scenario of road network development proposal was given in Table 15.18.

Table 15.18: Road Network Proposal at Ward no. 04

Type	Proposed Road ID	Length in m	Remark	Phase
Primary Road	PR-8	711.04	Widening	1st
Primary Road	PR-9	0.44	Widening	1st
Secondary Road	SR-35	498.38	Widening	1st
Secondary Road	SR-36	6.17	Widening	1st
Secondary Road	SR-37	18.24	Widening	1st
Secondary Road	SR-38	242.43	Widening	1st
Secondary Road	SR-39	0.28	Widening	1st
Secondary Road	SR-40	0.38	Widening	1st
Secondary Road	SR-41	0.29	Widening	1st
Tertiary Road	TR-39	36.03	Widening	2nd
Tertiary Road	TR-40	1.08	Widening	2nd
Tertiary Road	TR-41	62.28	Widening	2nd
Tertiary Road	TR-42	12.21	Widening	2nd
Tertiary Road	TR-43	93.25	Widening	2nd
Tertiary Road	TR-44	12.22	Widening	2nd
Tertiary Road	TR-45	76.54	Widening	2nd
Tertiary Road	TR-46	12.23	Widening	2nd
Tertiary Road	TR-47	23.55	Widening	2nd
Tertiary Road	TR-48	320.98	New	2nd
Tertiary Road	TR-49	190.20	New	2nd
Tertiary Road	TR-50	7.67	New	2nd
Tertiary Road	TR-51	90.91	New	2nd
Tertiary Road	TR-52	76.81	New	2nd
Tertiary Road	TR-53	178.66	New	2nd
Tertiary Road	TR-54	0.08	Widening	2nd
Tertiary Road	TR-55	0.16	New	2nd
Access Road	AR-229	98.25	Widening	2nd
Access Road	AR-230	22.60	Widening	2nd
Access Road	AR-231	100.40	Widening	2nd
Access Road	AR-232	29.92	Widening	2nd
Access Road	AR-233	5.80	Widening	2nd
Access Road	AR-234	33.53	Widening	2nd
Access Road	AR-235	5.79	Widening	2nd
Access Road	AR-236	2.62	Widening	2nd
Access Road	AR-237	2.64	Widening	2nd
Access Road	AR-238	2.68	Widening	2nd
Access Road	AR-239	2.72	Widening	2nd
Access Road	AR-240	2.74	Widening	2nd
Access Road	AR-241	2.74	Widening	2nd
Access Road	AR-242	2.74	Widening	2nd
Access Road	AR-243	3.80	Widening	2nd

Type	Proposed Road ID	Length in m	Remark	Phase
Access Road	AR-244	12.33	Widening	2nd
Access Road	AR-245	44.00	Widening	2nd
Access Road	AR-246	12.20	Widening	2nd
Access Road	AR-247	21.61	Widening	2nd
Access Road	AR-248	12.21	Widening	2nd
Access Road	AR-249	11.60	Widening	2nd
Access Road	AR-250	28.90	Widening	2nd
Access Road	AR-251	12.21	Widening	2nd
Access Road	AR-252	17.81	Widening	2nd
Access Road	AR-253	12.21	Widening	2nd
Access Road	AR-254	32.11	Widening	2nd
Access Road	AR-255	12.40	Widening	2nd
Access Road	AR-256	110.00	Widening	2nd
Access Road	AR-257	12.44	Widening	2nd
Access Road	AR-258	49.52	Widening	2nd
Access Road	AR-259	12.21	Widening	3rd
Access Road	AR-260	37.62	Widening	3rd
Access Road	AR-261	12.21	Widening	3rd
Access Road	AR-262	32.30	Widening	3rd
Access Road	AR-263	12.20	Widening	3rd
Access Road	AR-264	13.70	Widening	3rd
Access Road	AR-265	12.30	Widening	3rd
Access Road	AR-266	123.15	Widening	3rd
Access Road	AR-267	29.74	Widening	3rd
Access Road	AR-268	3.75	Widening	3rd
Access Road	AR-269	3.19	Widening	3rd
Access Road	AR-270	4.04	Widening	3rd
Access Road	AR-271	9.25	Widening	3rd
Access Road	AR-272	53.06	Widening	3rd
Access Road	AR-273	73.35	Widening	3rd
Access Road	AR-274	9.42	Widening	3rd
Access Road	AR-275	178.81	New	3rd
Access Road	AR-276	59.76	New	3rd
Access Road	AR-277	3.16	New	3rd
Access Road	AR-278	9.12	New	3rd
Access Road	AR-279	44.86	Widening	3rd
Access Road	AR-280	136.49	New	3rd
Access Road	AR-281	188.91	New	3rd
Access Road	AR-282	173.94	New	3rd
Access Road	AR-283	9.53	New	3rd
Access Road	AR-284	9.14	New	3rd
Access Road	AR-285	3.66	New	3rd
Access Road	AR-286	198.66	New	3rd
Access Road	AR-287	166.81	New	3rd
Access Road	AR-288	7.66	New	3rd
Access Road	AR-289	9.16	New	3rd
Access Road	AR-290	5.84	New	3rd
Access Road	AR-291	91.99	New	3rd
Access Road	AR-292	207.56	New	3rd
Access Road	AR-293	5.86	New	3rd
Access Road	AR-294	5.10	New	3rd
Access Road	AR-295	9.23	New	3rd
Access Road	AR-296	98.47	Widening	3rd
Access Road	AR-297	9.27	Widening	3rd
Access Road	AR-298	13.45	New	3rd
Access Road	AR-299	306.85	New	3rd
Access Road	AR-300	90.90	New	3rd
Access Road	AR-301	5.79	New	3rd
Access Road	AR-302	0.11	Widening	3rd
Access Road	AR-303	0.08	Widening	3rd

Type	Proposed Road ID	Length in m	Remark	Phase
Access Road	AR-304	0.03	Widening	3rd
Access Road	AR-305	0.08	Widening	3rd
Access Road	AR-306	0.15	Widening	3rd
Access Road	AR-307	0.18	Widening	3rd
Access Road	AR-305	0.08	Widening	3rd
Access Road	AR-309	0.22	New	3rd
Access Road	AR-310	0.06	New	3rd
Access Road	AR-311	0.18	New	3rd

- "AR" for access road, "TR" for tertiary road, "SR" for secondary road, and "PR" for primary road

15.6.2.4 Drainage Development Plan

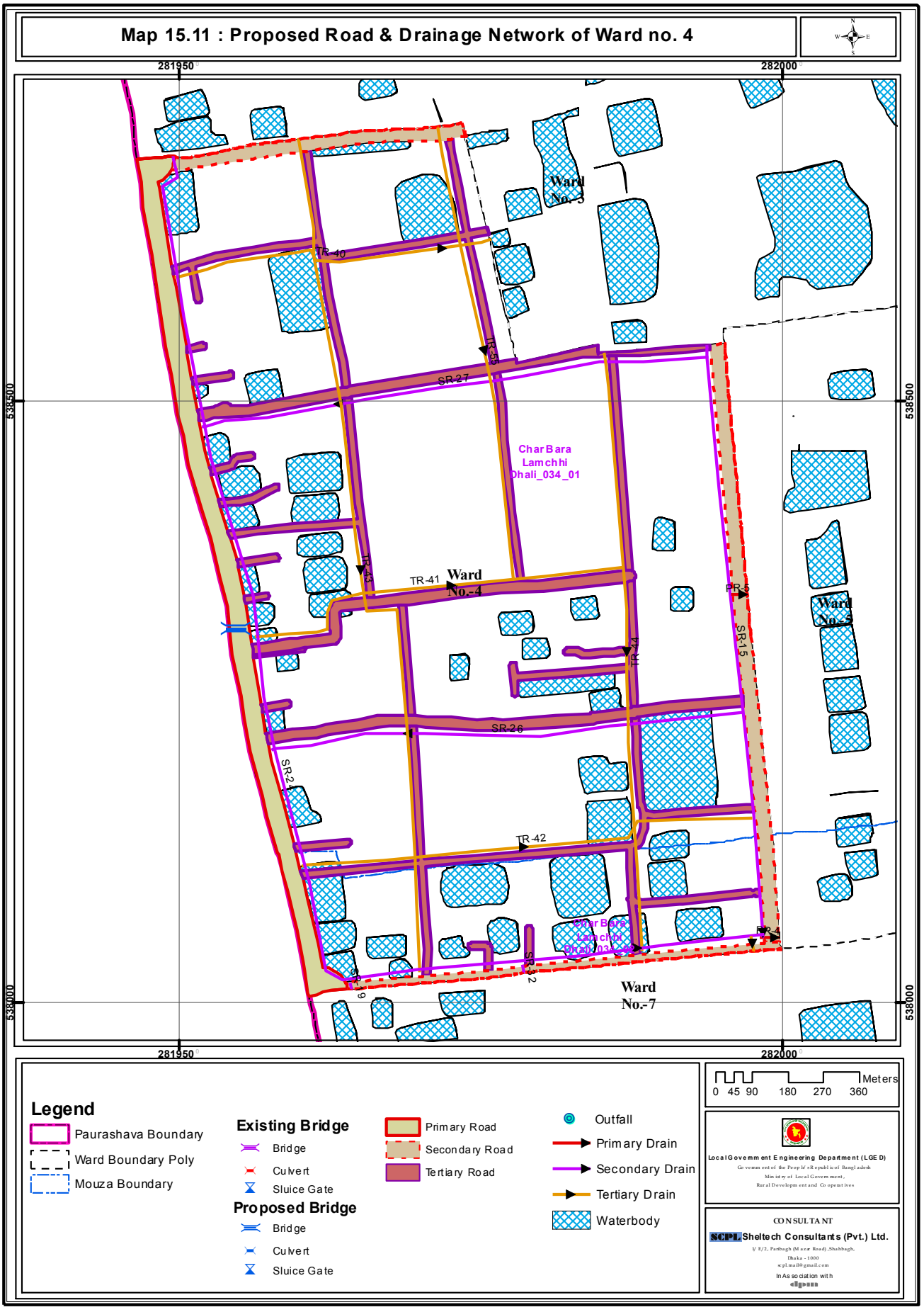
There is manmade drainage facility at Ward no. 04 of Daulatkhan Paurashava. Existing drainage is mostly depending on natural drainage facilities, Meghna river will be served as primary drain for the ward. Table 15.19 shows the detail.

Table 15.19: Drainage Development Plan Proposals for ward 04

Item	Length (km)
Proposed Drainage (Primary)	0.03
Proposed Drainage (Secondary)	2.39
Proposed Drainage (Tertiary)	2.60

Besides, it will be necessary to re-excavate the khals that serve as primary drains.

Map 15.11 represents proposed Road and Drainage Network for Ward 4.


Map 15.11 : Proposed Road & Drainage Network of Ward no. 4
281950
282000
538500
538000
Ward No.-3
Ward No.-4
Ward No.-5
Ward No.-7
TR-40
TR-43
TR-41
TR-42
TR-44
SR-27
SR-26
SR-25
SR-24
SR-15
SR-16
SR-32
Char Bara Lamchhi Dhali_034_01
Legend
Paurashava Boundary
Ward Boundary Poly
Mouza Boundary
Existing Bridge
Bridge
Culvert
Sluice Gate
Proposed Bridge
Bridge
Culvert
Sluice Gate
Primary Road
Secondary Road
Tertiary Road
Outfall
Primary Drain
Secondary Drain
Tertiary Drain
Waterbody
Meters
0 45 90 180 270 360
Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Cooperatives
CONSULTANT
SCPL Sheltech Consultants (Pvt.) Ltd.
In Association with

15.6.2.5 Urban Services

a. Solid Waste Management

The consultant proposes one solid waste transfer station at ward 4.

b. Water Supply

It is proposed to install a network based water supply system by exploring fresh water from the Meghna River for the entire Paurashava. And water supply lines in this ward will be established along all categories of roads as per the growth of the settlement. There is no existing water supply network line. And water supply network is proposed as per the design of DPHE.

c. Sanitation

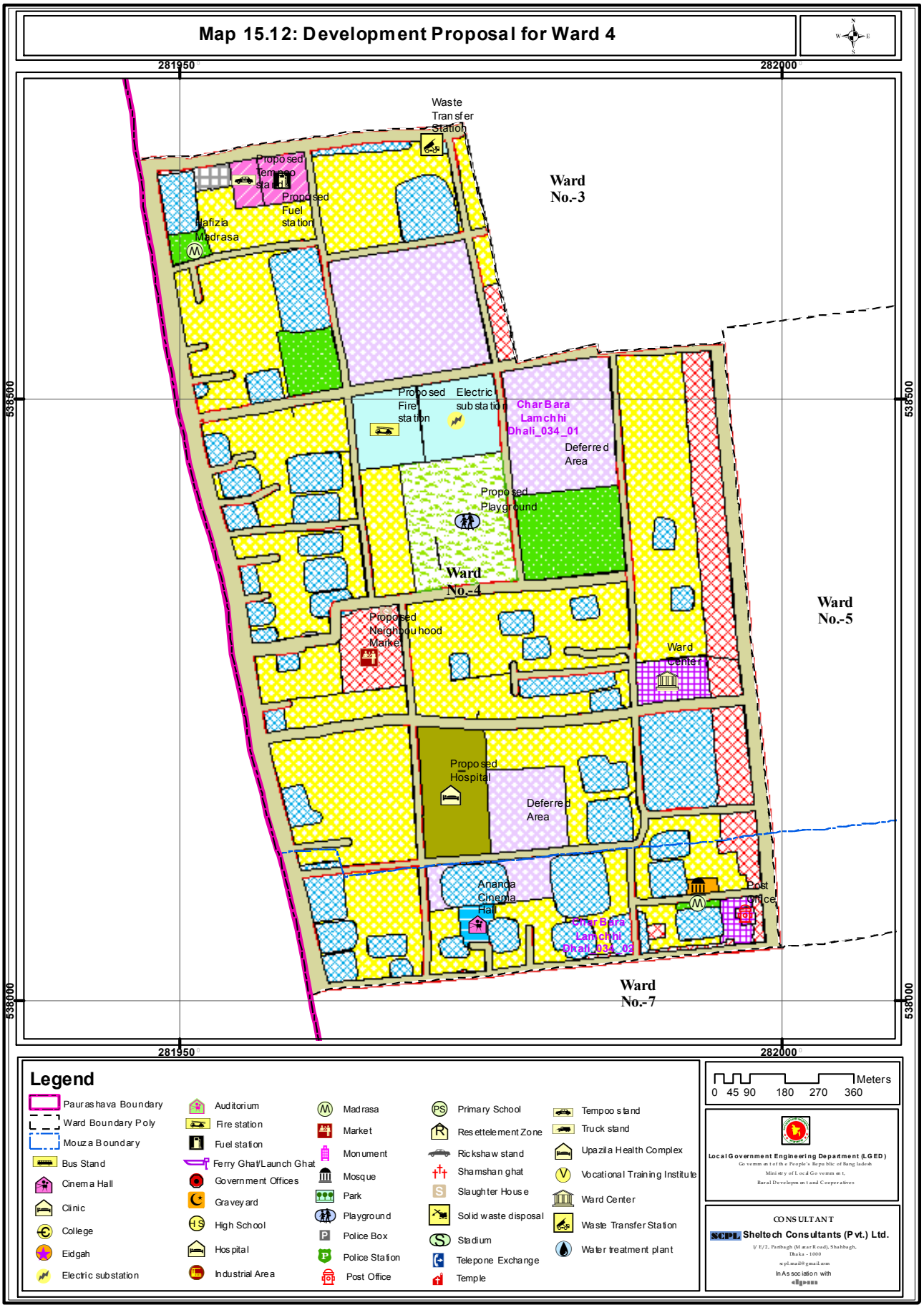
The Paurashava must try to promote hygienic sanitation for the whole Paurashavsa to ensure better public health.

Table 15.20: Utility Service Development Proposals for ward 04

Item	Existing		Proposed	
	No.	Area/length	No.	Area/Length
Solid Waste Transfer Station	None		1	0.1 acre
Electricity Line			As per existing program of PDB	

Map 15.12 represents proposed urban services for ward 4.

Map 15.12: Development Proposal for Ward 4



Legend

- Paurashava Boundary
- Ward Boundary Poly
- Mouza Boundary
- Bus Stand
- Cinema Hall
- Clinic
- College
- Eidgah
- Electric substation
- Auditorium
- Fire station
- Fuel station
- Ferry Ghat/Launch Ghat
- Government Offices
- Graveyard
- High School
- Hospital
- Industrial Area
- Madrasa
- Market
- Monument
- Mosque
- Park
- Playground
- Police Box
- Police Station
- Post Office
- Primary School
- Resettelement Zone
- Rickshaw stand
- Shamshan ghat
- Slaughter House
- Solid waste disposal
- Stadium
- Telepone Exchange
- Temple
- Tempoo stand
- Truck stand
- Upazila Health Complex
- Vocational Training Institute
- Ward Center
- Waste Transfer Station
- Water treatment plant

0 45 90 180 270 360 Meters

Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government,
Rural Development and Cooperatives

CONSULTANT
SCPL Sheltech Consultants (Pvt.) Ltd.
V/E/2, Panthapath (Mazar Road), Shahbagh,
Dhaka - 1000
scpl.mail@gmail.com
In Association with

15.7 Ward Action Plan for Ward No. 05

15.7.1 Demography

Ward No. 5 is located on the middle part of the town. It is the smallest ward in the entire paurashava. It has a very high density of population. Table 15.21 shows the detail.

Table 15.21: Population Statistics of Ward No. 05

Item	Year			
	2016	2021	2026	2031
Area (acre)	20.02	20.02	20.02	20.02
Population	854	898	944	992
Density of Population (acre)	43	45	47	50

15.7.2 Ward Action Plan Proposals

15.7.2.1 Review of Existing Land Use

This ward is urban in character. Out of total 20.02 acre of land i.e. 53.15% is used as residential use. There is no agricultural land. Water bodies occupy 25.57% land of the ward. At present only 2.78 acres of land are used in commercial purpose whereas only 1.65% is used as circulation network. Administrative use is absent in this ward. Only 0.14 acre of land is used as industrial purposes.

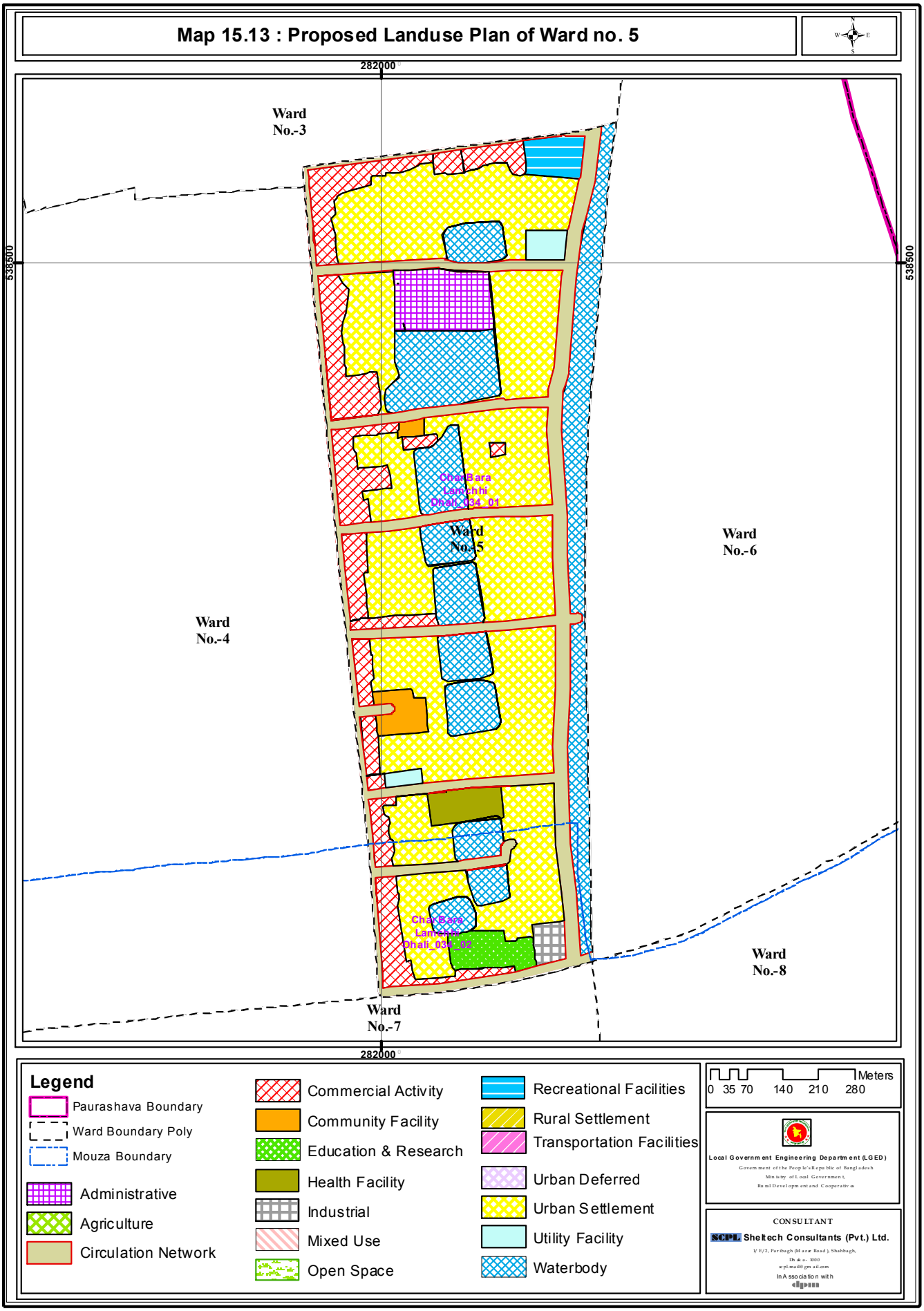
15.7.2.2 Proposed Land Use Zoning

The category wise proposals are presented here. Table 15.22 shows the amount of land existing and proposed uses in Ward no. 5. **Map 15.13** shows proposed land use of Ward 05.

Table 15.22: Comparative Scenario of Existing and Proposed Land Uses of Ward No. 05

Sl. No.	Landuse Category		Existing		Proposed	
			Area (Acre)	%	Area (Acre)	%
01	Administrative	Government Service	-	-	0.56	2.80
		Non-Government Service	-	-	-	-
02	Agriculture		-	-	-	-
03	Circulation Network		0.33	1.65	3.04	15.18
04	Commercial Activity		2.78	13.89	2.32	11.59
05	Community Service		0.25	1.25	0.23	1.15
06	Deferred Area		-	-	-	
07	Education and Research		0.28	1.4	0.28	1.40
08	Health Facility		-	-	0.22	1.10
09	Industrial		0.14	0.7	0.12	0.60
10	Mixed Use		0.29	1.45	-	-
11	Open Space		0.17	0.85	-	-
12	Recreational Facilities		0.02	0.1	0.22	1.10
13	Residential		10.64	53.15	8.72	43.56
14	Transportation and Communication		-	-	-	-
15	Utility Service		-	-	0.16	0.80
16	Water Body		5.12	25.57	4.15	20.73
	Total		**20.02**	**100.00**	**20.02**	**100.00**

Map 15.13 : Proposed Landuse Plan of Ward no. 5



a. Urban Residential Zone

In existing land uses, both the urban residential and rural homestead has been considered as residential use as a whole. In Ward Action Plan, more than 8 acre of land has been earmarked for urban residential use which will occupy 43.56% of the total land.

b. Circulation network

For any type of development, circulation network is an important facility. To improve the efficiency of transport network of the ward, more roads are proposed which will consume almost 3.04 acres of land and more than 15.18% of the total area.

c. Administrative Area

2.80% land has been allocated for administrative purpose. Ward councilor's office and a police box have been proposed in this ward.

d. Commercial Activity

At present, commercial activity and density of population are moderate in this ward. 2.32 acres of land has been allocated for this purpose which will occupy only 11.59 % of total land.

e. Education and Research

In Ward Action Plan, 1.4% of total land has been allocated for education.

f. Health Facilities

1.10% land has been allocated for health purpose.

g. Community Facilities

Land for community facilities will be 0.23 acre which is 1.15 %.

h. Utility Service

A total of 0.16 acre of land covering 0.80% of total land is earmarked as Utility Services zone at Ward no. 05. Proposal is made for the establishment of waste transfer station in this zone.

i. Industrial Activity

A total 0.12 acre land has been allocated in this purpose. Small industries have been proposed in this ward.

j. Recreational Facilities

A total 1.10% land has been allocated in this purpose.

k. Open Space

No land has been proposed for this purpose.

l. Water bodies

The plan suggests for preserving most of the water bodies for two purposes, first, to serve as source of water, second to serve as water retention area during monsoon. The ponds will be

preserved as the water retention ponds. The proposed retention area covers 4.15 acres of land which covers almost 20.73% of the total ward area.

15.7.2.3 Proposed Road Infrastructure Development

Total 1.35 km road development proposal have been proposed in first Ward Action Plan for Ward no. 05. All access roads covering length of 0.83 km have RoW 20ft. Tertiary road covers 0.52 km having width of 30 ft. There is no primary or secondary road in this ward. Detail scenario of road network development proposal was given in table 15.23.

Table 15.23: Road Network Proposal at Ward no. 05

Type	Proposed Road ID	Length in m	Remark	Phase
Tertiary Road	TR-56	5.88	New	2nd
Tertiary Road	TR-57	518.34	New	2nd
Access Road	AR-312	92.52	Widening	2nd
Access Road	AR-313	3.23	Widening	2nd
Access Road	AR-314	115.44	Widening	2nd
Access Road	AR-315	3.23	Widening	2nd
Access Road	AR-316	4.32	Widening	2nd
Access Road	AR-317	18.79	Widening	2nd
Access Road	AR-318	3.23	Widening	2nd
Access Road	AR-319	4.47	Widening	2nd
Access Road	AR-320	126.97	Widening	2nd
Access Road	AR-321	3.24	Widening	2nd
Access Road	AR-322	9.15	Widening	2nd
Access Road	AR-323	82.65	Widening	2nd
Access Road	AR-324	3.20	Widening	2nd
Access Road	AR-325	107.26	Widening	2nd
Access Road	AR-326	3.15	Widening	2nd
Access Road	AR-327	77.20	Widening	3rd
Access Road	AR-328	3.08	Widening	3rd
Access Road	AR-329	75.91	New	3rd
Access Road	AR-330	4.65	New	3rd
Access Road	AR-331	28.80	New	3rd
Access Road	AR-332	4.00	New	3rd
Access Road	AR-333	50.56	New	3rd
Access Road	AR-334	4.43	New	3rd
Access Road	AR-335	0.03	Widening	3rd
Access Road	AR-336	0.08	Widening	3rd
Access Road	AR-337	0.15	Widening	3rd

- “AR” for access road, “TR” for tertiary road, “SR” for secondary road, and “PR” for primary road

15.7.2.4 Drainage Development Plan

There are both natural and manmade drainage facilities at ward no. 05. Existing drainage is mostly depending on natural drainage facilities; the proposed drainage facilities will be developed based on this natural channel. These will be served as primary drain which will be connected with 1.21 km secondary drain and 0.52 km tertiary drain in first Ward Action Plan. Table 15.24 shows the detail.

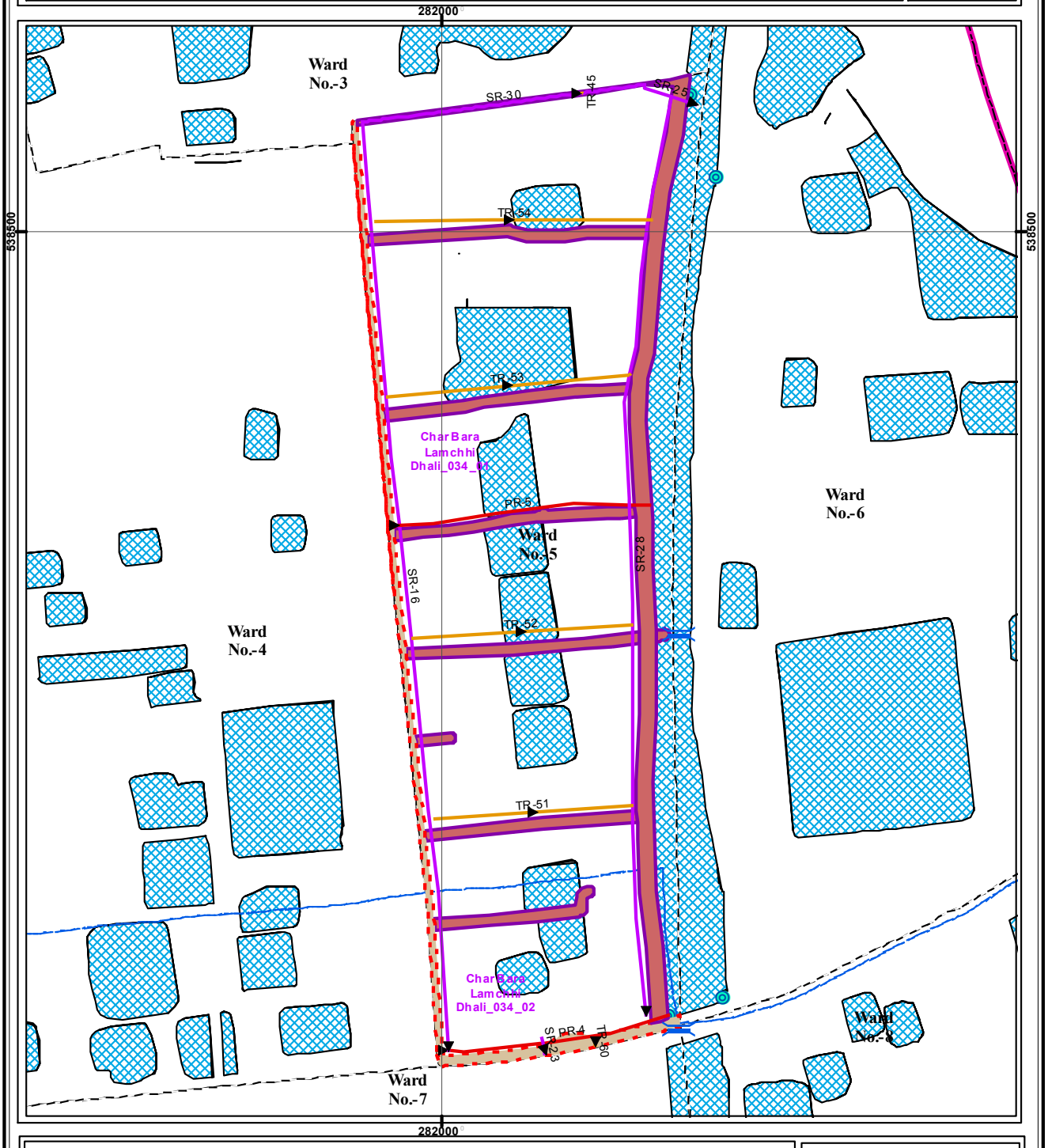
Table 15.24: Drainage Development Plan Proposals for ward 05

Item	Length (km)
Proposed Drainage (Primary)	0.27
Proposed Drainage (Secondary)	1.21
Proposed Drainage (Tertiary)	0.52

Besides, it will be necessary to re-excavate the khals that serve as primary drains.

Map 15.14 represents proposed Road and Drainage Network for ward 5.

Map 15.14 : Proposed Road & Drainage Network of Ward no. 5



Legend

- Paurashava Boundary
- Ward Boundary Poly
- Mouza Boundary

Existing Bridge

- Bridge
- Culvert
- Sluice Gate

Proposed Bridge

- Bridge
- Culvert
- Sluice Gate

- Primary Road
- Secondary Road
- Tertiary Road

- Outfall
- Primary Drain
- Secondary Drain
- Tertiary Drain
- Waterbody

0 35 70 140 210 280 Meters

Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government,
Rural Development and Cooperatives

CONSULTANT
SCPL Sheltech Consultants (Pvt.) Ltd.
1/E/2, Paribagh (Mazar Road), Shahbagh,
Dhaka - 1000
scpl.mail@gmail.com
In Association with

15.7.2.5 Urban Services

a. Solid Waste Management

The plan proposes one solid waste transfer stations at ward 05 with an area 0.16 acre. It also is recommended that home collection system is introduced in the ward by creation of local CBOs.

b. Water Supply

It is proposed to install a network based water supply system by exploring fresh water from the Meghna River for the entire Paurashava. And water supply lines in this ward will be established along all categories of roads as per the growth of the settlement. There is no existing water supply network line. And water supply network is proposed as per the design of DPHE.

c. Sanitation

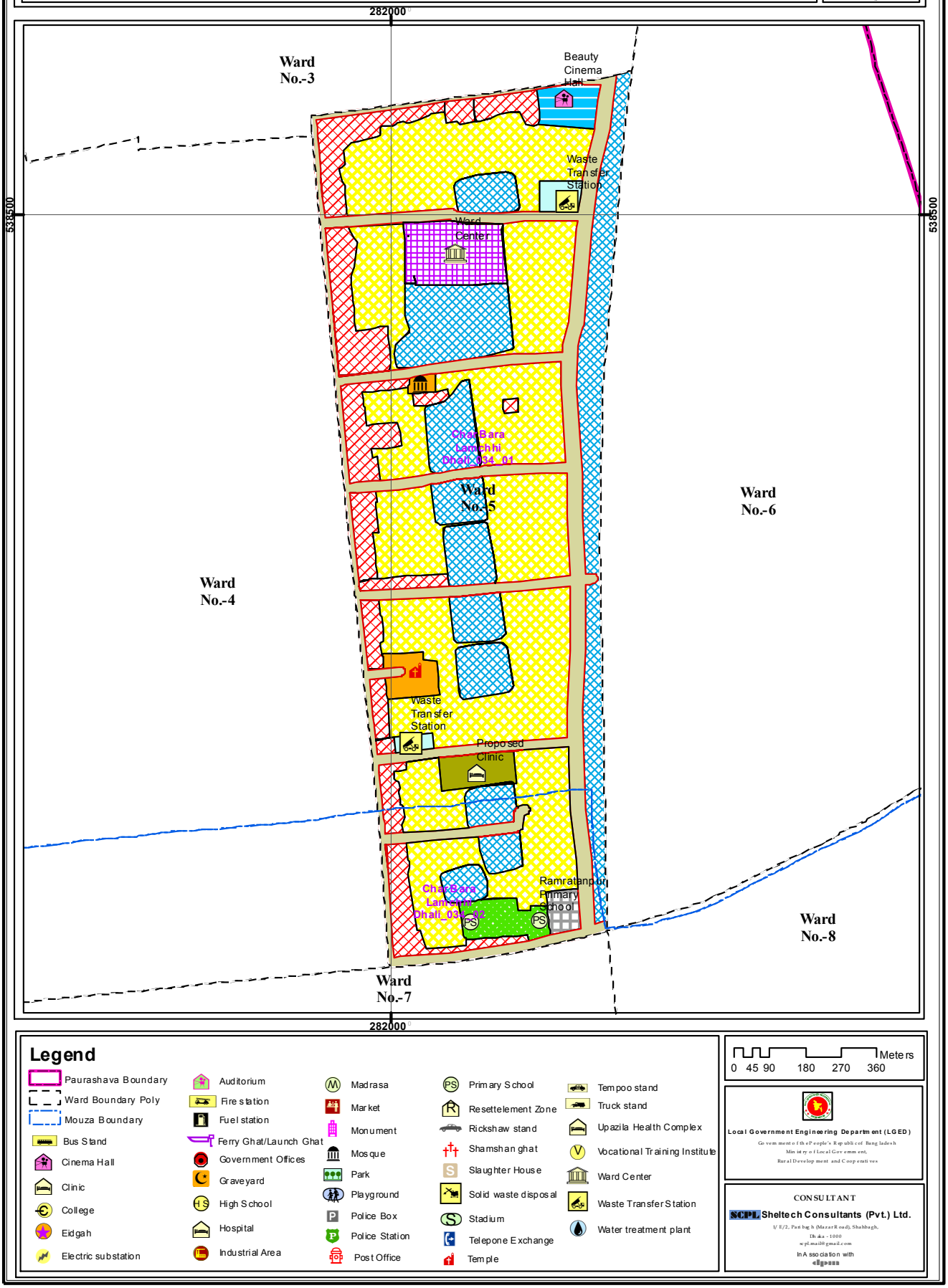
The Paurashava must try to promote hygienic sanitation for the whole Paurashava to ensure better public health.

Table 15.25: Utility Services Development Proposals for ward 05

Item	Existing		Proposed	
	No.	Area/length	No.	Area/Length
Solid Waste Transfer Station	None		1	0.16 acre
Electricity Line			As per existing program of PDB	

Map 15.15 represents proposed urban services for ward 5.

Map 15.15: Development Proposal for Ward 5



Legend

- Paurashava Boundary
- Ward Boundary Poly
- Mouza Boundary
- Bus Stand
- Cinema Hall
- Clinic
- College
- Eidgah
- Electric substation
- Auditorium
- Fire station
- Fuel station
- Ferry Ghat/Launch Ghat
- Government Offices
- Graveyard
- High School
- Hospital
- Industrial Area
- Madrasa
- Market
- Monument
- Mosque
- Park
- Playground
- Police Box
- Police Station
- Post Office
- Primary School
- Resettelement Zone
- Rickshaw stand
- Shamshan ghat
- Slaughter House
- Solid waste disposal
- Stadium
- Telepone Exchange
- Temple
- Tempoo stand
- Truck stand
- Upazila Health Complex
- Vocational Training Institute
- Ward Center
- Waste Transfer Station
- Water treatment plant

Meters
0 45 90 180 270 360

Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Cooperatives

CONSULTANT
SCPL Sheltech Consultants (Pvt.) Ltd.
1/E/2, Paribagh (Mazar Road), Shahbagh, Dhaka - 1000
scplmail@gmail.com
In Association with

15.8 Ward Action Plan for Ward No. 06

15.8.1 Demography

Ward No. 6 is located on the Eastern part of the town. It has the moderate density of population within the Paurashava. Table 15.26 shows detail.

Table 15.26: Population Statistics of Ward No. 06

Item	Year			
	2016	2021	2026	2031
Area (acre)	32.25	32.25	32.25	32.25
Population	1257	1321	1389	1459
Density of Population (acre)	39	41	43	45

15.8.2 Ward Action Plan Proposals

15.8.2.1 Review of Existing Land Use

There is no agricultural land in this ward. Out of total 32.25 acre of land i.e. about 33.92% is used as residential use. Water bodies occupy more than 31% land of the ward. At present 0.92 acres of land are used in commercial purpose. About 4.37% is used as circulation network. Only 0.27 acre of land is used as community facilities.

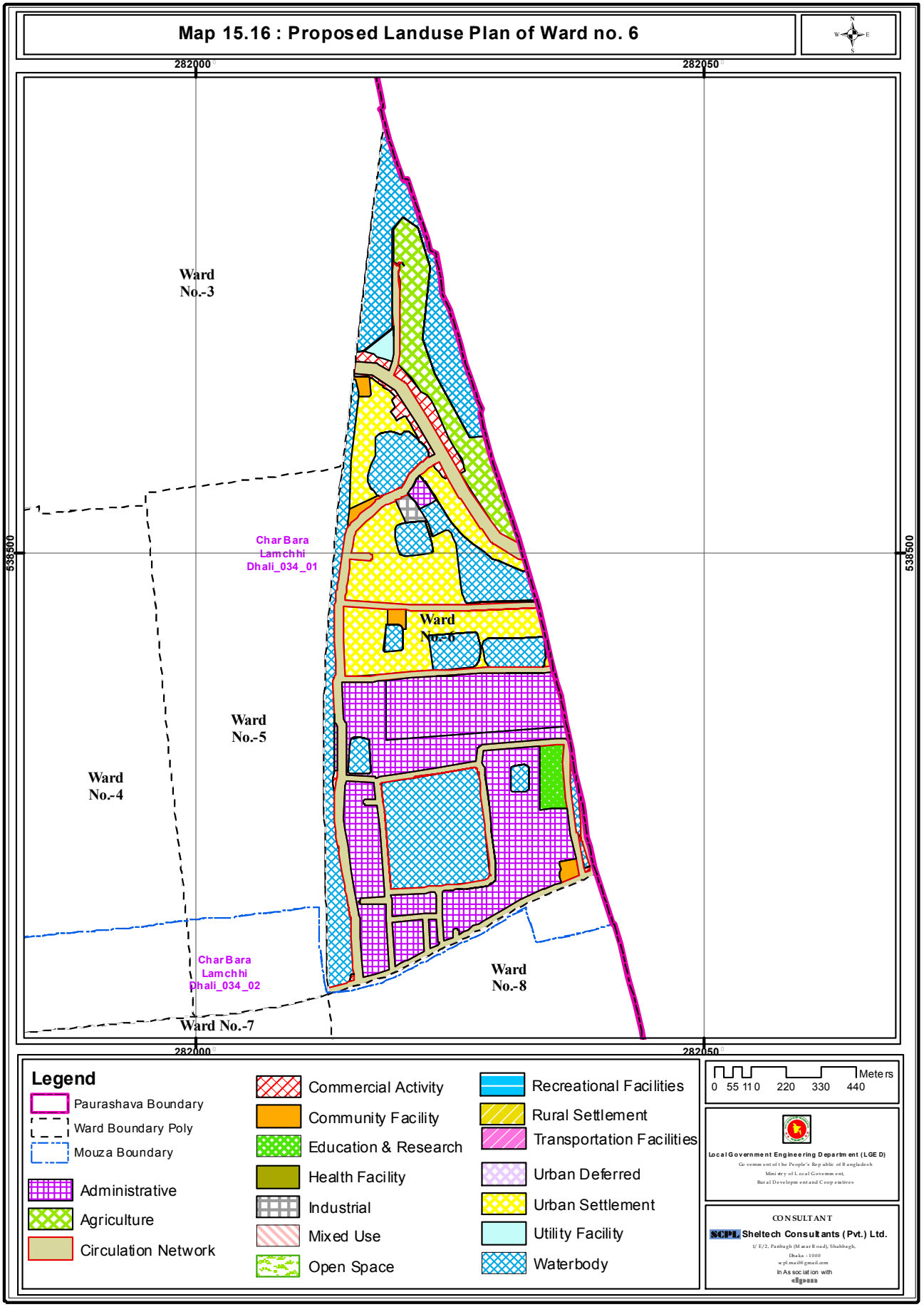
15.8.2.2 Proposed Land Use Zoning

The category wise proposals are presented here. Table 15.26 shows the amount of land existing and proposed uses in Ward no. 06. **Map 15.16** shows proposed land use of Ward 06.

Table 15.27: Comparative Scenario of Existing and Proposed Land Uses of Ward no. 06

Sl. No.	Landuse Category		Existing		Proposed	
			Area (Acre)	%	Area (Acre)	%
01	Administrative	Government Service	7.95	24.65	8.85	27.44
		Non-Government Service	-	-	-	-
02	Agriculture		-	-	2.06	6.39
03	Circulation Network		1.41	4.37	4.71	14.60
04	Commercial Activity		0.92	2.85	0.55	1.71
05	Community Service		0.27	0.84	0.29	0.9
06	Deferred Area		-	-	-	-
07	Education and Research		0.41	1.27	0.37	1.15
08	Health Facility		-	-	-	-
09	Industrial		0.13	0.40	0.12	0.37
10	Mixed Use		-	-	-	-
11	Open Space		-	-	-	-
12	Recreational Facilities		-	-	-	-
13	Residential		10.94	33.92	5.18	16.06
14	Utility Service		-	-	0.12	0.37
15	Transportation and Communication		-	-	-	-
16	Water Body		10.22	31.69	10	31.01
	Total		**32.25**	**100.00**	**32.25**	**100.00**

Map 15.16 : Proposed Landuse Plan of Ward no. 6



a. Urban Residential Zone

In existing land uses, both the urban residential and rural homestead has been considered as residential use as a whole. In Ward Action Plan, more than 5.18 acre of land has been earmarked for urban residential use which will occupy 16.06% of the total land.

b. Circulation network

For any type of development, circulation network is an important facility. To improve the efficiency of transport network of the ward, more roads are proposed which will consume almost 4.71 acres of land and more than 14.60% of the total area.

c. Administrative Area

27.44% land has been allocated for administrative purpose. Ward councilor's office and a police box have been proposed in this ward.

d. Commercial Activity

At present, commercial activity and density of population are moderate in this ward. Only 0.55 acres of land has been allocated for this purpose which will occupy only 1.71 % of total land.

e. Education and Research

In Ward Action Plan, 1.15% of total land has been allocated for education.

f. Community Facilities

Land for community facilities will be 0.29 acre which is 0.9 %. One community center has been proposed in this ward.

g. Utility Service

A total of 0.12 acre of land covering 0.37% of total land is earmarked as Utility Services zone at Ward no. 05. One waste transfer station has been proposed here.

h. Industrial Activity

A total 0.12 acre land has been allocated in this purpose. Small industries have been proposed in this ward.

i. Agricultural Area

The total area under this use has been estimated as about 2.06 acres of land covering 6.39% of the total land.

j. Water bodies

The plan suggests for preserving most of the water bodies for two purposes, first, to serve as source of water, second to serve as water retention area during monsoon. The ponds will be preserved as the water retention ponds. The proposed retention area covers 10 acres of land which covers almost 31.01% of the total ward area.

15.8.2.3 Proposed Road Infrastructure Development

Total 2.34 km road development proposal have been proposed for Ward no. 06. Length of access roads is 1.51 km and width of these roads will be 20 ft. Length of tertiary road is 0.57 km and width is 30 ft. The total length of Secondary road is 0.26 km and width is 60 ft. Detail scenario of road network development proposal was given in table 15.28.

Table 15.28: Road Network Proposal at Ward no. 06

Type	Proposed Road ID	Length in m	Remark	Phase
Secondary Road	SR-42	247.21	Widening	1st
Secondary Road	SR-43	9.13	Widening	1st
Tertiary Road	TR-58	363.68	Widening	1st
Tertiary Road	TR-59	5.89	Widening	2nd
Tertiary Road	TR-60	200.26	Widening	2nd
Access Road	AR-338	182.80	Widening	2nd
Access Road	AR-339	6.31	Widening	2nd
Access Road	AR-340	65.51	Widening	2nd
Access Road	AR-341	4.74	Widening	2nd
Access Road	AR-342	49.72	Widening	2nd
Access Road	AR-343	32.15	Widening	2nd
Access Road	AR-344	6.34	Widening	2nd
Access Road	AR-345	50.96	Widening	2nd
Access Road	AR-346	3.94	Widening	2nd
Access Road	AR-347	5.97	Widening	2nd
Access Road	AR-348	12.78	Widening	2nd
Access Road	AR-349	6.34	Widening	2nd
Access Road	AR-350	106.76	Widening	2nd
Access Road	AR-351	18.62	Widening	3rd
Access Road	AR-352	4.60	Widening	3rd
Access Road	AR-353	69.25	Widening	3rd
Access Road	AR-354	25.56	Widening	3rd
Access Road	AR-355	231.28	Widening	3rd
Access Road	AR-356	5.63	Widening	3rd
Access Road	AR-357	353.66	Widening	3rd
Access Road	AR-358	4.59	Widening	3rd
Access Road	AR-359	55.74	New	3rd
Access Road	AR-360	206.63	New	3rd
Access Road	AR-361	4.14	New	3rd

- "AR" for access road, "TR" for tertiary road, "SR" for secondary road, and "PR" for primary road.

15.8.2.4 Drainage Development Plan

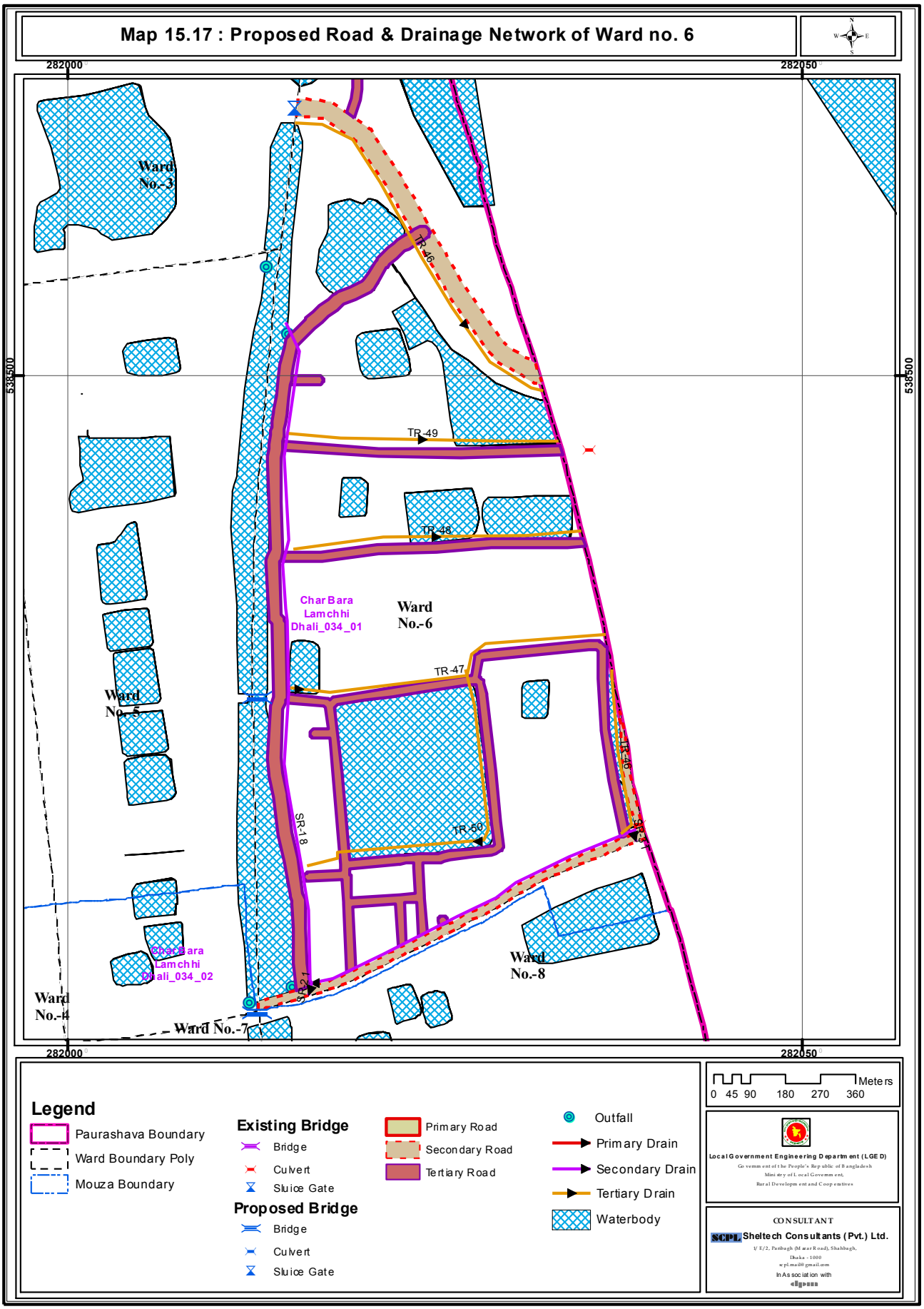
The proposed drainage facilities will be 1.95 km, served as 0.72 km secondary drain and 1.23 km tertiary drain in first Ward Action Plan. Table 15.29 shows the detail.

Table 15.29: Drainage Development Plan Proposals for ward 06

Item	Length (km)
Proposed Drainage (Secondary)	0.72
Proposed Drainage (Tertiary)	1.23

Map 15.17 represents proposed Road and Drainage Network Map of Ward 6.

Map 15.17 : Proposed Road & Drainage Network of Ward no. 6



Legend

- Paurashava Boundary
- Ward Boundary Poly
- Mouza Boundary

Existing Bridge
- Bridge
- Culvert
- Sluice Gate

Proposed Bridge
- Bridge
- Culvert
- Sluice Gate

- Primary Road
- Secondary Road
- Tertiary Road

- Outfall
- Primary Drain
- Secondary Drain
- Tertiary Drain
- Waterbody

Meters
0 45 90 180 270 360

Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government,
Rural Development and Cooperatives

CONSULTANT
SCPL Sheltech Consultants (Pvt.) Ltd.
V/E/2, Panthapath (Matar Road), Shahbagh,
Dhaka - 1000
scpl.ma@gmail.com
In Association with

15.8.2.5 Urban Services

a. Solid Waste Management

The consultant proposes solid waste transfer stations at ward no. 06. It is recommended that home collection system is introduced in the ward by creation of local CBOs. Table 15.30 shows the detail.

b. Water Supply

It is proposed to install a network based water supply system by exploring fresh water from the Meghna River for the entire Paurashava. And water supply lines in this ward will be established along all categories of roads as per the growth of the settlement. There is no existing water supply network line. And water supply network is proposed as per the design of DPHE.

c. Sanitation

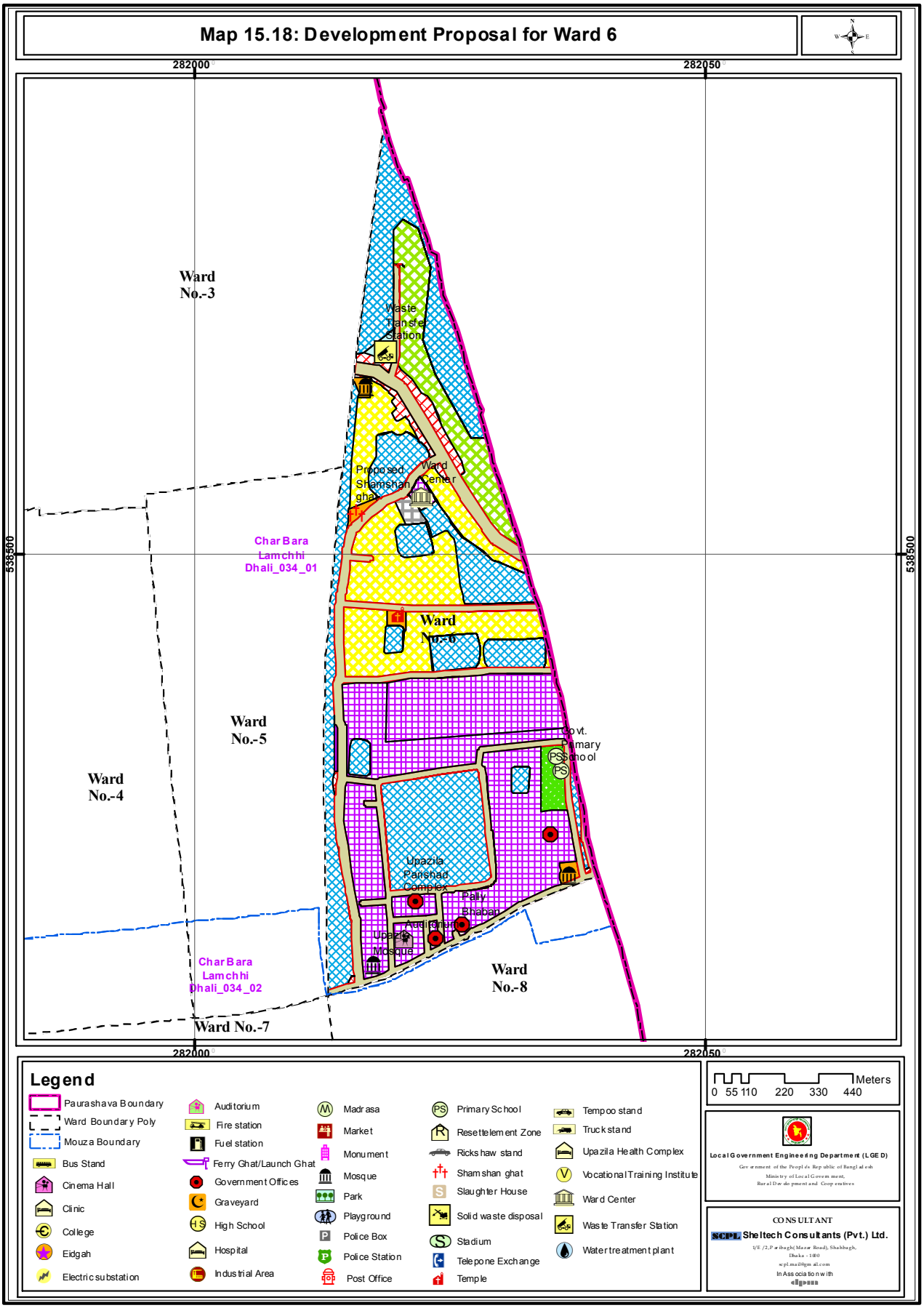
The Paurashava must try to promote hygienic sanitation for the whole Paurashavsa to ensure better public health.

Table 15.30: Utility Services Development Proposals for ward 06

Item	Existing		Proposed	
	No.	Area(acre)/length(m)	No.	Area(acre)/Length(m)
Solid Waste Transfer Station	None		1	0.12 acre
Electricity Line			As per existing program of PDB	

Map 15.18 represents proposed urban services for ward 6

Map 15.18: Development Proposal for Ward 6



Legend

- Paurashava Boundary
- Ward Boundary Poly
- Mouza Boundary
- Bus Stand
- Cinema Hall
- Clinic
- College
- Eidgah
- Electric substation
- Auditorium
- Fire station
- Fuel station
- Ferry Ghat/Launch Ghat
- Government Offices
- Graveyard
- High School
- Hospital
- Industrial Area
- Madrasa
- Market
- Monument
- Mosque
- Park
- Playground
- Police Box
- Police Station
- Post Office
- Primary School
- Resettelement Zone
- Rickshaw stand
- Shamshan ghat
- Slaughter House
- Solid waste disposal
- Stadium
- Telepone Exchange
- Temple
- Tempoo stand
- Truck stand
- Upazila Health Complex
- Vocational Training Institute
- Ward Center
- Waste Transfer Station
- Water treatment plant

0 55 110 220 330 440 Meters

Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Cooperatives

CONSULTANT
SCPL Sheltech Consultants (Pvt.) Ltd.
1/E /2,Pribagh(Mazar Road), Shahbagh, Dhaka - 1000
scpl.ma@gmail.com
In Association with

15.9 Ward Action Plan for Ward No. 07

15.9.1 Demography

Ward no.7 is located on the West-south of the town. Population projection shows that 2121 people would be in the ward in the year 2031. The density of population is the low in this ward with 20 persons per acre. Table 15.31 shows the details.

Table 15.31: Population Statistics of Ward No. 07

Item	Year			
	2016	**2021**	**2026**	**2031**
Area (acre)	108.01	108.01	108.01	108.01
Population	1827	1920	2018	2121
Density of Population (acre)	17	18	19	20

15.9.2 Ward Action Plan Proposals

15.9.2.1 Review of Existing Land Use

Out of total 108.01 acres of land about 46.70% is used as residential use. The next use is waterbody, more than 25 acres of land are used in this purpose. Agriculture occupies about 12.05% land of the ward. More than 3% is used as circulation network.

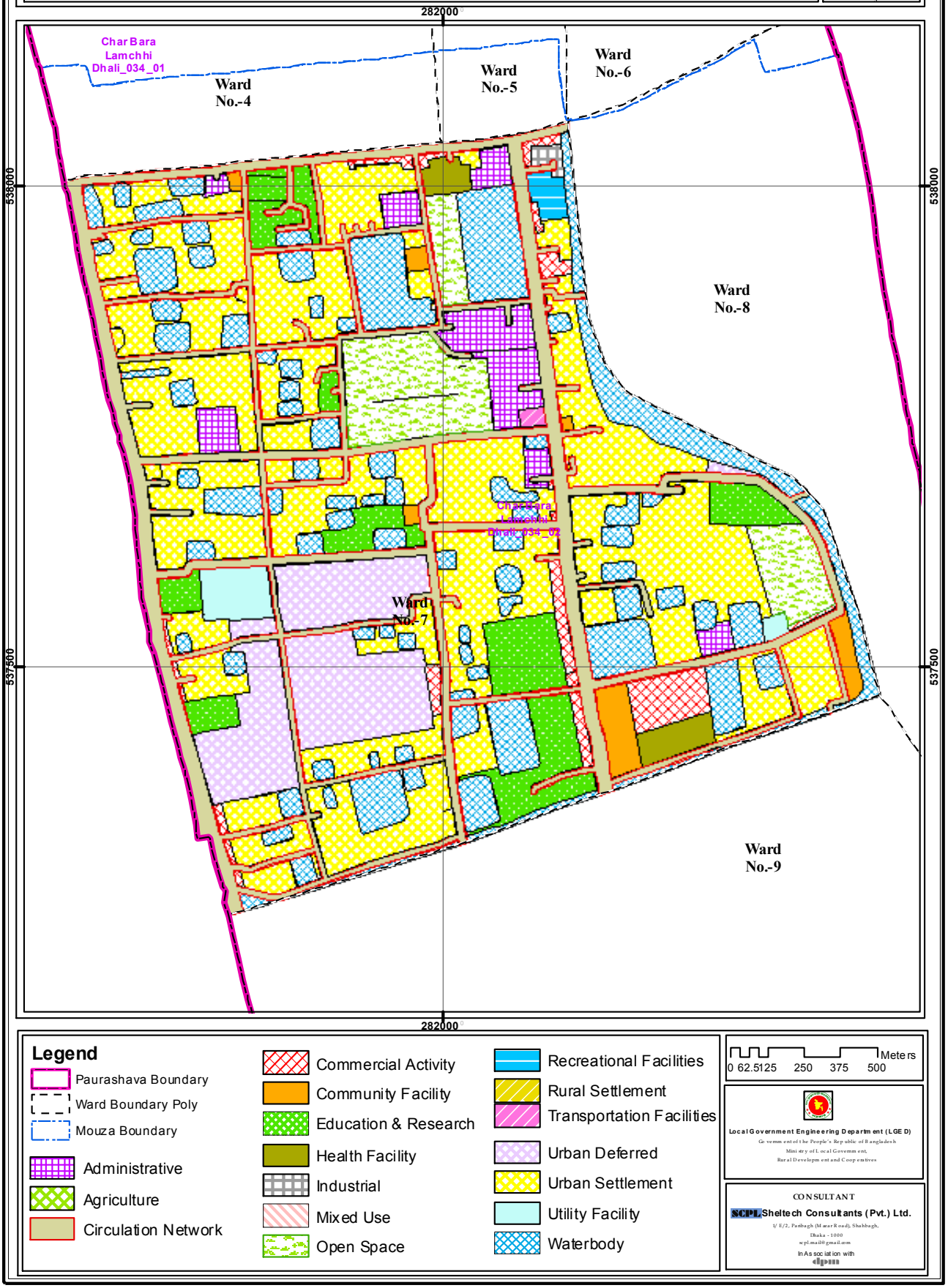
15.9.2.2 Proposed Land Use Zoning

The category wise proposals are presented here. Table 15.32 shows the amount of land existing and proposed uses in Ward no. 7. **Map 15.19** shows proposed land use of Ward 07

Table 15.32: Comparative Scenario Existing and Proposed Land Uses of Ward No. 07

Sl. No.	Landuse Category		Existing		Proposed	
			Area (Acre)	**%**	**Area (Acre)**	**%**
01	Administrative	Government Service	2.31	2.14	3.63	3.36
		Non-Government Service	0.16	0.15	0.13	0.12
02	Agriculture		13.01	12.05	-	-
03	Circulation Network		4.21	3.9	18.42	17.05
04	Commercial Activity		1.44	1.33	2.7	2.50
05	Community Service		1.06	0.98	1.52	1.41
06	Deferred Area		-	-	9.00	8.33
07	Education and Research		7.16	6.63	6.93	6.42
08	Health Facility		-	-	1.08	1.00
09	Industrial		0.21	0.19	0.19	0.18
10	Mixed Use		-	-	-	-
11	Open Space		2.28	2.11	2.48	2.30
12	Recreational Facilities		0.04	0.04	4.11	3.81
13	Residential		50.44	46.7	36.30	33.61
14	Transportation and Communication		-	-	0.12	0.11
15	Utility Service		0.03	0.03	1.13	1.05
16	Water Body		25.66	23.76	20.27	18.77
	Total		**108.01**	**100.00**	**108.01**	**100.00**

Map 15.19 : Proposed Landuse Plan of Ward no. 7



a. Urban Residential Zone

In existing land uses, both the urban residential and rural homestead has been considered as residential use as a whole. In Ward Action Plan, more than 36.30 acre of land has been earmarked for urban residential use which will occupy 33.61% of the total land.

b. Circulation network

For any type of development, circulation network is an important facility. To improve the efficiency of transport network of the ward, more roads are proposed which will consume almost 18.42 acres of land and more than 17.05% of the total area.

c. Administrative Area

3.48% land has been allocated for administrative purpose. Ward councilor's office and a police box have been proposed in this ward.

d. Commercial Activity

At present, commercial activity and density of population are moderate in this ward. Only 2.70 acres of land has been allocated for this purpose which will occupy only 2.50% of total land.

e. Education and Research

In Ward Action Plan, 6.42% of total land has been allocated for education.

f. Health Facilities

1.00% land has been allocated for health purpose. One health center has been proposed in this ward.

g. Community Facilities

Land for community facilities will be 1.52 acre which is 1.41 %.

h. Utility Service

A total of 1.13 acre of land covering 1.05% of total land is earmarked as Utility Services zone at Ward no. 07. Water treatment plant, waste transfer stations have been proposed here.

i. Recreational facilities

A total 4.11 acre land has been allocated in this purpose. Cinema hall has been proposed in this ward and there is already a stadium in this ward.

j. Open Space

Land for Open space will be 2.48 acre which includes open recreational facilities playground, Local Park, green belt and Neighborhood Park.

k. Water bodies

The plan suggests for preserving most of the water bodies for two purposes, first, to serve as source of water, second to serve as water retention area during monsoon. The ponds will be

preserved as the water retention ponds. The proposed retention area covers 20.27 acres of land which covers almost 18.77% of the total ward area.

15.9.2.3 Proposed Road Infrastructure Development

Total 9.17 km road development proposal have been proposed in ward action plan for ward no. 07. Length of the access road will be 20 ft wide 5.18 km. Total length of tertiary road will be 1.99 km and width of these roads will be 30ft for this ward. Total length of secondary road will be 1.22 km and width of these roads will be 60ft for this ward. There is 0.78 km primary road proposal. Detail scenario of road network development proposal was given in table 15.33.

Table 15.33: Road Network Proposal at Ward no. 07

Type	Proposed Road ID	Length in m	Remark	Phase
Primary Road	PR-10	776.47	Widening	1st
Secondary Road	SR-44	7.12	Widening	1st
Secondary Road	SR-45	682.17	Widening	1st
Secondary Road	SR-46	1.43	Widening	1st
Secondary Road	SR-47	31.14	Widening	1st
Secondary Road	SR-48	494.39	Widening	1st
Secondary Road	SR-49	0.28	Widening	1st
Tertiary Road	TR-61	12.91	Widening	2nd
Tertiary Road	TR-62	211.35	Widening	2nd
Tertiary Road	TR-63	12.24	Widening	2nd
Tertiary Road	TR-64	82.42	Widening	2nd
Tertiary Road	TR-65	147.92	Widening	2nd
Tertiary Road	TR-66	7.63	Widening	2nd
Tertiary Road	TR-67	133.23	Widening	2nd
Tertiary Road	TR-68	7.64	Widening	2nd
Tertiary Road	TR-69	159.08	Widening	2nd
Tertiary Road	TR-70	7.63	Widening	2nd
Tertiary Road	TR-71	97.10	Widening	2nd
Tertiary Road	TR-72	7.63	Widening	2nd
Tertiary Road	TR-73	105.71	Widening	2nd
Tertiary Road	TR-74	92.30	New	2nd
Tertiary Road	TR-75	113.53	New	2nd
Tertiary Road	TR-76	5.63	New	2nd
Tertiary Road	TR-77	67.44	New	2nd
Tertiary Road	TR-78	398.42	New	2nd
Tertiary Road	TR-79	5.18	New	2nd
Tertiary Road	TR-80	200.40	New	2nd
Tertiary Road	TR-81	25.80	Widening	2nd
Tertiary Road	TR-82	1.51	New	2nd
Tertiary Road	TR-83	90.26	Widening	2nd
Access Road	AR-362	88.33	Widening	2nd
Access Road	AR-363	52.94	Widening	2nd
Access Road	AR-364	32.75	Widening	2nd
Access Road	AR-365	62.63	Widening	2nd
Access Road	AR-366	115.88	Widening	2nd
Access Road	AR-367	94.36	Widening	2nd
Access Road	AR-368	7.63	Widening	2nd
Access Road	AR-369	12.25	Widening	2nd
Access Road	AR-370	14.61	Widening	2nd
Access Road	AR-371	12.23	Widening	2nd
Access Road	AR-372	13.80	Widening	2nd
Access Road	AR-373	12.25	Widening	2nd
Access Road	AR-374	37.80	Widening	2nd
Access Road	AR-375	12.28	Widening	2nd

Type	Proposed Road ID	Length in m	Remark	Phase
Access Road	AR-376	121.13	Widening	2nd
Access Road	AR-377	12.33	Widening	2nd
Access Road	AR-378	63.11	Widening	2nd
Access Road	AR-379	12.26	Widening	2nd
Access Road	AR-380	24.15	Widening	2nd
Access Road	AR-381	11.11	Widening	2nd
Access Road	AR-382	20.31	Widening	2nd
Access Road	AR-383	12.28	Widening	2nd
Access Road	AR-384	40.45	Widening	2nd
Access Road	AR-385	12.21	Widening	2nd
Access Road	AR-386	7.40	Widening	3rd
Access Road	AR-387	12.29	Widening	3rd
Access Road	AR-388	17.31	Widening	3rd
Access Road	AR-389	100.75	Widening	3rd
Access Road	AR-390	4.57	Widening	3rd
Access Road	AR-391	22.12	Widening	3rd
Access Road	AR-392	4.56	Widening	3rd
Access Road	AR-393	22.45	Widening	3rd
Access Road	AR-394	7.64	Widening	3rd
Access Road	AR-395	16.82	Widening	3rd
Access Road	AR-396	7.63	Widening	3rd
Access Road	AR-397	6.33	Widening	3rd
Access Road	AR-398	7.63	Widening	3rd
Access Road	AR-399	98.65	Widening	3rd
Access Road	AR-400	7.62	Widening	3rd
Access Road	AR-401	107.72	Widening	3rd
Access Road	AR-402	4.12	Widening	3rd
Access Road	AR-403	1.77	Widening	3rd
Access Road	AR-404	1.79	Widening	3rd
Access Road	AR-405	33.03	Widening	3rd
Access Road	AR-406	7.63	Widening	3rd
Access Road	AR-407	106.93	Widening	3rd
Access Road	AR-408	5.85	Widening	3rd
Access Road	AR-409	69.44	Widening	3rd
Access Road	AR-410	7.64	Widening	3rd
Access Road	AR-411	278.58	Widening	3rd
Access Road	AR-412	7.71	Widening	3rd
Access Road	AR-413	4.56	Widening	3rd
Access Road	AR-414	20.50	Widening	3rd
Access Road	AR-415	7.63	Widening	3rd
Access Road	AR-416	21.18	Widening	3rd
Access Road	AR-417	7.62	Widening	3rd
Access Road	AR-418	39.69	Widening	3rd
Access Road	AR-419	7.62	Widening	3rd
Access Road	AR-420	20.93	Widening	3rd
Access Road	AR-421	7.62	Widening	3rd
Access Road	AR-422	21.69	Widening	3rd
Access Road	AR-423	7.65	Widening	3rd
Access Road	AR-424	1.90	Widening	3rd
Access Road	AR-425	3.79	Widening	3rd
Access Road	AR-426	6.02	Widening	3rd
Access Road	AR-427	14.43	Widening	3rd
Access Road	AR-428	7.63	Widening	3rd
Access Road	AR-429	49.81	Widening	3rd
Access Road	AR-430	7.63	Widening	3rd
Access Road	AR-431	20.17	Widening	3rd
Access Road	AR-432	7.63	Widening	3rd
Access Road	AR-433	84.95	Widening	3rd
Access Road	AR-434	7.62	Widening	3rd
Access Road	AR-435	149.02	Widening	3rd

Type	Proposed Road ID	Length in m	Remark	Phase
Access Road	AR-436	28.43	Widening	3rd
Access Road	AR-437	101.97	Widening	3rd
Access Road	AR-438	7.62	Widening	3rd
Access Road	AR-439	7.60	Widening	3rd
Access Road	AR-440	7.63	Widening	3rd
Access Road	AR-441	20.81	Widening	3rd
Access Road	AR-442	182.05	Widening	3rd
Access Road	AR-443	7.81	Widening	3rd
Access Road	AR-444	54.42	Widening	3rd
Access Road	AR-445	186.52	Widening	3rd
Access Road	AR-446	8.88	Widening	3rd
Access Road	AR-447	8.56	Widening	3rd
Access Road	AR-448	13.27	Widening	3rd
Access Road	AR-449	2.27	Widening	3rd
Access Road	AR-450	7.60	Widening	3rd
Access Road	AR-451	12.22	Widening	3rd
Access Road	AR-452	90.84	Widening	3rd
Access Road	AR-453	11.90	Widening	3rd
Access Road	AR-454	103.39	Widening	3rd
Access Road	AR-455	4.05	Widening	3rd
Access Road	AR-456	7.58	Widening	3rd
Access Road	AR-457	0.13	Widening	3rd
Access Road	AR-458	44.00	New	3rd
Access Road	AR-459	95.48	New	3rd
Access Road	AR-460	28.15	Widening	3rd
Access Road	AR-461	9.92	Widening	3rd
Access Road	AR-462	69.90	Widening	3rd
Access Road	AR-463	78.20	Widening	3rd
Access Road	AR-464	27.17	Widening	3rd
Access Road	AR-465	35.56	Widening	3rd
Access Road	AR-466	5.16	Widening	3rd
Access Road	AR-467	11.90	New	3rd
Access Road	AR-468	239.00	New	3rd
Access Road	AR-469	5.30	New	3rd
Access Road	AR-470	69.17	New	3rd
Access Road	AR-471	234.07	New	3rd
Access Road	AR-472	5.50	New	3rd
Access Road	AR-473	10.95	New	3rd
Access Road	AR-474	197.23	New	3rd
Access Road	AR-475	73.76	New	3rd
Access Road	AR-476	2.87	New	3rd
Access Road	AR-477	108.33	New	3rd
Access Road	AR-478	26.52	New	3rd
Access Road	AR-479	9.16	New	3rd
Access Road	AR-480	109.31	New	3rd
Access Road	AR-481	5.59	New	3rd
Access Road	AR-482	12.33	New	3rd
Access Road	AR-483	68.43	New	3rd
Access Road	AR-484	2.33	New	3rd
Access Road	AR-485	31.04	New	3rd
Access Road	AR-486	135.14	New	3rd
Access Road	AR-487	7.56	New	3rd
Access Road	AR-488	4.57	New	3rd
Access Road	AR-489	1.05	New	3rd
Access Road	AR-490	19.85	New	3rd
Access Road	AR-491	4.65	New	3rd
Access Road	AR-492	110.33	New	3rd
Access Road	AR-493	5.30	New	3rd
Access Road	AR-494	0.11	Widening	3rd
Access Road	AR-495	0.08	Widening	3rd

Type	Proposed Road ID	Length in m	Remark	Phase
Access Road	AR-496	0.06	New	3rd
Access Road	AR-497	0.18	New	3rd

- "AR" for access road, "TR" for tertiary road, "SR" for secondary road, and "PR" for primary road.

15.9.2.4 Drainage Development Plan

There are both manmade and natural drainage facilities at ward no. 07. Existing drainage is mostly depending on natural drainage facilities; Meghna River which is passing the ward .The proposed drainage facilities will be developed based on this natural channel and served as primary drain for the ward and will be connected with 2.64 km secondary drain. Table 15.34 shows the detail.

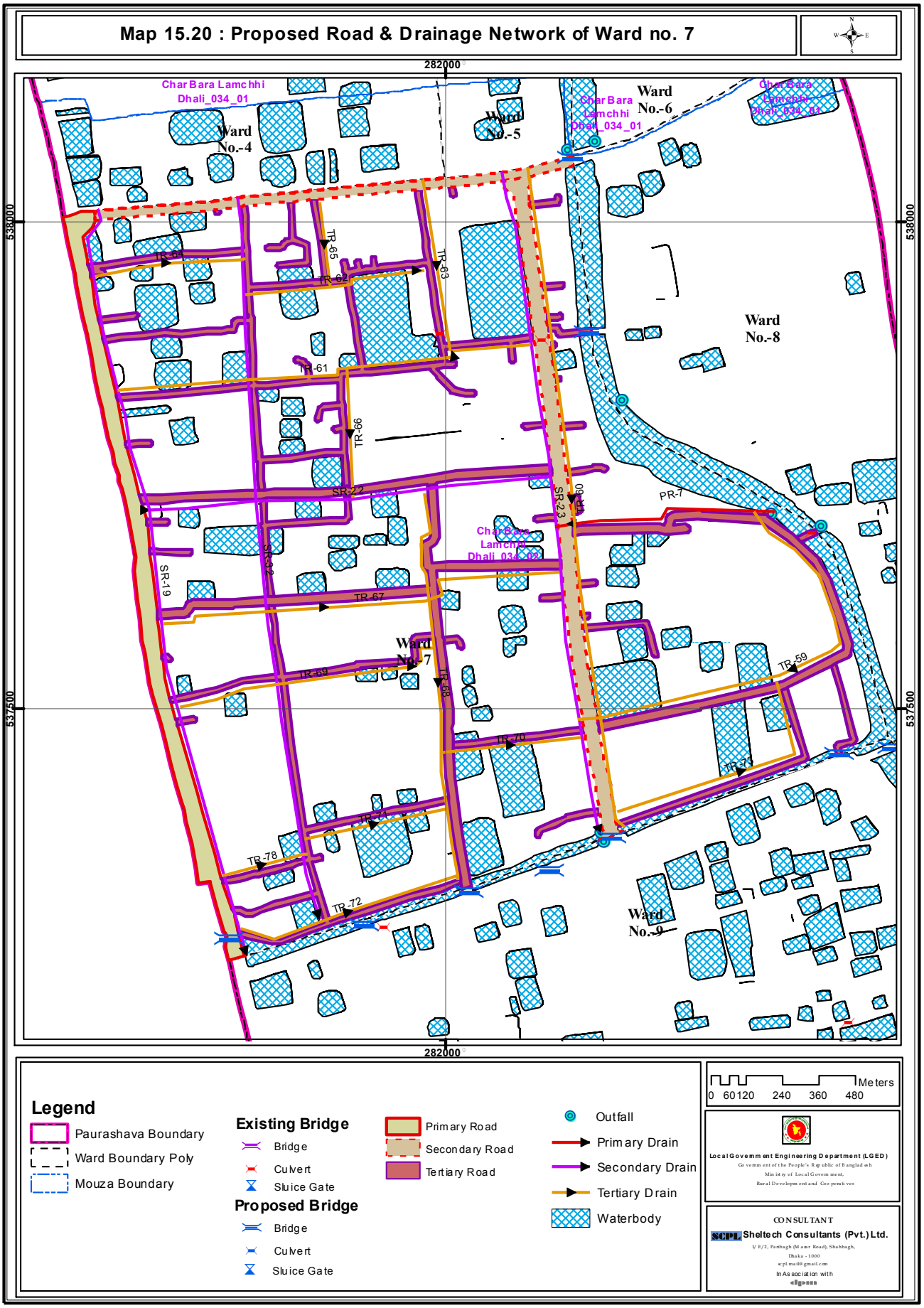
Table 15.34: Drainage Development Plan Proposals for ward 07

Item	Length (km)
Proposed Drainage (Primary)	0.23
Proposed Drainage (Secondary)	2.64
Proposed Drainage (Tertiary)	4.33

Besides, it will be necessary to re-excavate the khals that serve as primary drains flowing of Water through them.

Map 15.20 represents proposed Road and Drainage Network for Ward 7.

Map 15.20 : Proposed Road & Drainage Network of Ward no. 7



Legend

- Paurashava Boundary
- Ward Boundary Poly
- Mouza Boundary

Existing Bridge

- Bridge
- Culvert
- Sluice Gate

Proposed Bridge

- Bridge
- Culvert
- Sluice Gate

- Primary Road
- Secondary Road
- Tertiary Road

- Outfall
- Primary Drain
- Secondary Drain
- Tertiary Drain
- Waterbody

Meters
0 60120 240 360 480

Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government,
Rural Development and Cooperatives

CONSULTANT
SCPL Sheltech Consultants (Pvt.) Ltd.
1/E/2, Paribagh (Manr Road), Shahbagh,
Dhaka - 1000
scpl.mail@gmail.com
In Association with

15.9.2.5 Urban Services

a. Solid Waste Management

The consultant proposes solid waste transfer stations in some suitable locations for the management of solid waste. It is recommended that home collection system is introduced in the ward by creation of local CBOs. This will cause organized collection of waste and prevent indiscriminate littering.

b. Water Supply

It is proposed to install a network based water supply system by exploring fresh water from the Meghna River for the entire Paurashava. And water supply lines in this ward will be established along all categories of roads as per the growth of the settlement. There is no existing water supply network line. And water supply network is proposed as per the design of DPHE.

c. Sanitation

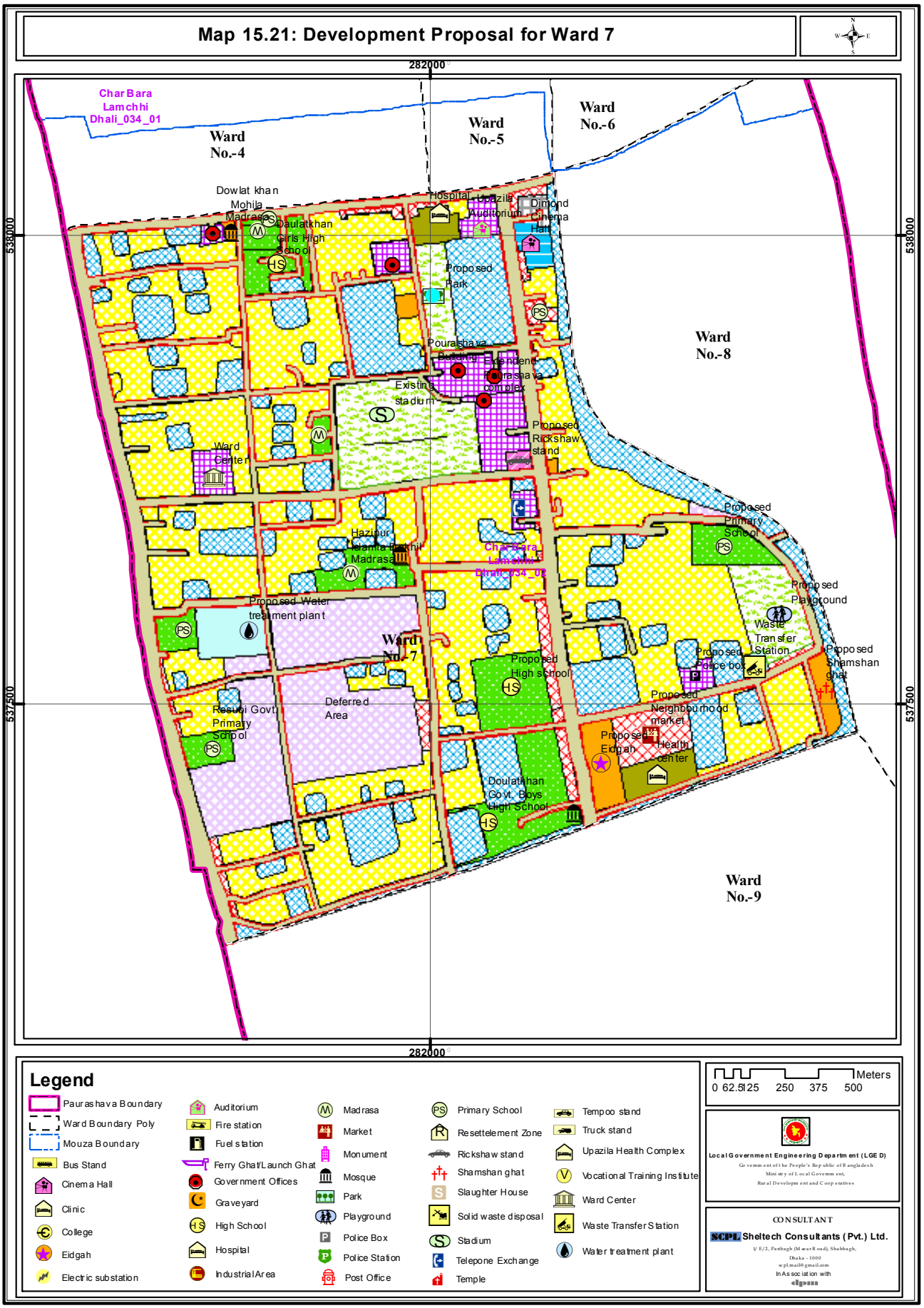
The Paurashava must try to promote hygienic sanitation for the whole Paurashava to ensure better public health.

Table 15.35: Urban Services Development Proposals for ward 07

Item	Existing		Proposed	
	No.	Area/length	No.	Area/Length
Solid Waste Transfer Station	None		1	0.43
Water Treatment plant			1	0.98
Electricity Line			As per existing program of PDB	

Map 15.21 represents proposed urban services for ward 7.

Map 15.21: Development Proposal for Ward 7



Legend

- Paurashava Boundary
- Ward Boundary Poly
- Mouza Boundary
- Bus Stand
- Cinema Hall
- Clinic
- College
- Eidgah
- Electric substation
- Auditorium
- Fire station
- Fuel station
- Ferry Ghat/Launch Ghat
- Government Offices
- Graveyard
- High School
- Hospital
- Industrial Area
- Madrasa
- Market
- Monument
- Mosque
- Park
- Playground
- Police Box
- Police Station
- Post Office
- Primary School
- Resettelement Zone
- Rickshaw stand
- Shamshan ghat
- Slaughter House
- Solid waste disposal
- Stadium
- Telepone Exchange
- Temple
- Tempoo stand
- Truck stand
- Upazila Health Complex
- Vocational Training Institute
- Ward Center
- Waste Transfer Station
- Water treatment plant

Meters
0 62.5 125 250 375 500

Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Cooperatives

CONSULTANT
SCPL Sheltech Consultants (Pvt.) Ltd.
1/E/2, Pantbagh (Mazar Road), Shahbagh, Dhaka - 1000
scplmail@gmail.com
In Association with

15.10 Ward Action Plan for Ward No. 08

15.10.1 Demography

Ward No. 8 is located on the East-South of the town. It has the highest density of population. The estimated population for the year 2031 will be 2437 with a density of 56 persons per acre. Table 15.36 shows the detail.

Table 15.36: Population Statistics of Ward No. 08

Item	Year			
	2016	**2021**	**2026**	**2031**
Area (acre)	43.26	43.26	43.26	43.26
Population	2099	2206	2318	2437
Density of Population (acre)	49	51	54	56

15.10.2 Ward Action Plan Proposals

15.10.2.1 Review of Existing Land Use

Ward no. 08 is mainly urban in character. Out of total 43.26 acre of land of this ward more than 20.94 acre of land i.e. 48.40% is used as residential. The next use is waterbody; 12.37 acres are used as this purpose. It occupies almost 28.59% of total land. Agricultural land occupies about 14.66% land. More than 5.06% is used as circulation network. Only 1.13% of land is used as Commercial activities.

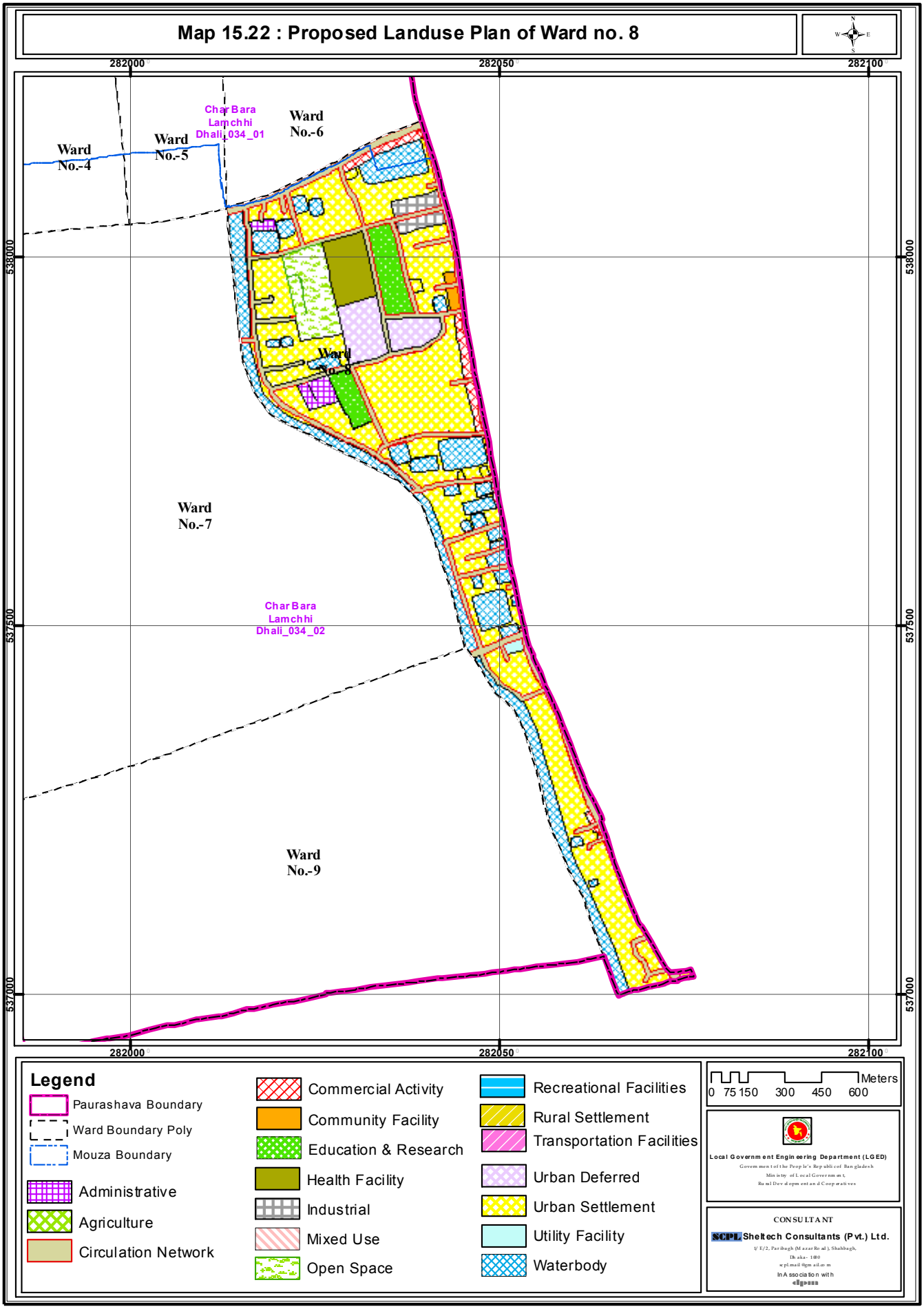
15.10.2.2 Proposed Land Use Zoning

The category wise proposals are presented here. Table 15.37 shows the amount of land existing and proposed uses in Ward no. 8. **Map 15.22** shows proposed land use of Ward 08

Table 15.37: Comparative Scenario of Existing and Proposed Land Uses of Ward No. 08

Sl. No.	Landuse Category		Existing		Proposed	
			Area (Acre)	**%**	**Area (Acre)**	**%**
01	Administrative	Government Service	0.14	0.32	0.53	1.23
		Non-Government Service	-	-	-	
02	Agriculture		6.34	14.66	0.01	0.02
03	Circulation Network		2.19	5.06	6.9	15.95
04	Commercial Activity		0.49	1.13	0.86	1.99
05	Community Service		0.001	0.002	0.16	0.37
06	Deferred Area		-	-	1.78	4.11
07	Education and Research		-	-	1.66	3.84
08	Health Facility		-	-	1.24	2.87
09	Industrial		0.68	1.57	0.63	1.46
10	Mixed Use		-	-	-	
11	Open Space		-	-	1.73	4.00
12	Recreational Facilities		-	-	-	
13	Residential		20.94	48.40	19.16	44.29
14	Transportation and Communication		0.11	0.25	-	
15	Utility Service		-	-	0.09	0.21
16	Water Body		12.37	28.59	8.51	19.67
	Total		**43.26**	**100.00**	**43.26**	**100.00**

Map 15.22 : Proposed Landuse Plan of Ward no. 8



a. Urban Residential Zone

In existing land uses, both the urban residential and rural homestead has been considered as residential use as a whole. In Ward Action Plan, more than 19.16 acre of land has been earmarked for urban residential use which will occupy 44.29% of the total land.

b. Circulation network

For any type of development, circulation network is an important facility. To improve the efficiency of transport network of the ward, more roads are proposed which will consume almost 6.9 acres of land and more than 15.95% of the total area.

c. Administrative Area

1.23% land has been allocated for administrative purpose. Ward councilor's office and a police box have been proposed in this ward.

d. Commercial Activity

At present, commercial activity and density of population are moderate in this ward. Only 0.86 acres of land has been proposed for this purpose which will occupy only 1.99 % of total land.

e. Education and Research

In Ward Action Plan, 3.84% of total land has been allocated for education.

f. Health Facilities

2.87% land has been allocated for health purpose. A health center has been proposed in this purpose.

g. Community Facilities

Land for community facilities will be 0.16 acre which is 0.37%. A grave yard has been proposed in this ward.

h. Open Space

Land for Open space will be 2.04 acre which includes open recreational facilities playground, Local Park and green belt.

i. Agricultural Area

The Paurashava including Ward No. 08 has a moderate area of agricultural land that demands formation of a separate zone like, agriculture zone. The total area under this use has been estimated as about 0.01 acres of land covering 0.01% of the total land.

j. Water bodies

The plan suggests for preserving most of the water bodies for two purposes, first, to serve as source of water, second to serve as water retention area during monsoon. The ponds will be preserved as the water retention ponds. The proposed retention area covers 14.41 acres of land which covers almost 19.91% of the total ward area.

k. Utility Service

Proposed utility service is 0.17%. Waste transfer station has been proposed in this ward.

15.10.2.3 Proposed Road Infrastructure Development

Total 3.9 km road development proposal have been proposed for this ward. Length of the access road will be 3.06 km and width of these roads will be 20 ft. Total length of tertiary road will be 0.08 km and width of these roads will be 30 ft Total length of secondary road will be 0.75km and width of these roads will be 60 ft for this ward. Detail scenario of road network development proposal was given in table 15.38.

Table 15.38: Road Network Proposal at Ward no.08

Type	Proposed Road ID	Length in m	Remark	Phase
Secondary Road	SR-50	463.72	Widening	1st
Secondary Road	SR-51	0.97	Widening	1st
Secondary Road	SR-52	288.33	Widening	1st
Tertiary Road	TR-84	35.37	Widening	2nd
Tertiary Road	TR-85	1.86	Widening	2nd
Tertiary Road	TR-86	43.20	New	2nd
Access Road	AR-498	1.05	Widening	2nd
Access Road	AR-499	63.01	Widening	2nd
Access Road	AR-500	1.67	Widening	2nd
Access Road	AR-501	56.43	Widening	2nd
Access Road	AR-502	2.40	Widening	2nd
Access Road	AR-503	57.78	Widening	2nd
Access Road	AR-504	2.58	Widening	2nd
Access Road	AR-505	154.00	Widening	2nd
Access Road	AR-506	2.62	Widening	2nd
Access Road	AR-507	30.35	Widening	2nd
Access Road	AR-508	2.78	Widening	2nd
Access Road	AR-509	180.83	Widening	2nd
Access Road	AR-510	2.74	Widening	2nd
Access Road	AR-511	28.56	Widening	2nd
Access Road	AR-512	1.99	Widening	2nd
Access Road	AR-513	4.26	Widening	2nd
Access Road	AR-514	102.75	Widening	2nd
Access Road	AR-515	22.90	Widening	2nd
Access Road	AR-516	7.63	Widening	2nd
Access Road	AR-517	20.27	Widening	2nd
Access Road	AR-518	8.00	Widening	2nd
Access Road	AR-519	70.38	Widening	2nd
Access Road	AR-520	7.79	Widening	2nd
Access Road	AR-521	2.02	Widening	2nd
Access Road	AR-522	1.89	Widening	2nd
Access Road	AR-523	2.21	Widening	2nd
Access Road	AR-524	29.84	Widening	2nd
Access Road	AR-525	2.33	Widening	2nd
Access Road	AR-526	23.02	Widening	2nd
Access Road	AR-527	20.46	Widening	2nd
Access Road	AR-528	55.81	Widening	2nd
Access Road	AR-529	33.13	Widening	2nd
Access Road	AR-530	27.93	Widening	2nd
Access Road	AR-531	2.25	Widening	2nd
Access Road	AR-532	13.91	Widening	2nd
Access Road	AR-533	1.52	Widening	2nd
Access Road	AR-534	8.90	Widening	2nd
Access Road	AR-535	2.53	Widening	2nd
Access Road	AR-536	10.67	Widening	2nd

Type	Proposed Road ID	Length in m	Remark	Phase
Access Road	AR-537	2.52	Widening	2nd
Access Road	AR-538	78.61	Widening	2nd
Access Road	AR-539	2.51	Widening	2nd
Access Road	AR-540	46.95	Widening	2nd
Access Road	AR-541	40.41	Widening	2nd
Access Road	AR-542	2.61	Widening	3rd
Access Road	AR-543	596.35	Widening	3rd
Access Road	AR-544	8.39	Widening	3rd
Access Road	AR-545	2.11	Widening	3rd
Access Road	AR-546	82.82	New	3rd
Access Road	AR-547	18.11	Widening	3rd
Access Road	AR-548	4.61	Widening	3rd
Access Road	AR-549	112.09	New	3rd
Access Road	AR-550	102.61	New	3rd
Access Road	AR-551	9.15	New	3rd
Access Road	AR-552	74.34	New	3rd
Access Road	AR-553	116.13	New	3rd
Access Road	AR-554	263.13	New	3rd
Access Road	AR-555	7.15	New	3rd
Access Road	AR-556	192.37	New	3rd
Access Road	AR-557	169.85	New	3rd
Access Road	AR-558	46.34	New	3rd
Access Road	AR-559	13.40	New	3rd

- "AR" for access road, "TR" for tertiary road, "SR" for secondary road, and "PR" for primary road.

15.10.2.4 Drainage Development Plan

There are both natural and manmade drainage facilities at ward no. 08 of Daulatkhan Paurashava. Existing drainage is mostly depending on natural drainage facilities; Meghna River which is passing very close to the western border .The proposed drainage facilities will be developed based on this natural channel. Table 15.39 shows the detail.

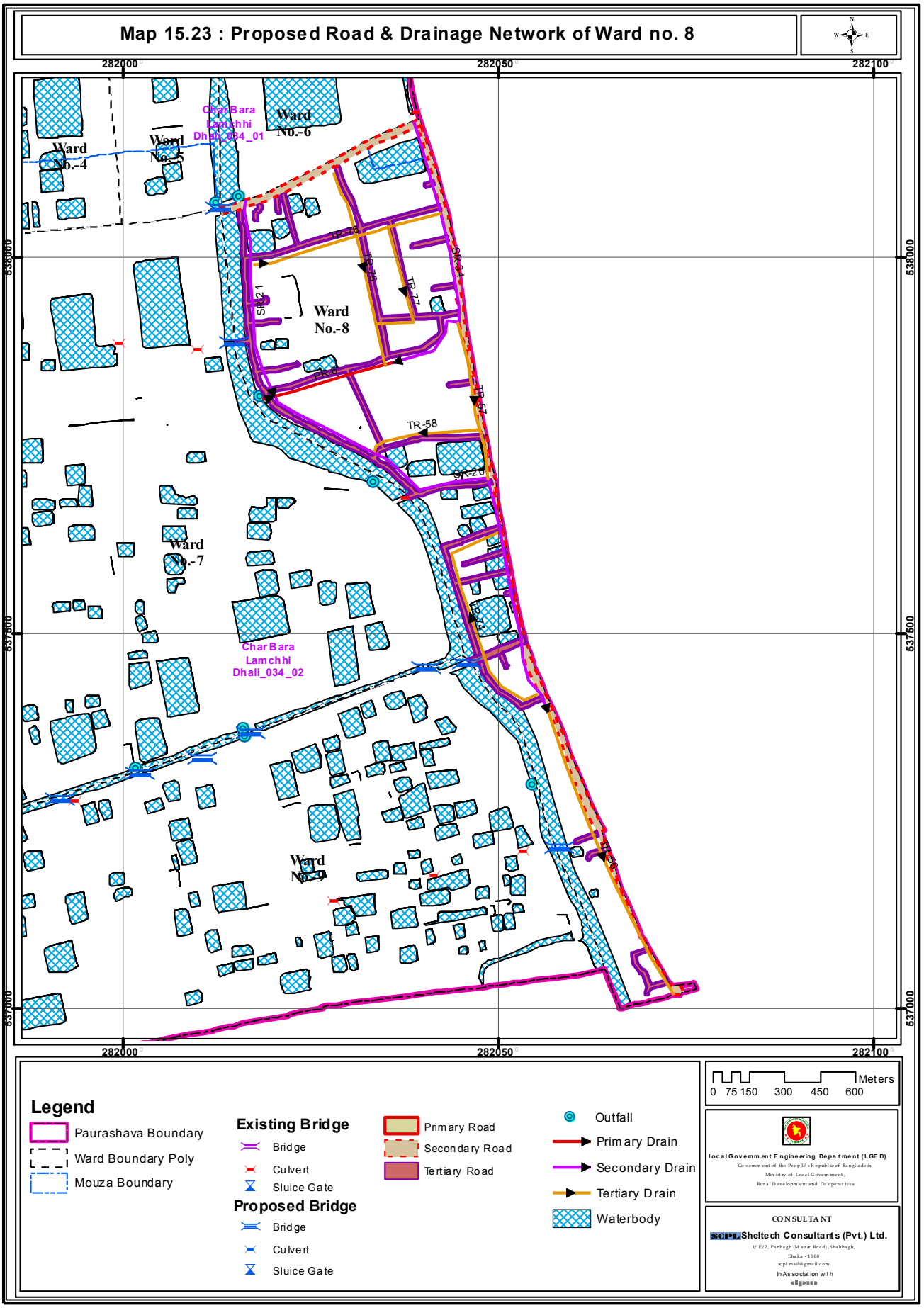
Table 15.39: Drainage Development Plan Proposals for ward 08

Item	Length (km)
Proposed Drainage (Primary)	0.19
Proposed Drainage (Secondary)	1.31
Proposed Drainage (Tertiary)	1.80

Besides, it will be necessary to re-excavate the khals that serve as primary drains. The consultants have identified existing whole of the khals need to be re-excavated to allow smooth flow of water through them.

Map 15.23 represents proposed Road and Drainage Map of ward 8.

Map 15.23 : Proposed Road & Drainage Network of Ward no. 8



15.10.2.5 Urban Services

a. Solid Waste Management

Solid waste management is a major urban service. As density of population increases the volume of solid waste also increases proportionately. However, the income level is also a major factor influencing the volume of solid waste. Population and the volume of waste in the Paurashava are yet to be large enough to become a problem for the city. But the present management system is not satisfactory and it might to lead to problem in future. The consultant proposes solid waste transfer stations in a suitable location. It is recommended that home collection system is introduced in the ward by creation of local CBOs. This will cause organized collection of waste and prevent indiscriminate littering.

b. Water Supply

It is proposed to install a network based water supply system by exploring fresh water from the Meghna River for the entire Paurashava. And water supply lines in this ward will be established along all categories of roads as per the growth of the settlement. There is only 1 existing water supply network line. And water supply network is proposed as per the design of DPHE.

c. Sanitation

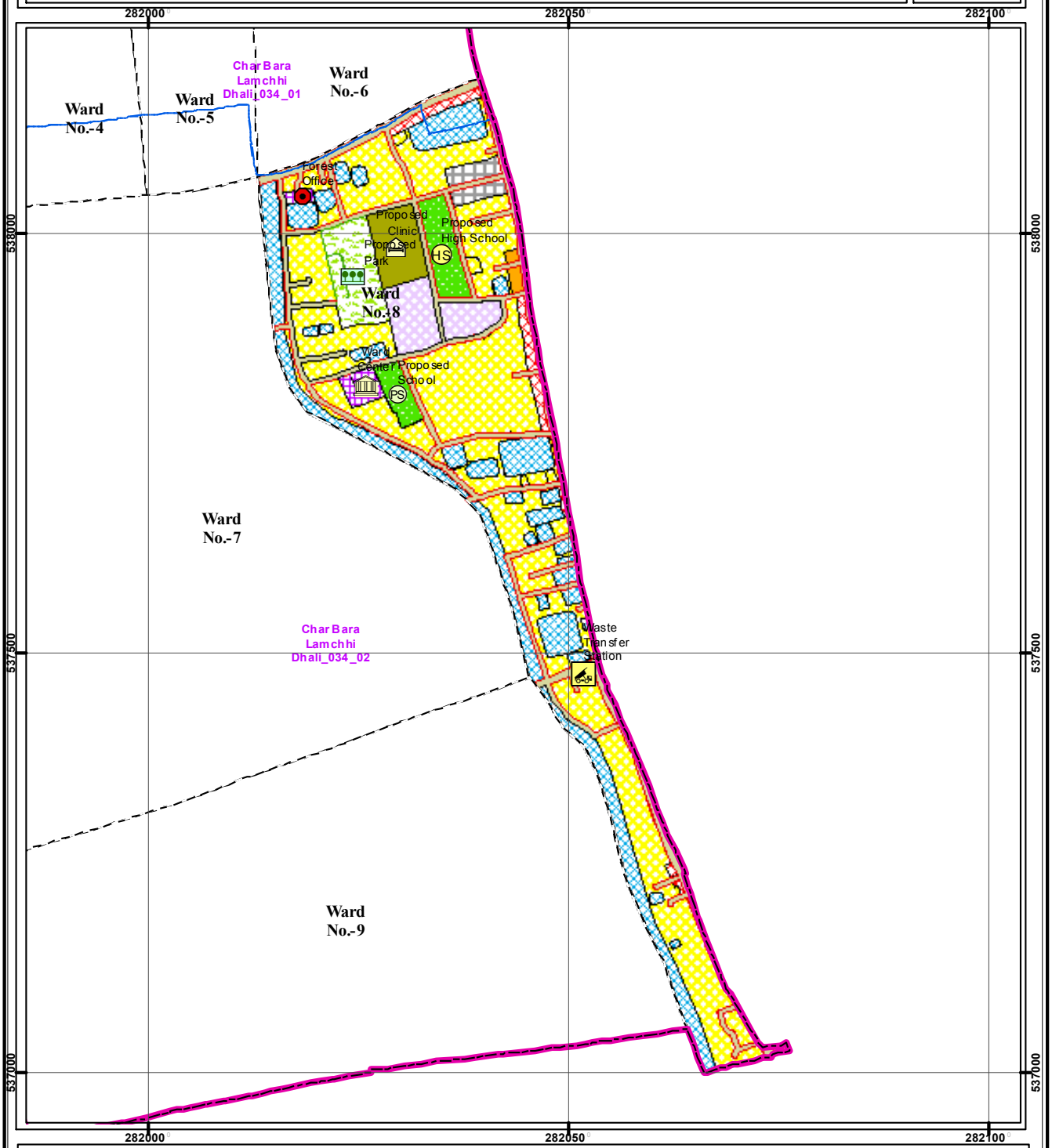
The Paurashava must try to promote hygienic sanitation for the whole Paurashava to ensure better public health.

Table 15.40: Urban Service Development Proposals for ward 08

Item	Existing		Proposed	
	No.	Area/length	No.	Area/Length
Solid Waste Transfer Station	None		1	0.09
Electricity Line			As per existing program of PDB	

Map 15.24 represents proposed urban services for ward 8

Map 15.24: Development Proposal for Ward 8



Legend

- Paurashava Boundary
- Ward Boundary Poly
- Mouza Boundary
- Bus Stand
- Cinema Hall
- Clinic
- College
- Eidgah
- Electric substation
- Auditorium
- Fire station
- Fuel station
- Ferry Ghat/Launch Ghat
- Government Offices
- Graveyard
- High School
- Hospital
- Industrial Area
- Madrasa
- Market
- Monument
- Mosque
- Park
- Playground
- Police Box
- Police Station
- Post Office
- Primary School
- Resettelement Zone
- Rickshaw stand
- Shamshan ghat
- Slaughter House
- Solid waste disposal
- Stadium
- Telepone Exchange
- Temple
- Tempoo stand
- Truck stand
- Upazila Health Complex
- Vocational Training Institute
- Ward Center
- Waste Transfer Station
- Water treatment plant

0 75 150 300 450 600 Meters

Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Cooperatives

CONSULTANT
SCPL Sheltech Consultants (Pvt.) Ltd.
1/E/2, Paribagh (Mazar Road), Shahbagh, Dhaka- 1000
scpl.mail@gmail.com
In Association with

15.11 Ward Action Plan for Ward No. 09

15.11.1 Demography

Ward No. 9 is located on the southern part of the town. It has a density of the estimated population for the year 2031 will be 3535 with a density of 49 persons per acre.

Table 15.41: Population Statistics of Ward No. 09

Item	Year			
	2016	2021	2026	2031
Area (acre)	72.38	72.38	72.38	72.38
Population	3045	3200	3363	3535
Density of Population (acre)	42	44	46	49

15.11.2 Ward Action Plan Proposals

15.11.2.1 Review of Existing Land Use

Out of total about 72.38 acre of land of this ward almost 34.55 acre of land i.e. 47.73% of the total land is under residential use. Water bodies occupy 25.66% land of the ward. 3.77% land is for circulation network, 0.86% is for community services, 5.21% land is for education and research purposes, 15.90% land is for agricultural use in this ward.

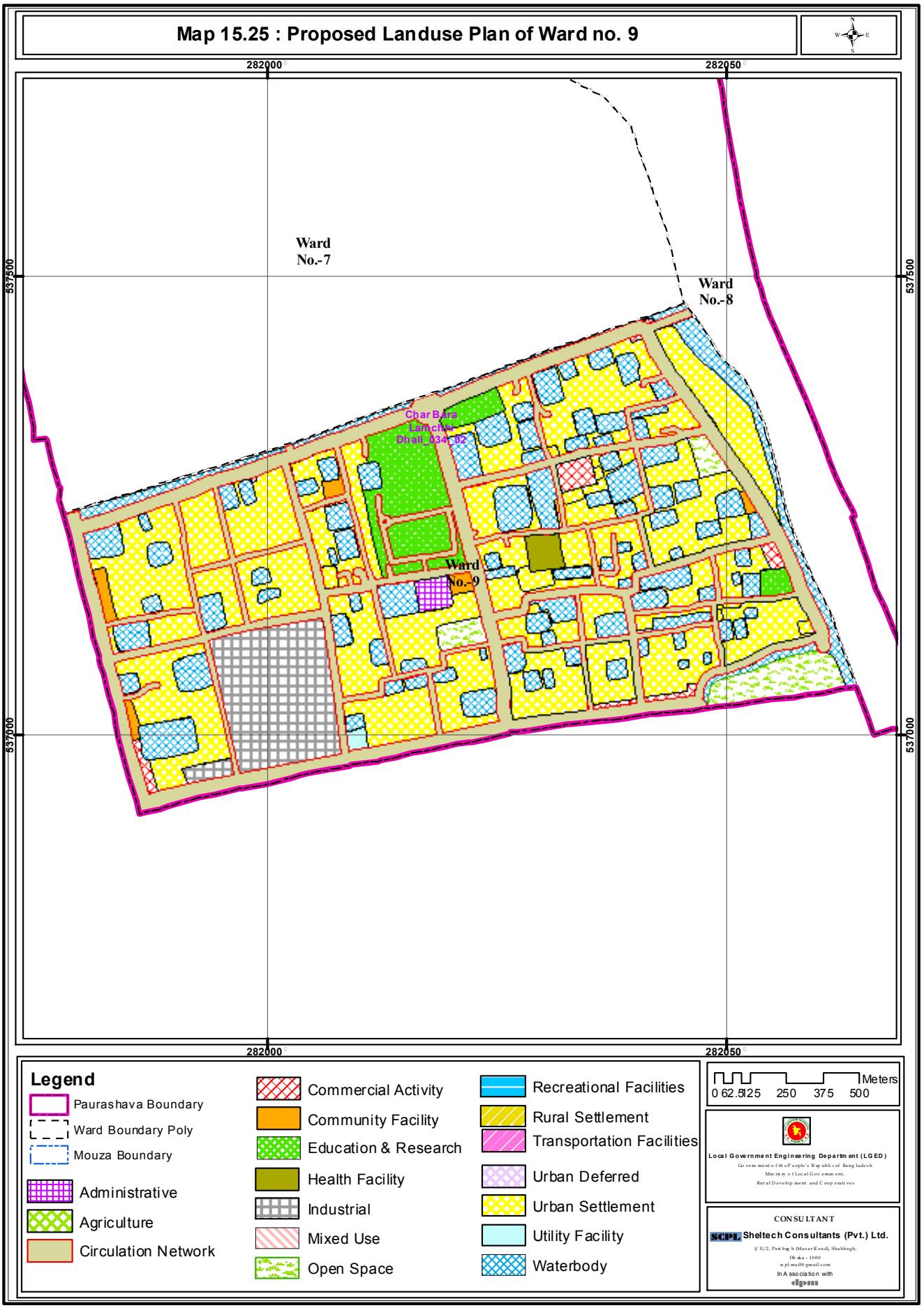
15.11.2.2 Proposed Land Use Zoning

The category wise proposals are presented here. Table 15.42 shows the amount of land existing and proposed uses in Ward no. 9. **Map 15.25** shows proposed land use of Ward 09.

Table 15.42: Comparative Scenario of Existing and Proposed Land Use of Ward no. 09

Sl. No.	Landuse Category		Existing		Proposed	
			Area (Acre)	%	Area (Acre)	%
01	Administrative	Government Service	-	-	0.32	0.44
		Non-Government Service	-	-	-	-
02	Agriculture		11.51	15.90	0.01	0.01
03	Circulation Network		2.73	3.77	17.47	24.14
04	Commercial Activity		0.44	0.61	0.74	1.02
05	Community Service		0.62	0.86	0.57	0.79
06	Deferred Area		-	-	0.1	0.14
07	Education and Research		3.77	5.21	3.48	4.81
08	Health Facility		-	-	0.35	0.48
09	Industrial		0.01	0.01	4.65	6.42
10	Mixed Use		-	-	-	
11	Open Space		0.18	0.25	2.04	2.82
12	Recreational Facilities		-	-	-	
13	Residential		34.55	47.73	28.12	38.85
14	Transportation and Communication		-	-	-	
15	Utility Service		-	-	0.12	0.17
16	Water Body		18.57	25.66	14.41	19.91
	Total		**72.38**	**100.00**	**72.38**	**100.00**

Map 15.25 : Proposed Landuse Plan of Ward no. 9



Legend

- Paurashava Boundary
- Ward Boundary Poly
- Mouza Boundary
- Administrative
- Agriculture
- Circulation Network
- Commercial Activity
- Community Facility
- Education & Research
- Health Facility
- Industrial
- Mixed Use
- Open Space
- Recreational Facilities
- Rural Settlement
- Transportation Facilities
- Urban Deferred
- Urban Settlement
- Utility Facility
- Waterbody

Meters
0 62.5 125 250 375 500

Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government,
Rural Development and Cooperatives

CONSULTANT
SCPL Sheltech Consultants (Pvt.) Ltd.
I/E/2, Paribagh (Mazar Road), Shahbagh,
Dhaka - 1000
scpl.mail@gmail.com
In Association with

a. Urban Residential Zone

In existing land uses, both the urban residential and rural homestead has been considered as residential use as a whole. In Ward Action Plan, more than 28.12 acre of land has been earmarked for urban residential use which will occupy 38.85% of the total land.

b. Circulation network

For any type of development, circulation network is an important facility. To improve the efficiency of transport network of the ward, more roads are proposed which will consume almost 17.47 acres of land and more than 24.14% of the total area.

c. Administrative Area

0.44% land has been allocated for administrative purpose. Ward councilor's office and a police box have been proposed in this ward.

d. Commercial Activity

At present, commercial activity and density of population are moderate in this ward. Only 0.74 acres of land has been proposed for this purpose which will occupy only 1.02 % of total land.

e. Education and Research

In Ward Action Plan, 4.81% of total land has been allocated for education.

f. Health Facilities

0.48% land has been allocated for health purpose. A health center has been proposed in this purpose.

g. Community Facilities

Land for community facilities will be 0.57 acre which is 0.79%. A grave yard has been proposed in this ward.

h. Open Space

Land for Open space will be 2.04 acre which includes open recreational facilities playground, Local Park and green belt.

i. Agricultural Area

The Paurashava including Ward No. 09 has a vast area of agricultural land that demands formation of a separate zone like, agriculture zone. The total area under this use has been estimated at about 0.01 acres of land covering 0.01% of the total land.

j. Water bodies

The plan suggests for preserving most of the water bodies for two purposes, first, to serve as source of water, second to serve as water retention area during monsoon. The ponds will be preserved as the water retention ponds. The proposed retention area covers 14.41 acres of land which covers almost 19.91% of the total ward area.

k. Urban Deferred

For the purpose, 0.1 acres of land is proposed for the development of the town in future. It covers almost 0.14% of the whole ward.

l. Utility Service

Proposed utility service is 0.12 acre. Waste transfer station has been proposed in this ward.

15.11.2.3 Proposed Road Infrastructure Development

Total 7.58 km road development proposal have been proposed for Ward no. 09 of Daulatkhan Paurashava. Length of the access road will be 3.40 km and width of these roads will be 20 ft. Total length of tertiary road will be 2.39 km and width of these roads will be 30 ft Total length of secondary road will be 1.44 km and width of these roads will be 60 ft for this ward. Detail scenario of road network development proposal was given in Table 15.43. **Map 15.26** represents proposed Road network for ward 9.

Table 15.43: Road Network Proposal at Ward no. 09

Type	Proposed Road ID	Length in m	Remark	Phase
Primary Road	PR-11	339.12	Widening	1st
Secondary Road	SR-53	12.35	Widening	1st
Secondary Road	SR-54	1049.22	Widening	1st
Secondary Road	SR-55	17.08	Widening	1st
Secondary Road	SR-56	7.32	Widening	1st
Secondary Road	SR-57	14.49	Widening	1st
Secondary Road	SR-58	343.38	Widening	1st
Tertiary Road	TR-87	7.98	Widening	2nd
Tertiary Road	TR-88	117.06	Widening	2nd
Tertiary Road	TR-89	49.82	Widening	2nd
Tertiary Road	TR-90	7.72	Widening	2nd
Tertiary Road	TR-91	27.24	Widening	2nd
Tertiary Road	TR-92	85.14	Widening	2nd
Tertiary Road	TR-93	7.83	Widening	2nd
Tertiary Road	TR-94	7.57	Widening	2nd
Tertiary Road	TR-95	334.99	Widening	2nd
Tertiary Road	TR-96	8.28	Widening	2nd
Tertiary Road	TR-97	20.55	Widening	2nd
Tertiary Road	TR-98	57.19	Widening	2nd
Tertiary Road	TR-99	613.41	New	2nd
Tertiary Road	TR-100	7.72	New	2nd
Tertiary Road	TR-101	45.94	New	2nd
Tertiary Road	TR-102	12.14	New	2nd
Tertiary Road	TR-103	175.20	New	2nd
Tertiary Road	TR-104	12.15	New	2nd
Tertiary Road	TR-105	236.22	New	2nd
Tertiary Road	TR-106	7.70	New	2nd
Tertiary Road	TR-107	119.71	New	2nd
Tertiary Road	TR-108	7.48	New	2nd
Tertiary Road	TR-109	251.62	New	2nd
Tertiary Road	TR-110	11.92	New	2nd
Tertiary Road	TR-111	71.90	New	2nd
Tertiary Road	TR-112	7.64	Widening	2nd
Tertiary Road	TR-113	6.80	Widening	2nd
Tertiary Road	TR-114	25.12	Widening	2nd
Tertiary Road	TR-115	12.92	New	2nd
Tertiary Road	TR-116	34.36	New	2nd

Type	Proposed Road ID	Length in m	Remark	Phase
Access Road	AR-560	49.49	Widening	2nd
Access Road	AR-561	7.63	Widening	2nd
Access Road	AR-562	151.06	Widening	2nd
Access Road	AR-563	7.64	Widening	2nd
Access Road	AR-564	4.57	Widening	2nd
Access Road	AR-565	0.92	Widening	2nd
Access Road	AR-566	7.63	Widening	2nd
Access Road	AR-567	36.83	Widening	2nd
Access Road	AR-568	4.57	Widening	2nd
Access Road	AR-569	19.19	Widening	2nd
Access Road	AR-570	4.57	Widening	2nd
Access Road	AR-571	48.06	Widening	2nd
Access Road	AR-572	4.71	Widening	2nd
Access Road	AR-573	61.73	Widening	2nd
Access Road	AR-574	38.71	Widening	2nd
Access Road	AR-575	31.38	Widening	2nd
Access Road	AR-576	9.43	Widening	2nd
Access Road	AR-577	248.53	New	3rd
Access Road	AR-578	7.77	New	3rd
Access Road	AR-579	5.14	New	3rd
Access Road	AR-580	4.37	New	3rd
Access Road	AR-581	71.12	Widening	3rd
Access Road	AR-582	7.63	Widening	3rd
Access Road	AR-583	157.26	Widening	3rd
Access Road	AR-584	14.24	Widening	3rd
Access Road	AR-585	4.57	Widening	3rd
Access Road	AR-586	9.59	Widening	3rd
Access Road	AR-587	4.56	Widening	3rd
Access Road	AR-588	42.36	Widening	3rd
Access Road	AR-589	7.64	Widening	3rd
Access Road	AR-590	1.95	Widening	3rd
Access Road	AR-591	7.62	Widening	3rd
Access Road	AR-592	24.38	Widening	3rd
Access Road	AR-593	28.94	Widening	3rd
Access Road	AR-594	101.76	Widening	3rd
Access Road	AR-595	7.63	Widening	3rd
Access Road	AR-596	5.00	Widening	3rd
Access Road	AR-597	17.36	Widening	3rd
Access Road	AR-598	7.63	Widening	3rd
Access Road	AR-599	79.01	Widening	3rd
Access Road	AR-600	7.85	Widening	3rd
Access Road	AR-601	25.02	Widening	3rd
Access Road	AR-602	7.74	Widening	3rd
Access Road	AR-603	50.70	Widening	3rd
Access Road	AR-604	7.65	Widening	3rd
Access Road	AR-605	14.11	Widening	3rd
Access Road	AR-606	7.65	Widening	3rd
Access Road	AR-607	98.99	Widening	3rd
Access Road	AR-608	4.88	Widening	3rd
Access Road	AR-609	11.89	Widening	3rd
Access Road	AR-610	260.54	Widening	3rd
Access Road	AR-611	7.62	Widening	3rd
Access Road	AR-612	5.26	Widening	3rd
Access Road	AR-613	28.99	Widening	3rd
Access Road	AR-614	7.62	Widening	3rd
Access Road	AR-615	22.98	Widening	3rd
Access Road	AR-616	4.59	Widening	3rd
Access Road	AR-617	12.20	Widening	3rd
Access Road	AR-618	64.08	Widening	3rd
Access Road	AR-619	12.33	Widening	3rd
Access Road	AR-620	40.39	Widening	3rd

Type	Proposed Road ID	Length in m	Remark	Phase
Access Road	AR-621	9.00	Widening	3rd
Access Road	AR-622	4.56	Widening	3rd
Access Road	AR-623	13.31	Widening	3rd
Access Road	AR-624	12.16	New	3rd
Access Road	AR-625	147.55	New	3rd
Access Road	AR-626	4.52	New	3rd
Access Road	AR-627	96.30	New	3rd
Access Road	AR-628	4.70	New	3rd
Access Road	AR-629	36.67	New	3rd
Access Road	AR-630	97.65	New	3rd
Access Road	AR-631	4.70	New	3rd
Access Road	AR-632	129.60	New	3rd
Access Road	AR-633	5.34	New	3rd
Access Road	AR-634	63.01	New	3rd
Access Road	AR-635	4.18	New	3rd
Access Road	AR-636	112.90	New	3rd
Access Road	AR-637	4.71	New	3rd
Access Road	AR-638	69.25	New	3rd
Access Road	AR-639	13.01	New	3rd
Access Road	AR-640	123.33	New	3rd
Access Road	AR-641	9.20	New	3rd
Access Road	AR-642	92.04	New	3rd
Access Road	AR-643	12.07	New	3rd
Access Road	AR-644	88.98	New	3rd
Access Road	AR-645	47.07	New	3rd
Access Road	AR-646	49.74	New	3rd
Access Road	AR-647	4.52	New	3rd
Access Road	AR-648	19.83	Widening	3rd
Access Road	AR-649	5.28	Widening	3rd
Access Road	AR-650	58.83	New	3rd

- “AR” for access road, “TR” for tertiary road, “SR” for secondary road, and “PR” for primary road.

15.11.2.4 Drainage Development Plan

There are both natural and manmade drainage facilities at ward no. 09 of Daulatkhan Paurashava. Existing drainage is mostly depending on natural drainage facilities; Meghna River which is passing very close to this ward. The proposed drainage facilities will be developed based on this natural channel. Table 15.44 shows the detail.

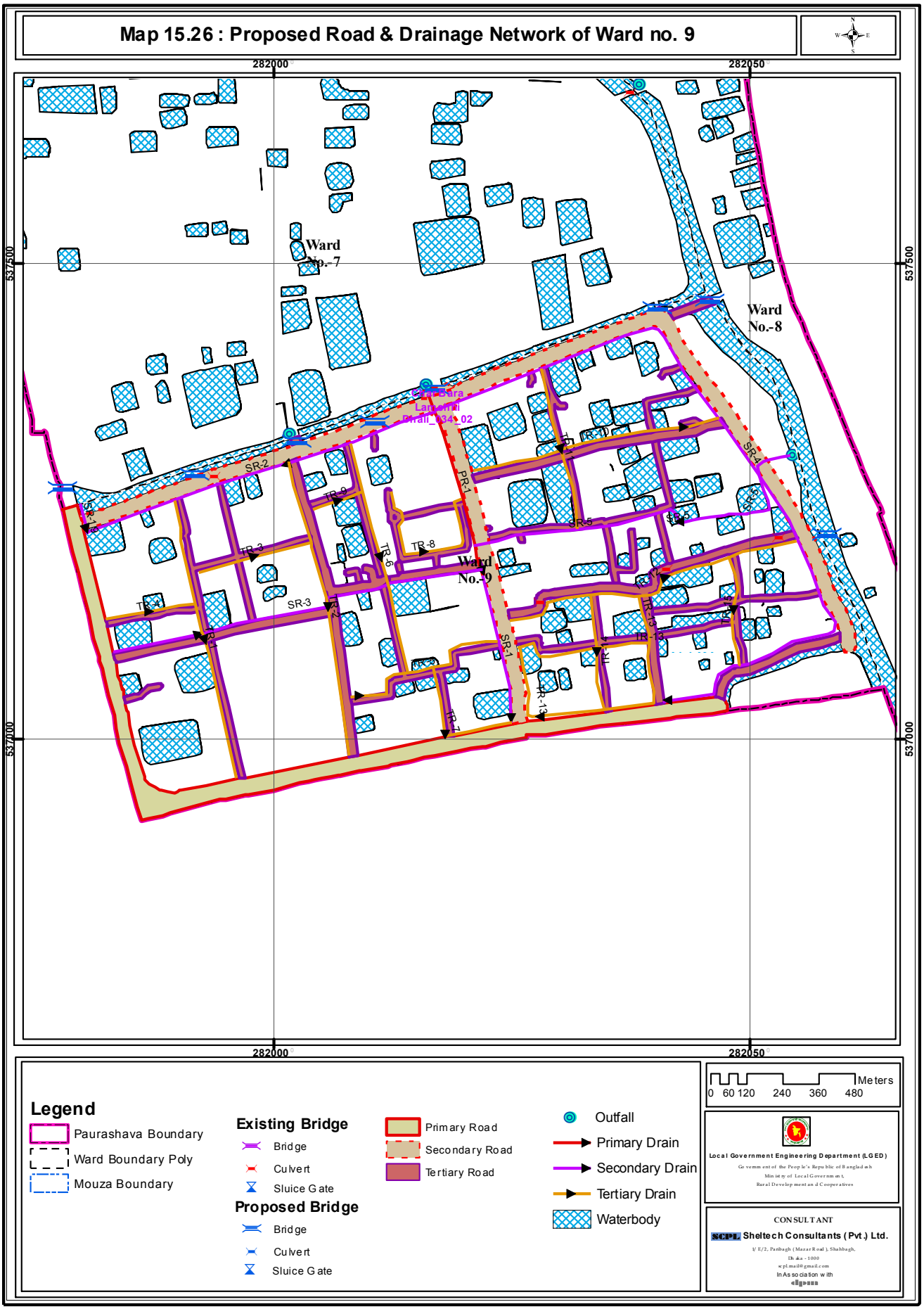
Table 15.44: Drainage Development Plan Proposals for ward 09

Item	Length (km)
Proposed Drainage (Primary)	0.20
Proposed Drainage (Secondary)	2.23
Proposed Drainage (Tertiary)	3.14

Besides, it will be necessary to re-excavate the khals that serve as primary drains. The consultants have identified existing whole of the khals need to be re-excavated to allow smooth flow of water through them.

Map 15.26 represents proposed Road and Drainage network for ward 9.

Map 15.26 : Proposed Road & Drainage Network of Ward no. 9



Legend

- Paurashava Boundary
- Ward Boundary Poly
- Mouza Boundary

Existing Bridge

- Bridge
- Culvert
- Sluice Gate

Proposed Bridge

- Bridge
- Culvert
- Sluice Gate

- Primary Road
- Secondary Road
- Tertiary Road

- Outfall
- Primary Drain
- Secondary Drain
- Tertiary Drain
- Waterbody

0 60 120 240 360 480 Meters

Local Government Engineering Department (LGED)

Government of the People's Republic of Bangladesh
Ministry of Local Government,
Rural Development and Cooperatives

CONSULTANT

SCPL Sheltech Consultants (Pvt.) Ltd.

1/E/2, Paribagh (Mazar Road), Shahbagh,
Dhaka - 1000
scpl.mail@gmail.com
In Association with

15.11.2.5 Urban Services

a. Solid Waste Management

Solid waste management is a major urban service. As density of population increases the volume of solid waste also increases proportionately. However, the income level is also a major factor influencing the volume of solid waste. Population and the volume of waste in the Paurashava are yet to be large enough to become a problem for the city. But the present management system is not satisfactory and it might to lead to problem in future. The consultant proposes solid waste transfer stations in a suitable location. It is recommended that home collection system is introduced in the ward by creation of local CBOs. This will cause organized collection of waste and prevent indiscriminate littering.

b. Water Supply

It is proposed to install a network based water supply system by exploring fresh water from the Meghna River for the entire Paurashava. And water supply lines in this ward will be established along all categories of roads as per the growth of the settlement. There is only 1 existing water supply network line. And water supply network is proposed as per the design of DPHE.

c. Sanitation

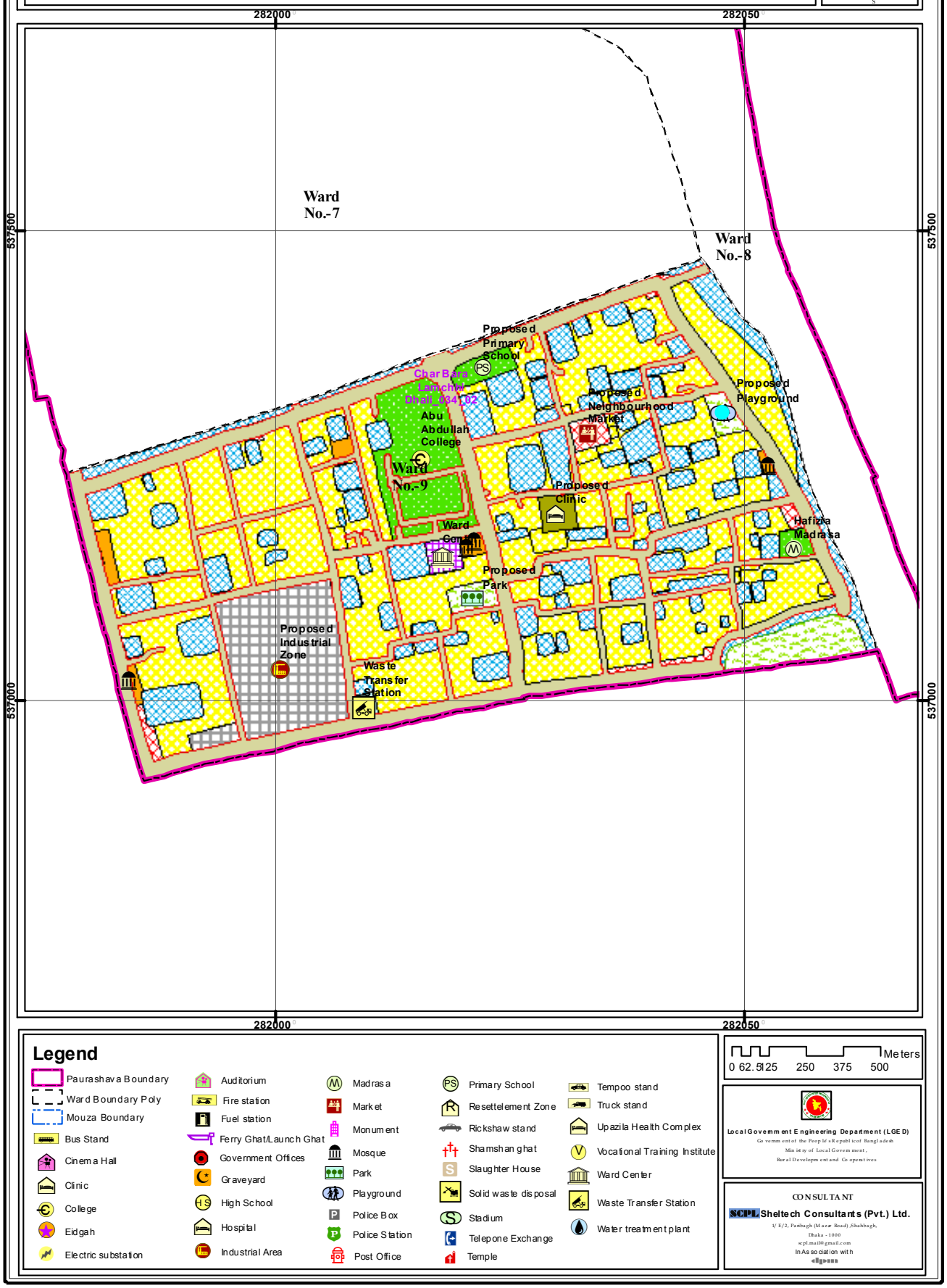
The Paurashava must try to promote hygienic sanitation for the whole Paurashava to ensure better public health.

Table 15.45: Urban Service Development Proposals for ward 09

Item	Existing		Proposed	
	No.	Area/length	No.	Area/Length
Solid Waste Transfer Station	None		1	0.12
Electricity Line			As per existing program of PDB	

Map 15.27 represents proposed urban services for ward 9.

Map 15.27: Development Proposal for Ward 9



Legend

- Paurashava Boundary
- Ward Boundary Poly
- Mouza Boundary
- Bus Stand
- Cinema Hall
- Clinic
- College
- Eidgah
- Electric substation
- Auditorium
- Fire station
- Fuel station
- Ferry Ghat/Launch Ghat
- Government Offices
- Graveyard
- High School
- Hospital
- Industrial Area
- Madrasa
- Market
- Monument
- Mosque
- Park
- Playground
- Police Box
- Police Station
- Post Office
- Primary School
- Resettelement Zone
- Rickshaw stand
- Shamshan ghat
- Slaughter House
- Solid waste disposal
- Stadium
- Telepone Exchange
- Temple
- Tempoo stand
- Truck stand
- Upazila Health Complex
- Vocational Training Institute
- Ward Center
- Waste Transfer Station
- Water treatment plant

Meters
0 62.5 125 250 375 500

Local Government Engineering Department (LGED)
Government of the People's Republic of Bangladesh
Ministry of Local Government, Rural Development and Cooperatives

CONSULTANT
SCPL Sheltech Consultants (Pvt.) Ltd.
1/E/2, Paribagh (Mazar Road), Shahbagh, Dhaka - 1000
scpl.mail@gmail.com
In Association with

15.12: Implementation Guidelines

The Master Plan of Daulatkhan Paurashava will be an effective tool for planned urban development, if it is implemented properly with legal enforcement. The different components of the Master Plan have varied implications if they are not implemented in an integrated manner. There is no separate laws related directly to the implementation of Master Plan of the Paurashavas in the country other than the Paurashava Ordinance/Act 2009 and some relevant national policies and laws as discussed in chapter 5 under the Structure Plan.

However, the legal provisions that have been made in the Paurashava Act 2009 can effectively be applied in the implementation of the Master Plan of Daulatkhan Paurashava for the time being along with other relevant national policies and laws that have also implications at Paurashava level, such as Wetland Conservation Act 2000 and BNBC 1993. Other national policies, guidelines and laws relevant to population, agriculture, environment, tourism, building materials, building construction etc. have implications for the implementation of various components including the Ward Action Plan of the Master Plan of Daulatkhan Paurashava.

Therefore, until specific laws and guidelines are made by the government for the Paurashavas in Bangladesh for the implementation of Master Plans, the existing laws, policies and guidelines should be strictly followed so that the goal and objectives of these plans are achieved. Effective application of the various existing policies and laws require prudent exercise of professional knowledge and expertise, which is lacking in the existing human resources of the Paurashavas in Bangladesh. In particular, the Paurashavas require professional urban/town planner(s) in the set up of their manpower. In this context, there is an urgent need for the creation of a planning division/section in the existing set up of the Paurashava Organogram.

15.12.1 Proposals for Mitigation of Identified Issues

The critical issues of planning and development identified in the Structure Plan have been addressed through the preparation of Urban Area Plan and Ward Action Plan. The proposals made in these plans resolve the issues addressed in the Structure Plan.

15.12.2 Comparative Advantage of Master Plan

The Paurashavas in Bangladesh do not have any practicing plans at present in regard to organized development of land use or infrastructure. This situation has been continuing over a long period of time in the past promoting spontaneous land and infrastructure development. As a result, there are examples of unplanned development creating discomfort to the people living in almost all Paurashavas in the country. The implementation of the currently prepared Master Plan of the Paurashava will remove those obstacles by applying the principles, guidelines and proposals of various components of its Master Plan. The Ward Action Plan prepared following the Urban Area Plan will solve the most pressing needs of the town in infrastructure development.

15.13 Conclusion

The Paurashavas in Bangladesh for the first time in its history are having their detailed Master Plans prepared scientifically using modern tools and techniques. These Master Plans will be effective tools for planned development of most of the urban centers in Bangladesh. The planned township development will also ensure required services for the rural areas of the country. This in turn will make a positive impact on economic growth, social progress and environmental sustainability. Daulatkhan Paurashava must avail this opportunity for its progress in the future by implementing its newly prepared Master Plan.

Annexure

Team Composition of Master Plan Preparation

A.1 Personnel of the Project Management Office (UTIDP, LGED)

Sl No.	Name	Position
1	Md. Moslah Uddin	Project Director
2	Md. Manzurul Islam	Deputy Project Director
3	Syed Shahriar Amin	Urban Planner
4	Pulin Chandra Golder	Urban Planner
5	Ziaul Huq	Urban Planner
6	Md. Saifur Rahman	Junior Urban Planner
7	Md. Rakibul Hossain	Junior Urban Planner
8	Md. Saifur Rahman	Junior Urban Planner
9	Md. Rakibul Hossain	Junior Urban Planner

A.2 Personnel of the Consultancy Firm Sheltech Consultants (Pvt.) Ltd.

A. Key Personnel:

Sl No.	Name	Position
1	Sultana Dilruba Aziz	Team Leader
2	Afsana M Kamal	Deputy Team Leader
3	Rukhsana Parveen	Urban Planner
4	Dr. Md. Altaf Hossain	Urban Planner
5	A.K.M. Mahfuzul Kabir	Demographer/Statistician
6	Dr. Santi Ranjan Hawlader	Urban Development Economist
7	Lipika Khan	Transport Planning Expert
8	Mohammed Iqbal Hossain	Municipal Engineer
9	Mohammad Ferozuddin	Architect Planner
10	Mohammad Quadiruzzaman	Environmental Analyst
11	Tripal Kumar Sen	GIS Specialist
12	Md. Hefzul Bari	Legal Expert

B. Supporting Stuff:

Sl No.	Name	Position
1	Mohammad Helal	Office Manager
2	M.A. Quayum	Computer Operator
3	Md. Jahangir Hossain	Computer Operator
4	Raihanul Islam	CAD Operator
5	Zakaria Ahmed	CAD Operator
6	ANM Shafiqul Alam	Surveyor
7	Aolad Hossain	Surveyor

রেজিস্টার্ড নং ডি এ-১

Daulatkhan

বাংলাদেশ গেজেট

অতিরিক্ত সংখ্যা

কর্তৃপক্ষ কর্তৃক প্রকাশিত

বৃহস্পতিবার, ডিসেম্বর ৪, ১৯৯৭

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

স্থানীয় সরকার পল্লী উন্নয়ন ও সমবায় মন্ত্রণালয়

স্থানীয় সরকার বিভাগ

(পৌর-৩ শাখা)

প্রজ্ঞাপন

তারিখ, ১৯শে অগ্রহায়ণ ১৪০৪/৩রা ডিসেম্বর ১৯৯৭

এস, আর, ও নং ২৭৪-আইন/৯৭—যেহেতু সরকার নিম্ন তফসিলে উল্লিখিত শহর এলাকাসমূহকে মিউনিসিপ্যালিটি ঘোষণা করার প্রস্তাব করিয়াছিল;

এবং যেহেতু সরকার Declaration and Alteration of Municipalities Rules, 1978, অতঃপর উক্ত Rules বলিয়া উল্লিখিত, এর rule 3 এর অধীন প্রস্তাবিত মিউনিসিপ্যালিটির ব্যাপারে পরামর্শ এবং আপত্তি আহবান করিয়া পাবলিক নোটিশ জারী করার জন্য সংশ্লিষ্ট ডেপুটি কমিশনারকে নির্দেশ প্রদান করিয়াছিল এবং তদনুযায়ী ডেপুটি কমিশনার উক্ত rule মোতাবেক প্রয়োজনীয় ব্যবস্থা গ্রহণ করিয়া প্রতিবেদন দাখিল করিয়াছে;

এবং যেহেতু সরকার প্রস্তাবিত মিউনিসিপ্যালিটি ঘোষণার ব্যাপারে ডেপুটি কমিশনারের প্রতিবেদন বিবেচনা করিয়া উক্ত Rules এর rule 4 (2) এর অধীন নিম্ন তফসিলভুক্ত শহর এলাকাসমূহকে মিউনিসিপ্যালিটি ঘোষণা করার জন্য চূড়ান্ত সিদ্ধান্ত গ্রহণ করিয়াছে;

মূল্য ঃ টাকা ১.০০

অতএব, যেহেতু উক্ত Rules এর rule 5 এর বিধান মোতাবেক সরকার এতদ্বারা নিম্ন তফসিলভুক্ত শহর এলাকাসমূহ সমন্বয়ে ২৪শে অগ্রহায়ণ, ১৪০৪ বাং মোতাবেক ৮ই ডিসেম্বর ১৯৯৭ ইং তারিখ হইতে দৌলতখান মিউনিসিপ্যালিটি গঠনের ঘোষণা করিল:

তফসিল

ক্রমিক নং	ইউনিয়নের নাম	মৌজার নাম	জে, এল, নম্বর	দাগ নম্বর
১	২	৩	৪	৫
(১)	সৈয়দপুর	চর বড়লামছি ধলী	৩৪	১—৪৮৭, ৫০১—৭৬৫, ৭৭৫, ১২০৫—১২০৮, ১২১০, ১২১২, ১২১৩, ১২১৭—১২১৯, ১২২৩—১২২৭, ১২২৯—১২৪৫, ১২৫০—১২৫৩।

রাষ্ট্রপতির আদেশক্রমে

আবদুস সাত্তার মিঞা
উপ-সচিব (পৌর)।

মুহাম্মদ রবিউল ইসলাম, উপ-নিয়ন্ত্রক, বাংলাদেশ সরকারী মুদ্রণালয়, ঢাকা কর্তৃক মুদ্রিত
মোঃ সিকান্দার আলী মণ্ডল, উপ-নিয়ন্ত্রক, বাংলাদেশ ফরমস্ ও প্রকাশনী অফিস,
তেজগাঁও, ঢাকা কর্তৃক প্রকাশিত।

Annexure- C: Land use Permission

a. Urban Residential Land Use

Land Use Permitted

The following uses in the tables are proposed to be applicable for this zone only.

Table C.1: Land Use Permitted

Permitted Urban Residential Uses
Artisan's Shop
Assisted Living or Elderly Home
Confectionery Shop
Barber Shop
Child Daycare \ Preschool
Cleaning \ Laundry Shop
Communication Service Facilities
Communication Tower Within Permitted Height
Condominium or Apartment
Cottage
Cyber Café
Daycare Center (Commercial or Nonprofit)
Drug Store or Pharmacy
Employee Housing (Guards \ Drivers) \ Ancillary Use
General Store
Grocery Store
High School
Household Appliance and Furniture Repair Service (No Outside Storage)
Housing For Seasonal Firm Labor
Landscape and Horticultural Services
Mosque, Place Of Worship
Newspaper Stand
Nursery School
Orphanage
Eidgah
Photocopying and Duplicating Services (No Outside Storage)
Pipelines and Utility Lines
Playing Field
Primary School
Private Garages (Ancillary Use)
Project Identification Signs
Property Management Signs
Public Transport Facility
Satellite Dish Antenna
Shelter (Passers By)
Shoe Repair or Shoeshine Shop (Small)
CBO Office
Special Dwelling
Temporary Tent
Temporary tent for Permitted Function
Newspaper Stand
Specialized School: Dance, Art, Music, Physically Challenged & Others
Transmission Lines
Urban-Nature Reserve
Utility Lines
Woodlot
Children's Park (Must Have Parking)
ATM Booth
Water Pump \ Reservoir
Monument (Neighborhood Scale)
Bill Payment Booth
Boarding and Rooming House
Dormitory
Memorial Structure (Ancillary)
Neighborhood Center* *(Where Neighborhood Center exists)*
Permitted
Community Center
Doctor \ Dentist Chamber
Cultural Exhibits and Libraries
Fast Food Establishment \ Food Kiosk
Flowers, Nursery Stock and Florist Supplies
Fitness Centre
Gaming Clubs
Departmental Stores
Retail Shops \ Facilities

Source: Compiled by the Consultants

*Permission of Neighborhood Center Facilities in absence of formal neighborhood should be subject to Landuse Permit Committee

Land Use Conditionally Permitted

The following uses may be permitted or disallowed in this zone after review and approval by the authority/committee following appropriate procedure while the application meets the criteria mentioned in the requirement.

Table C.2: Land Use Conditionally Permitted

Conditionally Permitted Urban Residential Uses
Addiction Treatment Center
Amusement and Recreation (Indoors)
Funeral Services
Art Gallery, Art Studio \ Workshop
Automobile Driving Academy
Beauty and Body Service
Billiard Parlor \ Pool Hall
Book or Stationery Store or Newsstand
Building Maintenance \ Cleaning Services, No Outside Storage
Bus Passenger Shelter
Graveyard \ Cemetery
Coffee Shop \ Tea Stall
Correctional Institution
Courier Service
Crematorium
Plantation (Except Narcotic Plant)
Furniture & Variety Stores
Emergency Shelter
Energy Installation
Garages
Garden Center or Retail Nursery
Fire Brigade Station
Police Station
Temporary Rescue Shed
Guest House
Slaughter House
Static Transformer Stations
Tourist Home or Resort
Market (Bazar)
Optical Goods Sales
Outdoor Café
Outdoor Fruit and Vegetable Markets
Community Hall
Neighborhood Co-Operative Office
Overhead Water Storage Tanks
Row House
Paints and Varnishes Store
Parking Lot
Patio Homes
Photofinishing Laboratory
Post Office
Postal Facilities
Sports and Recreation Club
Tennis Club
Flood Management Structure
Telephone Sub Station
Electrical Sub Station

Source: Compiled by the Consultants

Restricted Uses

All uses except permitted and conditionally permitted uses are restricted in this zone.

b. General Industry

Land use Permitted

General Industry land use category approve only Green and Orange-A category industry mentioned in *The Environmental Conservation Rule, 1997*.The following uses in the tables are proposed to be applicable for this zone only.

Table C.3: Land Use Permitted

Permitted General Industrial Activities
Confectionery Shop
Bank & Financial Institution
Bicycle Assembly, Parts and Accessories
Blacksmith
Bus Passenger Shelter
Communication Tower Within Permitted Height
Freight Transport Facility
Police Box \ Barrack
Fire \ Rescue Station
Grocery Store
Household Appliance and Furniture Repair Service
Machine Sheds
Meat and Poultry (Packing & Processing)
Mosque, Place Of Worship
Newspaper Stand
Photocopying and Duplicating Services
Pipelines and Utility Lines
Printing, Publishing and Distributing
Public Transport Facility
Restaurant
Retail Shops \ Facilities
Salvage Processing
Salvage Yards
Satellite Dish Antenna

Permitted General Industrial Activities
Sawmill, Chipping and Pallet Mill
Shelter (Passers By)
Television, Radio or Electronics Repair (No Outside Storage)
Transmission Lines
Truck Stop & Washing or Freight Terminal
Utility Lines
Wood Products
Woodlot
ATM Booth
Water Pump \ Reservoir
Effluent Treatment Plant
Social Forestry

Source: Compiled by the Consultants

Land Use Conditionally Permitted

The following uses may be permitted or denied in this zone after review and approval by the authority/committee following appropriate procedure.

Table C.4: Land Use Conditionally Permitted

Conditionally Permitted General Industrial Land Uses
Amusement and Recreation (Indoors)
Appliance Store
Plantation (Except Narcotic Plant)
Cyber Café
Daycare Center (Commercial or Nonprofit)
Doctor \ Dentist Chamber
Electrical and Electronic Equipment and Instruments Sales
Employee Housing
Energy Installation
Fast Food Establishment \ Food Kiosk
Garages
Grain & Feed Mills
Incineration Facility
Super Store
Lithographic or Print Shop
Motor Vehicle Fuelling Station \ Gas Station
Motorcycle Sales Outlet
Outdoor Fruit and Vegetable Markets
Outside Bulk Storage
Overhead Water Storage Tanks
Painting and Wallpaper Sales
Paints and Varnishes
Parking Lot
Conditionally Permitted General Industrial Land Uses
Parking Lot (Commercial)
Private Garages
Retail Shops Ancillary To Studio \ Workshop
Jute Mill

Source: Compiled by the Consultants

Restricted Uses

All other uses; except the permitted and conditionally permitted uses.

c. Commercial Zone

Land Use Permitted

Commercial zone is mainly intended for supporting the office and business works. There are several functions that are permitted in this zone.

Table C.5: Land Use Permitted

Permitted Commercial Activity
Accounting, Auditing or Bookkeeping Services
Billboards, Advertisements & Advertising Structure
Agri-Business
Agricultural Sales and Services
Ambulance Service
Antique Shop
Appliance Store
Auction Market
Auditorium, Coliseum, Meeting Halls, and Conference Facilities, Convention
Auto Leasing or Rental Office
Auto Paint Shop
Auto Parts and Accessory Sales (Indoors)
Auto Repair Shop (With Garage)
Automobile Wash
Automobile Sales
Confectionery Shop
Bakery or Confectionery Retail
Bank & Financial Institution
Bar (Licensed)
Barber Shop
Beauty and Body Service
Bicycle Shop
Billiard Parlor \ Pool Hall
Book or Stationery Store or Newsstand
Building Material Sales or Storage (Indoors)
Bulk Mail and Packaging

Permitted Commercial Activity
Bus Passenger Shelter
Cinema Hall
Communication Service Facilities
Communication Tower Within Permitted Height
Computer Maintenance and Repair
Computer Sales & Services
Conference Center
Construction Company
Courier Service
Cyber Café
Daycare Center (Commercial or Nonprofit)
Department Stores, Furniture & Variety Stores
Doctor \ Dentist Chamber
Drug Store or Pharmacy
Electrical and Electronic Equipment and Instruments Sales
Fast Food Establishment \ Food Kiosk
Freight Handling, Storage & Distribution
Freight Transport Facility
Freight Yard
General Store
Grocery Store
Guest House
Hotel or Motel
Inter-City Bus Terminal
Jewelry and Silverware Sales
Junk \ Salvage Yard
Super Store
Market (Bazar)
Mosque, Place Of Worship
Motorcycle Sales Outlet
Multi-Storey Car Park
Newspaper Stand
Outdoor Fruit and Vegetable Markets
Outdoor Recreation, Commercial
Parking Lot (Commercial)
Pet Store
Photocopying and Duplicating Services
Photofinishing Laboratory & Studio
Pipelines and Utility Lines
Post Office
Preserved Fruits and Vegetables Facility \ Cold Storage
Printing, Publishing and Distributing
Project Identification Signs
Property Management Signs
Public Transport Facility
Refrigerator or Large Appliance Repair
Resort
Restaurant
Retail Shops \ Facilities
Salvage Processing
Salvage Yards
Satellite Dish Antenna
Sawmill, Chipping and Pallet Mill
Shelter (Passers By)
Shopping Mall \ Plaza
Slaughter House
Software Development
Sporting Goods and Toys Sales
Taxi Stand
Telephone Exchanges
Television, Radio or Electronics Repair (No Outside Storage)
Theater (Indoor)
Transmission Lines
Utility Lines
Vehicle Sales & Service, Leasing or Rental
Veterinarian Clinics, Animal Hospitals, Kennels and Boarding Facilities
Warehousing
Wood Products
Woodlot
ATM Booth
Water Pump \ Reservoir
Agro-Based Industry (Rice Mill, Saw Mill, Cold Storage)
Social Forestry

Source: Compiled by the Consultants

Land Use Conditionally Permitted

Some functions are permitted with some condition in this zone.

Table C.6: Land Use Conditionally Permitted

Conditionally permitted commercial activities
Amusement and Recreation (Indoors)
Bicycle Assembly, Parts and Accessories
Broadcast Studio \ Recording Studio (No Audience)
Coffee Shop \ Tea Stall
Concert Hall, Stage Shows

Conditionally permitted commercial activities
Construction, Survey, Soil Testing Firms
Trade Shows
Craft Workshop
Plantation (Except Narcotic Plant)
Energy Installation
Firm Equipment Sales & Service
Agricultural Chemicals, Pesticides or Fertilizers Shop
Fitness Centre
Flowers, Nursery Stock and Florist Supplies
Forest Products Sales
Fuel and Ice Dealers
Garages
Garden Center or Retail Nursery
Police Box \ Barrack
Fire \ Rescue Station
Grain & Feed Mills
Household Appliance and Furniture Repair Service
Incineration Facility
Indoor Amusement Centers, Game Arcades
Indoor Theatre
Lithographic or Print Shop
Motor Vehicle Fuelling Station \ Gas Station
Musical Instrument Sales or Repair
Optical Goods Sales
Painting and Wallpaper Sales
Paints and Varnishes
Parking Lot
Patio Homes
Postal Facilities
Poultry
Private Garages
Professional Office
Retail Shops Ancillary To Studio \ Workshop
Stone \ Cut Stone Products Sales

Source: Compiled by the Consultants

Restricted Uses

All other uses except;, the permitted and conditionally permitted uses.

d. Rural Settlement

Land Use Permitted

The following uses in the tables are proposed to be applicable for this zone only.

Table C.7: Land Use Permitted

Permitted Rural Settlement
Agricultural Dwellings
Animal Husbandry
Animal Shelter
Graveyard \ Cemetery
Child Daycare \ Preschool
Primary School
Communication Tower Within Permitted Height
Cottage
Crematorium
Dairy Firming
General Store
Grocery Store
Handloom (Cottage Industry)
Housing For Seasonal Firm Labor
Mosque, Place Of Worship
Newspaper Stand
Nursery School
orphanage
Outdoor Religious Events (Eidgah)
Playing Field
Satellite Dish Antenna
NGO \ CBO Facilities
Special Dwelling (E.G. Dorm For Physically Challenged Etc.)
Temporary Shed \ Tent
Specialized School: Dance, Art, Music, Physically Challenged & Others
Static Electrical Sub Stations
Transmission Lines
Utility Lines
Woodlot
Plantation (Except Narcotic Plant)
Social Forestry
Memorial Structure

Source: Compiled by the Consultants

Land Use Conditionally Permitted

The following uses may be permitted or disallowed in this zone after review and approval by the authority/committee following appropriate procedure while the application meets the criteria mentioned in the requirement.

Table No. C.8: Land Use Conditionally Permitted

Conditionally permitted uses under Rural Settlement
Artisan's Shop (Potter, Blacksmith, and Goldsmith Etc.)
Research organization (Agriculture \ Fisheries)
Energy Installation
Fish Hatchery
Garden Center or Retail Nursery
Emergency Shelter
Sports and Recreation Club, Firing Range: Indoor

Source: Compiled by the Consultants

Restricted Uses

All uses except permitted and conditionally permitted uses are restricted in this zone.

e. Mixed use zone

Land Use Permitted

The following uses in the tables are proposed to be applicable for this zone only.

Table C.9: Land Use Permitted

Permitted uses in Mixed Use Zone
Accounting, Auditing or Bookkeeping Services
Addiction Treatment Center
Billboards, Advertisements & Advertising Structure
Agricultural Sales and Services
Antique Store
Appliance Store
Art Gallery, Art Studio \ Workshop
Artisan's Shop
Assisted Living or Elderly Home
Auditorium, Coliseum, Meeting Halls, and Conference Facilities, Convention
Auto Leasing or Rental Office
Automobile Wash
Automobile Driving Academy
Confectionery Shop
Bakery or Confectionery Retail
Bank & Financial Institution
Barber Shop
Bicycle Shop
Billiard Parlor \ Pool Hall
Blacksmith
Boarding and Rooming House

Permitted uses in Mixed Use Zone
Book or Stationery Store or Newsstand
Bus Passenger Shelter
Child Daycare \ Preschool
Cleaning \ Laundry Shop
Commercial Recreational Buildings
Communication Service Facilities
Communication Tower Within Permitted Height
Community Center
Condominium or Apartment
Correctional Institution
Courier Service
Cyber Café
Daycare Center (Commercial or Nonprofit)
Doctor \ Dentist Chamber
Employee Housing
Fabric Store
Fast Food Establishment \ Food Kiosk
Funeral Services
General Store
Grocery Store
Guest House
Hospital
Jewelry and Silverware Sales
Landscape and Horticultural Services
Mosque, Place Of Worship
Newspaper Stand
Nursery School
Photocopying and Duplicating Services
Pipelines and Utility Lines
Primary School
Project Identification Signs
Property Management Signs
Public Transport Facility
Resort
Satellite Dish Antenna
Shelter (Passers By)
Shoe Repair or Shoeshine Shop (Small)
Slaughter House
Social organization
Software Development
Special Dwelling
Toys and Hobby Goods Processing and Supplies
Training Centre
Transmission Lines
Utility Lines

Permitted uses in Mixed Use Zone
Vehicle Sales & Service, Leasing or Rental
Warehousing
Woodlot
Children's Park
ATM Booth
Water Pump \ Reservoir
Social Forestry
Dormitory
Rickshaw \ Auto Rickshaw Stand

Source: Compiled by the Consultants

Land Use Conditionally Permitted

The following uses may be permitted or disallowed in this zone after review and approval by the authority/committee.

Table C.10: Land Use Conditionally Permitted

Conditionally permitted uses in Mixed Use Zone
Agricultural Chemicals, Pesticides or Fertilizers Shop
Amusement and Recreation (Indoors)
Beauty and Body Service
Broadcast Studio \ Recording Studio (No Audience)
Building Maintenance \ Cleaning Services, No Outside Storage
Building Material Sales or Storage (Indoors)
Graveyard \ Cemetery
Coffee Shop \ Tea Stall
Computer Maintenance and Repair
Computer Sales & Services
Concert Hall, Stage Shows
Conference Center
Construction Company
Construction, Survey, Soil Testing Firms
Cottage
Counseling Services
Craft Workshop
Crematorium
Plantation (Except Narcotic Plant)
Cultural Exhibits and Libraries
Department Stores, Furniture & Variety Stores
Drug Store or Pharmacy
Energy Installation
Fitness Centre
Flowers, Nursery Stock and Florist Supplies
Freight Handling, Storage & Distribution
Freight Transport Facility
Gaming Clubs

Conditionally permitted uses in Mixed Use Zone
Garages
Garden Center or Retail Nursery
Commercial Office
Project Office
Government Office
Hotel or Motel
Household Appliance and Furniture Repair Service
Indoor Amusement Centers, Game Arcades
Indoor Theatre
Lithographic or Print Shop
Market (Bazar)
Health Office, Dental Laboratory, Clinic or Lab
Musical Instrument Sales or Repair
Optical Goods Sales
Outdoor Café
Outdoor Fruit and Vegetable Markets
Painting and Wallpaper Sales
Paints and Varnishes
Patio Homes
Photofinishing Laboratory & Studio
Poultry
Printing, Publishing and Distributing
Psychiatric Hospital
Retail Shops Ancillary To Studio \ Workshop
Radio \ Television or T&T Station With Transmitter Tower
Refrigerator or Large Appliance Repair
Restaurant
Retail Shops \ Facilities
Sporting Goods and Toys Sales
Sports and Recreation Club, Firing Range: Indoor
Telephone Exchanges
Television, Radio or Electronics Repair (No Outside Storage)

Source: Compiled by the Consultants

Restricted Uses

All uses except permitted and conditionally permitted uses are restricted in this zone.

f. Education and Research Area

Land Use Permitted

The following uses in the tables are proposed to be applicable for this zone only.

Table C.11: Land Use Permitted

Permitted uses under Education & Research Zone
Addiction Treatment Center

Permitted uses under Education & Research Zone
Billboards, Advertisements & Advertising Structure
Art Gallery, Art Studio \ Workshop
Automobile Driving Academy
Confectionery Shop
Bus Passenger Shelter
Child Daycare \ Preschool
College, University, Technical Institute
Communication Service Facilities
Communication Tower Within Permitted Height
Conference Center
Correctional Institution
Cultural Exhibits and Libraries
Cyber Café
Freight Transport Facility
General Store
Grocery Store
High School
Hospital
Lithographic or Print Shop
Mosque, Place Of Worship
Multi-Storey Car Park
Newspaper Stand
Nursery School
Outdoor Religious Events
Photocopying and Duplicating Services
Post Office
Primary School
Professional Office
Project Identification Signs
Property Management Signs
Public Transport Facility
Satellite Dish Antenna
School (Retarded)
Scientific Research Establishment
Shelter (Passers By)
Specialized School: Dance, Art, Music & Others
Training Centre
Transmission Lines
Utility Lines
Vocational, Business, Secretarial School
Woodlot
ATM Booth
Water Pump \ Reservoir
Social Forestry
Dormitory
Veterinary School \ College and Hospital

Source: Compiled by the Consultants

Land Use Conditionally Permitted

The following uses may be permitted or denied in this zone after review and approval by the authority/committee.

Table C.12: Land Use Conditionally Permitted

Conditionally permitted uses under Education and Research Zone
Auditorium, Coliseum, Meeting Halls, and Conference Facilities, Convention
Bank & Financial Institution
Barber Shop
Boarding and Rooming House
Book or Stationery Store or Newsstand
Coffee Shop \ Tea Stall
Counseling Services
Courier Service
Plantation (Except Narcotic Plant)
Daycare Center (Commercial or Nonprofit)
Doctor \ Dentist Chamber
Drug Store or Pharmacy
Fast Food Establishment \ Food Kiosk
Flowers, Nursery Stock and Florist Supplies
Gallery \ Museum
Garages
Indoor Theatre
orphanage
Outdoor Café
Parking Lot
Pipelines and Utility Lines
Postal Facilities
Psychiatric Hospital

Source: Compiled by the Consultants

Restricted Uses

All uses except permitted and conditionally permitted uses are restricted in this zone.

g. Government Office

Land Use Permitted

The following uses in the tables are proposed to be applicable for this zone only.

Table C.13: Land Use Permitted

Permitted uses under Government Office Zone
Accounting, Auditing or Bookkeeping Services
Billboards, Advertisements & Advertising Structure

Permitted uses under Government Office Zone
Confectionery Shop
Bus Passenger Shelter
Civic Administration
Communication Service Facilities
Communication Tower Within Permitted Height
Construction, Survey, Soil Testing Firms
Cultural Exhibits and Libraries
Cyber Café
Emergency Shelter
Freight Transport Facility
General Store
Project Office
Government Office
Grocery Store
Guest House
Multi-Storey Car Park
Newspaper Stand
Outdoor Religious Events
Photocopying and Duplicating Services
Post Office
Professional Office
Public Transport Facility
Satellite Dish Antenna
Scientific Research Establishment
Shelter (Passers By)
Training Centre
Transmission Lines
Utility Lines
Woodlot
ATM Booth
Water Pump \ Reservoir
Social Forestry

Source: Compiled by the Consultants

Land Use Conditionally Permitted

The following uses may be permitted or denied in this zone after review and approval by the authority/committee.

Table C.14: Land Use Conditionally Permitted

Conditionally permitted uses under Government office
Amusement and Recreation (Indoors)
Auditorium, Coliseum, Meeting Halls, and Conference Facilities, Convention
Bank & Financial Institution
Boarding and Rooming House
Book or Stationery Store or Newsstand
Coffee Shop \ Tea Stall
Conference Center
Courier Service
Plantation (Except Narcotic Plant)
Daycare Center (Commercial or Nonprofit)
Detention Facilities
Doctor \ Dentist Chamber
Energy Installation
Fast Food Establishment \ Food Kiosk
Flowers, Nursery Stock and Florist Supplies
Freight Handling, Storage & Distribution
Freight Yard
Gallery \ Museum
Garages
Police Box \ Barrack
Fire \ Rescue Station
Lithographic or Print Shop
Mosque, Place Of Worship
Outdoor Café
Parking Lot
Parking Lot (Commercial)
Pipelines and Utility Lines
Postal Facilities

Source: Compiled by the Consultants

Restricted Uses

All uses except permitted and conditionally permitted uses are restricted in this zone.

h. Agricultural Zone

Land Use Permitted

The following uses in the tables are proposed to be applicable for this zone only.

Table C.15: Land Use Permitted

Permitted uses under Agricultural Zone
Food Grain Cultivation
Vegetable Cultivation
Cash Crop Cultivation
Horticulture
Arboriculture
Dairy Firming
Deep Tube Well
Shallow Tube Well
Irrigation Facilities (Irrigation Canal, Culvert,

Permitted uses under Agricultural Zone
Flood Wall etc)
Temporary Structure (Agricultural)
Animal Shelter
Duckery
Aquatic Recreation Facility (Without Structure)
Tree Plantation (Except Narcotic Plant)
Aquaculture
Static Transformer Stations
Transmission Lines
Utility Lines
Woodlot
Social Forestry

Source: Compiled by the Consultants

Land Use Conditionally Permitted

Table C.16: Land Use Conditionally Permitted

Conditionally permitted uses under Agricultural Zone
Graveyard \ Cemetery
Communication Tower Within Permitted Height
Crematorium
Fish Hatchery
Garden Center or Retail Nursery
Poultry

Source: Compiled by the Consultants

Restricted Uses

All uses except permitted and conditionally permitted uses are restricted in this zone.

j. Open Space

Land Use Permitted

The following uses in the tables are proposed to be applicable for this zone only.

Table C.17: Land Use Permitted

Permitted uses under Open Space
Botanical Garden & Arboretum
Bus Passenger Shelter
Caravan Park \ Camping Ground
Carnivals and Fairs
Circus
Plantation (Except Narcotic Plant)
Landscape and Horticultural Services
Open Theater
Park and Recreation Facilities (General)
Pipelines and Utility Lines
Playing Field
Special Function Tent
Tennis Club
Transmission Lines
Urban-Nature Reserve
Utility Lines
Woodlot
Zoo
Roadside Parking
Social Forestry
Memorial Structure

Source: Compiled by the Consultants

Landuse Conditionally Permitted

Table C.18: Land Use Conditionally Permitted

Conditionally permitted uses under open space
Communication Tower Within Permitted Height
Trade Shows
Fitness Centre
Flowers, Nursery Stock and Florist Supplies
Golf Course
Motorized Recreation
Outdoor Recreation Facilities
Outdoor Recreation, Commercial
Outdoor Sports and Recreation
Park Maintenance Facility
Retreat Center
Sports and Recreation Club, Firing Range: Indoor

Source: Compiled by the Consultants

Restricted Uses

All uses except permitted and conditionally permitted uses are restricted.

k. Water Body

Retaining water is the main purpose of this type of Landuse.

Land Use Permitted

The following uses in the tables are proposed to be applicable for this zone only.

Table C.19: Land Use Permitted

Permitted uses under Water Body
Aquatic Recreation Facility (Without Structure)
Fishing Club
Utility Lines
Water Parks
Memorial Structure

Source: Compiled by the Consultants

Land Use Conditionally Permitted

The following uses may be permitted or denied in this zone after review and approval by the authority/committee.

Table C.20: Land Use Conditionally Permitted

Conditionally permitted uses under water body
Plantation (Except Narcotic Plant)
Marina \ Boating Facility
Motorized Recreation

Source: Compiled by the Consultants

Restricted Uses

All uses except permitted and conditionally permitted uses are restricted.

দৌলতখান পৌরসভার খসড়া মহাপরিকল্পণার উপর মতবিনিময় সভার কার্যবিবরণী

তারিখ: ০১/১০/২০১৩
স্থান: দৌলতখান পৌরসভা
সময়: সকাল ১১:০০ ঘটিকায়

স্থানীয় সরকার প্রকৌশল অধিদপ্তর, দৌলতখান পৌরসভা ও পরামর্শক প্রতিষ্ঠানের যৌথ উদ্যোগে দৌলতখান পৌরসভার খসড়া মহাপরিকল্পণার উপর এক মতবিনিময় সভা অনুষ্ঠিত হয়।পৌরসভার মাননীয় প্যানেল মেয়র জনাব মোঃ আলমগীর হোসেন এর সভাপতিত্বে মতবিনিময় সভা অনুষ্ঠিত হয়। উক্ত মতবিনিময় সভায় পৌরসভার কাউন্সিলরবৃন্দ সহ স্থানীয় গণ্যমাণ্য ব্যক্তি বর্গ, বিভিন্ন সরকারি-বেসরকারি অধিদপ্তরের কর্মকর্তাবৃন্দ,স্থানীয় সরকার প্রকৌশল অধিদপ্তরের প্রতিনিধি, এবং মহাপরিকল্পণা প্রণয়ণ প্রকল্পে নিযুক্ত পরামর্শকবৃন্দ উপস্থিত হয়ে আলোচনায় অংশগ্রহন করেন।

সভার শুরুতে মাননীয় প্যানেল মেয়র মহোদয় জনাব মোঃ আলমগীর হোসেন উপস্থিত সকলকে শুভেচ্ছা জানিয়ে আনুষ্ঠানিকভাবে সভার কার্যক্রম শুরু করেন। সভাপতি পৌরসভার মহাপরিকল্পণা প্রণয়ণ সংক্রান্ত কাজের উপর স্বাগত বক্তব্যে উল্লেখ করেন যে নাগরিক কর্মকান্ড, জলবায়ু পরিবর্তন, ভৌগোলিক অবস্থান প্রভৃতি কারনে দৌলতখান পৌরসভা তথা ভোলা জেলার অবকাঠামোগত অবস্থা অত্যন্ত নাজুক। পরিকল্পিতভাবে শহর গড়ে উঠলে একদিকে যেমন বাসযোগ্য উন্নত শহর গড়ে তোলা যাবে অন্যদিকে দেশের অর্থনীতি সমৃদ্ধ করা সম্ভব হবে। তিনি আরও উল্লেখ করেন যে আগামী (২০) বিশ বছরের জন্য এই মহাপরিকল্পণা। উক্ত পরিকল্পণায় উপস্থিত সকলকে সুচিন্তিত মতামত প্রদানের জন্য আহ্বান করেন যাতে করে পরিকল্পণাটি আরও গঠণমূলক ও বাস্তব সম্মত হয়।

উপজেলা শহর অবকাঠামো উন্নয়ন প্রকল্পের পরিকল্পণাবিদ মোঃ জিয়াউল হক মহাপরিকল্পণার স্বয়ংসম্পূর্ণ ও যথাযথ বাস্তবায়নের জন্য সকলের সহযোগীতা কামনা করেন এবং তিনি বলেন যে সকলের মূল্যবান মতামত পরিকল্পণাকে আরো গঠণমূলক ও সময়োপযোগী করে তুলবে। তিনি মহাপরিকল্পণার বিভিন্ন পর্যায়ের কাজগুলি ও মহাপরিকল্পণার বিভিন্ন স্তর নিয়ে বিষদ আলোচনা করেন। তিনি উল্লেখ করেন যে, যে মহাপরিকল্পণা প্রনয়ণ করা হয়েছে ভবিষ্যতে তা যথাযথভাবে কার্যকর হলে দৌলতখান পৌরসভা একটি পরিকল্পিত বাসযোগ্য শহর হিসেবে আত্মপ্রকাশ করবে।

পরামর্শক প্রতিষ্ঠানের পক্ষ থেকে ডঃ নুরুল ইসলাম নাজেম, উপস্থিত সকলকে স্বাগত জানিয়ে খসড়া মহাপরিকল্পণার উপর Power Point Presentation এর মাধ্যমে তার বক্তব্য তুলে ধরেন। তিনি কার্যক্রমসমূহ, উন্নয়নের সম্ভাবনাসমূহ ধাপে ধাপে বর্ণনা করেন। প্রথমে মাঠ পর্যায়ে বিভিন্ন প্রকার জরিপ কার্যক্রম ও জরিপ থেকে সংগৃহীত তথ্য সম্পর্কে আলোকপাত করেন। এরপর মহাপরিকল্পণার কোথায় কিভাবে প্রস্তাবনা সমূহ ওয়ার্ড ভিত্তিক দেওয়া হয়েছে সেসব বিষদ আলোচনা করেন। তিনি আরও উল্লেখ করেন যে, সকলের মতামতের ভিত্তিতে যে প্রস্তাবসমূহ দেওয়া হয়েছিল তা নিম্নরূপ:

Proposed Facility	Ward	Mouza Name	Plot No.	Area (acre)
Low Income Housing	8	Char Bara Lamchhi Dhali	573,582-586,588	3.81
Resettlement Zone	2	Char Bara Lamchhi Dhali	105,108,109,112,113,116,117,121,124,127 ,132,133,138,141,142,147	6.63
Cinema Hall	4,5,7	Char Bara Lamchhi Dhali	360,362,502,569-70,1209-10	0.83

Proposed Facility	Ward	Mouza Name	Plot No.	Area (acre)
Woman College	4	Char Bara Lamchhi Dhali	244,271-79	1.51
Super Market	3	Char Bara Lamchhi Dhali	229,231,232,233,234,235,292,293,294,295	0.88
	4		235	
Wholesale Market	3	Char Bara Lamchhi Dhali	174,175,182,183,184,189,190,198	1.49
Neighborhood Market	4	Char Bara Lamchhi Dhali	244,245,246	2.19
	7	Char Bara Lamchhi Dhali	628,629,630	
	9	Char Bara Lamchhi Dhali	675,677	
Cottage industry/ Agro-based/Fish processing	1	Char Bara Lamchhi Dhali	4,6,7,8,28,31,32,33,34,38,39,46,47,50,52,55,56	6.15
	9	Char Bara Lamchhi Dhali	716,717,718,719,720,721,722,724,725,727,730,732,734,735,736,737,738	
Small industry	1	Char Bara Lamchhi Dhali	108,109,112,113,116,121,124,	2.63
	2	Char Bara Lamchhi Dhali	164,167	
	3	Char Bara Lamchhi Dhali	377	
	4	Char Bara Lamchhi Dhali	235	
	5	Char Bara Lamchhi Dhali	564,565,566,570	
	6	Char Bara Lamchhi Dhali	382,383	
	7	Char Bara Lamchhi Dhali	567,569,570	
	8	Char Bara Lamchhi Dhali	579,580,99999	
Ward center	1	Char Bara Lamchhi Dhali	101,104,105,108	3.47
	2		101,104	
	3		175,182,183,184	
	4		256,265,266	
	5		328,329,330,331,332,333,424,425	
	6		382	
	7		528,529,530,531	
	8		586,589	
	9		714,715,742	
Paurashava Complex	7	Char Bara Lamchhi Dhali	540,543,544,591	0.94
Paurashava Office	7	Char Bara Lamchhi Dhali	544,545	0.98
Post Office	4	Char Bara Lamchhi Dhali	559,560,562,565,566,1231	0.24
Police Station	3	Char Bara Lamchhi Dhali	198,206,207,214,411,416,417,418	2.49
Police box	3	Char Bara Lamchhi Dhali	174,175,182	0.75
	7		632,633	
Stadium	7		538,539,540,542,543,544,591	3.70
Neighborhood Park	8	Char Bara Lamchhi Dhali	571,572,573,574,575,576	2.07
	9	Char Bara Lamchhi Dhali	739,740,742	
Playground	1	Char Bara Lamchhi Dhali	12,26,27	4.36
	4		243,244	
	7		570,632,633,634,635,637,1226	
	9		667,668,671	
Park	2	Char Bara Lamchhi Dhali	116,117,121	3.78
	3		204,216,217	
	7		545,549,550,551,552,555	
	9		760,763,764,767,768	
Clinic	1	Char Bara Lamchhi Dhali	6,7,8,26,27	0.95
	3	Char Bara Lamchhi Dhali	222	
	5	Char Bara Lamchhi Dhali	348,349,476,477	
	9	Char Bara Lamchhi Dhali	679,680,682,683,685,686	
Hospital	2	Char Bara Lamchhi Dhali	63,70,72	1.96
	4	Char Bara Lamchhi Dhali	249,250,251,252,253	
Maternity/Health Center	7	Char Bara Lamchhi Dhali	628,629,630	0.66

Proposed Facility	Ward	Mouza Name	Plot No.	Area (acre)
Upazila Health Complex	3	Char Bara Lamchhi Dhali	189,190,198,204,216,217,412	3.19
	7	Char Bara Lamchhi Dhali	549,555,558,566,567,568,1232	
Kindergarden School	4	Char Bara Lamchhi Dhali	235,238,239	0.59
College cum Cyclone Shelter	2	Char Bara Lamchhi Dhali	59,60,62,63,72,73,74,75,76,77,78,79	5.09
	9	Char Bara Lamchhi Dhali	642,693,694,695,696,697,713,714,715	
High School cum Cyclone Shelter cum Cyclone Shelter	2	Char Bara Lamchhi Dhali	59,60,63	5.58
	7	Char Bara Lamchhi Dhali	555,556,557,621,623,624,625,641,1237,1238,1239	
	8	Char Bara Lamchhi Dhali	579,581	
Primary School cum Cyclone Shelter	1	Char Bara Lamchhi Dhali	8,12,27	4.64
	2	Char Bara Lamchhi Dhali	63,64,65,105,108	
	3	Char Bara Lamchhi Dhali	174,175,182,227,228,409	
	4	Char Bara Lamchhi Dhali	228	
	5	Char Bara Lamchhi Dhali	564,565,566	
	6	Char Bara Lamchhi Dhali	391,392	
	7	Char Bara Lamchhi Dhali	504,556,557,570,594,595,604,605,608,609,1223,1236	
	8	Char Bara Lamchhi Dhali	546,588,589	
	9	Char Bara Lamchhi Dhali	684,685,692	
Vocational Training Center cum Cyclone Shelter	2	Char Bara Lamchhi Dhali	76,79,93,94,97,101	2.66
Woman College	4	Char Bara Lamchhi Dhali	244,271,272,273,274,275,276,277,278,279	1.51
Homeopathic College	2	Char Bara Lamchhi Dhali	124,127,132,138,141,142,145	1.15
Madrasha	4	Char Bara Lamchhi Dhali	235,559,560	1.64
	7	Char Bara Lamchhi Dhali	504,540,541,542,555,556,596,602,603,1236,1237	
	9	Char Bara Lamchhi Dhali	750,751,752	
Bus Terminal	3	Char Bara Lamchhi Dhali	203,204,216,217,218,220,221,222	1.15
Rickshaw stand	1	Char Bara Lamchhi Dhali	108,109	0.30
	7	Char Bara Lamchhi Dhali	591	
Passenger Shed	1	Char Bara Lamchhi Dhali	108,109	0.35
	3	Char Bara Lamchhi Dhali	218,222	
Fuel station	4	Char Bara Lamchhi Dhali	235	0.39
Launch terminal	1	Char Bara Lamchhi Dhali	97,101,104,105,108	1.07
Tempo Stand	1	Char Bara Lamchhi Dhali	108,109	0.40
	4	Char Bara Lamchhi Dhali	235	
Truck Stand	2	Char Bara Lamchhi Dhali	2,3,4,9	0.39
Fire Station	4	Char Bara Lamchhi Dhali	235,240,241,243	0.85
Waste Disposal Site	1	Char Bara Lamchhi Dhali	12,13,22,23,24,25,26,29,30,31,38,40	4.52
Waste transfer station	1	Char Bara Lamchhi Dhali	60,62	1.01
	2	Char Bara Lamchhi Dhali	108,109	
	3	Char Bara Lamchhi Dhali	168,174	
	4	Char Bara Lamchhi Dhali	235	
	5	Char Bara Lamchhi Dhali	348,357,359,474	
	6	Char Bara Lamchhi Dhali	369,373	
	7	Char Bara Lamchhi Dhali	632,633	
	8	Char Bara Lamchhi Dhali	647,648,657,99999	
	9	Char Bara Lamchhi Dhali	722	

Proposed Facility	Ward	Mouza Name	Plot No.	Area (acre)
Water Treatment Plant	7	Char Bara Lamchhi Dhali	604,1213	0.98
Community Center	3	Char Bara Lamchhi Dhali	219-23	0.74
Park	2,3,7, 9	Char Bara Lamchhi Dhali	116-17,121,204,216-17,545,549	3.78
Graveyard	2,8,9	Char Bara Lamchhi Dhali	62-64,77,149-152,580,582,99999,704-706,709-11	0.58
Eidgah	7	Char Bara Lamchhi Dhali	626,628	0.79

সভা শেষে প্যানেল মেয়র মহোদয় পরামর্শক প্রতিষ্ঠানের পরিকল্পণাবিদগণকে এবং স্থানীয় সরকার প্রকৌশল অধিদপ্তরকে পৌরসভার মহাপরিকল্পণা প্রনয়নের জন্য পুনরায় ধন্যবাদ জ্ঞাপন করেন এবং সম্ভাব্য সকল দিকনির্দেশনাগুলি সন্নিবেশিত করে যথাশীঘ্রসম্ভব চুড়ান্ত মহাপরিকল্পণা প্রণয়ন করার জন্য অনুরোধ করেন এবং সকলকে ধন্যবাদ জানিয়ে পৌরসভার স্বপ্ন বাস্তবায়নের আশা ব্যক্ত করে সভার কার্যক্রম সমাপ্তি ঘোষণা করেন।

.....

(জনাব মোঃ আলমগীর হোসেন)

মেয়র (প্যানেল),

দৌলতখান পৌরসভা

স্থানীয় সরকার প্রকৌশল অধিদপ্তর, ঢাকা-১২০৭
উপজেলা শহর অবকাঠামো উন্নয়ন প্রকল্প, প্যাকেজ-১১

দৌলতখান পৌরসভার মহাপরিকল্পনার উপর চূড়ান্ত মতবিনিময় সভা
দৌলতখান পৌরসভা।
স্থান: দৌলতখান পৌরসভা। তারিখ: ১ অক্টোবর, ২০১৩ খ্রিঃ; সকাল ১১:০০ ঘটিকা

অংশগ্রহনকারীর তালিকা

ক্রমিক নং	নাম	প্রতিষ্ঠান ও পদবী	ফোন নম্বর	সাক্ষর
১	- মো: আবদুল্লাহ	(কেয়ার	০১৭১১৭০৫৫৫৫	
২	মো: জোহা আহমেদ খোকন	উপজেলা স্বাস্থ্য ও পরিবার পরিকল্পনা	০১৭১৬৫৮৬৬৬৪	
৩	মো: মোস্তাফিজুর রহমান	ইউনিয়ন পরিষদ চেয়ারম্যান	০১৮১৬৮৪৩১৯	
৪	মো: সাফিকুল ইসলাম	উপ/সি: জে: ম: ম: ম: ম:	০১৭৪২১১৯১৪৩	
৫	আবুল কাশেম	কাউন্সিলর পৌরসভা	০১৮১৪৩৯২৫২৬	
৬	আবেদা সুলতানা	কাউন্সিলর পৌঃ ৭,৮,৯ নং ওয়ার্ড	০১৭১৯৩৯৪৭০৭	
৭	মো: রফিক	কাউন্সিলর ০৯ নং ওয়ার্ড	০১৩৫৫৩৪৪২৫ -	
৮	এম.এম. খুরশিদ আলম	কাউন্সিলর ০৪ নং ওয়ার্ড	০১৭১১-৯৫৭৫২৬	
৯	(মো: মাকসুদুর রহমান (বাহার)	কাউন্সিলর ০৬ নং ওয়ার্ড	০১৯১৬-১১৯৬৫০	
১০	নির্মল কুমার দেবনাথ	উপ/সি: জে: ম: ম: ম: ম:	০১৭১৩-০৫৩৯৯৪	
১১	মো: জামাল হোসেন	হাজিরা আদায়কারী	০১৭১৮৫৮৮২৬৪	

ক্রমিক নং	নাম	প্রতিষ্ঠান ও পদবী	ফোন নম্বর	সাক্ষর
১২	মোঃ শাহরুখ মিয়া	দৌলতখান পৌরসভা সার্ভিস সহকারী	01760225881	
১৩	মোহাম্মদ ইসহাক	উপ-সহকারী প্রকৌশলী দৌলতখান পৌরসভা	01720129406	
১৪	সিদ্দিকুর রহমান	সার্ভেয়ার দৌলতখান পৌরসভা	01715709826	
১৫	মোঃ মিরাজউদ্দিন	কন্সালটেন্সি ১নং ওয়ার্ড দৌলতখান পৌরসভা	01912-912636	মোঃ মিরাজ
১৬	মোঃ মিরাজউদ্দিন	কন্সালটেন্সি ৩নং ওয়ার্ড দৌলতখান পৌরসভা	01716000092	
১৭	জনাব মোঃ ফজলুল হক (ভোলা)	কাউন্সিলর ০৪নং দৌলতখান পৌরসভা	01716111390	
১৮	জনাব মোঃ কাদির	কাউন্সিলর ০৬নং দৌলতখান পৌরসভা	01724115806	
১৯	মোঃ নাছরুল হোসেন	কর নির্ধারক দৌলতখান পৌরসভা	01712522474	
২০	মোঃ মোঃ হান্নান	টিকাদার কর্মী দৌলতখান পৌরসভা	01765631227	
২১	নাসরিন বেগম	সহকারী কর আদায়কারী দৌঃ পৌঃ	01718352527	নাসরিন
২২	বিবি মরিয়ম	টিকাদার কর্মী দৌলতখান পৌরসভা	01734677484	বিবি মরিয়ম
২৩	সাদমিন আক্তার	টিকাদার কর্মী দৌলতখান পৌরসভা	01962316379	সাদমিন
২৪	মোঃ শহিদুল ইসলাম	ইঞ্জিনিয়ার	01720462249	
২৫	নতুন নাম	মাতিলা কন্সালটেন্সি ৪,৫,৬নং ওয়ার্ড	01819764369	নতুন নাম

ক্রমিক নং	নাম	প্রতিষ্ঠান ও পদবী	ফোন নম্বর	সাক্ষর
২৬	মো: নবীন	৪নং ওয়ার্ড	01312479373	
২৭	মো: কায়কোবাদ	৮ নং ওয়ার্ড	01X21663XX	কায়কোবাদ
২৮	মো: মাসুম	৮ নং ওয়ার্ড	01935750075	
২৯	মোঃ জাহাঙ্গীর	০৯ নং ওয়ার্ড,	01558-266009	
৩০	মোঃ আবুল কাশেম	০৫ নং ওয়ার্ড	01715229947	
৩১	মা: মোস্তাফেজ	০৭ নং ওয়ার্ড	01849914646	মা: মোস্তাফেজ
৩২	এম. ওয়াসিদ	৮ নং ওয়ার্ড	01721049535	সাহিদুজ্জামান
৩৩	মোঃ সাখাওয়াত	৮ নং ওয়ার্ড,	01944178385	
৩৪	মো: ইউসুফ সরকার	৭নং ওয়ার্ড তফসীয়া দৌলতিয়া সৌদাগর	01730755362, মো:ইউসুফ	
৩৫	মোহাম্মদ ওসমান গণি	উপজেলা পরিষদ চেয়ারম্যান	01712026139	
৩৬	মো: আবেদ হোসেন	৭ নং ওয়ার্ড বাসিন্দা	01731386207	আবেদ
৩৭	মোঃ ইউনুছ,	উপজেলা সদস্য) দৌঃ সৌদাগর,	0176-918091	ইউনুছ
৩৮	ফুলমিয়া বেপারী,	০৭নং ওয়ার্ড তফসীয়া,	01823-365060	
৩৯	মোঃ জাহাঙ্গীর	৩ নং ওয়ার্ড	01719758887	

ক্রমিক নং	নাম	প্রতিষ্ঠান ও পদবী	ফোন নম্বর	সাক্ষর
৪০	[illegible]	[illegible]	017[illegible]	[illegible]
৪১	[illegible]	[illegible]	01711-288973	[illegible]
৪২	N.I. Islam Afsana Kamal	JTL SEPL	01819262012	[illegible]
৪৩	~~Dr. Nurul Islam Nazem~~	~~TL SEPL~~	~~01819234025~~	
৪৪	Dr. Nazem	Dhaka University	01819234025	[illegible]
৪৫				
৪৬				
৪৭				
৪৮				
৪৯				
৫০				
৫১				
৫২				

Phase wise Road Network Development Proposal for Daulatkhan Paurashava

Road ID	Road Type	Width (in ft)	Length (in m)	Development Phase
PR-1	Primary Road	80.00	326.17	1st
PR-2	Primary Road	80.00	0.02	1st
PR-3	Primary Road	80.00	777.02	1st
PR-4	Primary Road	80.00	0.02	1st
PR-5	Primary Road	80.00	195.28	1st
PR-6	Primary Road	80.00	3.67	1st
PR-7	Primary Road	80.00	0.44	1st
PR-8	Primary Road	80.00	711.04	1st
PR-9	Primary Road	80.00	0.44	1st
PR-10	Primary Road	80.00	776.47	1st
PR-11	Primary Road	80.00	339.12	1st
SR-1	Secondary Road	40.00	1075.82	1st
SR-2	Secondary Road	40.00	12.91	1st
SR-3	Secondary Road	40.00	15.34	1st
SR-4	Secondary Road	40.00	10.45	1st
SR-5	Secondary Road	40.00	9.60	1st
SR-6	Secondary Road	40.00	9.61	1st
SR-7	Secondary Road	50.00	1.85	1st
SR-8	Secondary Road	40.00	1.85	1st
SR-9	Secondary Road	40.00	0.02	1st
SR-10	Secondary Road	50.00	0.01	1st
SR-11	Secondary Road	40.00	0.02	1st
SR-12	Secondary Road	50.00	12.25	1st
SR-13	Secondary Road	50.00	66.22	1st
SR-14	Secondary Road	50.00	832.66	1st
SR-18	Secondary Road	40.00	52.25	1st
SR-19	Secondary Road	40.00	11.41	1st
SR-20	Secondary Road	40.00	0.02	1st
SR-21	Secondary Road	40.00	323.91	1st
SR-22	Secondary Road	40.00	18.65	1st
SR-23	Secondary Road	40.00	9.35	1st
SR-24	Secondary Road	50.00	134.98	1st
SR-25	Secondary Road	50.00	5.59	1st
SR-26	Secondary Road	50.00	227.36	1st
SR-30	Secondary Road	50.00	3.41	1st
SR-31	Secondary Road	50.00	442.26	1st
SR-32	Secondary Road	40.00	0.02	1st
SR-33	Secondary Road	50.00	0.01	1st
SR-34	Secondary Road	50.00	0.38	1st
SR-35	Secondary Road	50.00	0.29	1st
SR-36	Secondary Road	50.00	498.38	1st
SR-37	Secondary Road	50.00	6.17	1st
SR-38	Secondary Road	50.00	18.24	1st
SR-39	Secondary Road	50.00	242.43	1st
SR-40	Secondary Road	50.00	0.28	1st
SR-41	Secondary Road	50.00	0.38	1st
SR-42	Secondary Road	50.00	0.29	1st
SR-43	Secondary Road	40.00	247.21	1st
SR-44	Secondary Road	40.00	9.13	1st
SR-45	Secondary Road	50.00	7.12	1st
SR-46	Secondary Road	50.00	682.17	1st
SR-47	Secondary Road	50.00	1.43	1st
SR-48	Secondary Road	50.00	31.14	1st

Road ID	Road Type	Width (in ft)	Length (in m)	Development Phase
SR-49	Secondary Road	50.00	494.39	1st
SR-50	Secondary Road	50.00	0.28	1st
SR-51	Secondary Road	40.00	463.72	1st
SR-52	Secondary Road	40.00	0.97	1st
SR-53	Secondary Road	50.00	288.33	1st
SR-54	Secondary Road	50.00	12.35	1st
SR-55	Secondary Road	50.00	1049.22	1st
SR-56	Secondary Road	50.00	17.08	1st
SR-57	Secondary Road	50.00	7.32	1st
SR-58	Secondary Road	50.00	14.49	1st
SR-59	Secondary Road	50.00	343.38	1st
TR-1	Tertiary Road	30.00	2.02	2nd
TR-2	Tertiary Road	30.00	2.02	2nd
TR-4	Tertiary Road	30.00	0.01	2nd
TR-5	Tertiary Road	30.00	0.01	2nd
TR-7	Tertiary Road	30.00	12.67	2nd
TR-8	Tertiary Road	30.00	22.66	2nd
TR-9	Tertiary Road	30.00	12.20	2nd
TR-10	Tertiary Road	30.00	15.41	2nd
TR-11	Tertiary Road	30.00	263.16	2nd
TR-12	Tertiary Road	30.00	351.82	2nd
TR-13	Tertiary Road	30.00	12.51	2nd
TR-14	Tertiary Road	30.00	279.01	2nd
TR-15	Tertiary Road	30.00	8.19	2nd
TR-16	Tertiary Road	30.00	304.40	2nd
TR-22	Tertiary Road	30.00	0.01	2nd
TR-23	Tertiary Road	30.00	0.01	2nd
TR-25	Tertiary Road	30.00	4.53	2nd
TR-26	Tertiary Road	30.00	261.82	2nd
TR-27	Tertiary Road	30.00	5.66	2nd
TR-28	Tertiary Road	30.00	29.70	2nd
TR-29	Tertiary Road	30.00	3.78	2nd
TR-30	Tertiary Road	30.00	74.39	2nd
TR-31	Tertiary Road	30.00	12.21	2nd
TR-32	Tertiary Road	30.00	96.72	2nd
TR-38	Tertiary Road	30.00	0.08	2nd
TR-40	Tertiary Road	30.00	36.03	2nd
TR-41	Tertiary Road	30.00	1.08	2nd
TR-42	Tertiary Road	30.00	62.28	2nd
TR-43	Tertiary Road	30.00	12.21	2nd
TR-44	Tertiary Road	30.00	93.25	2nd
TR-45	Tertiary Road	30.00	12.22	2nd
TR-46	Tertiary Road	30.00	76.54	2nd
TR-47	Tertiary Road	30.00	12.23	2nd
TR-48	Tertiary Road	30.00	23.55	2nd
TR-55	Tertiary Road	30.00	0.08	2nd
TR-59	Tertiary Road	30.00	363.68	1st
TR-60	Tertiary Road	30.00	5.89	2nd
TR-61	Tertiary Road	30.00	200.26	2nd
TR-62	Tertiary Road	30.00	12.91	2nd
TR-63	Tertiary Road	30.00	211.35	2nd
TR-64	Tertiary Road	30.00	12.24	2nd
TR-65	Tertiary Road	30.00	82.42	2nd
TR-66	Tertiary Road	30.00	147.92	2nd
TR-67	Tertiary Road	30.00	7.63	2nd
TR-68	Tertiary Road	30.00	133.23	2nd

Road ID	Road Type	Width (in ft)	Length (in m)	Development Phase
TR-69	Tertiary Road	30.00	7.64	2nd
TR-70	Tertiary Road	30.00	159.08	2nd
TR-71	Tertiary Road	30.00	7.63	2nd
TR-72	Tertiary Road	30.00	97.10	2nd
TR-73	Tertiary Road	30.00	7.63	2nd
TR-74	Tertiary Road	30.00	105.71	2nd
TR-82	Tertiary Road	30.00	25.80	2nd
TR-84	Tertiary Road	30.00	90.26	2nd
TR-85	Tertiary Road	30.00	35.37	2nd
TR-86	Tertiary Road	30.00	1.86	2nd
TR-88	Tertiary Road	30.00	7.98	2nd
TR-89	Tertiary Road	30.00	117.06	2nd
TR-90	Tertiary Road	30.00	49.82	2nd
TR-91	Tertiary Road	30.00	7.72	2nd
TR-92	Tertiary Road	30.00	27.24	2nd
TR-93	Tertiary Road	30.00	85.14	2nd
TR-94	Tertiary Road	30.00	7.83	2nd
TR-95	Tertiary Road	30.00	7.57	2nd
TR-96	Tertiary Road	30.00	334.99	2nd
TR-97	Tertiary Road	30.00	8.28	2nd
TR-98	Tertiary Road	30.00	20.55	2nd
TR-99	Tertiary Road	30.00	57.19	2nd
TR-113	Tertiary Road	30.00	7.64	2nd
TR-114	Tertiary Road	30.00	6.80	2nd
TR-115	Tertiary Road	30.00	25.12	2nd
AR-1	Access Road	20.00	12.23	2nd
AR-2	Access Road	20.00	20.48	2nd
AR-3	Access Road	20.00	12.20	2nd
AR-4	Access Road	20.00	26.59	2nd
AR-5	Access Road	20.00	13.05	2nd
AR-6	Access Road	20.00	160.53	2nd
AR-7	Access Road	20.00	12.83	2nd
AR-8	Access Road	20.00	11.73	2nd
AR-9	Access Road	20.00	2.74	2nd
AR-10	Access Road	20.00	2.03	2nd
AR-11	Access Road	20.00	1.96	2nd
AR-12	Access Road	20.00	1.89	2nd
AR-13	Access Road	20.00	2.12	2nd
AR-14	Access Road	20.00	1.86	2nd
AR-15	Access Road	20.00	2.08	2nd
AR-16	Access Road	20.00	1.88	2nd
AR-17	Access Road	20.00	1.94	2nd
AR-18	Access Road	20.00	1.86	2nd
AR-19	Access Road	20.00	1.90	2nd
AR-20	Access Road	20.00	1.85	2nd
AR-21	Access Road	20.00	6.24	2nd
AR-22	Access Road	20.00	20.26	2nd
AR-23	Access Road	20.00	6.30	2nd
AR-24	Access Road	20.00	17.34	2nd
AR-25	Access Road	20.00	6.80	3rd
AR-26	Access Road	20.00	84.38	3rd
AR-27	Access Road	20.00	6.59	3rd
AR-28	Access Road	20.00	194.30	3rd
AR-29	Access Road	20.00	1.97	3rd
AR-33	Access Road	20.00	0.02	3rd
AR-34	Access Road	20.00	0.01	3rd

Road ID	Road Type	Width (in ft)	Length (in m)	Development Phase
AR-35	Access Road	20.00	0.01	3rd
AR-36	Access Road	20.00	0.01	3rd
AR-37	Access Road	20.00	0.01	3rd
AR-38	Access Road	20.00	0.01	3rd
AR-39	Access Road	20.00	0.01	3rd
AR-40	Access Road	20.00	0.01	3rd
AR-41	Access Road	20.00	0.02	3rd
AR-42	Access Road	20.00	0.01	3rd
AR-43	Access Road	20.00	0.01	3rd
AR-44	Access Road	20.00	0.01	3rd
AR-45	Access Road	20.00	12.25	2nd
AR-46	Access Road	20.00	1.45	2nd
AR-47	Access Road	20.00	12.48	2nd
AR-48	Access Road	20.00	64.90	2nd
AR-49	Access Road	20.00	12.84	2nd
AR-50	Access Road	20.00	38.65	2nd
AR-51	Access Road	20.00	12.35	2nd
AR-52	Access Road	20.00	47.08	2nd
AR-53	Access Road	20.00	12.24	2nd
AR-54	Access Road	20.00	61.90	2nd
AR-55	Access Road	20.00	12.21	2nd
AR-56	Access Road	20.00	113.63	2nd
AR-57	Access Road	20.00	12.22	2nd
AR-58	Access Road	20.00	20.94	2nd
AR-59	Access Road	20.00	12.20	2nd
AR-60	Access Road	20.00	73.85	2nd
AR-61	Access Road	20.00	26.77	2nd
AR-62	Access Road	20.00	8.15	2nd
AR-63	Access Road	20.00	12.35	2nd
AR-64	Access Road	20.00	168.01	2nd
AR-65	Access Road	20.00	57.26	2nd
AR-66	Access Road	20.00	12.22	2nd
AR-67	Access Road	20.00	19.68	2nd
AR-68	Access Road	20.00	12.54	2nd
AR-69	Access Road	20.00	98.30	2nd
AR-70	Access Road	20.00	12.28	2nd
AR-71	Access Road	20.00	148.12	2nd
AR-72	Access Road	20.00	12.33	2nd
AR-73	Access Road	20.00	115.30	2nd
AR-74	Access Road	20.00	6.38	2nd
AR-75	Access Road	20.00	62.07	2nd
AR-76	Access Road	20.00	36.46	2nd
AR-77	Access Road	20.00	4.57	2nd
AR-78	Access Road	20.00	4.74	2nd
AR-79	Access Road	20.00	22.19	2nd
AR-80	Access Road	20.00	4.49	2nd
AR-81	Access Road	20.00	16.61	2nd
AR-82	Access Road	20.00	31.94	2nd
AR-83	Access Road	20.00	4.41	2nd
AR-84	Access Road	20.00	62.32	2nd
AR-85	Access Road	20.00	4.68	2nd
AR-86	Access Road	20.00	18.07	2nd
AR-87	Access Road	20.00	4.57	2nd
AR-88	Access Road	20.00	4.93	2nd
AR-89	Access Road	20.00	106.10	2nd
AR-90	Access Road	20.00	4.34	2nd

Road ID	Road Type	Width (in ft)	Length (in m)	Development Phase
AR-91	Access Road	20.00	17.45	2nd
AR-92	Access Road	20.00	4.85	2nd
AR-93	Access Road	20.00	46.96	2nd
AR-94	Access Road	20.00	4.38	2nd
AR-95	Access Road	20.00	66.94	2nd
AR-96	Access Road	20.00	4.51	2nd
AR-97	Access Road	20.00	27.02	2nd
AR-98	Access Road	20.00	4.34	2nd
AR-99	Access Road	20.00	36.89	2nd
AR-100	Access Road	20.00	4.42	2nd
AR-101	Access Road	20.00	10.59	2nd
AR-102	Access Road	20.00	0.46	2nd
AR-103	Access Road	20.00	45.32	2nd
AR-104	Access Road	20.00	7.50	3rd
AR-105	Access Road	20.00	12.21	3rd
AR-106	Access Road	20.00	8.03	3rd
AR-107	Access Road	20.00	43.02	3rd
AR-151	Access Road	20.00	0.02	3rd
AR-152	Access Road	20.00	0.01	3rd
AR-153	Access Road	20.00	0.01	3rd
AR-154	Access Road	20.00	0.01	3rd
AR-155	Access Road	20.00	0.01	3rd
AR-156	Access Road	20.00	0.01	3rd
AR-157	Access Road	20.00	0.01	3rd
AR-158	Access Road	20.00	0.01	3rd
AR-159	Access Road	20.00	0.02	3rd
AR-160	Access Road	20.00	0.01	3rd
AR-161	Access Road	20.00	0.01	3rd
AR-162	Access Road	20.00	27.23	2nd
AR-163	Access Road	20.00	3.89	2nd
AR-164	Access Road	20.00	44.47	2nd
AR-165	Access Road	20.00	18.61	2nd
AR-166	Access Road	20.00	7.62	2nd
AR-167	Access Road	20.00	34.29	2nd
AR-168	Access Road	20.00	7.74	2nd
AR-169	Access Road	20.00	61.95	2nd
AR-170	Access Road	20.00	17.49	2nd
AR-171	Access Road	20.00	223.15	2nd
AR-172	Access Road	20.00	7.63	2nd
AR-173	Access Road	20.00	132.68	2nd
AR-174	Access Road	20.00	19.21	2nd
AR-175	Access Road	20.00	14.11	2nd
AR-176	Access Road	20.00	119.75	2nd
AR-177	Access Road	20.00	8.05	2nd
AR-178	Access Road	20.00	168.35	2nd
AR-179	Access Road	20.00	8.04	2nd
AR-180	Access Road	20.00	73.08	2nd
AR-181	Access Road	20.00	7.88	2nd
AR-182	Access Road	20.00	75.09	2nd
AR-183	Access Road	20.00	11.21	2nd
AR-184	Access Road	20.00	8.18	2nd
AR-185	Access Road	20.00	100.95	3rd
AR-186	Access Road	20.00	8.76	3rd
AR-187	Access Road	20.00	43.68	3rd
AR-188	Access Road	20.00	10.58	3rd
AR-189	Access Road	20.00	29.52	3rd

Road ID	Road Type	Width (in ft)	Length (in m)	Development Phase
AR-190	Access Road	20.00	15.80	3rd
AR-191	Access Road	20.00	20.40	3rd
AR-192	Access Road	20.00	119.55	3rd
AR-193	Access Road	20.00	5.98	3rd
AR-194	Access Road	20.00	254.66	3rd
AR-195	Access Road	20.00	7.85	3rd
AR-196	Access Road	20.00	5.10	3rd
AR-197	Access Road	20.00	147.41	3rd
AR-198	Access Road	20.00	7.97	3rd
AR-199	Access Road	20.00	7.85	3rd
AR-200	Access Road	20.00	16.44	3rd
AR-201	Access Road	20.00	4.49	3rd
AR-202	Access Road	20.00	115.83	3rd
AR-203	Access Road	20.00	12.22	3rd
AR-204	Access Road	20.00	56.11	3rd
AR-205	Access Road	20.00	12.21	3rd
AR-206	Access Road	20.00	25.46	3rd
AR-207	Access Road	20.00	44.76	3rd
AR-208	Access Road	20.00	3.69	3rd
AR-209	Access Road	20.00	26.88	3rd
AR-210	Access Road	20.00	4.25	3rd
AR-211	Access Road	20.00	12.44	3rd
AR-212	Access Road	20.00	26.19	3rd
AR-213	Access Road	20.00	25.16	3rd
AR-214	Access Road	20.00	9.36	3rd
AR-215	Access Road	20.00	12.29	3rd
AR-216	Access Road	20.00	28.02	3rd
AR-236	Access Road	20.00	0.01	3rd
AR-237	Access Road	20.00	0.18	3rd
AR-238	Access Road	20.00	0.18	3rd
AR-240	Access Road	20.00	98.25	2nd
AR-241	Access Road	20.00	22.60	2nd
AR-242	Access Road	20.00	100.40	2nd
AR-243	Access Road	20.00	29.92	2nd
AR-244	Access Road	20.00	5.80	2nd
AR-245	Access Road	20.00	33.53	2nd
AR-246	Access Road	20.00	5.79	2nd
AR-247	Access Road	20.00	2.62	2nd
AR-248	Access Road	20.00	2.64	2nd
AR-249	Access Road	20.00	2.68	2nd
AR-250	Access Road	20.00	2.72	2nd
AR-251	Access Road	20.00	2.74	2nd
AR-252	Access Road	20.00	2.74	2nd
AR-253	Access Road	20.00	2.74	2nd
AR-254	Access Road	20.00	3.80	2nd
AR-255	Access Road	20.00	12.33	2nd
AR-256	Access Road	20.00	44.00	2nd
AR-257	Access Road	20.00	12.20	2nd
AR-258	Access Road	20.00	21.61	2nd
AR-259	Access Road	20.00	12.21	2nd
AR-260	Access Road	20.00	11.60	2nd
AR-261	Access Road	20.00	28.90	2nd
AR-262	Access Road	20.00	12.21	2nd
AR-263	Access Road	20.00	17.81	2nd
AR-264	Access Road	20.00	12.21	2nd
AR-265	Access Road	20.00	32.11	2nd

Road ID	Road Type	Width (in ft)	Length (in m)	Development Phase
AR-266	Access Road	20.00	12.40	2nd
AR-267	Access Road	20.00	110.00	2nd
AR-268	Access Road	20.00	12.44	2nd
AR-269	Access Road	20.00	49.52	2nd
AR-270	Access Road	20.00	12.21	3rd
AR-271	Access Road	20.00	37.62	3rd
AR-272	Access Road	20.00	12.21	3rd
AR-273	Access Road	20.00	32.30	3rd
AR-274	Access Road	20.00	12.20	3rd
AR-275	Access Road	20.00	13.70	3rd
AR-276	Access Road	20.00	12.30	3rd
AR-277	Access Road	20.00	123.15	3rd
AR-278	Access Road	20.00	29.74	3rd
AR-279	Access Road	20.00	3.75	3rd
AR-280	Access Road	20.00	3.19	3rd
AR-281	Access Road	20.00	4.04	3rd
AR-282	Access Road	20.00	9.25	3rd
AR-283	Access Road	20.00	53.06	3rd
AR-284	Access Road	20.00	73.35	3rd
AR-285	Access Road	20.00	9.42	3rd
AR-290	Access Road	20.00	44.86	3rd
AR-307	Access Road	20.00	98.47	3rd
AR-308	Access Road	20.00	9.27	3rd
AR-313	Access Road	20.00	0.11	3rd
AR-314	Access Road	20.00	0.08	3rd
AR-315	Access Road	20.00	0.03	3rd
AR-316	Access Road	20.00	0.08	3rd
AR-317	Access Road	20.00	0.15	3rd
AR-318	Access Road	20.00	0.18	3rd
AR-319	Access Road	20.00	0.18	3rd
AR-323	Access Road	20.00	92.52	2nd
AR-324	Access Road	20.00	3.23	2nd
AR-325	Access Road	20.00	115.44	2nd
AR-326	Access Road	20.00	3.23	2nd
AR-327	Access Road	20.00	4.32	2nd
AR-328	Access Road	20.00	18.79	2nd
AR-329	Access Road	20.00	3.23	2nd
AR-330	Access Road	20.00	4.47	2nd
AR-331	Access Road	20.00	126.97	2nd
AR-332	Access Road	20.00	3.24	2nd
AR-333	Access Road	20.00	9.15	2nd
AR-334	Access Road	20.00	82.65	2nd
AR-335	Access Road	20.00	3.20	2nd
AR-336	Access Road	20.00	107.26	2nd
AR-337	Access Road	20.00	3.15	2nd
AR-338	Access Road	20.00	77.20	3rd
AR-339	Access Road	20.00	3.08	3rd
AR-346	Access Road	20.00	0.03	3rd
AR-347	Access Road	20.00	0.08	3rd
AR-348	Access Road	20.00	0.15	3rd
AR-349	Access Road	20.00	182.80	2nd
AR-350	Access Road	20.00	6.31	2nd
AR-351	Access Road	20.00	65.51	2nd
AR-352	Access Road	20.00	4.74	2nd
AR-353	Access Road	20.00	49.72	2nd
AR-354	Access Road	20.00	32.15	2nd

Road ID	Road Type	Width (in ft)	Length (in m)	Development Phase
AR-355	Access Road	20.00	6.34	2nd
AR-356	Access Road	20.00	50.96	2nd
AR-357	Access Road	20.00	3.94	2nd
AR-358	Access Road	20.00	5.97	2nd
AR-359	Access Road	20.00	12.78	2nd
AR-360	Access Road	20.00	6.34	2nd
AR-361	Access Road	20.00	106.76	2nd
AR-362	Access Road	20.00	18.62	3rd
AR-363	Access Road	20.00	4.60	3rd
AR-364	Access Road	20.00	69.25	3rd
AR-365	Access Road	20.00	25.56	3rd
AR-366	Access Road	20.00	231.28	3rd
AR-367	Access Road	20.00	5.63	3rd
AR-368	Access Road	20.00	353.66	3rd
AR-369	Access Road	20.00	4.59	3rd
AR-373	Access Road	20.00	88.33	2nd
AR-374	Access Road	20.00	52.94	2nd
AR-375	Access Road	20.00	32.75	2nd
AR-376	Access Road	20.00	62.63	2nd
AR-377	Access Road	20.00	115.88	2nd
AR-378	Access Road	20.00	94.36	2nd
AR-379	Access Road	20.00	7.63	2nd
AR-380	Access Road	20.00	12.25	2nd
AR-381	Access Road	20.00	14.61	2nd
AR-382	Access Road	20.00	12.23	2nd
AR-383	Access Road	20.00	13.80	2nd
AR-384	Access Road	20.00	12.25	2nd
AR-385	Access Road	20.00	37.80	2nd
AR-386	Access Road	20.00	12.28	2nd
AR-387	Access Road	20.00	121.13	2nd
AR-388	Access Road	20.00	12.33	2nd
AR-389	Access Road	20.00	63.11	2nd
AR-390	Access Road	20.00	12.26	2nd
AR-391	Access Road	20.00	24.15	2nd
AR-392	Access Road	20.00	11.11	2nd
AR-393	Access Road	20.00	20.31	2nd
AR-394	Access Road	20.00	12.28	2nd
AR-395	Access Road	20.00	40.45	2nd
AR-396	Access Road	20.00	12.21	2nd
AR-397	Access Road	20.00	7.40	3rd
AR-398	Access Road	20.00	12.29	3rd
AR-399	Access Road	20.00	17.31	3rd
AR-400	Access Road	20.00	100.75	3rd
AR-401	Access Road	20.00	4.57	3rd
AR-402	Access Road	20.00	22.12	3rd
AR-403	Access Road	20.00	4.56	3rd
AR-404	Access Road	20.00	22.45	3rd
AR-405	Access Road	20.00	7.64	3rd
AR-406	Access Road	20.00	16.82	3rd
AR-407	Access Road	20.00	7.63	3rd
AR-408	Access Road	20.00	6.33	3rd
AR-409	Access Road	20.00	7.63	3rd
AR-410	Access Road	20.00	98.65	3rd
AR-411	Access Road	20.00	7.62	3rd
AR-412	Access Road	20.00	107.72	3rd
AR-413	Access Road	20.00	4.12	3rd

Road ID	Road Type	Width (in ft)	Length (in m)	Development Phase
AR-414	Access Road	20.00	1.77	3rd
AR-415	Access Road	20.00	1.79	3rd
AR-416	Access Road	20.00	33.03	3rd
AR-417	Access Road	20.00	7.63	3rd
AR-418	Access Road	20.00	106.93	3rd
AR-419	Access Road	20.00	5.85	3rd
AR-420	Access Road	20.00	69.44	3rd
AR-421	Access Road	20.00	7.64	3rd
AR-422	Access Road	20.00	278.58	3rd
AR-423	Access Road	20.00	7.71	3rd
AR-424	Access Road	20.00	4.56	3rd
AR-425	Access Road	20.00	20.50	3rd
AR-426	Access Road	20.00	7.63	3rd
AR-427	Access Road	20.00	21.18	3rd
AR-428	Access Road	20.00	7.62	3rd
AR-429	Access Road	20.00	39.69	3rd
AR-430	Access Road	20.00	7.62	3rd
AR-431	Access Road	20.00	20.93	3rd
AR-432	Access Road	20.00	7.62	3rd
AR-433	Access Road	20.00	21.69	3rd
AR-434	Access Road	20.00	7.65	3rd
AR-435	Access Road	20.00	1.90	3rd
AR-436	Access Road	20.00	3.79	3rd
AR-437	Access Road	20.00	6.02	3rd
AR-438	Access Road	20.00	14.43	3rd
AR-439	Access Road	20.00	7.63	3rd
AR-440	Access Road	20.00	49.81	3rd
AR-441	Access Road	20.00	7.63	3rd
AR-442	Access Road	20.00	20.17	3rd
AR-443	Access Road	20.00	7.63	3rd
AR-444	Access Road	20.00	84.95	3rd
AR-445	Access Road	20.00	7.62	3rd
AR-446	Access Road	20.00	149.02	3rd
AR-447	Access Road	20.00	28.43	3rd
AR-448	Access Road	20.00	101.97	3rd
AR-449	Access Road	20.00	7.62	3rd
AR-450	Access Road	20.00	7.60	3rd
AR-451	Access Road	20.00	7.63	3rd
AR-452	Access Road	20.00	20.81	3rd
AR-453	Access Road	20.00	182.05	3rd
AR-454	Access Road	20.00	7.81	3rd
AR-455	Access Road	20.00	54.42	3rd
AR-456	Access Road	20.00	186.52	3rd
AR-457	Access Road	20.00	8.88	3rd
AR-458	Access Road	20.00	8.56	3rd
AR-459	Access Road	20.00	13.27	3rd
AR-460	Access Road	20.00	2.27	3rd
AR-461	Access Road	20.00	7.60	3rd
AR-462	Access Road	20.00	12.22	3rd
AR-463	Access Road	20.00	90.84	3rd
AR-464	Access Road	20.00	11.90	3rd
AR-465	Access Road	20.00	103.39	3rd
AR-466	Access Road	20.00	4.05	3rd
AR-467	Access Road	20.00	7.58	3rd
AR-468	Access Road	20.00	0.13	3rd
AR-471	Access Road	20.00	28.15	3rd

Road ID	Road Type	Width (in ft)	Length (in m)	Development Phase
AR-472	Access Road	20.00	9.92	3rd
AR-473	Access Road	20.00	69.90	3rd
AR-474	Access Road	20.00	78.20	3rd
AR-475	Access Road	20.00	27.17	3rd
AR-476	Access Road	20.00	35.56	3rd
AR-477	Access Road	20.00	5.16	3rd
AR-505	Access Road	20.00	0.11	3rd
AR-506	Access Road	20.00	0.08	3rd
AR-509	Access Road	20.00	1.05	2nd
AR-510	Access Road	20.00	63.01	2nd
AR-511	Access Road	20.00	1.67	2nd
AR-512	Access Road	20.00	56.43	2nd
AR-513	Access Road	20.00	2.40	2nd
AR-514	Access Road	20.00	57.78	2nd
AR-515	Access Road	20.00	2.58	2nd
AR-516	Access Road	20.00	154.00	2nd
AR-517	Access Road	20.00	2.62	2nd
AR-518	Access Road	20.00	30.35	2nd
AR-519	Access Road	20.00	2.78	2nd
AR-520	Access Road	20.00	180.83	2nd
AR-521	Access Road	20.00	2.74	2nd
AR-522	Access Road	20.00	28.56	2nd
AR-523	Access Road	20.00	1.99	2nd
AR-524	Access Road	20.00	4.26	2nd
AR-525	Access Road	20.00	102.75	2nd
AR-526	Access Road	20.00	22.90	2nd
AR-527	Access Road	20.00	7.63	2nd
AR-528	Access Road	20.00	20.27	2nd
AR-529	Access Road	20.00	8.00	2nd
AR-530	Access Road	20.00	70.38	2nd
AR-531	Access Road	20.00	7.79	2nd
AR-532	Access Road	20.00	2.02	2nd
AR-533	Access Road	20.00	1.89	2nd
AR-534	Access Road	20.00	2.21	2nd
AR-535	Access Road	20.00	29.84	2nd
AR-536	Access Road	20.00	2.33	2nd
AR-537	Access Road	20.00	23.02	2nd
AR-538	Access Road	20.00	20.46	2nd
AR-539	Access Road	20.00	55.81	2nd
AR-540	Access Road	20.00	33.13	2nd
AR-541	Access Road	20.00	27.93	2nd
AR-542	Access Road	20.00	2.25	2nd
AR-543	Access Road	20.00	13.91	2nd
AR-544	Access Road	20.00	1.52	2nd
AR-545	Access Road	20.00	8.90	2nd
AR-546	Access Road	20.00	2.53	2nd
AR-547	Access Road	20.00	10.67	2nd
AR-548	Access Road	20.00	2.52	2nd
AR-549	Access Road	20.00	78.61	2nd
AR-550	Access Road	20.00	2.51	2nd
AR-551	Access Road	20.00	46.95	2nd
AR-552	Access Road	20.00	40.41	2nd
AR-553	Access Road	20.00	2.61	3rd
AR-554	Access Road	20.00	596.35	3rd
AR-555	Access Road	20.00	8.39	3rd
AR-556	Access Road	20.00	2.11	3rd

Road ID	Road Type	Width (in ft)	Length (in m)	Development Phase
AR-558	Access Road	20.00	18.11	3rd
AR-559	Access Road	20.00	4.61	3rd
AR-571	Access Road	20.00	49.49	2nd
AR-572	Access Road	20.00	7.63	2nd
AR-573	Access Road	20.00	151.06	2nd
AR-574	Access Road	20.00	7.64	2nd
AR-575	Access Road	20.00	4.57	2nd
AR-576	Access Road	20.00	0.92	2nd
AR-577	Access Road	20.00	7.63	2nd
AR-578	Access Road	20.00	36.83	2nd
AR-579	Access Road	20.00	4.57	2nd
AR-580	Access Road	20.00	19.19	2nd
AR-581	Access Road	20.00	4.57	2nd
AR-582	Access Road	20.00	48.06	2nd
AR-583	Access Road	20.00	4.71	2nd
AR-584	Access Road	20.00	61.73	2nd
AR-585	Access Road	20.00	38.71	2nd
AR-586	Access Road	20.00	31.38	2nd
AR-587	Access Road	20.00	9.43	2nd
AR-592	Access Road	20.00	71.12	3rd
AR-593	Access Road	20.00	7.63	3rd
AR-594	Access Road	20.00	157.26	3rd
AR-595	Access Road	20.00	14.24	3rd
AR-596	Access Road	20.00	4.57	3rd
AR-597	Access Road	20.00	9.59	3rd
AR-598	Access Road	20.00	4.56	3rd
AR-599	Access Road	20.00	42.36	3rd
AR-600	Access Road	20.00	7.64	3rd
AR-601	Access Road	20.00	1.95	3rd
AR-602	Access Road	20.00	7.62	3rd
AR-603	Access Road	20.00	24.38	3rd
AR-604	Access Road	20.00	28.94	3rd
AR-605	Access Road	20.00	101.76	3rd
AR-606	Access Road	20.00	7.63	3rd
AR-607	Access Road	20.00	5.00	3rd
AR-608	Access Road	20.00	17.36	3rd
AR-609	Access Road	20.00	7.63	3rd
AR-610	Access Road	20.00	79.01	3rd
AR-611	Access Road	20.00	7.85	3rd
AR-612	Access Road	20.00	25.02	3rd
AR-613	Access Road	20.00	7.74	3rd
AR-614	Access Road	20.00	50.70	3rd
AR-615	Access Road	20.00	7.65	3rd
AR-616	Access Road	20.00	14.11	3rd
AR-617	Access Road	20.00	7.65	3rd
AR-618	Access Road	20.00	98.99	3rd
AR-619	Access Road	20.00	4.88	3rd
AR-620	Access Road	20.00	11.89	3rd
AR-621	Access Road	20.00	260.54	3rd
AR-622	Access Road	20.00	7.62	3rd
AR-623	Access Road	20.00	5.26	3rd
AR-624	Access Road	20.00	28.99	3rd
AR-625	Access Road	20.00	7.62	3rd
AR-626	Access Road	20.00	22.98	3rd
AR-627	Access Road	20.00	4.59	3rd
AR-628	Access Road	20.00	12.20	3rd

Road ID	Road Type	Width (in ft)	Length (in m)	Development Phase
AR-629	Access Road	20.00	64.08	3rd
AR-630	Access Road	20.00	12.33	3rd
AR-631	Access Road	20.00	40.39	3rd
AR-632	Access Road	20.00	9.00	3rd
AR-633	Access Road	20.00	4.56	3rd
AR-634	Access Road	20.00	13.31	3rd
AR-659	Access Road	20.00	19.83	3rd
AR-660	Access Road	20.00	5.28	3rd

Phase Wise Drainage Network Development Proposal of Daulatkhan Paurashava

Drain_ID	Drain Type	Length (in m)	Width (in ft)	Depth (in m)	Phase
PR-1	Primary Drain	199.18	3.5-4.5	2.00-3.00	1st
PR-2	Primary Drain	39.85	3.5-4.5	2.00-3.00	1st
PR-3	Primary Drain	346.27	3.5-4.5	2.00-3.00	3rd
PR-4	Primary Drain	164.89	3.5-4.5	2.00-3.00	2nd
PR-5	Primary Drain	111.64	3.5-4.5	2.00-3.00	3rd
PR-6	Primary Drain	5.74	3.5-4.5	2.00-3.00	3rd
PR-7	Primary Drain	16.55	3.5-4.5	2.00-3.00	3rd
PR-8	Primary Drain	129.20	3.5-4.5	2.00-3.00	1st
PR-9	Primary Drain	13.29	3.5-4.5	2.00-3.00	1st
PR-10	Primary Drain	144.26	3.5-4.5	2.00-3.00	1st
PR-11	Primary Drain	232.75	3.5-4.5	2.00-3.00	1st
PR-12	Primary Drain	186.35	3.5-4.5	2.00-3.00	1st
PR-13	Primary Drain	0.01	3.5-4.5	2.00-3.00	2nd
PR-14	Primary Drain	0.01	3.5-4.5	2.00-3.00	3rd
PR-15	Primary Drain	0.01	3.5-4.5	2.00-3.00	3rd
PR-16	Primary Drain	0.01	3.5-4.5	2.00-3.00	2nd
PR-17	Primary Drain	0.03	3.5-4.5	2.00-3.00	2nd
PR-18	Primary Drain	0.03	3.5-4.5	2.00-3.00	2nd
SR-2	Secondary Drain	389.83	2.5-3.5	1.124-2.124	3rd
SR-3	Secondary Drain	652.62	2.5-3.5	1.124-2.124	2nd
SR-4	Secondary Drain	650.85	2.5-3.5	1.124-2.124	2nd
SR-5	Secondary Drain	832.54	2.5-3.5	1.124-2.124	3rd
SR-6	Secondary Drain	553.00	2.5-3.5	1.124-2.124	3rd
SR-7	Secondary Drain	320.43	2.5-3.5	1.124-2.124	3rd
SR-8	Secondary Drain	39.00	2.5-3.5	1.124-2.124	3rd
SR-9	Secondary Drain	610.29	2.5-3.5	1.124-2.124	3rd
SR-10	Secondary Drain	358.18	2.5-3.5	1.124-2.124	3rd
SR-11	Secondary Drain	213.38	2.5-3.5	1.124-2.124	1st
SR-12	Secondary Drain	495.03	2.5-3.5	1.124-2.124	2nd
SR-13	Secondary Drain	234.18	2.5-3.5	1.124-2.124	2nd
SR-14	Secondary Drain	32.73	2.5-3.5	1.124-2.124	2nd
SR-15	Secondary Drain	8.91	2.5-3.5	1.124-2.124	2nd
SR-16	Secondary Drain	1065.56	2.5-3.5	1.124-2.124	2nd
SR-17	Secondary Drain	10.59	2.5-3.5	1.124-2.124	2nd
SR-18	Secondary Drain	687.37	2.5-3.5	1.124-2.124	2nd
SR-19	Secondary Drain	7.45	2.5-3.5	1.124-2.124	3rd
SR-20	Secondary Drain	747.31	2.5-3.5	1.124-2.124	3rd
SR-21	Secondary Drain	418.56	2.5-3.5	1.124-2.124	1st
SR-22	Secondary Drain	10.13	2.5-3.5	1.124-2.124	2nd
SR-23	Secondary Drain	268.86	2.5-3.5	1.124-2.124	3rd
SR-24	Secondary Drain	6.46	2.5-3.5	1.124-2.124	3rd
SR-25	Secondary Drain	393.33	2.5-3.5	1.124-2.124	2nd
SR-26	Secondary Drain	5.65	2.5-3.5	1.124-2.124	2nd
SR-27	Secondary Drain	789.81	2.5-3.5	1.124-2.124	2nd
SR-28	Secondary Drain	32.55	2.5-3.5	1.124-2.124	2nd
SR-29	Secondary Drain	189.72	2.5-3.5	1.124-2.124	3rd
SR-30	Secondary Drain	0.01	2.5-3.5	1.124-2.124	3rd
SR-31	Secondary Drain	416.59	2.5-3.5	1.124-2.124	3rd
SR-32	Secondary Drain	216.79	2.5-3.5	1.124-2.124	3rd
SR-33	Secondary Drain	245.52	2.5-3.5	1.124-2.124	3rd
SR-34	Secondary Drain	244.46	2.5-3.5	1.124-2.124	3rd
SR-35	Secondary Drain	171.60	2.5-3.5	1.124-2.124	3rd
SR-36	Secondary Drain	70.54	2.5-3.5	1.124-2.124	3rd
SR-37	Secondary Drain	768.99	2.5-3.5	1.124-2.124	3rd
SR-38	Secondary Drain	0.30	2.5-3.5	1.124-2.124	3rd

Drain_ID	Drain Type	Length (in m)	Width (in ft)	Depth (in m)	Phase
SR-39	Secondary Drain	0.30	2.5-3.5	1.124-2.124	3rd
SR-40	Secondary Drain	0.10	2.5-3.5	1.124-2.124	3rd
SR-41	Secondary Drain	0.10	2.5-3.5	1.124-2.124	3rd
SR-42	Secondary Drain	0.01	2.5-3.5	1.124-2.124	3rd
SR-43	Secondary Drain	509.59	2.5-3.5	1.124-2.124	1st
SR-44	Secondary Drain	178.82	2.5-3.5	1.124-2.124	1st
SR-45	Secondary Drain	424.60	2.5-3.5	1.124-2.124	3rd
SR-46	Secondary Drain	701.82	2.5-3.5	1.124-2.124	3rd
SR-47	Secondary Drain	503.76	2.5-3.5	1.124-2.124	3rd
SR-48	Secondary Drain	394.96	2.5-3.5	1.124-2.124	3rd
SR-49	Secondary Drain	328.80	2.5-3.5	1.124-2.124	3rd
SR-50	Secondary Drain	406.08	2.5-3.5	1.124-2.124	2nd
SR-51	Secondary Drain	412.84	2.5-3.5	1.124-2.124	3rd
SR-52	Secondary Drain	158.39	2.5-3.5	1.124-2.124	2nd
SR-53	Secondary Drain	155.20	2.5-3.5	1.124-2.124	2nd
TR-1	Tertiary Drain	189.81	1.5-2.5	.64-1.00	3rd
TR-2	Tertiary Drain	407.50	1.5-2.5	.64-1.00	2nd
TR-3	Tertiary Drain	144.22	1.5-2.5	.64-1.00	2nd
TR-4	Tertiary Drain	313.65	1.5-2.5	.64-1.00	2nd
TR-5	Tertiary Drain	259.06	1.5-2.5	.64-1.00	2nd
TR-6	Tertiary Drain	248.94	1.5-2.5	.64-1.00	2nd
TR-7	Tertiary Drain	55.62	1.5-2.5	.64-1.00	2nd
TR-8	Tertiary Drain	87.48	1.5-2.5	.64-1.00	2nd
TR-9	Tertiary Drain	433.10	1.5-2.5	.64-1.00	2nd
TR-10	Tertiary Drain	149.77	1.5-2.5	.64-1.00	2nd
TR-11	Tertiary Drain	267.52	1.5-2.5	.64-1.00	2nd
TR-12	Tertiary Drain	179.45	1.5-2.5	.64-1.00	2nd
TR-13	Tertiary Drain	298.56	1.5-2.5	.64-1.00	2nd
TR-14	Tertiary Drain	316.79	1.5-2.5	.64-1.00	2nd
TR-15	Tertiary Drain	123.38	1.5-2.5	.64-1.00	2nd
TR-16	Tertiary Drain	95.47	1.5-2.5	.64-1.00	2nd
TR-17	Tertiary Drain	187.11	1.5-2.5	.64-1.00	2nd
TR-18	Tertiary Drain	143.89	1.5-2.5	.64-1.00	2nd
TR-19	Tertiary Drain	471.08	1.5-2.5	.64-1.00	2nd
TR-20	Tertiary Drain	118.56	1.5-2.5	.64-1.00	2nd
TR-21	Tertiary Drain	398.47	1.5-2.5	.64-1.00	2nd
TR-22	Tertiary Drain	282.43	1.5-2.5	.64-1.00	2nd
TR-23	Tertiary Drain	133.22	1.5-2.5	.64-1.00	2nd
TR-24	Tertiary Drain	236.47	1.5-2.5	.64-1.00	2nd
TR-25	Tertiary Drain	144.47	1.5-2.5	.64-1.00	2nd
TR-26	Tertiary Drain	11.26	1.5-2.5	.64-1.00	2nd
TR-27	Tertiary Drain	131.12	1.5-2.5	.64-1.00	2nd
TR-28	Tertiary Drain	281.74	1.5-2.5	.64-1.00	2nd
TR-29	Tertiary Drain	89.55	1.5-2.5	.64-1.00	2nd
TR-30	Tertiary Drain	0.02	1.5-2.5	.64-1.00	2nd
TR-31	Tertiary Drain	0.01	1.5-2.5	.64-1.00	2nd
TR-32	Tertiary Drain	0.21	1.5-2.5	.64-1.00	2nd
TR-33	Tertiary Drain	174.38	1.5-2.5	.64-1.00	2nd
TR-34	Tertiary Drain	331.57	1.5-2.5	.64-1.00	2nd
TR-35	Tertiary Drain	114.91	1.5-2.5	.64-1.00	2nd
TR-36	Tertiary Drain	242.01	1.5-2.5	.64-1.00	2nd
TR-37	Tertiary Drain	346.37	1.5-2.5	.64-1.00	2nd
TR-38	Tertiary Drain	260.09	1.5-2.5	.64-1.00	2nd
TR-39	Tertiary Drain	201.13	1.5-2.5	.64-1.00	2nd
TR-40	Tertiary Drain	176.80	1.5-2.5	.64-1.00	2nd
TR-41	Tertiary Drain	283.90	1.5-2.5	.64-1.00	2nd
TR-42	Tertiary Drain	128.53	1.5-2.5	.64-1.00	2nd

Drain_ID	Drain Type	Length (in m)	Width (in ft)	Depth (in m)	Phase
TR-43	Tertiary Drain	378.74	1.5-2.5	.64-1.00	3rd
TR-44	Tertiary Drain	109.06	1.5-2.5	.64-1.00	3rd
TR-45	Tertiary Drain	234.60	1.5-2.5	.64-1.00	3rd
TR-46	Tertiary Drain	146.22	1.5-2.5	.64-1.00	3rd
TR-47	Tertiary Drain	0.02	1.5-2.5	.64-1.00	3rd
TR-48	Tertiary Drain	0.01	1.5-2.5	.64-1.00	3rd
TR-49	Tertiary Drain	0.21	1.5-2.5	.64-1.00	3rd
TR-50	Tertiary Drain	0.17	1.5-2.5	.64-1.00	3rd
TR-51	Tertiary Drain	0.09	1.5-2.5	.64-1.00	2nd
TR-52	Tertiary Drain	0.26	1.5-2.5	.64-1.00	2nd
TR-53	Tertiary Drain	264.93	1.5-2.5	.64-1.00	3rd
TR-54	Tertiary Drain	122.45	1.5-2.5	.64-1.00	2nd
TR-55	Tertiary Drain	171.40	1.5-2.5	.64-1.00	1st
TR-56	Tertiary Drain	92.43	1.5-2.5	.64-1.00	1st
TR-57	Tertiary Drain	132.54	1.5-2.5	.64-1.00	1st
TR-58	Tertiary Drain	104.10	1.5-2.5	.64-1.00	2nd
TR-59	Tertiary Drain	344.01	1.5-2.5	.64-1.00	1st
TR-60	Tertiary Drain	187.63	1.5-2.5	.64-1.00	1st
TR-61	Tertiary Drain	0.94	1.5-2.5	.64-1.00	2nd
TR-62	Tertiary Drain	267.64	1.5-2.5	.64-1.00	1st
TR-63	Tertiary Drain	246.53	1.5-2.5	.64-1.00	2nd
TR-64	Tertiary Drain	246.83	1.5-2.5	.64-1.00	2nd
TR-65	Tertiary Drain	7.78	1.5-2.5	.64-1.00	2nd
TR-66	Tertiary Drain	350.12	1.5-2.5	.64-1.00	2nd
TR-67	Tertiary Drain	128.22	1.5-2.5	.64-1.00	2nd
TR-68	Tertiary Drain	187.99	1.5-2.5	.64-1.00	2nd
TR-69	Tertiary Drain	330.40	1.5-2.5	.64-1.00	2nd
TR-70	Tertiary Drain	194.13	1.5-2.5	.64-1.00	2nd
TR-71	Tertiary Drain	116.42	1.5-2.5	.64-1.00	2nd
TR-72	Tertiary Drain	133.19	1.5-2.5	.64-1.00	3rd
TR-73	Tertiary Drain	219.70	1.5-2.5	.64-1.00	3rd
TR-74	Tertiary Drain	276.95	1.5-2.5	.64-1.00	3rd
TR-75	Tertiary Drain	32.73	1.5-2.5	.64-1.00	3rd
TR-76	Tertiary Drain	229.74	1.5-2.5	.64-1.00	3rd
TR-77	Tertiary Drain	184.49	1.5-2.5	.64-1.00	3rd
TR-78	Tertiary Drain	244.72	1.5-2.5	.64-1.00	2nd
TR-79	Tertiary Drain	121.29	1.5-2.5	.64-1.00	2nd
TR-80	Tertiary Drain	133.87	1.5-2.5	.64-1.00	2nd
TR-81	Tertiary Drain	151.71	1.5-2.5	.64-1.00	2nd
TR-82	Tertiary Drain	7.20	1.5-2.5	.64-1.00	2nd
TR-83	Tertiary Drain	381.61	1.5-2.5	.64-1.00	1st
TR-84	Tertiary Drain	413.42	1.5-2.5	.64-1.00	2nd
TR-85	Tertiary Drain	214.23	1.5-2.5	.64-1.00	2nd
TR-86	Tertiary Drain	150.07	1.5-2.5	.64-1.00	3rd
TR-87	Tertiary Drain	452.18	1.5-2.5	.64-1.00	3rd
TR-88	Tertiary Drain	5.72	1.5-2.5	.64-1.00	3rd
TR-89	Tertiary Drain	686.06	1.5-2.5	.64-1.00	1st
TR-90	Tertiary Drain	155.97	1.5-2.5	.64-1.00	1st
TR-91	Tertiary Drain	0.17	1.5-2.5	.64-1.00	2nd
TR-92	Tertiary Drain	0.09	1.5-2.5	.64-1.00	2nd
TR-93	Tertiary Drain	0.26	1.5-2.5	.64-1.00	2nd
TR-94	Tertiary Drain	4.50	1.5-2.5	.64-1.00	2nd
TR-95	Tertiary Drain	272.58	1.5-2.5	.64-1.00	2nd
TR-96	Tertiary Drain	383.03	1.5-2.5	.64-1.00	2nd
TR-97	Tertiary Drain	6.39	1.5-2.5	.64-1.00	2nd
TR-98	Tertiary Drain	723.64	1.5-2.5	.64-1.00	2nd
TR-99	Tertiary Drain	233.04	1.5-2.5	.64-1.00	1st

Drain_ID	Drain Type	Length (in m)	Width (in ft)	Depth (in m)	Phase
TR-100	Tertiary Drain	497.74	1.5-2.5	.64-1.00	1st
TR-101	Tertiary Drain	439.30	1.5-2.5	.64-1.00	1st
TR-102	Tertiary Drain	188.97	1.5-2.5	.64-1.00	2nd
TR-103	Tertiary Drain	12.03	1.5-2.5	.64-1.00	2nd
TR-104	Tertiary Drain	177.85	1.5-2.5	.64-1.00	2nd
TR-105	Tertiary Drain	197.17	1.5-2.5	.64-1.00	1st

Planning Schedule of Waterbodies in Daulatkhan Paurashava

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	2	0.0124
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	9	0.0343
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	4	0.0672
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	2	0.0000
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	9	0.0000
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	7	0.0686
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	6	0.0127
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	62	0.0559
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	93	0.0545
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	94	0.0527
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	81	0.0924
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	97	0.0702
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	101	0.1346
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	104	0.0524
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	105	0.0814
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	108	0.0109
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	31	0.0929
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	38	0.0611
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	46	0.0702
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	47	0.0734
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	50	0.0459
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	52	0.0644
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	27	0.0372
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	55	0.0792
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	56	0.0678
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	8	0.1182
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	59	0.0518
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	7	0.1038
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	60	0.0910
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	28	0.0850
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	62	0.0502
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	6	0.1319
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	39	0.0586
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	32	0.0055
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	34	0.0299
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	8	0.0000
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	81	0.0000
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	2	0.0212
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	12	0.0314
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	10	0.0518
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	8	0.0035
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	2	0.0174

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	11	0.0392
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	12	0.0121
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	10	0.0136
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	11	0.0001
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	12	0.0000
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	12	0.0408
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	27	0.0423
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	12	0.0000
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	27	0.0000
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	108	0.0402
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	108	0.0000
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	93	0.1061
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	81	0.0992
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	80	0.0031
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	60	0.0003
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	62	0.0009
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	93	0.0005
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	94	0.0004
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	81	0.0007
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	97	0.0001
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	99999	0.0002
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	131	0.0003
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	99999	0.0003
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	194	0.0000
Waterbody	Ward-1	Char Bara Lamchhi Dhali	034	01	193	0.0006
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	157	0.0287
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	156	0.0386
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	158	0.2446
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	159	0.2364
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	158	0.0001
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	153	0.0308
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	154	0.2008
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	155	0.0879
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	153	0.0001
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	149	0.0327
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	150	0.1094
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	151	0.0929
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	152	0.0406
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	121	0.0007
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	124	0.1968
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	124	0.0002
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	121	0.1524
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	124	0.0010

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	121	0.0002
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	124	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	121	0.1219
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	120	0.0371
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	121	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	121	0.0006
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	120	0.0002
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	127	0.0936
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	127	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	127	0.0002
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	127	0.0004
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	121	0.0767
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	121	0.0002
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	109	0.0770
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	109	0.0004
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	105	0.0852
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	105	0.0004
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	104	0.0582
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	100	0.0004
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	104	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	100	0.0002
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	104	0.0004
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	100	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	100	0.0402
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	100	0.0003
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	98	0.0739
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	98	0.1053
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	98	0.0003
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	98	0.0006
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	98	0.0002
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	98	0.0003
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	98	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	100	0.0668
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	100	0.0002
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	100	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	100	0.0313
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	100	0.0002
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	101	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	100	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	97	0.0751
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	98	0.0459
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	97	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	98	0.0000

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	97	0.0002
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	98	0.0003
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	93	0.0050
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	69	0.1995
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	67	0.0494
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	68	0.0557
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	93	0.0015
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	69	0.0004
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	68	0.0001
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	120	0.2577
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	120	0.0006
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	120	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	120	0.0541
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	120	0.0008
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	105	0.0616
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	105	0.0003
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	105	0.0232
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	105	0.0001
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	104	0.0389
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	105	0.0032
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	100	0.0124
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	104	0.0001
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	105	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	100	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	100	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	104	0.0510
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	100	0.0318
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	104	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	100	0.0003
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	93	0.0007
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	66	0.0001
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	68	0.0003
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	66	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	65	0.0001
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	60	0.0555
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	63	0.0188
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	55	0.0406
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	56	0.0428
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	59	0.0493
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	60	0.0001
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	46	0.0011
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	47	0.0336
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	52	0.0142

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	51	0.0560
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	3	0.0042
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	36	0.0770
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	37	0.0043
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	3	0.0964
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	3	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	3	0.2425
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	4	0.0244
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	5	0.4313
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	3	0.1464
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	5	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	3	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	124	0.0968
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	124	0.0002
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	109	0.0005
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	118	0.0001
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	109	0.1069
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	118	0.0764
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	121	0.1360
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	121	0.0002
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	100	0.0183
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	100	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	100	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	98	0.0415
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	100	0.0632
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	98	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	100	0.0008
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	98	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	93	0.0008
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	94	0.1124
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	98	0.0043
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	99	0.0354
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	94	0.0003
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	98	0.0003
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	99	0.0009
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	63	0.0347
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	63	0.1217
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	70	0.0004
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	69	0.0106
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	50	0.0016
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	52	0.0771
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	55	0.1109
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	56	0.0719

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	59	0.0101
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	38	0.0539
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	46	0.0843
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	47	0.0602
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	50	0.0474
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	35	0.1450
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	38	0.0616
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	46	0.0600
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	47	0.0110
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	34	0.1087
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	93	0.1673
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	94	0.0641
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	80	0.0783
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	77	0.0124
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	78	0.0158
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	79	0.0215
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	93	0.0002
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	80	0.0006
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	97	0.0949
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	97	0.0007
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	97	0.0001
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	97	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	47	0.0030
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	50	0.0227
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	52	0.0025
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	62	0.0746
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	77	0.0024
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	62	0.0005
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	77	0.0002
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	62	0.0001
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	62	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	60	0.0001
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	62	0.0733
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	101	0.0038
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	104	0.1007
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	100	0.0704
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	100	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	104	0.0020
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	105	0.0261
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	104	0.0001
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	105	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	104	0.0129
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	105	0.0352

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	104	0.0002
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	105	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	101	0.0106
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	104	0.0141
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	101	0.0001
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	104	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	101	0.0483
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	101	0.0001
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	101	0.0003
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	56	0.0986
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	59	0.0410
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	66	0.0230
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	68	0.0356
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	66	0.0002
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	68	0.0006
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	63	0.0650
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	69	0.0002
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	63	0.0006
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	69	0.0002
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	97	0.0042
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	101	0.1432
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	97	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	101	0.0008
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	101	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	101	0.0640
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	101	0.0005
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	105	0.1201
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	108	0.1740
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	108	0.1332
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	109	0.0407
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	108	0.1235
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	109	0.0420
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	108	0.0017
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	108	0.0006
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	109	0.1035
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	112	0.1102
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	113	0.0881
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	116	0.0346
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	112	0.0352
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	113	0.0982
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	116	0.1358
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	121	0.0827
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	121	0.0468

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	124	0.0006
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	127	0.2005
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	132	0.1192
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	127	0.0005
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	132	0.0001
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	132	0.0848
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	138	0.1148
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	141	0.0808
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	141	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	141	0.0525
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	142	0.0925
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	142	0.0011
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	145	0.2386
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	142	0.0001
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	145	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	145	0.0013
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	164	0.3211
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	167	0.0013
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	167	0.1632
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	167	0.2338
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	163	0.1932
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	167	0.0004
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	163	0.0004
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	145	0.1924
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	167	0.0277
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	163	0.0119
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	147	0.0634
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	162	0.2414
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	162	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	145	0.1019
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	164	0.2187
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	167	0.1889
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	164	0.0001
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	141	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	142	0.0601
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	145	0.0278
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	170	0.0636
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	170	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	167	0.2374
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	168	0.0611
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	169	0.0518
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	169	0.1083
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	109	0.0172

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	149	0.0001
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	149	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	97	0.0001
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	101	0.0327
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	100	0.0070
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	93	0.0047
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	66	0.0136
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	68	0.0924
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	65	0.0320
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	93	0.0002
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	55	0.0001
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	59	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	59	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	3	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	36	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	37	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	3	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	3	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	93	0.0004
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	94	0.0005
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	93	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	101	0.0003
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	104	0.0001
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	100	0.0001
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	100	0.0001
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	56	0.0002
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	59	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	105	0.0001
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	105	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	112	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	113	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	113	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	113	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	113	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	113	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	109	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	109	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	109	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	101	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	101	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	100	0.0000
Waterbody	Ward-2	Char Bara Lamchhi Dhali	034	01	100	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	175	0.2692

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	182	0.0034
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	174	0.1340
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	175	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	174	0.0534
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	174	0.0001
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	175	0.0626
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	174	0.0001
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	175	0.1467
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	188	0.2187
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	199	0.3223
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	406	0.0007
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	407	0.0005
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	188	0.0001
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	183	0.0086
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	184	0.0124
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	183	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	174	0.0299
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	175	0.0770
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	174	0.0703
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	416	0.0207
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	214	0.7268
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	417	0.0085
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	416	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	416	0.2121
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	214	0.0035
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	412	0.1267
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	412	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	196	0.0170
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	195	0.0001
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	197	0.1232
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	190	0.0775
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	196	0.0033
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	197	0.0221
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	412	0.1333
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	182	0.0132
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	183	0.0555
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	184	0.1315
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	190	0.1494
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	182	0.0068
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	183	0.0358
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	184	0.0134
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	183	0.0255
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	184	0.0771

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	182	0.1541
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	183	0.0537
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	184	0.0670
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	182	0.0923
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	183	0.0006
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	175	0.0959
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	174	0.0916
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	174	0.0257
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	175	0.0138
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	174	0.0002
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	175	0.0001
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	182	0.0517
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	182	0.0004
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	174	0.0020
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	174	0.1078
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	175	0.1277
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	182	0.0158
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	182	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	174	0.0835
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	174	0.0630
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	174	0.1294
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	174	0.0280
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	174	0.0005
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	175	0.0722
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	175	0.0003
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	182	0.0310
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	182	0.0003
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	183	0.0201
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	184	0.0807
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	190	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	183	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	183	0.0264
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	184	0.0938
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	183	0.0002
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	184	0.0001
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	183	0.0004
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	184	0.0287
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	183	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	184	0.0003
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	184	0.0152
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	190	0.0166
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	184	0.0002
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	190	0.0002

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	190	0.1273
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	184	0.0235
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	190	0.0501
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	184	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	184	0.0022
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	190	0.0205
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	190	0.0018
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	412	0.0928
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	412	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	174	0.1582
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	175	0.0008
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	174	0.0004
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	200	0.2393
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	185	0.0072
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	201	0.0984
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	184	0.0670
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	200	0.0498
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	185	0.0685
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	184	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	219	0.1778
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	219	0.0001
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	219	0.1580
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	225	0.1259
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	225	0.0003
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	219	0.0001
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	200	0.2536
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	202	0.0506
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	219	0.0030
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	201	0.0858
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	219	0.0622
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	225	0.1096
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	369	0.0625
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	366	0.0688
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	365	0.0648
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	362	0.0690
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	377	0.7511
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	376	0.1405
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	375	0.0701
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	373	0.0006
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	375	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	217	0.0069
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	216	0.2583
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	217	0.0001

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	377	0.0149
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	312	0.2745
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	217	0.0994
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	216	0.4606
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	309	0.4117
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	308	0.0022
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	199	0.0079
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	187	0.0103
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	407	0.0065
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	200	0.3563
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	404	0.0307
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	202	0.0840
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	407	0.0001
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	219	0.1316
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	224	0.0082
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	227	0.0783
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	235	0.0019
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	228	0.0142
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	228	0.1572
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	229	0.0003
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	229	0.0469
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	229	0.0001
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	229	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	310	0.0008
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	420	0.0128
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	227	0.0536
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	454	0.0037
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	409	0.4342
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	229	0.2076
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	231	0.0996
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	306	0.7913
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	304	0.0015
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	303	0.0012
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	302	0.0053
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	301	0.0101
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	300	0.0078
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	299	0.0118
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	298	0.0107
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	297	0.0071
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	296	0.0382
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	306	0.0002
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	295	0.0046
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	294	0.0326

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	293	0.0316
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	292	0.0553
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	291	0.0001
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	373	0.0710
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	369	0.0283
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	459	0.0350
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	371	1.0770
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	372	0.0811
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	316	0.0189
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	317	0.0139
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	370	0.1151
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	318	0.0061
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	365	0.1719
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	319	0.0017
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	427	0.0956
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	320	0.0003
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	321	0.0124
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	322	0.0576
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	426	0.1311
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	414	0.0668
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	131	0.0022
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	99999	0.0047
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	194	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	208	0.0011
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	209	0.0034
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	213	0.0053
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	212	0.0010
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	377	0.0161
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	376	0.0043
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	375	0.0032
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	373	0.0053
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	369	0.0011
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	416	0.0001
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	214	0.0001
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	182	0.0001
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	183	0.0003
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	184	0.0001
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	183	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	183	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	183	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	184	0.0003
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	183	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	182	0.0004

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	182	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	182	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	219	0.0001
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	225	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	225	0.0001
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	377	0.0002
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	377	0.0001
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	216	0.0001
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	216	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	216	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	216	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	216	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	216	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	227	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	227	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	227	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	229	0.0001
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	229	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	229	0.0001
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	229	0.0001
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	310	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	310	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	420	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	227	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	227	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	227	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	229	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	229	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	229	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	229	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	229	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	229	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	229	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	229	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	231	0.0004
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	231	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	231	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	231	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	231	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	227	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	235	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	99999	0.0773
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	131	0.1857

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	99999	0.0232
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	194	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	193	0.0205
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	208	0.0002
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	210	0.1980
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	209	0.0028
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	211	0.0968
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	213	0.0364
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	212	0.0694
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	377	0.3790
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	378	0.0014
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	376	0.1538
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	375	0.1273
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	373	0.1700
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	369	0.0109
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	99999	0.0002
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	131	0.0003
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	99999	0.0003
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	194	0.0000
Waterbody	Ward-3	Char Bara Lamchhi Dhali	034	01	193	0.0006
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	248	0.0749
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	248	0.0010
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	251	0.0756
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	252	0.1023
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	501	0.2769
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	501	0.0366
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	253	0.0000
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	501	0.0003
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	501	0.0010
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	1210	0.1921
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	1209	0.1444
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	503	0.0116
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	245	0.0630
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	245	0.0002
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	244	0.0593
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	244	0.0997
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	244	0.0001
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	244	0.0827
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	244	0.0001
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	244	0.0889
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	242	0.0431
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	242	0.0002
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	241	0.0779

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	242	0.1066
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	239	0.0228
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	240	0.0998
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	240	0.0000
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	240	0.0057
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	241	0.0929
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	243	0.0028
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	242	0.2405
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	244	0.1823
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	242	0.0353
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	244	0.1561
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	244	0.2311
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	244	0.0092
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	244	0.1171
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	244	0.0001
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	244	0.0003
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	239	0.0203
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	400	0.0089
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	239	0.0000
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	239	0.1796
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	239	0.0000
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	235	0.0776
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	237	0.6072
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	235	0.3506
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	235	0.0589
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	236	0.5078
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	235	0.0003
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	235	0.0000
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	235	0.0000
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	235	0.1320
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	235	0.0048
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	245	0.0673
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	246	0.0638
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	246	0.0915
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	244	0.0017
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	245	0.0735
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	246	0.0236
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	247	0.2774
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	250	0.0004
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	247	0.0008
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	250	0.1063
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	266	0.0006
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	254	0.1864

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	253	0.0669
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	266	0.0003
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	271	0.0000
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	270	0.0464
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	269	0.0362
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	268	0.0059
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	265	0.9572
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	256	0.2198
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	265	0.0005
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	256	0.0001
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	246	0.0789
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	246	0.0000
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	502	0.4408
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	1210	0.0046
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	1209	0.0846
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	1210	0.0591
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	1209	0.1013
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	561	0.1261
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	1234	0.0879
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	502	0.3739
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	1210	0.1830
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	502	0.0010
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	502	0.0004
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	562	0.0002
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	560	0.0001
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	559	0.2307
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	565	0.0002
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	1210	0.0002
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	559	0.0002
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	1208	0.1098
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	503	0.0253
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	557	0.0054
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	559	0.0420
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	565	0.0089
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	1208	0.0002
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	503	0.0026
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	557	0.0031
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	559	0.0001
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	1208	0.0006
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	503	0.0002
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	557	0.0000
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	1208	0.0647
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	1209	0.1360

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	503	0.0305
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	557	0.0017
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	275	0.0000
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	274	0.0580
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	273	0.0571
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	1210	0.0653
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	1209	0.0757
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	1209	0.0369
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	503	0.0258
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	561	0.0807
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	255	0.0588
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	430	0.0323
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	241	0.0001
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	242	0.0000
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	240	0.0001
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	241	0.0007
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	241	0.0014
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	243	0.0000
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	240	0.0001
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	244	0.0001
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	244	0.0001
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	235	0.0002
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	235	0.0001
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	235	0.0002
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	237	0.0001
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	235	0.0002
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	237	0.0015
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	235	0.0000
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	235	0.0000
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	235	0.0000
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	253	0.0000
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	253	0.3291
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	419	0.0006
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	430	0.0006
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	256	0.0007
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	266	0.0002
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	256	0.0000
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	256	0.0001
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	560	0.0000
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	562	0.0000
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	559	0.0000
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	559	0.0000
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	559	0.0000

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	02	565	0.0000
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	227	0.0000
Waterbody	Ward-4	Char Bara Lamchhi Dhali	034	01	235	0.0000
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	02	570	0.0659
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	378	0.5121
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	379	0.8868
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	369	0.0193
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	366	0.0338
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	365	0.0370
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	362	0.0479
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	382	0.0140
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	360	0.1192
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	361	0.0561
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	383	0.0050
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	358	0.0330
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	359	0.0083
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	356	0.1757
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	357	0.0584
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	386	0.0099
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	387	0.0127
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	355	0.0245
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	354	0.0000
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	388	0.0292
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	389	0.1035
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	394	0.1797
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	395	0.1879
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	396	0.2004
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	397	0.3014
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	360	0.0340
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	359	0.1596
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	333	0.0170
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	333	0.5578
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	332	0.0185
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	334	0.1644
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	335	0.0005
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	336	0.0230
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	337	0.0652
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	338	0.0479
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	339	0.0625
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	340	0.1016
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	341	0.0349
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	341	0.0000
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	341	0.0656

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	342	0.1348
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	341	0.0003
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	343	0.2026
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	344	0.0544
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	344	0.0630
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	471	0.0885
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	345	0.0632
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	344	0.0003
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	471	0.0080
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	345	0.0050
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	346	0.2099
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	473	0.0136
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	347	0.0098
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	02	1251	0.0510
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	02	563	0.0566
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	477	0.0281
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	349	0.0336
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	02	1251	0.0002
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	02	1251	0.0970
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	02	563	0.0356
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	02	1251	0.0001
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	02	563	0.0001
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	02	1251	0.0488
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	02	564	0.0851
Waterbody	Ward-5	Char Bara Lamchhi Dhali	034	01	333	0.0001
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	386	0.1120
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	382	0.0000
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	383	0.2558
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	384	0.0000
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	386	0.4056
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	389	0.1729
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	392	0.1120
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	392	0.1232
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	394	2.3094
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	393	0.1554
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	377	0.0001
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	378	0.0022
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	99999	0.0015
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	379	0.0007
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	374	0.0008
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	368	0.0004
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	381	0.0027
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	378	0.1333

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	379	0.0931
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	381	0.0000
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	365	0.0003
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	363	0.0591
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	362	0.2979
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	382	0.0272
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	99999	0.0053
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	384	0.1278
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	386	0.2410
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	391	0.0465
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	99999	0.0000
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	392	0.0001
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	394	0.0004
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	392	0.0001
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	392	0.0001
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	377	0.0002
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	378	0.0063
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	99999	0.0048
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	379	0.0025
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	374	0.0022
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	368	0.0012
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	381	0.0082
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	369	0.0000
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	378	0.0001
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	379	0.0003
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	382	0.0001
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	379	0.0000
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	382	0.0000
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	99999	0.0275
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	382	0.0873
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	384	0.7326
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	383	0.1030
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	131	0.0808
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	211	0.1049
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	212	0.0167
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	377	0.3451
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	378	0.2109
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	99999	0.3288
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	376	0.1945
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	379	0.1452
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	375	0.1498
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	373	0.2789
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	374	0.0030

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	380	0.1003
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	368	0.0021
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	369	0.0360
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	381	0.4746
Waterbody	Ward-6	Char Bara Lamchhi Dhali	034	01	377	0.0000
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	633	0.2020
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	632	0.1487
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	630	0.2206
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	630	0.0009
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	570	0.7014
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	545	0.0312
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	590	0.1005
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	586	0.0038
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	544	0.0433
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	1217	0.0303
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	589	0.2254
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	543	0.0784
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	588	0.0004
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	540	0.1165
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	591	0.5699
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	587	0.2989
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	1224	0.2736
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	1225	0.2073
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	595	0.0029
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	642	0.0454
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	641	0.6651
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	620	0.0041
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	619	0.0049
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	618	0.0380
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	641	0.4144
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	623	0.0004
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	621	0.0001
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	1235	0.0530
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	505	0.0341
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	508	0.0815
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	509	0.0015
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	1235	0.0002
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	505	0.0001
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	505	0.0191
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	506	0.0374
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	508	0.0096
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	509	0.0024
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	507	0.0318

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	506	0.0549
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	509	0.0636
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	507	0.0486
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	510	0.0535
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	511	0.0141
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	509	0.2016
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	510	0.0785
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	510	0.1554
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	513	0.0031
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	510	0.0003
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	513	0.0643
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	1240	0.0593
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	512	0.2982
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	516	0.1588
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	517	0.0012
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	1229	0.1087
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	1230	0.1370
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	554	0.0247
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	555	0.1304
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	1229	0.0021
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	555	0.0003
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	517	0.1614
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	517	0.0002
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	554	0.0417
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	544	0.0317
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	520	0.2551
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	519	0.0454
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	1243	0.0252
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	518	0.0041
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	1243	0.0326
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	520	0.1913
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	519	0.0001
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	1243	0.0000
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	1243	0.0001
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	519	0.0731
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	541	0.0251
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	1244	0.0031
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	526	0.0000
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	525	0.0010
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	527	0.1563
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	531	0.0000
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	523	0.0006
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	520	0.0842

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	525	0.0006
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	524	0.0026
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	521	0.0001
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	541	0.0562
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	1244	0.0406
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	540	0.0383
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	1245	0.0509
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	539	0.0477
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	537	0.1396
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	538	0.0453
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	593	0.1410
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	593	0.0003
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	593	0.0993
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	598	0.0967
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	601	0.0017
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	598	0.0265
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	599	0.3802
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	600	0.0037
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	601	0.0023
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	598	0.0002
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	598	0.0008
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	601	0.1044
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	602	0.0379
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	602	0.0001
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	600	0.1347
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	604	0.0670
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	604	0.0050
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	606	0.0000
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	605	0.1183
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	606	0.0000
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	605	0.0000
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	614	0.1002
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	615	0.0606
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	614	0.0008
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	616	0.1571
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	616	0.0000
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	617	0.1110
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	619	0.1582
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	619	0.0001
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	569	0.0296
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	549	1.6930
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	548	0.0078
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	547	0.0080

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	546	0.0128
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	545	0.0063
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	549	0.0000
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	569	0.0000
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	549	0.0000
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	569	0.0013
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	548	0.0004
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	547	0.0005
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	546	0.0007
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	545	0.0002
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	555	0.0183
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	553	1.1491
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	550	0.0392
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	551	0.0251
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	552	0.0465
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	545	0.1839
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	553	0.0032
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	544	0.0598
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	553	0.0003
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	545	0.0322
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	544	0.0738
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	593	0.1693
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	598	0.0000
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	593	0.0002
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	591	0.0083
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	592	0.0730
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	591	0.0002
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	592	0.0003
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	597	0.1902
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	593	0.0014
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	598	0.1224
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	596	0.0028
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	596	0.1172
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	602	0.0049
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	598	0.0999
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	596	0.0002
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	598	0.0601
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	596	0.0001
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	602	0.1656
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	596	0.0927
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	625	0.1604
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	625	0.0004
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	603	0.0955

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	625	0.1666
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	624	0.0000
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	625	0.0796
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	624	0.0009
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	1213	0.0463
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	607	0.0258
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	1213	0.0002
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	1213	0.0000
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	1213	0.0265
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	607	0.0221
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	1213	0.0001
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	607	0.0671
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	603	0.0689
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	603	0.0591
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	603	0.0475
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	622	0.2194
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	622	0.0548
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	622	0.0003
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	622	0.0002
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	614	0.0364
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	612	0.0009
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	614	0.0679
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	615	0.1152
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	615	0.3341
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	617	0.3973
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	620	0.0051
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	623	0.7998
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	621	0.0031
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	623	0.0000
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	623	0.0004
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	623	0.0398
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	621	0.4299
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	626	0.0229
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	627	0.5636
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	628	0.3020
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	628	0.0002
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	633	0.1634
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	634	0.0863
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	633	0.0575
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	626	0.0614
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	627	0.1573
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	626	0.0001
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	626	0.1579

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	626	0.1613
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	1207	0.0050
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	594	0.0401
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	1223	0.1684
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	1207	0.0000
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	594	0.0001
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	594	0.0670
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	594	0.0003
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	630	0.6098
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	629	0.0020
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	630	0.0002
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	625	0.0012
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	641	0.3825
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	623	0.0064
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	621	0.0112
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	623	0.0000
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	1229	0.0003
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	1230	0.0000
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	1230	0.0001
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	602	0.0000
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	602	0.0001
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	602	0.0001
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	602	0.0000
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	621	0.0000
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	623	0.0000
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	623	0.0000
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	621	0.0000
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	633	0.0000
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	633	0.0000
Waterbody	Ward-7	Char Bara Lamchhi Dhali	034	02	633	0.0000
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	571	0.0440
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	571	0.0460
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	587	0.1592
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	587	0.0016
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	586	0.1381
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	587	0.0412
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	586	0.0005
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	587	0.0014
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	99999	0.0164
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	586	0.5978
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	586	0.0735
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	638	0.0485
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	638	0.0886

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	99999	0.0000
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	572	0.1420
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	1217	0.0239
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	589	0.0033
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	582	0.0849
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	99999	0.0081
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	586	0.1236
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	638	0.0442
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	99999	0.0000
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	99999	0.0000
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	99999	0.0243
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	638	0.0562
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	99999	0.0000
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	638	0.0000
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	99999	0.0113
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	638	0.0282
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	99999	0.0314
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	638	0.0978
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	99999	0.0000
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	638	0.0001
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	638	0.0494
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	638	0.0001
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	99999	0.0125
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	640	0.0113
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	99999	0.0001
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	640	0.0000
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	640	0.0463
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	639	0.4934
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	570	0.0426
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	640	0.0377
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	99999	0.0007
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	99999	0.0112
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	586	0.0799
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	99999	0.0000
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	586	0.0000
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	586	0.0000
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	570	0.2960
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	586	0.1494
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	587	0.1122
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	638	0.4620
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	640	0.0915
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	631	0.1676
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	642	0.0211

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	641	0.0889
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	570	0.3912
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	1218	0.0804
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	1219	0.1233
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	571	0.5421
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	569	0.0023
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	548	0.0064
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	547	0.0141
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	546	0.0354
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	545	0.0133
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	590	0.0092
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	631	0.0011
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	642	0.0158
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	641	0.0608
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	99999	0.0318
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	638	0.0782
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	656	0.0314
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	658	0.0178
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	761	0.0251
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	579	0.4552
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	01	399	0.4157
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	575	0.0016
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	1219	0.0354
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	571	0.2227
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	1219	0.0000
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	575	0.1288
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	575	0.0004
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	576	0.1067
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	578	0.0149
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	577	0.0012
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	576	0.0800
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	587	0.0003
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	587	0.0000
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	1219	0.0001
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	1219	0.0001
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	571	0.0000
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	571	0.0000
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	571	0.0001
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	571	0.0002
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	99999	0.0000
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	638	0.0001
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	99999	0.0000
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	576	0.0000

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	576	0.0000
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	578	0.0000
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	576	0.0000
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	576	0.0000
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	576	0.0000
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	576	0.0000
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	576	0.0000
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	577	0.0000
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	576	0.0000
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	576	0.0000
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	576	0.0000
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	576	0.0000
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	576	0.0000
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	576	0.0000
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	576	0.0000
Waterbody	Ward-8	Char Bara Lamchhi Dhali	034	02	576	0.0000
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	674	0.0895
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	674	0.0002
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	674	0.2470
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	674	0.1463
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	684	0.0015
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	678	0.0780
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	678	0.0003
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	684	0.0000
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	678	0.0528
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	679	0.3434
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	674	0.0799
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	674	0.1305
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	674	0.1629
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	674	0.1355
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	674	0.1626
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	674	0.0005
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	674	0.0208
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	675	0.0560
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	677	0.0120
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	674	0.0823
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	672	0.0026
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	674	0.0003
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	672	0.0792
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	671	0.1971
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	668	0.0001
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	671	0.0004
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	674	0.0505

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	674	0.0901
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	675	0.0981
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	674	0.3105
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	674	0.0010
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	674	0.0770
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	674	0.0958
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	667	0.0342
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	674	0.1017
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	667	0.0189
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	661	0.0000
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	667	0.1351
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	667	0.1905
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	755	0.0205
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	756	0.0168
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	760	0.1270
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	763	0.0276
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	764	0.0121
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	646	0.0355
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	645	0.6695
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	644	1.0580
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	643	0.1878
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	674	0.0833
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	651	0.0157
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	652	0.0442
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	673	0.0118
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	672	0.0079
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	653	0.0628
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	670	0.0187
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	669	0.0122
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	668	0.0004
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	654	0.0172
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	655	0.0317
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	667	0.0144
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	656	0.0683
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	665	0.0295
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	666	0.0397
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	664	0.0333
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	663	0.0538
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	659	0.0110
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	750	0.0304
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	752	0.0378
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	753	0.0422
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	754	0.0546

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	755	0.0737
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	760	0.0818
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	763	0.0593
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	762	0.0070
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	765	0.0131
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	764	0.0512
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	766	0.0145
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	767	0.0251
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	774	0.0160
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	777	0.0169
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	786	0.0033
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	755	0.0000
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	760	0.0005
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	763	0.0006
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	764	0.0005
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	767	0.0000
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	674	0.0037
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	739	0.0089
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	732	0.0105
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	732	0.0551
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	731	0.0227
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	680	0.0933
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	676	0.0291
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	682	0.0002
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	688	0.0061
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	681	0.0021
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	687	0.0323
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	743	0.0911
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	743	0.0544
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	743	0.0587
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	745	0.1017
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	724	0.1094
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	1227	0.1385
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	724	0.0000
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	1227	0.0004
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	745	0.0008
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	759	0.0941
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	745	0.0002
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	760	0.0003
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	758	0.0557
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	739	0.0733
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	732	0.0106
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	732	0.0590

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	731	0.0176
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	732	0.0004
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	731	0.0001
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	740	0.0900
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	739	0.0208
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	740	0.0006
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	739	0.0001
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	732	0.0501
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	731	0.0190
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	732	0.0001
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	715	0.2352
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	742	0.1219
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	715	0.0005
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	712	0.0806
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	712	0.0664
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	717	0.0037
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	724	0.0641
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	722	0.0164
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	724	0.0003
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	716	0.0005
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	736	0.1582
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	740	0.0009
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	697	0.1113
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	712	0.0548
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	697	0.0076
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	712	0.0225
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	715	0.0579
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	715	0.0001
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	711	0.0811
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	718	0.2677
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	718	0.0002
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	719	0.0978
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	719	0.3550
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	719	0.0010
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	719	0.3626
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	720	0.2214
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	711	0.0813
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	718	0.1540
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	662	0.0017
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	660	0.0344
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	675	0.0225
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	661	0.0152
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	675	0.0258

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	676	0.0226
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	675	0.0004
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	660	0.0642
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	675	0.0387
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	675	0.0003
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	680	0.0558
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	681	0.0807
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	687	0.0231
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	744	0.0547
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	743	0.0181
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	680	0.0005
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	681	0.0002
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	687	0.0001
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	744	0.0003
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	748	0.1111
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	744	0.0001
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	747	0.0982
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	748	0.0003
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	747	0.0003
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	675	0.0102
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	659	0.0364
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	749	0.1314
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	754	0.0552
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	754	0.0448
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	757	0.0016
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	758	0.0014
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	745	0.0834
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	758	0.0006
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	745	0.0006
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	760	0.0021
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	758	0.1128
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	758	0.0000
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	662	0.0093
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	659	0.2378
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	750	0.0064
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	662	0.0000
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	659	0.0002
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	667	0.0003
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	662	0.1087
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	667	0.0048
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	666	0.0976
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	663	0.0027
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	667	0.0001

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	666	0.0007
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	753	0.0945
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	749	0.0989
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	753	0.0002
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	663	0.0735
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	663	0.0001
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	750	0.0770
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	751	0.0438
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	750	0.0003
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	751	0.0002
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	659	0.0001
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	750	0.0275
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	750	0.0433
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	751	0.0230
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	750	0.0003
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	751	0.0001
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	757	0.0246
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	757	0.0235
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	753	0.0003
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	754	0.0783
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	753	0.0001
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	754	0.0693
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	753	0.0338
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	754	0.0014
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	699	0.0126
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	702	0.0323
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	699	0.0001
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	707	0.1475
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	702	0.0418
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	703	0.1954
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	701	0.0618
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	702	0.0000
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	703	0.0001
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	1205	0.1176
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	1205	0.0001
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	1205	0.0856
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	695	0.1610
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	696	0.0009
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	696	0.0896
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	696	0.1160
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	696	0.0008
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	697	0.1776
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	697	0.0007

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	691	0.3271
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	690	0.0051
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	684	0.0890
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	685	0.2113
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	690	0.0007
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	683	0.1096
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	689	0.0227
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	684	0.1495
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	685	0.1201
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	689	0.0686
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	685	0.0000
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	689	0.0819
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	688	0.0002
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	674	0.0000
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	674	0.0999
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	674	0.0000
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	674	0.0001
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	641	0.0000
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	641	0.0000
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	641	0.0001
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	743	0.0001
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	743	0.0000
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	743	0.0000
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	743	0.0000
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	743	0.0000
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	743	0.0000
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	743	0.0000
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	745	0.0000
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	745	0.0000
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	745	0.0000
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	660	0.0005
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	660	0.0000
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	674	0.0005
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	674	0.0005
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	715	0.0000
Waterbody	Ward-9	Char Bara Lamchhi Dhali	034	02	715	0.0000
Waterbody		Char Bara Lamchhi Dhali	034	01	60	0.0002
Waterbody		Char Bara Lamchhi Dhali	034	01	60	0.0003
Waterbody		Char Bara Lamchhi Dhali	034	01	62	0.0009
Waterbody		Char Bara Lamchhi Dhali	034	01	93	0.0005
Waterbody		Char Bara Lamchhi Dhali	034	01	94	0.0004
Waterbody		Char Bara Lamchhi Dhali	034	01	81	0.0007
Waterbody		Char Bara Lamchhi Dhali	034	01	97	0.0002

Landuse	Ward Name	MOUZA Name	JL NO.	SHEET NO.	PLOT NO.	Area (Acre)
Waterbody		Char Bara Lamchhi Dhali	034	01	369	0.0000
Waterbody		Char Bara Lamchhi Dhali	034	01	99999	0.0773
Waterbody		Char Bara Lamchhi Dhali	034	01	131	0.1857
Waterbody		Char Bara Lamchhi Dhali	034	01	99999	0.0232
Waterbody		Char Bara Lamchhi Dhali	034	01	194	0.0000
Waterbody		Char Bara Lamchhi Dhali	034	01	193	0.0205
Waterbody		Char Bara Lamchhi Dhali	034	01	208	0.0002
Waterbody		Char Bara Lamchhi Dhali	034	01	210	0.1980
Waterbody		Char Bara Lamchhi Dhali	034	01	209	0.0028
Waterbody		Char Bara Lamchhi Dhali	034	01	211	0.0968
Waterbody		Char Bara Lamchhi Dhali	034	01	213	0.0364
Waterbody		Char Bara Lamchhi Dhali	034	01	212	0.0694
Waterbody		Char Bara Lamchhi Dhali	034	01	377	0.3790
Waterbody		Char Bara Lamchhi Dhali	034	01	378	0.0014
Waterbody		Char Bara Lamchhi Dhali	034	01	376	0.1538
Waterbody		Char Bara Lamchhi Dhali	034	01	375	0.1273
Waterbody		Char Bara Lamchhi Dhali	034	01	373	0.1700
Waterbody		Char Bara Lamchhi Dhali	034	01	369	0.0109
Waterbody		Char Bara Lamchhi Dhali	034	01	131	0.0808
Waterbody		Char Bara Lamchhi Dhali	034	01	211	0.1049
Waterbody		Char Bara Lamchhi Dhali	034	01	212	0.0167
Waterbody		Char Bara Lamchhi Dhali	034	01	377	0.3451
Waterbody		Char Bara Lamchhi Dhali	034	01	378	0.2109
Waterbody		Char Bara Lamchhi Dhali	034	01	99999	0.3288
Waterbody		Char Bara Lamchhi Dhali	034	01	376	0.1945
Waterbody		Char Bara Lamchhi Dhali	034	01	379	0.1452
Waterbody		Char Bara Lamchhi Dhali	034	01	375	0.1498
Waterbody		Char Bara Lamchhi Dhali	034	01	373	0.2789
Waterbody		Char Bara Lamchhi Dhali	034	01	374	0.0030
Waterbody		Char Bara Lamchhi Dhali	034	01	380	0.1003
Waterbody		Char Bara Lamchhi Dhali	034	01	368	0.0021
Waterbody		Char Bara Lamchhi Dhali	034	01	369	0.0360
Waterbody		Char Bara Lamchhi Dhali	034	01	381	0.4746
Waterbody		Char Bara Lamchhi Dhali	034	01	377	0.0000
Waterbody		Char Bara Lamchhi Dhali	034	01	99999	0.0002
Waterbody		Char Bara Lamchhi Dhali	034	01	131	0.0003
Waterbody		Char Bara Lamchhi Dhali	034	01	99999	0.0003
Waterbody		Char Bara Lamchhi Dhali	034	01	194	0.0000
Waterbody		Char Bara Lamchhi Dhali	034	01	193	0.0006