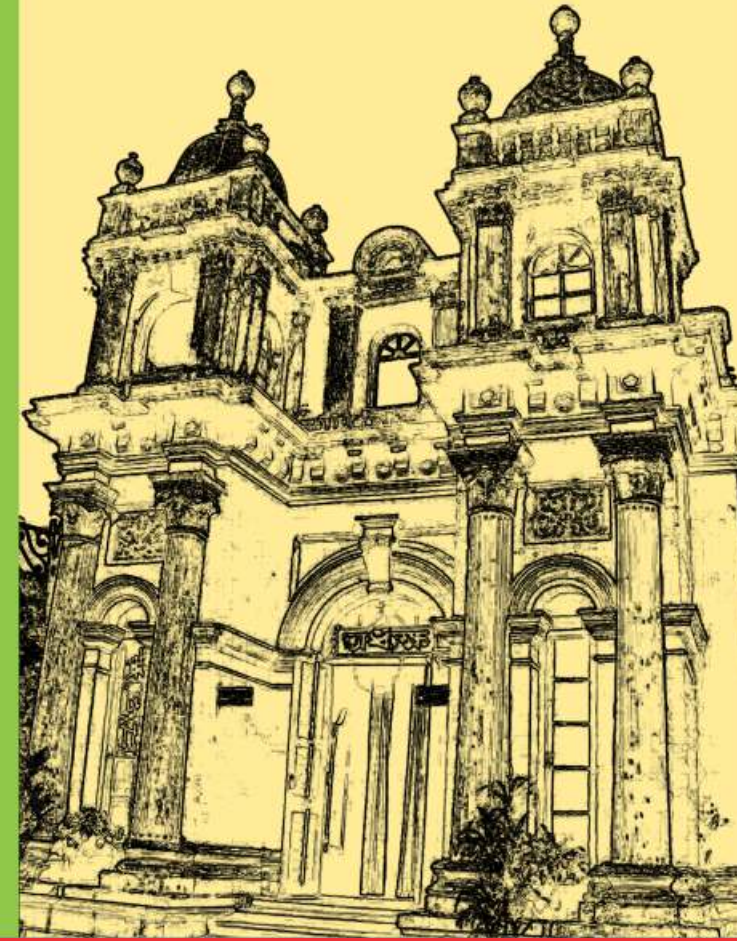


Mymensingh Strategic Development Plan (MSDP) 2011-2031



Urban Development Directorate (UDD)
Ministry of Housing and Public Works
The Government of the People's Republic of Bangladesh

We convey our heartiest gratitude to Mymensingh Strategic Development Plan (MSDP) team of Urban Development Directorate. We are happy to contribute to this Monograph.



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40+
Brands



600+
Corporate
Clients



80+
Awards



Mymensingh Strategic Development Plan (MSDP) 2011-2031



Urban Development Directorate (UDD),
Ministry of Housing and Public Works,
The Government of the People's Republic of Bangladesh

About UDD...

Urban Development Directorate (UDD),
Ministry of Housing and Public Works,
The Government of the People's Republic of Bangladesh

In the backdrop of rapid urbanization associated with increases in population and economic development in the early sixties, it was keenly felt that a regional and central office had to be created for Physical Planning. Accordingly Urban Development Directorate (UDD) was created on the 17th July 1965, under the administrative control of Works, Power and Irrigation Department of the then East Pakistan, vide memo no. 464E, dated, Dhaka, July 17, 1965. Functions allocated to the directorate were enhanced in the year 1983, by the Martial Law Committee on Organizational set up, headed by Brigadier Enamul Haque Khan which was approved by the Review Committee, headed by Major General Atiqur Rahman. The functions as listed below are:

1. To advise the Government on matters of policy relating to urbanization, land use and land development.
2. To prepare and co-ordinate regional plans, master plans and detailed layout and site plans for the existing as well as the new urban centers excluding the areas covered by the present town development authorities of Dhaka, Chittagong, Khulna & Rajshahi.
3. To undertake socio-economic research and collection of data for determination of the location and pattern of future urban development.
4. To prepare programmes for urban development for execution by the Sectoral agencies and secure approval of those from the National Council and assist the agencies in selection of sites for implementation of those programmes.
5. To act as a counterpart organization and focal point in the Government for all internationally aided physical planning and human settlement programmes in the country.
6. To organize seminars/workshops for creating better physical planning awareness and to disseminate information through regular publication of the research and planning materials on urbanization and human settlement planning and development.
7. To conduct in-service training of the officers and staff of organization involved in spatial planning and development.
8. To advise the existing urban development authorities on their operations at their request.

Message

Congratulations for successful completion of Mymensingh Strategic Development Plan (MSDP), 2011-2031 Project. It is expected that this planning package will be the model for risk sensitive planning process in Bangladesh.

I hope that Urban Development Directorate (UDD) will continue this trend to make disaster risk sensitive planned Bangladesh.



(Engineer Mosharraf Hossain, MP)
Hon'ble Minister
Ministry of Housing & Public Works





Message

I am glad to know that Mymensingh Strategic Development Plan (MSDP), 2011-2031 has been prepared under the Memorandum of Understanding (MoU) signed between Comprehensive Disaster Management Programme (CDMP)-II of the Ministry of Disaster Management and Relief and Urban Development Directorate (UDD), Ministry of Housing and Public Works. I convey my heartfelt thanks to UDD for preparing risk sensitive landuse plan for the first time in Bangladesh. The pictorial illustrations presented in this monograph would be the guideline and an essential risk sensitive planning tool for the future planners and related professionals in this arena.

A handwritten signature in black ink, appearing to be 'Md. Shahid Ullah Khandaker'.

(Md. Shahid Ullah Khandaker)
Secretary
Ministry of Housing & Public Works



Message

Mymensingh Strategic Development Plan (MSDP), 2011-2031 Project is the first endeavor for integrating disaster risk reduction in comprehensive landuse planning and management in Bangladesh. This project has achieved “2014 Asian Townscape Jury's Award” for its concept and planning approach, which has been initiated by the Comprehensive Disaster Management Programme (CDMP)-II. I feel proud to being a part of MSDP project. I wish every success of Urban Development Directorate (UDD).

(Mohammad Abdul Qayyum)
Former NPD, CDMP-II



Message

I convey my heartiest gratitude to Mymensingh Strategic Development Plan (MSDP) team of Urban Development Directorate for taking the pain for preparing risk sensitive landuse planning for the first time in Bangladesh. It is a monolithic example of application of theoretical perspective into landuse planning practice on ground. I hope further continuation of this process would build up a disaster resilient nation.

(Dr. Shamim Mahbubul Haque)
Former Urban Risk Sensitive Expert, CDMP-II



Message

Mymensingh Strategic Development Plan (MSDP), 2011-2031 Project is a paradigm shift in the landuse planning of Bangladesh, which has been reflected through achievement of “2014 Asian Townscape Jury's Award”. Urban Development Directorate (UDD) has got momentum through implementation of this project and dignity of this directorate has been upheld. I hope this trend will continue.

A handwritten signature in black ink, consisting of several overlapping, stylized lines.

(Khandkar Fowze Muhammed Bin Farid)
Former Director, UDD

Message

Mymensingh Strategic Development Plan (MSDP), 2011-2031 Project is a pilot project on “Preparing a Module for Mainstreaming Disaster Risk Reduction Measures into Comprehensive Land Use Development Planning and Management” with the Memorandum of Understanding (MoU) signed between Comprehensive Disaster Management Programme (CDMP)-II of the Ministry of Disaster Management and Relief and Urban Development Directorate (UDD), Ministry of Housing and Public Works. For the first time in Bangladesh, Engineering geological data and information has been interfaced with landuse data and information to prepare risk sensitive land use plan. MSDP has won the “Asian Townscape Jury's Award 2014” jointly organized by UN-Habitat for the methodology and database of MSDP Project. The project also selected as a pilot project for examining “Mainstreaming Climate Change into National Urban Policies”-the project implementing jointly by UNESCAP, UNEP and UN-Habitat.

This publication is the first monograph in planning profession in Bangladesh. The chronological development for the preparation of a plan could be visualized through the experiences of the series of maps, graphs, sketches etc. Hope this monograph will make a significant contribution in the field of planning profession.

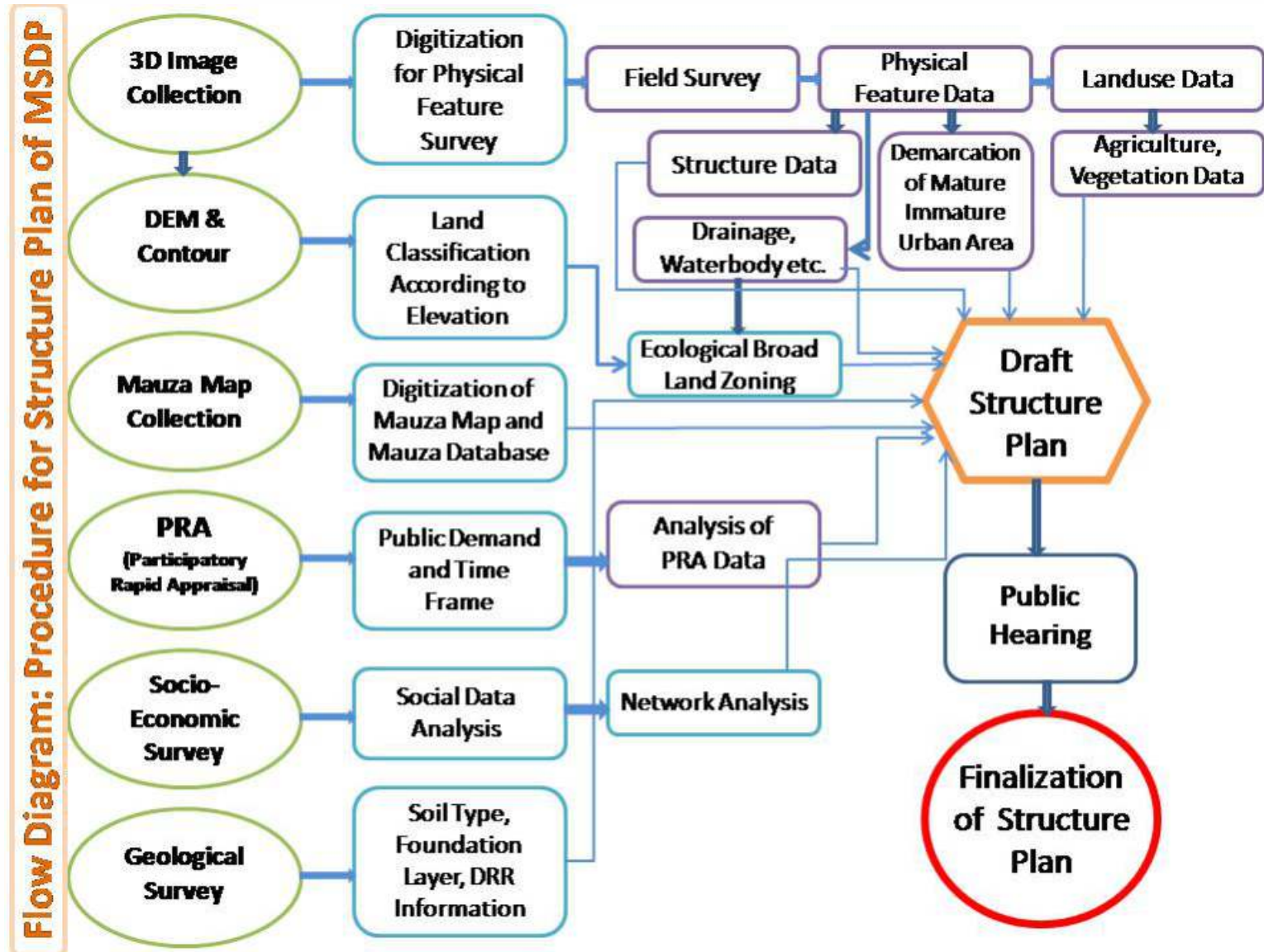
I specially remembering Dibbendu Saha, Assistant Professor, Dept. of Architecture, Ahsanullah University of Science and Technology for his thankless contribution to prepare this monograph.



(Dr. Khurshid Zabin Hossain Taufique)
Director, UDD & Project Director, MSDP



Flow Chart



Procedural List of Structure Plan Map Preparation

Image

- 1 Image Collection
- 2 Processing of Image
- 3 Rectification
- 4 Cleaning of Image
- 5 Bandwidth Colour Composition
- 6 Geo-referencing of Image

Digitize & Field Check

- 7 Prepare .shp file for Digitization With Arc GIS
- 8 Physical Feature Digitization from Image
- 9 Prepared Map from Image Digitization for Field Check and Data Collection
- 10 Physical Feature Survey and Data Collection with the help of Previously Digitized map
- 11 GIS Database Prepare and Update from Collected Field Data
- 12 Field Check By MSDP Team
- 13 Additional Building Data Collection By MSDP Team
- 14 Floor wise Building Data Collected from Field By MSDP Team
- 15 GIS Database Prepare and Update By MSDP Team
- 16 Physical feature database
- 17 Building use Declaration
- 18 Landuse database
- 19 Important point Feature database
- 20 Road Network Database
- 21 Waterbody Database
- 22 Drainage database
- 23 Embankment, Bridge, Culvert Database
- 24 Admin boundary Demarcation
- 25 KPI Demarcation
- 26 Educational Structure demarcation
- 27 Religious Facilities Demarcation
- 28 Ward wise Database prepare
- 29 Ward wise Database and Map Print
- 30 Verification of Ward wise database and Map from Municipality
- 31 Ward-wise map Prepare and Print
- 32 Para/ Neighborhood Demarcation From BBS
- 33 Field Check of Para/ Neighborhood Demarcation
- 34 Reform/Correction and Update of Para/ Neighborhood Boundary
- 35 Para-wise Database Preparation
- 36 Para-wise Map prepare and Print
- 37 Verification of Para wise database and Map from Municipality
- 38 Union-wise Database prepare
- 39 Specify Growth centers from unions and
- 40 Map Prepare and Print from Union Database
- 41 Field check of two Union and 10 Specific Growth center

- 42 Database of Unions and Growth Centers are Corrected and Updated
- 43 Print Growth Center and Union Database
- 44 Print Union-wise Map
- 45 Sample Field check of Different database
- 46 Analysis of Different Database
- 47 Map Preparation From Different Database
- 48 Print Map

Mauza Map

- 49 Mauza Map Collection from DLRS
- 50 Mauza Map Collection from DC Office
- 51 Mauza Map Digitization
- 52 Mauza Map Print
- 53 Mauza Map Check on Light Table
- 54 Error demarcation & Listing of Error for Mauza Map
- 55 Edit and Reprint of Mauza Map
- 56 Recheck of Mauza Map
- 57 Re Demarcation & Listing of Error for Mauza Map
- 58 Edit and reprint of Mauza Map
- 59 Recheck of Mauza Map
- 60 Edit and Finalization of Mauza Map
- 61 Ground Control Point Collection for Mauza Map Geo Reference
- 62 Mauza Map Georeference
- 63 Mosaic of Mauza Map for MSDP Area
- 64 Ground Control Point Collection From field by RTK GPS for Checking of Mauza Map
- 65 GCP Collection at the corner of halot for georeference Check
- 66 GCP Collection at the corner of Mauza Building for georeference Check
- 67 Mauza reference check from GCP
- 68 Mosaic of Mauza Unionwise
- 69 Mosaic of Mauza for MSDP Area
- 70 Mauza Map Database Prepared and Map print
- 71 Mauza Map Database Check
- 72 Mauza Map Database Edit & Print
- 73 Prepare Mauza Boundary
- 74 Prepare Sheet boundary
- 75 Ward wise Mauza Map Prepare
- 76 Ward wise Mauza Map Print
- 77 Ward wise Mauza with Physical feature Map Prepare & Print for Verification
- 78 Final Mauza map Prepare
- 79 Layout Prepare for Final Mauza print
- 80 Layout Validate From PD for Final Mauza print
- 81 Test Layout of Mauza Map Print
- 82 Test Layout of Mauza Map Check
- 83 Test Layout of Mauza Map Edit
- 84 Finalize Mauza Layout and Map Print

Procedural List of Structure Plan Map Preparation (cont'd)

Agricultural Map

- 85 Agriculture Map Prepared from Image
- 86 Agriculture Map Verified from PRA with Sub Assistant Agriculture Officer
- 87 Edit Agricultural data
- 88 Reform and Update Agricultural Data
- 89 Verification of Agricultural Map from Agri Office of Mymensingh
- 90 Re Update of Agri Database
- 91 Prepare Cropping Pattern Map and print
- 92 Finalization of Agricultural Map

DEM

- 93 DTM points generated(10m interval) from 3d Image
- 94 DEM Preparation
- 95 Prepare Contour from DEM
- 96 Collect RL from Field for DEM (RL) checking
- 97 Find out Difference By using GIS Software
- 98 Check Contour from Field(rl)
- 99 DEM Correction and Finalization
- 100 Contour Correction and Finalization
- 101 Inundation Data collection
- 102 Flood Map Preparation from DEM

Geological Map

- 103 Geological Survey (SPT, Borehole, MT, MSAW)
- 104 Geological Survey Checking By MSDP Team
- 105 Collection and Analysis of Geological Data
- 106 Raster Data Preparation
- 107 .shp file Prepared from Raster data
- 108 Database Prepare for all type of Geological Survey
- 109 Synchronization of all Type of Geological Data
- 110 Geological Map Prepared and Print
- 111 Explanatory Map prepared from analysis of Geological Data
- 112 Height Sensitive Map Prepared from Geological Data
- 113 Foundation Depth map Prepare
- 114 Soil Layer Map Prepare
- 115 Earthquake map Prepare
- 116 Earthquake Intensity Map Prepare
- 117 Verification of Geological Data from Expert
- 118 A 2 Days Workshop on Geological Data and Map
- 119 Re-Explanatory Map prepared from analysis of Geological Data
- 120 Re Prepare of Height Sensitive Map
- 121 Re Prepare Foundation Depth map
- 122 Re Prepare Soil Layer Map
- 123 Re Verification of Geological Data from Expert
- 124 Re Prepare Earthquake map
- 125 Re Prepare Earthquake Intensity Map

- 126 Finalization of Geological Map
- 127 Prepare Earthquake Impact Analysis Map Based on Building Height
- 128 Demarcation of Hotspot Zone After Earthquake

Soil Map

- 132 Data Collected From Soil Resource Development Institute
- 133 Map Collected and Scan
- 134 Georeference of Scan Map
- 135 Digitization of Soil Map
- 136 Database Prepare for Soil Map
- 137 Print of Soil Map
- 138 Edit of Soil Map
- 139 Finalization of soil Map

Tree

- 140 Prepare a .shp file for Digitization from Image
- 141 Digitize Trees from Image
- 142 Compile .shp file for tree data
- 143 Print and Check .shp File
- 144 Edit Tree Data
- 145 Calculate area
- 146 Prepare and Finalize Database for Tree
- 147 Union wise Database prepare for tree

Urban Road

- 148 Prepare and Finalize Road Network from Field survey by Using RTK GPS, Total station
- 149 Categorization of Road According to Width
- 150 Buffer all Road for a road network (12ft, 16ft & 20ft width)
- 151 Find out the Structures which are affected due to Road widening
- 152 Listing of Affected building By Type & Height
- 153 Affected Portion has been Identified from GIS Data
- 154 prepare Map and database for Field survey
- 155 Map and Database Print for Check from field
- 156 Data Check & Additional data has been Collected for Affected building from field Survey
- 157 Affected Building's Image has been Captured
- 158 Database Prepare & Updated
- 159 Database linked with Previous Database
- 160 Images are linked with the database
- 161 prepare Map and database for Print
- 162 Print Road network Map
- 163 Prepare Different Grid For road Network (100m,200m, 250m, 500m)
- 164 Print Road Network with Grid
- 165 Sketch on Printed Road Network Map
- 166 Demarcation and Make decision on road Network System
- 167 Re-adjust Road centerline According to Decision
- 168 Buffer Road centerline According to Road Type and Lane

- 169 Identify Affected Structure
- 170 Listing of Affected building By Type & Height
- 171 Affected Portion has been Identified from GIS Data
- 172 Prepare Map and database for print
- 173 Re-demarcation and Make decision on road Network System
- 174 Re-adjust Road centerline According to Decision
- 175 Buffer Road centerline According to Road Type and Lane
- 176 Re-identify Affected Structure
- 177 Re Listing of Affected building By Type & Height
- 178 Re Identify Affected Portion from GIS Data
- 179 Re Prepare Map and database for print
- 180 Again new decisions are made on road Network System
- 181 Re adjust Road centerline According to Decision
- 182 Buffer Road centerline According to Road Type and Lane
- 183 Re-identify Affected Structure
- 184 Re-listing of Affected building By Type & Height
- 185 Re-identify Affected Portion from GIS Data
- 186 Re Prepare Map and database for print
- 187 Print Map
- 188 Finalize Road network for Urban Area

Eco Sensitive Land

- 189 Prepare Polygone from DEM According to elevation
- 190 Reclass Elevation of DEM
- 191 Prepare Database
- 192 Classify Elevation
- 193 Prepare Map and Print
- 194 Check on Map
- 195 Edit Map and Reclass
- 196 Finalize Map and Print
- 197 Add Missing link of Drainage From stream line generated from DEM
- 198 Classify Waterbody According to Use
- 199 Add Classified Waterbody
- 200 Demark Eco Sensitive broad Land Zoning and prepare Map
- 201 Print Map
- 202 Finalize Eco Sensitive broad Land Zoning

Mental Map

- 203 Sample Data Collected from Socio-economic Survey for Preparing Mental Map
- 204 Prepare .shp File for Road Network for mental map
- 205 Prepare .shp file of spaces for mental Map
- 206 Prepare Mental Map and Print

Network Analysis

- 207 Sample Data Collected from Socio-economic Survey for Educational Network Analysis
- 208 Prepare .shp file for Primary Educational Institute Analysis

- 209 Analyze and prepare Map
- 210 Prepare .shp file for Secondary Educational Institute Analysis
- 211 Analyze and prepare Map
- 212 Prepare .shp file for Higher Secondary Educational Institute Analysis
- 213 Analyze and prepare Map
- 214 Prepare .shp file for University Analysis
- 215 Analyze and prepare Map
- 216 Sample Data Collected from Socio Economic Survey for Bazaar Network Analysis
- 217 Prepare .shp file for Bazar Analysis
- 218 Analyze and prepare Map
- 219 Sample Data Collected from Socio Economic Survey for Health Facility Network Analysis
- 220 Prepare .shp file for Health Facilities Analysis
- 221 Analyze and prepare Map
- 222 Sample Data Collected from Socio Economic Survey for Religious Facility Network Analysis
- 223 Prepare .shp file for Religious Facilities Analysis
- 224 Analyze and prepare Map
- 225 Waterbody (Pond) Data Prepared from Existing Physical Feature Survey to find Activated Area While Emergency Response through Network Analysis
- 226 Analyze and prepare Map
- 227 Shape file of Open Space Prepared from Existing Physical Feature Survey to find Activated Area While Emergency Response through Network Analysis
- 228 Analyze and prepare Map

Drainage Map

- 230 Prepare Drainage Map from Field Survey By Using RTK GPS and Total Station and GIS Software
- 231 Identify Missing link of Khal from Mauza Map
- 232 Identify missing link from DEM
- 233 Prepare Drainage Map for Print
- 234 Detailed Field survey for Drainage and flow Direction
- 235 Identify flow Direction
- 236 Define Catchment Area for Drainage
- 237 Edit Drain database
- 238 Prepare Flow Direction Map
- 239 Prepare Catchment Area Map and Print
- 240 Re Edit by Expert
- 241 Re prepare Catchment Map and Print
- 242 Finalize Catchment Area and prepare Database
- 243 Calculate rainfall data
- 244 Link Rainfall data and Analyze
- 245 Prepare Drain junction
- 246 Analyze Drainage data and prepare Flooding node By Using Pcsymm Software
- 247 Find Flooding Area
- 248 Finalize Drainage Map

Procedural List of Structure Plan Map Preparation (cont'd)

Fire Map

- 249 Prepare Physical Feature Map of Municipality For Fire Service and civil Defense
- 250 Map Print
- 251 Sketch Drawn By Fire Service and civil Defense on Map at PRA
- 252 Data Collected from Fire Service and civil Defense through PRA
- 253 Scan Map
- 254 Georeference Map
- 255 Prepare & Update Database for fire escape Route
- 256 Prepare fire incidence .shp file and database
- 257 Prepare Map and Print
- 258 Analyze Fire Incidence Data and Find out Hot Spot
- 259 Prepare Escape Route
- 260 Finalize Fire Escape Route

Crime Map

- 261 Collect Crime Data from Thana
- 262 Prepare .shp file for Crime Data
- 263 Analyze Data
- 264 Prepare Crime hot Zone Map & Database

Ecological Sensitive Map

- 265 Print DEM Map With Grid
- 266 Print Physical feature Map With Grid
- 267 Print Map of Waterbody With Grid
- 268 Prepare different map by Sketching on Different Printed Map at A2 days Workshop
- 269 Sketch on printed DEM to find Land Elevation
- 270 Sketch on Printed Physical feature Map to find out Existing Urban Area
- 271 Sketch on Printed Physical feature Map to find Mature Urban Area
- 272 Sketch on Printed Physical feature Map to find Existing Growth Centers
- 273 Use Water Policy To find Ecological Zone
- 274 Synchronization of all Type of Sketch to find out Ecological Zone
- 275 Sketch on Synchronized Map to find Ecological Zone
- 276 Scan Map
- 277 Transfer Ecological Zone into ARC GIS format
- 278 Add water policy with Ecology Data
- 279 Prepare Ecological Sensitive Map and Print

Regional Road Network

- 280 Prepare Physical Feature Map for MSDP Area
- 281 Sketch on Printed Map for Regional Road Network
- 282 Scan Map
- 283 Georeference Map
- 284 Edit and Prepare Road network
- 285 Print Prepared Road Network
- 286 Re sketch on Printed Road Network
- 287 Scan Map

- 288 Georeference Map
- 289 Re Edit and Prepare Road network
- 290 Print Re edited Network on Classification of Elevation
- 291 Re shuffle Road Network
- 292 Define Type of Road and Define Width of road
- 293 Buffer Road centerline According to Road Type and Lane
- 294 Find out the Structures which are affected due to Road widening
- 295 Listing of Affected building By Type & Height
- 296 Affected Portion has been Identified from GIS Data
- 297 Prepare Database for Regional Road network
- 298 Database Verified with Expert opinion
- 299 Finalize Regional Road network for MSDP Area

Regional Growth Center

- 300 Add Foreshore with Road from Ecological Zone
- 301 Prepare Map with Road Network and Ecological Zone
- 302 Print Map
- 303 Sketch on Map for Designing Growth Center
- 304 Scan Map
- 305 Geo-reference Map
- 306 Edit Road At Growth Center
- 307 Buffer Road centerline According to Road Type and Lane
- 308 Find out the Structures which are affected due to Road widening
- 309 Listing of Affected building By Type & Height
- 310 Affected Portion has been Identified from GIS Data
- 311 Prepare Database for Road network
- 312 Database Verified with Expert opinion
- 313 Finalize Road network at growth Centers for MSDP Area

Draft Structure Plan

- 314 Proposals of Draft Structure Plan were Drafted Synchronizing all of the data (Drainage, Road, land elevation, Geology, Landuse, PRA Data, Network Analysis)
- 315 Draft Structure Plan Map Prepared
- 316 Print of Draft Structure Plan Map
- 317 In house Dialogue of Professionals has been performed on this Draft Plan
- 318 Edit of Structure Plan Proposals
- 319 Draft Structure Plan Map Prepared
- 320 Print of Draft Structure Plan Map
- 321 Again In house Dialogue of Professionals has been performed on this Draft Plan
- 322 Edit of Structure Plan Proposals
- 323 Public Hearing has been Performed on Draft Structure Plan At Concern municipality and 10 Unions
- 324 Public Opinions has been taken at Maps
- 325 Edit Correction of Public opinion
- 326 Prepare Structure Plan Map

Strategic Development Plan of Mymensingh Town and Its Surrounding Region through Mainstreaming Disaster Risk Reduction in Land Use Planning 2011-2031

1. Conceptualization of Mymensingh Strategic Development Plan (MSDP), 2011-2031 Project

Considering the conceptual frame-work of Comprehensive Disaster Management Programme (CDMP)-II, a pilot project on preparing a module for mainstreaming disaster risk preventive measures into comprehensive Land Use development planning and management for Mymensingh (Municipality) Strategic Development Planning (MSDP) Area for twenty years (2011-2031) time-span has been formed between CDMP-II and Urban Development Directorate (UDD).

A Memorandum of Understanding (MoU) was signed on 21 March, 2011 between the authorities of CDMP-II of the Disaster Management & Relief and UDD, Ministry of Housing and Public Works (MoHPW) at the presence of concerned Ministers. The area of collaboration is to prepare an integrated development plan covering Structure Plan, Urban/Rural Area Plan and Action Area Plans, and subsequent training module for Mymensingh (Municipality) Strategic Development Planning (MSDP) Area by including disaster (both natural and man-made) risk reduction measures into comprehensive land use planning and management.

2. Project Goal, Objectives and Outcomes of MSDP

(A) Goal of MSDP

The CDMP II offers an outstanding opportunity to improve linkages with, and synergies between, disaster risk reduction and adaptation to climate change. This applies both at the national and at the general stakeholder level. The linkages are clearly expressed in many of the activities outlined in the operational outcomes of the project design, as well as through strengthened institutional capacities. Under this opportunity, a Memorandum of Understanding (MoU) delineated the area of collaboration between CDMP-II and UDD to prepare an integrated development planning package covering structure plan, urban/rural area plan and action area plans, and subsequent training module through the integration of disaster risk information with the Physical/Structural/Land use plan of the township area.

(B) Objectives MSDP

The objective of this MoU is to enhance the technical capacity of the relevant professionals for acquiring knowledge on the appropriate disaster risk reduction measures technique particularly earthquake to incorporate them into comprehensive land use development planning and management. The specific objectives of this MoU are:

- I) A Pilot Project on Preparing a Module for Mainstreaming Disaster Risk Reduction Measures into Comprehensive Land Use Development Planning and Management for Mymensingh (Municipality) Strategic Development Planning Area.
- II) Equipments support to develop a permanent “Geographic Information System (GIS) Laboratory”, under “Urban Research and Development Application Centre (URDAC)” in UDD office.
- III) Advocacy support to institutionalize the Urban Research and Development Application Centre (URDAC) through appropriate institutional approach (reforming organizational structure of UDD).

(C) Outcomes of MSDP

The project planning area will cover Mymensingh (Municipality) Strategic Development Area which might have potential for development within the next 20 years up to year, 2031 A.D. The project is planned to be completed in three stages/tiers. In the first stage, there will be preparation of Structure Plan for Mymensingh municipality and surrounding grater hinterland area. The second stage will be preparation of Urban Area Plan incorporating necessary data of urban (municipality) area and also preparation of Rural Area Plan for said hinterland area for assessing problems or opportunities, which need immediate intervention. The third stage will be preparation of Action Area Plan/Detailed Area Plan using relevant data from detailed CDMP physical feature survey in the form of sectoral projects and programs for immediate intervention based on local need. The current project would also emphasize over the change in land category, land use and livelihood pattern.

CDMP II is designed around the following six interrelated outcomes which will be related with proposed planning package (3-stages) described below:

Outcome of CDMP and correlation with planning package of MSDP

Outcome of CDMP	Key Result of the Project
<p>Outcome 1: Development of strong, well-managed and professional institutions in Bangladesh that is able to implement a comprehensive range of risk reduction programmes and interventions at the national level, as well as contributing to regional actions, international learning and best practice.</p>	<p>Institutional Capacity (outcome 1) of UDD has been developed during preparation of MSDP planning package.</p>
<p>Outcome 2: Reduced risk to rural populations through structural and non-structural interventions, empowerment of rural communities and improved awareness of, and planning for, natural hazard events, including the likely impacts of climate change.</p>	<p>Reduction of risk to rural populations (Outcome 2) has been achieved at the structure planning stage for rural area.</p>
<p>Outcome 3: Reduced risk to urban populations through structural and non-structural interventions, improved awareness of natural hazard events and the piloting of urban community risk reduction methodologies targeting the extreme poor.</p>	<p>Reduction of risk to urban populations (Outcome 3) has been achieved at the structure planning stage for urban area.</p>
<p>Outcome 4: Improved overall effectiveness and timeliness of disaster preparedness and response in Bangladesh by strengthening management capacity and coordination as well as networking facilities at all levels.</p>	<p>Effectiveness and timeliness of disaster preparedness (Outcome 4) has been incorporated within Disaster Risk Reduction Plan.</p>
<p>Outcome 5: Better disaster-proofing of development funding across thirteen ministries. This will be achieved by generating increased awareness of hazard risks and the provision of technical information, advisory services and resources to stimulate positive changes in planning and investment decisions over the long-term.</p>	<p>Structure Plan has been disseminated among 56 sectoral agencies (Outcome 5) under different ministries working in Mymensingh district, dated on September 16, 2015 presided over by Deputy Commissioner, Mymensingh.</p>
<p>Outcome 6: Community-level adaptation to disaster risks from a changing climate is effectively managed.</p>	<p>Community-level adaptation to disaster risks (Outcome 6) has been incorporated in the Disaster Risk Reduction Plan.</p>

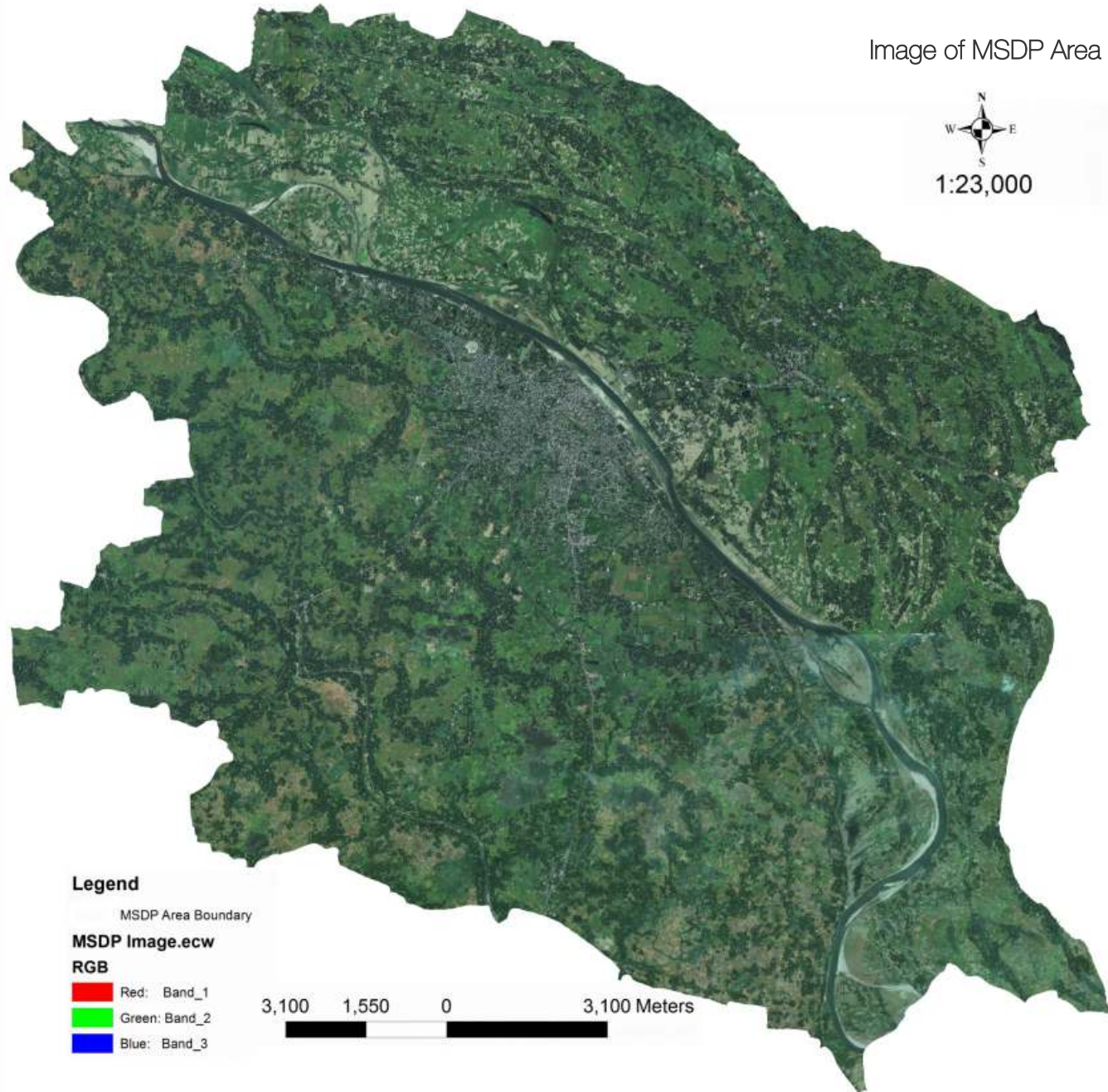


Image of MSDP Area



STEP 01

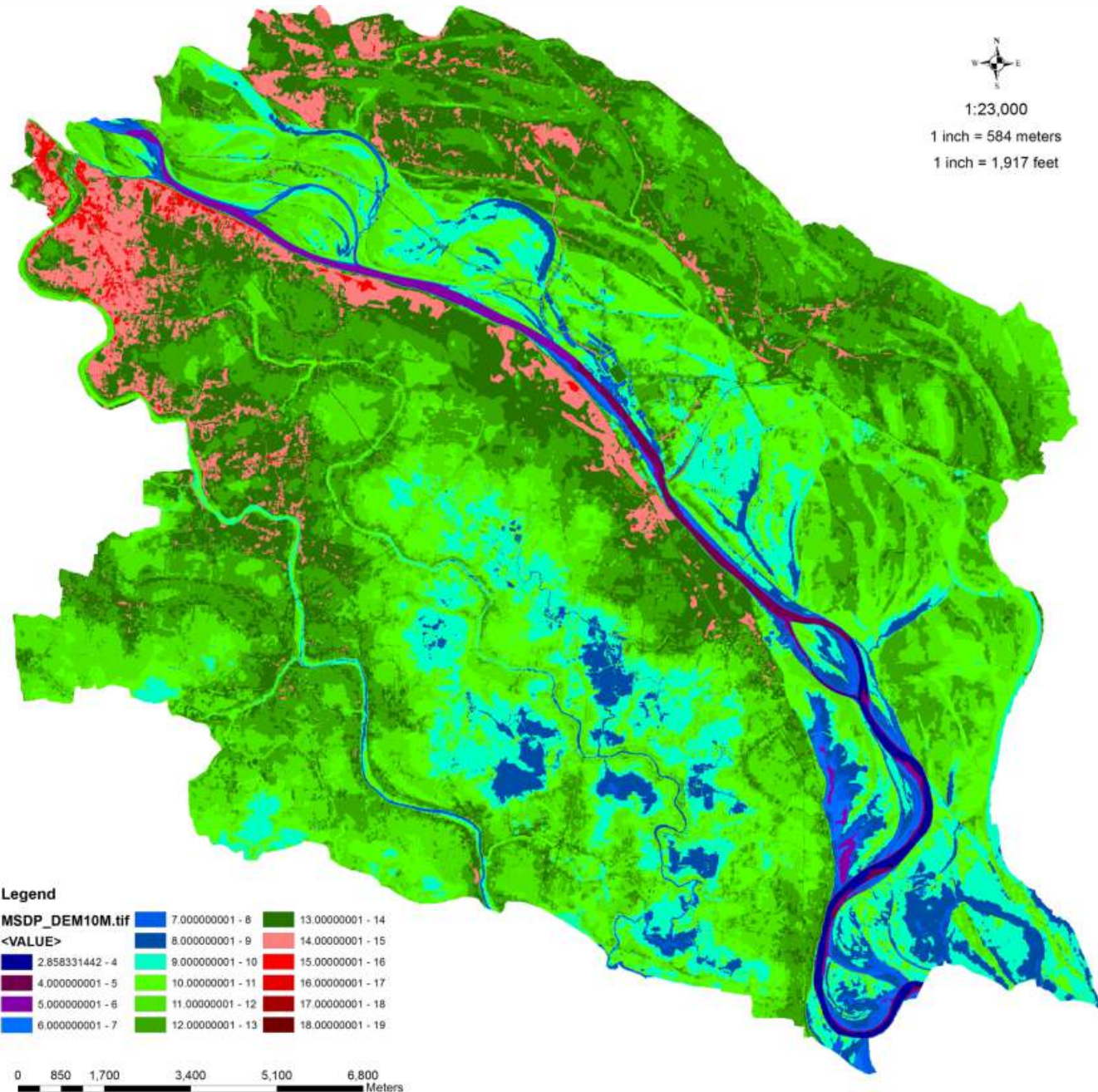
IMAGE

STEP 02

DEM

Generation of Digital Elevation Model (DEM)

DEM of the whole of MSDP project area (both urban and rural) has been generated from 3-D four brand satellite image interpretation. Digital Elevation Model has been checked and adjusted at 231 points. Average error has been found +/-0.21m for rural area and +/-0.14m for urban area (see the detailed into www.msdp.gov.bd).

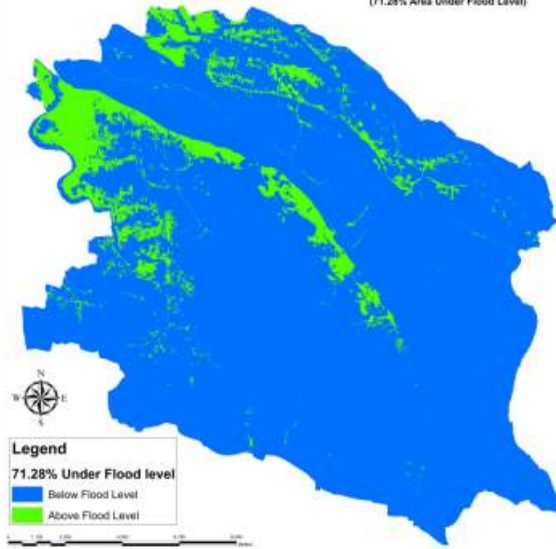


STEP 02

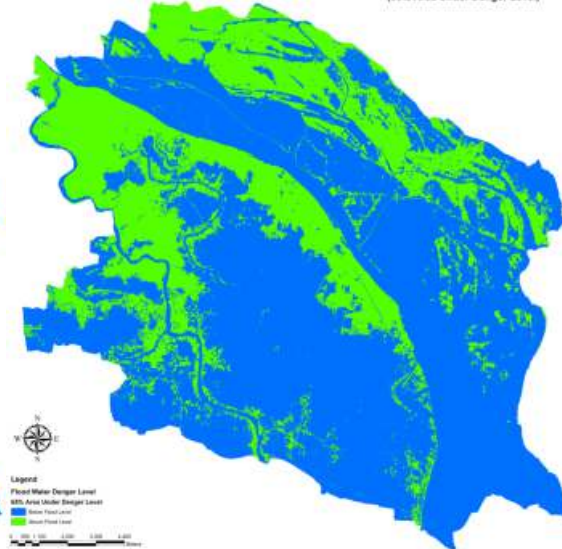
DEM

Different Flooding Scenario

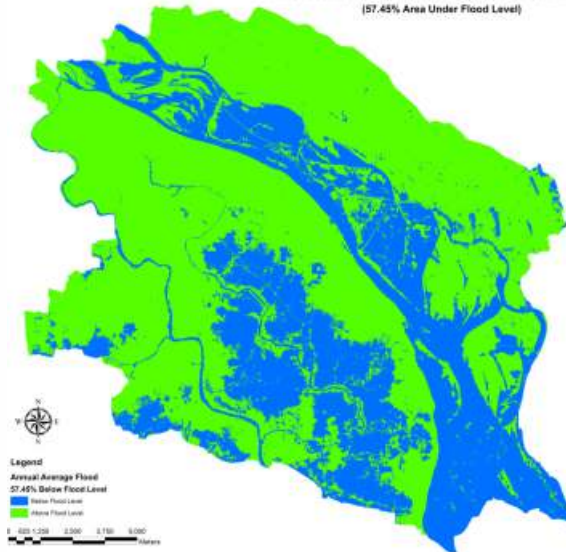
Flood Water Level Map:1988
(71.28% Area Under Flood Level)



Flood Water Danger Level Map
(65% Area Under Danger Level)



Annual Average Flood Map (Inundation Map)
(57.45% Area Under Flood Level)

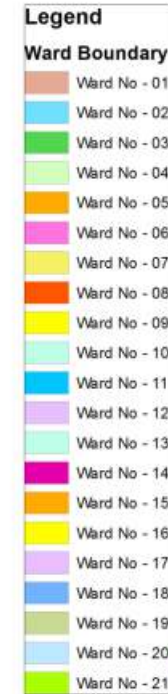
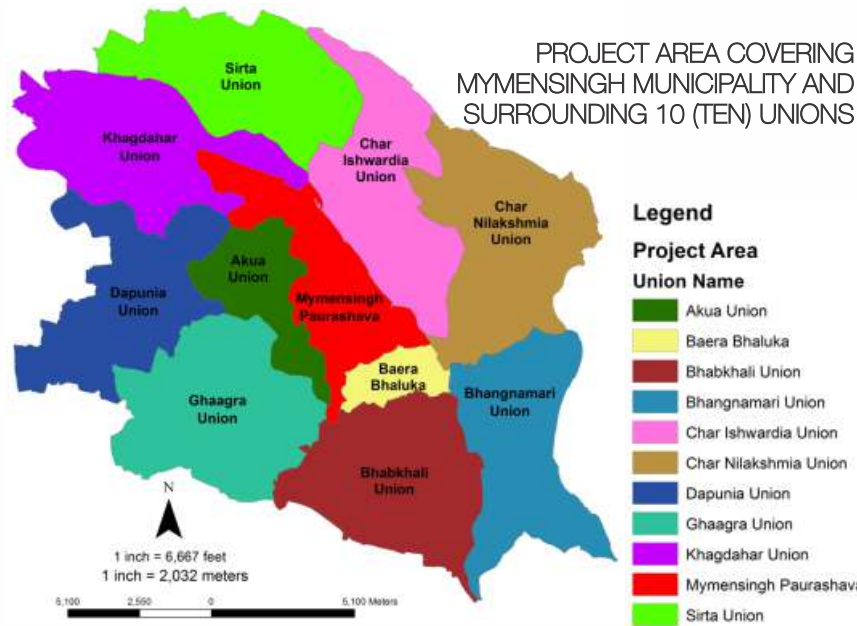


Highest Flood Level Map
(73% Area Under Flood Level)



STEP 03

AREA DEMARICATION



WARD BOUNDARY OF MYMENSINGH MUNICIPALITY

Description of The Project Area

The Mymensingh Paurashava (Municipality) lies between the 24043' and 24045' north latitude and 90023' and 90025' east longitude. The project areas constitutes Mymensingh municipality and surrounding 10 (ten) unions with an area of about 27933.43 hectare (69024.70 acre). Detailed administrative boundary of the project has been summarized in table below:

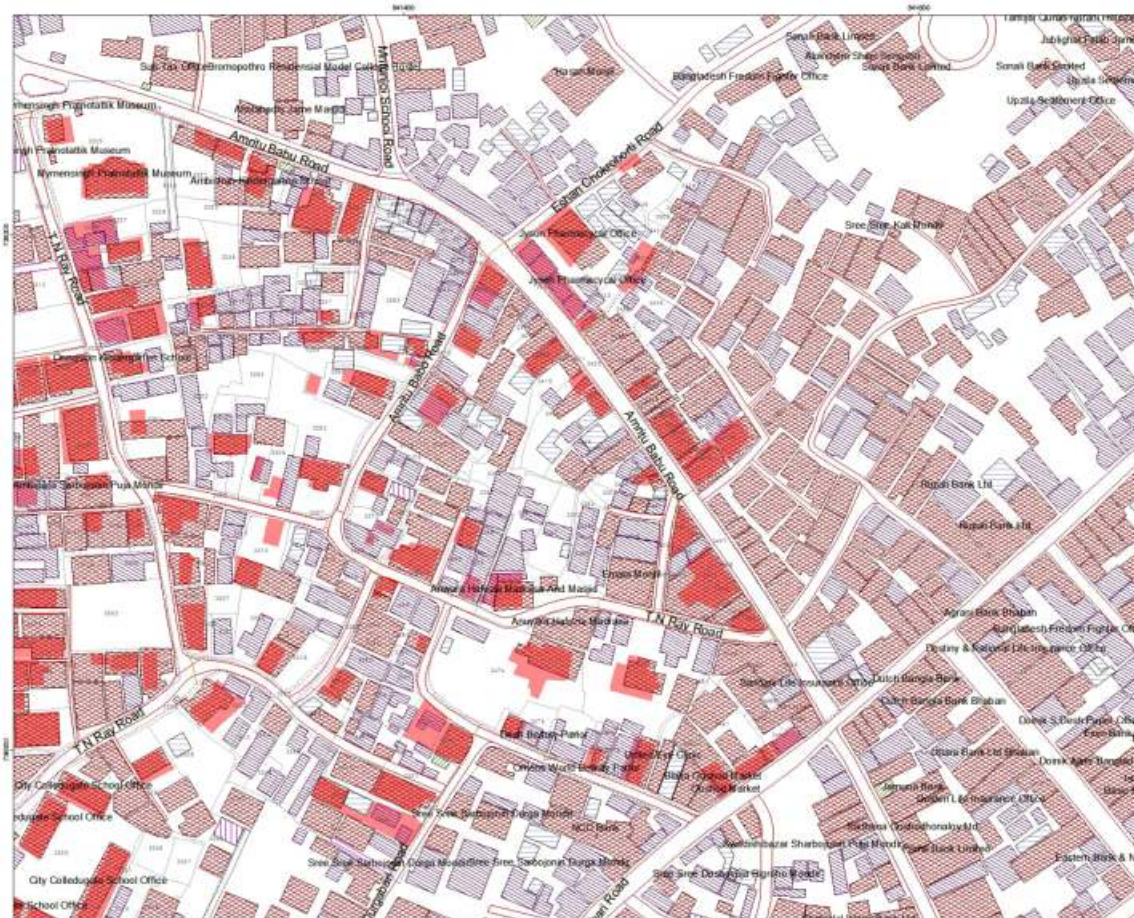
Table02: Name and area of Mymensingh Strategic Development Planning (MSDP) area

S/N	Paurashava/ union	Area			Population	Density of Population /Acre
		acres	hectares	%		
1	Akua	3286.9	1330.16	4.76	41905	12.75
2	Baera (Kewatkhali)	1430.56	578.93	2.07	22620	15.81
3	Bhabkhali	7632.49	3088.77	11.06	43467	5.69
4	Char Ishwardia	7150.91	2893.88	10.36	39095	5.47
5	Char Nilakshmia	8022.88	3246.76	11.62	37917	4.73
6	Dapunia	7014.1	2838.52	10.16	41690	5.94
7	Ghagra	8379.64	3391.13	12.14	46842	5.59
8	Khagdahar	6642.92	2688.31	9.62	36645	5.52
9	Paurashava	5302.03	2145.67	7.68	227204	42.85
10	Sirta	7337.31	2969.32	10.63	31485	4.29
11	Bhangnamari	6825	2761.98	9.89	23215	3.40
12	Total area	69024.74	27933.43	100.00	592085	8.58

Source: BBS, 2001 and GIS Lab, MSDP, UDD, September, 2011

STEP 04

DIGITIZE & FIELD CHECK



Physical infrastructure of MSDP area (both urban and rural) has been identified through interpretation of 4 band 3-D satellite image. According to the interpretation of satellite image and field verification, there are 202303 structures within MSDP area. Among them 51510 are katcha, 18938 pucca, 62156 semi-pucca and 68547 tin-shed structures in the project area respectively.

MSDP Project Team has checked the physical feature survey data at field level; and after necessary corrections MSDP Project Team plot the surveyed data on mouza map for further checking of gathered data for preparing structure plan, urban area plan, rural area plan and detailed area plan by integrating multiple disaster risk into land use planning. While checking of physical features provided by ADPC, story-wise attribute of structures have been collected, besides collecting building material of the structures.

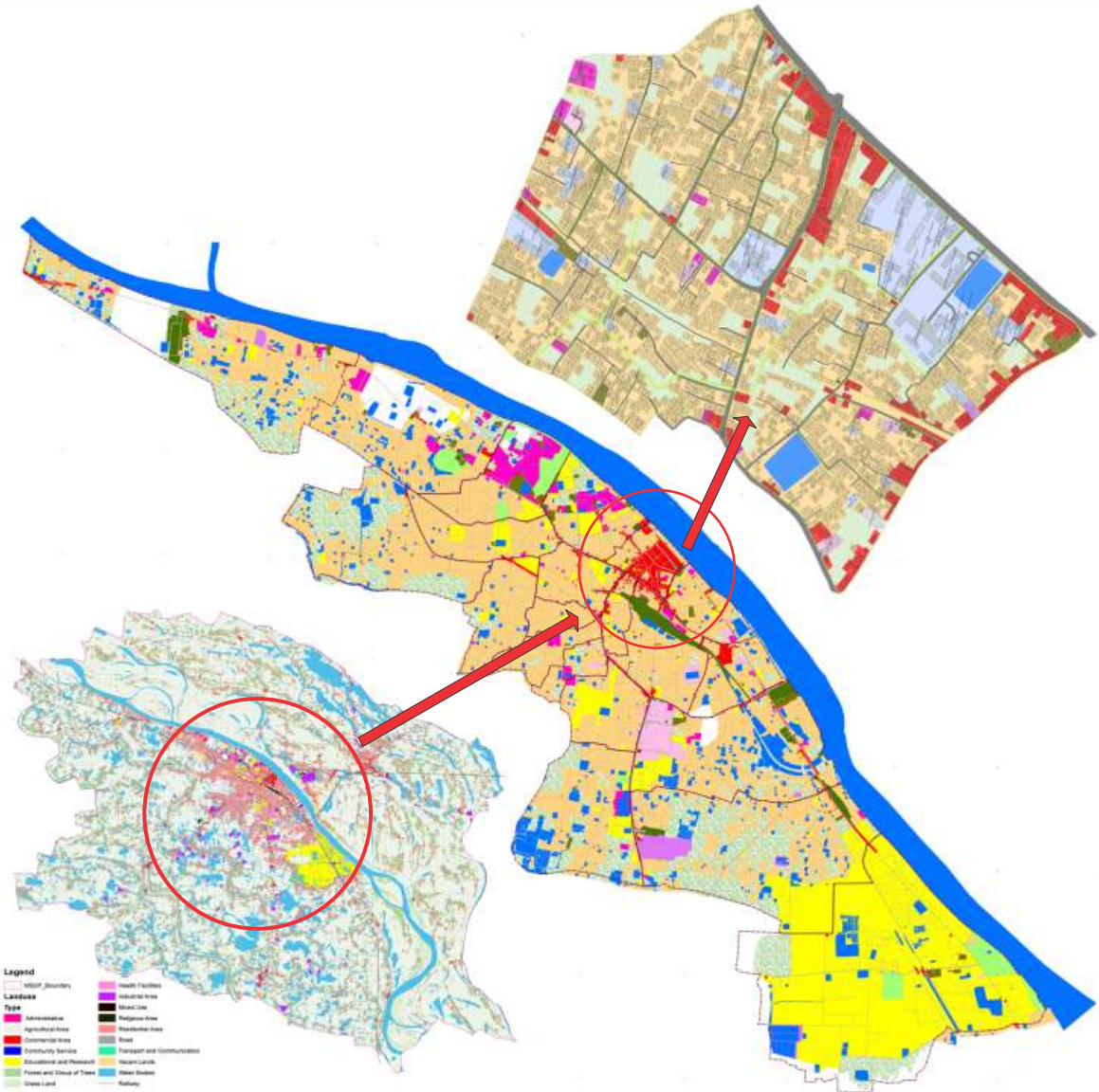
LEGEND



Structure Type	Structure Type of Municipality and Rural Unions					
	Municipality		Rural Unions		Grand Total	
	Total No.	%	Total No.	%	Total No.	%
Katcha	10479	22.03	41031	26.52	51510	25.46
Pucca	13226	27.81	5712	3.69	18938	9.36
Semi Pucca	23620	49.67	38536	24.90	62156	30.72
Tin-Shed	30	0.06	68517	44.28	68547	33.88
Under Construction		0.00	580	0.37	580	0.29
Vacant		0.00	10	0.01	10	0.00
No Information	203	0.43	359	0.23	562	0.28
Grand Total	47558	100	154742	100	202303	100

STEP 05

DATABASE &
MAP
PREPARATION



Category	Area (Acre)	Percentage (%)
Administrative	87.22	1.79
Agriculture	936.76	19.21
Commercial	115.58	2.37
Educational	683.54	14.02
Health	52.62	1.08
Industrial	33.27	0.68
Recreation	73.22	1.50
Red Light Area	0.60	0.01
Residential	1647.82	33.80
Restricted	118.93	2.44
Road	451.36	9.26
Sand/Sand Dunes/Charland	11.33	0.23
Socio-Culture	43.87	0.90
Urban Service	89.95	1.84
Waterbody	529.73	10.86
Grand Total	4875.79	100.00

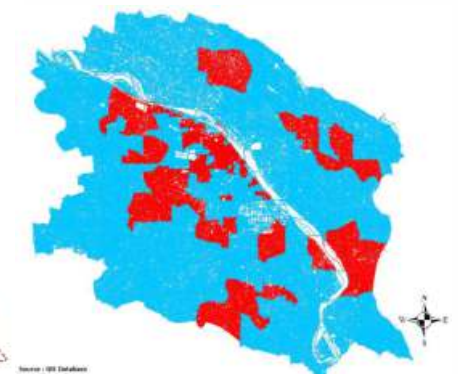
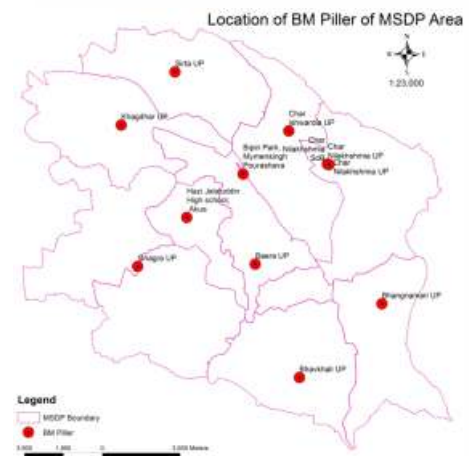
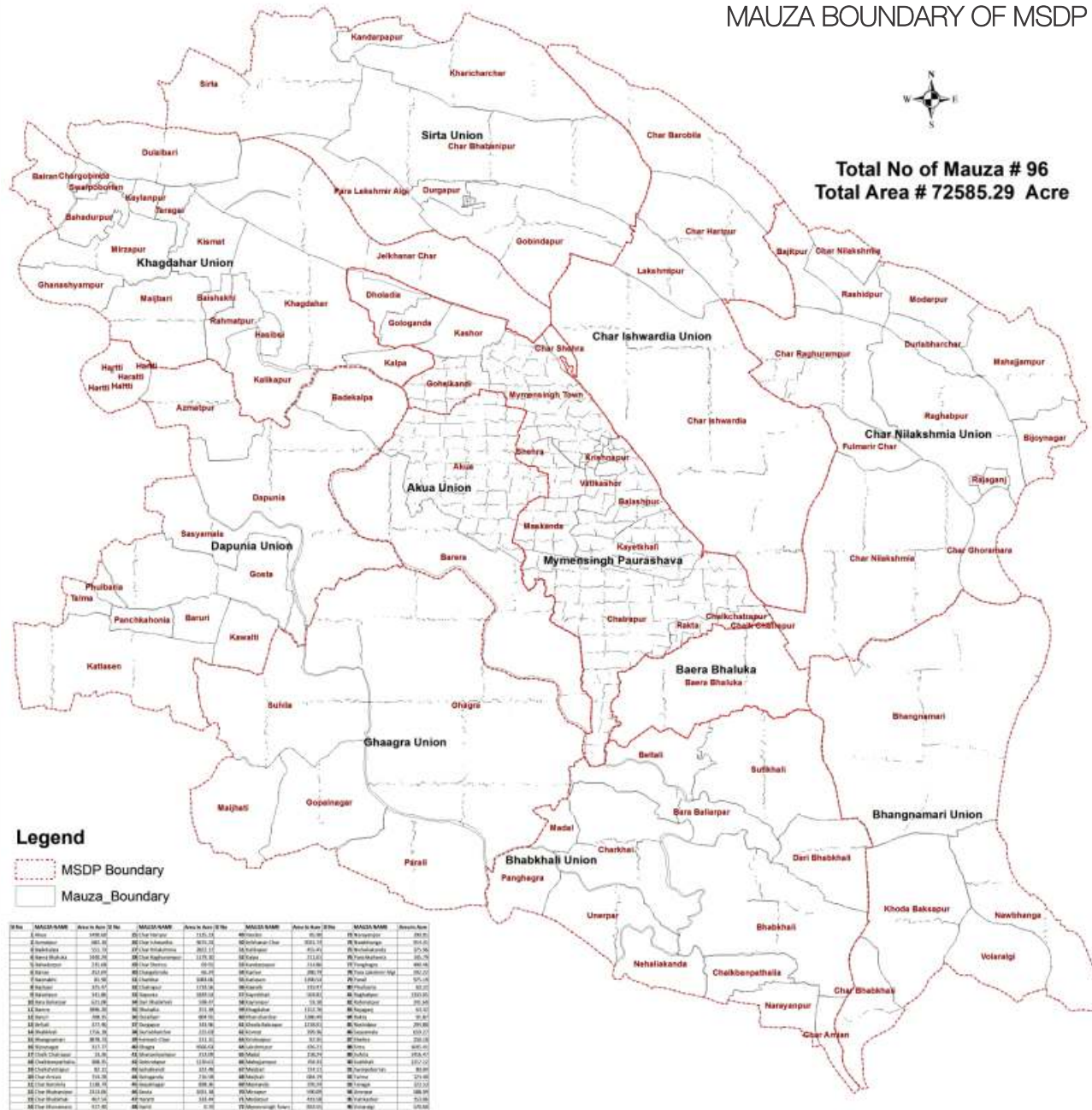
Legend

Region boundary
 Landuse
 Type
 Administrative
 Agricultural Area
 Commercial Area
 Community Service
 Educational and Research
 Forest and Group of Trees
 Green Land
 Health Facilities
 Industrial Area
 Mixed Use
 Religious Area
 Residential Area
 Road
 Recreation and Communication
 Retail Land Use
 Water Body
 Railway

MAUZA BOUNDARY OF MSDP AREA

STEP 06

MAUZA MAP



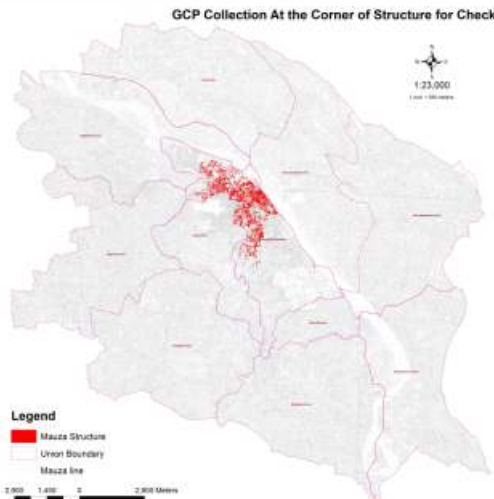
Red colour indicates as referenced Mauza from GCP
Blue colour indicates as referenced Mauza from Image

STEP 06

MAUZA MAP

22

MSDP 2011-2031



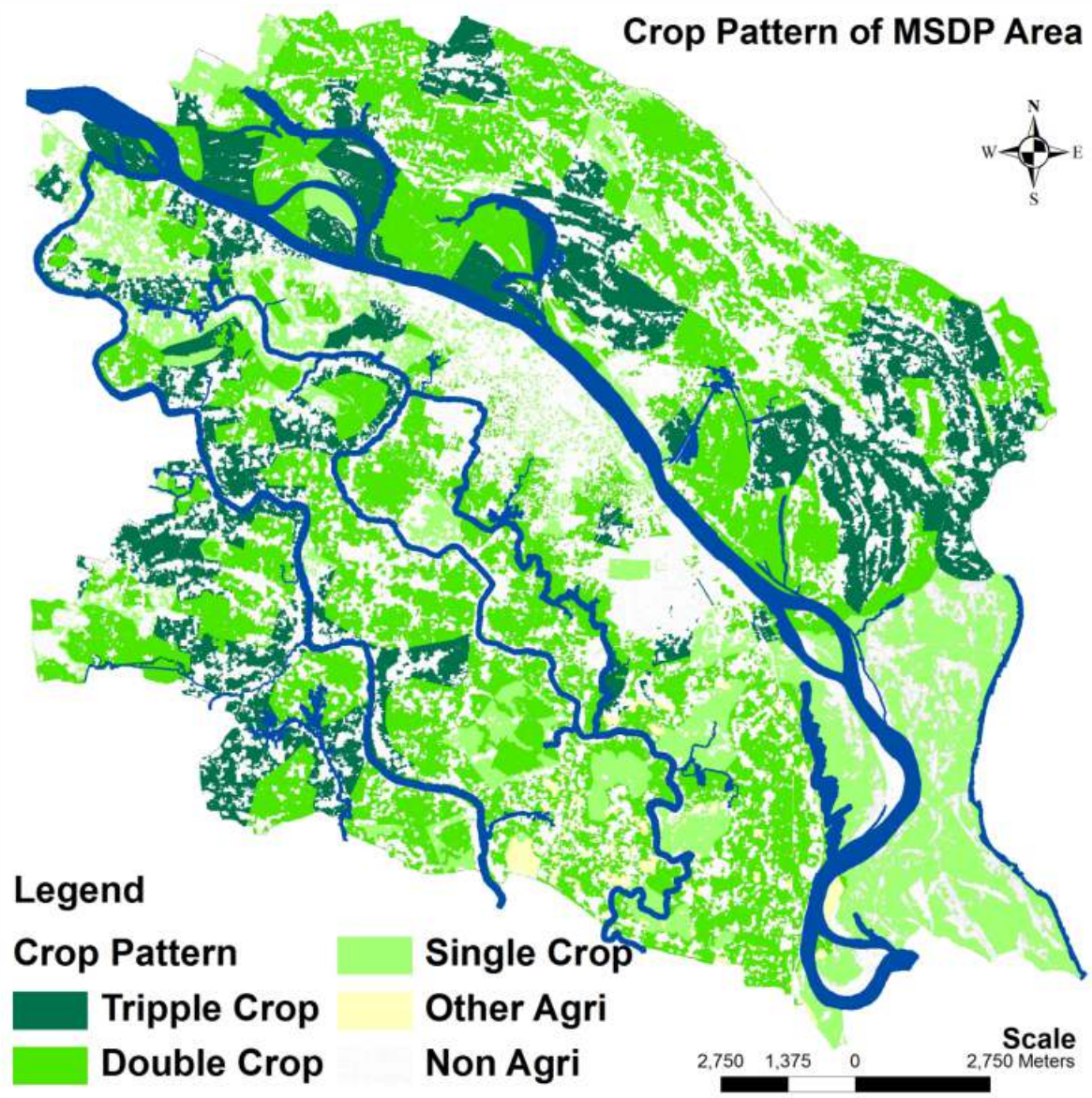
Digitization and Reproduction of Cadastral Reproduction of Cadastral Map of MSDP Area into Digital map Format.
 Cadastral maps of MSDP area have been digitized and reproduced into digital format mosaic them. No rubber sheeting has been done to do so.

District	01. Mymensingh
Upzila	02. Mymensingh Sadar
Union	10 Nos. (9 Union) & Gouripur (1 Union)
Mouza -RS	116 Nos.
Mouza Sheet (Supplied by UDD)	417 Nos.
Out of Project Area	58 Nos.
New Collected Mouza	
Sheet (GEOMARK)	131 Nos.
Total Mouza Sheet	554 (548+6) Nos.

STEP 07

AGRICULTURAL
MAP

Crop Pattern of MSDP Area



Legend

Crop Pattern

- Single Crop
- Tripple Crop
- Double Crop
- Other Agri
- Non Agri

Identification of Cropping Pattern of MSDP Area

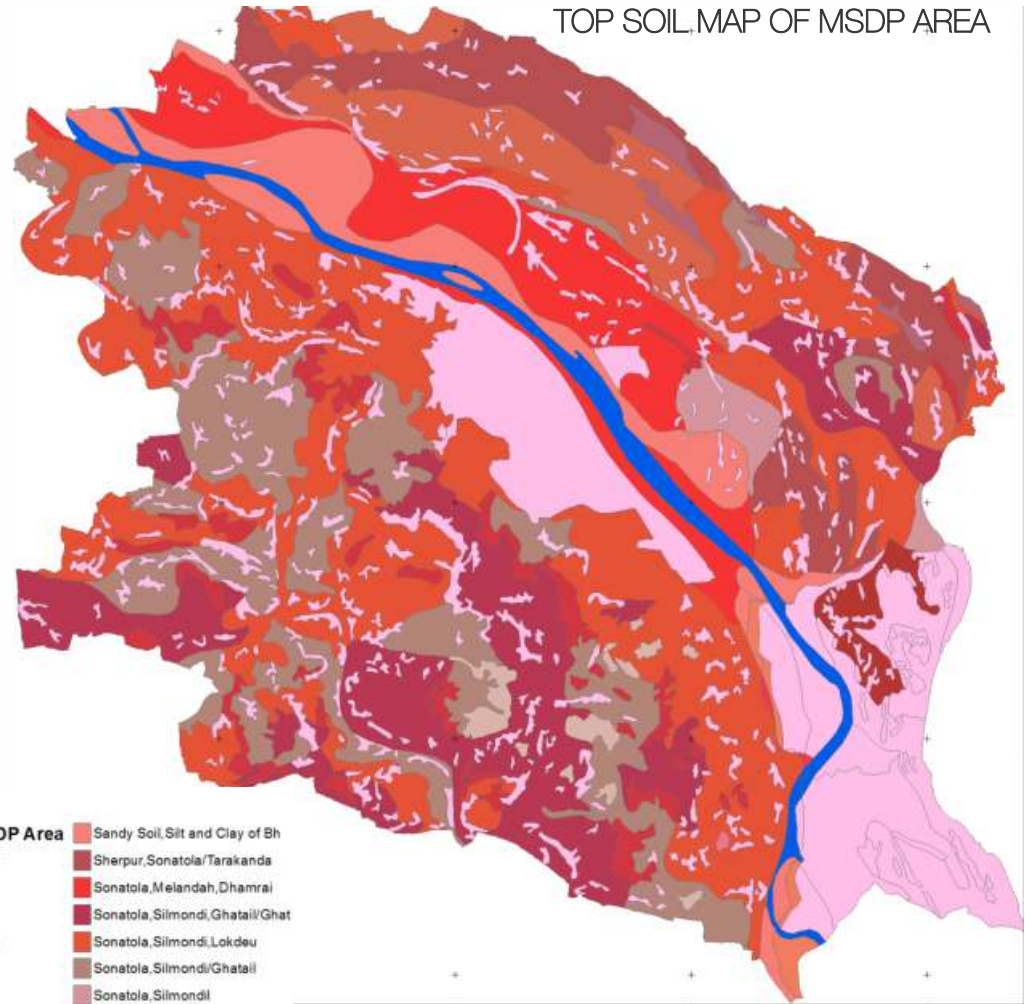
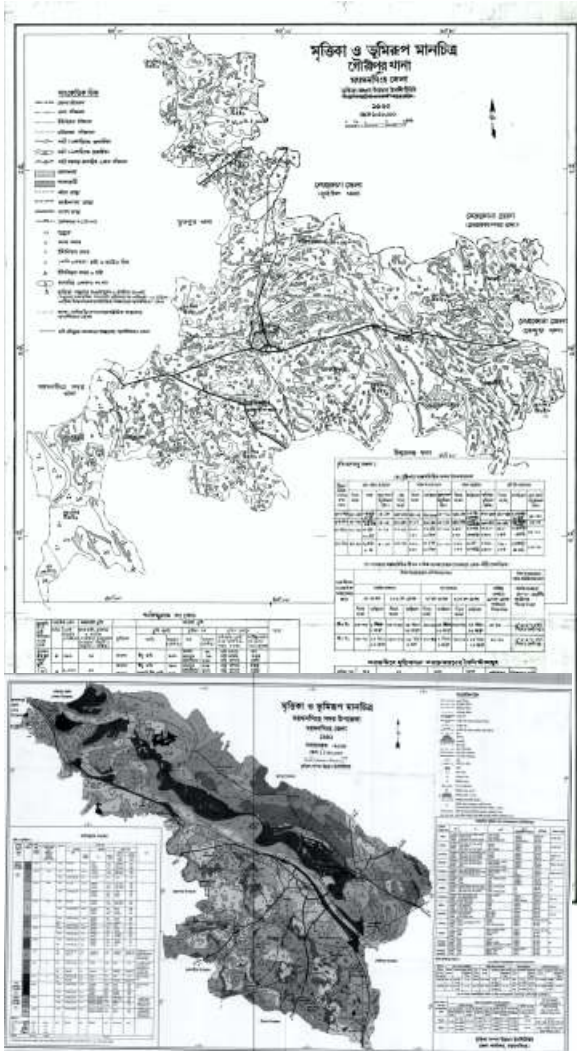
Cropping pattern of nine unions of MSDP area including Mymensingh municipality has been identified through PRA with the Sub-Agricultural Officers' of Mymensingh Sadar upazila. It has been found from the PRA session that single cropping, double cropping and triple cropping land comprises 13.69 percent, 40.09 percent and 37.22 percent of total land area respectively.

Union Name	Area in Hectar		
	Single Crop	Double Crop	Triple Crop
Akua Union	60.21	618.18	0.00
Baera Bhaluka	81.81	149.30	84.44
Bhabkhali	579.02	1354.47	0.00
Char Ishwardia Union	123.21	1304.42	452.74
Char Nilakshmia Union	32.19	1009.12	1049.10
Dapunia Union	150.32	1036.30	662.78
Ghaagra Union	204.26	1354.58	576.21
Khagdahar Union	585.00	669.63	832.57
Mymensingh Paurashava	237.60	441.68	55.13
Sirta Union	174.72	1360.00	565.52
Grand Total	2228.34	9297.70	4278.50

STEP 08

SOIL MAP

TOP SOIL MAP OF MSDP AREA

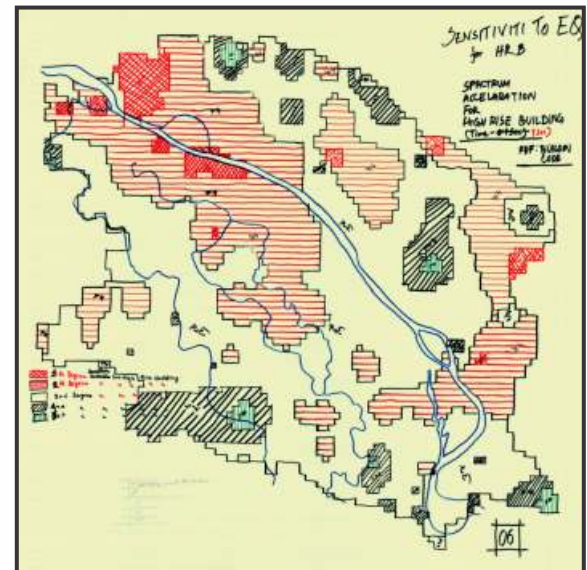
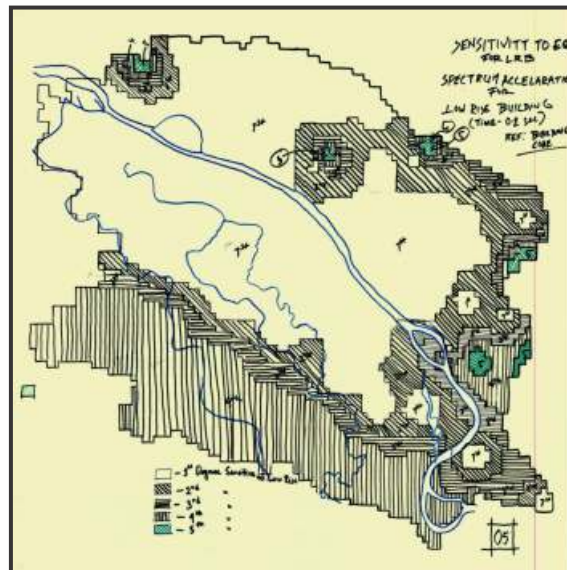
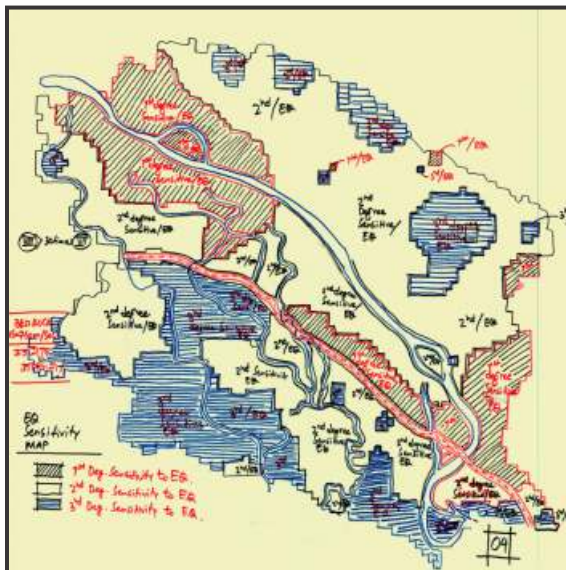
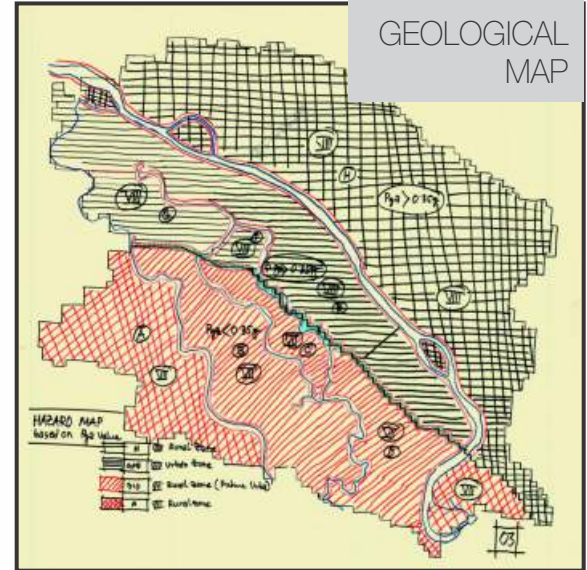
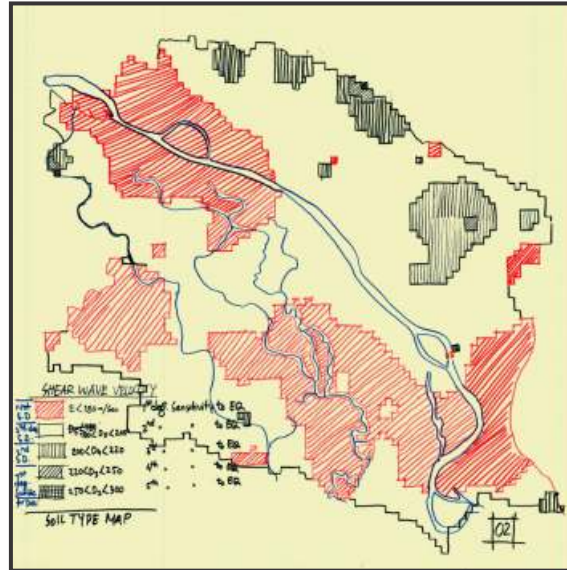
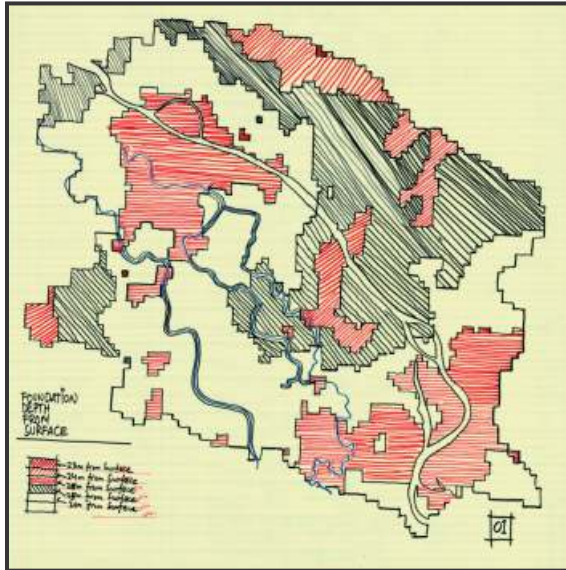


- Legend**
- Soil Type of MSDP Area**
- Sandy Soil, Silt and Clay of Bh
 - Brahmaputra River
 - Foundation Soil
 - Ghatail/Balina
 - Ghatail/Mohonganj
 - Ghorargau
 - Lokdeu, Ghatail
 - Nokis, Sherpur, Sonatola
 - Sherpur, Sonatola/Tarakanda
 - Sonatola, Melandah, Dhamrai
 - Sonatola, Silmondi, Ghatail/Ghat
 - Sonatola, Silmondi, Lokdeu
 - Sonatola, Silmondi/Ghatail
 - Sonatola, Silmondi

Soil resources map indicating soil classification and agricultural suitability map produced by Soils Resources Development Institute (SRDI) has been considered for the project. This map has been prepared outside the municipality area. The soils map shows that land form of MSDP area comprises of dry land (danga) and wetland (beel), which is percent and percent of total land area respectively. On the other hand, land classification indicates that there are high land, moderate high land, moderate low land and low land. The soils also sub-divided into fourteen (14) soils group and further sub-divided into fast and very fast according to its water removal capability.

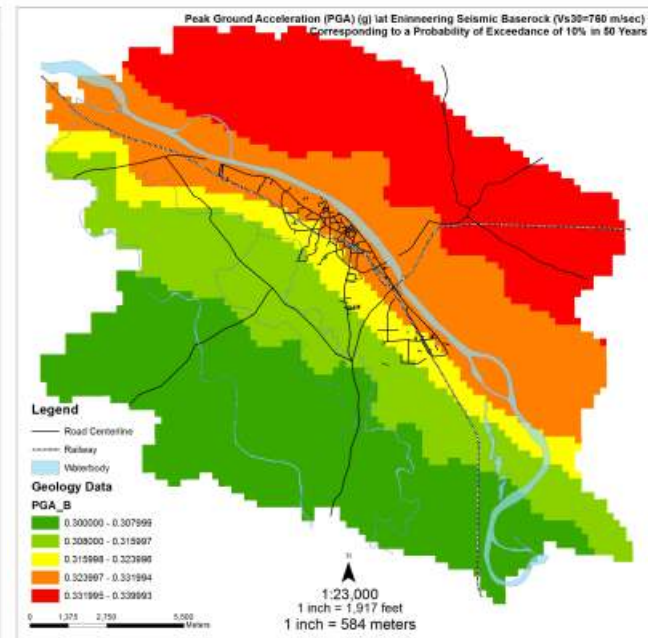
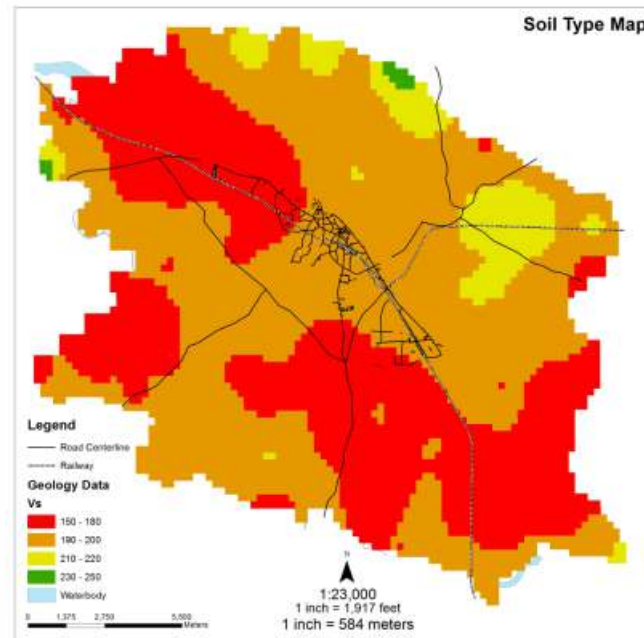
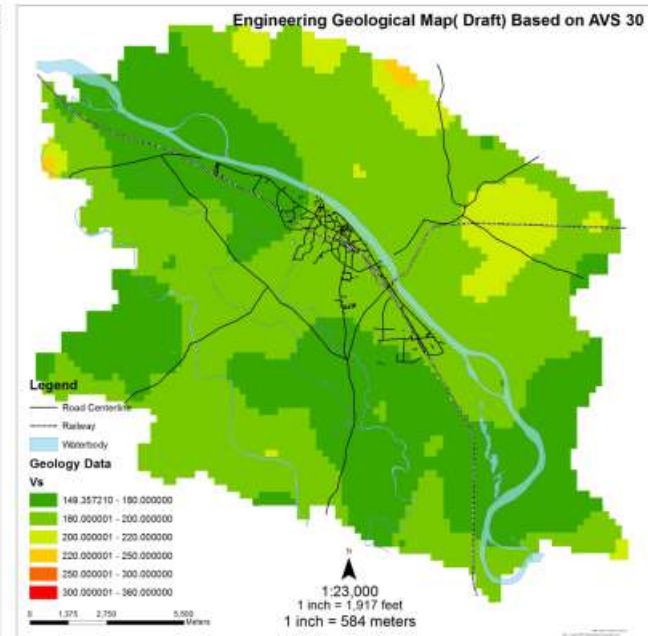
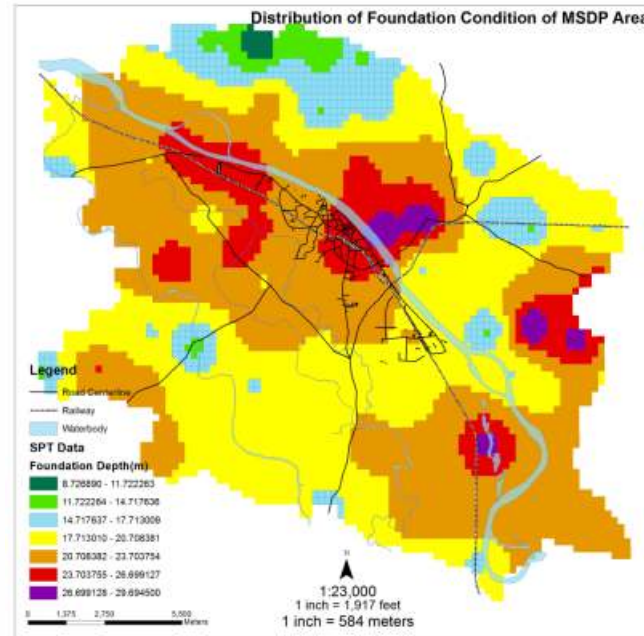
STEP 09

GEOLOGICAL MAP



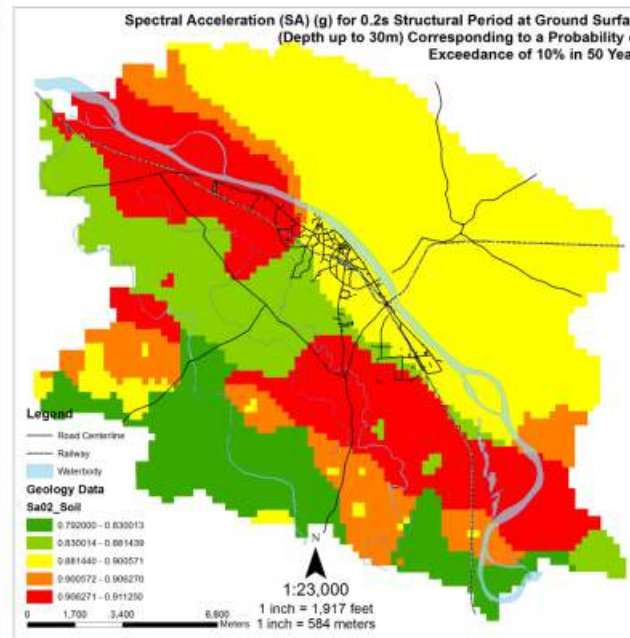
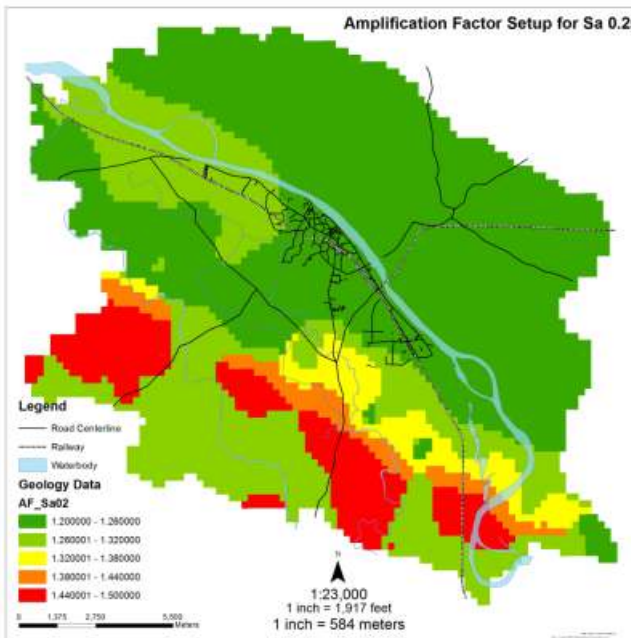
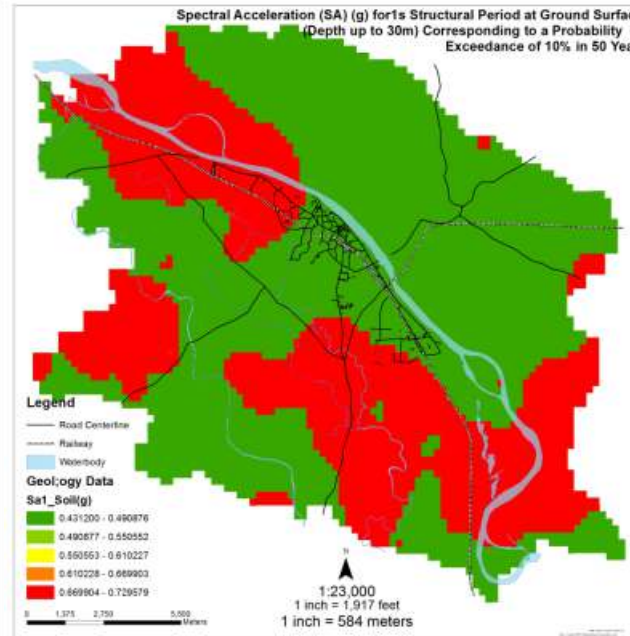
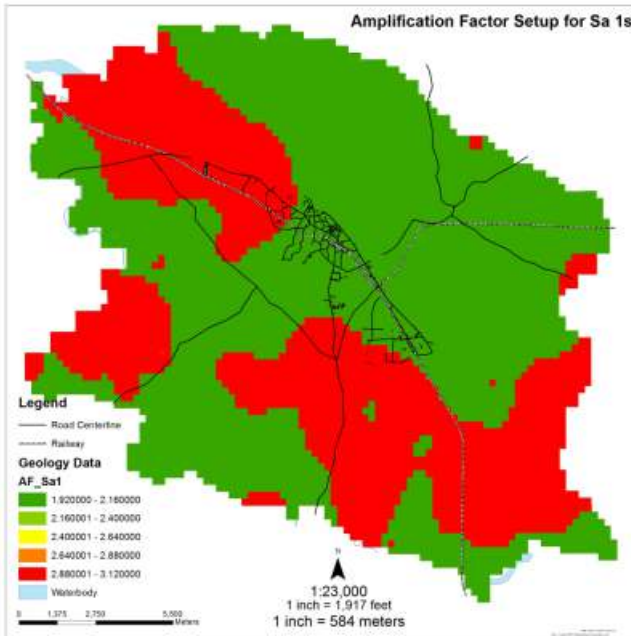
STEP 09

GEOLOGICAL MAP



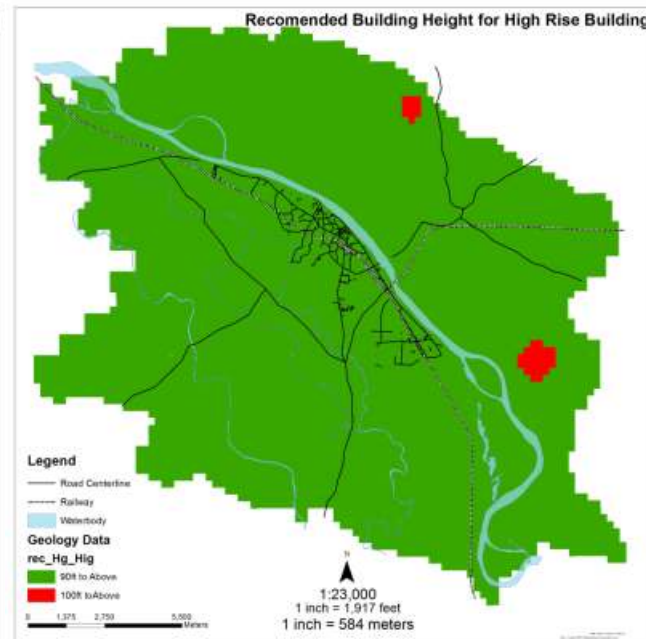
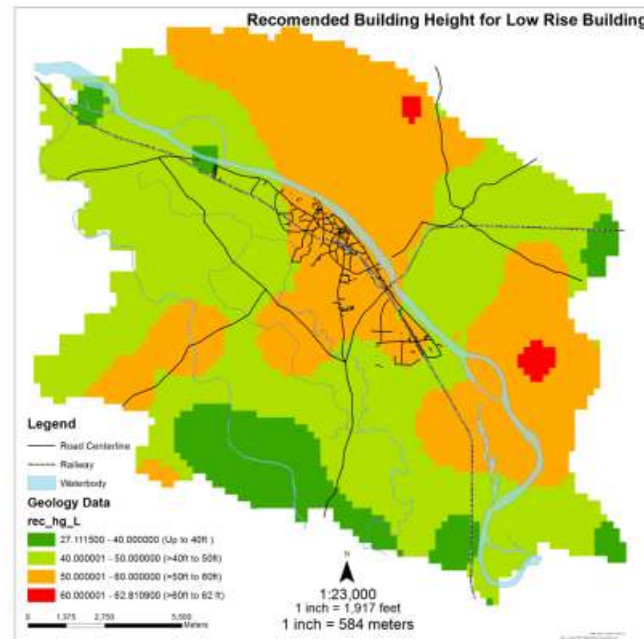
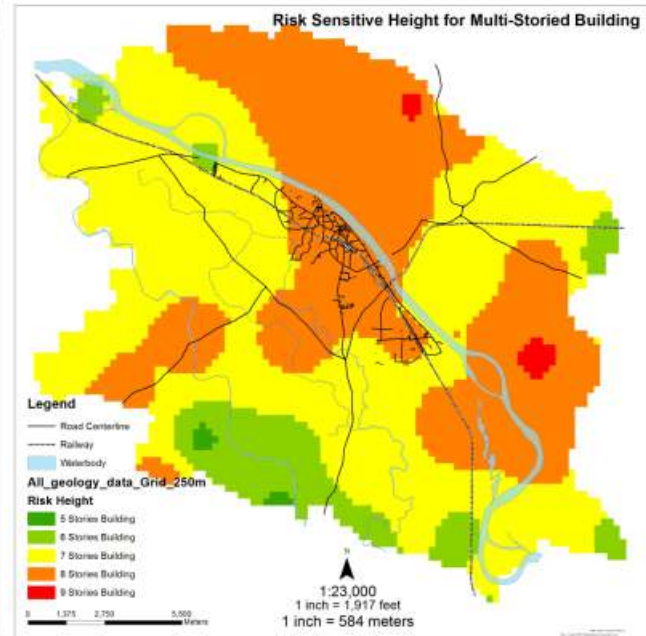
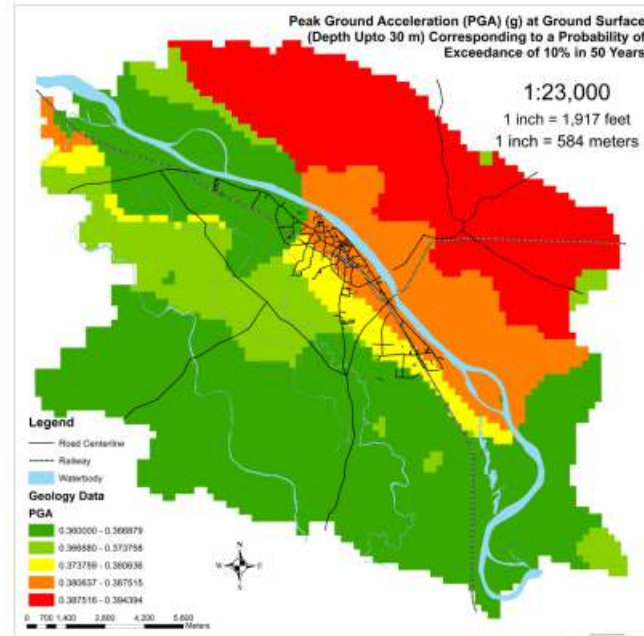
STEP 09

GEOLOGICAL MAP



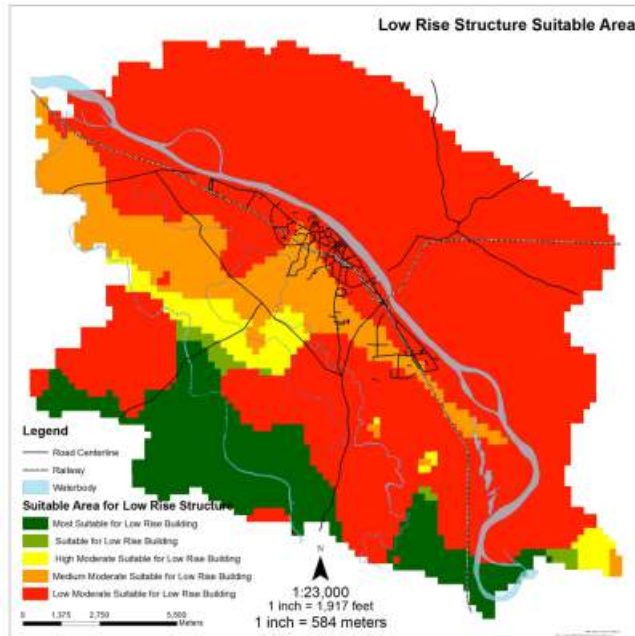
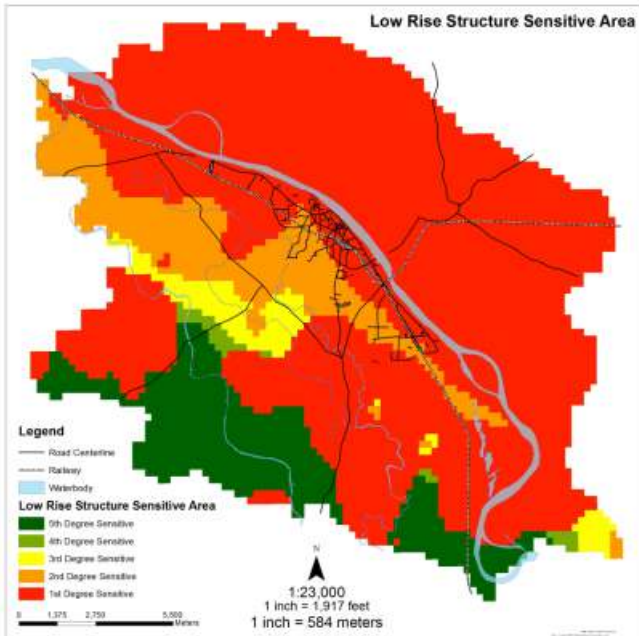
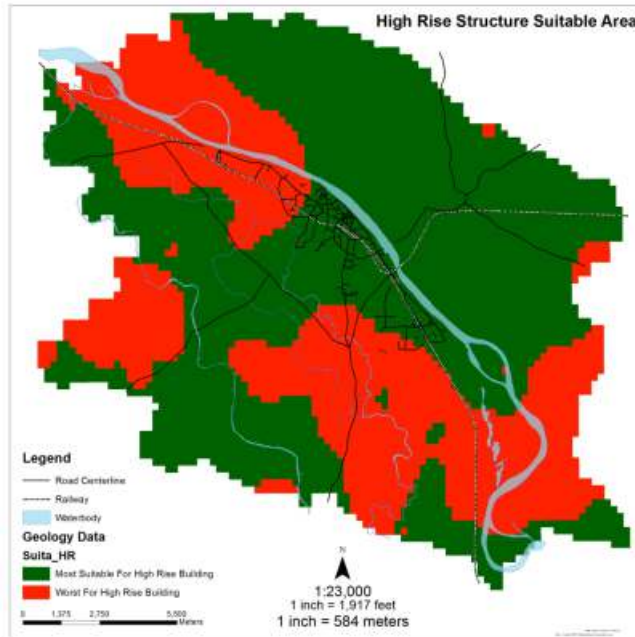
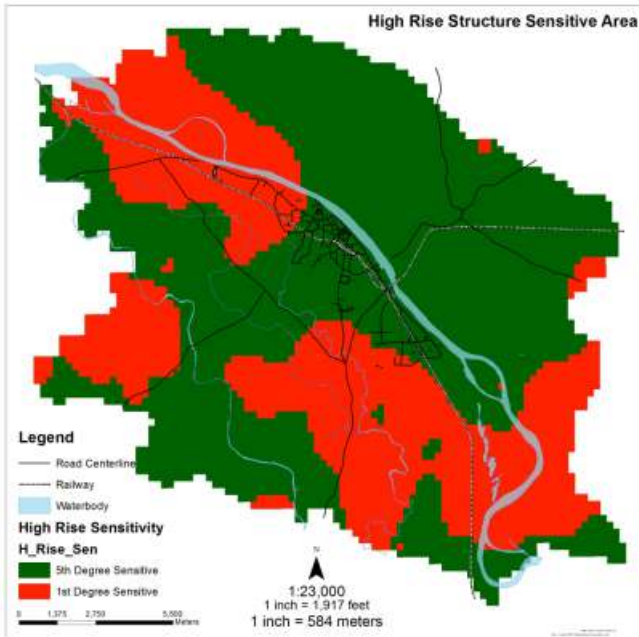
STEP 09

GEOLOGICAL MAP



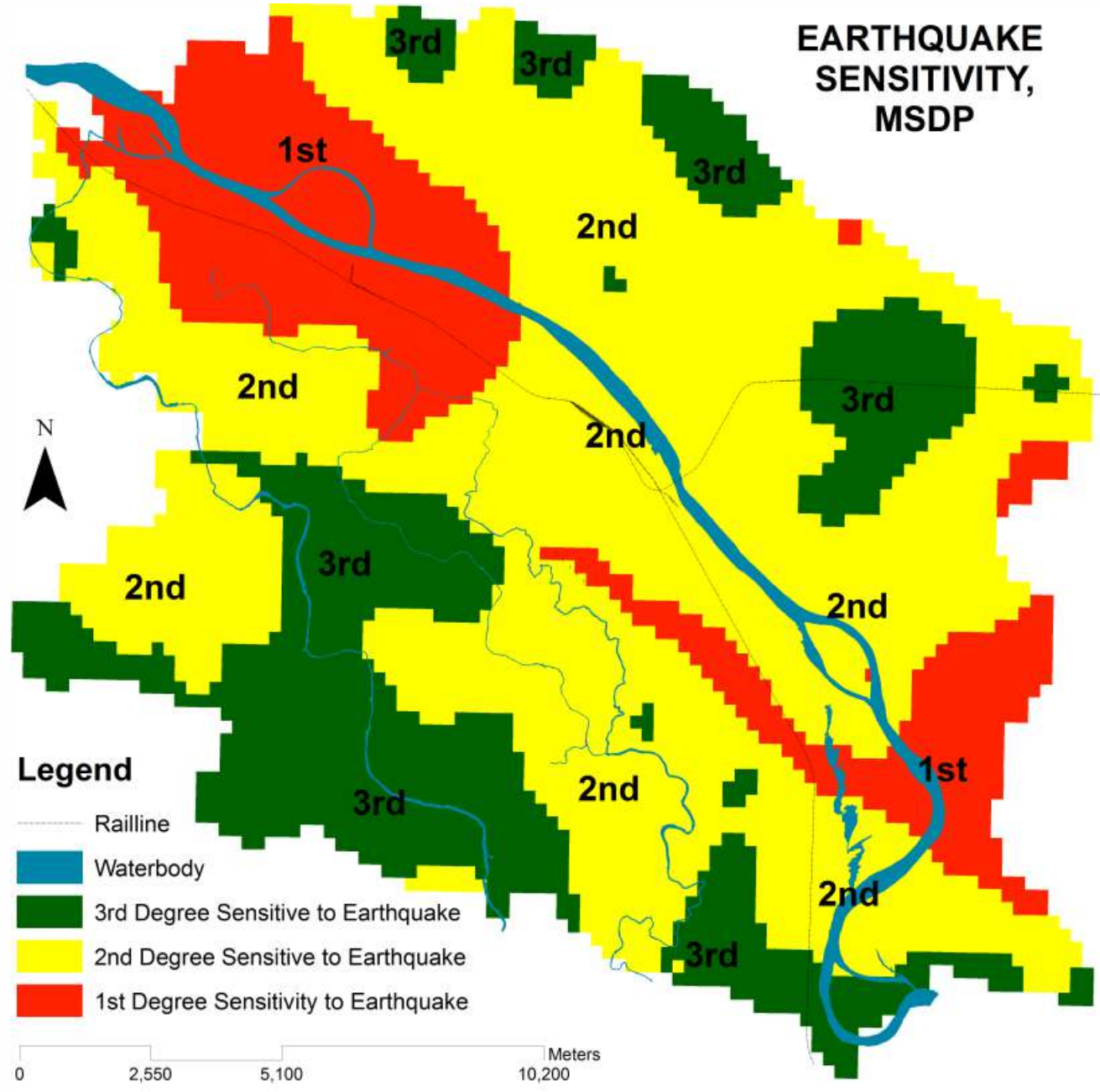
STEP 09

GEOLOGICAL MAP



STEP 09

GEOLOGICAL
MAP



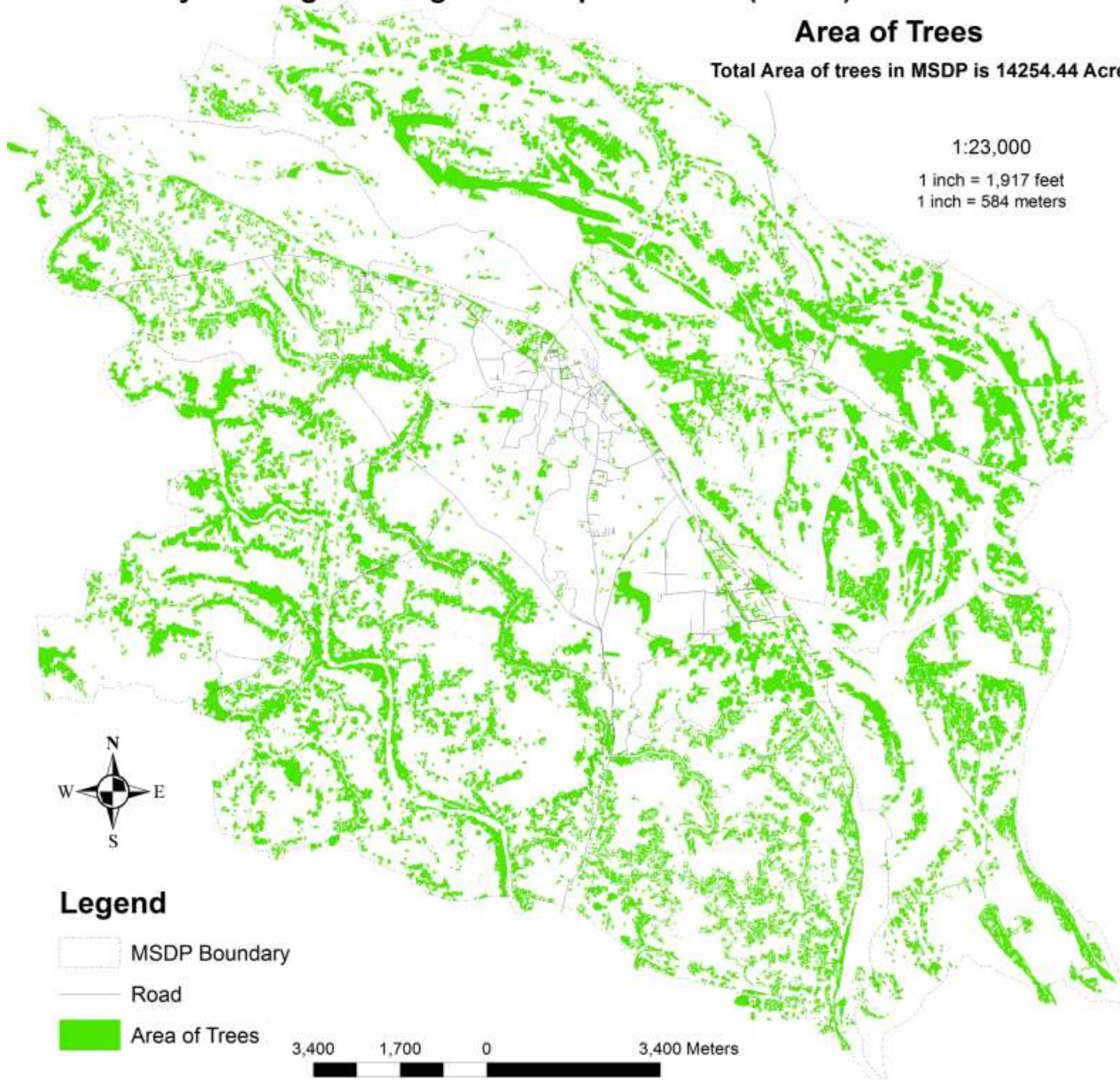
Mymensingh Strategic Development Plan (MSDP) 2011-2031

Area of Trees

Total Area of trees in MSDP is 14254.44 Acre

1:23,000

1 inch = 1,917 feet
1 inch = 584 meters



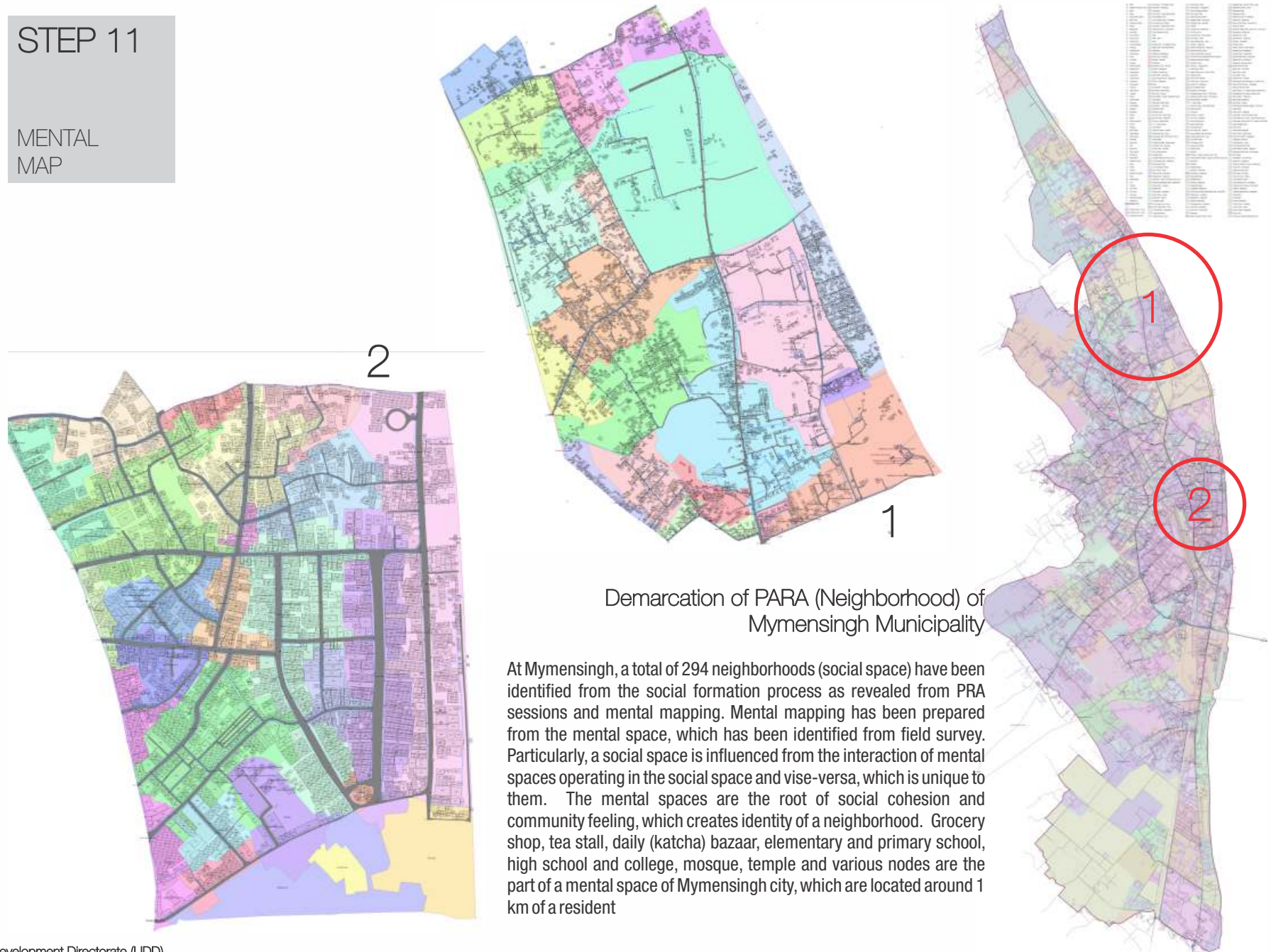
Legend

- MSDP Boundary
- Road
- Area of Trees

3,400 1,700 0 3,400 Meters

STEP 11

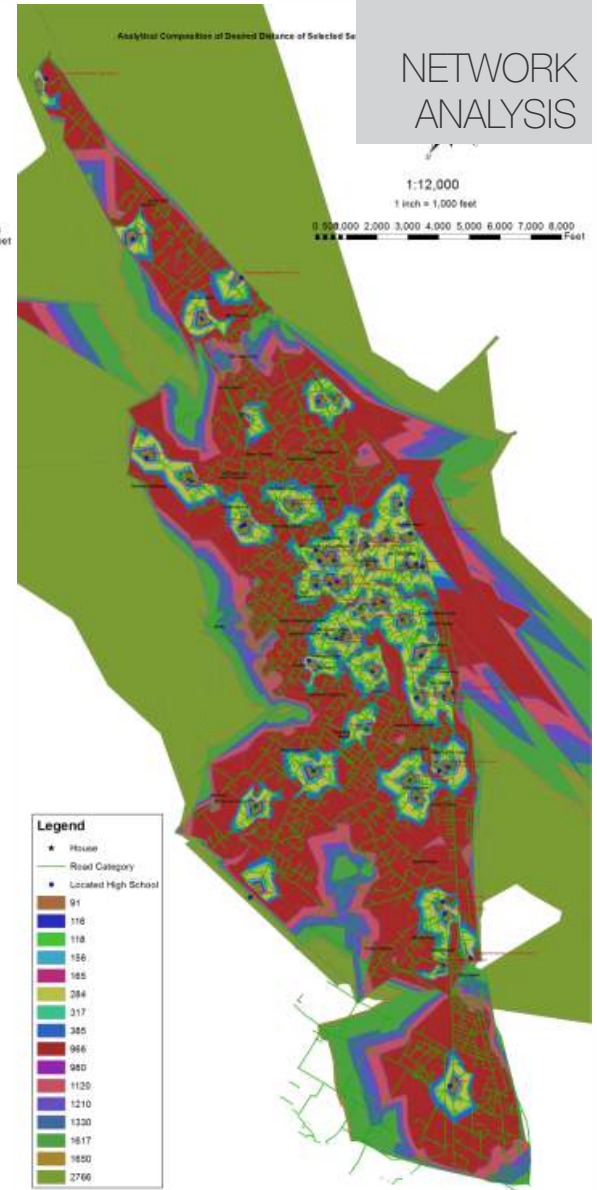
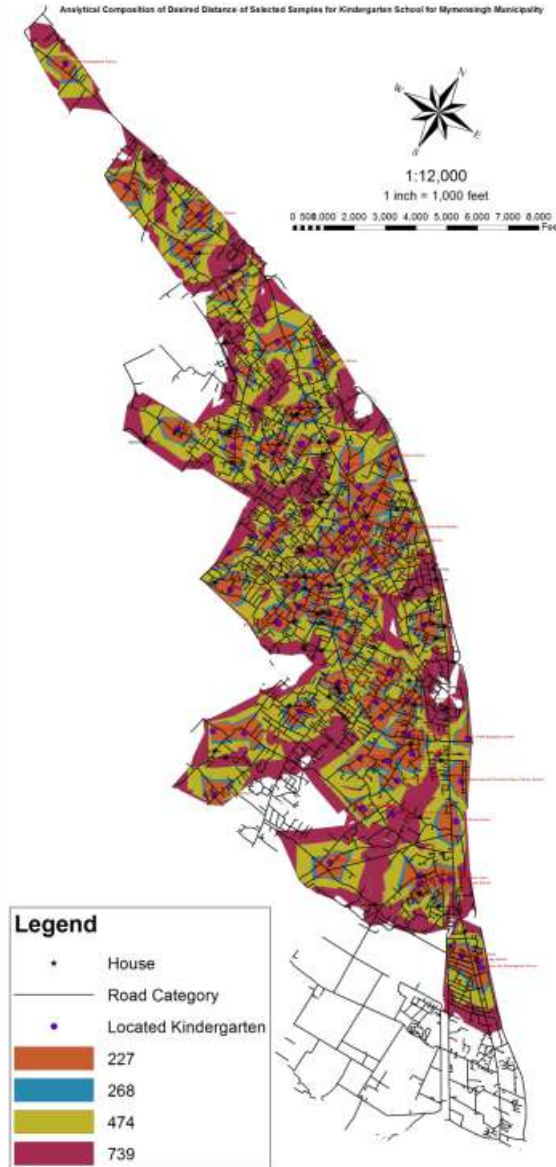
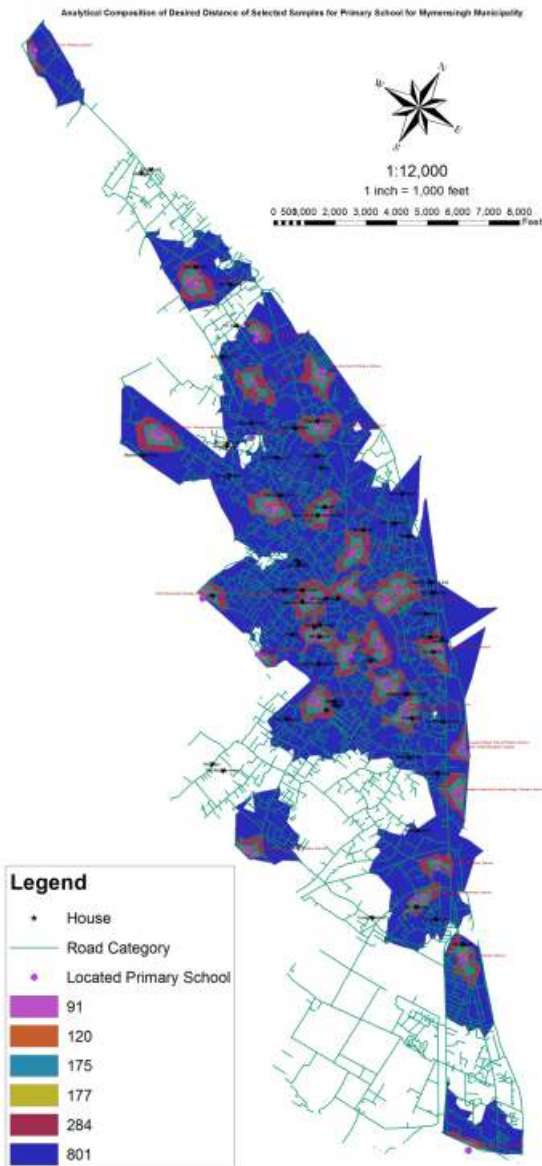
MENTAL
MAP



Demarcation of PARA (Neighborhood) of Mymensingh Municipality

At Mymensingh, a total of 294 neighborhoods (social space) have been identified from the social formation process as revealed from PRA sessions and mental mapping. Mental mapping has been prepared from the mental space, which has been identified from field survey. Particularly, a social space is influenced from the interaction of mental spaces operating in the social space and vice-versa, which is unique to them. The mental spaces are the root of social cohesion and community feeling, which creates identity of a neighborhood. Grocery shop, tea stall, daily (katcha) bazaar, elementary and primary school, high school and college, mosque, temple and various nodes are the part of a mental space of Mymensingh city, which are located around 1 km of a resident

STEP 12
NETWORK
ANALYSIS

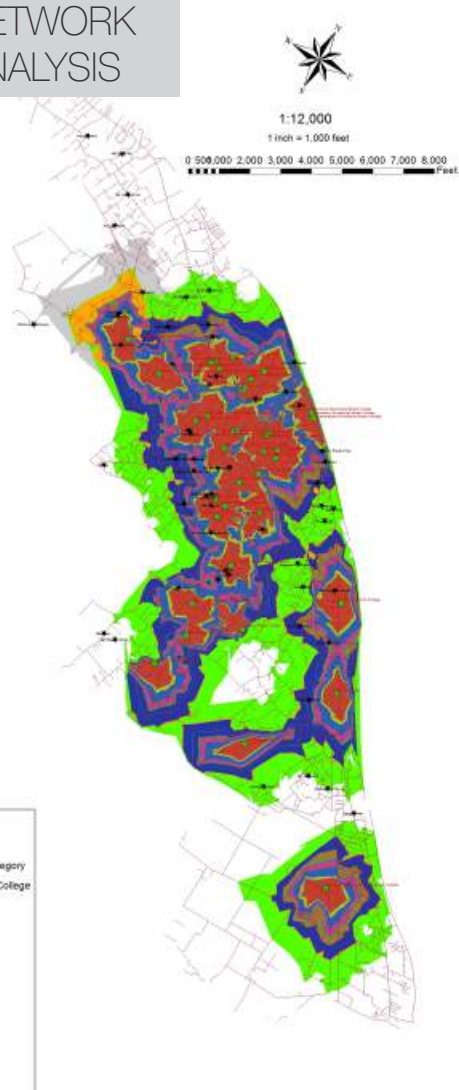


Different Network Analysis

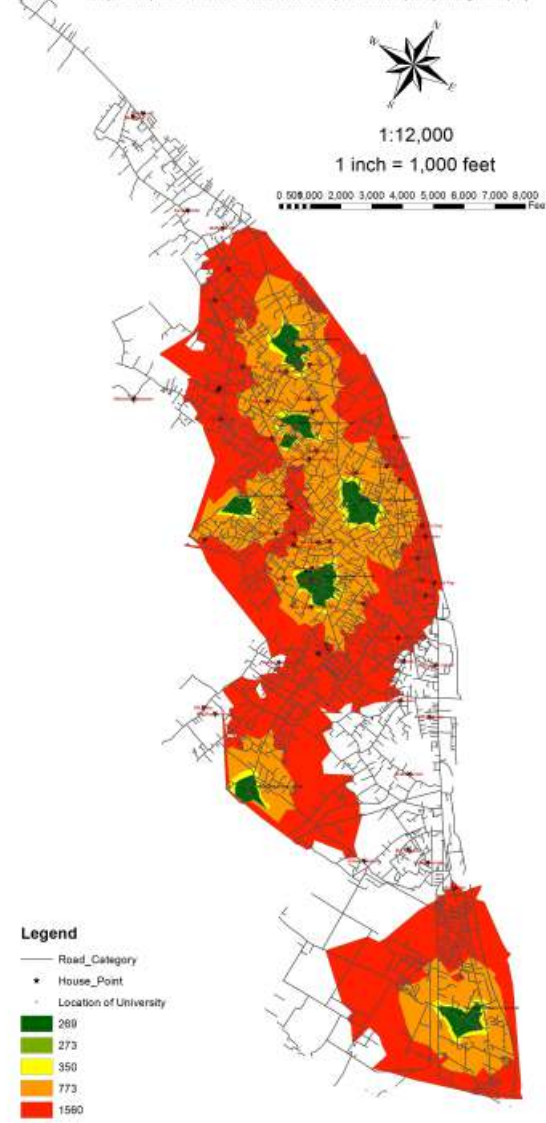
STEP 12

NETWORK ANALYSIS

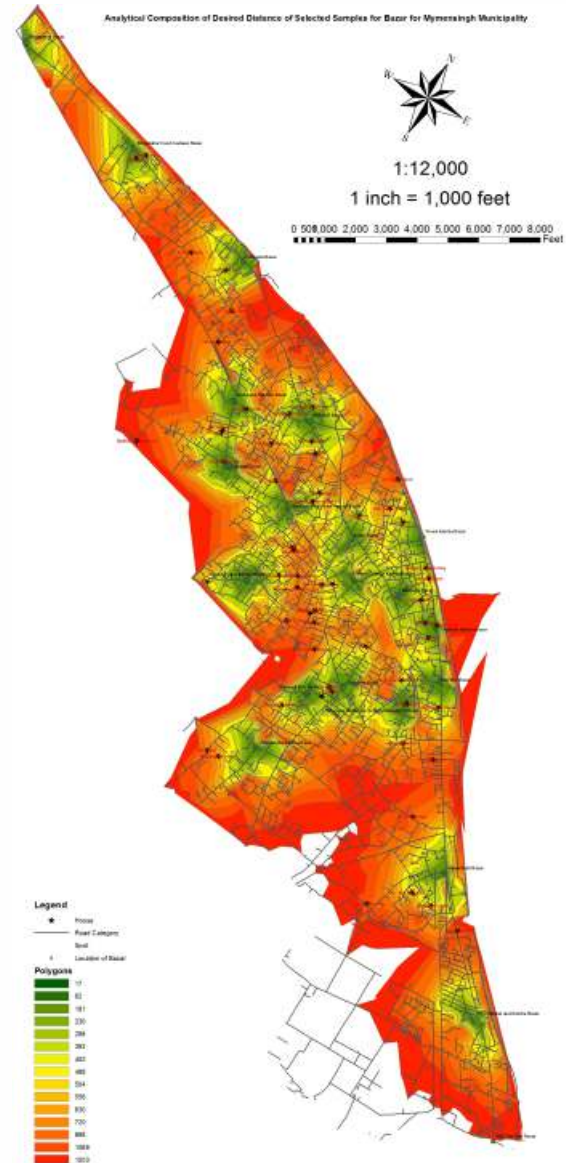
7 Selected Samples for College for Mymensingh Municipality



Analytical Composition of Desired Distance of Selected Samples for University for Mymensingh Municipality

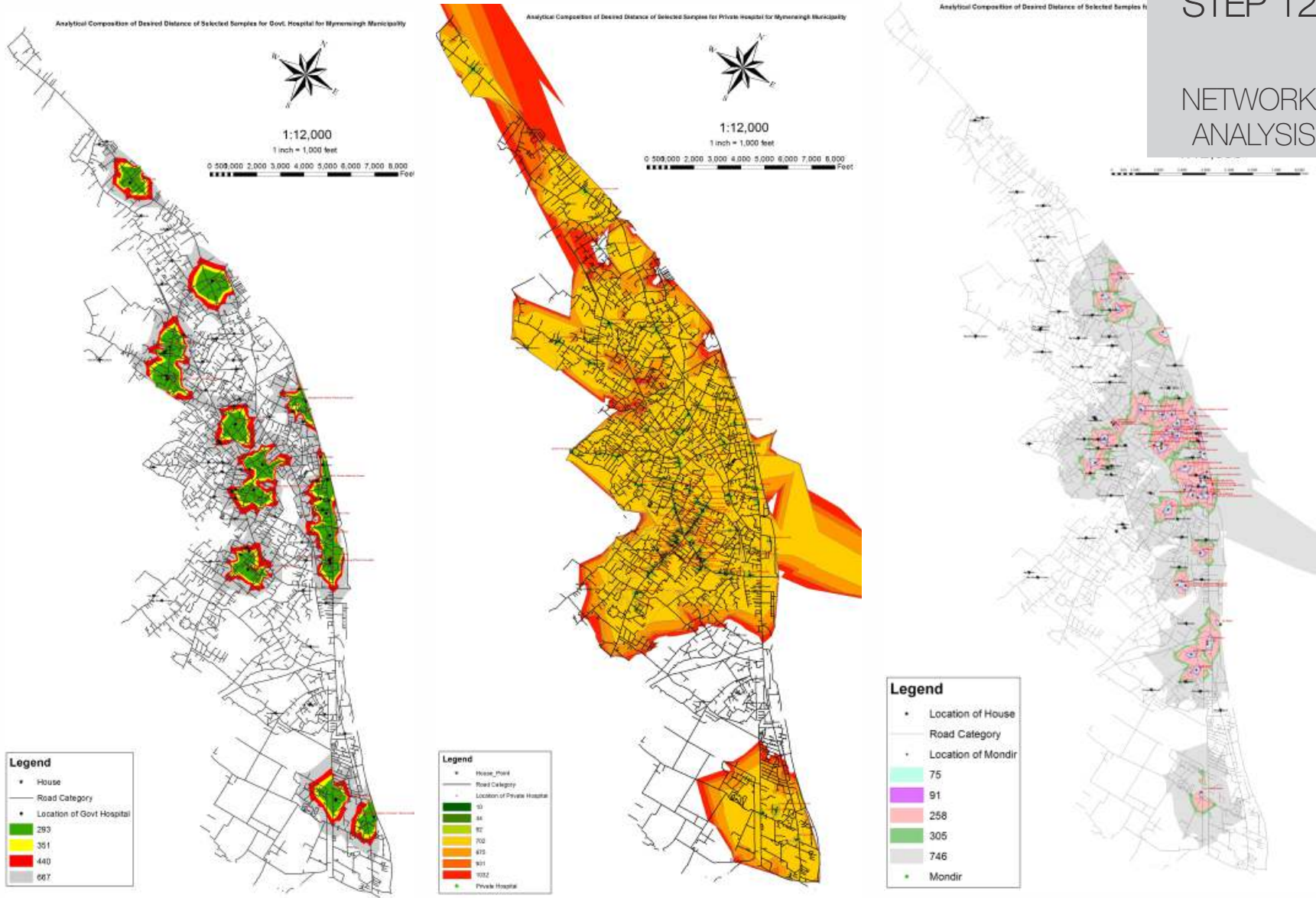


Analytical Composition of Desired Distance of Selected Samples for Bazar for Mymensingh Municipality



Different Network Analysis

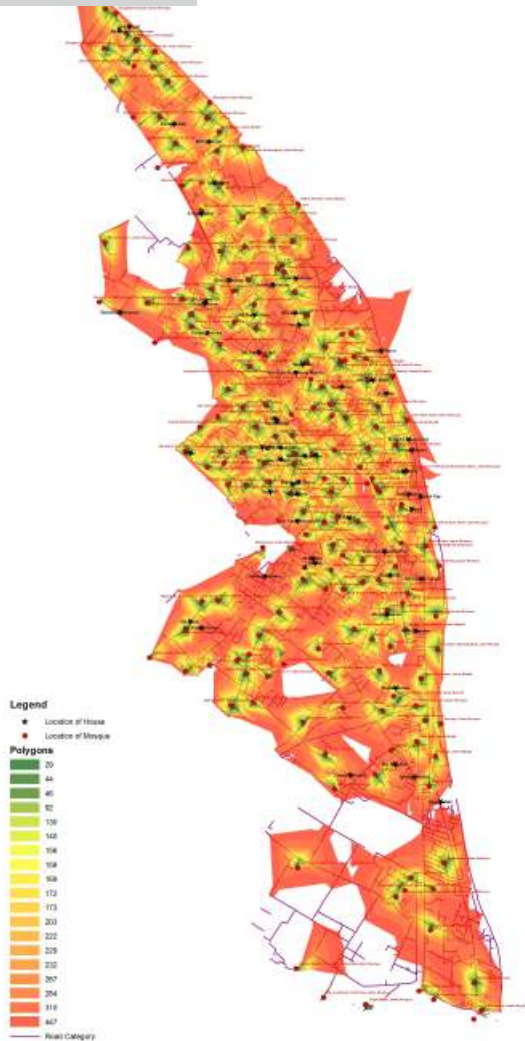
STEP 12 NETWORK ANALYSIS



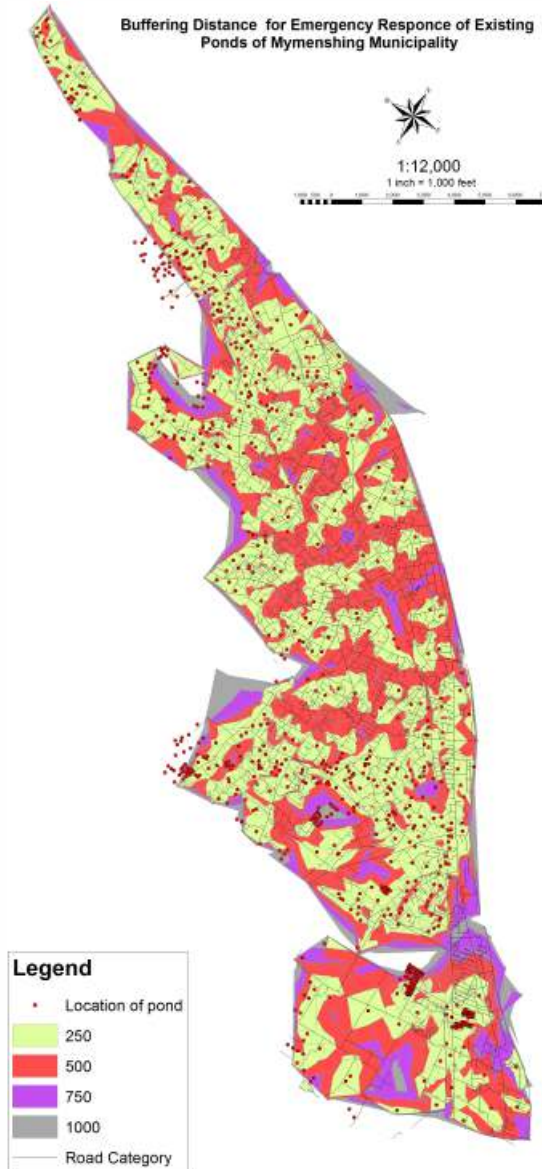
STEP 12

NETWORK ANALYSIS

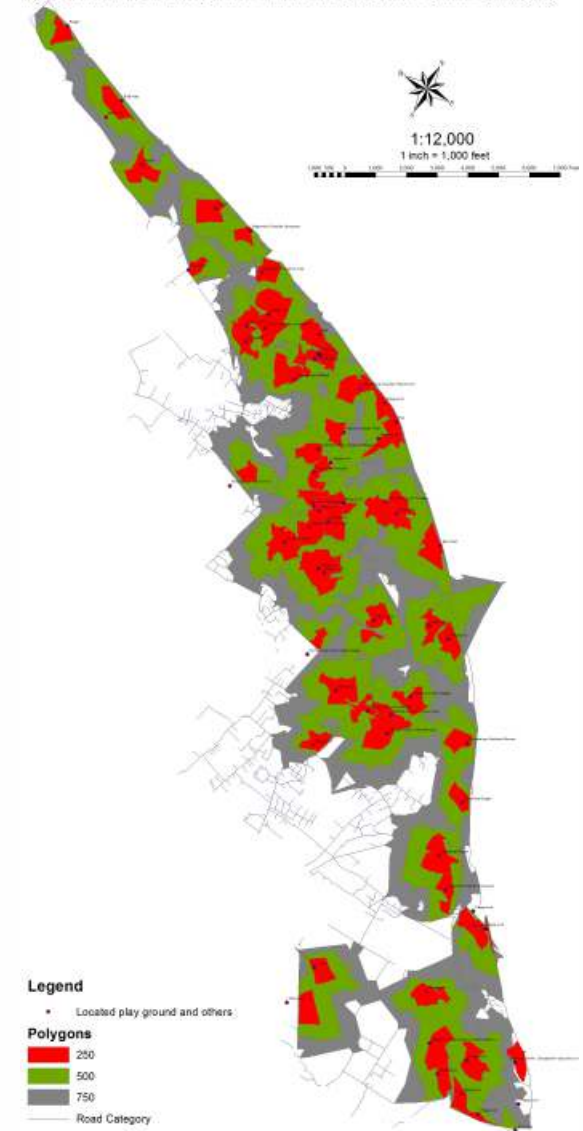
Desired Distance of Selected Samples for Mosque for Mymensingh Municipality



Buffering Distance for Emergency Response of Existing Ponds of Mymensingh Municipality

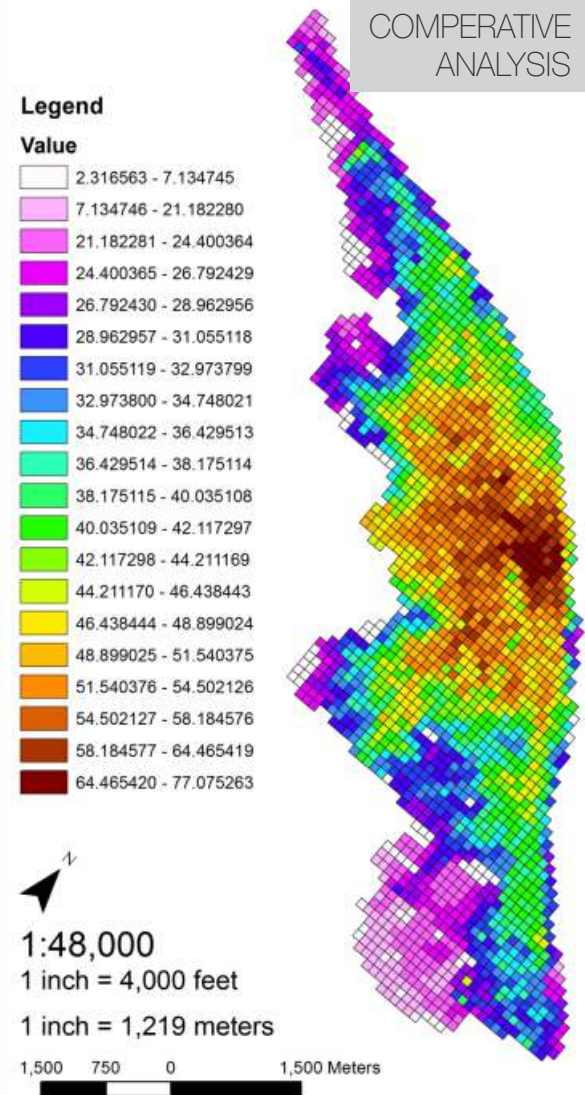
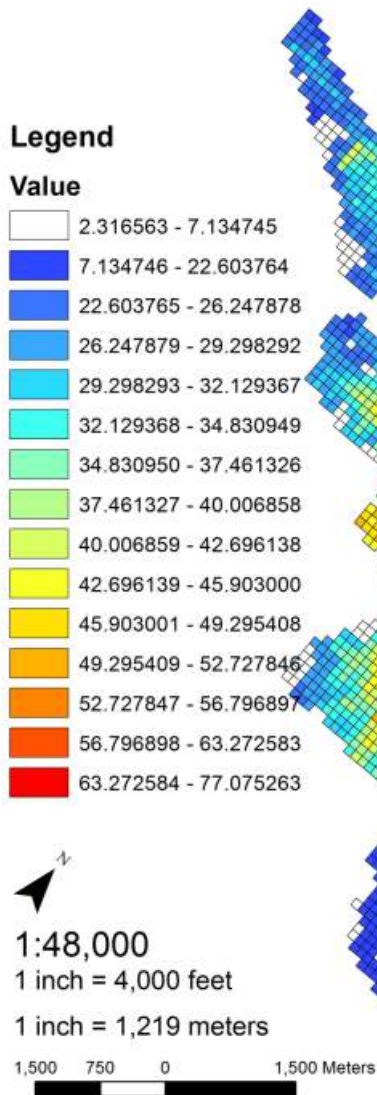
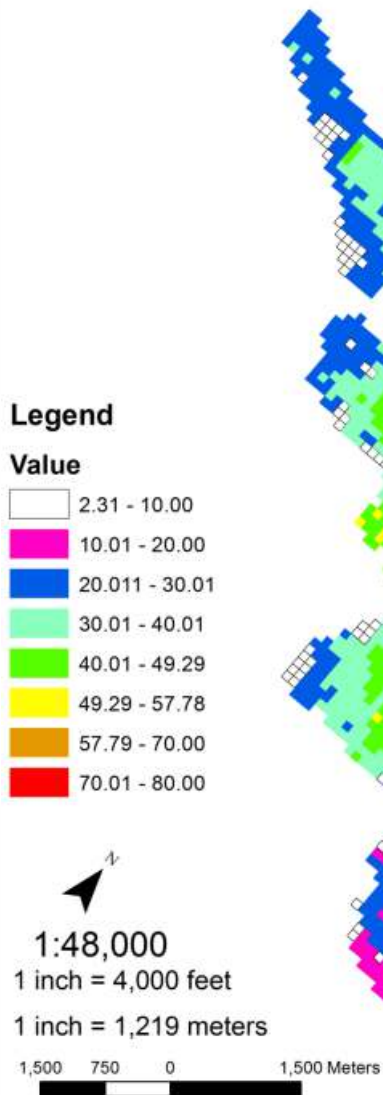


Buffering Distance for Emergency Response of Existing Play Ground, Park, Eidgha, Graveyard, Stadium and other Open Spaces of Mymensingh Municipality



COMPARATIVE ANALYSIS OF MYMENSINGH MUNICIPALITY

STEP 13
COMPERATIVE ANALYSIS



STEP 13

ECO SENSITIVE MAP

Eco Sensitive Map

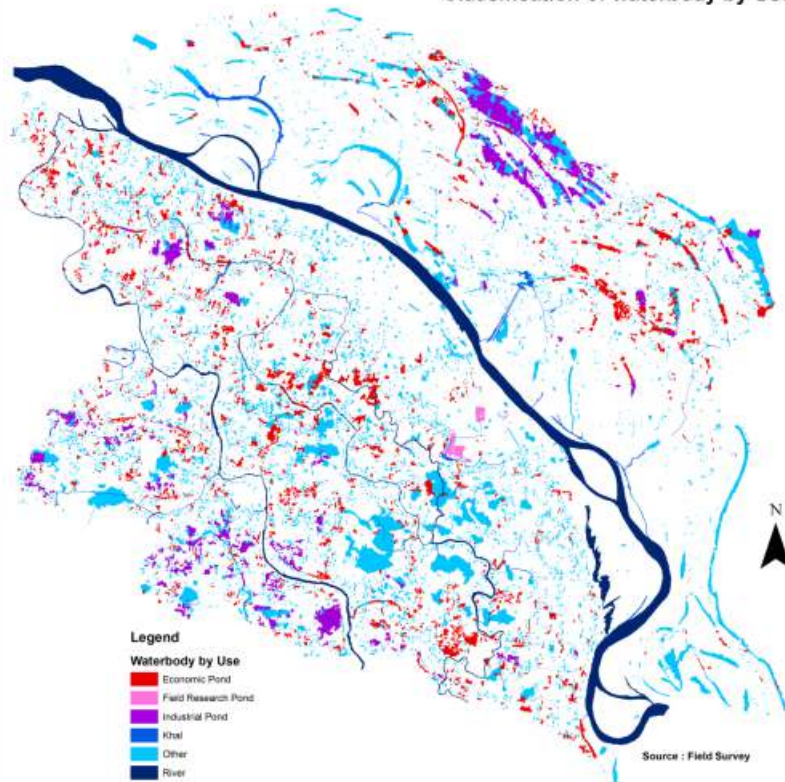
Digital Elevation Model (DEM), prepared from 4-Band Multispectral Stereo Image, suggests the existing ecological network of MSDP project area. According to the suggested network ground elevation varies from 2m to 19m above msl. The whole project area has been classified into 9 different categories from DEM. Table reveals the land classification according to elevation.

According to land classification, total flood free land within MSDP area is 14690.65 acres, which is 20.66 percent of total land area. On the other hand, total drainage sensitive zone has been found 30109.52 acres (41.78%) and total drainage reservoir has been found about 20527.88 acres (28.49%) and foreshore is about 6531.38 acres (9.06%) of total project area respectively.

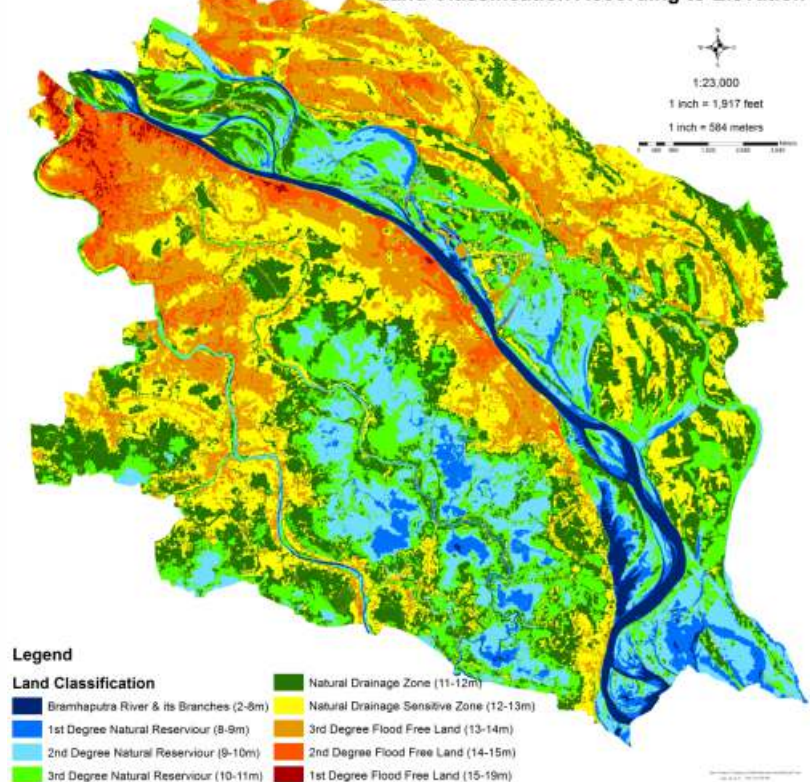
Land Classification According to Elevation

Land Class	Area (Acre)	Percentage
1st Degree Flood Free Land	383.86	0.53
2nd Degree Flood Free Land	4494.15	6.24
3rd Degree Flood Free Land	10012.64	13.89
Total Flood Free Land	14890.65	20.66
1st Degree Natural Reservoir	3571.85	4.96
2nd Degree Natural Reservoir	7489.09	10.39
3rd Degree Natural Reservoir	9466.95	13.14
Total Natural Reservoir	20527.88	28.49
Natural Drainage Sensitive Zone	14610.84	20.28
Natural Drainage Zone	15498.68	21.51
Total Drainage Sensitive Zone	30109.52	41.78
Foreshore	6531.38	9.06
Grand Total	72059.43	100.00

Classification of waterbody by Use

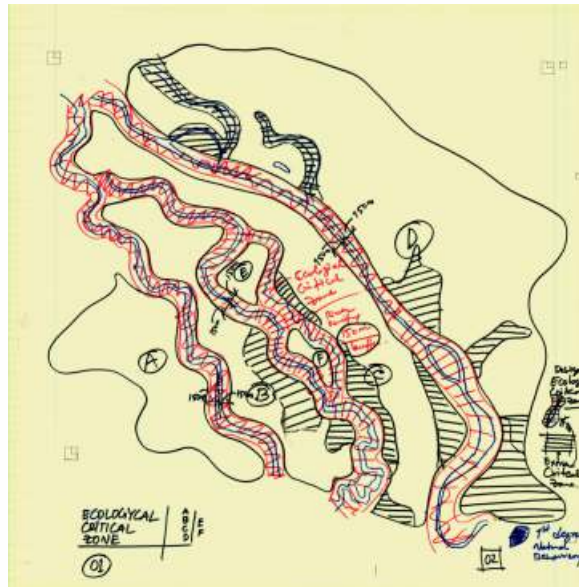


Land Classification According to Elevation



STEP 13

ECO SENSITIVE MAP



Eco Sensitive Map

On the basis of the DEM based land classification, the hydrological region of MSDP area has been further reclassified into (a) Brahmaputra River and foreshore, (b) Main Flood Flow Zone, (c) Sub-Flood Flow Zone, (d) Water Retention Area and (e) Water bodies considering surface morphology.

Eco-sensitive broad land use zone has been delineated from the land classification by elevation. According to the following Table, the MSDP area has been categorized into six ecological categories.

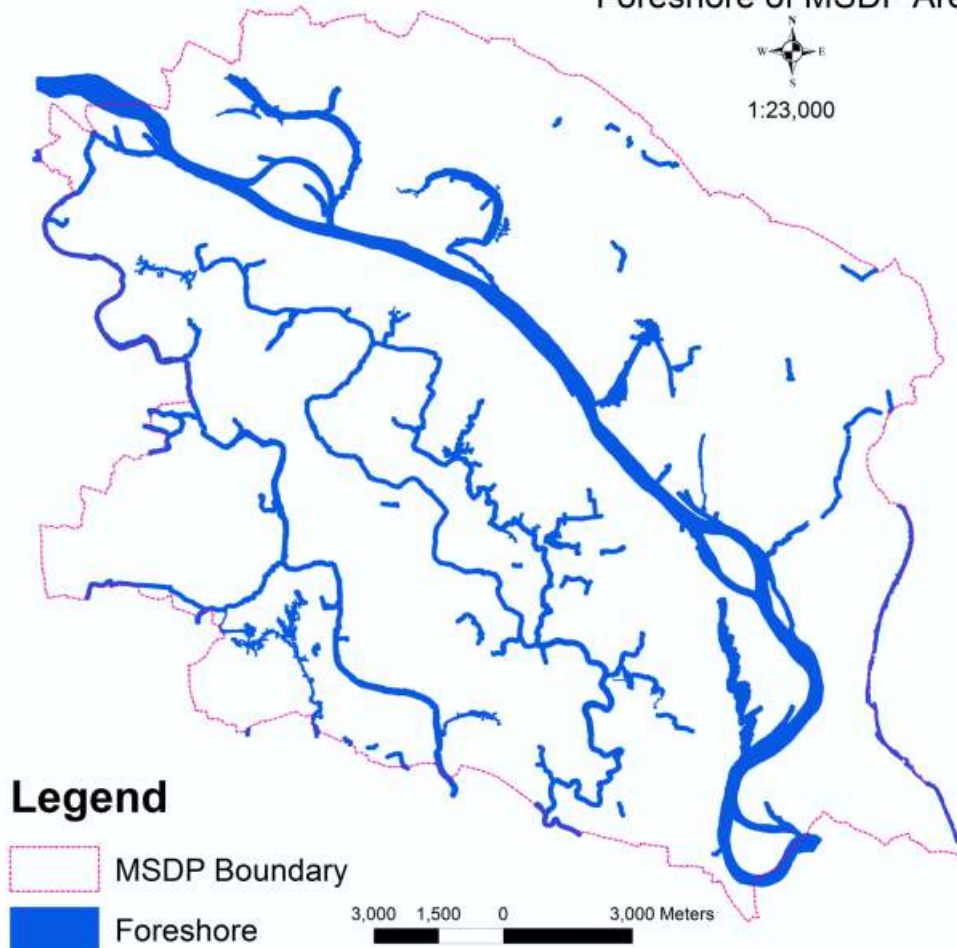
Eco-Sensitive Broad Land Use Zone

Ecological Category	Area (Acre)	Percentage
Natural Drainage Sensitive Land	11106.85	15.41
Flood Free Land	14449.81	20.05
Foreshore	7845.84	10.89
Main Flood Flow Zone	18267.20	25.35
Natural Retention Area	10038.22	13.93
Sub-Flood Flow Zone	10351.50	14.37
Grand Total	72059.43	100.00

STEP 13

ECO SENSITIVE MAP

Foreshore of MSDP Area

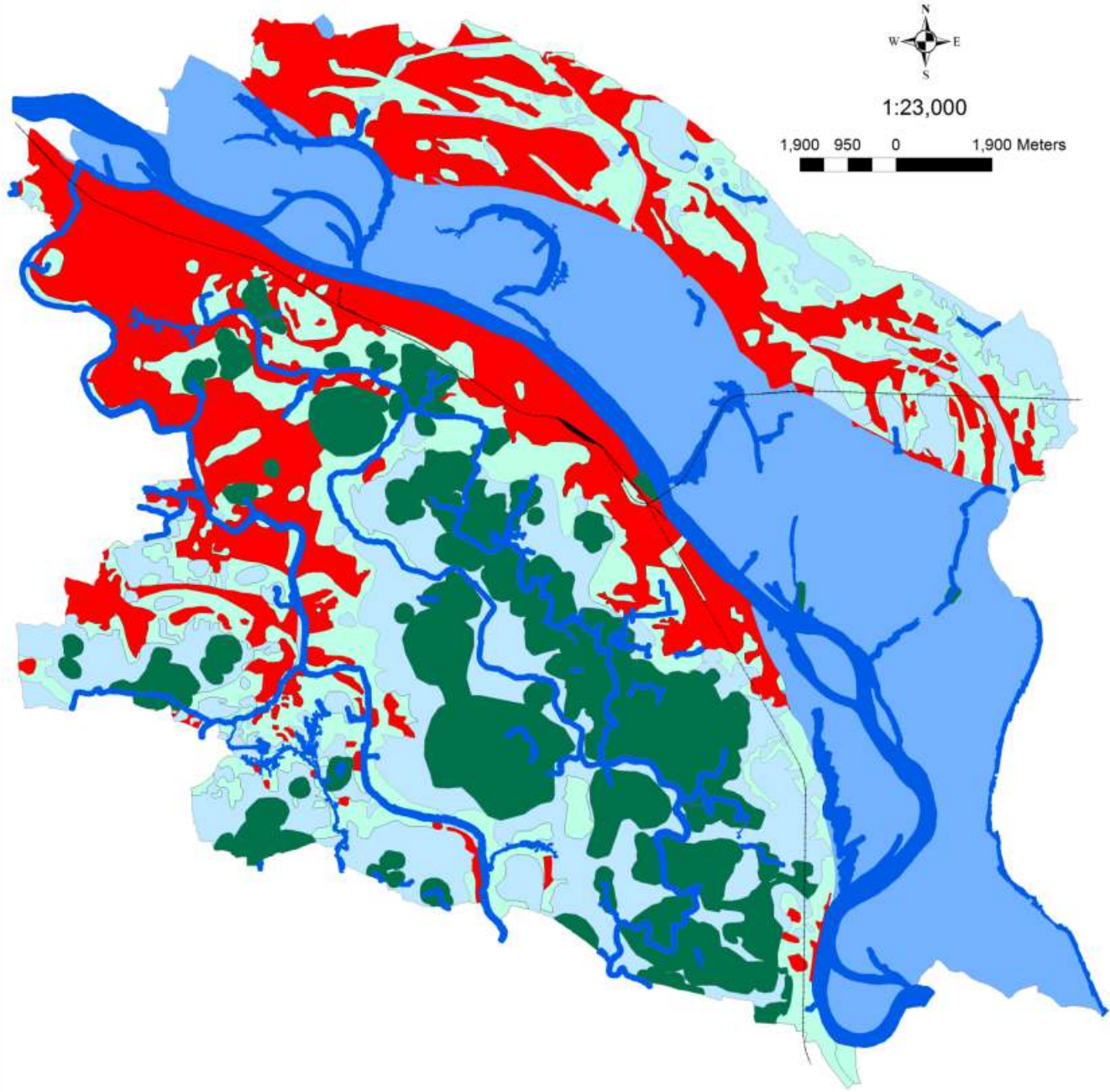


Main flood flow zone of MSDP area is located, on the northeastern portion of the river Brahmaputra, in the area having predominantly rural setting. Main flood flow zone of MSDP area occupies an area of 18267.20 acres, which is slightly over one-fourth of total project area (25.35%). Width of the main flood flow zone is ranging from 3km to 5 km creating a blue-axis elongated from northwest to southeast. Several ox-bows have also been created within the main flood flow zone, which acting as a reservoir during dry season.

Sub-flood zone, which is subject to seasonal flooding in the MSDP area covering an area of about 10351.50 acres (14.37% of total project area). The sub-flood zone has three different categories with distinct character and flow directions including (i) sub-flood zone east, (ii) sub-flood flow zone west and (iii) sub-flood flow zone central. Spatially different three-sub-flood flow zones have no directly physical connectivity with the centrally located main flood flow zone. The main characteristics of sub-flood flow zone are that there is water during wet season and it nearly dries up during dry season. Sub-flood zone central is rather strategically important for natural drainage of urban and rural areas, where the town is located.

Natural retention area covering an area of 10038.22 acres, which is slightly below fourteen percent (13.93%) of total project area. The retention area is strategically located within the central sub-flood flow zones. Slope of the existing topography is very gentle. As a result, discharge from existing surface drainage system is very low, which increases the lagging period of the existing drainage system, particularly in the central sub-flood zone where the town lies, creating urban flooding in the town.

Drainage sensitive land, in the MSDP area, occupies an area of 11106.85 acres, which is 15.41 percent of total project area, interfacing sub-flood flow zone and flood free land. The drainage sensitive land is divided mainly into two parts including northeast and southwest. The southwestern part of the drainage sensitive land is further sub-divided into two parts including central part and lower part by the river Sutia.



STEP 13
ECO SENSITIVE MAP

Eco-Sensitive Broad Land Zoning of MSDP Area

STEP 14

DRAINAGE MAP

Drainage Missing Link of Natural Drainage System

While analyzing the natural drainage system of MSDP area, it is evident from the RS cadastral map that there are a numerous canals/khals existed within the project area. It has been found that MSDP area has lost a total length of 586.99 km with an area of 8603.67 acres overtime. This due to encroachment of canals/khals through human intervention.

Identification of Catchments

First, the outfall locations of the drainage network were identified from the DEM. Then the drainage channels were back-tracked and tentative catchments were delineated following the natural levee and roads, which were considered as the boundaries of the catchments.

The calibrated and validated PC SWMM model was used to simulate the baseline condition.

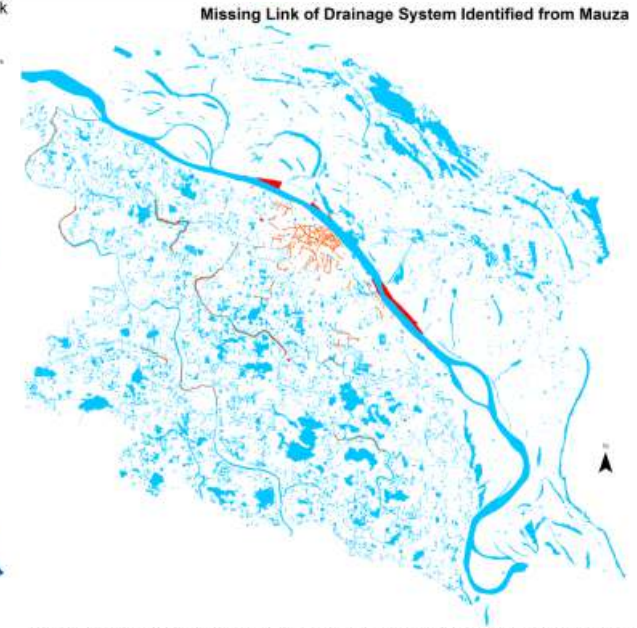
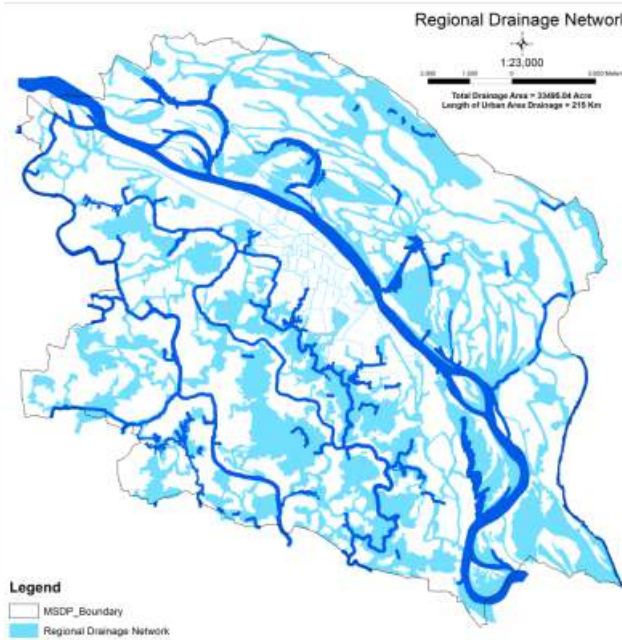
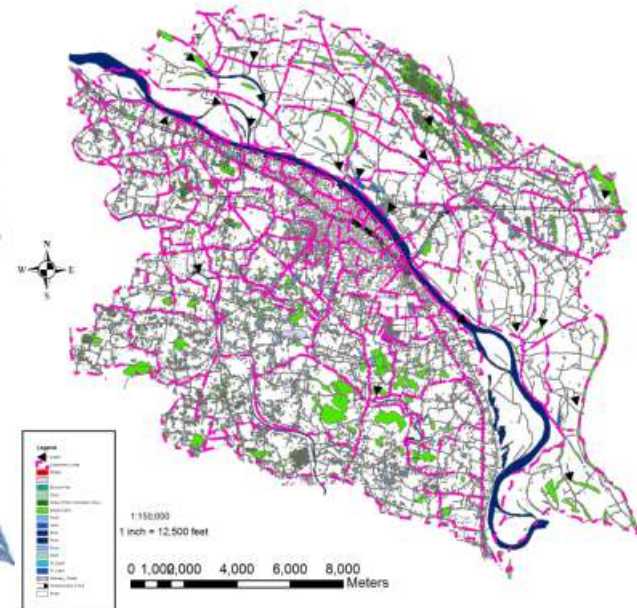
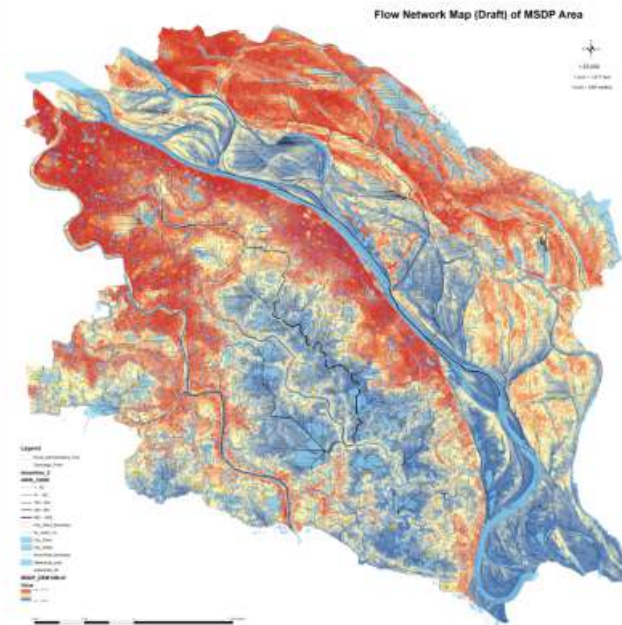


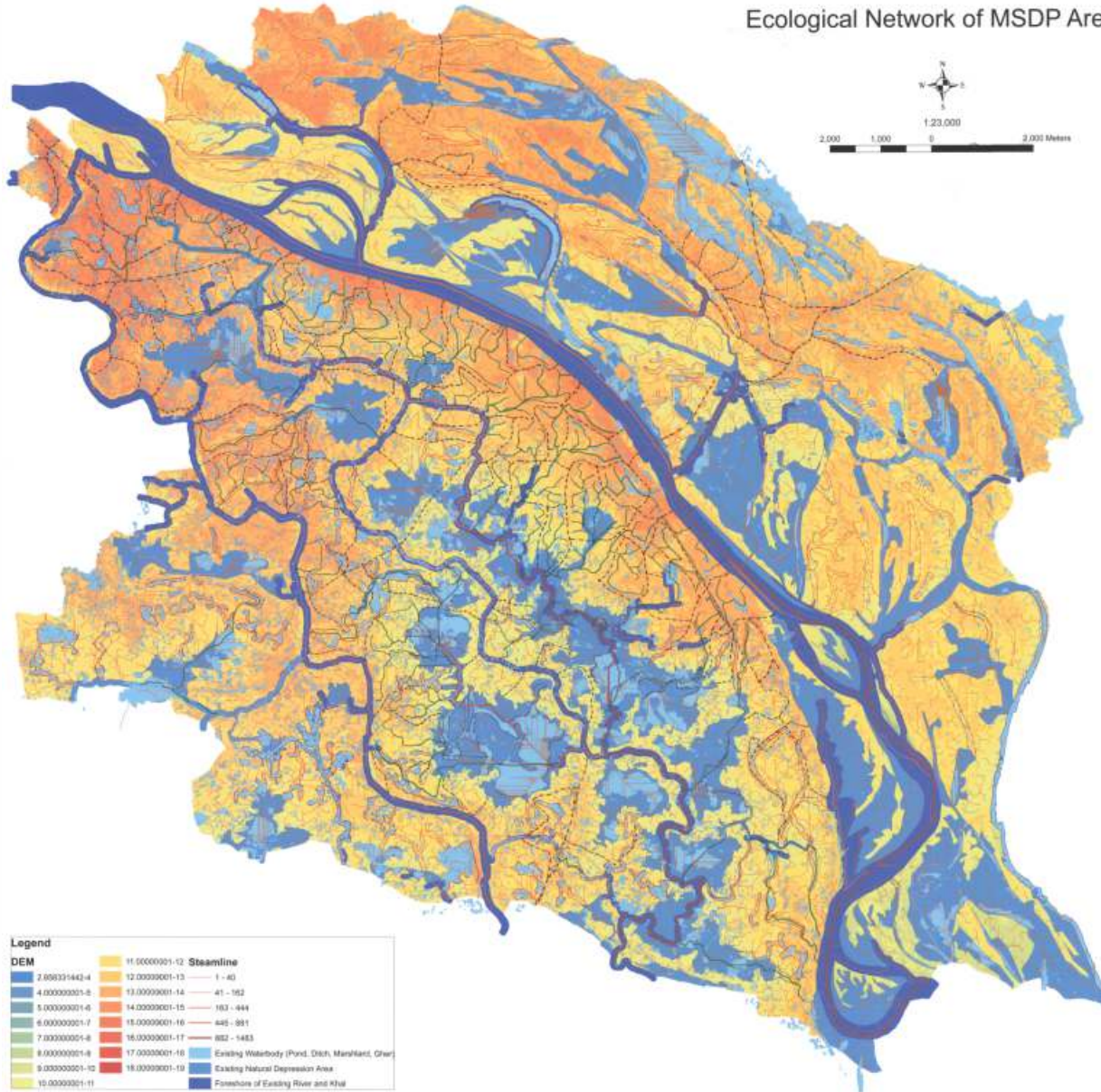
Figure: Drainage Catchment of Mymensingh Strategic Development Plan (MSDP) Project Area



STEP 14

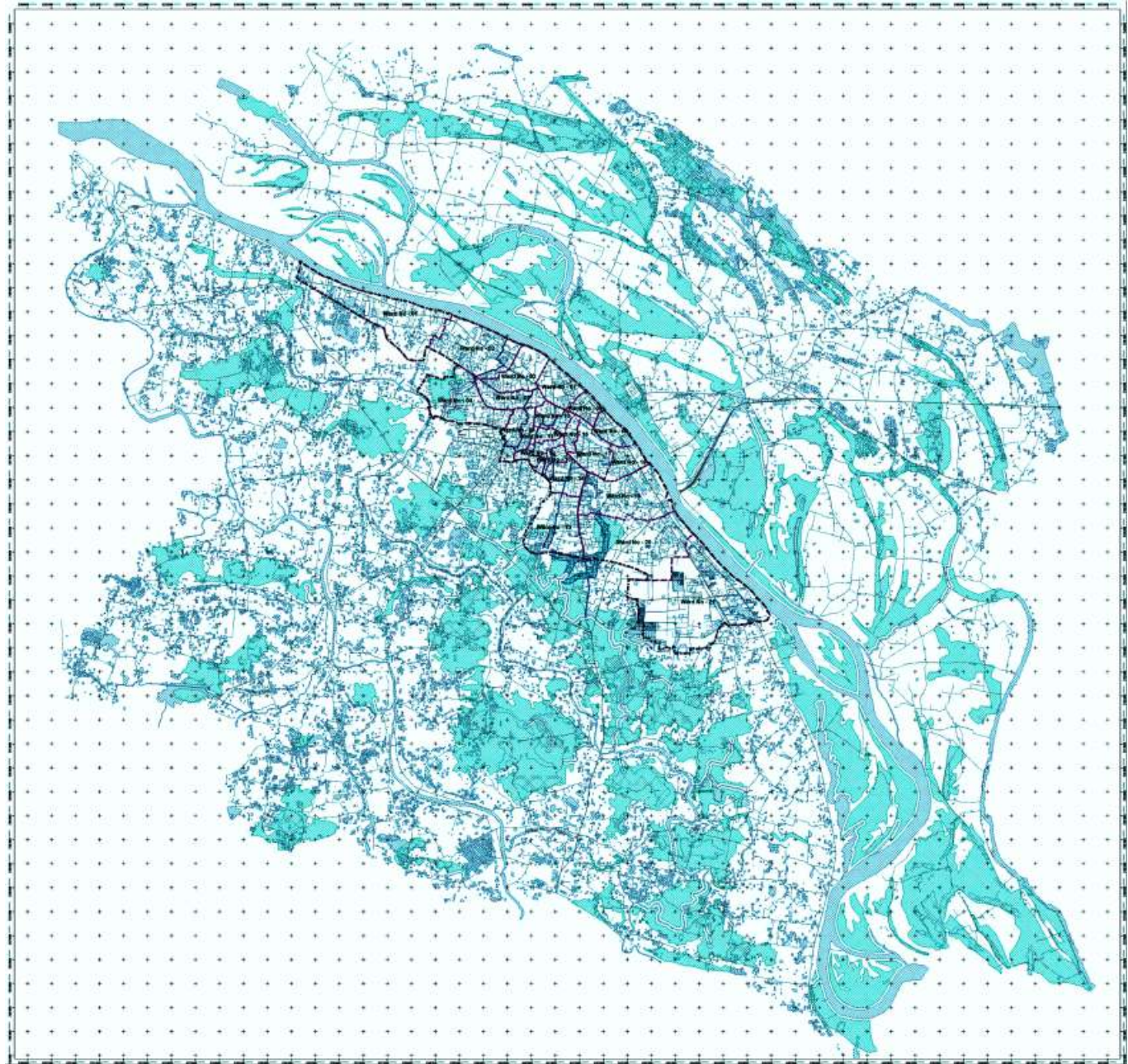
DRAINAGE
MAP

Ecological Network of MSDP Area



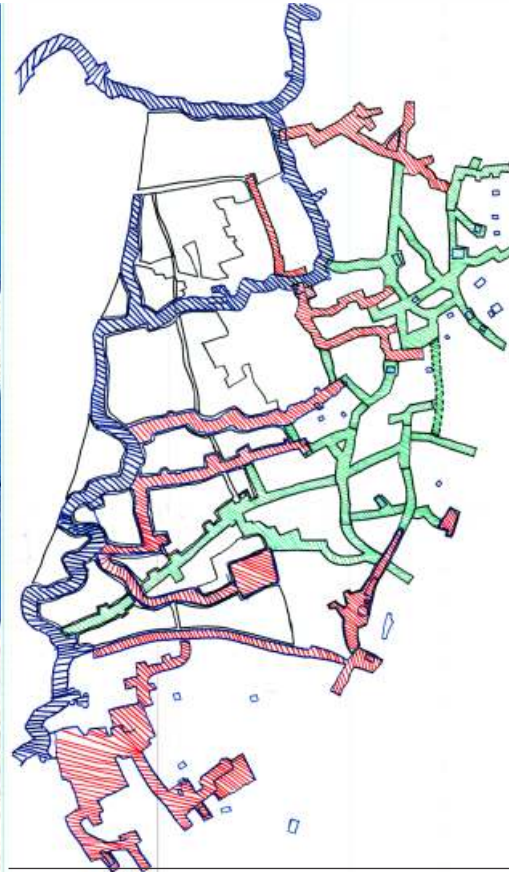
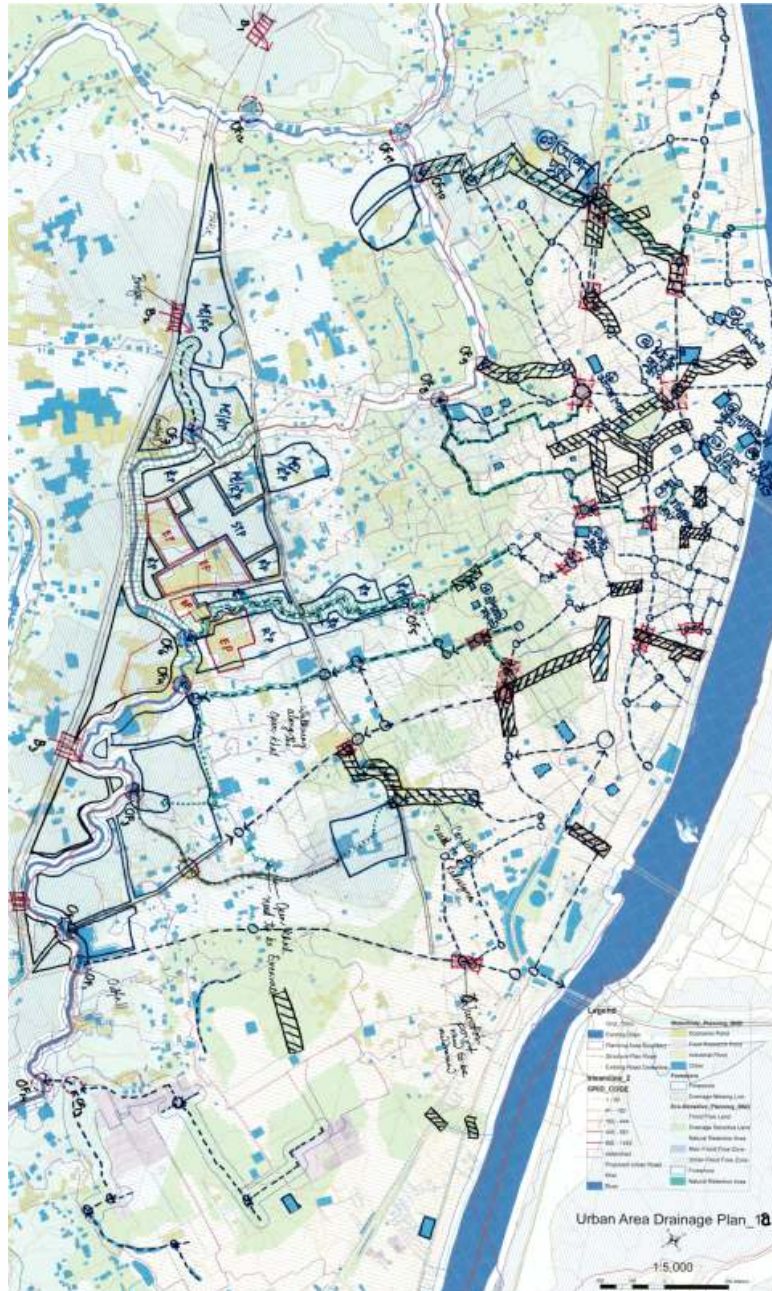
STEP 14

DRAINAGE MAP



STEP 14

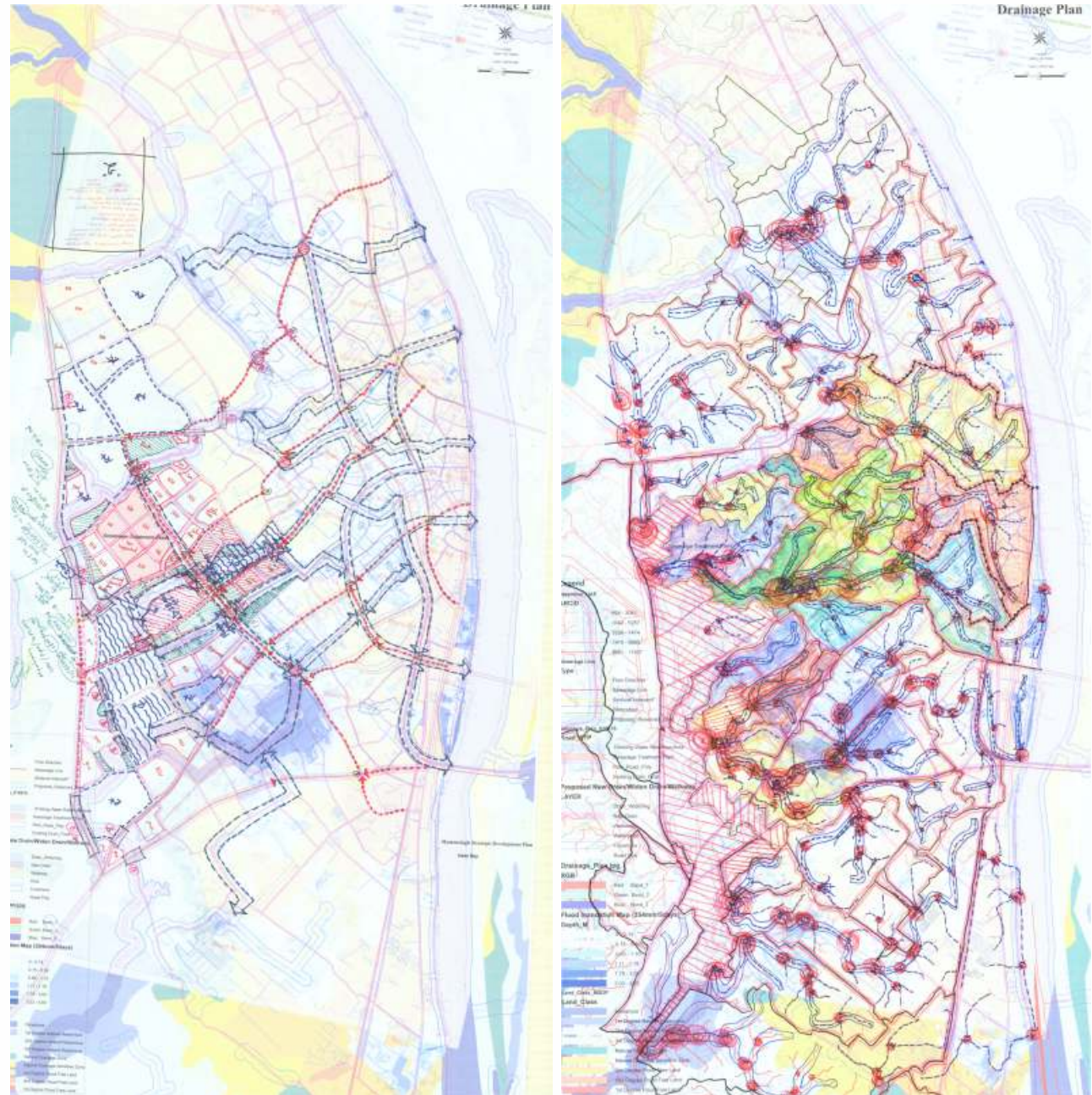
DRAINAGE MAP



Sl. No.	Name	Drainage	Area in Acre	Length in Km
1	Foreshore	Foreshore	8576.12	
		Main Flood Flow Zone	18267.32	
		Sub-Flood Flow Zone	10351.50	
		Natural Retention Area	10038.22	
2	Regional Drainage Network	Regional Drainage Missing Link	21960.82	
		Primary Drain		5.24
		Secondary Drain	75.28	12.04
		Tertiary		198.52
		Open Drain	5.32	215.80
3	Urban Area Drainage	Covered Drain	67.75	
		Primary Open Drain	82.11	13.09

STEP 14

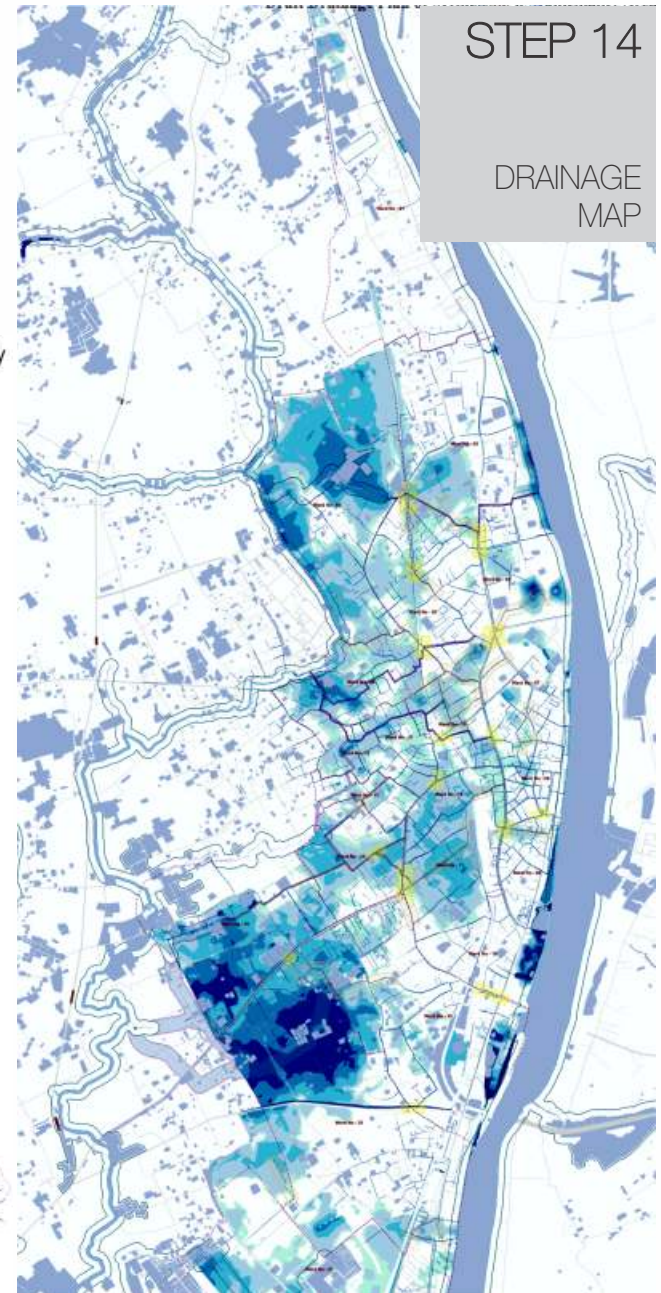
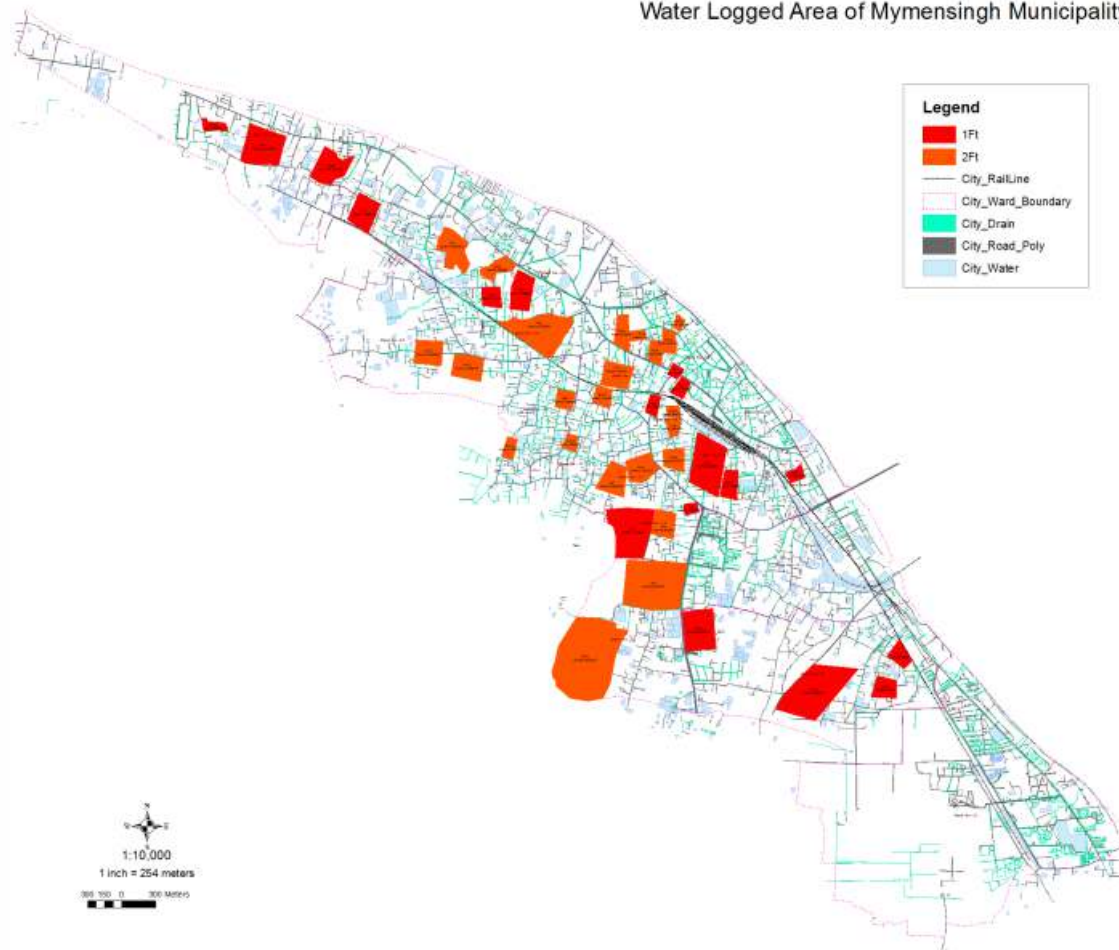
DRAINAGE MAP



STEP 14

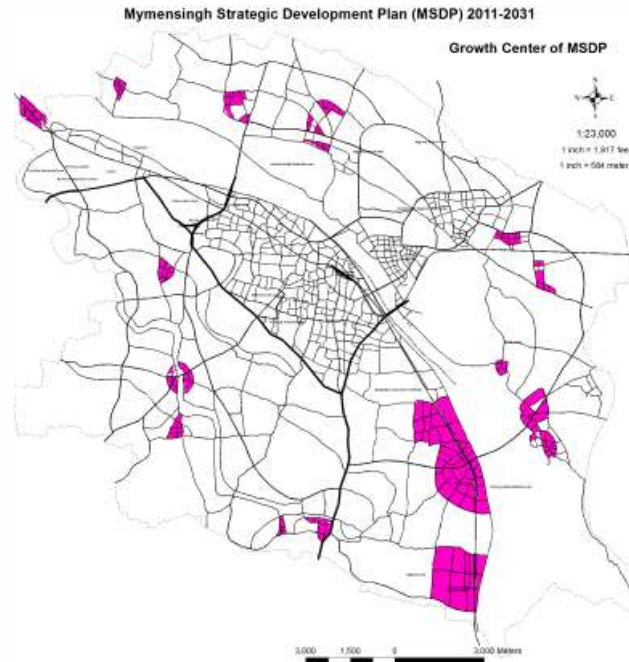
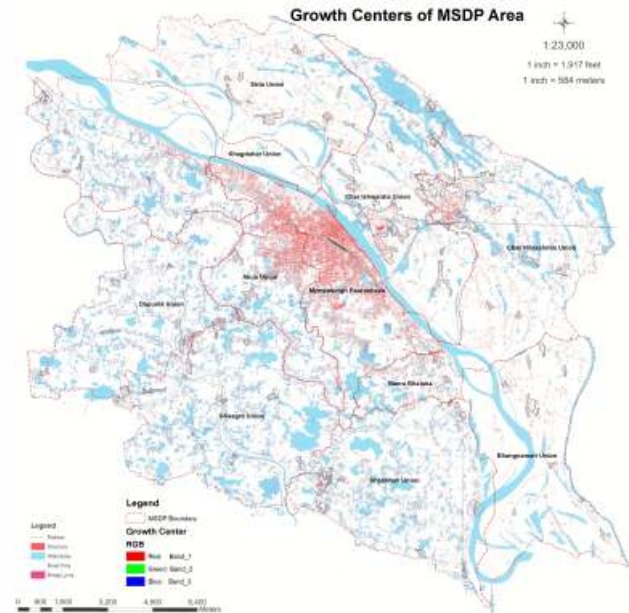
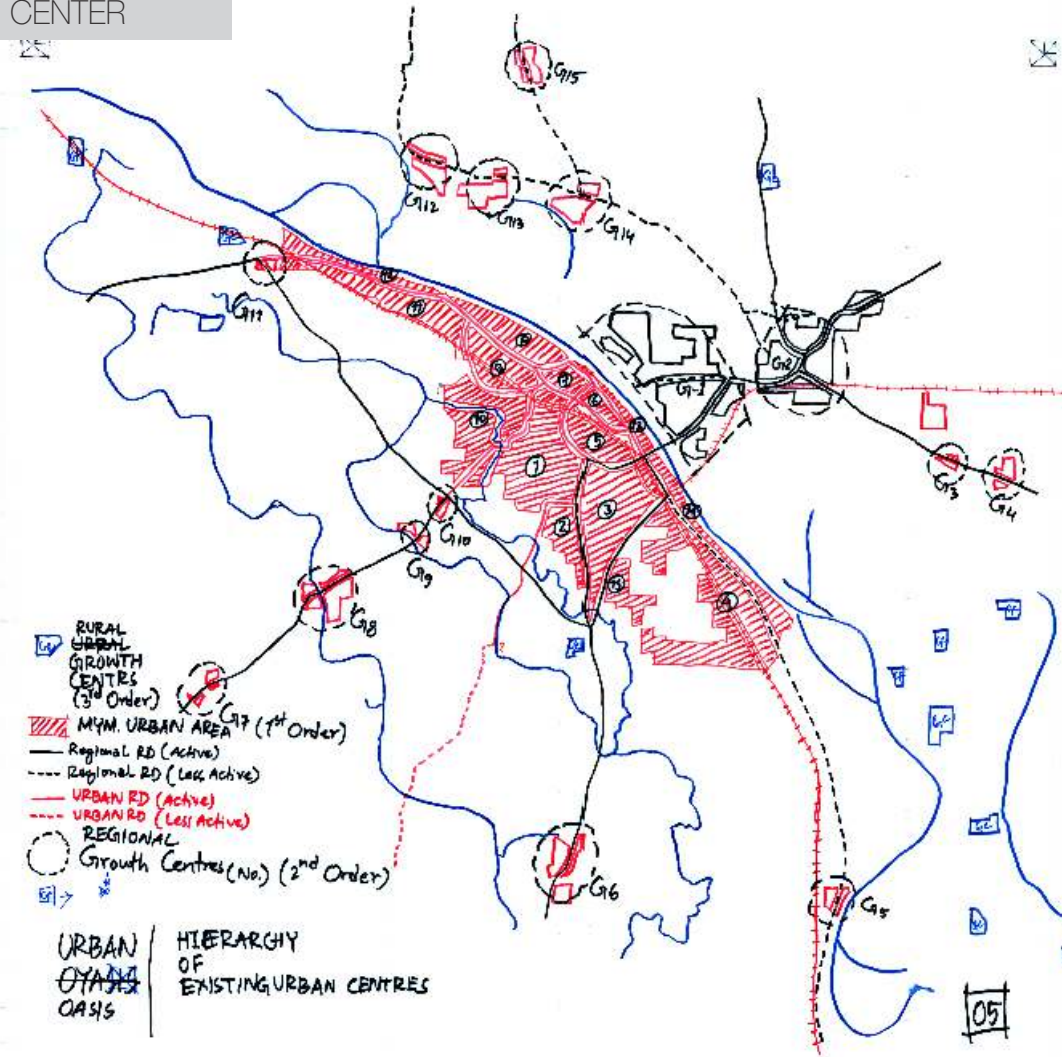
DRAINAGE MAP

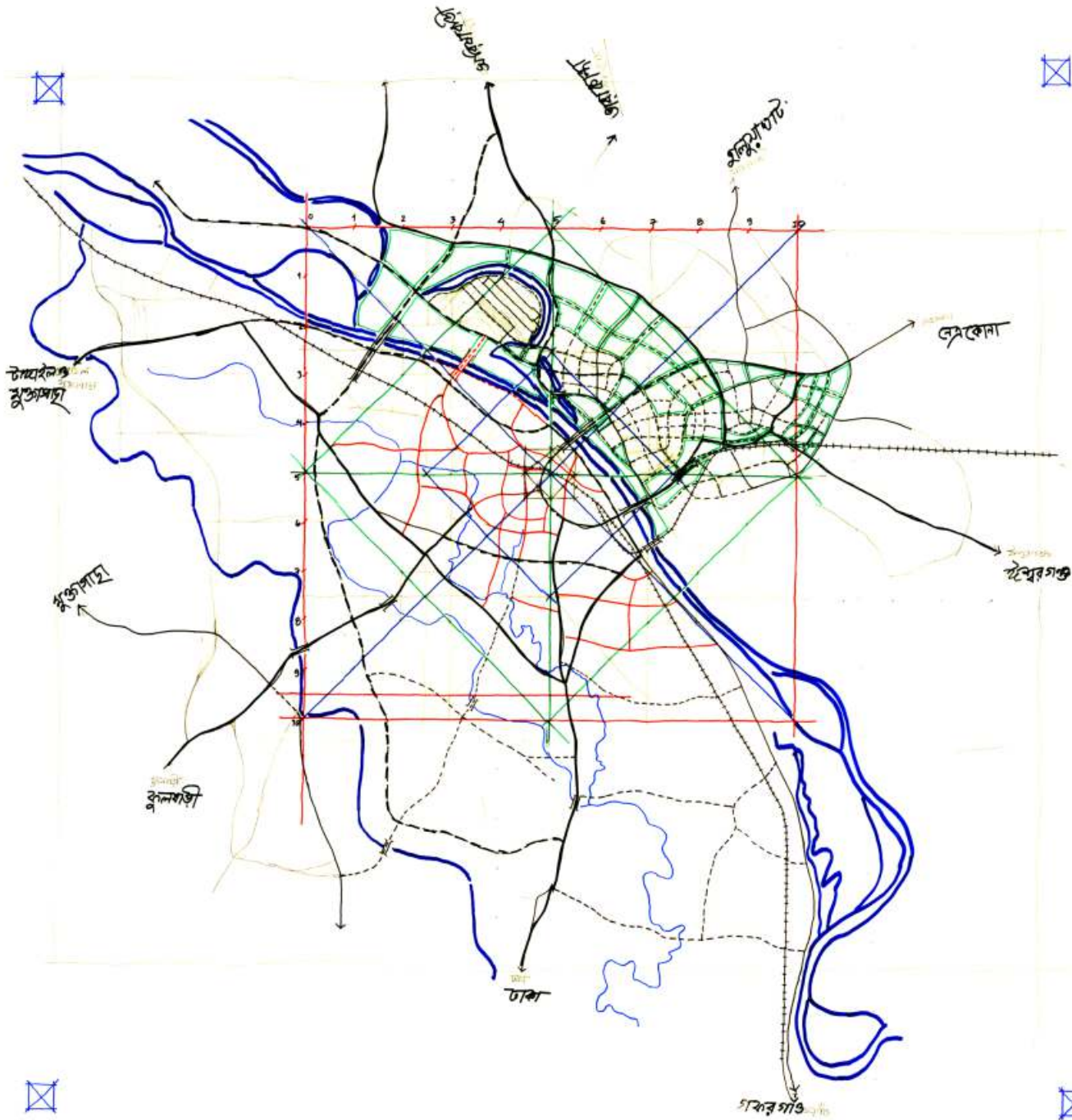
Water Logged Area of Mymensingh Municipality



STEP 15

REGIONAL GROWTH CENTER





STEP 16

REGIONAL
ROAD
NETWORK

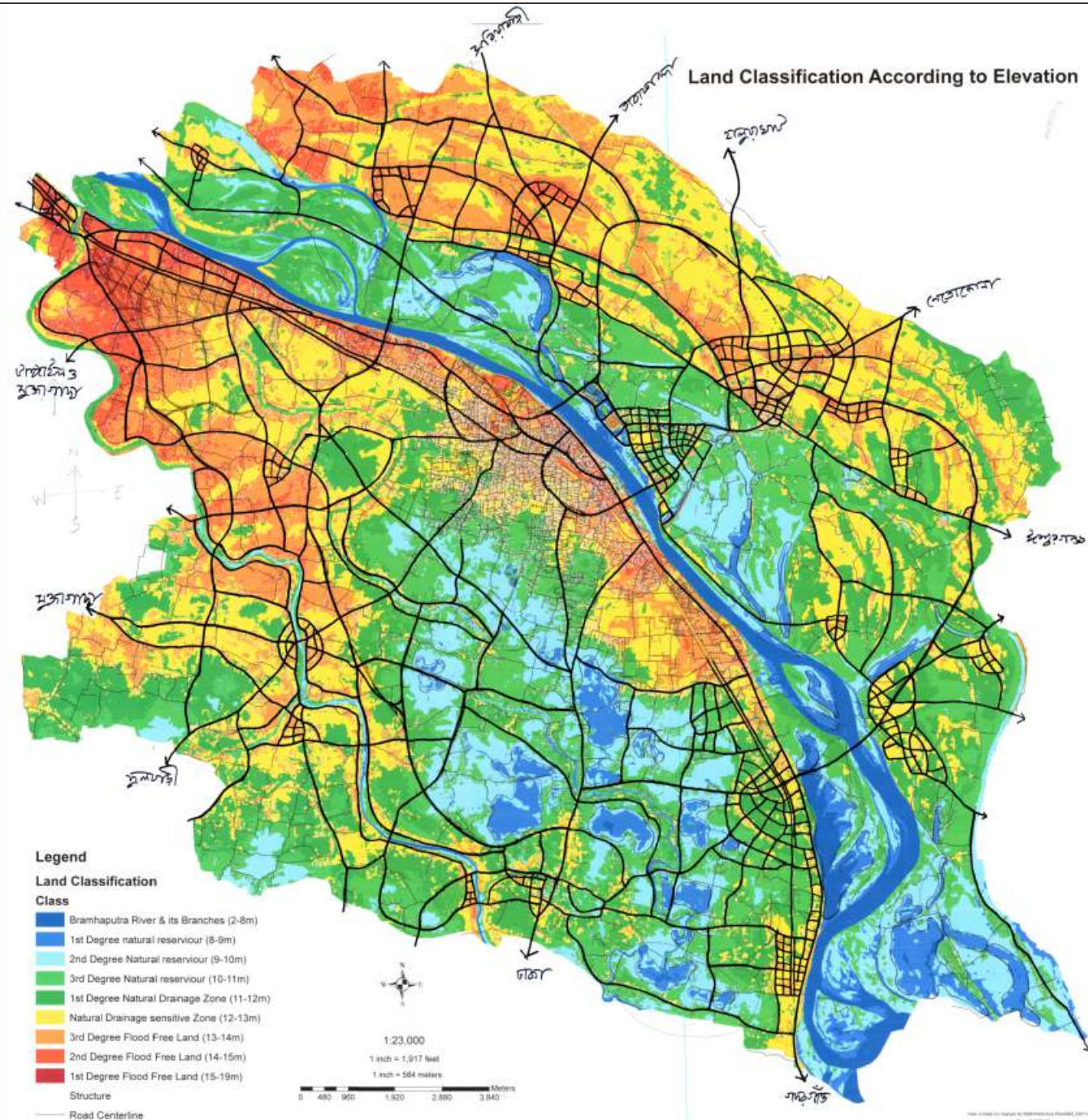
STEP 16

REGIONAL
ROAD
NETWORK

50

MSDP 2011-2031





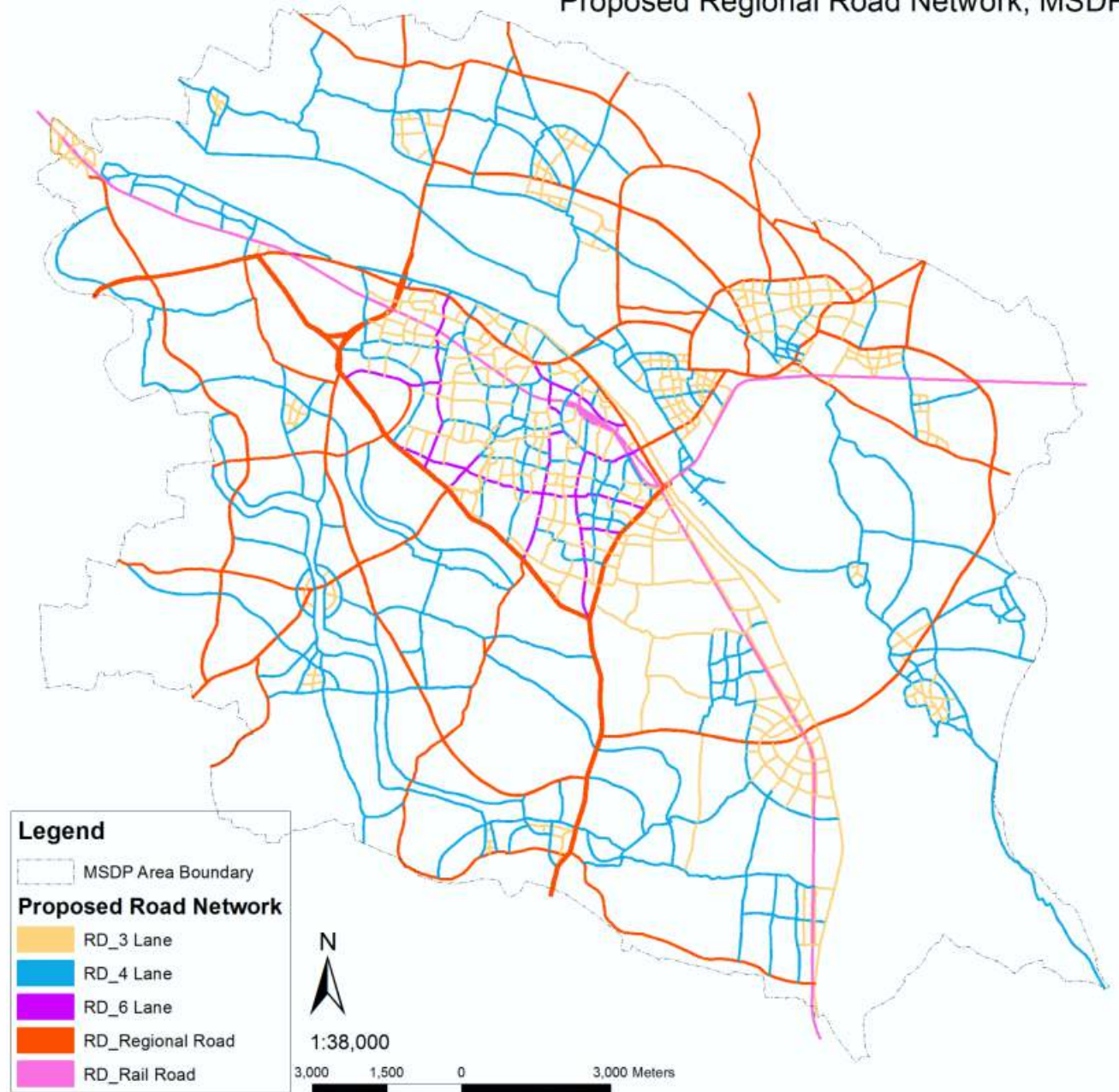
STEP 16

REGIONAL
ROAD
NETWORK

STEP 16

REGIONAL ROAD NETWORK

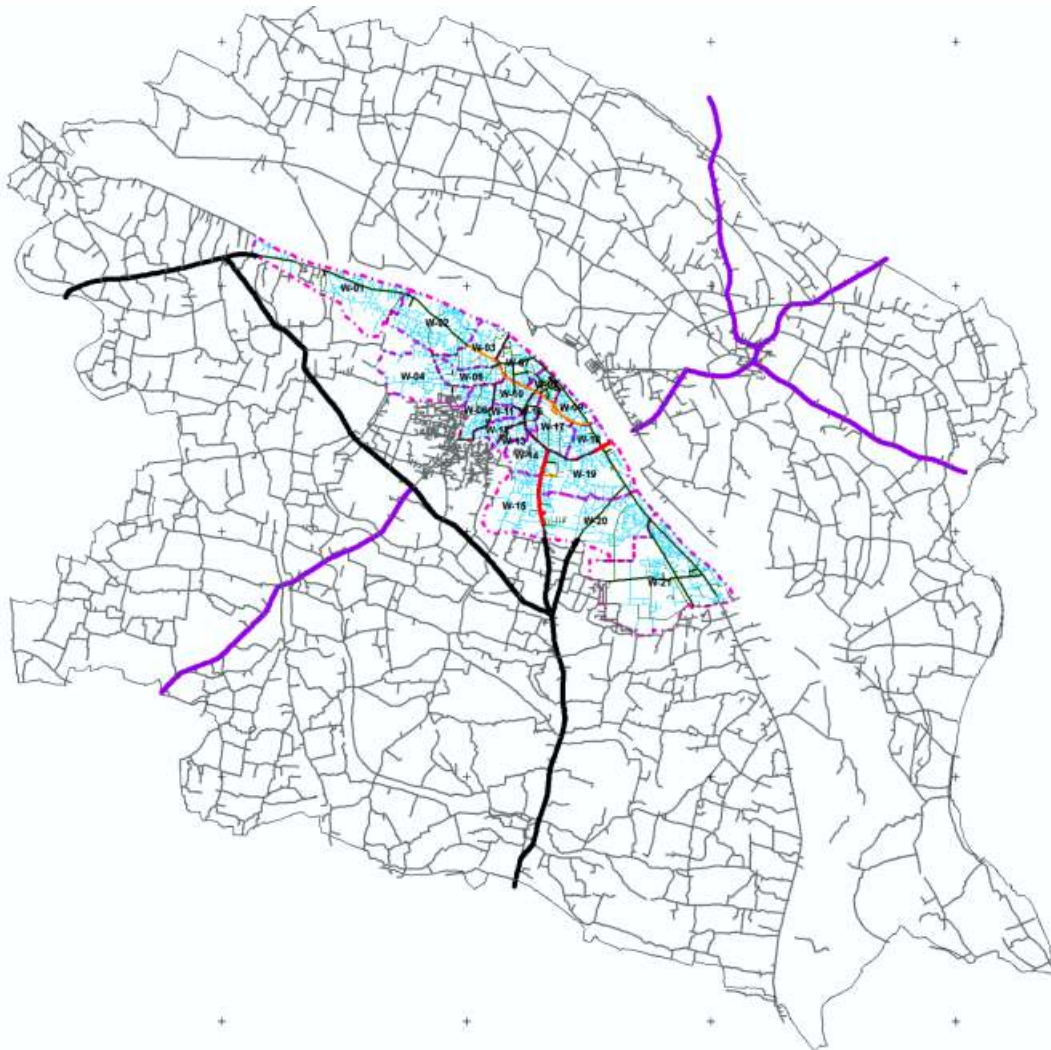
Proposed Regional Road Network, MSDP



Existing Road network of MSDP Area

STEP 17

URBAN ROAD NETWORK



Length of Road at MSDP Area

Road Type	Length(M)	%
Access (>=30<39ft)	3788.26	1.34
Tertiary C (<12 ft)	214551.22	76.06
Primary (>=45ft)	2096.31	0.74
Secondary (>=39<45ft)	327.99	0.12
Tertiary A (>=18<30ft)	28107.96	9.96
Tertiary B (>=12<18ft)	33208.71	11.77
Total	282080.44	100.00

Total length of existing road network at MSDP area is a little over 282 km. Table above shows the length of road at MSDP area. As per table, road has been classified into six categories according to its width. The table depicts that primary (width ≥ 45 ft) and secondary (≥ 39 ft < 45 ft) road comprising of less than 1 percent (0.74%) and 0.12% respectively. The table also reveals that more than 76 percent Tertiary C type road having width of less than 12 feet. Map shows the existing road network of Mymensingh municipality. Mymensingh is a typical secondary town with length of about 12 km. and width is variably 2.5 km. Like other secondary towns, non-motorized vehicles are predominant in the town.

STEP 17

URBAN ROAD NETWORK

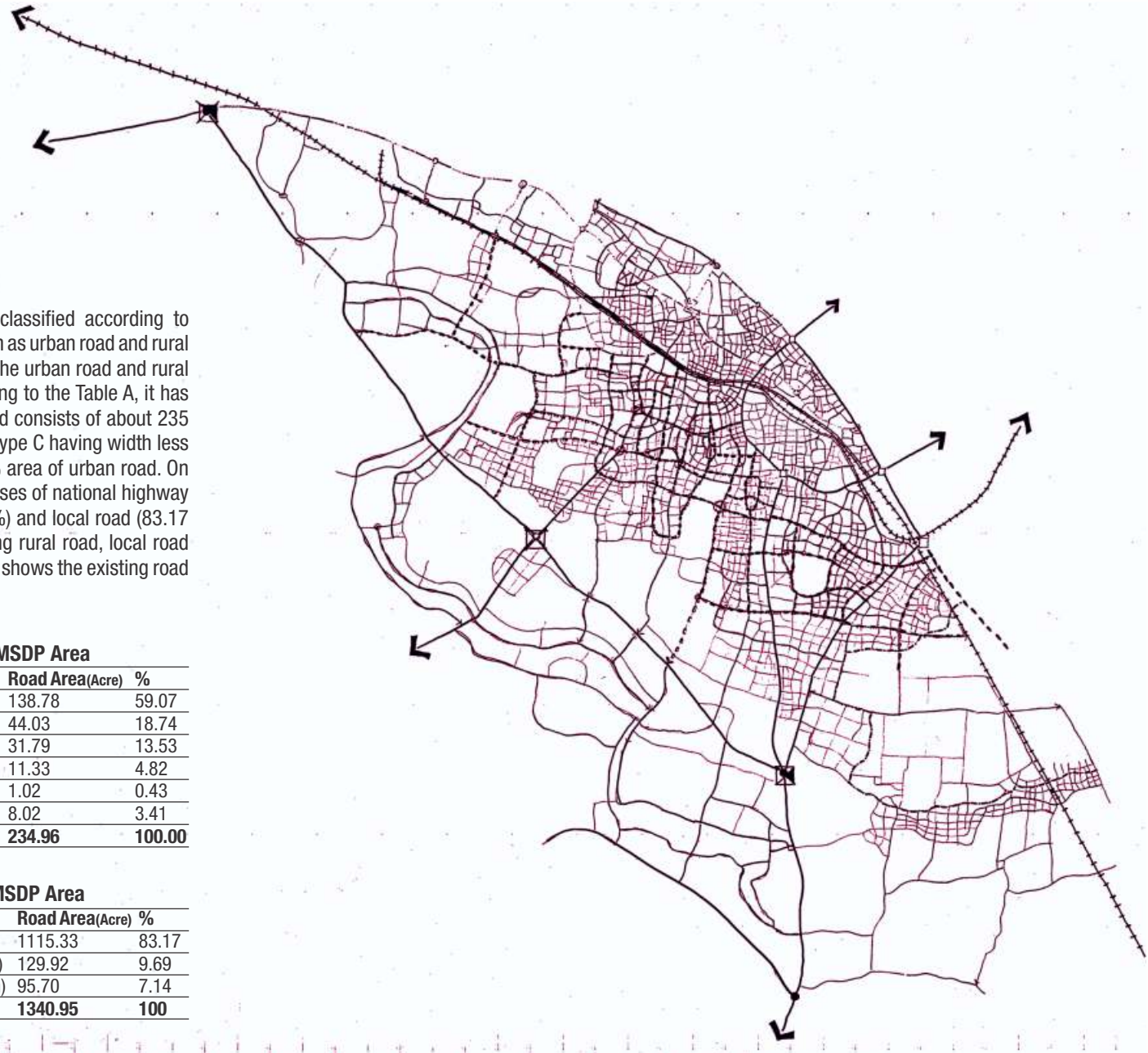
Roads in MSDP area has been classified according to regional context into two parts such as urban road and rural road. Tables A and Table B depict the urban road and rural road by area respectively. According to the Table A, it has been found that area of urban road consists of about 235 acres. Among them, tertiary road type C having width less than 12 feet, which occupies 59% area of urban road. On the other hand, rural roads comprises of national highway (9.69%), regional highway (7.14 %) and local road (83.17 %). The data illustrates that among rural road, local road comprises the most (Table B). Map shows the existing road network of MSDP area.

Table A: Area of Urban Road at MSDP Area

	Road Type	Road Area(Acre)	%
Urban Road	Tertiary C(<12ft)	138.78	59.07
	Tertiary A(>=18<30ft)	44.03	18.74
	Tertiary B(>=12<18ft)	31.79	13.53
	Access(>=30<39ft)	11.33	4.82
	Secondary (>=39<45ft)	1.02	0.43
	Primary (>=45ft)	8.02	3.41
	Total	234.96	100.00

Table B: Area of Rural Road at MSDP Area

	Road Type	Road Area(Acre)	%
Rural Road	Local Road(0-3m)	1115.33	83.17
	National Highway(6-7.5m)	129.92	9.69
	Regional Highway(6-7.5m)	95.70	7.14
	Total	1340.95	100



Road Design MSDP_2

STEP 17

URBAN ROAD NETWORK



Table below illustrates that 87.95 percent mode of transport in Mymensingh municipality is non-motorized and among them rickshaw is the most frequent (53.43%). Width of most of the road of Mymensingh is very narrow, which varies from 6 feet to 8 feet. Considering the width of a bus is 8 feet, minimum width of a lane has been considered as 8 feet to minimize the intervention of existing building in the planning proposal.

Mode of Transport at MSDP Area

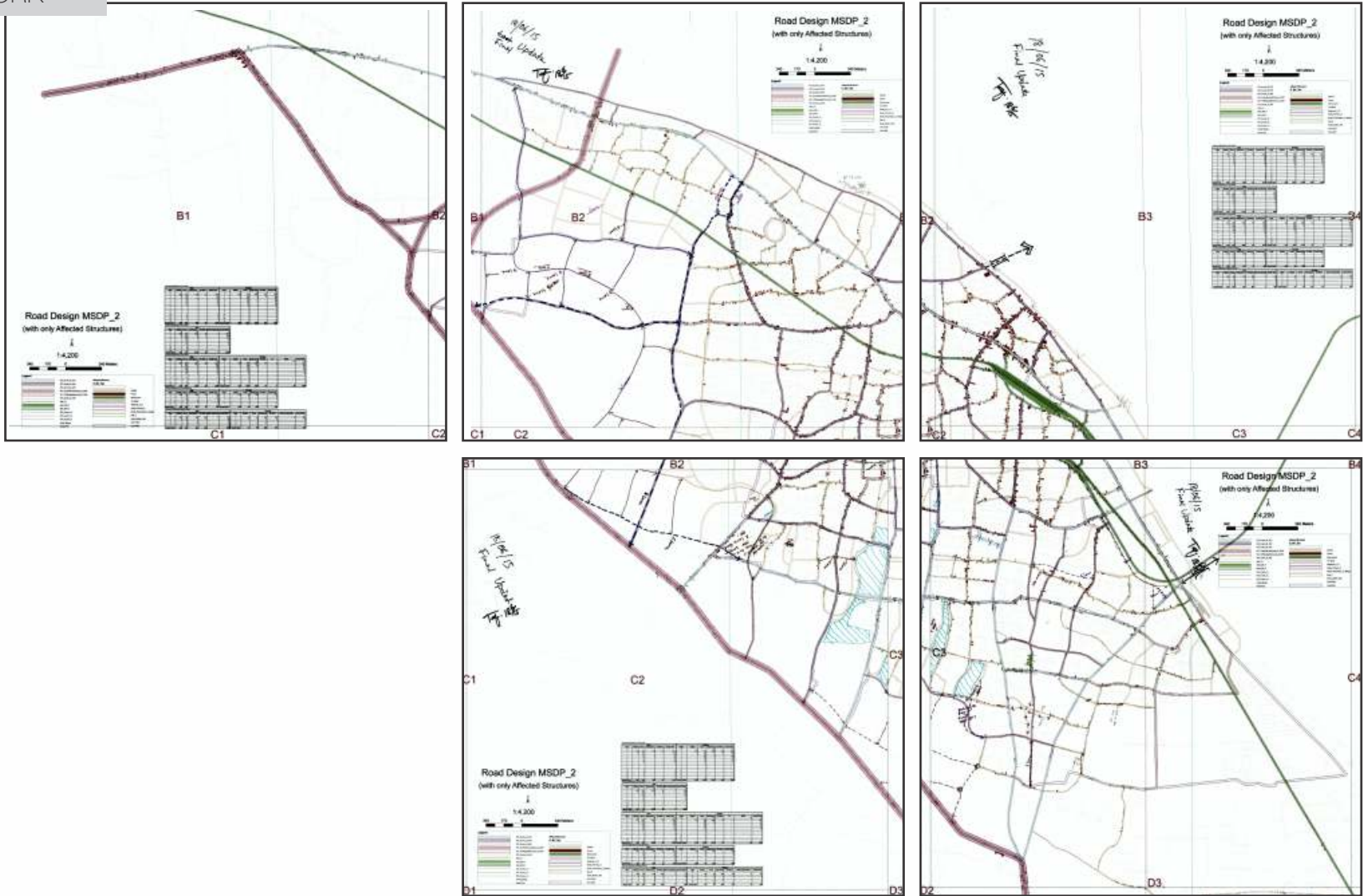
Mode of Transport	Percent	Total Percent
Non-motorized Mode		
Rickshaw	53.43	87.95
Van	15.37	
Cycle	8.98	
Walking	10.17	
Motorized Mode		
Car	3.54	12.05
Motor Cycle	0.95	
Micro Bus	4.02	
Bus	3.54	
Total		100.00

STEP 17

URBAN ROAD NETWORK

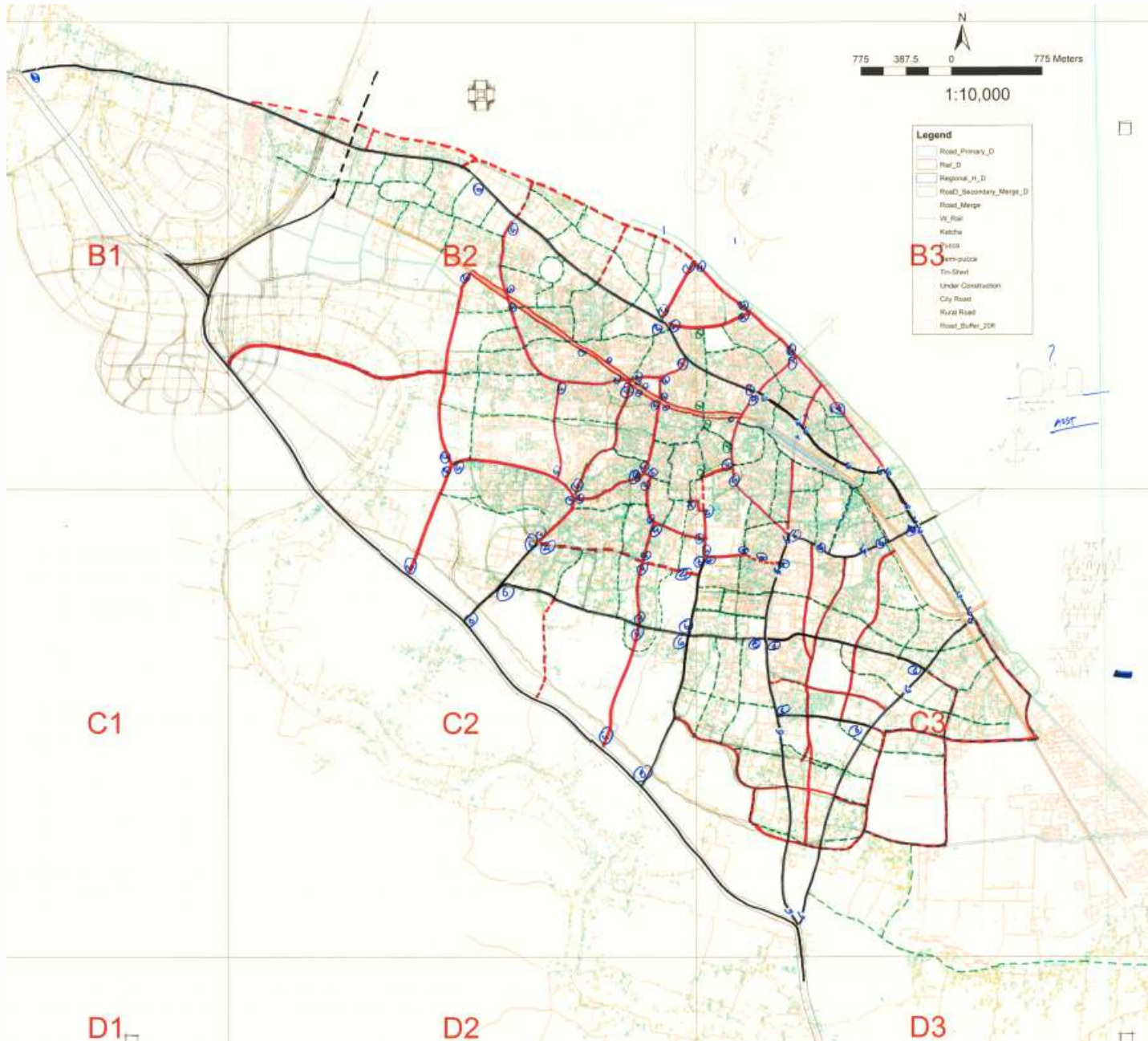
Floor-wise Affected Structure by Proposed Road Network

Floor	0	1	2	3	4	5	6	7	8	9	10	11	13	14	Grand Total
Katcha	4	2073	4												2081
Pucca		1150	498	311	184	81	28	1	1	2	7	2	1	1	2267
Semi-pucca	23	4978	19	4	2	1	1								5028
Tin-Shed		536	4												540
Under Construction		11													11
Grand Total	27	8748	525	315	186	82	29	1	1	2	7	2	1	1	9927



STEP 17

URBAN ROAD NETWORK

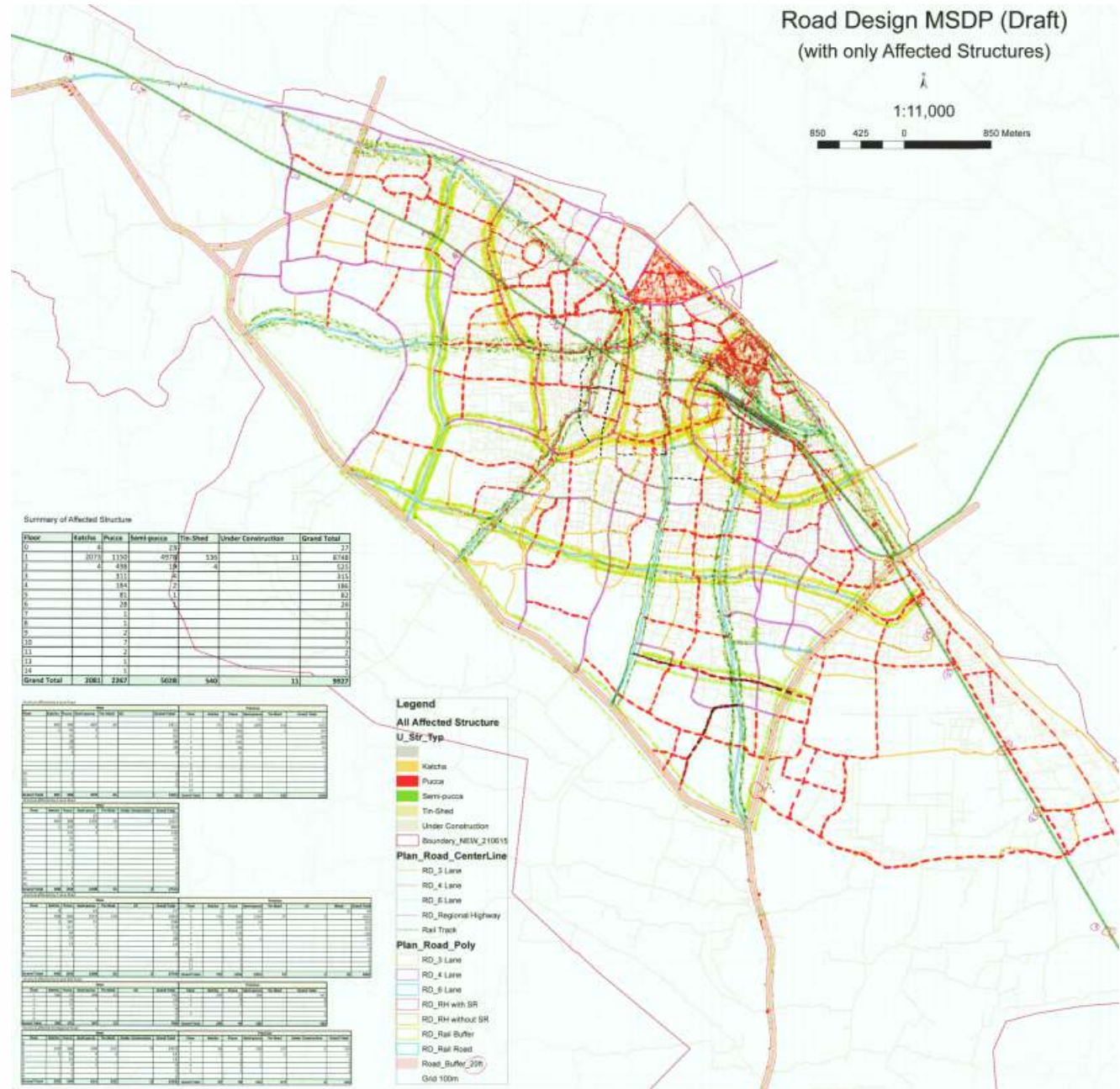


STEP 17

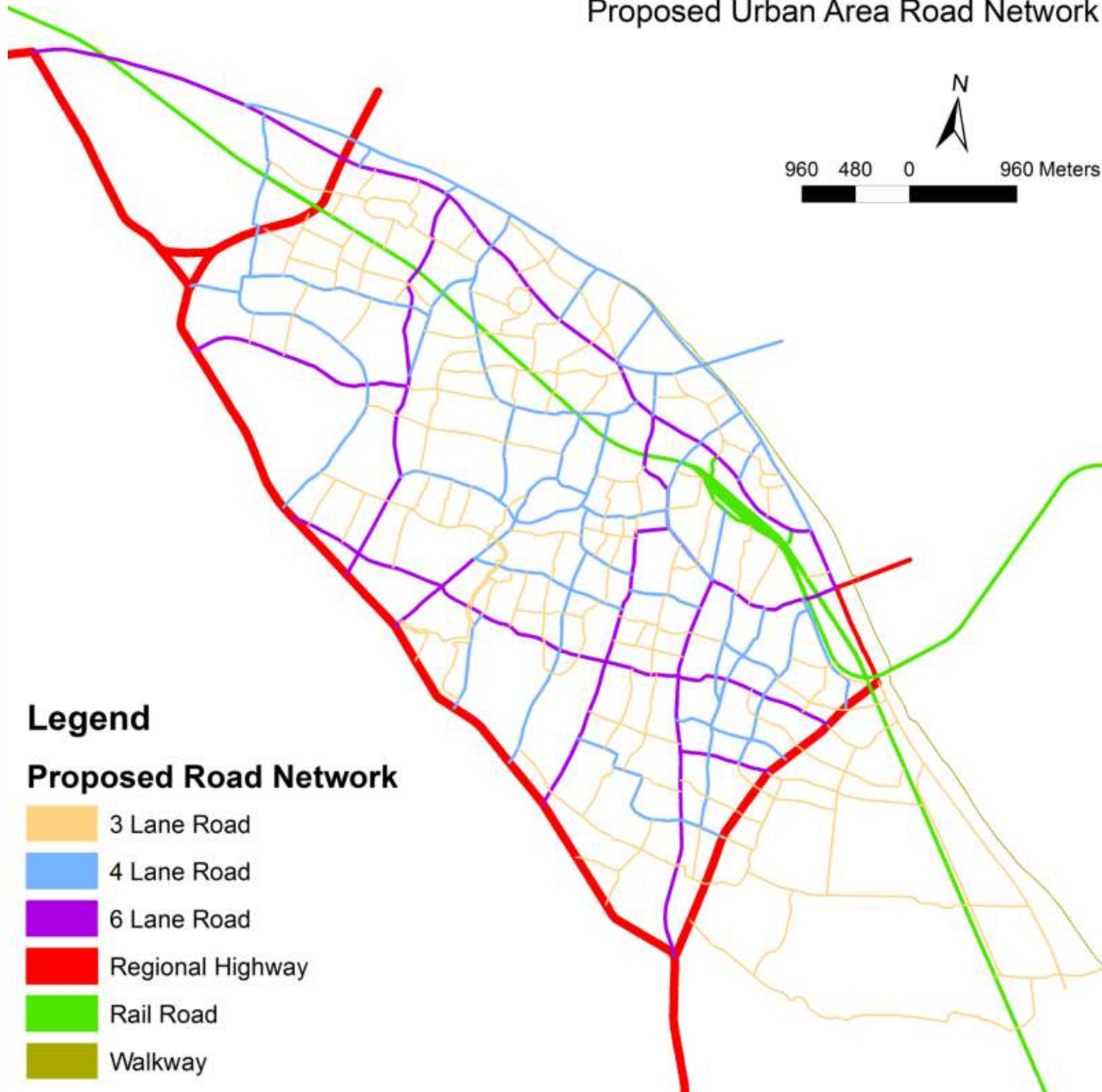
URBAN ROAD NETWORK

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MSDP 2011-2031

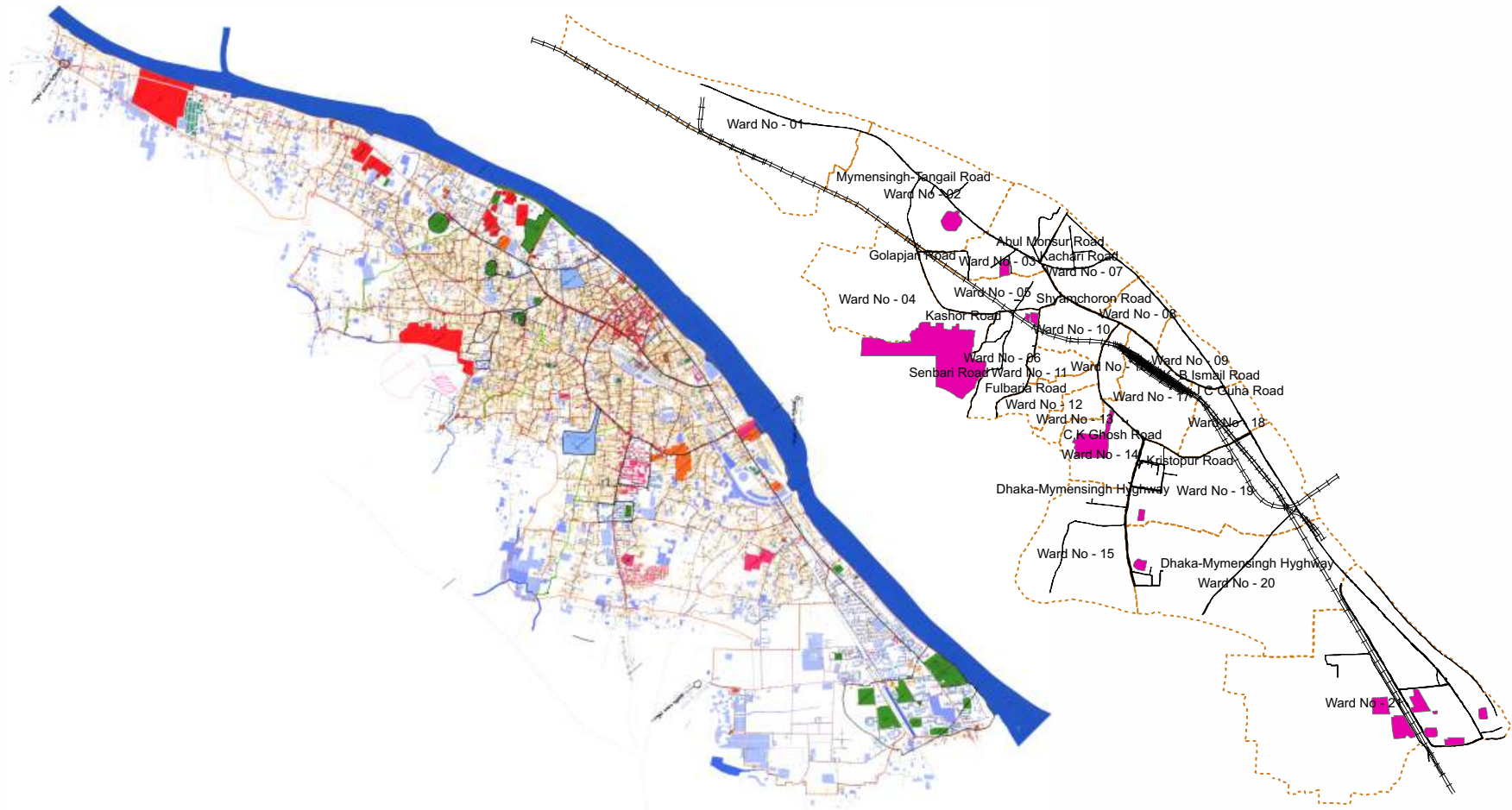


Proposed Urban Area Road Network



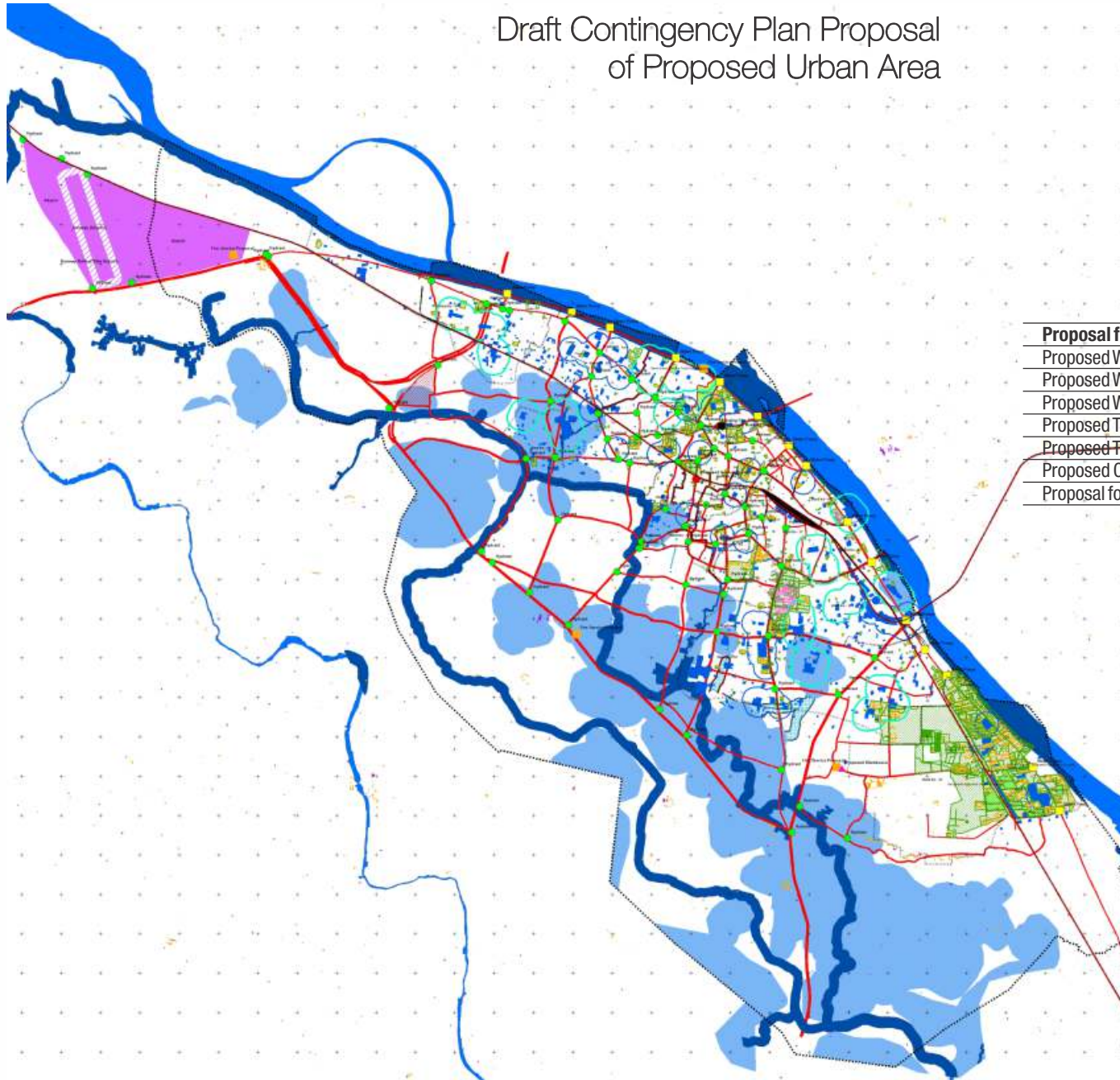
STEP 18
 PREPARATION
 OF
 CONTINGENCY
 MAP

Type	Area(Acre)	Area(sqm)
Existing Fire Station	0.90	3654.31
Proposed Water Storage Area for Fire Fighting	45.41	183767.75
Open Space Development for Recreation and Disaster Response	60.23	243742.16



Draft Contingency Plan Proposal of Proposed Urban Area

STEP 18
PREPARATION
OF
CONTINGENCY
MAP

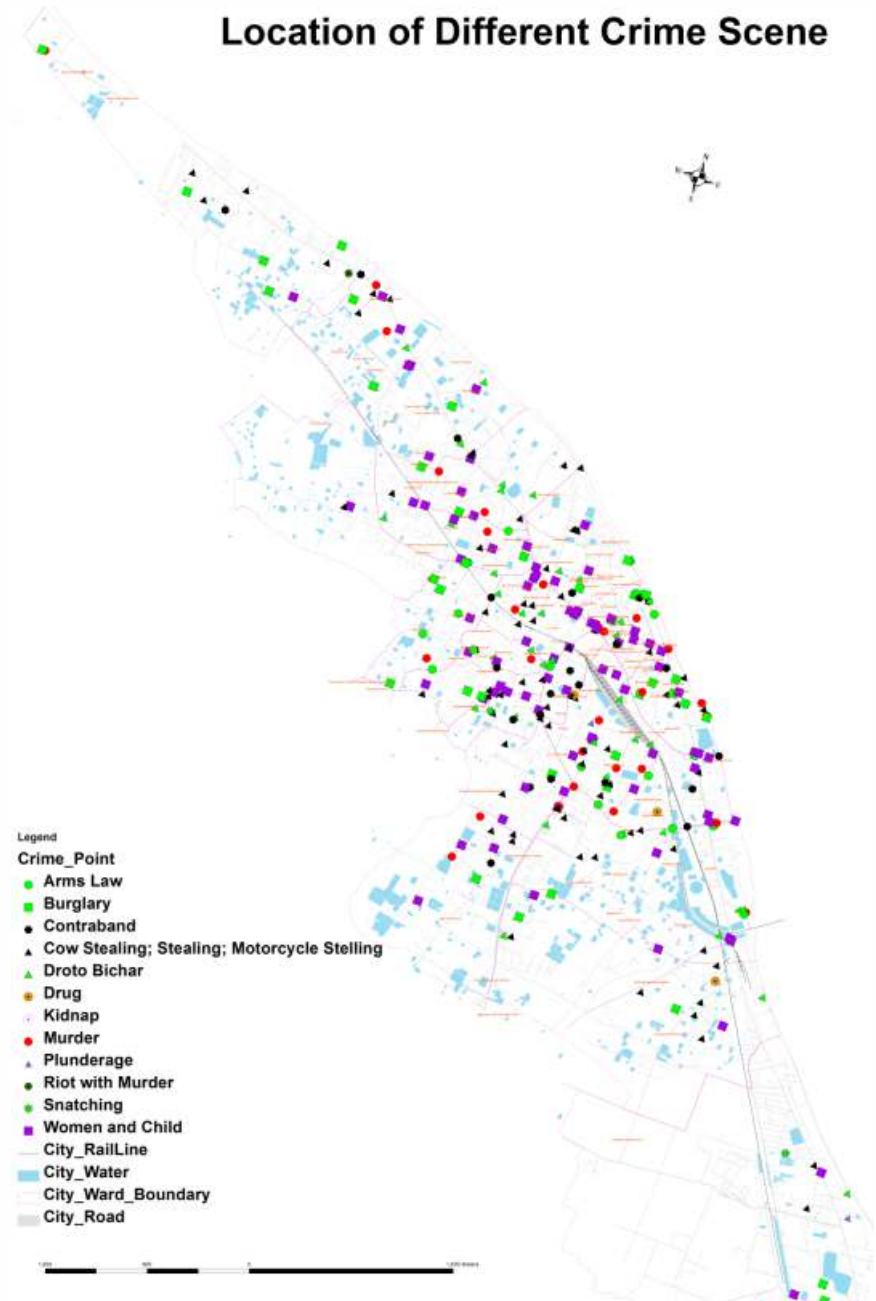


Proposal for Fire Fighting	No
Proposed Water Hydrant	69
Proposed Water Pump	15
Proposed Warehouse	1
Proposed Training Center	3
Proposed Training Shed	1
Proposed Control Room	1
Proposal for new fire Station	3

STEP 19

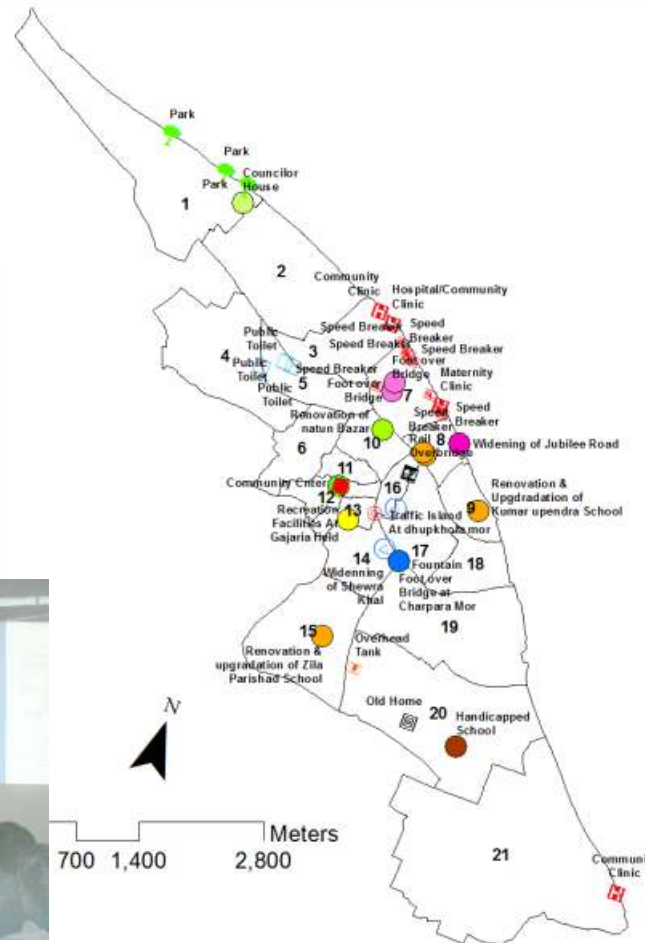
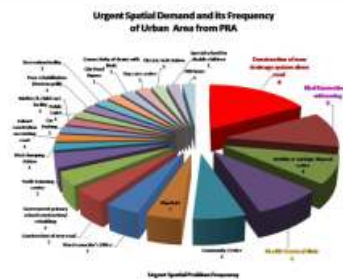
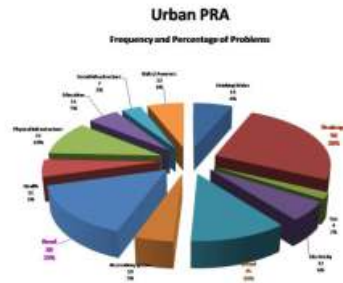
CRIME MAP

Location of Different Crime Scene



STEP 20

URBAN PRA



Conducting Participatory Rapid Appraisal (PRA)

MSDP Project Team already has conducted a total of 42 numbers pre-planning stage PRA sessions. Among them 10 in ten unions surrounding Mymensingh Municipality with the elected representatives of concerned unions and twenty one in 21 wards of the Pourashava with elected representatives and local people as well; to get a complete picture of the areas including their development problem, prospects of the area, probable solution to the problem, demand and vision for development. A pre-PRA meeting was conducted with the Honorable Mayor, Mymensingh Pourashava on policy related issues before conducting PRA in the Pourashava.

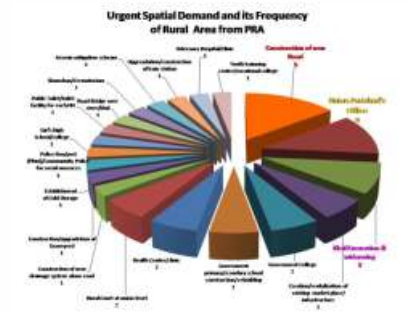
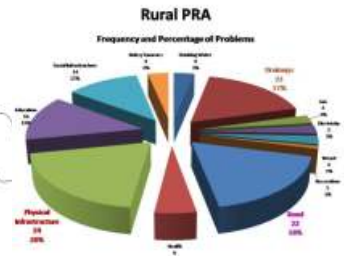
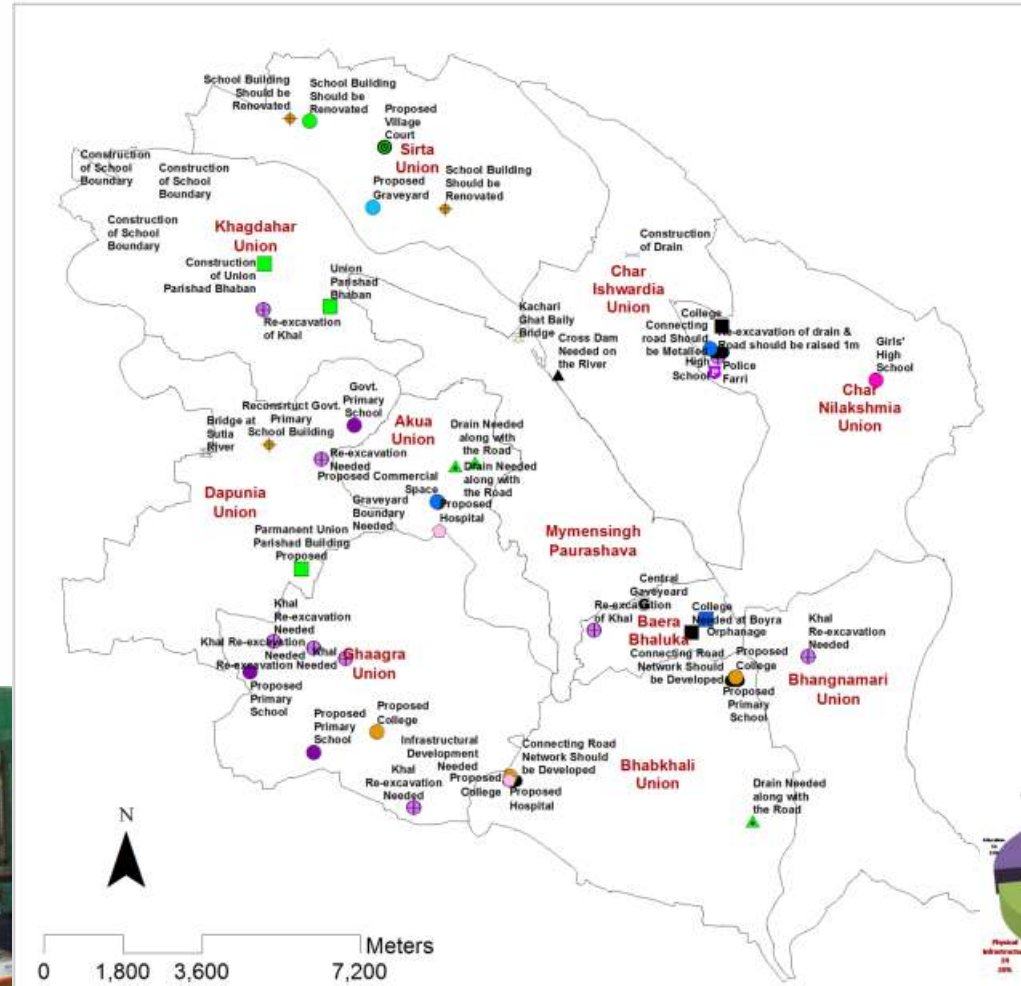
Moreover, the following PRA sessions already been conducted in the project area:

- Mymensingh Chamber of Commerce.
- Journalist and Civil Society.
- Non-government Organizations (NGO).
- Minority Community.
- Inter-district Bus Drivers.
- Slums.
- Bangladesh Fire Service and Civil Defense (BFSCD), Mymensingh; and
- Sub-Agricultural Extension Officers, Mymensingh Sadar Upazila.



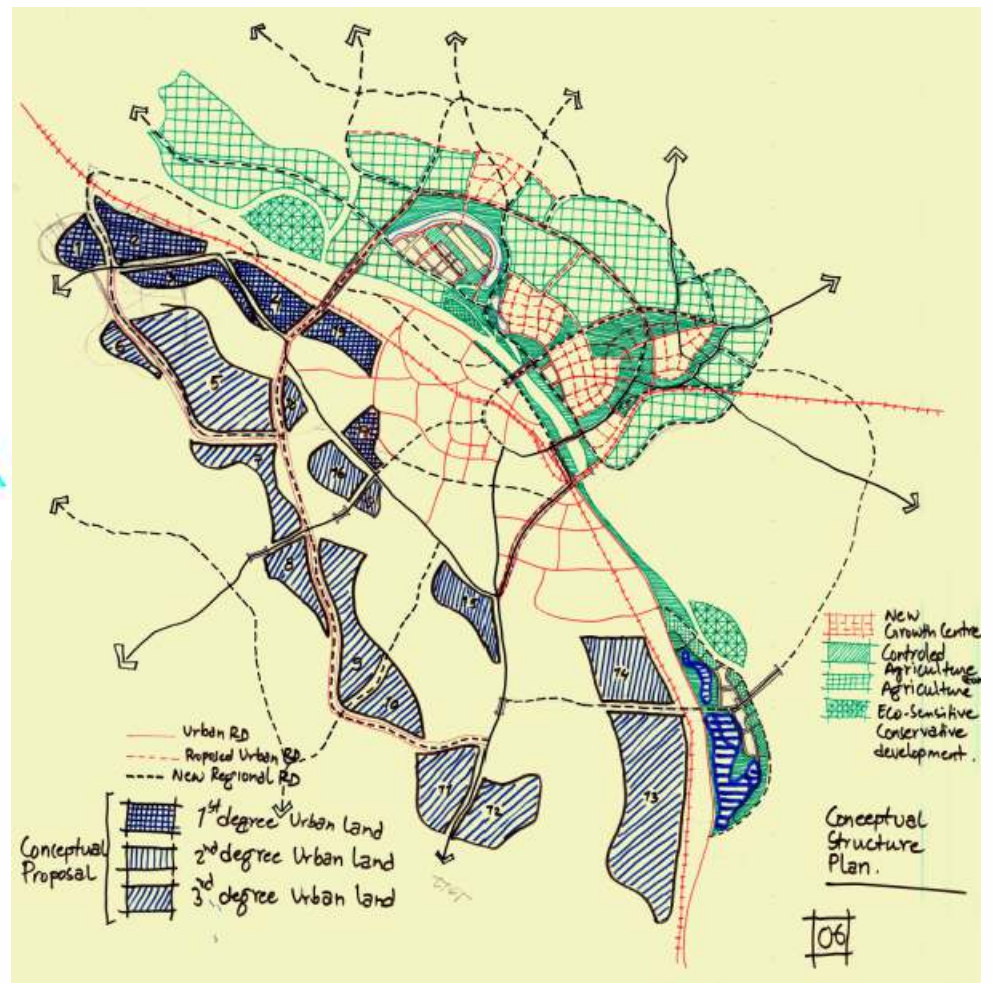
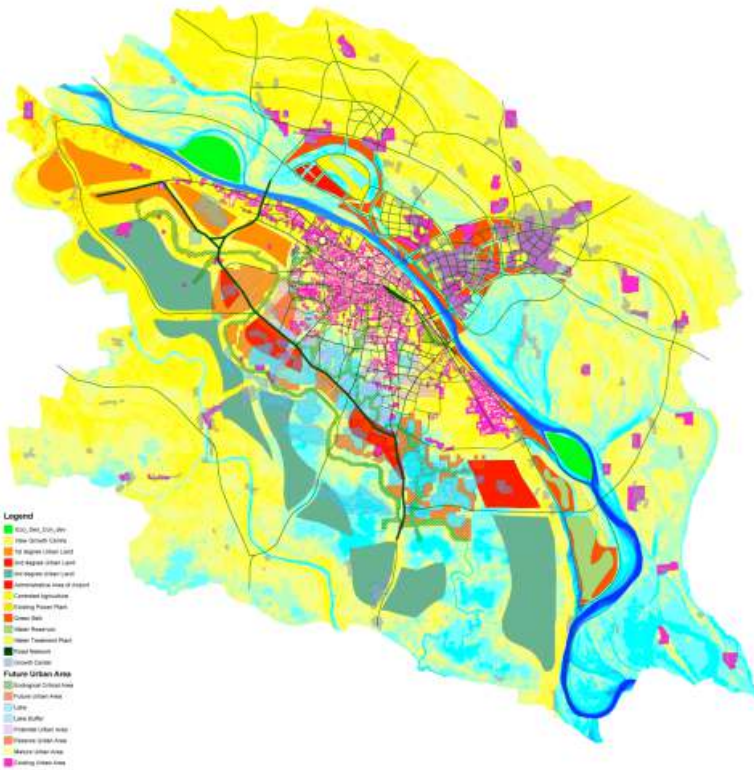
STEP 21

RURAL PRA



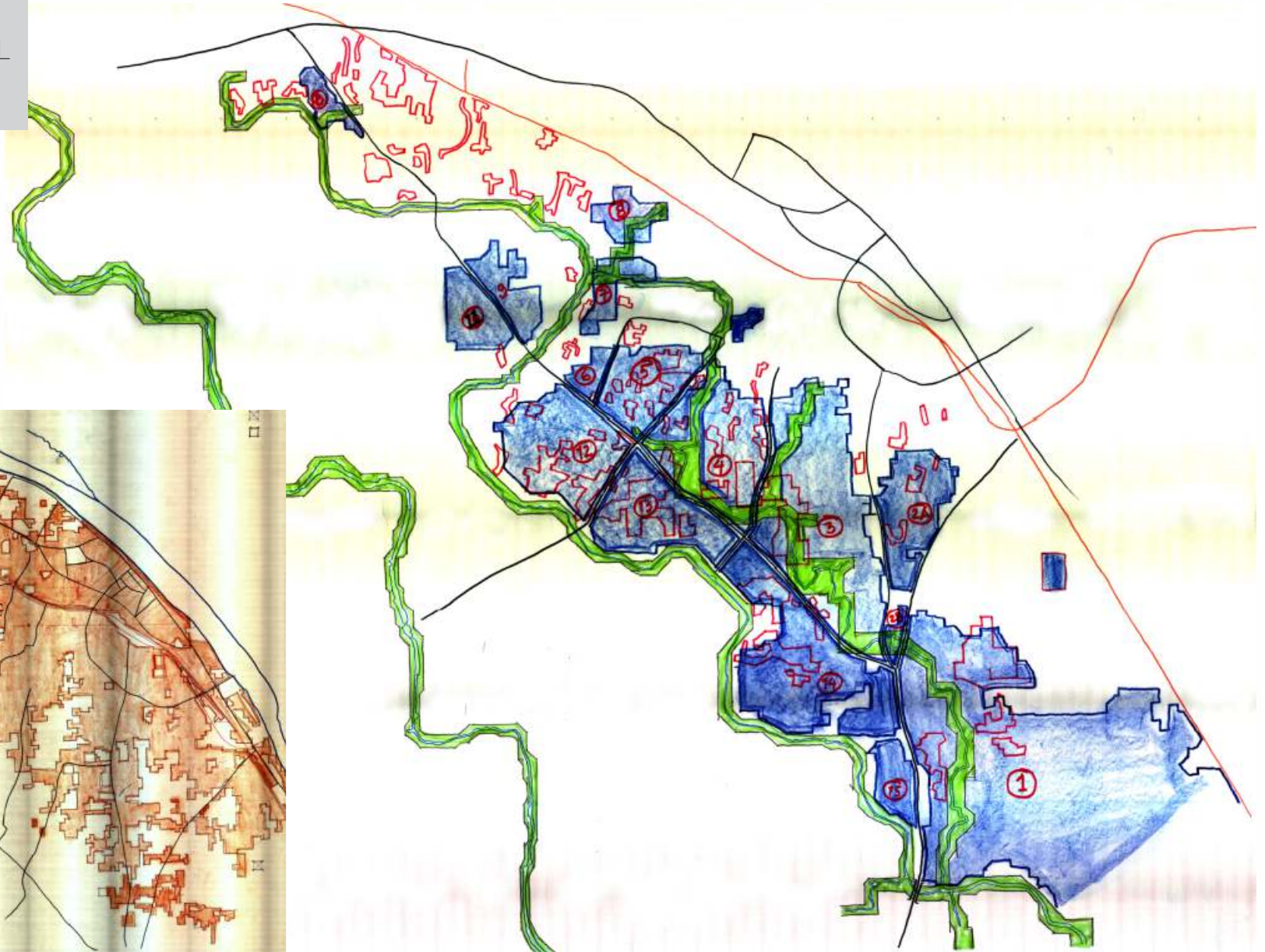
STEP 22

CONCEPTUAL STRUCTURE PLAN



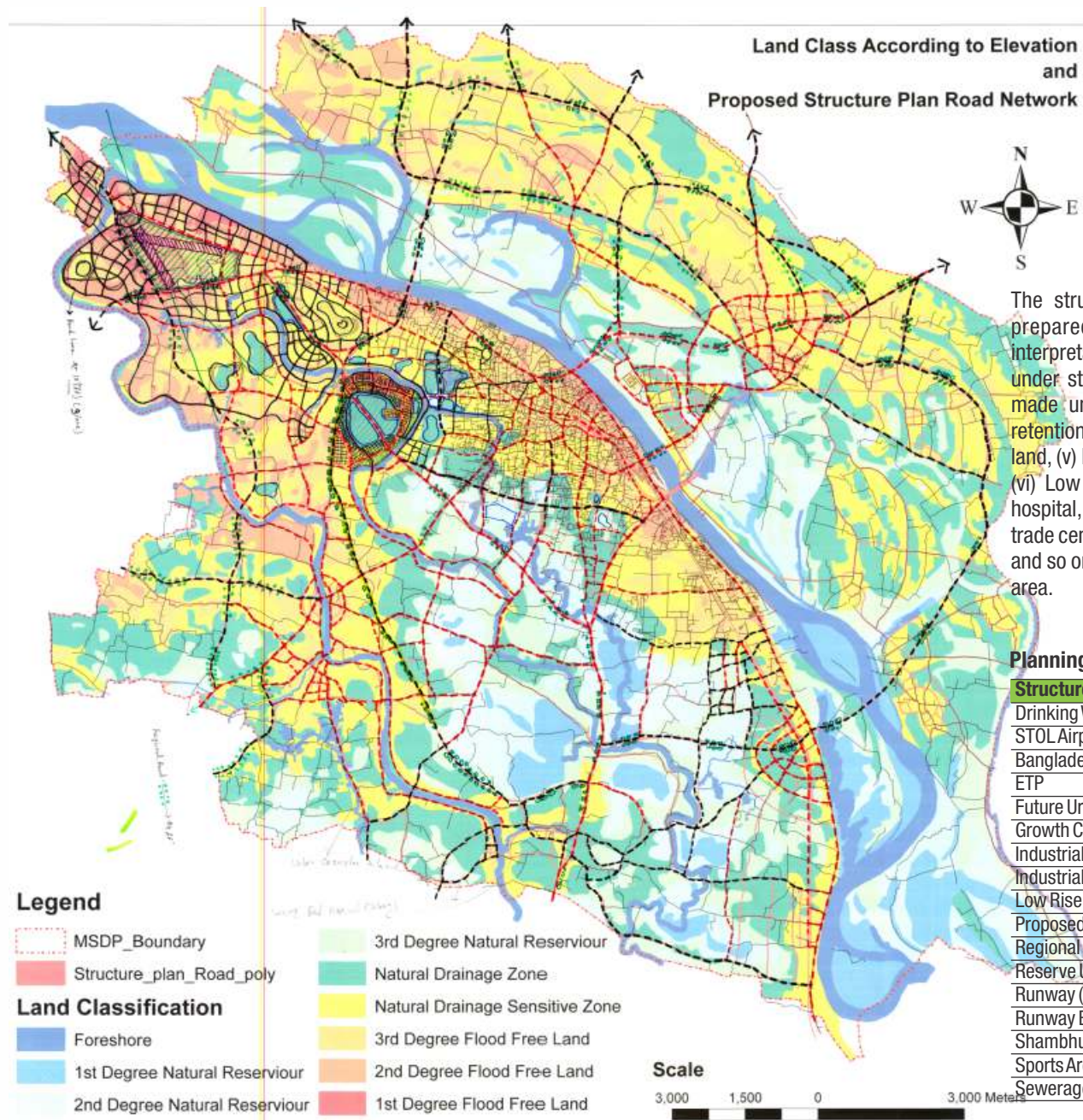
STEP 22

CONCEPTUAL STRUCTURE PLAN



STEP 23

DRAFT STRUCTURE PLAN



The structure plan for MSDP Project area has been prepared on the basis of collected data and their interpretation. Table below shows the provisions made under structure plan. The significant planning proposals made under the structure plan are: (i) Drinking water retention area, (ii) STOL Airport, (iii) ETP, (iv) Future urban land, (v) Industrial water retention area, (v) Industrial zone, (vi) Low rise residential zone, (vi) Burn and Orthopedic hospital, (vii) Regional park, (viii) Shambhuganj regional trade center, (ix) sports arena (x) Sewerage treatment plant and so on. Map shows the structure Plan of MASP Project area.

Planning Proposals Made under Structure Plan

Structure Plan Proposal	Area in Acre	%
Drinking Water Retention Area	1130.40	8.41
STOL Airport	490.99	3.65
Bangladesh Agriculture University	926.52	6.89
ETP	55.34	0.41
Future Urban Land	1029.50	7.66
Growth Centers	3011.76	22.41
Industrial Water Retention Area	790.71	5.88
Industrial Zone	325.52	2.42
Low Rise Residential Zone	713.00	5.31
Proposed Burn & Orthopedic Hospital	31.43	0.23
Regional Park	3368.78	25.07
Reserve Urban Land	267.39	1.99
Runway (Airport)	65.41	0.49
Runway Buffer(100m Airport)	77.85	0.58
Shambhuganj Regional Trade Center	649.81	4.84
Sports Arena	415.64	3.09
Sewerage Treatment Plant	89.06	0.66
Total	13439.11	100.00

Legend

- MSDP_Boundary
- Structure_plan_Road_poly
- Foreshore
- 1st Degree Natural Reservoir
- 2nd Degree Natural Reservoir
- 3rd Degree Natural Reservoir
- Natural Drainage Zone
- Natural Drainage Sensitive Zone
- 3rd Degree Flood Free Land
- 2nd Degree Flood Free Land
- 1st Degree Flood Free Land



STEP 23

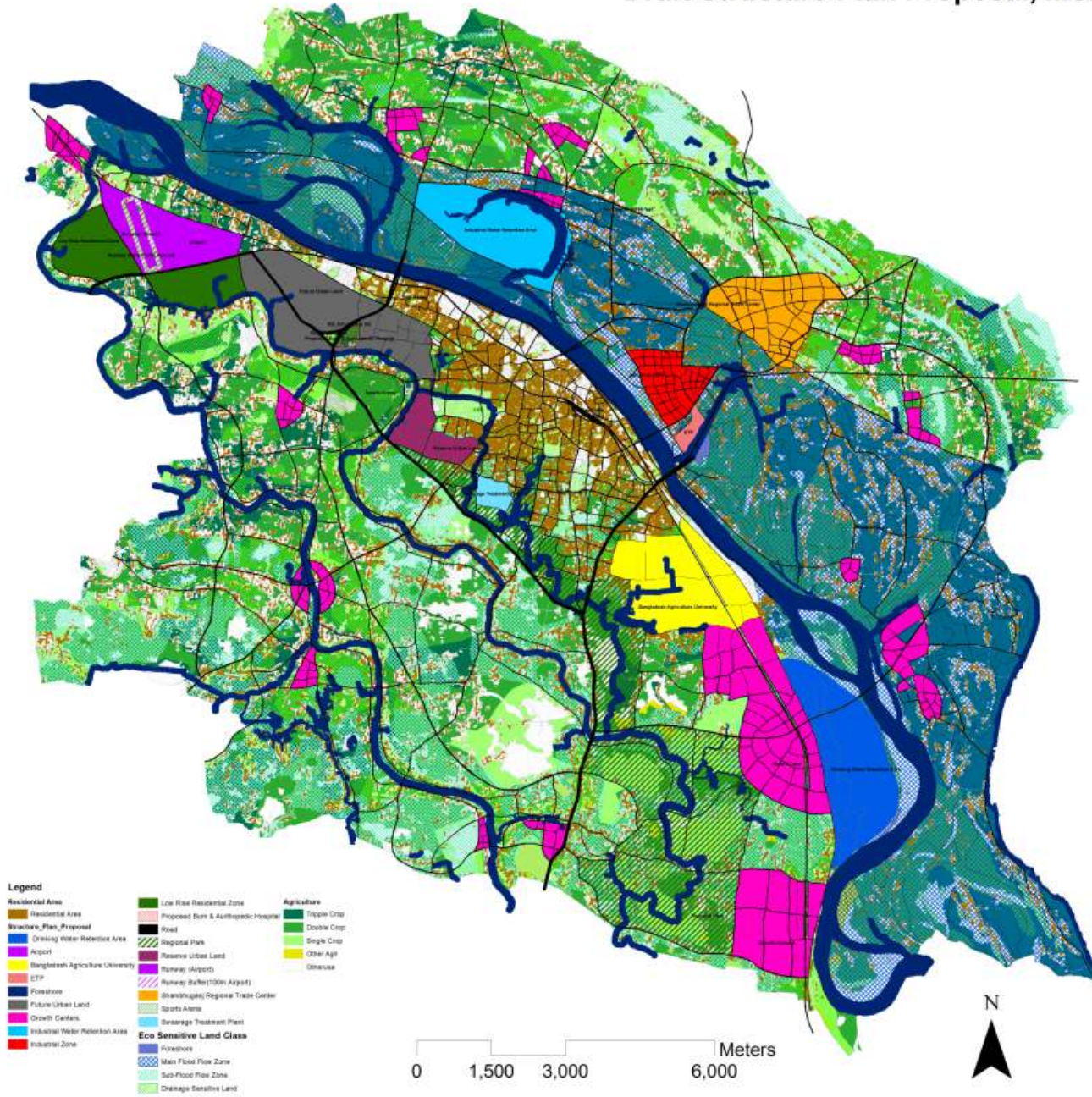
DRAFT STRUCTURE PLAN



Draft Structure Plan Proposal, MSDP

STEP 23

DRAFT
STRUCTURE
PLAN



Legend

- Residential Area**
- Residential Area
- Structure Plan Proposed**
- Drinking Water Rehabilitation Area
- Airport
- Bangladesh Agriculture University
- ETP
- Foreport
- Future Urban Land
- Drivth Center
- Industrial Water Rehabilitation Area
- Industrial Zone
- Low Rise Residential Zone
- Proposed Burn & Ambipedsic Hospital
- Road
- Regional Park
- Reserve Urban Land
- Runway (Airport)
- Runway Buffer(100m Airport)
- Shamshugan Regional Trade Center
- Sports Arena
- Sewerage Treatment Plant
- Eco Sensitive Land Class**
- Foreport
- Main Flood Flow Zone
- Sub-Flood Flow Zone
- Drainage Sensitive Land
- Agriculture
- Triple Crop
- Double Crop
- Single Crop
- Other Agri
- Other Use

0 1,500 3,000 6,000 Meters

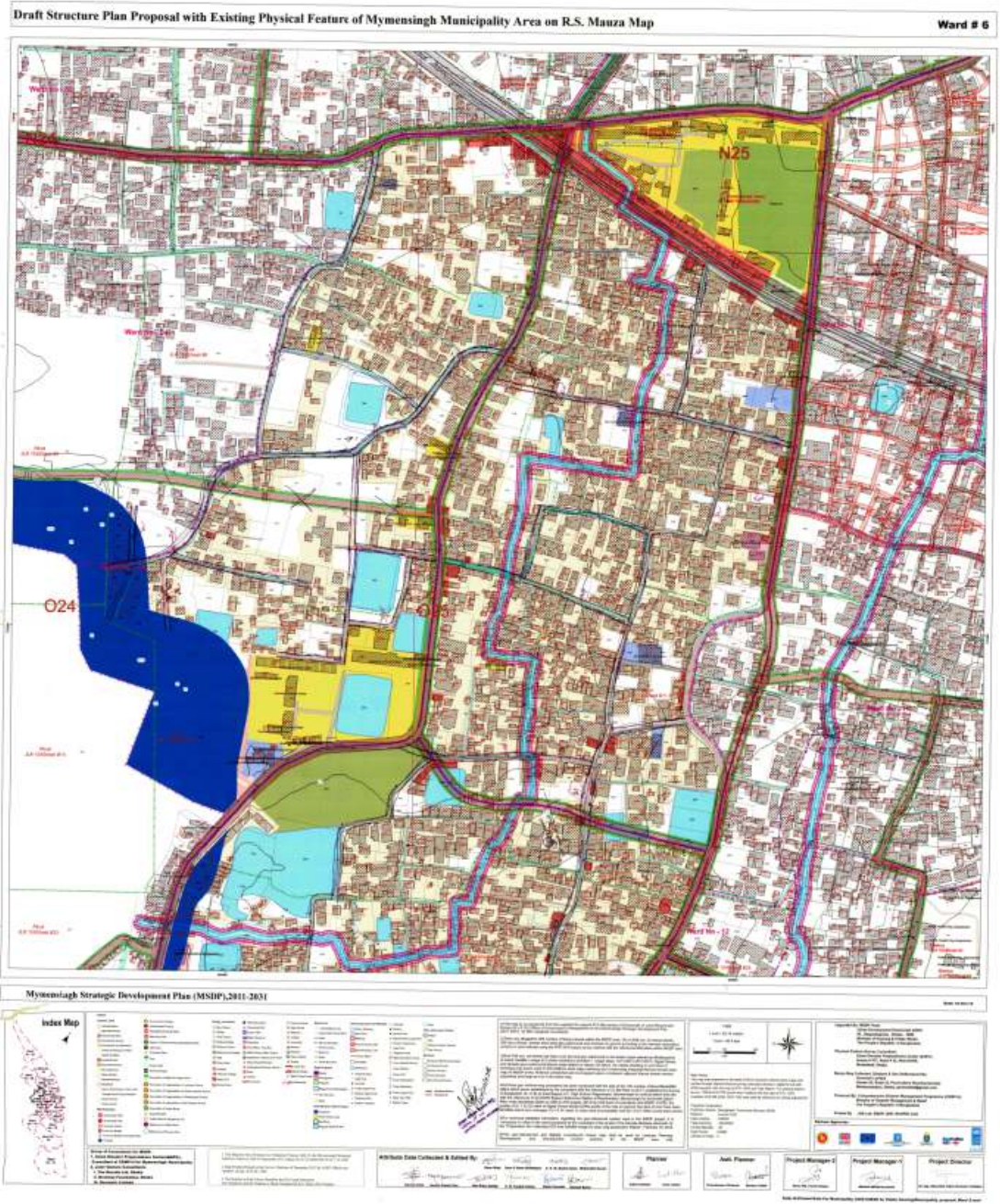
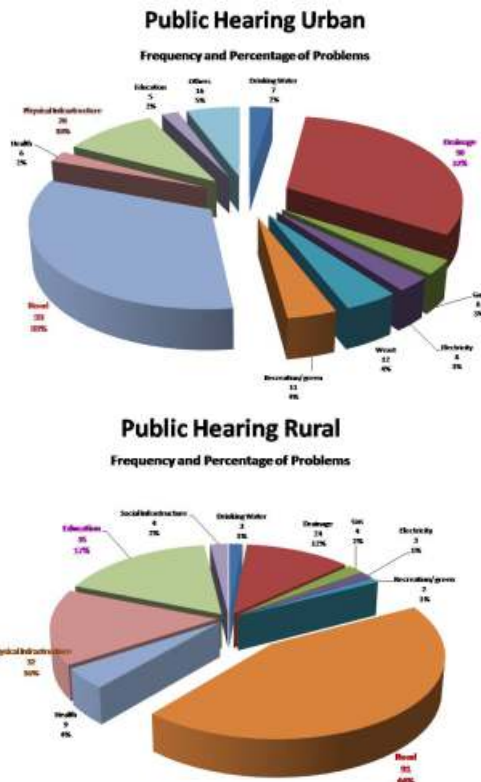


STEP 24

PUBLIC HEARING

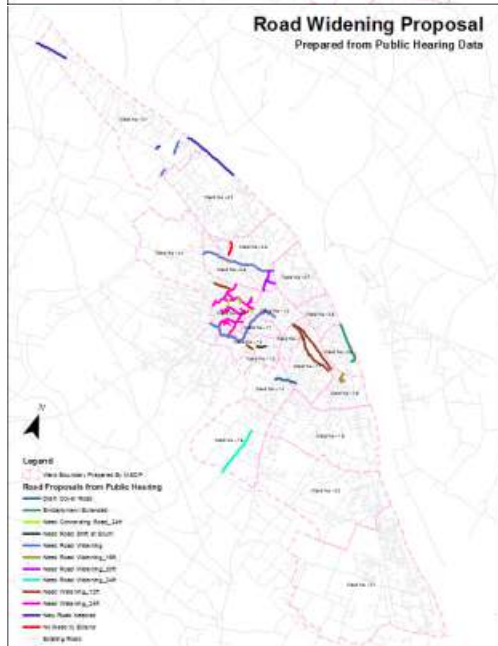
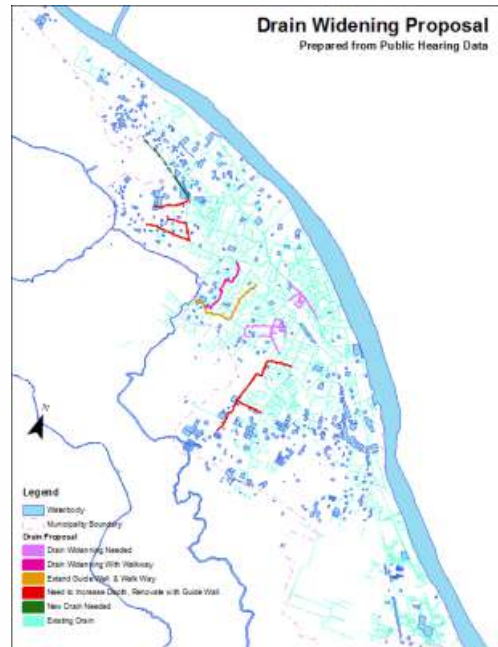
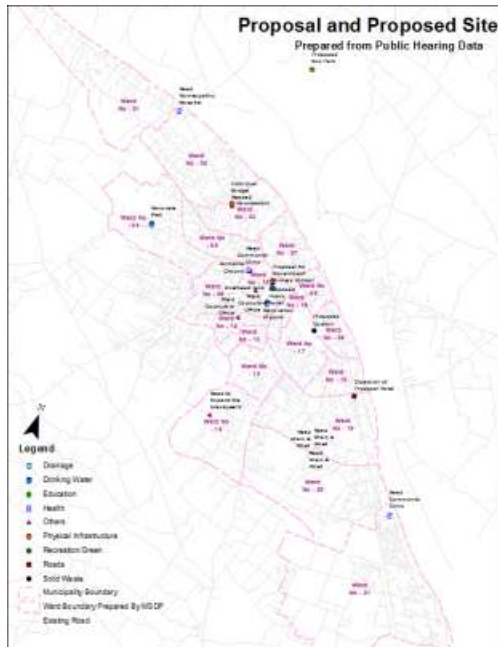
70

MSDP 2011-2031



STEP 24

PUBLIC HEARING



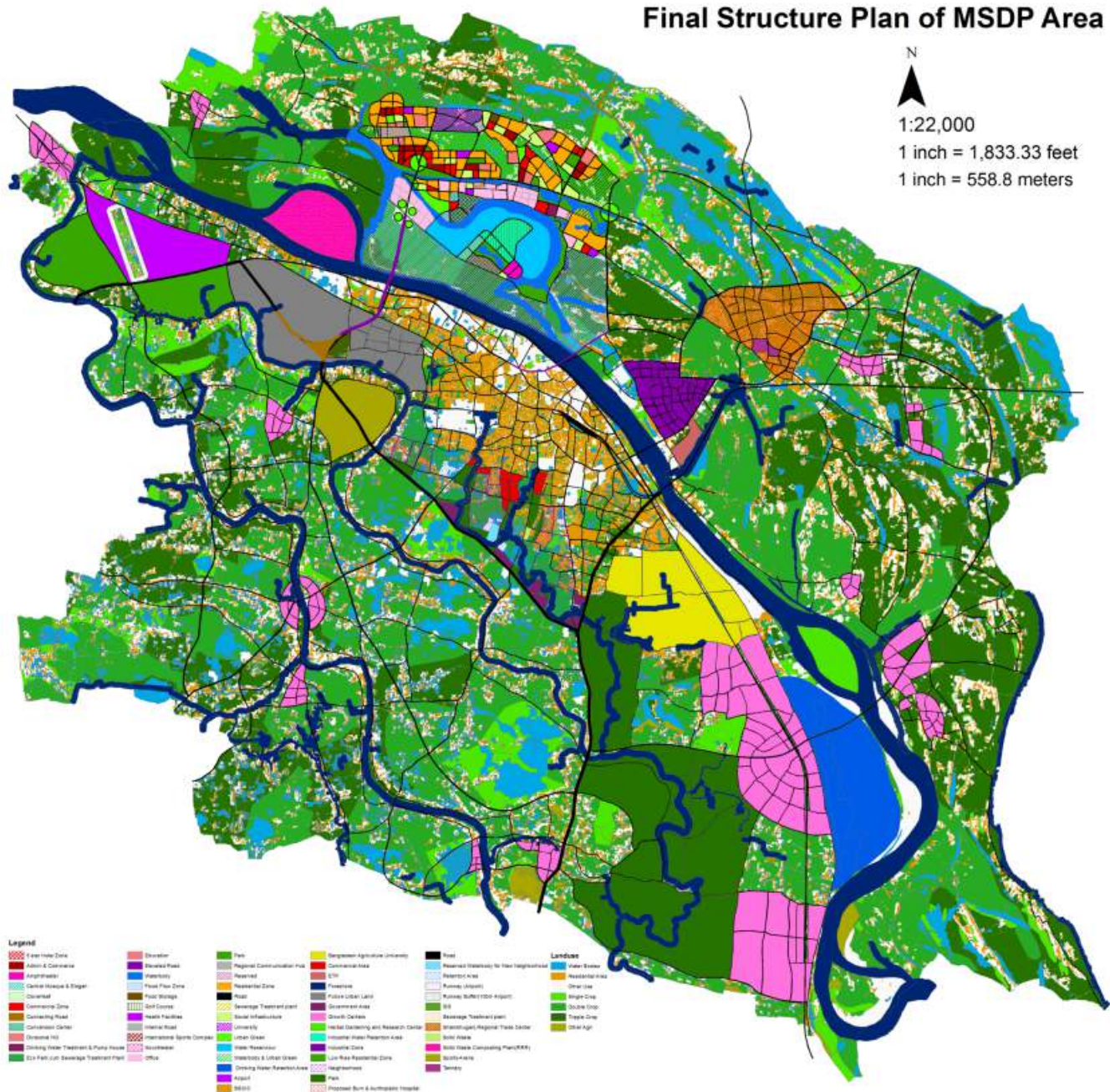
STEP 25

FINAL
STRUCTURE
PLAN

72

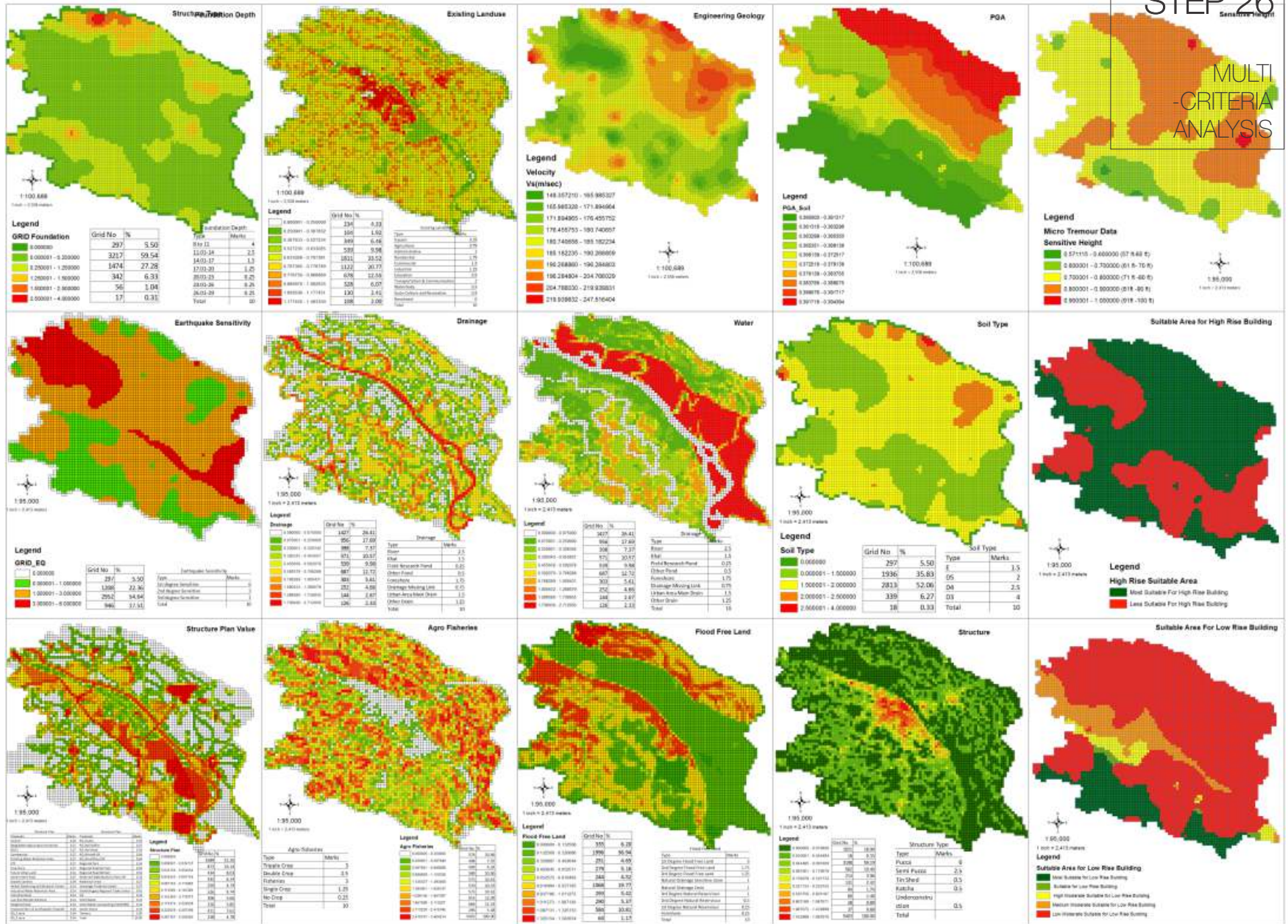
MSDP 2011-2031

Final Structure Plan of MSDP Area



STEP 26

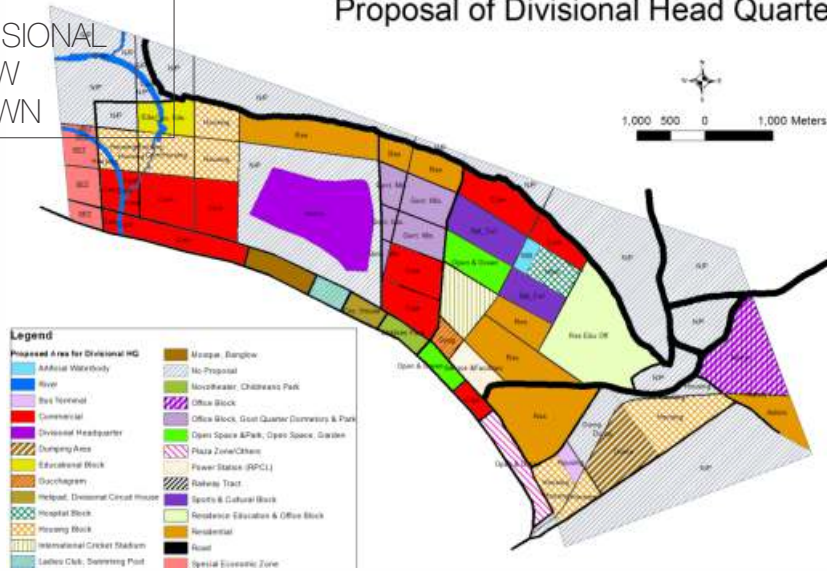
MULTI-CRITERIA ANALYSIS



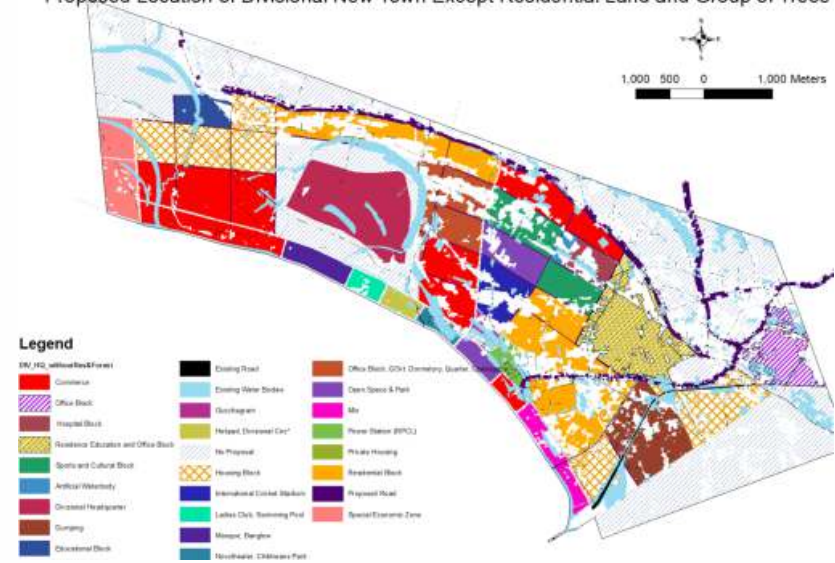
STEP 27

DIVISIONAL
NEW
TOWN

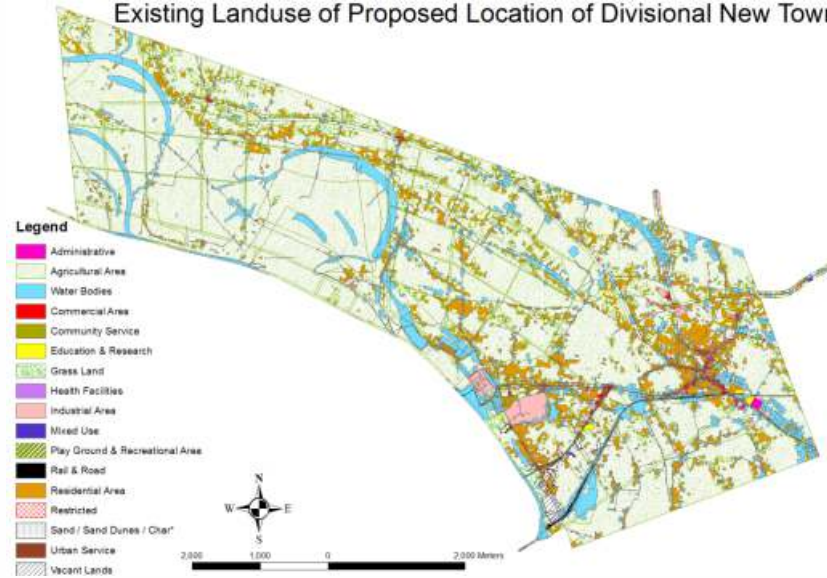
Proposal of Divisional Head Quarter



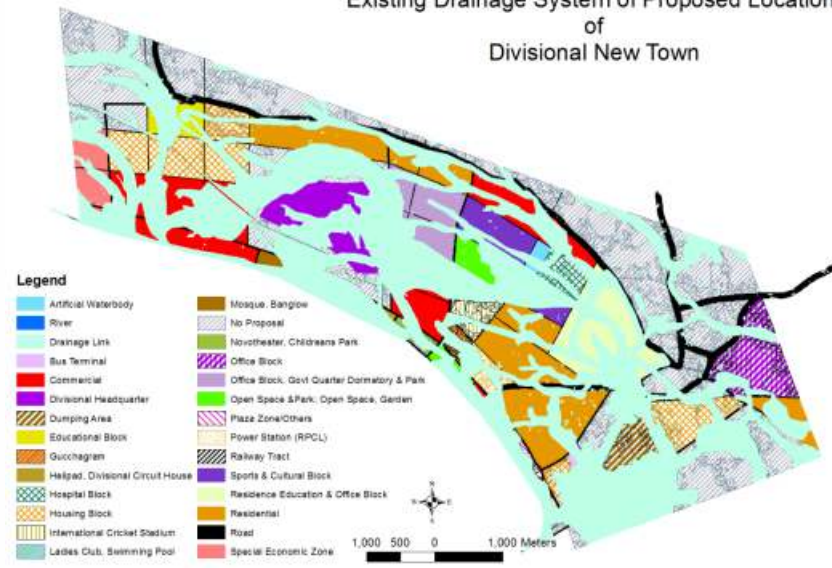
Proposed Location of Divisional New Town Except Residential Land and Group of Trees



Existing Landuse of Proposed Location of Divisional New Town

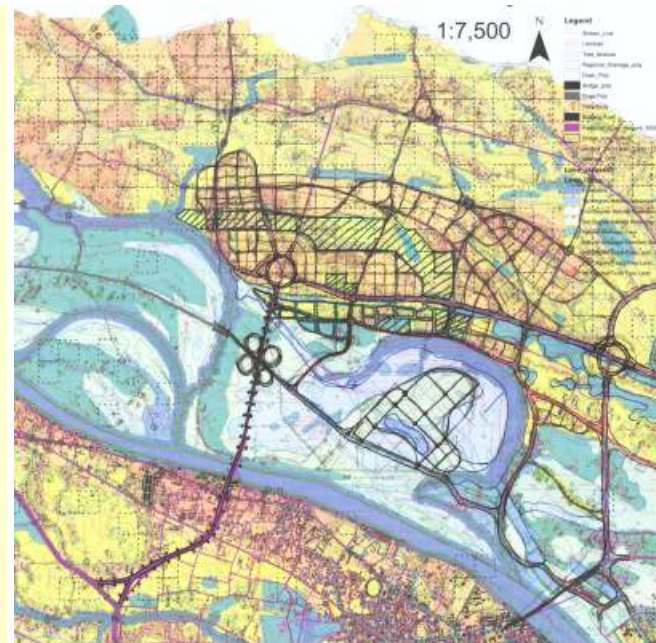
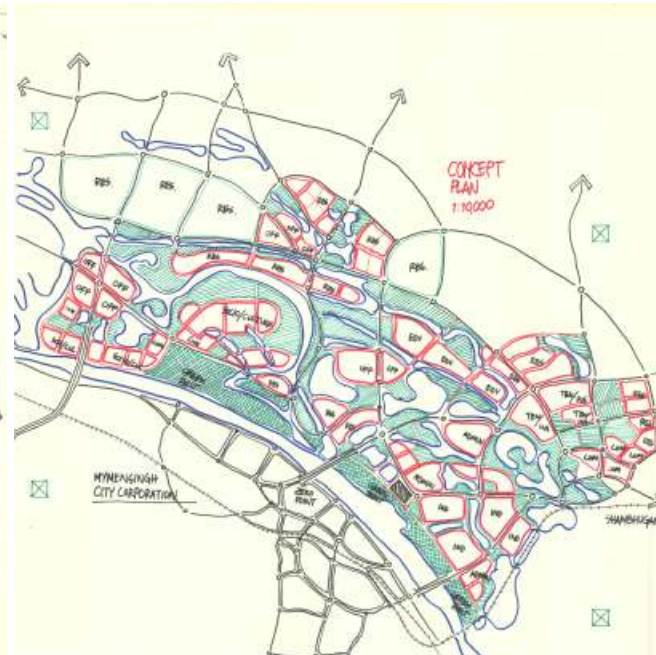
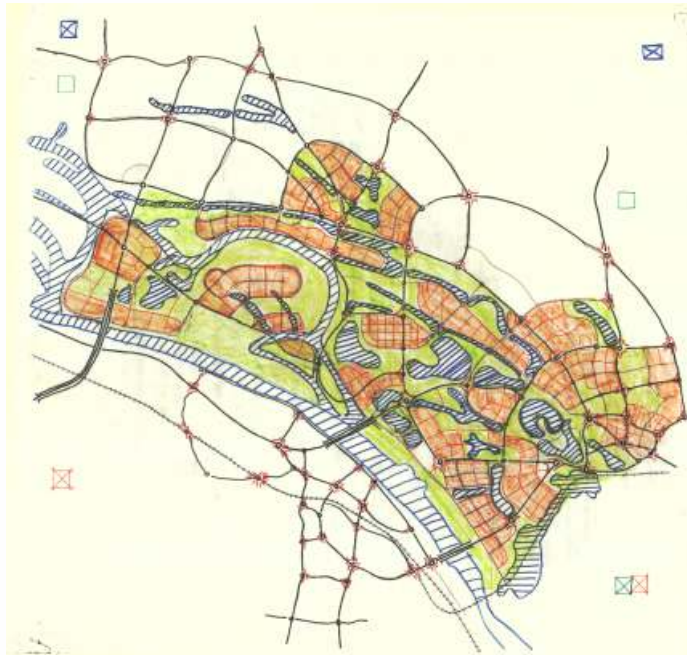


Existing Drainage System of Proposed Location of Divisional New Town



STEP 27

DIVISIONAL NEW TOWN

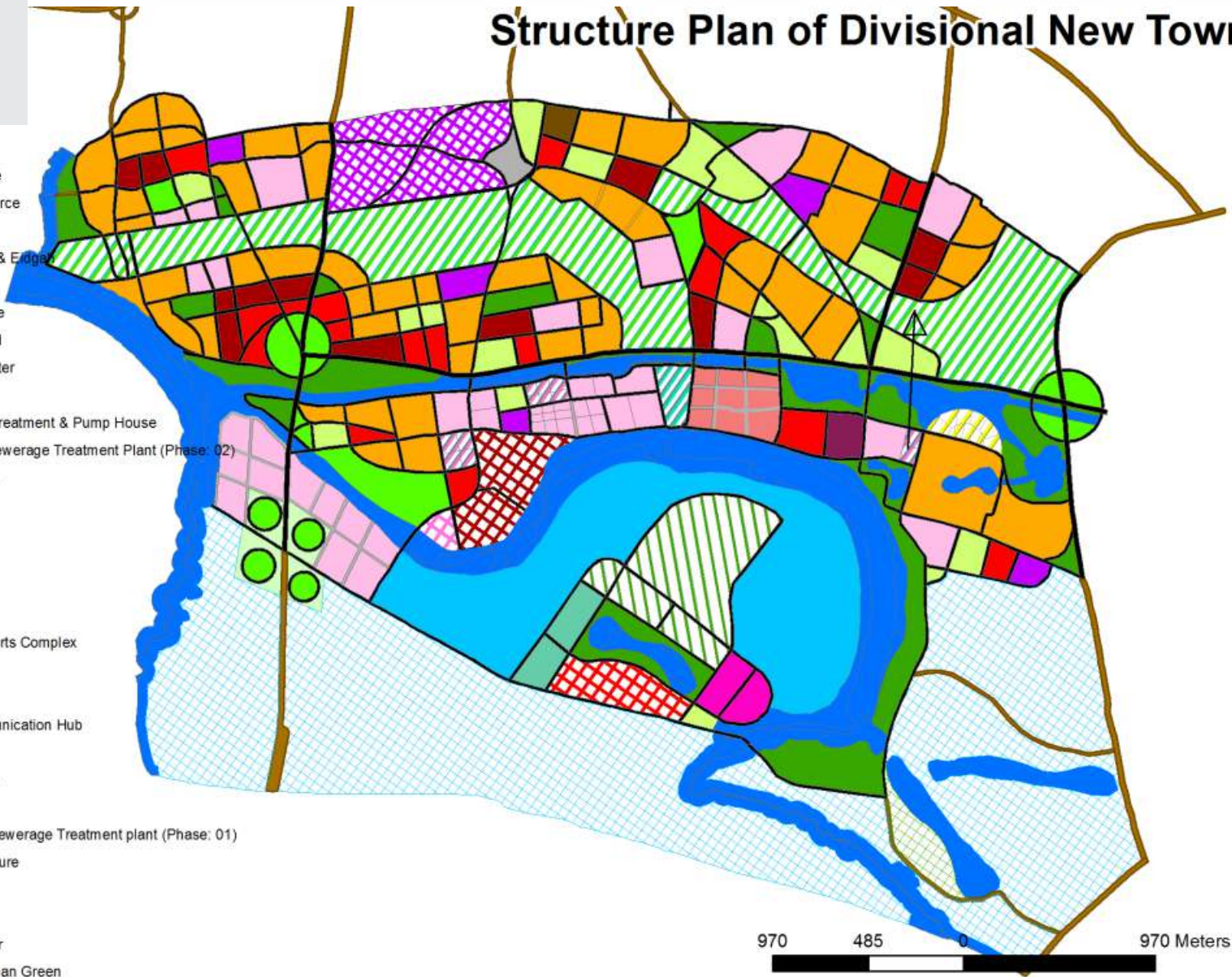


STEP 27

DIVISIONAL
NEW
TOWN

Structure Plan of Divisional New Town

- Office
- 5 star Hotel Zone
- Admin & Commerce
- Amphitheater
- Central Mosque & Edgeway
- Cloverleaf
- Commercial Zone
- Connecting Road
- Convension Center
- Divisional HQ
- Drinking Water Treatment & Pump House
- Eco Park cum Sewerage Treatment Plant (Phase 02)
- Flood Flow Zone
- Waterbody
- Food Storage
- Golf Course
- Health Facilities
- Internal Road
- International Sports Complex
- Novotheater
- Park
- Regional Communication Hub
- Reserved
- Residential Zone
- Road
- Eco Park Cum Sewerage Treatment plant (Phase: 01)
- Social Infrastructure
- University
- Urban Green
- Water Reservoir
- Waterbody & Urban Green



STEP 28

SPECIAL
ACHIEVEMENT



KNOWLEDGE
TAPING
BETWEEN
GOVERNMENT
AND ACADEMIA

Interfacing between
Architecture and Planning through Urban Design Studio
Department of Architecture
Ahsanullah University of Science & Technology

Urban Development Directorate (UDD) has taken initiative to designate particular segments of the MSDP for design exercise which is implemented by the Department of Architecture, Ahsanullah University of Science and Technology (AUST). This particular design workout is carried out as academic exercise for Design Studio VII, which is labeled for understanding of the urban complexity and interrelation of complicated issues of architecture, urban design and planning.

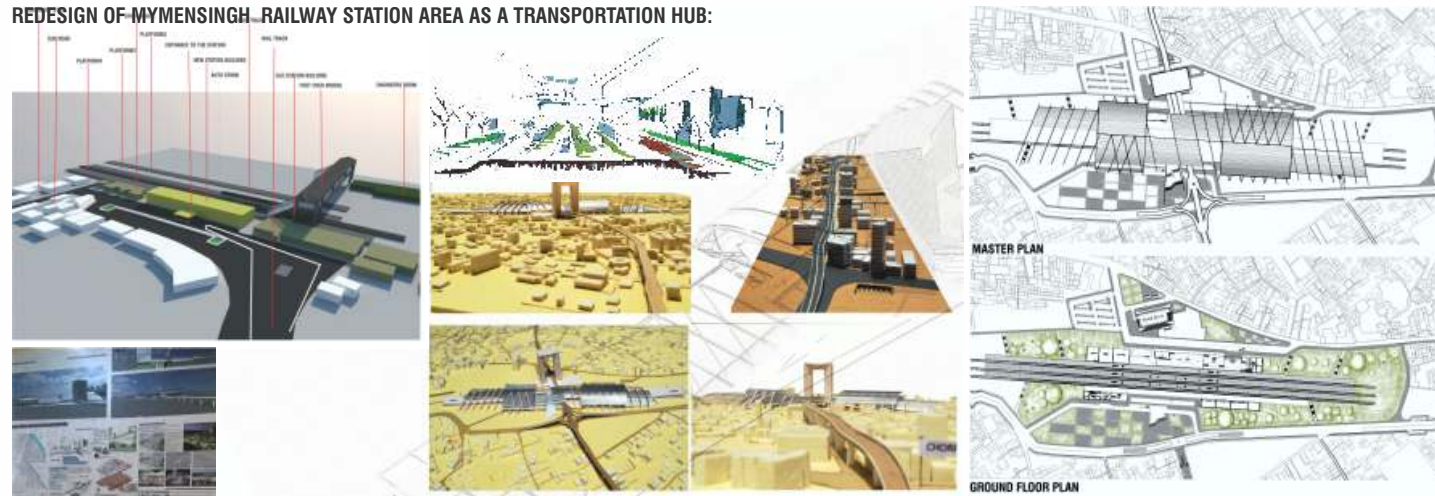
For this exercise UDD has provided necessary data and technical assistance whenever required. The Project Director Dr. K. Z. H. Taufique and his team of UDD, in fact, played the role of client and thus students had the opportunity to exercise and experience of a real life urban planning and design project. Students had several presentations of their exercise before different group of audience, outside the academic environment, such as the honorable Mayor of the Mymensingh City Corporation, Additional Secretary of CDMP-II, Director of UDD and others at BIAM Auditorium.

In this exercise, students, under the guidance of studio guides, Mr. Dibbendu Saha, Ms. Maher Niger and Mr. Naimul Aziz, have demonstrated their efforts as well as ability of understanding, analyzing, decision-making and designing of real life urban problems. Particularly their considerations about the complex urban issues of Mymensingh City following limitations of a real life project within the wider boundary of an academic exercise shows their merit.

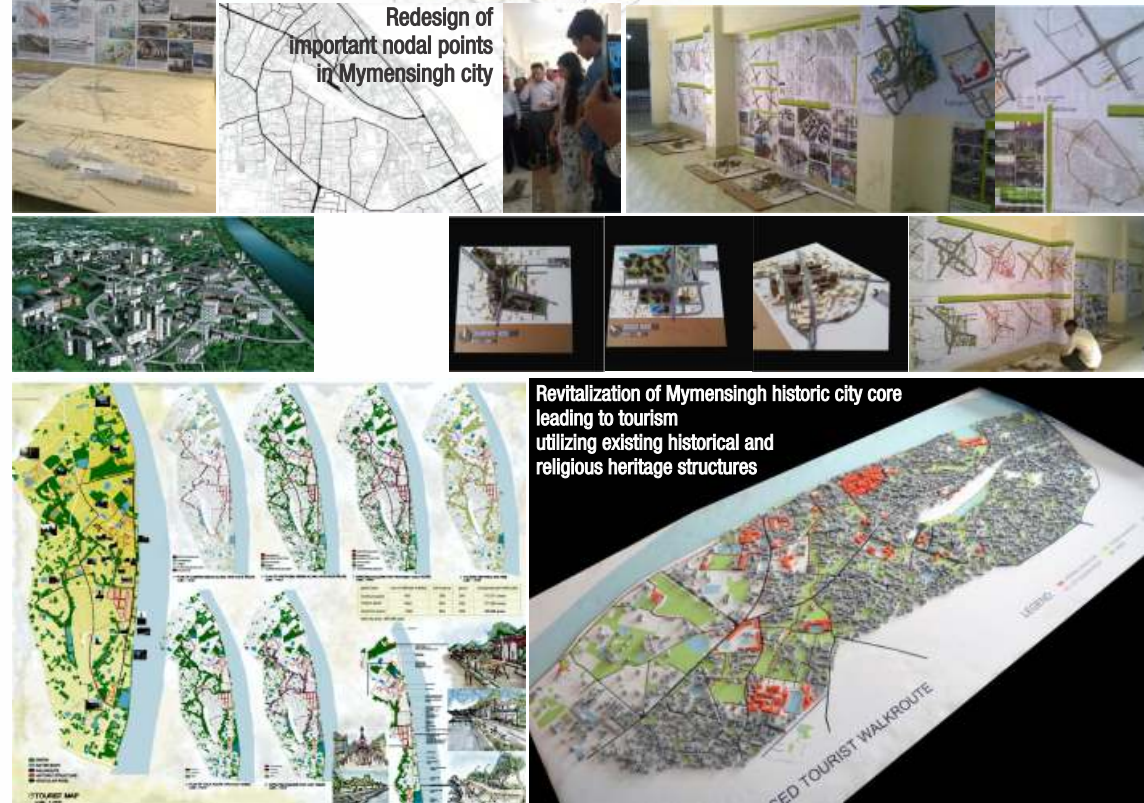
Site Survey & Interactive sessions at Mymensingh



REDESIGN OF MYMENSINGH RAILWAY STATION AREA AS A TRANSPORTATION HUB:



KNOWLEDGE
TAPING
BETWEEN
GOVERNMENT
AND ACADEMIA



In this particular academic exercise, these students have participated as a group and designed the project titled as

- **Redesign of Mymensingh Central Railway Station Area as a Central Transportation Hub.**
- **Brahmaputra Nod: riverfront development as a dream place of Shilpacharya Jainul Abedin**
- **Understanding the dynamics of Shambhuganj Bazar area and its revitalization**
- **Revitalization of Mymensingh historic city core leading to tourism utilizing existing historical and religious heritage structures.**
- **Redesign of important nodal points in Mymensingh city.**
- **Amusement in a 'Char': proposed leisure and recreational facilities in Mymensingh.**
- **Reconsidering the "BSCIC" Industrial Park and its feasible alternative use.**
- **Open space adaptation in disaster management: Reconsidering social & physical infrastructures and open spaces in Mymensingh City and their possible utilization in disaster management program.**

KNOWLEDGE TAPING BETWEEN GOVERNMENT AND ACADEMIA



Open space adaptation in disaster management: Reconsidering social & physical infrastructures and open spaces in Mymensingh City and their possible utilization in disaster management program

Understanding the dynamics of Shambhuganj Bazar area and its revitalization



MSDP 2011-2031

Amusement in a 'Char': proposed leisure and recreational facilities in Mymensingh



Bratmaputra Nod: riverfront development as a dream place of Shilpacharya Jainul Abedin



Reconsidering the "BSCIC" Industrial Park and its feasible alternative use



Physical Feature



PRA



Children Art Competition



GLIMPSE

Stakeholders Participated In Training and Workshop





TMC & Workshop



GLIMPSE

সময় ২০১১-২০১৫



Opening Ceremonial of Public Hearing and Exhibition at Town Hall, Mymensingh on 25th October, 2015.



GLIMPSE



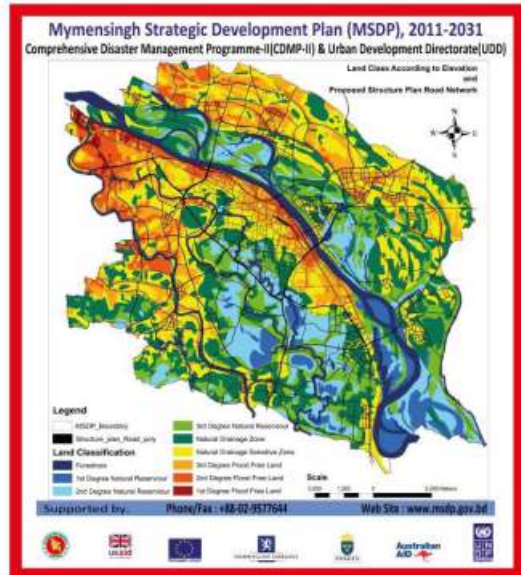
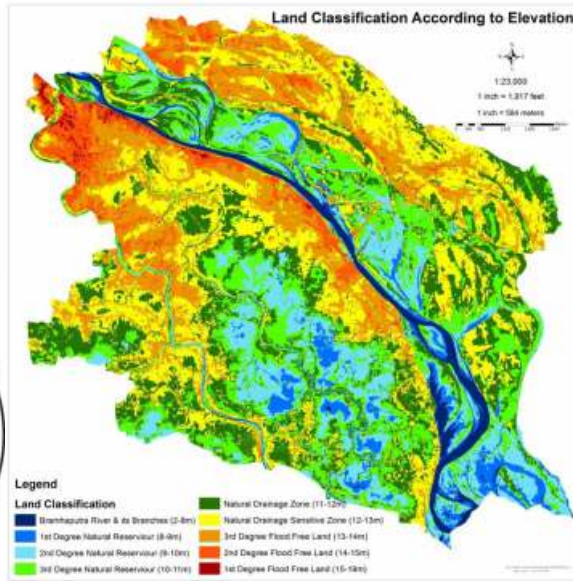
Final Workshop on
Structure Plan, Seismic Risk Information Plan and Earthquake Contingency Plan
 Chief Guest
 Mr. Mohammad Abdul Gaffar, Additional Secretary to Government
 Commissioner, Disaster Management Programme (2011-15), Bangladesh Red Crescent Society
 Special Guest
 Mr. Feroze Bin Prasad, Director (Urban Development), Ministry of Housing and Public Works
 Mr. Pinar Mahapatra, Project Manager (2011-15)
 Mr. Chandra Mohan Das, Head (Technical), Disaster Management Programme
 Chairperson
 Shafiqul Bari, Executive Director, Bangladesh Red Crescent Society
 Date
 26 October 2015
 Organized jointly by
 Ministry of Housing and Public Works, Government of Bangladesh
 Bangladesh Red Crescent Society





GLIMPSE
DIVISIONAL
HEADQUARTER

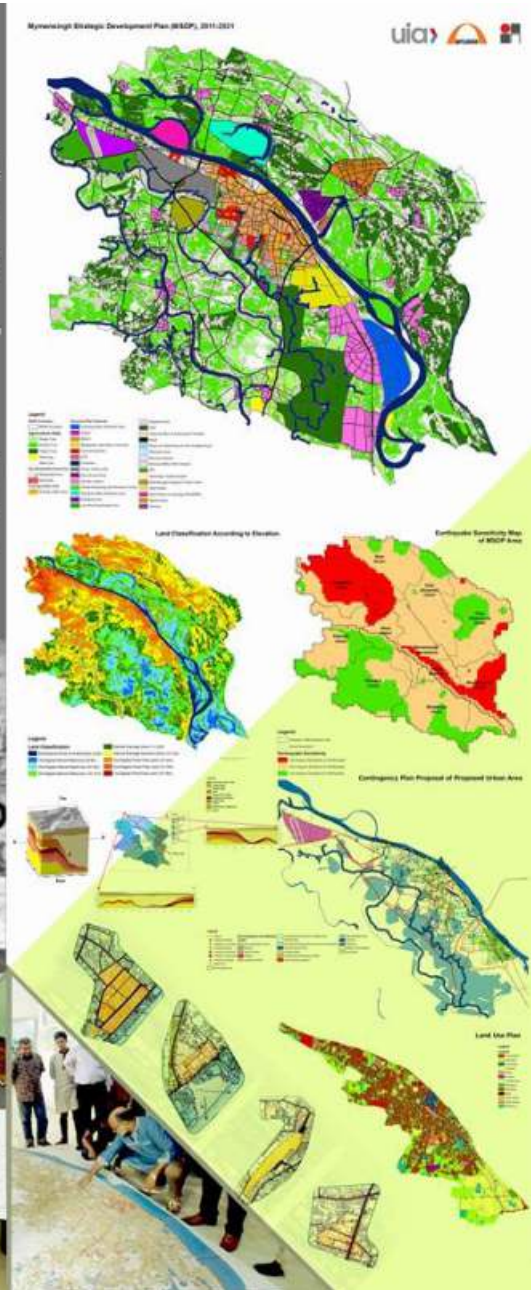




MYMENSINGH Strategic Development Plan, Bangladesh UDD & CDM-II

Asian Townscape Jury's Award 2014
Architect / Planner : Khurshid Zabin Hossain Taufique

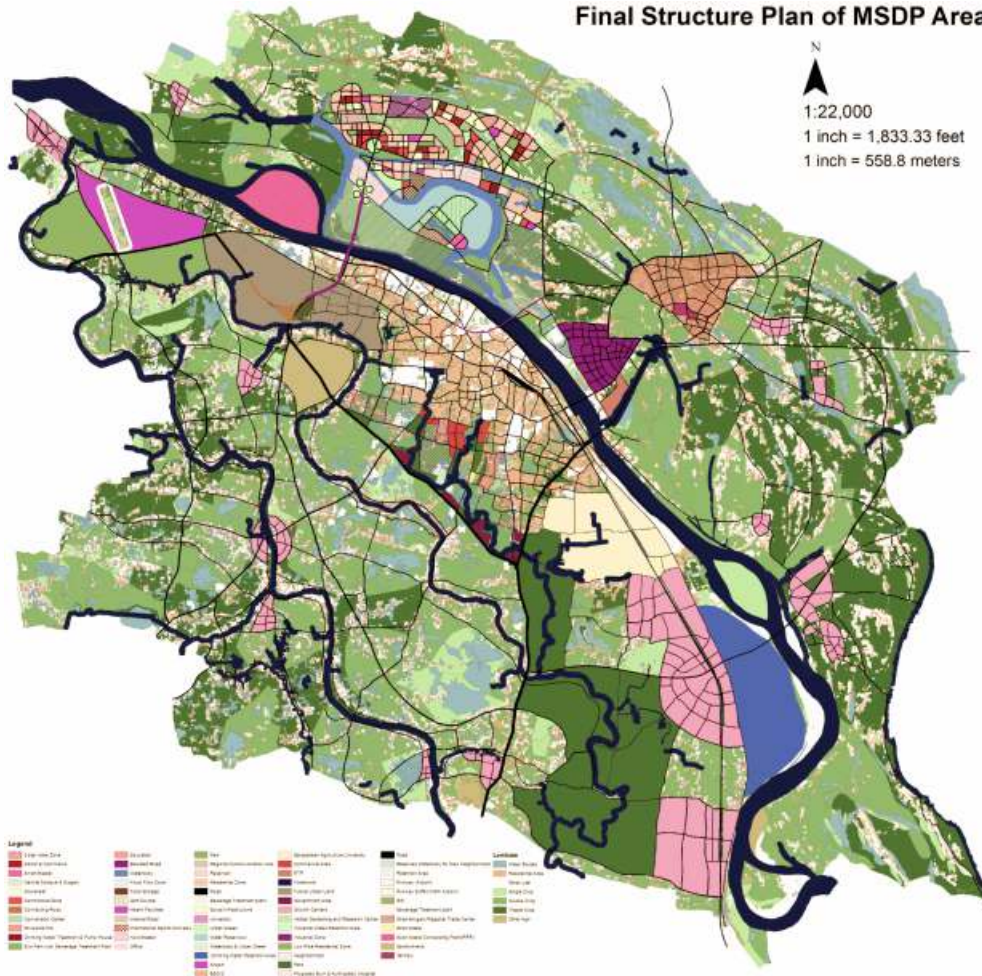
Considering the conceptual framework of Comprehensive Disaster Management Programme (CDMP)-II under Ministry of Disaster Management and Relief, a pilot project on preparing a module for mainstreaming disaster risk preventive measures into comprehensive landuse development planning and management for Mymensingh Municipality and its surrounding ten unions entitled "Mymensingh Strategic Development Planning (MSDP), 2011-2031" has been prepared. The Plan has been prepared considering both natural (earthquake, flood etc.) and man-made (fire, urban flooding, building vulnerability etc.) disaster and eco-sensitive regional planning approach. Besides, ecology and social space also been framed and adopted as the fundamental guiding principle of planning process. Participatory planning process has been followed at all stages of plan preparation as well. As a result, the plan is well accepted all levels starting from grass-root level people for whom the plan has been prepared to top policy making level area.



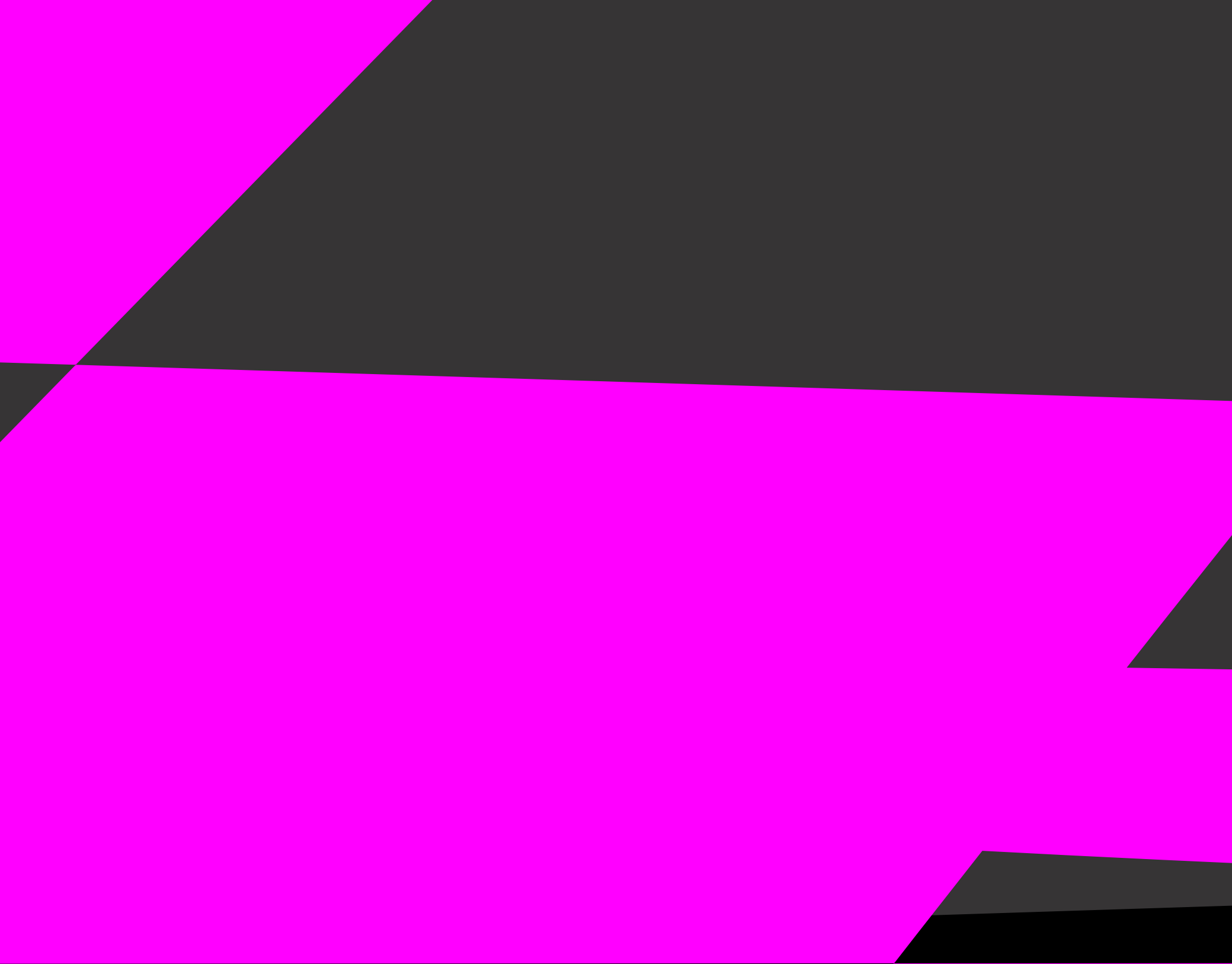
MSDP
TEAM

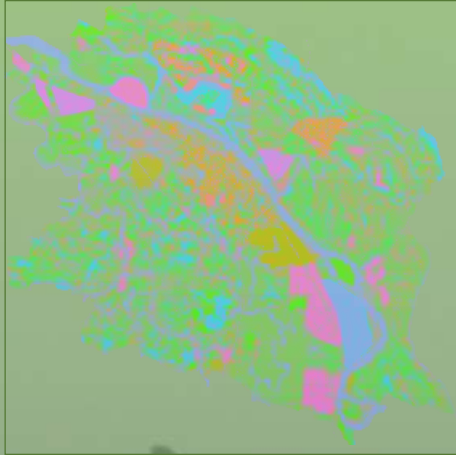
CONGRATULATION MSDP TEAM!

Final Structure Plan of MSDP Area



- Khondker Fowze Muhammed Bin Farid
- Dr.-Ing. K. Z. Hossain Taufique
- Ahmed Akhtaruzzaman
- Quazi Md. Fazlul Haque
- Ahshan Habib
- Yearunnessa Khanam
- Israt Jahan
- Planner Zakia Sultana
- Harosit Barai
- Md. Monir Hossain
- S. M. Saydul Islam
- Md. Abu Bakar Siddik
- Touhidul Mofiz
- Amrita Kumar Das
- Md. Nazrul Islam
- Md. Mahmudul Hasan
- A.K.M. Badrul Alam
- Md. Noor E Alam Siddiquei
- Renu Miah
- Omur Faruk
- Shajib Sarkar
- Nadira Alo
- Md. Abdur Razzak Sikder
- Md. Al Amin Shikdar
- Farhana Akter
- Md. Nazrul Islam
- Md. Abul Fayeaz
- Md. Zakir Hossain
- Abdul Kuddus
- Md. Toriqul Islam
- Md. Anisur Rahman
- Narayan Cakrabarti





**Mymensingh
Strategic
Development Plan
(MSDP)
2011-2031**



Urban Development Directorate (UDD)
Ministry of Housing and Public Works
The Government of the
People's Republic of Bangladesh

Published by UDD
October 2016