Welcome to The Presentation on

Physical Feature, Land Use & Topographic Survey using

(GIS & Photogrammetry Technique)

Tuesday 30, August, 2016

Survey Coverage

- Physical Feature Survey
 - ✓ Installation of BM pillars
 - ✓ Physical Features Survey Using Base Map (Mauza + SOB Topo+ Satellite Image)
 - ✓ Information Collection of Various Physical Feature.
- Topography Survey
 - ✓ Land spot height survey using RTK GPS
 - ✓ Photogrammetry Technique
- Land Use Survey
 - √ Land use survey on Base Map
 - ✓ Plot to plot survey

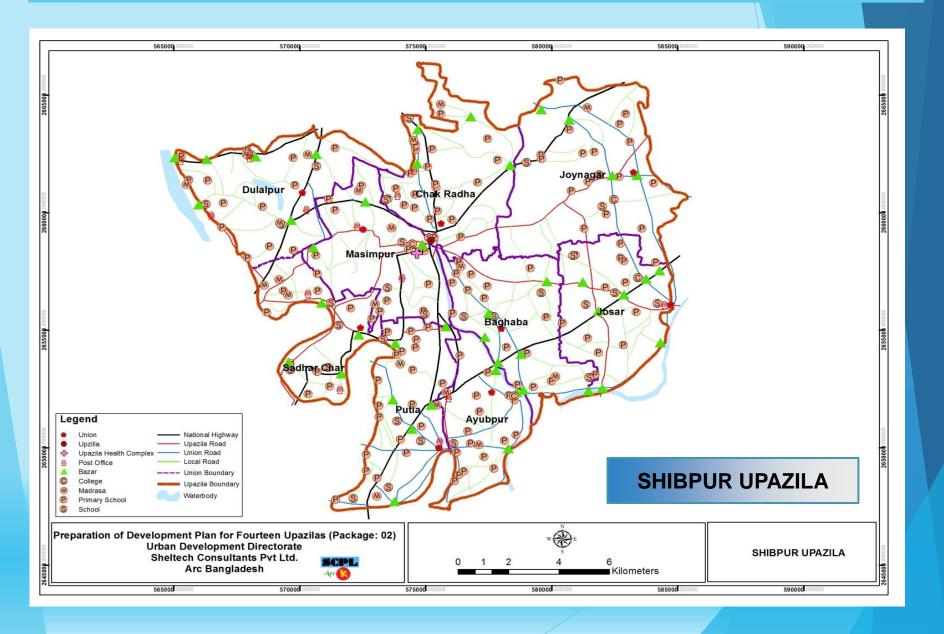
Project Area for Package 2

ISHWARGANJ UPAZILA SHIBPUR UPAZILA RAIPURA UPAZILA

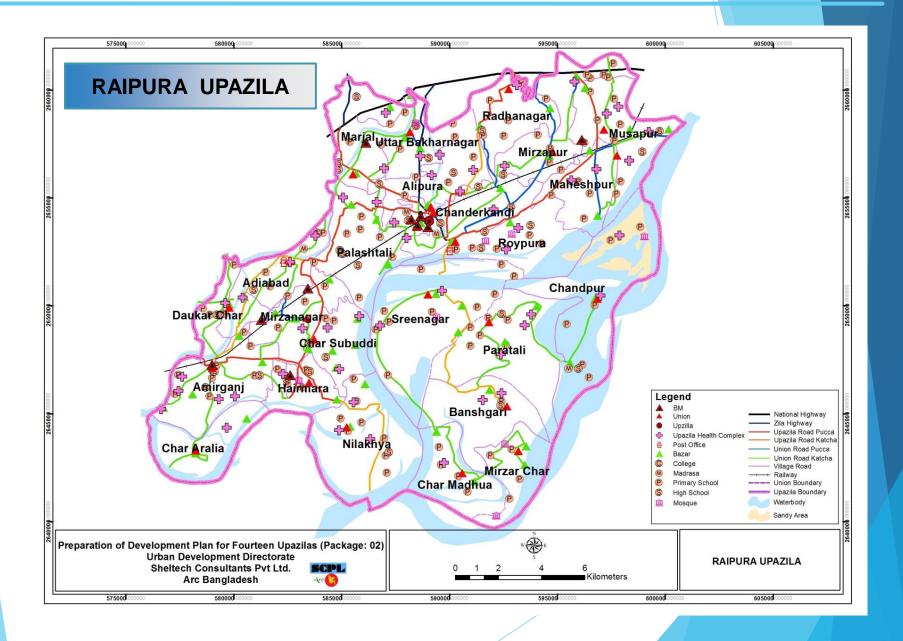
ISHWARGANJ UPAZILA



SHIBPUR UPAZILA



RAIPURA UPAZILA



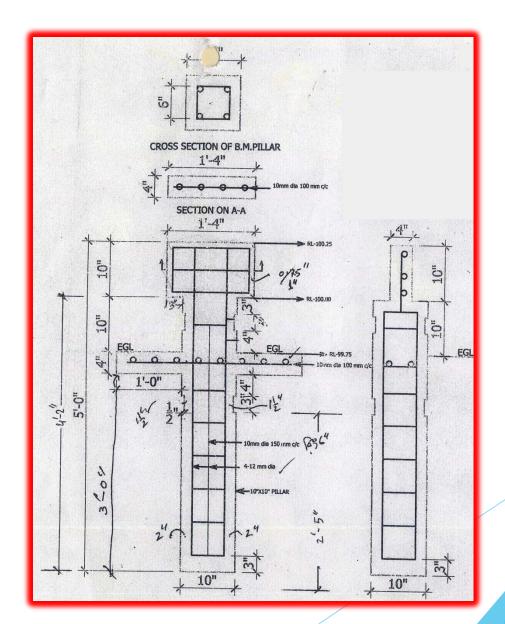
BM Pillar Installation



Steps in BM Pillar Installation

- Design of BM Pillar
- Construction of BM Pillars
- Installation of BM Pillars
- Fixing coordinate of BM Pillars using RTK base GPS & DGPS techniques

Design of BM



Construction of BM Pillars



BM Site Selection Criteria

- The site is suitable for RTK-GPS/DGPS observation. There exists Good Sky Visibility (15 degree cut of angle above the horizon) and far from mobile tower or high voltage electric line.
- The site is located on undisturbed location due to natural or human activities
- The site is located on such a place that is suitable to set up Total Station equipment in future work.
- The site is located on a corner of government own land, playground, school or beside of road for sustainability

Information of Reference BM

Ishwarganj

Sl No.	Point	WGS-84		RL	Location of pillar	
	ID	Latitude	Longitude			
1	GPS	24°37"55.5	90°43'05.680	8.6030	The pillar is situated in the compound of Atharabari	
	2227	8164"	96"		Model Primary School. It is 38 meter west from	
					kishoreganj-kendua road and north – west corner of	
					a tank.	
					Vill: Atharabari, Upazila: Ishwarganj, District:	
					Mymensingh	
2	GPS	24°41'28.5	90°35'54.447	11.2571	The pillar is situated in north-east corner of the	
	5380	6224"	65"		playground of Charoni Kholapourasabha. It is 30ft.	
					West from idgha mimbar.	
					Vill: Charonikhola, Upazila: Ishwarganj, District:	
					Mymensingh	
3	GPS	24°37'28.1	90°36'23.562	10.2946	The pillar is situated in south-east corner of the field	
	5386	8207"	32"		of Charshangkr primary School. It is 25m east from	
					west side road.	
					Vill: Charshangkr, Upazila: Ishwarganj, District:	
					Mymensingh.	

Reference BM Pillar GPS-5380 (Ishwarganj)



Information of Reference BM

Shibpur and Raipura

Sl	Point ID	WGS-84		RL	Location of pillar	
No.		Latitude	Longitud			
			e			
1	BM 533	24°01'12		9.891	The pillar is situated in the playground of	
		.24721"	.95158"		chaitannya high School on Dhaka	
					Narsingdi road. Vill: Chaitannya, Upazila:	
					Shibpur, Dist: Narsingdi	
2	GPS	24°06'29	90°50'58	7.6315	The pillar is situated in tha soudth- west of	
	2317	.99146''	.58477"		Zila parishad Dak Banglow, 2.8m south-	
					west from the south- west side boundary	
		wall, 2.6m west from west side wall. Vill:				
					Belabo, Upazila: Belabo, Dist: Narsingdi.	
3	GPS	23°53'02	90°58'10	6.6094	The pillar is situated in Nabingar, pilot	
	3533	.77343"	.38328"	.38328" High School ground & south s		
					field. It is about 75m West from main road.	
					Vill: Nabinagar, Upazila: Nabinagar, Dist:	
					Brahmanbari	

Reference BM Pillar BM 533 (Shibpur and Raipura Upazila)



Installed BM Pillars





RTK-GPS Observations on BM Pillars

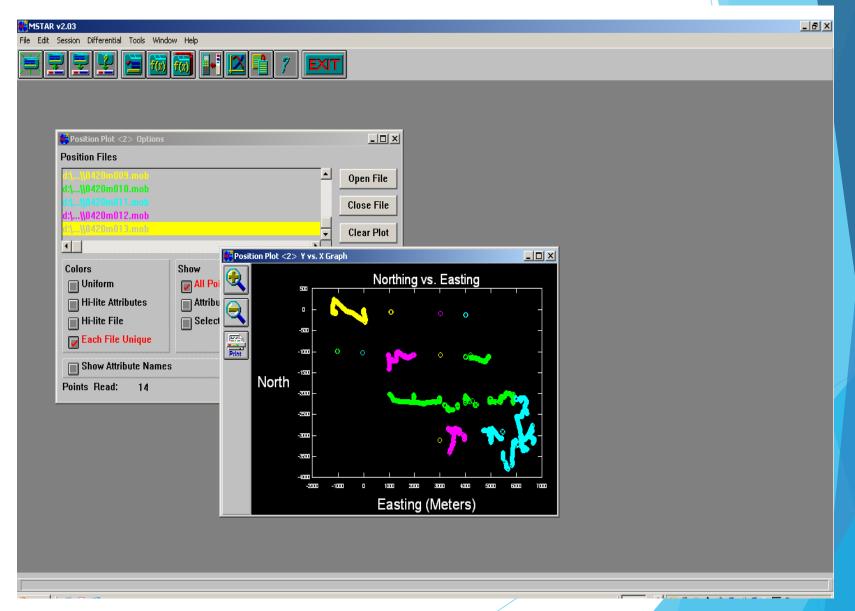
BASE



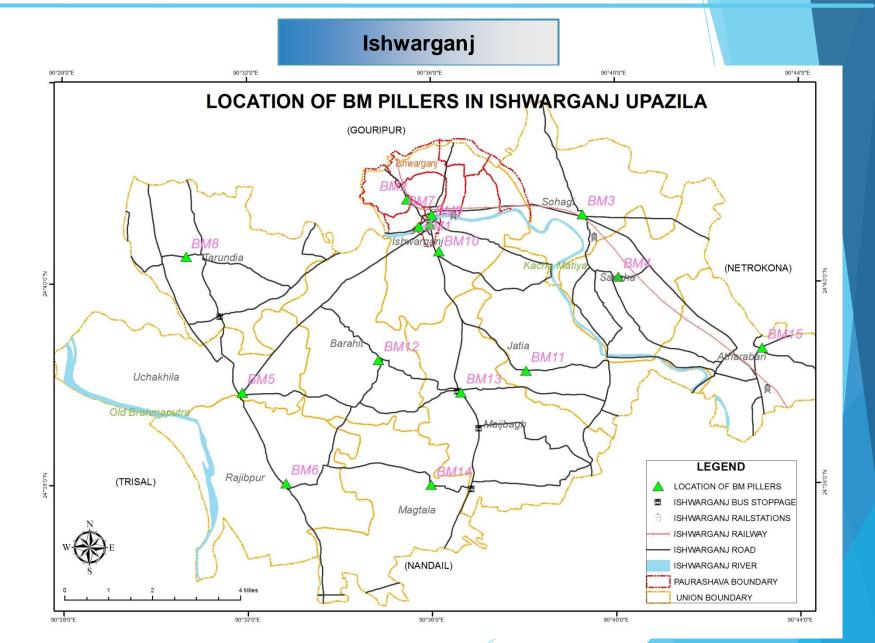
ROVER



Post Processing of GPS Data

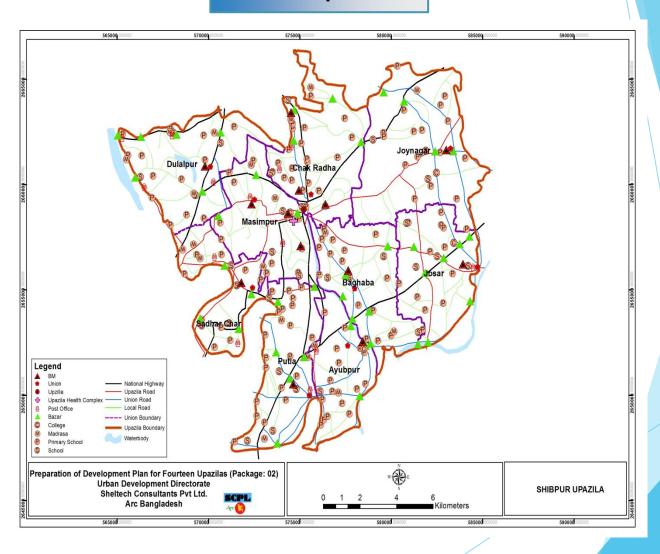


BM Location Map



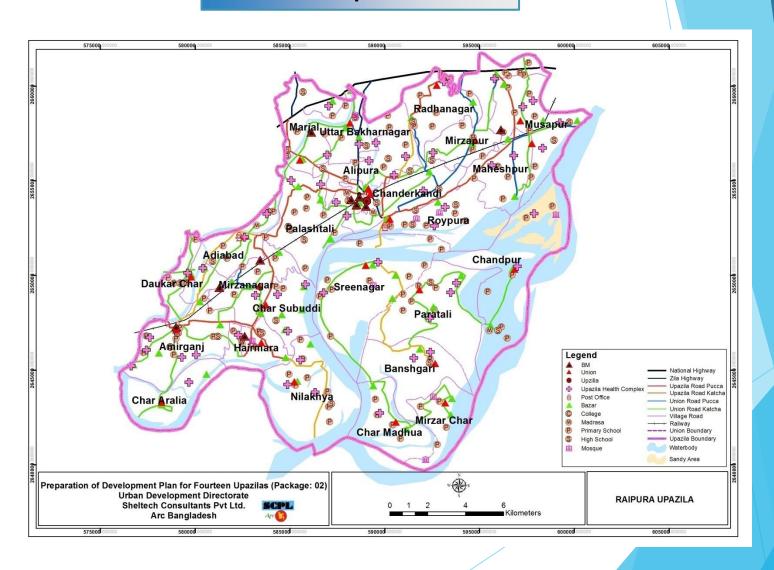
BM Location Map

Shibpur



BM Location Map

Raipura



Steps at BASE MAP Preparation

- Collection of Mauza Maps
- Authentication of Mauza Maps
- GCP Collection
- Scanning, Geo-referencing, Digitizing, Check Plots
- Mosaic Study Area Map Preparation
- Satellite Image Collection
- SOB Topo+ Mauza + Satellite Image as Base Map

Statistics of collected Mauza Ma

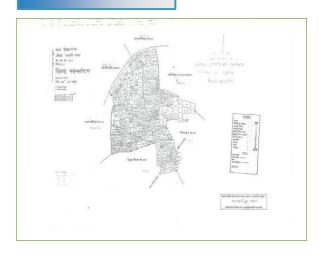
Ishwarganj, Shibpur and Raipura Upazila

Collected, Authenticated, Scanned, Digitized, Geo-referenced)

	Mauza Map			
Upazila	Total No. of Hard Copy Collected	Total No of Scanning	Percentage	
Ishwarganj	364	364	100%	
Shibpur	171	171	100%	
Raipura	246	246	100%	
Total	781	781	100%	

Mauza Maps

Ishwarganj



Shibpur



RAIPURA



GCP Survey for geo-referencing Mauza Maps



Coordinate System: BUTM2010

Projection : Transverse_Mercator

False_Easting : 500000.00000000

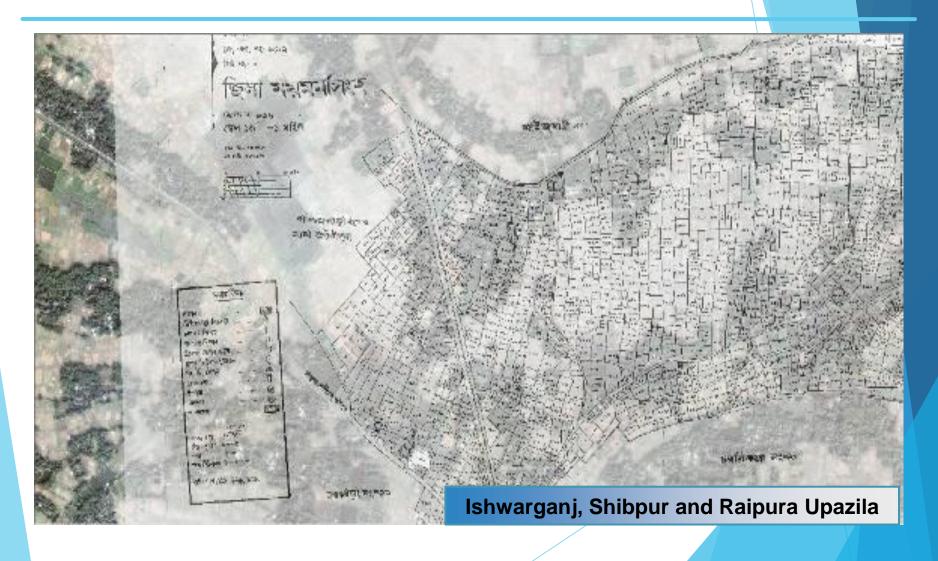
False_Northing : 0.00000000 Central_Meridian : 90.00000000

Scale_Factor : 0.99960000

Latitude_Of_Origin : 0.00000000

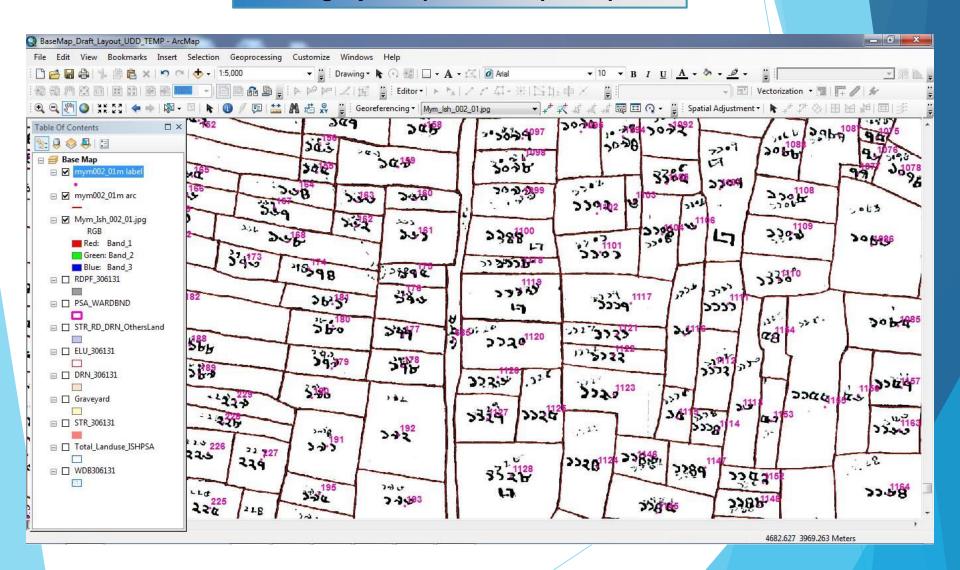
Linear Unit : Meter

Fine Tuning of Geo-reference using Satellite Image

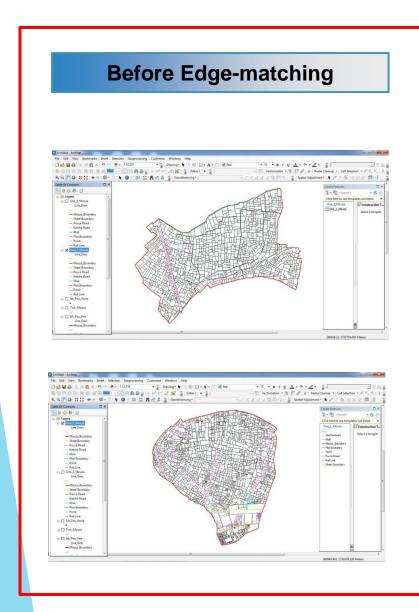


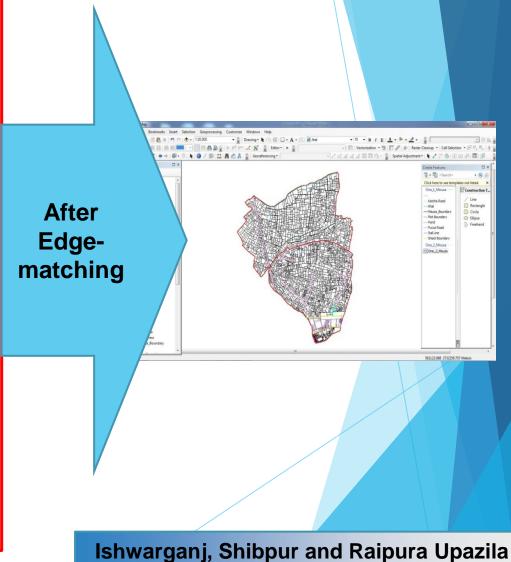
Digitization of Mauza Maps

Ishwarganj, Shibpur and Raipura Upazila



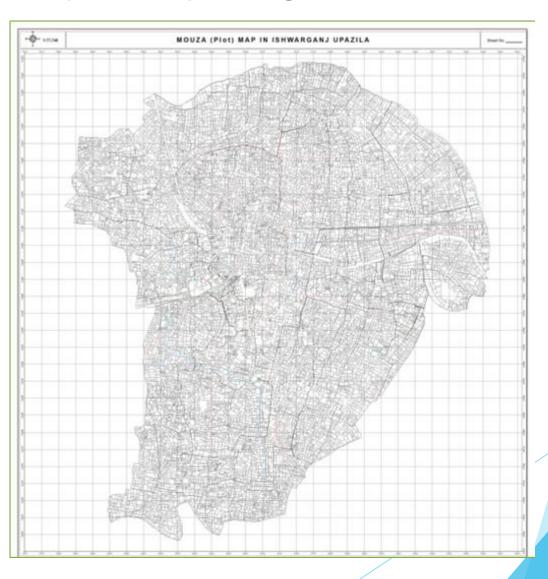
Edge-matching of Mauza Maps





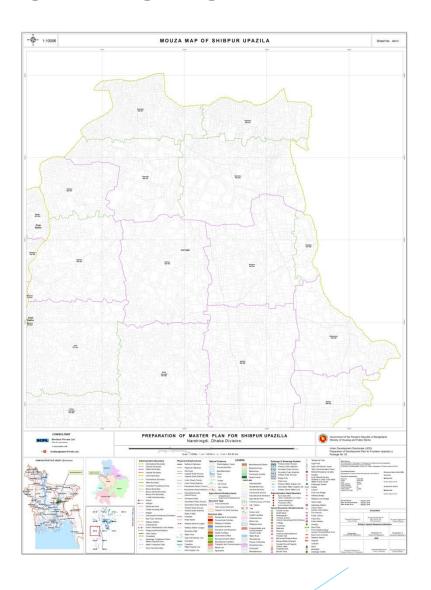
Mauza Edge Matched Project AREA

ISHWARGANJ UPAZILA



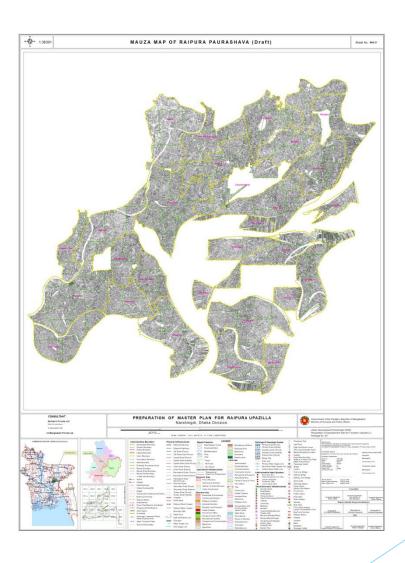
Mauza Edge Matched Project AREA

SHIBPUR UPAZILA



Mauza Edge Matched Project AREA

RAIPURA UPAZILA



Satellite Image Collection

Ishwarganj, Shibpur and Raipura Upazila

0.5 meter Stereo Pair

Image Sensor : Plediades 1A

Type : Ortho ready stereo (3D)

Resolution : 0.5m Panchromatic,

2.0 meter Multispectral

Source : New Acquisition, 10th December 2015

Area : Urabn 300 Sq. km. and 560 Sq. km. Rural

Company : Airbus Defence and Space

Processing of Satellite Image

Work Flow

- aerial triangulation measurements
- block adjustment for central projection images
- block adjustment for satellite scanner images
- DTM creation
- dense DSM generation algorithm
- 3D feature extraction in stereo-mode and
- 3D modeling
- orthomosaicking
- digital map creation

Orthorectified Satellite Imagery

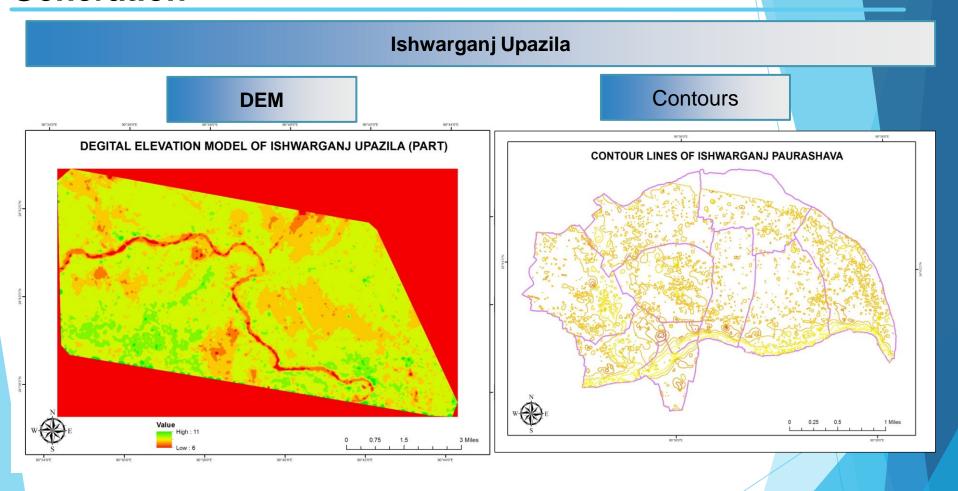
Orthorectified Satellite Imager



Base Map (Orthorectified Satellite Imagery +Mauza Map)



Digital Elevation Model (DEM) and Contours Generation



Digital Elevation Model (DEM) and Contours Generation

Shibpur Paurashava (Partial) DEM Contours Digital Elevation Model (DEM) of Shibpur Paurashava(Partial) Contour Map of Shibpur Paurashava(Partial) PREPARATION OF MASTER PLAN FOR FOURTEEN UPAZILLA PREPARATION OF MASTER PLAN FOR FOURTEEN UPAZILLA overnment of the People's Republic of Banglad inistry of Housing and Public Works Legend Joint Venture of Sheltech Private Ltd. ArcBangladesh Private Ltd. Joint Venture of Sheltech Private Ltd.

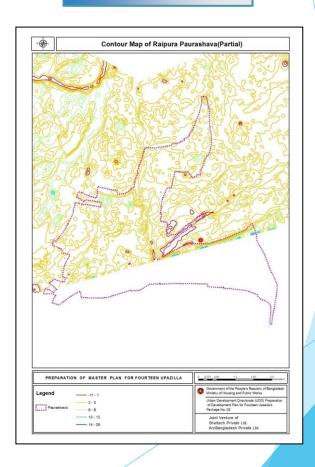
Digital Elevation Model (DEM) and Contours Generation

Raipura Paurashava (Partial)

DEM

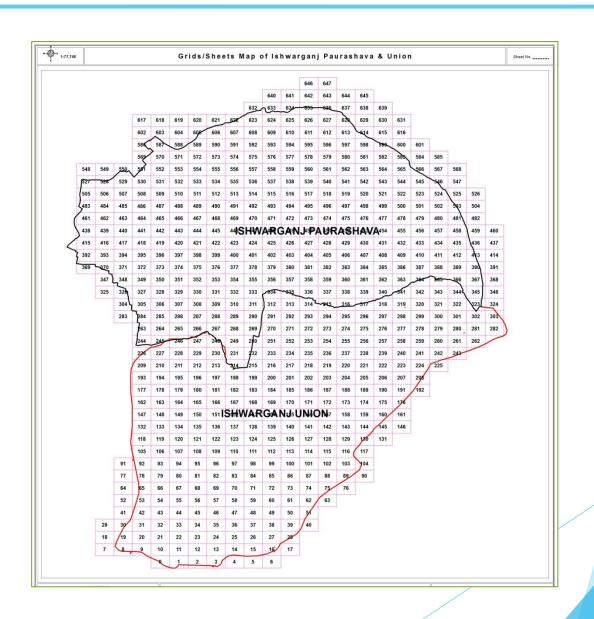
Digital Elevation Model (DEM) of Raipura Paurashava(Partial) PREPARATION OF MASTER PLAN FOR FOURTEEN UPAZILLA Government of the People's Republic of Bangla-Ministry of Housing and Public Works

Contours

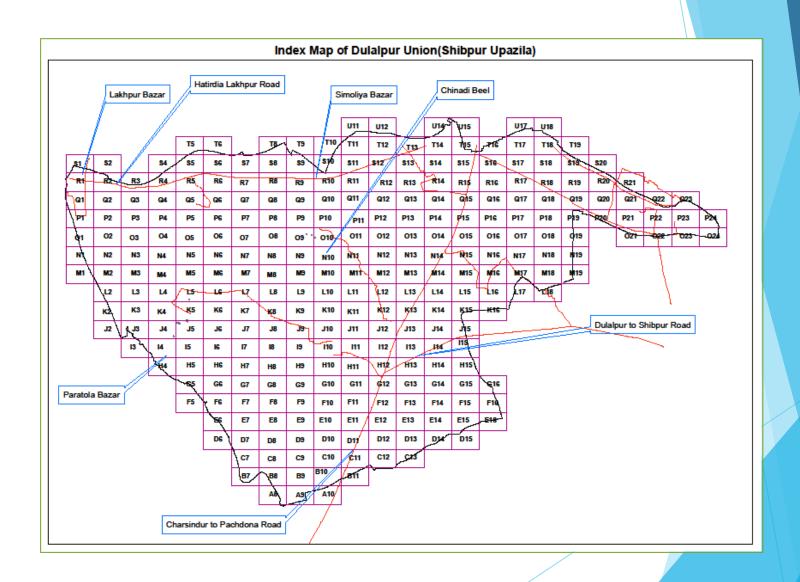


Physical Infrastructure Survey Topographic Survey Land Use Survey

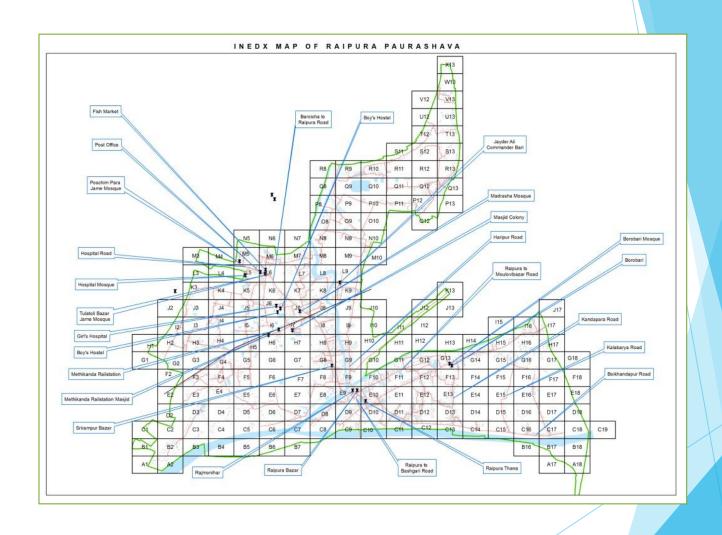
Working Grids for Ishwarganj Upazila



Working Grids for Shibpur Upazila



Working Grids for Raipura Upazila



Base Map for Physical Survey



Field Activities of Survey Work

Ishwarganj, Shibpur and Raipura Upazila









Physical Survey

Ishwarganj Upazila



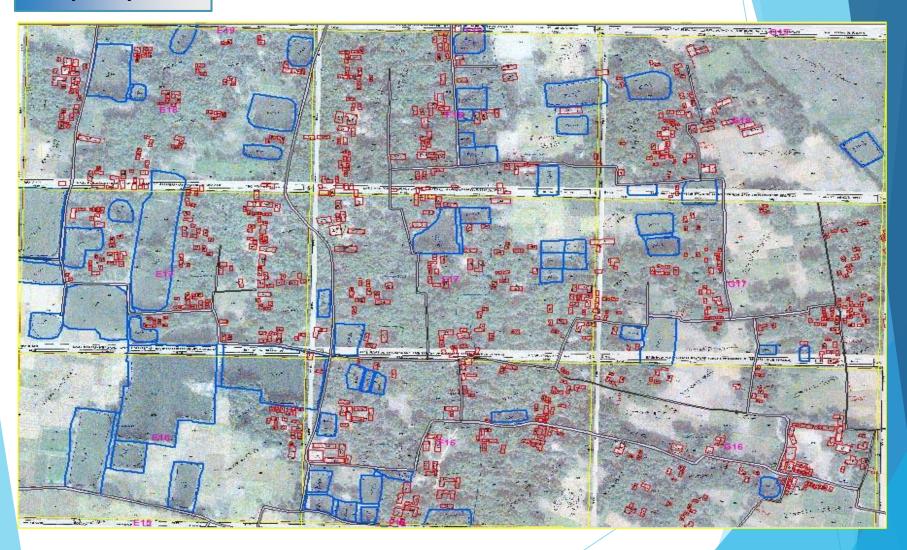
Physical Survey (Attribute)

Ishwarganj Upazila

	•	Upazila: Union: Ward No: Grid ID: Data Type:		ISHWARCAN'S	Prep Urban De	Date: Name of Surveyor:	5098					
				Structure		Name of Supervisor:						
Γ	ID	Туре	Storied	Structure Use	Structure Name	Owner Name	Owner Cell No	Construction Year	Holding No	Plot No, Mauza Name	Road Name	Locality
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Physical Survey

Shibpur Upazila



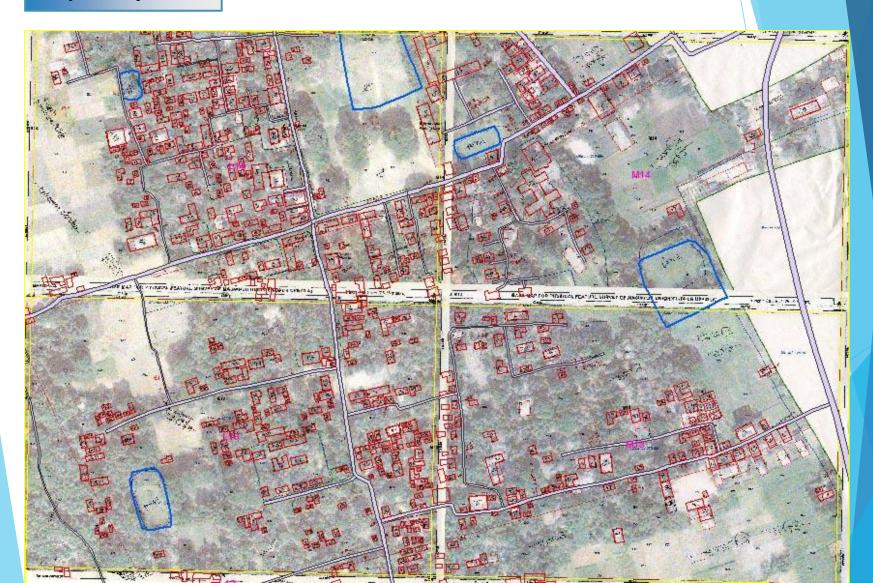
Physical Survey (Attribute)

Shibpur Upazila

	Upazila Union: Ward I	lo:	म्बद्धः अनुग्र १	Preparation of Development Plan for 14 Upazilas (Package-2) Urban Development Directorate, Ministry of Housing and Public works Physical Feature and Landuse Survey					Date: Name of Surveyor:	22-7-16 505ed	
	Grid iD: Data Type:		3 0 Structure	riiyonai reetule and Landuse Survey					Name of Supervisor:		
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Physical Survey

Raipura Upazila



Physical Survey (Attribute)

Raipura Upazila

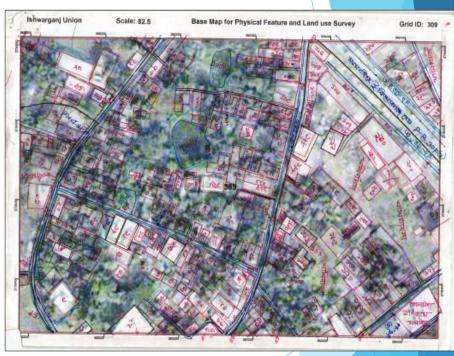
Upazila: Union: Ward No:	भूनुका ए जन्मी भूनुका ए जन्मी		Ur	Preparation of Deban Development Di	Date: Name of Surve	22-3-1 yor: 50 Jed		
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ode of Road Ty	pe:							A
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Physical Features and Land use Survey

Before Survey

After Survey





Field Verification/Ground Truthing





Feature Extraction

Ishwarganj, Shibpur and Raipura Upazila

Structures

Road Network

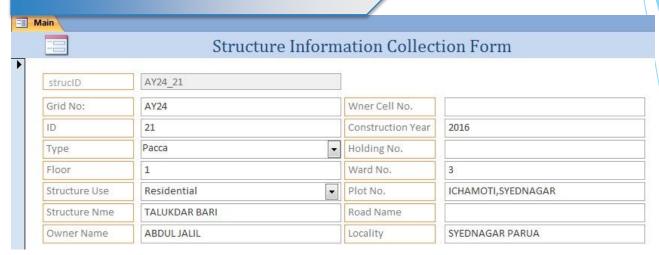
Waterbodies



Attribute Data Entry Software

Ishwarganj, Shibpur and Raipura Upazila

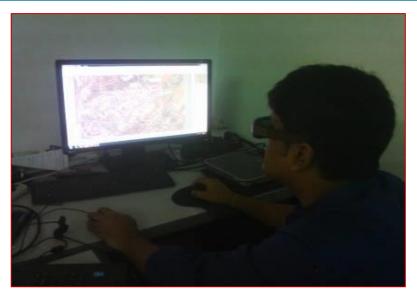
Data Entry of Features from Log Book



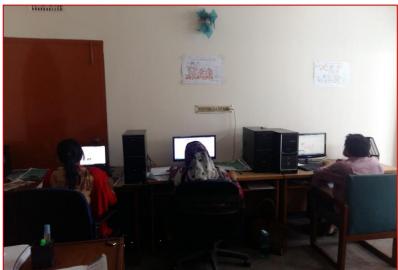
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BO25_25	BO25	25 Pacca	2	Mosque	Religious Area	North Ghatcheck Shahi Jame I			1994	
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BR15_8	BR15	8 Pacca	2	Mosque	Religious Area	Dullober Bari Jame Mosque			2000	
BP27_95	BP27	95 Pacca	1	Temple	Religious Area	Maitra Mandir	Dharmasen Ba	01815697679	2013	
BC29_4	BC29	4 Pacca	1	Mosque	Religious Area	FOKANIA MASJID	HAFIZ MAWLA	01819624739	1971	
BC29_6	BC29	6 Pacca	1	ORPHANAGE	Religious Area	FOKANIA	SHAHDAT HOS	01819624739	1971	
BG31_31	BG31	31 Semi Pacca	1	temple	Religious Area	thakur ghor	shomoronjon s			
BR17_15	BR17	15 Pacca	1	Mosque	Religious Area	Mohammadia Jame Mosque			1993	
BA28_16	BA28	16 Pacca	1	Mosque	Religious Area	MOGHOL HAT JAME MOSQUE	MOGHOL BARI		2014	
BK29_14	BK29	14 Pacca	1	Mosque	Religious Area	ali ha mosque			2006	
BL31_51	BL31	51 Pacca	1	Mosque	Religious Area	bokhottor jame mosque			2005	
BG25_61	BG25	61 Pacca	1	Mosque	Religious Area	baitul nur jam e mosque			2006	
BL31_17	BL31	17 Pacca	1	temple	Religious Area	sarbojonin			2002	
BQ21_7	BQ21	7 Katcha	1	Mosque	Religious Area	Khaza Gariber Newaz Jame M			2013	
BD24_33	BD24	33 Pacca	1	TEMPLE	Religious Area		BIRENDRALALI	01823059336	2003	
BK31_58	BK31	58 Pacca	1	Mosque	Religious Area	FORKANUA JAME MASJID			1940	
3D38_54	BD38	54 Pacca	1	Mosque	Religious Area	south nischinta pur jame mos			1970	
BQ11_43	BQ11	43 Semi Pacca	1	MAZAR	Religious Area	HAZRAT ASHRAF UDDIN SHAH	HAZRAT ASHRA		2002	
3P26_61	BP26	61 Katcha	1	MAZAR	Religious Area	SAT ANI JA MAZAR	MURADNAGAF	01868578896	1990	
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GIS Features Processing

Ishwarganj, Shibpur and Raipura Upazila









Attribute Data Entry

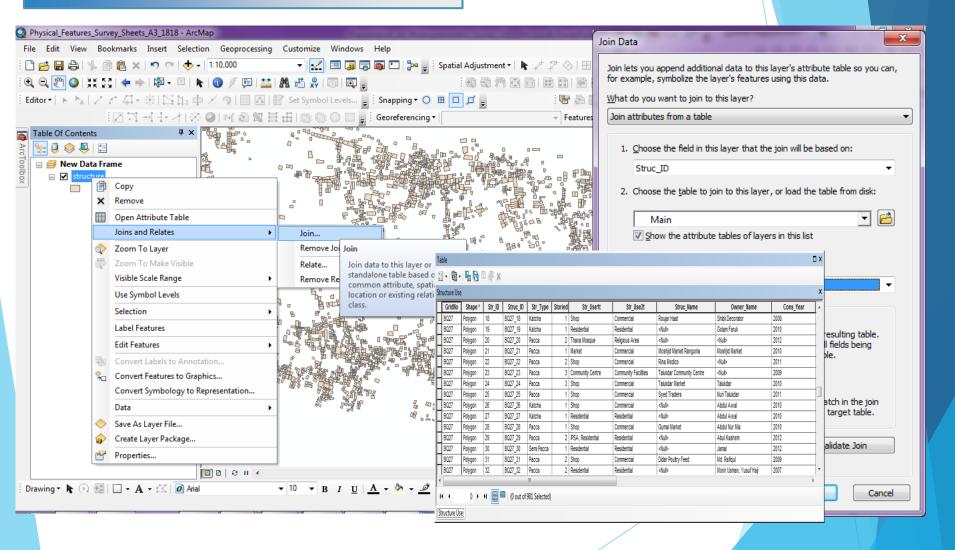
Ishwarganj, Shibpur and Raipura Upazila

Data Entry of Features from Log Book



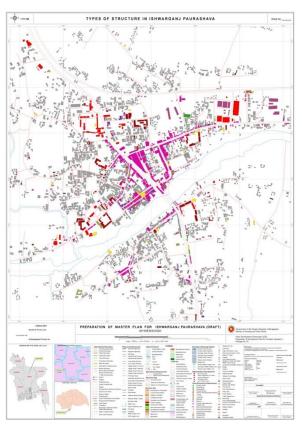
Attribute Linking to Physical Features

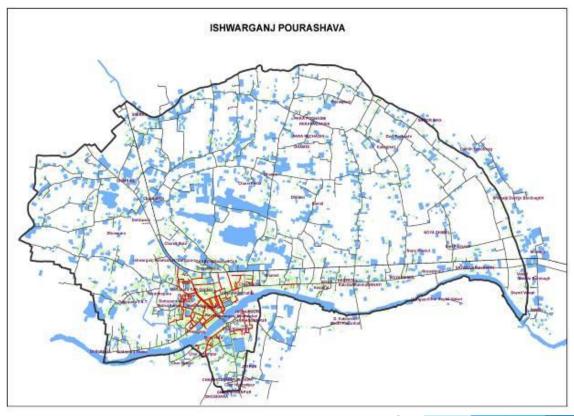
Ishwarganj, Shibpur and Raipura Upazila



Digital Mapping (Feature Compilation)

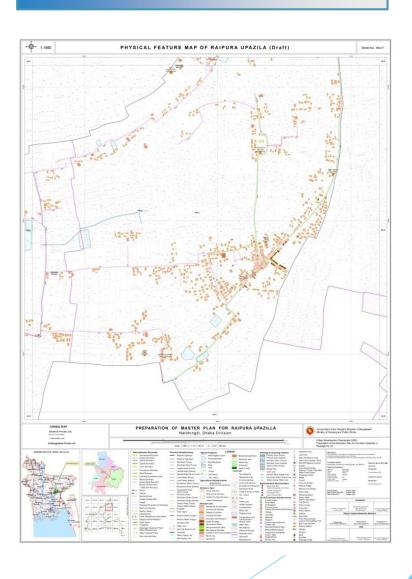
Ishwarganj Paurashava





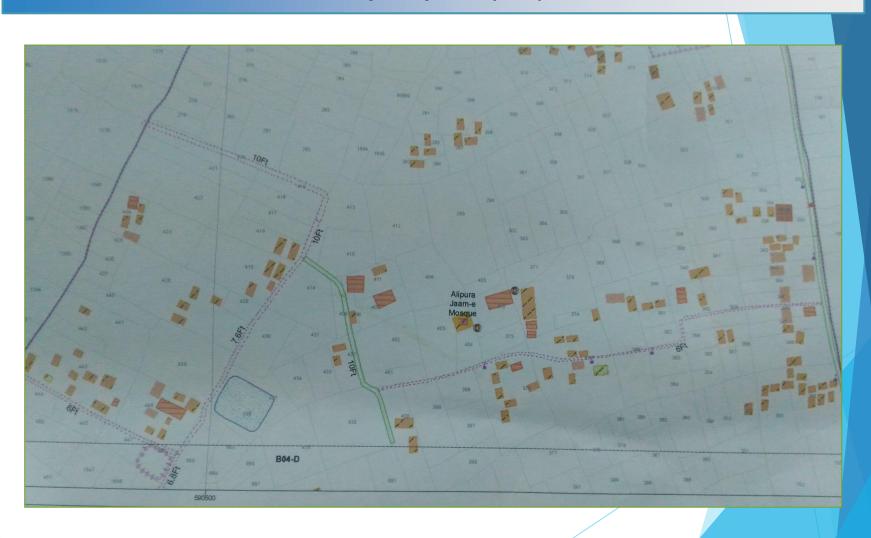
Digital Mapping (Feature Compilation)

Raipura Upazilav(Part)



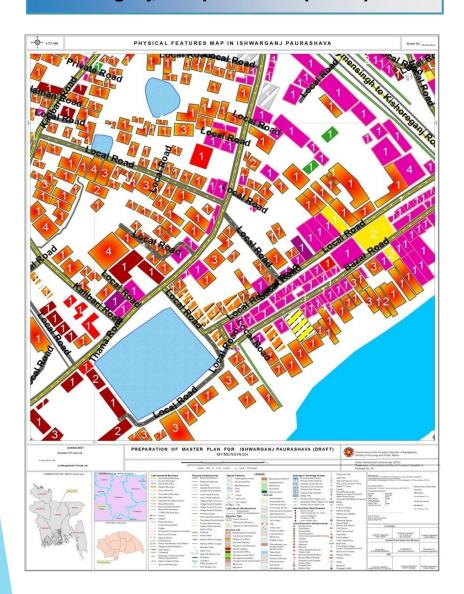
Digital Mapping (Feature Compilation)

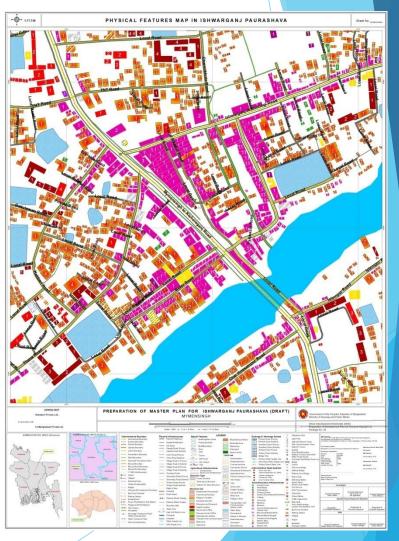
Shibpur Upazila (Part)



Landuse Map Generation

Ishwarganj, Shibpur and Raipura Upazila





Landuse Statistics

Ishwarganj Paurashava

Sl	Land Use	Area(Acre)
1	Administrative	6.238
2	Agricultural Land	1653.687
3	Commercial Activities	11.572
4	Drain	2.069
5	Education and Research	4.051
6	Fellow Land	1.837
7	Garden	382.526
8	Graveyard	3.193
9	Health Facilities	0.51
10	Industrial Activities	1.036
11	Miscellaneous	0.129
12	Mixed Use	0.681
13	Non-government	0.772
14	Open Space	486.224
15	Recreational Facilities	0.111
16	Religious Facilities	2.457
17	Residential & Homestead	93.434
18	Transport and Communication Network	62.939
19	Water bodies	426.132
	Total Paurashava Area (In Acre)	3139.598

Others Physical Survey (Road Inventor)y

Ishwarganj, Shibpur and Raipura Upazila









Thank You!

