Preparation of Ward Maps in Digital Format

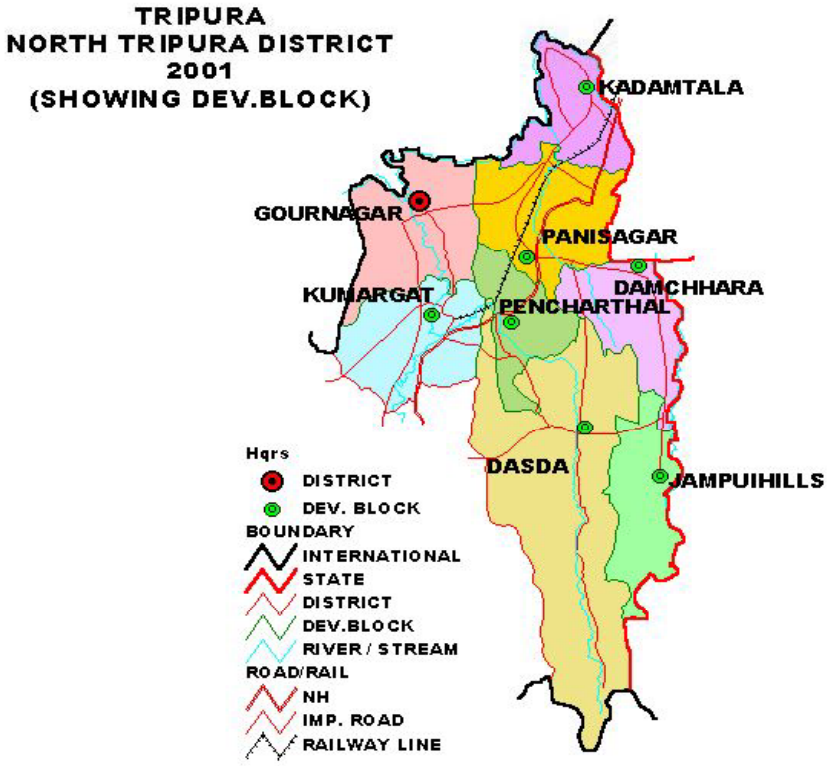
Map Division
Office of the Registrar General, India

Items of Discussion

- Background
- Methodology (Step involved)
- Volume of work
- Time lines for completion
- Demarcating Census Enumeration Blocks
- Updating of digital maps

Background

- Before each census, the Census Directorates are required to provide maps of rural and urban frame to ensure complete coverage
- In many cases latest maps of towns and their wards were not available in earlier Censuses
- As a result, there had been instances of overlapping and omissions of areas, especially in urban areas


TRIPURA
NORTH TRIPURA DISTRICT
2001
(SHOWING DEV.BLOCK)
KADAMTALA
GOURNAGAR
PANISAGAR
DAMCHHARA
KUMARGAT
PENCHARTHAL
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JAMPUIHILLS
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DEV. BLOCK
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RIVER / STREAM
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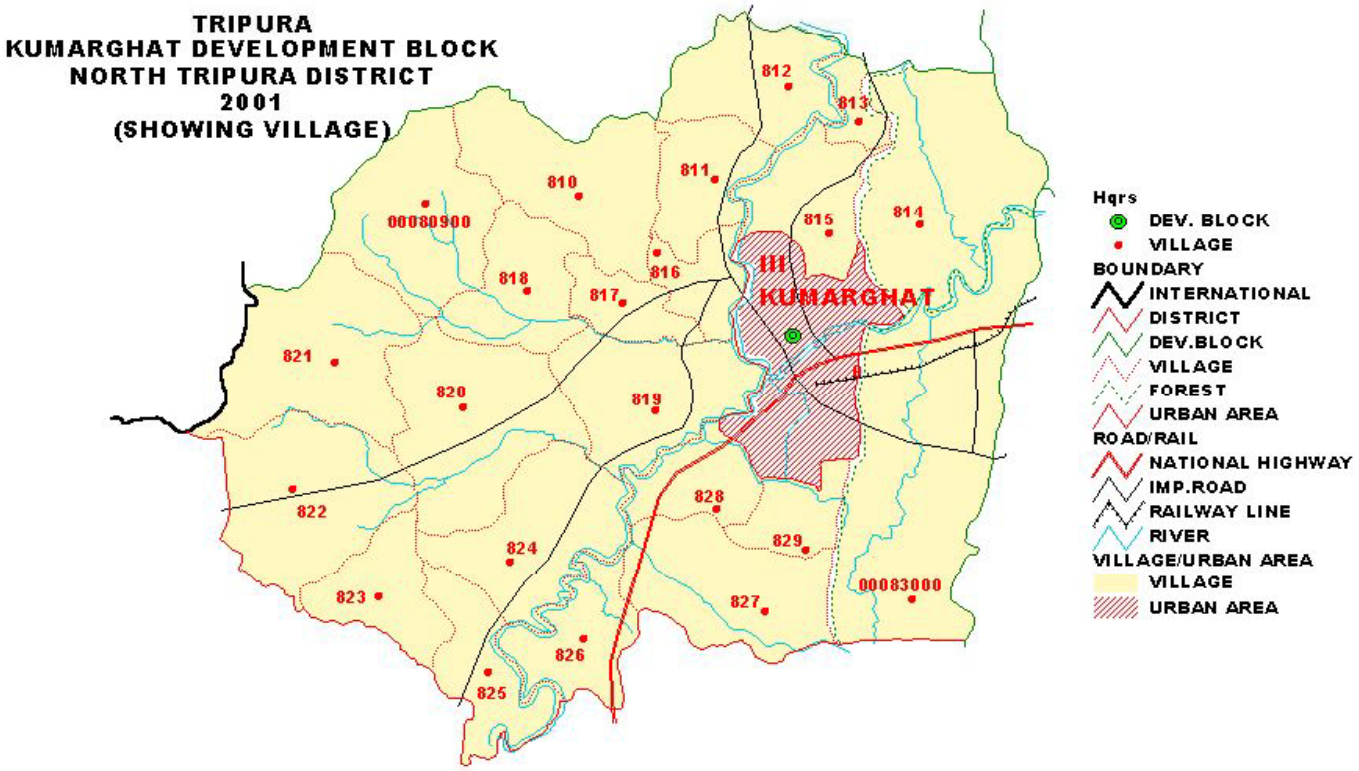
IMP. ROAD
RAILWAY LINE


TRIPURA
KUMARGHAT DEVELOPMENT BLOCK
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(SHOWING VILLAGE)
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URBAN AREA
ROAD/RAIL
NATIONAL HIGHWAY
IMP.ROAD
RAILWAY LINE
RIVER
VILLAGE/URBAN AREA
VILLAGE
URBAN AREA

- Many of the maps were found to be old. Not representing the ground reality today
- Extent and boundary of towns changed
- Number of Wards changed in many cases
- For 2011 Census, maps need to be updated.

Focus on….

- Using maps in pre-census planning in urban areas
- Aimed to ensure complete coverage in 2011 Census
- No omission or over-lapping
- Possible by preparing maps showing complete details for each ward before census
- Details: (House number, Purpose of use, Number of Floors, Population)

Main objectives

1. To prepare separate ward maps in digital format showing lanes, sub-lanes, houses with number and important land marks.
2. To demarcate geo-referenced Census Enumeration Blocks for use in 2011 Census in case of Capital Cities (33).
3. To achieve the objective of preparing ward maps in digital format support of Survey of India (SOI) is taken in a substantive manner.

Requirements

- To obtain town maps showing ward boundaries and their numbers as per the latest notification.
- Individual separate detailed map of wards up to each lane and sub lane showing layout of buildings, house with their number in hard and soft copy.
- This is initially required for capital cities/ towns first.

Step involved

Step 1: Collecting town maps from Municipal Corporation

Step 2: To update town maps (Capital city)

- Extension in urban limits
- Change in number of wards
- Extension in urban build up area

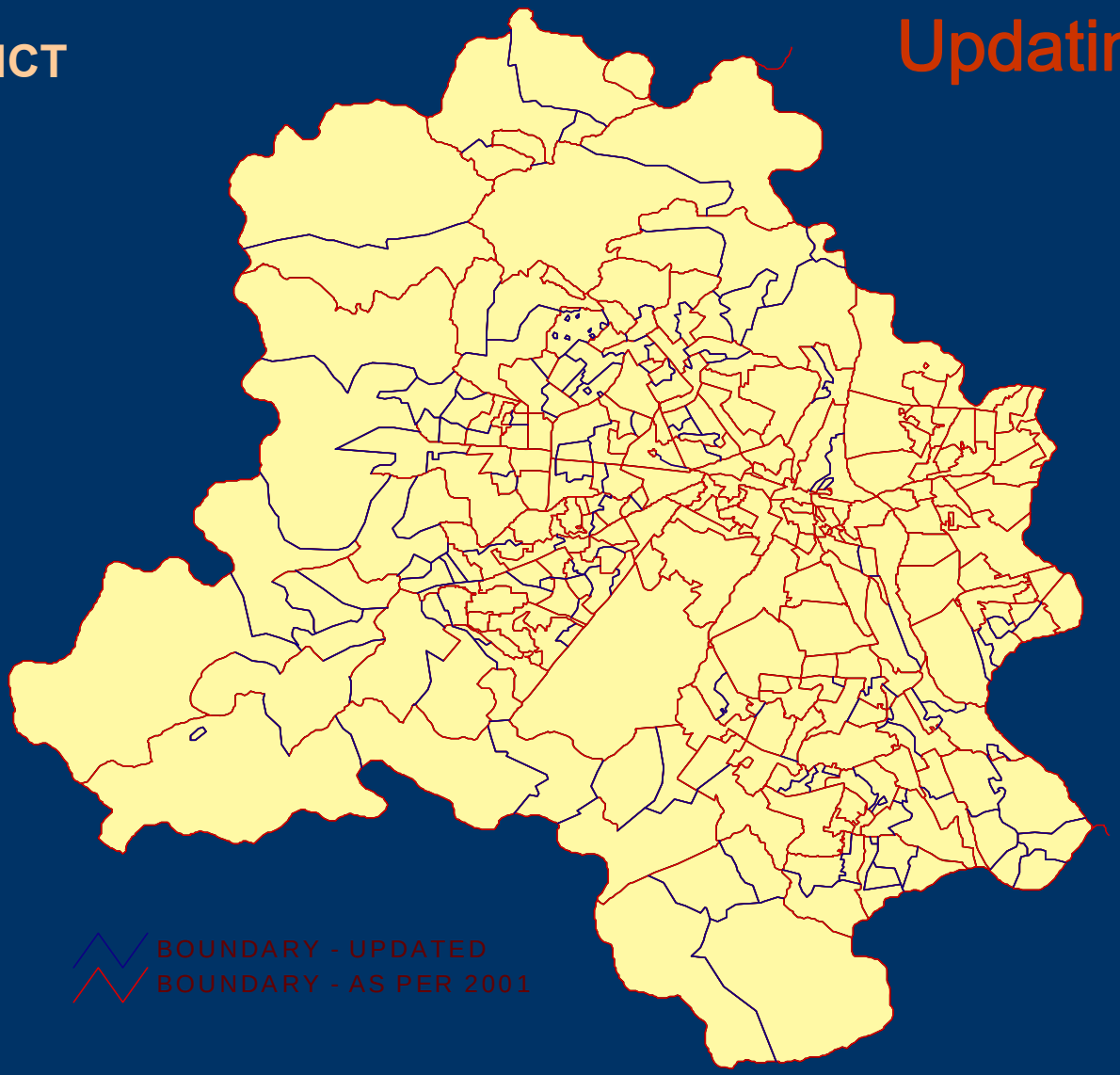
Step 3: Finalization of hard copy maps

- Final drawing
- Certification from the Municipal Corporations

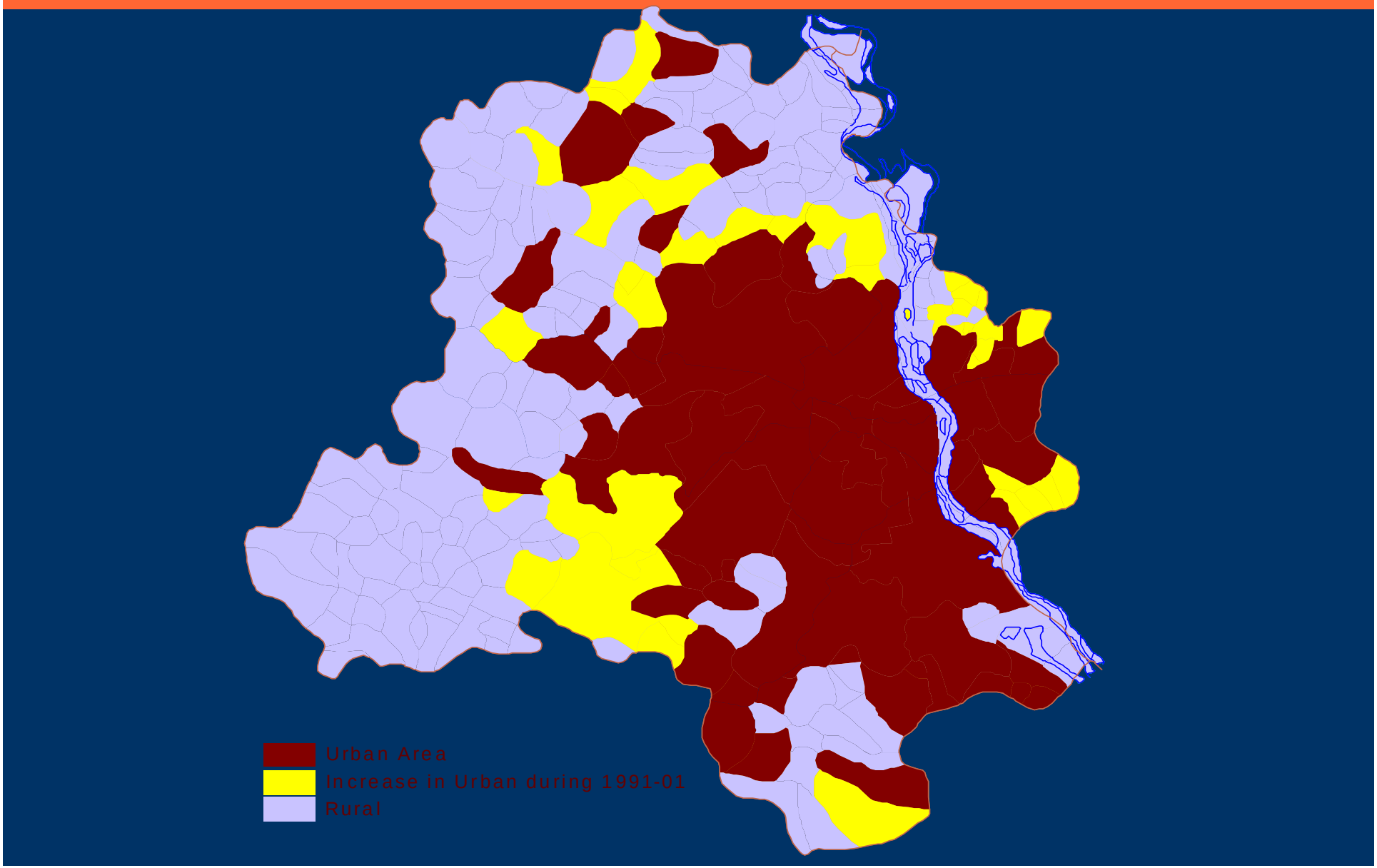
Step involved

DELHI NCT

Updating ….



Step involved



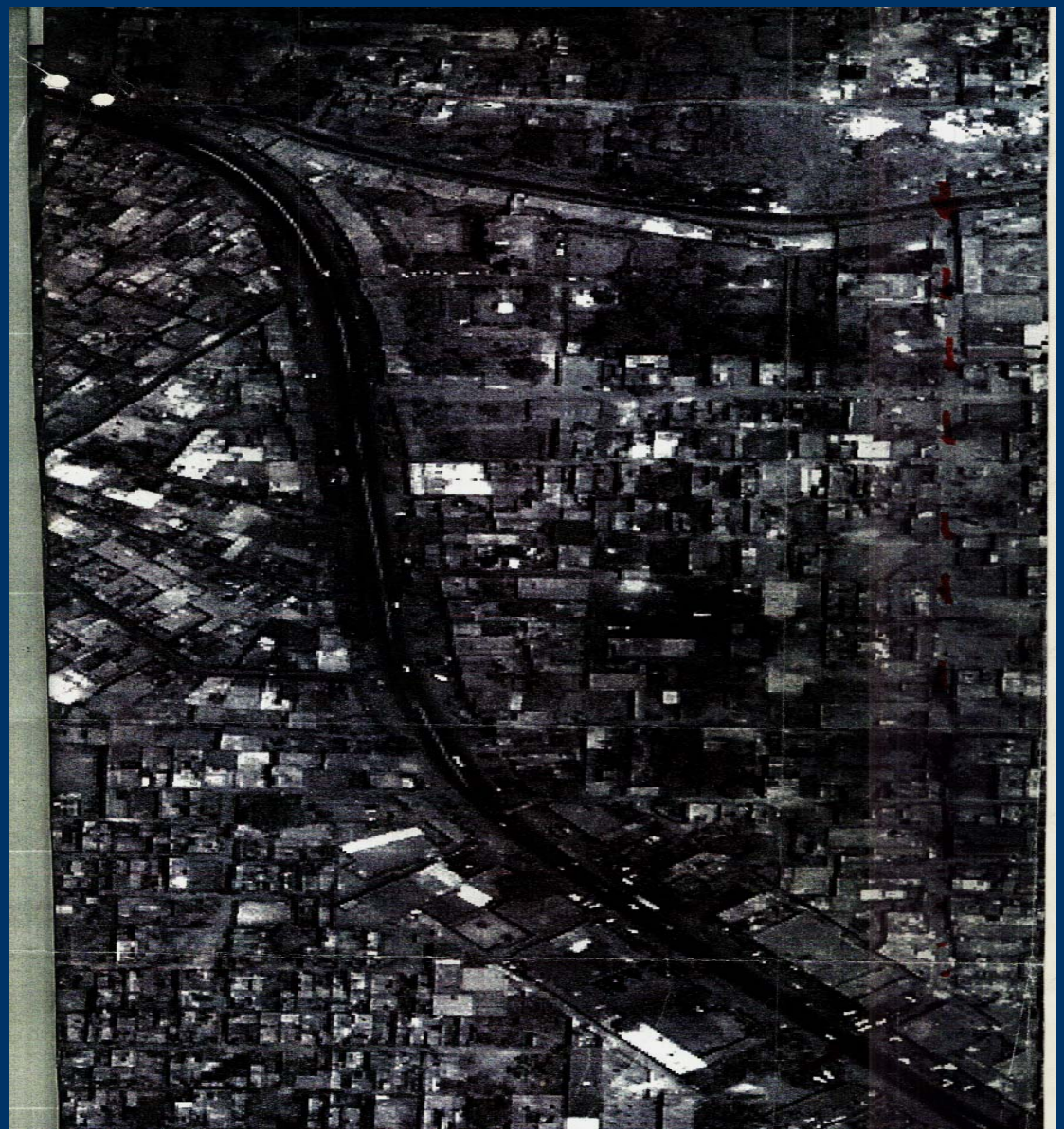
Step 4: Conversion into vector format

- Scanning
- Raster to vector
- Digitization

Step 5: Preparation of separate ward maps with the help of certified town maps

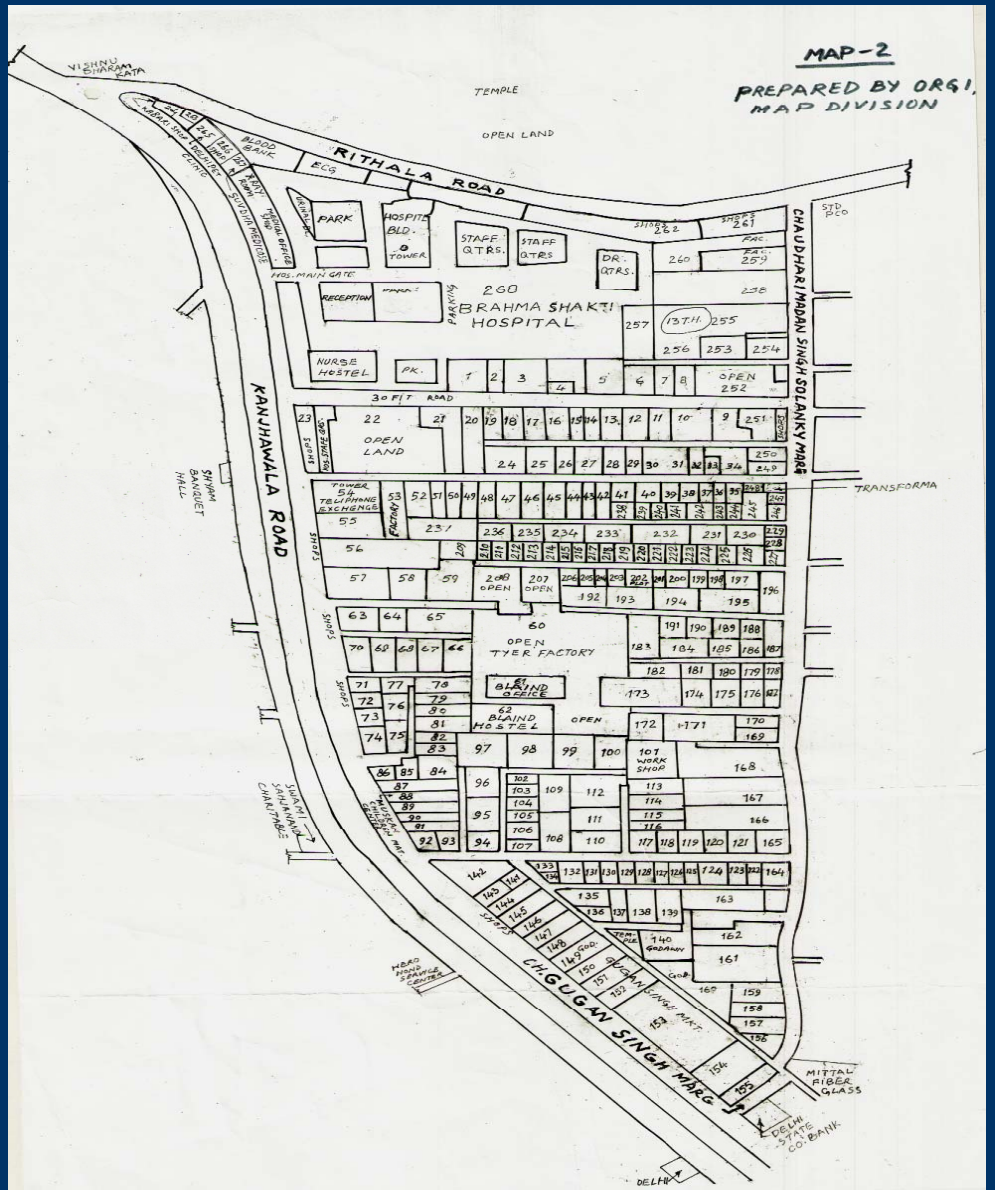
Step 6: SOI Shall provide geo-referenced satellite image based map of wards for field survey showing each building, house, lane, by-lane, etc.

Selection of area on Satellite Image



Selection of area on Satellite Image

Area map after actual field survey



Step involved

Step 7: Field verification and survey

- Surrounding ward numbers
- Marking roads, lanes, sub-lanes, layout of housing structures & house numbers
  - Using Corporation maps
  - Other sources (e.g., Town guide maps, Arial photographs, Satellite imageries, etc.)
- Physical landmarks and other important places
- House numbering and collection of information.

Step 8: Finalization of Ward-wise hard copy maps

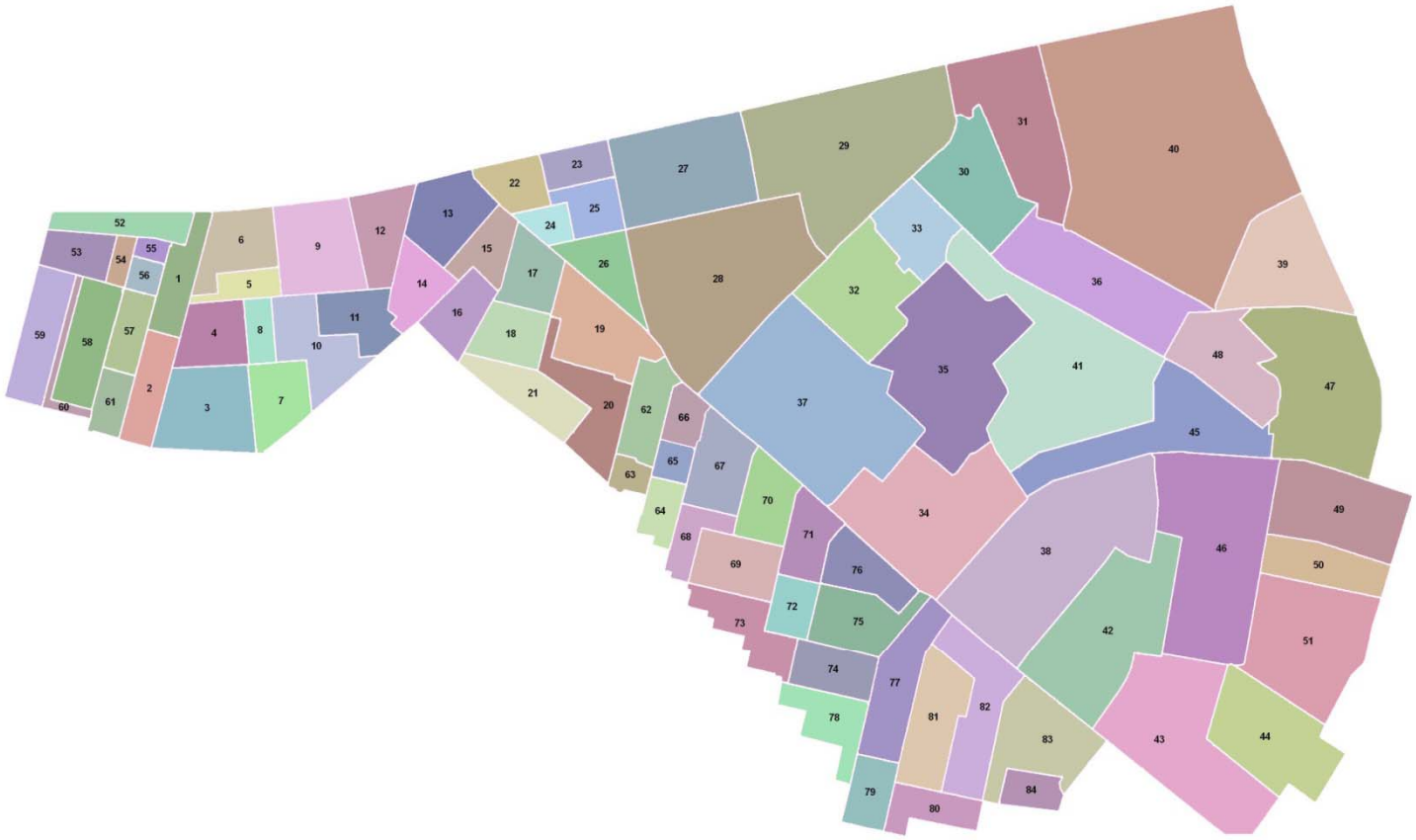
- Final drawing
- Preparation of data sheet

Step 9: ORGI will hand over to SOI for updating digital database

- Final drawing
- Attribute data

Step 10: SOI will link attribute data with digital database of wards

Updated Map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Step 11: Digitization & finalization of Ward maps by SOI

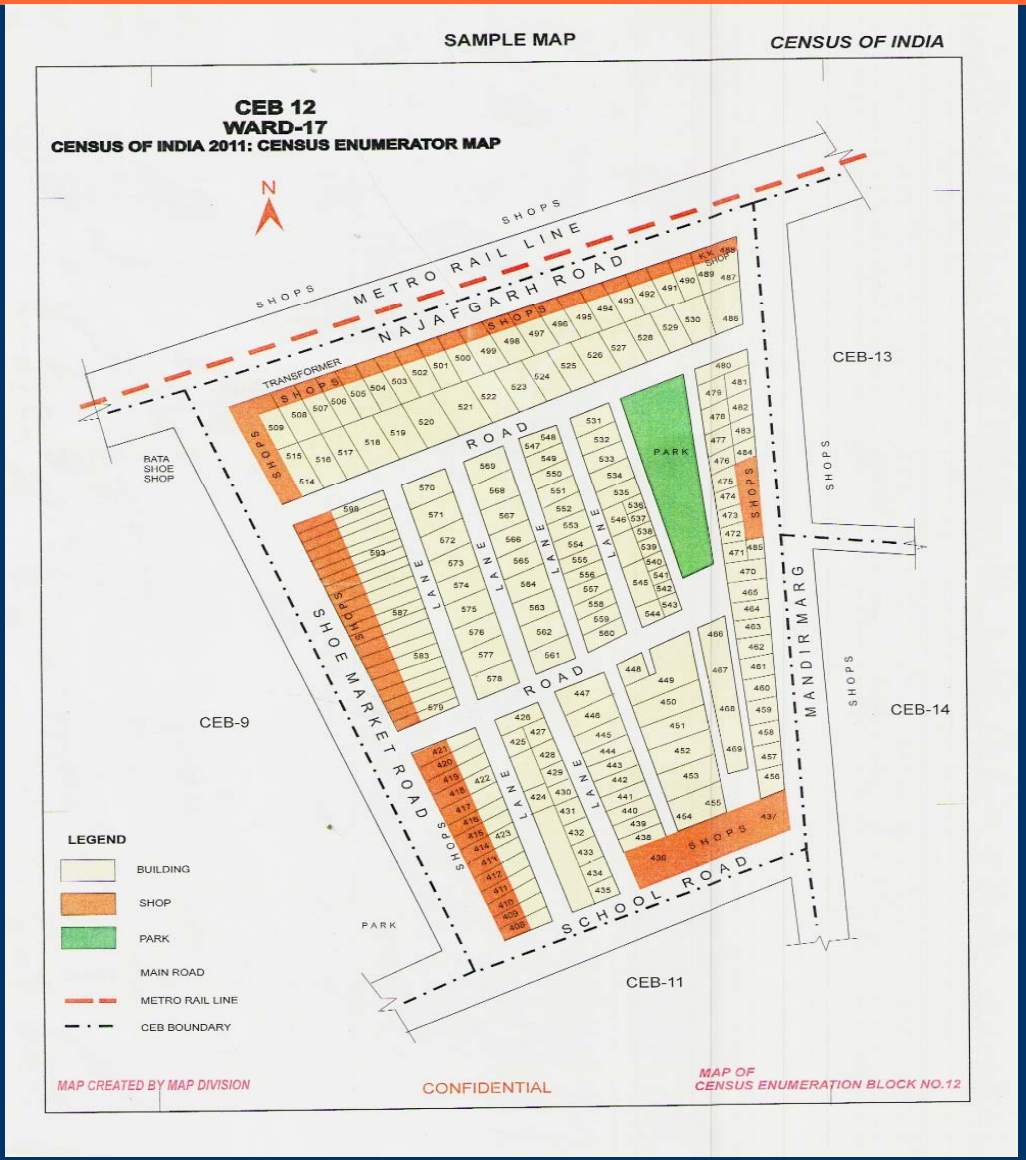
Step 12: Carving out EBs and Supervisory Circles in each ward

- Census Enumeration Blocks on the basis of population or approximate number of households or number of houses
- Supervisory Circles (6 - 8 CEBs) on the basis of permanent boundaries, if possible

Step 13: Printing of following maps for use in Houselisting Operations in 2010

- Ward map
- Census Enumeration Block Map

EB Map


SAMPLE MAP
CENSUS OF INDIA
CEB 12
WARD-17
CENSUS OF INDIA 2011: CENSUS ENUMERATOR MAP
N
METRO RAIL LINE
NAJAFGARH ROAD
SHOPS
TRANSFORMER
ROAD
LANE
PARK
BATA SHOE SHOP
SHOE MARKET ROAD
MANDIR MARG
SCHOOL ROAD
CEB-9
CEB-11
CEB-13
CEB-14
LEGEND
BUILDING
SHOP
PARK
MAIN ROAD
METRO RAIL LINE
CEB BOUNDARY
MAP CREATED BY MAP DIVISION
CONFIDENTIAL
MAP OF CENSUS ENUMERATION BLOCK NO.12

Step 13: Handing over to local authorities for use in Houselisting

- Ward map
- Supervisory circle or Locator Map
- Census Enumeration Block Map

Step 14: Updating as per houselisting information

- Ward map
- Census Enumeration Block Map

Volume of work involved

City	Ward maps available	Digital map of ward available	Total budget	Manpower
1. Srinagar (JK-01)	NO	NA	1500365	31
2. Shimla (HP-02)	NO	NA	334340	10
	NO	NA		
4. Chandigarh (CH-04)	NO	NA	1136520	36
5. Dehradun (UTT-05)	NO	NA	682375	17
8. DMC+NDMC (DEL-07)	NO	Yes	16028710	404

City	Ward maps available	Digital map of ward available	Total budget	Manpower
9. Jaipur (RJ-08)	NO	NA	3891920	88
10. Lucknow (UP-09)	NO	NA	3326050	74
11. Patna (BI-10)	NO	NA	1422535	47
12. Gangtok (SK-11)	NO	NA	200875	5
13. Itanagar (ARP-12)	NO	NA	146875	5
14. Kohima (NG-13)	NO	NA	116875	5
15. Imphal (MN-14)	NO		355635	9
16. Aizawl (MZ-15)	NO	NA	630315	9

City	Ward maps available	Digital map of ward available	Total budget	Manpower
17. Agartala (TR-16)	No	NA	291405	9
18. Shillong (ME-17)	No	NA	173705	7
19. Guwahati (AS-18)	NO	NA	1875745	41
20. Kolkata (WB-19)	NO	Yes	7755655	179
21. Ranchi (JH-20)	NO	NA	1407445	29
22. Bhubaneshwr (OR-21)	NO	NA	1165925	31
23. Raipur (CHH-22)	NO	NA	1024980	24
24. Bhopal (MP-23)	NO	NA	2647190	58

City	Ward maps available	Digital map of ward available	Total budget	Manpower
25. Ahmedabad (GJ-24)	NO	NA	5770240	152
26. Daman (DD-25)	Not known			
27. Sylvasa (DNH-26)	Not known			
28. Mumbai (MH-27)		Partly Av.	21971805	549
29. Hyderabad (AP-28)	NO	NA	6500345	133
30. Bangalore (KRN-29)	NO	NA	6662025	201
31. Panaji (GOA-30)	NO	Yes	126235	5

City	Ward maps available	Digital map of ward available	Total budget for manpower	Manpower
32. Kavarati (LA-31)	NO	NA	161875	5
33. T’puram (KE-32)	NO	Yes	1564810	44
34. Chennai (TN-33)	NO	Yes	5830875	147
35. Pondi’chrry (PO-34)	NO	NA	562315	11
36. Port Blair (A&N-35)	NO	Yes	176707	5

Strategy ….

- DCOs have been advised to
  - Contact all Municipal Corp and Municipalities, etc.
  - Collect latest town maps
  - Also to collect Ward maps showing full details
  - Discuss the methodology of field verification
  - Consent on deploying municipal officials
  - Joint verification by DCO & MC officials
  - Also ex-DCO and ex- NSSO officials to be engaged

Field Operation

Fund Requirement:

- Honorarium (Rs 2500) plus TA/DA as per Rules will be paid to the DCO officials and Municipality Officials
- Temporary Investigators : Rs 350 per day maximum 100 days
- 70 houses to be covered each day
- Drawing of the area showing houses to be submitted.

Fund requirements

S.N	Item of Expenditure	Outlay (Rs. in Crores
1	Cost of maps and digitization from SOI	2.12
2	Honorarium (DCO-335 persons and Municipality – 300) @Rs. 2500 PP	0.16
3	T.A./D.A	1.11
4.	Temporarily Investigators	6.10
5.	Stationery	0.03
6	Contingency	0.06
	Total	**9.58**