City as a Platform: Towards Connected City

CHALLENGES

- Slums and Squatter settlements

- Increased Urban Sprawl : Encroaching the precious agricultural lands

- Shortage of housing in urban areas due to increased in urban population non availability of financial resources and non implementation of planned housing schemes & other factors etc.

- Lack of infrastructure facilities such as accessibility of water supply, sewerage and sanitation services to every households and in sub-urban areas.

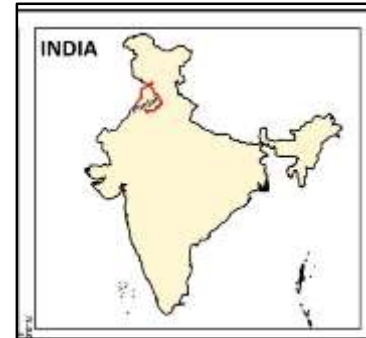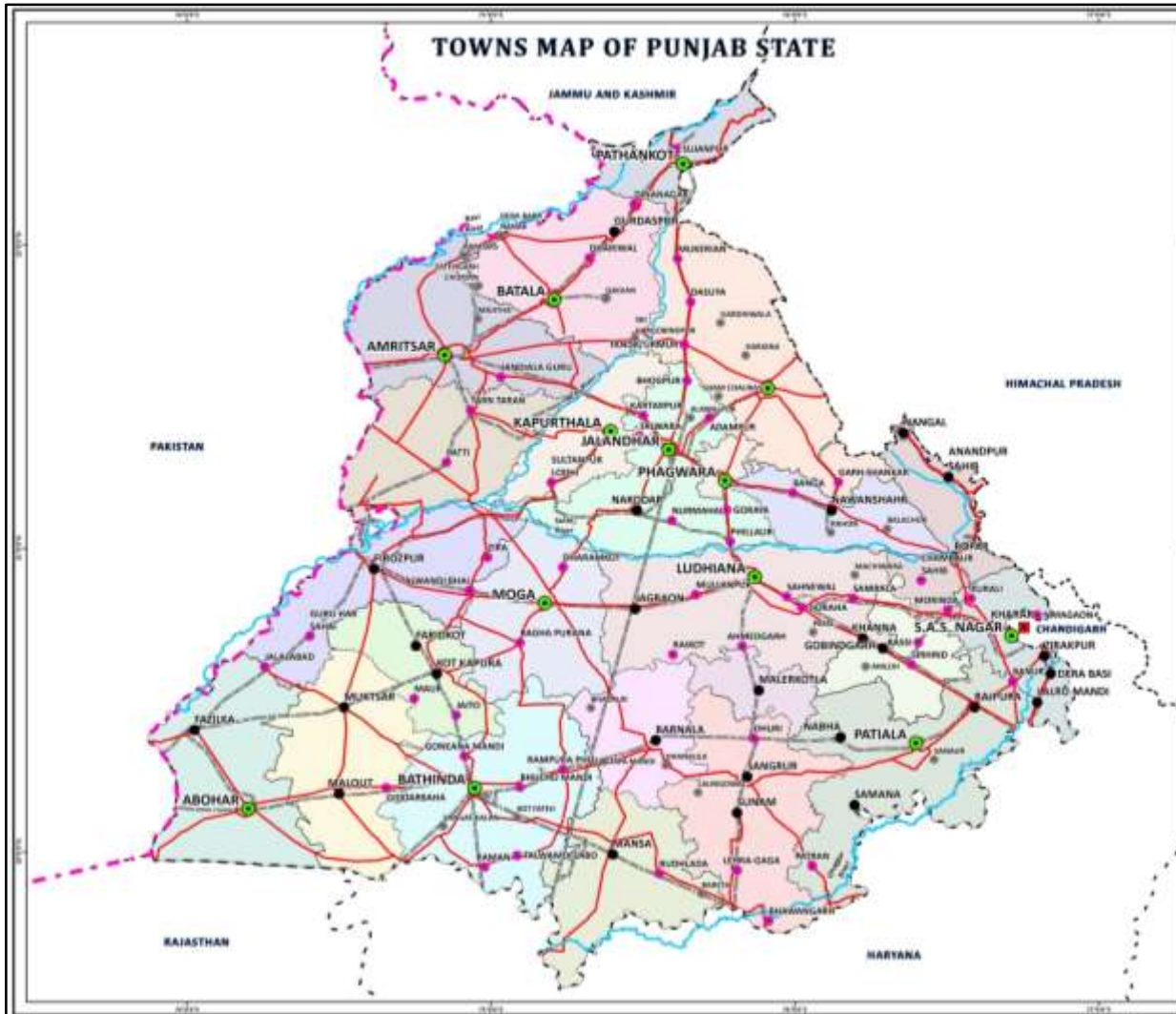- Problem of Urban Pollution in the cities.

- Solid waste disposal & its management at city level.

- Transportation: Increased traffic movements and congestion in core areas due to overcrowding of people at a particular place.

TOWNS OF PUNJAB

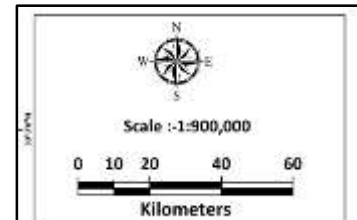TOWNS MAP OF PUNJAB STATE

INDIA
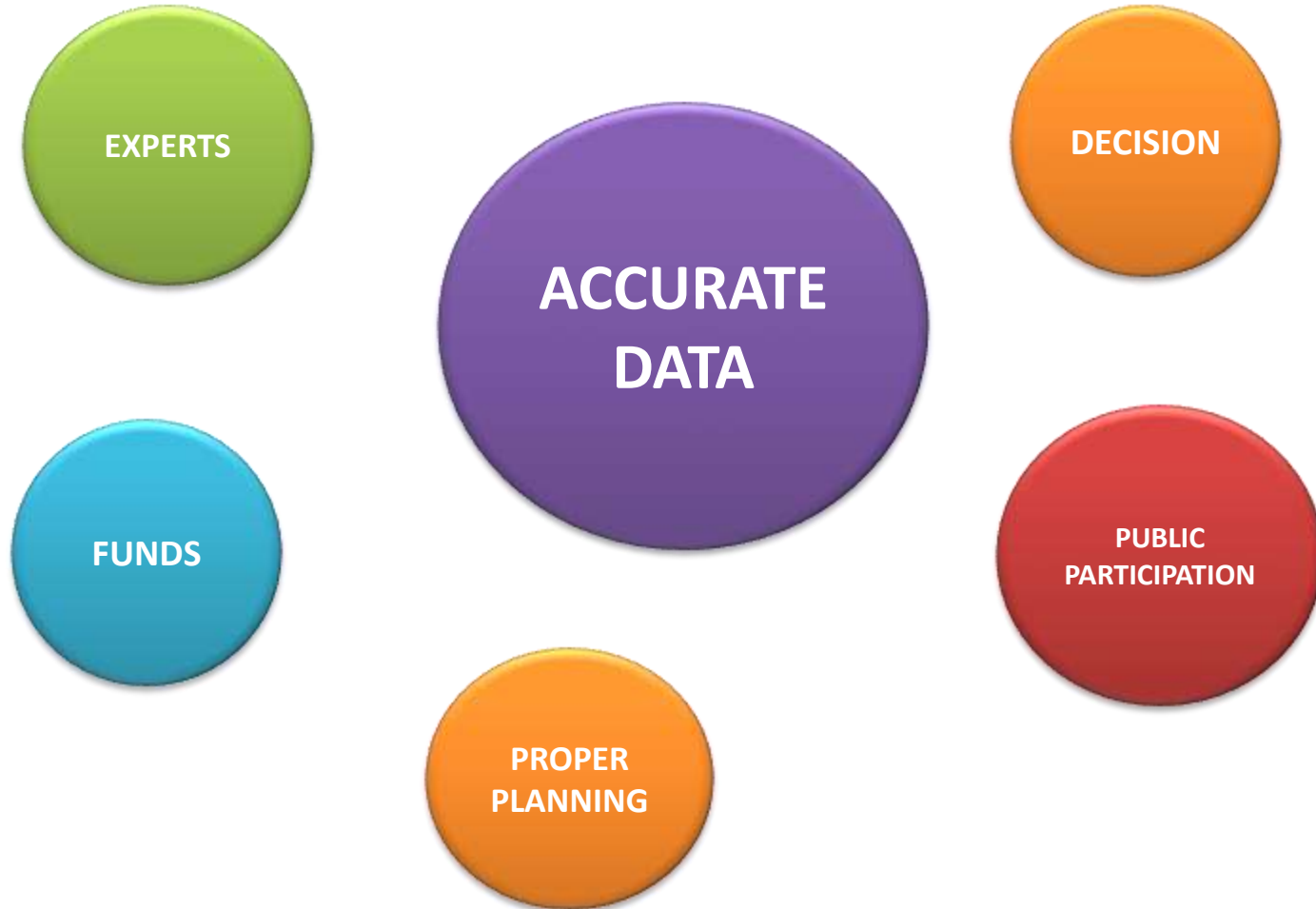
MCorporations:	13
Class I Towns:	28
Class II Towns:	47
Class III Towns:	21
Nagar Panchayats:	57

Scale :-1:900,000

0   10   20   40   60

Kilometers
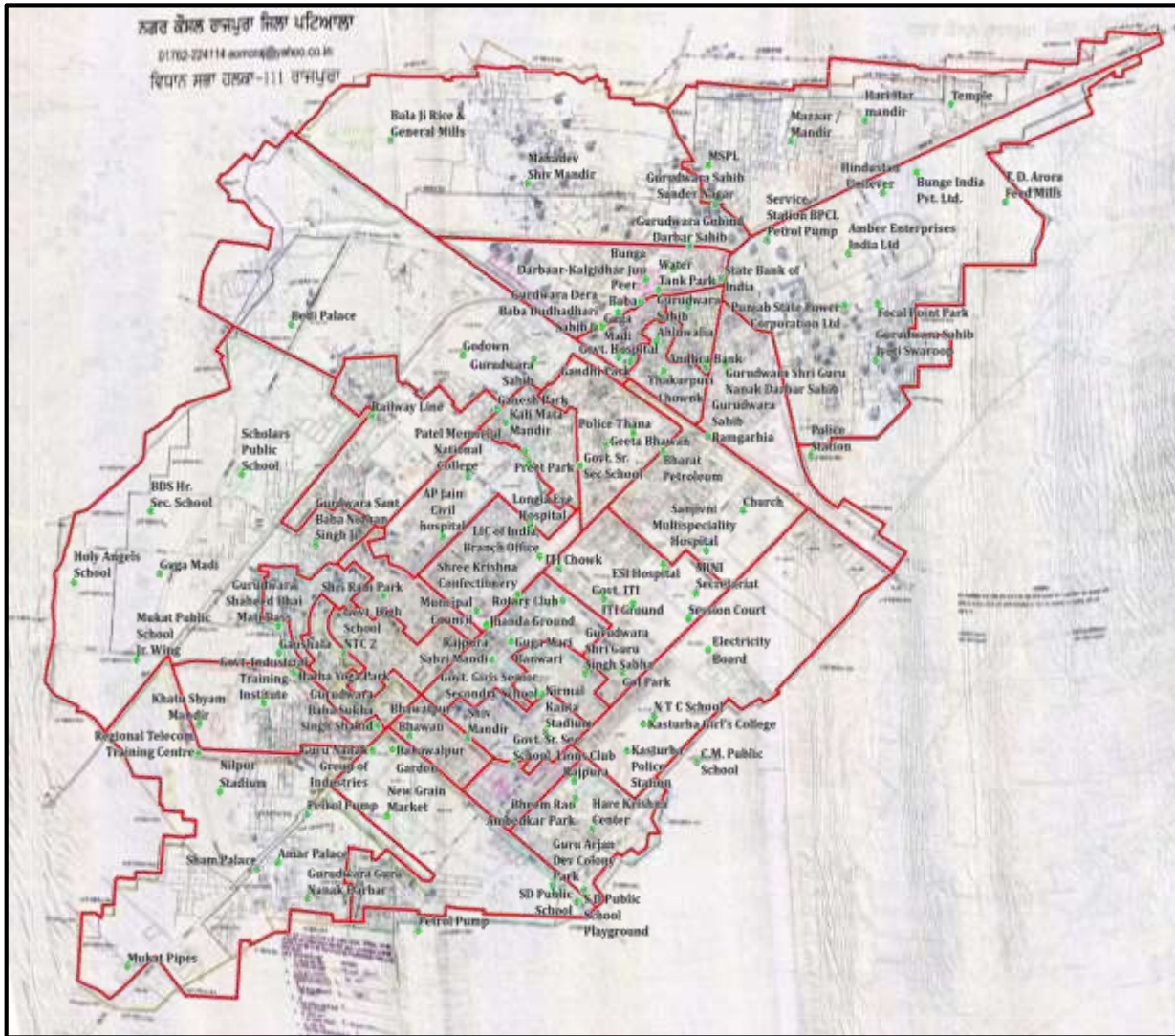
PMIDC

SOP REGARDING GIS BASED WARD/MC BOUNDARY

Phase I

- Scan Ward Boundary Map
- Superimpose Scan map on imagery by using geo-referencing technique
- Delineate the ward/MC boundary on satellite imagery with the help of scanned ward boundary map.
- Attributes filling in ward/MC boundary polygons
- Landmark Demarcation
- Draft Ward/MC Boundary Map
- Cross checking of Ward/MC boundaries in collaboration with Election Branch along with the updated notification
- Verification of draft ward/MC boundary map through updated notification and mobile application (assigning coordinates by the concerned ULBs).

Phase II

- Constitution of Committee.
- Training to Staff/Officials regarding use of Mobile Application
- Execution of Task in Field
- PMIDC would be updating the shape files/KML through **coordinates provided by the ULBs** and forward to concerned ULBs for the verification of Ward boundaries & MC limit
- The GIS Based Ward boundaries maps would be **verified & approved by EOs countersigned by concerned ADCs in case of Municipal Council/Nagar Panchayat and by Commissioners in case of Municipal Corporations**.
- ULBs will only share the data with the approval of ADCs/ Commissioners to any other department.

- Superimpose Scan Map On Satellite Imagery By Using Geo-referencing Technique

- Delineate The Ward/MC Boundary On Satellite Imagery With The Help Of Scanned Ward Boundary Map

Attributes Filling In Ward Boundary Polygons

FID	Ward_No	Town	District	State
0	01	Rajpura	Patiala	Punjab
25	02	Rajpura	Patiala	Punjab
26	03	Rajpura	Patiala	Punjab
6	04	Rajpura	Patiala	Punjab
4	05	Rajpura	Patiala	Punjab
7	06	Rajpura	Patiala	Punjab
27	07	Rajpura	Patiala	Punjab
11	08	Rajpura	Patiala	Punjab
30	09	Rajpura	Patiala	Punjab
10	10	Rajpura	Patiala	Punjab
29	11	Rajpura	Patiala	Punjab
9	12	Rajpura	Patiala	Punjab
28	13	Rajpura	Patiala	Punjab
8	14	Rajpura	Patiala	Punjab
23	15	Rajpura	Patiala	Punjab
24	16	Rajpura	Patiala	Punjab
22	17	Rajpura	Patiala	Punjab
21	18	Rajpura	Patiala	Punjab
19	19	Rajpura	Patiala	Punjab
20	20	Rajpura	Patiala	Punjab

DRAFT BASE MAP PREPARED AT STATE LEVEL
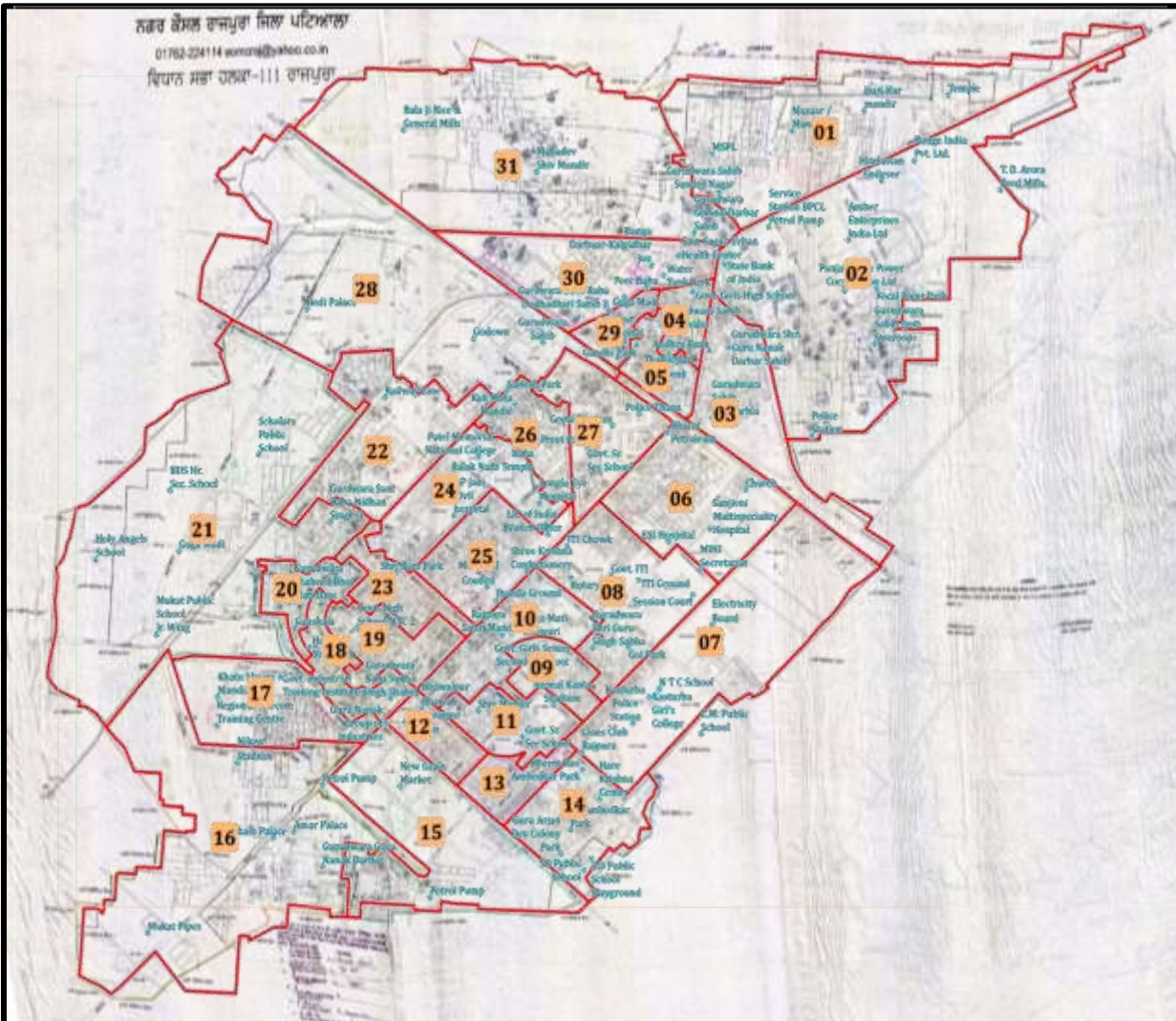
- Satellite Image
- Scanned Ward Boundary Map/Latha
- Ward Boundaries/Ward Numbers
- Landmark Demarcation
- Draft Ward/MC Boundary Map

WARD-01 MAP

ਵਾਰਡ ਨੰਬਰ :1 (ਇਸਤਰੀ ਮੈਂਬਰਾ ਲਈ ਰਾਖਵਾਂ)

ਢਕਾਂਸੂ ਮਾਜਰਾ ਰੋਡ ਅਤੇ ਨਗਰ ਕੌਂਸਲ ਦੀ ਉੱਤਰੀ ਹੱਦ ਦੇ ਮਿਲਣ ਦੇ ਸਥਾਨ ਤੋਂ ਆਰੰਭ ਕਰਕੇ ਉੱਤਰੀ ਹੱਦ ਨਾਲ ਚਲਦੇ ਹੋਏ (ਸ਼ਾਹੀ ਫਰਨੀਚਰ) ਚੰਡੀਗੜ੍ਹ ਰੋਡ ਤੱਕ; ਫਿਰ ਉਕਤ ਰੋਡ ਨਾਲ ਚਲਦੇ ਹੋਏ ਸੁੰਦਰ ਨਗਰ ਰੋਡ ਤੱਕ;ਫਿਰ ਉਕਤ ਰੋਡ ਨਾਲ ਚਲਦੇ ਹੋਏ ਗਲੀ ਏ.ਐਸ.ਆਈ. ਗੁੰਜਨ ਸਿੰਘ ਸਰਵਾਰਾ ਤੱਕ; ਫਿਰ ਉਕਤ ਗਲੀ ਨਾਲ ਚਲਦੇ ਹੋਏ ਗਲੀ ਕਸ਼ਮੀਰ ਸਿੰਘ ਤੱਕ; ਫਿਰ ਉਕਤ ਰੋਡ ਨਾਲ ਚਲਦੇ ਹੋਏ ਮੇਂਟਰ ਅਜੀਤ ਸਿੰਘ ਤੱਕ; ਫਿਰ ਉਕਤ ਰੋਡ ਨਾਲ ਚਲਦੇ ਹੋਏ ਮਾਸਟਰ ਗੁਰਨਾਮ ਸਿੰਘ ਤੱਕ; ਫਿਰ ਉਕਤ ਰੋਡ ਨਾਲ ਚਲਦੇ ਹੋਏ ਢਕਾਂਸੂ ਮਾਂਡਰਾ ਰੋਡ ਤੱਕ;ਫਿਰ ਉਕਤ ਰੋਡ ਨਾਲ ਚਲਦੇ ਹੋਏ ਨਗਰ ਕੌਂਸਲ ਦੀ ਉੱਤਰੀ ਹੱਦ ਤੱਕ;ਅਰਥਾਤ ਜਿੱਥੋਂ ਆਰੰਭ ਕੀਤਾ ਸੀ।

Legend

⊙ Notification Point

⬚ Adjoining Ward

▭ Ward Boundary

N

ULB LEVEL

- Constitution of Committee.
- Training to Staff/Officials regarding use of Mobile Application
- Execution of Task in Field
- PMIDC would be updating the shape files through **coordinates provided by the ULBs** and forward to concerned ULBs for the verification of Ward boundaries & MC limit
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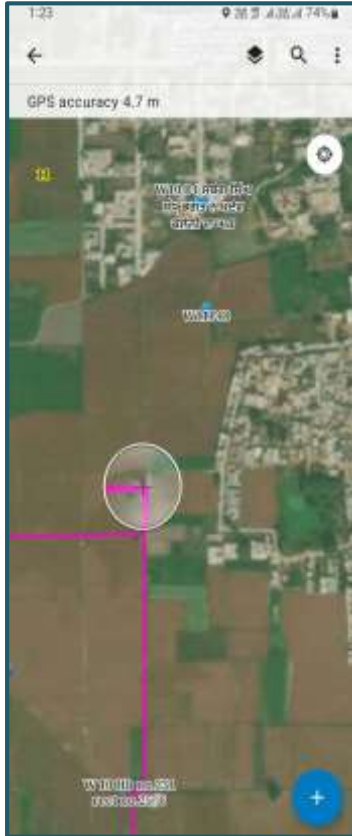# MOBILE APP
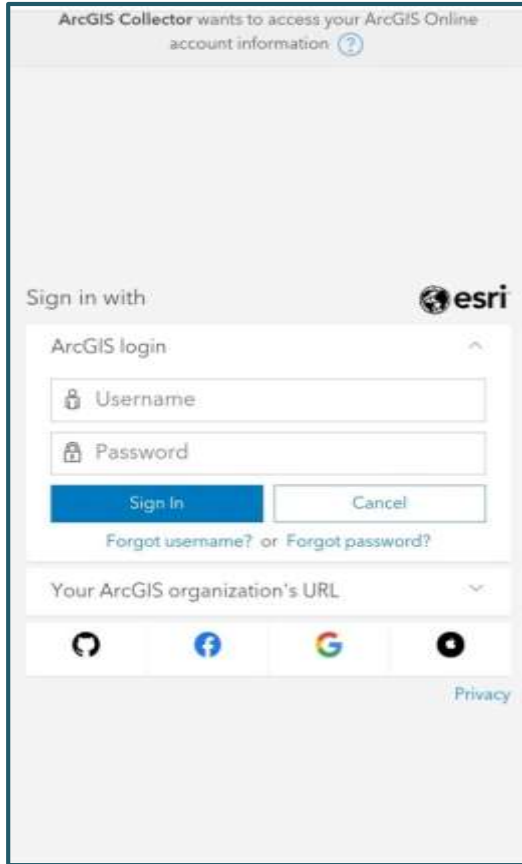
STEP 1

Sign in APP
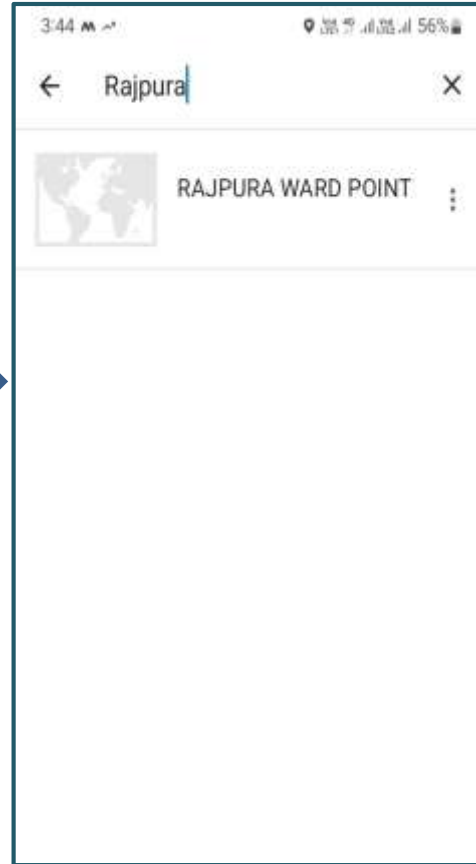
STEP 2

Click on Search for Town and then click on the selected Town.

STEP 3
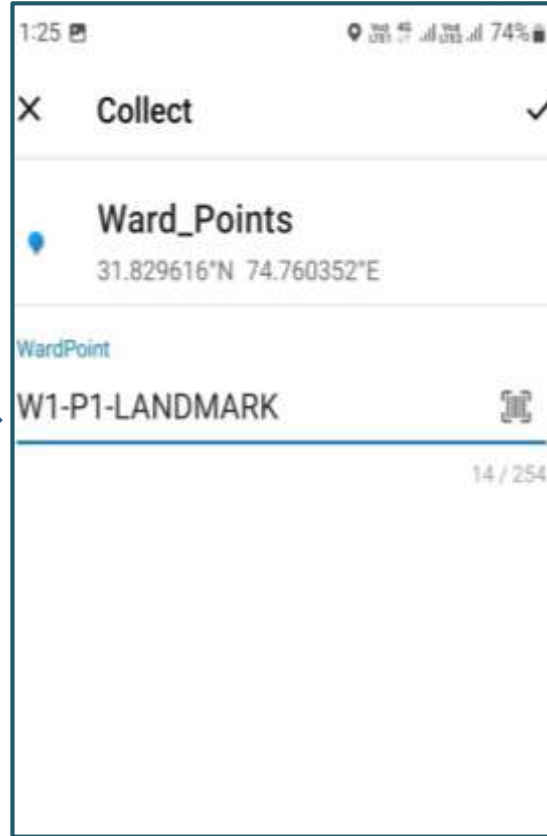
Click on the ward boundary.

MOBILE APP

Click on Point (+) and drop the pin on the location to collect the point.
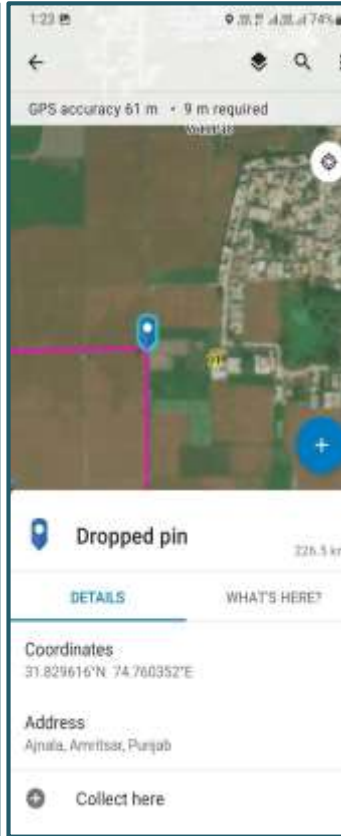
Adding Ward Point details in specified format i.e. W1-P1-LANDMARK and save the same.
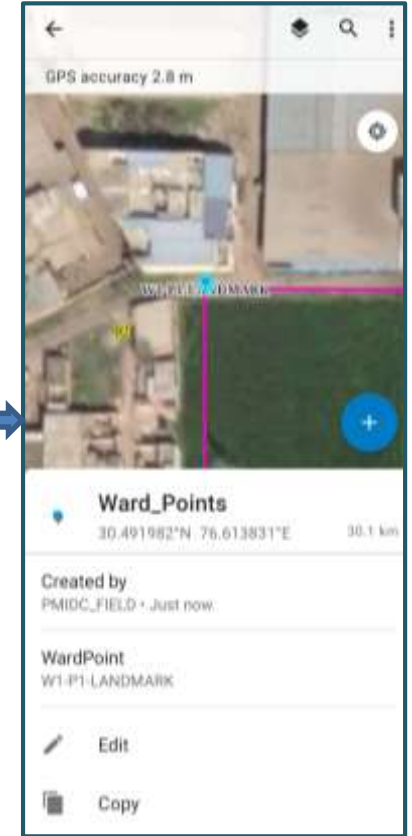
Click on Edit for any editing/correction/deletion of point if required.

Identification Of Gaps
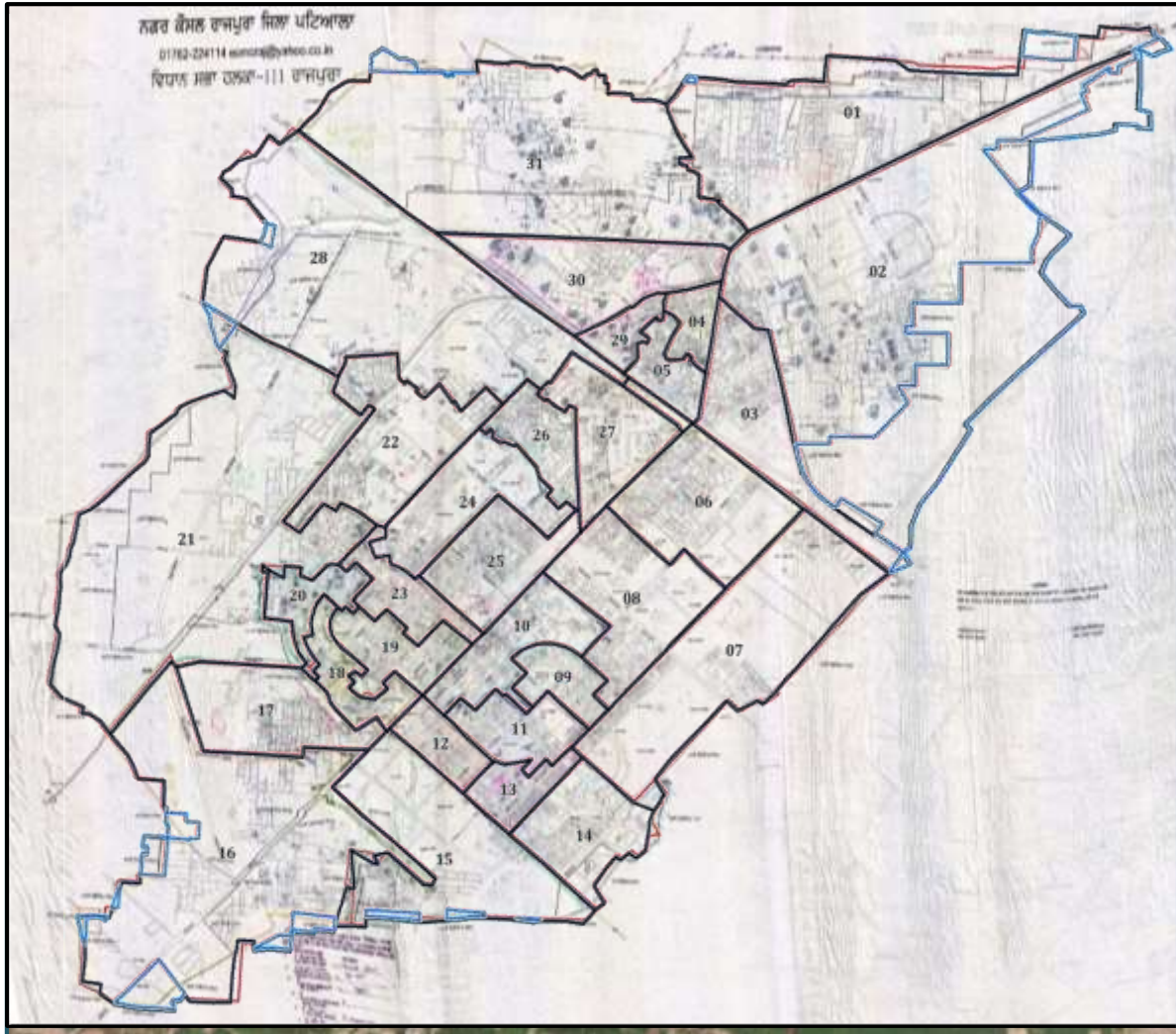
- Satellite Image
- Scanned Ward Boundary Map/Latha
- Digitized Boundary
- Boundary after Verification
- Boundary Gaps Justification

Details	Area (Sq.Km)
Area as per Census 2011	25.00
Area as per Scanned Latha	19.84
Area as per Approval	21.28
Area of Boundaries Gaps	1.512

Legend

🟥	GIS Ward Boundary as per Scanned Latha
⬛	Approved Ward Boundary
🟦	Boundary Gaps

GIS Property Mapping Along with GIS Database
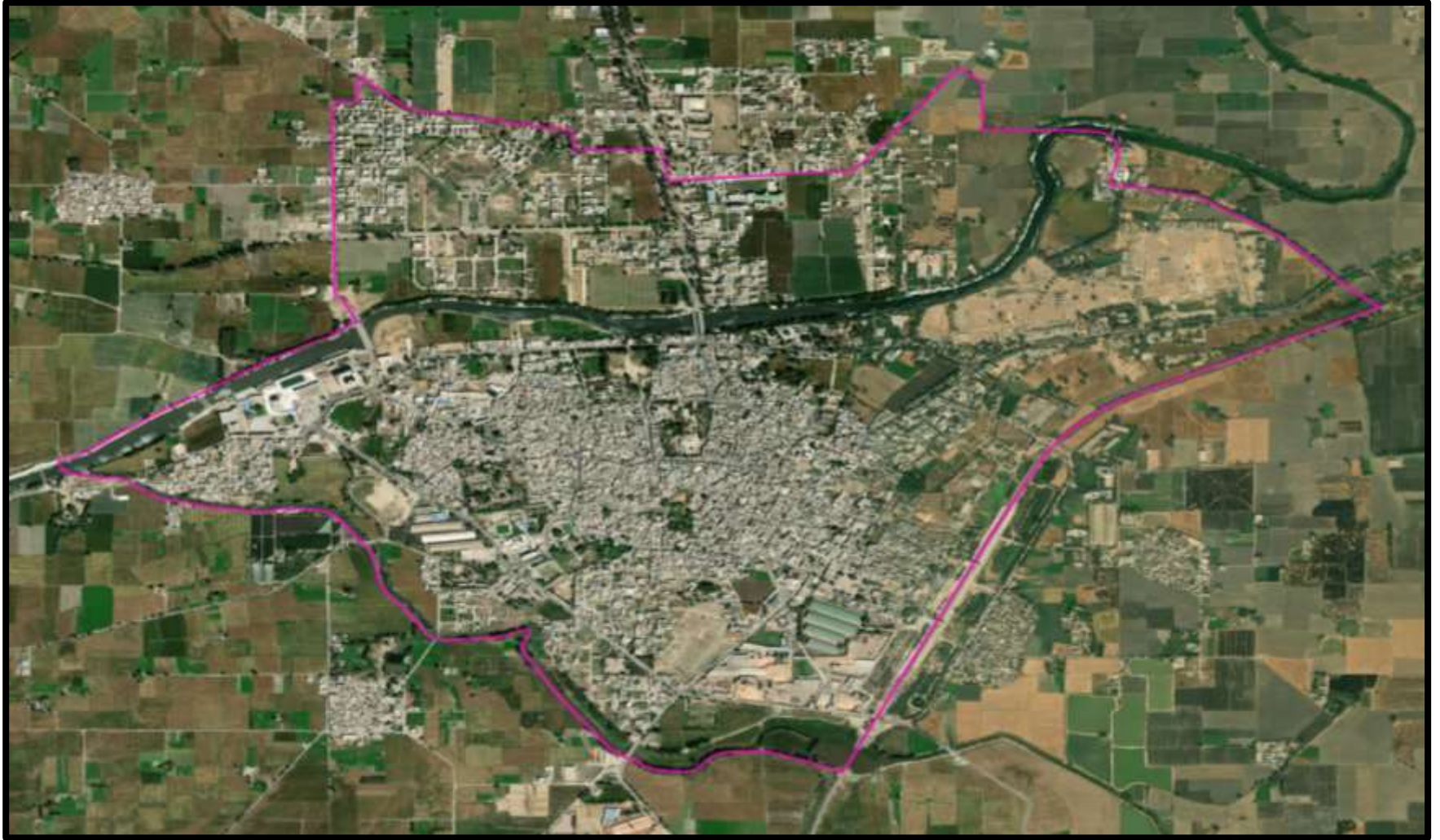
The GIS base map procured shall be in Standard GIS raster format
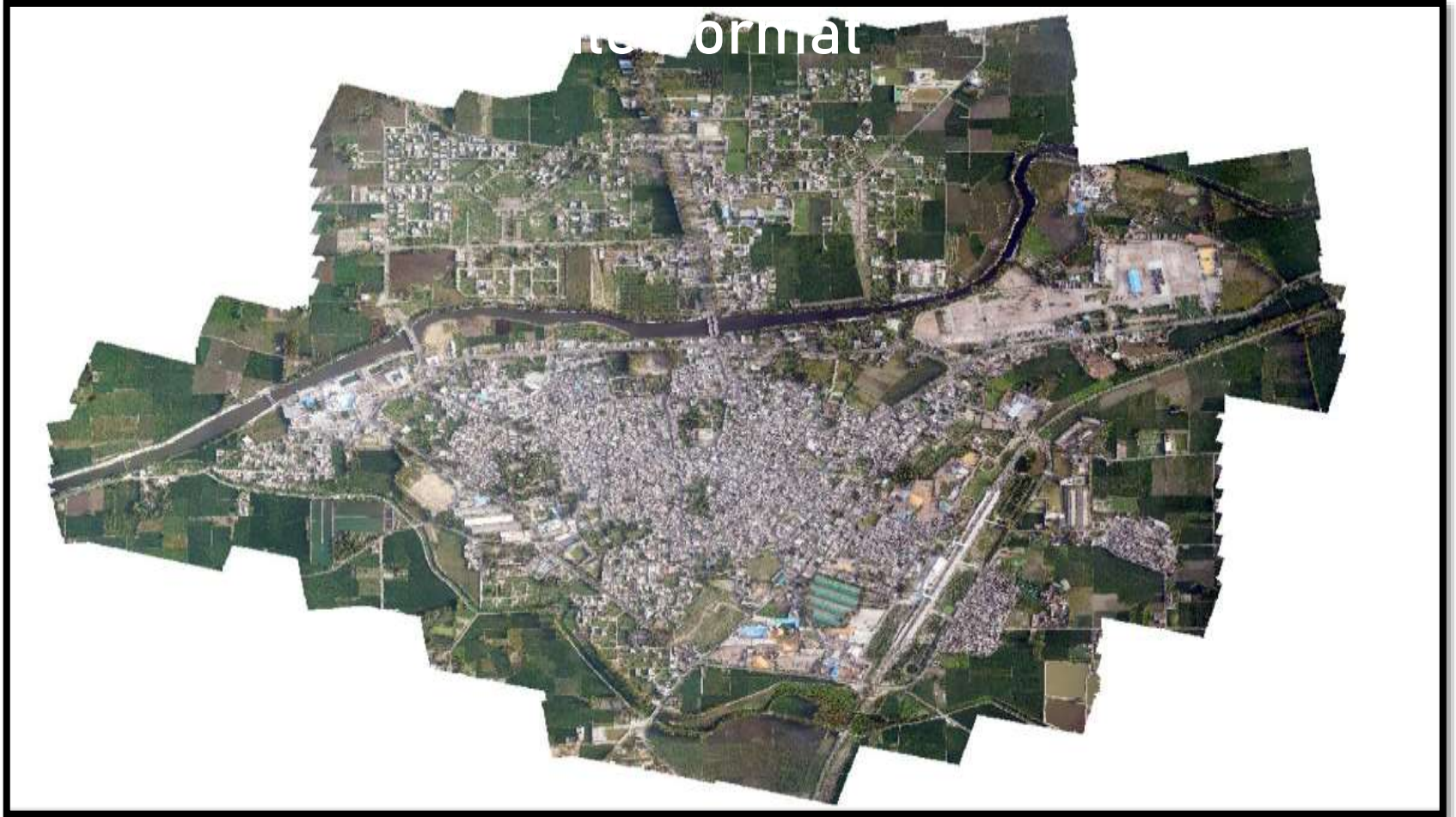
This will ensure good quality data for faster implementation of work.
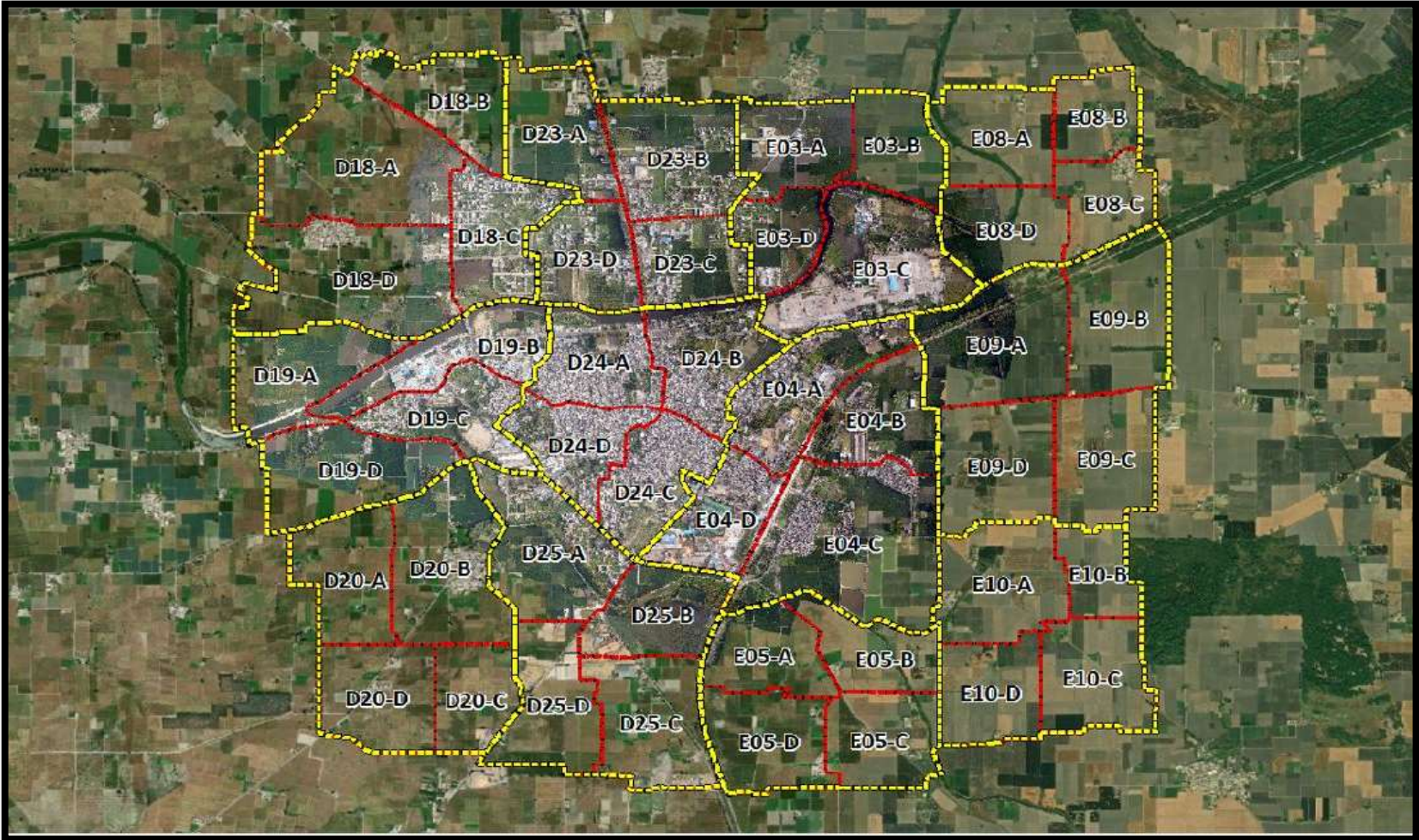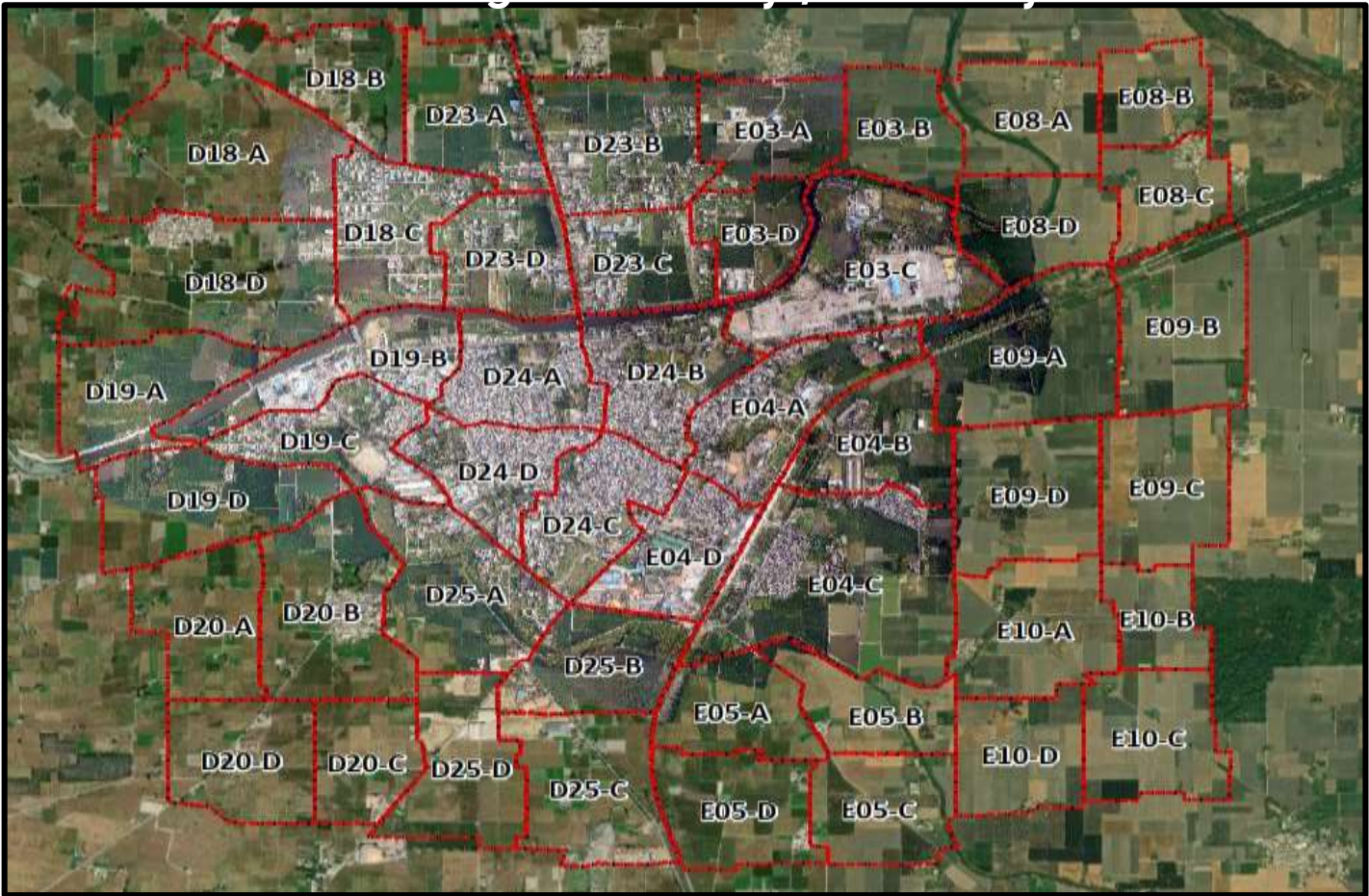
Create Centroid Point Feature of The Property on The Polygon and Link The Associate Attribute Data With it.

- Create property survey based app & will upload Drone map with auto generated Property Id & road ID. If during the survey any additional property/ partitioned property is found the UID will be split & a Sub UID will be assigned.

Detailed Survey Of Each Property/Holding Through DGPS Survey And Its Database Generation As Per Approved Format

Sr. No	Map ID:			Date of Survey:		DDMMYY	
1	UID						
2	Owner Name:			Father/Husband name			
3	Mobile No. of Property Owner			E- mail ID:			
4	Property Address	House No/Flat No:		Apartment/Building Name	Locality		
5		Road Name (if any)			Pin Code:		
6	Property Usage (√ mark in the box) :	Residential	Commercial		Mix		Other (Please Specify)
7	Occupancy Status (√ mark in the box) :	Self-Occupied	Tenant		Other		Remarks
8	Type of Construction	Pucca	Semi Pucca		Kacha		
9	Year of Construction:			Age of the Buildings (01 - > 30 Years; 02 - 15 –30 Years; 03 - 15 - 5Years; 04 - < 5 Years)			
10	Total No. of Floors						
11	Total Plot area(Sq.ft)						
12	Built- up area (In Sq. Feet) – Only in case of individual buildings						
13	Photograph						
14	Water Connection No		Sewerage Connection No				
15	Property Tax Id :						
B	Commercial/Industrial/Institutional						

Firm/Shop/Industry/Institution Name	Linense Status- Yes/No & License number if available	Firm/Shop/ Industry/Owner Name & address	Shop area	Business/Industry type	

C	Multi						

Apartment/ Building Name	Total No. of property	Total built up area	Total no of floor	Total open space area	Total No of residential & Non-residential holdings	Source of water for the building	

GIS Based Property Map

With these maps we are able to find out total number of properties/use (Residential/Commercial/Industrial/Public/Semi-Public/Mixed/Open Area etc.) , Area and other detailed information.

PHASE-I

Property Layer **-** Raster, Vector data with Property images/ Satellite/Drone Images, Field Survey data, Ownership and other records.

- Area (Tax Zone Layer)

Tax Calculation of all property according to area as per rules & Policies.

Integrate the Property Tax Data Base with M-Sewa integrated Property Tax Module.

Tax Unpaid Data- Spatial report on property tax defaulters.

Self-Assessment Variation Data-Spatial report on variation of Tax paid.

Tax Paid Mismatch

Change Detection   -   Vacant to Built-up

Built-up to Vacant

Application for Field Updation and Web Dashboard for officials and public.

CHIEF MINISTERS'
SLUM DEVELOPMENT PROGRAM

'BASERA'

**GOVERNMENT OF PUNJAB,
INDIA**

PMIDC

"**Poverty** *is the worst form of (social) violence*"

- Mahatma Gandhi

"*Without property rights, no other rights are possible.*"

- Ayn Rand

Inadequate housing & lack of access to basic civic amenities like clean water, toilets and deficient access to localised healthcare leads to unhygienic living conditions

Climate change fueling flooding and water scarcity

Source: Indian express

Source: The tribune

COVID–19: Are Slums In India Conducive For The Outbreak?

Overcrowding in slums makes social distancing and self-quarantine quixotic, and place the slum dwellers at an increased risk of contracting an infection.

Covid-19: Delta variant is sprinting to become dominant in Punjab

COVID 19 heightened the vulnerabilities of the urban poor

14 % urban dwellers reside in slums in Punjab

INNOVATIONS

No. of Slums: 220	No. of HHs surveyed: 33,838	No. of households Processed: 15,000	No. of Proprietary Rights granted: 9700

INNOVATION 1:

The **Punjab Slum Dwellers (Proprietary Rights) Act, 2020** aimed to provide for sustainable growth of basic civic services in slum areas in urban towns and cities by conferring *proprietary rights of land to the slum dwellers* and ensuring their development through optimal utilisation of resources.

INNOVATION 2:

Use of GIS Based Multi-layered database by superimposing Drone imaginary surveys on Revenue/Cadastral Maps using Sate of Art Technology like Arch GIS Dashboard for implementation of the Scheme.

INNOVATIONS

Coverage

The scheme applies to all slums including but not limited to notified or non-notified or recognized or authorised slums or the slums identified in accordance with the provisions of 'The Punjab Slum Dwellers (Proprietary Rights) Act, 2020' situated on Land owned by the **State**

Eligibility

Every slum HH, occupying land in a slum in any urban area on the date of notification of PSD Act, 2020, i.e. 1st April 2020, are eligible under the scheme.

Extent of Proprietary Rights

Eligible Slum dweller shall be entitled to the following extent of the land, if the slum is situated in:

Municipal Corporation Area:
not exceeding thirty square meter.

Municipal Council Area:
not exceeding forty-five square meter.

Notified Area Committee Area:
not exceeding sixty-square meter.

If slum dweller belongs to EWS category (annual income not more than rupees three lakhs), the proprietary rights of land shall be settled free of cost

Legal Framework

Punjab Slum Dwellers (Proprietary Rights) Act, 2020

Operational Framework

PSD Rules, 2020

Chief Ministers' Slum Development Scheme-*BASERA*

Implementation Framework

- Constitution of the Empowered & Steering Committee
- Notifying the Nodal Agency
- Constitution of SARRC
- Roles and responsibilities of SARRC
- Demarcation of slum boundary
- Survey through mobile application
- Drone survey
- Frequently asked questions…. among others

Comprehensive legal, operational and implementation

Education
land
Drinking water
Pucca road
Property
Financial inclusion
resilience
Liveable habitat
Inclusivity
Sustainability
Health
Proof of residence
TENURE SECURITY
Improved Housing
Slum Upgradation
sanitation
Street light
Social infrastructure
Water supply
City planning
In house Toilet

PUNJAB GOVT. GAZ. (EXTRA), APRIL 1, 2020   51
(CHTR 12, 1942 SAKA)

PART I
GOVERNMENT OF PUNJAB
DEPARTMENT OF LEGAL AND LEGISLATIVE AFFAIRS, PUNJAB

NOTIFICATION

The 1st April, 2020

No. 7-Leg./2020.–The following Act of the Legislature of the State of Punjab received the assent of the Governor of Punjab on the 20th day of March, 2020, is hereby published for general information :–

THE PUNJAB SLUM DWELLERS (PROPRIETARY RIGHTS) ACT, 2020

(Punjab Act No. 7 of 2020)

AN

ACT

to provide for sustainable growth of basic civic services in slum areas in urban towns and cities of the State of Punjab by conferring proprietary rights of land to the slum dwellers and ensuring their development through optimal utilization of resources.

BE it enacted by the Legislature of the State of Punjab in the Seventy-first Year of the Republic of India as follows:–

(1)   This Act may be called the Punjab Slum Dwellers (Proprietary Rights) Act, 2020.   Short title, extent and Commencement.

(2)   This Act shall be applicable to the whole of the State of Punjab.

(3)   This Act shall come into force on and with effect from the date of its publication in the Official Gazette.

2.   (1)   In this Act, unless the context otherwise requires,-   Definitions.

(a)   "Authorized Officer" means the head of the Slum Redevelopment and Rehabilitation Committee or any officer authorized by the Government, by order, to exercise such powers as may be prescribed;

(b)   "basic civic services" means the services of drinking water supply, sanitation, drainage, sewerage, solid waste disposal, street lighting and urban environment improvement;

CHIEF MINISTER'S SLUM DEVELOPMENT PROGRAMME

BASERA

2020
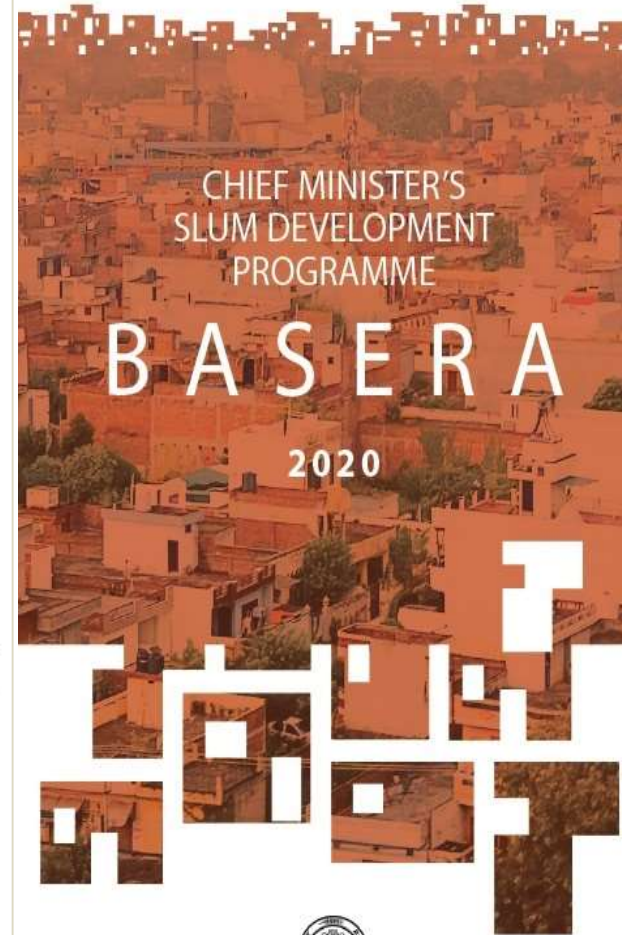
GOVERNMENT OF PUNJAB

Comprehensive legal, operational and implementation framework

Accessible multi-layered databases to ensure Transparency

1 Interdependent complimentary frameworks

2 Consultatively & Simultaneously designed

3 Granting Proprietary rights across all forms of tenures

4 Use of in house state-of-the- art technologies Drone Imagery & Surveys, Arc GIS Dashboard of ESRI

5 Overlaying of revenue records on geospatial data

6 Creation of multi-layered database

Legal Framework

Operational Framework

Implementation Framework

Partnership that builds Accountability

Community-centric approach

Forging **partnerships with elected representatives** and other key stakeholders

Dedicated state-team for implementation and monitoring

Community

ULB

Nodal Agency PMIDC

State

Local NGOs

Think Tank

Additional Innovative Instruments

10 **Convergence** with other programs for infrastructure development such AMRUT and SBM

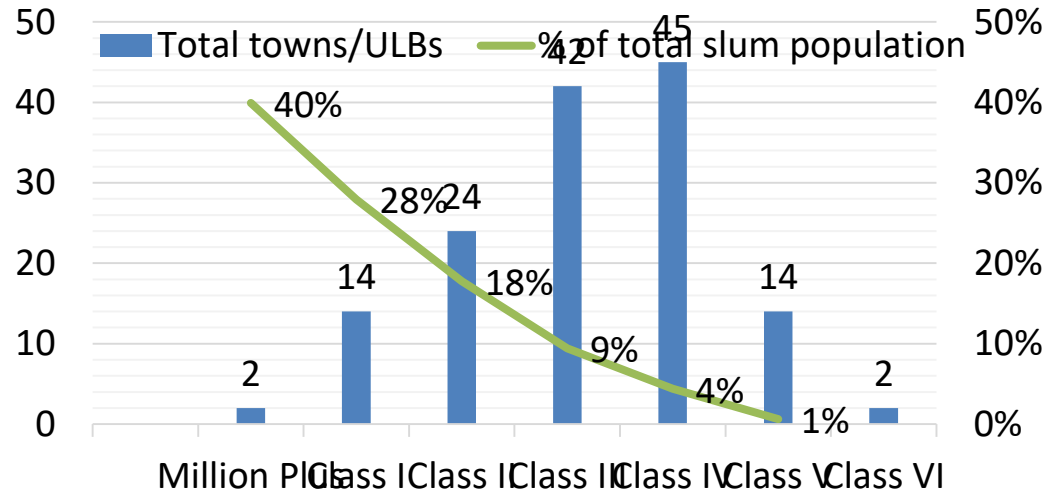**11** **Women empowerment** while issuing PRC

12 **Transferable after 30 years,** Heritable & Mortgageable

13 **Dedicated funding** Municipal Area Development Fund

14 Enabling tenure security **in all cities irrespective of their size**

Chart legend: ■ Total towns/ULBs ── % of total slum population

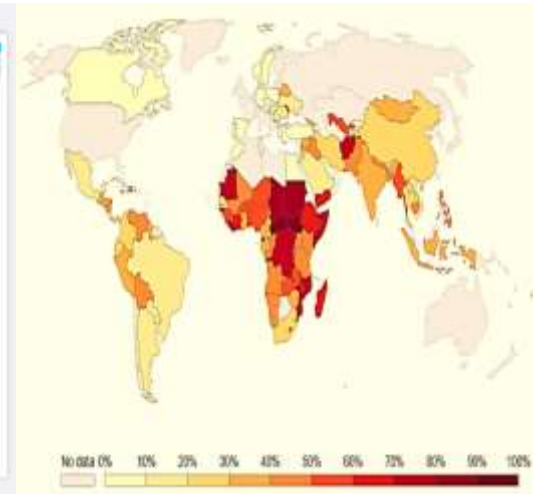|	Million Plus	Class I	Class II	Class III	Class IV	Class V	Class VI
Total towns/ULBs	2	14	24	42	45	14	2
% of total slum population	40%	28%	18%	9%	4%	1%	

Superimposition of Revenue/Master Plan/HHs boundaries on Drone Maps

- Drone Image
- Roads
- Boundary
- Shajra
- Master Plan
- Mapping

Recognitions

UNDP North Zone- 2021

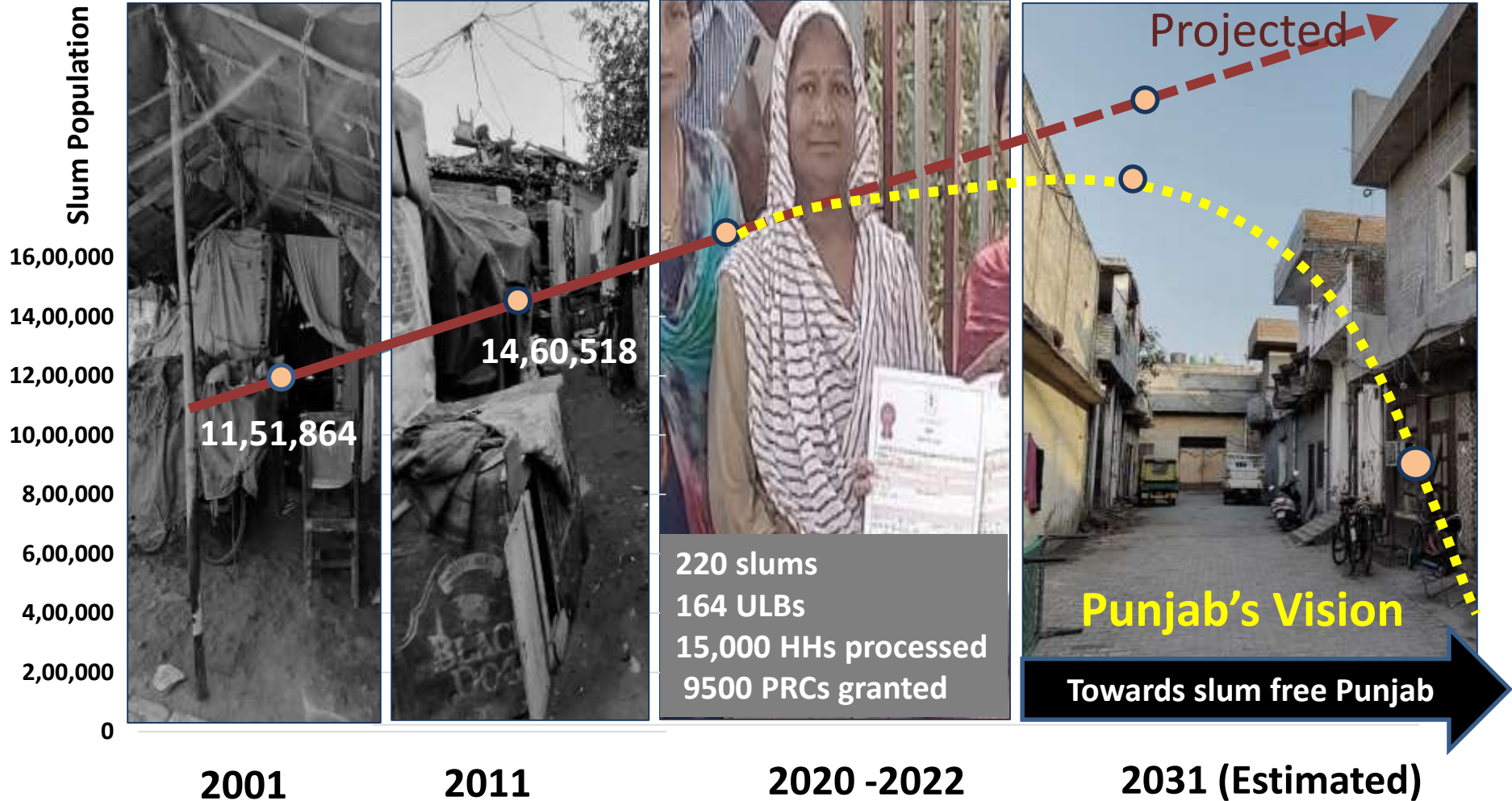**Asia Pacific Housing Forum Innovation Award 2021**

State	National	Global

BASERA is being recognised at state, national & international level and can be scaled up, globally

Result and Impact

Slum Population

16,00,000
14,00,000
12,00,000
10,00,000
8,00,000
6,00,000
4,00,000
2,00,000
0

11,51,864

14,60,518

Projected

Punjab's Vision

220 slums
164 ULBs
15,000 HHs processed
9500 PRCs granted

Towards slum free Punjab

2001   2011   2020 -2022   2031 (Estimated)

Progressing towards inclusive, safe, resilient and

Enhanced livelihood opportunities through large scale job creation

Potential to break away from vicious poverty cycles

Strengthened construction supply chain thereby boosting city economies

- **Access to Public Housing subsidy- PMAY Urban**
- **Improved access to basic civic & social services through Upgradation**

Access to equitable quality education opportunities

PRC

- **Improved housing**
- **Inclusive education**
- **Financial Inclusion**
- **Better Healthcare & Nutrition**

Enables access to institutional housing finance through mortgage

- **Hygienic environment**
- **Universal access to a basic drinking water and better sanitation facilities through SBM, AMRUT**
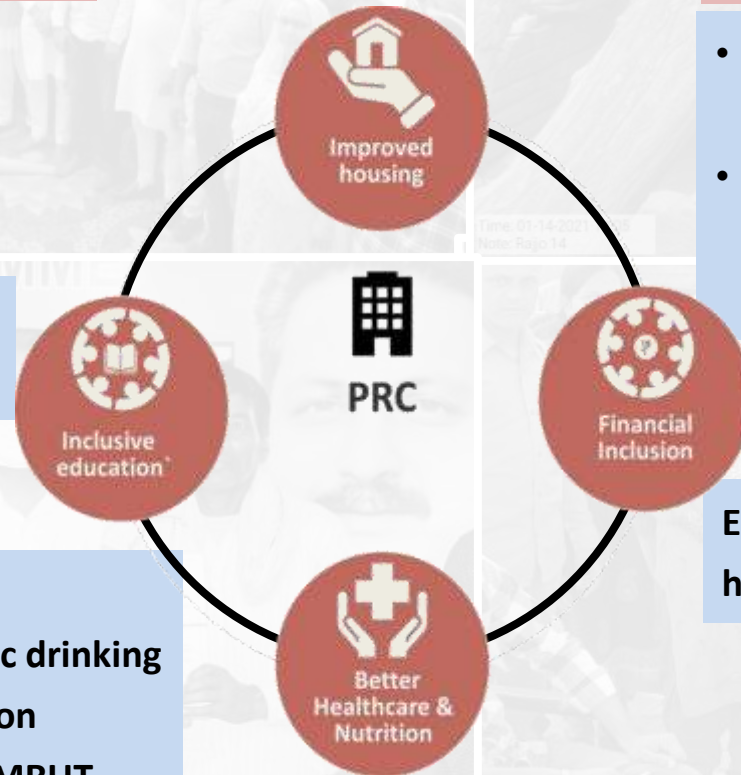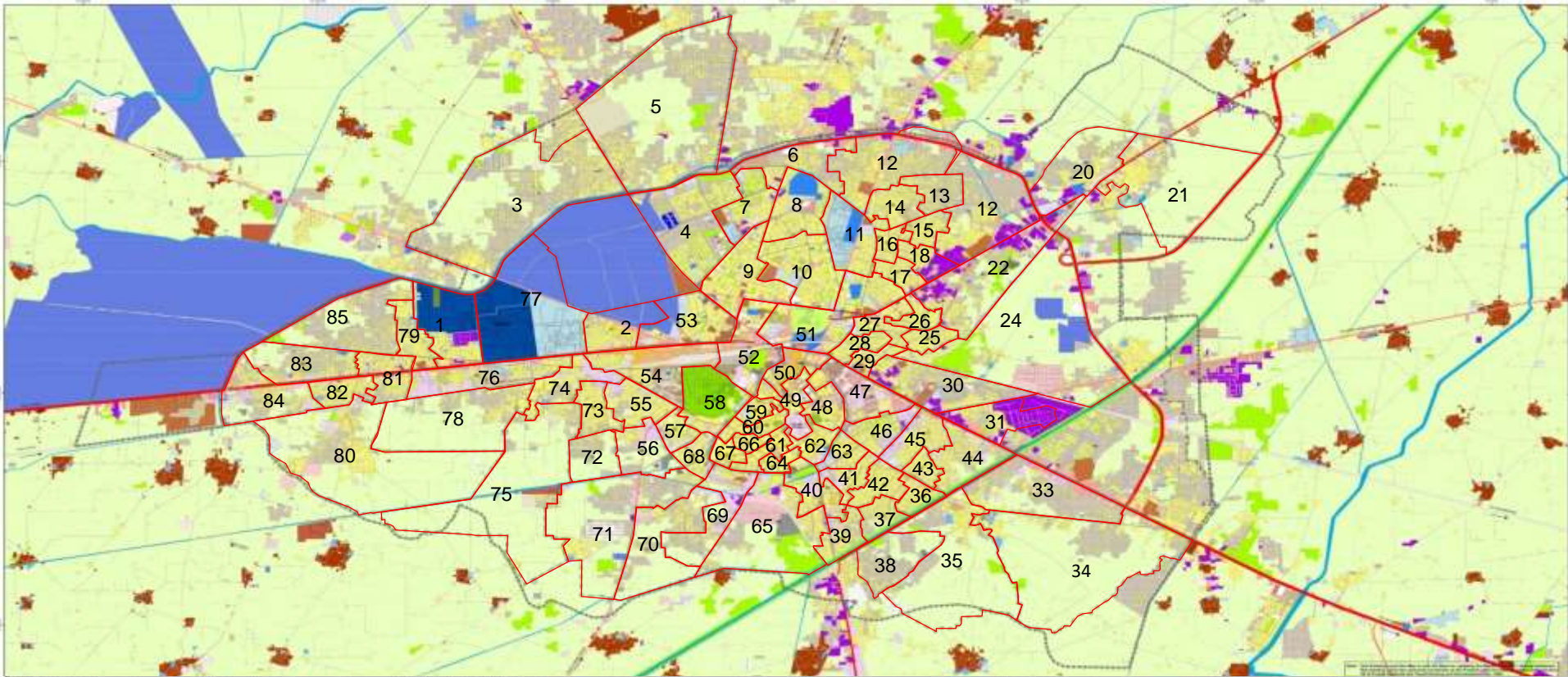
Building Urban Data Base: Existing Land Use
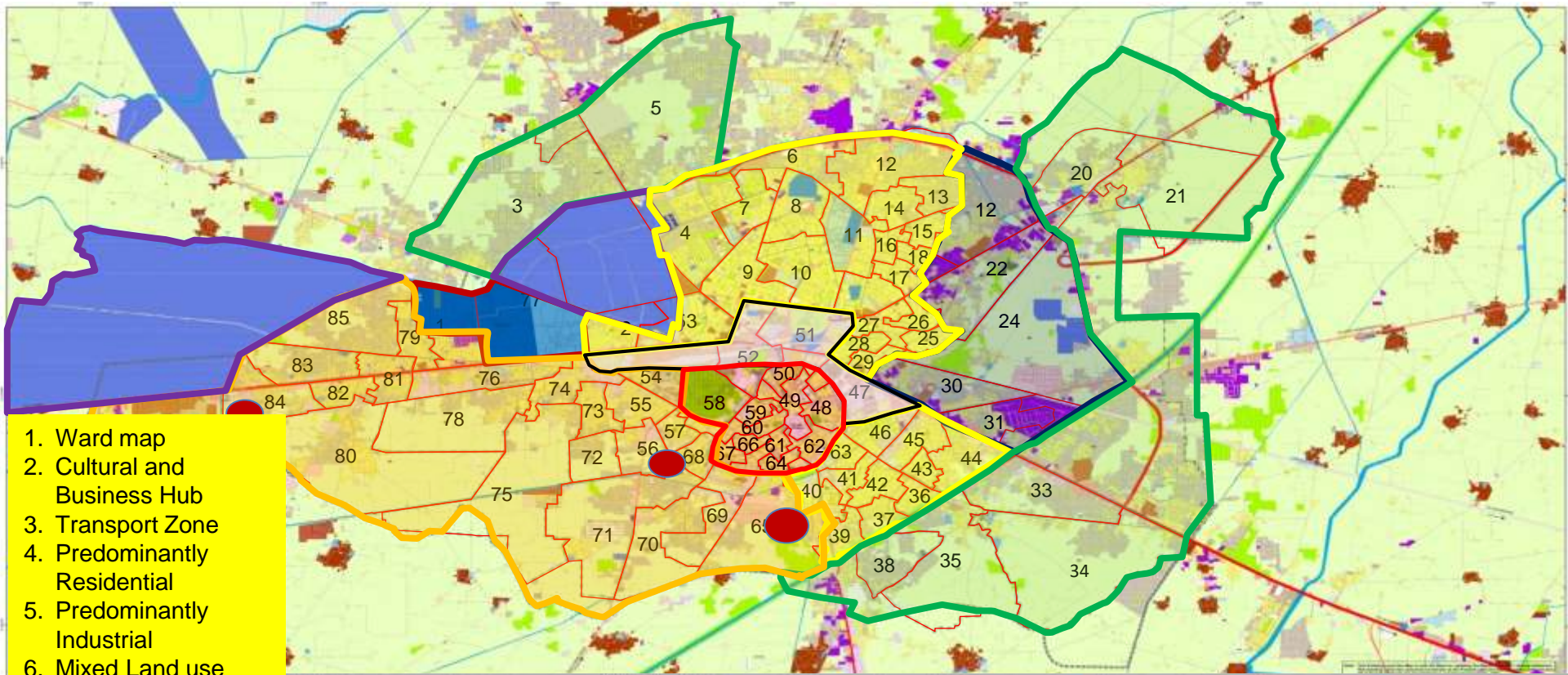
1. Ward map
2. Cultural and Business Hub
3. Transport Zone
4. Predominantly Residential
5. Predominantly Industrial
6. Mixed Land use
7. Educational Zone
8. Defense Establishments
9. New Extensions
10. Solid waste Sites
11. Govt. Land

Urban Data Base ELU and BRTS

1. **Central Axis;**   2. **India gate to Doburji,**   3. **Doburji to Celebration Mall**