

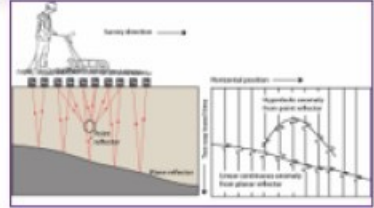


[**CLICK TO KNOW MORE**](#)

Commercial Space Industry
Unlocking Potential of
Image Intelligence

GWF 2024

GV Sreeramam



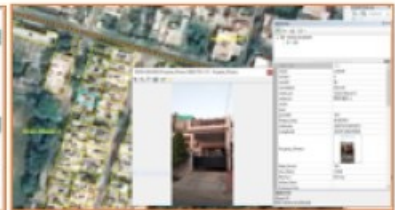
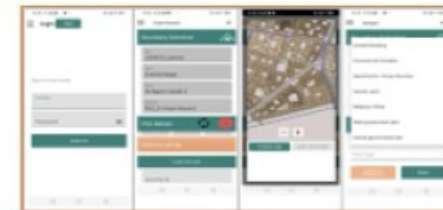
Map



Model & Build



Enable with real-time data



Manage

NeoGeoInfo Offers...



Map

- ✓ High Resolution Satellite Imagery
- ✓ Drone and LiDAR Survey
- ✓ GPR – Sub Surface Utility Mapping
- ✓ Positioning as a Service
- ✓ IoT Sensors & other Devices
- ✓ Data Conversion & Updating Existing Data
- ✓ Defining Right Data Structure for Collection

Model

- ✓ Creation of DEM/ DTM/ ORI
- ✓ Data Processing for Drone/ LiDAR/ GPR
- ✓ Models for Data Processing
- ✓ IoT Sensor Data Analysis
- ✓ Predictive Analytics for Maintenance
- ✓ Models for Continuous Evaluation and Tracking

Manage

- ✓ Integrated Web/ Mobile Solution for Asset Management
- ✓ GIS Lab Set up
- ✓ Integration with Legacy and MIS systems
- ✓ Systems of Engagement with Public/ Stake holders
- ✓ Crowd Sourcing of Inputs
- ✓ Capacity Creation/ Trainings

Navigate Geospatial World Confidently

- ✓ NeoGeo the fastest growing GIS Services Provider company with 2500+ man years experience, 200+ Engineers, expertise on the cutting edge technologies (LiDAR, Satellite Images, CORS and GPR)
- ✓ Rich experience in System Integration, Application Development to provide engineering solutions across Pipeline Networks, CGD, Highways, Utilities
- ✓ Design and Consultancy Services for Smart/ Safe cities, Geo-enabling Property Taxes and developing Digital Models for cities
- ✓ Rated as the 10 Leading Startups in India working on Geo-Intelligence & Emerging Technology Space, Recognized for Making an Impact on Indian Economy at Geospatial Artha Summit
- ✓ Proficient in Cognitive Technologies (AI/ Machine Learning/ Robotic Process Automation), Analytics and in developing solutions using web/ mobile technologies.
- ✓ Worked on Complex & Big projects with majority of government agencies, corporates across sectors in India
- ✓ Partner of Choice for major players (Trimble, ESRI, Maxar) in the Industry
- ✓ Experience in providing services across platforms - agnostic to the underlying technology stack

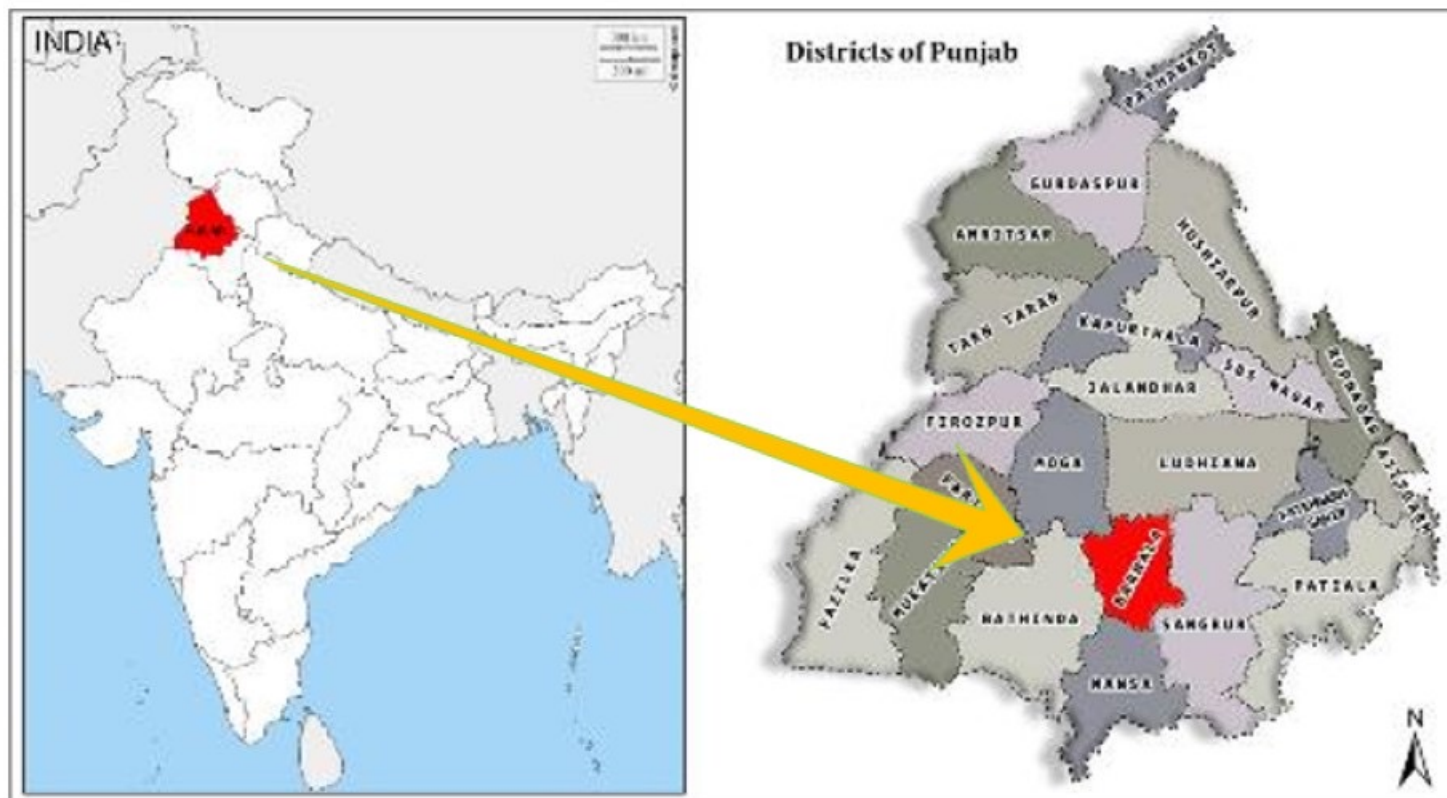
PROJECT:

Formulation of GIS-based Master Plan for Barnala city, Punjab

Mission:



Atal Mission for Rejuvenation and Urban Transformation



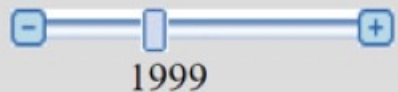
Client:



Punjab Municipal Infrastructure Development Company

Decadal Urban Growth

Available Datasets:
1991,1999,2009,2014



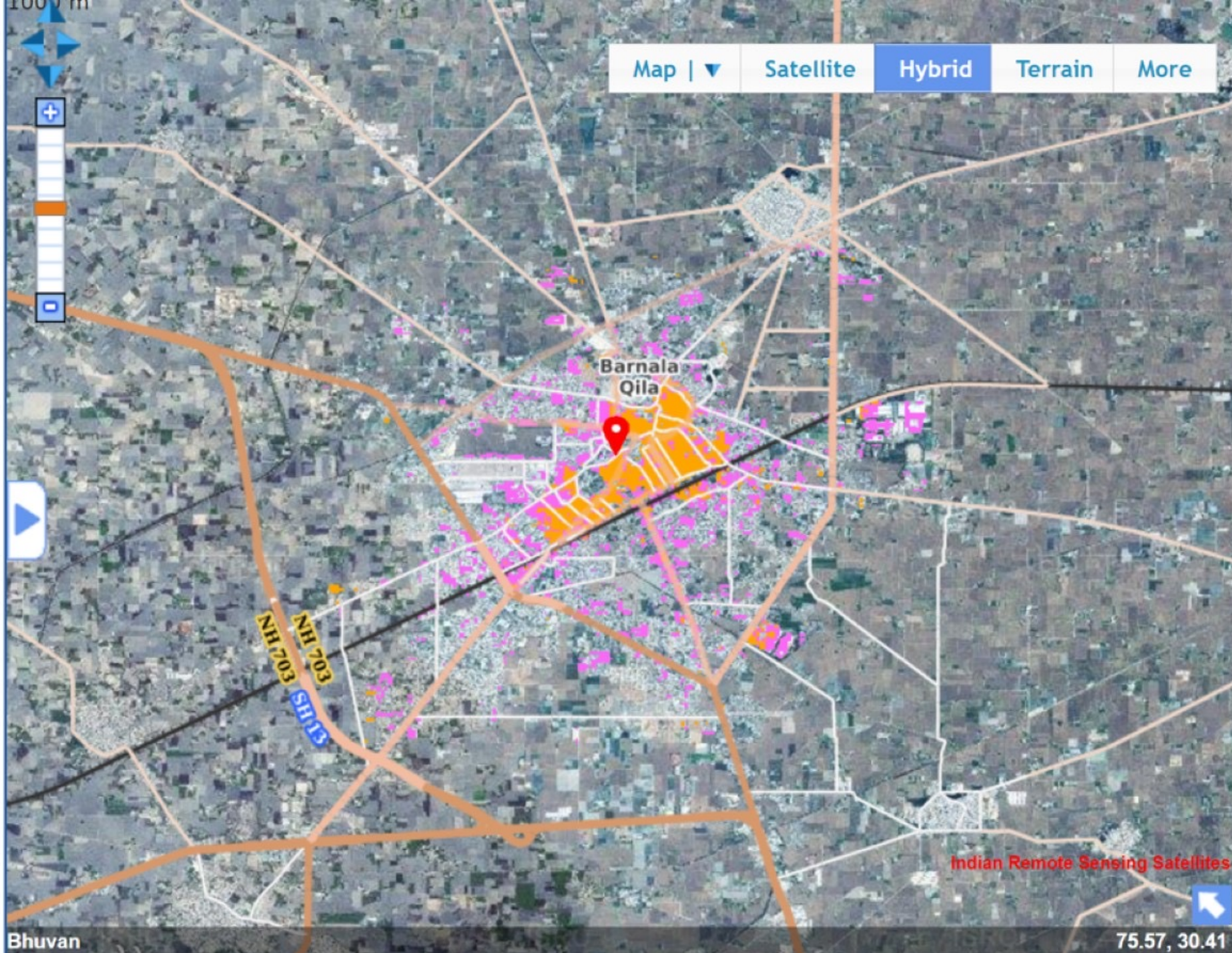
Speed 1s ▾ Auto Play

Enable Statistics

Barnala

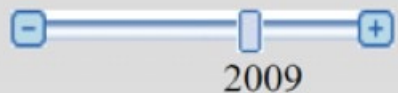
- 1991
- 1999
- 2009
- 2014

- Major Urbans
- Mega Cities
- Class-I



Decadal Urban Growth

Available Datasets:
1991,1999,2009,2014



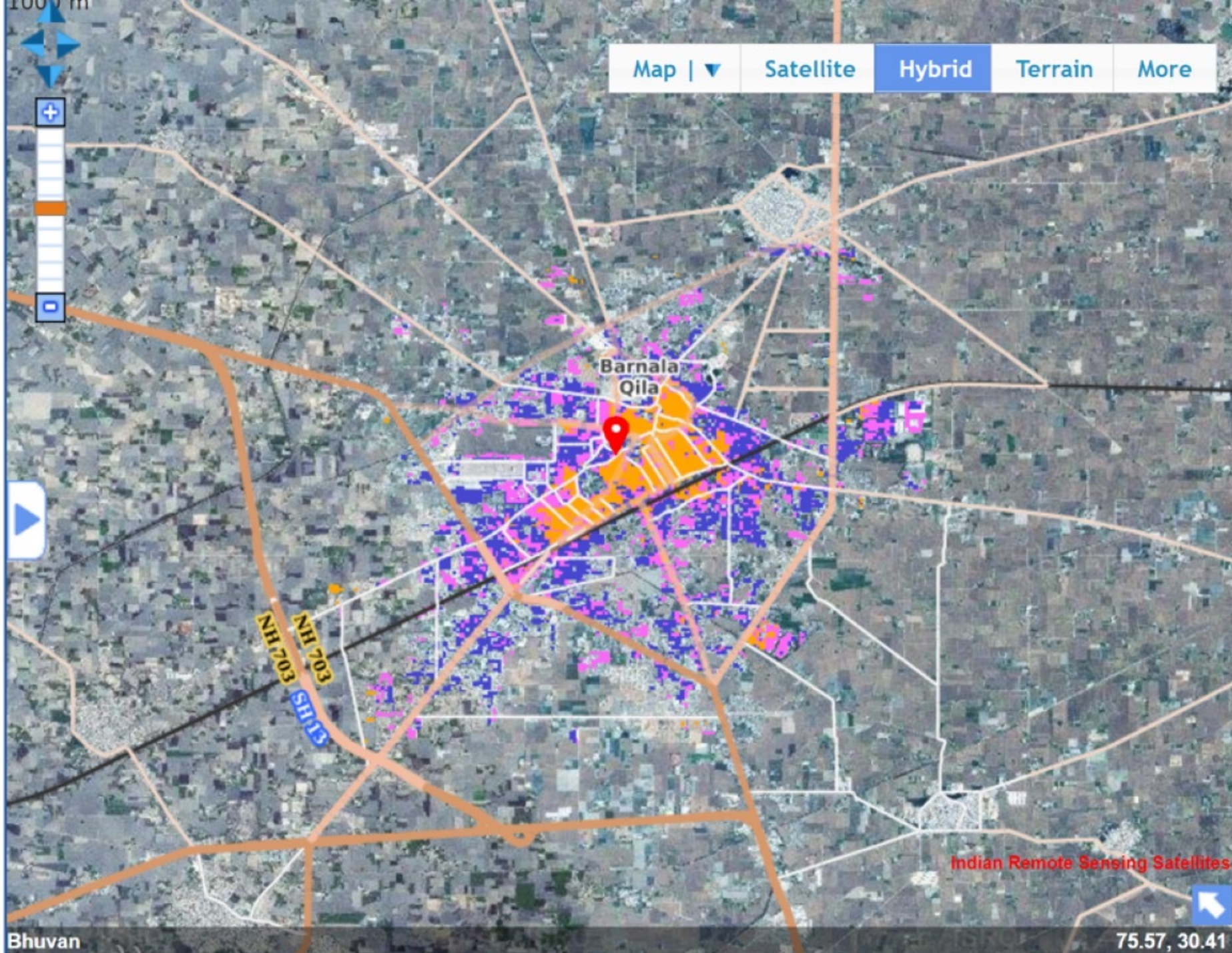
Speed 1s ▾ Auto Play

Enable Statistics

Barnala

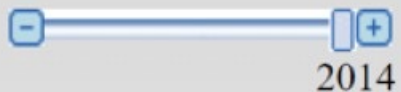
- 1991
- 1999
- 2009
- 2014

- Major Urbans
- Mega Cities
- Class-I



Decadal Urban Growth

Available Datasets:
1991,1999,2009,2014



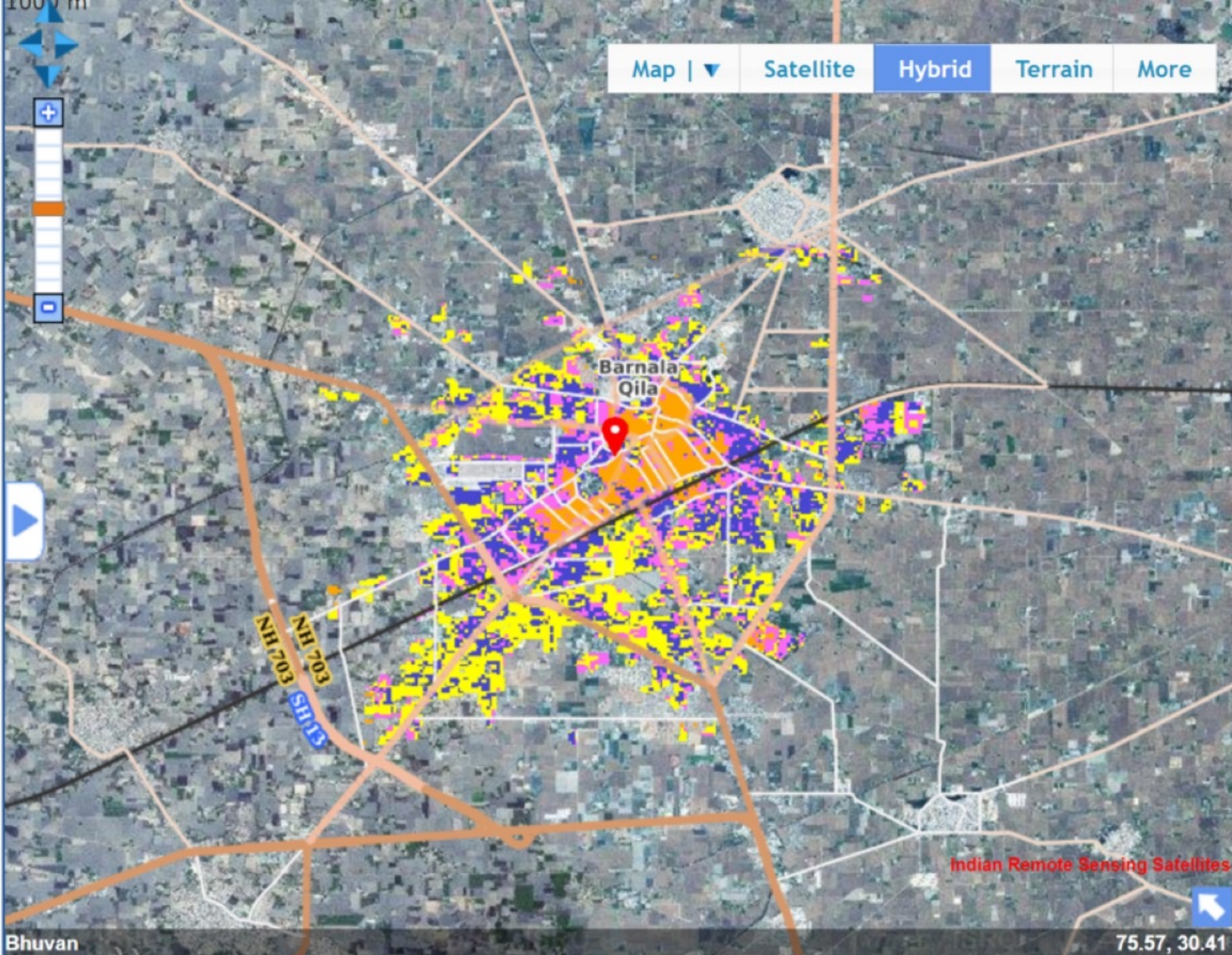
Speed 1s ▾ Auto Play

Enable Statistics

Barnala

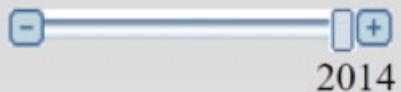
- 1991
- 1999
- 2009
- 2014

- Major Urbans
- Mega Cities
- Class-I



Urban Growth Pattern

Available Datasets:
1991,1999,2009,2014



Speed 1s ▾ Auto Play

Enable Statistics

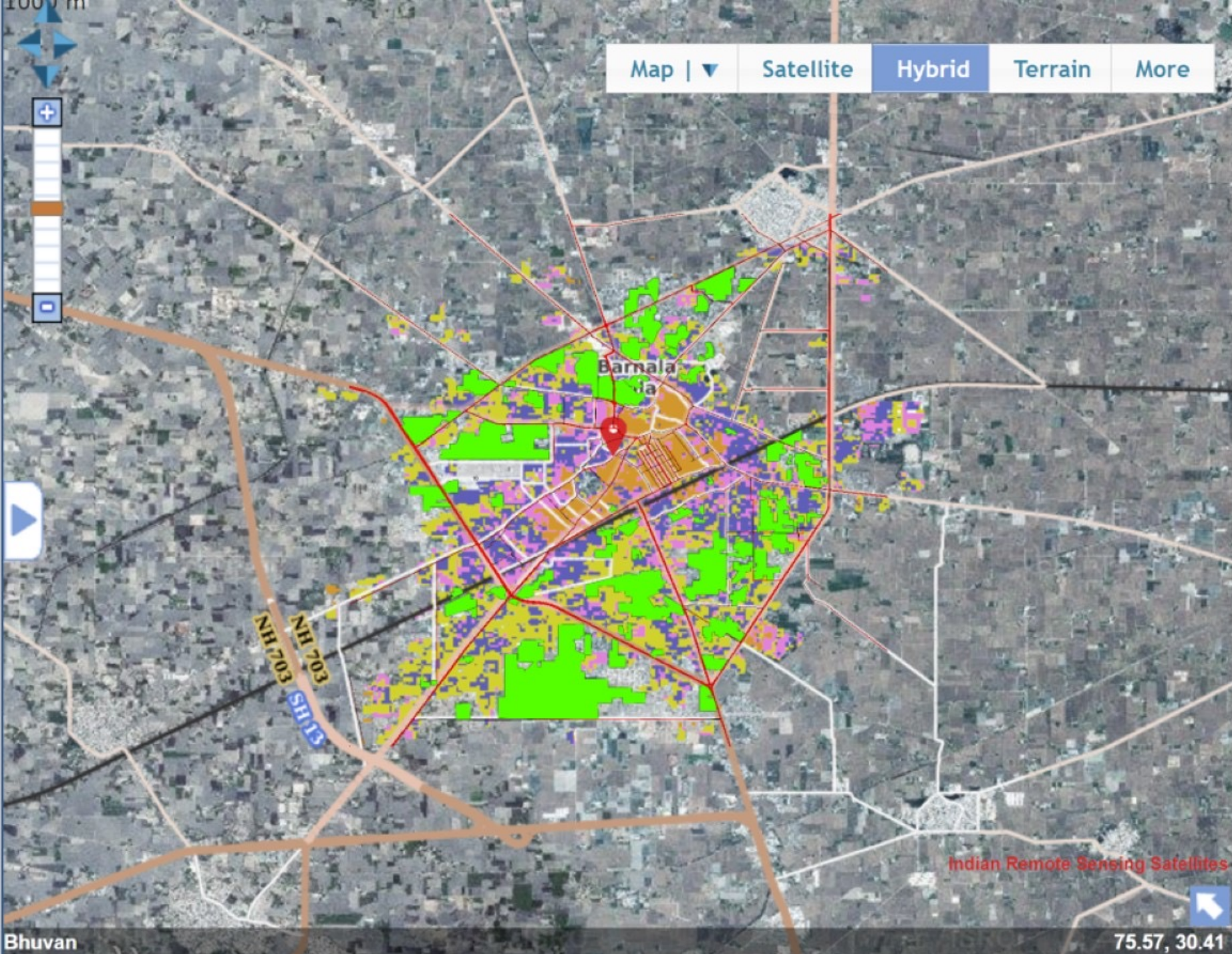
Barnala

- 1991
- 1999
- 2009
- 2014

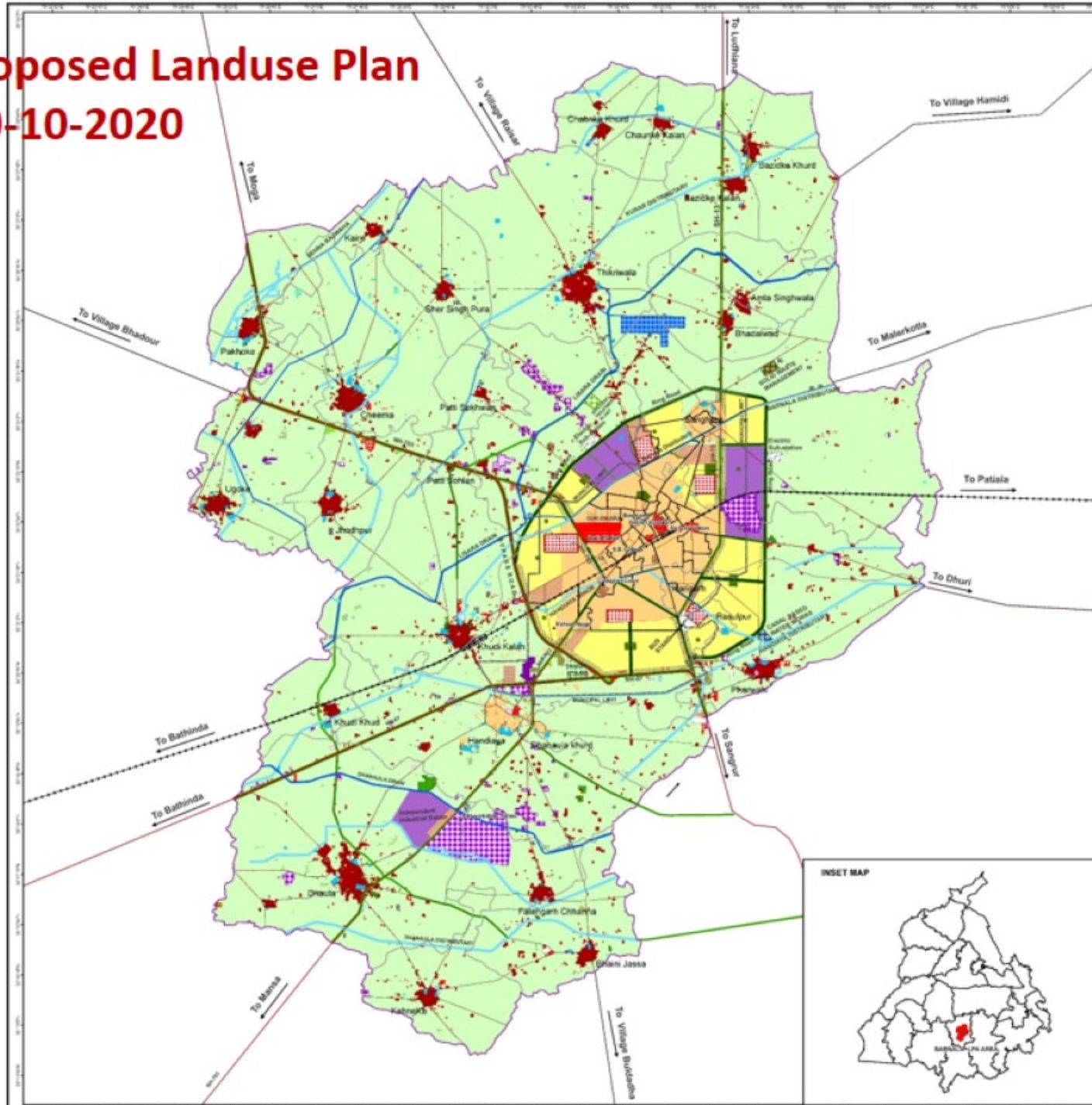
Agriculture Pockets

Mega Cities

Class-I



Draft Proposed Landuse Plan As on 30-10-2020



BARNALA PROPOSED LAND USE PLAN (2041)

LEGEND

Existing Land Use

Sl. No.	Code	Symbol	Description
1	101	[Symbol]	Barren Land
2	102	[Symbol]	Barren Land
3	103	[Symbol]	Barren Land
4	104	[Symbol]	Barren Land
5	105	[Symbol]	Barren Land
6	106	[Symbol]	Barren Land
7	107	[Symbol]	Barren Land
8	108	[Symbol]	Barren Land
9	109	[Symbol]	Barren Land
10	110	[Symbol]	Barren Land
11	111	[Symbol]	Barren Land
12	112	[Symbol]	Barren Land
13	113	[Symbol]	Barren Land
14	114	[Symbol]	Barren Land
15	115	[Symbol]	Barren Land
16	116	[Symbol]	Barren Land
17	117	[Symbol]	Barren Land
18	118	[Symbol]	Barren Land
19	119	[Symbol]	Barren Land
20	120	[Symbol]	Barren Land
21	121	[Symbol]	Barren Land
22	122	[Symbol]	Barren Land
23	123	[Symbol]	Barren Land
24	124	[Symbol]	Barren Land
25	125	[Symbol]	Barren Land
26	126	[Symbol]	Barren Land
27	127	[Symbol]	Barren Land
28	128	[Symbol]	Barren Land
29	129	[Symbol]	Barren Land
30	130	[Symbol]	Barren Land
31	131	[Symbol]	Barren Land
32	132	[Symbol]	Barren Land
33	133	[Symbol]	Barren Land
34	134	[Symbol]	Barren Land
35	135	[Symbol]	Barren Land
36	136	[Symbol]	Barren Land
37	137	[Symbol]	Barren Land
38	138	[Symbol]	Barren Land
39	139	[Symbol]	Barren Land
40	140	[Symbol]	Barren Land
41	141	[Symbol]	Barren Land
42	142	[Symbol]	Barren Land
43	143	[Symbol]	Barren Land
44	144	[Symbol]	Barren Land
45	145	[Symbol]	Barren Land
46	146	[Symbol]	Barren Land
47	147	[Symbol]	Barren Land
48	148	[Symbol]	Barren Land
49	149	[Symbol]	Barren Land
50	150	[Symbol]	Barren Land

Proposed Land Use

Sl. No.	Code	Symbol	Description
1	201	[Symbol]	Barren Land
2	202	[Symbol]	Barren Land
3	203	[Symbol]	Barren Land
4	204	[Symbol]	Barren Land
5	205	[Symbol]	Barren Land
6	206	[Symbol]	Barren Land
7	207	[Symbol]	Barren Land
8	208	[Symbol]	Barren Land
9	209	[Symbol]	Barren Land
10	210	[Symbol]	Barren Land
11	211	[Symbol]	Barren Land
12	212	[Symbol]	Barren Land
13	213	[Symbol]	Barren Land
14	214	[Symbol]	Barren Land
15	215	[Symbol]	Barren Land
16	216	[Symbol]	Barren Land
17	217	[Symbol]	Barren Land
18	218	[Symbol]	Barren Land
19	219	[Symbol]	Barren Land
20	220	[Symbol]	Barren Land
21	221	[Symbol]	Barren Land
22	222	[Symbol]	Barren Land
23	223	[Symbol]	Barren Land
24	224	[Symbol]	Barren Land
25	225	[Symbol]	Barren Land
26	226	[Symbol]	Barren Land
27	227	[Symbol]	Barren Land
28	228	[Symbol]	Barren Land
29	229	[Symbol]	Barren Land
30	230	[Symbol]	Barren Land
31	231	[Symbol]	Barren Land
32	232	[Symbol]	Barren Land
33	233	[Symbol]	Barren Land
34	234	[Symbol]	Barren Land
35	235	[Symbol]	Barren Land
36	236	[Symbol]	Barren Land
37	237	[Symbol]	Barren Land
38	238	[Symbol]	Barren Land
39	239	[Symbol]	Barren Land
40	240	[Symbol]	Barren Land
41	241	[Symbol]	Barren Land
42	242	[Symbol]	Barren Land
43	243	[Symbol]	Barren Land
44	244	[Symbol]	Barren Land
45	245	[Symbol]	Barren Land
46	246	[Symbol]	Barren Land
47	247	[Symbol]	Barren Land
48	248	[Symbol]	Barren Land
49	249	[Symbol]	Barren Land
50	250	[Symbol]	Barren Land

Scale: 1:50,000 (1 cm = 0.5 km)

Inset Map: Shows Barnala's location within Punjab state.

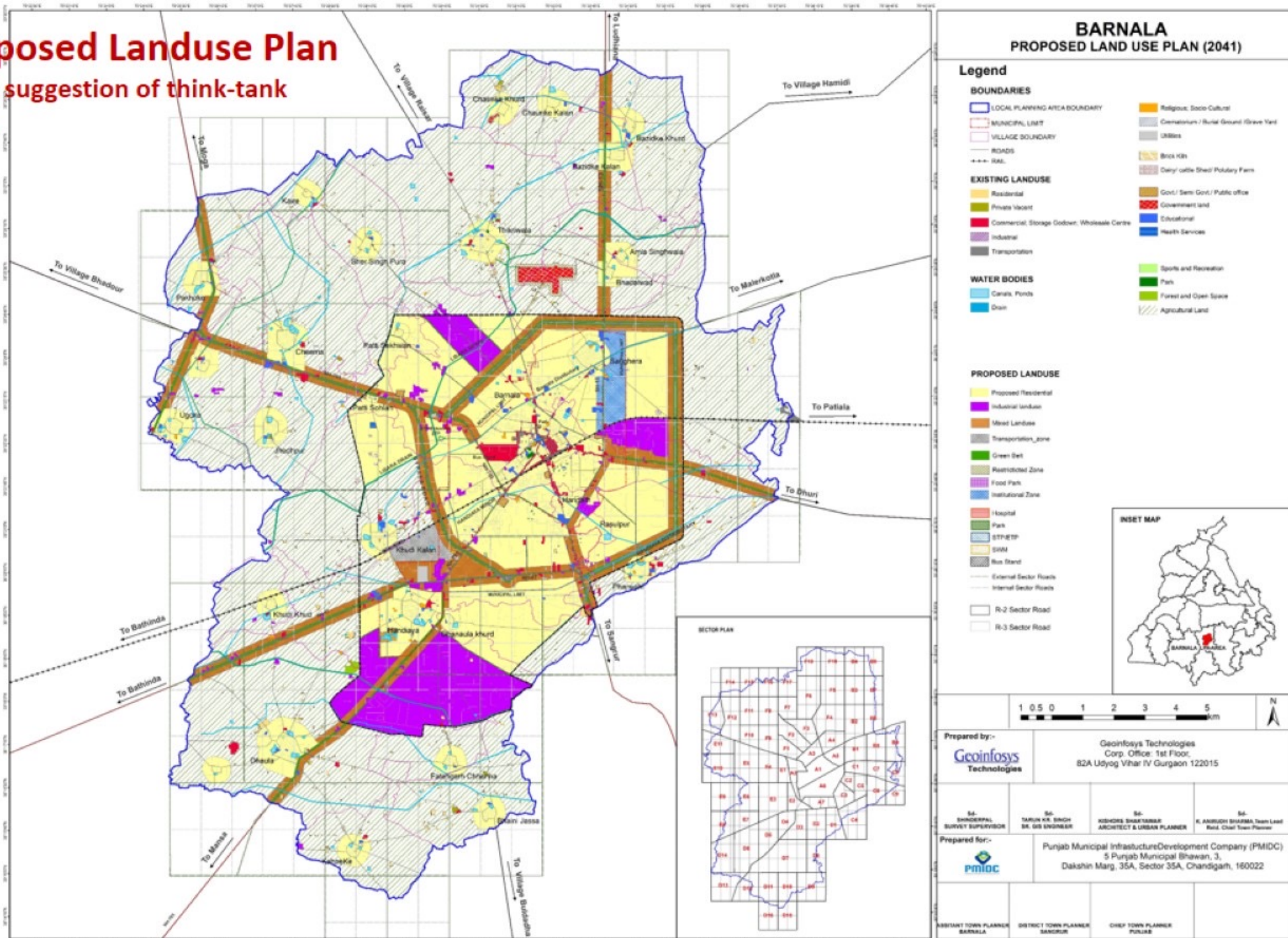
Prepared by: Geoinfosys Technologies
Corp. Office: 1st Floor, 82A Udyog Vihar IV Gurgaon 122015

Prepared for: Punjab Municipal Infrastructure Development Company (PMIDC)
5 Punjab Municipal Bhawan, 3, Dakshin Marg, 35A, Sector 35A, Chandigarh, 160022

Personnel:
 Sr. District Survey Supervisor: Tarun K. Singh, Sr. Sd Engineer
 Sr. District Surveyor: Rishore Singh/Singh, Architect & Urban Planner
 Sr. Assistant Surveyor: S. Anurag Sharma, Team Lead, Asst. Chief Town Planner
 Assistant Town Planner: Barnala
 District Town Planner: Sangrur
 Chief Town Planner: Punjab

Final Proposed Landuse Plan

Incorporating suggestion of think-tank
As approved.



Ground Slope

Wind Direction

Tasks Accomplished till date

- GIS Base map of all 3 cities supplied (Lucknow, Prayagraj and Ghaziabad) and submitted Inception Reports.
- World's Best Resolution Digital Globe World View 3 & World View 4 with 30 cm accuracy high-resolution satellite imagery procured and submitted for all 3 cities.
- GCP Collection for Image Processing completed using DGPS.
- Total Survey done: **16,88,047+** properties against **10,81,059 RFP no.** detailed as below in each city
 1. Lucknow: Properties as per RFP **5,53,819** - Surveyed Properties **8,39,190 = 152%**
 2. Ghaziabad: Properties as per RFP **3,20,268** - Surveyed Properties **6,17,708 = 207%**
 3. Prayagraj: Properties as per RFP **2,06,972** - Surveyed Properties **2,31,149 = 112%**
- GIS-based Enterprise Property Tax Management System (PTMS) developed and deployed as per all requirements of Urban Local Bodies & UP Government.
- Mobile Based Property Survey application developed and deployed for property survey.

AOI & Boundaries of LUCKNOW Municipal Corporation

Satellite Image of AOI Boundary



Zone Boundaries



Zone- 4 georeferenced image using ground Control points:



DGPS points - Zone-4

DGPS Control points Report(Lucknow zone-4,Gomti Nagar)								
Sr.N	Control point		Description of Geo-coordinates (WGS-84) Observation of control points				Remark	
	Control point	Number of Point	Latitude	Longitude	Northing(m meter)	Easting(m meter)		M.S.L(m meter)
1	DGPS	LKO9	28° 51' 27.97680" N	80° 56' 14.48660" E	2870683.802	493776.0223	76.0123	Zone-44
Detail Of DGPS								
1	Serial number of machine	S/MC1084008		Total time taken for observation				
2	Product Name	Z8014 3920		Starting time				
3	Height(m meter)	3.108		Ending time				
				13/06/2019				
				13:05				
				13/06/2019				
				13:42:00pm				
Details of control points								
Picture								
Detail of Surveyor								
Name of Surveyor				Rahul Singh				
Checked by				Anoop Singh				

DGPS Ground Control points Report

high resolution satellite image & Updated Base map:

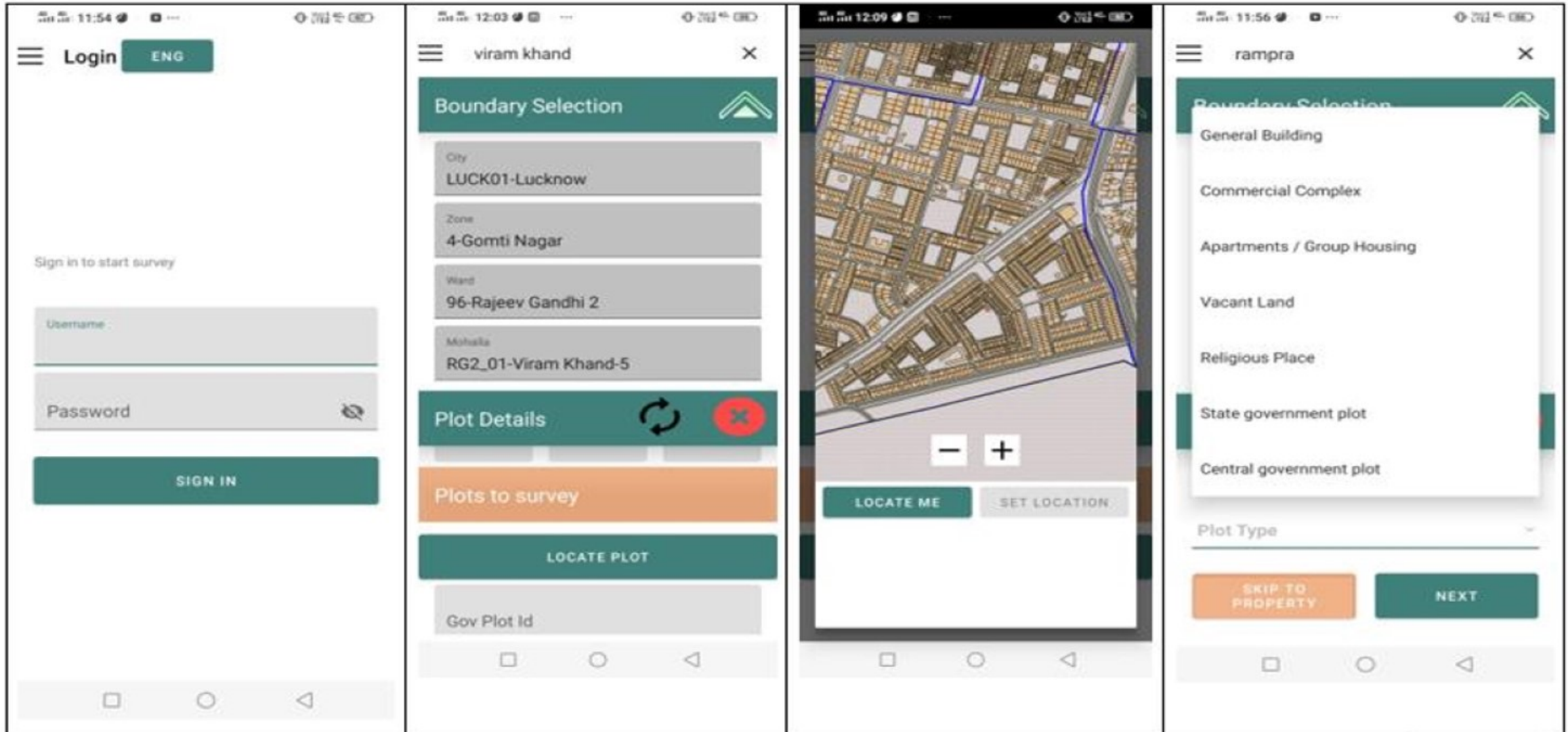


**High Resolution Satellite Imagery
(30cm World View 3/4)**




Digitized Base map

Property Survey Mobile Application:



Property management system:

The screenshot displays a property management system interface. On the left, a satellite map shows a grid of plots outlined in yellow. Two areas are labeled 'Viram Khand-1' and 'Viram Khand-2'. Plot 130 is highlighted in cyan. A window titled 'VIRAM_KHAND2\Property_Photos.OBJECTID=110 - Property_Photos' shows a photograph of a building with a gate. On the right, an 'Attributes' window displays the following data:

OBJECTID	110
cityld	LUCK01
zoneld	4
wardld	96
mohallaid	RG2_04
name_en	Viram Khand-2
name_hi	विराम खंड -2
name	
type	
parcelld	130
Shape_Leng	46.087061
Latitude	2969739.95492818
Longitude	500397.660349096
Property_Photos	
Map_Parcel	130
Gov_Plot_I	2/549
Name_1	B.D roy
Father_Nam	
Husband_Na	

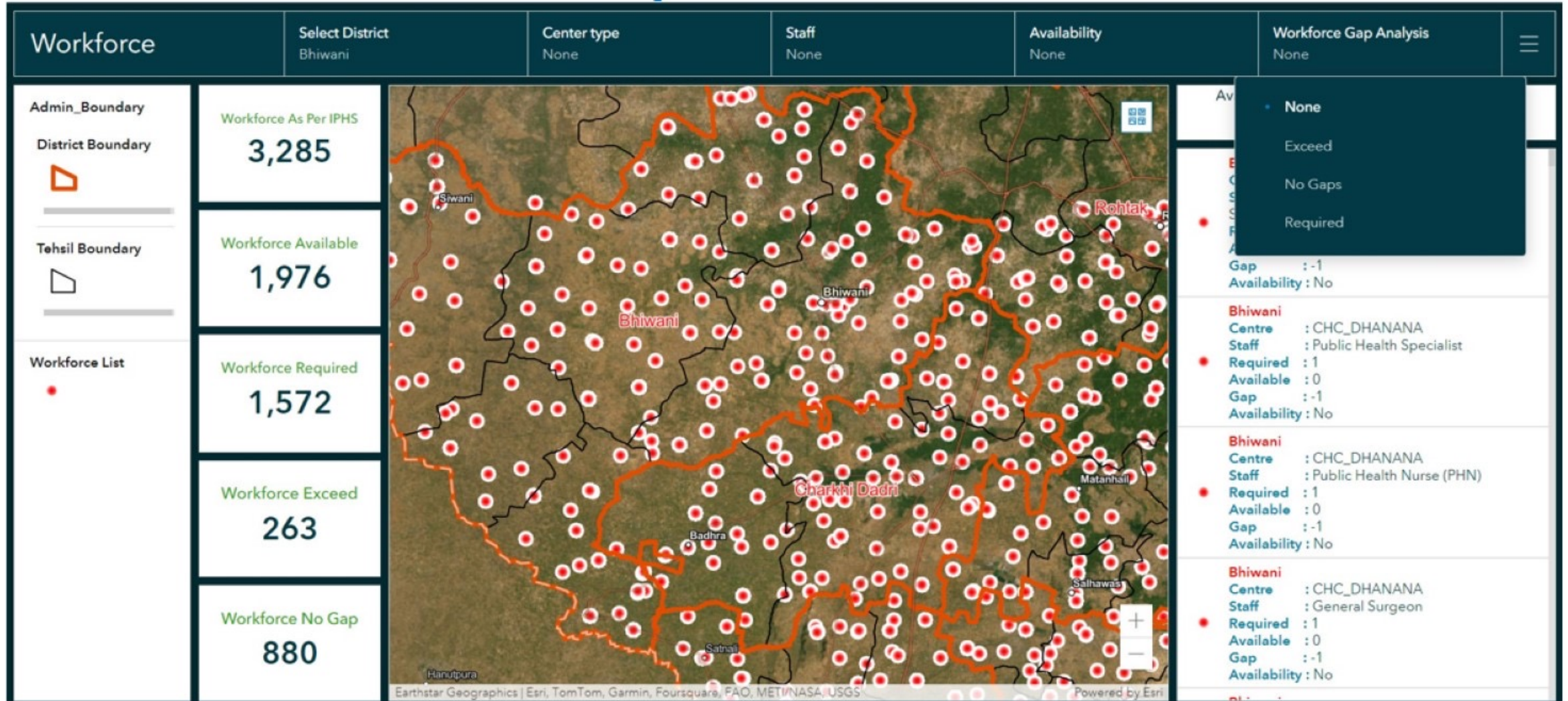
At the bottom of the attributes window, it shows 'OBJECTID' and 'Object ID' with a note 'Null values not allowed'.

Property's Document & Pictures

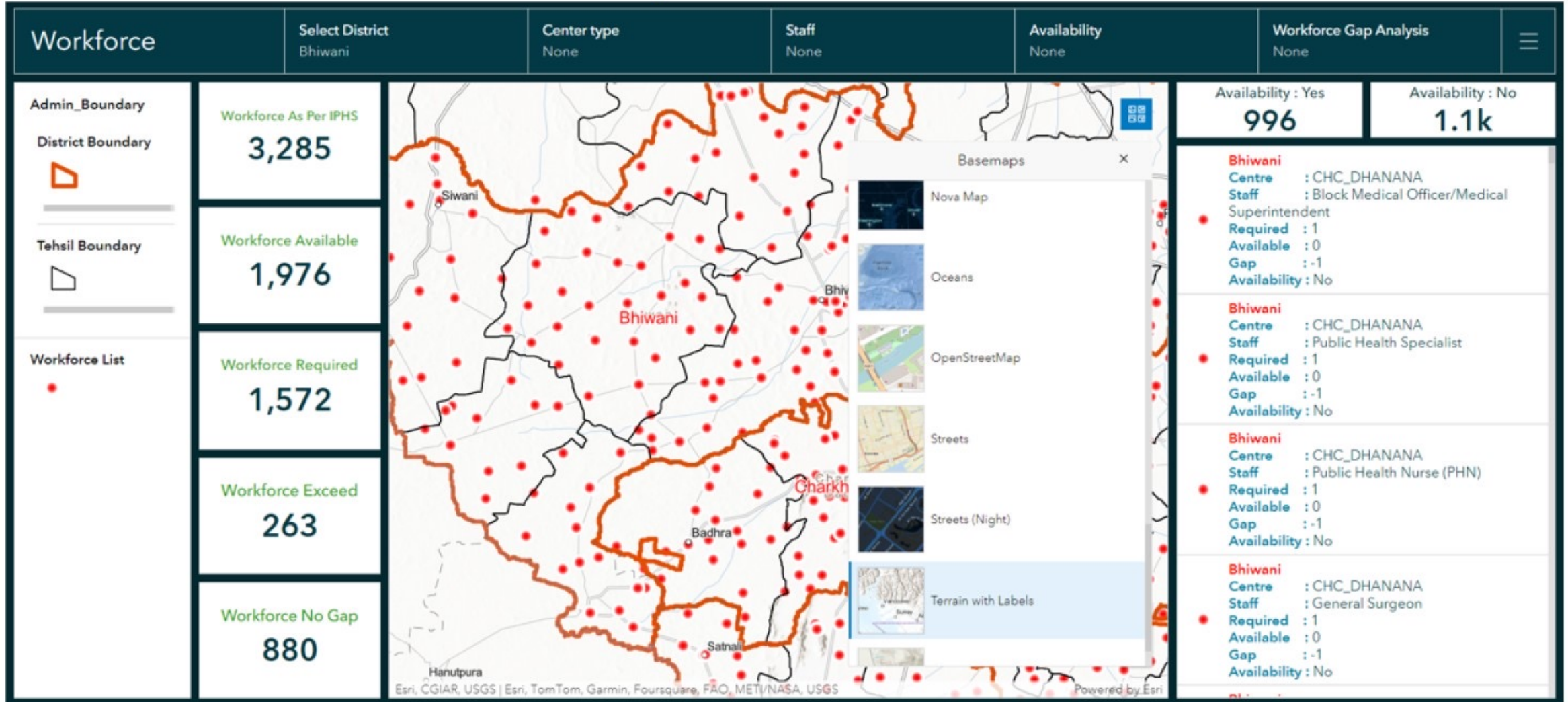
LMC: City wise progress & old vs new tax comparison

Sr. No.	Zone	Total Wards	LMC: Property, Water & Sewerage Tax after GIS Survey					
			Existing Properties as per RFP	Nigam Properties as per Latest Data	Total Surveyed Properties	New Properties	Total Existing Tax	Total Current Tax
1	LALBAGH (Z-1)	14	5,53,819	53,649	65,885	12,236	77,95,97,139	84,84,41,260
2	AISHBAGH (Z-2)	12		47,546	59,503	11,957	25,82,44,566	30,52,08,187
3	Aliganj (Z-3)	19		1,06,415	1,44,512	38,097	63,51,00,549	99,14,63,235
4	Gomti Nagar (Z-4)	8		51,088	63,091	12,003	94,51,31,997	1,67,82,48,527
5	ALAMBAGH (Z-5)	10		49,002	73,445	24,443	27,78,32,190	84,78,18,639
6	BALAGANJ (Z-6)	22		1,17,027	1,74,565	57,538	36,94,27,678	62,87,43,470
7	Indira Nagar (Z-7)	13		86,034	1,29,759	43,725	50,99,76,179	1,37,75,44,039
8	Sec N Aur (Z8)	12		71,612	1,28,430	56,818	55,82,45,135	1,34,99,87,197
	Total	110	5,53,819	5,82,373	8,39,190	2,56,817	4,33,35,55,432	8,02,74,54,553

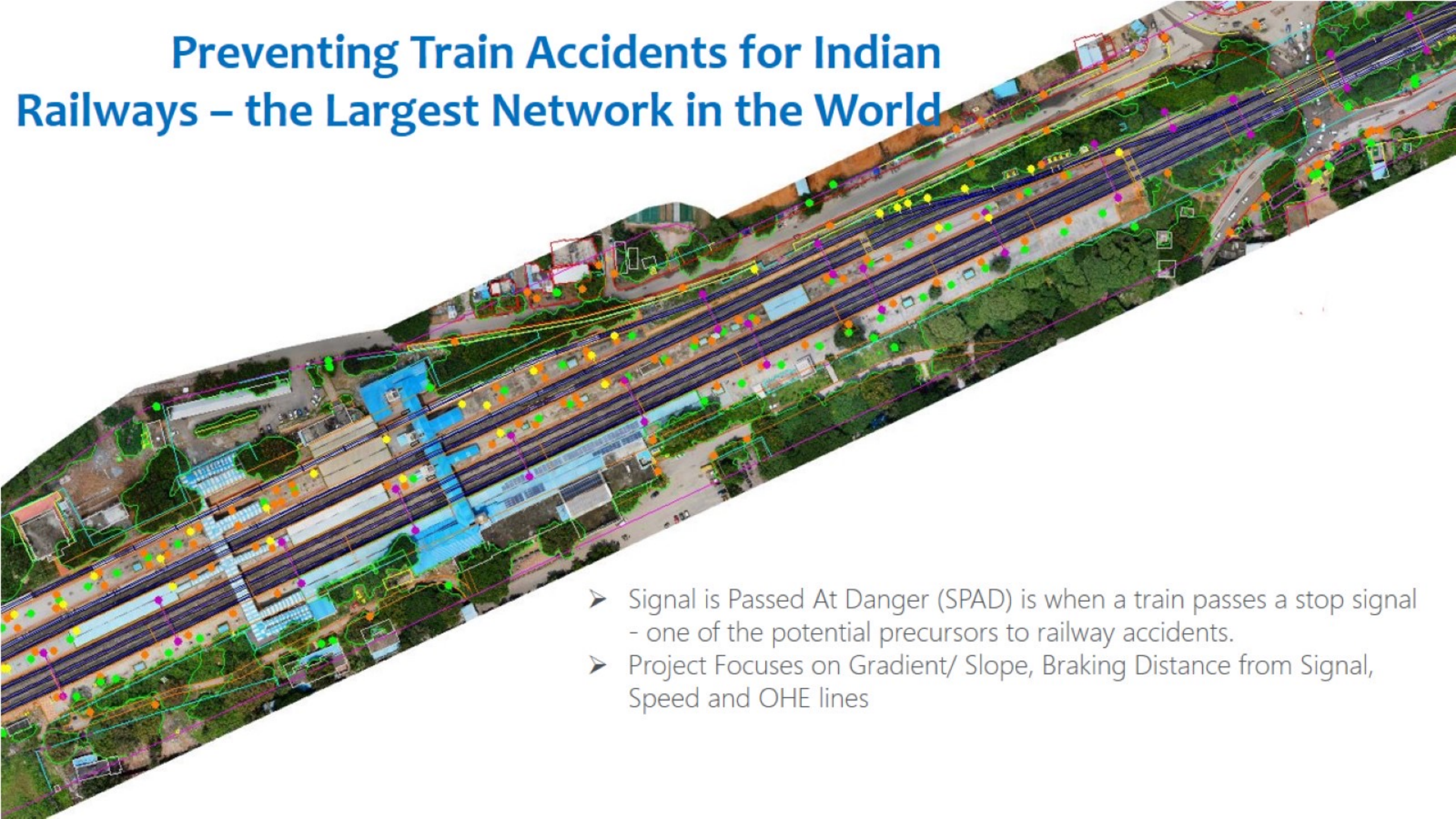
Helping Policymakers, Healthcare Administrators & Public Health Professionals to Improve Healthcare Facilities and Services



Helping Policymakers, Healthcare Administrators & Public Health Professionals to Improve Healthcare Facilities and Services



Preventing Train Accidents for Indian Railways – the Largest Network in the World



- Signal is Passed At Danger (SPAD) is when a train passes a stop signal - one of the potential precursors to railway accidents.
- Project Focuses on Gradient/ Slope, Braking Distance from Signal, Speed and OHE lines

Preventing Train Accidents for Indian Railways – the Largest Network in the World

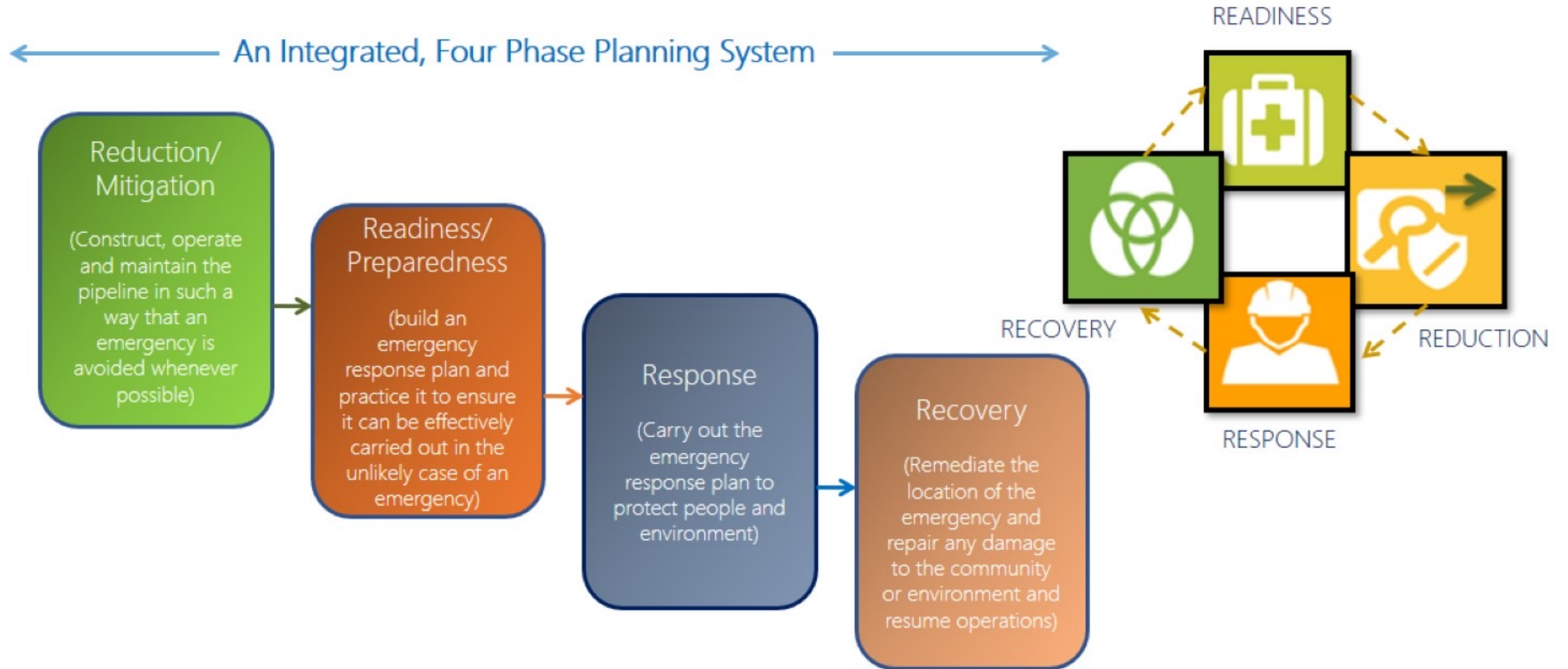


- Drone + LiDAR for High Resolution/ High Accuracy
- Referencing Multiple Sets of Data
- Z-Axis – for gradient of rail/ building/ mast heights
- Web Hosting to Enable Inter-Disciplinary teams to Access

Preventing Train Accidents for Indian Railways – the Largest Network in the World

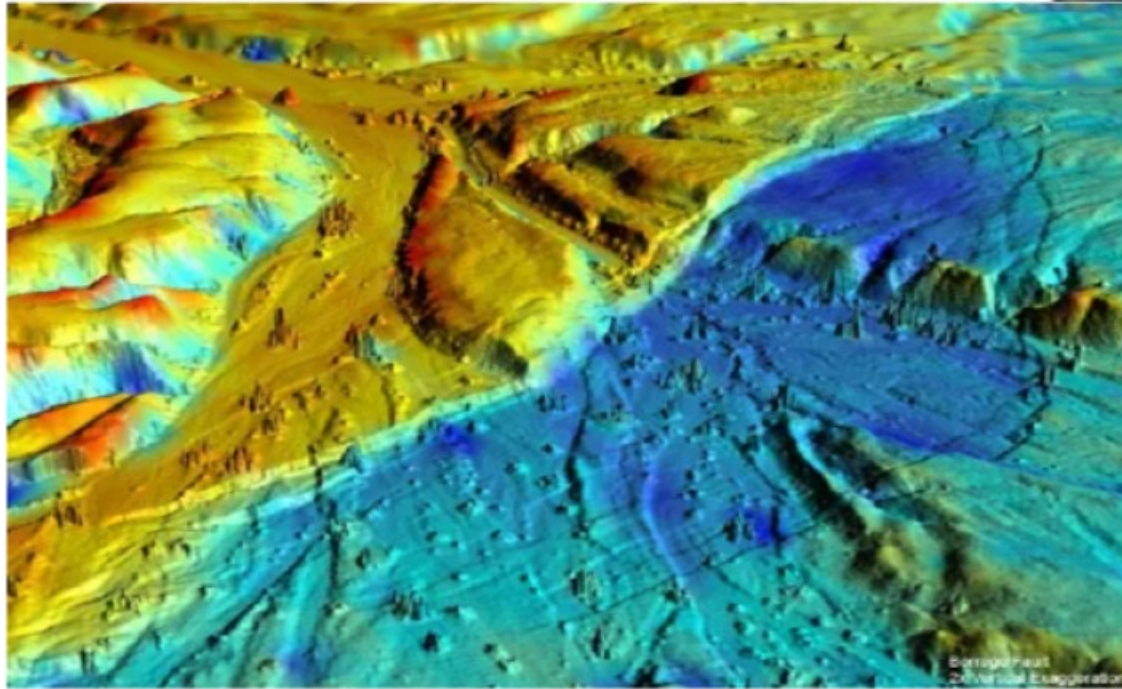


Disaster Management Cycle Model



Geospatial Data for Disaster Management

High Resolution Satellite Imagery along with Dem/DTM of the affected areas can help assess the extent of the damage to buildings and infrastructure.



LiDAR (Light Detection And Ranging) - to create 3D models for detailed information on the extent of the damage and help guide repair efforts

Geospatial Data for Flood Monitoring

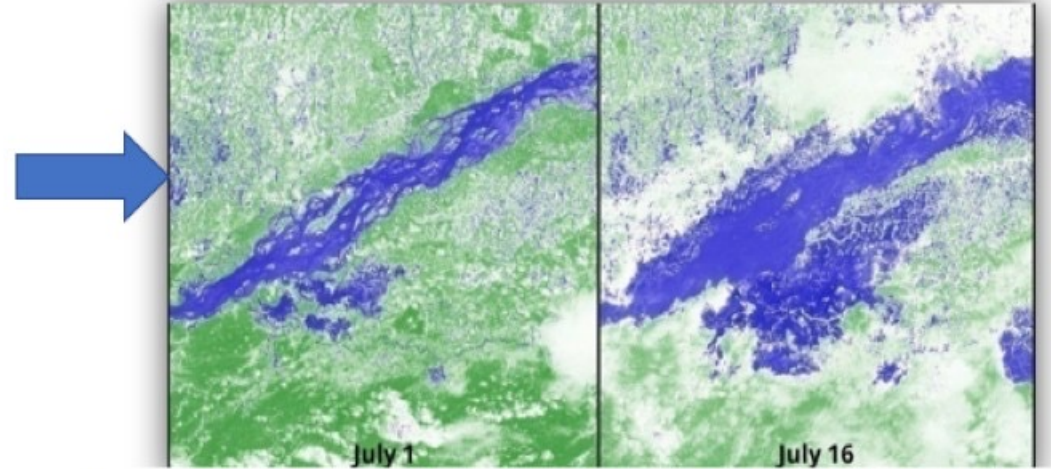
High Resolution Satellite Images (HRSI) can provide information about the Extent & Severity of Flooding over a large area

Different types of Sensors on Satellites can capture Different Wavelengths of light, revealing Different Characteristics of Flood

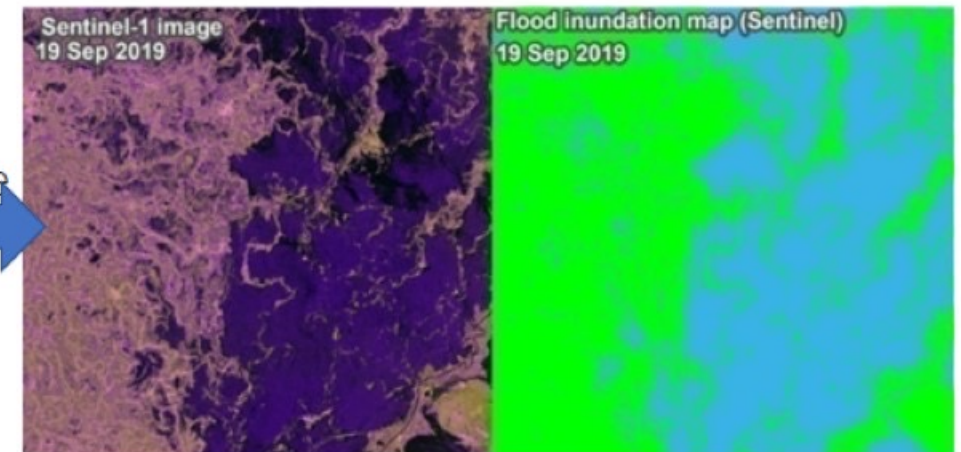


Synthetic Aperture Radar (SAR) provides all-weather imaging capability - for estimating Floodwater Depth & to track changes in the flood over time

Classification result based on Sentinel-1 data (dark blue: perennial water; light blue, flood inundation areas; green: other areas)



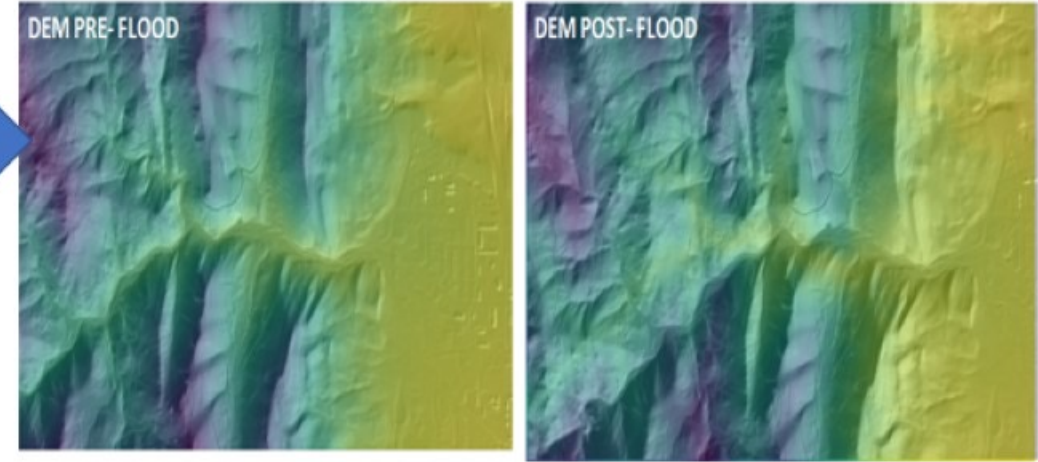
LiDAR helps create high-resolution 3D models of the Earth's surface - used to map Floodplains & to Estimate floodwater depth



Geospatial Models for Flood Monitoring

Digital Elevation Models provide info of the elevation of the Earth's surface, - used in predicting areas that are prone to flooding

DEMs can be derived from LiDAR data, Satellite Images, or Other Sources.



Hydrological models use Remote Sensing data + Rainfall data, to simulate the flow of water in a Aol

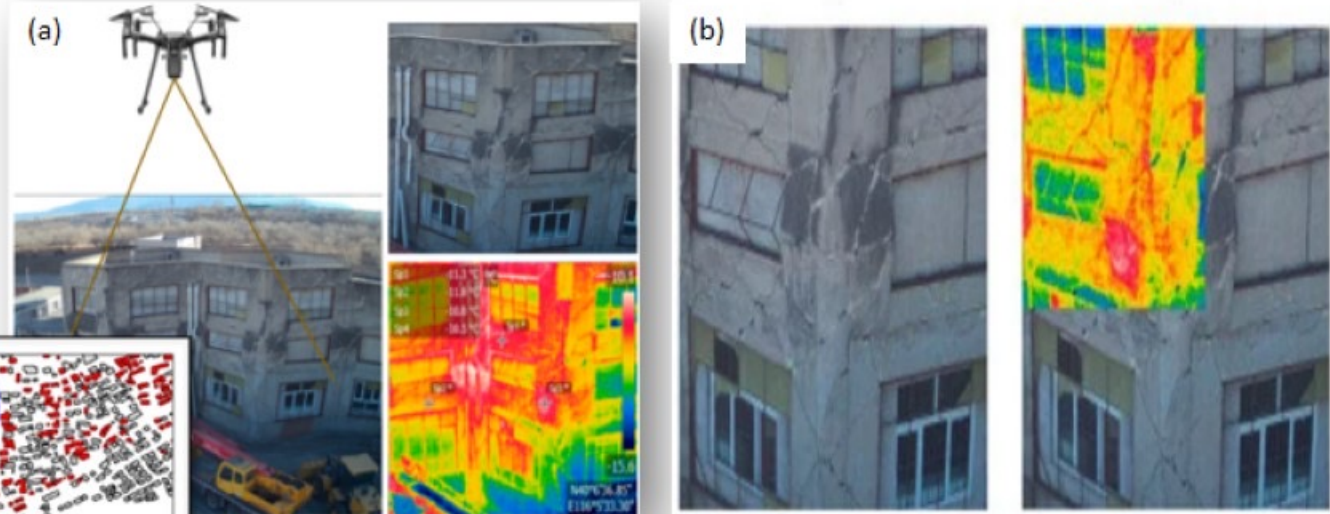
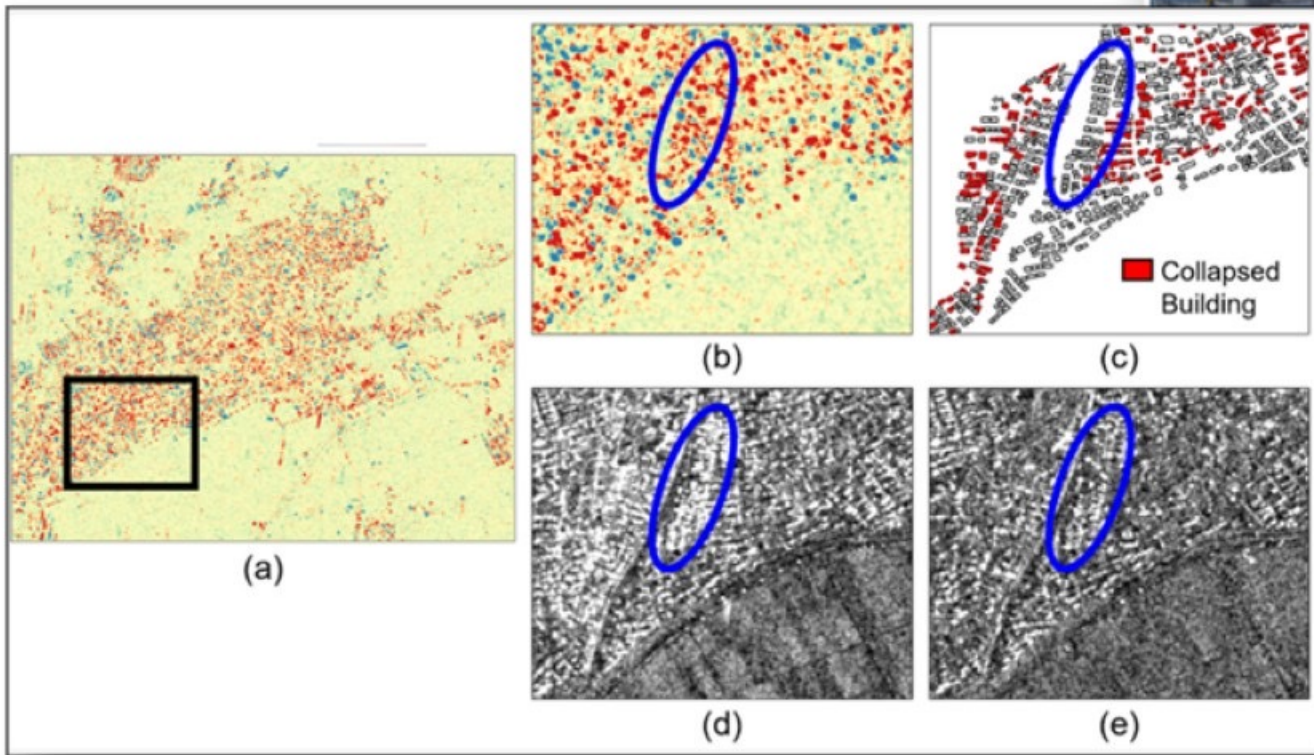
Simulates Aols to be affected by flooding & estimates floodwater Depth/ Duration

Thermal data can be used to detect areas of flooding where water is cooler than the surrounding land. This can be useful for identifying the extent of flooding, especially in areas where floodwaters are not visible in other types of imagery



Geospatial Data for Disaster Management

Thermal Imaging to detect Changes in Temperature that may indicate structural damage such as fires or water leaks.



SAR (Synthetic Aperture Radar) data to detect ground deformation caused by the earthquake and monitor changes in the landscape.

Rethink Business

A high jumper in a red and black athletic outfit is captured in mid-air, performing a Fosbury Flop over a high jump bar. The athlete is inverted, with their back to the ground and legs tucked. The bar is supported by two tall, yellow-green posts. The background is a bright blue sky with wispy white clouds and a sun flare. In the foreground, a white landing pit is visible. A fence and a building are in the distance.

It's not about knowing, it's about doing