Second United Nations World Geospatial Information Congress

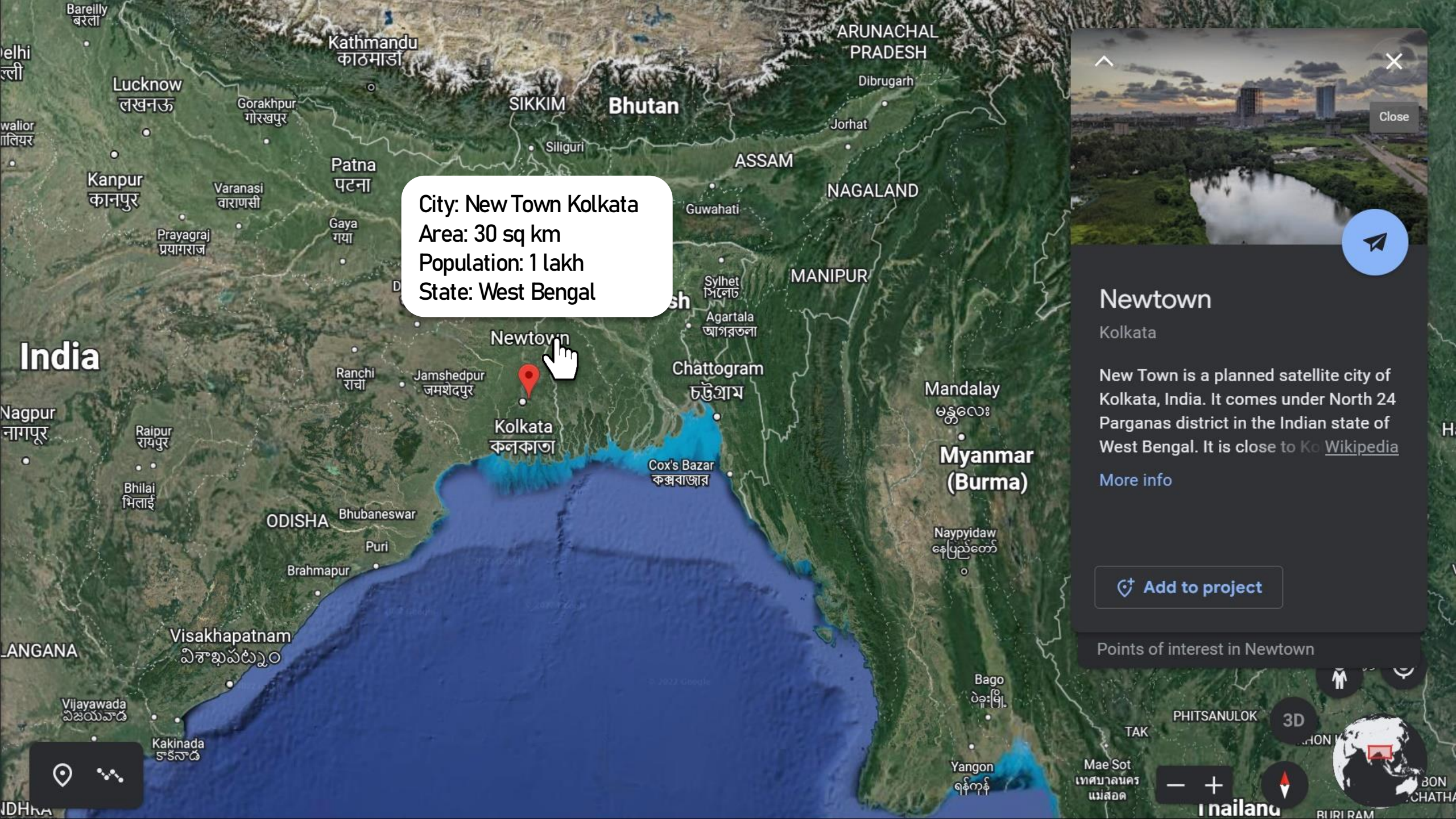
Session: TP10D - Effective Global Partnerships

Topic: Development and Maintenance of Public Green Space with Community Participation and in Collaboration with Private Partners

Presented by:

New Town Kolkata Green Smart City Corporation, West Bengal

Hyderabad, October 2022


City: New Town Kolkata
Area: 30 sq km
Population: 1 lakh
State: West Bengal
Newtown
Kolkata
New Town is a planned satellite city of Kolkata, India. It comes under North 24 Parganas district in the Indian state of West Bengal. It is close to Ko
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Points of interest in Newtown
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Mae Sot
3D

New Town Kolkata, being a ‘Smart City’ practises Data – Driven Planning, Implementation & Monitoring

New Town Kolkata has been practising use of Geo Spatial Information for various functions

Few Instances. . .

#1

Smart Solid Waste Management System in New Town Kolkata

Smart Solid Waste Management System in New Town Kolkata

- New Town practices regular door-to-door collection of solid waste for 100 % of the city

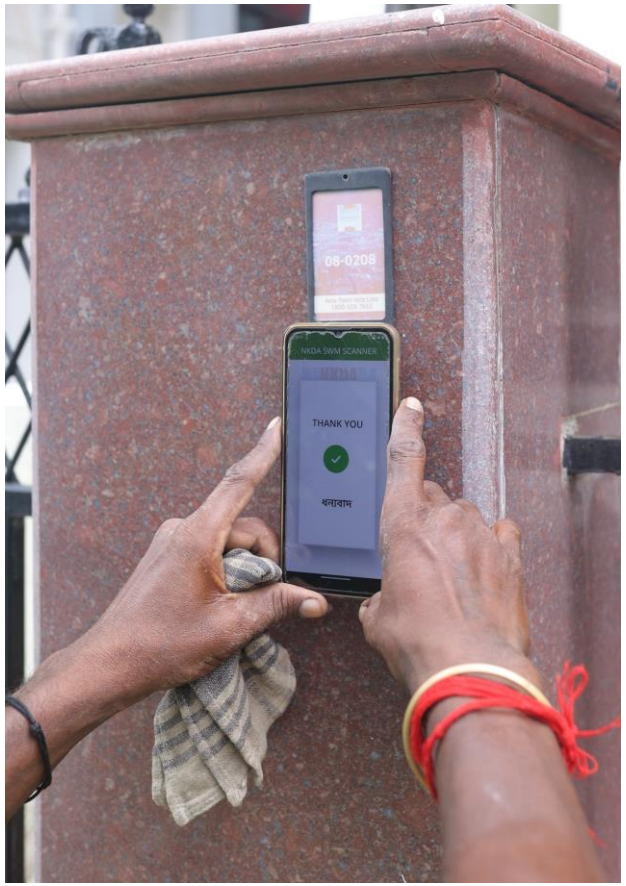
- Concern : Timely Collection at household level & from primary/ secondary transfer stations

Initiatives undertaken to ensure timely collection of solid waste:

1. Smart Home Tag
2. SWM Vehicle Tracking
3. IOT Enabled Street Fencing

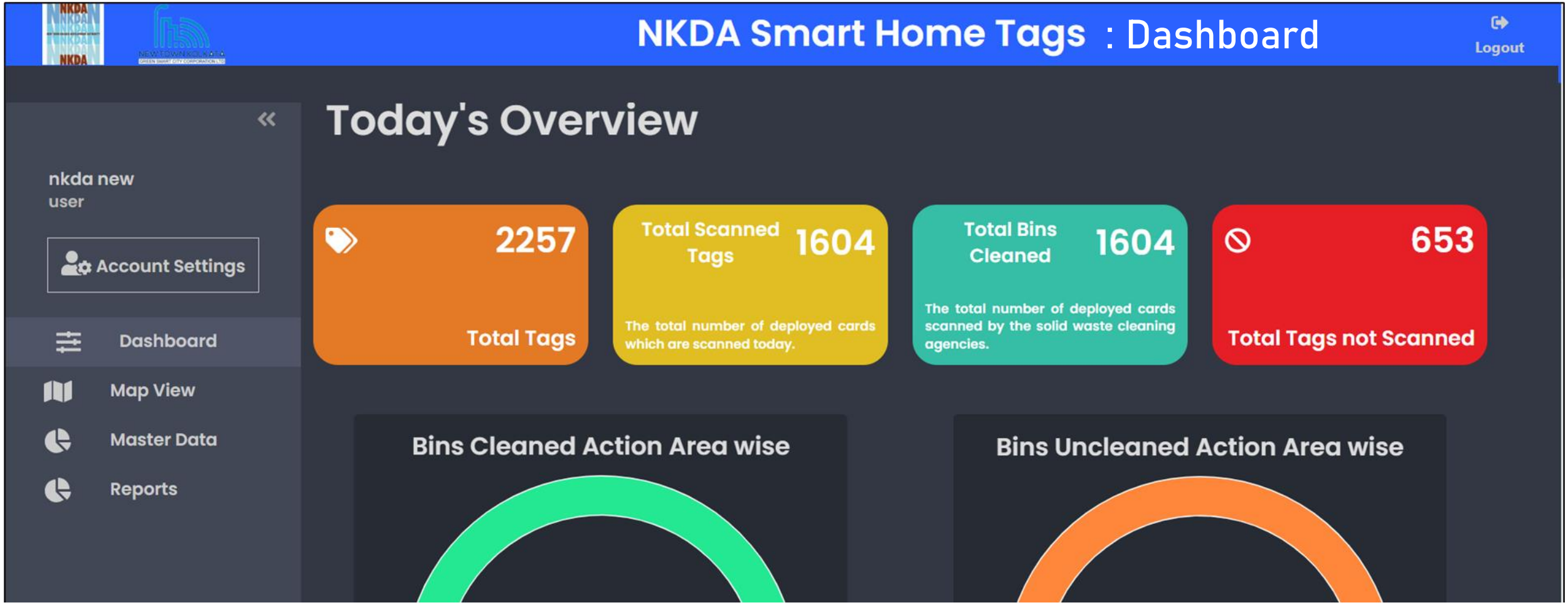
Smart Solid Waste Management System in New Town Kolkata

- RFID-based 'Smart Tags' are installed at all Premises
- 'Smart Tag' is scanned, every time post - collection
- Cleaning Time is updated on Central Dashboard



Smart Solid Waste Management System in New Town Kolkata

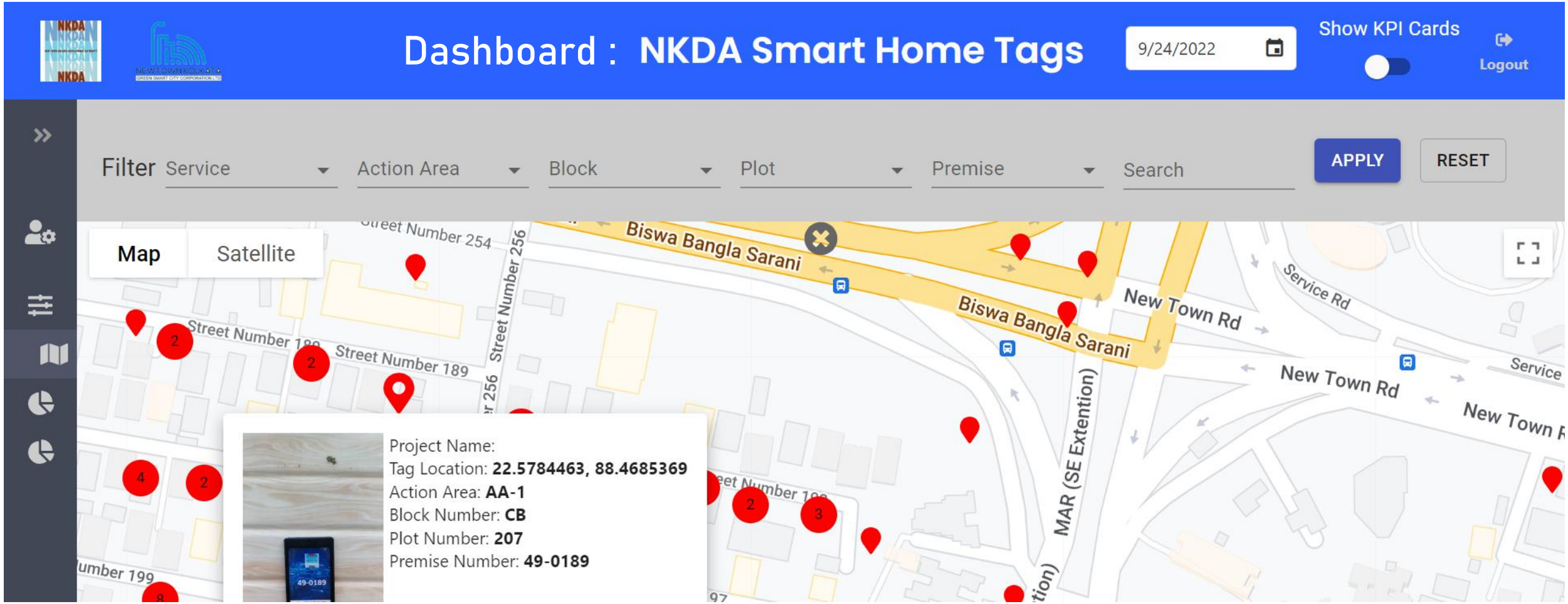
Dashboard is maintained for real-time monitoring of the overall status of clearing of bins



Snapshot from the dashboard displays total number of premises with Smart Tag and number of bins cleared at that instant of time

Smart Solid Waste Management System in New Town Kolkata

Dashboard is maintained for monitoring clearing of bins for each premise



Snapshot from the dashboard displays spatial distribution of premises with Smart Tag and details against each tag like premises no., location, etc.

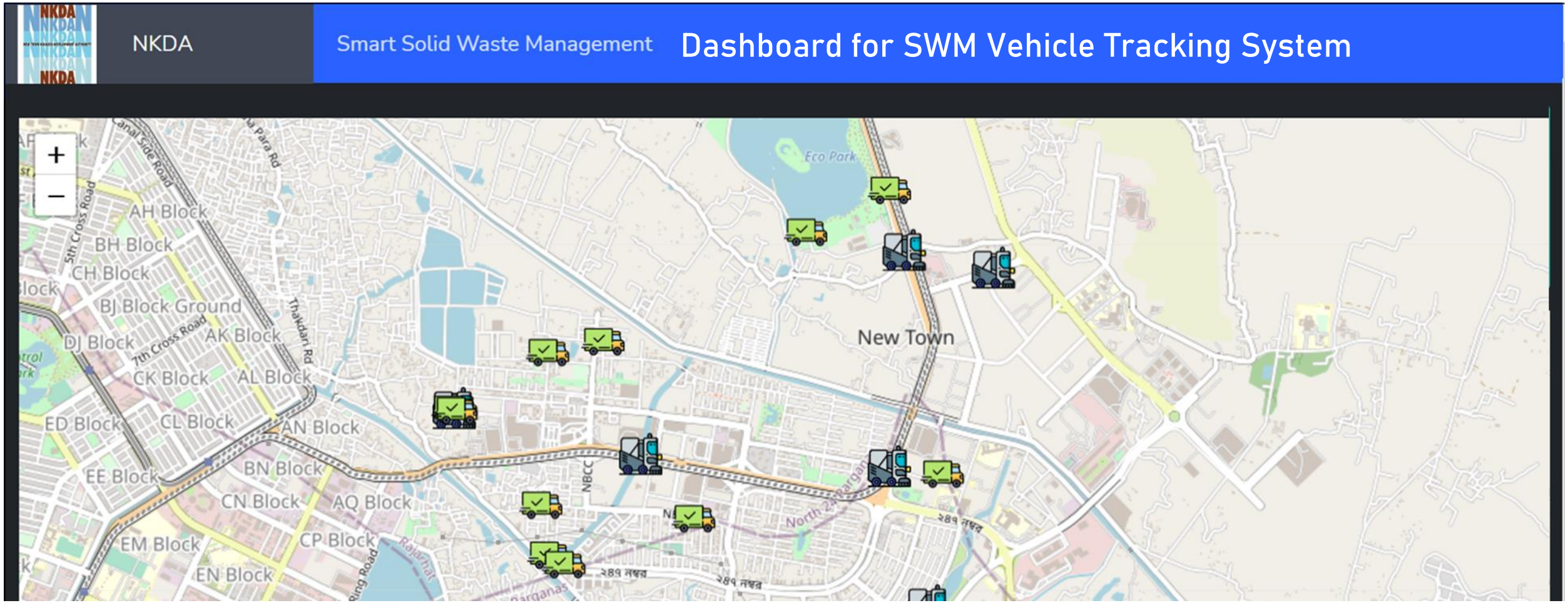
Smart Solid Waste Management System in New Town Kolkata

All solid waste collection vehicles are tagged with RFID- based sensors

SWM Vehicle fleet includes Auto- tippers with segregated chamber for dry waste and wet waste & Compactors for Wet Waste

Smart Solid Waste Management System in New Town Kolkata

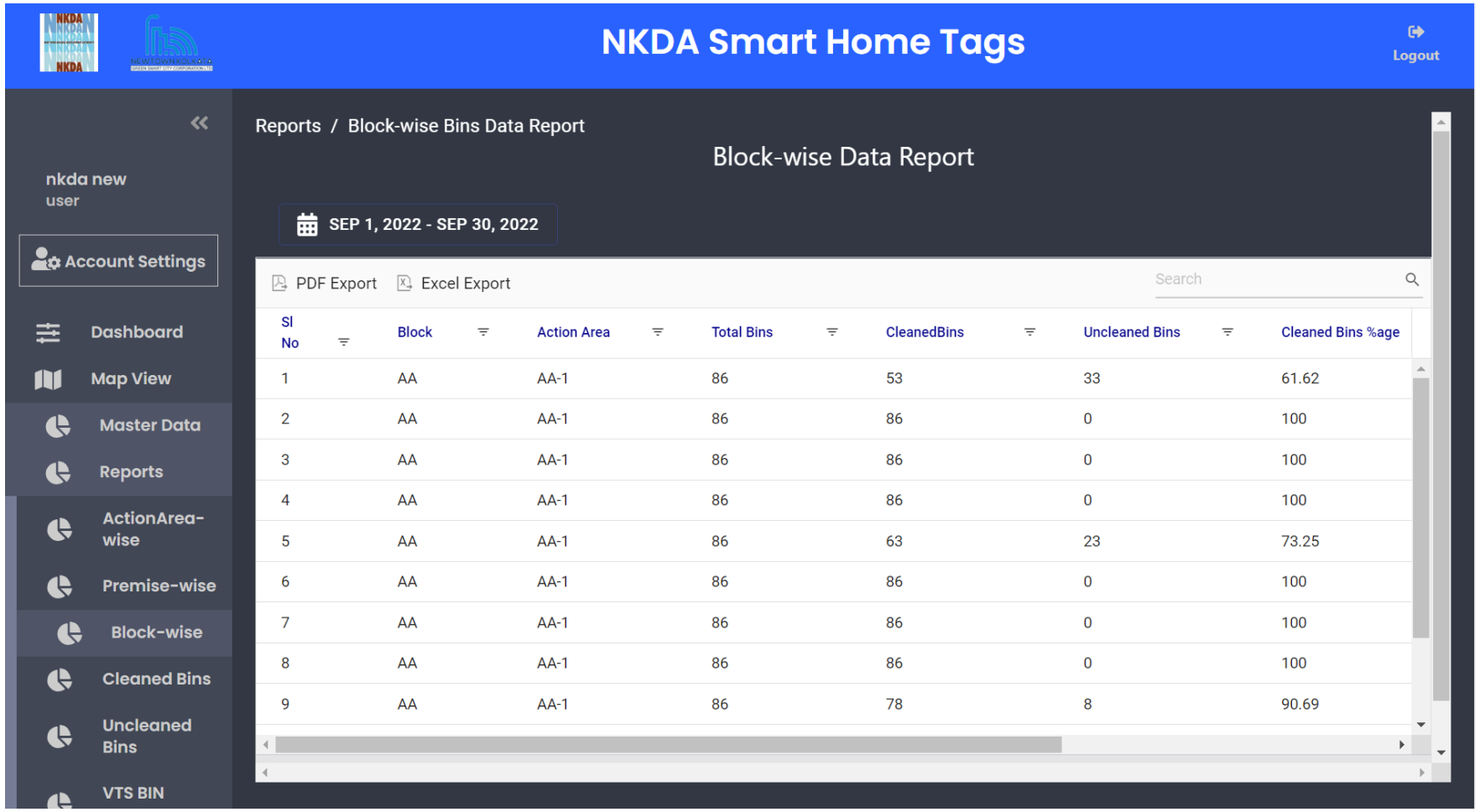
- Dashboard monitors real-time movement of SWM Vehicles, using the RFID- tag installed on vehicles.
- Development of Street Fencing with RFID-Reader installed on them is in progress.



Snapshot from the dashboard displays real-time spatial distribution of the SWM Vehicles in use for that instant of time

Smart Solid Waste Management System in New Town Kolkata

New Town Kolkata experiences many benefits of this Smart Solid Waste Management System



Sl No	Block	Action Area	Total Bins	CleanedBins	Uncleaned Bins	Cleaned Bins %age
1	AA	AA-1	86	53	33	61.62
2	AA	AA-1	86	86	0	100
3	AA	AA-1	86	86	0	100
4	AA	AA-1	86	86	0	100
5	AA	AA-1	86	63	23	73.25
6	AA	AA-1	86	86	0	100
7	AA	AA-1	86	86	0	100
8	AA	AA-1	86	86	0	100
9	AA	AA-1	86	78	8	90.69

1. Helps maintain a time-series database of the waste collection status for all premises in the city

2. Enables more customized, efficient and effective planning for collection and disposal of the waste

3. Saves time, money and resources while ensuring a better delivery of services

#2

Development and Maintenance of Public Green Space with Community Participation and in Collaboration with Private Partners

Public Green Space in New Town Kolkata: Green Verges

- In New Town, 'Green Verges' are pockets amidst built-up areas and are to be retained as green
- Concern : Rapid growth of weeds, snake infestation & manpower-intensive monitoring

Initiative undertaken to maintain the Green Verges in New Town Kolkata:

New Town Kolkata has introduced New Partnership Scheme:
'Adoption of Green Verges'

Salient Features :

- Land belongs to Authority
- Plantation & Maintenance by Private bodies along with Community Involvement
- All produces belong to Authority and to be used for livelihood generation for local Self-Help Groups

Adoption of Green Verge in New Town Kolkata

A Success Story : Dragon Fruit Orchard in New Town Green Verge

The Green Verge is adopted by
Bandhan- Konnagar

Fund Support is provided by
Bandhan Bank

Maintenance and Marketing is being done by Local SHGs

Adoption of Green Verge in New Town Kolkata

- Of the 48 Green Verges distributed across the city, more than 35 Green Verges have been 'Adopted'

Concern in 'Adoption' of Green Verges:
Appropriate Monitoring

Innovative Initiative for Monitoring:
Use of Geo Spatial Information

A Pilot Initiative has been launched

Initiative Partner:
Green for Life Foundation (NGO)

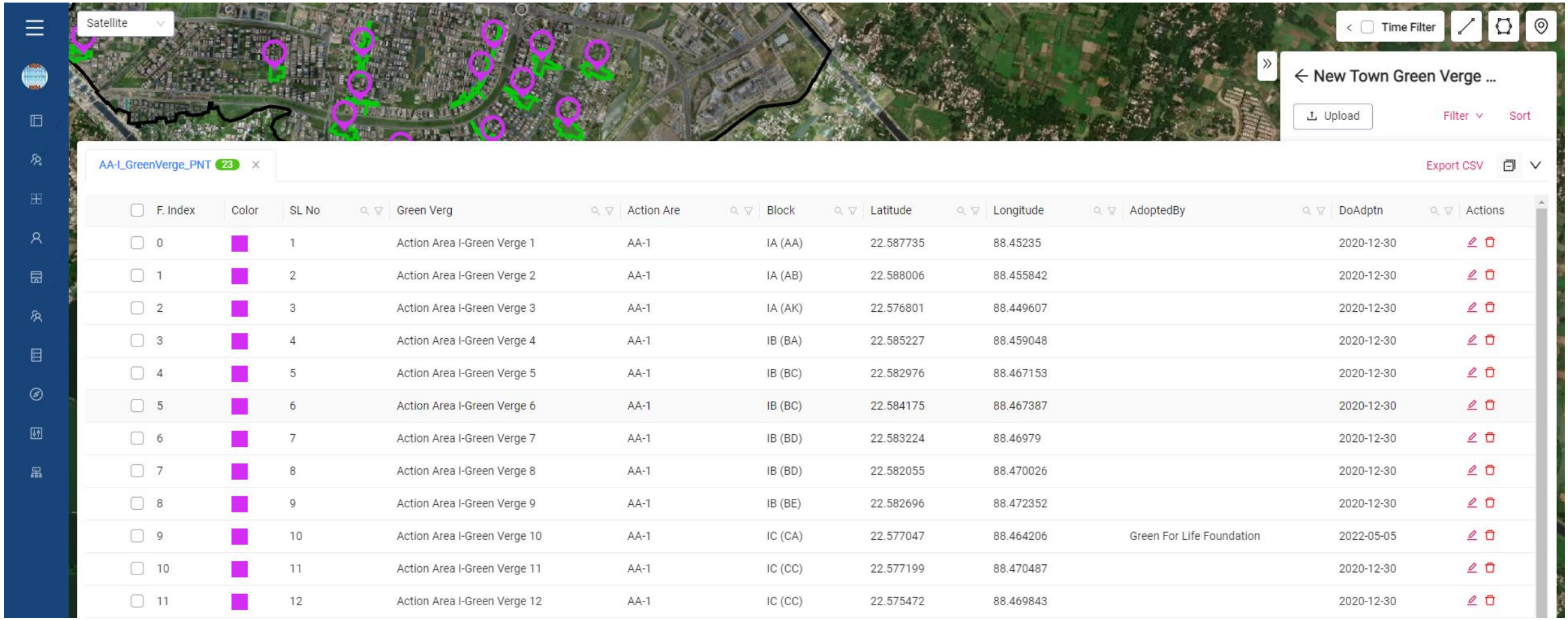
Monitoring of 'Adopted' Green Verges in New Town Kolkata

- Green Verges are being geo - tagged and database is being generated

Snapshot from the dashboard displays a part of New Town with the Green Verges within that area marked on map

Monitoring of 'Adopted' Green Verges in New Town Kolkata

- Data-base being developed for all green verges, include their block, area, coordinates, adoptive partner, etc.



F. Index	Color	SL No	Green Verg	Action Are	Block	Latitude	Longitude	AdoptedBy	DoAdptn	Actions
0		1	Action Area I-Green Verge 1	AA-1	IA (AA)	22.587735	88.45235		2020-12-30	
1		2	Action Area I-Green Verge 2	AA-1	IA (AB)	22.588006	88.455842		2020-12-30	
2		3	Action Area I-Green Verge 3	AA-1	IA (AK)	22.576801	88.449607		2020-12-30	
3		4	Action Area I-Green Verge 4	AA-1	IB (BA)	22.585227	88.459048		2020-12-30	
4		5	Action Area I-Green Verge 5	AA-1	IB (BC)	22.582976	88.467153		2020-12-30	
5		6	Action Area I-Green Verge 6	AA-1	IB (BC)	22.584175	88.467387		2020-12-30	
6		7	Action Area I-Green Verge 7	AA-1	IB (BD)	22.583224	88.46979		2020-12-30	
7		8	Action Area I-Green Verge 8	AA-1	IB (BD)	22.582055	88.470026		2020-12-30	
8		9	Action Area I-Green Verge 9	AA-1	IB (BE)	22.582696	88.472352		2020-12-30	
9		10	Action Area I-Green Verge 10	AA-1	IC (CA)	22.577047	88.464206	Green For Life Foundation	2022-05-05	
10		11	Action Area I-Green Verge 11	AA-1	IC (CC)	22.577199	88.470487		2020-12-30	
11		12	Action Area I-Green Verge 12	AA-1	IC (CC)	22.575472	88.469843		2020-12-30	

Snapshot from the dashboard displays the database being maintained for each green verge

Monitoring of 'Adopted' Green Verges in New Town Kolkata

▶ In the data base, exact boundary of each Green Verge is being superimposed on the Map

Snapshot from the dashboard displays exact boundary of one of the Green Verges, Green Verge 23, DF Block, Action Area I, New Town Kolkata

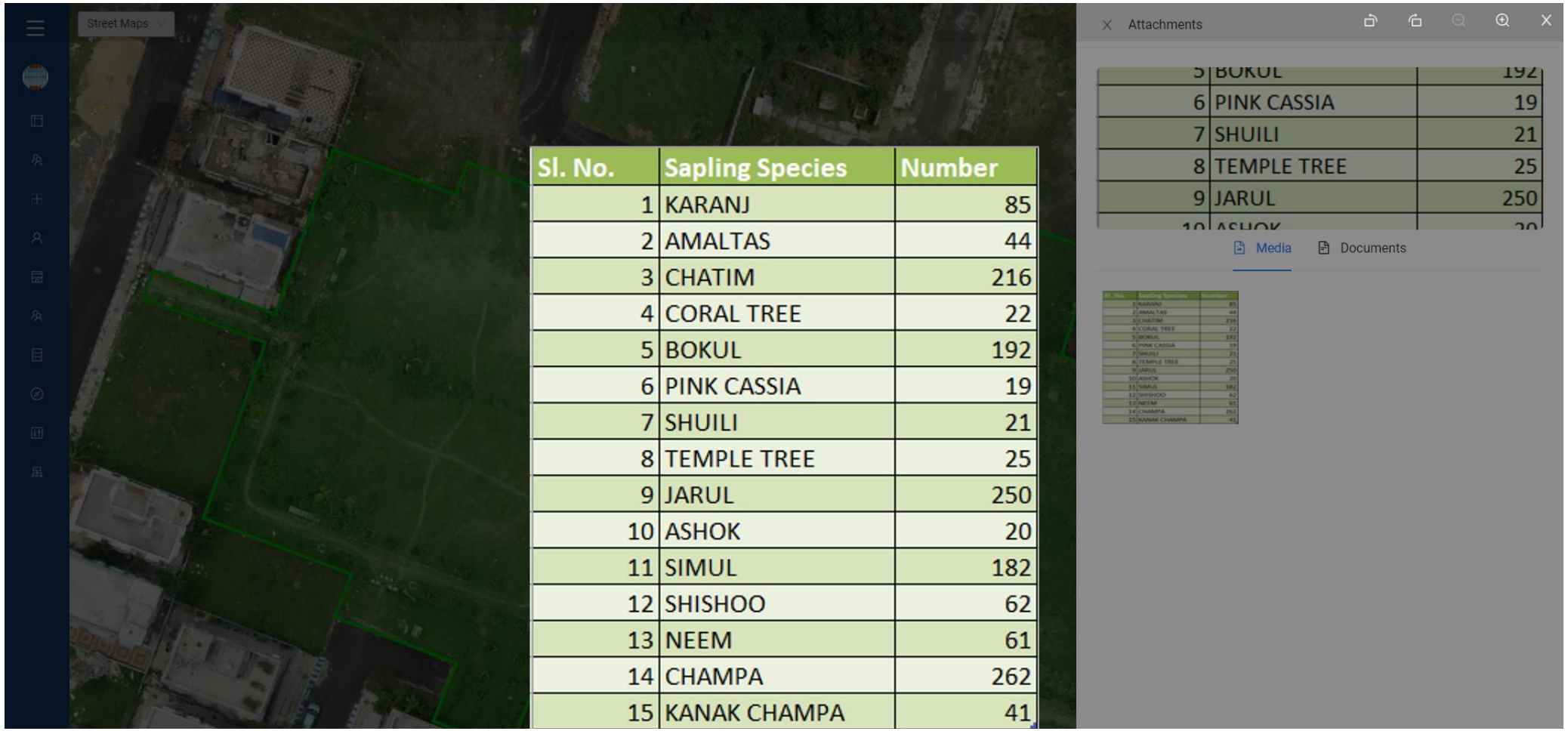
Monitoring of 'Adopted' Green Verges in New Town Kolkata

- Details of individual Green Verge are being included in the Data Base

Snapshot from the dashboard displays exact boundary of the Green Verge along with the data maintained for each Green Verge

Monitoring of 'Adopted' Green Verges in New Town Kolkata

- Details include type of plants and their number in respective Green Verge



Sl. No.	Sapling Species	Number
1	KARANJ	85
2	AMALTAS	44
3	CHATIM	216
4	CORAL TREE	22
5	BOKUL	192
6	PINK CASSIA	19
7	SHUILI	21
8	TEMPLE TREE	25
9	JARUL	250
10	ASHOK	20
11	SIMUL	182
12	SHISHOO	62
13	NEEM	61
14	CHAMPA	262
15	KANAK CHAMPA	41

Snapshot from the dashboard displays the database being maintained about the type and number of trees planted in each green verge

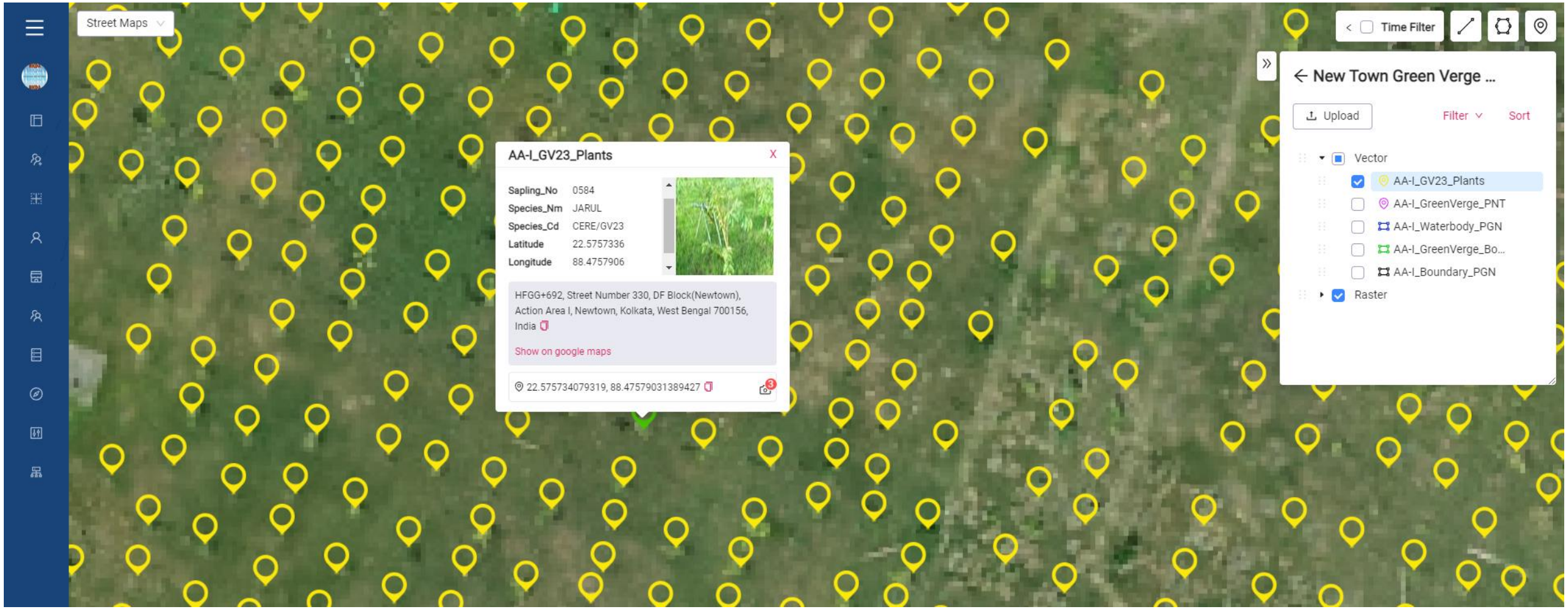
Monitoring of 'Adopted' Green Verges in New Town Kolkata

- Every Tree in the Green Verge is being provided with a Unique Number and is being Geo tagged

Snapshot from the dashboard displays the unique code number on trees in the Green Verge

Monitoring of 'Adopted' Green Verges in New Town Kolkata

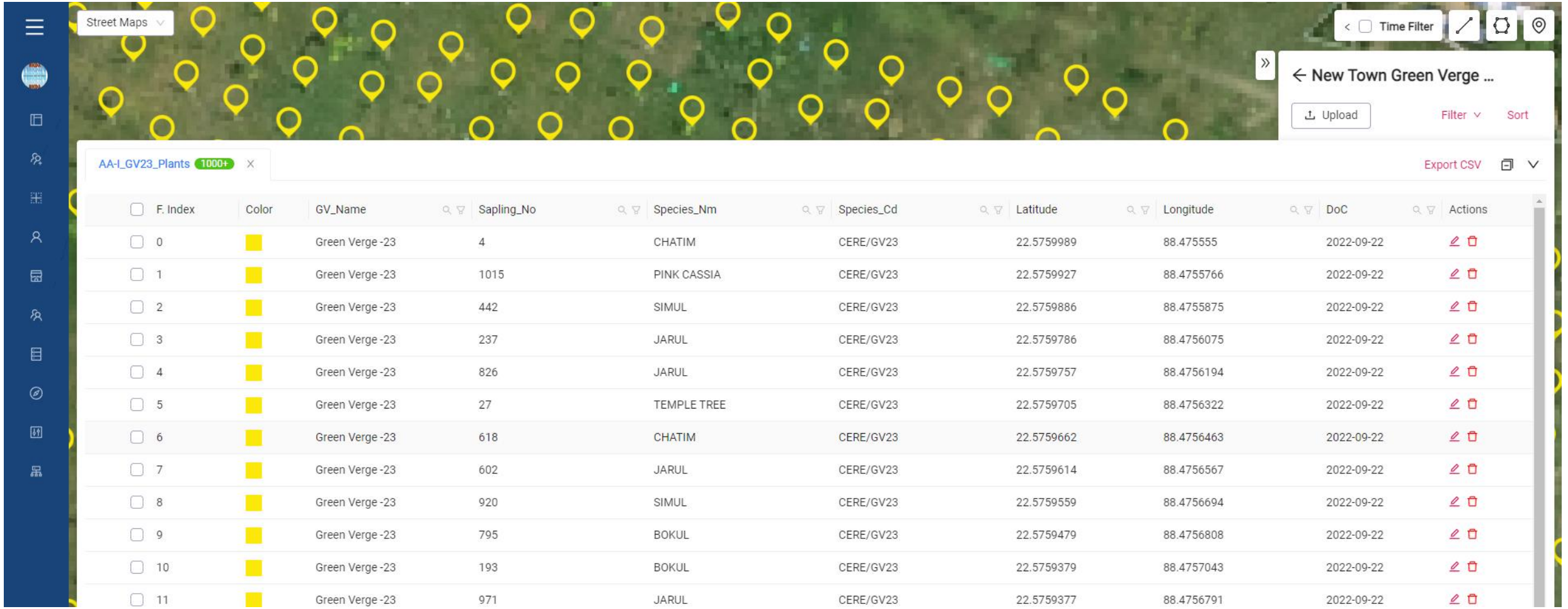
- Detail including periodic photos of each tree with a unique number, is being incorporated in the data base



Snapshot from the dashboard displays details of each tree maintained in the database like species type, photo, etc. against each unique number

Monitoring of 'Adopted' Green Verges in New Town Kolkata

- Database is being generated for all trees in particular Green Verge



F. Index	Color	GV_Name	Sapling_No	Species_Nm	Species_Cd	Latitude	Longitude	DoC	Actions
0		Green Verge -23	4	CHATIM	CERE/GV23	22.5759989	88.475555	2022-09-22	
1		Green Verge -23	1015	PINK CASSIA	CERE/GV23	22.5759927	88.4755766	2022-09-22	
2		Green Verge -23	442	SIMUL	CERE/GV23	22.5759886	88.4755875	2022-09-22	
3		Green Verge -23	237	JARUL	CERE/GV23	22.5759786	88.4756075	2022-09-22	
4		Green Verge -23	826	JARUL	CERE/GV23	22.5759757	88.4756194	2022-09-22	
5		Green Verge -23	27	TEMPLE TREE	CERE/GV23	22.5759705	88.4756322	2022-09-22	
6		Green Verge -23	618	CHATIM	CERE/GV23	22.5759662	88.4756463	2022-09-22	
7		Green Verge -23	602	JARUL	CERE/GV23	22.5759614	88.4756567	2022-09-22	
8		Green Verge -23	920	SIMUL	CERE/GV23	22.5759559	88.4756694	2022-09-22	
9		Green Verge -23	795	BOKUL	CERE/GV23	22.5759479	88.4756808	2022-09-22	
10		Green Verge -23	193	BOKUL	CERE/GV23	22.5759379	88.4757043	2022-09-22	
11		Green Verge -23	971	JARUL	CERE/GV23	22.5759377	88.4756791	2022-09-22	

Snapshot from the dashboard displays example of the tree database maintained for each Green Verge

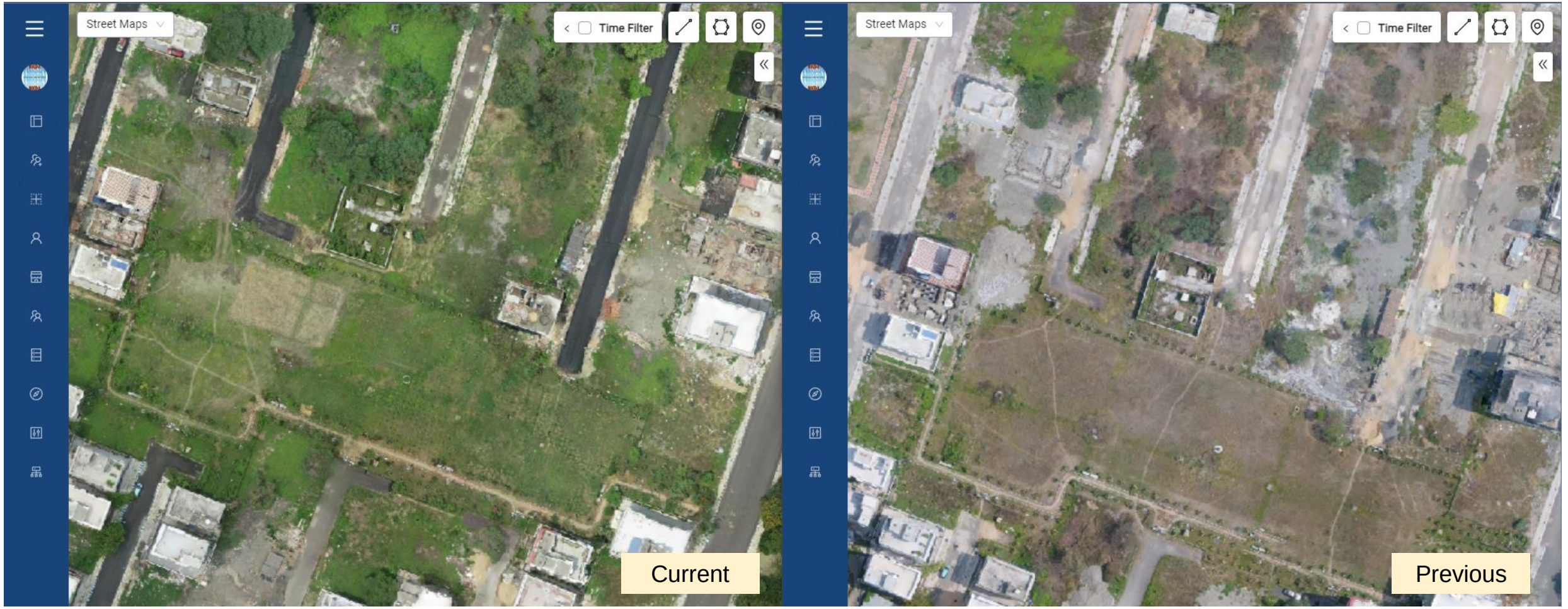
Monitoring of ‘Adopted’ Green Verges in New Town Kolkata

- Drone Surveillance of the Green Verges are being conducted periodically

Snapshot from the dashboard displays the drone surveillance images preserved for the Green Verges

Monitoring of 'Adopted' Green Verges in New Town Kolkata

- Periodic Drone Images from different ranges are being preserved to understand the development over time



Snapshot from the dashboard displays a comparison between the current and previous status of a Green Verge (Green verge 23, Action Area I)

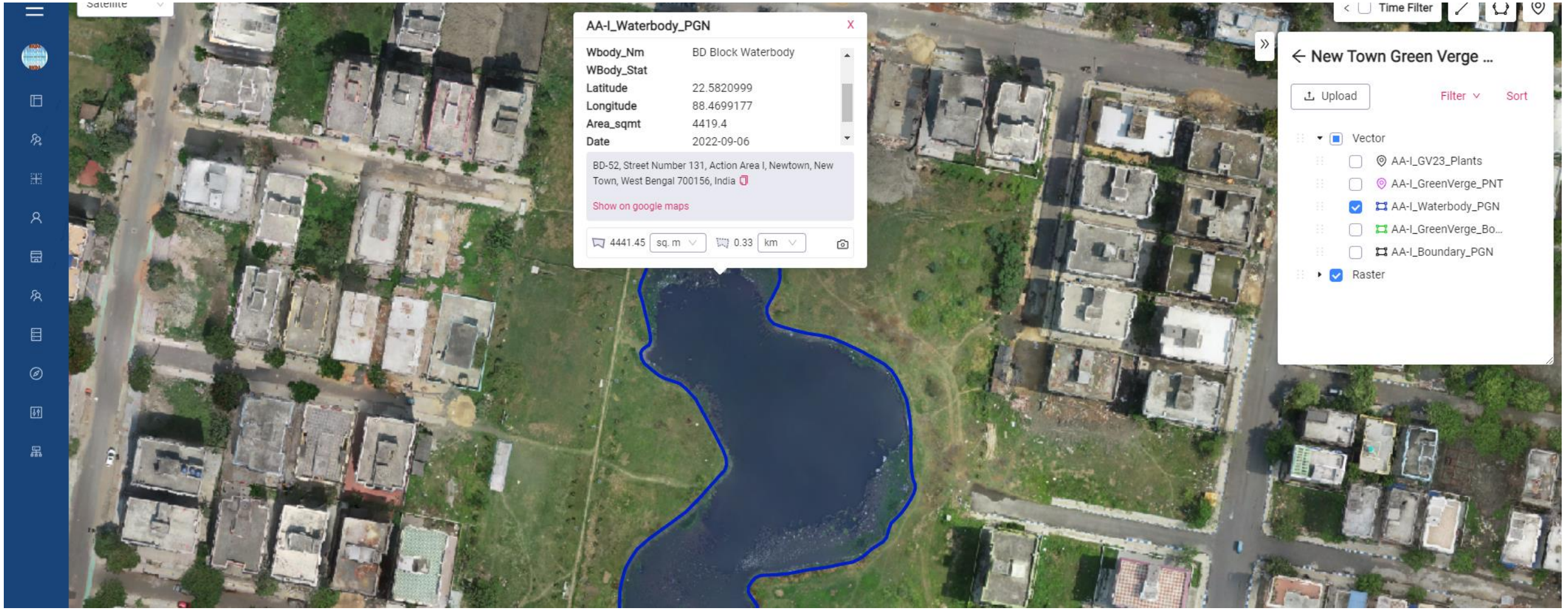
Monitoring of 'Adopted' Green Verges in New Town Kolkata

- Water Bodies Present in the Green Verges are also being Geo -Tagged

Snapshot from the dashboard displays a part of New Town as an example to demonstrate tagging of water bodies on map

Monitoring of 'Adopted' Green Verges in New Town Kolkata

- Data- Base is being developed for water bodies including Area, Green Verge Number, etc.



Snapshot from the dashboard displays a water body which is a part of a Green Verge and all details regarding the same, incorporated

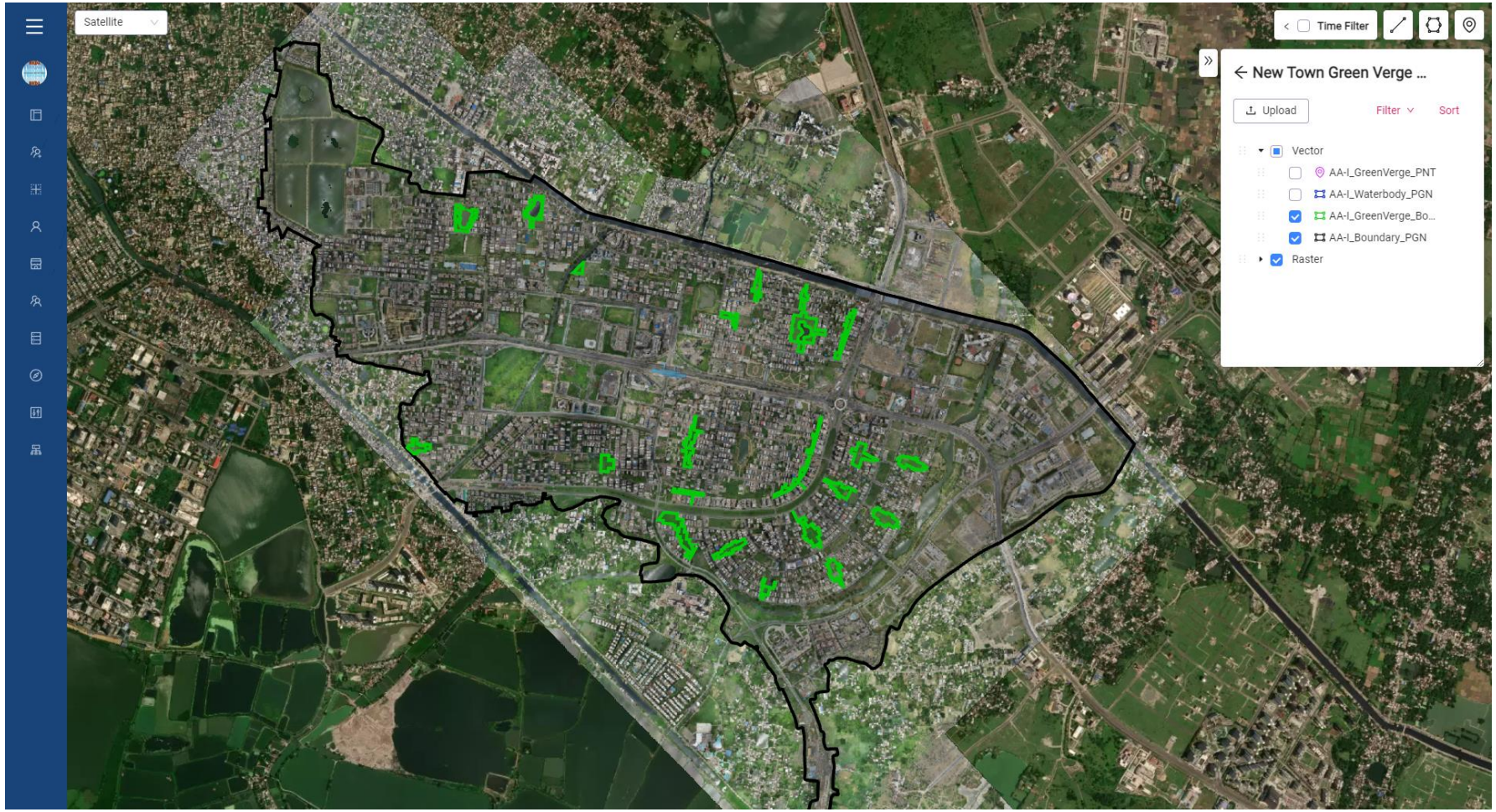
Monitoring of 'Adopted' Green Verges in New Town Kolkata

- Drone Surveillance of the water bodies are being conducted and Periodic Images are preserved

Snapshot from the dashboard displays a comparison between the current and previous status of a Water Body within a Green Verge

Monitoring of 'Adopted' Green Verges in New Town Kolkata

There are many benefits of using this Monitoring Mechanism for the Green Verges in New Town Kolkata



1. Maintaining information on spatial distribution of green area and monitoring 'Adopted' Green Verges

2. Preparation of Time- Series data base on tree count, vegetation type, water bodies, temporal images, etc.

3. The project plans to integrate data about the trees periodic health statistics in the database as well.

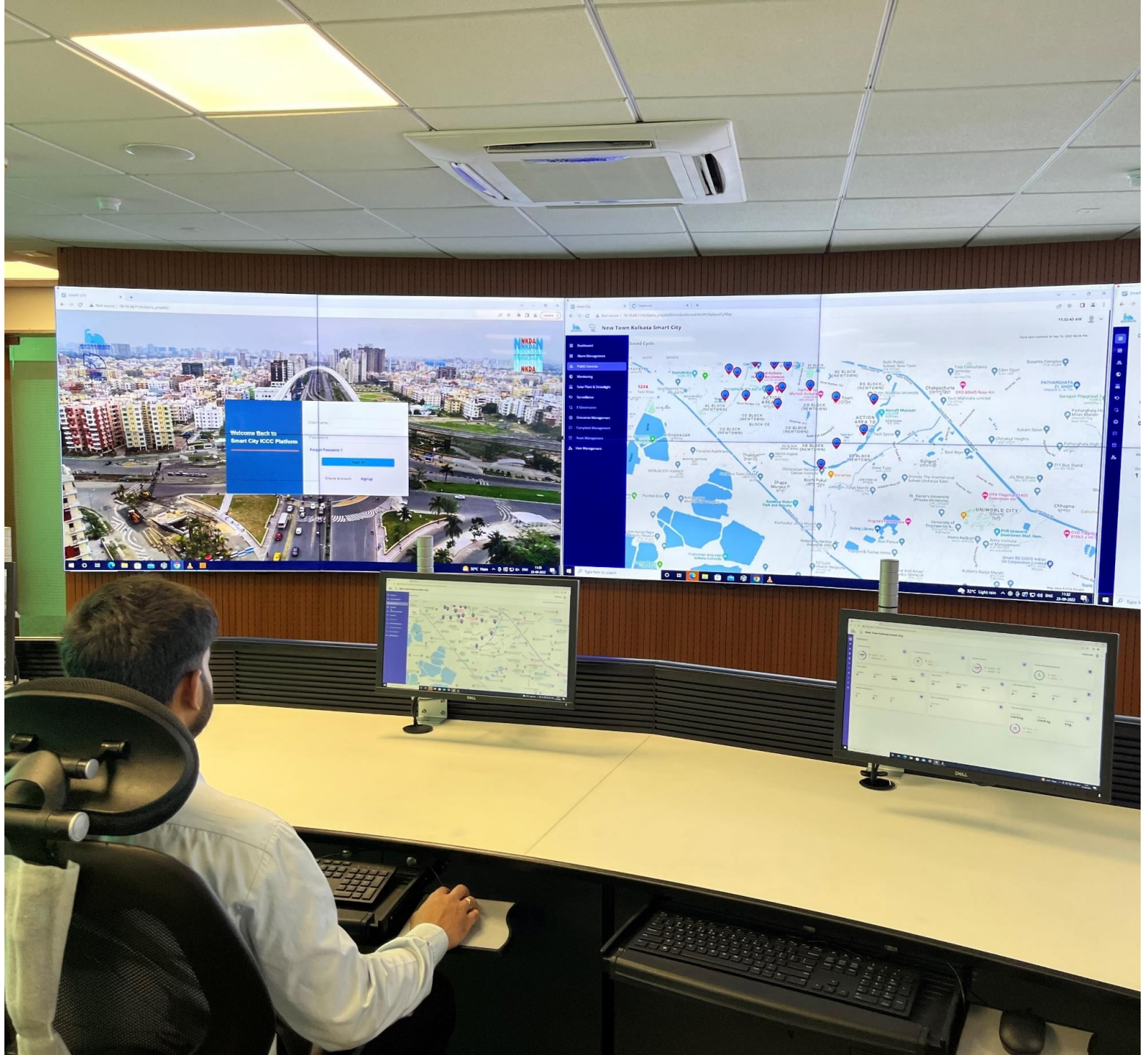
Use of Geo Spatial Information for Other Functions in New Town Kolkata

1. Lora WAN- based Street Light System

2. Passenger Information System at Bus Stops

3. Identification of black-spots for further analysis towards identification of CCTV locations

3. Real Time Feedback of Utilities, etc.



New Town Kolkata has Integrated Command and Control System (ICCC) with presently around 25+ Services linked to it

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Presented by

New Town Kolkata Green Smart City Corporation, West Bengal