



**Global Conference on
"Growth of the IoT/M2M Ecosystem through Standardized Implementations"**

**Transforming the Cities through
Digital Technologies
Varanasi Case study**



Dr. D. Vasudevan
Chief General Manager
Varanasi Smart City

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- Smart Parking Management App
- Kashi Geo-Hub
- Kashi Pass- Unified Tourist Pass system
- Digital Twinning Project

Smart City Mandate



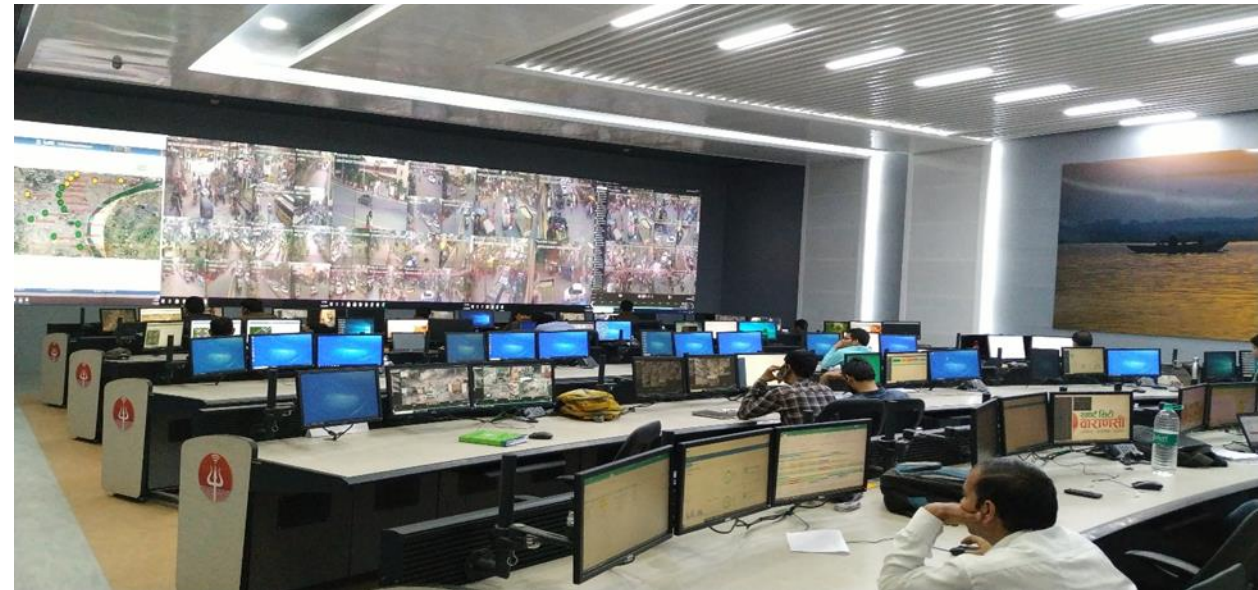
“In the approach to the Smart Cities Mission, the objective is to promote cities that provide core infrastructure and give a decent quality of life to its citizens, a clean and sustainable environment and application of ‘**Smart’ Solutions**”

Integrated Command and Control Centre platform equips cities to do more with less by graduating to **real time data driven decision/policy making** with better situational awareness as compared to traditional inefficient silo-ed departmental approach of city administration.

Integrated Command Control Centre also **reduces the complexity of dealing with multiple systems/application in different technologies** using different platform by integrating them to **common platform to leverage the intelligence for making informed decisions.**

Kashi Integrated Command and Control Centre

- Kashi Integrated Command & Control Viewing Centre
- Data Centre (DC) and Disaster Recovery (DR)
- City Surveillance & Intelligent Traffic Management System (ITMS)
- Kashi Solid Waste Management System (KSWMS)
- Kashi Environmental Monitoring System
- Kashi Smart Street Lighting Management System
- GIS (Real time Integration with Smart City Applications)
- E-Governance (Smart Kashi Portal & Smart Kashi App)
- Helpdesks



Intelligent Traffic Management System

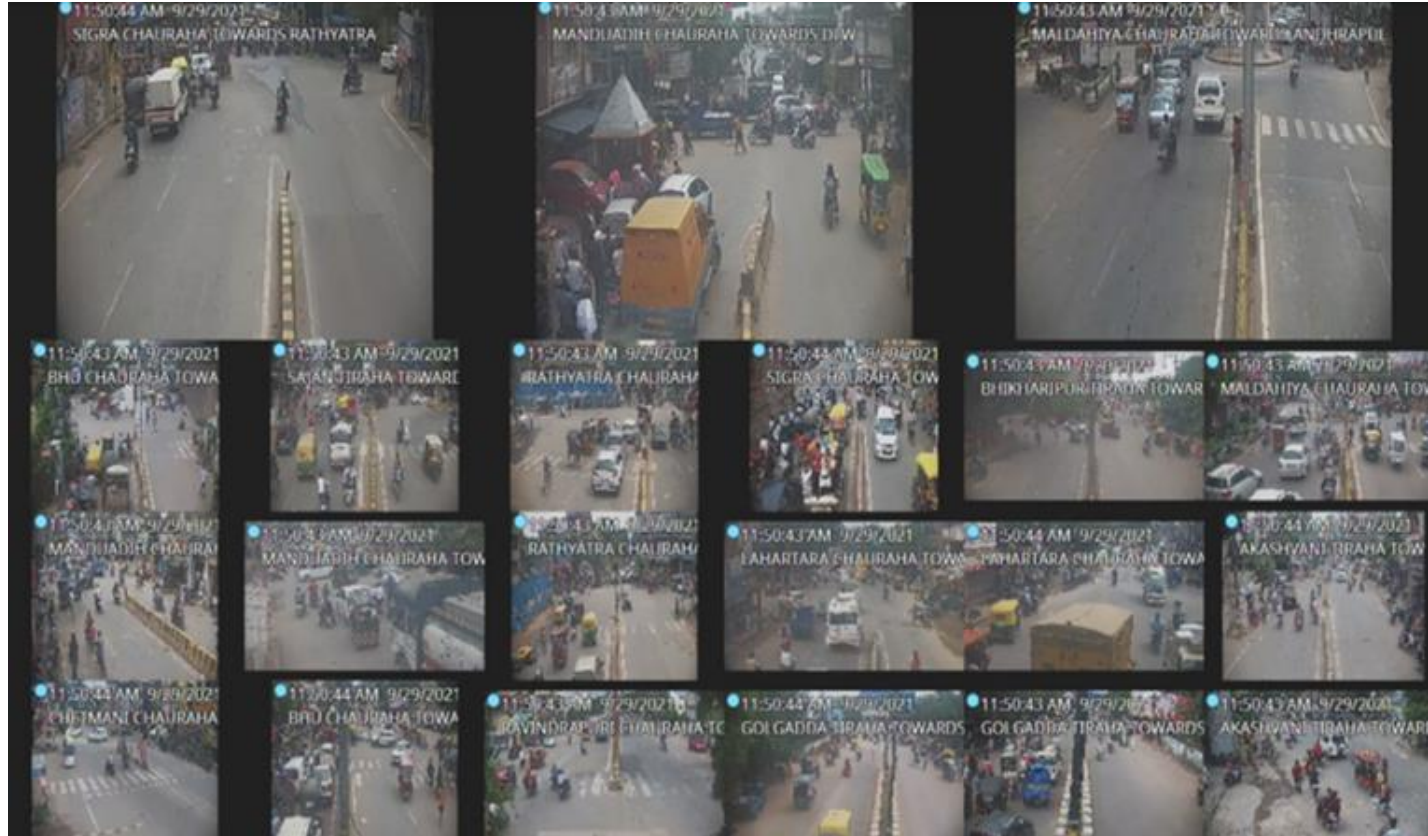
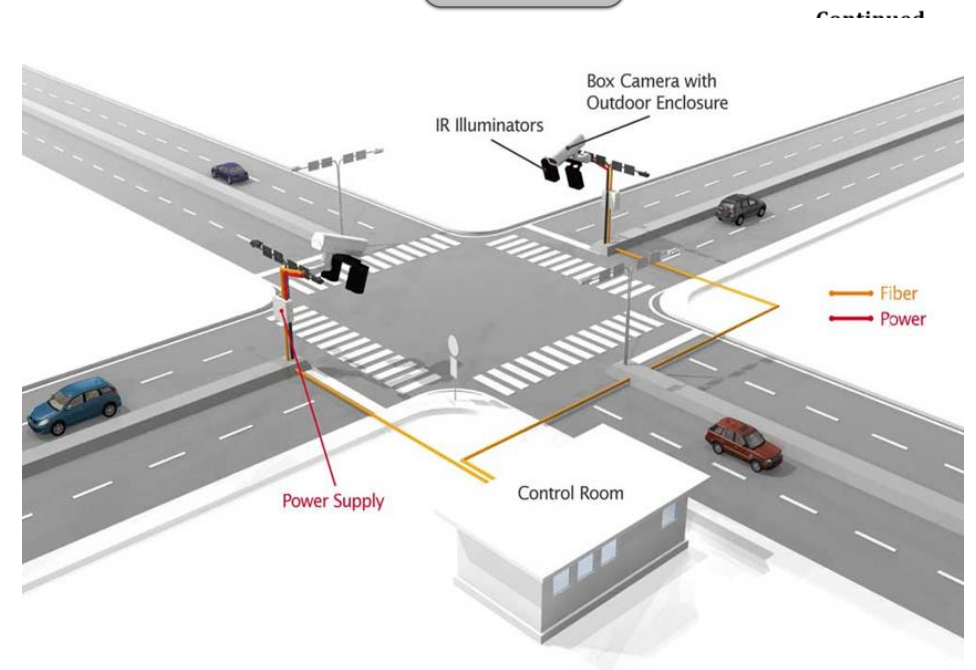
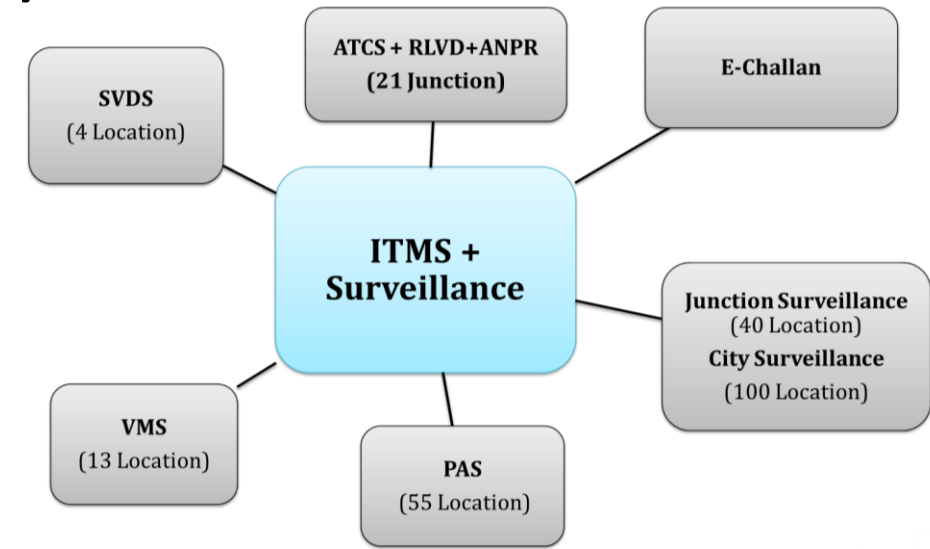
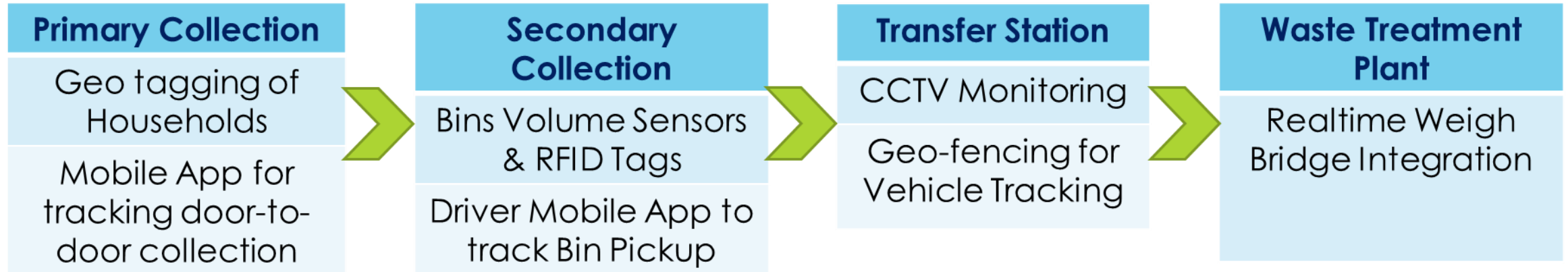


Figure 1: Viewing Screen of Camera Location at KICCC



Smart Solid Waste Management System

Centralized Monitoring at Command & Control Centre (KICCC)



Monitoring
Biometric Attendance
Citizen Complaint Redressal
Vehicle Tracking & Fuel Management
Inventory Management

Ancillary Activities
Mechanized Road Sweeping (Mobile App based)
Toilet & Urinal Cleaning (Mobile App based)
CoVID Initiative : QRT Vehicle Tracking & Sanitizer Drone Tracking through remote surveillance
IUDX collaboration : Using Open Data Source Mobile App Developed for In-transit Waste Collection Monitoring



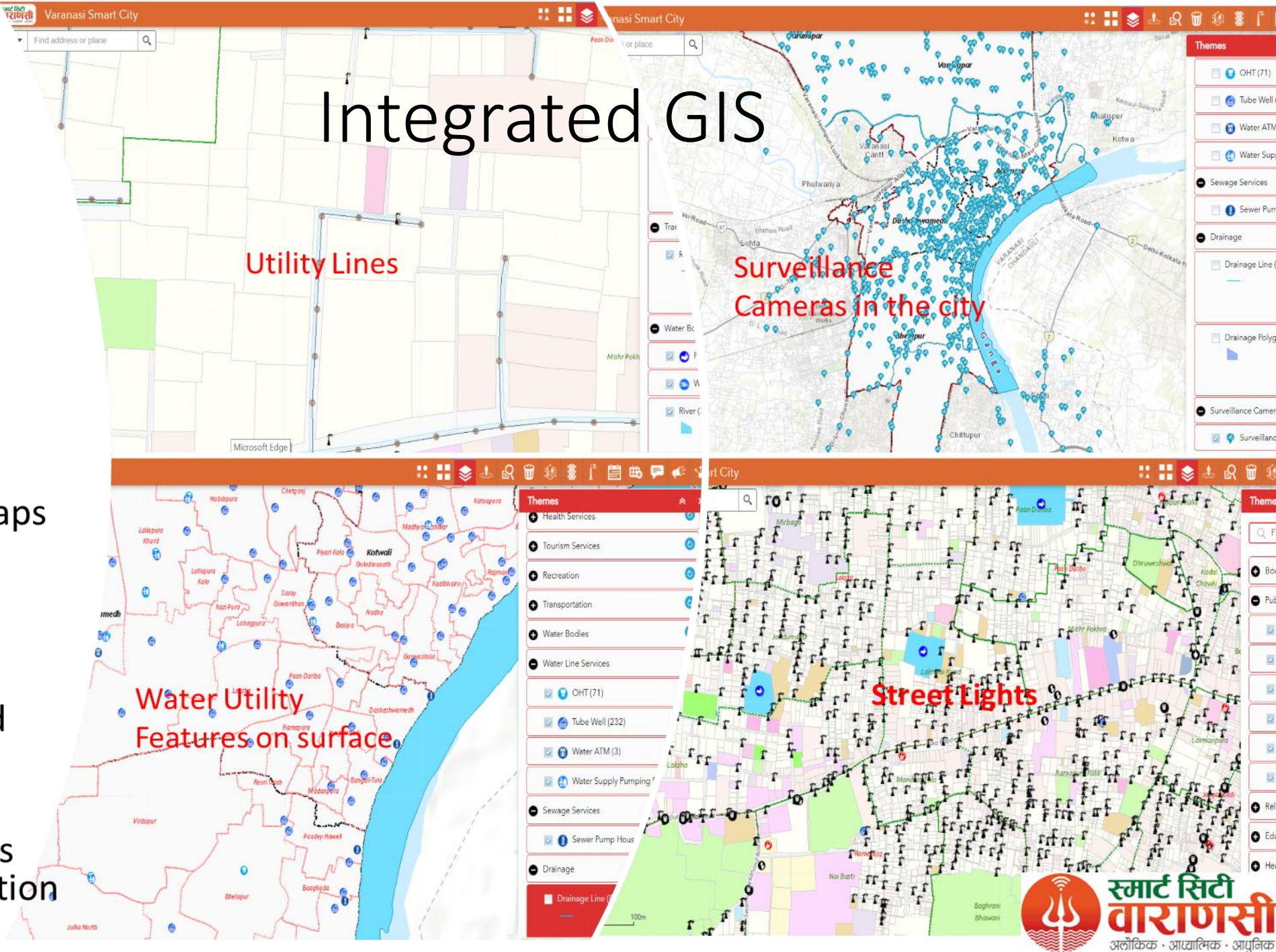
Outputs and Outcomes

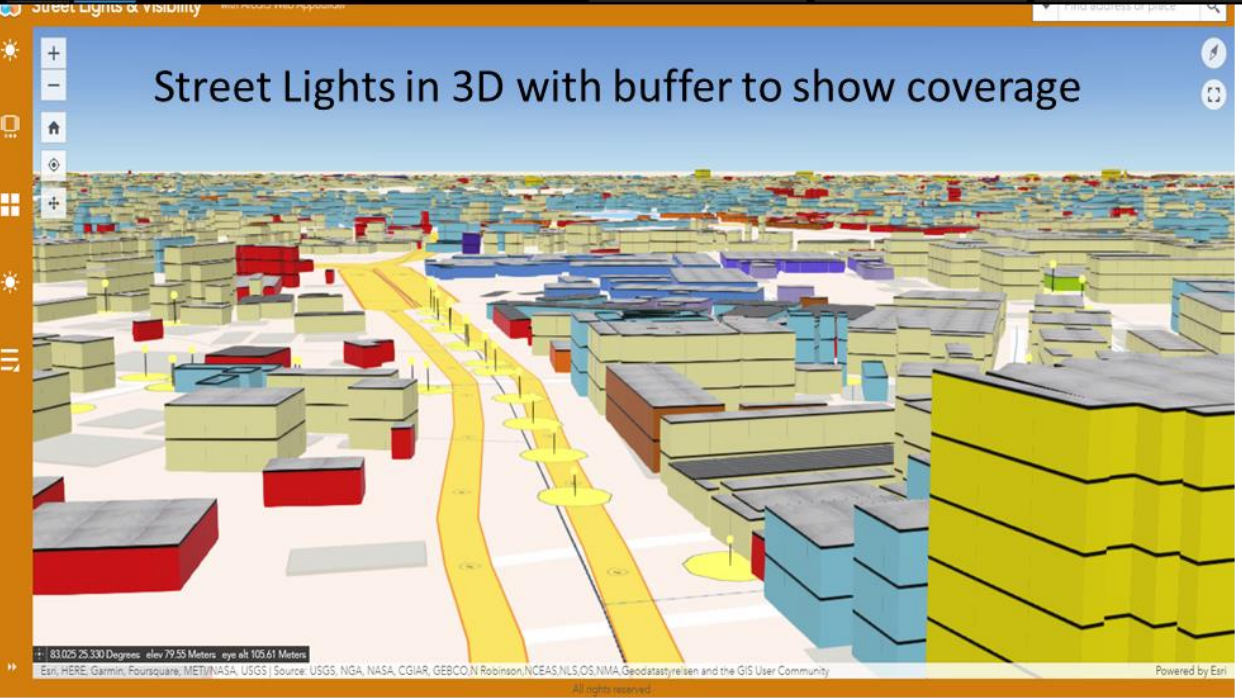
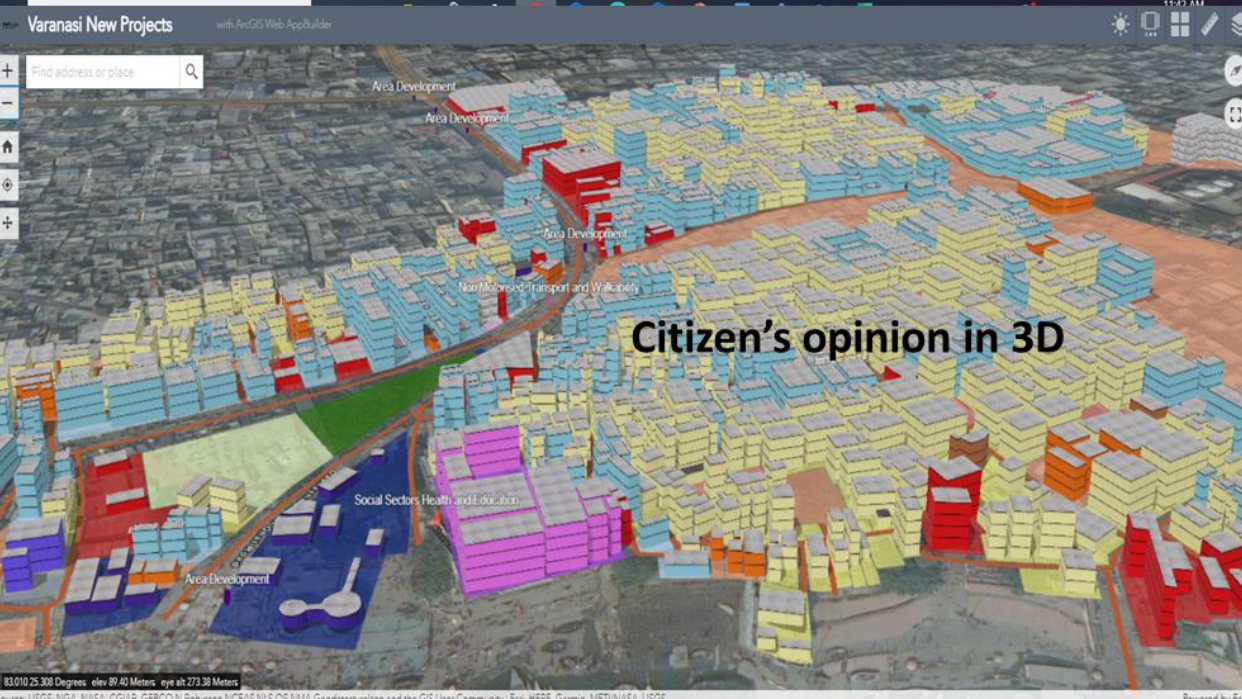
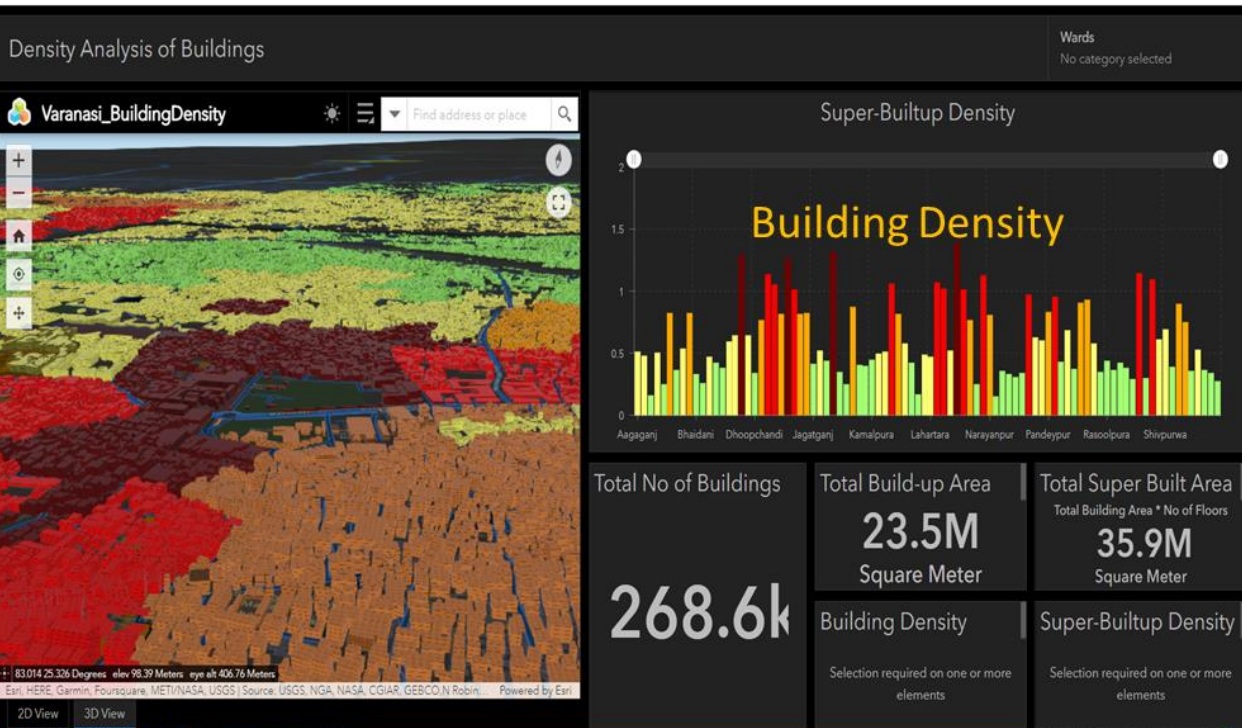
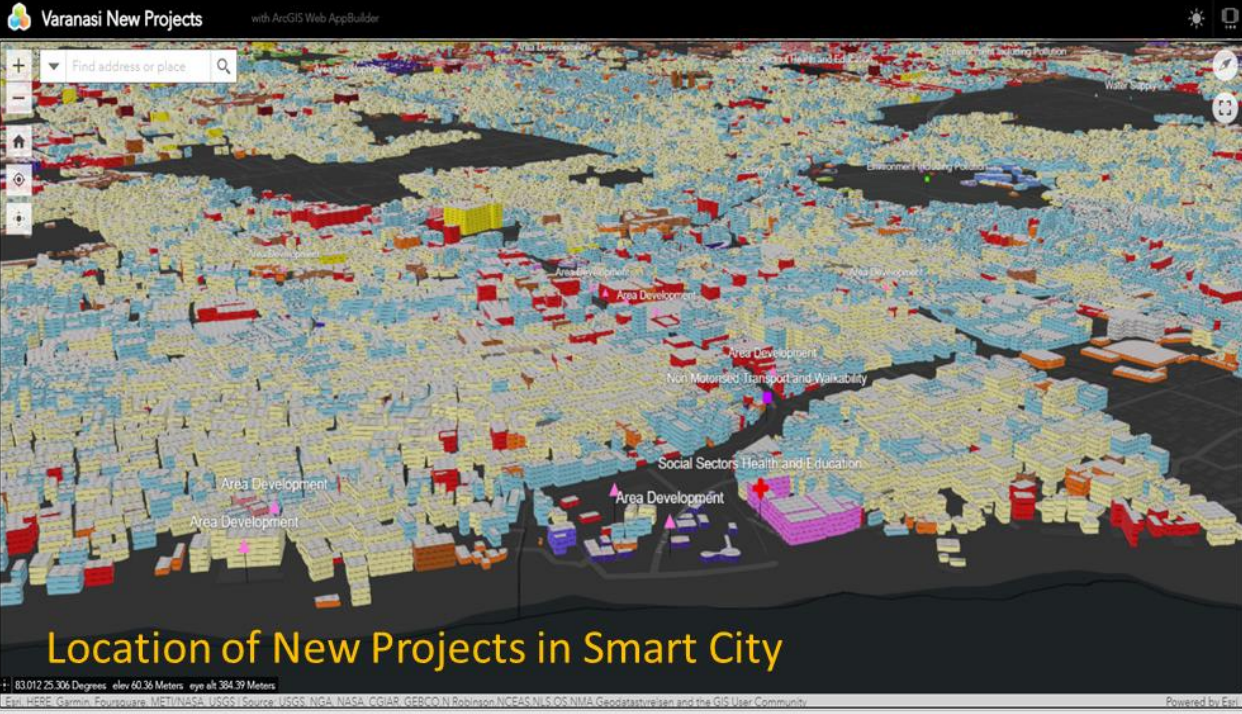
- **Reduced fuel consumption** and Route Optimization by GPS tracking of SWM vehicles and online fuel disbursement mechanism – **24%**
- **Early resolution of Citizen complaints** by integration of Swachhta App and Smart City SWM Supervisor App – Average resolution time 12-24 hrs. [Since July, 2018- 20333 Complaints received, 20291 resolved, 41 Pending]
- **Improved staff attendance** by bio-metric on field hand held system and its Tracking through SWM application – **25% increase**
- **Better Inventory Management** through Software tracking the repairs, replacements, warranties and scheduling preventive maintenance- **Saving of appx. Rs. 2.10 lacs,** month on month basis in repair and maintenance

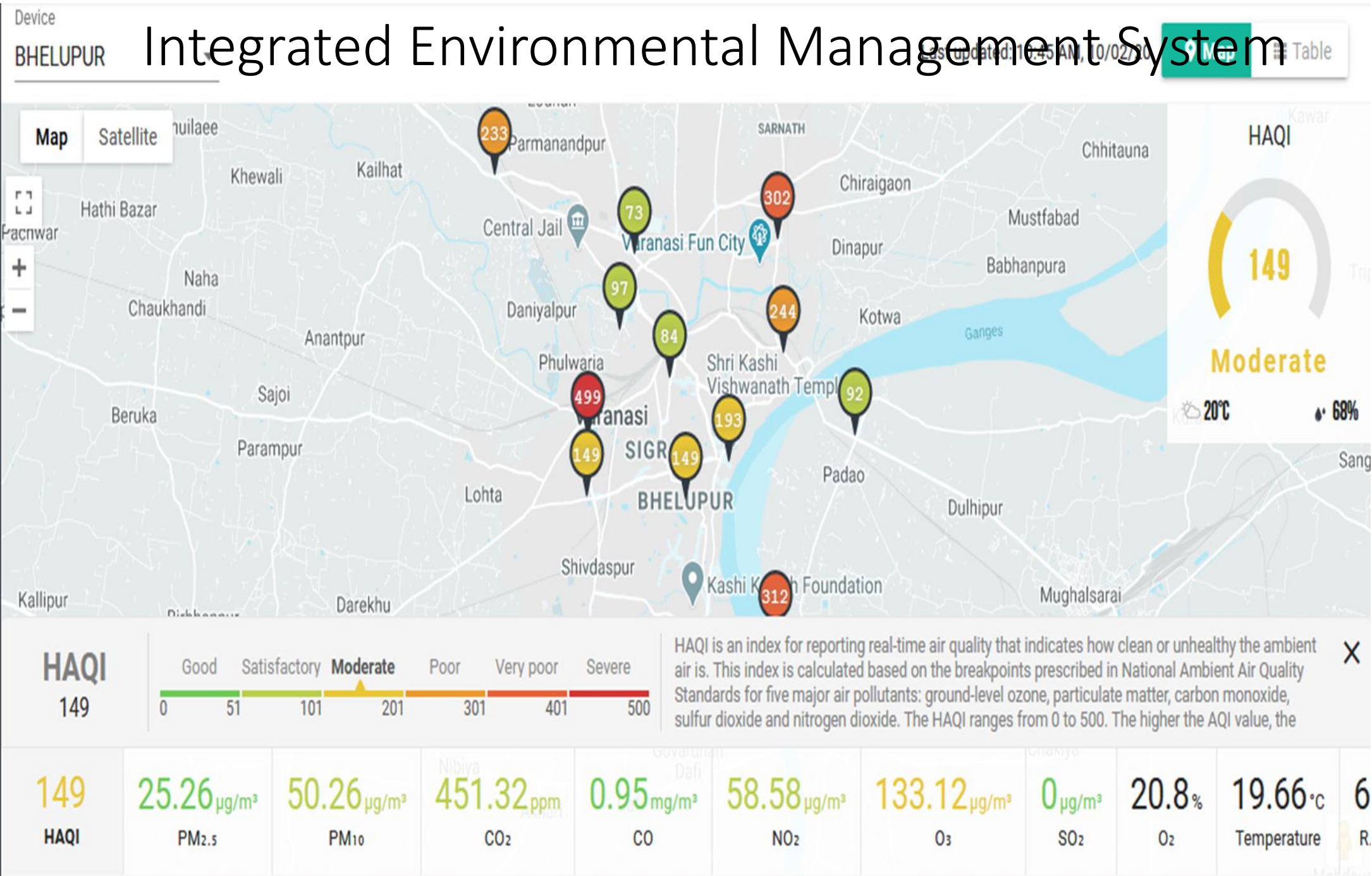


Spatial Data for Citizen's and departments information

- Multiple Layers of Information to support Citizen's locational requirement
- Common set of Base Maps for departments to collaborate and take decisions.
- Spatial Information for operation efficiency and provide efficient citizen services.
- Reduce Business Process through spatial information







Covid Management through KICCC

The Safe Kashi Mobile app was updated on a daily basis and was the primary source of Information to the citizens, Media and Officials alike

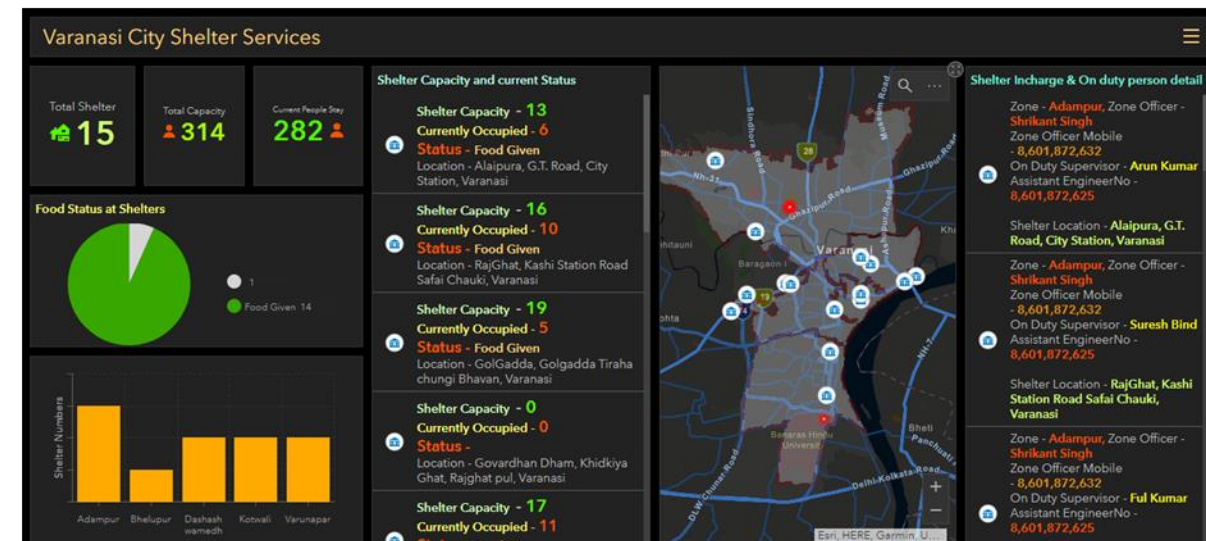
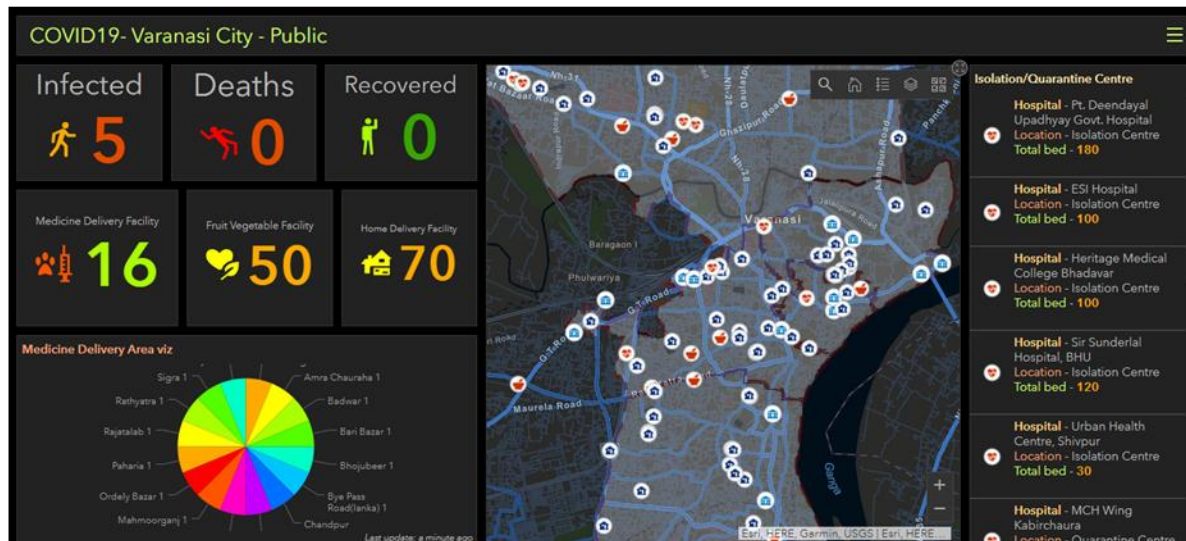
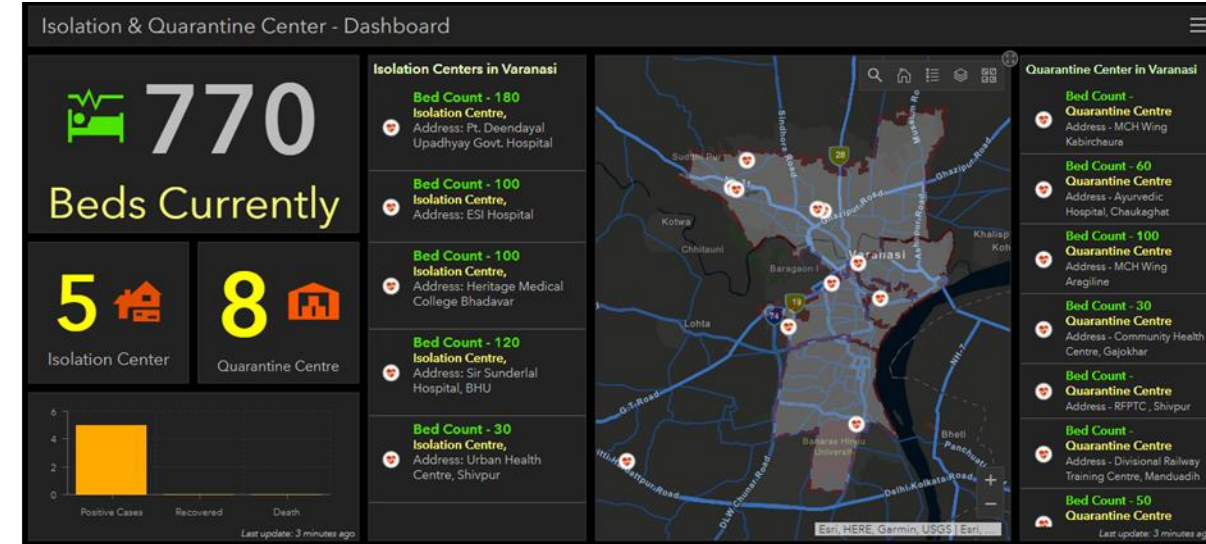
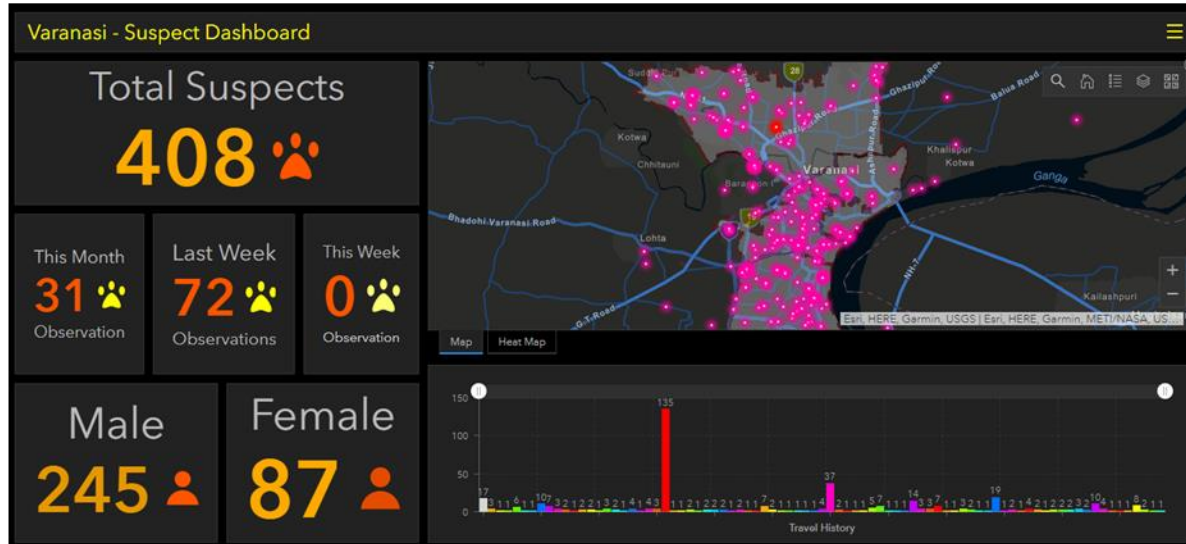
Safe Kashi Mobile App

- Publicly available from 25 March 2020
- Android based user friendly app
- Available on google play Store
- More than 2.5 lacs downloads
- App Features / Features
 - Daily COVID updates
 - Do's and don'ts
 - Doctor consultation
 - Door to door Grocery Delivery
 - Fruit and vegetable vending
 - Link to Lockdown E-pass site
 - Link to e-rickshaws e-Pass
 - Incident reporting
 - Government Orders
 - Voluntary contribution



Use of GIS and Digital Dashboards

“Digital Dashboards covered every aspect of the pandemic and helped the Administration to manage it better”






Explore Datasets in Varanasi

Streamlined collection of smart city data for a better experience



Geo Query

 28 Cities
  8 Domains
  1 Publishers
  11 Datasets
  30 Resources



Featured datasets in Varanasi



Search and find from 11 datasets, 30 resources and 1 publishers



Varanasi Smart City Limited

Places Of Interest In Varanasi City



Public 3 Resources



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Fuel Information of SWM Vehicles in Varanasi City



Private 2 Resources



Varanasi Smart City Limited

Waste Bin levels in Varanasi City



Private 1 Resources



Varanasi Smart City Limited

Realtime Positions for SWM Vehicles in Varanasi City



Private 1 Resources



Varanasi Smart City Limited

Civic Issues Reported from Swachhata-App



Private 1 Resources



Varanasi Smart City Limited

SWM Employees in Varanasi City



Private 1 Resources

[View All Datasets](#)



India Urban Data Exchange (IUDX) is a transformative initiative of the Ministry of Housing and Urban Affairs, Government of India to provide a data exchange platform to Indian cities. IUDX serves as a seamless interface for data providers and data users, including ULBs, to share, request, and access datasets related to cities, urban governance, and urban service delivery. The platform has been developed by the Smart Cities Mission and is implemented by the Indian Institute of Science (IISc), Bengaluru.



IOT data from installed sensors

Demographic or geographical data



Tax or property records

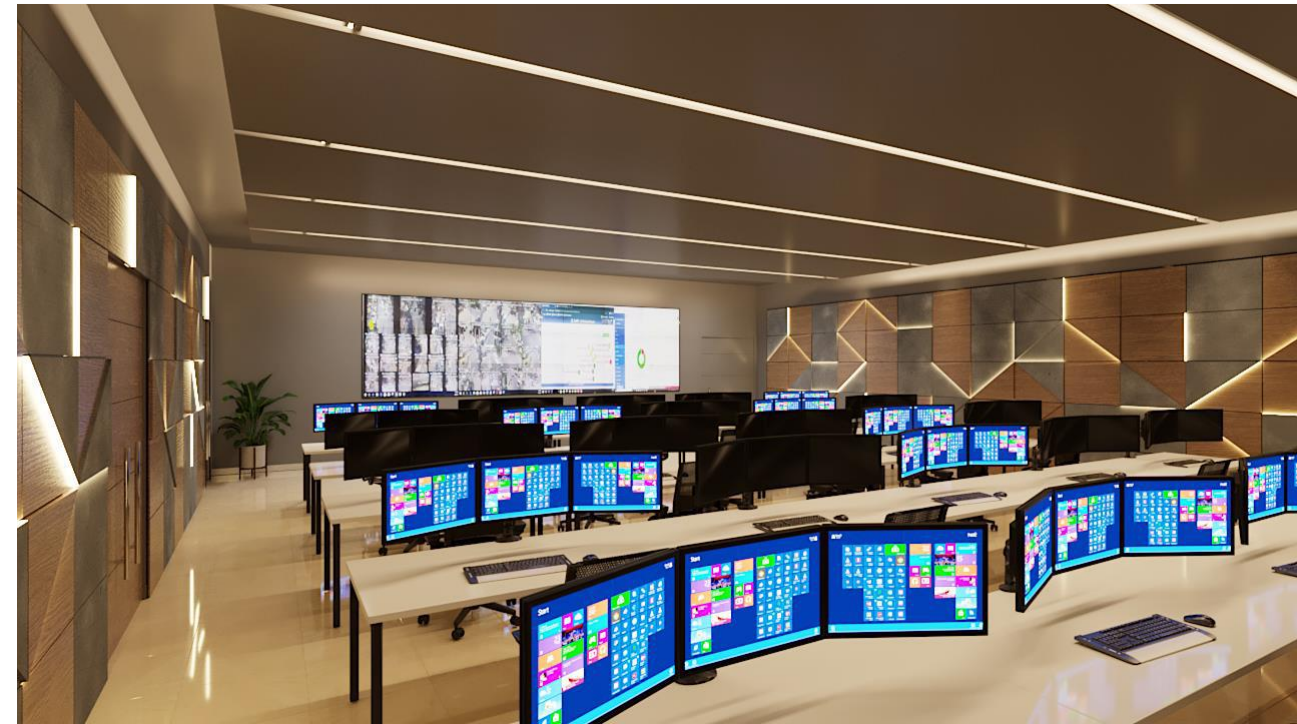
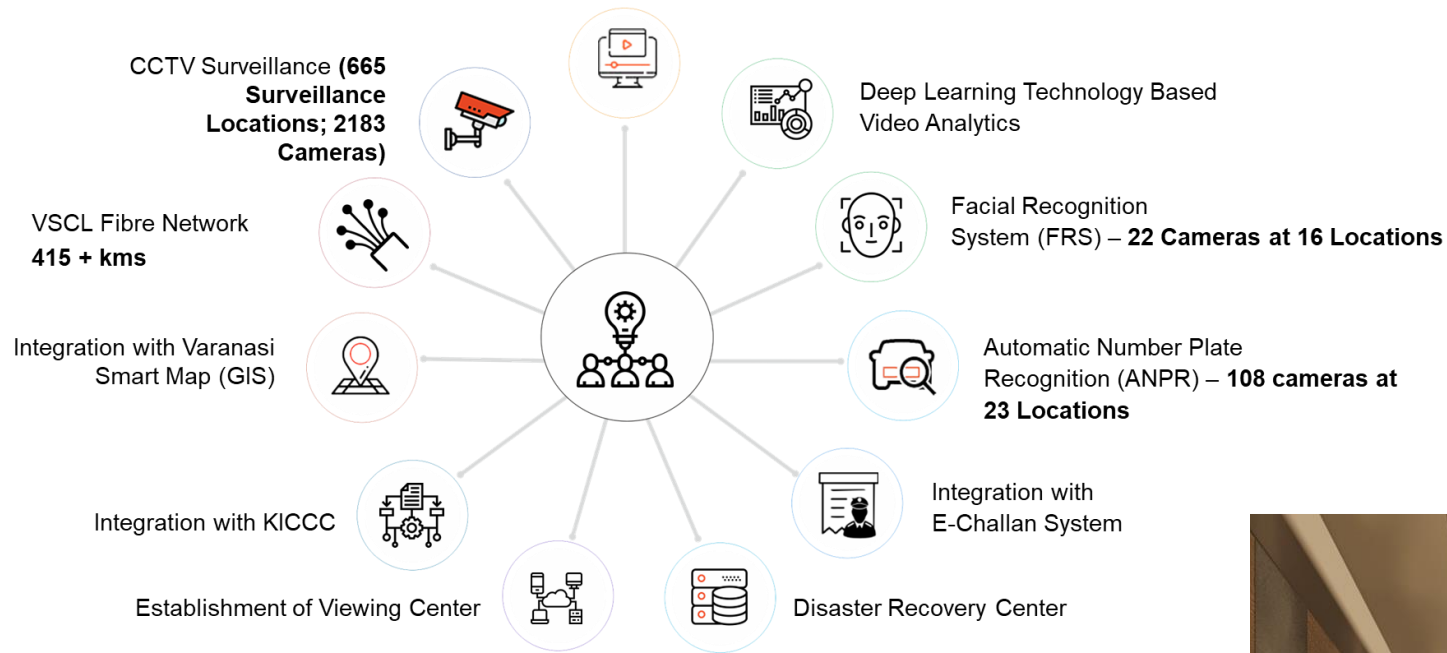
Legal documents and archival sources



Private data sources (Google, Swiggy, etc.)

Advanced Surveillance System

Video Management Software



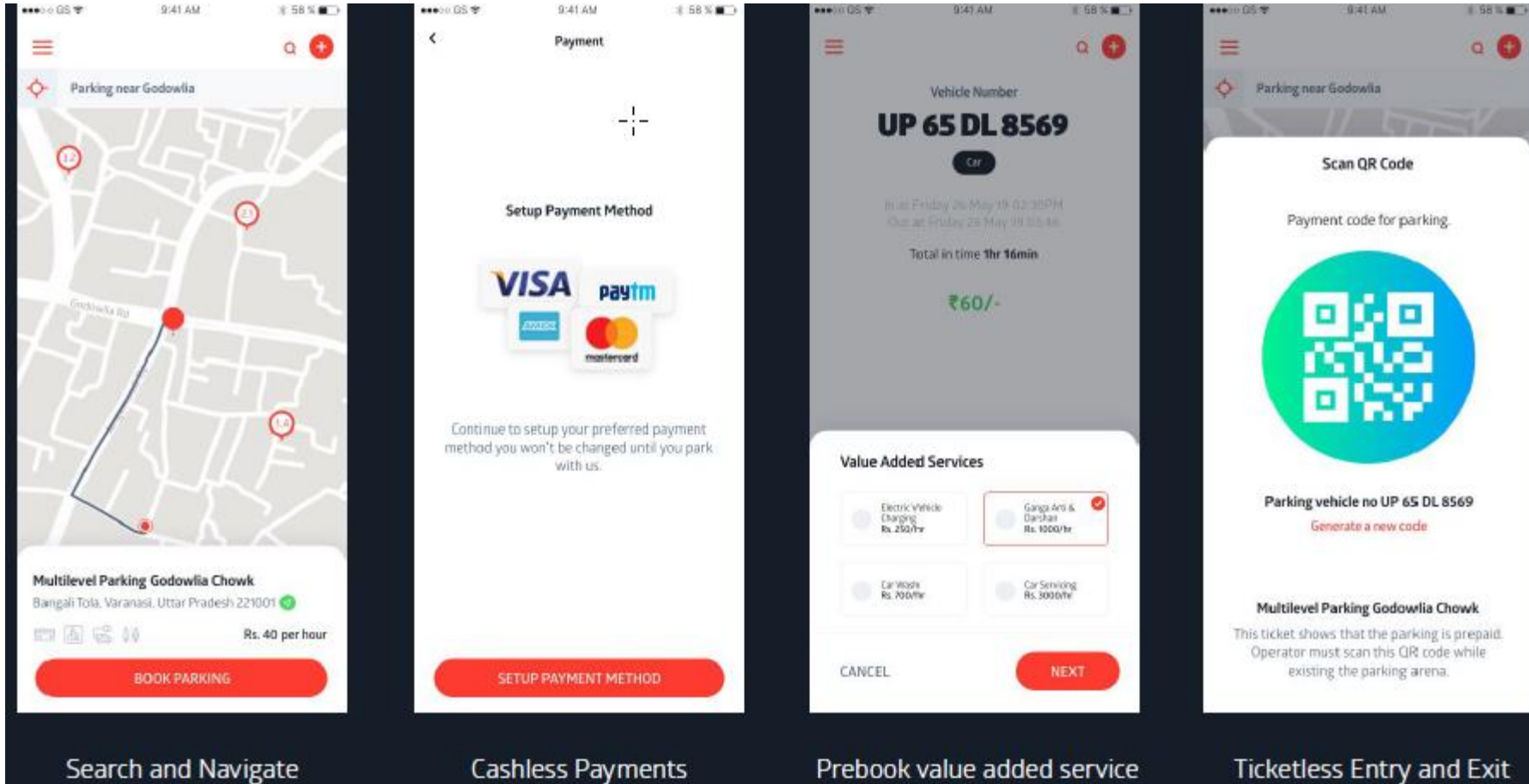
Advanced Surveillance System



Surveillance Based Analytics

- Parking Violation
- Vehicle Moving Wrong Way/ Wrong or One-way detection
- Vehicle Classification
- Vehicle Congestion
- Zone Monitoring/Intrusion Detection
- People Loitering
- Street Animal Detection
- Waste bin Cleared/ Full/Litter detection
- Person Collapsing
- Crowd detection/ Crowd Formation/Crowd estimation/Crowd Disbursement
- Fire Detection/Smoke Detection
- Footfall count/Object Counting/People Counting/Counter Flow and Movement
- Activity Detection
- Left/Unattended Object/ Abandoned baggage
- Object Classification
- Camera Vandalism/Camera Tempering/Obstruction Detection

Smart Parking Management App

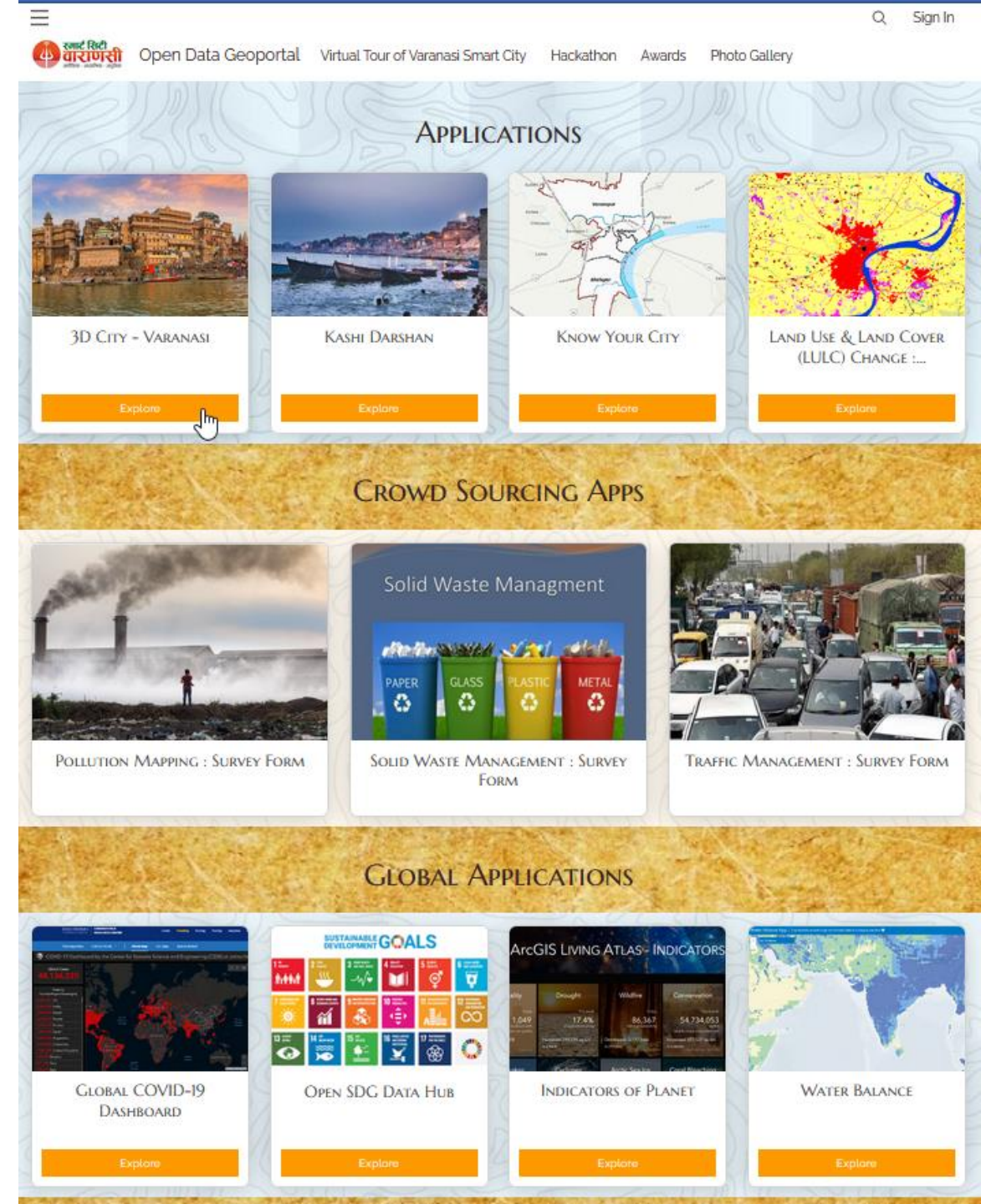


Single Mobile App for Parking in any part of City

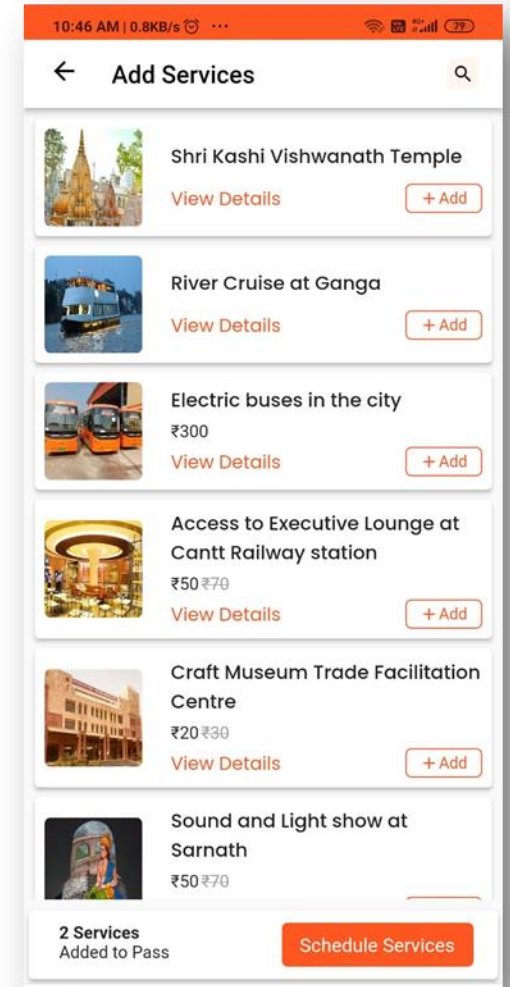
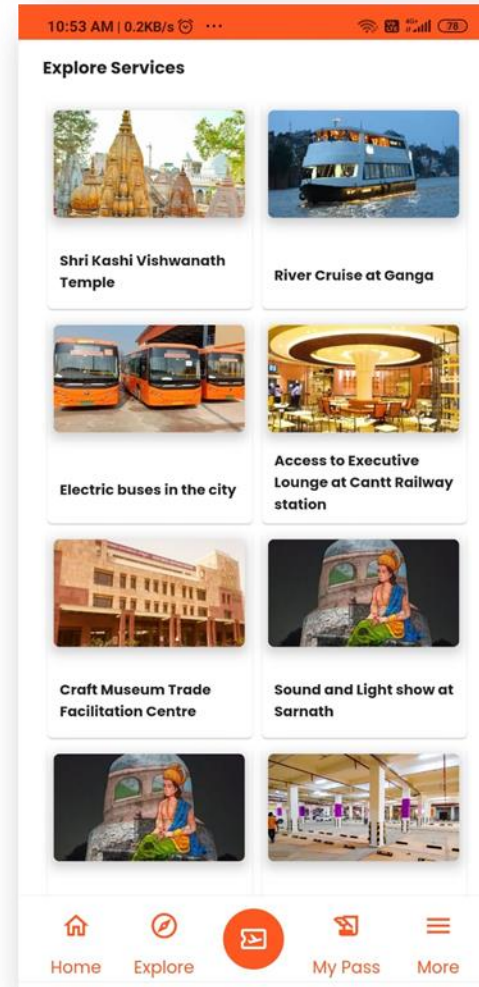
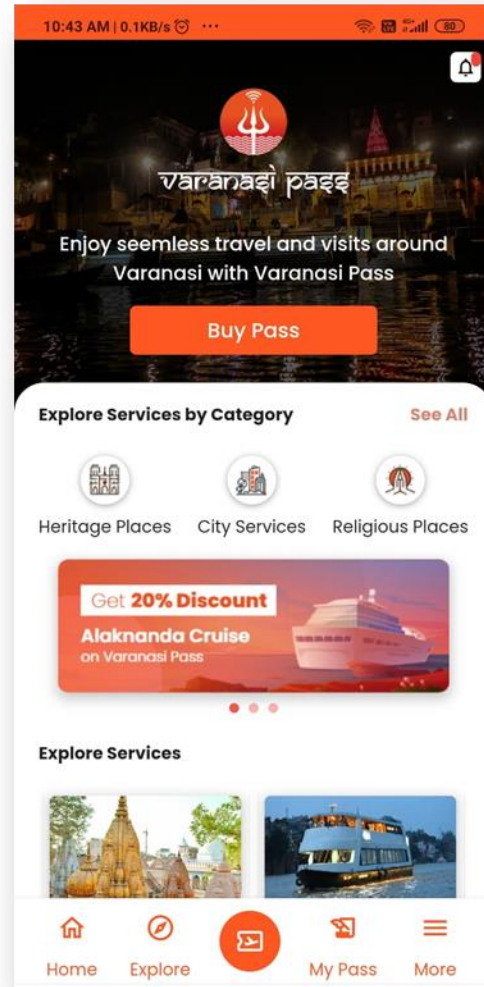
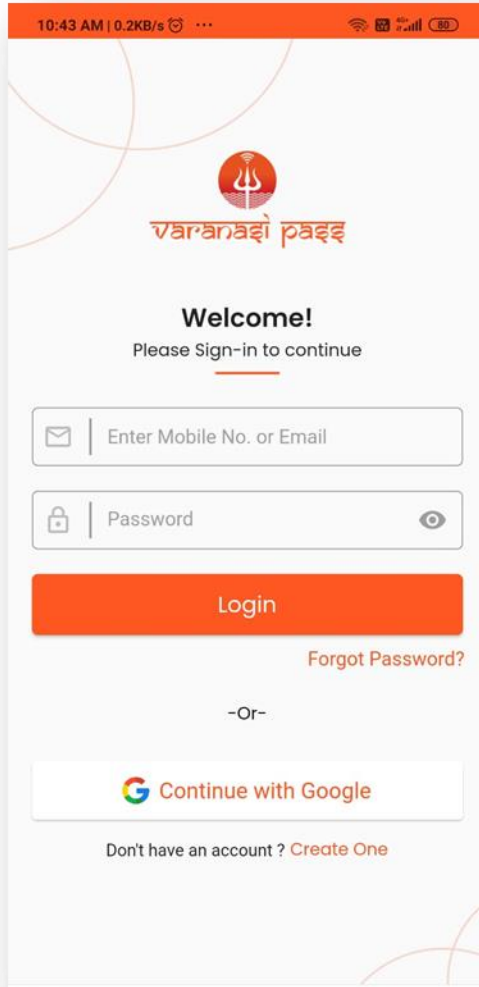
- Search 4 nearest parking
- Find availability
- Book a parking slot
- Pay online
- Generate QR code Ticket
- Scan the code and enter
- Scan the code and exit
- Works across parking lots

Kashi Geo-hub

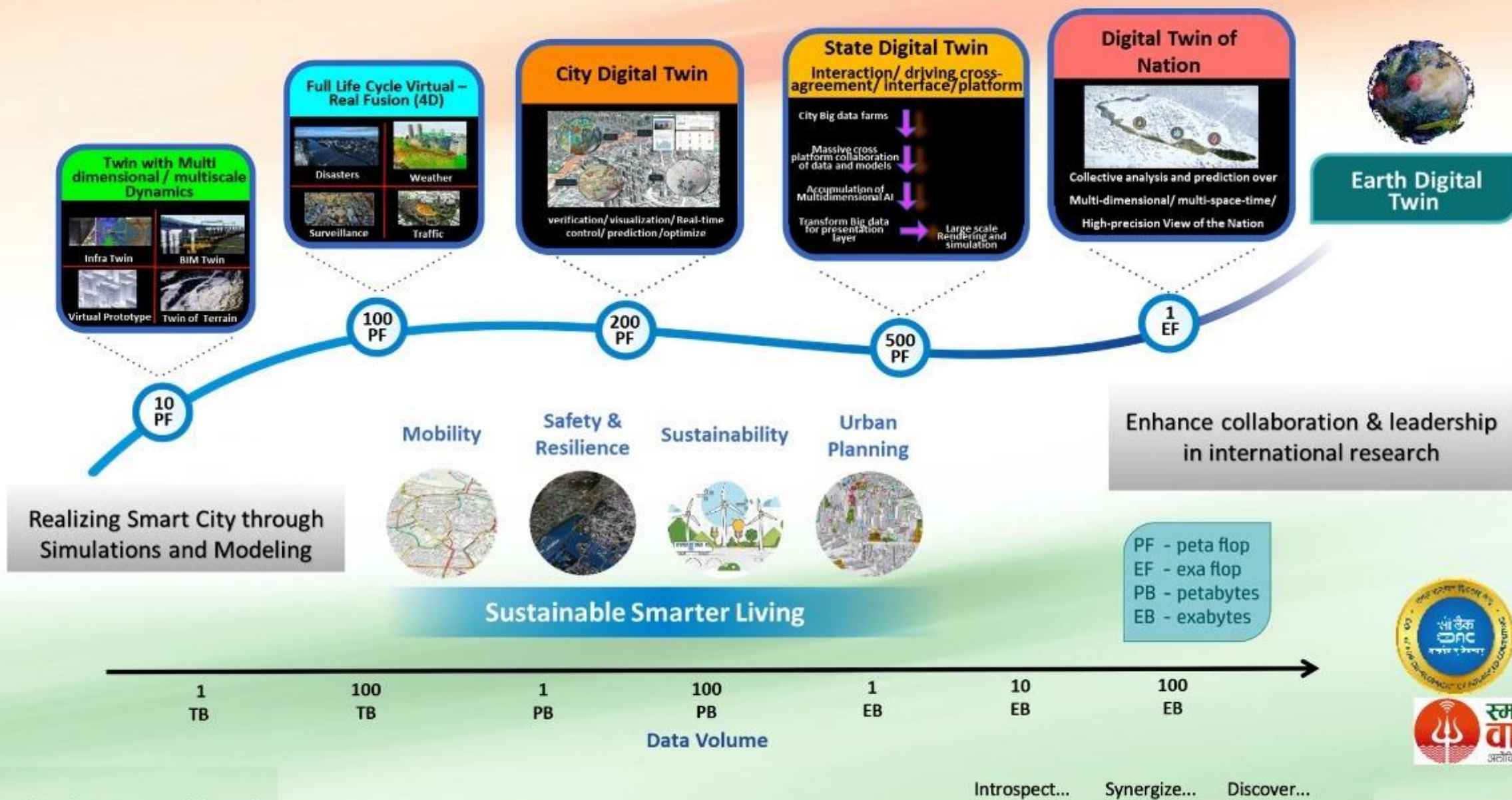
www.kashigeohub.org



Kashi Pass-Unified Tourist Pass System



Exascale Applications: Smart City Scientific Digital Twin



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*For more information
please contact*

dvasudevan@Varanasismartcity.gov.in