Data as a Resource for Government & Institutions

स्मार्ट सिटी
वाराणसी
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In Government, Location is never an Afterthought

GIS is recognized as a Foundational System

Citizen

Health
Education
Education
Mobility
Livability
Cleanliness
Connectivity
Housing
Public Safety
Economic Opportunities
Cleanliness

Infrastructure

Broadband
Aging Structures
Telecommunications
Airports
Highways and Roads
Electricity
Buildings
Water
Bridges
Drainages
Sewer

Environment

Green Infrastructure
Open Space
Clean Water
Climate
Sea-Level Rise
Air Quality
Inclement Weather
Renewable Energy
Pollution
Habitat Preservation

Technology Advancements

Sensors
Artificial Intelligence
Autonomous Vehicles
Machine Learning
Intelligent Things
Cloud
AR/VR
Drones
Internet of Things

GIS supports all aspects of government

Smart City Varanasi's efforts of using Data as a source of Governance

Spatial GIS Layers Created from different Surveys

- Boundary
- Public Services
- Religious places
- Education Services
- Health services
- Tourism
- Creation
- Transportation
- Water Bodies
- Sewage Drainage
- Surveillance

GIS layers integrated with API of Sensors for Big data analytics

- Solid waste Management
- Pollution
- Safety
- Traffic control

Open Data Hubs for Data Collaboration and Sharing

- Apps
- Thematic Maps
- International Apps
- Crowd Sourcing Apps
- Story Sharing
- Business Applications
- Open Data
- Creating Web Maps
- Education
- App Development Training
- Change Detection App
- Multi Media Integration

3D Data of Cities an effort towards Digital Twin

- Vertical Landuses
- Density analysis
- Location of New Project
- Location of Street Lights
- Live Traffic
- Green Space Analysis
- 3D sewer
- Citizen's Response Workflow

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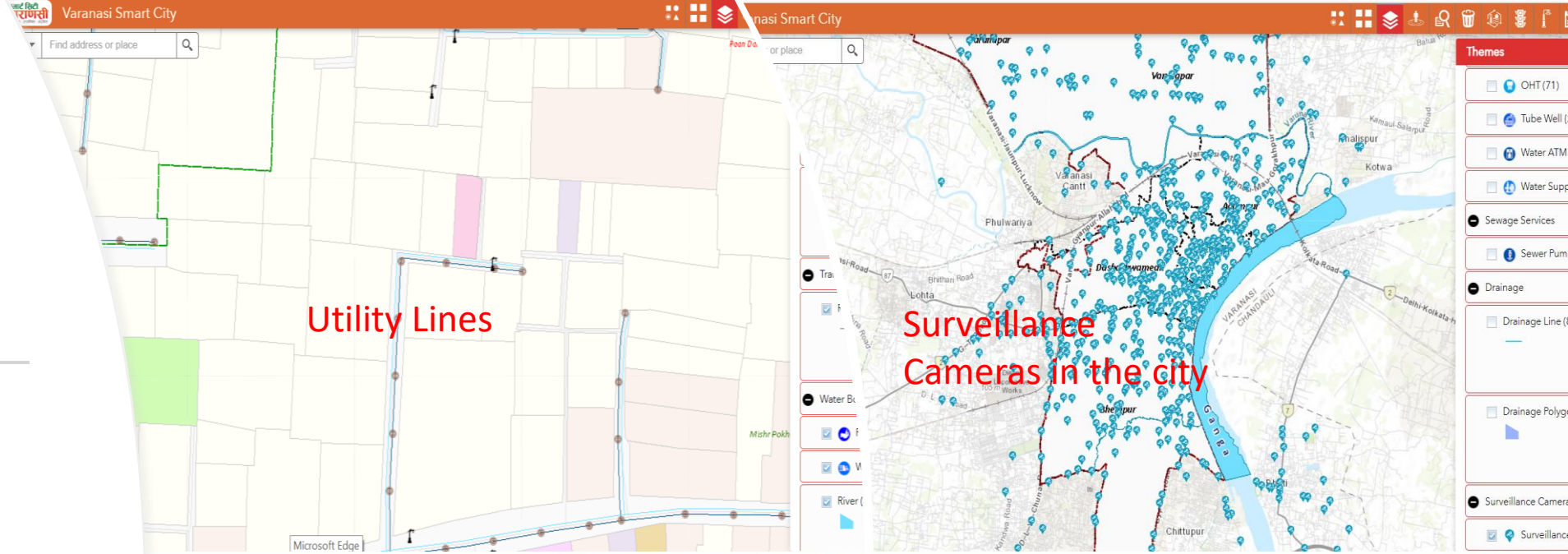
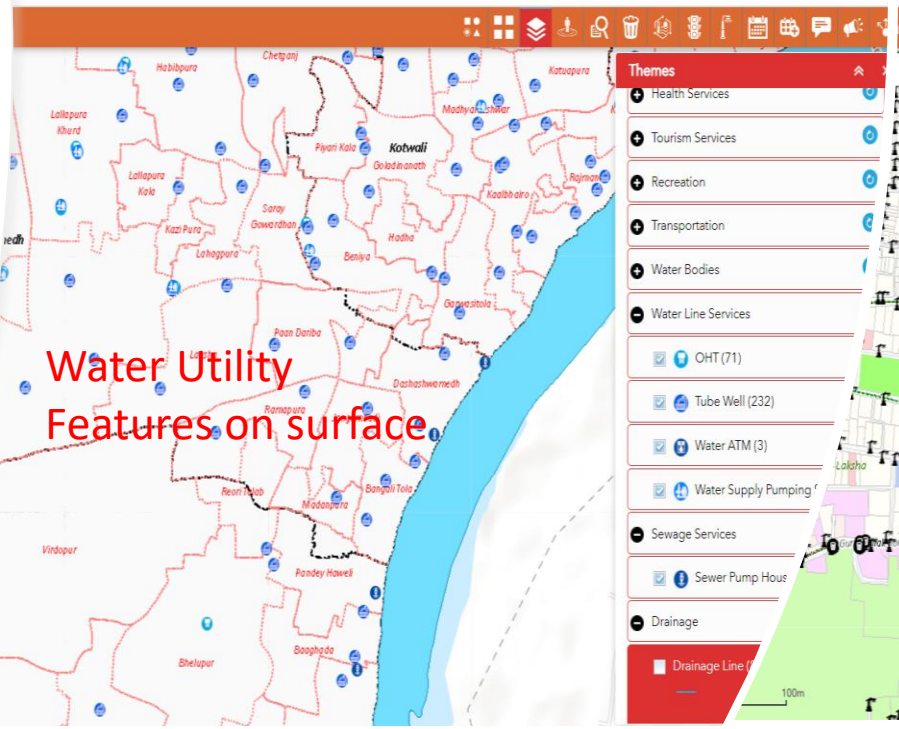
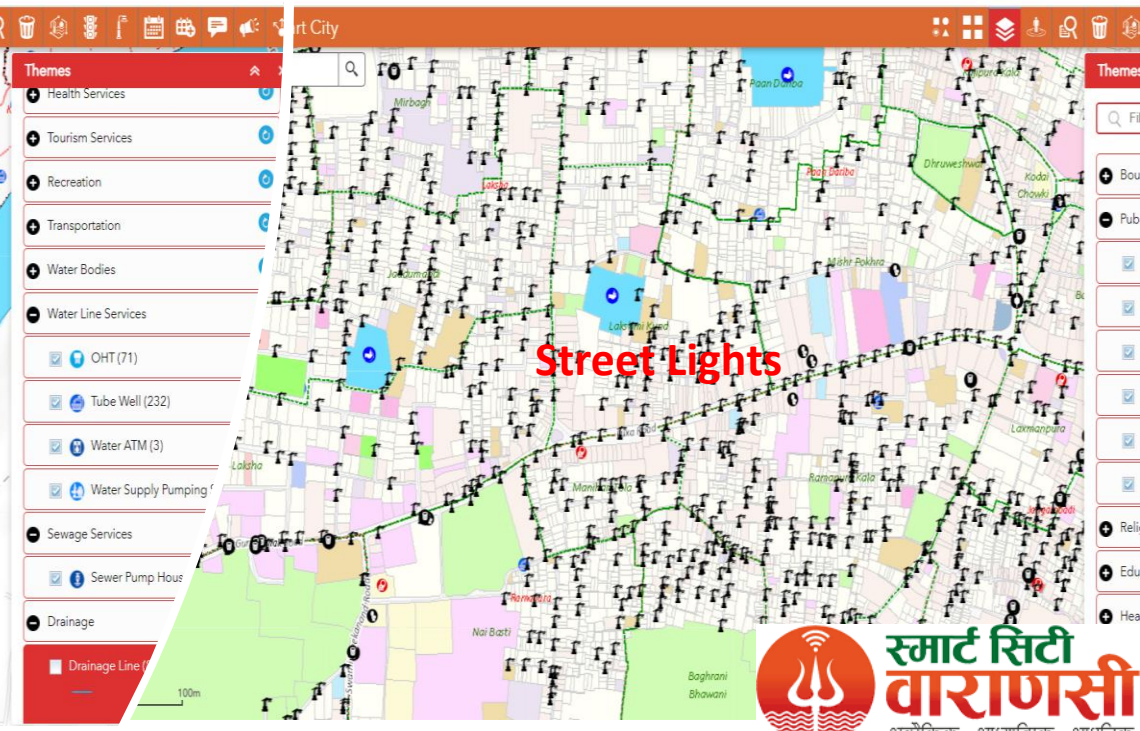
Spatial Data for Citizen's and departments information

- 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







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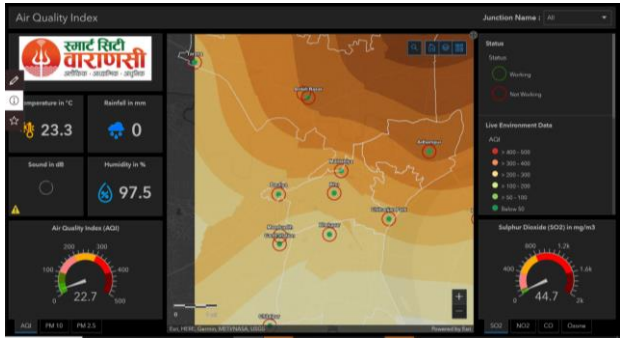
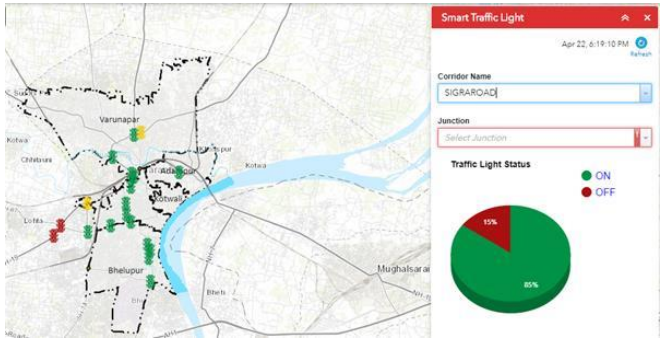
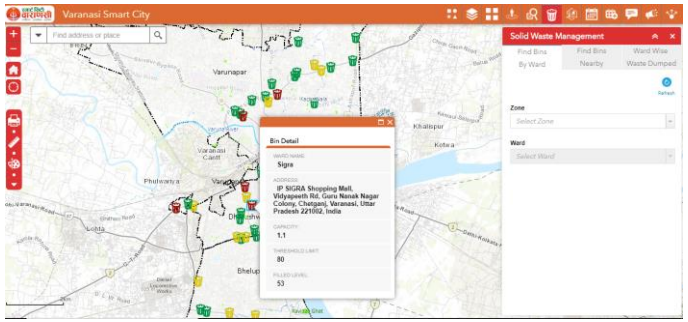
Environment Sensors



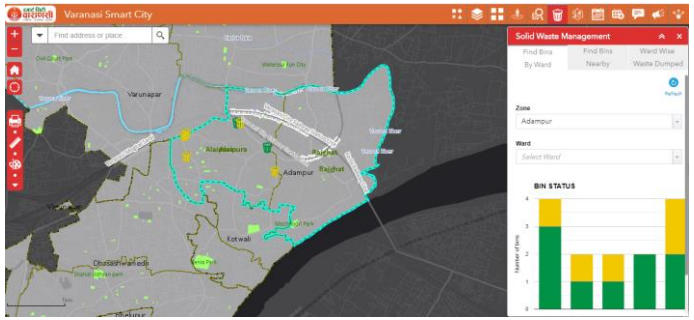
Interpolation of Pollution data



Traffic Lights Working Status



Smart Bins Fill status



Smart Bins Fill status ward wise

Integrated APIs for Real Time Decision Making

- Smart Sensors are integrated with GIS for Real time Information
- e.g. It helps to optimise resources like Waste Collection Routes formation based on fill status of bins. Deployment of Traffic police based on status of working of street lights
- It helps operational Decision Making
- It Helps GIS based analysis like sink areas of pollution based on Sensor data.

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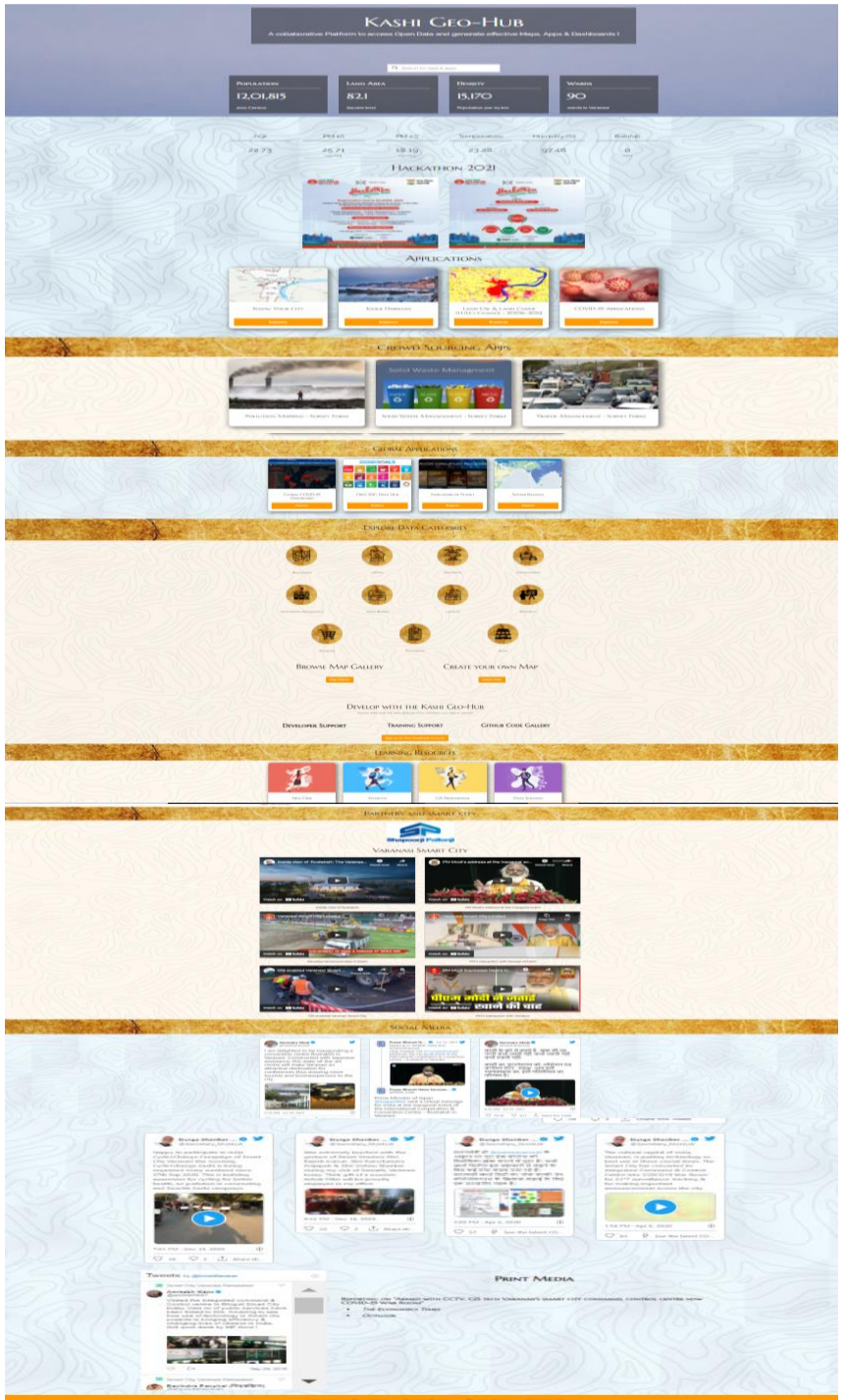
Kashi-GeoHub Contents

www.kashigeohub.org

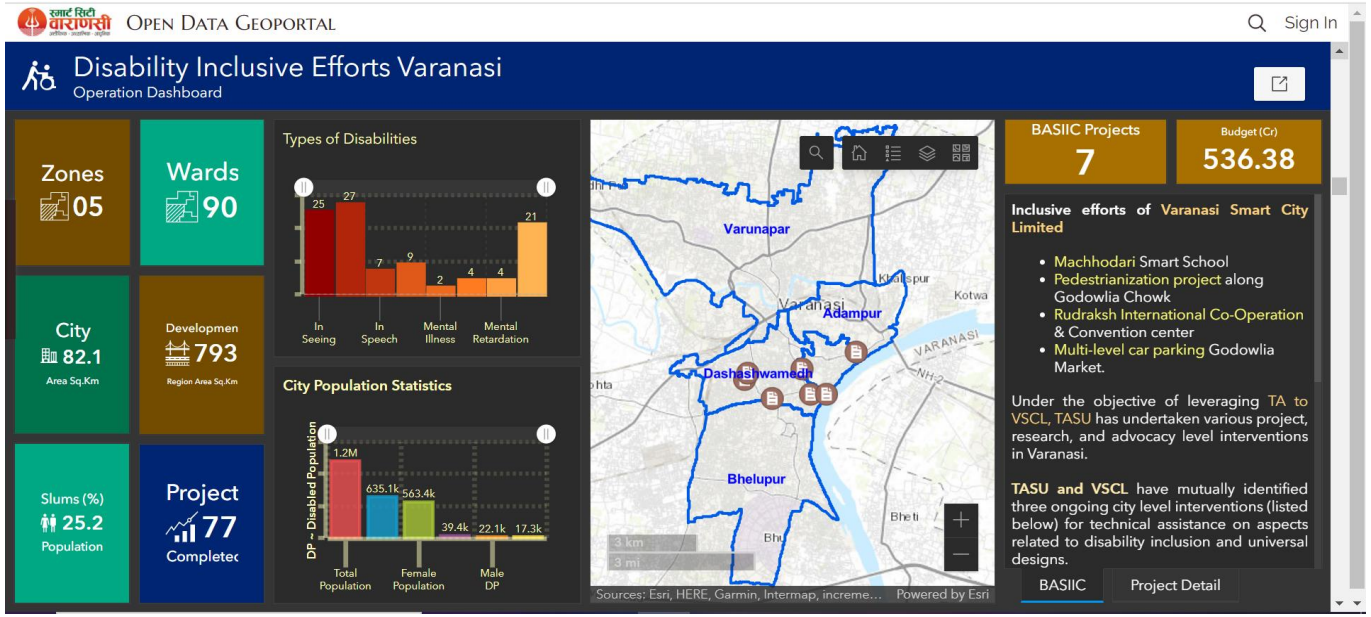
- Information – Static and Dynamic
- Best Practices: like Disabled friendly cities
- Geo-Spatial Applications
- Hackathon
- Crowd Sourcing Applications to drive citizen's initiative for different missions
- Global Applications
- Explore Data under different Heads
- APIs for Developers
- Developer's environment:
  - Browsing Map Gallery
  - Create your own Map
  - Developer support
  - Training Support
  - GITHUB code gallery
- Learning Resources
- Kashi Dham Project (a sample of project demonstration)
- FAQ for people
- Partners and Data Associates
- Tweets

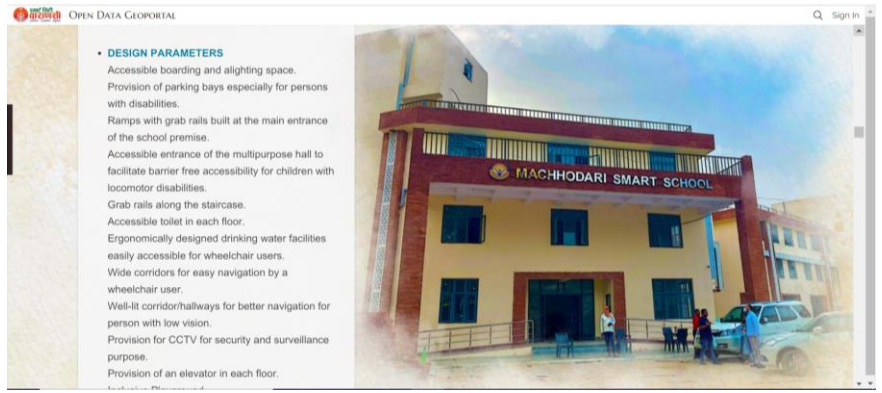


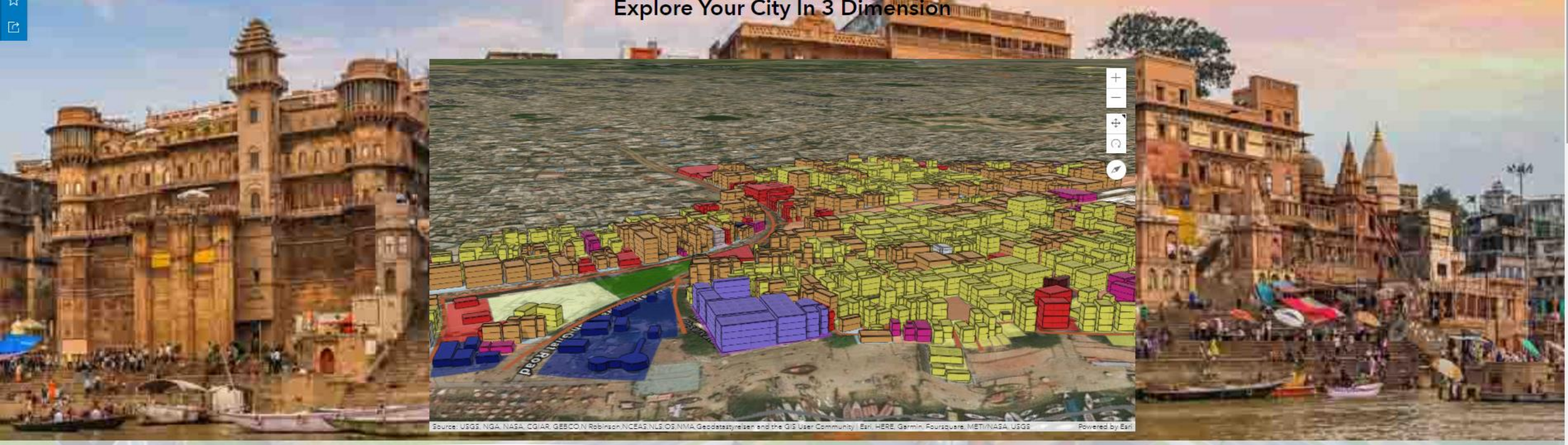
Geo-hub Stakeholders

- Administrators can collaborate for Decision Making
- Business People may download data and use it for customer analysis of different types
- Startups may download GIS APIs and Non GIS APIs for Making Apps of Different types for market places.
- Academia and research may use the GIS Maps for different study purposes.
- Citizens can give opinions and feedbacks via survey or initiative
- NGOs can run initiatives to collect data, do analysis and take actions based on data.

Story of Disable friendly cities on Kashi Geo-hub

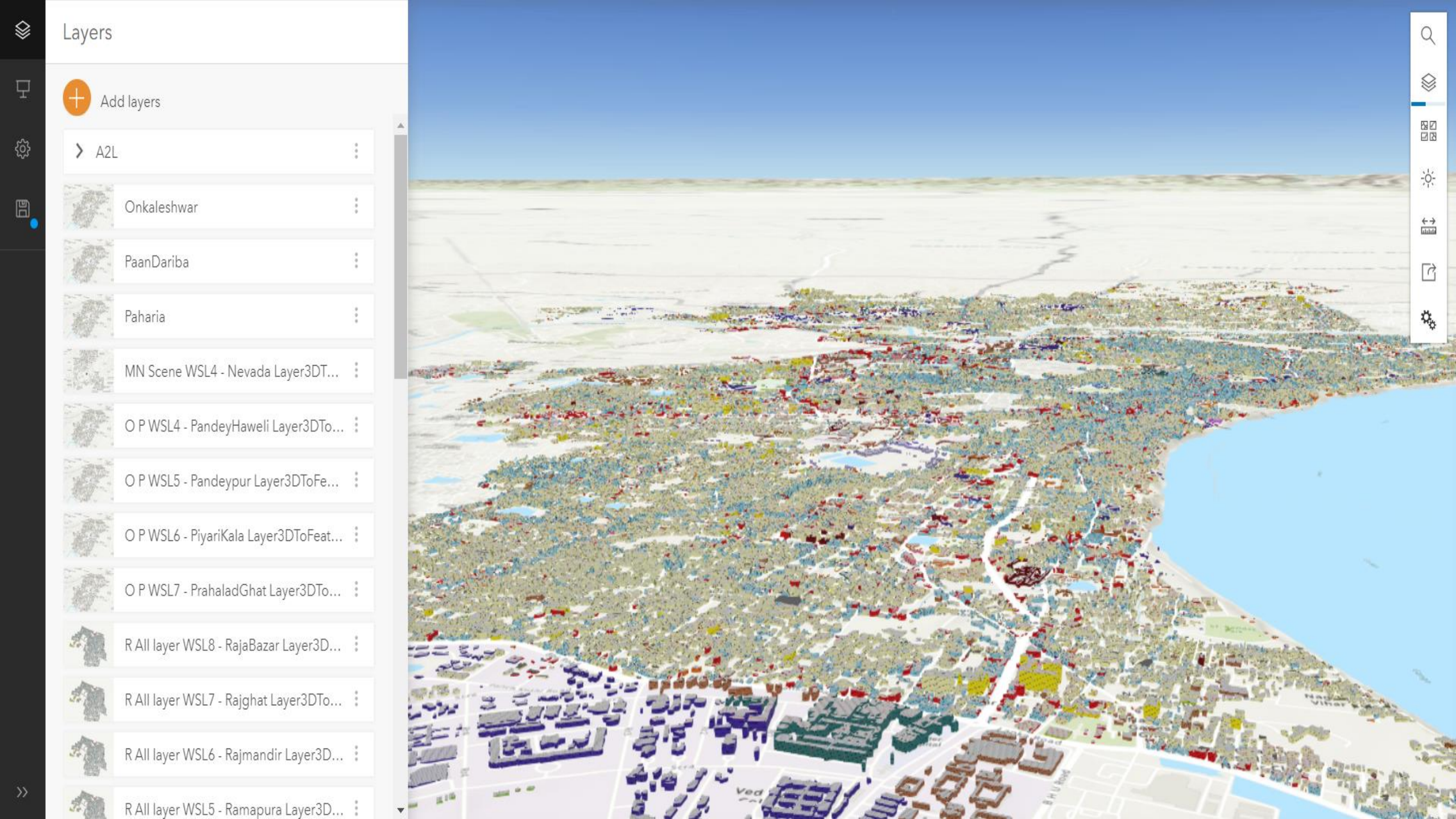


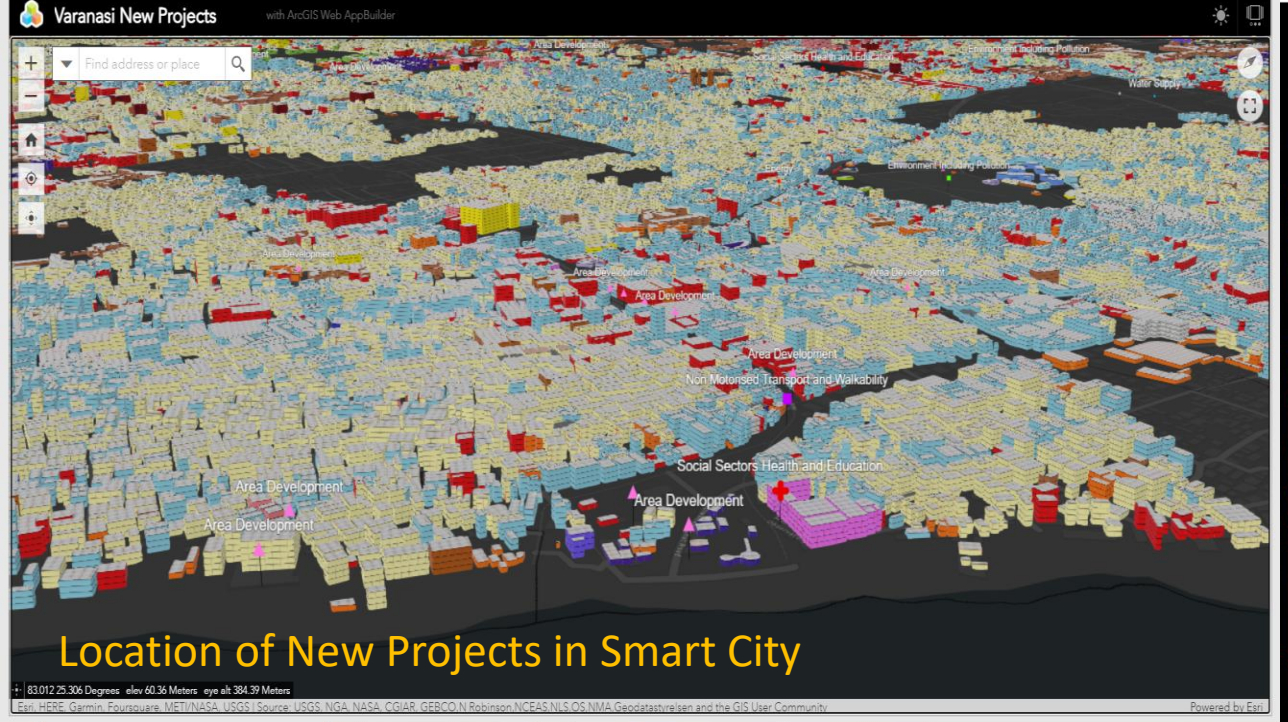




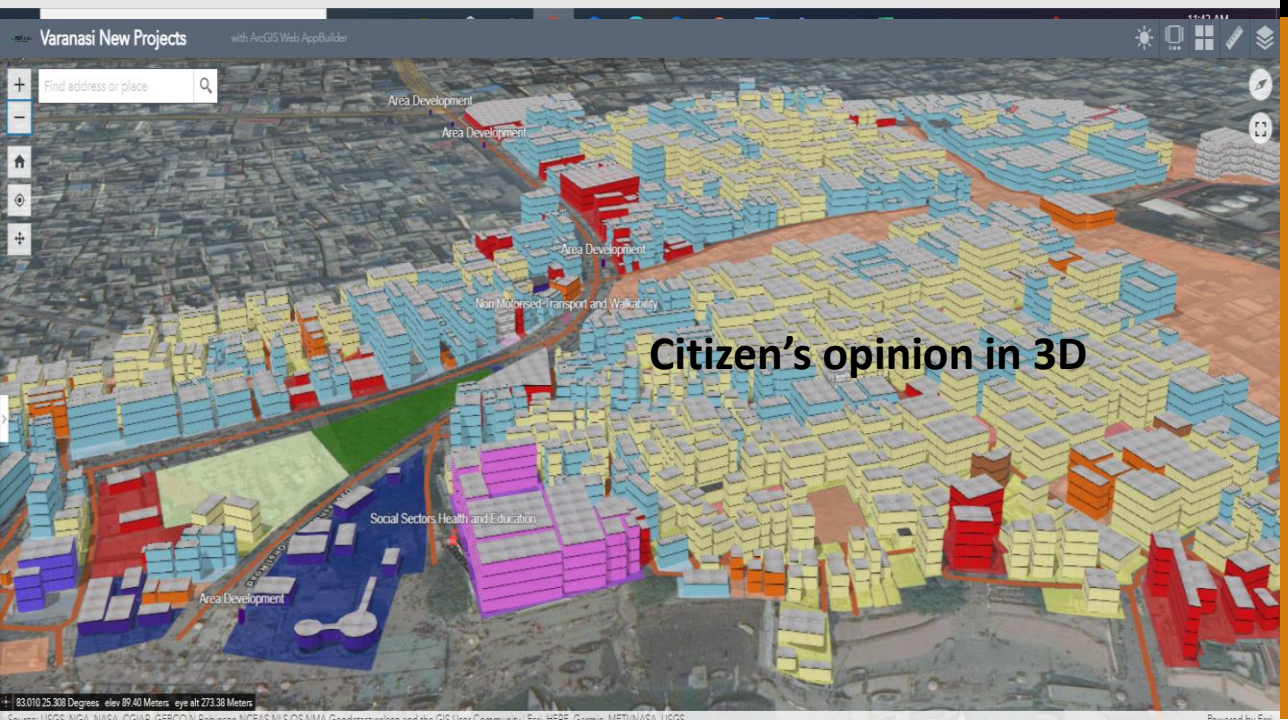
Exploring Varanasi in 3-Dimension

- Geographic Information Science (GIS) offers powerful tools for performing detailed analysis of spatial information and solving complex problems.
- Traditional GIS data is based on mapping in two dimensions, an x and y-value, which can be limiting in some applications. Like in 2D you mention a space as school or Hospital, but when you visualize it in 3D, it gives a possible perspective of services it may offer.
- Utilizing 3D GIS software lets users engage with data from a whole new perspective that results in more nuanced insights and detailed visualizations.
- One can visualize above ground, on Ground and Below the ground geographical entities with a 3D relationship.


Layers
Add layers
A2L
Onkaleshwar
PaanDariba
Paharia
MN Scene WSL4 - Nevada Layer3DT...
O P WSL4 - PandeyHaweli Layer3DTo...
O P WSL5 - Pandeypur Layer3DToFe...
O P WSL6 - PiyariKala Layer3DToFeat...
O P WSL7 - PrahaladGhat Layer3DTo...
R All layer WSL8 - RajaBazar Layer3D...
R All layer WSL7 - Rajghat Layer3DTo...
R All layer WSL6 - Rajmandir Layer3D...
R All layer WSL5 - Ramapura Layer3D...


Varanasi New Projects
with ArcGIS Web AppBuilder
Find address or place
Area Development
Non Motorised Transport and Walkability
Social Sectors Health and Education
Location of New Projects in Smart City


Density Analysis of Buildings
Wards
No category selected
Varanasi_BuildingDensity
Find address or place
Super-Builtup Density
Building Density
Aagaganj
Bhaidani
Dhoopchandi
Jagatganj
Kamalpura
Lahartara
Narayanpur
Pandeypur
Rasoolpura
Shivpurwa
Total No of Buildings
268.6k
Total Build-up Area
23.5M
Square Meter
Total Super Built Area
Total Building Area * No of Floors
35.9M
Square Meter
Building Density
Selection required on one or more elements
Super-Builtup Density
Selection required on one or more elements
2D View
3D View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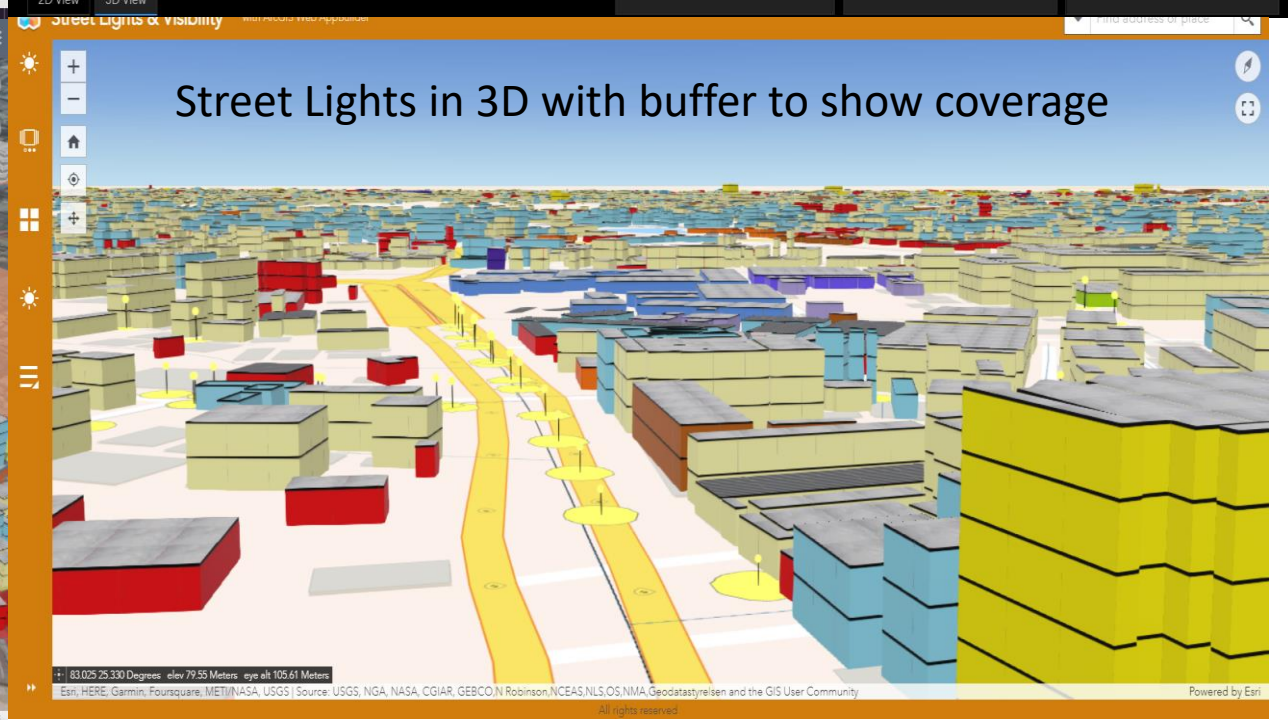
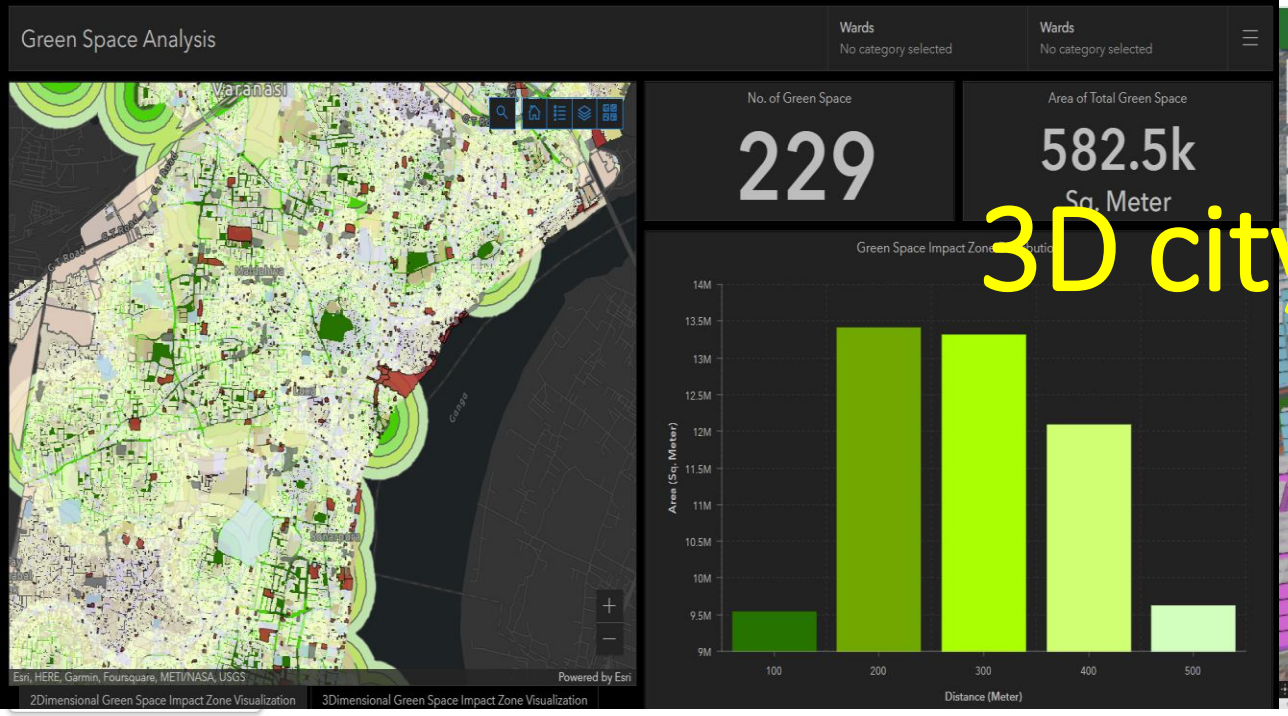
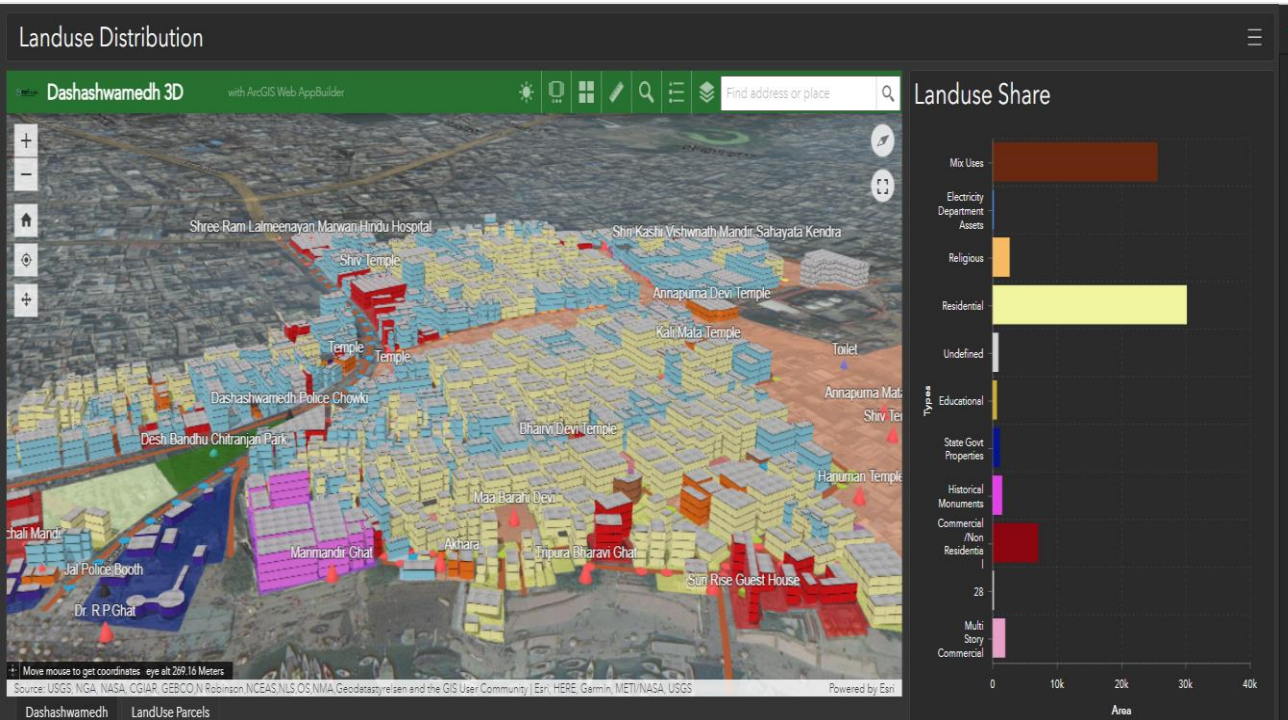
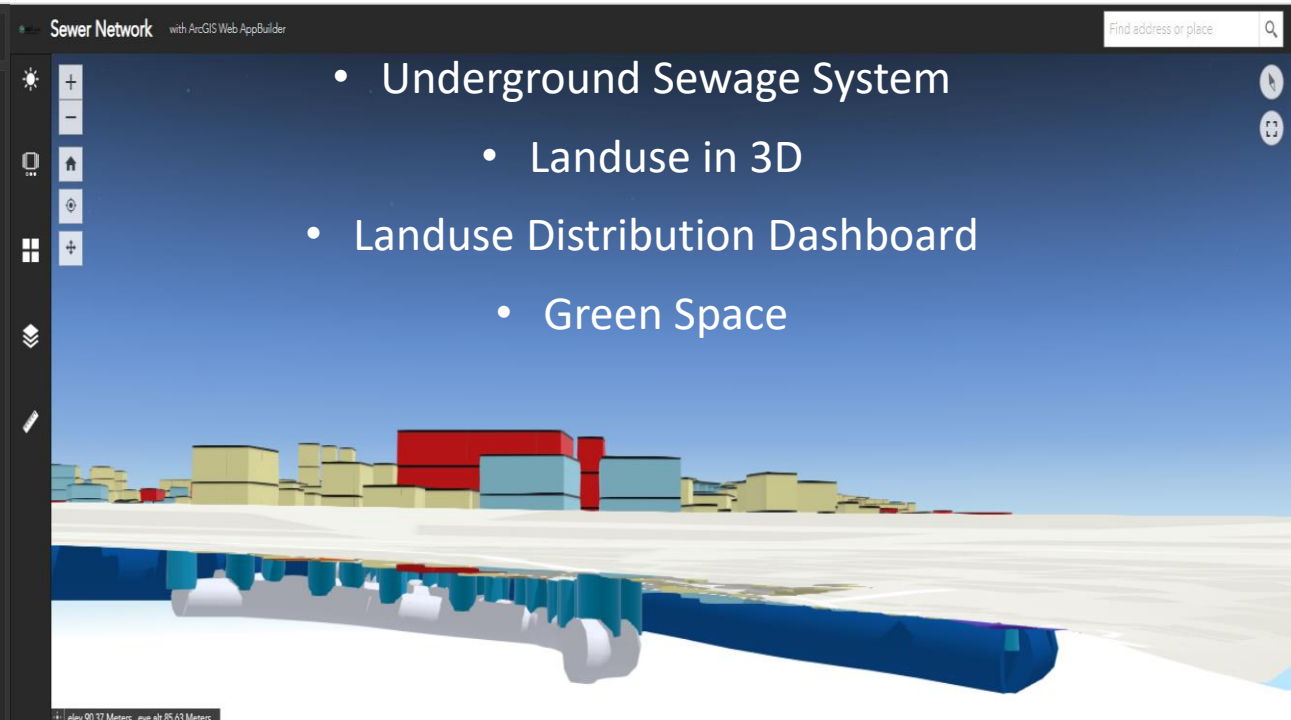
Citizen's opinion in 3D


Street Lights & Visibility
Street Lights in 3D with buffer to show coverage



3D city Varanasi





Thank You…

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