Reimagining Indian Cities

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GIS for Urban Transformation

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Urbanization in India by 2030

- **600 mil** people will live in cities
- **87 cities** will have a population of 1 mil+ up from 53 today
- **2.5 billion sqm** roads have to be paved, 20X the capacity added in past decade
- **7400 km** metros will need to be constructed – 20X the capacity added in past decade
- **$1.2 trillion** capital investment is necessary to meet projected demand in India's cities

Source: Ministry of Urban Development, McKinsey Global Institute: India’s Urban Awakening
Need to Build Smart Communities to meet the Challenges of Tomorrow
Our World
Is Evolving
Undergoing a Massive
Digital Transformation
Consumerization of
Community
The New Normal
Our Vision

Enabling a Smarter Community

Connecting Content and Providing Context
GIS Provides the Framework and Process

For Enabling a Smarter World

Data Integration and Management
Visualization and Mapping
Analysis and Modeling
Planning and Design
Action
Decision-Making

Transforming How We Think and Act . . .
. . . Creating a More Sustainable Future

Science
Understanding
Collaborating
Attributes of Smart Cities System

- Integration
- Standardization
- Collaboration
- Transparency
- Specialization
- Innovation
- Governance
- Workflows & SLA’s
- Data Driven

GIS System

- Solid Waste Management
- Property Tax System
- Online Civic Services
- Land & Estate Management
- City Surveillance System
- Vehicle Tracking & Intelligent Transport System
- Municipal Asset Management
- License & Building Permission
- Utility Management
- Hospital Management System
- Smart Devices & Sensors
- Various Sensors
Geospatial Technologies for Urban Transformation
Geo Analytics with Geo-event & Insights

- Can ingest higher velocity real-time data into ArcGIS.
  - Real time traffic data, camera feeds.
- Observations CAN now be stored in a Big Data Store.
- Can visualize high velocity and volume data
  - as an AGGREGATION,
  - as discrete FEATURES,
  - live & HISTORICALLY.
- Perform Analytics over the historical archives
- Browser Application for exploratory data analysis

GeoEvent

Stream Service

Spatiotemporal Big Data Store

Enhanced Map and Feature Service + Analytics

Big Data Store

ArcGIS Server

Ingestion

Stream Layer

Live Features

Visualization

Insights

Live and Historic Aggregates & Features

Web App

Web

Device

Desktop

Apps

Relational data store

Millions of e/s
ArcGIS Spatiotemporal Big Data Store
Implementation Approach
ArcGIS Enterprise based implementation

Initial Operating Capability
- Foundation Apps
  - Essential Information Products

Integrated Enterprise System
- Extended / Custom Apps
- Integration with Business Systems
- Advanced Workflows
- Content Production Systems
  - Data Modernization

ArcGIS Enterprise

Desktop
Web
Device

Server

Online Content and Services

"GIS Ready" Data
A new information regime supporting Smart Development & Management!

- Citizen Portal
- Emergency Portal
- Geodesign
- Water Leak Management Portal

Smart City – GIS Gateway
Citizen Portal
Command & Control Centre Operations
Geo Hub Concept for Smart Cities

- Platform for sharing data and for cross-departmental collaboration (Web GIS)

Public engagement, powered by services, Open Data, and apps (Community GIS)

NGOs
Citizens
Academia
Startups
Civic Developers
Journalists

Initiative
Health
Fire
Planning
Transportation
Police
Engineering
Smart City Experience

ESRI India is providing end to end GIS solution for Smart Cities

• Implementation of City GIS Portal
  - Know Your Ward & Grievance Redressal
  - Public announcement & Feedback, Tourism – Heritage portal

• Implementation of Department Specific GIS applications
  - Utility - Water, Sewerage & Storm drainage
  - Planning & Decision Support System, Transportation & SWM

• GIS Enterprise Wide Integrations Services
  - Command & Control Center
  - Govt. E – services, IT Smart solution Integrations
Thank You
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