



Smart City GIS Planning and Municipal Services Course

20 – 24 December 2026
Johannesburg

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Ref: 533_141635 **Date:** 20 – 24 December 2026 **Location:** Johannesburg **Fees:** 6000 Euro

Overview

Smart City GIS Planning and Municipal Services Course is a five-day intermediate course for urban planners, municipal teams, GIS professionals, infrastructure engineers, and service managers who leave with a Smart City GIS Action Pack. Participants combine authoritative city layers, land-use and accessibility analysis, network and service-coverage maps, operational feeds, dashboards, scenarios, and governance controls to support traceable urban decisions. Agile Leaders Training Center connects smart city GIS with practical municipal planning and service improvement.

Who Should Attend

- Teams responsible for land-use, growth, and development planning
- Functions that map transport, utilities, infrastructure, and municipal assets
- Personnel who assess access to public facilities and city services
- Staff who integrate operational, sensor, demographic, and spatial datasets
- Managers who govern city dashboards, scenarios, and location-based decisions

The course assumes participants can use GIS layers and basic spatial queries, and it leaves out introductory GIS operation, cadastral surveying, remote-sensing specialization, software development, and vendor certification.

Departments and Industries

The course supports departments that plan urban growth, infrastructure, mobility, and public-service delivery.

- Municipal planning, development control, and geographic information
- Transport, roads, parking, transit, and active mobility
- Water, energy, waste, telecommunications, and utility coordination
- Public safety, emergency response, environment, and resilience
- Housing, community facilities, parks, health, and education services

Learning Objectives

By the end of this course, participants will be able to:



- Build an authoritative urban spatial-data model
- Analyze land use, accessibility, and service coverage
- Evaluate infrastructure, mobility, and utility map evidence
- Use operational feeds in web maps and dashboards
- Compare planning scenarios through mapped indicators
- Apply governance and privacy-aware sharing controls

Course Agenda

Day 1: Urban Spatial Intelligence

- Smart City Decision and Stakeholder Map
- Authoritative Base Map and Urban Layer Catalogue
- CityGML Urban Object and Relationship Model
- Land-Use, Parcel, Building, and Population Data Structure
- Urban Spatial Data Fitness-for-Purpose Checklist

Day 2: Infrastructure and Mobility Mapping

- Utility and Infrastructure Network Inventory
- Road, Transit, Walking, and Cycling Network Model
- Origin-Destination and Travel-Time Analysis Method
- Asset Condition and Service Disruption Map
- Cross-Department Infrastructure Coordination Matrix

Day 3: Public-Service Coverage

- Facility Catchment and Accessibility Analysis
- Service Demand, Capacity, and Coverage Gap Map
- Equity and Vulnerable-Population Layer Review
- Emergency Response Location and Routing Scenario
- Green Space and Community Amenity Access Index

Day 4: Operational Maps and Governance

- Sensor and Operational Feed Integration Workflow
- OGC Web Map and Feature-Service Architecture
- Municipal Dashboard Indicator and Alert Design
- Privacy-Aware Location Data Sharing Matrix
- Spatial Data Stewardship and Publication Protocol



Day 5: Smart City GIS Practice

- Exercise: Assemble an Authoritative Urban Layer Catalogue
- Exercise: Map Mobility and Infrastructure Dependencies
- Exercise: Diagnose a Public-Service Coverage Gap
- Exercise: Compare Urban Scenarios on a Decision Dashboard
- Capstone Exercise: Smart City GIS Action Pack

Practical Exercises

The course uses suggested activities to turn city questions into mapped evidence and governed actions.

- Suggested activity: structure authoritative land-use, population, network, facility, and infrastructure layers for a planning question.
- Suggested activity: calculate catchments and compare service demand, capacity, accessibility, and coverage gaps.
- Suggested activity: integrate an operational feed into a web map and define dashboard indicators and alert rules.
- Suggested activity: compare urban scenarios and assign data ownership, access, publication, and review controls.

FAQs

Who suits the Smart City GIS Planning and Municipal Services Course?

It suits professionals who already use basic GIS and need to connect urban layers, operational data, service analysis, dashboards, and governance to municipal decisions.

How does smart city GIS training differ from general GIS foundations?

Smart city GIS training applies existing GIS skills to urban services, infrastructure, mobility, operational feeds, scenario comparison, and cross-department decisions rather than teaching basic software operation.

How can GIS measure municipal service coverage?

GIS can combine facility locations, networks, travel times, population, demand, and capacity to map catchments, identify underserved areas, and compare improvement options.

What data supports a smart city GIS dashboard?

A smart city GIS dashboard can combine authoritative base layers, service assets, incidents, work orders, mobility, sensors, environmental measures, and planned projects with documented refresh and ownership rules.



Why does smart city GIS need privacy-aware governance?

Location data can reveal sensitive patterns, so governance defines purpose, minimization, aggregation, access, sharing, retention, publication, stewardship, and review before data enters maps or dashboards.

Conclusion

Participants take back a Smart City GIS Action Pack containing the urban layer catalogue, network map, coverage analysis, dashboard design, scenario comparison, governance matrix, and implementation priorities. The pack converts dispersed city data into traceable planning and service decisions. It supports coordinated municipal action without replacing specialist surveying or advanced geospatial development.