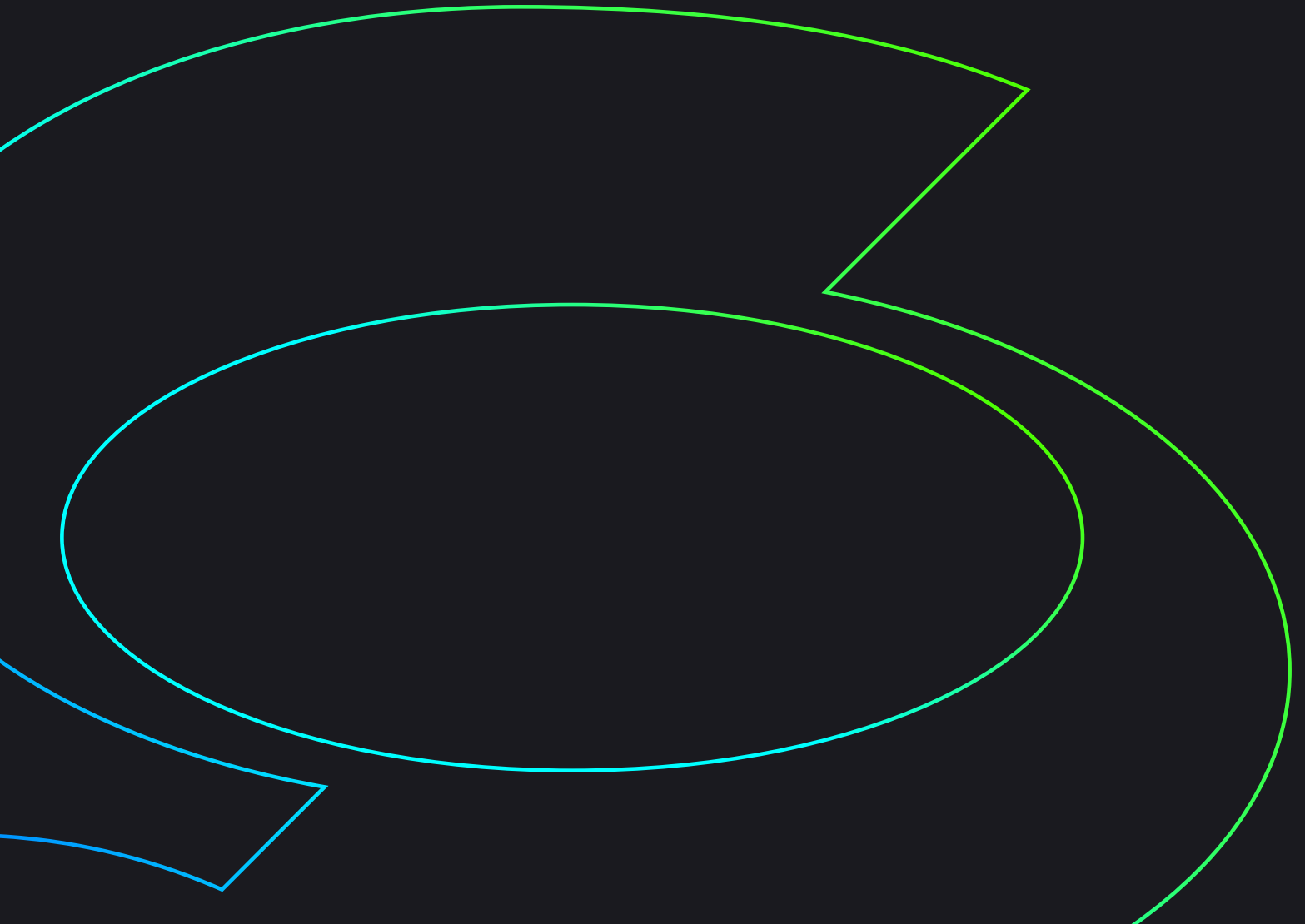




SOLUTION SHEET

Octave's integrated municipal solution



Need for geospatial technology in municipal governance

Urban local bodies are responsible for planning, developing, operating and maintaining critical urban infrastructure while delivering efficient resident services. Rapid urbanization requires a unified geospatial platform that integrates GIS, remote sensing, drones, mobile applications and enterprise dashboards for informed decision-making.

Traditional municipal operations rely on fragmented information maintained independently by engineering, planning, utilities, sanitation and revenue departments. A centralized geospatial platform provides a single source of truth, enabling efficient planning, collaboration and governance.

An enterprise geospatial platform integrates GIS, remote sensing, AI, drone mapping, IoT, mobile applications and operational dashboards into a unified environment that enables municipalities to monitor infrastructure, manage assets, plan urban development, respond to emergencies and improve resident services.

By integrating spatial and business information in a common platform, municipalities can improve operational efficiency, transparency, collaboration, infrastructure planning and sustainable urban governance.

Key challenges in municipal governance

- Departmental GIS and asset data maintained in silos
- No single unified geospatial database
- Paper-based manual infrastructure inspection and maintenance
- Limited use of satellite and drone imagery
- Lack of enterprise geospatial analytics
- Difficulty monitoring urban expansion and encroachments
- No geospatial analytics dashboards for decision-makers
- Disconnected applications

Modular municipal governance platform

A modular municipal governance platform enables urban local bodies to implement business applications according to operational priorities.

The platform is organized into four functional pillars:

- Data Authoring
- Municipal Asset Management
- Urban Monitoring and Operations
- Decision Support and Citizen Services

This modular architecture provides flexibility, scalability and enterprisewide collaboration while supporting future smart city initiatives.

Municipal modules

- Digital Base Map Creation
- Land Asset Management
- Road Asset Management
- Drainage Network Management
- Water Supply Network
- Street Light Management
- Solid Waste Management
- Urban Change Detection
- Encroachment Monitoring
- Flood Impact Analysis
- Green Space Monitoring
- Citizen Complaint Management
- Mobile Field Inspection
- Enterprise Dashboards

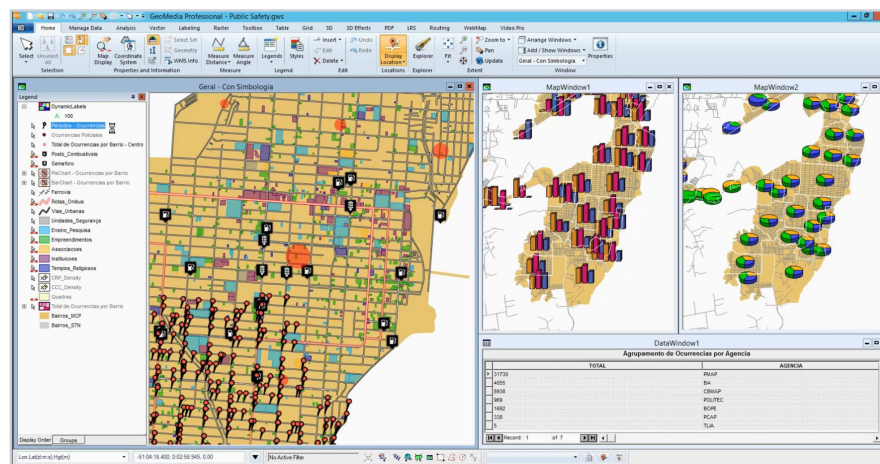
Municipal asset management workflow

An integrated municipal asset management workflow enables urban local bodies to create, maintain, monitor and analyze all municipal assets through a centralized enterprise geospatial platform.

**Create GIS > collect field updates >
manage enterprise data > analyze > make better decisions**

Data creation and GIS authoring workflow

- Update and maintain authoritative GIS layers for roads, buildings, drainage, utilities, streetlights, parks, water supply and public infrastructure
- Integrate survey, CAD, satellite and existing GIS datasets into a standardized municipal database
- Ensure data quality through topology validation and configurable editing workflows



Create and maintain accurate municipal spatial data by integrating survey, CAD, imagery and existing GIS datasets for effective planning and management.

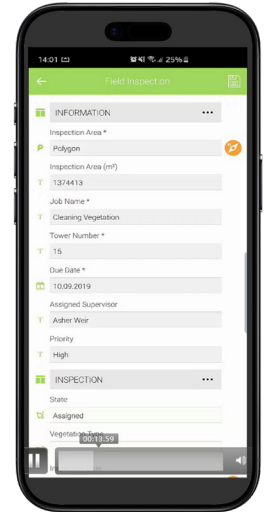
Survey field data collection workflow

- Capture new assets, inspections, maintenance activities using GIS-enabled mobile applications
- Collect geo-tagged photographs, GPS coordinates, inspection reports and asset attributes
- Synchronize field updates with the central system in real time or offline mode

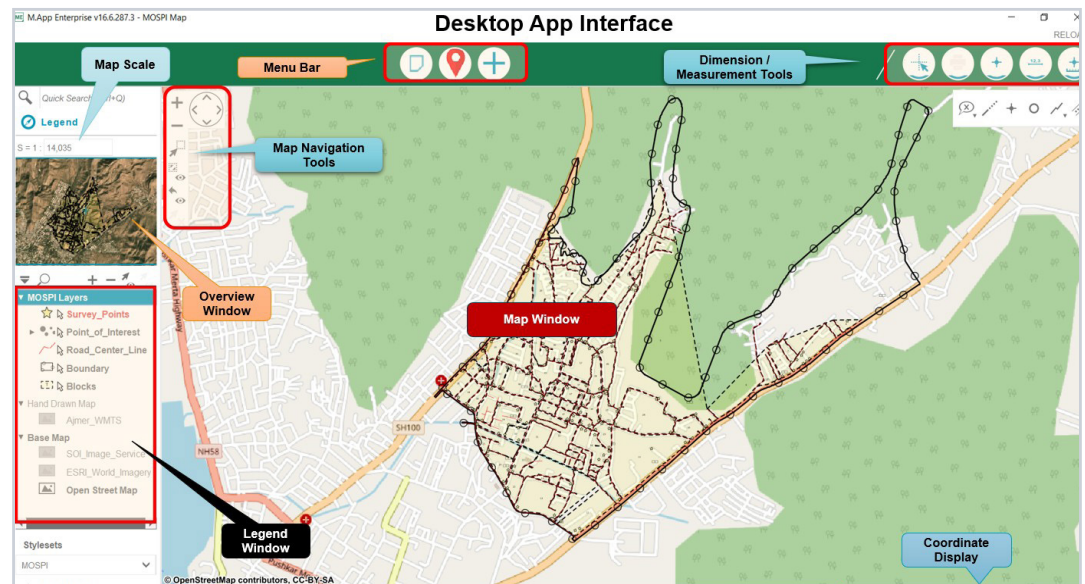
Web-based GIS editing and workflow management workflow

Municipal corporations require multiple departments to continuously create, update, verify and maintain geospatial information related to roads, buildings, utilities, drainage networks, streetlights, properties, parks and other public infrastructure. Octave's platform provides a centralized GIS editing environment that enables engineering, town planning, revenue and other departments to collaboratively maintain an authoritative municipal GIS.

The platform supports configurable business workflows for asset creation, field verification, quality control, technical review, approval and publishing. Role-based access ensures each department performs its assigned responsibilities while maintaining data integrity, consistency and complete auditability. Through a centralized enterprise GIS, municipalities can ensure that all stakeholders work with accurate, up-to-date spatial information for efficient planning, operations and decision-making.



Mobile GIS enables field teams to capture and update municipal asset and inspection data on-site.



Web-based GIS editing and workflow management enables collaborative, accurate and authoritative municipal data maintenance.

Monitoring, analytics and decision support workflow

- Provide interactive dashboards for monitoring municipal assets, maintenance activities, flood-prone areas, infrastructure health and operational KPIs
- Support spatial analysis, reporting and executive decision-making through configurable web dashboards
- Enable role-based access for engineering, planning, utility and administrative departments

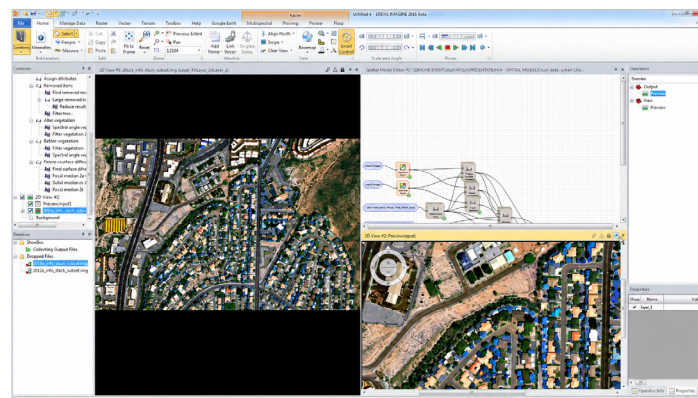


Interactive geospatial dashboards facilitate monitoring, analysis and data-driven municipal decision-making.

Urban change detection workflow

Urban change detection leverages multitemporal satellite imagery and drone imagery to continuously monitor urban growth and infrastructure development. By comparing imagery captured over time, the platform enables the identification of new constructions, illegal encroachments, road widening, land-use and land-cover changes and other unauthorized developments.

The detected changes are integrated with the municipal GIS database, enabling planning authorities to validate developments, update city maps, enforce regulations and support evidence-based urban planning. Interactive dashboards, GIS maps and analytical reports provide decision-makers with near real-time visibility of urban transformation, ensuring timely action and improved governance.



Advanced imagery processing and analysis allows users to extract actionable information for urban planning, infrastructure and municipal management.

Urban flood damage assessment and economic impact analysis workflow

Octave's solution provides municipalities with a comprehensive platform to monitor flood events, assess infrastructure damage and estimate the economic impact of disasters. By integrating satellite and drone imagery, digital elevation models (DEMs), rainfall data, hydrological information and municipal GIS datasets, the platform delivers situational awareness before, during and after flood events.

Using multitemporal imagery and spatial analytics, decision-makers can compare pre-flood and post-flood conditions, identify inundated areas, evaluate damage to roads, buildings, utilities and public infrastructure and estimate financial losses. Interactive geospatial dashboards enable emergency responders and municipal officials to prioritize rescue operations, optimize resource deployment, support damage assessment and plan recovery efforts.



Flood inundation analysis and visualization helps identify affected areas and support faster, data-driven disaster response.

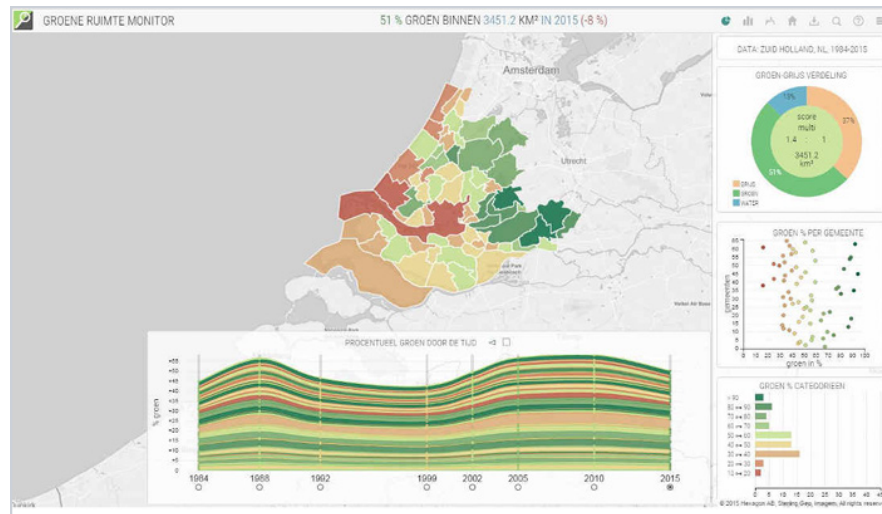
Urban green space monitoring workflow

Urban green space monitoring enables municipalities to effectively inventory, monitor and manage urban trees, parks, gardens, green belts and other ecological assets through an integrated geospatial platform. Using GIS, mobile applications, satellite imagery and field surveys, every tree and green asset can be geo-tagged with detailed attributes such as species, age, health condition, canopy size, maintenance history and ownership.

Field personnel can conduct tree inspections, record pruning and maintenance activities, report disease outbreaks and capture geo-tagged photographs directly from mobile devices. The collected information is synchronized with the central GIS database, providing real-time visibility through interactive maps and dashboards.

The platform also supports monitoring of green cover changes, identification of areas requiring plantation, assessment of environmental indicators and planning of urban greening initiatives. Decision-makers gain valuable insights into tree health, biodiversity, carbon sequestration potential and compliance with municipal environmental policies, enabling sustainable urban development and improved quality of life.

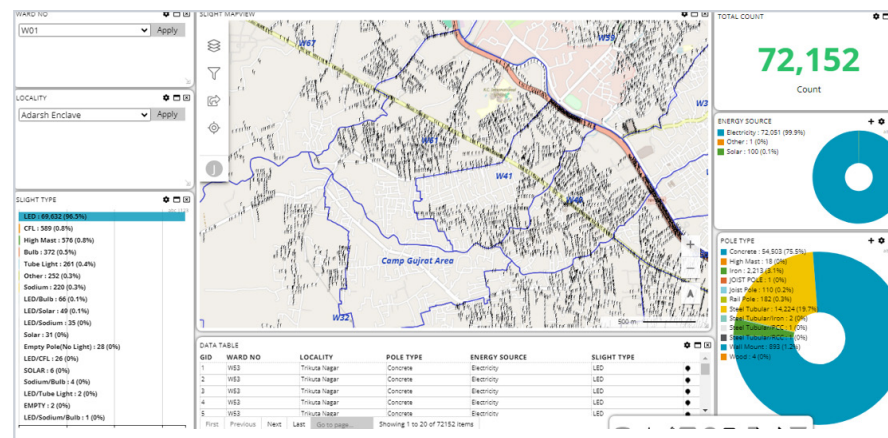
Workflows and benefits



The solution transforms geospatial data into interactive dashboards, enabling municipalities to visualize trends, analyze patterns and make data-driven decisions.

Street light management workflow

The street light management workflow enables municipalities to efficiently manage, monitor and maintain street lighting infrastructure through an integrated geospatial platform. Each streetlight is geo-tagged and maintained in a centralized GIS database with detailed asset information, including location, pole type, luminaire specifications, energy source, installation date, maintenance history and operational status.

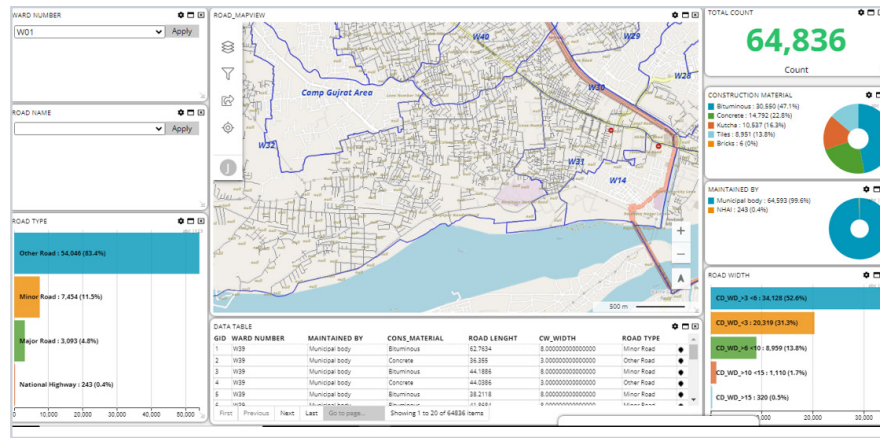


Map, monitor and manage street light assets.

Road infrastructure monitoring workflow

The road infrastructure monitoring workflow enables municipalities to efficiently manage, monitor, and maintain road networks through an integrated geospatial platform. The solution provides a centralized GIS-based inventory of roads, intersections, bridges, culverts, footpaths and associated infrastructure with detailed asset information including road classification, dimensions, surface type, condition, maintenance history and ownership.

Workflows and benefits



Centralized geospatial view of road assets, enabling municipalities to monitor infrastructure, assess asset conditions and support maintenance planning.

Citizen services workflow

The citizen services workflow enables municipalities to deliver efficient, transparent and resident-centric services through an integrated geospatial platform. Residents can report civic issues such as potholes, water leakage, drainage blockages, streetlight failures, garbage accumulation, illegal encroachments and other public grievances using web portals or mobile applications. Each complaint is automatically geo-tagged, assigned to the department concerned and tracked through a configurable workflow until resolution.

Why choose Octave for municipal governance?

- **Hardware-independent scalability:** Future-ready, scalable enterprise GIS platform with core-independent licensing, allowing organizations to expand infrastructure, users and workloads without impacting platform licensing costs
- **Multitenant enterprise architecture:** Enable multiple municipal departments, zones or wards to securely operate on a shared enterprise platform with isolated data, users, configurations and workflows — maximizing infrastructure use while simplifying centralized administration
- **Open and interoperable:** Seamlessly integrate with existing enterprise systems, spatial databases, CAD/BIM and OGC-compliant services
- **Real-time decision support:** Get actionable insights for planners, engineers and city administrators from interactive dashboards and geospatial analytics
- **Field-to-office connectivity:** Enable mobile inspections, geo-tagged data collection and real-time synchronization for efficient municipal operations with unlimited mobile editable users
- **Digital twin ready:** Implement the foundation for building intelligent, data-driven digital twins for smart city planning and operations
- **Proven government experience:** Benefit from Octave's strong track record of successfully deploying geospatial solutions across government agencies, smart cities, utilities and infrastructure organizations

About Octave

Octave is a leader in enterprise software, turning data into decisive action and intelligence into your edge. Our software solves for and simplifies complexity, from the design and build to operations and protection of people, property and assets – for any scope, at any scale. For decades, we've partnered with customers to sharpen performance, elevate efficiency and amplify results. From factory floors to entire cities, our solutions are tuned to scale up what's possible from day one onward.

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