UrbanSense AI

A Unified Operations & Decision Platform for Modern City Traffic

1. Executive Summary

Cities today operate increasingly complex traffic networks made up of signals, cameras, sensors, and control systems. While these systems generate large amounts of data, traffic authorities often struggle to turn this information into clear, timely action.

UrbanSense AI is a smart city traffic operations platform designed to simplify this complexity. It brings visibility, understanding, and coordination into one operational view, helping traffic authorities respond faster, manage priorities, and operate their networks with confidence. UrbanSense AI focuses on clarity, reliability, and control—supporting safer roads and smoother city mobility.

2. The Challenge Cities Face

Traffic authorities face common operational challenges:

- Disconnected systems from multiple vendors
- Limited visibility across operations and maintenance
- Issues discovered late, after service is impacted
- Heavy reliance on manual monitoring and operator experience
- Difficulty coordinating response during emergencies or critical movements
- Growing complexity without better operational insight
- Vehicle analysis and Classifications
- Pedestrian Analysis

Cities do not need more standalone tools. They need one operational platform that brings everything together.

3. What UrbanSense AI Is

UrbanSense AI acts as a unified operations and intelligence layer above existing city traffic systems.

It does not replace traffic controllers, cameras, or roadside equipment. Instead, it connects to what cities already own and transforms fragmented systems into one clear, coordinated operational picture.

UrbanSense AI brings together:

- Traffic signals and controllers
- Cameras and video-based insights
- Sensors and detectors
- Incidents and operational events
- Operations and maintenance awareness

All within a single platform designed for daily use in traffic control rooms.

4. Key Capabilities

4.1 Unified City Operations View

UrbanSense AI provides a single interface that shows:

- Live system status
- Critical alerts and priorities
- City-wide situational awareness

This reduces fragmented monitoring and helps operators focus on what matters most.

4.2 AI Copilot for Traffic Operations

UrbanSense AI includes an AI Copilot designed to support operators during daily operations.

Operators can:

- Ask what is happening right now

- Understand which locations need attention
- Receive guided explanations

The Copilot helps teams make consistent, informed decisions without switching between multiple systems.

4.3 Video Insights from Existing Cameras

UrbanSense AI uses existing cameras and video analytics services to better understand how streets and public spaces are used. By analyzing movement patterns across vehicles, cyclists, and pedestrians, the platform provides insights that support traffic operations, public space planning, and mobility improvements. This helps cities evaluate usage before and after changes—such as new layouts, bike infrastructure, or pedestrian zones—without requiring new hardware installations.

4.4 Automated System Readiness & Validation

UrbanSense AI continuously checks whether traffic systems are operating as intended. It highlights inconsistencies between expected operation and real-world behavior, helping operators detect hidden issues early and maintain stable, reliable service without manual inspections.

4.5 Operational Risk Awareness

UrbanSense AI helps authorities understand where operational conditions may lead to congestion, delays, or reduced service quality. By combining live status and historical patterns, the platform highlights areas that require attention, allowing teams to act before problems escalate.

4.6 Automation & Guided Response

UrbanSense AI supports structured workflows that:

- Automatically highlight critical conditions
- Guide operators on appropriate responses
- Reduce repetitive manual tasks

This enables teams to move from monitoring to action more efficiently, while keeping operators in control.

4.7 Emergency & Priority Route Coordination

UrbanSense AI allows traffic authorities to create and manage priority routes for emergency and critical movements.

Instead of responding intersection by intersection, operators can define a planned route across multiple signals. When an emergency vehicle, evacuation movement, or urgent hospital transfer is identified—through CCTV monitoring, coordination, or direct communication—the operator can activate the priority route.

UrbanSense AI then supports coordinated signal priority along the selected corridor, helping traffic move smoothly through the route while maintaining normal control elsewhere. This improves response time, reduces delays, and supports safer emergency movement when every second matters.

5. What Makes UrbanSense AI Different

UrbanSense AI is built around real operational needs:

- Vendor-agnostic: Works with existing city systems
- Operator-focused: Designed for real control rooms, not labs
- Proactive: Identifies issues before service is affected
- Scalable: Suitable for both small networks and mega-city deployments
- Future-ready: Prepared for connected and automated mobility

It is not just another monitoring dashboard—it is an operational decision platform.

6. Who UrbanSense AI Is For

- Traffic Management Centers (TMCs)
- City traffic and mobility authorities
- Operations and maintenance teams
- Emergency coordination and response units

7. Real-World Value

Cities using platforms like UrbanSense AI benefit from:

- Faster incident and emergency response
- Improved system reliability
- Reduced operator workload
- Better coordination across departments
- Safer roads and smoother traffic flow

8. Innovation Summary

UrbanSense AI represents a shift from reactive traffic monitoring to proactive traffic operations. By combining unified visibility, AI-assisted guidance, operational awareness, automation, and emergency coordination, it enables cities to manage traffic networks as one connected system.

9. Conclusion

UrbanSense AI helps traffic authorities simplify complexity, improve reliability, and respond with confidence. By turning disconnected systems into one operational view, it supports safer roads, faster decisions, and more efficient city mobility—today and into the future.