Product Guide

Nexar CityStream Compliance Solution

AI-Powered Construction Work Zone Monitoring for Cities

What Is It?

Nexar's CityStream Compliance Solution is a cloud-based platform that helps city agencies **automatically detect, monitor, and enforce** construction CityStream permit compliance. It uses Nexar's nationwide network of dashcam-equipped vehicles to capture continuous, street-level imagery of active work zones, then applies AI-powered vision models to identify construction equipment such as drums, cones, and barriers. The system cross-references these detections against official permit databases to flag unpermitted or non-compliant activity — all without sending a single inspector into the field.

Who Is It For?

The solution is purpose-built for **municipal DOT agencies, public works departments, and code enforcement units** that issue thousands of street-opening and construction permits each year but lack the resources to physically verify compliance at every location. It is especially relevant for large metropolitan areas where unpermitted roadwork impacts traffic flow, pedestrian safety, and municipal revenue.

The Nexar Console

The Nexar Console is the central command interface where city operators manage all compliance monitoring activity. It provides a real-time interactive map showing active detections, a sortable violations table with risk scores and estimated civil penalties, and a live Evidence Viewer fed by Nexar dashcam imagery. Operators are identified by name and role, and can take immediate enforcement action directly from the console.

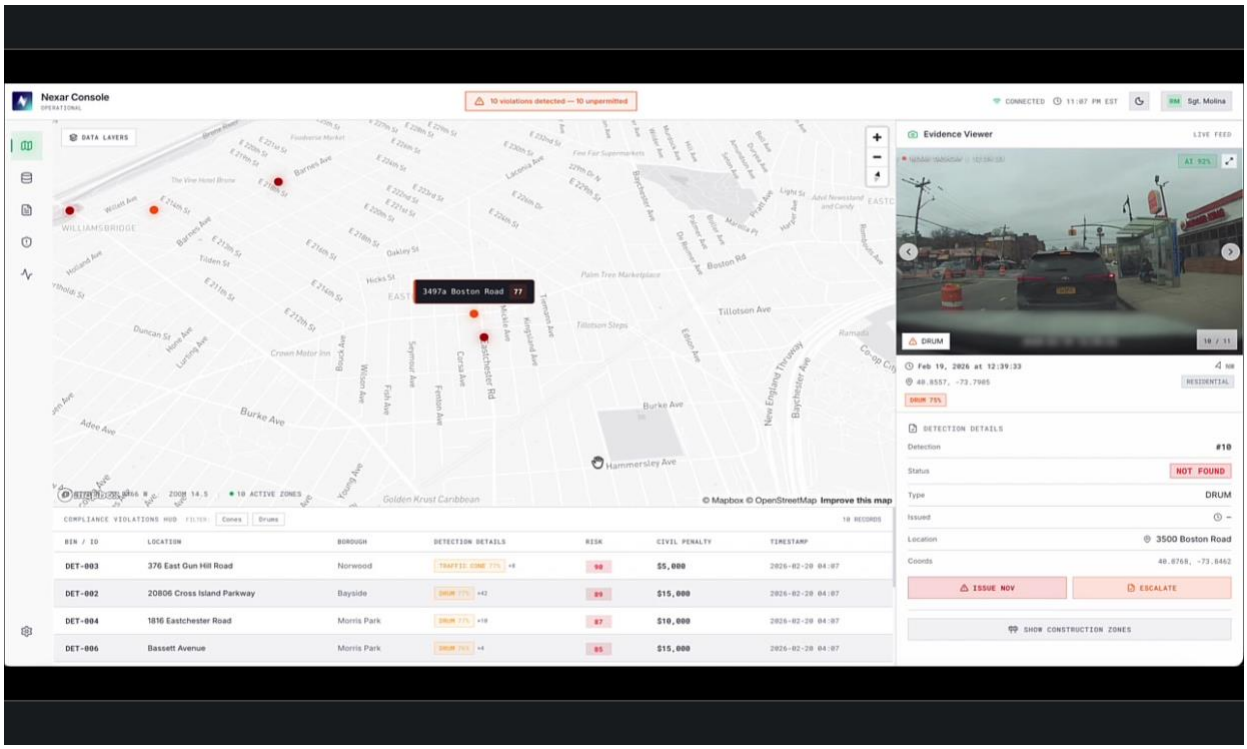

Figure 1: *Nexar Console — Compliance Violations HUD with live map, detection list, and dashcam evidence viewer.*

Evidence Viewer & AI Detection

Each detection in the console links to a detailed Evidence Viewer showing actual dashcam captures taken by Nexar-equipped vehicles as they drive past work zones. The viewer displays GPS coordinates, compass heading, timestamp, and the AI confidence score (e.g., “AI 92%”). Detected equipment types — such as DRUM or TRAFFIC CONE — are labeled and scored. Multiple frames per detection allow operators to review evidence from different passes and angles before taking action.

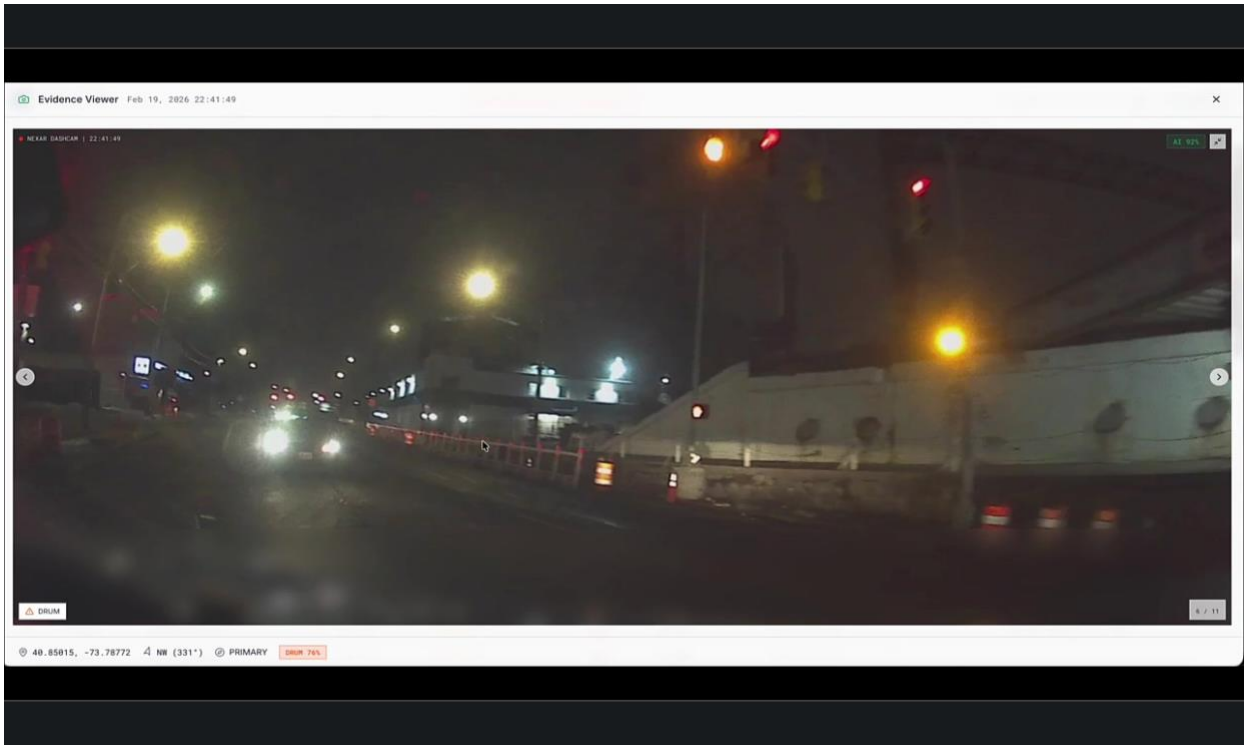

Figure 2: *Evidence Viewer — Dashcam capture with AI confidence score, GPS location, and equipment classification.*

Detection Details & Enforcement Actions

When an operator selects a detection, the right panel expands with full details: detection number, permit match status (e.g., “NOT FOUND”), equipment type, GPS coordinates, zone classification (residential, commercial), and nearby active construction zones. Two primary actions are available: **Issue NOV** (Notice of Violation) generates an official enforcement document with a unique tracking number and assigns it to a field unit. **Escalate** routes high-priority violations to supervisors. The violations table also displays estimated civil penalties per detection, helping agencies prioritize enforcement by financial impact.

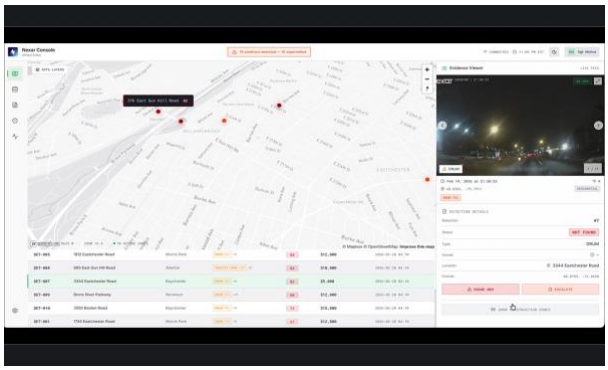

Figure 3: Detection details with Issue NOV and Escalate actions.

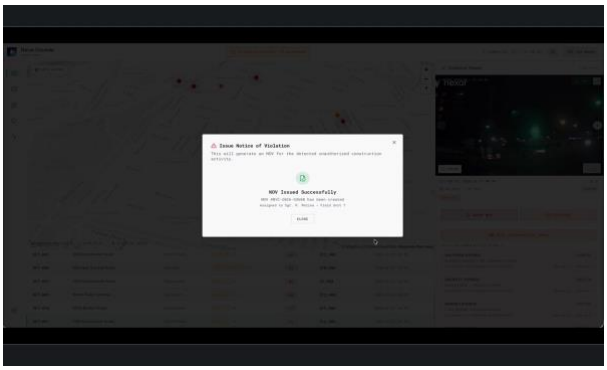

Figure 4: NOV issued successfully with tracking number and field unit assignment.

Permit Database Integration

The platform includes a built-in permit lookup interface connected to municipal open-data APIs. Operators can search permits by street name, district, contractor, or permit number. Each record shows the permit type, contractor identity, validity dates, and current status (Issued, Expired, Delinquent). This allows operators to quickly verify whether detected construction activity at a given location is backed by a valid, active permit — or whether enforcement action is warranted.

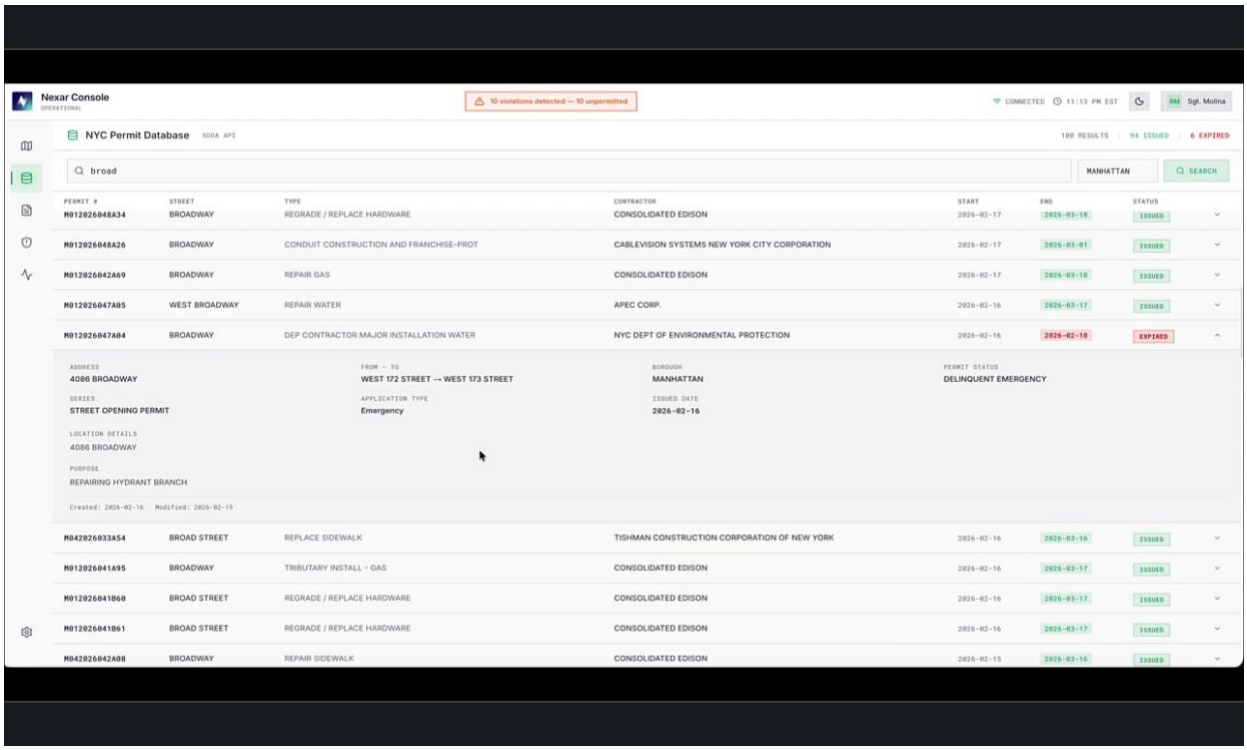

Figure 5: Permit Database — Searchable permit records with status, contractor, and validity details.

AI-Powered Analysis & Integrations

Beyond the core console, Nexar's solution integrates with AI assistants and enterprise platforms for deeper analysis. A conversational AI interface can query Nexar's CityStream API to answer natural-language questions about specific locations and compliance status. The AI cross-references detection data with permit records and returns a synthesized compliance summary, including specific contractor permits, validity windows, and whether detected activity matches any authorized work. It can also generate interactive maps of active street closures and violations by district.

Key Capabilities at a Glance

Capability	Description
Dashcam-Powered Surveillance	Near-real-time street-level imagery from Nexar's fleet of dashcam-equipped vehicles, covering city streets 24/7 without dedicated patrol units.
AI Object Detection	Vision models identify construction equipment (drums, cones, barriers, cranes) with confidence scoring and multi-model ensemble validation.
Geospatial Permit Matching	Automatic cross-referencing of detected work zones against official permit geo-boundaries to flag unpermitted activity.
One-Click Enforcement	Issue Notices of Violation (NOVs) or escalate cases directly from the console with auto-generated tracking numbers and field unit assignment.
Permit Database Search	Integrated lookup against municipal open-data APIs for real-time permit status, contractor identity, and validity verification.
Data Layers & Satellite View	Toggle between street map, satellite imagery, 3D buildings, traffic flow, and detection overlays for full situational awareness.
AI Compliance Assistant	Conversational AI integration for natural-language queries across detection and permit data, with synthesized compliance summaries.