

CASE STUDY

Automating Traffic Sign Monitoring with AI

New York City, NY, USA

Customer Situation

New York City Department of Transportation (NYC DOT) manages over 6,000 miles of streets, more than 13,000 signalized intersections, and operates the nation's largest automated enforcement program. In megacities like NYC, demonstrating due diligence is critical to defending against legal claims and upholding public safety accountability.

Missing, vandalized, or obscured signs can lead to inconsistent enforcement and create significant legal risks. To ensure that no speed-limit signs requiring repair go unnoticed and that asset records remain up to date, NYC DOT and Newlab issued an open call to pilot AI-enabled solutions for smarter street management, through which Dareesoft was selected.

Challenges

In NYC, many critical assets, such as speed-limit signs, were still inspected or monitored manually and intermittently, which created several challenges:

- **Lags in repair time**

Relying on a small team to conduct manual monthly inspections led to delays in identifying and repairing damaged signs.

- **Potential disputes**

When speed enforcement citations are issued, authorities must be able to provide verifiable evidence that the relevant sign was present and visible at the time of the violation. This can be difficult to prove when monitoring is conducted only intermittently.



Client

NYC DOT, New Labs LLC
(Open Innovation Studio)



Project Duration

Oct 2025-Mar 2026



Service Type

RiaaS RoadVision



Project Location

New York City



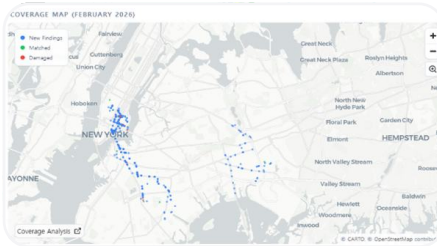
Solution

To automate speed-limit sign detection, three AI Road Analyzer (ARA-30) devices were installed on NYC DOT patrol vehicles operating across Manhattan, Brooklyn, and Queens, capturing images at 17-foot intervals.

Between November 2025 and March 2026, across 106 runs, 44,383 raw detections were identified and refined into 2,496 unique sign instances. Detection results were then compared against the existing reference database to automatically flag discrepancies and support an asset update pipeline.



ARA-30 installed on fleet



Interface - Coverage Map

Results

During this process, 90 damaged signs were identified and broadly categorized into four types: signs obscured by vegetation, obstructed by adjacent structures, structurally damaged, or affected by surface defacement.

The system also flagged inconsistencies between field data and existing reference databases, enabling NYC DOT to maintain a more accurate asset database. This helped the city not only maintain its street assets, but also build credible and traceable records that can reduce liability risks.

Detections

Speed Limit Signs (SLS)

- ✓ Obscured by Vegetation
- ✓ Obstructed by Infrastructure
- ✓ Damaged Structure
- ✓ Defaced (e.g. stickers, graffiti)
- ✓ Inaccurate Coordinates
- ✓ Incorrect Directional Attributes

Impact

- ✓ 96.7% detection accuracy
- ✓ 96.4% OCR accuracy
- ✓ < 3m location accuracy
- ✓ 99.2% damage detection
- ✓ Safeguard against legal claims

Contact



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