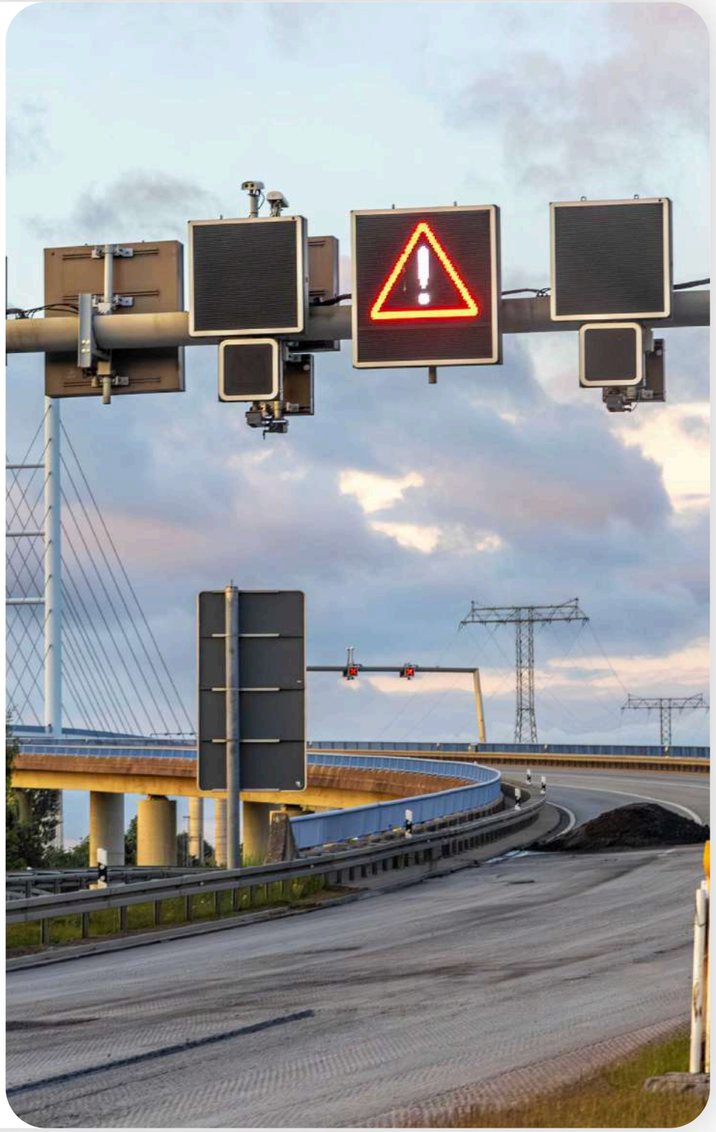
AI-Based Road Monitoring & Maintenance System

Smart Detection | Intelligent Prioritization | Faster Response



Roads are critical for Transportation, Safety, and Economic activity

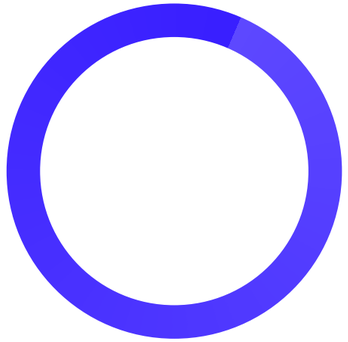
Current monitoring methods rely heavily on manual inspections

Problem:

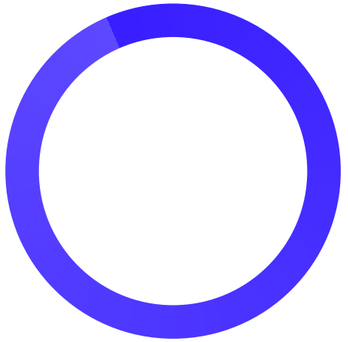
Manual processes are slow, inconsistent, and often fail to detect issues in early stages

Solution:

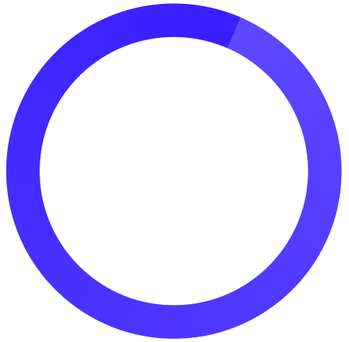
An automated system that continuously evaluates road conditions and enables faster decision-making



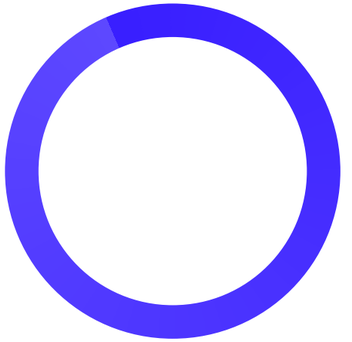
Road issues like potholes and cracks often go unnoticed initially



Lack of real-time visibility delays corrective actions



Manual reporting leads to Inefficiencies and Inconsistencies



Minor issues, when ignored, turn into major infrastructure failures

Impact: Increased accidents, higher repair costs, and reduced road lifespan

Automatically identify road surface and infrastructure issues

Classify issues based on severity and impact

Provide accurate location details for quick response

Support maintenance teams with actionable insights

Captures road visuals using cameras or mobile devices

Processes data to identify structural and environmental issues

Categorizes issues into severity levels (Low, Medium, Critical)

Shares alerts/ notifications to authorities along with exact location for quick action

Outcome: Enables a shift from reactive maintenance to proactive management

The system goes beyond simple identification

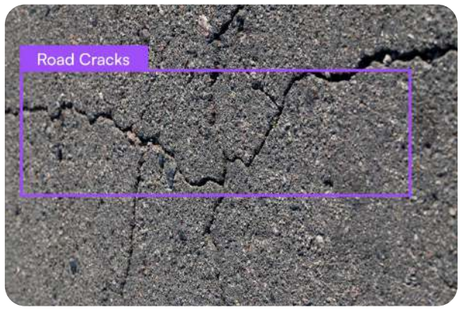
It evaluates how serious an issue is, not just what it is

Distinguishes between minor surface defects and safety-critical hazards

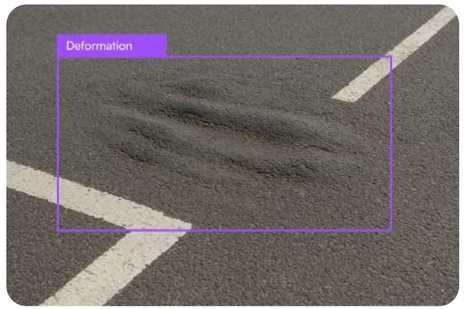
Example: A small crack is logged, but a deep pothole is prioritized immediately



Potholes



Road Cracks



Surface Deformation



Edge Break

Why It Matters: These issues directly impact vehicle safety, ride quality, and long-term road durability

- Lane Markings & Zebra Crossing
- Manholes (including open/damaged)
- Road Signs & Streetlights
- Speed Breakers & Road Barriers

Insight: Ensures roads are not just intact, but also properly guided and safe for users



Garbage Accumulation



Drainage Blockage

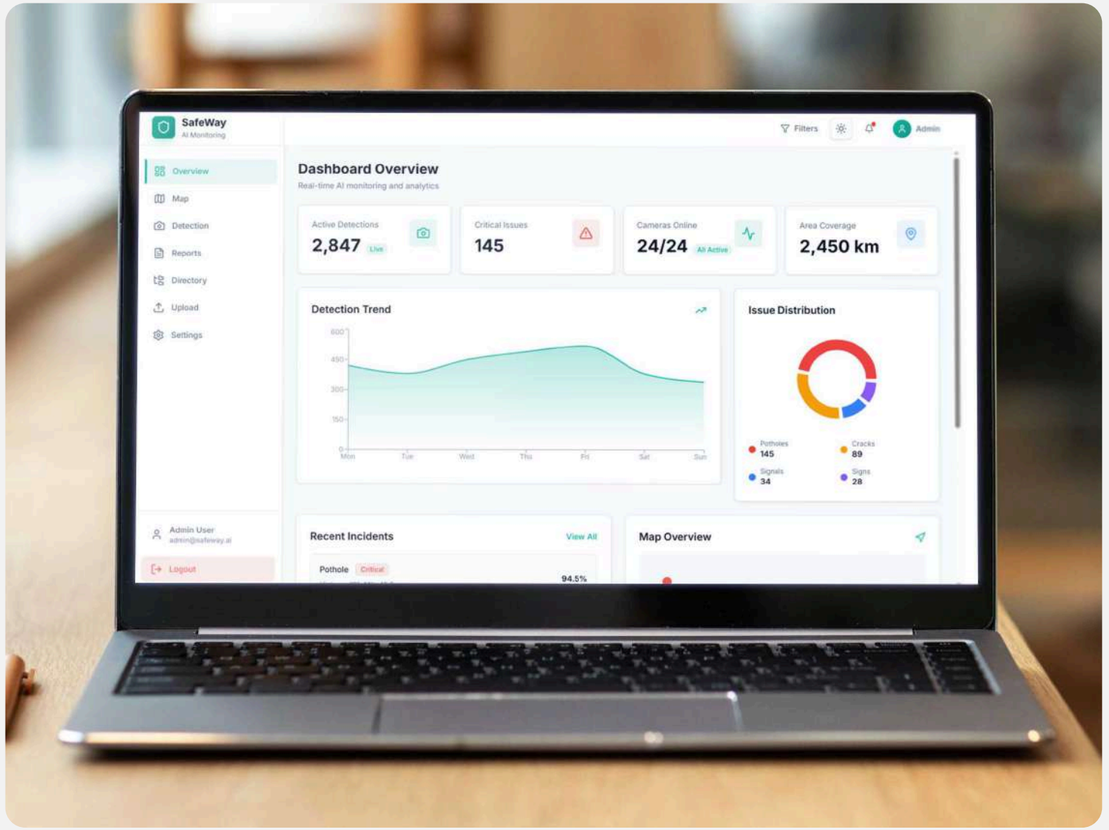
Explanation: Minor at first, but they slowly damage roads.

High Priority Issues:

- Severe potholes
- Major cracks
- Surface deformation

System Response:

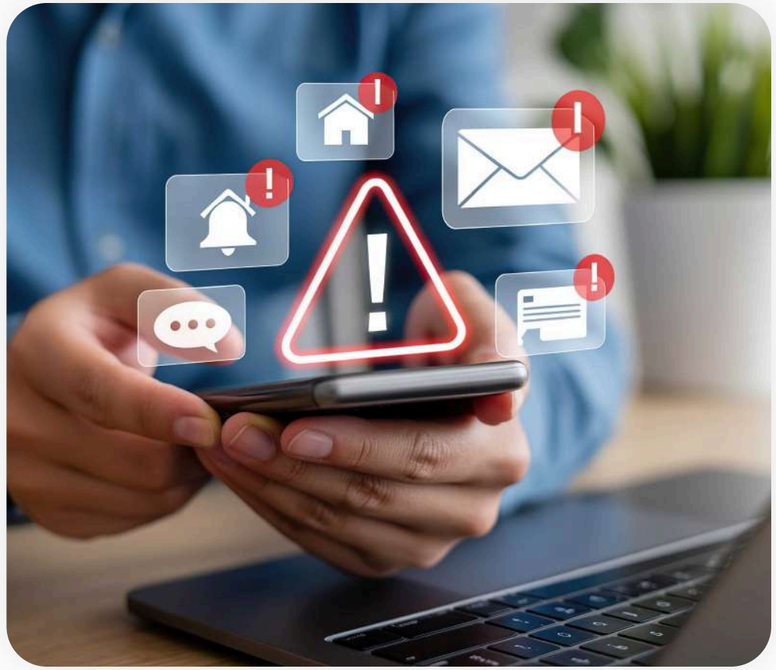
- Immediate alert generation
- Sent via email and call notifications
- Marked as high priority for quick resolution



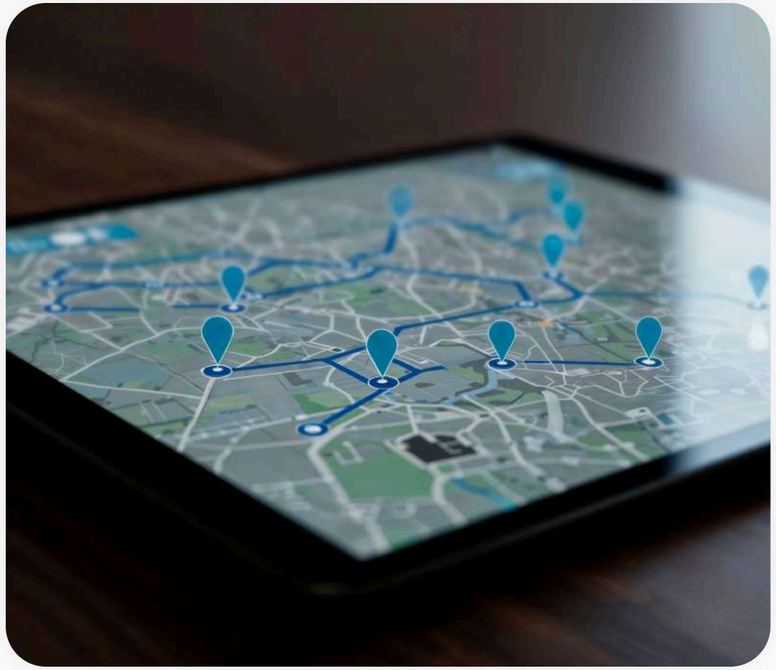
Real-time issue detection triggers alerts

Email notifications include issue type and details

Call alerts ensure urgent cases are not missed



Value: Reduces communication gaps and ensures faster response



Each issue is tagged with precise GPS coordinates

Enables exact identification of problem areas

Helps teams reach the site without confusion

Benefit: Saves time and improves operational efficiency

Capture road data (video/images)

Analyze and Identify issues

Classify based on severity

Tag location using GPS

Trigger alerts

Maintenance team takes action

- Faster detection and Resolution of issues
- Reduced dependency on manual inspections
- Improved road safety and user experience
- Better resource allocation and cost management
- Supports data-driven infrastructure planning

Enables proactive and Intelligent road maintenance

Ensures critical issues are addressed without delay

Enhances Safety, Efficiency, and Infrastructure quality

Final Thought: A smarter system for managing roads leads to safer journeys and better cities

Assimilate

Let's Build The Future

Of Intelligent Enterprises - Together

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