



# The City of Greenville, South Carolina: AI-Powered Storm Recovery with City Detect

July 2025



**Client:** The City of Greenville, SC

**Industry:** Municipal Government | Emergency Response

**Solution:** City Detect PASS AI

## Executive Summary

In September 2024, Hurricane Helene inflicted widespread damage across Greenville, SC, toppling trees, disrupting infrastructure, and leaving much of the city without power. But unlike many municipalities, Greenville had already prepared for this moment. As City Detect's first municipal partner, the city had fully deployed PASS AI months before the storm, including system calibration, staff training, and fleet integration. When the hurricane hit, Greenville activated a trusted platform to rapidly assess the extent of storm damage.

Using four municipal pickup trucks equipped with Data Collection Units, the city surveyed 300 miles and analyzed issues across 5,000 parcels in just three days. PASS AI provided population-level insights that replaced reactive complaints and fragmented windshield surveys with a complete, equitable view of damage. All detections were reviewed by municipal staff before action was taken, ensuring human oversight remained central. The result: faster triage, more efficient resource allocation, and a smarter, more transparent recovery, powered by data and grounded in ethics.



*City Detect PASS AI post-storm detections and citywide map*

## The Challenge

In late September 2024, Hurricane Helene brought 90mph winds and widespread devastation to the City of Greenville, South Carolina. The storm downed trees, snapped utility poles, and knocked out power for more than 1.3 million residents statewide. Multiple fatalities were reported, and hundreds of structures were damaged, but it was the City of Greenville's core infrastructure that bore the brunt of the impact.



*City Detect PASS AI detection example from Greenville, SC*

Residents described the chaos firsthand: “Power lines came down... poles snapped... praying for everyone,” one citizen shared. Local businesses posted updates from dark storefronts, asking customers to be patient as they navigated limited electricity and internet access.

What cities devastated by storms often lack isn't willpower or manpower, it's complete and accurate visibility. In high-stakes environments, human decision-making is vulnerable to exhaustion, cognitive overload, emotional strain, information gaps, and the physical toll of working through ongoing crisis conditions, often while personal safety and basic needs like rest, hydration, and nourishment are being deprioritized. Even highly trained professionals are susceptible to natural perceptual bias, where prior experiences, emotional urgency, or the order in which damage is encountered can unconsciously shape how risk and need are interpreted. This cognitive filtering can lead to under- or over-prioritizing certain areas, delaying critical action. Without an objective, data-driven picture of the scale and distribution of damage, leaders must rely on fragmented reports. In that vacuum, inefficiencies multiply, response efforts stall, and valuable resources are misdirected.

Even with a capable team in place, the sheer scope of damage demanded more than a manual response. Traditional inspections, complaint-driven alerts, and scattered documentation couldn't keep up with the city's needs. Officials needed a complete, structured view to triage the damage and start allocating resources in order to accelerate recovery.

"The early preparations we made had paid off in dividends," said Mayor Knox White. "Teams were in the field right away to do assessments, even when the storm was still going on. We knew our first priority was to open up streets, and in just a couple days we had all the streets open."



*City Detect PASS AI detection example from Greenville, SC*

City Detect's PASS AI was part of a broader emergency response, but its contribution was speed and clarity. With PASS AI already in place, Greenville didn't need to build a system in the midst of a crisis. It activated a platform designed for moments like this, transforming fragmented updates into a clear operational picture when the city needed it most.

## The Solution

Well before Hurricane Helene made landfall, the City of Greenville had already integrated City Detect's PASS AI system into its municipal operations. This proactive investment proved critical during the storm's aftermath, enabling the city to scale damage assessment quickly and without delay.

As emergency crews began their rounds, high-resolution Data Collection Units (DCUs) captured continuous street-level imagery across storm-impacted areas. PASS AI DCUs operate at

speeds up to 55mph, allowing the city to document vast swaths of affected neighborhoods without diverting from standard routes.

Imagery captured by PASS AI is initially analyzed on the DCU itself, enabling rapid detection of storm-related hazards such as downed trees, obstructed roads, structural damage, and standing water. Once uploaded to the platform, the data undergoes a secondary model-driven analysis to refine and validate outputs, ensuring a high level of data integrity before any action is taken.

At City Detect, maintaining ethical standards is non-negotiable, especially in times of crisis. No resource allocation occurs without human verification. AI supports the documentation and prioritization processes, but final decisions always remain in human hands, making the system accountable and transparent to the people it is intended to serve.

Detections of Greenville's Hurricane Helene damage were uploaded into the PASS AI web-based dashboard. This visual interface gave city leaders an up-to-date, highly accurate, map-based view of damage across the city, prioritized by severity and location. By integrating seamlessly into Greenville's existing workflows, PASS AI delivered operational intelligence without adding to the administrative burden of an already stretched emergency response team.



*City Detect PASS AI detection example from Greenville, SC*

Because PASS AI was in place before the disaster, Greenville didn't have to scramble for solutions. The city activated a system it already trusted, shifting from reactive cleanup to data-informed coordination within hours. That trust was built during their multiple year engagement working together.. City Detect first conducted local calibration to ensure PASS AI was attuned to Greenville's unique infrastructure and environment. From there, municipal staff

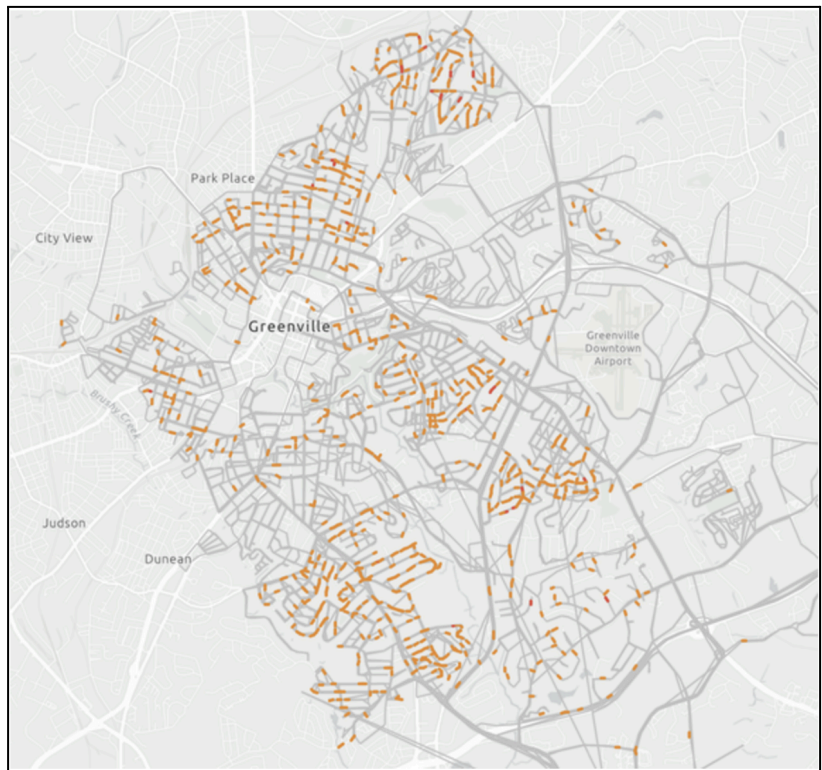
participated in hands-on, role-based training to ensure each department could effectively use the system in the field and in the command center. To sustain that readiness, City Detect provided ongoing support through weekly or biweekly coordination meetings, along with comprehensive online and offline documentation tailored to staff needs.

## The Results

Greenville's proactive deployment of City Detect's PASS AI system enabled the city to assess storm damage rapidly and at scale following Hurricane Helene. Using four municipal pickup trucks equipped with PASS AI Data Collection Units, the city captured high-resolution imagery across all neighborhoods, completing a full-city survey in just three days. This rapid deployment delivered population-level data, far exceeding the scope and speed of traditional windshield surveys, which typically rely on small samples and can take weeks to conduct.

City Detect's platform went beyond simple visual documentation. It categorized and prioritized damage by severity, giving city leaders access to a complete, high-integrity dataset across all neighborhoods, not just the areas with the loudest complaints or most visible damage. This level of comprehensive coverage allowed Greenville to approach recovery equitably and efficiently, ensuring resources were directed where they would have the greatest impact. By replacing sample-based windshield surveys and reactive reports with population-level insights, PASS AI enabled a more rigorous, data-driven foundation for storm response. And with municipal staff's ability to review all detections before action was taken, the system preserved the essential role of human judgment, pairing technological precision with ethical oversight.

"We were able to scale up quickly because the system was already there," said Gavin Baum-Blake, CEO and Cofounder of City Detect. "PASS AI gave Greenville the ability to see where the problems were, fast, without relying on slow, manual inspections or fragmented reports."



*City Detect PASS AI detection map from Greenville, SC, after 2024 Hurricane Helene*

Over just three days, the system delivered:

- 300 miles of storm-affected roadway surveyed
- ~5,000 parcels visually analyzed, including residential and commercial areas
- ~1,200 high-severity damage indicators flagged (e.g., downed trees, utility threats, flood zones)
- Zone-level heatmaps automatically generated and delivered to emergency management teams

These figures represent a dramatic compression of time and labor compared to traditional disaster assessment methods, which often require weeks of fieldwork and coordination across departments. By grounding recovery in structured, population-level data instead of subjective impressions or isolated complaints, Greenville's leadership gained a more complete, objective foundation for directing resources where they were needed most.

Critically, the system's precision made triage and response more efficient. Decision makers received prioritized, color-coded maps highlighting the hardest-hit road segments, from green (clear) to red (severe damage). Each detection was linked to timestamped, geo-tagged images that included DCU ID and location watermarks, details essential for audit trails, including future FEMA reporting. The PASS AI's interactive map allowed municipal staff to click on any segment to review corresponding imagery, supporting faster crew assignments and more confident, data-backed decision-making. All data is stored on a secure cloud platform, ensuring a reliable record of conditions for recovery planning and accountability.

PASS AI didn't just help the city assess storm damage; it enabled Greenville to operate from a position of clarity and control, even in crisis.

## **The Impact**

After Hurricane Helene, Greenville delivered a fast, coordinated recovery by relying on clear, up-to-date visibility into where help was needed most. By activating PASS AI, the city shifted from reactive damage response to precision-guided triage, reducing chaos, accelerating restoration, and reinforcing public trust.

### **Inspection Time Savings**

With roughly 300 miles surveyed in just three days, Greenville's public works teams received actionable insights that filled in data gaps from windshield surveys and other manual data collection efforts. PASS AI compressed what would have taken 10–12 inspectors over two weeks into a single weekend, freeing up personnel for critical response activities.

### **Faster Damage Triage**

AI-powered damage detection allowed the city to identify and prioritize areas with the most severe damage within hours. This matched the urgency voiced by residents and enabled emergency crews to clear streets and restore access far faster than traditional methods would allow.

### Resource Allocation Efficiency

Instead of deploying teams based on incomplete or anecdotal information, PASS AI directed resources to confirmed impact zones using geolocated data. Crews were directed to prioritized and verified impact zones, reducing fuel usage, avoiding duplication of effort, and making the most of limited staffing during a citywide crisis.

### Estimated ROI

Impact Area	Estimated Benefit	ROI Indicator Type
<b>Inspection Time Savings</b>	~10+ days of field staff time saved	Labor hours saved
<b>Faster Damage Triage</b>	High-severity zones flagged in hours vs. days	Time-to-action improvement
<b>Resource Allocation Efficiency</b>	Reduced crew and equipment misallocation	Avoided operational costs

### Conclusion

Greenville’s deployment of City Detect’s PASS AI system ahead of Hurricane Helene transformed what could have been a fragmented, reactive response into a coordinated, data-driven recovery. Because the city had already invested in calibration, training, and platform integration, it was able to activate PASS AI immediately, gaining structured visibility across every neighborhood, not just the ones with the most noise or damage reports.

In just three days, municipal staff surveyed 300 miles of roadway and analyzed nearly 5,000 parcels, producing a complete picture of damage that informed every step of the response. The system preserved human oversight at every stage, ensuring that each decision, while backed by AI, was ultimately reviewed and verified by city personnel. This balance of speed, scale, and accountability allowed Greenville to direct limited resources with confidence and care, all while reinforcing transparency and public trust.

City Detect didn’t replace Greenville’s emergency response; it strengthened it. By grounding decisions in comprehensive, high-integrity data, PASS AI helped the city lead with clarity, prioritize with precision, and recover with purpose.