Government | United States

Becoming a Cognitive Community

Town of Cary

Supported by Lenovo, AMSYS, and TrueNorth, Cary is building the foundational infrastructure to support real-time data ingestion, AI workloads, and digital twin development—redefining how communities learn, decide, and lead.

CARY

TRUE NORTH

AMSYS™

1 Customer background

Who is the Town of Cary?

One of the 10 largest municipalities in North Carolina, Cary is a growing, thriving community of over 191,000 people. Consistently ranked among the most-desirable places to live, work, have fun, and do business in the United States, Cary holds a reputation for its safe neighborhoods, network of bike-friendly parks and greenways, environmental stewardship, robust business climate, and premier amateur sports venues.

CARY

2 The challenge

Redefining community in Cary

Communities are not static. They are living, breathing systems shaped by growth, infrastructure, climate, economics, and people. They evolve every day.

Cary is experiencing this evolution in real time: more residents, greater population density, and increased demand on transportation, utilities, public safety, parks, and digital services. At the same time, the town is managing aging infrastructure, climate volatility, rising expectations for transparency, and the responsibility to deliver equitable outcomes.

“We’ve already built a strong foundation for becoming a Smart Community—connecting systems and sensors to gather data that we can use for the betterment of everyone in Cary,” begins Nicole Coughlin, CIO of the Town of Cary. “However, we want to go beyond visibility. Our next goal is to become a Cognitive Community.”

> “Smart Communities collect data. Cognitive Communities learn from it, adapt in real time, and continuously improve how they serve people.”

Nicole Coughlin

CIO, Town of Cary

2 The challenge

When visibility does not equal adaptability

As complexity increased, Cary saw the limits of siloed systems and periodic reporting. While dashboards revealed valuable information, they did not consistently help the town determine what to do next.

For example, traffic patterns shift daily, storm conditions evolve hourly, and infrastructure stress builds quietly. All the while, public expectations around the quality and responsiveness of municipal services continue to rise.

“Managing a dynamic community requires more than connected systems,” says Coughlin. “It requires the ability to sense change, understand interdependencies, and respond responsibly in near real time.”

3 The solution

Moving from Smart Infrastructure to Cognitive Governance

For the Town of Cary, achieving the vision of Cognitive Community will drive a shift in the way that local government operates—connecting trusted data, responsible AI, high-performance computing, strong governance frameworks, and human accountability.

Coughlin comments: “Innovation without governance erodes trust, but when we work thoughtfully and methodically with proven AI tools and expert partners, we strengthen it.”

Cary’s Cognitive Community approach is grounded in data stewardship, defined AI guardrails, privacy-first design, transparent decision frameworks, and human accountability.

“**Technology operates in the background** while community values and policy leadership set the direction. **AI is the accelerator** that helps us adapt quickly and responsibly.”

Nicole Coughlin

CIO, Town of Cary

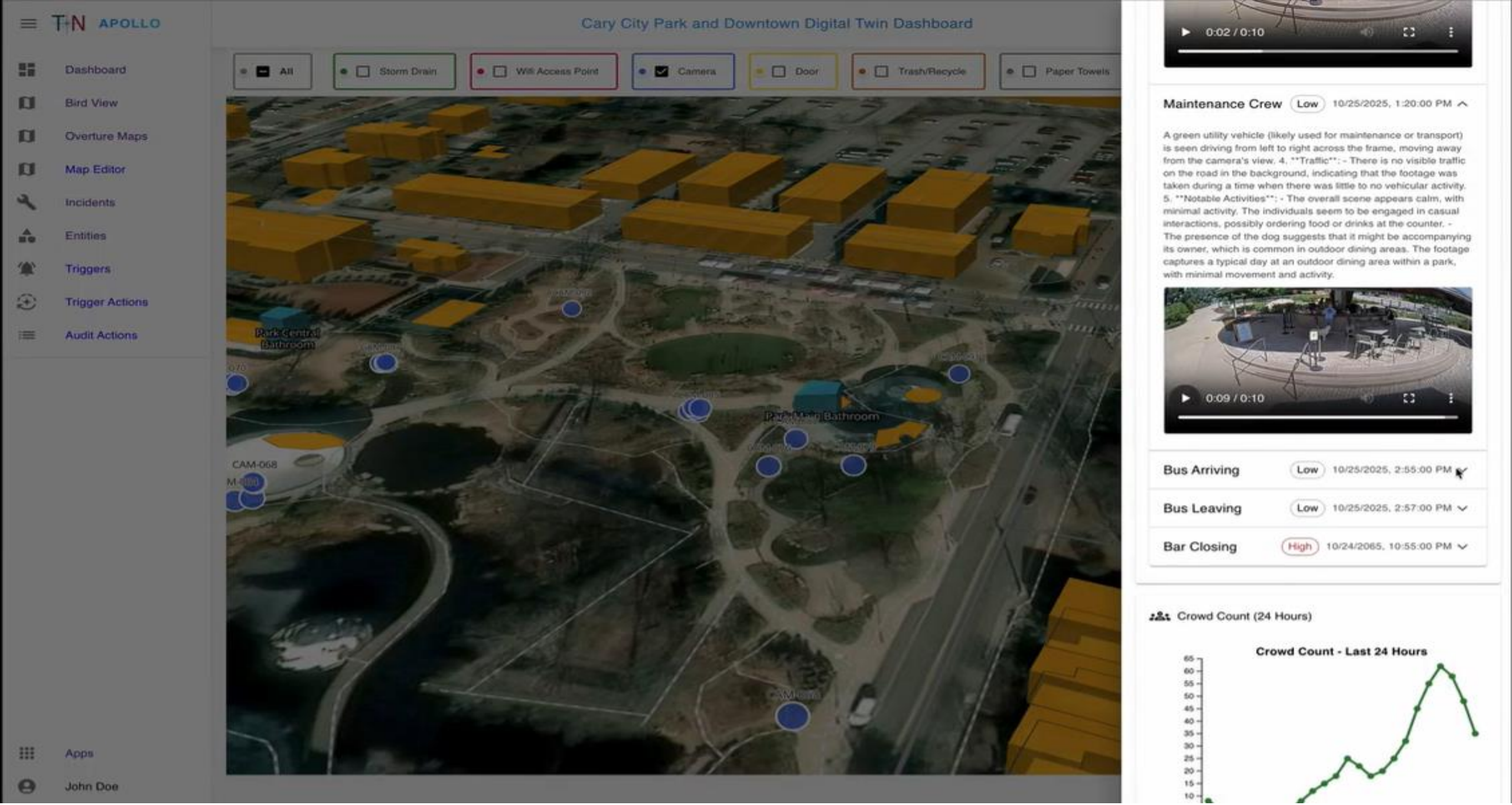
3 The solution

Choosing the right partners

To bring its vision to life, the Town of Cary teamed up with AI experts at Lenovo, AMSYS, and NVIDIA-accelerated ISV TrueNorth.

Together, the joint team is helping Cary build the foundational infrastructure necessary to support real-time data ingestion, AI workloads, and digital twin development.

“Our ultimate goal is to create a digital twin of Cary: a detailed virtual simulation of the town that will enable us to model the potential impacts of everything from traffic to storms, and even guide future decision-making around construction and infrastructure. We want staff and even residents to be able to ask: ‘what happens if we build here?’ or ‘what happens if a storm hits there?’ and see the answer in real time.”



Screengrab of the Downtown Cary Park digital twin dashboard

3 The solution

Building a powerful platform

The Town of Cary, Lenovo, AMSYS, and TrueNorth are working closely to develop and deliver an orchestration tool that visualizes the town's operations in real time.

Built on NVIDIA AI Enterprise and powered by the NVIDIA Blueprint for video search and summarization (VSS), TrueNorth's application transforms community deployed intelligent vision devices (cameras) and sensor data into real time, actionable intelligence. From instant alerts to automated event reporting and natural language Q&A, the platform gives operations teams a smarter, faster way to understand and manage their environment. Running on the Lenovo ThinkSystem SR675 V3 server and accelerated by NVIDIA RTX Pro 6000 Blackwell Server Edition GPUs, it delivers the performance needed to tackle the most demanding visual workloads with ease.

Hardware

Lenovo ThinkSystem SR675 V3
NVIDIA RTX Pro 6000 Blackwell Server Edition GPUs

Software

NVIDIA AI Enterprise
NVIDIA Blueprint for Video Search and Summarization

3 The solution

In the future, Town of Cary plans to implement simulation technology to enable a digital twin for community planning, scenario testing, and further the goal of creating a Cognitive Community.

> “The expertise behind the infrastructure is just as important as the technology itself. Advanced simulation and AI acceleration require architectural precision, scalability, and security—and that is what we have achieved by working together with Lenovo, AMSYS, and TrueNorth.”

Nicole Coughlin

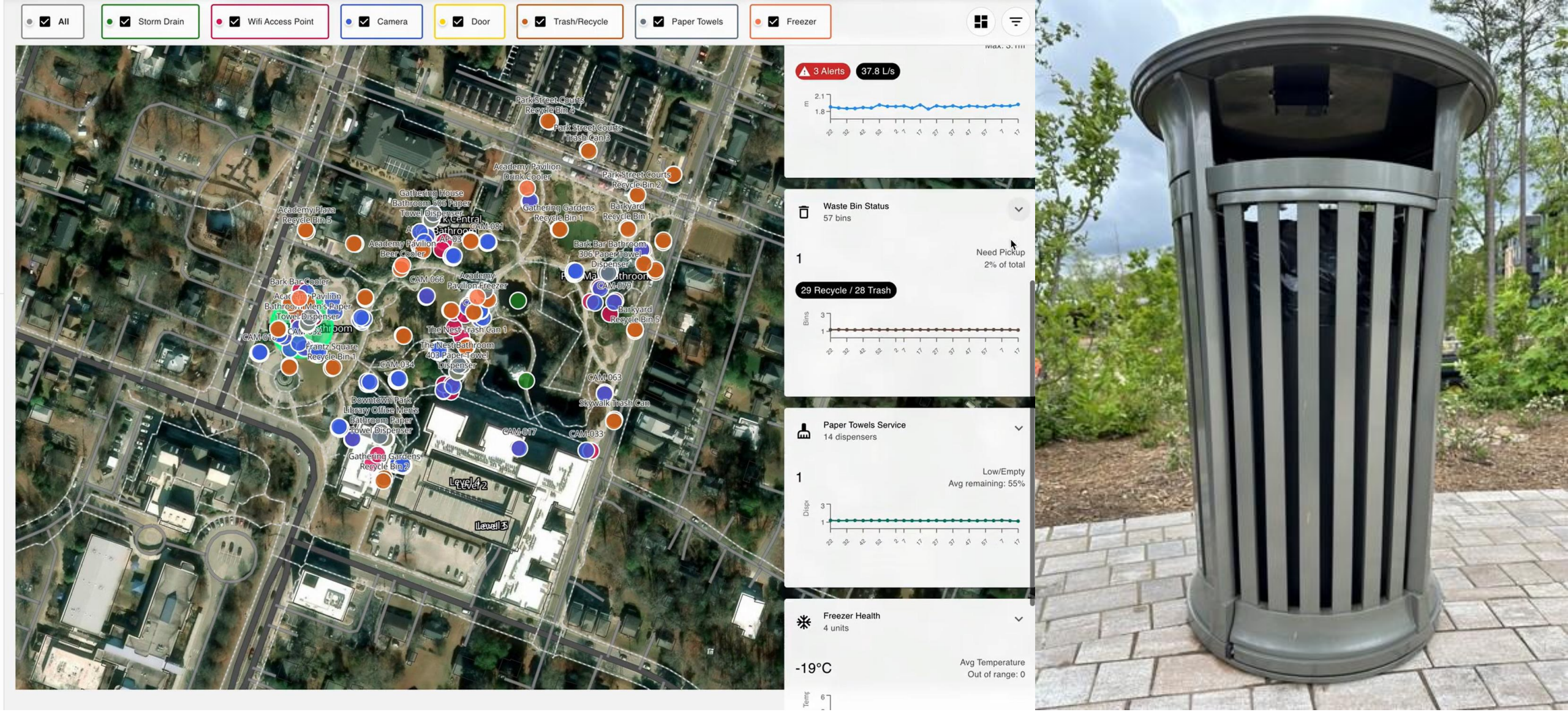
CIO, Town of Cary

3 The solution

A digital twin that learns

As Cary develops its digital twin capability, it is intended to function as a living, evolving environment. It will bring together real-time operational streams and allow the town to explore complex questions, understand interdependencies, simulate potential scenarios, and refine decisions as conditions change.

“The real power of a digital twin is not the 3D model. It is the ability to bring live data together, explore complex questions, simulate possibilities, and continuously refine how we serve our community,” says Coughlin.



Screengrab of the Downtown Cary Park digital twin dashboard. Sensors inside garbage and recycling bins provide real-time data on how full they are.

3 The solution

Accelerating AI innovation

Around the corner, Cary is looking to apply LLM and VLM technologies to various data sources like intelligent vision devices mounted on garbage trucks to query road infrastructure status with natural language and chatbots to streamline fleet asset maintenance.

The town is rapidly scaling its AI initiatives to elevate service delivery for residents and businesses. By refining data strategies and establishing a secure AI framework, the town is prioritizing privacy while consolidating platforms and streamlining workflows. Looking ahead, Cary is set to empower its teams with advanced predictive intelligence and simulation capabilities to drive the next stage of its digital transformation.

“We aim to use AI to deliver predictive maintenance capabilities across our parks and facilities, which will enable us to extend the lifespan of our assets, reduce maintenance and repair costs, and keep our town looking its best,” says Coughlin.

“Looking further ahead, our goal is to connect data that has historically lived in separate systems and silos, creating a **unified intelligence layer for our community**. When data is connected in this way, it becomes far more than information. It becomes **insight**. That insight allows us to model scenarios, anticipate challenges, and test solutions before problems ever reach our residents.”

Nicole Coughlin

CIO, Town of Cary

“In Cary, we’re proving that when you govern AI and data well, you can make life safer, smarter, and more connected for everyone.”

Nicole Coughlin

CIO, Town of Cary

4 The results

As Cary's Cognitive Community capabilities mature, the town expects to strengthen cross-department coordination, improve infrastructure planning, enhance resilience and preparedness, increase visibility into equity outcomes, and reinforce public trust through transparency.

"This is not an overnight transformation," notes Coughlin. "It is a disciplined, multi-year evolution designed to help Cary learn, adapt, and serve more effectively in an era of constant change."

She continues: "When we realize our vision, Cary won't just be a Cognitive Community—we'll become a trusted community where data and AI work together to truly serve the public. We are confident that our work with Lenovo, AMSYS, and TrueNorth will set the standard for municipalities across the nation."

- Advanced AI acceleration expertise
- Responsible public-sector innovation
- Powerful infrastructure

> “This is not about deploying new technology. It is about building a community that can learn, adapt, and evolve responsibly as the world around us changes.”

Nicole Coughlin

CIO, Town of Cary

Why Lenovo and NVIDIA?

Building a Cognitive Community is complex, requiring deep technical expertise, scalable infrastructure, and partners who understand that innovation in local government must operate within strong governance guardrails.

“Selecting the right partners is as critical as adopting strong data and AI policies,” comments Coughlin. “That’s why we sought partners with proven high-performance computing capabilities, advanced AI acceleration expertise, and a commitment to supporting responsible public sector innovation.”

How can municipalities become Cognitive Communities?

Lenovo, AMSYS, and TrueNorth are working to create a digital twin of the Town of Cary to model the potential impacts of everything from traffic to storms, guide decision-making, and continuously improve how the town serves its residents.

Explore Lenovo Hybrid AI

CARY

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