

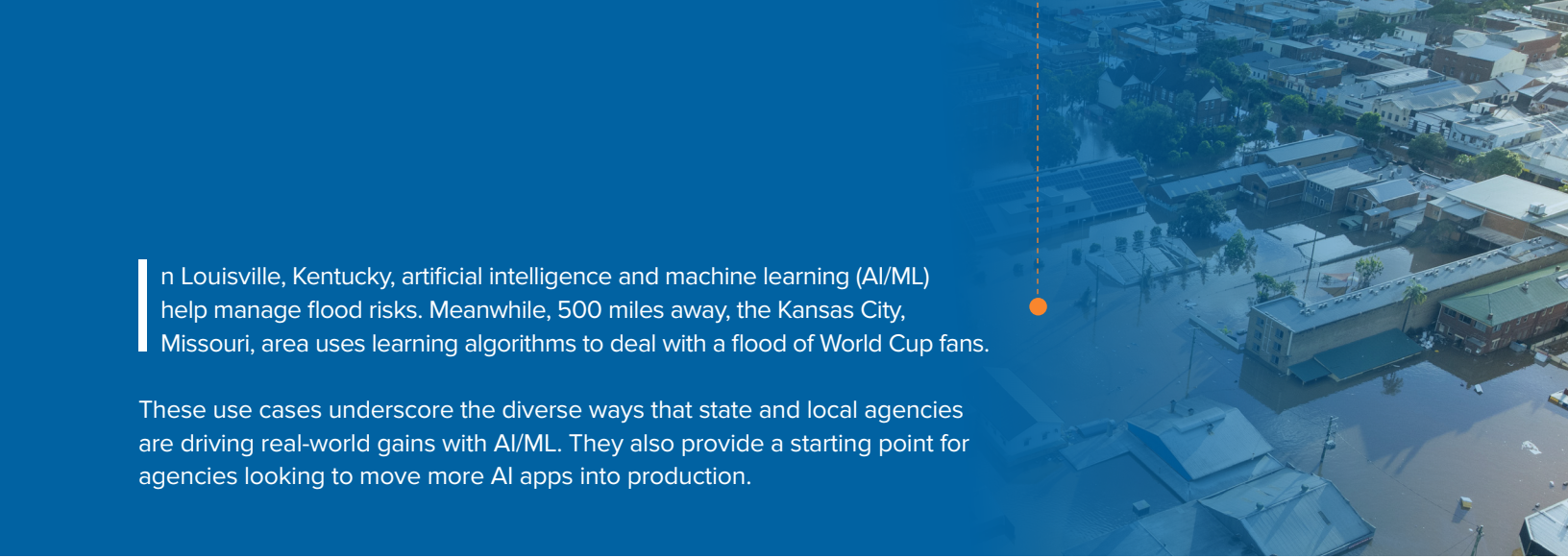


A GOVERNMENT TECHNOLOGY THOUGHT LEADERSHIP PAPER

# From Storms to Sports: How AI Helps Communities Plan and Respond

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In Louisville, Kentucky, artificial intelligence and machine learning (AI/ML) help manage flood risks. Meanwhile, 500 miles away, the Kansas City, Missouri, area uses learning algorithms to deal with a flood of World Cup fans.

These use cases underscore the diverse ways that state and local agencies are driving real-world gains with AI/ML. They also provide a starting point for agencies looking to move more AI apps into production.

## AI in a River City

Louisville is the hub of a metro area with nearly 1.4 million residents north and south of the Ohio River. Since its founding in 1778, Louisville has had to adapt to the river's whims.

"We're blessed with too much water," says Grace Simrall, senior fellow with the Center for Digital Government (CDG) and Louisville Metro Government's chief of civic innovation and technology from 2016 to 2023.

It's not just stormy weather pushing the Ohio River out of its banks, inundating homes and businesses with water. Louisville also has multiple railroad underpasses that flood in heavy rains, creating severe travel hazards.

That's exactly what happened during a particularly powerful storm in 2018. "We had absolutely no idea an intense rainfall was going to come," Simrall says. "It did. And the underpasses filled up."

What Louisville needed then — and now has — was an AI solution that delivers value specific to the city's unique needs. Drawing on local climate and traffic data, the city can predict the likelihood of storms and tailor its response plans. In the event of extreme situations, leaders are better prepared to respond and communicate with residents.

"We're getting a better sense of how frequently that might happen," Simrall says.

AI/ML will help the city redirect drivers away from flooded underpasses, potentially saving lives.

## Visitor Management in Missouri

Metropolitan Kansas City will host a half-dozen FIFA World Cup matches in 2026. Having hosted multiple World Series championships in recent years, Kansas City has

## *AI apps are helping cities plan for — and respond to — unique challenges.*

experience managing large sporting events. But the World Cup soccer tournament will also impact smaller suburban jurisdictions that don't have the same resources. AI is helping those places bridge the gap.

One of those suburbs is Parkville, Missouri, a town of about 9,000 northwest of downtown Kansas City. Though it's about a half-hour drive from Arrowhead Stadium, site of the FIFA World Cup matches, Parkville will serve as the headquarters for at least one World Cup team.

"We are going to be just crushed in terms of available hotel rooms," says Bob Bennett, a Parkville alderman and CDG senior fellow who helped lead smart city efforts for Kansas City. "We have to know how to move people around."

Parkville is using AI applications to simulate scenarios and put plans in place for when the World Cup arrives.

"We now know, based on the simulations we've done, that we can handle it," Bennett says.

Elsewhere in the Kansas City area, AI apps automate permitting for new companies, accelerating applications for zoning changes and alcohol permits.

The apps also greatly accelerate decision-making compared to a decade ago, when Bennett was helping Kansas City spin up new smart city initiatives.

"The type of analysis that would take a week for our team back in 2016 can now be done in 30 seconds," Bennett says.



## Finding AI Opportunities

Smart city programs gave Louisville and the Kansas City area a solid AI foundation when ChatGPT arrived in 2022. Though the large language models (LLMs) that drive generative AI (GenAI) apps are game changers, they're not the sole path to AI productivity.

For instance, a city's physical assets — buildings, bridges, utilities and vehicles — produce vast quantities of useful data that AI can convert into insights and productivity gains.

"Authoritative data can be captured across the full asset lifecycle," says Adrian Newcombe, associate vice president for product management with Trimble, a top provider of asset management software for public sector agencies.

Cameras on bridges can alert authorities about rising waters. Sensors in stormwater pipes can document rainwater flows to predict potential flood sites. Waste management truck drivers can snap pictures of potholes and use AI to track the health of roads, dispatching repair teams automatically.

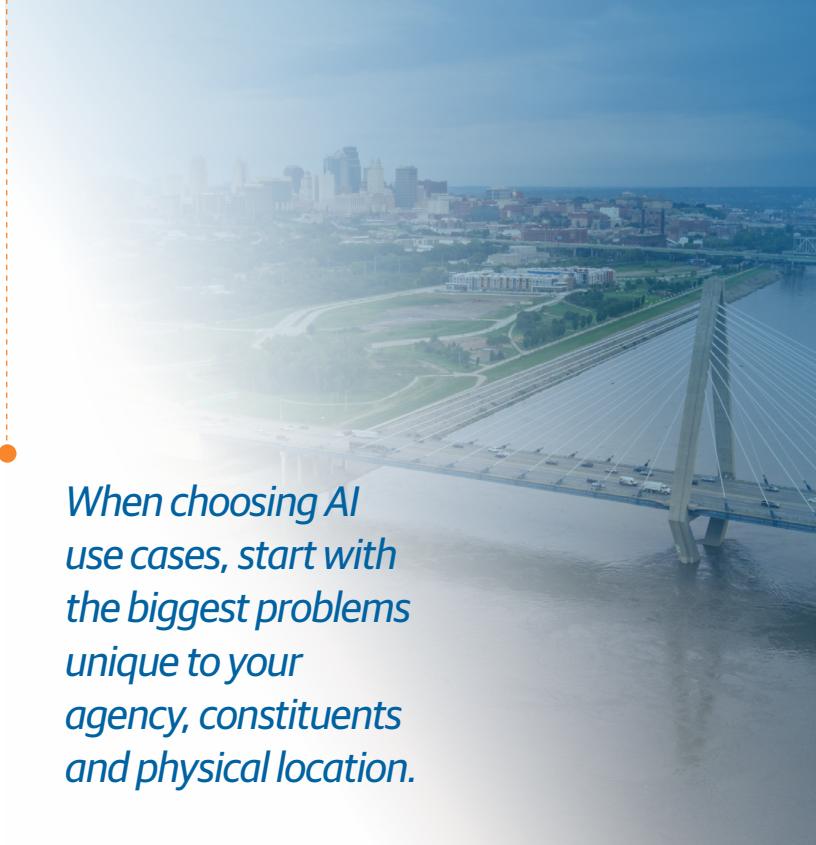
AI can also transform productivity for workers in the field. Users can add voice and video streams to their workflows, improving information sharing. Workers on building sites and repair projects don't have to interrupt operations to manually add data to tablets or laptops.

"If you make it easier for workers to capture data on what they're doing, the quality and the volume of the data increases significantly," Newcombe says.

## Successful Strategies

**Seek specific improvements.** When choosing AI use cases, start with the biggest problems unique to your agency, constituents and physical location. Focus on operational efficiencies and faster, more fluid public services. Even counties in sparsely populated rural communities can find opportunities in areas like fleet management, snow removal, and parks and recreation.

**Choose the right software.** As the Louisville and Parkville examples show, AI/ML apps are strong sense-and-react tools that pull real-time insights from sensors, video feeds and other sources. AI's plan-and-predict capabilities provide support analysis in minutes. Make sure your apps include analytics and visualizations to drive measurable results for your agency.



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"Most of the software we buy today already has AI embedded," Bennett says. "Without embedded AI, you're purchasing an obsolete product before you even deploy it."

**Regulate.** Strong AI governance will help you protect data and privacy while ensuring compliance. Consider a somewhat permissive stance to get pilot projects rolling.

**Collaborate.** Join forces with groups like the San Jose Government AI Coalition and explore public-private partnerships. Use industry conferences and trade shows to brainstorm use cases.

**Persuade stakeholders.** Get executives and elected officials excited about adopting AI by stating the business case and potential benefits.

"You have to articulate the value the AI solution will deliver against the investment needed to realize that value," Newcombe says.

## A Strong Start

AI apps are everywhere, but deploying practical solutions doesn't have to be overwhelming. As in Kentucky and Missouri, organizations will benefit from identifying their biggest priorities and opportunities to help constituents. Let those goals guide you as you explore different solutions and strategies, always focusing on your mission to improve outcomes and impact for your community.

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