SAND TECHNOLOGIES

AI and Smart Cities 2025

What Do Residents Think?

Introduction

Cities and counties face an escalating challenge to meet the needs of an increasingly urbanized society. By 2050, 68% of the world's population will live in a city.[1] The situation is even more urgent in the United States, where 89% of citizens will live in an urban environment 25 years from now compared to 83% today.[2]

This population growth puts a significant strain on city resources, from water and electric infrastructure to telecom and transportation systems, all of which generate vast amounts of data. Rapid technological advancements have prompted city and county leaders to evaluate how digital solutions can utilize this data to help them better manage resources and gain insights, improving citizen wellbeing while delivering a higher quality of life.

The idea of "smart cities," a concept embraced worldwide but still gaining traction in the U.S., aims to address these imperatives. But are U.S. citizens aware of the potential benefits? Do they understand how smart-city systems can meet their needs? Does AI have a place in the smart city of tomorrow? And do the programs civic leaders are exploring align with their constituents' priorities?

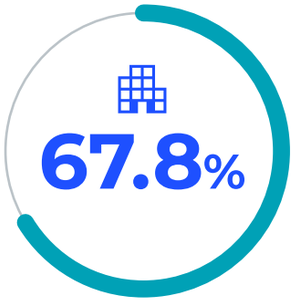
We surveyed 2,000 U.S. residents to explore these questions. Citizens clearly have faith in technology: according to our survey, 67.8% believe AI can have a positive impact on city living. They even have ideas about where it can deliver the biggest benefits. Yet 33% of respondents weren't sure how to define a smart city, and 61% expressed concern about their local government's responsible use of AI.

This report discusses the areas U.S. citizens feel are the best use of AI in the city and county environment. In the process, it provides a roadmap for city officials and urban planners to prioritize the use cases that are likely to receive the most public support and keep citizens' priorities at the center of their smart-city journey.

Global percentage of people living in a city by 2050:

Percentage of U.S. citizens living in a city by 2050:

Source: Center for Sustainable Systems, University of Michigan



of residents believe AI can have a positive impact on city living.

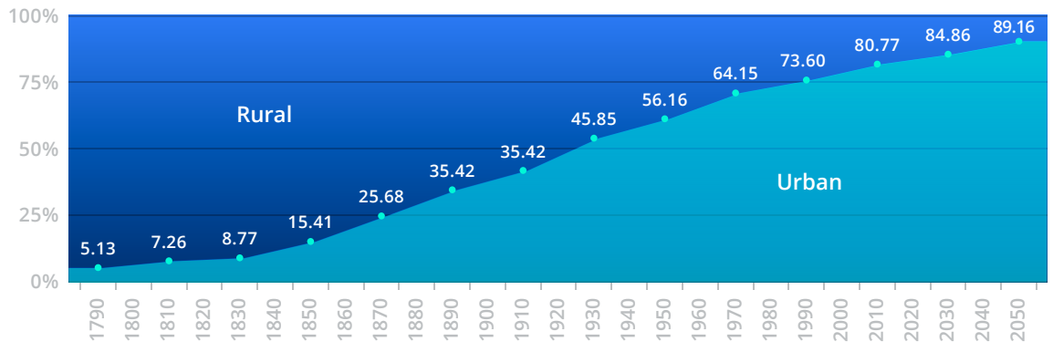
of residents weren't sure how to define a smart city.

of residents were concerned about their local government's responsible use of AI.

The Need for Smart Cities and Counties

Accelerating urban growth is a challenge for large and small municipalities alike. Technology can alleviate some of the pressure.

Percentage of the total population living in urban areas



Source: Statista

Do you think AI can have a positive impact on city living?

As urban populations grow, it's not just New York City, Chicago or Los Angeles that feel the pain; smaller and rural municipalities are also impacted. In fact, 75% of U.S. cities have fewer than 5,000 residents, and one-third have fewer than 500.[3] Fortunately, smart-city frameworks can apply to all municipal settings.

At its core, the concept of a "smart city" emerged from the idea that advanced technologies and data could make city operations more efficient, sustainable and resilient. These philosophies are relevant to cities and counties of all sizes, as new and expanding datasets emerge from an increasingly connected society.

In fact, the approach may be even more relevant in small- to medium-sized municipalities. In those settings, what sounds like modest population growth of 200 people puts an exponential burden on public resources.

Leveraging technology to gain actionable insights from their data can equip city and county leaders to strategically anticipate and remain responsive to the needs of their growing citizenry.

SLED spending on technology in 2025 is projected to be:

$61bn for services | **$14bn** for software

Fortunately, city and county governments are no strangers to technology. In 2025 alone, state, local and education spending on technology is projected to be $61 billion for services and $14 billion for software.[4]

One of the hottest technologies today, AI, is known for analyzing huge datasets like those produced by municipal systems and city residents. However, AI has largely been deployed in enterprise and consumer scenarios. Can a city or county deploy it to deliver positive outcomes?

According to our survey, more than two-thirds of U.S. citizens believe it can. This shows an opportunity for government leaders to embrace AI to accelerate their smart-city projects, provided they do so in a way that engages the public and addresses the challenges citizens want to solve.

Top 5 Survey Takeaways

Respondents believe AI will drive big improvements in several key city-living areas. They also uncovered opportunities to broaden smart-city support.

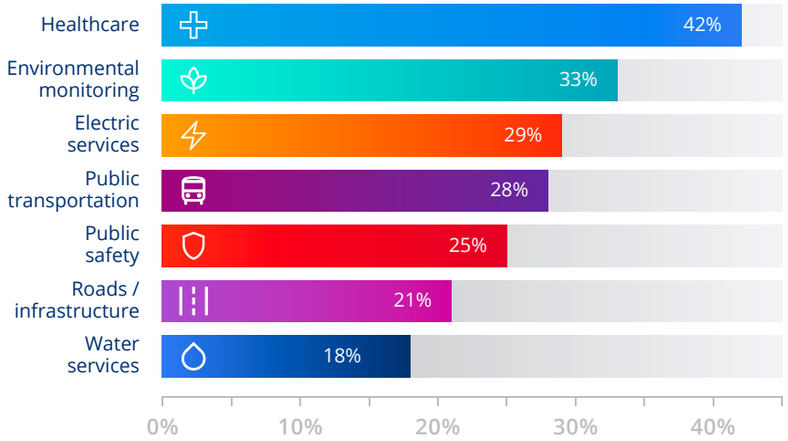
1.

AI is Already Having a Positive Impact

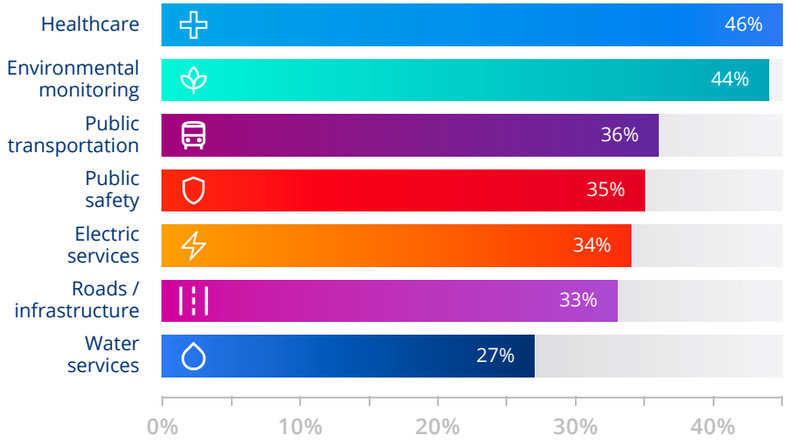
In cities worldwide, AI has already proven effective at addressing urban strain, integrating with IoT to create smart infrastructure and systems that dynamically adapt as populations grow. This proven capability can be a huge benefit to city and county leaders as it streamlines and improves resource management amid the pressures of urban expansion.

The benefits extend to residents as well. According to our survey, U.S. citizens believe AI is currently having a positive impact on multiple areas of city life, from healthcare and environmental monitoring to utility performance and infrastructure. Yet there is clearly optimism about cities' potential to achieve even more improvements with AI. The survey showed a disparity between citizens who noted AI's "current" vs "potential" impact, showing a strong belief that AI will deliver greater benefits in the future if deployed in meaningful ways by city leaders.

In what areas of city living do you think AI currently has an impact?



In what areas of city living do you think AI could have an impact?



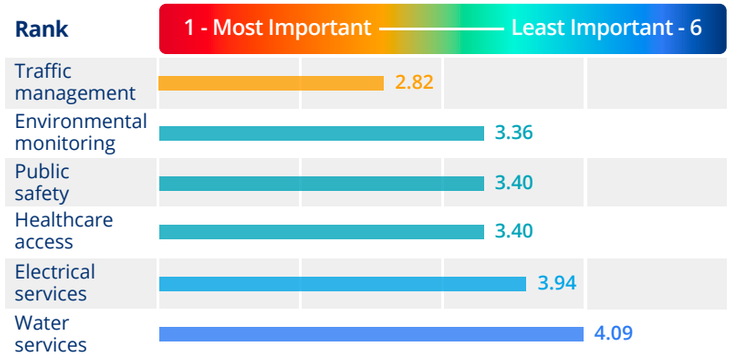
2.

AI Can Accelerate Improvements in Infrastructure, Environment, Health and Safety

Nationwide, 67% of respondents believe AI will have a positive impact on city living. The Midwest is slightly less optimistic, at 63%, followed by the South (66%) and Northeast (67%), while respondents in the West are most excited about AI, with 74% of respondents believing the advanced technology will deliver benefits to their city.

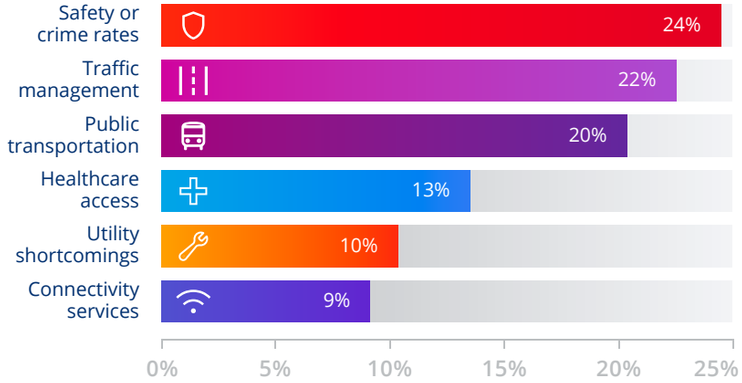
Survey respondents noted several areas where city leaders can make strides with AI. The most common area they believe AI will improve city living is traffic management, followed by improved environmental monitoring, public safety and healthcare access.

What area of city living could benefit the most from AI?



These results may partly reflect respondents' hope that city leaders will use AI to address citizens' greatest pain points. When asked about their primary concerns, respondents ranked safety as their biggest pain point, followed by traffic / transit issues and healthcare access. These responses echo findings from global surveys such as those from **IMD**[5] and **ThoughtLab,**[6] which found that citizens worldwide rank safety, health and traffic concerns among their top priorities.

What is the most significant pain point where you currently live?



Considering respondents' belief that AI will have a positive impact on city living, it's no surprise to see their optimism that the technology will help city leaders finally alleviate their biggest pain points.

3.

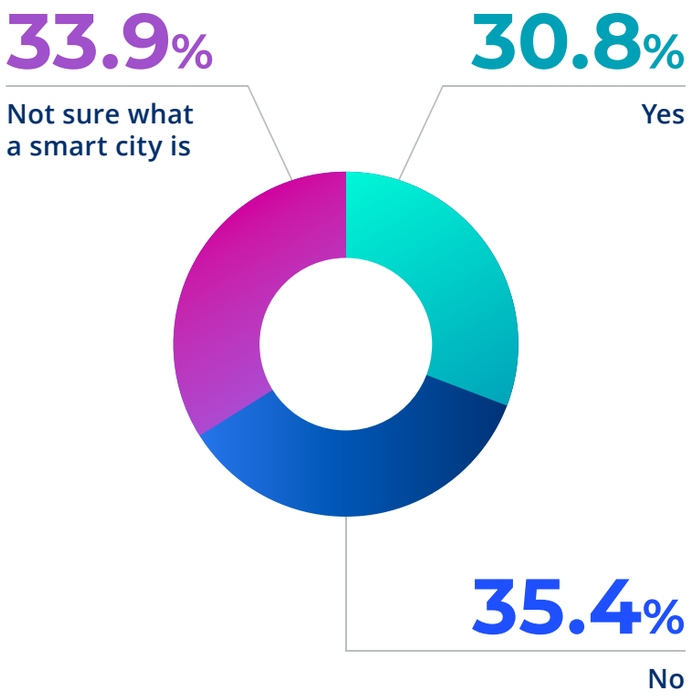
Citizens Need Clarity about Smart City Benefits

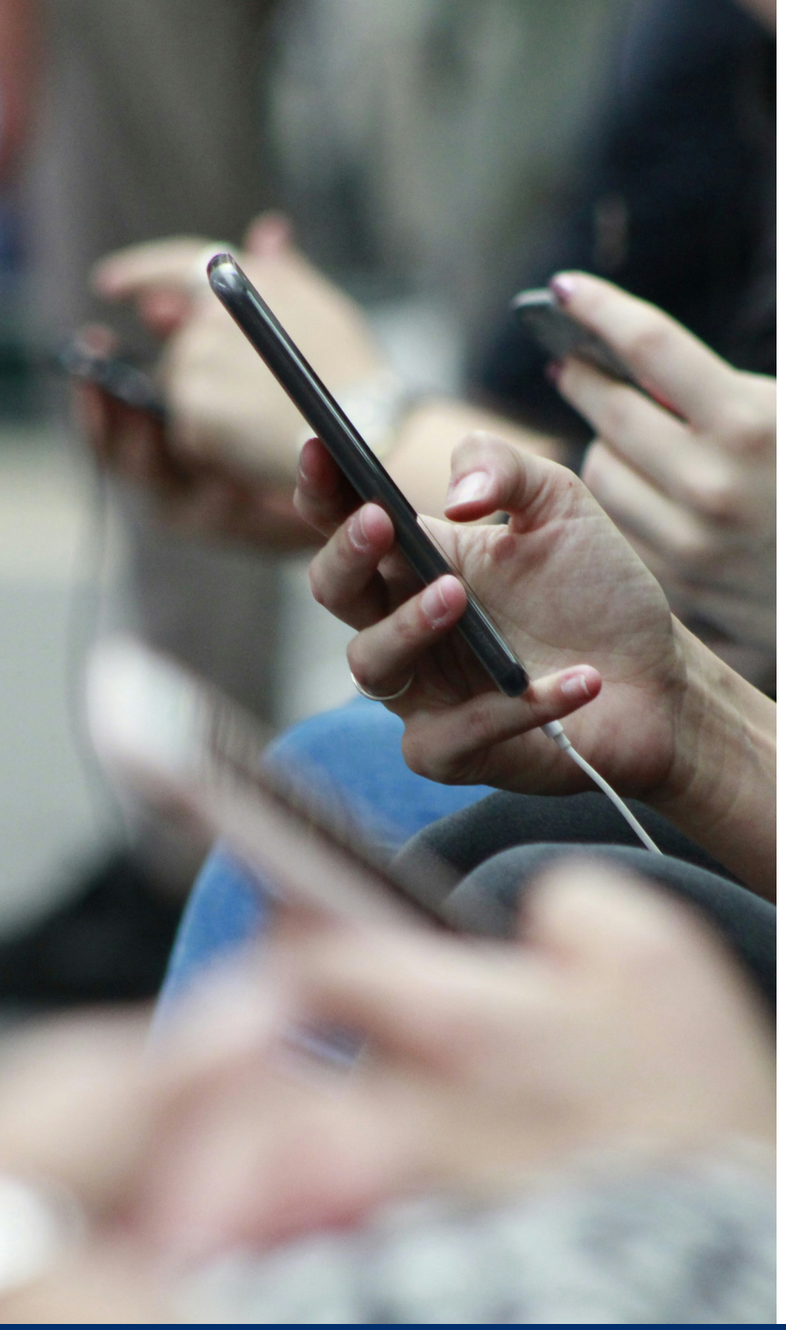
While two-thirds of the citizens we polled recognized the value AI can bring to city living, they were less clear about the benefits of a “smart city.” When asked whether they would move to a smart city, one-third of the survey respondents indicated they were “not sure what a smart city is,” with another third saying they would not. The final third indicated that they would proactively move to one.

Taken in context of responses to other survey questions, this does not seem to be an indictment of smart cities themselves. Rather, it highlights an opportunity for civic leaders to better articulate the benefits of smart systems and technologies in the urban environment.

If municipal leaders align their technology strategy with citizens’ pain points, and communicate how those efforts are part of a broader smart city initiative, residents would better understand how to define a smart city and, therefore, the benefits of living in one.

Would you move to a smart city?



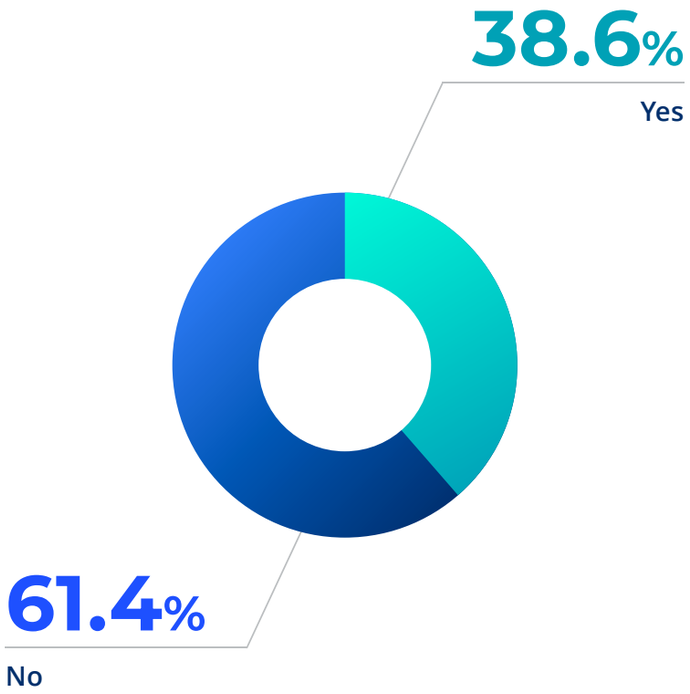


4.

Citizens are Concerned About Governments' Use of AI

As optimistic as U.S. residents may be about AI, 61% of survey respondents said they did not trust their local government to use AI responsibly. This finding is not unique to the United States. Three non-U.S. surveys – one by **Simon Fraser University**,[7] a **global report**[8] by the Organization for Economic Cooperation and Development (OECD) and another by **Pew Research**[9] – echo a similar sentiment.

Do you trust your local government to use AI responsibly?



5.

Citizens’ AI Concerns Can Largely be Addressed

Survey participants were asked to rank their main concerns about AI. For local municipalities, the good news is that several concerns can be addressed in their specific instances. Loss of privacy and loss of jobs were the top two concerns of U.S. citizens, followed by worry over higher taxes or costs to account for increased spending on technology programs.

In many cases, city leaders deploy AI to collect, analyze and learn from data in ways humans simply can not. In those scenarios, no jobs are lost, and in fact civil servants may operate more efficiently and serve an even more essential role due to the actionable insights uncovered by AI.

Securing public consent for data use is essential for privacy. Myriad programs exist to anonymize data where necessary, and city leaders can gain significant public trust by ensuring transparent data collection and use agreements. Collaborating with technology partners certified in strict global security standards like ISO 27001 can also help ease citizens’ concerns over privacy and security.

Residents’ cost concerns are understandable but not always warranted. The most successful AI programs start with specific use cases, are designed to gain early learnings and quick wins, and can be scaled over time. Following this model empowers city leaders to focus on investing in AI initiatives that deliver the greatest impact rather than massive programs that are capital-intense and require substantial up-front funding.

Residents' greatest concerns about AI

Smart City AI Use Cases: Citizen Priorities

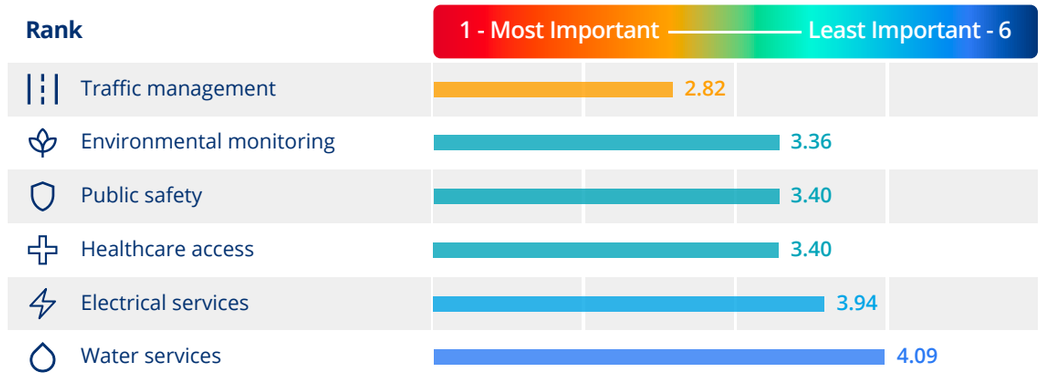
U.S. residents shared five AI applications that could significantly improve their quality of life. Infrastructure, healthcare and sustainability are among the top.

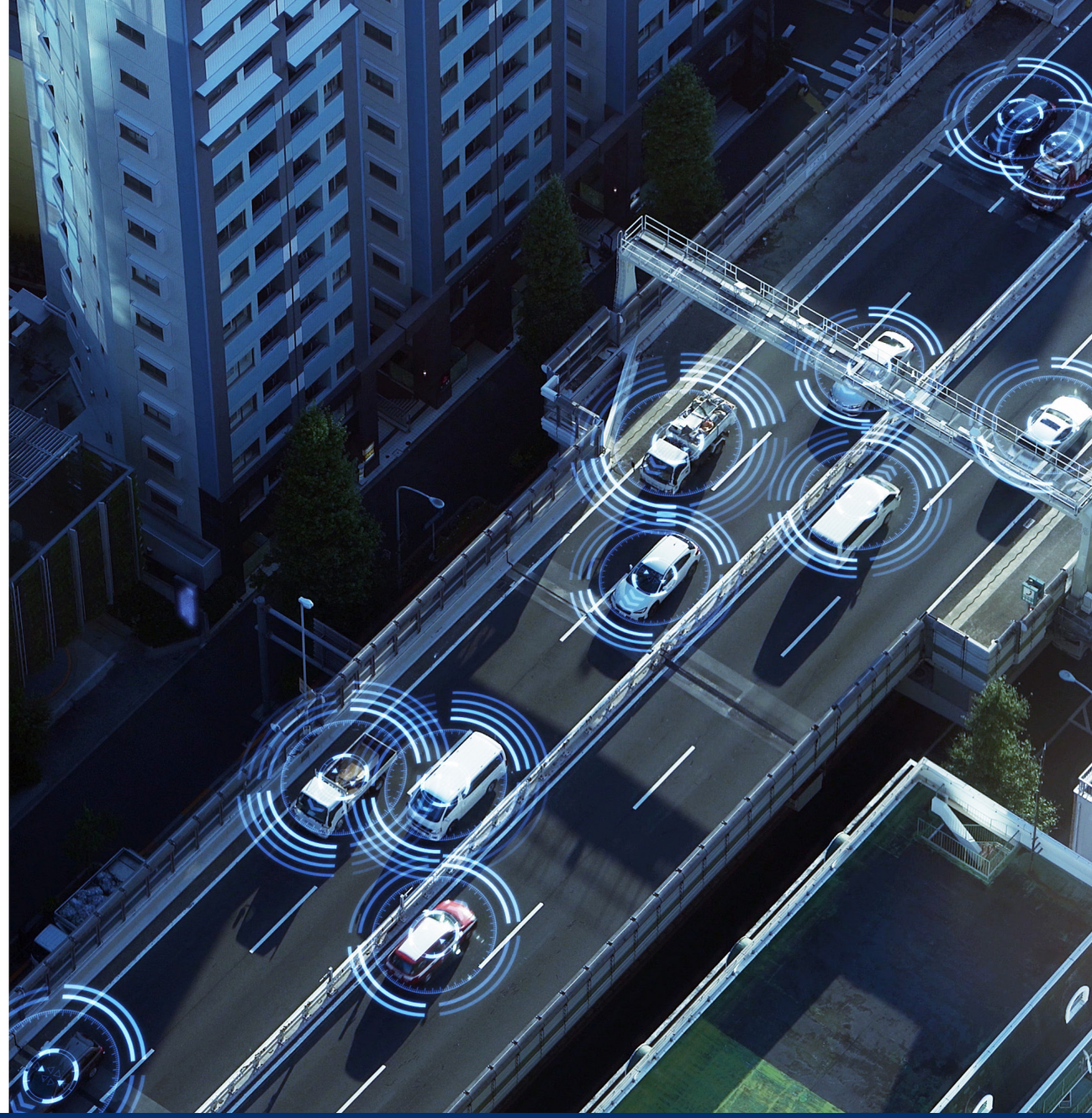
Improved Infrastructure, Environment, Health and Safety

Rapid population growth has strained resources and challenged urban planners to identify where technology can help improve citizens' lives. Infrastructure consistently tops municipal priorities, but the scope of those possible improvements is vast. Similarly, civic leaders have heard that AI can accelerate their smart-city vision, but it can be difficult to identify the best use cases. City and county leaders understand the importance of aligning municipal priorities with constituents' opinions about the best areas for public investment.

Survey respondents ranked six areas where they felt AI could have the biggest impact on city living. Traffic management was their top choice, followed by a statistical tie between environmental monitoring, safety and healthcare access. Electric services ranked fourth, followed by water services. Let's take a deeper look at each of these areas.

What area of city living could benefit the most from AI?



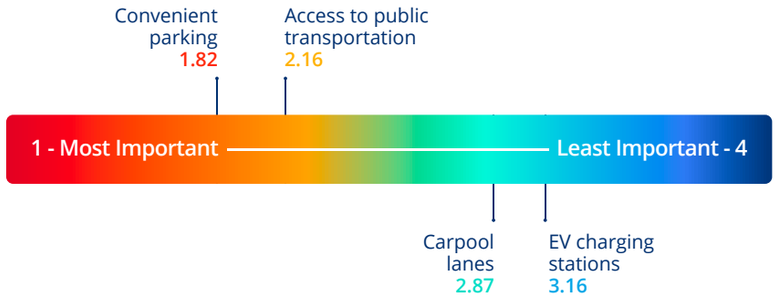


Traffic Management

Population growth often means longer commutes, so it's no surprise to see traffic management top respondents' list of the biggest opportunities for AI to deliver value. When asked which transportation areas were most important to them, respondents said convenient parking and access to public transit were their top two priorities, followed by carpool lanes and access to EV charging stations.

Many top smart cities in the U.S. and worldwide have integrated smart traffic management, and citizens clearly support this approach. Traffic management is a good place to start making a city "smart." Whether establishing intelligent traffic signals, developing a real-time parking tool or prioritizing locations to expand an EV charging network – all of which can be aided by AI – traffic management is one area where municipal and citizen priorities are aligned.

How important are the below factors when it comes to transportation?



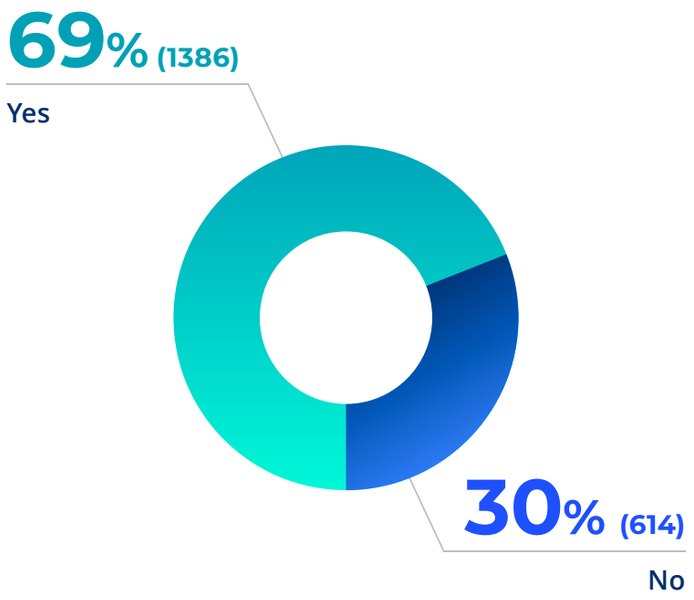
Environmental Monitoring

From heatwaves to snowstorms and wildfires to floods, environmental issues have gained significant mindshare among urbanites during the past 12 months. Leaders from cities and counties of all sizes are now acutely aware of the need to monitor environmental conditions and improve them where possible.

When asked if AI-enabled monitoring could improve air, water and environmental quality, nearly 70% of survey respondents answered "Yes." Citizens were most optimistic in the West, where 72% of those polled believed AI could drive environmental gains. The Midwest was the least optimistic, although 65% of respondents in that region still felt AI could help in this area.

Nationwide, environmental monitoring ranked second only to healthcare in terms of areas where respondents believe AI already has an impact and will continue to deliver value in the future.

Do you think AI-enabled monitoring can have a positive impact on air quality, water quality and the environment?



USE CASE

Water Management in the UK

As populations grow, so does demand for clean water and effective wastewater management. The UK's largest water utility deployed an AI and digital-twin system to manage a network that serves 16 million citizens. Using this tool and advanced automation, the utility achieved a 15% reduction in leakage, a 20% reduction in supply interruptions and $90 million in savings. It also forged a path to a 75% reduction in carbon emissions by 2035.

Leakage:
15% reduction

Supply Interruptions:
20% reduction

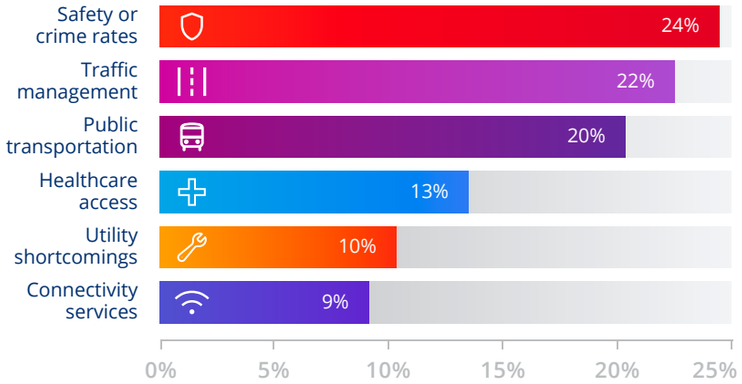
Carbon Emissions:
75% reduction by 2035

Savings:
$90 million

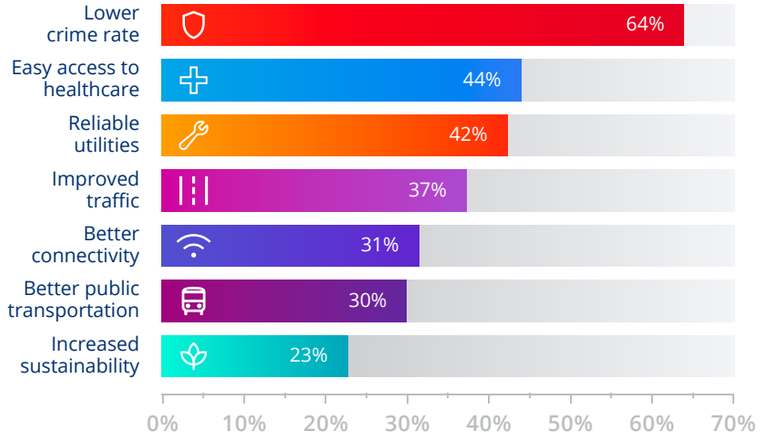
Public Safety

Public safety is consistently the top concern in global smart-city surveys. The U.S. citizens we polled had a similar response: 24% listed safety as their top pain point. Safety was also the clear priority when respondents ranked the most important factors that might make them consider moving to a new community or smart city.

What is the most significant pain point where you currently live?



What factors would make you consider moving to a new community or smart city?



Public safety encompasses a number of areas, from intelligent security systems to real-time analysis of video footage. AI is an obvious ally in these safety use cases, but more-advanced tools also exist.

USE CASES

Drug-Sniffing Chips

KONIKU

Koniku has developed AI chips that support city and country drug- and crime-reduction efforts by “sniffing out” illegal substances, empowering first responders to identify trouble spots and stay safe from accidental exposure.

Smart Analysis of Bodycam Footage

CLIPr

CLIPr has created AI-powered video software that analyzes police bodycam footage and automatically writes first-draft police reports. This tool reduces the amount of time officers spend behind a desk by 75%, enabling them to spend more time “protecting and serving" residents.

reduction in time spent on administrative tasks

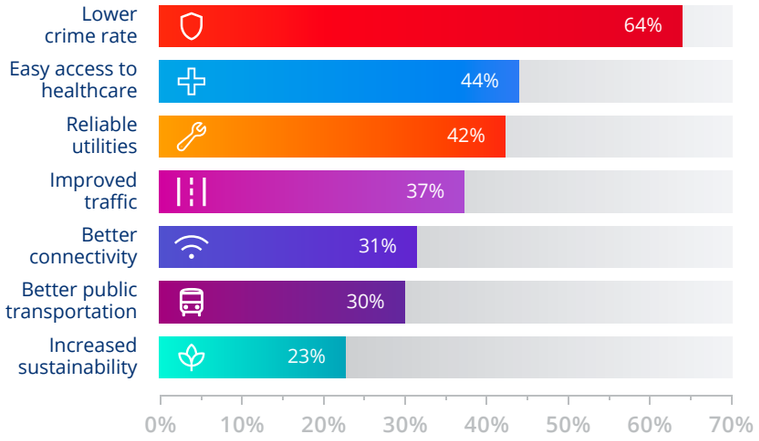
Healthcare

Local U.S. governments invest significantly in health and healthcare; according to Urban Institute, 10% of their budget is allocated there, behind only public welfare and education.[10] This reflects good public alignment with the priorities of local citizens. Across the U.S., survey respondents ranked healthcare as the top area where AI already has a positive impact, and they gave it a three-way tie for second in terms of the areas they believe AI will have the greatest future impact.

Telehealth has shown significant tech-enabled advancement in recent years, as have automated scheduling, advanced diagnostics and medicine discovery. Yet our survey uncovered one use case for technology, specifically AI, that many leaders have overlooked: identifying where to locate medical facilities to improve citizens' healthcare access.

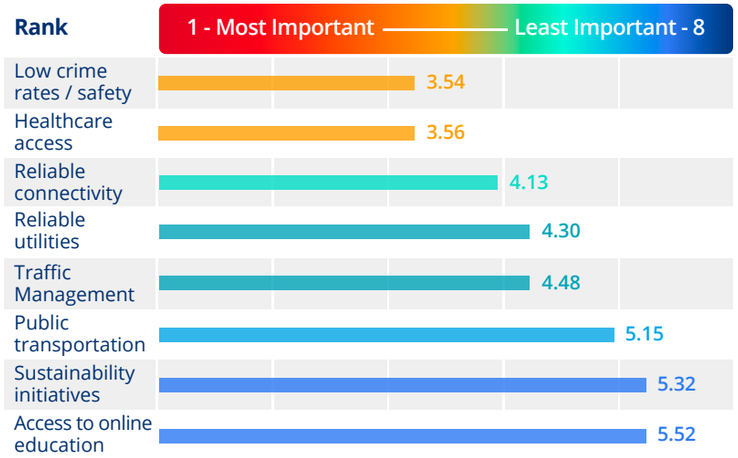
Healthcare access is important to city residents: when ranking the factors they consider when deciding where to live – including factors that would inspire them to move to a smart city – healthcare access ranked second in both questions.

What factors would make you consider moving to a new community or smart city?



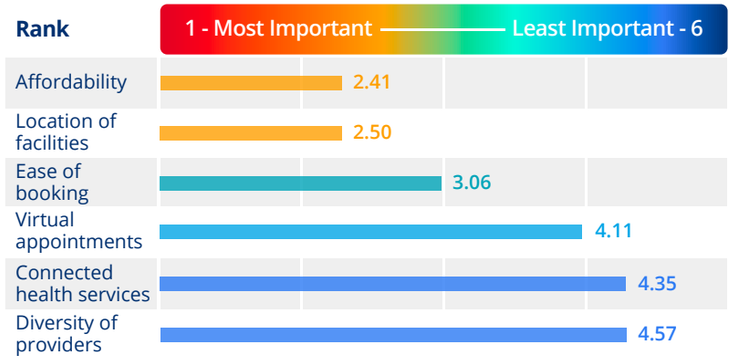
10% of the budget of local U.S. governments is invested in healthcare

How important are the factors listed below when it comes to choosing where to live?



When asked to specify their interest in healthcare issues overall, “affordability” was the highest priority. A close second, however, was “location of medical facilities,” which ranked even higher than “ease of booking appointments,” “telehealth availability” or “connected health services.”

How important are the factors below regarding healthcare?



Shifting demographics and socio-economic dynamics make it difficult to identify ideal clinic locations, but solving this challenge is key for cities that don’t have easy access to larger facilities. AI’s ability to ingest and analyze huge, diverse datasets – residential locations, historical records, traffic patterns, etc. – makes it ideally suited to creating a data-validated facility-placement strategy. By adding variables like growth projections and infill development, AI modeling can also account for the healthcare-facility needs of tomorrow’s taxpayers.

USE CASE

Rural Health Operating System

In sub-Saharan Africa, the patient-to-doctor ratio is 5,263 to 1. With health issues skyrocketing alongside their population, officials in Rwanda used AI modeling to identify locations for new facilities that would dramatically improve healthcare access as well as patient outcomes. These new connected facilities use an AI-driven Rural Health Operating System that supports telehealth services, provides real-time health dashboards and enables efficient reporting of pertinent statistics. This innovative system has helped officials take proactive measures to boost healthcare access and improve the lives of millions of citizens.

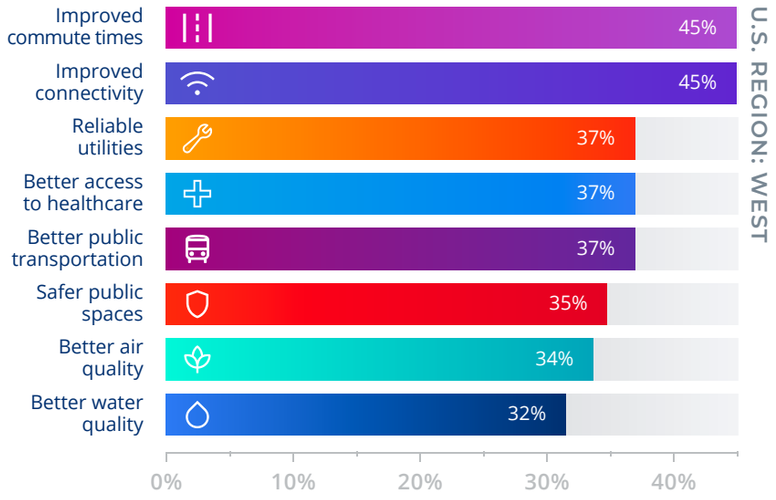
Electric and Water Infrastructure

Survey respondents across the U.S. were satisfied or mostly satisfied with their utility providers: 65.45% for electricity and 89.45% for water. This general satisfaction is likely why electrical services and water services ranked fourth and fifth, respectively, among areas where respondents feel AI can have the greatest impact. Even still, a deeper investigation into regional responses indicates that municipal investments in grid modernization and smart-water systems should continue.

Internet connectivity and transit-related issues consistently top respondents' lists when asked where AI could improve their city-living experience. Yet in most regions, air and water quality – along with improved utility services – are next on the list.

In the **Western U.S.**, where residents were more enthusiastic overall about AI, respondents felt just as optimistic that AI could bring "more reliable service from water / gas / electric" as they were with its ability to deliver "better healthcare access" and "better public transportation." In fact, respondents in the West even ranked likely utility improvements above AI's contribution to improved public safety.

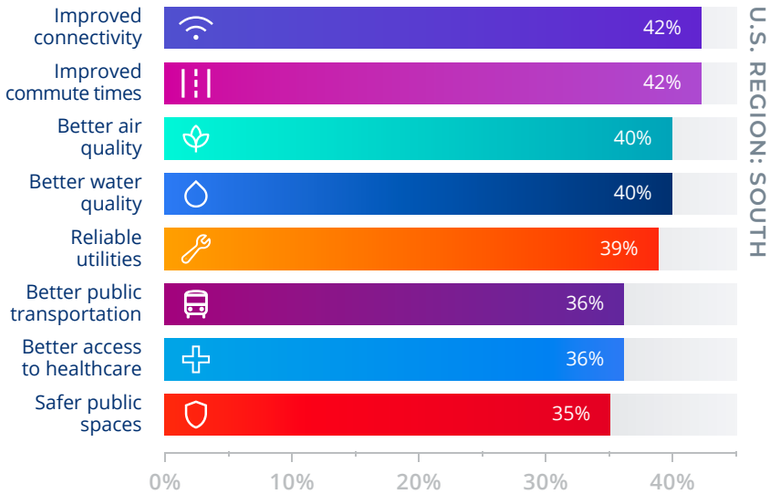
In what ways do you think AI could improve your city living experience?

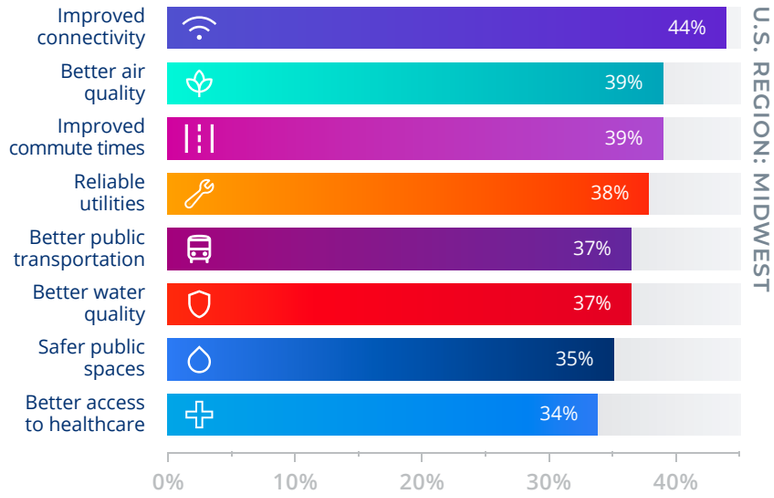


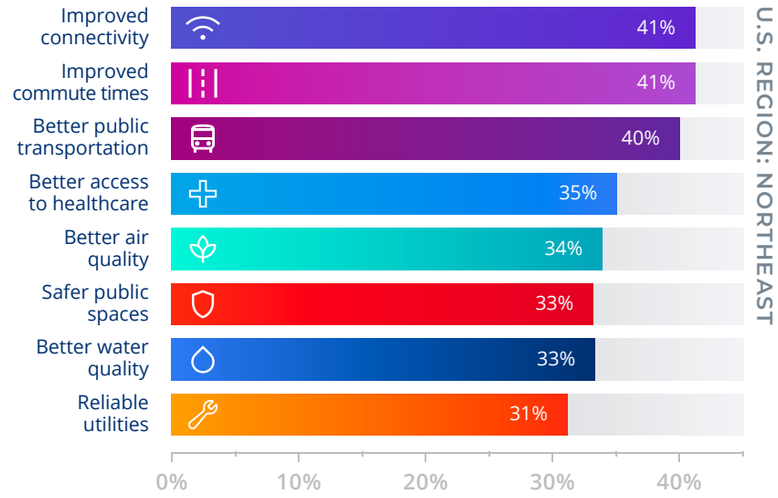
In the **South**, respondents ranked AI's ability to improve air and water quality – both under the purview of local utilities – almost as highly as its ability to improve connectivity and commute times.

The **Midwest** was more optimistic about air-quality improvements through AI than it was about utilities' performance or water quality, although all three areas were close.

The **Northeast**, meanwhile, felt the least optimistic about AI's ability to help improve air and water quality or their utilities' performance.







AI Action Plan for Smart Cities

Learn where and how municipal leaders should launch their AI strategy, and the importance of starting with smaller-scale projects.

The most impactful and supported public projects are those that put citizens first. Technologies like AI can help unlock new efficiencies, services and innovations, but the first step is always the hardest.

Listening to citizens' aspirations and concerns about new technologies can be just as informative as hearing their thoughts about basic services. When city and county leaders find ways to address citizens' needs and their technological ambitions, the initiative stands a good chance of success.

Cities in the U.S. that are beginning their smart-city journey can learn from the top five smart cities in the country. These cities are some of the nation's largest, yet their smart programs can serve as a framework for others, particularly the programs' dedication to **citizen engagement**. Across all five cities, public involvement was the sole common element in their smart-city strategy.

Priorities of the top five smart cities in the U.S.

Project	New York City	San Francisco	Seattle	Boston	Chicago
Improved or universal connectivity	●		●	●	●
Smart grid	●				●
Smart traffic lights	●		●	●	●
Citizen Involvement	●	●	●	●	●
Smart transportation - bike sharing, parking apps		●	●	●	●
Smart waste removal		●			
Smart water meters		●			
Smart energy meters			●		
Public Safety - video surveillance, shot tracking	●	●	●		●

> Public feedback provides valuable insights into pain points that may not otherwise be evident to city leaders.

78%

of smart cities have community platforms for meetings and feedback

Source: ThoughtLab

Citizens' input can also lead to ideas that mayors, councilors and commissioners may not have considered. According to ThoughtLab research, 78% of smart cities have platforms for community meetings and feedback gathering. Although the specific priorities of each of these cities differ, the cities share one common element: citizen involvement.

This report has identified a number of areas for officials to explore further for AI applications. These findings, coupled with local insights and community dialogue, can help city leaders **identify AI-fueled use cases** that hold the greatest promise for their constituents.

Our survey uncovered a clear need for cities to inform citizens about a smart program's benefits and how the overall initiative can improve residents' quality of life. Engagement programs are crucial here for two reasons. First, they provide a vehicle to communicate how the project or technology will alleviate a common pain point and deliver valuable outcomes. Second, they help establish a dialogue to **build residents' trust** in the government's ability to leverage AI for good.

Finally, leaders should start small, even with a proof of concept using a limited dataset, to test and learn how different approaches can solve their biggest challenges. This strategy enables leaders to understand which AI systems will deliver the greatest value to citizens before committing to endeavors with a greater scale and expense.

Conclusion

As urban populations grow faster than city systems can accommodate, municipal leaders must identify the technologies and applications that will help them more efficiently and proactively improve residents' quality of life.

An important step in this journey is to create intelligent tools that capture, integrate and learn from the ever-growing data flowing across the urban environment. AI technologies can help in this regard.

> Our survey of 2,000 U.S. residents found that more than two-thirds of respondents believe AI can have a positive impact on city living.

They also have distinct ideas about where technology can deliver the biggest benefits: **transportation and transit**, **environmental monitoring**, **public safety**, **healthcare access**, and the performance of local **electric and water utilities**.

Yet residents' belief in AI is stronger than their understanding of how to define a "smart city" or its benefits. And, they still need to be convinced that local municipalities will use AI responsibly.

City and county leaders have a clear opportunity to deliver value to constituents at a time when citizens' appetite for AI innovation is high. To capitalize on the moment, civic leaders must focus on AI use cases that will deliver quick, tangible results against their citizens' top priorities. They must also take great care to **engage citizens** in the process to **build trust and support**.

Appendix

Methodology

This survey polled 2,000 consumers in December 2024 using the online tool Pollfish. Pollfish reaches more than 250 million consumers who opt-in voluntarily through online questionnaires and are sourced using non-cash incentives. Respondents were U.S. adults aged 18-65 and represented all 50 states, the District of Columbia and Puerto Rico. The question set focused on consumers' sentiment around smart cities and AI uses in the city environment. The survey was deployed in English.

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2 https://css.umich.edu/publications/factsheets/built-environment/us-cities-factsheet
3 https://www.census.gov/newsroom/press-releases/2024/subcounty-population-estimates.html
4 https://www.govtech.com/opinion/in-2024-sled-it-spending-takes-a-whole-of-state-focus
5 https://www.imd.org/smart-city-observatory/home/
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