NATIONAL LEAGUE OF CITIES

CITIES STRONG TOGETHER

Local Authority and Emerging Technology

A STATE-BY-STATE ANALYSIS

NLC NATIONAL LEAGUE OF CITIES

CITIES STRONG TOGETHER

Acknowledgments

The authors wish to offer special thanks to **Lena Geraghty** (Director of Sustainability and Urban Innovation), **Christine Baker-Smith** (Director of Research), **James Brooks** (Director of Infrastructure Transportation and Solutions), **Joshua Franzel** (Senior Executive Director of Research and Data Analysis), **Joseph Breems** (Senior Executive Director of Center for Municipal Practice), **Angelina Panettieri** (Legislative Director of Information Technology and Communications, Federal Advocacy), **Brittney Kohler** (Legislative Director of Transportation and Infrastructure Services, Federal Advocacy), **Yucel Ors** (Legislative Director of Public Safety, Federal Advocacy), **David Park** (Director of Business Analytics), and **Zuhayr Ahmed** (Senior Program Specialist) for their guidance and review of this report. Additional thanks to **Susan Crawford** (Clinical Professor of Law) and **Tayjus Surampudi** (Law Student) from the Harvard Law School Cyberlaw Clinic for their foundational legal research on ground drones. Thanks to **Anne Phelan** for copyediting this report. Thanks to **Greg King** for designing a beautiful report.

About the National League of Cities

The National League of Cities (NLC) is the voice of America's cities, towns and villages, representing more than 200 million people. NLC works to strengthen local leadership, influence federal policy and drive innovative solutions.

About the Authors

Julia Bauer, Research Program Manager

Kyle Funk, Senior Program Specialist

Julia Glickman, Senior Program Specialist

Patrick Rochford, Research Specialist

Table of Contents

Foreword

Local leaders and their communities are often the first to experience the impacts of new technological developments – and both the opportunities and challenges that come with them. Whether it's artificial intelligence, ground drones, or facial recognition technology, emerging technologies have complex and wide-reaching impacts on nearly every facet of a community – and as new processes and systems crop up more frequently to manage these technologies, local governments need to be prepared to adapt to and interact with them in safe and effective ways.

As our current NLC President Mayor David Sander often says, municipalities have the power to be "laboratories of democracy… places for discovery where we have the opportunity to explore and test new ideas that contribute to our broader understanding of the world."

This is certainly true – and while the potential that new technologies bring is exciting, it is also critically important that city leaders be well informed about the latest state and federal laws that regulate technology so that they can make thoughtful decisions about how it can best be used in their communities.

As new technologies emerge and their impacts become evident, state and local governments will have to update their policies and practices accordingly. This work will require strong partnership among ALL levels of government to ensure that we are benefiting from the best opportunities technology can offer, while also maintaining comprehensive oversight of these systems.

Now in its ninth year, NLC's annual state-by-state analysis showcases the value of close local and state partnerships, particularly as local leaders adapt to changing technologies. We hope this year's report will inform local leaders across the US about what emerging technology laws look like in the context of their own states, the potential these technologies have for their work, and the opportunities for partnerships with their state municipal leagues and state leaders to implement better and safer technology everywhere.

CLARENCE E. ANTHONY
CEO AND EXECUTIVE DIRECTOR
National League of Cities

Introduction

Technological innovations have played a crucial role in the growth of American cities, towns and villages. People have adapted to new digital tools and experienced benefits from increased personal and professional efficiency in sectors ranging from medical advancements to streamlined communications with local businesses and government agencies.[1] However, adopting new technology can come with tradeoffs, such as decreased individual privacy, opportunity for misconduct and more.[2, 3] Because of these potential consequences, organizations – especially governments – must thoughtfully integrate new technology to mitigate possible ethical and fiscal outcomes, and optimize the benefits from their applications.[4, 5, 6]

In addition to implementing these tools for individual and organizational use, local leaders can engage in determining the boundaries for technological regulation. As the level of government closest to the people, municipalities are well positioned to directly identify how residents may experience the impacts of new technology. However, local, state and federal partnerships are necessary to provide comprehensive engagement and oversight of these systems.

Emerging Technology and Federal Investments

Federal programs under the CHIPS and Science Act and the Bipartisan Infrastructure Law (BIL, formally known as the Infrastructure Investments and Jobs Act) are pushing technological advancement further into the spotlight. Whether by increasing manufacturing, spurring research and development, or funding innovative transportation projects through programs like the Strengthening Mobility and Revolutionizing Transportation (SMART) grants program, national leaders have taken action on emerging technology in ways that impact local governments.[7, 8]

This report reviews state policies on three emerging technologies as they relate to local government use: **artificial intelligence (AI)**, **ground drones**, and **facial recognition**. As these technologies continue to impact communities in new ways, local and state governments have the opportunity to work together, even outside of the legislative process, to determine how to engage with these emerging technologies in their work, policies and practices.

Report History and Topic Selection

Since its inception nine years ago, the annual state-by-state analysis report has served as a research partnership between NLC and the state municipal leagues. NLC relies on the state municipal leagues' input to determine the report's topic based on their experiences with their state legislatures and needs of their municipal members. The policy areas addressed in the annual analysis are selected because of their direct impact on local governments and their residents as well as the identified needs for this legislative scan by the state municipal leagues. Through this annual process, along with our ongoing research with external partners like the Center for Public Health Law Research, NLC provides a better understanding of the preemption landscape in policy areas that impact local governments across the country.

State and local cooperation can play an important role in the development of regulations regarding emerging technology. Municipal leaders have the power to influence the laws that affect their operations, such as through establishing local laws, participating in state task forces or providing legislative testimony. This is especially true when they coordinate with other municipalities, residents, their state municipal league and nongovernmental organizations.

> [Municipalities are] places for discovery, where we have the opportunity to explore and test new ideas that contribute to our broader understanding of the world.
>
> **- NLC PRESIDENT AND MAYOR DAVID SANDER, RANCHO CORDOVA, CA**

Key Findings

An analysis of these **three different policy areas for all 50 states and the District of Columbia** (DC) found:

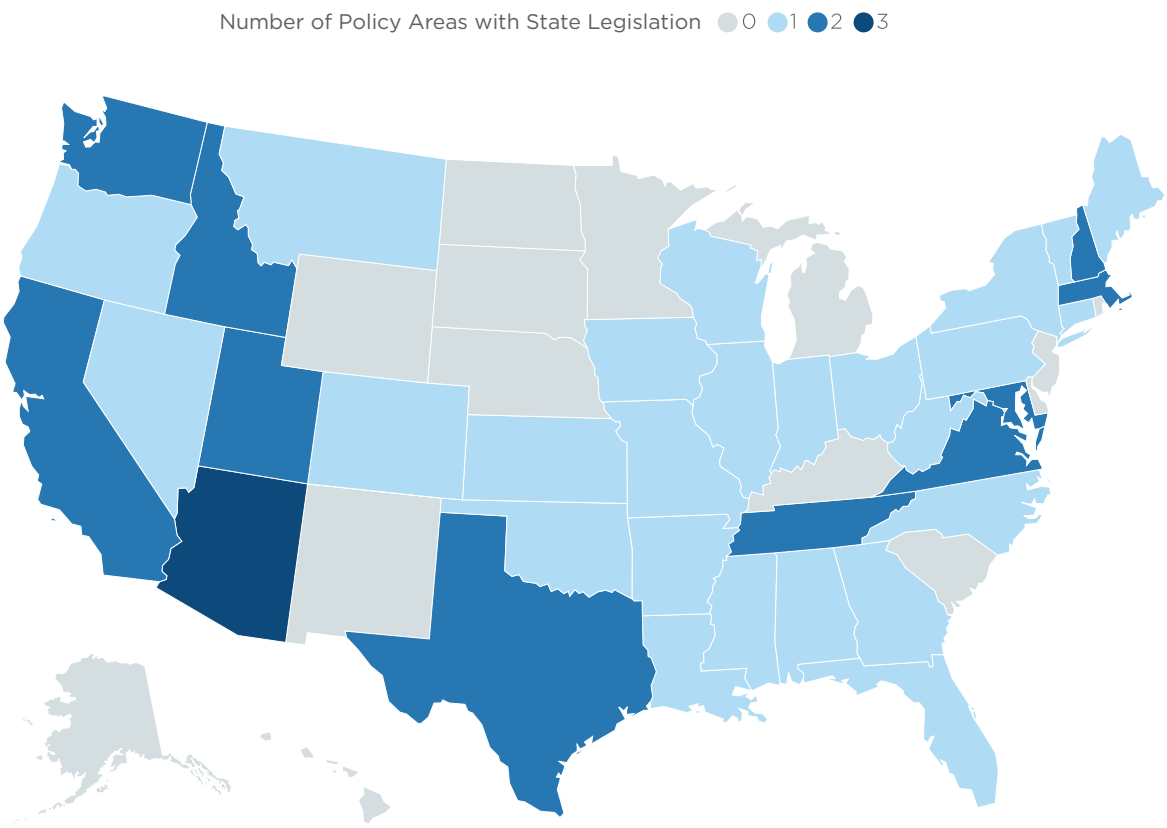
- **AI**: 26 states have enacted at least one law related to AI. Of those states, six have laws that impact AI use in local governments.
- **Ground Drones**: 26 states and DC have enacted legislation related to personal delivery devices (PDDs).
- **Facial Recognition**: 17 states have enacted a law regulating municipal usage of facial recognition technology.

In this report, NLC researchers find that the majority of states have passed legislation in at least one of the three policy areas reviewed (Figure 1). However, 51 percent of states limit local authority through preemptive measures in at least one policy area researched while 37 percent of states expand local authority in at least one of the reviewed policies. Although a lack of precedent can lead to more local authority in some cases, if a municipality lies within a Dillon's Rule state it often cannot pursue policies without the express permission of the state.[9] States can support local authority by setting policy floors or ceilings that allow municipalities to develop community-based solutions either on their own or with the support of their state.

FIGURE 1

Most states have passed legislation on at least one policy area researched.

TOTAL EMERGING TECHNOLOGY POLICY AREAS WITH LEGISLATIVE PRECEDENT



Source: Data compiled from thematic analysis of legal datasets across policy areas in the report. For more information, review the Methodology Appendix.
Figure: State laws with no local impact are not included in the total of policy areas with state legislation in this figure.

Understanding Dillon's Rule and Home Rule

Dillon's Rule is a governing principle that allows a state legislature to control local government structure, methods of financing its activities, its procedures, and the authority to make and implement policy. Due to the rigidity of this system, however, some states began to adopt "Home Rule" provisions in the early 1900s. Home Rule limits the degree of state interference in local affairs and delegates power from the state to local governments. That power is limited to specific fields and is subject to frequent judicial interpretation. For more information on the scope of Dillon's Rule and Home Rule in the US, see Appendix A. For more information on preemption, refer to NLC's Initiative on Preemption.

By preempting localities and not expressly allowing opportunities for local authority, states limit how local governments can respond to situations impacting their communities and residents. **Municipal leaders are well poised to enact local solutions tailored to the needs of their residents, rather than a one-size-fits-all approach.** As the impact of technologies continues to unfold, all levels of government should partner to develop guidance on their potential impacts and use cases.

Policy Considerations for Governing Emerging Technologies

Municipalities have approached emerging technology regulation in a variety of ways. Some have taken an active role in exploring use cases of emerging technologies for government and resident use. Others have used more caution in approaching and adopting emerging technology, implementing limits or bans, both temporary and permanent, on uses of certain technology. As technology evolves, local governments are tasked with integrating emerging technology into their own operations, as well as managing its use across their community or by their residents. In addition, data privacy and cybersecurity are important considerations for local leaders and other policymakers to take into account in policy development.

There is a growing need for municipalities to establish or update data governance policies related to emerging technologies, including policies related to storing and managing data, biometrics and AI solutions. Municipalities collect and manage large amounts of data, so whether or not they are deploying the latest technology, they have an obligation to be responsible stewards and use data to benefit residents. Any municipality can fall victim to a cyberattack, so it is vital for municipalities to consider how to secure their data and technology. For local governments, cybersecurity can take the form of ensuring proper backup for data, implementing multifactor authentication, conducting an analysis of vulnerabilities, creating plans to manage potential attacks, and much more.[10]

Learn More About Cybersecurity and Data Governance

Local governments must consider ways to holistically protect their data from threats and know how to reduce bias when conducting data collection. For more information, see NLC's report on *What Cities Should Know About Cybersecurity*.

For more information on designing privacy principles, see the MetroLab Network's Guide on Model Data Governance and Resource Library for examples of municipal privacy principles, data governance policies and much more.

A common first step in developing data privacy strategies is to establish privacy principles, which help build community trust around local government data use. These principles can include themes of intentionality, transparency, equity and cybersecurity. Setting privacy principles allows municipalities to proactively approach emerging technologies with a guiding framework and standards.[11] While data transparency is also important for local governments, privacy must be a core principle of data governance.

Changes and experimentation will continue to unfold at a rapid rate in the emerging technology space, so it is vital for municipalities and states to work together. States can look to their municipalities to identify optimal standards, whether they be floors or ceilings, that other municipalities can opt in to or adopt.

State Legislation on Local Access to Emerging Technologies

This section reviews state laws that allow municipal governments to leverage three emerging technologies – artificial intelligence, ground drones and facial recognition. At the local level, access to these tools varies by state. As these technologies continue to progress, so will local and state needs as it relates to their use cases and regulation. Local governments have a vested interest in understanding both the scope and use of these tools, as well as the legal limits of their use, to best inform their work going forward.

> It is essential that cities are able to experiment with emerging technologies and discover how these technologies can best serve residents and help local government operate more efficiently. Collaboration with states is an essential piece of this puzzle.
>
> **- COUNCILMAN KEVIN KRAMER, LOUISVILLE, KY**

POLICY AREA:

Artificial Intelligence

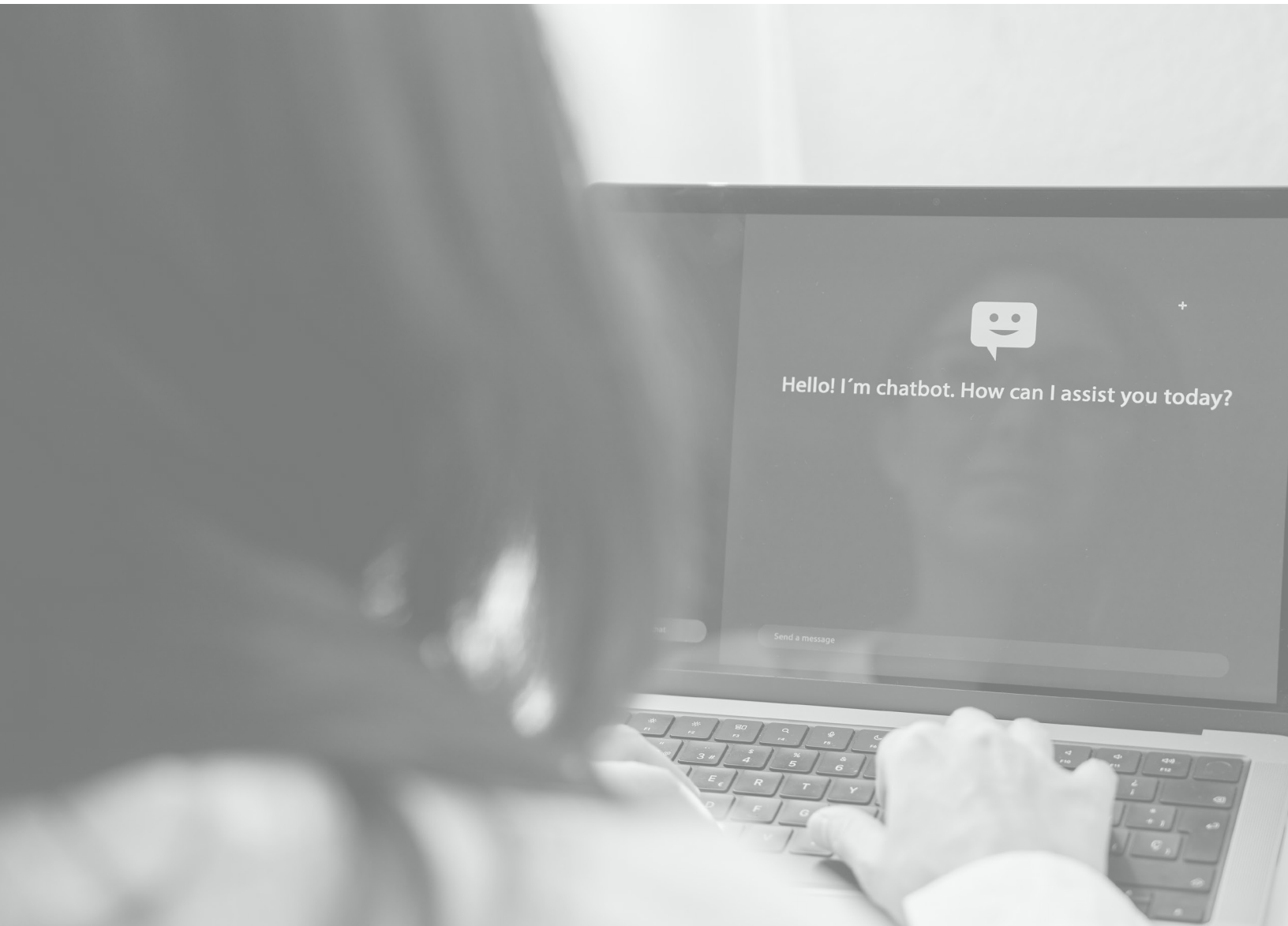
Artificial intelligence (AI) is comprised of technologies that allow computers to perform a variety of advanced functions, like analyze data, make recommendations, and more.[12] Generative AI is a subset of AI and machine learning that creates content, such as text, videos and images, in response to questions and prompts from a user based on data (e.g., text, numeric data) the model was trained on.* Generative AI is the foundation for tools like chatbots.[13] Although early versions of generative AI date back to the 1950s, rapid advancement of the foundational technologies of generative AI (e.g. large language models) and increased computing power in recent years have heightened interest in the tools' applications across sectors.[14] This increased interest also comes from improvements to different generative AI tools, such as ChatGPT, DALL-E, Bard and more, and the public availability of these tools for everyone to test.[15] For all types of governments, a major benefit is that AI tools can be used in a myriad of ways to streamline services across departments, such as:[16, 17]

- Increasing community access to resources by offering them in multiple languages
- Implementing data-driven policy metrics to analyze local trends and determine gaps in service
- Expediting processes to improve department response time, for services such as license and permit reviews
- Supporting economic development by creating local tourism materials

---

* The Association for Computing Machinery defines machine learning as the science of teaching computers how to accurately discover, contextualize and act on data through experience.

The benefits of AI, however, come with drawbacks that can lead to inequitable impacts that, regardless of intent, harm both individuals and communities. Negative impacts of AI implementation can stem from flawed data or algorithms, improper applications of the tool and uninformed users relying on these tools to drive a result in discriminatory or biased decisions.[18] When developing the use cases for these systems, governments should consider the larger social issues (e.g., digital divide) and economic impacts (e.g., job loss) that could be impacted by their widespread use. Additional considerations include ways to mitigate potential impacts, such as through consistent training and community engagement efforts, and through prioritizing streams of communication with those who are most impacted by the tools' implementation.[19, 20, 21]



NATIONAL LANDSCAPE

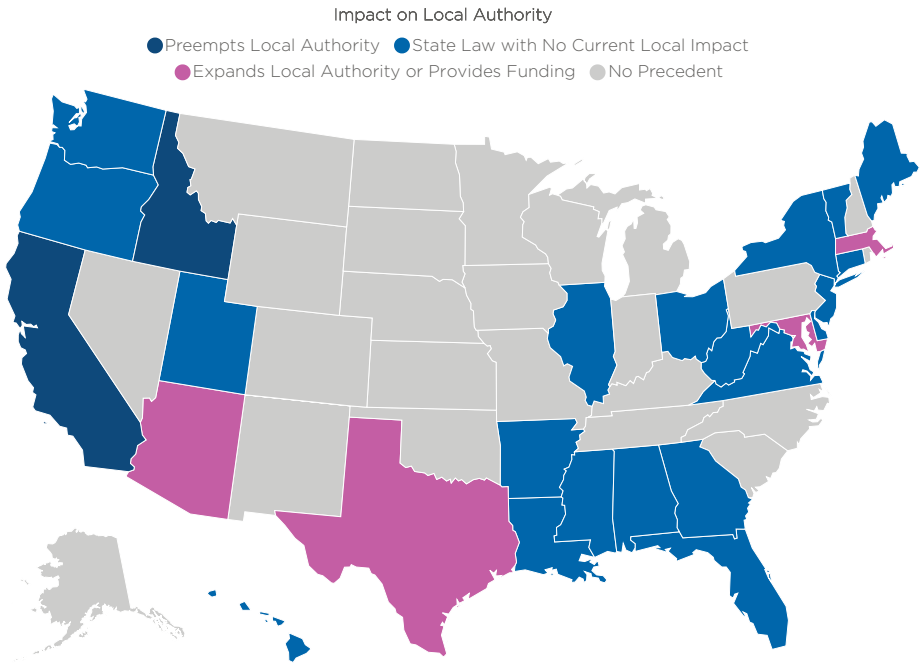
Throughout the US, **26 states** have enacted an AI-related policy as of September 2023. Different themes are evident across the 26 policies enacted, such as laws on uses of generative AI, AI in court and criminal proceedings, AI personhood and more. Twenty of the laws enacted have no current impact on local authority; over half of these laws with no impact on local authority relate to AI task force development at the state level.

Of the six laws that relate to AI implementation or regulatory use at the local level, four states (Arizona, Maryland, Massachusetts and Texas) expand local authority use of these tools or provide incentives or appropriations to access AI tools. Additionally, only two states (California and Idaho) have explicit regulations related to local government use of AI.

FIGURE 2

Forty percent of states have enacted policy on AI, most having no local authority impact.

IMPACT OF STATE ARTIFICIAL INTELLIGENCE LAWS ON LOCAL AUTHORITY



Source: Data compiled from thematic analysis of legal datasets sourced from the National Conference of State Legislatures (NCSL). For more information, review the Methodology Appendix.

CASE STUDY

Fort Worth, TX's (pop. 935,500) fiscal year 2024 budget set aside $250,000 to create a yearlong AI pilot program within its Transportation and Public Works Department.[22] The pilot will take crowdsourced camera footage from vehicles driving around the city. The city's AI program then will analyze the footage to determine varying public works needs, such as the percentage of streetlights functioning at a given time. Currently, Transportation and Public Works Department staff tally the number of lights that are working on a quarterly basis by driving at night and searching for non-functioning streetlights.[23] By using AI to assess this instead, staff time can be used more efficiently and staff safety can be improved by reducing the number of hours staff are working in the dark. Other municipalities have used similar technology to assess road conditions and networks, illegal parking in bus zones and more.[24]

Fort Worth is also one of more than 45 local governments participating in MetroLab Network's (MetroLab's) GenAI for Local Governments task force, in which NLC also participates.[25] This task force is comprised of local governments, universities, private sector companies and nonprofit organizations, all working to understand how generative AI can be used to improve local services and providing guidance on how to update local processes and policies "to ensure a just, equitable, and accurate use of this technology."[26] MetroLab's task force is a concrete example of how local governments can be at the forefront of understanding, shaping and utilizing emerging technologies.

POLICY AREA:

Ground Drones

Drones, both on the ground and in the air, are becoming more common in public spaces. Both are used for delivery of goods and a variety of other uses that communities can leverage. While air drones and their pilots are certified federally, state and local governments primarily regulate ground drones, also referred to as personal delivery devices (PDD).

PDDs are electric-powered devices that operate on sidewalks, streets and crosswalks to primarily transport cargo. PPDs that deliver smaller packages can weigh as little as eight pounds. However, some states allow PDDs of substantial size and weight, upward of 550 pounds.[27, 28] State legislation on PDDs usually sets a legislative ceiling that municipalities in the state must follow. For example, states typically regulate the speed at which the drones can travel, usually between 4 to 12 mph. Depending on the state's law and the type of technology used in the PDD, PDDs may operate without a human but usually require human monitoring, whether from a visual distance or at a remote location. Company operators and municipal officials are typically responsible for ensuring PDDs are not blocking access points for pedestrians or getting stuck on roadways.

Equity considerations for PDDs include accessibility to sidewalks and other areas used by pedestrians and enforcement of restrictions on PDDs use. PDDS can block or clutter routes, raising concerns for issues for individuals of varying mobility (especially if sidewalks with American with Disabilities Act (ADA) approved curb-points are being used or blocked by a PDD) and for residents who cannot see PDDs occupying the sidewalk. Many state laws require local public safety officials to monitor PDDs without additional state resources for enforcement, and many lack data-sharing requirements between local governments and the companies operating the devices. This can hinder law enforcement officers from identifying and responding to issues with the devices. Another equity consideration is where PDDs are deployed: state laws often require PDDs to remain on sidewalks that are well built and maintained; however, sidewalk conditions can vary greatly by neighborhood, leaving many residential areas without access to PDDs.

While PDDs come with certain challenges, there is great opportunity for municipalities and states to work together to determine how PDDs can benefit their residents, business and themselves, such as through:[29, 30]

- Creating a smooth process of permitting from pilot to regulation
- Allowing contactless delivery in zones of permitted use
- Addressing human intervention, accountability and liability
- Meeting the growing demand for the convenience economy
- Reducing the emissions produced from gas-powered delivery vehicles
- Reducing the number of vehicles on local roads

To learn more about PDDs and emissions, see NLC's *Decarbonizing Delivery of Goods Municipal Action Guide*.

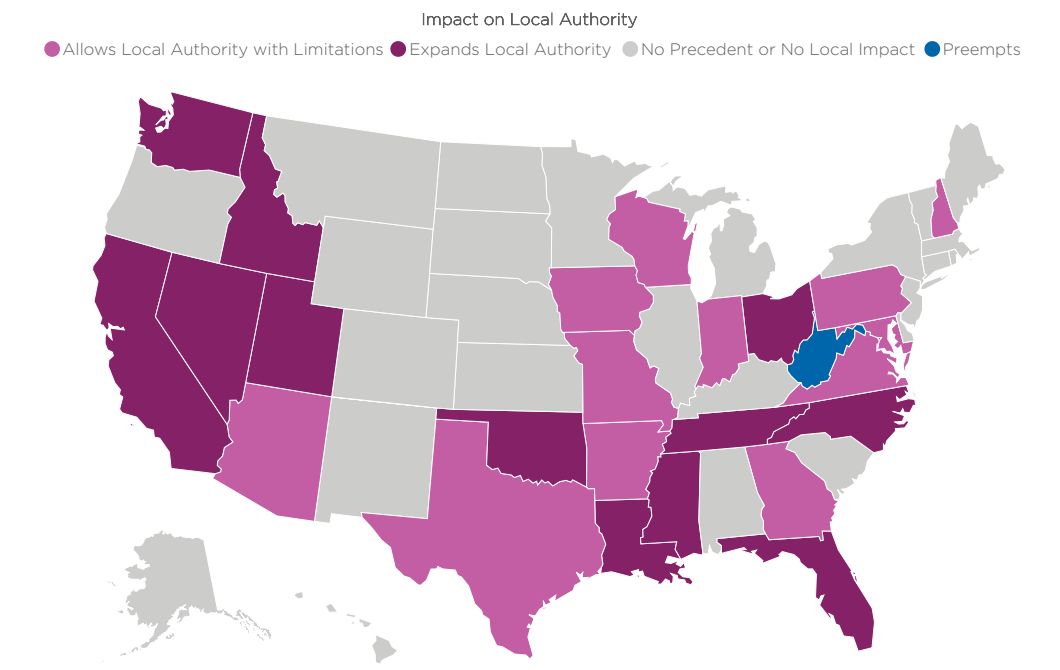
NATIONAL LANDSCAPE

At the state level, **26 states**, including the District of Columbia, have enacted PDD legislation as of September 2023. Twelve of these laws allow some local authority but contain limitations. Wisconsin, for example, only allows PDDs to be banned by a municipality on certain sidewalks or bike paths but not roads or all sidewalks, limiting municipalities' regulatory authority. Thirteen states expand local authority by allowing municipalities to regulate PDDs. For example, Louisiana allows local authorities to pass a resolution or ordinance banning PDDs if the local government determines that the prohibition is in the interest of public safety. One state, West Virginia, completely preempts local government from regulating PDDs. Twenty-five states have no PDD law that sets a precedent or impacts local governments.

FIGURE 3

Twenty six states have passed legislation on ground drones, mainly expanding local authority or imposing limitations.

IMPACT OF STATE GROUND DRONES LAWS ON LOCAL AUTHORITY



Source: Data compiled from thematic analysis of legal datasets sourced from state legislature websites and an NLC and Harvard Law School Cyberlaw Clinic project. For more information, review the Methodology Appendix.

CASE STUDY

As a hub for technology and engineering-focused universities, Pittsburgh, PA, (pop. 300,000) is an area often receptive to testing emerging technologies. Pittsburgh established a PDD pilot program in two demographically diverse neighborhoods with wide commercial area sidewalks. With the enactment of Pennsylvania state law, vehicles the size of a small refrigerator and weighing as much as an ATV were allowed to use the sidewalks as a "pedestrian." The pilot program "provide[d] city staff and residents experience with personal delivery devices (PDDs) in order to create informed local policies before the widespread deployment of PDDs, because the state law preempted local governments from most regulation."[31] The pilot lasted six months over the course of 2021 and included the creation of a steering committee composed of neighborhood residents and stakeholders who evaluated the program.

One key finding from the pilot was that it is best to communicate early and work with residents on emerging mobility technologies. PDDs were found also to work best in a controlled environment like an airport. Some challenges going forward include the permitting process; how PDD companies integrate with local business; and the lack of policies around data use, storage and sharing.[32]

The company Pittsburgh selected to deploy the PDDs has partnered with several cities in the past, including San Jose, CA, to conduct similar work.

POLICY AREA:

Facial Recognition

Facial recognition refers to the process whereby digital images or video frames of human faces are compared with databases to identify individuals.[33] While dating to the 1960s, 21st-century advances in facial recognition technology have spurred its popularity in both the public and private sectors, with uses ranging from law enforcement to education. There also has been controversy over the usage and regulation of facial recognition. Over the past 15 years, state and local governments have opted to regulate facial recognition in various ways.[34]

Facial recognition technology offers several opportunities for cities, towns and villages, such as:

- Increasing the efficiency of public safety investigations
- Managing and monitoring controlled spaces like government buildings or crowded events
- Helping first responders identify missing persons
- Providing additional context for residents with visual impairments

A primary concern with this technology is that, as studies have shown, facial recognition technology can demonstrate demographic and racial bias. Some facial recognition tools have an accuracy rate of over 90 percent, but these tools are much less accurate when identifying BIPOC (Black, Indigenous, People of Color), women, and children compared to white men.[35, 36] Facial recognition companies use different algorithms, which can lead to varying differentials in accuracy.[37] There have been several instances of wrongful arrests based on facial recognition data.[38] Because of the disparities in accuracy and the history of oversurveillance of communities of color in the US, underrepresented communities may have lower levels of trust in the use of facial recognition technology for law enforcement.[39]

As they consider utilizing facial recognition technology, municipalities are in a unique position to hold vendors accountable for racial bias testing. Local and state governments can work together to set minimum accuracy thresholds for the overall accuracy rate and for specific demographic groups so as to not overlook biases that could be obscured by a high level of overall accuracy.[40]

NATIONAL LANDSCAPE

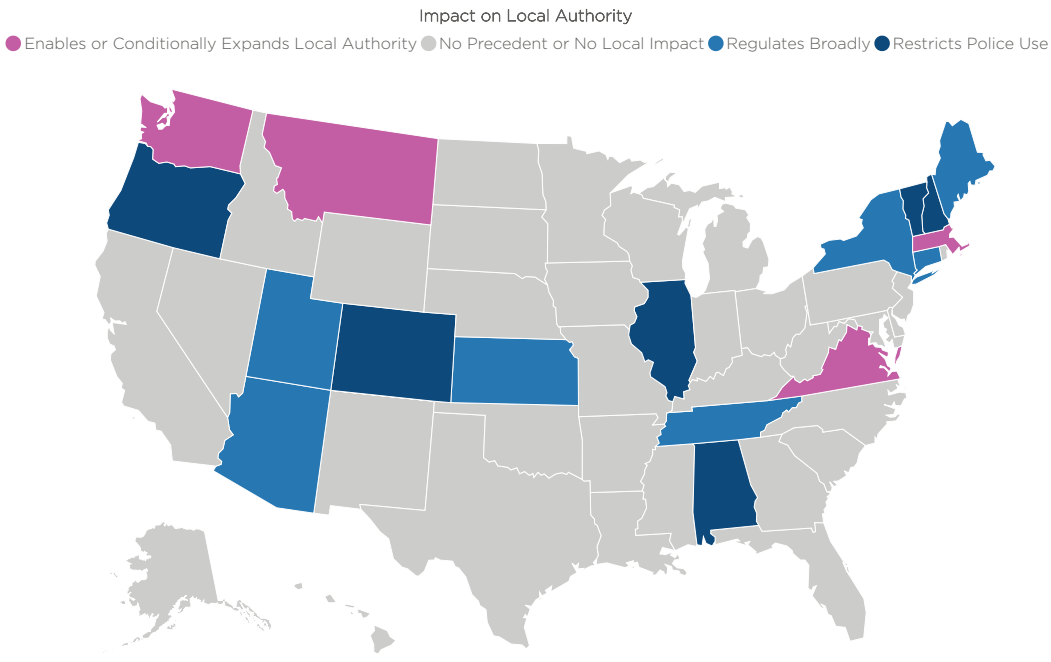
States have taken notice of facial recognition and other forms of biometric identification. Many have pursued legislation to expand biometric data privacy protections, which regulate the collection and storage of biometric information such as facial scans, voice recognition, fingerprints, retina scans and more. The specific content of these laws varies, but they often mandate extra data protection for biometrics, require companies to inform individuals of the use of biometrics, and set conditions for destroying biometric data after a period of time.[41] Most of these laws are designed to regulate private entities, and do not apply to local government use of biometric data.[42]

Across the country, **17 states** have enacted legislation regulating municipal usage of facial recognition as of September 2023. Of those states, six tailor their regulations to police usage, while seven regulate facial recognition in other contexts – and may or may not also restrict police usage. Among other regulations, the most common are those restricting facial recognition technology in schools, with many requiring written consent for the collection of minors' biometric data.

FIGURE 4

Most states have no precedent on facial recognition, those that do primarily restrict its use.

IMPACT OF STATE FACIAL RECOGNITION LAWS ON LOCAL AUTHORITY



Source: Data compiled from thematic analysis of legal datasets sourced from state legislature websites. For more information, review the Methodology Appendix.

CASE STUDY

In 2020, Vermont passed Senate Bill 124 to codify changes to the state's data practices and public health and safety systems. Among other provisions, the bill established a moratorium on law enforcement usage of facial recognition technology. However, the legislation also charged the newly reconstituted Vermont Criminal Justice Council with "recommend[ing] a statewide policy on law enforcement officers' acquisition and use of facial recognition technology" to replace the moratorium upon its development. As part of this process, the state stipulated that the council must include an employee of the Vermont League of Cities and Towns (VLCT), to be appointed by the executive director of the league.[43] By involving the VLCT, Vermont ensured that the perspectives of municipal leaders – as the officials closest to their populations – were represented in the process of formulating facial recognition policy.

Conclusion

Emerging technologies can change many aspects of our lives. As the technologies discussed in this report continue to develop, local leaders are in a position to witness the most direct impact these tools have on their residents. NLC's assessment of regulation of generative AI and chatbots, ground drones and facial recognition tools finds that municipalities within:

- Massachusetts and Washington have access to the most opportunities to expand local control across these policies.
- Arizona and New Hampshire have the most legal boundaries to incorporating these tools at the local level.
- Alaska, Delaware, Hawaii, Kentucky, Michigan, Minnesota, Nebraska, New Jersey, New Mexico, North Dakota, Rhode Island, South Carolina, South Dakota and Wyoming have no precedent as it relates to developing policies for all these tools.

In addition to state-level regulation, recent federal actions also address concerns for these emerging technologies including the Biden administration's Executive Order on Safe, Secure, and Trustworthy Artificial Intelligence, directing government advancement on:[44]

- New safety standards
- Data privacy protections
- Equity and civil rights considerations
- Support for underrepresented groups (consumers, patients, students and workers)
- Innovation and competition promotion
- Responsible and effective government use

NLC's goal with this report is to provide an informational overview of state policies that may have an impact on local governments. The report is not meant to outline best practices or suggest one standard approach regarding the topics covered.

Key Considerations in Adoption and Use of Emerging Technology

Municipalities and states can take several steps to facilitate local flexibility and to promote collaboration to meet mutual goals for regulating emerging technology, including:

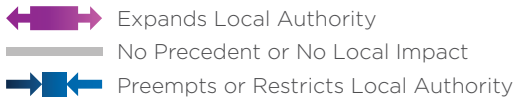
- **Develop policy interventions with equity at the forefront.** State and local leaders can embed equity for local neighborhoods and groups within policies to advance resident safety. Without equity considerations, residents are more likely to experience harm from these tools.
- **Prioritize data privacy and security.** There is a need for established or updated data governance policies to ensure that municipalities are responsible stewards and use the data to benefit residents. Any municipality can fall victim to a cyberattack, so it is important for municipalities to consider how to secure their data and technology.
- **Increase opportunities for collaboration with local, regional, state and federal partners.** Many stakeholders are interested in or directly impacted by emerging technology. Collaborating with partners, including residents, state municipal leagues, neighboring municipalities and nongovernmental organizations, that have expertise or are affected by these technologies strengthens decision making. Collaboration can take the form of sharing materials, completing a cross-jurisdictional project, seeking community feedback and input and more.

- **Local governments remain the center for policy innovation.** Across the policy areas analyzed, 49 states and DC have no precedent for at least one of the policy areas explored in this report. Municipalities with Home Rule have more flexibility to implement a pilot program to experiment with using the emerging technology. Such local adaptations could inform and inspire future legislation at local, state and national levels.
- **Build technical capacity at the local level.** Digital capacity and expertise in technology may be limited in many localities. Building the capacity to stay up to date on emerging technologies can better prepare municipalities for cost-saving improvements. To support localities who may not have the means to build technical capacity, states can create programs that provide more training in new tools.

Both municipalities and states have a momentous opportunity to leverage advancements in technology and create inclusive, meaningful policies that protect residents while advancing local, regional, and national innovation and improving efficient service delivery to residents. Allowing local leaders the opportunity to directly address their current and future residents' needs can improve local and national outcomes. State and local partnerships are valuable tools that can improve government relations while addressing concerns for technological advancement across the country.

Appendices

APPENDIX A: NATIONAL OVERVIEW SUMMARY



State	Local Authority Status	Drones	AI	Camera-Facial Recognition
Alabama	Dillon's Rule			
Alaska	Mixed or Unclear			
Arizona	Mixed or Unclear			
Arkansas	Home Rule			
California	Mixed or Unclear			
Colorado	Mixed or Unclear			
Connecticut	Home Rule			
Delaware	Home Rule			
District of Columbia	N/A			
Florida	Home Rule			
Georgia	Home Rule			
Hawaii	Home Rule			
Idaho	Mixed or Unclear			
Illinois	Home Rule			
Indiana	Home Rule			
Iowa	Home Rule			
Kansas	Mixed or Unclear			
Kentucky	Home Rule			
Louisiana	Home Rule			
Maine	Home Rule			
Maryland	Home Rule			
Massachusetts	Home Rule			
Michigan	Mixed or Unclear			
Minnesota	Mixed or Unclear			
Mississippi	Home Rule			
Missouri	Mixed or Unclear			
Montana	Home Rule			
Nebraska	Mixed or Unclear			
Nevada	Mixed or Unclear			
New Hampshire	Dillon's Rule			
New Jersey	Home Rule			
New Mexico	Home Rule			
New York	Home Rule			
North Carolina	Mixed or Unclear			
North Dakota	Mixed or Unclear			
Ohio	Home Rule			
Oklahoma	Mixed or Unclear			
Oregon	Home Rule			
Pennsylvania	Home Rule			
Rhode Island	Home Rule			
South Carolina	Home Rule			
South Dakota	Home Rule			
Tennessee	Home Rule			
Texas	Mixed or Unclear			
Utah	Home Rule			
Vermont	Dillon's Rule			
Virginia	Dillon's Rule			
Washington	Mixed or Unclear			
West Virginia	Home Rule			
Wisconsin	Mixed or Unclear			
Wyoming	Mixed or Unclear			

APPENDIX B: METHODOLOGY

Researchers conducted the analysis of all 50 states and DC by gathering legal data on each policy area from one of three sources: the National Conferences of State Legislatures (NCSL) legal datasets, state legislature websites, and research conducted by the Harvard Law School Cyberlaw Clinic. For each policy area (AI, ground drones, facial recognition), researchers reviewed the state laws and determined their impact on local authority. They then categorized each states' laws into two themes: national overview and policy-specific considerations. For the national overview, researchers put each state's law into one of three categories: No Precedent or No Local Impact, Preempts or Restricts Local Authority, or Expands Local Authority. The policy-specific considerations are discussed in the following paragraphs. If a state had more than one relevant state law, researchers only included one in the final count across the policies and states.

For the AI state law review, researchers relied on two legislative datasets from the NCSL for information.[45, 46] When reviewing these datasets, the researcher only included enacted laws that related to AI in the final count for this policy. For the policy-specific considerations, the researchers placed a state law into one of four categories: No Precedent, Preempts Local Authority, Expands Local Authority or Provides Funding, or State Law with No Current Local Impact. The Preempts Local Authority category was assigned if a municipality had some state-imposed limitations to use AI. The Expands Local Authority or Provides Funding category was assigned if municipalities could completely regulate AI in their jurisdiction without restrictions in the state law or the state developed AI funding opportunities that local governments could access.

For the ground drone state law review, researchers relied on a previous analysis from an NLC and Harvard Law School Cyberlaw Clinic project in which researcher Tayjus Surampudi gathered legal data on PDDs. The initial research scan identified PDD laws and captured information on local government impact. For any gaps that existed, the researchers reviewed state legislature websites for enacted PDD laws. When reviewing the enacted laws, the researchers only included laws that were stand-alone regulatory PDD legislation. Legislation creating a task force, for example, did not count. For the policy-specific considerations, the researchers placed a state law into one of four categories: No Precedent or No Local Impact, Preempts,

Allows Local Authority with Limitations, or Expands Local Authority. The Allows Local Authority with Limitations category was assigned if a municipality was allowed to regulate the time, place and/or manner of PDDs within state regulation but was restricted in other categories or a combination of time, place and/or manner. The Expands Local Authority category was assigned if municipalities could completely regulate PDD use in their jurisdiction without barriers or reasonable use within the state law.

For the review of facial recognition laws, researchers included any state law that regulates the use of facial recognition technology by local governments. Researchers used state legislature websites to search for relevant legislation, primarily using key words like "Facial Recognition" and "Biometric Data." Many states have passed privacy laws that impose restrictions on private use of facial recognition technology; however, researchers excluded such laws from this analysis as they did not directly regulate local governments. Researchers placed state laws into one of four categories: No Precedent or No Local Impact, Restricts Police Use, Broader Regulation, or Enables or Conditionally Expands Local Authority. The No Precedent or No Local Impact category was assigned when a state had no law regulating the use of facial recognition, or a law that only applied to private entities and not local governments. The Restricts Police Use category was assigned when a state had a law in place that restricted the use of facial recognition by law enforcement but not any other part of local government. The Broader Regulation category was assigned if a state had a law that restricted local government use of facial recognition beyond use by law enforcement. The Enables or Conditionally Expands Local Authority was assigned when a law delegated power to local governments or local government entities, for example when establishing authorized applications or procedures for local governments when using facial recognition.

Endnotes

1 Stansberry, K., Anderson, J., and Rainie, L. (2019, October). *The internet will continue to make life better.* Pew Research Center. https://www.pewresearch.org/internet/2019/10/28/4-the-internet-will-continue-to-make-life-better/

2 Nadelman, J. (2023, July). *Use of generative AI by local governments.* Municipal Research and Service Cener of Washington. https://mrsc.org/stay-informed/mrsc-insight/july-2023/use-of-generative-ai-by-local-governments

3 The United Nations. (N.D.). *The impact of digital technologies.* https://www.un.org/en/un75/impact-digital-technologies

4 The United Nations. *The impact of digital technologies…*

5 Wolff, J. (2021, August). *How is technology changing the world, and how should the world change technology?* Global Perspectives. https://online.ucpress.edu/gp/article/2/1/27353/118411/How-Is-Technology-Changing-the-World-and-How

6 Nadelman, J. *Use of generative AI by local governments…*

7 Stanford University Human-Centered Artificial Intelligence. (2022, August). *What the CHIPS and Science Act means for Artificial Intelligence.* https://hai.stanford.edu/sites/default/files/2022-08/HAI%20Explainer%20-%20What%20The%20CHIPS%20and%20Science%20Act%20Means%20for%20AI.pdf

8 U.S. Department of Transportation. (N.D.). *Strengthening mobility and revolutionizing transportation (SMART) grants program.* https://www.transportation.gov/grants/SMART

9 National League of Cities. (2020). *Principles of Home Rule for the 21st Century.* https://www.nlc.org/wp-content/uploads/2020/02/Home-Rule-Principles-ReportWEB-2-1.pdf

10 Funk, K., Martin, C., DuPuis, N., Shark, A., & Bowen, D. (2019, October). *Protecting our data: What cities should know about cybersecurity.* National League of Cities. https://www.nlc.org/wp-content/uploads/2019/10/CS20Cybersecurity20Report20Final_0.pdf

11 Metrolab Network. (N.D.). *Model data governance policy and practice guide for cities and counties.* https://metrolabnetwork.org/datagovernance-guide/

12 Google. (N.D.). *What is artificial intelligence (AI)?* https://cloud.google.com/learn/what-is-artificial-intelligence

13 Bell, E. (2023, May 26). *Generative AI: How it works, history, and pros and cons.* Investopedia. https://www.investopedia.com/generative-ai-7497939

14 Marr, B. (2023, June 16). *A simple guide to the history of generative AI.* Bernard Marr & Co. https://bernardmarr.com/a-simple-guide-to-the-history-of-generative-ai/

15 University of Michigan. (N.D.). *AI tools. Generative Artificial Intelligence.* https://genai.umich.edu/resources/tools

16 AAAS EPI Center. (N.D.). *Artificial intelligence: Responsible AI use in local and state government. American Association for the Advancement of Science.* https://www.aaas.org/programs/epi-center/AI

17 Morales, J. W. (N.D.). *AI in government in 2023 and beyond: Bringing artificial intelligence to your municipality.* GovPilot. https://www.govpilot.com/blog/ai-in-government

18 The White House. (2023, October 30). *Fact sheet: President Biden issues executive order on safe, secure, and trustworthy artificial intelligence.* https://www.whitehouse.gov/briefing-room/statements-releases/2023/10/30/fact-sheet-president-biden-issues-executive-order-on-safe-secure-and-trustworthy-artificial-intelligence/

19 Smith, M. J., Axler, R., Bean, S., Rudzicz, F., & Shaw, J. (2020, April 1). Four equity considerations for the use of artificial intelligence in public health. *Bulletin of the World Health Organization, 98 (4): 290–292.* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7133473/

20 National League of Cities. (2022, January). Digital equity playbook: How leaders can bridge the digital divide. https://www.nlc.org/resource/digital-equity-playbook-how-city-leaders-can-bridge-the-digital-divide/

21 Schwartz, R., Vassilev, A., Greene, K., Perine, L., Burt, A., & Hall, P. (2022). Towards a Standard for Identifying and Managing Bias in Artificial Intelligence, *National Institute of Standards and Technology*. https://doi.org/10.6028/NIST.SP.1270. https://tsapps.nist.gov/publication/get_pdf.cfm?pub_id=934464

22 Fort Worth, Texas. (2023). *City of Fort Worth, Texas, FY2024 recommended annual budget & program Objective.* https://www.fortworthtexas.gov/files/assets/public/v/3/the-fwlab/documents/budget-analysis/fy2024-budget/fy2024-recommended-operating-budget.pdf

23 Wolf, E. (2023, September 14). It's a 'bot' time: Artificial intelligence could help Fort Worth assess streetlights, pavement. *Fort Worth Report.* https://fortworthreport.org/2023/09/14/its-a-bot-time-artificial-intelligence-could-help-fort-worth-assess-streetlights-pavement/

24 Wolf, E. It's a 'bot' time…

25 MetroLab Network. (N.D.). *GenAI for local governments.* https://metrolabnetwork.org/ai-initiative/

26 MetroLab Network. *GenAI for local governments…*

27 An act to define and regulate personal delivery devices, NC S.B. 739 (2019). https://www.ncleg.gov/Sessions/2019/Bills/Senate/PDF/S739v7.pdf

28 Gerald, R. (2020, December). *U.S. States that have legalized personal delivery devices (PDDs) or last-mile autonomous delivery robots.* Insights. https://insights.rlist.io/2020/12/states-that-legalized-pdds.html

29 Durbin, D. (2021, November 2). Robots hit the streets as demand for food delivery grows. *Associated Press.* https://apnews.com/article/coronavirus-robot-food-delivery-technology-business-5b7dbb782f89ef3d586eefb9a33d5e1c

30 American Association of Motor Vehicle Administrators. (2021, May). *Automated Delivery Vehicles and Devices Whitepaper.* https://www.aamva.org/getmedia/cdddf035-97d9-47fe-96c0-072aa2e405f8/Automated-Delivery-Vehicles-and-Devices-Whitepaper.pdf

31 City of Pittsburgh, PA. (2023). *Personal delivery device pilot.* https://engage.pittsburghpa.gov/pdd-pilot

32 City of Pittsburgh, PA. (2022, May). *2021 Personal delivery device final pilot evaluation.* https://hdp-us-prod-app-pgh-engage-files.s3.us-west-2.amazonaws.com/9616/5540/2948/PDD_Final_Pilot_Evaluation_v2.pdf

33 Geraghty, L. (2021). *Facial Recognition Report.* National League of Cities. www.nlc.org/resource/facial-recognition-report/

34 Klosowski, T. (2020, July 15). Facial Recognition is Everywhere. Here's What We Can Do About It. *New York Times Wirecutter.* www.nytimes.com/wirecutter/blog/how-facial-recognition-works/

35 Najibi, A. (2020, October 24). Racial Discrimination in Face Recognition Technology. *Science in the News, Harvard University.* sitn.hms.harvard.edu/flash/2020/racial-discrimination-in-face-recognition-technology/

36 Grother, P., Ngan, M., & Hanaoka, K. (2019). *Face recognition vendor test (fvrt): Part 3, demographic effects*. Gaithersburg, MD: National Institute of Standards and Technology. doi.org/10.6028/NIST.IR.8280

37 Grother, P., Ngan, M., & Hanaoka, K. *Face recognition vendor test…*

38 Hill, K. (2023, August 6). Eight Months Pregnant and Arrested After False Facial Recognition Match. *New York Times.* https://www.nytimes.com/2023/08/06/business/facial-recognition-false-arrest.html

39 Lee, N.T. & Chin-Rothmann, C. (2022, April 12). *Police surveillance and facial recognition: Why data privacy is imperative for communities of color.* Brookings. www.brookings.edu/articles/police-surveillance-and-facial-recognition-why-data-privacy-is-an-imperative-for-communities-of-color/

40 Geraghty, L. (2021). *Facial Recognition Report…*

41 Bipartisan Policy Center. (2021, June 10). *Biometric Privacy Laws Fact Sheet.* bipartisanpolicy.org/explainer/biometric-privacy-laws-fact-sheet/

42 Morton, H. (2023, September 28). 2023 Consumer Data Privacy Legislation. *National Conference of State Legislatures.* https://www.ncsl.org/technology-and-communication/2023-consumer-data-privacy-legislation

43 Vermont Senate Bill 124, V.S.A. § 2362a (2020). legiscan.com/VT/bill/S0124/2019

44 The White House. *Fact sheet: President Biden issues executive order on safe, secure, and trustworthy Artificial Intelligence…*

45 National Conference of State Legislatures. (2023). *Legislation Related to Artificial Intelligence.* www.ncsl.org/technology-and-communication/legislation-related-to-artificial-intelligence

46 National Conference of State Legislatures. (2023, September 27). *Artificial Intelligence 2023 Legislation*. www.ncsl.org/technology-and-communication/artificial-intelligence-2023-legislation


NLC
NATIONAL
LEAGUE
OF CITIES
CITIES STRONG TOGETHER