

The Landscape of Digital Civic Infrastructure in Massachusetts

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Today's democracies are overwhelmed by complexity, unable to sense or respond quickly enough to changing realities, and distant from the people they are intended to serve. People's trust in institutions is eroding, information ecologies are fracturing, and polarization is deepening collective action failures.¹

In the United States, even as trust in federal institutions has been declining, local and state governments have been a bright spot. Yet here, too, there are signs of erosion.²

In today's digital age, local leaders face mounting challenges as systems struggle to keep pace with residents' expectations for responsive government and services, communication channels are fragmented, and there is growing complexity and information for often under-resourced decision-makers. Residents are accustomed to interacting with digital services (e.g., banking, health care) and the analog realities of local government often stand in stark contrast.

Even as technology has brought some of the challenging conditions, however, it also has assistive potential.³ We have the opportunity to transform the democratic operating system through thoughtful construction of digital civic infrastructure and to build a new foundation for democratic institutions, where current points of failure—including choke points, seemingly irresolvable trade-offs, and disabling conditions—have been overcome.

The project of building digital civic infrastructure to upgrade constitutional democracy for twenty-first-century conditions would benefit from starting at the municipal level. Local government is where residents experience democracy most directly and frequently in their daily lives. Healthy democracies connect residents to institutions, channel their opinion and experience to decision-makers, and design implementations that residents experience as securing their rights, safety, and happiness. Understanding digital civic infrastructure requires understanding each of those steps

in the system of representation and how they connect. To ensure that the connection between the people and their institutions is well in the frame, it behooves us to start with consideration of how representation is operating at the local level.

In a new, first of its kind analysis, the Allen Lab for Democracy Renovation investigates how technology is actually being used to support democratic life at the municipal level, and identifies opportunities and challenges to adopting the rapidly growing suite of civic and public technologies. Specifically, we examine how technology is currently being used in municipalities across Massachusetts to understand the pain points, existing workflows, and potential opportunities for both incremental improvements and transformative change.

The research reveals how municipalities are actively working to meet residents where they are and developing creative solutions, while struggling with significant personnel, technical, and financial constraints and competing demands for these limited resources. Municipalities are using an array of social media platforms to reach their diverse local constituencies with relevant information; providing access to budget, payments, and meeting information via their websites; and experimenting with AI. Across Massachusetts, municipalities are working to update their digital civic infrastructure to meet the demands of the digital age.

Our findings highlight promising examples of where technology can help support democracy and where significant gaps remain, as well as recommendations for how digital civic infrastructure can strengthen democracy starting at the local level. The findings provide a foundational grounding for conversations about democratic renovation for modern times. ▀



FOUNDATIONAL DESIGN PRINCIPLES

Democracy is a technology. While egalitarian political forms existed in a variety of cultures in antiquity, democracy was first formalized during the classical period in Greece, perdured to some degree over time in Italian city-states and Swiss cantons, and was broadly rediscovered in the eighteenth century. Enlightenment political philosophers introduced fundamental innovations: (1) popular representation; (2) the separation of legislative, executive, and judicial powers, combined with checks and balances; and (3) the reserved powers of the people.

POPULAR REPRESENTATION: This was the idea that the whole people formed the basis for government—not merely sectors such as aristocrats, clergy, and landholders—and could send people whom they had selected to government to work on their behalf or represent them. Thinkers like Thomas Hobbes and John Locke introduced this modernized conception of the people. Figures like Charles Lennox, the third Duke of Richmond, Thomas Paine, and the American Founders, introduced the idea that governing officials should be selected for the purpose of being representatives of the whole people.

SEPARATION OF POWERS: This was the idea that any act of power or will—whether of an individual or social body—can in fact be divided into three moments: choosing a direction or goal, executing that goal, and evaluating the relation between the execution and the goal. The brilliant discovery of the eighteenth century—made by Montesquieu, among others—was that assigning these different moments of power to different actors provided a pathway to limiting power and protecting freedom. If no single actor could carry out all three of the moments needed for any act of power, no single actor could dominate everyone else. In addition to separating the three moments of power, one could also use institutions to give each type of power a way of checking or counterbalancing the other.

This yielded the idea that the machinery of government should be organized in separate legislative, executive, and judicial institutions.

RESERVED POWERS OF THE PEOPLE:

Finally, this was the idea that when the people, who are the basis for government and whose good is the purpose of government, transfer the power that emerges from their combination to institutions, they do not transfer that power fully. They do not alienate it. They only lend it to the institutions who work for the people as the people's deputies. The people desire the production of state capacity in order to effect their own ends but reserve the right to call power back from the state at any point. For democracy to exist, it must be possible for the people to call power back. This was largely the idea of Jean-Jacques Rousseau.

THE SPINAL CORD OF DEMOCRACY

Once these design principles were put to work in the constitution-writing of the late eighteenth through the twentieth centuries, they yielded representative democracies whose functioning depends entirely on what might be called the spinal cord of democracy. **Every set of representative institutions depends on three core components: (1) channeling of civic voice; (2) processing of public opinion by decision-makers to make policy decisions; and (3) enforcement of those decisions, delivery of government services, and judicial evaluation of them.** The metaphor encapsulates all three of the foundational ideas outlined above. The popular basis of government and the reservation of power and ownership of state capacity to the people is conveyed through the importance of connecting the formal moments of government action (legislation, execution, and judicial evaluation) to the voices of the people.

When the spinal cord is healthy, it provides a democracy with responsiveness, energy, and adaptability. For the democracy to be healthy, each vertebra must be healthy. The



people must have meaningful and effective ways of participating. Decision-makers must be able to process information and find a path to negotiated settlements that support stable policy-making. Implementation must be efficient, fair, and rights-protective. In addition, all three vertebrae must be actively connected—each responding to the motions of the other—and the public must have sufficient visibility into the spinal cord as a whole to be able to trust these connections are working.

A way of understanding the challenges of twenty-first-century democracy is as a variety of kinds of pathological sclerosis affecting the spinal cord of democracy: bureaucratic complexity, textual overload, constituent distrust and frustration, weak sense-making, misaligned incentives, and jurisdictional misalignments. Democratic success depends on a supple, resilient, aligned “spinal cord” that expands—rather than erodes—democratic agency, enabling societies to sense, deliberate, decide, and coordinate.

At present, each of these components is under significant strain. This contributes to the increasing frustration and distrust between residents and their governments: information channels fail to translate residents’ voice into policy decisions, public servants are overwhelmed, and systems delivering services are outdated.

In the twenty-first century, it is impossible to discuss any infrastructure without considering how digitization affects it. Where does it harm it? Where might it help it? Without question, digitization will fundamentally transform infrastructure; and democracy’s infrastructure is no exception. Renovating democracy for twenty-first-century conditions requires, among other things, updating the digital civic infrastructure that supports and may even simply come to define the spinal cord of democracy: representative institutions. We will want to look for breakthrough solutions where assistive technologies can

overcome the pathological sclerosis that has developed. These assistive technologies are not just digital versions of existing civic processes but may structurally reshape how these processes function.

In this study, we have examined all three components of the spinal cord of democracy—from how technology is being used to support and channel civic voice at the municipal level to decision-maker processes and implementation—though as the findings will show, digital civic infrastructure has varying levels of maturity across these components, with tools for decision-making often the least developed.

DIGITAL CIVIC INFRASTRUCTURE

Digital civic infrastructure (DCI) refers to the digital tools that strengthen the spinal cord of democracy by enabling residents to participate and engage with each other, supporting governments to listen and decide, and delivering responsive public services and accountable enforcement. DCI often appears alongside terms such as digital participation infrastructure,⁴ civic technology, digital public infrastructure, and digital public goods. “Digital participation infrastructure” generally captures the first vertebra of the spinal cord of democracy. “Civic technology” is often used loosely across all three vertebrae. “Digital public infrastructure” and “digital public goods” both capture aspects of the third vertebra through the delivery of government services. To the best of our knowledge, the field has not yet developed a term focused only on the kinds of digital infrastructure that support decision-maker processes. But taken all together, these several kinds of digital infrastructure deliver the full stack of **digital civic infrastructure**. This ecosystem of technologies is developed and sustained by the government, market actors, and civil society—usually in explicit or implicit collaboration. In fact, in this ecosystem “government-provided digital public infrastructure and independently developed civic



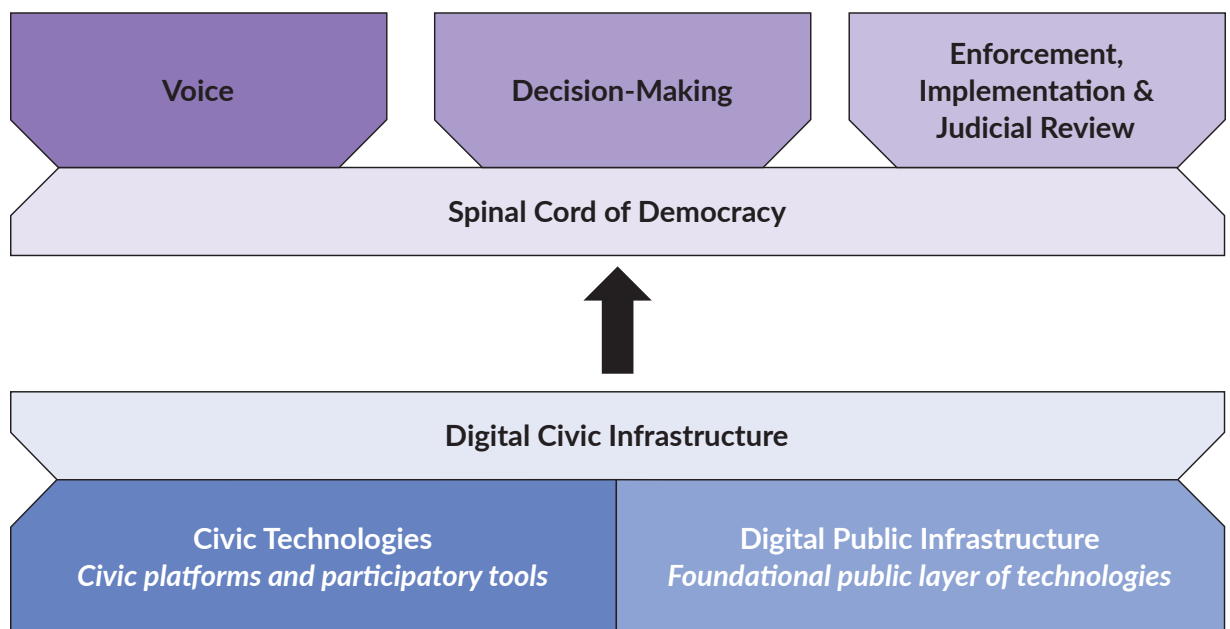
technologies work in concert.”⁵ State and society are inseparably integrated in digital civic infrastructure. State depends on society and vice versa. Of course, this has long been true. For-profit media have long shaped the public sphere alongside governmental bodies and civic associations.

The term “digital civic infrastructure” has obvious association to definitions of civic infrastructure. Nabatchi and Leighninger (2015) define *civic infrastructure* as “the laws, processes, institutions, and associations that support regular opportunities for people to connect with each other, solve problems, make decisions, and celebrate community.”⁶ In turn, Kaufman et al. (2022) define civic infrastructure as “the places, policies, programs, and practices that undergird strong communities and foster civic engagement.”⁷ Hughes et al. (2023) calls *digital civic infrastructure* the *civic infrastructures that leverage digital technologies*.⁸ The underlying concepts of popular representation, separation of powers, and the reservation of power to the people are all implicit in these definitions.

Figure 1 provides a summary of how DCI relates to other terms and to the spinal cord of democracy’s three key components.⁹

Using this framework, we can see more clearly the role played by digital civic infrastructure initiatives that aim to support the spinal cord. For example, in Bowling Green, Kentucky, local officials piloted an online engagement process that invited thousands of residents to share and prioritize ideas for long-term community planning, which were used in their BG 2050 plan for the city.¹⁰ Engaged California has invited Californians to weigh in on policy topics and community priorities to directly inform state government action using an online platform that also helps to analyze the large amount of public input received for policymakers.¹¹ Many of these efforts take inspiration from vTaiwan, which is a pioneering open consultation system from Taiwan that blends online deliberation tools with offline stakeholder interaction to help residents and government shape policy together, achieve rough consensus on complex issues, and directly influence legislation.¹²

FIGURE 1. Digital Civic Infrastructure Supporting the Spinal Cord of Democracy



Each provides a channel for civic voice and sense-making and connects these processes to decision-making. Each succeeds because it is designed for the local context, political culture, and institutions in which it is embedded.

As scholars have been exploring digital civic infrastructure, some noteworthy hypotheses have emerged. Tsai and Pentland (2025) treat digital civic infrastructure as essential “intermediating digital spaces . . . accommodating discussion and deliberation at local as well as national scales.”¹³ They recognize its potential to inject more practices of both local and direct democracy into the architecture of modern representative democracy, and hypothesize that this might be a pathway to reducing polarization that stems from the relentless nationalization of politics. The suggestion is that digital civic infrastructure might be used to help reverse that dynamic.

Gilman, Jacob, and Strano (2024)¹⁴ evaluate digital civic infrastructure as an enabling environment for new forms of civic association. They note the integration of public sector, market, and civil society, for instance, focusing on how commercial platforms like Discord can be used to host civic functions. Meanwhile, Kang et al. (2025) expand upon Communication

Infrastructure Theory to create “an integrated perspective of online behavior and the digital environment.”¹⁵ They argue that digital civic infrastructure does not have a uniform democratic effect on voter turnout. In Michigan, greater broadband availability was associated with increased turnout among urban residents and decreased turnout among rural residents, which suggests that geographic context shapes how digital infrastructure can influence participation.

This emerging academic literature sets the stage for mapping the landscape of digital civic infrastructure in Massachusetts to identify the platforms, technologies, and tools that municipalities and communities use. This report provides landscape analysis only; we don’t extend beyond that to test any of the hypotheses above. But what a landscape analysis reveals is where technologies seem already to be helping municipalities overcome the scleroses of late twentieth-century democracy and where those scleroses continue to go unaddressed. Clarity about those pain points and opportunities for transformation will enable us to envision how these technologies might better support healthy democracy. ▀



To understand how we can strengthen and transform the spinal cord of democracy, we must first map the current condition, including current engagement and existing infrastructures. Just as civil engineers survey the terrain before building and architects design in response to environmental constraints, democratic renewal requires a clear understanding of the analog and digital infrastructures shaping contemporary political life. The crisis in democracy's spinal cord can be addressed effectively only when residents and policymakers can see the condition of, and connections among, its three components. We hope that ultimately our analytical framework (the spinal cord of democracy), and our landscape analysis, will lay the foundation for a form of professionalized digital civic infrastructure planning akin to urban planning.

The Commonwealth offers a diverse landscape to examine digital civic infrastructure, with 351 municipalities ranging from Boston, one of the oldest cities in the United States with over 675,000 residents, to rural towns such as Monroe with 118 residents. There are also a variety of local governance structures, from mayor-council systems to open town meetings, which influence how people experience political life across the state. Below, we provide an overview of current community engagement and political participation across the state.

COMMUNITY ENGAGEMENT

As with the rest of the United States, community engagement is quite low across the state of Massachusetts. We use a "community engagement" score developed by the data firm Murruration to visualize geographic differences.¹⁶ This measure indicates likelihood of residents attending a public meeting and of volunteering with or holding a leadership position in a community organization. The score ranges from 0 to 100 with higher values indicating greater predicted community engagement. The average score in all 351 Commonwealth municipalities

ranges between just 25.6 and 40.5 (figure 2a and see figure 2b). A town with a score of 40 has residents who are, on average, 10 percentage points more likely to participate in civic activities than residents of a town scoring 30.

It is well established that individual-level civic engagement and political participation increase with age, education, and income, and we see the influence of these individual-level factors in this data. There is relatively high community engagement in Boston's MetroWest, for example, a region known for its well-educated and affluent residents.

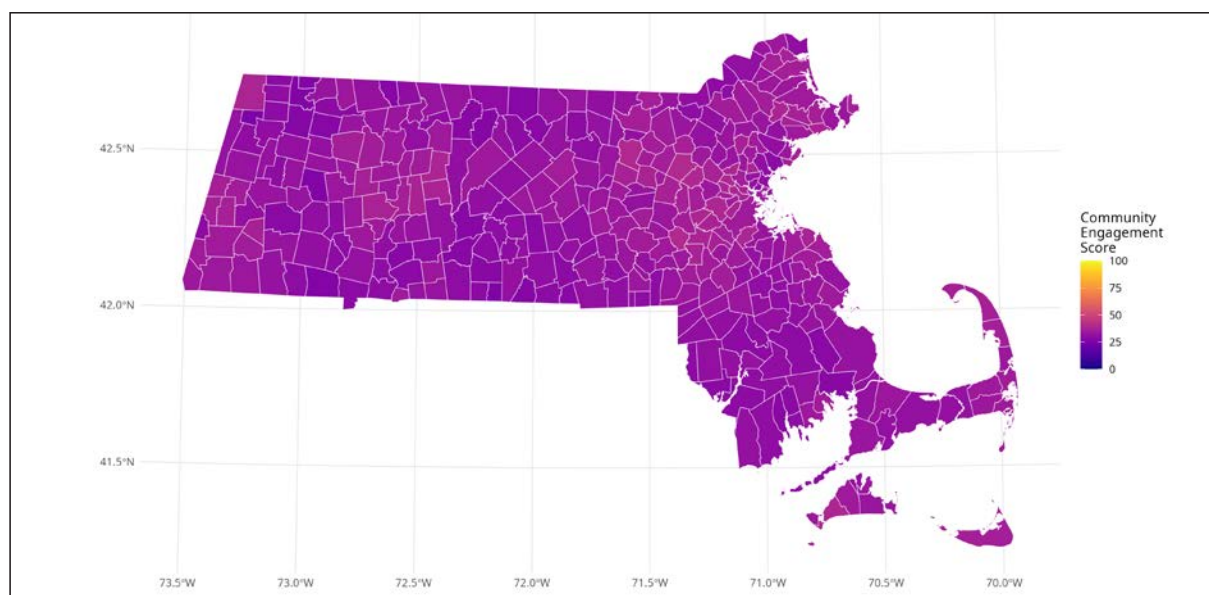
CIVIC OPPORTUNITY

Crucially, even the most civically inclined individuals will find that opportunities for engagement are limited by the prevalence of organizations and places that facilitate these activities. With its Civic Opportunity Index, MapAgora "captures the supply side of social capital, the institutional and organizational conditions that make civic participation possible." Using IRS tax records and organizational websites, the Civic Opportunity Index tracks where and whether nonprofit organizations offer concrete ways for individuals to engage in public life, such as volunteering, attending events, joining organizations, or participating in civic or political action.¹⁷ The authors find that civic opportunity across the U.S. decreases as poverty increases and increases as the percentage of white college-educated residents increases, and they find that social-fraternal organizations (Rotary Clubs, fraternities, sororities, ethnic clubs, and so on) and religious (churches, temples, mosques, and so on) organizations are the most common organizations providing civic opportunity across America.¹⁸

The index does not measure civic opportunity at the municipal level, but county level measures show that civic opportunity varies significantly across Massachusetts (see figure 3). On a 1 to 5 scale, where 1 is the lowest civic opportunity and 5 is the highest, only Suffolk and Nantucket

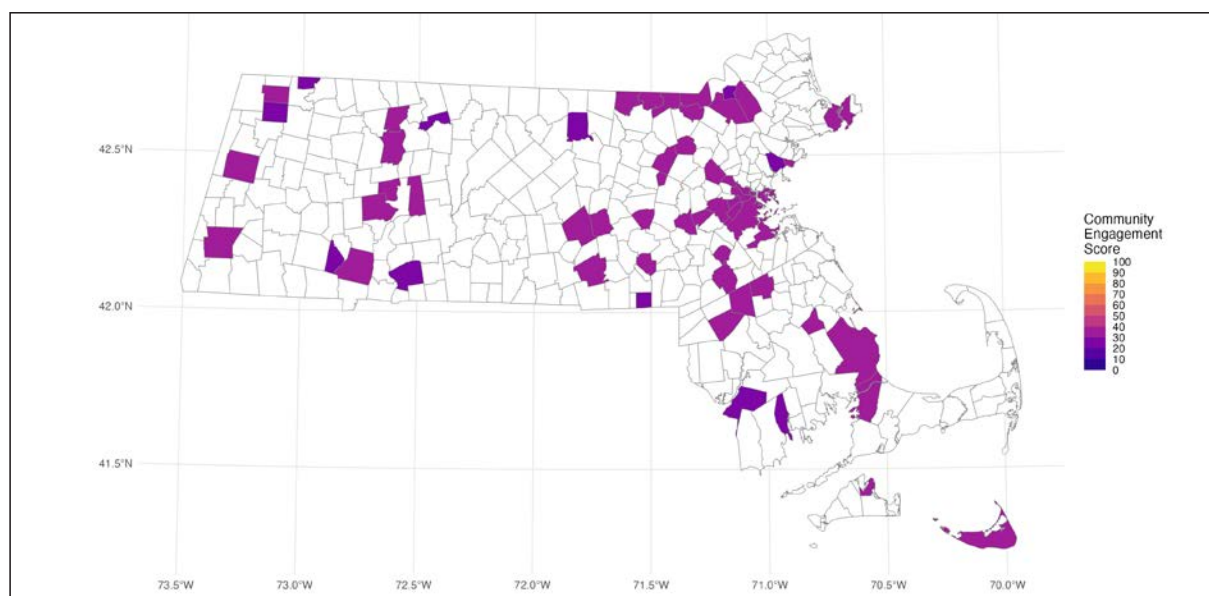


FIGURE 2A. Massachusetts Community Engagement Scores by Municipality



Source: Murmuration Community Engagement Score

FIGURE 2B. Massachusetts Community Engagement Scores in Municipalities Analyzed

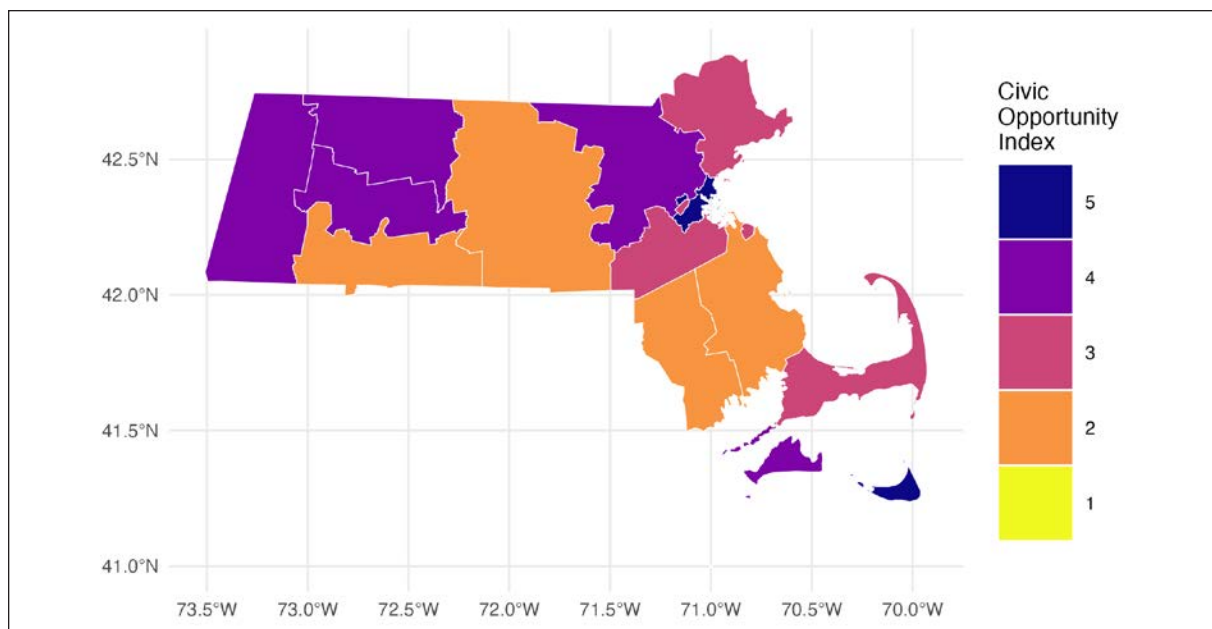


Source: Murmuration Community Engagement Score

Counties have a civic opportunity score of 5. Five of the state's fourteen counties rank in the bottom 50 percent of all counties nationwide for civic opportunity (Barnstable, Bristol, Hampden, Plymouth, and Worcester counties). In all but two Massachusetts counties, social and fraternal organizations account for the largest

percentage of civic opportunity organizations. The exceptions are Franklin County (where arts and cultural organizations are the most prevalent civic organizations) and Nantucket County (where religious, community, and arts and cultural organizations each represent 13.6 percent of the civic organizations).



FIGURE 3. Massachusetts Civic Opportunity by County

Source: MapAgora Civic Opportunity Index

TOWN MEETING TURNOUT

While Massachusetts cities tend to use council- or mayor-based systems of government, 260 towns use the open town meeting (OTM) form of government, “where any voter is permitted to attend and vote on legislative matters: budgets, bylaws, zoning, etc.,” according to the Massachusetts Municipal Association.¹⁹ An additional 32 towns use a representative town meeting, where voters elect representatives to deliberate and vote. The town meeting is deeply rooted in the state’s colonial history, with its origins dating back nearly four centuries to the early settlements of the Massachusetts Bay Colony. While the town meeting is a durable tradition of residents directly governing their local communities, attendance at local town meetings has declined over the years, especially with population growth. Attendees tend to skew toward older and more civically engaged residents.²⁰

A 2024 report by the Acton-area League of Women Voters examined town meeting attendance in six towns²¹ and found it

“persistently low”—the median participation over twenty years was under 6 percent of registered voters in all six towns.²² In Hudson, MA, the maximum participation over those twenty years was 3.81 percent.

Similarly, a sample of open town meeting participation over eight years for five towns south of Boston showed average turnout between 3 and 4.4 percent.²³

A 2020 study found that most town meeting attendees had also attended the five previous town meetings; in other words, it is largely the same small group of voters showing up. This highly active group is “more likely to be older, white, married, to work as municipal employees, and to be homeowners compared to the population at large,” and have resided in their towns significantly longer than voters who occasionally or never participate.²⁴

VOTER TURNOUT

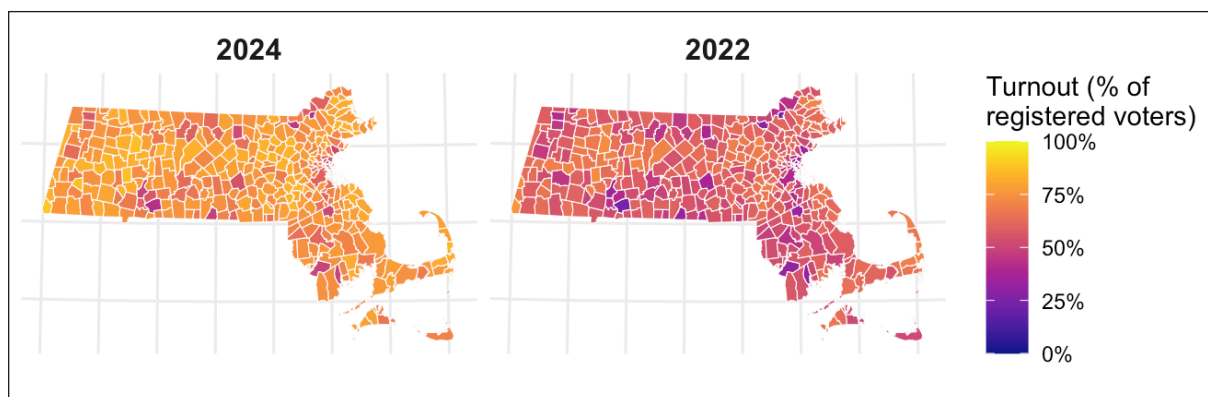
Despite relatively low community engagement, widely varied civic opportunity, and

town meeting turnout typically well below 10 percent of registered voters, Massachusetts consistently outperforms national averages in voter turnout for federal elections. In the 2024 presidential general election, 68 percent of eligible voters turned out to vote compared to the national average of 64 percent.²⁵ Notably, turnout across the state is much lower in the midterms (just 49 percent in 2022) and declines precipitously for local elections, which tend to be held in off years (see figure 4). While some towns regularly surpass 80 percent voter participation

in presidential elections, turnout above 40 percent is exceedingly rare for municipal elections.²⁶ At the lower end, even contested mayoral elections can have turnout in the low double digits. For example, New Bedford's turnout jumped from 13 percent in the City's 2023 mayoral election to 49 percent one year later for the presidential election.²⁷

These baseline measures of civic engagement and political participation across Massachusetts provide important context for understanding the digital civic infrastructure landscape. ▀

FIGURE 4. Election Turnout by Massachusetts Municipality in the 2022 Midterm and 2024 General Elections



Source: Murmuration



The data presented here were collected using a mixed-methods approach to complete an exploratory landscape analysis of digital civic infrastructure across the state of Massachusetts. The research design comprised structured data collection with qualitative stakeholder interviews to understand how technology is currently being used by officials and residents across municipalities. Researchers sought to capture a diversity of geographic regions and population sizes, and the exploratory nature prioritized depth of understanding over random sampling.

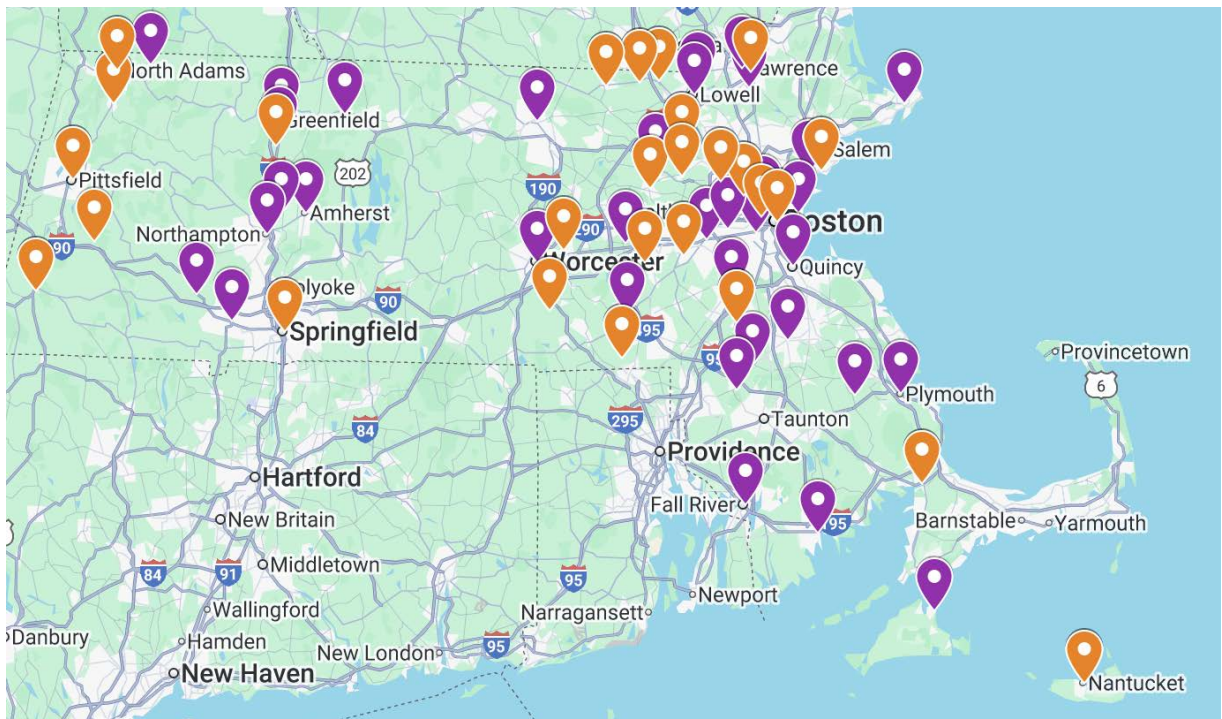
CONNECT-LEARN-ACT FRAMEWORK

The Connect-Learn-Act framework, developed by New_Public and extended by Partners In Democracy, provided a structure for understanding the functions essential to full democratic participation and the first vertebra of the spinal cord of democracy.²⁸

- Connect focuses on the connections that people form with each other, resources, and institutions, which each offer different entry points for civic participation.
- Learn encompasses the tools that build civic knowledge and facilitate information sharing.
- Act includes tools that enable direct civic engagement and create pathways for community members to get involved with and influence governance and community life.

This framework informed what information to gather in the municipal audits (see figure 5). Researchers examined how residents connect with each other and how municipalities connect with their residents; how residents find and share information and how municipalities disseminate information; and finally, how residents directly engage with their local government.

FIGURE 5. Map of Information Gathered Showing Municipal Interviews in Orange and Data Audits in Purple



DATA COLLECTION METHODS

Semi-structured interviews were conducted with thirty-two municipal and state leaders, including town administrators, IT directors, elected officials, and regional organizations (e.g., planning commissions, county regional councils). The interview protocol was designed to explore how municipalities were currently leveraging technology and conducting civic engagement in their community, as well as the challenges and successes they have had with these efforts. Interviews ranged from thirty to sixty minutes and were conducted via Zoom between May and September 2025.

Data audits were collected from fifty-eight municipalities across the state of Massachusetts. These were conducted with desk research between May to October 2025. The data audits collected information on:

- Social Media & Community Networks (platforms used by municipalities to reach their residents; platforms and networks used by residents to connect with their neighbors and community)
- Municipal Websites (availability of information critical to participating in local political life and to understanding the decision-making and actions of local officials such as elections, budgets, planning documents, announcements, etc.; ability to complete actions such as paying a bill, submitting permits, reporting an issue; underlying technology platforms used)
- Public Outreach (livestream or hybrid capabilities and availability of meeting minutes for local meetings; public engagement efforts including surveys or participatory processes)

- Local News (availability and format of news sources such as online, newspaper, TV, radio)

Interview notes were analyzed to identify patterns and results were reviewed alongside the data audits. Municipal-level datasets provided by Murmuration supplied additional context in the form of demographics, community engagement measures, and participation in local elections.

LIMITATIONS

Several limitations constrain the generalizability of the findings. The nature of this research is primarily exploratory and presents a descriptive data analysis; the data collection did not cover the entire state of Massachusetts; and the municipalities were not selected at random, so results are not statistically significant. The interviews were conducted with volunteers, which might introduce selection bias towards municipal leaders who are more engaged or interested in digital civic infrastructure. The audits conducted were not exhaustive; researchers focused on capturing the most prominent local news sources, public engagements, or social media groups, rather than cataloging every instance of digital civic infrastructure present in the community (e.g., every Facebook group that exists within a community). We also focused on the presence of the digital tools using publicly available data and did not capture internal metrics such as how frequently websites were used or what actions were taken on these platforms. ▼



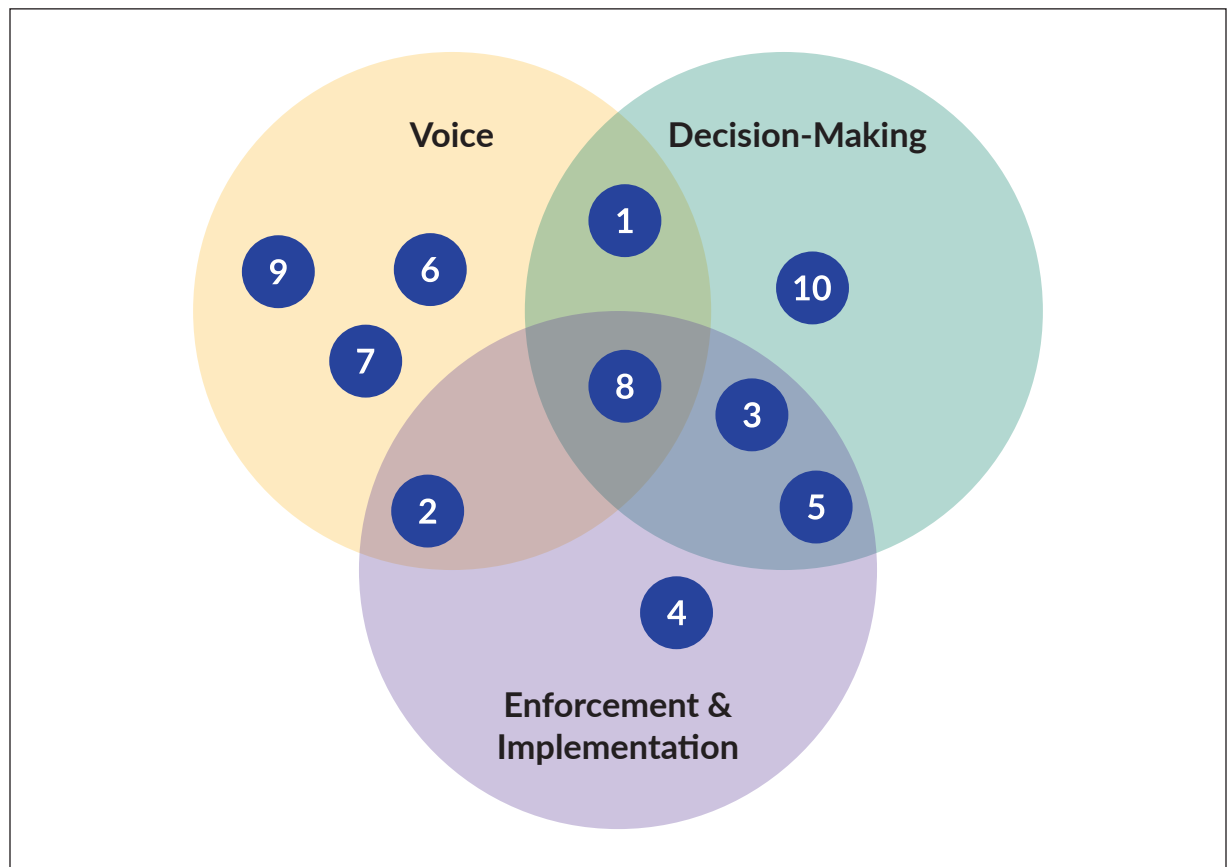
The three key components of the spinal cord of democracy (i.e., voice, decision-making, and implementation) are codependent. Namely, decision-making that does not incorporate residents' voice will probably reflect other priorities with more prominence. Similarly, implementation and service delivery that are disconnected from inclusive policy-making will suffer from a lack of accountability.

Digital civic infrastructure can strengthen the spinal cord of democracy depending on the maturity of the ecosystem of digital capacities that exists in each local government. As will become evident through the takeaways, though digital platforms might have a main goal, they can contribute to more than one of the spinal cord's components (see figure

6). For instance, improvements that facilitate broader public input enable the possibility of better and more representative decision-making. In turn, tools that make it easier to extract rich and nuanced insights from a large number of residents can improve decision-making.

The following takeaways aim to highlight key findings and shared needs across the state; successful examples of digital tools and creative solutions that municipalities have developed on their own; and the gaps, road-blocks, and opportunities for strengthening digital civic infrastructure. Each takeaway has one or multiple tags showcasing the relationship it bears to one or more of the spinal cord of democracy's components.

FIGURE 6. How Our 10 Takeaways Map to the Spinal Cord of Democracy



VOICE

DECISION-MAKING

TAKEAWAY 1: Laws and Algorithms Prevent Residents and Municipal Leaders from Connecting with Each Other on Social Media. Open Meeting Law Limits Digital Engagement Opportunities.

Although residents and municipal leaders are using the same online platforms, they are often talking past each other. Facebook was the most widely used platforms: of the municipalities we evaluated, 97 percent had an official municipal Facebook page and 100 percent had a community-run Facebook group. The small town of Monroe, Massachusetts, has a community-run Facebook group while lacking an official municipal website. Residents primarily use these groups to share information, discuss issues related to the community's political life and local government, and connect with others. However, municipal leaders expressed reluctance to join or engage with these groups out of fear of breaking Massachusetts' Open Meeting Law. While residents might be active on their Facebook community group, this engagement doesn't necessarily trickle into actual town meeting turnout or agenda-setting.

The vertebrae are not connecting.

The barriers run in both directions. Municipal leaders often try to use official Facebook pages (e.g., "City of Boston") to share information and updates with their community. However, many municipal leaders reported experiencing this content being down-ranked by the social media feed algorithms, leading residents to miss updates. This perception adds to a worrisome, yet well-documented, trend of how social media platforms prioritize content that drives engagement over content that serves a civic function.²⁹ The result is that municipal leaders feel stuck—Open Meeting Law prevents them from going where residents are, and social media feed algorithms undermine their ability to reach residents through more official channels.

Open Meeting Law in Massachusetts is meant to ensure transparency in decision-making by requiring deliberations, decisions, and meetings of public officials are open to the broader public. The law requires posting a 48-hour notice for meetings, ensuring meetings are open to the public, and sharing agendas and minutes publicly. While public officials are allowed to communicate certain information over social media, a quorum of public officials is not allowed to engage in any deliberation over social media (or any other digital platform), otherwise they would be breaking Open Meeting Law. This leads to confusion and concern among municipal leaders, especially depending on the size of the public body. If multiple public officials comment on the same Facebook group post, it could be a violation. Out of an abundance of caution, this leads many municipal officials to reportedly distance themselves from these community-run Facebook groups, in some cases choosing to opt-out entirely. As a result, officials unfortunately miss out on understanding resident concerns and questions or being able to clarify and respond to information being shared. Many residents are actively engaging, but not through a channel where they are heard and responded to.

This creates a significant challenge, and competing pressures, for municipal officials caught between wanting to be responsive to their community while remaining compliant with Open Meeting Law. Residents increasingly expect quick responses and ongoing dialogue on social media, while the law requires discussions to happen only in formal meetings with proper public notice. Between legal and algorithmic constraints, there is a communication breakdown between residents and their local government.



VOICE

ENFORCEMENT & IMPLEMENTATION

TAKEAWAY 2: Municipal Websites Prioritize Transactional Features over Transparency Features.

While most municipal websites support transactional features (e.g., the ability to make a payment online), fewer support robust transparency features (e.g., accessibility of budgets, meetings minutes, public records requests). Of the municipal websites evaluated, 98 percent supported online payments, yet the user experience of accessing how money is spent by the municipality was considerably more difficult. When residents can easily pay their bills but struggle to understand how their tax dollars are being spent, they experience a mismatch between transactional convenience and transparency, which reflects a set of design priorities chosen for municipal websites.

This breakdown impacts residents' ability to participate in budget discussions or hold their government accountable, and they often are missing context to make informed decisions in key democratic contexts like town meetings. In this information vacuum, actors with extreme views can advance falsehoods that residents, newspapers, and other intermediaries cannot easily check. This disconnect between the first

and third vertebrae makes it cheaper to spread misinformation and costlier to have deliberation based on common facts.

Over 83 percent of municipal budgets were shared as PDFs, typically as large, difficult-to-read spreadsheets. Almost every municipality posted their meeting minutes online with a PDF; however, nearly 25 percent of these were not searchable. Under a widely adopted international 5-star ranking system for open data originally proposed by Tim Berners-Lee, this would qualify at the lowest level.³⁰ Additionally, public records requests in 43 percent of the municipalities relied solely on email; and while municipal leaders noted that there has recently been a challenging increase in the volume of public records requests, relying on email is difficult for both parties. In short, the transparency features that do technically exist are rudimentary CSV files and email, instead of being the modern, user-friendly experiences many residents have come to expect from digital services.

FIGURE 8. Example of how meeting minutes are often uploaded to municipal websites.³¹

▼ Planning Board		2026	2025	2024	View More
Agenda		Minutes	Download		
	Jan 22, 2026 — Posted Jan 16, 2026 8:44 AM Planning Board - Hybrid		Download ▼		
	Jan 20, 2026 — Posted Jan 15, 2026 10:16 AM Planning Department		Download ▼		
	Jan 20, 2026 — Posted Jan 15, 2026 10:25 AM Planning Board		Download ▼		
	Jan 8, 2026 — Amended Jan 5, 2026 2:29 PM Planning Board - Hybrid		Download ▼		

▼ Policy Sub-Committee Meeting/ South Middlesex Regional Vocational Technical School Committee		2016	
Agenda		Minutes	Download
	Oct 18, 2016		Download ▼



DECISION-MAKING

ENFORCEMENT &
IMPLEMENTATION**TAKEAWAY 3: Early Experiments with AI Adoption Show Potential.**

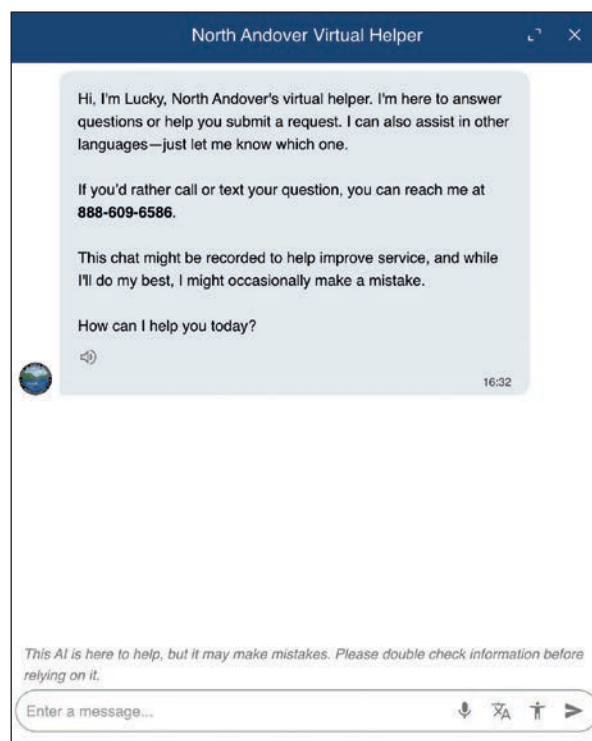
With the rise of artificial intelligence, some municipal leaders were trying to understand how they might leverage these tools to help them do more with less. Of the fifty-eight municipalities evaluated, three municipalities currently have an AI-powered chatbot on their website to help residents find the information and resources they are looking for. The chatbots are typically able to scan thousands of municipal documents for their answers and are available at any time of day, unlike phone support. Municipal leaders we spoke with noted that they were able to help with the initial training and, now that it is publicly available, are able to see the types of questions people are asking so they can fill in any informational gaps on the website.

Other experiments we observed included municipalities' leveraging AI to create transcripts, meeting minutes, and FAQs from local meeting recordings, as well as using the technology for language translation. Some of the town managers did remark that they personally leveraged tools such as ChatGPT to support their daily work such as summarizing documents, drafting emails, and other administrative tasks. One of the most innovative examples of AI use was a town manager who leveraged these tools to build open-source alternatives to otherwise

prohibitively expensive platforms, making information user-friendly and transparent.

As AI is becoming embedded into municipal services, questions around data ownership and retention, as well as contract terms, will need more attention and guidance.

FIGURE 9. AI Chatbot Available on the North Andover, MA, website.³²



Spotlight: Budget Transparency Portal

Many municipalities' budget documents are housed in PDFs on the town's website. Although the PDFs are not difficult to find, they can be difficult to read and understand.³³

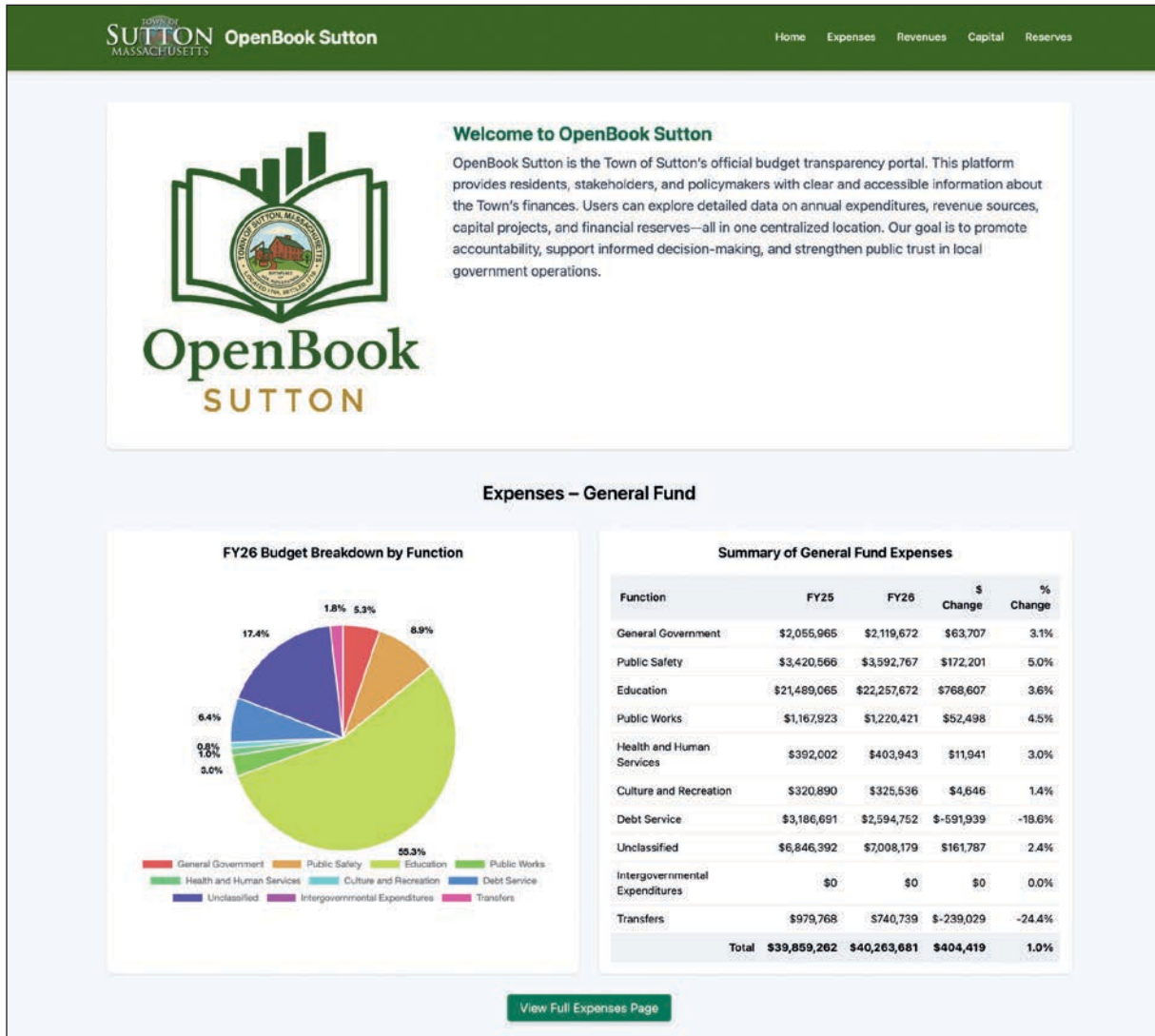
Town Manager Austin Cyganiewicz noticed this problem in both of the towns he was town manager for—Cyganiewicz previously served as the Town Manager of Rutland and is now the Town Manager in Sutton. In Rutland, there often was not even a consistently posted and publicly available PDF document. Even when PDFs existed, they lacked uniformity across fiscal years, making it difficult for residents and officials alike to track changes or understand long-term trends. The budget development process was also analog and outdated—departments began the budgeting process using a pen and paper form, requiring the form to be physically mailed to the Town Manager's office before meeting to make adjustments.

Cyganiewicz explored potential vendors to build a comprehensive and user-friendly budget portal, but cost proved a huge barrier. Though platforms like ClearGov and OpenGov can be great for larger municipalities, Cyganiewicz found that many software companies did not understand the limited resources of small towns. Though various grants could help pay for initial cost and implementation, recurring costs would likely come directly out of the municipalities' budget. Moreover, many companies include several different services within the platform, but these services do not always cohesively interface with each other and cannot operate disparately; it may not work to subscribe to one module's functionality unless multiple other modules are also purchased. This situation is conducive to creating closed systems where interoperability and ease of the municipality's data movement are jeopardized in the event they want to change platforms.

Ultimately, Cyganiewicz realized that the sustainable, affordable, and effective budget portal the town needed could not be found elsewhere. Cyganiewicz successfully built his own budget portal system for both Rutland and Sutton, leveraging various AI tools. The budget portal is hosted on a public Github repository, meaning all the code is publicly available. In his eyes, the budget portals he built are not only nearly free but built to the needs of his town. He has made the Sutton portal accessible for potential future developers to update the portal each fiscal year.

Within Rutland's portal, users can view revenues, expenses, reserves, and capital, as well as a multi-year financial forecast and a Community Comparison Dashboard. The multi-year financial forecast provides forecasts for the future five years (currently FY2025–2030) for both revenue and expenses using a series of standardized assumptions (like property tax rate, state aid, and town budget), helping residents gain an understanding of Rutland's current and future fiscal outlook. The Community Comparison Dashboard helps residents understand how Rutland compares to similar towns across Central Massachusetts, using key indicators like property values, income levels, and tax rates.

Cyganiewicz is also experimenting with creating other open-source municipal tools for the Town of Sutton, such as a public works reporting and tracking portal.³⁴

FIGURE 10. The budget transparency portal built for the Town of Sutton, MA.**ENFORCEMENT & IMPLEMENTATION****TAKEAWAY 4: Technology Platform Consolidation Limits Municipal Choice.**

In evaluating the various software platforms currently being used by local municipal governments for different features, four major companies—CivicPlus, Granicus, OpenGov, and Tyler Technologies—dominated the market. These major companies also frequently acquire smaller companies, which often continue to operate under their original name, obscuring ownership. For example, CivicPlus has acquired SeeClick-Fix, ArchiveSocial (now named CivicPlus Social

Media Archiving), NextRequest, and BoardSync (which became CivicClerk and is now named CivicPlus Agenda and Meeting Management). Granicus has acquired platforms such as SmartGov, Rock Solid Technologies (including CitySourced), and GovQA.

These companies control a large market share of municipal website functionality. CivicPlus powers 85 percent of the municipal websites we



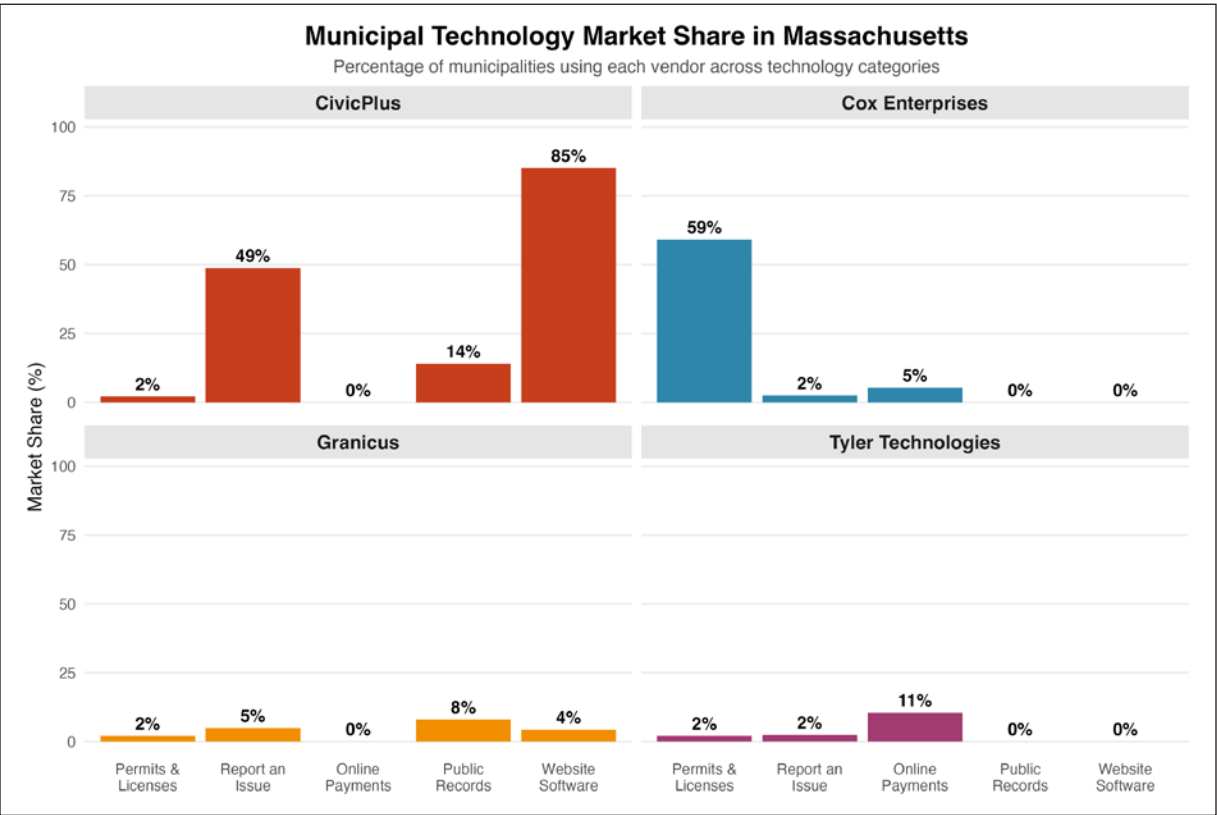
evaluated, while Granicus is used for an additional 10 percent of these websites. In addition, OpenGov (majority owned by Cox Enterprises) is used for 57 percent of the municipal permits and licenses solutions we evaluated. This consolidation limits municipal choice and creates vendor lock-in.

This market has been shaped by both the constraints of municipalities (e.g., limited technical staff) and structural issues with procurement processes today. Competitive bidding processes can favor larger companies as they are able to offer lower bid prices and are able to absorb lengthier government payment timelines. What at first can appear to be a cost-cutting opportunity can later become a high-cost trap as competition in the space disappears. Municipal leaders reported feeling locked into constantly increasing software subscription costs, which puts a significant strain on their already limited

budgets. In Shrewsbury, for example, the town's Management Information Systems budget increased by 12.64 percent, or \$166,300, from the previous year primarily due to increased software renewal costs for platforms including OpenGov and Tyler Technologies.³⁵ This is exacerbated by the high switching costs (e.g., migrating data, retraining staff, potential service disruption) for software services. Several town managers reported they were beginning to experiment with using platforms such as BlueSky or Threads, but chose not to proceed because they were concerned about the ability to meet content archival requirements for these newer platforms since they were unsupported by the existing tools used (e.g., ArchiveSocial, now CivicPlus Social Media Archiving).

The lack of competition prevents municipalities from negotiating better terms, and the lack of state-level guidance usually leaves each

FIGURE 11. Municipal Technology Market Share in Massachusetts across Technology Categories.



Note: Cox Enterprises owns a majority stake in OpenGov, N = 58.



municipality to navigate the process on their own. While the Massachusetts Operational Services Division does host a procurement platform for statewide contracts, COMMBUYS, it typically covers IT equipment (e.g., laptops, devices) and other IT software. There are no statewide contracts for civic technology platforms, such as website systems, permitting software, or civic engagement tools, that many municipalities need. This often leaves municipalities to

navigate procurement on their own without the pre-negotiated terms that a statewide contract would provide.

When only a handful of private companies own the platforms through which residents are accessing information and services, these companies begin to control the experience of local democracy.

DECISION-MAKING

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TAKEAWAY 5: Budget and Staffing Technical Resources Pose a Huge Constraint for Many Municipalities.

Many municipalities struggle with budget and technical staffing limitations. Out of the municipalities we evaluated, 78 percent listed IT staff on their website. However, there is a significant disparity between larger and smaller municipalities: the latter are less likely to have technical staff. Municipal leaders across the state reported that IT staff within town administrations lack competitive salaries and experience frequent turnover, requiring continuous recruitment and training of new staff. This cycle disrupts workflow consistency and generates substantial costs in both time and resources dedicated to onboarding and capacity building. The lack of technical staff often forces municipalities to rely on expensive external vendors to provide IT support. Municipal leaders are painfully aware of the strong advances and capabilities of current technology, as well as their lack of ability to obtain it, with one town administrator stating that the technology was “passing them by.”

One of the key challenges cited by many of the municipal leaders interviewed was the issue of cybersecurity. Challenges arise particularly with cost, as municipal leaders are burdened by the recurring, rising costs of annual software subscriptions just to maintain basic functionality. With more devices increasingly connected to their networks and looming national security threats, municipalities are struggling to keep up.³⁶

Moreover, new technology tools do not always yield greater efficiency. Staff, particularly those less comfortable with technology, frequently struggle with adaptation and adoption despite training (which also costs municipalities money and resources). Tools like SeeClickFix are indeed helpful, but they require staff and training to monitor, which may be difficult to afford on an already strained budget. These tools, designed to improve efficiency and in principle reduce costs, can inadvertently end up being extremely resource-intensive.



Spotlight: North Shore IT Collaborative

In the face of these limitations, municipalities have begun collaborating with each other to share resources and infrastructure. One such example is the North Shore IT Collaborative, a collaboration between eight municipalities in northern Massachusetts.

The North Shore IT Collaborative was officially launched in July 2021 to help municipalities in Massachusetts strengthen their technology infrastructure and cybersecurity through regional cooperation. Led by the Town of Danvers, the largest and most well-funded of the towns in the Collaborative, the project began when they partnered with nearby Essex through a state-funded fiber network and shared data center. The success of this partnership drew interest from other communities, eventually expanding to a total of eight municipalities that now share IT infrastructure, cybersecurity tools, and management resources.³⁷

The collaborative's work accelerated during the COVID-19 pandemic, when remote meetings made coordination easier and the need for secure digital operations became more urgent. Through a series of state Community Compacts and federal grants, the group built out fiber optic connections and deployed shared cybersecurity systems such as Endpoint Detection and Response. Danvers manages many of these systems centrally, allowing smaller towns, most without full IT departments, to access professional IT support at a lower cost. Through these bulk purchase agreements, Danvers' Chief Information Officer Colby Cousens states that each member community of the North Shore IT Collaborative has seen around a 25 percent reduction in costs compared to procuring similar services independently. The Collaborative has also been able to generate a small amount of net revenue that is reinvested through Danvers' Net Revenue Reinvestment Program, which finances pilot research and development initiatives that are operationalized and offered back to the Collaborative.

Mandatory to participate in the Collaborative, municipalities pay a base annual membership fee as well as for a required cybersecurity package procured and maintained by Danvers. Additional services are not required, and communities can, based on their need, opt into these programs, including managed helpdesk support, more advanced strategic and project management services, server hosting in the regional datacenter, and zero trust security architecture.

Governance and coordination were initially supported by the Metropolitan Area Planning Council (MAPC), a public agency composed of 101 municipalities and created under Massachusetts General Law, whose facilitation helped the group formalize its structure and secure funding. The collaborative continues to meet regularly to set regional priorities, standardize hardware and software, and plan future projects. Since the institution of the collaborative, the North Shore IT Collaborative has raised over \$1.7 million in grant funding.

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TAKEAWAY 6: Hybrid Meetings Often Fail to Enable Two-Way Participation.

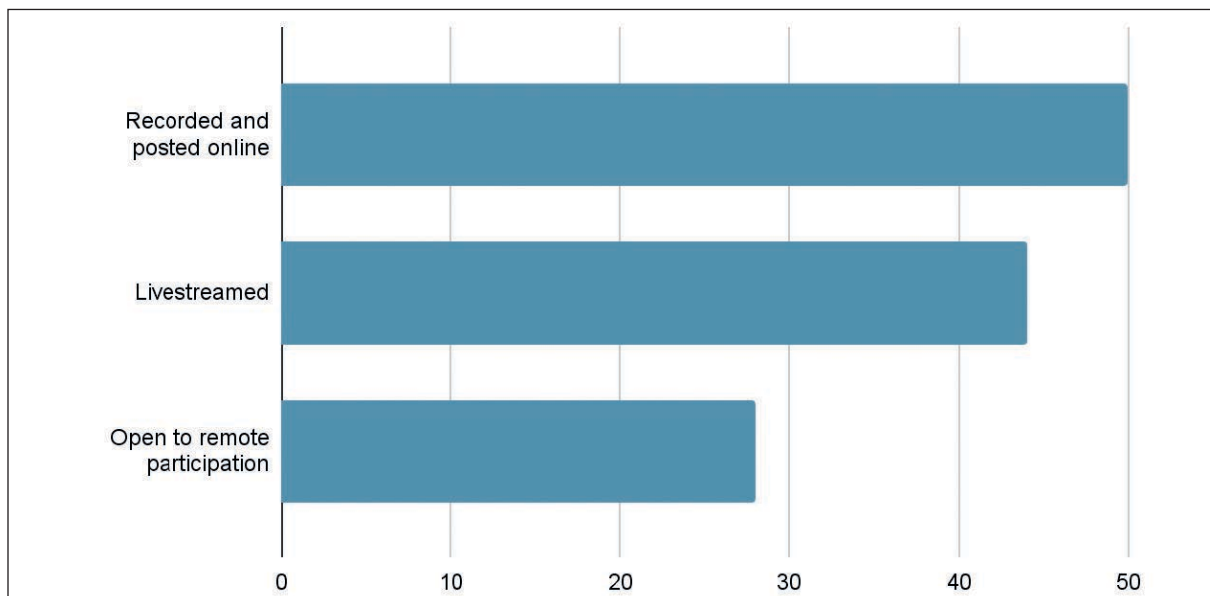
While over 86 percent of the municipalities we observed record and post their meetings online (typically using YouTube), fewer than half had hybrid meetings that enabled real remote participation where residents could actively engage or speak. The introduction of Zoom during the COVID-19 pandemic represented one of the most significant digital civic infrastructure changes that municipalities have faced in recent years, as leaders began to figure out how to quickly bring their operations online. However, many of these implementations fall short of genuine hybrid functionality and are often only one-way broadcasts of information. As such, these implementations may backfire as they create the appearance of access while risking further alienating residents from meaningful participation.³⁸

These limitations stem from both technical and physical constraints. Many meeting rooms lack the proper A/V equipment to support two-way interaction or might face internet connectivity issues. Several municipal leaders remarked

that tools such as Owl devices require technical expertise to troubleshoot, which they often do not have readily available. The result is that hybrid meetings become one-way channels of communication, leaving residents who face barriers to in-person attendance (e.g., caregiving, disabilities, working schedules) to miss out on the opportunity to fully participate. While digital civic infrastructure could create pathways to participation, it also risks replicating existing patterns of access.

While the Municipal Empowerment Act would create a new section in Massachusetts Open Meeting Law to allow for remote participation, it currently does not provide funding or grants for municipalities to actually adopt such measures.³⁹ Though the Act would require members participating remotely to be clearly audible to each other and public access to be ensured through adequate alternative means, municipalities are largely left to independently fund the necessary infrastructure such as IT equipment, accessibility technology, and video conference platforms.

FIGURE 12. Hybrid Meeting Capabilities across Evaluated Municipalities, N = 58.



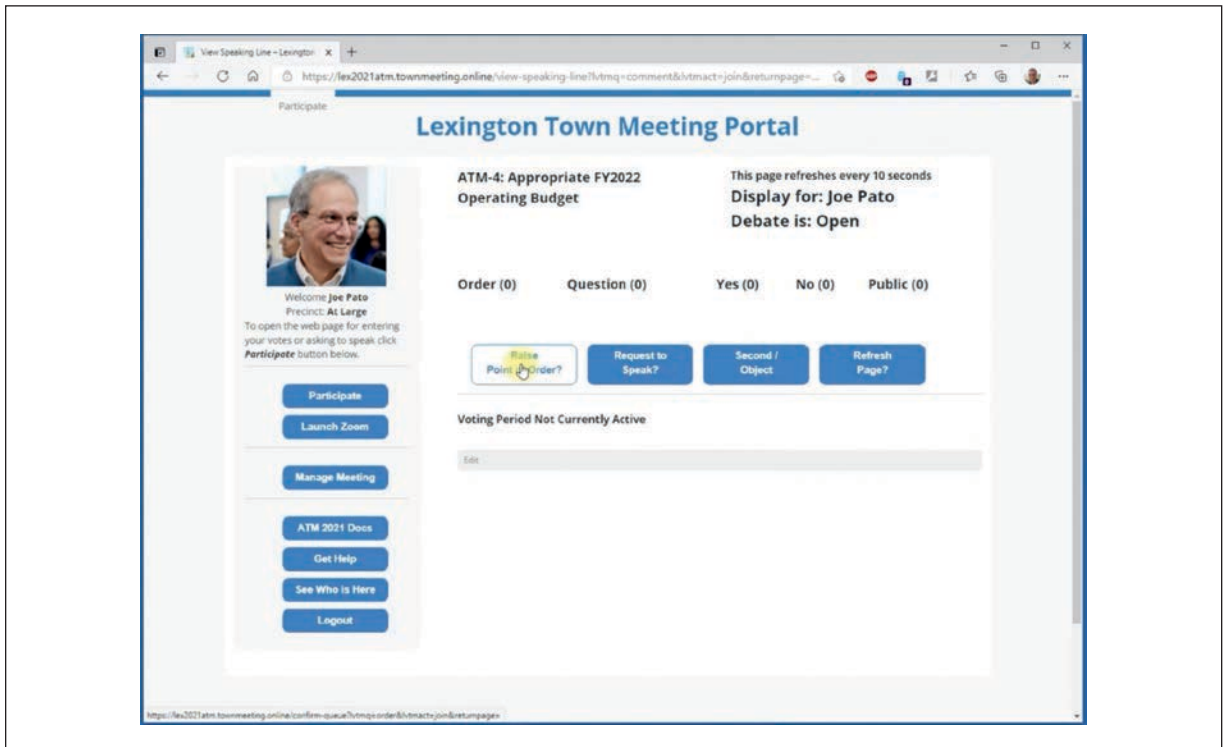
Spotlight: Remote Participation Tool in Lexington, Massachusetts

The Town of Lexington hosts their representative town meetings virtually over Zoom with the help of a companion application called the Town Meeting Portal, developed by Select Board Member Joe Pato.⁴⁰ The meeting portal is accessible via all web browsers and is responsible for the parliamentary aspects of the town meeting, allowing participants to ask to speak, vote, and monitor the state of the meeting. The log-in page is accessible through the Lexington website (or directly through the search bar of a web browser). In order to use the Town Meeting Portal, participants must log in with a username and password that they receive in a letter. On the portal page, there is also a telephone help number that participants can call if they encounter any issues while using the portal.

During the meeting itself, participants are able to see the status of the debate; for example, Town Meeting Portal users can see whether the debate is still open or not. Participants can raise a point of order at any time or ask to speak, all via clicking a button. If participants click that they would like to speak, they are brought to a page where they can select whether they are in favor, against, have a question, or would like to walk away from the debate. They can also see—live—the order in which they will speak and the names of others in line.

Lexington's Town Meeting Portal has helped to break down barriers to participation and accessibility, enabling participants to fully engage in town meetings remotely.

FIGURE 13. Town meeting portal for Lexington, MA.



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TAKEAWAY 7: Promising, Innovative Digital Civic Infrastructure Solutions Meet Residents Where They Are.

Meeting people where they are is essential for ensuring that civic engagement feels both accessible and responsive to residents' everyday realities—for some, that means digital tools, while for others, meaningful civic engagement happens best through close-knit and in-person conversations. This approach ensures that civic participation isn't limited to those who already have the time and resources to seek it out and lowers barriers for residents who may not feel heard with traditional means of connection. For some towns, meeting residents where they are means connecting with them in-person

at a community location. Located in northern Massachusetts and bordering New Hampshire, Dunstable is a town in Middlesex County with a population of fewer than 4,000 people. Dunstable's town administrator hosts recurring Coffee and Conversations, where residents can meet the town administrator at a local coffee shop and discuss anything that may be on their mind. Dunstable's town manager also hosted Kitchen and Conversations to discuss the FY26 budget, bringing the meetings directly to residents' homes where they were encouraged to invite their neighbors, friends, and family to join.⁴¹

Spotlight: Civic Academies in Arlington, Massachusetts

The Town of Arlington (population 46,000) hosts a Civic Academy program, which offers participants an inside look at how the town operates and how residents can engage in local government.⁴² The Academy runs in both the fall and spring, with typically a maximum of twenty participants per session, meeting in-person for two hours every week for six weeks. Each session, which features presentations by town officials, explains key aspects of government operations and provides opportunities for discussion or hands-on activities.

The fall 2025 Civic Academy curriculum began with an overview of town governance and operations, followed by sessions covering topics such as the town clerk, libraries, public schools, public works, inspectional services, fire, health and human services, planning and community development, police, recreation, and budget and finance.⁴³ The program is designed for community members who want to learn more about serving on committees, running for Town Meeting, or pursuing other elected positions. All residents of Arlington over eighteen years of age are eligible to apply, but preference is given to those who have limited experience with town politics and governance. The spring 2026 Civic Academy is its sixth iteration. Since its creation in fall 2023, there have been ninety-three graduates of Arlington's Civic Academy. Of these, thirty-one (one out of three) have reported active involvement in local government.⁴⁴

Arlington is not the only municipality with a Civic Academy program—Lexington and Watertown have also implemented their own Civic Academy model in their respective municipalities. Lexington's Civic Academy is a twelve-week program that brings together twelve to fifteen residents one evening per week to learn about how the town operates. Each session focuses on a different department such as fire, police, or public works, offering participants a look inside local government and encouraging them to become more involved in their community.⁴⁵ Watertown also hosts their own six-week version of the Civic Academy program.⁴⁶



Other towns have also found digital means of communication to experiment with creative ways of connecting with residents. Multiple municipalities have created podcasts to communicate town news, including the Towns of Tyngsborough, Ashland, Concord, and Carlisle. Municipal leaders remark that feedback on the podcasts has been positive, with residents appreciating its informality and authenticity, which allows complex information to be consumed in a conversational format. The town manager of Carlisle stated that the town's podcast, "The Carlisle Connection," works particularly well with its middle-aged population; the town has also found success with younger residents, connecting residents who may not have tuned into more traditional channels of engagement. The Town of Tyngsborough has a specific podcast dedicated to just the town manager's report, with each episode typically lasting no longer than ten minutes. Each episode is

dedicated to the bi-weekly report presented to the Tyngsborough Select Board.

Some municipalities have been able to connect with residents on various social media platforms, although these are not equally trusted or accessible in every community. After noticing decreasing engagement on their Facebook, the municipality of Ashland began a TikTok account, which the town manager says is more authentic and is helping Ashland reach a new and younger new audience. Ashland's TikTok account @townofashlandma features events in the community, such as Ashland's Fire Department & Senior Center Lunch showing firefighters preparing and serving lunch to members of a local senior center, the Ashland food pantry, the celebration of Ashland's oldest resident, parking rules, and even a comedic video of the Ashland Fire Department that has garnered over 38,000 views and counting.⁴⁷

FIGURE 14. Podcast Episode from Tyngsborough, MA, Showcasing Regular Updates from the Town Manager.

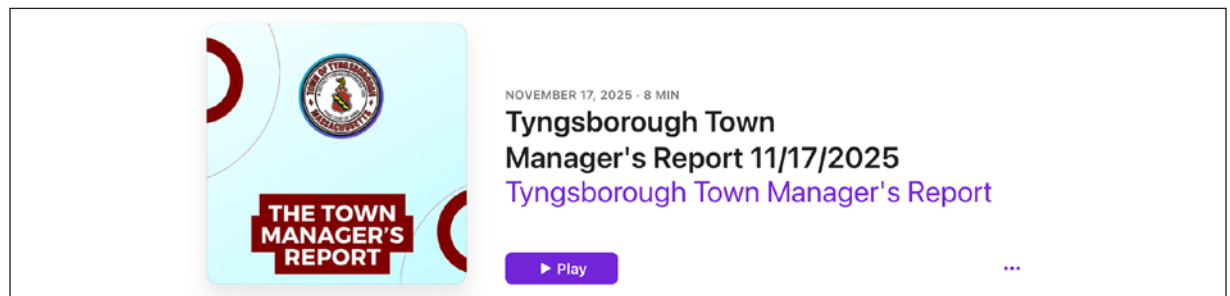
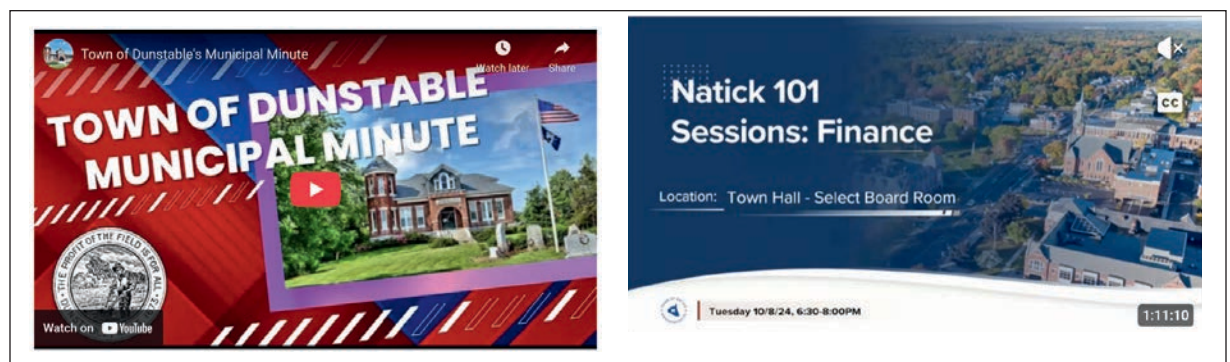


FIGURE 15. Videos Posted to YouTube from Dunstable, MA, Giving a Brief Town Update (left) and Natick, MA, providing Informational Resources about Town Operations (right).



Several municipalities have also launched video series on YouTube to help residents learn about how their local government operates and to share information about current happenings in their community. These video series aim to amplify the work currently happening in person, allowing residents to quickly connect with events and news from the town. The Town of Dunstable's "Municipal Minute" is one such example, a regular YouTube series by the Town giving residents highlights from the most recent town meeting, as well as general information on town events—anything from ongoing restoration projects to the Dunstable 5K.⁴⁸

These examples demonstrate just a sample of the diverse strategies Massachusetts municipalities are adopting to meet residents where they are, whether that is physically or digitally. Initiatives like Civic Academy programs across various municipalities or in-person Kitchen and Conversations both empower and allow residents to personally connect with their town leaders. Simultaneously, towns experimenting with online media like podcasts and social media show how digital tools can supplement traditional outreach by expanding access and presenting municipal information in more approachable ways.

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TAKEAWAY 8: Public Officials Must Close the Feedback Loop When Engaging the Public.

Municipal leaders consistently described a lack of public participation, except in highly controversial issues such as housing or zoning, which tend to mobilize residents. One town manager noted that "people engage when things are going wrong, otherwise it is hard to connect with them." This "vocal minority" problem creates a distorted picture of community sentiment. Municipal leaders often hear from the loudest voices, while the majority of residents are silent. This creates a difficult dynamic for municipal leaders who say they can have a hard time gauging community priorities.

The majority of the efforts to engage the public by local officials consisted of one-off surveys, primarily using Google Forms or Survey Monkey platforms. While many municipalities make efforts to gather public input, several municipal leaders recognized that they often struggle to incorporate the information they collect or demonstrate to residents how their participation influenced outcomes. Public input can sometimes fall into the trap of becoming

a "checkbox" requirement for a project to proceed. However, this failure to close the loop can also breed cynicism among residents. In order to build civic muscle, municipalities need to demonstrate consistently how residents' input leads to action, which can create a virtuous cycle of engagement. Similarly, municipalities should openly communicate to manage their residents' expectations, recognizing their existing capacities to turn their engagement into that virtuous cycle.

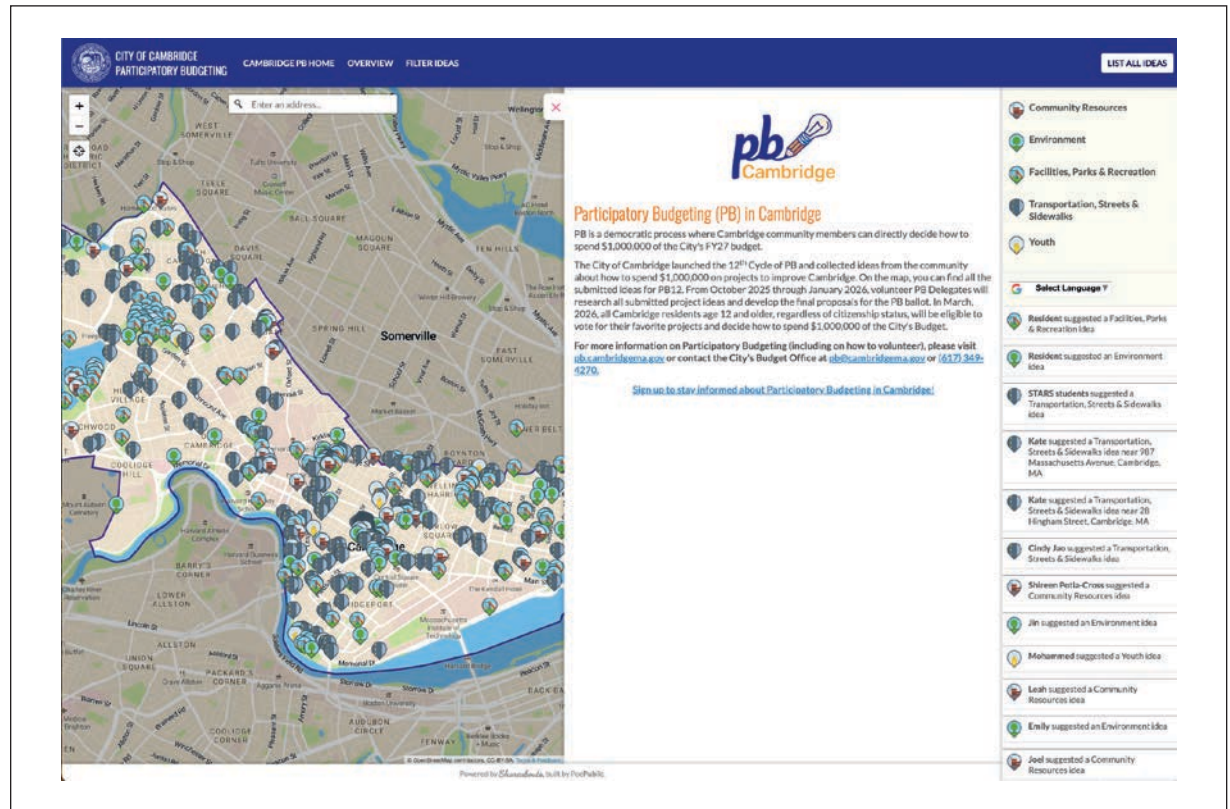
In our analysis, we found that one-time opinion surveys were especially common in smaller municipalities, while some of the larger municipalities were experimenting with processes such as participatory budgeting. Participatory budgeting gives residents control over the allocation of some portion of the budget; it offers a tangible connection from input to action where residents can see the concrete results of their participation in funded projects within their community. For example, in Cambridge, which has run this process for over a



decade, residents had control over allocating \$1 million of the City's budget and were able to submit ideas for projects in their community that needed funding. Municipal leaders observed that this enabled residents to watch

their choices actually materialize within a relatively quick turnaround time, which has helped build trust and civic habits that are important for sustained engagement.

FIGURE 16. The City of Cambridge Participatory Budgeting Portal Allows Residents to Submit and Vote on How to Allocate Funds to Projects That Improve Cambridge.



VOICE

TAKEAWAY 9: Online, Hyperlocal News Sources Are Emerging to Fill a Gap in Local News.

Falling circulation and consolidation have led to the closure of local news outlets in many communities. Our audit found that smaller municipalities were more likely to only have online news sources, versus a variety of print and online media. However, in communities across the state (e.g., Plymouth,⁴⁹ New Bedford,⁵⁰ Western Massachusetts⁵¹), new hyperlocal news sources are emerging to fill the gap. These outlets are typically non-profits, with boards made up of volunteers from the community who can act

as boosters and fundraisers for these startups. Newton residents began raising money from the community for the *Newton Beacon* in 2022. The *Beacon* ran several articles about a 2023 budget override to gauge interest in the new outlet. An outpouring of support brought in several thousand dollars in unsolicited donations and the *Beacon* hired a full-time reporter-editor in the summer of 2023. The *New Bedford Light* started in 2021 with just two backers and now has more than a dozen team members. The *Light* created a



community calendar, covers local elections that typically go under the radar, and marches in the city's Cape Verdean parade.⁵²

South Shore News, which uses AI to report on local meetings and reports from roughly nineteen municipalities, is trying another model.⁵³ The site takes in transcripts from meeting recordings posted on community access television to generate articles. With dozens of select boards, school committees, and other governing bodies meeting regularly across these nineteen municipalities, automatic summarization allows readers to keep up with the high volume of meetings. The limited involvement of a human reporter carries the risk that articles miss key issues, as the "About" page for *South Shore News* notes, "This is an experiment: Generative AI still occasionally hallucinates."⁵⁴

These outlets' experimentation highlights opportunities available to residents around Massachusetts who may similarly wish to take initiative in their own communities. Digital civic infrastructure can play a role in supporting the existence of local news, which can create the conditions for a more informed and engaged community. Research shows that the decline of local news coverage is reducing civic engagement,⁵⁵ that news outlets can drive engagement in other civic institutions (e.g., elections, planning processes),⁵⁶ and that exposure to local news can reduce partisan polarization.⁵⁷ Whether these emerging online, hyperlocal news sources will produce the same civic benefits as traditional local news sources remains an open question that warrants further longitudinal research.

DECISION-MAKING

TAKEAWAY 10: Digital Tools to Support Decision-Making Are Lacking.

Of the components in the spinal cord of democracy, the processing of public preferences into policy decisions is currently the least directly supported by existing digital civic infrastructure across the municipalities we observed. While many municipalities are leveraging tools, with various levels of maturity, in an attempt to support voice (e.g., social media, hybrid meetings) and government service delivery (e.g., online payments, budget portals, chatbots), we did not encounter as many tools designed specifically to help decision-makers gather, interpret, and act on public input.

Many of the local leaders interviewed described the need to process and digest substantial amounts of materials, reports, public inputs, etc. and to exercise informed judgment across a wide range of policy domains and operations.

One municipal leader pointed to multiple large stacks of paperwork on their desk and noted the volume of material. As noted in Takeaway 3 (page 15), several municipal leaders described using AI tools in a personal capacity to support their workload. Decision-makers appear to be in need of sense-making support so that they can connect the voice, decision-making, and implementation components of the spinal cord. This disconnection in the spinal cord presents an opportunity for digital civic infrastructure to support municipal leaders in their roles.

While there are tools emerging to help decision-makers manage complexity at the federal and state levels, local government—where residents experience democracy most directly—remains largely unequipped.



Our landscape analysis of digital civic infrastructure across Massachusetts showcases the creative solutions that local leaders have developed and highlights shared needs and gaps where there are opportunities to strengthen this infrastructure across the state. Municipal leaders, state policy makers, researchers, and technologists all have important roles to play in renovating our democracy for the digital age. While the opportunities discussed below are not exhaustive, they offer concrete starting points based on our takeaways.

Municipal Leaders:

- **Build civic muscle by starting small, staying consistent, and closing the loop with engagement.** Begin with manageable experiments that meet residents where they are (e.g., with the devices and times they have available) and demonstrate responsiveness. Each community might close the loop with engagement differently (e.g., annual civic priorities surveys, digital town halls, communication to residents), but by making it easier for residents to get engaged and then showing them that their input leads to tangible action, it is possible to create a more virtuous cycle of engagement.
- **Consider partnering with neighboring municipalities.** Regional partnerships such as the North Shore IT Collaborative demonstrate how resource-sharing can decrease costs while improving technical capacity.
- **Share knowledge and insights with other municipalities across the state.** Creating networks for sharing learnings on digital civic infrastructure makes it possible for other communities to accelerate innovation and avoid duplicative efforts.

State Policy Leaders:

- **Modernize Open Meeting Law for the digital age.**
 - The current law creates unintended barriers for responsive digital engagement between residents and municipal leaders. The Attorney General's Office should consider issuing clearer guidance on digital engagement for municipal

leaders that preserves transparency while enabling modern communication with residents.

- The Municipal Empowerment Act, which aims to amend Open Meeting Law and codify remote meeting participation, could be expanded to offer funding for the digital infrastructure or technical support for municipalities to successfully operate remote or hybrid meetings.
- **Include additional provisions in technology vendor contracts.**
 - **Adopt data portability standards.** Establish minimum data portability requirements (e.g., data export formats, timelines) for municipal technology systems.
 - **Require ownership disclosure.** Require vendors to disclose corporate ownership structure, including parent companies and significant investors. Require notice when there is a change in vendor ownership or control.
- **Encourage regional, shared technical resources.** State funding and facilitation could help replicate successful models like the North Shore IT Collaborative across other regions.
- **Develop statewide technology procurement standards, audits, and training.** Additional guidance and resources could help municipalities evaluate technology vendors, identify contract provisions, negotiate contracts, or leverage collective purchasing power for procurement, as well as support best practices for implementation.
- **Adopt common standards for procurement transparency such as the Open Contracting Data Standard.** This standard structures procurement data from planning through implementation, making it comparable across jurisdictions.

- **Modify state grant programs to include digital civic infrastructure use cases.** While current grant programs, such as the Community Compact IT Grant Program, are useful for supporting infrastructure needs, they could expand eligibility criteria beyond traditional IT needs to explicitly include other digital civic infrastructure opportunities such as civic engagement platforms, transparency tools, and others.

Researchers & Technologists:

- **Create or adopt interoperable, open-source tools when possible.** Proprietary software platform consolidation has created lock-in and rising costs for municipalities. Open-source solutions that municipalities could leverage and adapt to their needs, such as the budget portal for the Towns of Rutland and Sutton, offer potential alternatives. Provide clear documentation and onboarding instructions for these tools. Where open-source tools aren't feasible, civic technologists should advocate for open standards so municipalities aren't forced to lock into monolithic platforms.
- **Seize opportunities to build impactful civic tech solutions for low-hanging fruit at the municipal level.** Many municipalities struggle with basic functionality, such as searchable meeting minutes, budget visualizations, or managing public records requests, that technology could play a role in improving. There is also a lack of decision-making tools available for municipal leaders to process and act on constituent preferences. Civic technologists have many immediate opportunities for digital tools that would address real pain points for communities and make government more open, accountable, and transparent to residents.
- **Reimagine existing processes and tools.** Instead of simply moving existing, burdensome forms or processes online, look for possibilities to transform the experience of democracy. For example, in *Recoding America*, Pahlka shared how reimagining California's SNAP application, which originally had

over two hundred questions, lowered the time to application completion and allowed users to access benefits and receive updates from their mobile device.⁵⁸

- **Advance research on evaluative criteria for digital civic infrastructure.** Future research should work toward shared evaluative criteria for the impact and effectiveness of digital civic infrastructure including operational outcomes such as the residents' satisfaction and usage of the tool, as well as other downstream outcomes such as trust in government and civic participation.

In order to renovate our democracy for the digital age, thoughtful technology development that supports voice, decision-making, and implementation along the spinal cord of democracy will enable governments to become more transparent, accountable, and responsive to the people they serve. Our landscape research across the state shows that there are local leaders who are navigating significant constraints and coming up with creative solutions to serve their communities—from building budget transparency portals with AI tools, to launching podcasts, to forming regional IT collaboratives.

The success stories in this report exist alongside difficult, persistent challenges with rising costs, vendor consolidation, staffing, and community engagement—it will take time to understand which early experiments in digital civic infrastructure will truly move the needle on solving these challenges. The path forward to strengthen digital civic infrastructure and build a democracy for the digital age will require coordinated action across municipal leaders, state policymakers, and civic technology builders.

Democracy renovation can begin with the places people experience democracy most directly: the town meetings, budgets, community groups and websites they navigate in their everyday lives. Massachusetts has an opportunity to prove that thoughtful digital civic infrastructure, grounded in community needs, can strengthen the civic foundations necessary for a healthy democracy.



DATA AUDIT

The following information was collected on each municipality audited:

- Population
- County
- Municipal website:
 - Find forms for permits and licenses
 - Submit permits and licenses online
 - Technology used for permits and licenses
 - Report an issue
 - Technology used for reporting an issue
 - Information on how to submit a public records request
 - Technology used for submitting a public records request
 - Find the budget
 - Technology used to access budget information
 - Find public planning documents
 - Make online payments
 - Technology used to support online payments
 - Find local government structure and processes
 - Find public notices
 - Find upcoming community events
 - Find upcoming public meetings (or calendar)
 - Find recent news and announcements
 - Find information on how to register to vote
 - Find upcoming elections and polling places
 - Open data portal
 - Find municipal leadership (elected officials and staff)
 - Presence of technical staff
 - Translation capabilities
 - Technology used to support translation
 - Search
 - Chatbot
 - Technology used to support chatbot
 - Broken links
 - Website software
- Municipal social media accounts: Facebook, X, Instagram, YouTube, Other
- Local news: Media type, website
- Local meetings: Meeting type, if recorded and posted online, if meetings are live-streamed, technology used for recording or streaming, if meetings are open for remote participation, meeting minutes available online, technology used to support meeting minutes
- Public engagement: Type of engagement, tools used to support public engagement, year completed, website link
- Community social networks: Type of network (Facebook group, Nextdoor, Subreddit, Civic organization), website link, size of group

MUNICIPAL INTERVIEW QUESTIONS

Civic Engagement:

- How do residents typically engage with you and your municipality? How do you typically hear from them?
- What methods do you use to communicate with residents and share information?
- Does your municipality have a local paper, online news sources, or other media that residents use for local information?
- What decisions does the town make that would benefit from more public input?
- What is the biggest challenge you face with understanding “civic voice” and hearing from people in your community?

Technology:

- What technology or software platforms are you all using today?
- How do residents typically access government services? Have you moved any services online?
- Has your municipality used technology to solve a particular problem or improve how you engage with residents?
- What are the main technology challenges your municipality faces today?



Other:

- What are the processes in your town that are difficult and that residents and/or officials are frustrated by?
- Are there other municipalities whose efforts you have learned from or admired?
- Is there anything else you think would be important for us to understand about civic engagement or technology in your community?



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 - Did you spend time volunteering with a community organization? [Yes/No]
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