

Surveillance Working Groups as Geomedia Governance

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Abstract

Municipalities across the US are investing in smart technologies that rely on data collection tools and devices. Though proposals to procure these technologies often describe the benefits of optimization, privacy concerns and asymmetrical data access remain. Some municipalities are working to minimize such concerns by developing community working groups to evaluate the adoption of surveillance technologies. Many of these organizations have an explicit interest in geomedia technologies, yet their goals, composition, and technology review processes differ. We examined working groups from four US cities—Boston, Seattle, Syracuse, and Vallejo—to identify how group members articulate different sociotechnical imaginaries of geomedia. Through interviews with working group members and an analysis of public documents, we examine how working groups imagine the future use, and misuse, of these technologies in their communities. In turn, this project highlights how multi-stakeholder governance can shape decision-making about geomedia futures.

Keywords

geomedia; smart cities; smart technologies; sociotechnical imaginaries; surveillance

1. Introduction

Municipalities are increasingly adopting smart technologies under the premise that data-driven insights can optimize government functions to better support citizens. While smart technologies can benefit municipalities and the public, these tools monitor public space and raise questions about surveillance and privacy. In turn, some municipalities in the US have created community working groups tasked with evaluating the cities’ procurement and use of surveillance technologies.

This study compares four working groups in different cities across the US to examine their missions, processes, and practices. These groups first emerged in response to a move towards community control of police surveillance outlined by the American Civil Liberties Union (2016, 2024). In particular, the American Civil Liberties Union encourages municipalities to create community-run, independent advisory committees to raise concerns about civil rights and civil liberties (Southerland, 2023). In many cases, municipal departments must first seek approval from these committees before procuring potentially surveillant technologies (Sheard & Schwartz, 2021). While the initial goal of this movement was to address concerns about police surveillance, smart city technologies have increasingly fallen under the purview of these working groups.

Using the lens of geomedia, we examine how these working groups consider the relationship between technology, people, and space (Fast et al., 2018). Specifically, we consider how working groups construct sociotechnical imaginaries of the smart city. Sociotechnical imaginaries are “collectively imagined forms of social life and social order reflected in the design and fulfillment of nation-specific scientific and/or technological projects” (Jasanoff & Kim, 2009, p. 120). Here, we follow the notion that sociotechnical imaginaries are not merely visions, but are sustained through the creation and maintenance of technological systems (Powell, 2021). Thus, working group members are engaged in a project of imagining and debating potential futures (Goode & Godhe, 2017).

2. Literature Review

2.1. Sociotechnical Imaginaries

Sociotechnical imaginaries build upon Taylor’s (2004) notion of a “social imaginary” where large groups of people share a common understanding of a social practice and, in turn, legitimize that practice (p. 23). Though the concept of sociotechnical imaginaries was initially applied to nation-states, Jasanoff and Kim’s (2015) work helped to broaden the definition. Specifically, Jasanoff (2015, p. 4) writes that sociotechnical imaginaries account for how “scientific and technological visions enter into the assemblages of materiality, meaning, and morality that constitute robust forms of social life” and hold “visions of desirable futures.” Sociotechnical imaginaries intertwine the future of society with technology and are grounded in notions of progress. Through this framing, we consider how people’s desires for the future get bound up with material infrastructures, technological systems, legal institutions, and public reason. Sociotechnical imaginaries are useful for examining smart cities since the term smart city is already a sociotechnical imaginary. For example, Sadowski and Bendor (2019, p. 542) argue that “as a sociotechnical imaginary, the smart city is always in the process of becoming—expanding in both scope and reach.” Therefore, following Sepehr and Felt’s (2023) analysis of how urban policy documents translate and adapt global smart city imaginaries, we use sociotechnical imaginaries as a lens to understand questions of geomedia governance.

2.2. Smart Cities

The concept of the smart city promises that data-driven insights can benefit municipalities. Specifically, smart city initiatives often tether technological solutions to notions of optimization and efficiency (Halegoua, 2019; Houston et al., 2019; Morozov, 2013; Powell, 2021; Velsberg et al., 2020). For example, smart solutions might help governments make decisions about how to optimize labor and other resources. These

technologies are also sold as a means to reduce and mitigate risk. Powell (2021) takes a critical view of optimization arguing that optimization narrows the capacity for citizenship, prioritizing corporate interests over civic decision-making.

Smart cities rely on pervasive data collection and the legitimization of surveillance to create efficiencies (Powell, 2021). While surveillance has long been a feature of societies used to monitor efficiency and productivity (Lyon, 2007), in urban areas, the vast number and density of surveillance technologies can lead to a kind of surveillant assemblage (Haggerty & Ericson, 2000; Leszczynski, 2016). The implementation of these tools contributes to the expansion of surveillance capitalism when commercial intermediaries offer data analytic services to municipalities (Powell, 2021). In these instances, mayors and city officials are positioned as consumers of problem-solving technology (Cardullo & Kitchin, 2019). In turn, smart city initiatives raise questions about how corporate and municipal data are produced and managed.

2.3. Geomedia

Geomedia include a broad assemblage of technologies, services, processes, operations, and practices that shape our encounters with space and place (Fast & Abend, 2022). McQuire (2016) suggests that geomedia embody convergence, ubiquity, location awareness, and real-time feedback. Hartmann and Jansson (2022) use the term “geomedia city” to refer to both digital infrastructures and the coinciding social and cultural norms of the city.

In this article, we examine the relationship between technology, people, and space through the lens of geomedia (Fast et al., 2018). These technologies might include water meters, electricity meters, street and traffic lights, road temperature monitors, air quality monitors, traffic cameras, and other forms of real-time big data that show status updates, location coordinates, tracks, traces, and check-ins (Couldry & Powell, 2014; Kortuem et al., 2010; Leszczynski, 2016; Powell, 2021). Some of these tools might also be described as part of the internet of things (IoT), “a term used to describe objects or sensors capable of transmitting data without a direct internet connection” (Butkowski et al., 2023, p. 1).

Geomedia might perform or enhance urban surveillance capabilities. Geosurveillance reflects the surveillance of geographical activities and spatial location (Crampton, 2007; Swanlund & Schuurman, 2019). Kitchin (2023) notes that the big data often produced by networked digital technologies impacts the breadth and depth (spatially and temporally) of surveillance. Specifically, geospatial technologies perform geosurveillance by enabling “fine-grained, exhaustive monitoring and tracking of places and spatial behaviour for large populations, which was previously impossible to accomplish” (Kitchin, 2023, p. 476). Strategies for resisting geosurveillance might include minimizing opportunities for data collection (Swanlund & Schuurman, 2019). In turn, practices of governance and governmentality must account for a range of questions that coincide with geosurveillance—including questions about privacy, civil liberties, and data management.

2.4. Governance

By centering the practices and experiences of working groups in this article, we explore the complexities of *geomedia governance*. Like geomedia, geomedia governance reflects a convergence, in this case, between

governance approaches including algorithmic governance (Leszczynski, 2016), urban governance (Kitchin, 2014; Sadowski & Pasquale, 2015; Shelton et al., 2015), platform governance (Gillespie, 2017; Powell, 2021; Sadowski & Bendor, 2019), and municipal governance.

Smart governance and increased datafication shape practices and operations of citizenship (Gabrys, 2014; Hartmann & Jansson, 2022). In addition to questions of data management, storage, and retention, approaches to data governance raise questions about for whom technologies are developed and who benefits from the data (Powell, 2021). These questions are increasingly important in geomedias cities where citizens are data subjects as well as potential consumers of data.

2.5. Research Questions

In this article, we consider how working group members construct sociotechnical imaginaries of geomedias. We ask the following research questions: How do working group members account for future uses of geomedias through their evaluation and procurement processes? How do working group members imagine the future use and misuse of these technologies in their communities? How might working groups serve as sites of geomedias management, resistance, or refusal?

3. Methods

We first came across a surveillance working group as part of a larger multi-disciplinary research project focused on building a statewide public IoT sensor network in New York. In our efforts to learn about the creation and governance of sensor network technologies, we decided to conduct a multi-case study of these working groups. Because there were no comparable groups in New York, we opted for a national comparative sample. We identified four cities that have surveillance working groups: two larger municipalities with populations greater than 650,000 and two smaller cities with populations around 130,000 (see Table 1).

As part of our data collection, we collected municipal documents related to the working groups. We reviewed municipal codes, working group websites, and recommendations from the groups. As Jasanoff (2015) notes, policy documents “can be mined for insights into the framing of desirable futures” (p. 27). In addition to document analysis, we conducted seven semi-structured interviews with individuals involved with the working groups in each of the four cities. We asked questions about why the working groups were created, the structures of the groups, and the benefits and challenges the groups face. Additionally, we asked questions about reviewing IoT technologies. Finally, we asked questions about how group members think about surveillance and privacy.

Our method follows a “critical data set studies” approach by foregrounding the human subjects of data sets (Thylstrup, 2022, p. 665). By focusing on working groups, we answer Couldry and Powell’s (2014) call to examine data collection in a way that foregrounds the agency and reflexivity of individual actors. Importantly, the working group members were not necessarily IT specialists, but social actors who participate in processes that contribute to the governance of geomedias in their municipalities.

To analyze the data, we drew on Lofland et al. (2006), which involved an iterative and comparative approach. In analyzing the interview data and municipal ordinances and documents, we sought to find themes across

the four cities. In addition, we compared municipal documents to the lived experiences and practices of our interview participants.

The four municipalities we study serve as a useful sample because the boards have similar compositions and number of members, regardless of population size (see Table 1). The outlier in this sample is Boston, which established a Surveillance Oversight Advisory Board as well as a short-term Surveillance, Data and Privacy Working Group (City of Boston, 2024). The working group recommended the creation of a more permanent committee prospectively called the Privacy Advisory Committee (City of Boston, 2024). Additionally, we use pseudonyms for interviewees and the terms “board,” “group,” and “committee” interchangeably to anonymize participant responses.

4. Findings

We begin our findings by describing some of the key characteristics and attributes of the working groups. Next, we examine how working groups account for the future through their sociotechnical imaginaries of surveillance. Lastly, we examine how groups govern geomedia by helping municipalities navigate ways to optimize, resist, and deoptimize surveillance technologies.

4.1. *Attributes of Municipal Surveillance Working Groups*

While the working groups in the four cities we study have similar missions, they frame their priorities differently. The primary role of Seattle’s group is to provide an impact assessment for each technology, describing potential civil rights and civil liberty infringements as well as potential disparate impacts on communities of color and other marginalized communities (City of Seattle, n.d.-a). In Vallejo, the board was created to “advise the City and City Council on best practices to protect the safety, privacy, and civil rights of Vallejo residents” with a focus on policing technologies (City of Vallejo, 2023, § 2.27.030). The Syracuse working group was created to give recommendations on a variety of areas including equity, efficacy of collection techniques, financial capabilities of implementation, and taxpayer benefits (City of Syracuse, 2020). Finally, the Boston Surveillance Oversight Advisory Board was established to help advise the mayor on surveillance issues and engage the community in further discussion of the topic (City of Boston, 2024). The proposed Privacy Advisory Committee in Boston would serve as an expert body for City employees to consult on their day-to-day work and special projects (Surveillance, Data, and Privacy Working Group, n.d.-b).

The surveillance working groups are intended to represent public opinion in the acquisition of surveillance technologies. Thus, it is important to consider the composition of these groups. In our sample, each group requires stakeholders from across the city (see Table 1). For example, in Syracuse, the board must consist of a member from each of the following types of organizations: social justice, technology, community outreach, and research institution/partnerships (City of Syracuse, 2020). Notably, all four working groups, as well as the proposed Privacy Advisory Committee in Boston, require participation from individuals engaged with social justice or civil liberties efforts in their cities. The multi-stakeholder approach echoes the idea that people in different social positions will have different visions of the same technologies (MacKenzie & Wajcman, 1999).

Table 1. Municipal surveillance working group compositions.

Municipality, committee name, and year enacted	City population estimate (2022)	Mission statement (paraphrased)	Number of members and member appointment	Member composition
Boston: Surveillance Oversight Advisory Board (2021)	650,706 (U.S. Census Bureau, 2022)	To help advise the mayor on surveillance issues and engage the community in further discussion on this topic (City of Boston, 2024).	Five members including two representatives chosen by the mayor and a city councilor chosen by the president of the City Council (City of Boston, 2024).	The other two members must be a representative of the Massachusetts American Civil Liberties Union and a representative of the Boston Police Commissioner. One of the mayor's representatives must be an academic expert (City of Boston, 2024).
Boston: Privacy Advisory Committee (proposed, not enacted)	650,706 (U.S. Census Bureau, 2022)	To serve as an expert body for City employees across departments to consult on privacy aspects of their day-to-day work and special projects. The committee would partner with trusted community-based organizations and residents to cultivate relationships that would steer the City's future engagement around public technology (Surveillance, Data, and Privacy Working Group, n.d.-b).	Five members proposed, not yet determined.	At minimum one representative from each of the following: the Mayor's Office, the Department of Innovation and Technology, the Law Department with technology expertise, an advocacy and civil rights organization such as the American Civil Liberties Union of Massachusetts, and an external expert in privacy and technology, either an academic or a technologist. Additional interested employees with relevant expertise would be encouraged to participate in Committee meetings (Surveillance, Data, and Privacy Working Group, n.d.-a).
Seattle: Community Surveillance Working Group (2018)	749,256 (U.S. Census Bureau, 2022)	To provide a privacy and civil liberties impact assessment for each <i>Surveillance Impact Report</i> . These assessments include a description of the potential impact of the surveillance technology on civil rights and liberties, and potential disparate impacts on communities of color and other marginalized communities (City of Seattle, n.d.-a).	Seven members including four members appointed by the mayor and three members appointed by the Council (City of Seattle, 2024, § 14.18.080).	At least five members of the Working Group shall represent equity-focused organizations serving or protecting the rights of communities and groups historically subject to disproportionate surveillance, including Seattle's diverse communities of color, immigrant communities, religious minorities, and groups concerned with privacy and protest (City of Seattle, 2024, § 14.18.080).

Table 1. (Cont.) Municipal surveillance working group compositions.

Municipality, committee name, and year enacted	City population estimate (2022)	Mission statement (paraphrased)	Number of members and member appointment	Member composition
Syracuse: Surveillance Technology Working Group (2020)	144,451 (U.S. Census Bureau, 2022)	To ensure due diligence is done on all technologies fitting the surveillance definition so decision-makers can understand how technologies will impact areas including equity or service, the efficacy of collection techniques, financial capabilities of implementation, and benefit to the taxpayer (City of Syracuse, 2020).	Seven to 10 members: stakeholders to be appointed by the mayor (City of Syracuse, 2020).	Five to seven stakeholders from a variety of community groups including at least one member from each of the following types of organizations: social justice, technology, community outreach, and research institution/partnerships (City of Syracuse, 2020).
Vallejo: Surveillance Advisory Board (2021)	123,564 (U.S. Census Bureau, 2022)	To advise the City and City Council on best practices to protect the safety, privacy, and civil rights of Vallejo residents in connection with the acquisition, borrowing, and/or use by City departments of surveillance technology that collects, analyzes, processes, or stores information about Vallejo residents (City of Vallejo, 2023, § 2.27.030).	Seven members including one resident of Vallejo appointed by each sitting member of the Vallejo City Council and one resident appointed by the mayor. Members appointed by a sitting member of the Vallejo City Council shall be residents of the city of Vallejo and of the appointing Council member's district. At large, council members may appoint a member from any city council district. The member appointed by the mayor may reside anywhere within the city (City of Vallejo, 2023, § 2.27.040).	All members of the advisory board have an interest in privacy and civil rights as demonstrated by work experience, civic participation, and/or political advocacy. No member may be an employee of any city department, immediate family member of a city department employee, or a member of any other city advisory body or local, state, or federal law enforcement agency (City of Vallejo, 2023, § 2.27.040).

Municipal codes reveal differences in how cities define surveillance. The Boston ordinance defines surveillance as the “act of observing or analyzing the movements, behavior or actions of Identifiable Individuals” (City of Boston, 2021). Meanwhile, the Vallejo definition describes surveillance technology as “the systematic observation, for law enforcement purposes, of places, persons or things by visual, aural, electronic, photographic, or other means” (City of Vallejo, 2023, § 2.27.020). Here, the definition of surveillance links the role of the working group to law enforcement technologies. Both Seattle and Syracuse define surveillance technologies as those “that observe or analyze the movements, behavior, or actions of identifiable individuals in a manner that is reasonably likely to raise concerns about civil liberties, freedom of speech or association, racial equity or social justice” (City of Seattle, n.d.-b; City of Syracuse, 2020, p. 1). In most cases, the broad definitions of surveillance used by municipalities expand the scope of the working groups beyond policing technologies to include a variety of geomedia technologies.

4.2. *Negotiating Surveillant Futures*

How a municipality defines surveillance shapes the scope of the technologies working groups evaluate. Hannah, a working group member, asserted that their city’s ordinance was “intentionally written broadly to encompass new technologies that they hadn’t thought of yet.” Similarly, in Oliver’s city, the definition attempts to balance what would be commonly considered a surveillance technology today with “a lot of open space” for new developments. Oscar noted that because there are “a lot of abstractions and subjective interpretations” about surveillance, his city settled on “purposefully vague” terminology. Here, representatives from three municipalities explain how their city’s definition of surveillance shapes the scope of technologies they review. Naomi, however, wondered if her group’s definition was “overly broad” as it required “every little thing” from software to hardware to be identified and evaluated. While she found it important to be that thorough, at times it seemed “silly” to ask if certain tools were surveillance or not.

While smart technologies promise to mitigate risk and help predict potential disorder in cities (Powell, 2021), surveillance working groups are tasked with predicting and mitigating the risks of implementing these technologies. Working group members imagine the future uses and misuses of these tools in their communities. Interviewees explained the difficulty of anticipating future privacy concerns. Naomi noted that while a sensor alone might not be considered surveillance, if it were integrated with other technologies, it could potentially meet their municipality’s definition of surveillance in the future. For example, a sensor technology connected through the IoT could “essentially lead to a pattern analysis where we could track someone’s movement or track the behaviors of a person or a group” (Naomi). This concern reflects how technologies, like sensors, might converge, extending into new contexts and absorbing new capacities. While Naomi believes that a lot of IoT applications are “low risk,” they still find it important to ask questions and understand how misuse happens. Eve, a participant in another municipality, shared a similar concern regarding video surveillance: “If a young person [is] caught shoplifting at 13, I don’t want that video to be a detriment to him getting a job at 19.” She summarized: “It just goes back to equity. Equity [in] how things are being stored, maintained, utilized, and sort of shared within a department or across departments.” As a result, while “the charge of [the working] group is not to necessarily think about all of the potential future misuses of the application” (Naomi), working group members often find themselves anticipating future civil liberty concerns.

Some working group members accounted for public perception when considering potential privacy concerns. Daniel acknowledged the role of the public in flagging concerns about surveillant technologies. They

mentioned that their working group was created in direct response to public concern over the development of surveillance infrastructure in their community. Naomi reflected: “With surveillance and especially public trust, I think perception is honestly almost as important as the technical reality of these things.” They elaborated on this sentiment through the example of optical sensors, which look like cameras but do not capture images. “I don’t even know if we should label it surveillance. But because it looks like other cameras, it probably makes sense to err on the side of caution.” Thus, working group members often filter their work and surveillance imaginaries through the lens of public perception.

4.3. Optimization, Resistance, and Deoptimization

Working group members balance input from city departments, smart city companies, advocacy groups, and the larger public. In turn, they function as intermediaries between stakeholders who imagine different futures for the city. As a result, working groups negotiate between the dominant imaginary of the smart city focused on optimization, and the alternative imaginary of the smart city focused on resistance, sometimes articulating a third imaginary focused on deoptimization.

Smart city solutions often center efficiency and optimization as benefits (Sadowski & Bendor, 2019). Thus, optimization emerges as a key value within the “dominant social imaginary” (Mansell, 2012) of the smart city shaped by corporate intermediaries. In this purview, surveillance technologies are positioned as solutions for managing costs, time, and resources. Additionally, these technologies can serve the public good and help maintain municipal infrastructure. For example, IoT-connected tools can sense trash can capacity or sense air quality (Butkowski et al., 2022).

Municipal ordinances use the rhetoric of optimization and efficiency to justify the acquisition of surveillance technologies. For instance, the City of Syracuse implies that data can help the city “build efficiencies where needed and ensure projects are delivering productive outcomes for the public” (City of Syracuse, 2020, p. 1). Additionally, the City claims that “building predictive models and automated decision-making tools can create efficiencies in government and can enable more proactive work to happen” (City of Syracuse, 2020, p. 4). The logic of efficiency relies on integrated data sets. For example, Oscar mentioned that in their city they “see a lot of value in combining data from multiple sources to gain better insights”; however, he acknowledges that it also “brings extra risks” when it comes to privacy.

In addition to attaining better insights, optimization promises cost-effectiveness. The Boston ordinance implies that electronic data collection can “manage assets and resources efficiently” (City of Boston, 2021). Additionally, Naomi suggested that in their municipality integrating technologies, like sensors for road temperature readings and cameras for public safety, could help with costs and ease maintenance. Specifically, they believe emerging technologies could help to “effectively and efficiently do things with less human resources because cities are struggling with meeting a lot of demands with fewer and fewer resources.” In these examples, larger and smaller municipalities alike use the rhetoric of optimization when considering the value of surveillance technology.

While smart city solutions promise optimization and efficiency, municipalities must also account for privacy concerns. The Syracuse policy notes that oversight over data collection and analysis is necessary to ensure the privacy of community members and to limit the bias of the technologies (City of Syracuse, 2020).

Additionally, in Boston's Privacy Advisory Committee Recommendations, the working group suggests the City "consider funding additional staffing for roles that would lead implementation of improved City privacy practices and community engagement around technology and data collection" (Surveillance, Data, and Privacy Working Group, n.d.-b). Ironically, cities need to invest resources into the management of technologies that promise optimization. Oscar reflected on this tension noting that they encountered "a lot of wasted money on the city side" when cities "pursued a particular set of technologies without proper oversight." Later Oscar stated: "This smart city moment has a lot of smoke and mirrors" since "smart city people" are "really good" at marketing. Oscar also noted that at times smart city projects have failed because municipalities have not thought through who will look at the data and how those insights will benefit the city. In turn, working group members can disrupt the inclination to optimize by raising questions about data management and governance.

Resistance to surveillance emerges as a key value within the "alternative social imaginary" (Mansell, 2012) of the smart city shaped by activists, advocacy groups, and some scholars. Here, resistance operates as a counter-hegemonic vision of a geomedial future. Southerland's (2023) work on police surveillance working groups found that working groups can operate as important sites of resistance. In our study, working groups resisted geosurveillance by minimizing opportunities for data collection. They also operate as sites of surveillance resistance by refusing to condone certain technologies. While participants in our study acknowledged the importance of elevating concerns about privacy and civil liberties, none of them took a position of absolute refusal towards all surveillance technologies. Working group member Nate summarized:

I feel that no one in the group is coming in just trying to completely reject every proposal. I feel like everyone takes a good look at it and really tries to see the benefit of it. We can see some of the potential harms. How do we get as many of the benefits while allaying as many of the harms?

Thus, the multi-stakeholder approach enables working groups to have constructive conversations about these technologies. Rather than come from a point of absolute refusal, working group members try to evaluate each technology in situ by weighing risks and benefits.

The existence and structure of the working groups facilitate resistance. For example, Hannah noted that their working group was required to retroactively review implemented technologies before reviewing new ones. In her words, this process "prohibited and prevented new technologies from being acquired by the City." Here, Hannah implies that companies, and municipal departments, lost interest in new technologies while waiting for the implemented technologies to be reviewed. Thus, the semantics of municipal ordinances can inadvertently lead to surveillance resistance, by slowing down and limiting the adoption of new technology.

Sometimes, the activities of the working groups lead tech companies to refuse municipalities their services. Nate explained how the working group functions as an intermediary between tech companies and cities:

We have potential vendors come and kind of pitch, our group will ask them difficult questions....One time they decided, after they met with us, that they didn't want to sell our city their technology, which seems weird, we're just asking questions.

In this case, refusal came from the tech company and not from the surveillance working group. The tech company refused service because the working group asked questions about data governance, revealing the importance of working groups in challenging techno-solutionism.

Other times, the working group and tech company are able to move forward after the working group questions corporate practices. Naomi described this form of resistance when their working group asked third-party vendors (like cloud-based solutions) who would own and retain the rights to the collected data. They elaborated: “We [might] think [a] technology is a surveillance technology, but we’re okay with the city moving forward with using it. As long as the City negotiates a strict disposition policy with the vendor or puts privacy protections in place.” In turn, working group members can balance different stakeholders’ visions for the smart city by refusing parts of a vendor’s solution while still adopting the technology.

The slow pace of the working group structure might also lead to resistance. As Hannah shared: “Because bureaucracy is slow, technology development is always going to outpace the law and our standards and practices that we have, it’s always going to be responsive to technology.” Rather than frame the slow pace of these groups as a negative, slowing down the impetus to optimize can lead to a more thorough review process. Through resistance, but not necessarily complete refusal, the slow pace of the working group counters the fast pace of technology development. Here, working groups serve as a kind of speed bump, slowing down the inclination to optimize. Ideally, this process would give City departments more time and input to question the value of the technology they are hoping to procure. As a result, resistance processes can lead to a more sustainable approach to technology adoption.

Our research finds that municipal surveillance working groups are useful for exploring an additional “alternative social imaginary” (Mansell, 2012) of the smart city focused on deoptimization. Deoptimization encourages technology use in contexts outside of the corporatized smart city. Here, deoptimization reflects larger social values where technological practices engage and benefit the public. Nate suggested community members want “access to information about their city, whether it’s how their government spends tax dollars, how much crime is in their neighborhood, [or] how long code violations take to get addressed by landlords.” In turn, Nate exemplifies how data can help citizens communicate with regulators and make cases for improved services. Additionally, smart technologies can engage the community in the process of envisioning the city’s future. The proposed Privacy Advisory Committee in Boston might reflect this approach as the recommendations for the group include the establishment of community-led data governance practices informed by residents and community-based organizations (Surveillance, Data, and Privacy Working Group, n.d.-a). Naomi also expressed a desire to center community members, sharing that they want to make data collection tools and data accessible to middle school and high school students so that the community can better understand the kinds of data that are collected and imagine other ways data could be used to measure or monitor their environment. Efforts to use local municipal data in STEM education leverage the benefits of geomedia to privilege public good over efficiencies. As a result, a deoptimized imaginary might lead to constructive and creative uses of technology that inclinations towards optimization or resistance would discard. This approach might center on a variety of collective values such as education, public health, or art. Deoptimization then reflects less of a middle ground between calls for optimization and resistance and instead invites an alternative imaginary of geomedia futures.

4.4. Ongoing Challenges

While municipal surveillance working groups operate as a useful governance strategy, working group members reflected on several challenges they face. First, some city departments seeking new technologies give “stock answers about what they do with the data or who has access to the data” (Hannah) when providing information to the working groups. If there are no accountability systems for evaluating what departments do with the data they collect, the labor of working groups could be merely symbolic. Second, municipal departments are not always required to go back to the working group if they want to integrate existing technologies. This can complicate how working group members negotiate surveillant futures. Furthermore, Oliver explained that there is an onus on working group members to learn about these technologies themselves. While the composition of these groups includes members with different expertise and social backgrounds, those without technical knowledge sometimes need to engage in additional work to learn about the technical aspects of geosurveillance technologies. Learning about these tools is important so working group members do not rely on information from vendors. However, this work was not always equally distributed among working group participants. Finally, Eve noted that group members struggle to solicit equitable feedback from the public when governments are still building community trust. This concern about equitable feedback is not, likely, unique to these working groups, but an ongoing challenge for municipalities more broadly. In summary, the ability to carry out the mission of the working group can be impacted by a variety of factors outside of the working groups’ control.

5. Discussion

Municipal surveillance working groups operate as a form of geomedia governance. Geomedia governance encompasses the adoption and datafication of surveillant technologies, people, and space. Working group members must consider questions of future data collection and retention as well as questions of surveillance imaginaries through their governance efforts. Additionally, working group members are imbued with the agency to delay, or halt, technology procurement. By evaluating technologies, working group members imagine and construct the uncertain futures that characterize emerging technologies (Rotolo et al., 2015). Their involvement complicates the notion of citizen sensors where citizenship is informed through the monitoring and collecting of data (Gabrys, 2014; Houston et al., 2019). Although imperfect, surveillance working groups provide opportunities for civic engagement and citizen agency to counter geosurveillance and geomediatization, the process by which the adoption and logics of geomedia are seen as inevitable (Hartmann & Jansson, 2022).

Through their evaluation processes, working groups develop geomedia futures in their communities. Group members voiced a sense of responsibility to consider the claims of different stakeholders in order to make decisions that benefit the public. In turn, they are engaged in a process of negotiating the dominant and alternative social imaginaries of the smart city. They navigate ways to optimize, resist, and deoptimize technologies through their work examining, managing, and imagining geomedia. Interestingly, there were no significant differences by population size in how the working groups across our case studies functioned. Instead, there were many similarities including their general compositions and the centering of citizen perspectives in the procurement process. If “data-based cities are imagined as places where citizens can gain access to information, hold governments accountable, and use information as an open resource that allows everyone to participate” (Powell, 2021, p. 80), then it is imperative to involve citizens in decisions about

technology adoption and governance. The working group structure seems like a useful tool for smaller and larger cities and serves as a reminder of the importance of studying how smart city logics and applications are being adopted by communities of all sizes. While sincere and thoughtful engagement with citizens can be challenging and time-consuming, community members bring pertinent experiences and viewpoints to discussions about geosurveillance. Surveillance working groups bring together stakeholders who can help represent citizen perspectives, particularly those from marginalized groups who have disproportionately been affected by historical surveillance and discriminatory practices (Enns, 2016; Loury, 2008).

6. Conclusion

While municipal surveillance working groups initially emerged out of concerns about police surveillance, their ongoing work demonstrates the breadth of surveillance technology in cities today. The municipal codes which established the groups, their scopes of work, and membership, as well as members' efforts to optimize, resist, and deoptimize the use of technology, are all elements of geomedia governance. This work slows down and creates space for public engagement, review, and exploration of potential uses and misuses of geomedia. The working groups consider not just the adoption of geomedia, but the complications that come from ongoing data management, data sharing, and data integration. Through their work, working group members engage in the imperfect governance of geomedia futures.

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Conflict of Interests

The authors declare no conflict of interests.

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